

777 MOUNT AVE WYANDANCH, NY 11798



PIPE SUPPORT HARDWARE & SEISMIC BRACING  
DESIGNERS - ENGINEERS - MANUFACTURERS

# INDUSTRIAL THREADED PRODUCTS

P R O D U C T C A T A L O G

TEL (631) 665-9300 - FAX (631) 491-0897 - [www.itpny.net](http://www.itpny.net)



## MULTI-STRUT METAL FRAMING SYSTEM

Standard Strut, combination and concrete insert channel available in standard lengths or cut into suit. Stocked pre-galvanized, stainless steel and PVC coated. Pipe clips, Strut nuts and a variety of fittings that readily attach to the strut are also available.

## NON-METALLIC FRAMING SYSTEM

Fiberglass Strut and fittings are available in both polyester and vinyl ester finishes. Non-metallic structural shapes are also available upon request.

## FASTENERS

We stock hex bolts, studs, nuts in carbon steel, galvanized and stainless steel as well as lag bolts tek screws, concrete anchors, adhesive tubes and cartridges and threaded rod.

## VIBRATION ISOLATION AND SEISMIC CONTROL

Spring and neoprene hanger isolators, housed and free standing to provide shock and vibration isolation on equipment. Equipment bases, Inertia bases and Isolation rails are available. Seismic control braces to help preserve the safety and operation of plant systems during a seismic event.

## PIPE HANGERS

We stock Clevis, Harvard Rollers, Riser Clamps and other various components.





## INTRODUCTION

Since 1984 Industrial Threaded Products, Corp. has specialized in the manufacture and distribution of a complete line of pipe hangers and supports for commercial and industrial applications. Our designs are in accordance with ANSI B31.1 and MSS-SP 58.

We have extensive capabilities to design and fabricate support systems utilizing the latest technologies that will satisfy all customer requirements. Our sales and engineering group offer a full range of experience in the areas of product design and value engineering are available to discuss your project needs.

Our supports have been specified and installed on major water treatment, pharmaceutical, process piping, petrochemical, hospital and school buildings as well as many other industrial projects.

Industrial Threaded Products, Corp. products are synonymous in the pipe support industry for quality. Our mission is to support the mechanical industry with timely estimates, efficient designs, and full-line inventories that will allow us to meet our customers critical schedules.

### John Apicelli

CEO/President

### Zach Apicelli

Vice President

### Mark Engh

Vice President of Operations/Project Manager

### Gus Mosser

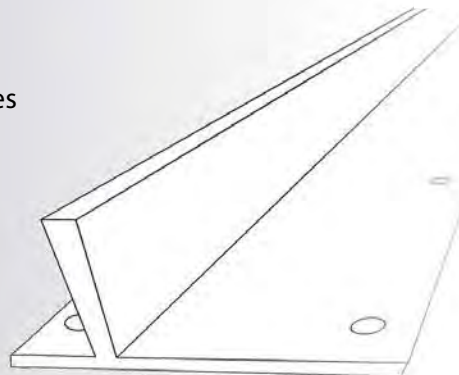
Senior Estimator/Project Manager

### Lisa Cappiello

Office Manager/Inside Sales

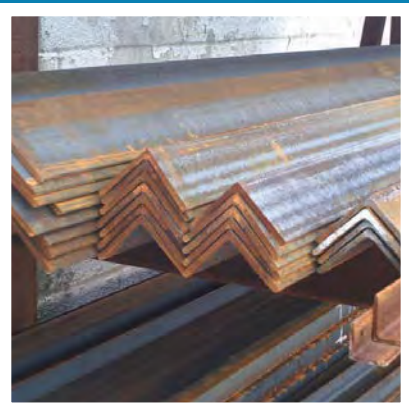
### Harriet Drake

Controller



## ENGINEERING

We maintain an engineering department to design pipe hangers and supports for typical and special applications including seismic, wind and snow loading. Our engineers utilize contemporary CAD and computer piping stress analysis programs when needed to meet customer requirements. Registered Professional engineers are on staff.





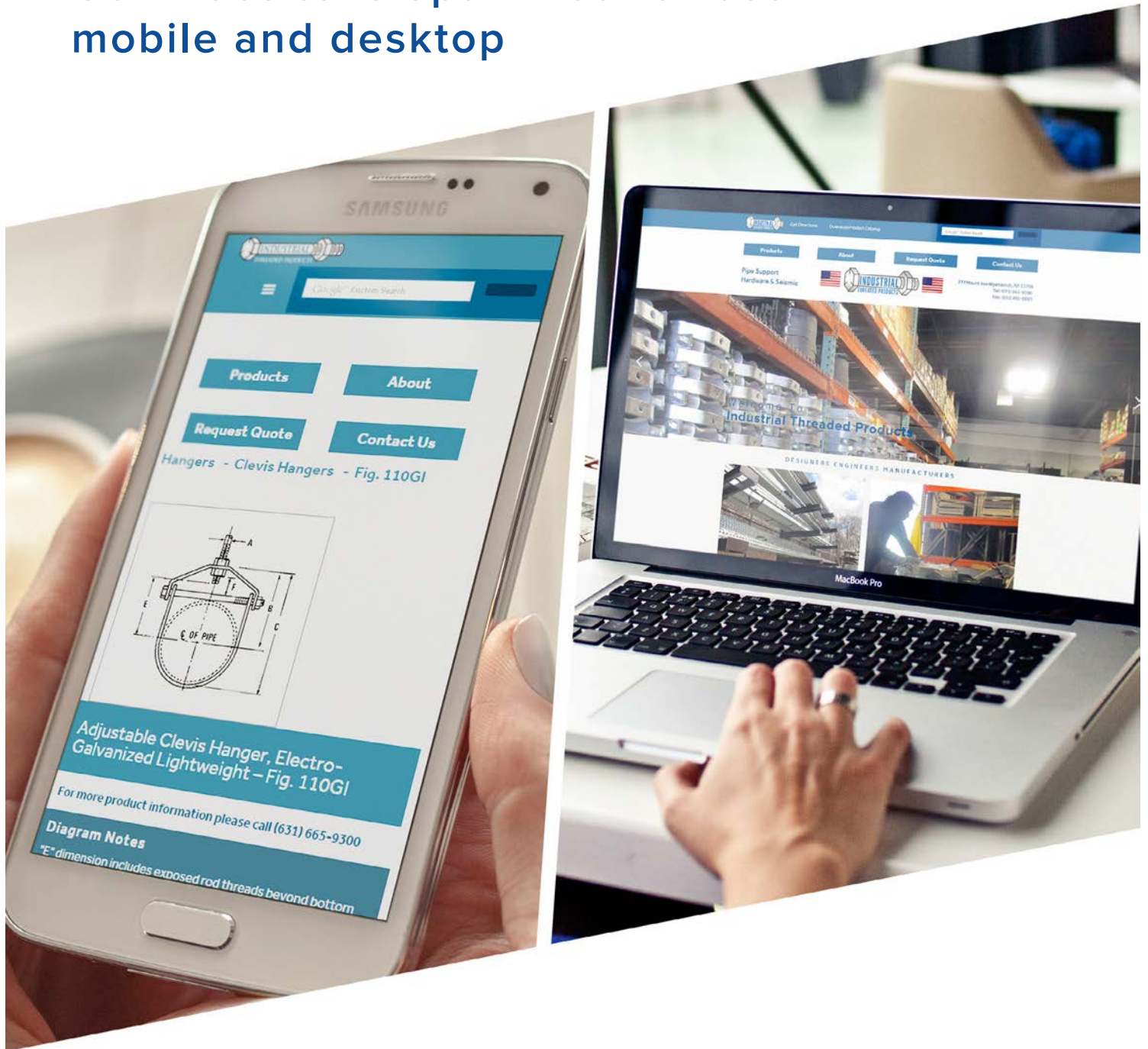
## STRUCTURAL STEEL FABRICATION

Complete fabrication services to meet your support needs in carbon steel, alloy steel, stainless steel and aluminum.





Our website is optimized for both mobile and desktop



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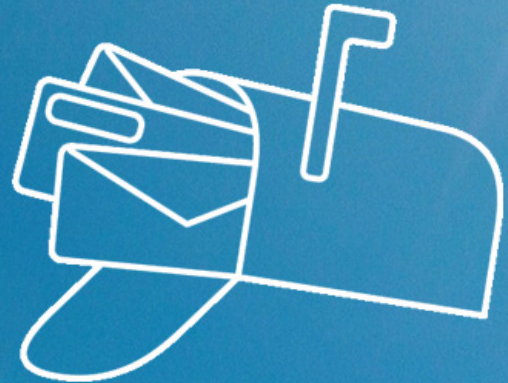
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## FINISHES

I.T.P. can coat any product it manufactures with plastic, red and yellow oxide primer, epoxy, hot-dip galvanized, electrozinc, copper, COPPER-GARD, chrome, color coordinated finishes and just about any coating required.

### ZINC COATING

#### Electro-Plated Zinc (ASTM B633)

This type of coating is recommended for indoor use in relatively dry areas. This process deposits a coating of zinc on the steel or iron by electrolysis from a bath of zinc salts. This coating is pure zinc and adheres to the steel or iron with a molecular bond. A maximum of .5 mills of zinc can be applied using this method.

#### Pre-Galvanized Zinc (ASTM A653)

This type of coating is suitable for extended exposure in dry or mildly corrosive atmospheres, but not generally recommended for outdoor use, or in industrial environments. This coating is also referred to as “mill galvanized” or “hot-dip mill galvanized”. This process continuously rolls steel coils or sheets through molten zinc. The steel is then cut or slit to size. Coating thickness of .90 ounces per square foot of steel surface (referred to as G90) is used on I.T.P.’s Figures 310G and 310NFPA. Cut edges are not zinc coated, however, zinc near the uncoated steel becomes a sacrificial anode, which protects the bare areas after a short period of time.

#### Hot-Dip Galvanized (ASTM 123)

This type of coating provides extended corrosion protection for steel and iron products exposed to extreme humidity commonly evident in outdoor exposure or in uncontrolled atmospheric conditions. This coating provides superior corrosion resistance to that of electro-plating. The process calls for the steel or iron product to be completely immersed into a bath of molten zinc, which creates a metallurgical bond. The minimum coating thickness is 1.5 ounces per square foot per side (3 ounces per square foot of steel or iron). Caution should be taken when specifying Hot-Dip Galvanizing on certain products. Products with threaded components should either have the threads protected from the galvanizing process or chase the threads subsequent to hot-dipping. Products with critical size tolerances should account for the thickness of the coating.

### PRIMER

I.T.P. offers Red Primer and Yellow Primer. Both offer a degree of protection from elements. These coatings are also used in applications where painting of the metal is desired. EPA is restricting the use of certain primers. Consult I.T.P. Industries for specific primer chemical components, as well as corrosive capabilities of specific primers.

### PLASTIC COATING

Vinyl coating of the metal prevents galvanic reaction between dissimilar metals, provides corrosion resistance, reduces noise, and can be used where glass or plastic pipe contact with metal is not desired.





## FINISHES (continued)

### EPOXY COATING

I.T.P. Industries offers various epoxy finishes in both commercial and military grades. These finishes offer a high degree of corrosion resistance.

I.T.P. Industries provides its COPPER-GARD finish for copper tubing installations. The finish provides superior corrosion protection and insulates against dissimilar metal contact, thus preventing electrolysis. The process applies a baked-on epoxy paint to steel stamping and iron castings. In the three-step process, the parts are zinc plated to .0002" thick, an epoxy copper colored powder is then applied by an electrostatic method, and finally the coated parts are baked at 180 degrees for 20 minutes.

### COPPER PLATING

This coating is designed for copper tubing installations. The coating is intended to identify the product size only. The finish is not intended for corrosion resistance.

### CHROME PLATING

This coating is intended to support chrome plated pipe and provides corrosion resistance for commercial installations such as hospitals, schools and prisons.



# TABLE OF CONTENTS

## HANGERS

Pages 14 - 44

## SPRING VIBRATION ISOLATORS

Pages 103 - 104

## ROOFTOP SUPPORTS

Pages 141 - 149

## BEAM CLAMPS

Pages 45 - 56

## PIPE STANTIONS

Pages 106 - 113

## PIPE LINK SEALS

Pages 150 - 157

## PIPE CLAMPS

Pages 57 - 75

## PIPE SLEEVES

Pages 114 - 116

## MISCELLANEOUS

Pages 158 - 183

## ANCHORS & FASTENERS

Pages 76 - 96

## STRAPS

Pages 117 - 124

## STRUT

Pages 184 - 194

## BRACKETS

Pages 97 - 99

## PIPE GUIDES & SLIDES

Pages 125 - 128

## STRUT NUTS & STRUT CLAMPS

Pages 195 - 200

## ROLLERS

Pages 100 - 102

## SEISMIC ATTACHMENTS

Pages 129 - 140

## STRUT ACCESSORIES

Pages 201 - 219



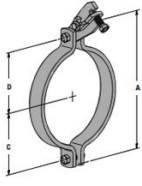


FIG. 4L - Page 129  
"In-Line" Sway Brace Attachment

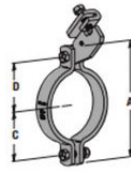


FIG. 4LA - Page 130 - 131  
"In-Line" Sway Brace Attachment

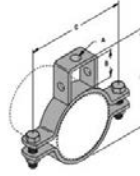


FIG. 4B - Page 132  
Pipe Clamp for Sway Bracing

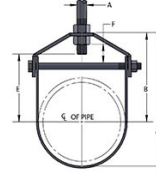


FIG. 11, 11GI - Page 14  
ADJUSTABLE  
CLEVIS HANGER  
WW-H-171-E TYPE 1  
A-A-1192 A TYPE 1  
MSS SP-58 and SP-69 TYPE 1

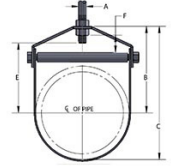


FIG. 11CI - Page 15  
CLEVIS HANGER FOR  
AWWA DUCTILE  
IRON AND PVC C-900 PIPE  
MSS SP-58 and SP-69 TYPE 1

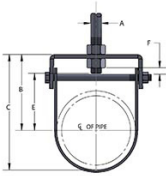


FIG. 11F - Page 16  
FLAT TOP  
CLEVIS HANGER

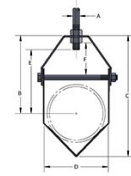


FIG. 11V - Page 17  
V-BOTTOM  
CLEVIS HANGER



FIG. 11WS - Page 18  
CLEVIS HANGER WITH  
WELDED SHIELD



FIG. 11X - Page 19  
CLEVIS HANGER WITH  
EXTENDED BOTTOM  
WW-H-171-E TYPE 1  
A-A-1192 A TYPE 1  
MSS SP-58 and SP-69 TYPE 1



FIG. 12 - Page 158  
V-CHANNEL

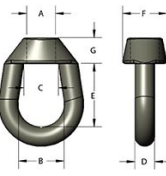


FIG. 13, 13I & 13L - Page 76  
WELDLESS EYE NUT  
WW-H-171-E TYPE 17  
A-A-1192 A TYPE 17  
MSS SP-58 and SP-69 TYPE 17

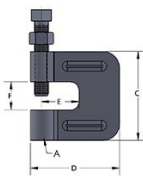


FIG. 21, 21L, & 21LI - Page 45  
STEEL C-CLAMP  
WW-H-171-E TYPE 23  
A-A-1192 A TYPE 23  
MSS SP-58 and SP-69 TYPE 23

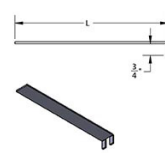


FIG. 21R - Page 46  
BEAM CLAMP  
RETAINING STRAP

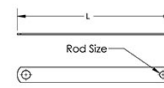


FIG. 22R - Page 46  
BEAM CLAMP  
RETAINING STRAP

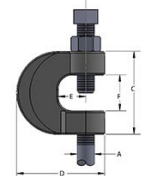


FIG. 23L - Page 47  
DUCTILE IRON C-CLAMP  
WW-H-171-E TYPE 23  
A-A-1192 A TYPE 23  
MSS SP-58 and SP-69 TYPE 23

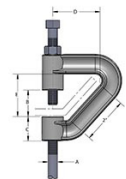


FIG. 24 - Page 47  
PURLIN CLAMP

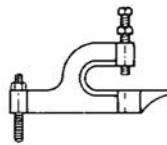


FIG. 25L - Page 48  
EXTENDED C-CLAMP

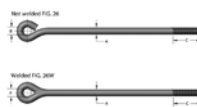


FIG. 26 & 26W - Page 80  
PLAIN & WELDED  
EYE ROD



FIG. 26DF, 26DFS, 26M - Page 77-79  
REGULAR EYEBOLT,  
SHOULDER EYEBOLT,  
MACHINE EYEBOLT



FIG. 31 - Page 30  
ADJUSTABLE  
BAND HANGER  
WW-H-171-E TYPE 7  
A-A-1192 A TYPE 7  
MSS SP-58 and SP-69 TYPE 7



FIG. 31CT, 31CTI - Page 31  
COPPER PLATED AND EPOXY COATED  
(COPPER-GARD),  
COPPER TUBING BAND HANGER  
WW-H-171-E TYPE 7  
A-A-1192 A TYPE 7  
MSS SP-58 and SP-69 TYPE 7

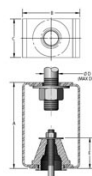


FIG. 34 - Page 103  
VIBRATION HANGER  
NEOPRENE  
"RH"/"RHD" SERIES

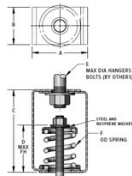


FIG. 35 - Page 104  
VIBRATION SPRING-FLEX  
HANGER  
"SH" SERIES

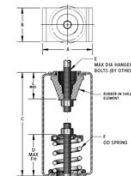


FIG. 36 - Page 105  
VIBRATION SPRING-FLEX  
AND NEOPRENE HANGER  
"RSH" SERIES

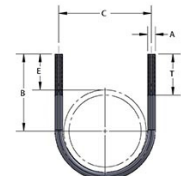


FIG. 37 - Page 159  
LIGHT DUTY U-BOLT

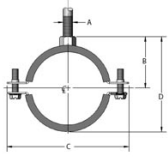


FIG. 40HS - Page 23  
HANDY SPLIT  
RING HANGER

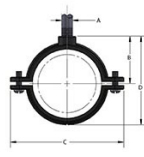


FIG. 41 - Page 24  
SPLIT RING  
EXTENSION HANGER  
WW-H-171-E TYPE 25  
A-A-1192 A TYPE 12  
MSS SP-58 and SP-69 TYPE 12

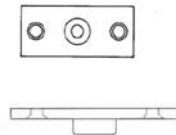


FIG. 41A, 41ACT - Page 24  
HANGER FLANGE PLATE

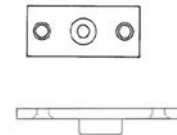


FIG. 41AB - Page 25  
FLANGE PLATE

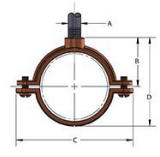


FIG. 41B - Page 25  
SPLIT RING HANGER

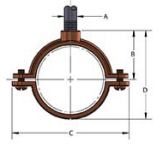


FIG. 41CT - Page 26  
COPPER SPLIT RING  
EXTENSION HANGER  
WW-H-171-E TYPE 25  
A-A-1192 A TYPE 12  
MSS SP-58 and SP-69 TYPE 12

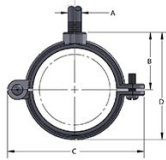


FIG. 41H - Page 27  
HINGE TYPE SPLIT RING  
EXTENSION HANGER  
WW-H-171-E TYPE 25  
A-A-1192 A TYPE 12  
MSS SP-58 and SP-69 TYPE 12

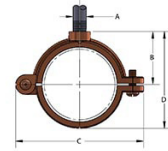


FIG. 41HCT - Page 28  
COPPER HINGE TYPE SPLIT RING  
EXTENSION HANGER  
WW-H-171-E TYPE 25  
A-A-1192 A TYPE 12  
MSS SP-58 and SP-69 TYPE 12

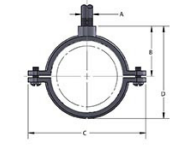


FIG. 41SSI & 41SXI - Page 29  
STAINLESS STEEL SPLIT RING  
EXTENSION HANGER  
MSS SP-58 and SP-69 TYPE 12



FIG. 47 - Page 80  
EYE SOCKET  
WW-H-171-E TYPE 16  
A-A-1192 A TYPE 16  
MSS SP-58 and SP-69 TYPE 16

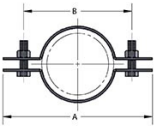


FIG. 48, 49PC - Page 57  
PLASTIC PIPE and PLASTIC COATED  
PVC RISER CLAMP  
WW-H-171-E TYPE 8  
A-A-1192 A TYPE 8  
MSS SP-58 and SP-69 TYPE 8

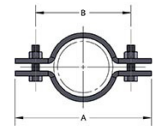


FIG. 50, 50DIP - Page 58 - 59  
RISER CLAMP  
WW-H-171-E TYPE 8  
A-A-1192 A TYPE 8  
MSS SP-58 and SP-69 TYPE 8

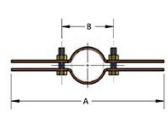


FIG. 50CT, 50CTI - Page 60  
COPPER PLATED AND EPOXY COATED  
(COPPER-GARD) COPPER TUBING  
RISER CLAMP  
WW-H-171-E TYPE 8  
A-A-1192 A TYPE 8  
MSS SP-58 and SP-69 TYPE 8

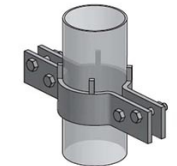


FIG. 50HD - Page 62  
HEAVY DUTY RISER CLAMP  
MSS SP-58 Type 42

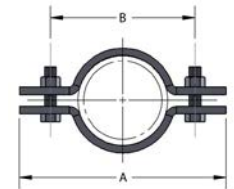


FIG. 50SA - Page 61  
SHORT ARM RISER CLAMP  
WW-H-171-E TYPE 8  
A-A-1192 A TYPE 8  
MSS SP-58 and SP-69 TYPE 8

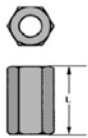


FIG. 51 - Page 81  
ROD COUPLING

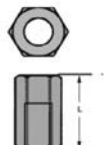


FIG. 51R - Page 81  
REDUCING ROD  
COUPLING



FIG. 52 - Page 82  
ROUND STEEL WASHER



FIG. 52F - Page 82  
FENDER WASHER



FIG. 52L - Page 83  
LOCK WASHER



FIG. 53 - Page 83  
ANGLE BRACKET  
WW-H-171-E TYPE 35  
A-A-1192 A TYPE 34  
MSS SP-58 and SP-69 TYPE 34



FIG. 54 - Page 84  
CONTINUOUS  
THREADED ROD



FIG. 55 - Page 84  
HANGER BOLTS



FIG. 56 - Page 85  
STANDARD HEX NUT

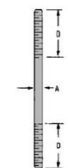


FIG. 57 - Page 85  
HANGER ROD



FIG. 58 - Page 86  
HEX HEAD BOLT



FIG. 59 - Page 86  
DRIVE SCREW

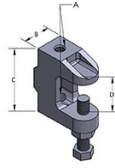


FIG. 60G - Page 49  
1/4" BEAM CLAMP

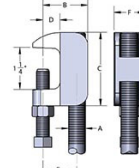


FIG. 61 - Page 49  
TOP BEAM CLAMP  
A-A-1192 A TYPE 19  
MSS SP-58 and SP-69 TYPE 19

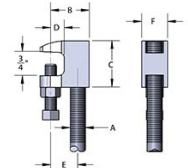


FIG. 62 - Page 50  
JUNIOR TOP BEAM CLAMP  
A-A-1192 A TYPE 19  
MSS SP-58 and SP-69 TYPE 19

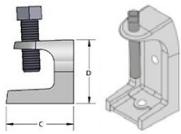


FIG. 63 & 63EWM - Page 50 - 51  
ELECTRICAL ROD  
SUPPORT CLAMP,  
EXTENDED WIDE  
MOUTH CLAMP

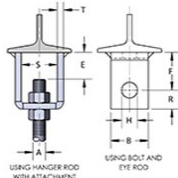


FIG. 66L & 66W - Page 160  
WELDING BEAM ATTACHMENT WITH  
AND WITHOUT BOLT  
WW-H-171-E TYPE 22  
A-A-1192 A TYPE 22  
MSS SP-58 and SP-69 TYPE 22

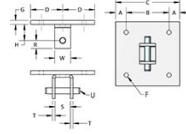


FIG. 67 - Page 161  
CONCRETE CLEVIS PLATE

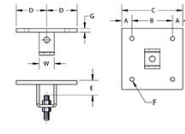


FIG. 68 - Page 161  
CONCRETE ROD  
ATTACHMENT

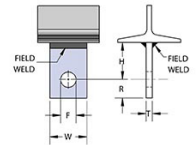


FIG. 69 - Page 162  
STRUCTURAL WELDING LUG  
LONG AND SHORT  
WW-H-171-E TYPE 57  
A-A-1192 A TYPE 57  
MSS SP-58 and SP-69 TYPE 57

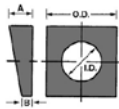


FIG. 72 - Page 87  
BEVEL WASHER



FIG. 73 - Page 87  
DROP IN ANCHOR

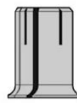


FIG. 73SD - Page 88  
MINI DROP-IN ANCHORS



FIG. 74 - Page 88  
HEX LAG SCREW

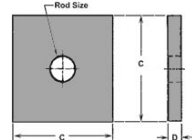


FIG. 75 - Page 89  
STEEL WASHER PLATE



FIG. 77 - Page 89  
ANCHOR BOLT



FIG. 79 - Page 90  
DOUBLE EXTENSION SHIELDS



FIG. 80 - Page 91  
WEDGE ANCHOR

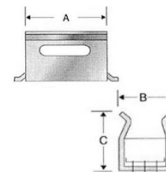


FIG. 81, 81N - Page 92  
CONCRETE INSERT,  
CONCRETE INSERT NUT  
WW-H-171-E TYPE 19  
A-A-1192 A TYPE 18  
MSS SP-58 and SP-69 TYPE 18



FIG. 83 - Page 92  
SPRING WING TOGGLE & BOLT



FIG. 84 - PAGE 93  
SPRING WING TOGGLE HEAD  
ONLY

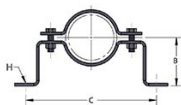


FIG. 95 - Page 63  
OFFSET PIPE CLAMP

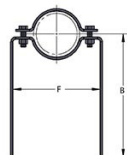


FIG. 97 - Page 64  
EXTENDED PIPE CLAMP

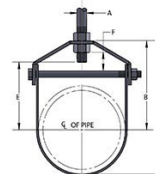


FIG. 110GI - Page 20  
ADJUSTABLE CLEVIS HANGER,  
LIGHTWEIGHT  
WW-H-171-E TYPE 12  
MSS SP-58 and SP-69 TYPE 1

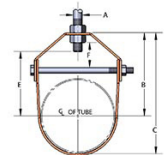


FIG. 110CT, 110CTI - Page 21  
COPPER PLATED AND COPPER EPOXY  
(COPPER-GARD)  
TUBING SIZE CLEVIS HANGER.  
WW-H-171-E TYPE 12  
MSS SP-58 and SP-69 TYPE 1



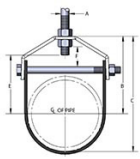


FIG. 110PC - Page 22  
ADJUSTABLE CLEVIS HANGER,  
PLASTIC COATED  
WW-H-171-E TYPE 12  
MSS SP-58 and SP-69 TYPE 1



FIG. 114 - Page 93  
TURNBUCKLE ADJUSTER  
WW-H-171-E TYPE 15  
A-A-1192 A TYPE 15  
MSS SP-58 and SP-69 TYPE 15

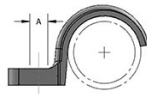


FIG. 126 - Page 117  
ONE HOLE CLAMP



FIG. 127CT - Page 35  
NATICK HANGER,  
COPPER TUBE SIZE

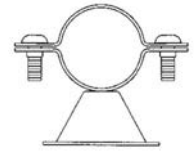


FIG. 129B - Page 36  
VAN (BELL) HANGER

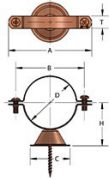


FIG. 129CTP - Page 36  
VAN (BELL TYPE)  
HANGER, COPPER PLATED



FIG. 131CT - Page 37  
MILFORD HANGER,  
COPPER TUBE SIZE

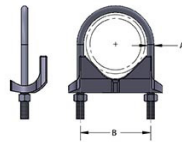


FIG. 136 - Page 163  
RIGHT ANGLE CLAMP

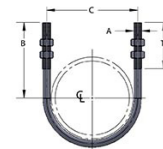


FIG. 137 - Page 164  
STANDARD U-BOLT  
WITH 4 HEX NUTS  
WW-H-171-E TYPE 24  
A-A-1192 A TYPE 24  
MSS SP-58 and SP-69 TYPE 24

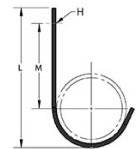


FIG. 145 - Page 165  
STRAIGHT J-HOOK

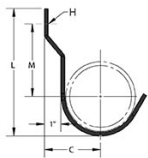


FIG. 146 - Page 165  
OFFSET J-HOOK

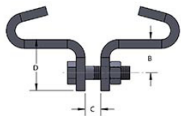


FIG. 150 - Page 51  
BEAM CLAMP  
WW-H-171-E TYPE 21  
A-A-1192 A TYPE 21  
MSS SP-58 and SP-69 TYPE 21

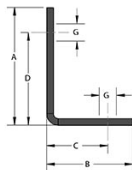


FIG. 152 - Page 166  
RETURN LINE ANGLE

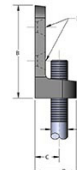


FIG. 153 - Page 166  
SIDE BEAM CONNECTOR

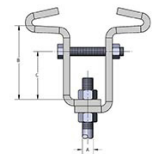


FIG. 155 - Page 52  
STEEL BEAM CLAMP

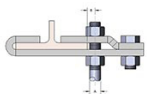


FIG. 156 - Page 52  
SIDE STEEL BEAM CLAMP  
WW-H-171-E TYPE 53  
A-A-1192 A TYPE 25  
MSS SP-58 and SP-69 TYPE 25

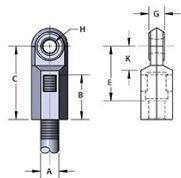


FIG. 157 - Page 54  
EXTENSION PIECE

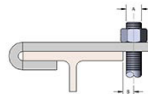


FIG. 158 - Page 53  
TOP BEAM HOOK

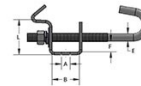


FIG. 159 - Page 53  
ADJUSTABLE ROD  
BEAM CLAMP  
WW-H-171-E TYPE 54  
A-A-1192 A TYPE 27  
MSS SP-58 and SP-69 TYPE 27



FIG. 167 - Page 167 - 168  
PIPE COVERING  
PROTECTION SHIELD  
WW-H-171-E TYPE 41  
A-A-1192 A TYPE 40  
MSS SP-58 and SP-69 TYPE 40



FIG. 167MSS - Page 169 - 170  
MSS PIPE COVERING  
PROTECTION SHIELD  
WW-H-171-E TYPE 41  
A-A-1192 A TYPE 40  
MSS SP-58 and SP-69 TYPE 40



FIG. 180 - Page 118  
SHORT CLIP

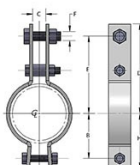


FIG. 189 - Page 65  
DOUBLE BOLT PIPE CLAMP  
WW-H-171-E TYPE 3  
A-A-1192 A TYPE 3  
MSS SP-58 and SP-69 TYPE 3

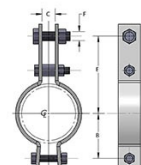


FIG. 189A - Page 66  
ALLOY DOUBLE  
BOLT PIPE CLAMP  
WW-H-171-E TYPE 3  
A-A-1192 A TYPE 3  
MSS SP-58 and SP-69 TYPE 3

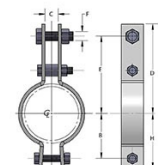


FIG. 189H - Page 67  
HEAVY DUTY DOUBLE BOLT  
PIPE CLAMP  
WW-H-171-E TYPE 3  
A-A-1192 A TYPE 3  
MSS SP-58 and SP-69 TYPE 3

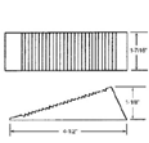


FIG. 200 - Page 171  
BATH TUB WEDGE

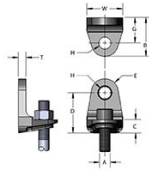


FIG. 202 - Page 171  
SIDE BEAM BRACKET

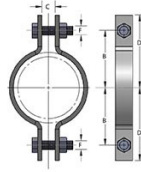


FIG. 212 & 212DIP - Page 68 - 69  
STANDARD STEEL  
PIPE CLAMP  
WW-H-171-E TYPE 4  
A-A-1192 A TYPE 4  
MSS SP-58 and SP-69 TYPE 4

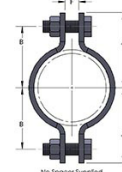


FIG. 216 - Page 70  
HEAVY DUTY TWO-BOLT  
PIPE CLAMP  
WW-H-171-E TYPE 4  
A-A-1192 A TYPE 4  
MSS SP-58 and SP-69 TYPE 4

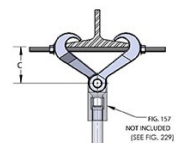


FIG. 218 - Page 54  
MALLEABLE IRON  
CENTER LOAD BEAM CLAMP

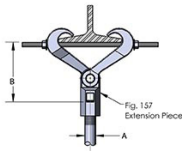


FIG. 229 - Page 55  
MALLEABLE BEAM CLAMP WITH  
EXTENSION PIECE  
WW-H-171-E TYPE 30  
A-A-1192 A TYPE 30  
MSS SP-58 and SP-69 TYPE 30

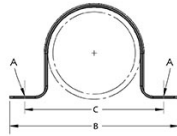


FIG. 231 - Page 119  
TWO HOLE PIPE STRAP

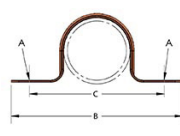


FIG. 231CT - Page 120  
COPPER TWO HOLE  
TUBING STRAP

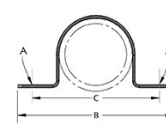


FIG. 231SS & 231OD - Page 121  
TWO HOLE PIPE STRAP,  
STAINLESS STEEL

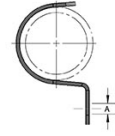


FIG. 233 - Page 122  
ONE HOLE PIPE STRAP

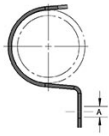


FIG. 233SS & 233OD - Page 123  
ONE HOLE PIPE STRAP,  
STAINLESS STEEL



FIG. 235 & 235CT - PAGE 124  
WIRE PIPE HOOK,  
COPPER WIRE PIPE HOOK



FIG. 237, 237CT - Page 38  
DWV (DRAIN, WASTE, VENT)  
HANGER



FIG. 239, 239CT - Page 39  
PERFORATED HANGER  
STRAPPING

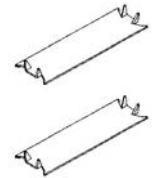


FIG. 240, 245 - Page 172  
STUD GUARD, TRIANGLE  
POINT & TWISTED POINT

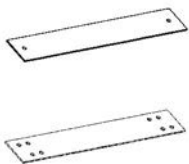


FIG. 241, 243 - Page 173  
NAIL PLATE

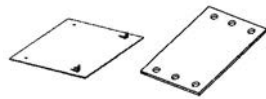


FIG. 242, 242GSN - Page 174  
BOCA SAFETY PLATES

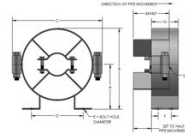


FIG. 255 - Page 125  
PIPE ALIGNMENT GUIDE  
(SINGLE SPIDER CLAMP)

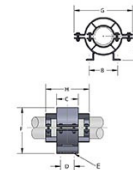


FIG. 256 - Page 126  
PIPE ALIGNMENT GUIDE

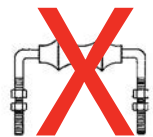


FIG. 271 - Page 175  
ADJUSTABLE ROLLER SUPPORT

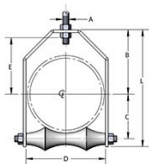


FIG. 272 - Page 40  
ADJUSTABLE ROLLER HANGER  
WW-H-171-E TYPE 44  
A-A-1192 A TYPE 43  
MSS SP-58 and SP-69 TYPE 43

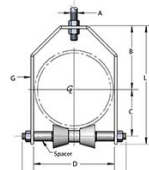


FIG. 272SS - Page 41  
ADJUSTABLE ROLLER HANGER,  
STAINLESS STEEL  
WW-H-171-E TYPE 44  
A-A-1192 A TYPE 43  
MSS SP-58 and SP-69 TYPE 43

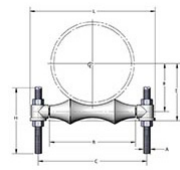


FIG. 273 - Page 42  
ADJUSTABLE TWO-ROD  
ROLLER SUPPORT

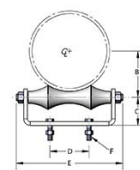


FIG. 275 - Page 100  
ROLLER CHAIR

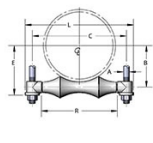


FIG. 277 - Page 43  
ADJUSTABLE TWO ROD  
ROLLER HANGER  
WW-H-171-E TYPE 42  
A-A-1192 A TYPE 41  
MSS SP-58 and SP-69 TYPE 41

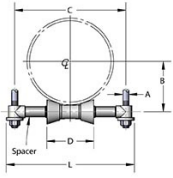


FIG. 277SS - Page 44  
ADJUSTABLE TWO ROD  
ROLLER HANGER, STAINLESS STEEL  
WW-H-171-E TYPE 42  
A-A-1192 A TYPE 41  
MSS SP-58 and SP-69 TYPE 41

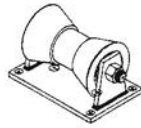


FIG. 279S & 279SS - Page 101  
PIPE ROLL STAND, CARBON STEEL &  
304 STAINLESS STEEL  
WW-H-171-E TYPE 45  
A-A-1192 A TYPE 44  
MSS SP-58 and SP-69 TYPE 44

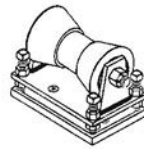


FIG. 280S & 280SS - Page 102  
ADJUSTABLE PIPE ROLL STAND,  
CARBON STEEL & STAINLESS STEEL  
WW-H-171-E TYPE 47  
A-A-1192 A TYPE 46  
MSS SP-58 and SP-69 TYPE 46

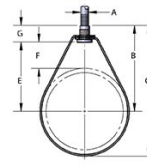


FIG. 310G - Page 32  
"EM-LOK" ADJUSTABLE SWIVEL  
RING HANGER  
WW-H-171-E TYPE 10  
A-A-1192 A TYPE 10  
MSS SP-58 and SP-69 TYPE 10

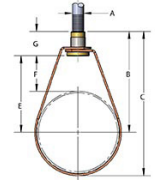


FIG. 310CT, 310CTI - Page 33  
COPPER PLATED AND EPOXY COAT-ED (COPPER-  
GARD) "EM-LOK" ADJUSTABLE SWIVEL RING  
HANGER, TUBING SIZE  
WW-H-171-E TYPE 10  
A-A-1192 A TYPE 10  
MSS SP-58 and SP-69 TYPE 10

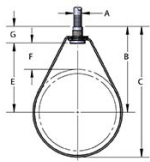


FIG. 310NF - Page 34  
"EM-LOK" ADJUSTABLE SWIVEL  
RING HANGER, NFPA  
WW-H-171-E TYPE 10  
A-A-1192 A TYPE 10  
MSS SP-58 and SP-69 TYPE 10



FIG. 320, 320I - Page 94  
TURNBUCKLE ADJUSTER  
WW-H-171-E TYPE 13  
A-A-1192 A TYPE 13  
MSS SP-58 and SP-69 TYPE 13



FIG. 420 - Page 106  
PIPE SADDLE SUPPORT  
WW-H-171-E TYPE 37  
A-A-1192 A TYPE 36  
MSS SP-58 and SP-69 TYPE 36

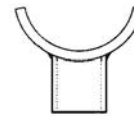


FIG. 421 - Page 107  
ADJUSTABLE PIPE SADDLE  
SUPPORT WITH COUPLING

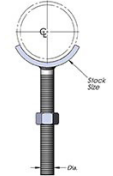


FIG. 422 - PAGE 107  
ADJUSTABLE PIPE  
SUPPORT

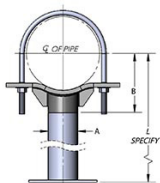


FIG. 425 - Page 108  
PIPE SADDLE SUPPORT  
WITH U-BOLT  
WW-H-171-E TYPE 38  
A-A-1192 A TYPE 37  
MSS SP-58 and SP-69 TYPE 37

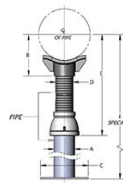


FIG. 426 - Page 109  
ADJUSTABLE PIPE  
SADDLE SUPPORT  
WW-H-171-E TYPE 39  
A-A-1192 A TYPE 38  
MSS SP-58 and SP-69 TYPE 38

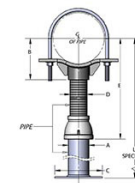


FIG. 427 - Page 110  
ADJUSTABLE PIPE  
SADDLE SUPPORT  
WITH U-BOLT



FIG. 428KT - Page 111  
ADJUSTABLE PIPE SADDLE  
SUPPORT KIT

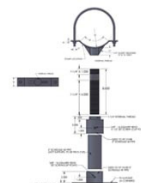


FIG. 429KT - Page 112  
ADJUSTABLE PIPE  
SADDLE SUPPORT KIT,  
WITH U-BOLT



FIG. 431KT - Page 113  
ADJUSTABLE BOLT ON FLANGE  
SUPPORT KIT

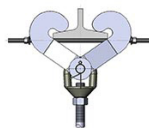


FIG. 450 - Page 56  
HEAVY BEAM CLAMP ASSEMBLY  
WW-H-171-E TYPE 28 WITHOUT LINKS, TYPE  
29 WITH LINKS  
A-A-1192 A TYPE 28 WITHOUT LINKS,  
TYPE 29 WITH LINKS  
MSS SP-58 and SP-69 TYPE 28 WITHOUT  
LINKS, TYPE 29 WITH LINKS

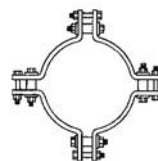


FIG. 570 - Page 71  
FOUR SECTION RODDING  
BAND



FIG. 575 - Page 72  
CORPORATION EYE BOLT

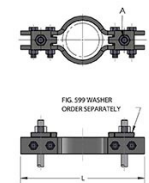


FIG. 595 - Page 72  
FOUR BOLT SOCKET CLAMP

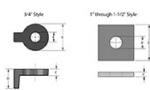


FIG. 599 - Page 73  
SOCKET CLAMP WASHER



FIG. 599A - Page 73  
DUCTILE LUG

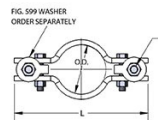


FIG. 600 - Page 74  
SOCKET CLAMP

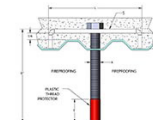


FIG. 685 - Page 94  
METAL DECK  
ANCHOR BOLT

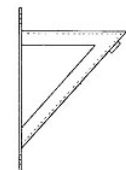


FIG. 800 - Page 97  
Light Welded Bracket  
WW-H-171-E TYPE 33  
MSS SP 58 TYPE 31



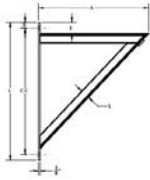


FIG. 801 - Page 98  
MEDIUM WELDED BRACKET  
WW-H-171-E TYPE 34  
A-A-1192 A TYPE 33  
MSS SP-58 and SP-69 TYPE 33

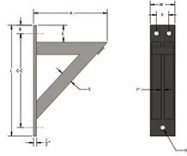


FIG. 802 - Page 98  
HEAVY WELDED BRACKET  
WW-H-171-E TYPE 34  
A-A-1192 A TYPE 33  
MSS SP-58 and SP-69 TYPE 33

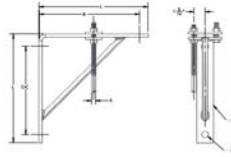


FIG. 820 & 820C - Page 99  
LIGHT WELDED  
STEEL BRACKET & CLIP  
WW-H-171-E TYPE 32  
A-A-1192 A TYPE 31  
MSS SP-58 and SP-69 TYPE 31

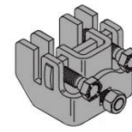


FIG. 825 - Page 133  
Bar Joist Sway Brace  
Attachment To Steel

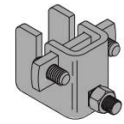


FIG. 825A - Page 133  
Bar Joist Sway Brace  
Attachment To Steel

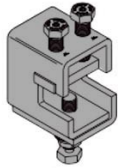


FIG. 828 - Page 134  
Universal Swivel Sway Brace  
Attachment to Steel

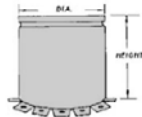


FIG. 900 - Page 114  
NAILING SLEEVE

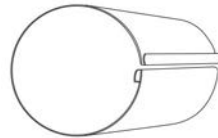


FIG. 901 - Page 114  
SPLIT SLEEVE

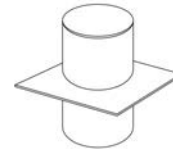


FIG. 902 - Page 114  
Q DECK SLEEVE

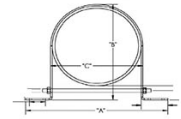


FIG. 903 - Page 75  
MANHOLE DROP  
PIPE CLAMP

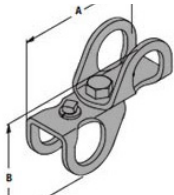


FIG. 907 - Page 135  
4-Way Sway Brace  
Attachment

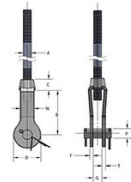


FIG. 909, 909I - Page 176  
FORGED STEEL CLEVIS  
WW-H-171-E TYPE 14  
A-A-1192 A TYPE 14  
MSS SP-58 and SP-69 TYPE 14

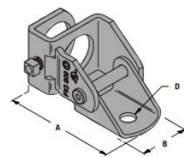


FIG. 909SA - Page 136  
No-Thread Swivel Sway Brace  
Attachment

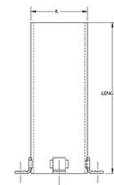


FIG. 910 - Page 115  
PIPE SLEEVE  
WITH WELDED LUGS

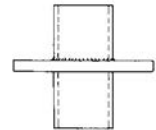


FIG. 915 - Page 115  
WATER PROOF SLEEVE

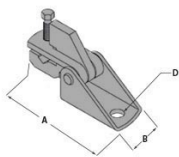


FIG. 980 - Page 137  
Universal Swivel Sway Brace  
Attachment

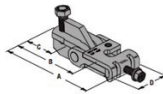


FIG. 981 - Page 138  
Fast Attach – Universal Swivel  
Sway Brace  
Attachment

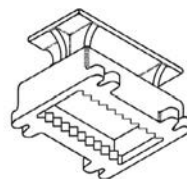


FIG. 982 - Page 177  
MALLEABLE CONCRETE INSERT  
BOX



FIG. 983 - Page 178  
MALLEABLE IRON  
INSERT NUT

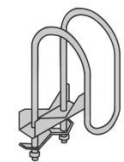


FIG. 1000 - Page 139  
"Fast Clamp" Sway Brace  
Attachment

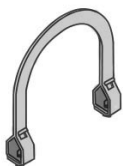


FIG. 1001 - Page 140  
Sway Brace Attachment



FIG. 1900-1905 - Page 179 - 182  
PIPE COVERING  
PROTECTION SADDLE  
WW-H-171-E TYPE 40A & 40B  
A-A-1192 A TYPE 39A & 39B  
MSS SP-58 and SP-69  
TYPE 39A & 39B

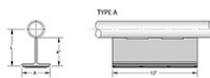


FIG. 4000 SERIES - Page 127  
PIPE SLIDE TEE  
A-A-1192 A TYPE 35

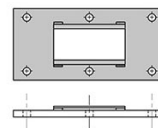


FIG. 4100 SERIES - Page 128  
SLIDE PLATE



FIG. 7000, 7001 - Page 184-185  
1-5/8" x 1-5/8" 12 Gauge Strut  
Solid & Slotted



FIG. 7000A, 7001A - Page 184-185  
1-5/8" x 1-5/8" 12 Gauge Back-to-Back Strut Solid & Slotted



FIG. 7100, 7101 - Page 186-187  
1-5/8" x 1-5/8" 14 Gauge Strut Solid & Slotted



FIG. 7200, 7201 - Page 188-189  
13/16" x 1-5/8" 14 Gauge Strut Solid & Slotted

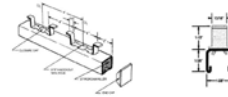


FIG. 7225 - Page 190  
1-3/8" x 1-5/8" 12 Gauge Continuous Concrete Insert



FIG. 7230, 7231 - Page 191-192  
2-7/16" x 1-5/8" 12 Gauge Strut Solid & Slotted

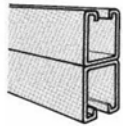


FIG. 7240, 7241 - Page 191-192  
2-7/16" x 1-5/8" 12 Gauge Back-to-Back Strut Solid & Slotted

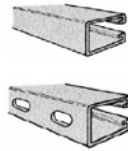


FIG. 7250, 7251 - Page 193-194  
3-1/4" x 1-5/8" 12 Gauge Strut Solid & Slotted

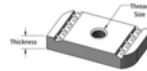


FIG. 8000 - Page 195  
Strut Nut Without Spring



FIG. 8050 - Page 195  
Strut Nut With Short Spring

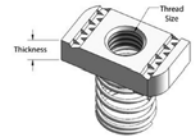


FIG. 8100 - Page 195  
Strut Nut With Regular Spring

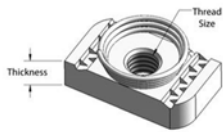


FIG. 8150 - Page 196  
Top Spring Strut Nut

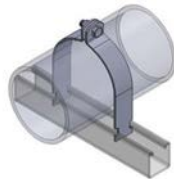


FIG. 8200, 8200SS - Page 196  
Rigid IPS Strut Clamp Assembled

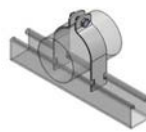


FIG. 8250 - Page 197  
OD Tubing Strut Clamp Assembled

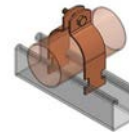


FIG. 8300CT, 8300CTP - Page 198  
Epoxy Coated Copper-Gard - Copper Tubing Strut Pipe Clamp

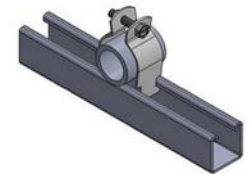


FIG. 8350 - Page 198  
Universal Pipe Strut Clamp Assembled



FIG. 8500 - Page 199  
Cushion Strut Clamp

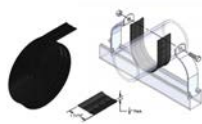


FIG. 8550 - Page 199  
Cushion Pipe Wrap



FIG. 8575 - Page 200  
Conduit Clamp with bolt & nut

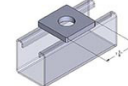


FIG. 9001FF, 9002FF - Page 201  
Square Strut Washer, Square Washer with Guides

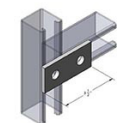


FIG. 9001FF-9021FF - Page 201-204  
Splice & Gusset Plates

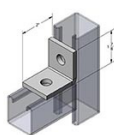


FIG. 9022CA-9048AF - Page 205-209  
Corner Angles

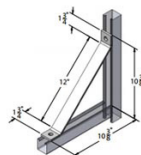


FIG. 9040CA-9043CA - Page 208  
Knee Braces

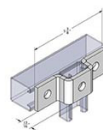


FIG. 9049UF-9057UF - Page 209-210  
U-Connectors

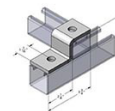


FIG. 9058ZF-9065ZF - Page 210-212  
Z-Supports

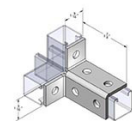


FIG. 9066WF-9080WF - Page 212-214  
Corner Connectors

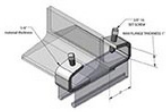


FIG. 9081BC-9087BC - Page 214-215  
Strut Beam Clamps

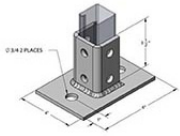


FIG. 9088PB-9095PB - Page 215-217  
Post Bases

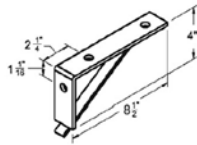


FIG. 9103BB-9109BB - Page 217-218  
Wall Brackets

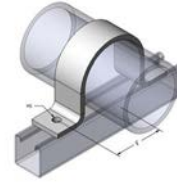


FIG. 9110HD - Page 200  
Two Hole Hold Down Clamp



FIG. BI - Page 96  
Bang-It Concrete Insert

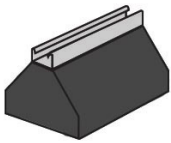


FIG. DBS - Page 141-149  
Rooftop Supports



FIG. EZ18 - Page 95  
EZ Anchor Kit



FIG. LSA516 - Page 96  
Lag Shield (Short or Long)



FIG. PAK10, PAK14 - Page 95  
10-12 Plastic Anchor Kit  
14-16 Plastic Anchor Kit

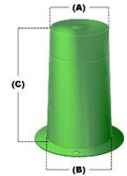


FIG. PCS - Page 116  
Plastic Crete-Sleeves

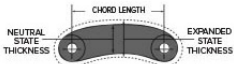


FIG. PS - Page 150-157  
Pipe Link Seals

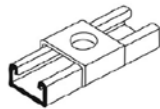


FIG. UW-450 - Page 219  
Saddle Washer

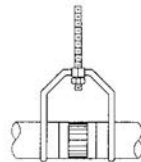


FIG. V6600 - Page 183  
CAST IRON DWV HANGER

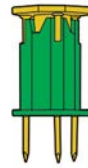


FIG. WK - Page 96  
Wood Knocker Insert

If there is something you do not see in the catalog please call for help on that product.





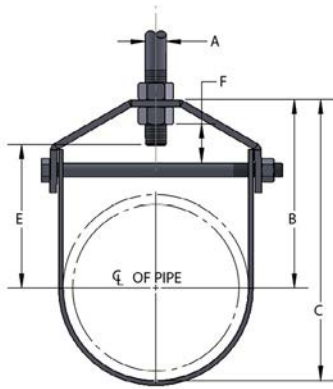
I.T.P. IS A DISTRIBUTOR FOR THE FOLLOWING MANUFACTURERS:



FIG. 11  
STANDARD CLEVIS HANGER, DOMESTIC  
FIG. 11GI  
STANDARD CLEVIS HANGER,  
ELECTRO-GALVANIZED



Manufactured  
in the USA  
Excluding 11GI



"E" dimension includes exposed rod threads beyond bottom of the hex nut. Exposed rod thread dimension is equal to the diameter of the rod used.

**Material:** Carbon steel, 304 (11SS) and 316 (11SX) stainless steel  
**Finish:** Plain, painted, electro-galvanized, hot dip galvanized.  
**Service:** Designed for the suspension of non-insulated, stationary pipelines.  
**Approvals:** U.L.-U.L.C. listed (sizes 2 1/2"-8") and FM approved (3/4"-8"). Complies with Federal Specification WW-H-171-E (Type# 1), A-A-1192A (Type# 1) and Manufacturers Standardization Society MSS SP-58 and SP-69 (Type# 1).  
**Ordering:** Specify pipe size, figure number and finish.  
**Notes:** Upper lock nut must be tightened securely to assure proper hanger performance. Stainless steel hangers are recommended for applications where protection from corrosive environments is needed.

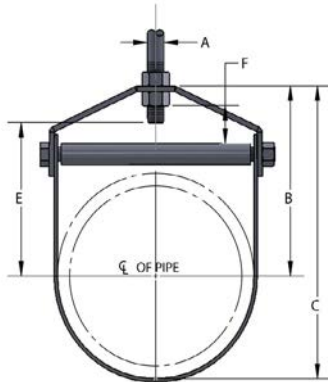
PIPE SIZE	PIPE OD	MATERIAL SIZE		BOLT	A	B	C	E	F	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
		TOP	BOTTOM								
1/2	0.840	13ga x 7/8	13ga x 7/8	1/4	3/8	1 11/16	2 1/16	15/16	7/16	0.18	610
3/4	1.050	13ga x 7/8	13ga x 7/8	1/4	3/8	1 11/16	2 9/16	15/16	7/16	0.18	610
1	1.315	13ga x 7/8	13ga x 7/8	1/4	3/8	2 1/16	2 11/16	1 1/4	5/8	0.22	610
1 1/4	1.660	13ga x 7/8	13ga x 7/8	1/4	3/8	2 1/2	3 3/16	1 11/16	7/8	0.26	610
1 1/2	1.900	12ga x 7/8	12ga x 7/8	1/4	3/8	2 7/8	3 11/16	2 1/16	1 1/16	0.34	610
2	2.375	12ga x 7/8	12ga x 7/8	1/4	3/8	3 15/16	4 7/16	2 1/2	1 1/4	0.38	610
2 1/2	2.875	9ga x 1 3/16	10ga x 1 3/16	5/16	1/2	4 1/2	5 7/8	3 3/8	1 15/16	0.86	1130
3	3.500	9ga x 1 3/16	10ga x 1 3/16	5/16	1/2	4 3/4	6 1/2	3 11/16	1 3/4	0.96	1130
3 1/2	4.000	8ga x 1 3/16	10ga x 1 3/16	5/16	1/2	5 7/8	7 15/16	4 13/16	2 9/16	1.14	1130
4	4.500	8ga x 1 3/16	10ga x 1 3/16	3/8	5/8	5 15/16	8 3/16	4 9/16	2 1/8	1.26	1430
5	5.563	4ga x 1 1/4	8ga x 1 1/4	1/2	5/8	5 11/16	8 7/16	4 15/16	1 7/16	2.04	1430
6	6.625	3ga x 1 1/2	8ga x 1 1/2	1/2	3/4	6 13/16	10 1/8	5 3/16	1 3/4	2.80	1940
7	7.625	3ga x 1 1/2	8ga x 1 1/2	1/2	3/4	7 13/16	11 5/8	6 3/16	2	3.24	2000
8	8.625	3ga x 1 3/4	8ga x 1 3/4	5/8	3/4	8 1/16	12 7/16	6 1/4	1 7/8	4.46	2000
10	10.750	3/8 x 1 3/4	3ga x 1 3/4	3/4	7/8	10	15 7/16	8	2 1/4	8.06	3600
12	12.750	3/8 x 2	3ga x 2	3/4	7/8	11 9/16	18	9 9/16	2 13/16	10.34	3800
14	14.000	1/2 x 2	1/4 x 2	7/8	1	12 9/16	19 9/16	10 9/16	2 9/16	14.80	4200
16	16.000	1/2 x 2 1/2	1/4 x 2 1/2	1	1	13 15/16	21 15/16	11 15/16	2 13/16	21.00	4600
18	18.000	1/2 x 2 1/2	1/4 x 2 1/2	1	1	16	25	13 8/8	3 3/4	24.40	4800
20	20.000	5/8 x 3	3/8 x 3	1 1/4	1 1/4	17 1/2	27 1/2	15 8/8	3 3/4	47.00	4800
24	24.000	5/8 x 3	3/8 x 3	1 1/4	1 1/4	19 3/4	31 3/4	17 3/8	4	54.00	4800
30	30.000	5/8 x 3	3/8 x 3	1 1/4	1 1/4	24 1/8	39-1/8	21 1/2	4 3/4	69.50	6000



Manufactured in the USA

**FIG. 11C1**  
**CLEVIS HANGER, FOR AWWA**  
**DUCTILE IRON AND PVC C-900 PIPE**

HANGERS



"E" dimension includes exposed rod threads beyond bottom of the hex nut. Exposed rod thread dimension is equal to the diameter of the rod used.

**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized, hot dip galvanized. (11CIHDG)  
**Service:** Designed for the suspension of stationary AWWA ductile iron pipe and PVC C-900 pipe.  
**Approvals:** Complies with Federal Specifications WW-H-171-E (Type# 1), A-A-1192 A (Type# 1), and Manufacturers' Standardization Society Mss SP-58 and SP-69 (Type# 1).  
**Ordering:** Specify pipe size, material, figure number and finish.  
**Notes:** For sizes 12" and larger a spacer sleeve is added over the cross bolt. Upper locknut must be tightened securely to assure proper hanger performance. Stainless steel hangers are recommended for applications where protection from corrosive environments is needed.

PIPE SIZE AWWA	PIPE OD	MATERIAL SIZE		BOLT	A	B	C	E	F	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
		TOP	BOTTOM								
3	3.960	8ga x 1.187	10ga x 1.187	5/16	1/2	5 5/8	8	4 9/16	2 9/16	1.14	1130
4	4.800	8ga x 1.187	10ga x 1.187	3/8	5/8	6	8 1/2	4 5/8	2 1/8	1.32	1460
6	6.900	3ga x 1.500	8ga x 1.500	1/2	3/4	6 13/16	10 1/8	5 3/16	1 3/4	2.86	1940
8	9.050	3ga x 1.750	8ga x 1.750	5/8	3/4	8 15/16	13	6 7/8	1 7/8	4.56	2000
10	11.100	3/8 x 1.750	3ga x 1.750	3/4	7/8	10 1/2	16 1/4	8 1/2	2 1/4	8.70	3600
12	13.200	3/8 x 2.000	3ga x 2.000	3/4	7/8	11 3/4	18 3/4	9 3/4	2 13/16	11.08	3800
14	15.300	1/2 x 2.000	1/4 x 2.000	1	1	13 1/2	21 1/2	11 3/4	2 1/2	17.57	4200
16	17.400	1/2 x 2.500	1/4 x 2.500	1	1	15 1/4	24 1/4	13 1/2	3 3/8	25.38	4600
18	19.500	1/2 x 2.500	1/4 x 2.500	1 1/4	1	16 3/4	26 3/4	14 7/8	3 3/8	47.00	4800
20	21.600	5/8 x 3.000	3/8 x 3.000	1 1/4	1 1/4	18 1/2	29 3/4	16 3/8	3 3/4	50.50	4800
24	25.800	5/8 x 3.000	3/8 x 3.000	1 1/4	1 1/4	20 3/4	34	18 5/8	4	58.00	4800

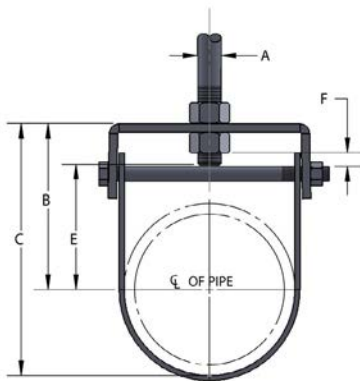




Manufactured in the USA

**FIG. 11F  
FLAT TOP CLEVIS HANGER**

HANGERS



"E" dimension includes exposed rod threads beyond bottom of the hex nut. Exposed rod thread dimension is equal to the diameter of the rod used.

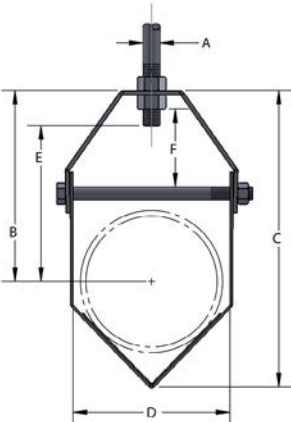
**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized.  
**Service:** Designed for the suspension of non-insulated, stationary pipe where space is limited.  
**Ordering:** Specify pipe size, figure number and finish.  
**Notes:** Upper lock nut must be tightened securely to assure proper hanger performance.

PIPE SIZE	PIPE OD	MATERIAL SIZE		BOLT	A	B	C	E	F	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
		TOP	BOTTOM								
1 1/2	1.900	8ga x 1	12ga x 7/8	1/4	3/8	2 1/8	3 1/8	1 5/16	5/16	0.42	250
2	2.375	8ga x 1	12ga x 7/8	1/4	3/8	2 1/2	3 11/16	1 11/16	7/16	0.46	300
2 1/2	2.875	8ga x 1 1/4	10ga x 1 3/16	5/16	1/2	2 7/8	4 3/16	1 13/16	7/16	0.78	500
3	3.500	8ga x 1 1/4	10ga x 1 3/16	5/16	1/2	3 5/8	5 3/8	2 9/16	11/16	0.98	500
3 1/2	4.000	8ga x 1 1/4	10ga x 1 3/16	5/16	1/2	4 1/16	6 1/16	2 15/16	3/4	1.36	500
4	4.500	4ga x 1 1/4	10ga x 1 3/16	3/8	5/8	4 1/16	6 5/16	2 11/16	3/16	1.38	700
5	5.563	4ga x 1 1/4	8ga x 1 1/4	1/2	5/8	4 7/8	7 5/8	3 1/2	5/8	2.08	700
6	6.625	3ga x 1 1/2	8ga x 1 1/2	1/2	3/4	5 1/2	8 7/8	3 7/8	7/16	2.82	900
8	8.625	3ga x 1 3/4	8ga x 1 3/4	5/8	3/4	6 3/8	10 7/8	4 5/8	5/16	4.34	1000

**FIG. 11V**  
**V BOTTOM CLEVIS HANGER**



Manufactured in the USA



"E" dimension includes exposed rod threads beyond bottom of the hex nut. Exposed rod thread dimension is equal to the diameter of the rod used.

- Material:** Carbon steel, also available in 304 and 316 stainless steel.
- Finish:** Plain, electro-galvanized.
- Service:** Designed for the suspension of flexible plastic pipe lines. Used in conjunction with figure #12 channel.
- Ordering:** Specify size number and figure number.
- Notes:** Hanger and channel sold separately. Upper locknut must be tightened securely to assure proper hanger performance.

HANGERS

PIPE SIZE	SIZE NUMBER	MATERIAL SIZE		BOLT	A	B	C	D	E	F	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
		TOP	BOTTOM									
1/2	1	14ga x 7/8	16ga x 7/8	1/4	3/8	5 3/16	5 7/8	2 9/16	4 7/16	1 1/4	.30	150
3/4	1	14ga x 7/8	16ga x 7/8	1/4	3/8	5	5 7/8	2 9/16	4 1/4	1 1/4	.30	150
1	1	14ga x 7/8	16ga x 7/8	1/4	3/8	4 7/8	5 7/8	2 9/16	4 1/16	1 1/4	.30	150
1 1/4	1	14ga x 7/8	16ga x 7/8	1/4	3/8	4 5/8	5 7/8	2 9/16	3 7/8	1 1/4	.30	150
1 1/2	1	14ga x 7/8	16ga x 7/8	1/4	3/8	4 7/16	5 7/8	2 9/16	3 11/16	1 1/4	.30	150
2	1	14ga x 7/8	16ga x 7/8	1/4	3/8	4 1/8	5 7/8	2 9/16	3 3/8	1 1/4	.30	150
2 1/2	2	11ga x 1 3/16	14ga x 1 3/16	3/8	1/2	6 13/16	8 15/16	4 11/16	5 3/4	2 3/8	.96	250
3	2	11ga x 1 3/16	14ga x 1 3/16	3/8	1/2	6 3/8	8 15/16	4 11/16	5 5/16	2 3/8	.96	250
4	2	11ga x 1 3/16	14ga x 1 3/16	3/8	1/2	5 11/16	8 15/16	4 11/16	4 1/2	2 3/8	.96	250

**FIG. 11WS  
CLEVIS WITH WELDED SHIELD**



Manufactured in the USA

HANGERS



- Material:** Carbon steel clevis hanger with pre-galvanized shield also available in 304 and 316 stainless steel.
- Finish:** Plain, electro-galvanized.
- Service:** Designed for the suspension of stationary insulated pipelines. Insulation protection shield is spot welded in place.
- Ordering:** Specify hanger size number and figure number.
- Notes:** To determine proper hanger size use hanger selection guide below. Upper locknut must be tightened securely to assure proper hanger performance.



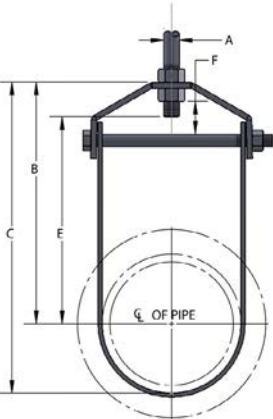
PIPE SIZE	THICKNESS OF PIPE INSULATION					
	1/2"	1"	1 1/2"	2"	2 1/2"	3"
1/2	1 1/2	2 1/2	3 1/2	5	6	7
3/4	2	3	3 1/2	5	6	7
1	2	3	4	5	6	7
1 1/4	2 1/2	3 1/2	4	5	6	7
1 1/2	2 1/2	3 1/2	5	6	7	8
2	3	4	5	6	7	8
2 1/2	3 1/2	5	6	7	8	10
3	4	5	6	7	8	10
3 1/2	5	6	7	8	10	10
4	5	6	7	8	10	10
5	6	7	8	10	10	12
6	7	8	10	10	12	12
8	10	10	12	12	14	16
10	12	12	14	16	16	18
12	14	16	16	18	18	20
14	16	16	18	18	20	20
16	18	18	20	20	24	24





Manufactured in the USA

**FIG. 11X**  
**CLEVIS HANGER WITH EXTENDED BOTTOM**



"E" dimension includes exposed rod threads beyond bottom of the hex nut. Exposed rod thread dimension is equal to the diameter of the rod used.

- Material:** Carbon steel, also available in 304 and 316 stainless steel.
- Finish:** Plain, electro-galvanized.
- Service:** Designed for the suspension of non-insulated stationary pipe lines. The bottom section of the hanger is elongated to allow for easier installation of insulation.
- Approvals:** Complies with Federal Specifications WW-H-171-E (Type #1), A-A-1192 A (Type #1), and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 1).
- Ordering:** Specify pipe size, figure number and finish.
- Notes:** Upper lock nut must be tightened securely to assure proper hanger performance.

HANGERS

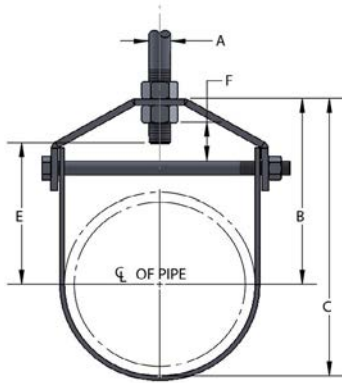
PIPE SIZE AWWA	PIPE OD	MATERIAL SIZE		BOLT	A	B	C	E	F	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
		TOP	BOTTOM								
1/2	0.840	13ga x 7/8	12ga x 7/8	1/4	3/8	3 13/16	4 1/4	3	7/16	.30	610
3/4	1.050	13ga x 7/8	12ga x 7/8	1/4	3/8	3 3/4	4 3/16	2 15/16	7/16	.33	610
1	1.315	13ga x 7/8	12ga x 7/8	1/4	3/8	4 1/8	4 3/4	3 5/16	5/8	.34	610
1 1/4	1.660	13ga x 7/8	12ga x 7/8	1/4	3/8	4 7/16	5 1/4	3 5/8	7/8	.39	610
1 1/2	1.900	12ga x 7/8	12ga x 7/8	1/4	3/8	4 3/4	5 3/4	3 15/16	1 1/16	.47	610
2	2.375	12ga x 7/8	12ga x 7/8	1/4	3/8	7 1/4	8 7/8	6 7/16	1 1/4	.65	610
2 1/2	2.875	9ga x 1 3/16	10ga x 1 3/16	5/16	1/2	8 13/16	10 13/16	7 3/4	1 15/16	1.24	1130
3	3.500	9ga x 1 3/16	10ga x 1 3/16	5/16	1/2	9	10 3/4	7 15/16	1 3/4	1.34	1130
4	4.500	8ga x 1 3/16	10ga x 1 3/16	3/8	5/8	10 1/8	12 3/8	8 13/16	2 1/8	1.92	1430
5	5.563	4ga x 1 1/4	8ga x 1 1/4	1/2	5/8	9 7/8	12 9/16	8 7/16	1 7/16	2.58	1430
6	6.625	3ga x 1 1/2	8ga x 1 1/2	1/2	3/4	10 7/8	14 1/8	9 1/4	1 3/4	3.36	1940
8	8.625	3ga x 1 3/4	8ga x 1 3/4	5/8	3/4	12 1/4	16 9/16	10 7/16	1 7/8	5.08	2000
10	10.7500	3/8 x 1 3/4	3ga x 1 3/4	3/4	7/8	14 1/2	19 7/8	12 1/2	2 1/4	9.08	3600
12	12.7500	3/8 x 2	3ga x 2	3/4	7/8	15 7/8	22 1/4	13 7/8	2 13/16	11.54	3800



Manufactured in the USA  
Excluding 110GI

FIG. 110  
ADJUSTABLE CLEVIS HANGER,  
LIGHTWEIGHT, DOMESTIC

FIG. 110GI  
ADJUSTABLE CLEVIS HANGER,  
ELECTRO-GALVANIZED LIGHTWEIGHT



"E" dimension includes exposed rod threads beyond bottom of the hex nut. Exposed rod thread dimension is equal to the diameter of the rod used.

**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized or painted.  
**Service:** Designed for the suspension of light stationary pipe or conduit.  
**Approvals:** Complies with Federal Specification WW-H-171-E (Type# 12) and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 1). Galvanized and coated only.  
**Ordering:** Specify pipe size, figure number and finish.  
**Notes:** Conduit comes in various outside diameters. Verify outside diameter of conduit is equal to outside diameter of schedule 40 steel pipe.

PIPE SIZE	PIPE OD	MATERIAL SIZE		BOLT	A	B	C	E	F	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
		TOP	BOTTOM								
1/2	0.840	18ga x 7/8	18ga x 7/8	1/4	3/8	1 3/4	2 1/8	1	1/2	0.12	250
3/4	1.050			1/4	3/8	1 13/16	2 5/16	1 1/16	1/2	0.12	
1	1.315			1/4	3/8	2 1/8	2 3/4	1 5/16	3/4	0.12	
1 1/4	1.660			1/4	3/8	2 1/2	3 1/4	1 3/4	15/16	0.18	
1 1/2	1.900	14ga x 7/8	16ga x 7/8	1/4	3/8	2 13/16	3 13/16	2 1/16	1 1/8	0.24	350
2	2.375			1/4	3/8	3 5/16	4 1/2	2 9/16	1 1/4	0.26	
2 1/2	2.875	12ga x 1 3/16	14ga x 1 3/16	1/4	1/2	4 1/2	5 5/16	3 7/16	2 1/16	0.58	350
3	3.500			1/4	1/2	4 13/16	6 9/16	3 3/4	1 7/8	0.66	
3 1/2	4.000	11ga x 1 3/16		5/16	1/2	5 15/16	7 7/8	4 7/8	2 5/8	0.82	400
4	4.500			5/16	1/2	6 1/16	8 5/16	5	2 3/8	0.94	

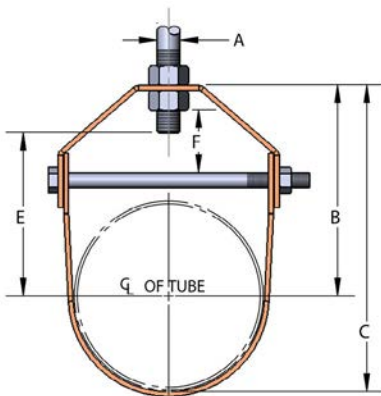


Manufactured in the USA  
Excluding 110CTI

HANGERS

FIG. 110CT  
COPPER PLATED CLEVIS HANGER, TUBING SIZE

FIG. 110CTI  
EPOXY COATED (COPPER-GARD) CLEVIS HANGER, TUBING SIZE



"E" dimension includes exposed rod threads beyond bottom of the hex nut. Exposed rod thread dimension is equal to the diameter of the rod used.

**Material:** Carbon Steel.

**Finish:** Copper plated (110CT) or Copper epoxy coated (COPPER-GARD). COPPER-GARD products offer superior corrosion protection due to the epoxy coating over electro-galvanized steel. The alternative copper plating, that has been done historically, identifies the product and is not intended for protection. Refer to MSS SP-58, 13.3.

**Service:** Designed for the suspension of stationary copper tubing.

**Approvals:** Complies with Federal Specifications WW-H-171-E (Type# 1), A-A-1192 A (Type# 1), and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 1).

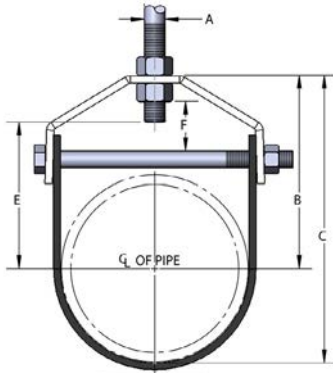
**Ordering:** Specify tube size and figure number.

TUBE SIZE	PIPE OD	MATERIAL SIZE		BOLT	A	B	C	E	F	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
		TOP	BOTTOM								
1/2	0.625	18ga x 7/8	18ga x 7/8	1/4	3/8	1 7/8	2 3/16	1 1/8	1/2	0.12	150
3/4	0.875	18ga x 7/8		1/4	3/8	1 3/4	2 1/8	1	1/2	0.12	
1	1.125	18ga x 7/8		1/4	3/8	1 13/16	2 5/16	1 1/16	1/2	0.12	
1 1/4	1.375	18ga x 7/8		1/4	3/8	2 1/8	2 3/4	1 5/16	3/4	0.12	
1 1/2	1.625	18ga x 7/8		1/4	3/8	2 1/2	3 1/4	1 3/4	15/16	0.18	
2	2.125	14ga x 7/8	16ga x 7/8	1/4	3/8	2 15/16	4	2 3/16	1 1/16	0.24	350
2 1/2	2.625	12ga x 1 3/16	14ga x 1 3/16	1/4	1/2	4 7/8	5 3/4	3 3/8	2 1/16	0.58	
3	3.125	12ga x 1 3/16		1/4	1/2	4 1/2	6 1/8	3 7/16	2	0.60	
3 1/2	3.625	12ga x 1 3/16		5/16	1/2	4 3/4	6 1/2	3 11/16	1 13/16	0.66	
4	4.125	11ga x 1 3/16		5/16	1/2	5 7/8	7 7/8	4 3/4	2 9/16	1.02	
5	5.125	8ga x 1 1/4	8ga x 1 1/4	3/8	5/8	5 7/8	8 3/4	4 3/4	1 5/8	1.68	550
6	6.125	8ga x 1 1/4		3/8	5/8	6 1/16	9	4 3/4	1 1/2	1.84	



**FIG. 110PC  
PLASTIC COATED CLEVIS HANGER**

HANGERS



**Material:** Carbon steel.

**Finish:** Top of hanger as well as nut and cross bolt are electro-galvanized and bottom of hanger is plastic coated.

**Service:** Designed for the suspension of non-insulated stationary pipe lines in light duty applications. Plastic coating prevents pipe from coming in contact with hanger; resulting in noise and vibration reduction as well as the prevention of electrolysis between pipe and hanger.

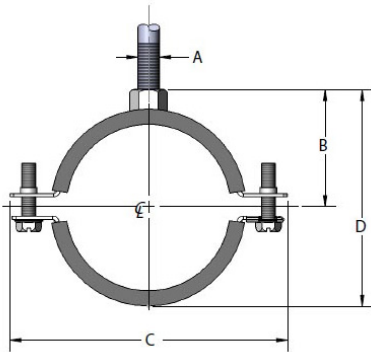
**Approvals:** Complies with Federal Specification WW-H-171-E (Type# 12) and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 1).

**Ordering:** Specify pipe size and figure number.

**Notes:** Available domestic

PIPE SIZE	PIPE OD	MATERIAL SIZE		BOLT	A	B	C	E	F	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
		TOP	BOTTOM								
1/2	0.840	18ga x 7/8	18ga x 7/8	1/4	3/8	1 3/4	2 1/8	1	1/2	0.12	250
3/4	1.050	18ga x 7/8	18ga x 7/8		3/8	1 13/16	2 5/16	1 1/16	1/2	0.12	
1	1.315	18ga x 7/8	18ga x 7/8		3/8	2 1/8	2 3/4	1 5/16	3/4	0.12	
1 1/4	1.660	18ga x 7/8	18ga x 7/8		3/8	2 1/2	3 1/4	1 3/4	1 5/16	0.18	
1 1/2	1.900	14ga x 7/8	16ga x 7/8		3/8	2 13/16	3 13/16	2 1/16	1 1/8	0.24	
2	2.375	14ga x 7/8	16ga x 7/8		3/8	3 5/16	4 1/2	2 9/16	1 1/4	0.26	
2 1/2	2.875	12ga x 1 3/16	14ga x 1 3/16		1/2	4 1/2	5 5/16	3 7/16	2 1/16	0.58	
3	3.500	12ga x 1 3/16	14ga x 1 3/16		1/2	4 13/16	6 9/16	3 3/4	1 7/8	0.66	
3 1/2	4.000	11ga x 1 3/16	14ga x 1 3/16	5/16	1/2	5 15/16	7 7/8	4 7/8	2 5/8	0.82	
4	4.500	11ga x 1 3/16	14ga x 1 3/16	3/8	1/2	6 1/16	8 5/16	5	2 3/8	0.94	400
5	5.563	4ga x 1 1/4	8ga x 1 1/4	1/2	5/8	5 11/16	8 7/16	4 5/16	1 7/16	2.04	1430
6	6.625	3ga x 1 1/2	8ga x 1 1/2		3/4	6 13/16	10 1/8	5 3/16	1 3/4	2.80	1940
7	7.625	3ga x 1 1/2	8ga x 1 1/2		3/4	7 13/16	11 5/8	6 3/16	2	3.24	2000
8	8.625	3ga x 1 3/4	8ga x 1 3/4	5/8	7/8	8 1/16	12 7/16	6 1/4	1 7/8	4.46	
10	10.750	3/8 x 1 3/4	3ga x 1 3/4	3/4	7/8	10	15 7/16	8	2 1/4	8.06	3600
12	12.750	3/8 x 2	3ga x 2		7/8	11 9/16	18	9 9/16	2 13/16	10.34	3800

**FIG. 40HS**  
**"HANDY SPLIT" RING HANGER**



**Material:** Electro-Galvanized carbon steel with EPDM rubber insulation liner (EPDM rubber liner is UV resistant).

**Service:** Designed for the suspension of non-insulated stationary pipe liners horizontally or vertically.

**Temperature Range:** -50F to +230F

**Approvals:** Complies with Manufacturers Standardization Society (MSS) SP-58 and SP-69 (Type# 12).

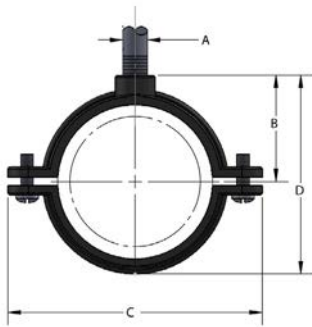
**Benefits:**

- EPDM Rubber Liner minimizes noise.
- "Handy Split" hinge mechanism allows installation with one hand.
- 3/8" welded cap nut allows easy attachment to threaded rod.
- Many sizes accommodate both OD and IPS sizes.

HANGERS

PIPE SIZE (IPS)	COPPERTUBE SIZE (CTS)
1/4"	3/8"
3/8"	1/2"
	5/8"
1/2"	3/4"
3/4"	1"
1"	1 1/4"
1 1/4"	1 1/2"
1 1/2"	
	2"
2"	
	2 1/2"
2 1/2"	
	3"
3"	
	3 1/2"
3 1/2"	4"
4"	

**FIG. 41**  
**SPLIT RING EXTENSION HANGER**



**Material:** Malleable iron.

**Finish:** Plain, electro-galvanized.

**Service:** Designed for the suspension of non-insulated stationary pipe lines horizontally and vertically.

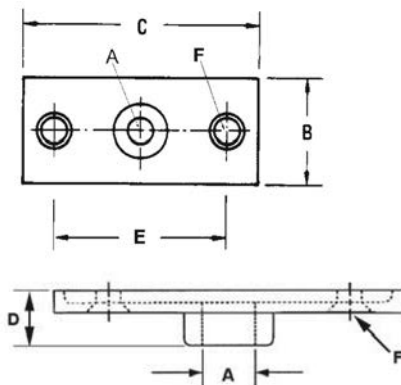
**Approvals:** Complies with Federal Specification WWH-171-E. (Type# 25), A-A-1192A (Type# 12), Manufacturers' Standardization Society SP-58 and MSS SP-69 (Type# 12).

**Ordering:** Specify pipe size, figure number and finish.

**Notes:** Split ring extension hangers with hinged design available in 3/8" - 4" (41H).

PIPE SIZE	PIPE OD	SCREW	A	B	C	D	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
1/2	0.840	10-24	3/8-16	3/4	2 1/8	1 3/16	0.098	180
3/4	1.050		3/8-16	7/8	2 1/2	1 9/16	0.112	
1	1.315		3/8-16	1 1/8	2 3/4	2	0.147	
1 1/4	1.660		3/8-16	1 5/16	3 3/16	2 3/8	0.181	
1 1/2	1.900		3/8-16	1 7/16	3 3/8	2 5/8	0.214	
2	2.375		3/8-16	1 5/8	3 15/16	3 1/16	0.300	

**FIG. 41A**  
**HANGER FLANGE PLATE**



**Material:** Malleable iron, 304 (41ASSI) and 316 (41ASXI) stainless steel.

**Finish:** Electro-galvanized, Copper epoxy coated (COPPER-GARD). COPPER-GARD products offer superior corrosion protection due to the epoxy coating over electro-galvanized material. The alternative copper plating that has been done historically is for identification purposes and is not intended for corrosion protection. Refer to MSS SP-58,13.3.

**Service:** Designed for attaching hanger rod to wood beams, ceilings, walls and floor.

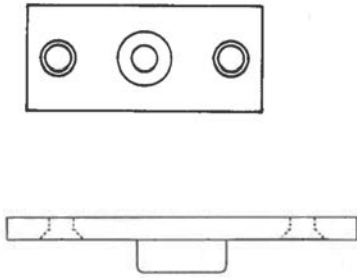
**Ordering:** Specify rod size, figure number and finish.

**Notes:** Stainless flange plates are recommended for applications where protection from corrosive environments is needed.

ROD SIZE A	B	C	D	E	F SCREW SIZE	WEIGHT EACH (lbs)
3/8-16	1 3/8	2 3/4	7/16	1 11/16	#12	0.18
1/2-13	1 3/8	2 3/4	7/16	1 11/16	#12	0.18

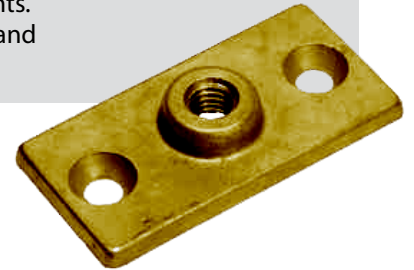


**FIG. 41AB  
FLANGE PLATES**



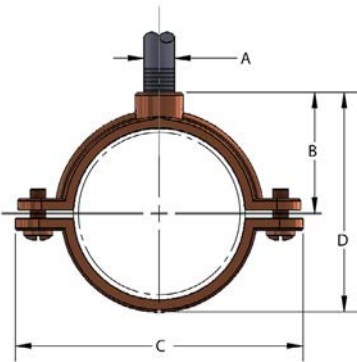
**Material:** Solid brass.  
**Ordering:** Specify rod size and figure number  
**Notes:** For 1/2", 3/4" and 1" Copper Tube Lines. Solid brass material is recommended for extra protection in corrosive environments. Excellent added protection in wet and humid surroundings.

ROD SIZE	WEIGHT EACH (lbs)
3/8	0.19



HANGERS

**FIG. 41B  
SPLIT RING HANGER**



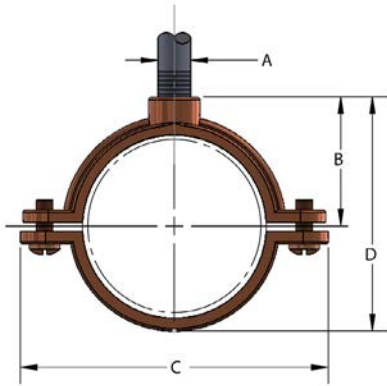
**Material:** Solid brass.  
**Ordering:** Specify rod size and figure number  
**Notes:** For 1/2", 3/4" and 1" Copper Tube Lines. Solid brass material is recommended for extra protection in corrosive environments. Excellent added protection in wet and humid surroundings.

ROD SIZE	WEIGHT EACH (lbs)
1/2	0.09
3/4	0.11
1	0.13



**FIG. 41CT**  
**EPOXY COATED (COPPER-GARD) COPPER TUBE SPLIT RING**  
**EXTENSION HANGER**

HANGERS



**Material:** Malleable iron.

**Finish:** Copper epoxy coated (COPPER-GARD). COPPER-GARD products offer superior corrosion protection due to the epoxy coating over electro-galvanized material. The alternative copper plating that has been done historically identifies the product and is not intended for protection. Refer to MSS SP58, 13:3.

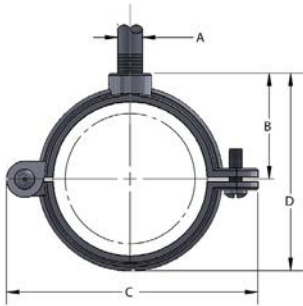
**Service:** Designed for the suspension of non-insulated stationary copper tubing, horizontally and vertically.

**Approvals:** Complies with Federal Specification WWH-171-E. (Type# 25), A-A-1192A (Type# 12), Manufacturers' Standardization Society SP-58 and MSS SP-69 (Type# 12).

**Ordering:** Specify tube size and figure number.

TUBE SIZE	TUBE OD	SCREW	A	B	C	D	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
1/2	0.625	10-24	3/8-16	11/16	1 7/8	1 1/8	0.087	180
3/4	0.875		3/8-16	13/16	2 1/4	1 3/8	0.096	
1	1.125		3/8-16	15/16	2 1/2	1 5/8	0.128	
1 1/4	1.375		3/8-16	1 1/16	2 7/8	1 7/8	0.141	
1 1/2	1.625		3/8-16	1 3/16	3	2 3/16	0.179	
2	2.125		3/8-16	1 7/16	3 1/2	2 11/16	0.229	

**FIG. 41H**  
**SPLIT RING EXTENSION HANGER, HINGE DESIGN**



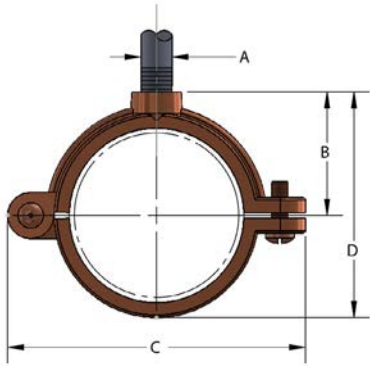
**Material:** Malleable iron.  
**Finish:** Plain, electro-galvanized.  
**Service:** Designed for suspension of non-insulated stationary pipe lines horizontally or vertically.  
**Approvals:** Complies with Federal Specification WWH-171-E. (Type# 25), A-A-1192A (Type# 12), Manufacturers' Standardization Society SP-58 and MSS SP-69 (Type# 12).  
**Ordering:** Specify pipe size, figure number and finish.

HANGERS

PIPE SIZE	PIPE OD	SCREW	A	B	C	D	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
3/8	0.675	10-24	3/8-16	11/16	1 13/16	1 3/16	0.084	180
1/2	0.840		3/8-16	3/4	2 1/8	1 3/16	0.098	
3/4	1.050		3/8-16	7/8	2 1/2	1 9/16	0.112	
1	1.315		3/8-16	1 1/8	2 3/4	2	0.147	
1 1/4	1.660		3/8-16	1 5/16	3 3/16	2 3/8	0.181	
1 1/2	1.900		3/8-16	1 7/16	3 3/8	2 5/8	0.214	
2	2.375		3/8-16	1 5/8	3 15/16	3 1/16	0.299	
2 1/2	2.875	1/4	1/2-13	2 1/8	5 3/16	3 13/16	0.583	300
3	3.500		1/2-13	2 1/2	5 11/16	4 5/8	0.713	
4	4.500		1/2-13	2 7/8	6 3/4	5 9/16	1.019	

**FIG. 41HCT**  
**EPOXY COATED (COPPER-GARD) COPPER TUBING SPLIT RING**  
**EXTENSION HANGER, HINGE DESIGN**

HANGERS



**Material:** Malleable iron.

**Finish:** Copper epoxy coated (COPPER-GARD). COPPER-GARD products offer superior corrosion protection due to the epoxy coating over electro-galvanized material. The alternative copper plating that has been done historically identifies the product and is not intended for protection. Refer to MSS SP58, 13:3.

**Service:** Designed for suspension of non-insulated stationary pipe lines horizontally or vertically.

**Approvals:** Complies with Federal Specification WWH-171-E. (Type# 25), A-A-1192A (Type# 12), Manufacturers' Standardization Society SP-58 and MSS SP-69 (Type# 12).

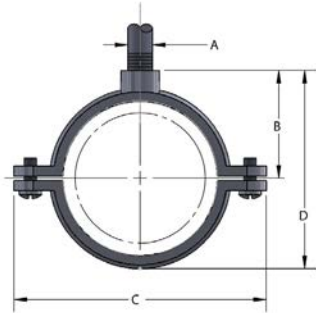
**Ordering:** Specify tube size and figure number.

TUBE SIZE	TUBE OD	SCREW	A	B	C	D	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
1/4	0.375	10-24	3/8-16	7/8	1 3/4	7/8	0.073	180
3/8	0.500		3/8-16	5/8	1 3/4	1 1/16	0.080	
1/2	0.625		3/8-16	11/16	1 7/8	1 3/16	0.084	
3/4	0.875		3/8-16	13/16	2 5/16	1 7/16	0.106	
1	1.125		3/8-16	15/16	2 7/16	1 5/8	0.122	
1 1/4	1.375		3/8-16	1 1/16	2 13/16	1 15/16	0.152	
1 1/2	1.625		3/8-16	1 3/16	3 1/16	2 3/16	0.172	
2	2.125		3/8-16	1 7/16	3 5/8	2 11/16	0.233	
2 1/2	2.625	1/4-20	1/2-13	1 7/8	4 15/16	2 7/16	0.449	300
3	3.125		1/2-13	2 1/8	5 1/2	4 1/16	0.663	
4	4.125		1/2-13	2 5/8	6 5/8	5 1/16	0.753	



FIG. 41SSI  
304 STAINLESS STEEL

FIG. 41SXI  
316 STAINLESS STEEL SPLIT RING EXTENSION HANGER



**Material:** 304 (41SSI) and 316 (41SXI) stainless steel.  
**Service:** Designed for suspension of non-insulated stationary pipe lines horizontally or vertically.  
**Approvals:** Complies with Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 12).  
**Ordering:** Specify pipe size, material and finish.  
**Notes:** 304 and 316 stainless steel are recommended for applications where protection from corrosive environments is needed.

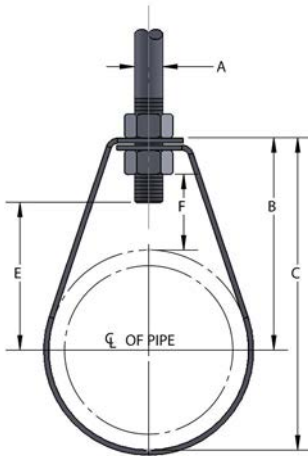
PIPE SIZE	PIPE OD	SCREW	A	B	C	D	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
3/8	0.675	10-24	3/8-16	11/16	1 13/16	1 3/16	0.084	180
1/2	0.840		3/8-16	3/4	2 1/8	1 3/16	0.098	
3/4	1.050		3/8-16	7/8	2 1/2	1 9/16	0.112	
1	1.315		3/8-16	1 1/8	2 3/4	2	0.147	
1 1/4	1.660		3/8-16	1 5/16	3 3/16	2 3/8	0.181	
1 1/2	1.900		3/8-16	1 7/16	3 3/8	2 5/8	0.214	
2	2.375		3/8-16	1 5/8	3 15/16	3 1/16	0.300	
2 1/2	2.875	1/4	1/2-13	2 1/8	5 3/16	3 13/16	0.580	300
3	3.500		1/2-13	2 1/2	5 11/16	4 5/8	0.720	
4	4.500		1/2-13	2 7/8	6 3/4	5 9/16	1.020	



Manufactured in the USA

**FIG. 31  
BAND HANGER**

HANGERS



"E" dimension includes exposed rod threads beyond bottom of the hex nut. Exposed rod thread dimension is equal to the diameter of the rod used.

**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized, plastic coated.  
**Service:** Designed for the suspension of non-insulated, stationary pipe lines. The plastic coated band hanger protects the pipe from the steel surface of the hanger and is designed to reduce noise, vibration and prevents electrolysis between pipe and the hanger. Stainless steel hangers are recommended for applications where protection from corrosive environments is needed.  
**Approvals:** Complies with Federal Specification WWH-171-E (Type# 7), A-A-1192A (Type# 7), Manufacturers' Standardization Society SP-58 and MSS SP-69 (Type# 7).  
**Ordering:** Specify pipe size, figure number and finish.  
**Notes:** Upper lock nut must be tightened securely to assure proper hanger performance.

PIPE SIZE	PIPE OD	MATERIAL SIZE	A	B	C	E	F	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
3/8	0.675	16ga x .875	3/8	2 1/4	2 5/8	1 7/16	1 1/2	.100	610
1/2	0.840	16ga x .875	3/8	2 3/16	2 9/16	1 3/8	1 5/16	.100	610
3/4	1.050	16ga x .875	3/8	2	2 9/16	1 13/16	1 1/16	.100	610
1	1.315	16ga x .875	3/8	2 3/16	2 13/16	1 5/16	1 1/16	.120	610
1 1/4	1.660	16ga x .875	3/8	2 5/16	3 1/8	1 1/2	1 1/16	.120	610
1 1/2	1.900	16ga x .875	3/8	2 3/8	3 3/8	1 9/16	1	.140	610
2	2.375	16ga x .875	3/8	2 13/16	4	2	1 3/16	.160	610
2 1/2	2.875	14ga x 1.0	1/2	3 3/8	4 13/16	2 1/4	1 5/16	.280	970
3	3.500	13ga x 1.0	1/2	3 3/4	5 9/16	2 5/8	1 3/8	.380	970
3 1/2	4.000	13ga x 1.0	1/2	4 3/16	6 3/16	3 1/16	1 9/16	.420	970
4	4.500	11ga x 1.0	1/2	4 5/8	6 13/16	3 7/16	1 11/16	.600	1130
5	5.563	11ga x 1.0	1/2	5 1/16	7 7/8	3 15/16	1 5/8	.700	1130
6	6.625	11ga x 1.5	3/4	6 3/8	9 3/4	4 3/4	2 3/16	1.340	1600
8	8.625	11ga x 1.5	3/4	8 1/16	12 7/16	6 7/16	2 7/8	1.640	1800

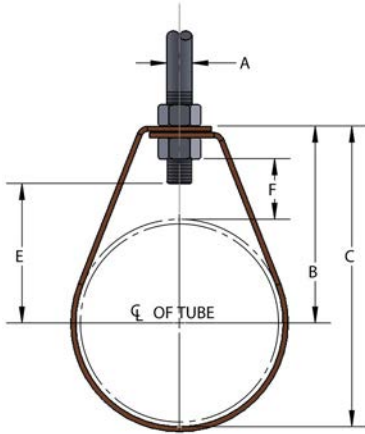


Manufactured in the USA Excluding 31CTI

HANGERS

FIG. 31CT  
COPPER BAND HANGER

FIG. 31CTI  
EPOXY COATED (COPPER-GARD) BAND HANGER



"E" dimension includes exposed rod threads beyond bottom of the hex nut. Exposed rod thread dimension is equal to the diameter of the rod used.

**Material:** Carbon steel.

**Finish:** Copper plated (31CT) or Copper epoxy coated. COPPER-GARD (31CTI). COPPER-GARD products offer superior corrosion protection due to the epoxy coating over electro-galvanized steel. The alternative, copper plating that has been done historically, is for identification purposes only and is not intended for corrosion protection. Refer to MSS-SP58 13.3.

**Service:** Designed for the suspension of non-insulated stationary pipe.

**Approvals:** Complies with Federal Specification WWH-171-E (Type# 7), A-A-1192A (Type# 7), Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 7).

**Ordering:** Specify tube size, figure number and finish.

**Notes:** Upper locknut must be tightened securely to assure proper hanger performance.

PIPE SIZE	PIPE OD	MATERIAL SIZE	A	B	C	E	F	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
1/2	0.625	16ga x .875	3/8	2 5/16	2 5/8	1 1/2	1 9/16	.10	610
3/4	0.875	16ga x .875	3/8	2 1/8	2 9/16	1 5/16	1 1/4	.10	610
1	1.125	16ga x .875	3/8	2	2 9/16	1 3/16	1	.10	610
1 1/4	1.375	16ga x .875	3/8	2 1/16	2 13/16	1 1/4	1 5/16	.12	610
1 1/2	1.625	16ga x .875	3/8	2 5/16	3 1/8	1 1/2	1 1/16	.12	610
2	2.125	16ga x .875	3/8	2 5/8	3 11/16	1 13/16	1 1/8	.14	610
2 1/2	2.625	14ga x 1.0	1/2	3 3/16	4 1/2	2 1/16	1 1/4	.30	610
3	3.125	14ga x 1.0	1/2	3 1/2	5	2 3/8	1 5/16	.32	970
3 1/2	3.625	13ga x 1.0	1/2	3 13/16	5 9/16	2 11/16	1 3/8	.38	970
4	4.125	13ga x 1.0	1/2	4	6 1/16	2 7/8	1 5/16	.44	1130
5	5.125	11ga x 1.0	1/2	4 15/16	7 1/2	3 11/16	1 5/8	.68	1130
6	6.125	11ga x 1.0	1/2	5 5/8	8 11/16	4 17/16	1 7/8	.84	1130

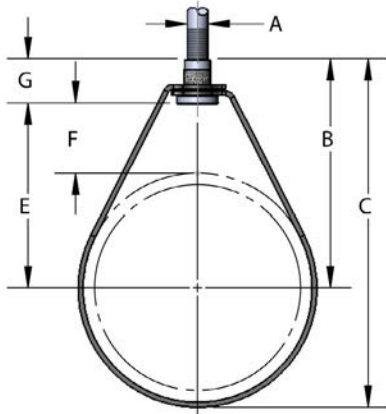


**FIG. 310G**  
**"EM-LOK" ADJUSTABLE SWIVEL RING HANGER, DOMESTIC**

HANGERS



Manufactured in the USA



**Material:** Pre-galvanized carbon steel.  
**Finish:** Pre-galvanized and plastic coated.  
**Service:** Designed for the suspension of non-insulated stationary pipe lines. Plastic coating prevents pipe from coming in contact with hanger and is designed to reduce noise, vibration and prevent electrolysis between pipe and hanger.  
**Approvals:** U.L. - U.L.C. listed and FM approved. Complies with Federal Specification WW-H-171-E (Type# 10), A-A-1192A (Type# 10) and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 10).  
**Ordering:** Specify pipe size, figure number and finish.

PIPE SIZE	PIPE OD	MATERIAL SIZE	A	B	C	E	F	G	WGT EACH (lbs)	MAX REC LOAD (lbs)
1/2	0.840	18ga x 5/8	3/8	2 1/2	2 7/8	1 5/8	13/16	7/8	0.08	400
3/4	1.050	18ga x 5/8	3/8	2 7/16	2 15/16	1 9/16	11/16	7/8	0.08	400
1	1.315	18ga x 5/8	3/8	2 5/8	3 1/4	1 3/4	11/16	7/8	0.08	600
1 1/4	1.660	18ga x 5/8	3/8	2 9/16	3 3/8	1 11/16	7/8	7/8	0.10	600
1 1/2	1.900	18ga x 5/8	3/8	2 11/16	3 5/8	1 13/16	7/8	7/8	0.10	600
2	2.375	18ga x 5/8	3/8	3 3/8	4 1/2	2 1/2	15/16	7/8	0.12	600
2 1/2	2.875	14ga x 3/4	1/2	3 11/16	5 1/8	2 3/4	1 1/4	11/16	0.32	600
3	3.500	14ga x 3/4	1/2	4	5 7/8	3 1/8	1 1/8	11/16	0.35	600
3 1/2	4.000	14ga x 3/4	1/2	4 5/16	6 5/8	3 5/8	1 1/2	11/16	0.39	600
4	4.500	13ga x 3/4	5/8	4 15/16	7 1/8	3 7/8	1 1/4	1 1/8	0.43	1000
5	5.563	12ga x 1	5/8	5 5/8	8 1/2	4 3/8	1 3/8	1 1/8	0.65	1000
6	6.625	12ga x 1	3/4	6 11/16	10 1/8	5 5/16	2	1 3/8	1.09	1250
8	8.625	11ga x 1	3/4	8 5/16	12 7/8	6 15/16	2 5/8	1 3/8	1.24	1250



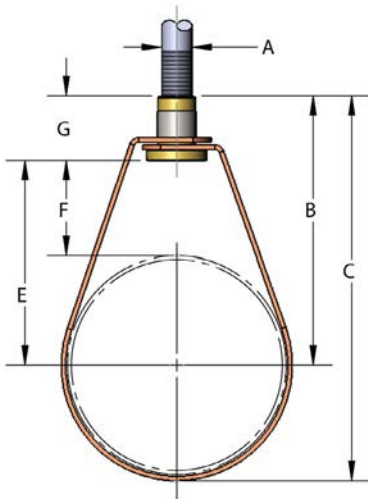


Manufactured  
in the USA  
Excluding 310CTI

HANGERS

FIG. 310CT  
COPPER TUBING "EMLOK" ADJUSTABLE  
SWIVEL RING HANGER

FIG. 310CTI  
EPOXY COATED (COPPER-GARD)  
COPPER TUBING "EMLOK"  
ADJUSTABLE SWIVEL RING HANGER



**Material:** Carbon steel.  
**Finish:** Copper plated (310CT) or Copper epoxy coated (COPPER- GARD).  
**Service:** Designed for the suspension of non-insulated, stationary copper lines.  
**Approvals:** Complies with Federal Specification WW-H-171-E (Type# 10), A-A-1192A (Type# 10) and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 10).  
**Ordering:** Specify tubing size and figure number.

TUBE SIZE	TUBE OD	MATERIAL SIZE	A	B	C	E	F	G	WGT EACH (lbs)	MAX REC LOAD (lbs)
1/2	0.625	18ga x .625	3/8	2 11/16	3	1 13/16	1 1/2	7/8	0.07	300
3/4	0.875			2 1/2	2 15/16	1 5/8	1 3/16		0.07	300
1	1.125			2 7/16	3	1 9/16	1		0.07	300
1 1/4	1.375			2 1/2	3 3/16	1 5/8	15/16		0.08	300
1 1/2	1.625			2 9/16	3 3/8	1 11/16	7/8		0.085	300
2	2.125			3 5/16	4 3/8	2 7/16	1 3/8		0.1	300
2 1/2	2.625	14ga x 1.00	1/2	3 7/8	5 9/16	2 13/16	1 1/2	1 1/16	0.31	525
3	3.125			4 3/16	5 3/4	3 1/8	1 9/16		0.345	525
3 1/2	3.625			4 9/16	6 3/8	3 1/2	1 11/16		0.375	525
4	4.125			4 13/16	6 15/16	3 3/4	1 11/16		0.41	650
5	5.125			5 3/16	7 13/16	4 1/8	1 9/16		0.475	1000
6	6.125			5 11/16	8 15/16	4 5/8	1 9/16		0.53	1000

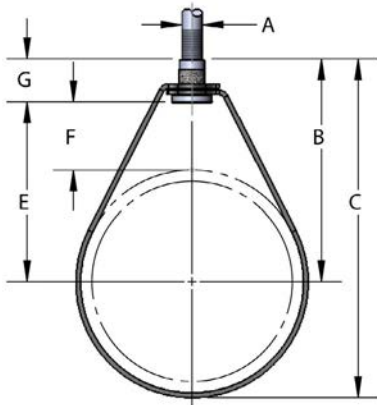


**FIG. 310NF**  
**"EM-LOK" ADJUSTABLE**  
**SWIVEL RING HANGER, NFPA**

HANGERS



Manufactured in the USA



**Material:** Pre-galvanized carbon steel, also available in 304 and 316 stainless steel.

**Finish:** Pre-galvanized.

**Service:** Designed for the suspension of non-insulated stationary pipe lines. Typically used as a pipe support for sprinkler piping. Hanger is manufactured to use minimum rod sizes permitted by NFPA.

**Approvals:** U.L. - U.L.C. listed and FM approved (<sup>3</sup>/<sub>4</sub>"-8"). Complies with Federal Specification WW-H-171-E (Type# 10), A-A-1192A (Type# 10) and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 10).

**Ordering:** Specify pipe size and figure number.

PIPE SIZE	PIPE OD	MATERIAL SIZE	A	B	C	E	F	G	WGT EACH (lbs)	MAX REC LOAD (lbs)
1/2	0.840	18ga x 5/8	3/8	2 1/2	2 7/8	1 5/8	13/16	7/8	0.08	400
3/4	1.050			2 7/16	2 15/16	1 9/16	11/16		0.08	
1	1.315			2 5/8	3 1/4	1 3/4	11/16		0.08	
1 1/4	1.660			2 9/16	3 3/8	1 11/16	7/8		0.10	600
1 1/2	1.900			2 11/16	3 5/8	1 13/16	7/8		0.10	
2	2.375			3 3/8	4 1/2	2 1/2	15/16		0.12	
2 1/2	2.875	14ga x 3/4	3/8	3 7/8	5 3/8	3 1/8	1 3/8	0.24	1000	
3	3.500			4 1/2	6 1/4	3 5/8	1 5/8	0.28		
3 1/2	4.000			4 7/8	6 7/8	4	13/4	0.32		
4	4.500			5	7 1/4	4 1/8	1 5/8	0.32		
5	5.563	13ga x 3/4	1/2	5 3/4	8 1/2	4 1/4	1 7/8	0.62	1250	
6	6.625	12ga x 3/4		6 3/4	10 1/8	5 1/8	21/8	0.65		
8	8.625	11ga x 1		7 7/8	12 1/4	7	2 3/8	1.00		
10	10.750	11ga x 1 1/4		9 11/16	15 1/16	8 5/8	31/4	1.675		

**FIG. 127CT**  
**NATICK HANGERS, COPPER TUBE SIZE**



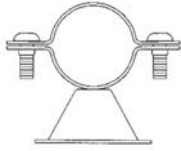
**Material:** Carbon steel.  
**Finish:** Copper epoxy coated (COPPER-GARD)  
**Service:** Designed for the support of copper tube supply lines. Attaches to wood members.  
**Ordering:** Specify tube size, length and figure number.

HANGERS

TUBE SIZE	D TUBE OD	T	L (6" OR 12")	WGT EACH (lbs)	
				6"	12"
1/2	0.625	1/2	6" or 12"	0.07	0.09
3/4	0.875			0.07	
1	1.125			0.08	0.10
1 1/4	1.375			0.08	
1 1/2	1.625			0.10	0.12
2	2.125			0.105	

FIG. 129B  
VAN (BELL) HANGER

HANGERS

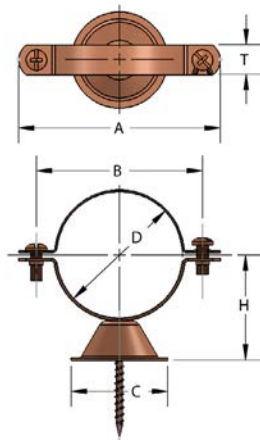


**Material:** Solid brass.  
**Ordering:** Specify rod size and figure number  
**Notes:** For 1/2", 3/4" and 1" Copper Tube Lines. Solid brass material is recommended for extra protection in corrosive environments. Excellent added protection in wet and humid surroundings.



ROD SIZE	WEIGHT EACH (lbs)
1/2	0.060
3/4	0.075
1	0.080
(SET SCREW NOT INCLUDED)	

FIG. 129CT  
VAN (BELL TYPE) HANGER, EPOXY COATED (COPPER-GARD)  
 FIG. 129CTP  
VAN (BELL TYPE) HANGER, COPPER PLATED



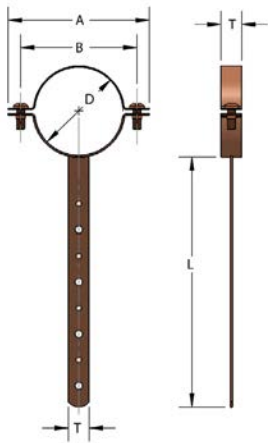
**Material:** Carbon steel.  
**Finish:** Copper plated, copper epoxy coated (COPPER-GARD) (with stainless steel screws).  
**Service:** Designed to support copper tubing to wall. Supports the pipe 1" from the back of pipe to wall. The wood screw is concealed upon installation.  
**Ordering:** Specify tube size, finish and figure number.

TUBE SIZE	D TUBE OD	A	B	C	H	T	WEIGHT EACH (lbs)
1/2	0.625	2 3/16	1 9/16	1 5/8	1 1/16	1/2	0.06
3/4	0.875	2 3/8	1 3/4		1 3/16		0.06
1	1.125	2 7/16	1 7/8		1 5/16		0.06
1 1/4	1.375	2 11/16	2 1/8		1 7/16		0.08
1 1/2	1.625	3 1/16	2 7/16		1 9/16		0.08
2	2.125	4 7/16	2 13/16		1 13/16		0.09

ASSEMBLED WITH #6 X 2 COARSE THREAD DRYWALL SCREW



**FIG. 131CT**  
MILFORD HANGER, COPPER TUBE SIZE



**Material:** Carbon steel.  
**Finish:** Copper epoxy coated (COPPER-GARD)  
**Service:** Designed for the support of copper tube supply lines. Attaches to wood members.  
**Ordering:** Specify tube size, length and figure number.

HANGERS

TUBE SIZE	D TUBE OD	A	B	T	L	WGT EACH (lbs)	
						6"	12"
1/2	0.625	2 3/16	1 9/16	1/2	6" or 12"	0.08	0.12
3/4	0.875	2 3/8	1 3/4			0.08	0.12
1	1.125	2 7/16	1 7/8			0.08	0.12
1 1/4	1.375	2 11/16	2 1/8			0.10	0.14
1 1/2	1.625	3 1/16	2 7/16			0.10	0.14
2	2.125	3 7/16	2 13/16			0.10	0.14



Manufactured in the USA

**FIG. 237**  
DWV (DRAIN, WASTE, VENT) HANGER

HANGERS



**Material:** Pre-galvanized carbon steel, pre-copper plated carbon steel.  
**Finish:** Pre-galvanized (237G), copper plated (237CT) or plastic coated (237PC).  
**Service:** Designed for the support of PVC or ABS DWV pipe from wood joists. Evenly spaced holes allow for proper pipe pitch.  
**Ordering:** Specify pipe size, figure number and finish.  
**Notes:** FIG. 237CT copper plated DWV hangers are NOT designed for copper DWV pipe.

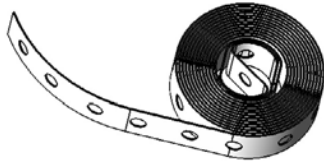
PIPE SIZE	PIPE OD D	T	L	WGT EACH (lbs)
1 1/2	1.900	3/4	12	0.20
2	2.375			0.22
3	3.500			0.24
4	4.500			0.26



**FIG. 239**  
**PERFORATED HANGER STRAPPING**



Manufactured  
in the USA



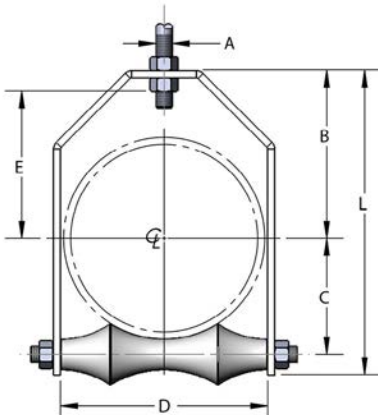
- Material:** Plain or pre-galvanized carbon steel, pre-copper plated carbon steel, type 304 stainless steel (239SS).
- Finish:** Plain, pre-galvanized or copper plated
- Service:** Designed for various light duty applications.
- Ordering:** Specify gauge, length, figure number and finish.
- Notes:** Stainless steel hangers are recommended for applications where protection from corrosive environments is needed.

SIZE	WGT EACH (lbs) LENGTH		
	10'	50'	100'
<sup>3</sup> / <sub>4</sub> X 20ga	0.83	4.15	8.30
<sup>3</sup> / <sub>4</sub> X 22ga	0.70	3.50	7.00
<sup>3</sup> / <sub>4</sub> X 24ga	0.54	2.70	5.40

HANGERS

**FIG. 272**  
**ADJUSTABLE ROLLER HANGER**

HANGERS



“E” dimension includes exposed rod threads beyond bottom of the hex nut. Exposed rod thread dimension is equal to the diameter of the rod used.

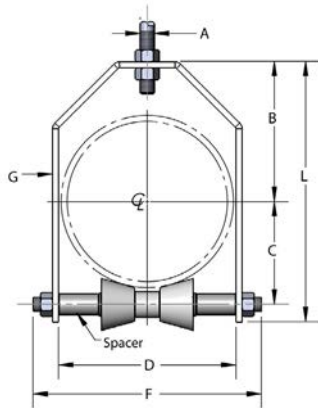
- Material:** Carbon steel yoke and crossbolt with cast iron roller. Also available in 316 stainless steel
- Finish:** Plain, electro-galvanized or painted.
- Service:** Designed for the suspension of pipe where longitudinal movement of pipe may occur due to expansion and contraction, and where vertical adjustment may be necessary.
- Approvals:** Complies with Federal Specification WW-H-171-E (Type# 44), A-A-1192A (Type# 43) and Manufacturers’ Standardization Society MSS SP-58 and SP-69 (Type# 43).
- Ordering:** Specify roller size, figure number and finish. Please remember to consider insulation thickness when sizing rollers.
- Notes:** Available domestic

HANGER SIZE	MATERIAL SIZE	A	B	C	D	E	L	WGT EACH (lbs)	MAX REC LOAD (lbs)
2	8ga x 1.25	1/2	3 3/8	1 9/16	2 7/8	2 1/4	5 5/8	1.14	150
2 1/2	8ga x 1.25	1/2	3 15/16	1 7/8	3 1/4	2 13/16	6 1/2	1.47	225
3	8ga x 1.25	1/2	4 5/16	2 1/8	3 13/16	3 3/16	7 13/16	1.62	310
3 1/2	3ga x 1.50	1/2	4 5/8	2 1/2	4 5/16	3 7/16	7 15/16	2.76	390
4	3ga x 1.50	5/8	4 13/16	2 13/16	4 7/8	3 3/8	8 1/2	3.16	475
5	3ga x 2.00	5/8	5 3/4	3 3/8	5 7/8	4 5/16	9 15/16	4.62	685
6	3ga x 2.00	3/4	6 3/8	3 15/16	7	4 5/8	11 1/4	6.08	780
7	3ga x 2.00	3/4	6 5/16	4 1/2	8	4 9/16	11 5/8	7.59	780
8	3/8 x 2.00	7/8	7 9/16	5 1/8	9	5 7/16	13 7/8	11.83	780
10	3/8 x 2.50	7/8	8 3/4	6 1/4	11 1/8	6 5/8	16 1/4	17.29	965
12	1/2 x 2	7/8	9 5/8	7 3/8	13	7 7/8	18 7/8	22.50	1200
14	1/2 x 2 1/2	1	11 1/4	8 3/8	14 1/4	9 1/4	21 7/8	33.00	1200
16	1/2 x 3	1	12 1/4	9 3/8	16 1/4	10 1/4	24 1/8	46.00	1200
18	1/2 x 3	1	13 1/4	10 1/2	18 1/4	11 1/4	26 1/2	50.50	1400
20	5/8 x 3	1 1/4	14 1/4	11 5/8	20 1/4	12 1/4	28 1/8	65.00	1600



**FIG. 272SS**  
**ADJUSTABLE ROLLER HANGER, 316 STAINLESS STEEL**

HANGERS



**Material:** All 316 stainless steel construction.

**Service:** Designed for the suspension of pipe where longitudinal movement of pipe may occur due to expansion and contraction and where vertical adjustment may be necessary. Excellent corrosion resistance.

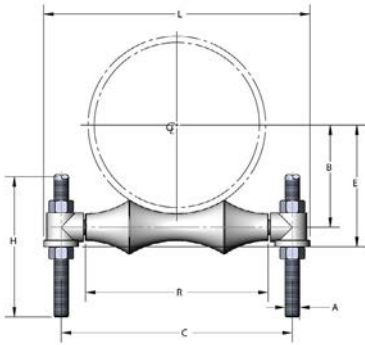
**Approvals:** Complies with Federal Specification WW-H-171-E (Type# 44), A-A-1192A (Type# 43) and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 43).

**Ordering:** Specify roller size and figure number. Please remember to consider insulation thickness when sizing rollers.

Size No.	A	B	C	D	F	G	L	Cross Rod Dia.
4	5/8	5 3/16	2 13/16	4 7/8	6 1/2	1/4 x 2	9 1/4	3/4
6	3/4	6 7/16	3 15/16	7	9 1/2	1/4 x 2	11 5/8	
8	7/8	7 1/2	5 1/4	9	11 7/8	3/8 x 2	14	7/8
10		8 3/4	6 3/8	11	14 1/4	3/8 x 2 1/2	16 1/2	
12		10 1/16	7 7/16	13	16 1/4	1/2 x 2	18 7/8	
14	1	10 15/16	8 3/16	14 1/4	18	1/2 x 2 1/2	20 5/8	1 1/8
16		12 13/16	9 5/16	16 1/4	21	1/2 x 3	24 3/8	
18		13 3/4	10 3/8	18 1/4	22 7/8	1/2 x 3	26 1/8	
20		15 1/16	11 5/16	20 1/4	25 1/2	5/8 x 3	28 11/16	

**FIG. 273**  
**ADJUSTABLE TWO-ROD ROLLER SUPPORT**

HANGERS



**Material:** Carbon steel axles and rods with cast iron rollers and sockets. Axles & Rods also available in stainless steel.

**Finish:** Plain, electro-galvanized or painted.

**Service:** Designed for the support of pipe where longitudinal movement may occur due to expansion and contraction and vertical adjustment of up to 6 inches may be necessary.

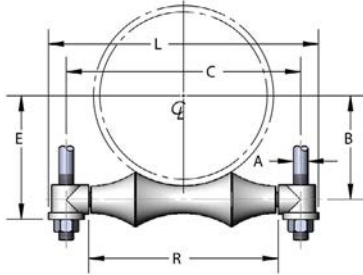
**Ordering:** Specify roller size, figure number and finish. Please remember to consider insulation thickness when sizing rollers.

**Notes:** Available domestic

PIPE ROLLER SIZE	PIPE OD	AXLE SIZE	A	B	C	E	H	L	R	WGT EACH (lbs)	MAX REC LOAD (lbs)
2	2.375	3/8	3/8	19/16	4 3/8	2 3/16	12	5 5/8	2 7/8	1.450	600
2 1/2	2.875	1/2	1/2	1 7/8	5 1/8	2 5/8	12	6 1/2	3 1/8	2.535	600
3	3.500	1/2	1/2	2 1/8	5 5/8	2 7/8	12	7	3 3/4	2.735	700
3 1/2	4.000	1/2	1/2	2 1/2	5 7/8	3 1/4	12	7 1/4	3 7/8	2.850	750
4	4.500	1/2	5/8	2 13/16	7	3 13/16	12	8 9/16	4 3/4	4.320	750
5	5.563	5/8	5/8	3 3/8	8 1/8	4 3/8	12	9 3/4	5 3/4	4.780	750
6	6.625	3/4	3/4	3 15/16	9 3/4	4 15/16	12	11 5/8	6 7/8	7.705	1070
7	7.625	3/4	3/4	4 1/2	10 1/2	5 1/4	12	12 1/2	8	8.410	1070
8	8.625	7/8	7/8	5 1/8	12 1/8	6 3/8	12	14 1/4	8 7/8	12.205	1350
10	10.750	7/8	7/8	6 1/4	14	7 1/2	12	16 1/4	11	13.950	1730
12	12.750	7/8	7/8	7 5/16	15 3/4	8 9/16	12	18	13	17.930	2400
14	14.000	1 1/8	1	8 3/8	17 3/4	9 13/16	18	20 1/2	14 1/4	27.545	3130
16	16.000	1 1/4	1	9 1/2	20 9/16	10 15/16	18	23 3/8	16 7/8	33.340	3970
18	18.000	1 1/4	1	10 7/16	22	11 7/8	18	24 7/8	18 5/16	36.000	4200
20	20.000	1 1/4	1 1/4	11 1/2	24	13 3/8	18	27	20 1/4	46.600	4550
24	24.000	1 1/2	1 1/2	13 13/16	28 3/4	16 1/6	24	32	24 1/4	81.220	6160
30	30.000	1 3/4	1 1/2	17 1/4	35 5/8	19 5/8	24	39 3/4	30 1/4	109.220	7290



**FIG. 277**  
**ADJUSTABLE TWO-ROD ROLLER HANGER**



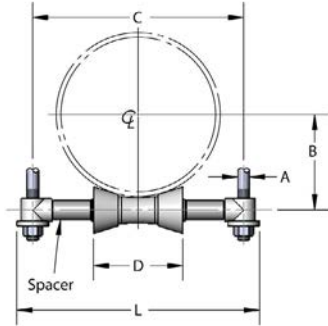
- Material:** Carbon steel axle with cast iron roller and socket ends. Also available in 316 stainless steel
- Finish:** Plain, electro-galvanized or painted.
- Service:** Designed for the suspension of pipe where longitudinal movement may occur due to expansion and contraction, and vertical adjustment is necessary.
- Approvals:** Complies with Federal Specification WW-H-171-E (Type# 42), A-A-1192A (Type# 41) and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 41).
- Ordering:** Specify roller size, figure number and finish. Please remember to consider insulation thickness when sizing rollers.
- Notes:** Available domestic

HANGERS

PIPE ROLLER SIZE	PIPE OD	AXLE SIZE	A	B	C	E	L	R	WGT EACH (lbs)	MAX REC LOAD (lbs)
2	2.375	3/8	3/8	19/16	4 3/8	2 3/16	5 5/8	2 7/8	0.760	600
2 1/2	2.875	1/2	1/2	1 7/8	5 1/8	2 5/8	6 1/2	3 1/8	1.185	660
3	3.500	1/2	1/2	2 1/8	5 5/8	2 7/8	7	3 3/4	1.385	700
3 1/2	4.000	1/2	1/2	2 1/2	5 7/8	3 1/4	7 1/4	3 7/8	1.500	750
4	4.500	1/2	5/8	2 13/16	7	3 13/16	8 9/16	4 3/4	2.110	750
5	5.563	5/8	5/8	3 3/8	8 1/8	4 3/8	9 3/4	5 3/4	2.570	750
6	6.625	3/4	3/4	3 15/16	9 3/4	4 15/16	11 5/8	6 7/8	4.395	1070
7	7.625	3/4	3/4	4 1/2	10 1/2	5 1/4	12 1/2	8	5.160	1100
8	8.625	7/8	7/8	5 1/8	12 1/8	6 3/8	14 1/4	8 7/8	7.425	1350
10	10.750	7/8	7/8	6 1/4	14	7 1/2	16 1/4	11	9.170	1730
12	12.750	7/8	7/8	7 5/16	15 3/4	8 9/16	18	13	13.150	2400
14	14.000	1 1/8	1	8 3/8	17 3/4	9 13/16	20 1/2	14 1/4	18.745	3130
16	16.000	1 1/4	1	9 1/2	20 9/16	10 15/16	23 3/8	16 7/8	24.540	3970
18	18.000	1 1/4	1	10 7/16	22	11 7/8	24 7/8	18 5/16	27.200	4200
20	20.000	1 1/4	1 1/4	11 1/2	24	13 3/8	27	20 1/4	32.000	4550
24	24.000	1 1/2	1 1/2	13 13/16	28 3/4	16 1/6	32	24 1/4	54.000	6160
30	30.000	1 3/4	1 1/2	17 1/4	35 5/8	19 5/8	39 3/4	30 1/4	82.000	7290

**FIG. 277SS**  
**ADJUSTABLE TWO-ROD ROLLER HANGER,**  
**316 STAINLESS STEEL**

HANGERS



**Material:** All 316 stainless steel construction.

**Service:** Designed for the suspension of pipe where longitudinal movement of pipe may occur due to expansion and contraction and where vertical adjustment may be necessary. Excellent corrosion resistance.

**Approvals:** Complies with Federal Specification WW-H-171-E (Type# 42), A-A-1192A (Type# 41) and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 41).

**Ordering:** Specify roller size and figure number. Please remember to consider insulation thickness when sizing rollers.

Size No.	A	B	C	D	L	Cross Rod Dia.
4	3/4	2 13/16	6 3/4	3 3/4	8 9/16	3/4
6	3/4	3 15/16	9 9/16	3 3/4	11 7/16	3/4
8	7/8	5 1/4	11 15/16	6	14 1/8	7/8
10	7/8	6 3/8	14 1/16	6	16 1/4	7/8
12	1	7 7/16	16 5/16	8	19 3/4	1 1/8
14	1	8 3/16	17 3/4	8	20 3/16	1 1/8
16	1 1/4	9 5/16	20 3/4	9	23 9/16	1 1/4
18	1 1/4	10 3/8	21 7/8	9	24 5/8	1 1/4
20	1 1/4	11 5/16	24 1/4	9	27 1/16	1 1/4

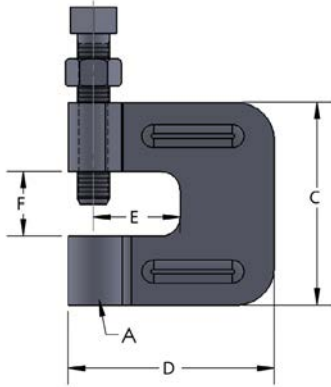


Manufactured in the USA Excluding 21LI

FIG. 21  
STEEL C-CLAMP

FIG. 21L  
STEEL C-CLAMP WITH LOCKNUT, DOMESTIC

FIG. 21LI  
STEEL C-CLAMP WITH LOCKNUT



**Material:** Carbon steel, 304 stainless steel (21LSS) and 316 stainless steel (21LSX).

**Finish:** Plain, electro-galvanized.

**Service:** Designed for attaching hanger rod to the bottom flange of a beam. Features the ribbed design for added strength. Hardened steel cup point set screw secures clamp to beam.

**Approvals:** U.L.-U.L.C. listed sizes  $\frac{3}{8}$  AND  $\frac{1}{2}$  ( $\frac{1}{2}$  FOR 4" IPS max) **with locknut only**. FM approved for  $\frac{3}{8}$  only **with and without locknut**. Complies with Federal Specification WW-H-171-E (Type# 23), A-A-1192 A (Type# 23) and Manufacturers' Standard Society SP-58 and MSS SP-69 (Type# 23).

**Ordering:** Specify rod size, figure number and finish.

**Notes:** See MSS SP-69 for proper set screw torque recommendations.

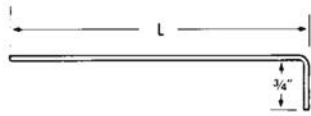
BEAM CLAMPS

SIZE A	SET SCREW	C	D	E	F	MAX PIPE SIZE	WEIGHT EACH (lbs)		MAX REC LOAD (lbs)
							21 (W/OUT NUT)	21L (W/NUT)	
$\frac{3}{8}$ -16	$\frac{3}{8}$ -16	$2 \frac{3}{8}$	$2 \frac{3}{8}$	1	$\frac{3}{4}$	4	.38	.40	400
$\frac{1}{2}$ -13	$\frac{3}{8}$ -16	$2 \frac{3}{8}$	$2 \frac{3}{8}$	1	$\frac{3}{4}$	4	.38	.40	500
$\frac{5}{8}$ -11	$\frac{1}{2}$ -13	$2 \frac{3}{8}$	$2 \frac{5}{16}$	$\frac{7}{8}$	$\frac{3}{4}$	5	.56	.60	550
$\frac{3}{4}$ -10	$\frac{5}{8}$ -11	$2 \frac{3}{8}$	$2 \frac{5}{16}$	$\frac{7}{8}$	$\frac{3}{4}$	6	.60	.68	630
$\frac{7}{8}$ -9	$\frac{3}{4}$ -10	3	$3 \frac{5}{16}$	$1 \frac{1}{4}$	1	8	1.76	1.88	1200

**FIG. 21R  
RETAINING STRAP**

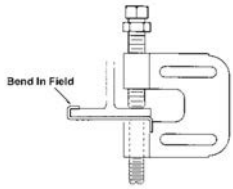


Manufactured in the USA



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized.  
**Service:** Designed for use with FIG. 21, FIG. 21L ( $\frac{3}{8}$ " -  $\frac{3}{4}$ " ) and FIG. 23L ( $\frac{3}{8}$ " and  $\frac{1}{2}$ " ) to eliminate movement of the beam clamp due to vibration.  
**Ordering:** Specify part number, length and finish.  
**Notes:** Add 2" minimum to flange width to determine length.

BEAM CLAMPS

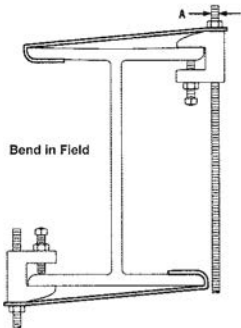
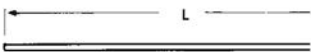


MATERIAL	WEIGHT EACH (lbs)					
	LENGTH L					
	4-1/2	6	8	10	12	14
11ga x 1 1/4	.22	.30	.36	.44	.48	.66

**FIG. 22R  
RETAINING STRAP**



Manufactured in the USA



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized.  
**Service:** Designed for use with FIG. 61 and FIG. 62.  
**Ordering:** Specify part number, length and finish.  
**Notes:** Add 2" minimum to flange width to determine length.

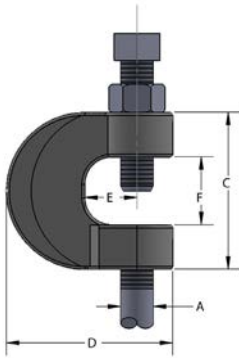
ROD SIZE A	MATERIAL WIDTH	WEIGHT EACH (lbs)					
		LENGTH L					
		4-1/2	6	8	10	12	14
$\frac{3}{8}$	1.0	.14	.18	.26	.32	.40	.46
$\frac{1}{2}$	1.0	.14	.18	.24	.32	.38	.44
$\frac{5}{8}$	1.25	.17	.22	.30	.40	.47	.55
$\frac{3}{4}$	1.25	.17	.22	.30	.40	.47	.55
$\frac{7}{8}$	2.00	.28	.36	.48	.64	.76	.88

Supplied 16ga unless noted otherwise





**FIG. 23L**  
**MALLEABLE IRON C-CLAMP WITH LOCKNUT**

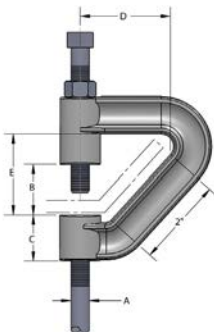


**Material:** Malleable iron  
**Finish:** Plain, electro-galvanized.  
**Service:** Designed for attaching hanger rod to the bottom flange of a beam.  
**Approvals:** U.L.-U.L.C. listed and FM approved ( $\frac{3}{8}$ " and  $\frac{1}{2}$ " ONLY). Complies with Federal Specification WW-H-171-E (Type# 23), A-A-1192A (Type# 23) and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 23).  
**Ordering:** Specify rod size, figure number and finish.  
**Notes:** See MSS SP-69 for proper set screw torque recommendations.

BEAM CLAMPS

SIZE A	SET SCREW	C	D	E	F	MAX PIPE SIZE	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
$\frac{3}{8}$ -16	$\frac{3}{8}$ -16	1 $\frac{3}{4}$	1 $\frac{3}{4}$	$\frac{5}{8}$	$\frac{3}{4}$	4	0.40	400
$\frac{1}{2}$ -13	$\frac{3}{8}$ -16	1 $\frac{3}{4}$	1 $\frac{3}{4}$	$\frac{5}{8}$	$\frac{3}{4}$	4	0.39	500
$\frac{5}{8}$ -11	$\frac{3}{8}$ -16	2	2	$\frac{5}{8}$	$\frac{3}{4}$	5	0.65	550
$\frac{3}{4}$ -10	$\frac{3}{8}$ -16	2	2	$\frac{5}{8}$	$\frac{3}{4}$	6	0.76	630

**FIG. 24**  
**PURLIN CLAMP**

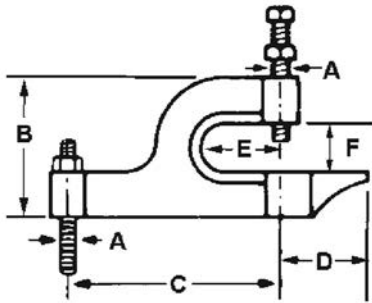


**Material:** Malleable iron  
**Finish:** Plain, electro-galvanized.  
**Service:** Designed for use with large-lip steel Purlin beams.  
**Ordering:** Specify figure number and finish.  
**Notes:** See MSS SP-69 for proper set screw torque recommendations.

SIZE A	SET SCREW	B	C	D	E	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
$\frac{3}{8}$ -16	$\frac{3}{8}$ -16 x 3	1	1	1 $\frac{7}{8}$	1 $\frac{5}{8}$	0.92	400

**FIG. 25L**  
**EXTENDED C-CLAMP WITH LOCKNUT**

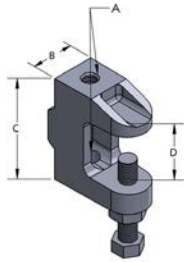
BEAM CLAMPS



**Material:** Malleable iron  
**Finish:** Plain, electro-galvanized.  
**Service:** Designed for attachment to beams where flange thickness does not exceed  $\frac{3}{4}$ " and where it is desired to have the rod support offset from the beam.  
**Ordering:** Specify figure number and finish.  
**Notes:** See MSS SP-69 for proper set screw torque recommendations.

SIZE A	SET SCREW	B	C	D	E	F	WEIGHT EACH (lbs)
$\frac{3}{8}$ -16	$\frac{1}{8}$ -16 x 2	2.362	3.600	1.515	1.000	0.787	0.716

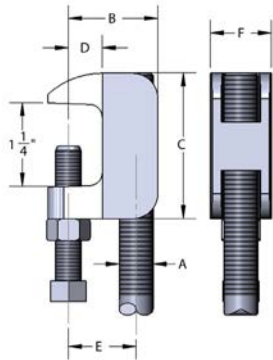
**FIG. 60G**  
**1/4" BEAM CLAMP**



**Material:** Malleable iron.  
**Finish:** Electro-galvanized.  
**Service:** Designed to attach 1/4" hanger rod from metal beams, channel or angle iron.  
**Ordering:** Specify figure number and finish.

ROD SIZE A	SET SCREW	B	C	D	WEIGHT EACH (lbs)	MAC REC LOAD (lbs) TOP	MAC REC LOAD (lbs) BOTTOM
1/4-20	1/4-20	5/8	1 9/16	15/16	0.18	250	100

**FIG. 61**  
**TOP BEAM CLAMP**



**Material:** Malleable iron body with hardened steel set screw.  
**Finish:** Plain or electro-galvanized.  
**Service:** Designed to attach hanger rod to the top flange of a beam or bar.  
**Approvals:** U.L. - U.L.C. listed 3/8 and 1/2 (1/2 for 4" IPS max).  
 FM approved for 3/8 only. Complies with Federal Specification A-A-1192A (Type# 19) and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 19).  
**Ordering:** Specify rod size, figure number and finish.  
**Notes:** See MSS SP-69 for proper set screw torque recommendations.  
**Order 61D for domestic.**

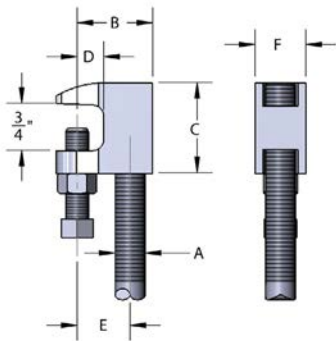
ROD SIZE A	SET SCREW	B	C	D	E	F	MAX PIPE SIZE	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
3/8-16	3/4-10	1 3/8	2	1/2	1	7/8	4	0.55	400
1/2-13		1 3/8	2	1/2	1	7/8	4	0.56	500
5/8-11		1 7/8	2 3/8	5/8	1 3/8	1 1/4	5	0.66	850
3/4-10		1 7/8	2 3/8	5/8	1 3/8	1 1/4	6	0.83	900

BEAM CLAMPS

**FIG. 62**  
**JUNIOR TOP BEAM CLAMP**



BEAM CLAMPS



**Material:** Malleable iron with hardened steel set screw. 304 (62SS) and 316 (62SX) stainless steel.

**Finish:** Plain or electro-galvanized.

**Service:** Designed to attach hanger rod to the top flange of a beam or bar joist where flange thickness does not exceed  $\frac{5}{8}$  of an inch.

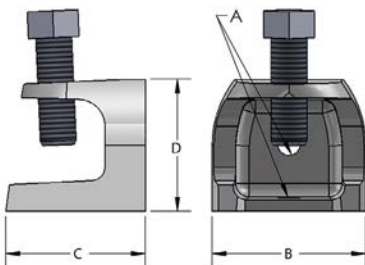
**Approvals:** U.L. - U.L.C. listed  $\frac{3}{8}$  and  $\frac{1}{2}$  ( $\frac{1}{2}$  for 4" IPS max). FM approved for  $\frac{3}{8}$  only. Complies with Federal Specification A-A-1192 A (Type# 19) and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 19).

**Ordering:** Specify rod size, material, figure number and finish.

**Notes:** See MSS SP-69 for proper set screw recommendations. Stainless steel beam clamps are recommended for corrosive environments. **Order 62D for domestic.**

ROD SIZE A	SET SCREW	B	C	D	E	F	MAX PIPE SIZE	MAX REC LOAD (lbs)	WEIGHT EACH (lbs)
$\frac{3}{8}$ -16	$\frac{3}{8}$ -16	$1 \frac{5}{16}$	$1 \frac{1}{2}$	$\frac{1}{2}$	1	$\frac{7}{8}$	4	350	0.320
$\frac{1}{2}$ -13		$1 \frac{5}{16}$	$1 \frac{1}{2}$	$\frac{1}{2}$	1	$\frac{7}{8}$	4	470	0.320
$\frac{5}{8}$ -11		$1 \frac{3}{4}$	$1 \frac{3}{4}$	$\frac{5}{8}$	$1 \frac{3}{8}$	$1 \frac{1}{8}$	5	550	0.580
$\frac{3}{4}$ -10		$1 \frac{7}{8}$	$1 \frac{7}{8}$	$\frac{5}{8}$	$1 \frac{3}{8}$	$1 \frac{3}{8}$	6	700	0.820
$\frac{7}{8}$ -9	$\frac{1}{2}$ -13	$2 \frac{3}{8}$	$1 \frac{7}{8}$	$\frac{5}{8}$	$1 \frac{3}{8}$	$1 \frac{3}{8}$	8	1000	0.795

**FIG. 63**  
**ELECTRICAL ROD SUPPORT CLAMP**



**Material:** Malleable iron.

**Finish:** Electro-galvanized.

**Service:** Designed to attach hanger rod to beam or framework where thickness does not exceed  $\frac{1}{2}$  inch. Rod tap on both bottom and back of clamp.

**Ordering:** Specify rod size and figure number.

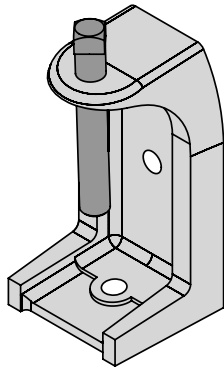
ROD SIZE A	SET SCREW	B	C	D	MAX REC LOAD (lbs)	WEIGHT EACH (lbs)
$\frac{1}{4}$ -20	$\frac{5}{16}$ -18	$1 \frac{3}{16}$	$1 \frac{3}{8}$	$\frac{1}{2}$	335	0.260
$\frac{5}{16}$ -18		$1 \frac{3}{16}$	$1 \frac{3}{8}$	$\frac{1}{2}$	335	0.250
$\frac{3}{8}$ -16	$\frac{1}{2}$ -13	$2 \frac{1}{16}$	$1 \frac{3}{4}$	$\frac{5}{8}$	525	0.700
$\frac{1}{2}$ -13		$2 \frac{1}{2}$	$2 \frac{3}{16}$	$\frac{5}{8}$	750	1.26



**FIG. 63EWM  
EXTRA-WIDE GALVANIZED IRON BEAM CLAMP**



Manufactured in the USA



- Material:** Malleable iron.
- Finish:** Electro-galvanized.
- Service:** Designed to attach hanger rod to beam or framework. Rod tap on both bottom and back of clamp.
- Approvals:** Complies with CUL, UL.
- Ordering:** Specify rod size and figure number.

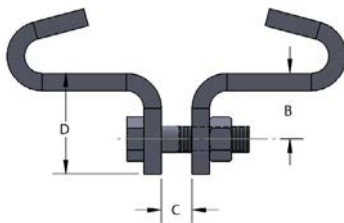
BEAM CLAMPS

ROD SIZE	FLANGE THICKNESS	JAW OPENING	THREADED HOLES	MAX LOAD CAPACITY (lbs)	TESTING LOAD CAPACITY (lbs)	WEIGHT EACH (lbs)
5/16-18 x 2-1/2	Up to 3"	3 1/8	1/4 - 20	200	600	0.9110
3/8-16 x 4	Up to 3"	3 1/8	3/8 - 16	300	900	1.0500
1/2-13 x 2-1/2	Up to 3"	3 1/8	1/2 - 13	400	1200	1.5000

**FIG. 150  
BEAM CLAMP**



Manufactured in the USA



- Material:** Carbon steel, also available in 304 and 316 stainless steel.
- Finish:** Plain, electro-galvanized.
- Service:** Designed for attaching hanger rods from the center of an I-beam. Normally used with figure 26, 26W eyerods, or figure 13 weldless eye nut.
- Approvals:** Complies with Federal Specifications WW-H-171-E (Type# 21), A-A-1192 A (Type# 21), and MSS SP-58 and SP-69 (Type# 21).
- Ordering:** Specify clamp size, flange width, beam thickness, figure number and finish.
- Notes:** Not recommended for beams greater than 12 inches wide.

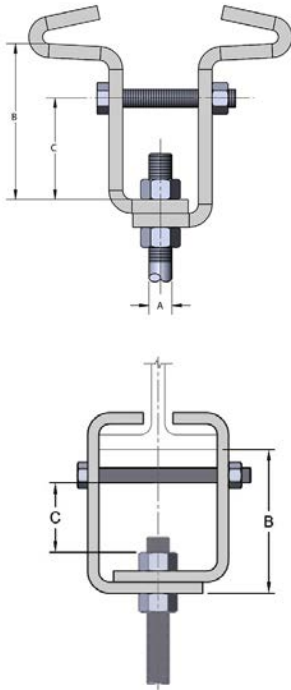
CLAMP SIZE	MATERIAL	BOLT	B	C	D	MAX REC LOAD (lbs)
1	1/4 x 1 1/4	1/2	1 1/8	5/8	1 3/4	1000
2	1/2 x 2	3/4	1 5/8	7/8	2 5/8	3000

**FIG. 155**  
**STEEL BEAM CLAMP**



Manufactured in the USA

BEAM CLAMPS



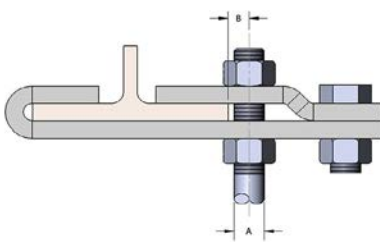
**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized or painted.  
**Service:** Designed for attaching hanger rods to be centered under beam flanges. The clamp provides a vertical adjustment of approximately 2 inches.  
**Ordering:** Specify clamp size, beam thickness, flange width, figure number and finish.  
**Notes:** Not recommended for beams greater than 12 inches wide. Sizes 2 through 4 with flanges less than 4" are box style. Sizes 5 with flanges 5" and less are box style. Sizes 6 with flanges 5½ and less are box style.

CLAMP SIZE	STOCK SIZE	A	B	C	MAX REC LOAD (lbs)
1	1/4 x 1 1/4	3/8	4	3	550
2	1/4 x 1 1/2	1/2			850
3	3/8 x 1 1/2	5/8	4 1/2	3 1/4	1100
4	3/8 x 2	3/4			1500
5	1/2 x 2	7/8	5	3 1/2	2600
6	1/2 x 2 1/2	1			4300

**FIG. 156**  
**SIDE STEEL BEAM CLAMP**



Manufactured in the USA



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized or painted.  
**Service:** Designed to be used where it is necessary for the hanger rod to run vertically close to the beam's edge, eliminating drilling of holes in structural member.  
**Approvals:** Complies with Federal Specifications WW-H-171-E (Type# 53), A-A-1192 A (Type# 25), and MSS SP-58 and SP-69 (Type# 25).  
**Ordering:** Specify clamp size, flange width and thickness, figure number and finish.  
**Notes:** Not recommended for beams greater than 12 inches wide.

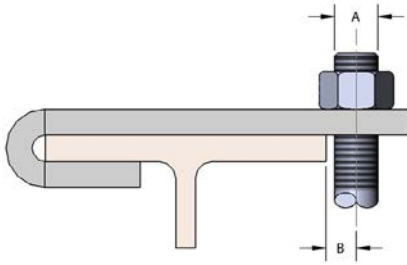
SIZE NO.	STOCK SIZE	A	B
1	1 1/4 x 1/4	3/8	5/16
2	1 1/4 x 1/4	1/2	5/16
3	1 1/2 x 3/8	5/8	7/16
4	2 x 3/8	3/4	1/2
5	2 1/2 x 1/2	7/8	9/16





Manufactured in the USA

FIG. 158  
TOP BEAM HOOK

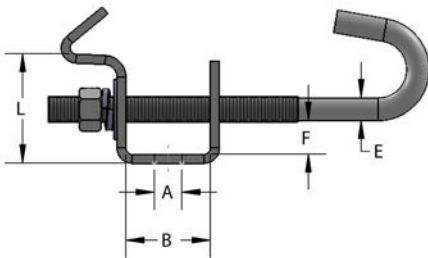


**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized or painted.  
**Service:** Designed for attaching hanger rod to the top flange of a beam.  
**Ordering:** Specify size, flange width, thickness and finish.  
**Notes:** Not recommended for beams greater than 12 inches wide.

HOOK SIZE	MATERIAL SIZE	A	B
1	1 1/4 x 1/4	3/8	5/16
2	1 1/4 x 1/4	1/2	3/8
3	1 1/2 x 3/8	5/8	7/16
4	2 x 3/8	3/4	1/2
5	2 1/2 x 1/2	7/8	9/16

BEAM CLAMPS

FIG. 159  
ADJUSTABLE ROD BEAM CLAMP

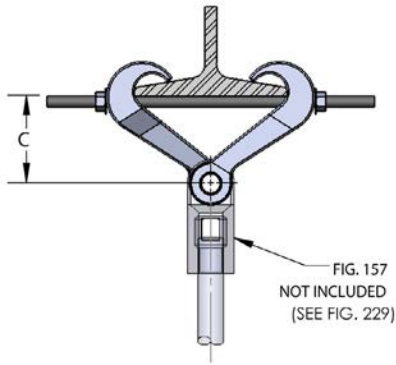


**Material:** Carbon steel.  
**Finish:** Plain or electro-galvanized.  
**Service:** Designed to be used in the suspension of a hanger rod from an I-beam. Recommended for flange widths from 4 inches minimum to 8 inches maximum.  
**Approvals:** Complies with Federal Specifications WW-H-171-E (Type# 54), A-A-1192 A (Type# 27), and MSS SP-58 and SP-69 (Type# 27).  
**Ordering:** Specify rod size, figure number and finish.

SIZE A	MATERIAL	FLANGE WIDTH		B	E	F	L	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
		MIN	MAX						
3/8-16	3ga x 1 1/4	3 1/2	8	2	3/8	1	2 3/4	0.98	300
1/2-13	3ga x 1 1/2	3 1/2			1/2	15/16		1.38	700
5/8-11	3ga x 1 3/4	3 1/2			5/8	7/8		1.86	1000
3/4		6		3 3/8	3/4	2	4	6.50	1800

**FIG. 218**  
MALLEABLE IRON CENTER LOAD BEAM CLAMP

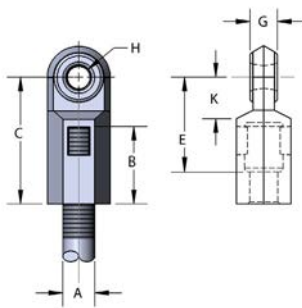
BEAM CLAMPS



**Material:** Malleable iron.  
**Finish:** Plain or electro-galvanized.  
**Service:** Designed for the suspension of a hanger rod from the center of an I-beam. The clamp accommodates flange widths of 2 3/8" - 7". Flange thickness not to exceed .60 inches. Normally used in conjunction with figure 157 extension piece. Figure 157 provides 1" of vertical adjustment.  
**Approvals:** When used with FIG. 157 Extension Piece, complies with Federal Specification WW-H-171-E (Type# 30), A-A-1192 A (Type# 30) and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 30).  
**Ordering:** Specify figure number and finish.  
**Notes:** For complete assembly with extension piece see FIG. 229.

A (7/8 MAX ROD)	C ROD TAKE OUT FOR WIDTH OF BEAM FLANGE						BOLT DIA	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
	2 3/8	3	4	5	6	7			
CLAMP ONLY	3 1/2	3 7/16	3 5/16	2 15/16	2 9/16	1 7/8	7/16	2.49	1365

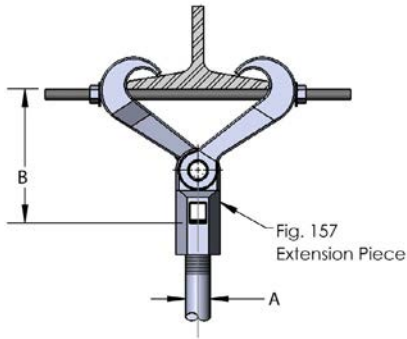
**FIG. 157**  
EXTENSION PIECE



**Material:** Malleable iron.  
**Finish:** Plain or electro-galvanized.  
**Service:** Designed for attaching hanger rod to various type of attachments. Allows a 1 inch vertical adjustment of the rod.  
**Ordering:** Specify rod size, figure number and finish.

SIZE A	PIPE SIZE	B	C	E	G	H	K	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
3/8-16	1/2 to 2	1 5/16	2 1/16	1 3/16	1/2	1/2	9/16	0.19	610
1/2-13	2 1/2 to 3 1/2	1 7/16	2 5/16	1 5/16	5/8		11/16	0.41	1130
5/8-11	4 to 5	1 9/16	2 7/16	1 7/16	5/8		3/4	0.42	1810
3/4-10	6	1 7/8	2 7/8	1 9/16	5/8		7/8	0.68	2710
7/8-9	8 to 12	2	3 1/16	1 11/16	3/4	9/16	7/8	0.78	2950

**FIG. 229**  
**MALLEABLE BEAM CLAMP WITH EXTENSION PIECE**



**Material:** Malleable iron.

**Finish:** Plain or electro-galvanized.

**Service:** Designed for the suspension of a hanger rod from the center of an I-beam. The clamp accommodates flange widths of 2 3/8" to 7". Flange thickness not to exceed .60 inches. Extension piece provides 1" of vertical adjustment.

**Approvals:** Complies with Federal Specification WW-H- 171-E (Type# 30), A-A-1192A (Type# 30) and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 30).

**Ordering:** Specify rod size, figure number and finish.

BEAM CLAMPS

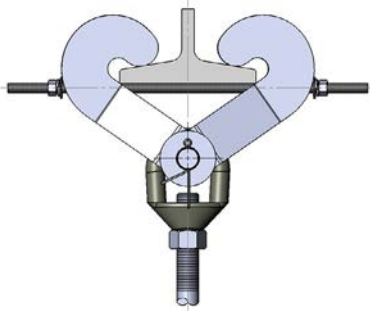
SIZE A	B ROD TAKE-OUT FOR WIDTH OF BEAM FLANGE						BOLT DIA	WGT EACH (lbs)	MAX REC LOAD (lbs)
	2 3/8	3	4	5	6	7			
3/8- 16	4 3/4	4 11/16	4 9/16	4 3/16	3 13/16	3 1/8	7/16	2.42	610
1/2- 13	4 7/8	4 13/16	4 11/16	4 5/16	3 15/16	3 1/4		2.63	1130
5/8- 11	4 15/16	4 7/8	4 3/4	4 3/8	4	3 5/16		2.67	1365
3/4- 10	5 3/16	5 1/8	5	4 5/8	4 1/4	3 9/16		2.87	1365
7/8- 9	5 1/4	5 3/16	5 1/16	4 11/16	4 5/16	3 5/8		3.01	1365



Manufactured in the USA

FIG. 450  
HEAVY BEAM CLAMP ASSEMBLY

BEAM CLAMPS



**Material:** ASTM A-36 carbon steel with ASTM A-235 class C eye-nut.  
**Finish:** Plain, electro-galvanized or painted.  
**Service:** Designed to be used for the suspension of heavy loads from beams up to 16 inches wide and up to 1 inch thick. Normally used with figure 26, 26W eyerods or figure 13, 13I weldless eye nuts.  
**Approvals:** Complies with Federal Specification WW-H-171-E (Type# 28 without links, Type #29 with links), A-A-1192A (Type# 28 without links, Type #29 with links) and Manufacturers' Standardization Society MSS SP- 58 and SP-69 (Type# 28 without links, Type #29 with links).  
**Ordering:** Specify clamp size, figure number, rod size and finish.  
**Notes:** Maximum loads are based on maximum rod sizes. For load capacity of other rod sizes, see page 117.

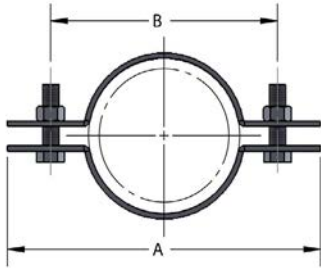
SIZE	FLANGE SIZE		MAX ROD	WGT EACH (lbs)	MAX LOAD (lbs)
	WIDTH	MAX THICKNESS			
1	3-8	5/8	3/4	8	2800
2	7-12*				
3	3-8	3/4	1	11	5000
4	7-15*				
5	5-11	1	1 1/2	30	11500
6	8-16*				

\*Supplied with links



Manufactured in the USA

FIG. 48  
RISER CLAMP FOR PLASTIC PIPE  
FIG. 49PC  
RISER CLAMP FOR PLASTIC PIPE, PLASTIC COATED



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized, plastic coated.  
**Service:** Designed as a support of plastic DWV pipe.  
**Approvals:** Complies with Federal Specification WWH-171-E. (Type# 8), A-A-1192A (Type# 8), Manufacturers' Standardization Society SP-58 and MSS SP-69 (Type# 8).  
**Ordering:** Specify pipe size, figure number and finish.

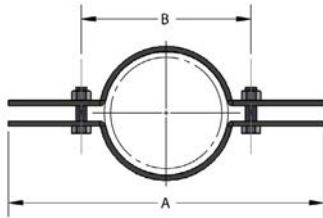
PIPE SIZE	PIPE OD	MATERIAL SIZE	BOLT	A	B	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
1 1/2	1.900	11ga x 1.250	5/16	5 1/2	3 1/2	.56	225
2	2.375		5/16	6 1/16	4 1/16	.60	
3	3.500		3/8	7 1/4	5 1/4	.80	
4	4.500		3/8	8 1/2	6 1/2	.98	

PIPE CLAMPS

**FIG. 50**  
**STANDARD RISER CLAMP**



Manufactured  
in the USA



**Material:** Carbon steel, 304 (50SS) and 316 (50SX) stainless steel.

**Finish:** Plain, painted, electro-galvanized, hot-dip galvanized, plastic coated.

**Service:** Designed for supporting and stabilizing vertical pipe runs.

**Approvals:** U.L. - U.L.C. listed (sizes 2" - 8"). Complies with Federal Specification WW-H-171-E (Type# 8), A-A-1192 A (Type# 8) and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 8).

**Ordering:** Specify pipe size, figure number and finish.

**Notes:** Plastic coated riser clamps are completely plastic coated with zinc plated hardware. The plastic coating prevents pipe from coming in contact with the clamp and is designed to reduce noise, vibration and prevent electrolysis between pipe and clamp. Stainless steel riser clamps are recommended for applications where protection from corrosive environments is needed.

PIPE CLAMPS

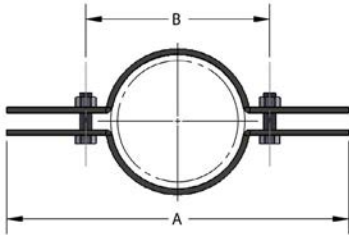
PIPE SIZE	PIPE OD	MATERIAL SIZE	BOLT	A	B	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
1/2	0.870	8ga x 1.0	3/8	8 5/8	2 1/8	0.88	220
3/4	1.050	8ga x 1.0		8 13/16	2 5/16	0.92	220
1	1.315	8ga x 1.0		9 1/16	2 5/8	0.94	220
1 1/4	1.660	8ga x 1.0		9 7/8	2 15/16	1.00	250
1 1/2	1.900	8ga x 1.0		10	3 7/16	1.04	250
2	2.375	8ga x 1.0		10 9/16	4	1.14	300
2 1/2	2.875	3ga x 1.0		11 1/8	4 9/16	1.60	400
3	3.500	3ga x 1.0		11 13/16	5 1/4	1.70	500
3 1/2	4.000	3ga x 1.0	1/2	13	6	2.06	600
4	4.500	3ga x 1.0		13 5/8	6 5/8	2.20	750
5	5.563	3ga x 1.5		14 1/8	7 5/8	3.40	1500
6	6.625	3ga x 1.5		15 3/8	8 7/8	3.72	1600
8	8.625	3/8 x 1.5	5/8	18 5/8	12	7.22	2500
10	10.750	3/8 x 2.0		21	14 1/2	10.94	2500
12	12.750	1/2 x 2.0		22 3/4	16 3/4	16.10	2700
14	14.000	1/2 x 2.0		24	17 7/8	17.00	2700
16	16.000	5/8 x 2 1/2	3/4	26	21	29.16	2900
18	18.000	5/8 x 2 1/2		28	23 1/8	31.91	2900
20	20.000	5/8 x 2 1/2		30	25	35.00	2900
24	24.000	5/8 x 2 1/2	7/8	36	29 1/4	42.00	2900
30	30.000	3/4 x 4		42	35 1/4	60.00	3200





Manufactured in the USA  
Excluding 50CTI

**FIG. 50DIP  
STANDARD RISER CLAMP  
SIZED FOR DIP – FIG. 50**



- Material:** Carbon steel, also available in 304 (50SS) and 316 (50SX) stainless steel.
- Finish:** Plain
- Service:** Designed for supporting and stabilizing vertical pipe runs.
- Approvals:** U.L. - U.L.C. listed (sizes 2" - 8"). Complies with Federal Specification WW-H-171-E (Type# 8), A-A-1192 A (Type# 8) and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 8).
- Ordering:** Specify pipe size, figure number and finish.

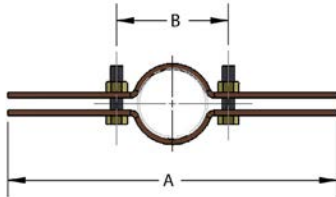
Pipe Size	Pipe OD	Material Size	Bolt	A	B	Wgt Each (lbs)	Max REC Load (lbs)
3	3.96	8ga x 1	<sup>3</sup> / <sub>8</sub>	11 <sup>13</sup> / <sub>16</sub>	5 <sup>1</sup> / <sub>4</sub>	1.70	500
4	4.80	3ga x 1.0	<sup>1</sup> / <sub>2</sub>	13 <sup>5</sup> / <sub>8</sub>	6 <sup>5</sup> / <sub>8</sub>	2.20	750
6	6.90	3ga x 1.5	<sup>1</sup> / <sub>2</sub>	15 <sup>3</sup> / <sub>8</sub>	8 <sup>7</sup> / <sub>8</sub>	3.72	1600
8	9.05	<sup>3</sup> / <sub>8</sub> x 1.5	<sup>5</sup> / <sub>8</sub>	18 <sup>5</sup> / <sub>8</sub>	12	7.22	2500
10	11.10	<sup>3</sup> / <sub>8</sub> x 2.0	<sup>5</sup> / <sub>8</sub>	21	14 <sup>1</sup> / <sub>2</sub>	10.94	2500
12	13.20	<sup>1</sup> / <sub>2</sub> x 2.0	<sup>5</sup> / <sub>8</sub>	22 <sup>3</sup> / <sub>4</sub>	16 <sup>3</sup> / <sub>4</sub>	16.10	2700

PIPE CLAMPS



Manufactured in the USA Excluding 50CTI

FIG. 50CT  
COPPER PLATED COPPER TUBING RISER CLAMP  
FIG. 50CTI  
EPOXY COATED (COPPER-GARD) COPPER TUBING RISER CLAMP



**Material:** Carbon steel.  
**Finish:** Copper plated (50CT) or Copper epoxy coated (COPPER-GARD-50CTI). COPPER-GARD products offer superior corrosion protection due to the epoxy coating over electro-galvanized steel. The alternative copper plating that has been done historically identifies the product and is not intended for protection. Refer to MSS SP58, 13.3.  
**Service:** Designed for supporting and stabilizing vertical tubing runs.  
**Approvals:** Complies with Federal Specification WW-H-171-E (Type# 8), A-A-1192A (Type# 8), Manufacturers' Standardization Society SP-58 and MSS SP-69 (Type# 8).  
**Ordering:** Specify pipe size, figure number and finish.

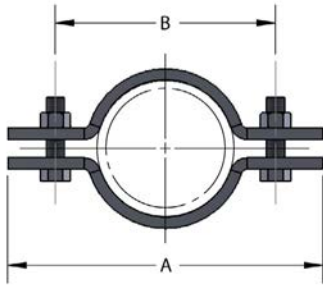
PIPE CLAMPS

TUBE SIZE	TUBE OD	MATERIAL SIZE	BOLT	A	B	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
1/2	0.625	11ga x 1.0	1/4	6 11/16	1 11/16	0.48	225
3/4	0.875		1/4	7	2	0.50	225
1	1.125		1/4	8 3/4	2 1/4	0.64	250
1 1/4	1.375		1/4	9	2 1/2	0.66	250
1 1/2	1.625		1/4	9 3/8	2 7/8	0.68	250
2	2.125	8ga x 1.0	3/8	9 15/16	3 3/8	1.06	500
2 1/2	2.625		3/8	10 1/2	4	1.08	500
3	3.125		3/8	11	4 7/16	1.16	500
3 1/2	3.625		3/8	12 3/16	5 1/8	1.58	500
4	4.125	8ga x 1.25	3/8	12 5/8	5 9/16	1.66	500
5	5.125	3ga x 1.50	1/2	14 1/8	7 1/8	3.42	815
6	6.125		1/2	15	8	3.76	815



Manufactured in the USA

**FIG. 50SA**  
**SHORT ARM RISER CLAMP**

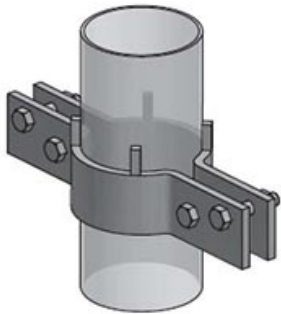


**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized.  
**Service:** Designed for supporting and stabilizing vertical pipe runs. Overall length of clamp is shorter than standard to accommodate field requirements.  
**Approvals:** Complies with Federal Specification WWH-171-E (Type# 8), A-A-1192A (Type# 8), Manufacturers' Standardization Society SP-58 and MSS SP-69 (Type# 8).  
**Ordering:** Specify pipe size, figure number and finish.

PIPE SIZE	PIPE OD	MATERIAL SIZE	BOLT	A	B	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
1	1.315	8ga x 1.0	<sup>5</sup> / <sub>16</sub>	4 <sup>11</sup> / <sub>16</sub>	2 <sup>11</sup> / <sub>16</sub>	0.50	170
1 1/4	1.660		<sup>5</sup> / <sub>16</sub>	5 <sup>3</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>16</sub>	0.58	260
1 1/2	1.900		<sup>5</sup> / <sub>16</sub>	5 1/2	3 1/2	0.60	260
2	2.375		<sup>5</sup> / <sub>16</sub>	6	4	0.60	260
2 1/2	2.875	3ga x 1.0	<sup>3</sup> / <sub>8</sub>	6 <sup>5</sup> / <sub>8</sub>	4 <sup>5</sup> / <sub>8</sub>	1.12	260
3	3.500		<sup>3</sup> / <sub>8</sub>	7 <sup>5</sup> / <sub>16</sub>	5 <sup>5</sup> / <sub>16</sub>	1.18	260
4	4.500		1/2	8 <sup>9</sup> / <sub>16</sub>	6 <sup>9</sup> / <sub>16</sub>	1.54	450
5	5.563	3ga x 1.5	1/2	9 <sup>3</sup> / <sub>4</sub>	7 <sup>3</sup> / <sub>4</sub>	2.64	770
6	6.625		1/2	10 <sup>7</sup> / <sub>8</sub>	8 <sup>7</sup> / <sub>8</sub>	2.80	770

PIPE CLAMPS

**FIG. 50HD  
HEAVY DUTY RISER CLAMP**



**Material:** Carbon steel, also available in 304 and 316 stainless steel.

**Finish:** Plain or hot-dip galvanized

**Service:** Designed to support vertical piping from hanger rods or structural members such as beams and concrete slabs. Shear lugs field welded to pipe wall transfer pipe load to riser clamp.

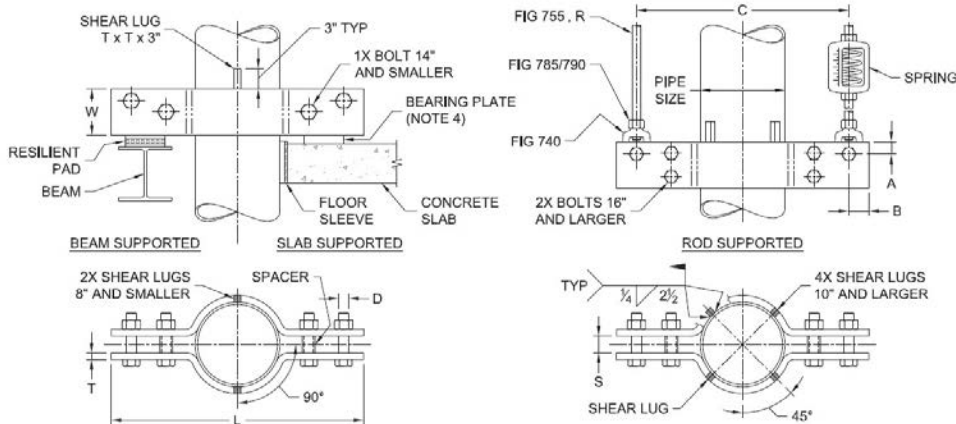
**Approvals:** MSS SP-58 Type 42

**Ordering:** Specify pipe size, figure number and finish.

**Notes:** 650°F for Black Carbon Steel and Stainless Steel 350°F for Hot-Dip Galvanized Carbon Steel. Maximum recommended load on rigid support. Loads may be doubled when used with springs or other resilient devices. Welding in accordance with AWS D1.1 for carbon steel and AWS D1.6 for stainless steel. Local pipe wall stress due to welded shear lug attachment evaluation available upon request, provide: pipe material, pipe wall thickness, operating pressure and temperature, and corrosion allowance. Concrete bearing plate as necessary by others. For special designs, contact factory with pipe size, material, load, operating temperature, C and L dimensions, finish and support type.

PIPE CLAMPS

PIPE SIZE	T x W	A	B	C	D	L	S	R	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
2	1/2 x 2 1/2	1 1/4	2	18	1/2	22	3/4	1/2	16.00	900
2 1/2	1/2 x 2 1/2	1 1/4	2	20	1/2	24	3/4	1/2	18.00	900
3	5/8 x 3	1 1/4	2	20	5/8	24	1	5/8	27.30	1500
4	3/4 x 4	1 1/4	2	22	3/4	26	1 1/4	3/4	46.70	2200
5	3/4 x 4	1 1/4	2	22	3/4	26	1 1/4	3/4	47.40	2200
6	3/4 x 5	1 1/4	2	24	7/8	28	1 1/2	3/4	66.00	3000
8	3/4 x 5	1 1/4	2	27	7/8	31	1 1/2	3/4	74.00	3000
10	1 x 6	1 5/8	3	30	1 1/4	36	2 1/4	1	141.00	5500
12	1 x 7	1 7/8	3	32	1 1/2	38	2 1/2	1 1/4	185.00	7800
14	1 x 7	1 7/8	3	34	1 1/2	40	2 1/2	1 1/4	195.00	7800
16	1 1/4 x 8	2	3	36	1 1/2	42	2 1/2	1 1/4	283.00	9000
18	1 1/4 x 8	2	3	39	1 1/2	45	2 1/2	1 1/4	302.00	9000
20	1 1/4 x 8	2 5/8	4 1/4	42	2	50 1/2	3 1/2	1 1/2	364.48	13500
24	1 1/4 x 8	2 5/8	4 1/4	45	2	53 1/2	3 1/2	1 1/2	391.00	13500

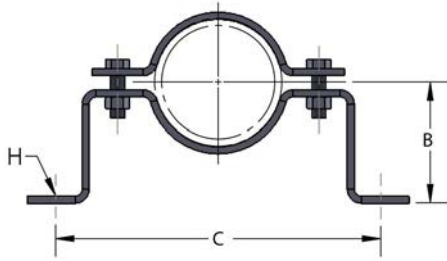




**FIG. 95**  
**OFFSET PIPE CLAMP**



Manufactured  
in the USA



**Material:** Carbon steel. Also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized.  
**Service:** Designed for supporting horizontal or vertical pipe lines at a fixed distance from wall or floor. This clamp can be furnished with "B" dimensions to suit field conditions.  
**Ordering:** Specify pipe size, figure number and finish.

PIPE SIZE	PIPE OD	MATERIAL SIZE	BOLT	B	C	H	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
3/4	1.050	1 1/4 x 1/4	3/8	2 1/2	7 3/16	7/16	1.25	200
1	1.315	1 1/4 x 1/4		2 5/8	7 9/16		1.33	
1 1/4	1.660	1 1/4 x 1/4		2 13/16	7 7/8		1.42	
1 1/2	1.900	1 1/4 x 1/4		2 15/16	8 1/4		1.49	
2	2.375	1 1/4 x 1/4		3 3/16	9 1/8		2.03	410
2 1/2	2.875	1 1/4 x 1/4		3 7/16	10 1/2		2.25	
3	3.500	1 1/4 x 1/4		3 3/4	11 1/8		2.50	
3 1/2	4.000	1 1/4 x 1/4		4	11 5/8		2.75	
4	4.500	1 1/2 x 1/4	1/2	4 1/4	12 1/2	9/16	3.68	600
5	5.563	1 1/2 x 1/4		4 3/4	13 3/4		4.25	
6	6.625	1 1/2 x 3/8		5 5/16	16 1/2		6.80	850
8	8.625	1 1/2 x 3/8		5 5/16	18 5/8		8.20	

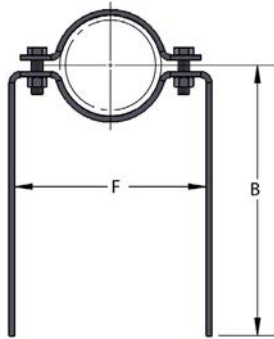
PIPE CLAMPS



**FIG. 97**  
**EXTENDED PIPE CLAMP**



Manufactured  
in the USA



**Material:** Carbon steel. Also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized.  
**Service:** Designed for suspending or supporting pipe lines where exact distance between structure and pipe cannot be determined until installation.  
**Ordering:** Specify pipe size, figure number and finish.

PIPE CLAMPS

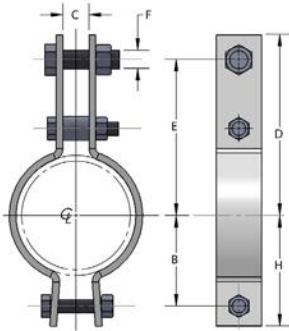
PIPE SIZE	PIPE OD	MATERIAL SIZE	BOLT	B	F	WEIGHT EACH (lbs)
3/4	1.050	1 1/4 x 1/4	3/8	12	4 7/16	1.85
1	1.315			12	4 11/16	2.34
1 1/4	1.660			12	5	2.40
1 1/2	1.900			12	5 1/4	2.45
2	2.375	1 1/2 x 1/4	1/2	12	6	3.13
2 1/2	2.875			12	7 1/4	4.20
3	3.500			12	7 7/8	4.47
3 1/2	4.000			12	8 3/8	4.74
4	4.500			12	9 1/4	4.90
5	5.563	2 x 3/8	5/8	12	10 1/2	5.32
6	6.625			12	12 1/2	11.15
8	8.625			12	14 5/8	12.65



**FIG. 189**  
**DOUBLE BOLT PIPE CLAMP**



Manufactured  
in the USA



- Material:** Carbon steel, also available in 304 and 316 stainless steel.
- Finish:** Plain, electro-galvanized.
- Service:** Designed for the suspension of insulated pipe lines. Normally used with weldless eye nut, figure #13.
- Approvals:** Complies with Federal Specifications WW-H-171-E (Type# 3), A-A-1192 A (Type# 3), and MSS SP-58 and SP-69 (Type# 3).
- Ordering:** Specify pipe size, figure number and finish.
- Notes:** Available in 304 and 316 stainless steel.

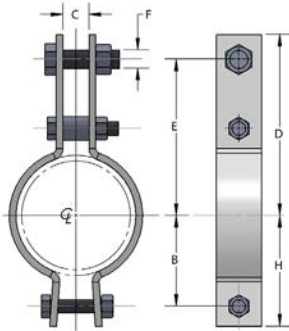
PIPE SIZE	PIPE OD	MATERIAL SIZE	F BOLT	B	C	D	E	H	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
1/2	0.840	8ga x 1.00	3/8	1	5/8	2 7/8	2 5/16	1 9/16	0.540	950
3/4	1.050	8ga x 1.00	3/8	1 1/16	5/8	3	2 7/16	1 5/8	0.570	950
1	1.315	8ga x 1.00	3/8	1 3/8	5/8	3 3/16	2 5/8	1 15/16	0.605	950
1 1/4	1.660	8ga x 1.00	3/8	1 1/2	5/8	3 1/2	2 15/16	2 1/16	0.675	950
1 1/2	1.900	4ga x 1.25	5/8	1 15/16	7/8	4 11/16	3 13/16	2 13/16	1.715	1545
2	2.375	4ga x 1.25	5/8	2 3/16	7/8	5 9/16	4 11/16	3 1/16	1.925	1545
2 1/2	2.875	4ga x 1.25	5/8	2 7/16	7/8	6 7/16	5 9/16	3 5/16	2.115	1545
3	3.500	4ga x 1.25	5/8	2 3/4	1	7	6 1/8	3 5/8	2.260	1545
3 1/2	4.000	4ga x 1.25	5/8	2 7/8	1	7 1/4	6 3/8	3 3/4	2.365	1545
4	4.500	3/8 x 2	3/4	3 1/2	1 1/16	7 5/8	6 1/2	4 1/2	7.50	2500
5	5.563	3/8 x 2	3/4	4	1 1/16	8 1/8	7	5	8.13	2500
6	6.625	3/8 x 2 1/2	1	5	1 7/16	9 15/16	8 9/16	6 1/8	13.11	2865
8	8.625	3/8 x 2 1/2	1	6	1 7/16	10 15/16	9 9/16	7 1/8	14.67	2865
10	10.750	1/2 x 2 1/2	1	7 1/2	1 7/16	12	10 5/8	8 7/8	21.67	3240
12	12.750	1/2 x 2 1/2	1	8 1/2	1 7/16	13	11 5/8	9 7/8	23.83	3240
14	14.000	5/8 x 3	1 1/4	9 3/8	2	14 5/16	12 11/16	11	37.50	4300
16	16.000	5/8 x 3	1 1/4	10 3/8	2	15 5/16	13 11/16	12	41.00	4300
18	18.000	5/8 x 3	1 1/4	11 3/8	2	16 5/16	14 11/16	13	46.46	4300
20	20.000	3/4 x 3	1 1/2	12 3/4	2	17 1/2	15 7/8	14 3/8	60.00	5490
24	24.000	3/4 x 3	1 1/2	14 3/4	2	19 1/2	17 7/8	16 3/8	70.43	4500

PIPE CLAMPS

**FIG. 189A**  
**ALLOY DOUBLE BOLT PIPE CLAMP**



Manufactured in the USA



- Material:** Alloy steel (ASTM A387 grade 22).
- Finish:** Plain.
- Service:** Designed for suspension of high temperature insulated pipe lines, maximum temperature is 1,050°F.
- Approvals:** Complies with Federal Specifications WW-H-171-E (Type# 3), A-A-1192 A (Type# 3), and MSS SP-58 and SP-69 (Type# 3).
- Ordering:** Specify pipe size and figure number.
- Notes:** Galvanizing is not recommended for alloy products.

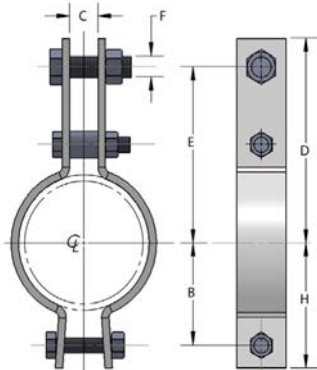
PIPE CLAMPS

PIPE SIZE	PIPE OD	MATERIAL SIZE	B	C	D	E	H	WEIGHT EACH (lbs)	MAX REC LOAD (lbs) FOR SERVICE TEMP			
									650°F	750°F	1000°F	1050°F
1 1/2	1.900	1/4 x 1 1/4	1 13/16	1 1/16	4 7/8	4 1/8	2 3/8	2.3	1545	1410	1000	745
2	2.375	1/4 x 1 1/4	2 1/8	1 1/16	5 7/8	5 1/8	2 11/16	2.6	1545	1410	1000	745
2 1/2	2.875	1/4 x 1 1/4	2 5/16	1 1/16	6 1/8	5 3/8	2 15/16	2.7	1545	1410	1000	745
3	3.500	1/4 x 1 1/4	2 3/4	1 1/16	6 11/16	5 15/16	3 1/2	3.0	1545	1410	1000	745
4	4.500	3/8 x 2	3 3/8	1 1/16	7 5/8	6 1/2	4 1/2	6.7	2500	2290	1625	1200
5	5.563	3/8 x 2	3 15/16	1 1/16	8 1/8	7	5	7.0	2500	2290	1625	1200
6	6.625	3/8 x 2 1/2	4 3/4	1 7/16	9 15/16	8 9/16	6 1/8	11.5	2865	2620	1860	1380
8	8.625	3/8 x 2 1/2	5 3/4	1 7/16	10 15/16	9 9/16	7 1/8	13.2	2865	2620	1860	1380
10	10.750	1/2 x 2 1/2	7 1/16	1 7/16	12	10 5/8	8 1/4	19.8	3240	2970	2100	1565
12	12.750	1/2 x 2 1/2	8 1/16	1 7/16	12 15/16	11 5/8	9 5/16	22.3	3240	2970	2095	1555
14	14.000	5/8 x 3	9 1/16	2	14 5/16	12 11/16	10 11/16	37.7	4300	3915	2795	2060
16	16.000	5/8 x 3	10 1/16	2	15 5/16	13 11/16	11 11/16	41.4	4300	3915	2795	2060
18	18.000	5/8 x 3	11 1/16	2	16 5/16	14 11/16	12 11/16	44.9	4300	3915	2780	2060
20	20.000	3/4 x 3	12 3/8	2	17 1/2	15 7/8	14	57.3	5490	4995	3550	2635
24	24.000	3/4 x 4	14 3/8	2	19 1/2	17 7/8	16	65.9	4500	4095	2910	2160



Manufactured in the USA

**FIG. 189H**  
**HEAVY DUTY DOUBLE BOLT PIPE CLAMP**



- Material:** Carbon steel, also available in 304 and 316 stainless steel.
- Finish:** Plain or electro-galvanized.
- Service:** Designed for suspension of high temperature pipe lines within the limitation of temperature and loads shown below.
- Approvals:** Complies with Federal Specifications WW-H-171-E (Type# 3), A-A-1192 A (Type# 3), and MSS SP-58 and SP-69 (Type# 3).
- Ordering:** Specify pipe size, figure number and finish.
- Notes:** Maximum temperature is 750°F and accommodates up to 4" thick insulation.

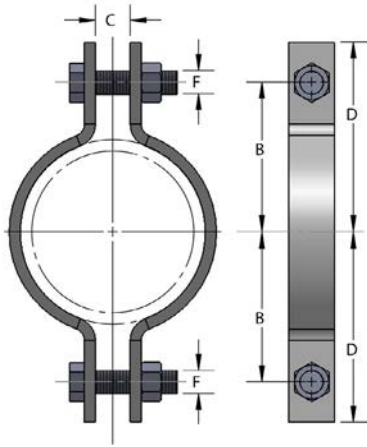
PIPE SIZE	PIPE OD	MATERIAL SIZE	F BOLT	B	C	D	E	H	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)	
										650°F	750°F
6	6.625	2 1/2 x 3/8	1	4 3/4	1 3/4	10 3/16	8 15/16	6	12.00	3500	3125
8	8.625	2 1/2 x 1/2	1 1/8	6	2	11 3/8	10 1/8	7 1/4	18.50	4800	4285
10	10.750	3 1/2 x 1/2	1 1/4	7 1/4	2 1/4	13 1/8	11 3/8	9	30.25	5500	4910
12	12.750	4 x 5/8	1 1/2	8 5/8	2 1/2	14 5/16	12 9/16	10 3/8	42.00	7000	6250
14	14.000	4 x 3/4	1 1/2	9 5/8	2 1/2	15 1/2	13 1/2	11 5/8	60.00	9500	8485
16	16.000	4 1/2 x 3/4	1 3/4	10 7/8	3	17 1/8	14 7/8	13 1/8	80.00	10000	8930
18	18.000	4 x 1	2	12 1/2	3 1/2	18 1/4	16 1/4	14 1/2	115.00	13800	12325
20	20.000	5 x 1	2	13 1/2	3 1/2	19 3/4	17 1/4	16	140.00	15300	13665
24	24.000	6 x 1	2	15 1/2	3 1/2	22 5/16	19 5/16	18 1/2	190.00	16300	14555

PIPE CLAMPS

**FIG. 212**  
**STANDARD STEEL PIPE CLAMP**



Manufactured in the USA



- Material:** Carbon steel, also available in 304 and 316 stainless steel.
- Finish:** Plain or electro-galvanized.
- Service:** Designed for the suspension of cold pipe lines or hot pipe lines where no insulation is required.
- Approvals:** Complies with Federal Specifications WW-H-171-E (Type# 4), A-A-1192 A (Type# 4), and MSS SP-58 and SP-69 (Type# 4).
- Ordering:** Specify pipe size, figure number and finish.
- Notes:** Available in 304 and 316 stainless steel and alloy steel.

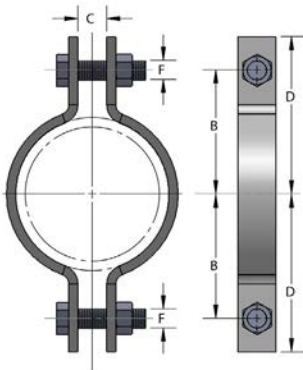
PIPE CLAMPS

PIPE SIZE	PIPE OD	MATERIAL SIZE S	BOLT F	B	C	D	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
1/2	0.840	11ga x 1	5/16	1 1/8	7/16	1 11/16	0.27	500
3/4	1.050	11ga x 1	5/16	1 1/4	7/16	1 13/16	0.30	500
1	1.315	11ga x 1	5/16	1 7/16	7/16	2	0.33	500
1 1/4	1.660	11ga x 1	5/16	1 9/16	7/16	2 1/8	0.36	500
1 1/2	1.900	11ga x 1	5/16	1 11/16	1/2	2 1/4	0.37	800
2	2.375	3ga x 1	1/2	2 5/16	1/2	3 3/16	1.04	1040
2 1/2	2.875	3ga x 1	1/2	2 5/8	3/4	3 1/2	1.19	1040
3	3.500	3ga x 1	1/2	2 7/8	3/4	3 3/4	1.27	1040
3 1/2	4.000	3ga x 1	1/2	3 1/8	3/4	4	1.43	1040
4	4.500	4ga x 1 1/4	5/8	3 5/8	3/4	4 1/2	1.94	1040
5	5.563	4ga x 1 1/4	5/8	4 1/8	7/8	5	2.20	1040
6	6.625	3/8 x 1 1/2	3/4	5	7/8	5 7/8	5.42	1615
8	8.625	3/8 x 1 1/2	3/4	6 1/8	1	7	6.51	1615
10	10.750	1/2 x 2	7/8	7 7/16	1	8 9/16	13.60	2490
12	12.750	1/2 x 2	7/8	8 7/16	1	9 9/16	16.05	2490
14	14.000	1/2 x 2 1/2	7/8	9 1/4	1 1/8	10 5/8	20.00	2490
16	16.000	1/2 x 2 1/2	7/8	10 1/4	1 1/8	11 5/8	22.00	2490
18	18.000	5/8 x 2 1/2	1	11 5/8	1 1/4	13	32.00	3060
20	20.000	5/8 x 2 1/2	1 1/8	12 3/4	1 3/8	14 1/8	36.00	3060



Manufactured in the USA

**FIG. 212DIP  
STANDARD STEEL PIPE CLAMP  
SIZED FOR DIP**



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Service:** Designed for the suspension of cold pipe lines or hot pipe lines where no insulation is required.  
**Ordering:** Specify pipe size, figure number and finish.  
**Notes:** Available in 304 and 316 stainless steel and alloy steel.

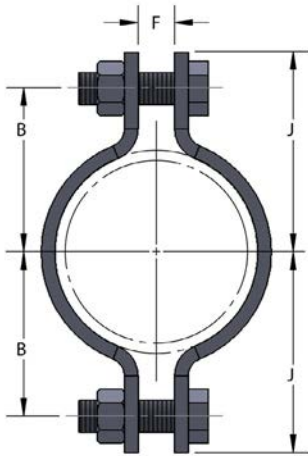
Pipe Size	Pipe OD	Material Size S	F Bolt	B	C	D	Wgt Each (lbs)	Max REC Load (lbs)
4	4.80	4ga x 1 1/4	5/8	3 11/16	3/4	4 9/16	2.25	1040
6	6.90	3/8 x 1 1/2	3/4	5 1/8	7/8	6 1/16	5.75	1615
8	9.05	3/8 x 1 1/2	3/4	6 3/8	1	7 3/8	6.5	1615

PIPE CLAMPS

**FIG. 216**  
**HEAVY DUTY TWO-BOLT PIPE CLAMP**



Manufactured  
in the USA



No Spacer Supplied

- Material:** Carbon steel, also available in 304 and 316 stainless steel.
- Finish:** Plain, electro-galvanized.
- Service:** Designed for the suspension of cold or hot pipe lines with heavy loads where no insulation is required.
- Approvals:** Complies with Federal Specifications WW-H-171-E (Type# 4), A-A-1192 A (Type# 4), and MSS SP-58 and SP-69 (Type# 4).
- Ordering:** Specify pipe size, figure number and finish.
- Notes:** Available in 304 and 316 stainless and alloy steel.

PIPE CLAMPS

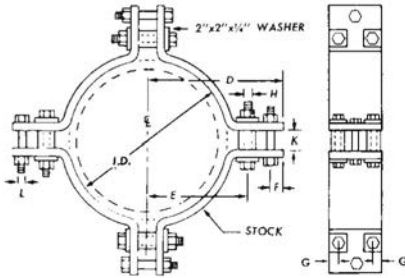
PIPE SIZE	PIPE OD	MATERIAL SIZE	BOLT	B	F	J	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)	
								650°F	750°F
3	3.500	1/4 x 1 1/2	3/4	3 1/8	1	4	2.67	3300	3235
3 1/2	4.000	1/4 x 1 1/2	3/4	3 5/16	1	4 3/16	3.36	3300	3235
4	4.500	3/8 x 2	7/8	3 3/4	1	4 7/8	5.93	3515	3135
5	5.563	3/8 x 2	7/8	4 3/8	1	5 1/2	6.56	3515	3135
6	6.625	1/2 x 2 1/2	1	5 1/4	1 1/8	6 5/8	12.40	4865	4340
8	8.625	1/2 x 2 1/2	1	6 1/4	1 1/8	7 5/8	14.66	4865	4340
10	10.750	5/8 x 2 1/2	1 1/4	7 11/16	1 1/4	9 1/16	24.07	6010	5360
12	12.750	3/4 x 3	1 1/2	9 1/4	1 5/8	10 7/8	40.95	8675	7740
14	14.000	3/4 x 4	1 1/2	10		11 7/8	55.50	9120	8135
16	16.000	3/4 x 4	1 1/2	11	1 5/8	12 7/8	59.40	9120	8135
18	18.000	3/4 x 6	2	12 3/16		14 5/16	70.12	9150	8160
20	20.000	1 x 5	2	13 5/16	1 5/8	15 7/16	74.68	9150	8160
24	24.000	1 x 6	2	15 3/8	1 3/4	17 3/4	126.29	9200	8205





Manufactured in the USA

**FIG. 570**  
**FOUR SECTION RODDING BAND**

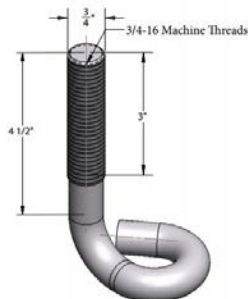


**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, hot-dip galvanized or painted.  
**Service:** Designed to be used to avoid possibility of joint separation on high pressure water mains.  
**Approvals:** Made to specifications of the City of New York and the New York City Port Authority.  
**Ordering:** Specify size, figure number and finish.  
**Notes:** Four heavy square washer plates drilled for the correct rod size are furnished with each clamp.

PIPE SIZE	ID	STOCK	D	E	F	G	H	K	L	TIE ROD SIZE
4	4 7/8	3/8 x 3	7 1/2	4 3/8	1	1 1/2	7/8	1 1/4	5/8	3/4
6	7	3/8 x 3	8 1/2	5 3/8		1 1/2		1 1/4		
8	9 1/8	1/2 x 4	9	6 3/8		1		1 1/4		
12	13 3/8	1/2 x 4 1/2	12 1/4	8 7/8		1		1 1/2		
16	17 1/4	1/2 x 5	14 1/4	10 7/8		1		1 1/2		
20	21 1/2	1/2 x 5 1/2	16 3/8	13		1 1/4		1 1/2		
24	26	1/2 x 5 1/2	19	15 1/4		1 1/4		1 7/8		
30	32 1/4	5/8 x 6	23	18 3/4		1 1/4		2 1/4		
36	38 1/2	3/4 x 7	26 1/4	22	1 1/2	2 1/4				

PIPE CLAMPS

**FIG. 575**  
**CORPORATION EYE BOLT**



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain.  
**Service:** Designed to be used with figure number 600 socket clamp.  
**Ordering:** Specify figure number.

BOLT SIZE	WGT (lbs)
3/4	1.0

PIPE CLAMPS

**FIG. 595**  
**FOUR BOLT SOCKET CLAMP**



Manufactured in the USA

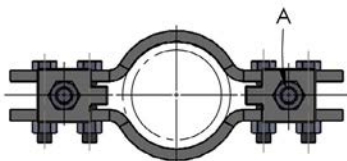
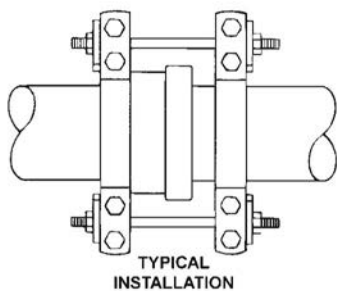
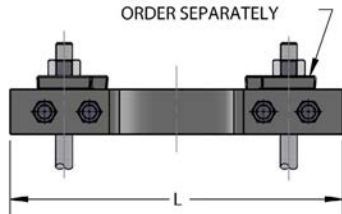


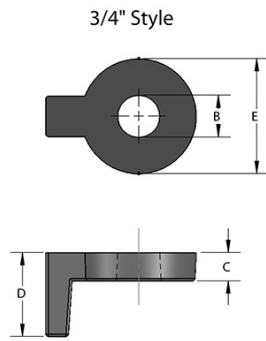
FIG. 599 WASHER  
ORDER SEPARATELY



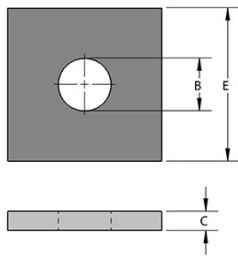
**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain or electro-galvanized.  
**Service:** Designed to used to clamp mechanical joint or socket joint piping and fittings together to prevent separation or distortion of pipe lines under excessive water pressure.  
**Approvals:** Complies with the requirements of the National Fire Protection Association standard NFPA 24 for outside protection.  
**Ordering:** Specify size, figure number and finish.

PIPE SIZE	PIPE OD	MATERIAL SIZE	BOLT	A	L	WGT EACH (lbs)
3	3.960	1/2 X 2	5/8	3/4	13	8.6
4	4.800	1/2 X 2	5/8	3/4	14 5/8	9.38
6	6.900	1/2 X 2	5/8	3/4	16 7/8	11.50
8	9.050	5/8 X 2 1/2	5/8	3/4	19 1/8	20.54
10	11.100	5/8 X 2 1/2	3/4	1	21 3/8	23.15
12	13.200	5/8 X 3	7/8	1	25 1/8	35.85
14	15.300	3/4 X 3	7/8	1 1/4	28 1/4	46.78
16	17.400	3/4 X 4	1	1 1/4	31 3/8	70.53
18	19.500	3/4 X 4	1 1/4	1 1/4	35 1/8	84.65
20	21.600	3/4 X 5	1 1/4	1 3/8	37 3/4	98.65
24	25.800	3/4 X 5	1 1/2	1 1/2	44 1/4	135.50

**FIG. 599**  
**SOCKET CLAMP WASHER**



1" through 1-1/2" Style

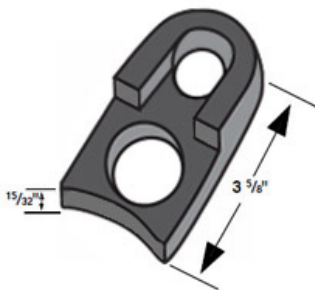


**Material:** Cast Iron/Carbon steel (see notes).  
**Finish:** Plain, electro-galvanized.  
**Service:** Designed to be used with figure 600 socket clamp, washer lugs hook around clamp bolts to secure tie rods within clamp legs.  
**Ordering:** Specify size, figure number and finish.  
**Notes:** The 3/4" rod size socket clamp washer is a cast iron product with tab feature. This accommodates pipe sizes 4"-12". The 1"-1 1/2" rod size washer are a carbon steel flat style. these accommodate pipe sizes 14"-24".

TIE ROD SIZE	B HOLE DIA	C	D	E	FOR USE WITH PIPE SIZE	WGT EACH (lbs)
3/4	7/8	5/8	1 3/4	2 3/8	3" - 12"	0.80
1	1 1/8	1/2	-	4	14"	2.16
1 1/8	1 1/4	1/2	-	4	16"	2.13
1 1/4	1 3/8	3/4	-	4	18"	3.14
1 3/8	1 1/2	3/4	-	4	20"	3.08
1 1/2	1 9/16	3/4	-	4	24"	3.02

PIPE CLAMPS

**FIG. 599a**  
**Ductile Lug**

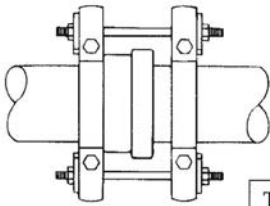
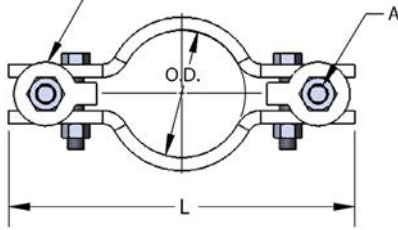


**Material:** Ductile iron per ASTM A536, Grade 65-45-12  
**Service:** Restriant of MJ Fittings 4" - 24" Accomodates 3/4" rod

Approximate Weight (lbs)	Max Load (lbs)
0.844	7500

**FIG. 600  
SOCKET CLAMP**

FIG. 599 WASHER  
ORDER SEPARATELY



Typical  
Installation



Manufactured  
in the USA

**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized.  
**Service:** Designed to be used to clamp joints of underground AWWA ductile iron water lines to prevent joint separation due to excessive water pressure.  
**Ordering:** Specify size, figure number and finish.

PIPE SIZE	PIPE OD	MATERIAL SIZE	BOLT	A ROD DIA.	L	WGT EACH (lbs)
3	3.960	2 X 3/8	5/8	3/4	12	5.95
4	4.800	2 X 1/2	5/8	3/4	12 3/4	8.00
6	6.900	2 X 1/2	5/8	3/4	15 1/2	10.00
8	9.050	2 X 1/2	5/8	3/4	17 1/2	12.10
10	11.100	2 X 1/2	5/8	3/4	19 1/2	13.63
12	13.200	2 X 1/2	5/8	3/4	22	15.65
14	15.300	3 X 3/4	7/8	1	28 1/2	45.00
16	17.400	4 X 3/4	1	1 1/8	30 3/4	63.00
18	19.500	4 X 3/4	1 1/4	1 1/4	34 5/8	76.00
20	21.600	5 X 3/4	1 1/4	1 3/8	37 1/2	100.50
24	25.800	5 X 3/4	1 1/2	1 1/2	43	118.00

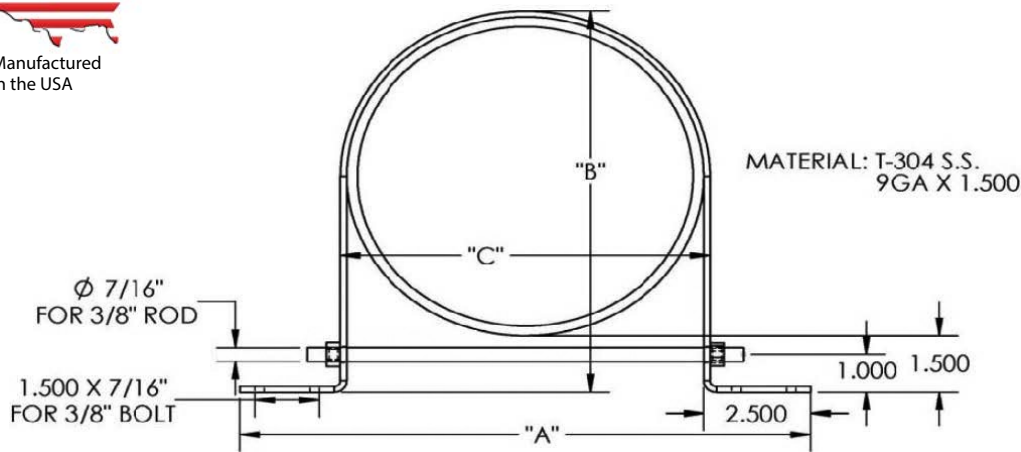
PIPE CLAMPS

**FIG. 903**  
**MANHOLE DROP PIPE CLAMP**

**Material:** Certified T-304 Stainless Steel  
**Service:** Designed for easy installation and support of manhole drop pipe.  
**Ordering:** Specify size, figure number and name



Manufactured in the USA



PIPE CLAMPS

SIZE	SDR-35 PIPE OD	ROD LENGTH	"A"	"B"	"C"
4"	4.125"	5 7/8"	9.215"	5.865"	4.514"
6"	6.275"	7 5/8"	11.275"	7.925"	6.574"
8"	8.400"	10 1/4"	13.400"	10.050"	8.700"
10"	10.500"	12 1/4"	15.500"	12.150"	10.800"
12"	12.500"	14 1/4"	17.500"	14.150"	12.800"

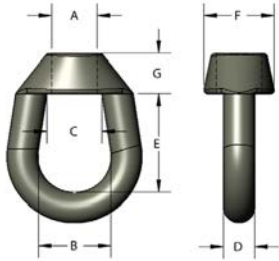
SIZE	DIP / C-900 OD	ROD LENGTH	"A"	"B"	"C"
4"	4.800"	6 1/2"	9.800"	6.450"	5.100"
6"	6.900"	8 3/4"	11.900"	8.550"	7.200"
8"	9.050"	10 7/8"	14.050"	10.700"	9.350"
10"	11.100"	12 7/8"	16.100"	12.750"	11.400"
12"	13.200"	15"	18.200"	14.850"	13.500"

SIZE	IPS OD	ROD LENGTH	"A"	"B"	"C"
4"	4.500"	6 3/8"	9.500"	6.150"	4.800"
6"	6.625"	8"	11.625"	8.275"	6.924"
8"	8.625"	10 1/2"	13.625"	10.275"	8.924"
10"	10.750"	12 1/2"	15.750"	12.400"	11.050"
12"	12.750"	14 1/2"	17.750"	14.400"	13.050"



Manufactured in the USA Excluding 131

- FIG. 13 WELDLESS EYENUT, DOMESTIC, RIGHT HAND THREADS
- FIG. 13I WELDLESS EYENUT, RIGHT HAND THREADS
- FIG. 13L WELDLESS EYENUT, DOMESTIC, LEFT HAND THREADS

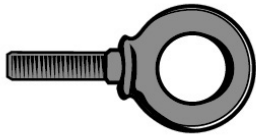


**Material:** Forged carbon steel, 316 stainless steel.  
**Finish:** Plain, electro-galvanized, hot-dip galvanized.  
**Service:** Designed for use on high temperature piping applications.  
**Approvals:** Complies with Federal Specifications WW-H-171-E (Type# 17), A-A-1192 A (Type# 17), and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 17).  
**Ordering:** Specify rod size, figure number and finish.  
**Notes:** Supports loads equal to the full limitation of the hanger rod. When figure 13I is supplied in hot-dip galvanized finish, it is not tapped oversized.

SIZE A	B	C	D	E	F	G	WGT EACH (lbs)	MAX REC LOAD (lbs)	
								650 <sup>a</sup> F	750 <sup>a</sup> F
3/8-16	1 1/4	13/16	3/8	1 9/16	1	5/8	0.23	610	540
1/2-13	1 1/4	13/16	3/8	1 9/16	1	5/8	0.55	1130	1010
5/8-11	1 1/2	1 3/16	1/2	2	1 3/8	11/16	0.52	1810	1610
3/4-10	1 1/2	1 3/16	1/2	2	1 3/8	11/16	1.70	2710	2420
7/8-9	2	1 13/16	3/4	2 3/8	1 15/16	1	1.70	3770	3360
1-8	2	1 13/16	3/4	2 3/8	1 15/16	1	1.70	4960	4420
1 1/8-7	2 1/2	1 13/16	1	3 3/8	2 3/8	1 1/4	3.70	6230	5560
1 1/4-7	2 1/2	1 13/16	1	3 3/8	2 3/8	1 1/4	3.50	8000	7140
1 1/2-6	2 1/2	1 13/16	1	3 3/8	2 3/8	1 1/4	3.50	11630	10370



**FIG. 26M  
MACHINE EYEBOLT**



**Material:** Drop Forged, shoulder or regular pattern  
**Finish:** Plain, galvanized, or stainless steel.  
**Ordering:** Specify size, figure number and finish.  
**Notes:** See Warnings for proper use

Shank Diameter	Shank Length	Eye Inside Dimension	Eye Outside Dimension	Weight Each	Working Load Limit
1/4	1	0.75	1.25	0.05	500
5/16	1-1/8	0.87	1.50	0.08	900
3/8	1-1/4	1.00	1.65	0.14	1,300
7/16	1-3/8	1.09	1.84	0.19	2,000
1/2	1-1/2	1.18	2.06	0.30	2,400
9/16	1-5/8	1.28	2.28	0.47	3,200
5/8	1-3/4	1.37	2.50	0.60	4,000
3/4	2	1.50	2.81	0.90	5,000
7/8	2-1/4	1.68	3.25	1.3	7,000
1	2-1/2	1.81	3.56	2.0	9,000
1-1/4	3	2.18	4.43	4.0	15,000
1-1/2	3-1/2	2.50	5.18	7.0	21,000

**FIG. 26DF  
REGULAR EYEBOLT**



**Material:** Drop Forged, Furnished with standard hex nuts  
**Finish:** Plain, galvanized, or stainless steel.  
**Ordering:** Specify size, figure number and finish.  
**Notes:** See Warnings for proper use

**STAINLESS STEEL**

Shank Diameter and Length	Length of Thread	Eye Inside Dimension	Eye Outside Dimension	Weight Each	Working Load Limit
1/4 x 2	1.5	0.50	1.00	0.09	500
1/4 x 4	2.5	0.50	1.00	0.12	500
5/16 x 2-1/4	1.5	0.62	1.25	0.16	800
5/16 x 4-1/4	2.5	0.62	1.25	0.17	800
3/8 x 2-1/2	1.5	0.75	1.50	0.24	1,200
3/8 x 4-1/2	2.5	0.75	1.50	0.30	1,200
1/2 x 3-1/4	1.5	1.00	2.00	0.54	2,200
1/2 x 6	3	1.00	2.00	0.69	2,200
5/8 x 4	2	1.25	2.50	1.04	3,500
5/8 x 6	3	1.25	2.50	1.15	3,500
3/4 x 4-1/2	2	1.50	3.00	1.65	5,200
3/4 x 6	3	1.50	3.00	1.38	5,200



**FIG. 26DF - Regular Eyebolt**  
(continued from previous page)

**GALVANIZED**

Shank Diameter and Length	Length of Thread	Eye Inside Dimension	Eye Outside Dimension	Weight Each	Working Load Limit
1/4 x 2	1.5	0.50	1.00	0.07	500
1/4 x 4	2.5	0.50	1.00	0.12	500
5/16 x 2-1/4	1.5	0.62	1.25	0.13	800
5/16 x 4-1/4	2.5	0.62	1.25	0.20	800
3/8 x 2-1/2	1.5	0.75	1.50	0.24	1,200
3/8 x 4-1/2	2.5	0.75	1.50	0.31	1,200
3/8 x 6	2.5	0.75	1.50	0.35	1,200
1/2 x 3-1/4	1.5	1.00	2.00	0.55	2,200
1/2 x 6	3	1.00	2.00	0.74	2,200
1/2 x 8	3	1.00	2.00	0.78	2,200
1/2 x 10	3	1.00	2.00	0.88	2,200
1/2 x 12	3	1.00	2.00	1.05	2,200
5/8 x 4	2	1.25	2.50	1.01	3,500
5/8 x 6	3	1.25	2.50	1.15	3,500
5/8 x 8	3	1.25	2.50	1.31	3,500
5/8 x 10	3	1.25	2.50	1.52	3,500
5/8 x 12	4	1.25	2.50	1.86	3,500
5/8 x 15	5	1.25	2.50	2.00	3,500
5/8 x 18	5	1.25	2.50	2.10	3,500
5/8 x 21	5.5	1.25	2.50	2.40	3,500
5/8 x 24	5.5	1.25	2.50	2.65	3,500
3/4 x 4-1/2	2	1.50	3.00	1.56	5,200
3/4 x 6	3	1.50	3.00	1.84	5,200
3/4 x 8	3	1.50	3.00	2.08	5,200
3/4 x 10	3	1.50	3.00	2.30	5,200
3/4 x 12	4	1.50	3.00	2.52	5,200
3/4 x 15	5	1.50	3.00	3.10	5,200
7/8 x 5	2.5	1.75	3.50	2.84	7,200
7/8 x 8	4	1.75	3.50	3.20	7,200
7/8 x 12	4	1.75	3.50	3.87	7,200
1 x 6	3	2.00	4.00	3.85	10,000
1 x 9	4	2.00	4.00	4.52	10,000
1 x 12	4	2.00	4.00	5.26	10,000
1 x 18	7	2.00	4.00	6.67	10,000
1-1/4 x 8	4	2.50	5.00	7.50	15,200
1-1/4 x 12	4	2.50	5.00	9.00	15,200
1-1/4 x 20	6	2.50	5.00	12.09	15,200

ANCHORS & FASTENERS



**FIG. 26DFS  
SHOULDER EYEBOLT**



**Material:** Drop Forged, Furnished with standard hex nuts  
**Finish:** Plain, galvanized, or stainless steel.  
**Ordering:** Specify size, figure number and finish.  
**Notes:** See Warnings for proper use

**GALVANIZED**

Shank Diameter and Length	Length of Thread	Eye Inside Dimension	Eye Outside Dimension	Weight Each	Working Load Limit
1/4 x 2	1.5	0.50	0.87	0.07	500
1/4 x 4	2.5	0.50	0.87	0.10	500
5/16 x 2-1/4	1.5	0.62	1.12	0.12	800
5/16 x 4-1/4	2.5	0.62	1.12	0.17	800
3/8 x 2-1/2	1.5	0.75	1.37	0.21	1,200
3/8 x 4-1/2	2.5	0.75	1.37	0.28	1,200
1/2 x 3-1/4	1.5	1.00	1.75	0.42	2,200
1/2 x 6	3	1.00	1.75	0.59	2,200
5/8 x 4	2	1.25	2.25	0.83	3,500
5/8 x 6	3	1.25	2.25	1.00	3,500
3/4 x 4-1/2	2	1.50	2.75	1.54	5,200
3/4 x 6	3	1.50	2.75	1.77	5,200
7/8 x 5	2.5	1.75	3.25	2.23	7,200
7/8 x 8	4	1.75	3.25	2.66	7,200
1 x 6	3	2.00	3.75	3.56	10,000
1 x 9	4	2.00	3.75	4.20	10,000
1-1/2 x 15	6	2.50	5.50	14.25	15,200

**STAINLESS STEEL**

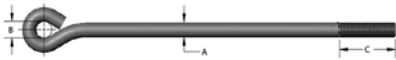
Shank Diameter and Length	Length of Thread	Eye Inside Dimension	Eye Outside Dimension	Weight Each	Working Load Limit
1/4 x 2	1.5	0.50	0.87	0.09	460
1/4 x 4	2.5	0.50	0.87	0.12	460
5/16 x 2-1/4	1.5	0.62	1.12	0.16	780
5/16 x 4-1/4	2.5	0.62	1.12	0.17	780
3/8 x 2-1/2	1.5	0.75	1.37	0.24	1,160
3/8 x 4-1/2	2.5	0.75	1.37	0.30	1,160
1/2 x 3-1/4	1.5	1.00	1.75	0.54	2,150
1/2 x 6	3	1.00	1.75	0.69	2,150
5/8 x 4	2	1.25	2.25	1.04	3,440
5/8 x 6	3	1.25	2.25	1.25	3,440
3/4 x 4-1/2	2	1.50	2.75	1.65	5,140
3/4 x 6	3	1.50	2.75	1.80	5,140

**FIG. 26**  
PLAIN EYE ROD  
**FIG. 26W**  
WELDED EYE ROD

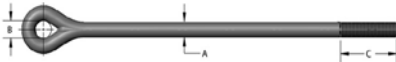


Manufactured in the USA

Not welded FIG. 26



Welded FIG. 26W



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized.  
**Service:** Designed for use in hanger assemblies and supports.  
**Ordering:** Specify rod size, length, figure number and finish.  
**Notes:** Other lengths, rod diameters and thread lengths available on request.

ROD SIZE A	B	C	MAX REC LOAD (lbs)		
			FIG# 26 (NOT WELDED) 650° F	FIG# 26 (WELDED)	
				650° F	750° F
3/8-16	0.500	2.500	240	610	540
1/2-13	0.625	2.500	440	1130	1010
5/8-11	0.750	2.500	705	1810	1610
3/4-10	0.875	3.000	1050	2710	2420
7/8-9	1.000	3.500	1470	3770	3360
1-8	1.125	4.000	1940	4960	4420
1 1/8-7	1.250	4.500	2430	6230	5560
1 1/4-7	1.375	5.000	3120	8000	7140
1 1/2-6	1.625	6.000	4650	11630	10370

ANCHORS & FASTENERS

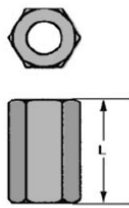
**FIG. 47**  
EYE SOCKET



**Material:** Malleable iron.  
**Finish:** Plain, electro-galvanized, copper plated.  
**Service:** Designed for attaching hanger rod to various types of hangers.  
**Approvals:** Complies with Federal Specification WWH-171-E. (Type# 25), A-A-1192A (Type# 16), Manufacturers' Standardization Society SP-58 and MSS SP-69 (Type# 16).  
**Ordering:** Specify rod size, figure number and finish.

SIZE A	PIPE SIZE	B	C	D	E	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
1/4-20	3/8	1/4	1 3/8	7/8	1 1/8	0.05	230
3/8-16	1/2 to 2	1/4	1 9/16	1 1/8	1 1/4	0.07	610
1/2-13	2 1/2 to 3 1/2	1/4	1 7/8	1 1/4	1 1/2	0.14	1000
5/8-11	4 to 5	3/8	2 1/4	1 9/16	1 3/4	0.22	1400
3/4-10	6	1/2	2 7/16	1 7/8	2 1/16	0.32	2200
7/8-9	8	1/2	2 3/4	1 1/8	2 5/16	0.53	2300

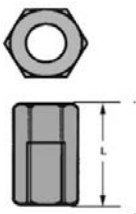
**FIG. 51  
ROD COUPLING**



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain or electro-galvanized.  
**Service:** Designed for connecting two lengths of rod with equal diameters.  
**Ordering:** Specify rod size, figure number and finish.  
**Notes:** Stainless steel rod couplings are recommended for applications where protection from corrosive environment is needed.

SIZE	LENGTH	HEX WIDTH	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
1/4-20	7/8	3/8	0.02	230
3/8-16	1 3/4	5/8	0.11	610
1/2-13	1 3/4	11/16	0.10	1130
5/8-11	2 1/8	13/16	0.18	1810
3/4-10	2 1/4	1	0.28	2710
7/8-9	2 1/2	1 1/4	0.55	3770
1-8	2 3/4	1 3/8	0.71	4960
1 1/8-7	3	1 1/2	0.86	6230
1 1/4-7	3	1 5/8	0.95	8000
1 1/2-6	3 1/2	2	1.88	11,630

**FIG. 51R  
REDUCING ROD COUPLING**

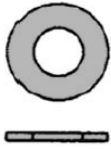


**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Electro-galvanized.  
**Service:** Designed for connecting two lengths of rod with different diameters.  
**Ordering:** Specify rod sizes and figure number.

SIZE	LENGTH	HEX WIDTH	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
3/8-16 x 1/4-20	1	1/2	0.04	225
1/2-13 x 3/8-16	1 1/4	5/8	0.07	610
5/8-11 x 1/2-13	1 1/4	13/16	0.14	1130
3/4-10 x 5/8-11	1 1/2	1	0.21	1810
7/8-9 x 3/4-10	1 3/4	1 1/4	0.40	2710
1-8 x 7/8-9	2	1 3/8	0.55	3770

ANCHORS & FASTENERS

**FIG. 52**  
**ROUND STEEL WASHER**

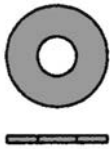


**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized or hot-dip galvanized.  
**Ordering:** Specify size, figure number and finish.  
**Notes:** Available packaged and bulk.

SIZE	OD	ID	WEIGHT EACH (lbs)
1/4	3/4	5/16	0.01
3/8	1	7/16	0.02
1/2	1 3/8	9/16	0.04
5/8	1 3/4	11/16	0.08
3/4	2	13/16	0.11
7/8	2 1/4	15/16	0.15
1	2 1/2	1 1/16	0.19
1 1/8	2 3/4	1 1/4	0.22
1 1/4	3	1 3/8	0.26
1 1/2	3 1/2	1 5/8	0.39

ANCHORS & FASTENERS

**FIG. 52F**  
**FENDER WASHER**



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Electro-galvanized.  
**Service:** Designed to produce a greater bearing surface.  
**Ordering:** Specify size and figure number.

SIZE	OD	ID	PCS/50lbs (approx.)	WEIGHT EACH (lbs)
1/4	1 1/2	9/32	1575	0.03
3/8	1 1/2	13/32	1650	0.03
1/2	2	17/32	925	0.05

**FIG. 52L  
LOCK WASHER**



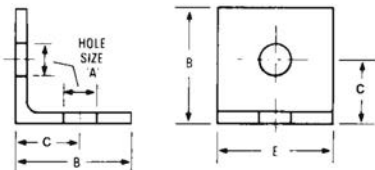
**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain or electro-galvanized.  
**Ordering:** Specify size, figure number and finish.

SIZE	WEIGHT EACH (lbs)
1/4	0.01
3/8	0.01
1/2	0.01
5/8	0.02
3/4	0.03

**FIG. 53  
ANGLE BRACKET**



Manufactured in the USA



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain or electro-galvanized.  
**Service:** Designed for attaching hanger rod to the side of beams or walls.  
**Approvals:** Complies with Federal Specification WW-H-171-E (Type# 35), A-A-1192 A (Type# 34), and MSS SP-58 and 7SP-69 (Type# 34).  
**Ordering:** Specify rod size, figure number and finish.  
**Notes:** Also available in stainless steel.

ANCHORS & FASTENERS

SIZE	HOLE SIZE A	MATERIAL THICKNESS	B	C	D	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
3/8-16	7/16	8ga	2 1/16	1 5/16	1 1/2	0.225	300
1/2-13	9/16	3ga	2 1/8	1 3/8	1 1/2	0.330	560
5/8-11	11/16	3/8	2 3/4	1 5/8	2 1/2	1.130	900
3/4-10	13/16	3/8	3 1/4	2 3/16	2 1/2	1.390	900



**FIG. 54**  
CONTINUOUS THREADED ROD

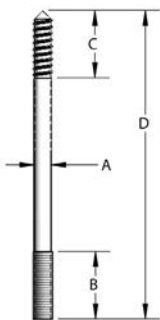


**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized, hot-dip galvanized.  
**Service:** Useful in applications for attaching hangers to structural attachments.  
**Ordering:** Specify rod size, figure number and finish.  
**Notes:** Stainless steel rod is recommended for applications where protection from corrosive environments is needed.

SIZE A	WGT/FT (lbs)	MAX REC LOAD (lbs)	
		650°F	750°F
1/4-20	0.12	240	210
3/8-16	0.29	610	540
1/2-13	0.54	1130	1010
5/8-11	0.83	1810	1610
3/4-10	1.25	2710	2420
7/8-9	1.70	3770	3360
1-8	2.23	4960	4420
1 1/8-7	2.81	6230	5560
1 1/4-7	3.54	8000	7140
1 1/2-6	5.12	11630	10370

ANCHORS & FASTENERS

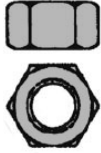
**FIG. 55**  
HANGER BOLTS



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized.  
**Service:** Designed for suspending pipe supports from wood structures.  
**Ordering:** Specify rod size, length, figure number and finish.  
**Notes:** Also available in stainless steel.

SIZE A	MINIMUM LENGTH		WEIGHT EACH (lbs) LENGTH D						
	MACHINE B	COACH C	3 1/2	4	4 1/2	6	8	10	12
1/4-20	1 5/8	1 3/4	0.04	—	—	—	—	—	—
3/8-16			0.08	—	0.11	0.14	0.19	0.23	0.29
1/2-13			—	0.14	0.21	0.22	0.32	0.36	0.40
3/8-11			—	0.24	—	—	—	—	—

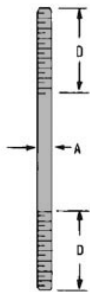
FIG. 56  
STANDARD HEX NUT, PACKAGED  
FIG. 56H  
HEAVY HEX NUT, PACKAGED



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized.  
**Ordering:** Specify rod size, figure number and finish.  
**Notes:** Also available in bulk.

SIZE	WEIGHT EACH (lbs)	
	56	56H
1/4-20	0.01	0.01
3/8-16	0.02	0.03
1/2-13	0.04	0.07
5/8-11	0.07	0.12
3/4-10	0.12	0.19
7/8-9	0.19	0.30
1-8	0.28	0.43
1 1/8-7	0.40	0.59
1 1/4-7	0.54	0.79
1 1/2-6	0.95	1.31

FIG. 57  
HANGER ROD, RIGHT HAND THREADS



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized.  
**Service:** Designed for use in pipe hanger assemblies.  
**Ordering:** Specify rod size, length, figure number and finish.  
**Notes:** Available in both right and left hand threads.

SIZE A	THREAD LENGTH D	WGT/FT (lbs)	MAX REC LOAD (lbs)	
			650°F	750°F
1/4-20	SPECIFY	0.12	240	210
3/8-16	SPECIFY	0.29	610	540
1/2-13	SPECIFY	0.54	1130	1010
5/8-11	SPECIFY	0.83	1810	1610
3/4-10	SPECIFY	1.25	2710	2420
7/8-9	SPECIFY	1.70	3770	3360
1-8	SPECIFY	2.23	4960	4420
1 1/8-7	SPECIFY	2.81	6230	5560
1 1/4-7	SPECIFY	3.54	8000	7140
1 1/2-6	SPECIFY	5.12	11630	10370

**FIG. 58**  
**HEX HEAD BOLT**



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized.  
**Service:** Designed for use as a fastening device.  
**Ordering:** Specify rod size, length, figure number and finish.  
**Notes:** Also available in stainless steel. Available packaged or in bulk.

SIZE A	WEIGHT EACH (lbs)												
	LENGTH												
	2	2 1/4	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4	4 1/2	5	5 1/2	6
3/8-16	0.072	0.080	0.087	0.095	0.103	0.111	0.119	0.126	0.134	0.150	0.168	0.181	0.196
1/2-13	0.144	0.157	0.171	0.185	0.199	0.213	0.226	0.240	0.254	0.282	0.309	0.337	0.364
5/8-11	0.228	0.250	0.271	0.293	0.314	0.336	0.358	0.379	0.401	0.444	0.487	0.530	0.573
3/4-10	0.351	0.382	0.413	0.445	0.476	0.504	0.538	0.569	0.600	0.662	0.724	0.787	0.849
7/8-9	0.511	0.550	0.592	0.634	0.677	0.719	0.761	0.803	0.846	0.930	1.015	1.100	1.184
1-8	0.701	0.748	0.799	0.854	0.910	0.968	1.020	1.075	1.130	1.241	1.351	1.462	1.572
1 1/8-7	—	—	—	—	1.240	—	1.370	—	1.510	1.650	1.780	1.920	2.050
1 1/4-7	—	—	—	—	1.610	—	1.780	—	1.950	2.120	2.290	2.450	2.620
1 1/2-6	—	—	—	—	2.460	—	2.690	—	2.940	3.190	3.440	3.690	3.940

ANCHORS & FASTENERS

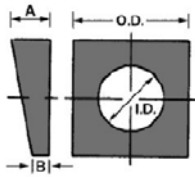
**FIG. 59**  
**DRIVE SCREW**



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain.  
**Service:** Designed for fastening attachments to wood beams.  
**Ordering:** Specify size and figure number.

SIZE A	LENGTH	WEIGHT EACH (lbs)
12	1 1/2	0.014
14	1 1/2	0.016
16	2	0.025

**FIG. 72**  
**BEVEL WASHER**



**Material:** Malleable iron.  
**Finish:** Plain or electro-galvanized.  
**Service:** Designed to compensate for taper of "S" shape beam flanges so that bearing surface of bolt or nut will seat flush.  
**Ordering:** Specify bolt size, finish and figure number.

SIZE A	OD	ID	THICKNESS		WEIGHT EACH (lbs)
			A	B	
3/8	1 1/4	7/16	11/32	5/32	0.09
1/2	1 1/4	9/16	11/32	5/32	0.09
5/8	1 1/2	11/16	13/32	5/32	0.14
3/4	1 1/2	13/16	15/32	7/32	0.16
7/8	2	15/16	9/16	7/32	0.34

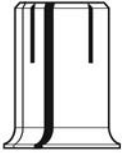
**FIG. 73**  
**DROP IN ANCHOR**



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Electro-galvanized.  
**Service:** Designed to be inserted into a pre-drilled hole and set by means of a setting tool to provide attachment point for bolts or hanger rods.  
**Ordering:** Specify bolt or rod size and figure number.

SIZE	DRILL DIAMETER	MIN DEPTH	THREAD DEPTH	WEIGHT EACH (lbs)
1/4	3/8	1 1/4	7/16	0.020
3/8	1/2	1 7/8	5/8	0.060
1/2	5/8	2 3/8	13/16	0.120
5/8	7/8	3	1 3/16	0.320
3/4	1	3 1/2	1 3/8	0.480

**FIG. 73SD**  
MINI DROP-IN ANCHORS



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Electro-galvanized.  
**Service:** Designed to be inserted into a pre-drilled hole and set by means of a setting tool to provide attachment point for bolts or hanger rods.  
**Ordering:** Specify bolt or rod size and figure number.

SIZE	DRILL DIAMETER	MIN DEPTH	THREAD DEPTH	WEIGHT EACH (lbs)
3/8	1/2	3/4	3/8	0.035
1/2	5/8	1	1/2	0.060

**FIG. 74**  
HEX LAG SCREW



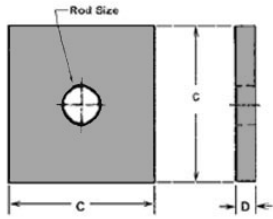
**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Electro-galvanized.  
**Service:** Designed for fastening devices to wood.  
**Ordering:** Specify fastener diameter, length (excluding head), and figure number.

SIZE DIA	WEIGHT EACH (lbs)								
	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	6
1/4-20	0.02	0.03	0.03	0.04	0.04	0.05	0.06	0.06	0.07
3/8-16	0.06	0.07	0.08	0.09	0.10	0.12	0.13	0.14	0.17
1/2-13	—	0.14	0.16	0.19	0.20	0.23	0.25	0.27	0.31
5/8-11	—	0.23	0.27	0.31	0.34	0.38	0.41	0.45	0.52
3/4-10	1	—	—	—	—	0.58	0.63	0.68	0.78

**FIG. 75**  
**STEEL WASHER PLATE**



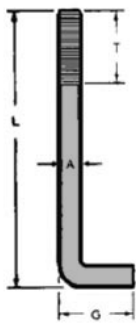
Manufactured  
in the USA



- Material:** Carbon steel, also available in 304 and 316 stainless steel.
- Finish:** Plain, electro-galvanized.
- Service:** Designed as a heavy duty washer to suspend hanger rods.
- Ordering:** Specify rod size, thickness, length and width, and figure number.
- Notes:** Other sizes and dimensions available on request.

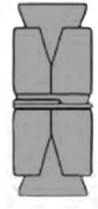
PLATE SIZE D x C x C	WEIGHT EACH (lbs) LENGTH					
	3/8	1/2	5/8	3/4	7/8	1
1/4 x 2 x 2	0.26	0.26	—	—		
1/4 x 3 x 3	0.64	0.64	0.64	0.64	0.63	0.63
1/4 x 4 x 4	1.15	1.15	1.15	1.10	1.10	1.06
3/8 x 2 x 2	1.72	1.72	1.72	1.71	1.70	1.70

**FIG. 77**  
**ANCHOR BOLT**



- Material:** Carbon steel, also available in 304 and 316 stainless steel.
- Finish:** Plain, Electro-galvanized or painted.
- Service:** Designed to be embedded in concrete to provide a means to fasten devices to concrete surfaces.
- Ordering:** Specify rod size (A): 3/8", 1/2", 5/8" or 3/4", length (L): 8", 10", 12" or 14", thread length (T), figure number and finish.
- Notes:** "G" dimension is 2 inches unless specified otherwise. Left hand thread can be furnished.

**FIG. 79**  
**DOUBLE EXPANSION SHIELDS**

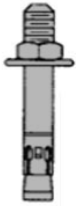


**Material:** Carbon steel.  
**Finish:** Electro-galvanized.  
**Service:** Can be used for fastening into rock, concrete, brick etc. Eliminates high stress points detrimental in fastening into materials of medium hardness, expands fully and has high gripping power. Ideal for shear loads or where bolt is subject to side pressure or vibration. Does not fracture, and permits fastening at any length.  
**Ordering:** Specify bolt or rod size and figure number.

CAT. NO.	INTERNAL DIAMETER	HOLE SIZE	ANCHOR LENGTH	3000 PSI		BOX/CTN. QUANTITY	WEIGHT PER 100 (lbs)
				TENSILE STRENGTH	SHEAR STRENGTH		
NFC 4015	1/4	1/2	1	1,850 LBS	2,780 LBS	100/1000	4.0
NFC 4020	5/16	5/8	1 1/4	2,000 LBS	3,600 LBS	50/500	12.0
NFC 4025	3/8	3/4	1 1/2	3,900 LBS	4,485 LBS	50/500	14.0
NFC 4030	1/2	7/8	2	4,600 LBS	9,300 LBS	25/250	18.0
NFC 4035	5/8	1	2 1/4	5,950 LBS	13,250 LBS	25/125	25.0
NFC 4040	3/4	1 1/4	2 7/8	9,350 LBS	16,200 LBS	10/100	54.0



**FIG. 80  
WEDGE ANCHOR**



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Electro-galvanized.  
**Service:** Designed to be driven into a pre-drilled hole. Tightening nut sets anchor.  
**Ordering:** Specify rod size and length.

SIZE	MIN DEPTH	THREAD LENGTH	WEIGHT EACH (lbs)
1/4 x 1 3/4	1 1/8	3/4	0.032
1/4 x 2 1/4		7/8	0.037
1/4 x 3			0.52
3/8 x 2 1/4	1 3/4	1 1/8	0.87
3/8 x 2 3/4			0.105
3/8 x 3			0.110
3/8 x 3 1/2			0.125
3/8 x 3 3/4			0.130
3/8 x 5			0.172
1/2 x 2 3/4	2 1/4	1 1/4	0.180
1/2 x 3 3/4			0.240
1/2 x 4 1/2			0.300
1/2 x 5 1/2			0.340
1/2 x 7			0.440
5/8 x 3 1/2	2 7/8	1 5/8	0.400
5/8 x 4 1/2			0.540
5/8 x 5			0.570
5/8 x 6			0.640

**Larger sizes available. Drill size is anchor size.**

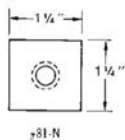
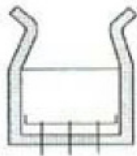
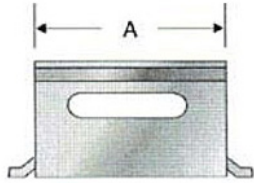
ANCHORS & FASTENERS



Manufactured in the USA

FIG. 81  
CONCRETE INSERT

FIG. 81N  
CONCRETE INSERT NUT



**Material:** Carbon steel.  
**Finish:** Plain, electro-galvanized or painted.  
**Service:** Heavy gauge insert box is nailed to concrete form. When concrete has set, knock out plug can be removed and insert nut installed. Side openings accommodate up to 1/2" reinforcing rods.  
**Approvals:** Complies with Federal Specification WW-H-171-E (Type# 19), A-A-1192A (Type# 18), and Manufacturers' Standardization Society MSS SP-58 (Type# 18) and SP-69 (Type# 18).  
**Ordering:** Specify figure number and finish. For insert nuts specify figure number, finish and rod size.

SIZE A	WEIGHT EACH (lbs)		MAX REC LOAD (lbs)
	INSERT (FIG# 81)	NUT (FIG# 81N)	
3/8-16	0.61	0.12	610
1/2-13			800
5/8-11		0.10	800
3/4-10			800

ANCHORS & FASTENERS

FIG. 83  
SPRING WING TOGGLE AND BOLT



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Electro-galvanized.  
**Service:** Designed as a fastener for hollow walls.  
**Ordering:** Specify size and figure number.

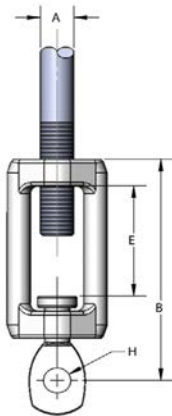
SIZE	WEIGHT EACH (lbs)
1/4-3	0.06
3/8-4	0.18

**FIG. 84**  
SPRING WING TOGGLE HEAD ONLY



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Electro-galvanized.  
**Service:** Designed as a heavy duty washer to suspend hanger rods.  
**Ordering:** Designed to be used with threaded rod in hollow walls.  
**Notes:** Specify size ( $1/4"$  or  $3/8"$ ) and figure number.

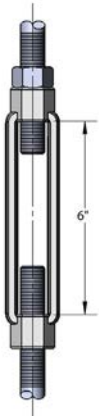
**FIG. 114**  
TURNBUCKLE ADJUSTER



**Material:** Malleable iron.  
**Finish:** Plain, copper plated.  
**Service:** Designed to provide vertical rod adjustment with split ring hangers.  
**Approvals:** Complies with Federal Specification WW-H-171-E (Type# 15), A-A-1192 A (Type# 15) and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 15).  
**Ordering:** Specify rod size and figure number.  
**Notes:** Available domestic

SIZE A	PIPE SIZE	B	E	H	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
$3/8-16$	$1/2$ to 2	4.300	2.000	0.410	0.30	610
$1/2-13$	$2 1/2$ to $3 1/2$	4.300	2.000	0.410	0.28	610

**FIG. 320  
(DOMESTIC) & 320I TURNBUCKLE**



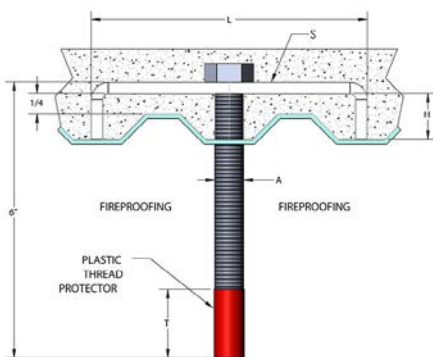
**Material:** Forged steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized, hot-dip galvanized.  
**Service:** Hanger rod connector, tapped right hand x left hand thread to provide up to 6 inches of adjustment. Normally tapped for UNC-2A thread (standard).  
**Approvals:** Complies with Federal Specification WW-H-171-E (Type# 13), A-A-1192A (Type# 13) and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 13).  
**Ordering:** Specify size, figure number and finish.  
**Notes:** When figure 320I is supplied hot-dip galvanized, it is not tapped oversize.



Manufactured in the USA  
Excluding 320I

SIZE A	WGT EACH (lbs)	MAX REC LOAD (lbs)	
		650°F	700°F
3/8-16	0.42	610	540
1/2-13	0.65	1130	1010
5/8-11	0.98	1810	1610
3/4-10	1.50	2710	2420
7/8-11	1.90	3770	3360
1-8	2.60	4960	4420
1 1/8-7	4.20	6230	5560
1 1/4-7	4.50	8000	7140
1 1/2-6	6.40	11630	10370

**FIG. 685  
METAL DECK ANCHOR BOLT**



**Material:** Carbon steel.  
**Finish:** Plain, electro-galvanized, or painted.  
**Service:** Designed to be used on metal deck concrete forms to provide attachment points for hanger rods. Furnished with "SEEL-PEEL" plastic thread protection.  
**Ordering:** Specify rod size, figure number and finish. Also specify dimensions L and H.



Manufactured in the USA

SIZE NO.	A	H	STOCK SIZE "S"	T	L	WGT EACH (lbs)	MAX REC LOAD (lbs)
1	3/8	SPECIFY	1 1/4 x 1/4	1	SPECIFY	0.80	610
2	1/2	SPECIFY	1 1/2 x 1/4	1 1/4	SPECIFY	0.99	1130
3	5/8	SPECIFY	1 1/2 x 1/4	1 1/2	SPECIFY	1.60	1810
4	3/4	SPECIFY	1 1/2 x 1/4	1 3/4	SPECIFY	2.25	2710
5	7/8	SPECIFY	2 x 1/4	2	SPECIFY	3.10	3770
6	1	SPECIFY	2 x 1/4	2 1/4	SPECIFY	3.59	4960

**FIG. EZ18  
EZ ANCHOR KIT**



Kit Contains: (50) EZ Anchors  
(50) 8x1" Combo Pan Sheet Metal Screws

**FIG. PAK10  
10-12 PLASTIC ANCHOR KIT**



Kit Contains: (100) 10-12 Conical Plastic Anchors  
(100) #10x1" Combo Pan Sheet Metal Screws  
(1) 1/4" Carbide Bit in a Plastic Kit Box

Hole Size	Weight (lbs) per Kit
1/4"	1.25

**FIG. PAK14  
14-16 PLASTIC ANCHOR KIT**

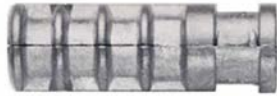


Kit Contains: (50) 14-16 Conical Plastic Anchors  
(50) #14x1-1/4" Combo Pan Sheet Metal Screws  
(1) 5/16" Carbide Bit in a Plastic Kit Box

Hole Size	Weight (lbs) per Kit
5/16"	1.15

ANCHORS & FASTENERS

**FIG. LSA516  
LAG SHIELD (SHORT OR LONG)**



Material: Zamac Alloy

ITEM NAME	ANCHOR SIZE	Anchor Length	HOLE SIZE
1/4" Short Lag Shield	1/4"	1"	1/2"
1/4" Long Lag Shield	1/4"	1-1/2"	1/2"
5/16" Short Lag Shield	5/16"	1-1/4"	1/2"
5/16" Long Lag Shield	5/16"	1-3/4"	1/2"
3/8" Short Lag Shield	3/8"	1-3/4"	5/8"
3/8" Long Lag Shield	3/8"	2-1/2"	5/8"
1/2" Short Lag Shield	1/2"	2"	3/4"
1/2" Long Lag Shield	1/2"	3"	3/4"
5/8" Short Lag Shield	5/8"	2"	7/8"
5/8" Long Lag Shield	5/8"	3-1/2"	7/8"
3/4" Short Lag Shield	3/4"	2"	1"
3/4" Long Lag Shield	3/4"	3-1/2"	1"

ANCHORS & FASTENERS

**FIG. BI  
BANG-IT CONCRETE INSERT**

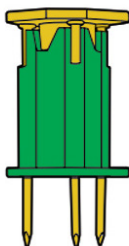


**Service:** Designed for installation in and through composite steel deck used to support newly poured concrete floors or roof slabs.

**Approvals:** Complies with Underwriters Laboratories (UL Listed) Also complies with FM Approvals (Factory Mutual) International Code Council, Evaluation Service (ICC-ES), ESR-3657 for concrete. Approved for seismic and wind loading (all diameters) Tested in accordance with ASTM E 488 and ICC-ES AC446 for use in concrete under the design provisions of ACI 318

SIZE	COLOR CODE	PRE-DRILLED HOLE	STANDARD BOX
1/4"	BROWN	13/16" or 7/8"	200
3/8"	GREEN	13/16" or 7/8"	200
1/2"	YELLOW	13/16" or 7/8"	200
5/8"	RED	1-3/16" or 1-1/4"	150
3/4"	PURPLE	1-3/16" or 1-1/4"	150

**FIG. WK  
WOOD KNOCKER INSERT**



**Service:** Installed onto wooden forms used to support newly poured concrete floor slabs, roof slabs or walls.

**Approvals:** Complies with Underwriters Laboratories (UL Listed) Also complies with FM Approvals (Factory Mutual) International Code Council, Evaluation Service (ICC-ES), ESR-3657 for concrete. Approved for seismic and wind loading (all diameters) Tested in accordance with ASTM E 488 and ICC-ES AC446 for use in concrete under the design provisions of ACI 318

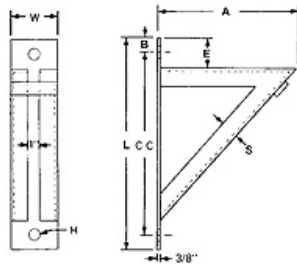
SIZE	COLOR CODE	STANDARD BOX
1/4"	BROWN	100
3/8"	GREEN	100
1/2"	YELLOW	100
5/8"	RED	50
3/4"	PURPLE	50



**FIG. 800**  
Light Welded Bracket



Manufactured in the USA



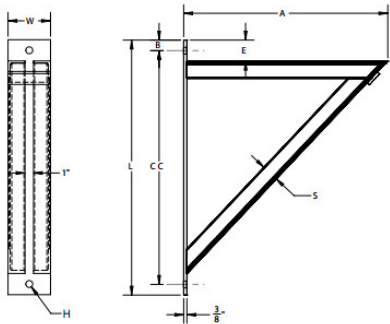
**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized, hot-dip galvanized or painted.  
**Service:** Recommended for the support of pipe loads up to 750 lbs. Constructed of facing angle iron with 1" space. The bracket provides maximum lateral adjustment when carrying or suspending pipe.  
**Approvals:** Complies with Federal Specification WW-H-171-E (Type# 33), and Manufacturers' Standardization Society MSS SP 58 (Type#31).  
**Ordering:** Specify size number, figure number and finish.  
**Notes:** Stainless steel dimensions may change due to availability of stainless steel angle.

Size No.	C-C	A	E	H	B	L	Angle Size S	W	Wgt Each (lbs)
0	11 1/2	9	2	13/16	3/4	13	1 x 1 x 3/16	3	6.900
1	15 1/2	13	2	13/16	3/4	17	1 x 1 x 3/16	3	10.11
2	21 1/2	19	2	13/16	3/4	23	1 x 1 x 3/16	3	13.70

BRACKETS



**FIG. 801**  
**MEDIUM WELDED BRACKET**



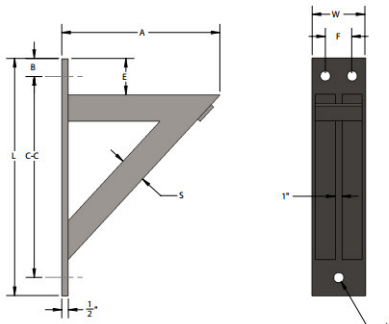
Manufactured in the USA

**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized, hot-dip galvanized or painted.  
**Service:** Recommended for the support of pipe loads up to 1500 lbs. Constructed of facing angle iron with 1" space. The bracket provides maximum lateral adjustment when carrying or suspending pipe.  
**Approvals:** Complies with Federal Specification WW-H-171-E (Type# 33), A-A-1192A (Type# 32) and Manufacturers' Standardization Society MSS SP 58 and SP 69 (Type#32).  
**Ordering:** Specify size number, figure number and finish.

SIZE NO.	C-C	A	E	H	B	L	ANGLE SIZE S	W	WGT EACH (lbs)
1	15 1/2	12	2 1/2	13/16	1 1/4	18	1 1/2 x 1 1/2 x 3/16	4	16.10
2	21 1/2	18	2 1/2	13/16	1 1/4	24	1 3/4 x 1 3/4 x 3/16	4 1/2	26.00
3	27 1/2	24	2 1/2	13/16	1 1/4	30	2 x 2 x 1/4	5	45.00

**FIG. 802**  
**HEAVY WELDED BRACKET**

BRACKETS

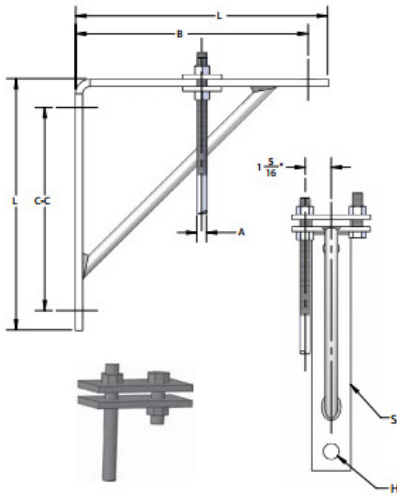


Manufactured in the USA

**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized, hot-dip galvanized or painted.  
**Service:** Recommended for the support of pipe loads up to 3000 lbs. Constructed of facing angle iron with 1" space. The bracket provides maximum lateral adjustment when carrying or suspending pipe.  
**Approvals:** Complies with Federal Specification WW-H-171-E (Type# 34), A-A-1192A (Type# 33) and Manufacturers' Standardization Society MSS SP 58 and SP 69 (Type# 33).  
**Ordering:** Specify size number, figure number and finish.

SIZE NO.	C-C	A	F	E	H	B	L	ANGLE SIZE S	W	WGT EACH (lbs)
1	15 1/4	12	ONE HOLE	2 3/4	13/16	1 1/2	18	2 x 1 1/2 x 1/4	4	25.00
2	21 3/8	18	2 3/4	2 3/4	15/16	1 3/8	24	2 x 2 x 1/4	5	38.00
3	27 1/2	24	2 1/2	2 3/4	1 1/16	1 1/4	30	2 1/2 x 2 x 5/16	5	69.00
4	33 1/4	30	2 1/2	3	1 1/16	1 1/2	36	2 1/2 x 2 x 5/16	5	82.10
5	39	36	3 1/2	3	1 1/16	1 1/2	42	3 1/2 x 2 1/2 x 3/8	6	130.00
6	46	42	3 1/2	3 1/2	1 1/16	2	50	3 1/2 x 2 1/2 x 3/8	6	155.00

**FIG. 820 & 820C  
LIGHT WELDED STEEL BRACKET & CLIP**



Manufactured in the USA

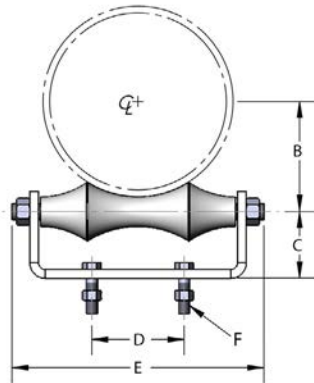
**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized, hot-dip galvanized or painted.  
**Service:** Recommended for the suspension of hanger rod for support of light loads up to 750 lbs. Rod can be suspended at any point along the length of the bracket, thus providing horizontal adjustment, using figure #820C clip which consists of two steel plates joined by a bolt and nut in one end.  
**Approvals:** Fig. 820 complies with Federal Specification WW-H-171-E (Type# 32), A-A-1192A (Type# 31) and Manufacturers' Standardization Society MSS SP 58 and SP 69 (Type# 31).  
**Ordering:** Specify size number, figure number and finish.  
**Notes:** Piping suspended from FIG. 820C clip shall not exceed 3 1/2" in diameter. Side clip (FIG. 820C) to be ordered separately.

FIG. 820						
BRACKET SIZE	B	C-C	HOLES H	L	STOCK SIZE S	WGT EACH (lbs)
1	8	6 1/2	13/16	9	2 X 3/8	4.20
2	12	10 1/2	13/16	13		6.50
3	18	16 1/2	13/16	19		9.40

FIG. 820C			
CLIP NUMBER	PIPE SIZE	ROD SIZE A	WGT EACH (lbs)
1	3/4 to 2	3/8	0.80
2	2 1/2 to 3 1/2	1/2	1.24

BRACKETS

**FIG. 275**  
**ROLLER CHAIR**



**Material:** Carbon steel chair and axle with cast iron roller. Carbon steel chain and Axle also available in stainless steel.

**Finish:** Plain, electro-galvanized or painted.

**Service:** Designed for the support of pipe where longitudinal movement may occur due to expansion and contraction, and vertical adjustment is not necessary. May be bolted or welded to supporting member.

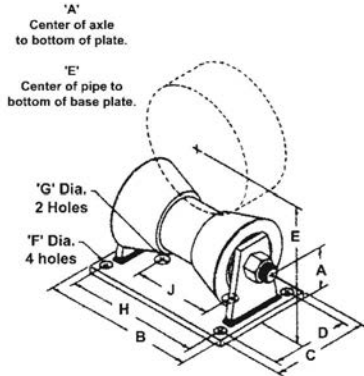
**Ordering:** Specify roller size, figure number and finish. Please remember to consider insulation thickness when sizing rollers.

**Notes:** Also available in 304 stainless steel (275SS).  
**Available domestic**

HANGER SIZE	MATERIAL SIZE	AXLE SIZE	B	C	D	E	F	WGT EACH (lbs)	MAX REC LOAD (lbs)
2	4ga x 1.25	3/8	19/16	1 3/8	1 1/4	4 1/4	3/8	0.94	390
2 1/2	4ga x 1.25	1/2	1 7/8	1 5/8	1 1/4	4 7/8	3/8	1.18	390
3	4ga x 1.25	1/2	2 1/8	1 3/4	2	5 11/32	3/8	1.32	390
3 1/2	3/8 x 1.500	1/2	2 1/2	2	2 1/2	6 11/32	3/8	2.58	390
4	3/8 x 1.500	1/2	2 13/16	2 5/16	2	7 11/32	1/2	2.94	950
5	3/8 x 1.500	5/8	3 3/8	2 1/2	3	8 1/4	1/2	3.64	950
6	3/8 x 2.00	3/4	3 15/16	2 3/4	3 1/8	9 1/2	1/2	5.72	950
7	3/8 x 2.00	3/4	4 1/2	2 13/16	3 3/8	10	1/2	6.98	1350
8	3/8 x 2.00	7/8	5 1/8	3	3 3/8	12 1/4	5/8	8.16	1350
10	1/2 x 2	7/8	6 3/8	3 5/8	5	14 1/2	5/8	11.96	1730
12	1/2 x 2	7/8	7 1/2	4 1/8	6	16 1/4	5/8	15.86	2400
14	1/2 x 2.50	1 1/8	8 3/8	4 11/16	6 1/2	18	3/4	21.58	3130
16	1/2 x 3	1 1/4	9 3/8	5 3/8	8 1/4	21	3/4	34.50	3970
18	1/2 x 3	1 1/4	10 7/16	6	9 1/4	22 7/8	3/4	36.50	4200
20	1/2 x 3	1 1/4	11 5/8	6 1/2	10 1/4	25 1/4	3/4	45.00	4550
24	5/8 x 4	1 1/2	14	7 7/8	12 1/4	30	7/8	77.50	6160

**FIG. 279S**  
PIPE ROLL STAND, CARBON STEEL

**FIG. 279SS**  
PIPE ROLLER STAND, 316 STAINLESS STEEL



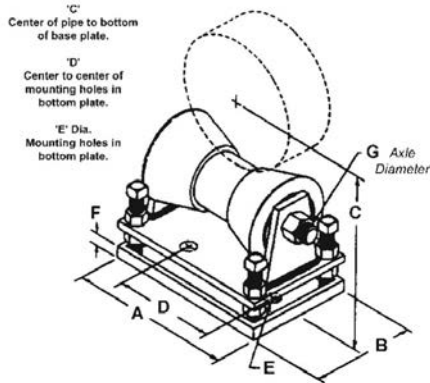
**Material:** Carbon steel chair and axle with cast iron roller.  
**Finish:** Plain, galvanized, electro-galvanized, or painted.  
**Service:** Designed for support of pipe where longitudinal movement may occur due to expansion and contraction where vertical adjustment is not necessary.  
**Approvals:** Complies with Federal Specification WW-H-171-E (Type# 45), A-A-1192A (Type# 44) and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 44).  
**Ordering:** Specify roller size, figure number and finish. Please remember to consider insulation thickness when sizing rollers.  
**Notes:** Stainless steel roller chairs are recommended for applications where protection from corrosive environments is needed.  
**Available domestic**

PIPE SIZE	A	B	C	D	E	DIA. F	DIA. G	H	J	WGT EACH (lbs)	MAX REC LOAD (lbs)
2	1 3/4	8 3/8	6	4	3 11/16	9/16	1	3 3/8	6 3/8	5.08	390
2 1/2	1 3/4	8 3/8	6	4	3 15/16	9/16	1	3 3/8	6 3/8	5.08	390
3	1 3/4	8 3/8	6	4	4 1/4	9/16	1	3 3/8	6 3/8	5.08	390
3 1/2	1 3/4	8 3/8	6	4	4 1/2	9/16	1	3 3/8	6 3/8	5.08	390
4	2	9 7/8	6	4 1/4	5	9/16	1	4 3/4	7 7/8	6.31	650
5	2	9 7/8	6	4 1/4	5 9/16	9/16	1	4 3/4	7 7/8	6.31	950
6	2	9 7/8	6	4 1/4	6 1/16	9/16	1	4 3/4	7 7/8	6.31	950
8	3 3/8	8 5/8	8	5	8 13/16	11/16	1	7	4	13.65	2100
10	3 3/8	8 5/8	8	5	9 7/8	11/16	1	7	4	13.65	2100
12	3 7/8	11	8	6	11 7/16	13/16	1	9	5 3/4	21.00	3075
14	3 7/8	11	8	6	12 1/16	13/16	1	9	5 3/4	21.00	3075
16	4 1/4	12 3/8	10	6 1/2	13 5/8	13/16	1	10 3/8	6 3/4	34.23	4980
18	4 1/4	12 3/8	10	6 1/2	14 11/16	13/16	1	10 3/8	6 3/4	34.23	4980
20	4 1/4	12 3/8	10	6 1/2	15 11/16	13/16	1	10 3/8	6 3/4	34.23	4980
24	4 3/8	13 1/2	10	6 1/2	17 11/16	13/16	1	11 1/2	7 1/2	40.00	6100
30	5 1/8	17	10	7 3/4	21 3/4	1 1/16	1	14 1/4	10	71.32	7500
36	5 3/4	20	12	9	25 3/4	1 3/8	1	17	12	147	12000
42	5 3/4	20	12	9	28 7/8	1 3/8	1	17	12	147	12000

ROLLERS

**FIG. 280S ADJUSTABLE PIPE ROLL STAND,  
CARBON STEEL**

**FIG. 280SS ADJUSTABLE PIPE ROLLER STAND,  
316 STAINLESS STEEL**



- Material:** Carbon steel chair base plate and axle with cast iron roller.
  - Finish:** Plain, galvanized or painted.
  - Service:** Designed for the support of pipe where longitudinal movement may occur due to expansion and contraction, and where vertical adjustment is necessary.
  - Approvals:** Complies with Federal Specification WW-H-171-E (Type# 47), A-A-1192A (Type# 46) and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 46).
  - Ordering:** Specify roller size, figure number and finish. Please remember to consider insulation thickness when sizing rollers.
  - Notes:** \*Stainless steel adjustable roller chair supports are recommended for applications where protection from corrosive environments is needed.
- Available domestic**

PIPE SIZE	A	B	C MIN	C MAX	D	E	F	G	WGT EACH (lbs)	MAX REC LOAD (lbs)
2	6 7/8	6	4 3/4	5 5/8	3 7/8	1	1	1/2	11.00	390
2 1/2	6 7/8	6	5	5 7/8	3 7/8	1	1	1/2	11.00	390
3	6 7/8	6	55/16	6 9/16	3 7/8	1	1	1/2	11.00	390
3 1/2	6 7/8	6	59/16	6 7/16	3 7/8	1	1	1/2	11.00	390
4	8 1/2	6	63/16	7 7/16	5 1/8	1	1	1/2	13.10	950
5	8 1/2	6	63/4	8	5 1/8	1	1	1/2	13.10	950
6	8 1/2	6	7 1/4	8 1/2	5 1/8	1	1	1/2	13.10	950
8	10 1/2	7 1/2	10 1/8	11 11/16	7 3/8	1	1	3/4	29.00	2100
10	10 1/2	7 1/2	11 3/16	12 3/4	7 3/8	1	1	3/4	29.00	2100
12	12 1/2	8 1/4	12 3/4	14 1/8	9 1/2	1	1	7/8	40.00	3075
14	12 1/2	8 1/4	13 3/8	14 3/8	9 1/2	1	1	7/8	40.00	3075
16	14 5/8	10	15 3/8	17 1/4	11 1/8	1	1	1 1/8	63.84	4980
18	14 5/8	10	16 3/8	18 1/4	11 1/8	1	1	1 1/8	63.84	4980
20	14 5/8	10	17 3/8	19 1/4	11 1/8	1	1	1 1/8	63.84	4980
24	15 3/4	10	19 1/4	21 1/4	12 1/4	1	1	1 1/4	71.00	6100
30	19 1/2	10 3/4	24 7/16	26 11/16	15 3/4	1	1 1/2	1 3/4	125.28	7500

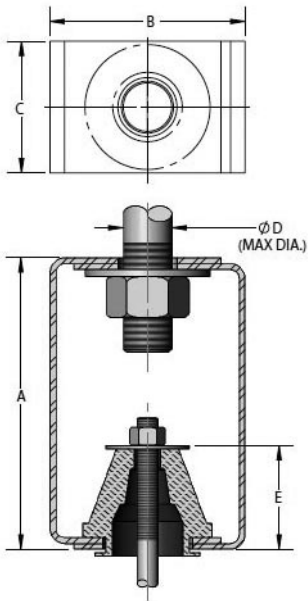
ROLLERS

**FIG. 34**  
**VIBRATION HANGER-NEOPRENE**



Manufactured  
in the USA

SPRING VIBRATION ISOLATORS



**Material:** Painted Carbon Steel Housing with Neoprene Rubber Element (34)

**Service:** Designed for effective vibration isolation for piping or suspended equipment. Typical applications include fans, air handling units, piping and suspended ceilings.

**Approvals:** There are no approval options for this product.

**Ordering:** Specify figure number, isolator size, rod size and load.

**Notes:** See hanger selection guide.

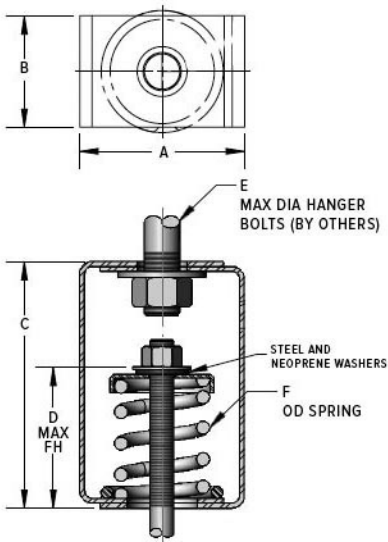
ISOLATOR SIZE	MAX REC LOAD (lbs)	DEFLECTION	DIMENSIONS				
			A	B	C	D	E
EMP - 1 - A	60	0.50	4	2-7/8	2-1/2	1/2	1-7/8
EMP - 1 - B	130	0.50	4	2-7/8	2-1/2	1/2	1-7/8
EMP - 1 - C	250	0.50	4	2-7/8	2-1/2	1/2	1-7/8
EMP - 1 - D	430	0.50	4	2-7/8	2-1/2	1/2	1-7/8
EMP - 2 - A	380	0.50	5-1/2	3-3/4	4	3/4	2-3/8
EMP - 2 - B	520	0.50	5-1/2	3-3/4	4	3/4	2-3/8
EMP - 2 - C	840	0.50	5-1/2	3-3/4	4	3/4	2-3/8
EMP - 2 - D	1070	0.50	5-1/2	3-3/4	4	3/4	2-3/8
EMP - 3 - A	750	0.50	6-1/4	4-1/4	5-3/8	1	2-3/8
EMP - 3 - B	1350	0.50	6-1/4	4-1/4	5-3/8	1	2-3/8
EMP - 3 - C	1800	0.50	6-1/4	4-1/4	5-3/8	1	2-3/8
EMP - 3 - D	3050	0.50	6-1/4	4-1/4	5-3/8	1	2-3/8



Manufactured in the USA

**FIG. 35**  
**VIBRATION SPRING-FLEX HANGER**

SPRING VIBRATION ISOLATORS



**Material:** Painted Carbon Steel Housing with Steel Spring (35)  
**Service:** Designed to isolate low frequency vibrations for piping or suspended equipment. Typical applications include fans, duct work, air handling units, piping, and suspended ceilings.  
**Approvals:** There are no approval options for this product.  
**Ordering:** Specify figure number, isolator size, rod size and load.  
**Notes:** See hanger selection guide.

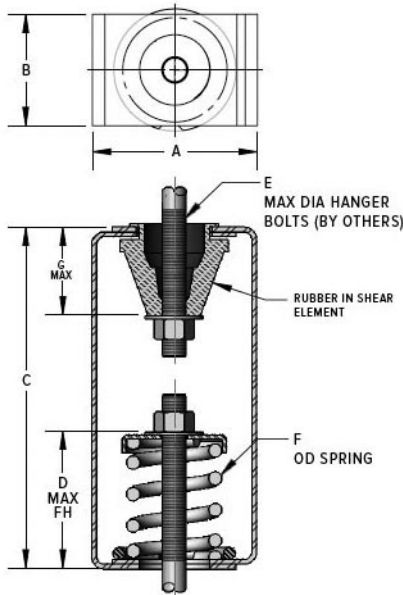
ISOLATOR SIZE	RATED LOAD LBS @ 1" DEFL	SOLID LOAD (lbs)	DIMENSIONS					
			A	B	C	D	E	F
EMP - 1 - 15	15	27	3-1/2	2-1/2	5-5/8	3-1/8	1/2	2
EMP - 1 - 25	25	39	3-1/2	2-1/2	5-5/8	3-1/8	1/2	2
EMP - 1 - 50	50	83	3-1/2	2-1/2	5-5/8	3-1/8	1/2	2
EMP - 1 - 100	100	160	3-1/2	2-1/2	5-5/8	3-1/8	1/2	2
EMP - 1 - 150	150	242	3-1/2	2-1/2	5-5/8	3-1/8	1/2	2
EMP - 1 - 200	200	293	3-1/2	2-1/2	5-5/8	3-1/8	1/2	2
EMP - 1 - 300	300	442	3-1/2	2-1/2	5-5/8	3-1/8	1/2	2
EMP - 1 - 400	400	585	3-1/2	2-1/2	5-5/8	3-1/8	1/2	2
EMP - 1 - 500	500	782	4-1/2	3-1/2	10-1/8	4-5/8	1	3-1/4
EMP - 1 - 600	600	925	4-1/2	3-1/2	10-1/8	4-5/8	1	3-1/4
EMP - 1 - 800	800	1257	4-1/2	3-1/2	10-1/8	4-5/8	1	3-1/4
EMP - 1 - 1000	1000	1565	4-1/2	3-1/2	10-1/8	4-5/8	1	3-1/4
EMP - 1 - 1200	1200	1829	4-1/2	3-1/2	10-1/8	4-5/8	1	3-1/4
EMP - 1 - 1400	1400	2131	4-1/2	3-1/2	10-1/8	4-5/8	1	3-1/4
EMP - 1 - 1600	1600	2419	4-1/2	3-1/2	10-1/8	4-5/8	1	3-1/4
EMP - 1 - 1800	1800	2662	4-1/2	3-1/2	10-1/8	4-5/8	1	3-1/4





Manufactured in the USA

**FIG. 36**  
VIBRATION SPRING-FLEX AND NEOPRENE HANGER



**Material:** Painted Carbon Steel Housing and spring with neoprene rubber element (36)

**Service:** Designed to isolate both noise and vibration for piping or suspended equipment.

**Approvals:** There are no approval options for this product.

**Ordering:** Specify figure number, isolator size, rod size and load.

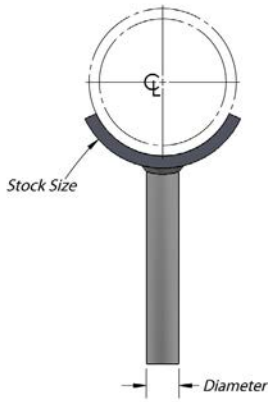
**Notes:** See hanger selection guide.

SPRING VIBRATION ISOLATORS

ISOLATOR SIZE	RATED LOAD LBS @ 1" DEFL	SOLID LOAD (lbs)	DIMENSIONS						
			A	B	C	D	E	F	G
EMP - 1 - 15	15	27	3-1/2	2-1/2	7-1/8	3	1/2	2	1-7/8
EMP - 1 - 25	25	39	3-1/2	2-1/2	7-1/8	3	1/2	2	1-7/8
EMP - 1 - 50	50	83	3-1/2	2-1/2	7-1/8	3	1/2	2	1-7/8
EMP - 1 - 100	100	160	3-1/2	2-1/2	7-1/8	3	1/2	2	1-7/8
EMP - 1 - 150	150	242	3-1/2	2-1/2	7-1/8	3	1/2	2	1-7/8
EMP - 1 - 200	200	293	3-1/2	2-1/2	7-1/8	3	1/2	2	1-7/8
EMP - 1 - 300	300	442	3-1/2	2-1/2	7-1/8	3	1/2	2	1-7/8
EMP - 1 - 400	400	585	3-1/2	2-1/2	7-1/8	3	1/2	2	21-7/8
EMP - 1 - 500	500	782	4-1/2	4-7/8	11	4-3/8	3-1/4	3-1/4	2-3/8
EMP - 1 - 600	600	925	4-1/2	4-7/8	11	4-3/8	3-1/4	3-1/4	2-3/8
EMP - 1 - 800	800	1257	4-1/2	4-7/8	11	4-3/8	3-1/4	3-1/4	2-3/8
EMP - 1 - 1000	1000	1565	4-1/2	4-7/8	11	4-3/8	3-1/4	3-1/4	2-3/8
EMP - 1 - 1200	1200	1829	4-1/2	4-7/8	11	4-3/8	1	3-1/4	2-3/8
EMP - 1 - 1400	1400	2131	4-1/2	4-7/8	11	4-3/8	1	3-1/4	2-3/8
EMP - 1 - 1600	1600	2419	4-1/2	4-7/8	11	4-3/8	1	3-1/4	2-3/8
EMP - 1 - 1800	1800	2662	4-1/2	4-7/8	11	4-3/8	1	3-1/4	2-3/8

**FIG. 420 PIPE SADDLE SUPPORT**

PIPE STANTIONS

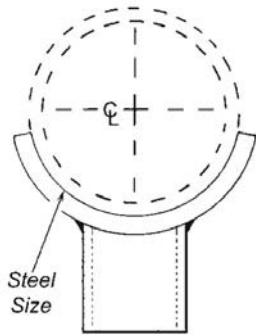


Manufactured in the USA

**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized or painted.  
**Service:** Designed to be used in conjunction with a base stand to support pipe running close to the floor.  
**Approvals:** Complies with Federal Specification WW-H-171-E (Type# 37), A-A-1192A and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 36).  
**Ordering:** Specify size, figure number and finish. Base stand ordered separately (requires accurate center line of pipe to floor dimension). Base stand can be ordered separately.

PIPE SIZE	STEEL SIZE	DIAMETER AND LENGTH OF STEM	WGT EACH (lbs)
2	1 1/2 x 3/8	7/8 x 6	1.57
3			1.85
4	2 x 3/8	1 x 6	2.70
5			3.14
6	2 x 1/2	1 1/4 x 6	4.90
8			5.75
10	3 x 1/2	1 1/2 x 6	9.88
12			11.40

**FIG. 421**  
ADJUSTABLE PIPE SADDLE SUPPORT  
WITH THREADED COUPLING



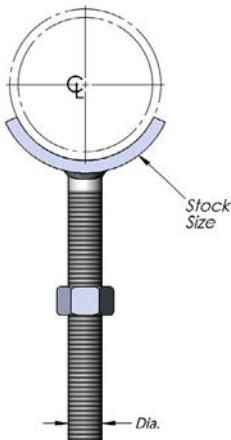
Manufactured  
in the USA

**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized or painted.  
**Service:** Designed to be used in conjunction with a base stand to support pipe running close to the floor.  
**Ordering:** Specify pipe size, figure number and finish. Base stand can be ordered separately (requires accurate center line of pipe to floor dimension).

PIPE SIZE	STEEL SIZE	PIPE SIZE, THREADED COUPLING	WGT EACH (lbs)
2	$\frac{3}{8} \times 2$	1 1/4	1.35
3	$\frac{3}{8} \times 2 \frac{1}{2}$	1 1/2	2.45
4	$\frac{3}{8} \times 3$	2	3.63
5			4.30
6	$\frac{1}{2} \times 3 \frac{1}{2}$	2 1/2	7.03
8			8.53
10	$\frac{1}{2} \times 4$	3	13.04
12			15.07

PIPE STATIONS

**FIG. 422**  
ADJUSTABLE PIPE SUPPORT



Manufactured  
in the USA

**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized or painted.  
**Service:** Designed to be used in conjunction with a base stand to support pipe running close to the floor. Threaded stud and nut provide adjustability.

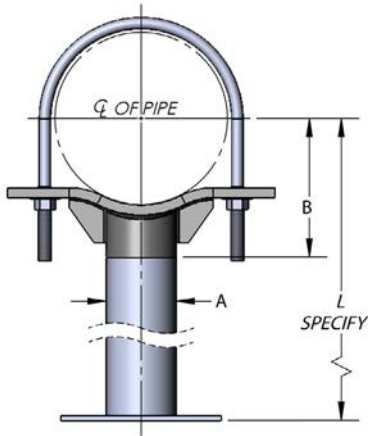
PIPE SIZE	STEEL SIZE	DIAMETER AND LENGTH OF STEM	WGT EACH (lbs)
2	$1 \frac{1}{2} \times \frac{3}{8}$	$\frac{7}{8} \times 8$	1.92
3			2.20
4	$2 \times \frac{3}{8}$	1 x 8	3.23
5			3.67
6	$2 \times \frac{1}{2}$	1 1/4 x 8	5.92
8			6.77
10	$3 \times \frac{1}{2}$	1 1/2 x 8	11.56
12			13.08



Manufactured in the USA

**FIG. 425**  
**PIPE SADDLE SUPPORT WITH U-BOLT**

PIPE STANTIONS



**Material:** Carbon steel, saddle, support and u-bolt. Also available in 304 and 316 stainless steel.

**Finish:** Plain, electro-galvanized or painted.

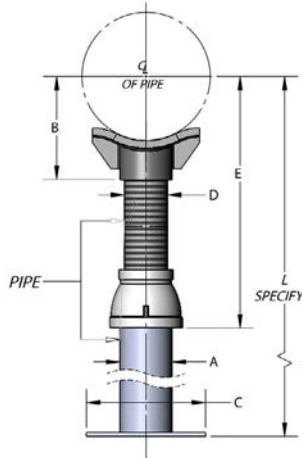
**Service:** Designed to be used in conjunction with a base stand to support pipe running close to the floor. U-bolt secures pipe to saddle.

**Approvals:** Complies with Federal Specification WW-H-171-E (Type# 37), A-A-1192A (Type# 36) and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 36).

**Ordering:** Specify size, figure number and finish. Base stand ordered separately. Requires accurate center line of pipe to floor dimension ("L").

PIPE SIZE	PIPE SIZE A	B	WGT EACH (lbs)
4	3	4 <sup>3</sup> / <sub>16</sub>	10.75
5		4 <sup>13</sup> / <sub>16</sub>	12.10
6		5 <sup>7</sup> / <sub>16</sub>	12.70
8		6 <sup>15</sup> / <sub>16</sub>	21.30
10		8 <sup>7</sup> / <sub>16</sub>	25.70
12		9 <sup>15</sup> / <sub>16</sub>	31.20
14	4	10 <sup>15</sup> / <sub>16</sub>	50.00
16		12 <sup>3</sup> / <sub>8</sub>	57.00
18		13 <sup>7</sup> / <sub>8</sub>	64.00
20	6	15 <sup>3</sup> / <sub>8</sub>	113.50
24		17 <sup>15</sup> / <sub>16</sub>	137.00
30		21 <sup>15</sup> / <sub>16</sub>	174.00
36		24 <sup>1</sup> / <sub>2</sub>	268.00

**FIG. 426**  
**ADJUSTABLE PIPE SADDLE SUPPORT**



**Material:** Carbon steel saddle and nipple with special cast iron reducing coupling, also available in 304 and 316 stainless steel.

**Finish:** Plain, electro-galvanized or painted.

**Service:** Designed to be used in conjunction with a base stand to support horizontal pipe. Straight cut pipe thread on nipple provides adjustability.

**Approvals:** Complies with Federal Specification WW-H-171-E (Type# 39), A-A-1192A (Type# 38) and Manufacturers' Standardization Society MSS SP 58 and SP 69 (Type#38).

**Ordering:** Specify size, figure number and finish. Base stand ordered separately. Requires accurate center line of pipe to floor dimension ("L") .

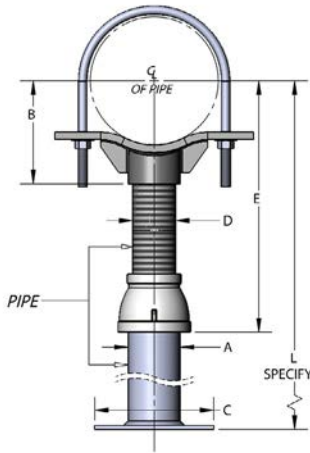
**Notes:** Adjustable pipe saddle supports are available in stainless steel.

PIPE STATIONS

PIPE SIZE	PIPE SIZE A	B	C	D	DIMENSION E		WGT EACH (lbs)	
					MIN	MAX	COMPLETE	SADDLE ONLY
2 1/2	2 1/2	3 7/16	8	1 1/2	8	13	9.00	4.80
3		3 11/16			8 1/4	13 1/4	9.20	5.00
3 1/2		3 15/16			8 1/2	13 1/2	9.40	5.20
4	3	4 3/16	10	2 1/2	9 1/4	14	15.00	7.60
5		4 13/16			10	14 3/4	16.65	9.25
6		5 7/16			10 1/2	15 1/4	17.64	10.25
8		6 15/16			11 3/4	16 1/2	20.20	12.80
10		8 7/16			13 1/2	18 1/4	25.15	17.75
12	4	9 15/16	12	3	15	19 3/4	29.00	21.60
14		10 15/16			16 1/4	20 3/4	49.20	38.00
16		12 3/8			17 3/4	22 1/4	53.20	42.00
18		13 7/8			19 1/2	24	70.80	51.00
20		15 3/8			21	25 1/2	104.80	85.00
24	6	17 15/16	12	4	23 3/4	28 1/4	130.00	110.00
30		2 15/16			27	31 1/2	170.00	150.00
32		22 1/2			28 1/4	32 3/4	181.00	161.00
36		24 1/2			30 1/4	34 3/4	249.00	229.00

**FIG. 427**  
**ADJUSTABLE PIPE SADDLE SUPPORT WITH U-BOLT**

PIPE STANTIONS



**Material:** Carbon steel saddle, nipple and u-bolt with special cast iron reducing coupling, also available in 304 and 316 stainless steel.

**Finish:** Plain, galvanized or painted.

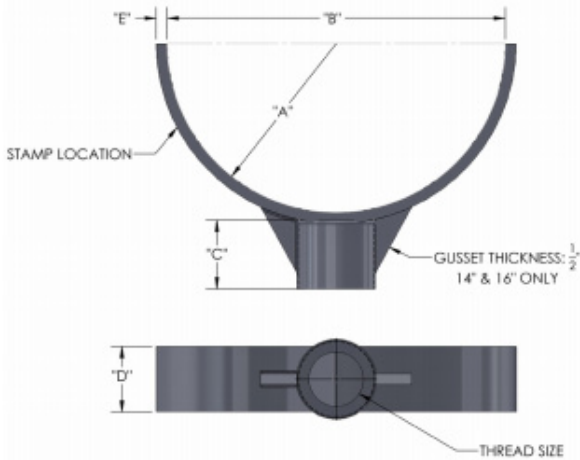
**Service:** Designed to be used in conjunction with a base stand to support horizontal pipe. Straight cut pipe thread on nipple provides adjustability, u-bolt secures pipe to saddle.

**Ordering:** Specify size, figure number and finish. Base stand ordered separately. Requires accurate center line of pipe to floor dimension ("L").

**Notes:** Adjustable pipe saddle supports with u-bolts are available in stainless steel.

PIPE SIZE	PIPE SIZE A	B	C	D	DIMENSION E		WGT EACH	
					MIN	MAX	COMPLETE	SADDLE ONLY
2 1/2	2 1/2	3 7/16	8	1 1/2	8	13	9.00	4.80
3	2 1/2	3 11/16	8	1 1/2	8 1/4	13 1/4	9.20	5.00
3 1/2	2 1/2	3 15/16	8	1 1/2	8 1/2	13 1/2	9.40	5.20
4	3	4 3/16	10	2 1/2	9 1/4	14	15.00	7.60
5	3	4 13/16	10	2 1/2	10	14 3/4	16.65	9.25
6	3	5 7/16	10	2 1/2	10 1/2	15 1/4	17.64	10.25
8	3	6 15/16	10	2 1/2	11 3/4	16 1/2	20.20	12.80
10	3	8 7/16	10	2 1/2	13 1/2	18 1/4	25.15	17.75
12	3	9 15/16	10	2 1/2	15	19 3/4	29.00	21.60
14	4	10 15/16	10	3	16 1/4	20 3/4	49.20	38.00
16	4	12 3/8	10	3	17 3/4	22 1/4	53.20	42.00
18	6	13 7/8	12	4	19 1/2	24	70.80	51.00
20	6	15 3/8	12	4	21	25 1/2	104.80	85.00
24	6	17 15/16	12	4	23 3/4	28 1/4	130.00	110.00
30	6	21 5/16	12	4	27	31 1/2	170.00	150.00
32	6	22 1/2	12	4	28 1/4	32 3/4	181.00	161.00
36	6	24 1/2	12	4	30 1/4	34 3/4	249.00	229.00

**FIG. 428KT**  
**ADJUSTABLE PIPE SADDLE SUPPORT, KIT**



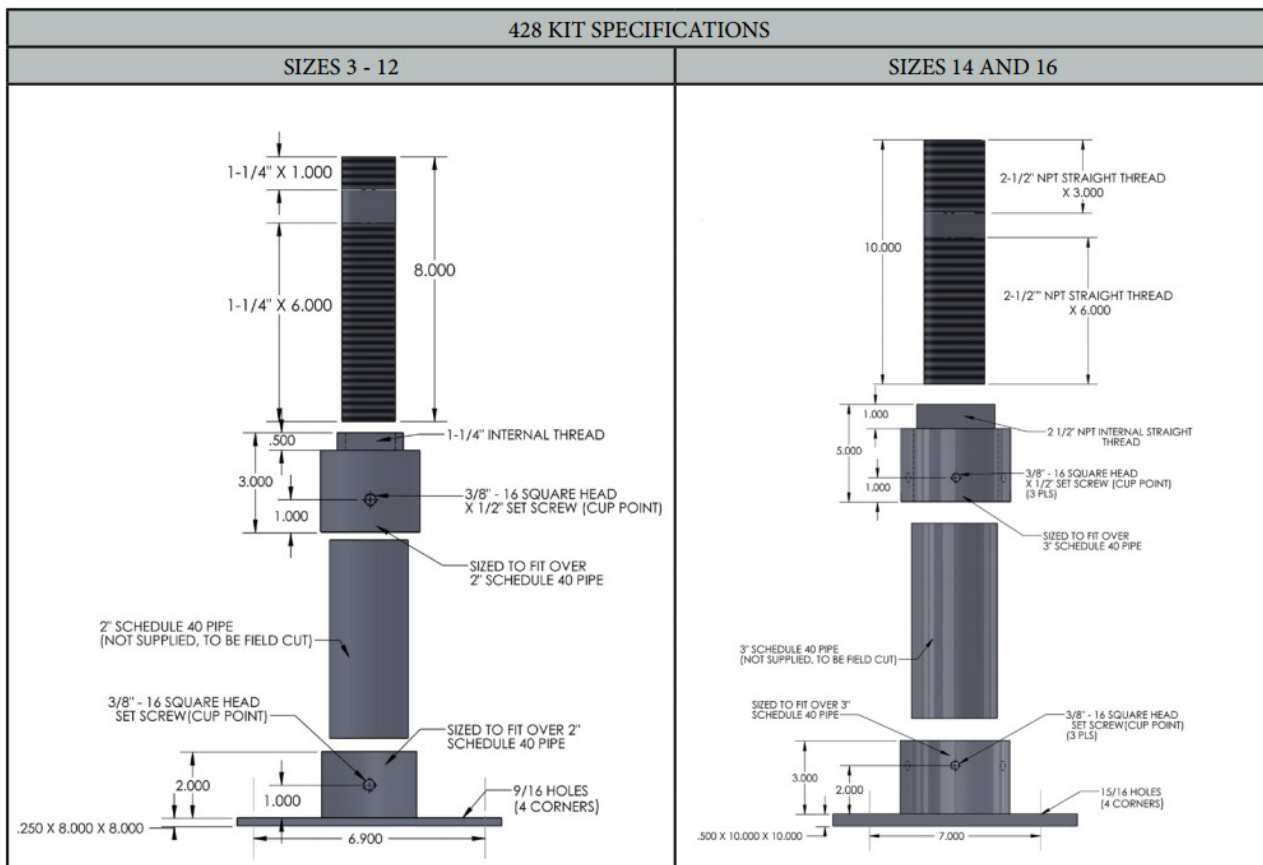
- Material:** Ductile iron saddle with carbon steel coupling, carbon steel nipple and base plate, cast steel reducing coupling, stainless steel set screws.
- Finish:** All items listed above are hot-dip galvanized except for stainless steel set screws
- Service:** Designed to support pipe horizontally. Straight cut pipe thread on nipple provides up to 4 - 1/2 inches of vertical adjustability.
- Ordering:** Specify pipe size and figure number.
- Notes:** Saddles accommodate ductile iron pipe and IPS. Support requires 2" schedule 40 extension pipe to be cut in the field.

PIPE STATIONS

\*NOTE: Min. Distance of Floor to B.O.P. = 9.125"

Also available in 316 stainless steel.  
Factory System Tested to 11,000 Lbs  
(Support Must Be Properly Aligned to Piping System)

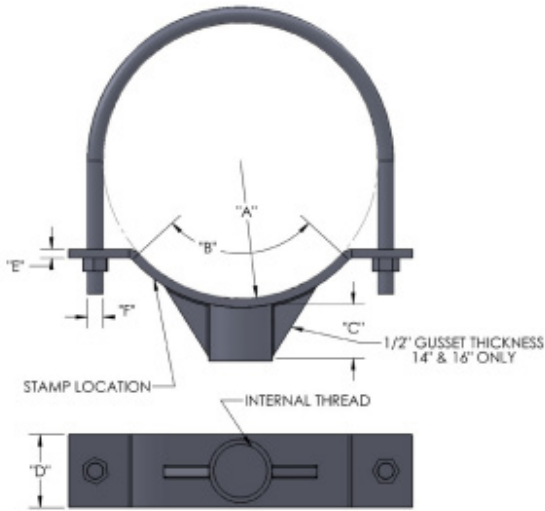
Size	A	B	C	D	E	Thread Size
2	1.750	3.500	1.500	2.000	0.375	1-1/4-7
3	2.030	4.060	1.500	2.000	0.375	1-1/4-7
4	2.450	4.900	1.500	2.000	0.375	1-1/4-7
6	3.500	7.000	1.500	2.000	0.500	1-1/4-7
8	4.580	9.160	1.500	2.000	0.500	1-1/4-7
10	5.600	11.200	1.500	2.000	0.500	1-1/4-7
12	6.650	13.300	1.500	2.000	0.500	1-1/4-7
14	7.750	15.500	3.000	3.000	0.500	2-1/2-4
16	8.800	17.600	3.000	3.000	0.500	2-1/2-4





**FIG. 429KT**  
**ADJUSTABLE PIPE SADDLE SUPPORT, with U-BOLT, KIT**

PIPE STANTIONS



- Material:** Ductile iron saddle with carbon steel coupling, carbon steel nipple and base plate, carbon steel U-Bolts and nuts, cast steel reducing coupling, stainless steel set screws.
- Finish:** All items listed above are hot-dip galvanized except for stainless steel set screws
- Service:** Designed to support pipe horizontally. Straight cut pipe thread on nipple provides up to 4 - 1/2 inches of vertical adjustability.
- Ordering:** Specify pipe size and figure number.
- Notes:** Saddles accommodate ductile iron pipe and IPS. Support requires 2" schedule 40 extension pipe to be cut in the field.

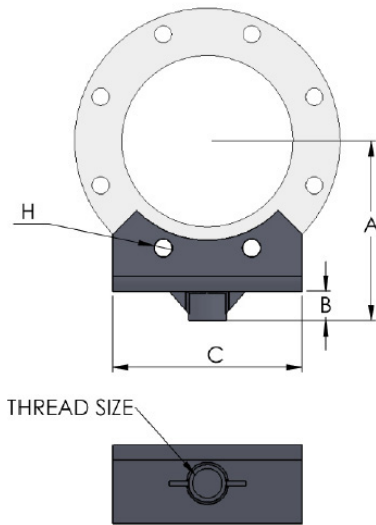
\*NOTE: Min. Distance of Floor to B.O.P. = 9.125"

Also available in 316 stainless steel.  
 Factory System Tested to 11,000 Lbs  
 (Support Must Be Properly Aligned to Piping System)

Size	A	B	C	D	E	F	Thread Size
3	2.030	130°	1.500	2.000	0.375	1/2-3	1-1/4-7
4	2.450	130°	1.500	2.000	0.375	1/2-3	1-1/4-7
6	3.500	130°	1.500	2.000	0.500	5/8-11	1-1/4-7
8	4.580	130°	1.500	2.000	0.500	5/8-11	1-1/4-7
10	5.600	130°	1.500	2.000	0.500	5/8-11	1-1/4-7
12	6.650	130°	1.500	2.000	0.500	5/8-11	1-1/4-7
14	7.750	130°	3.000	3.000	0.500	7/8-9	2-1/2-4
16	8.800	130°	3.000	4.000	0.500	7/8-9	2-1/2-4

428 KIT SPECIFICATIONS	
SIZES 3 - 12	SIZES 14 AND 16

**FIG. 431KT  
ADJUSTABLE BOLT ON FLANGE SUPPORT KIT**

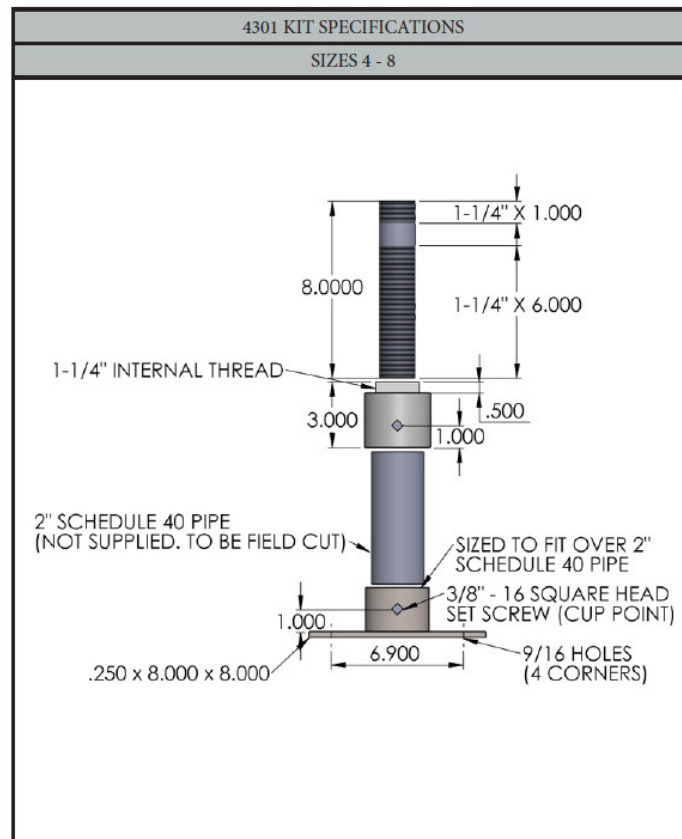


- Material:** Hot-Dip Galvanized Carbon Steel Saddle with Threaded Coupling, 1-1/4" x 8" Straight Tapped Nipple, 3" Long Steel 1-1/4" x 2" Reducing Coupling, (2) Stainless Steel Set Screws, 8" x 8" Steel Base Plate, 11 Step Installation Guide
- Finish:** All items listed above are hot-dip galvanized except for stainless steel set screws
- Service:** Designed to support pipe flange horizontally. Straight cut pipe thread on nipple provides up to 4-1/2 inches of vertical adjustability. Empire Industries' FIG. 431KT is designed to connect to back flow devices, water meters and to accommodate class 125 flange installation devices. The Fig. 431KT provides an easy to install pipe support system.
- Ordering:** Specify pipe size and figure number.
- Notes:** Support requires 2" schedule 40 extension pipe to be cut in the field.

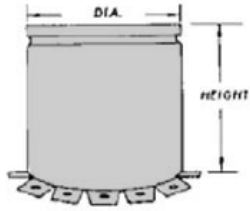
PIPE STATIONS

Factory System Tested to 11,000 Lbs  
(Support Must Be Properly Aligned to Piping System)

Size	A	B	C	H	Thread Size
4	6-7/8	1-1/2	6	13/16	1-1/4-7
6	7-7/8	1-1/2	8	15/16	1-1/4-7
8	9-1/8	1-1/2	9-1/8	15/16	1-1/4-7



**FIG. 900  
NAILING SLEEVE**

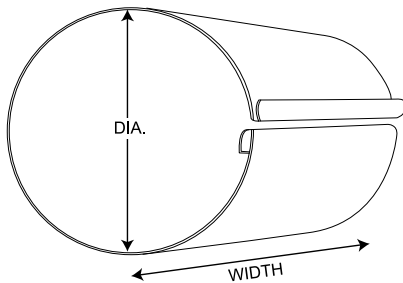


Manufactured  
in the USA

**Material:** Galvanized steel, also available in 304 and 316 stainless steel.  
**Finish:** Galvanized.  
**Service:** When attached to roof decking, sleeve provides a channel for piping, eliminating the need to core drill. Optional tabs facilitate fastening to deck. Optional covers seal out wet cement during pour and safely cover sleeve until pipe installation.  
**Ordering:** Specify diameter, height, and figure number, with or without tabs. Covers must be ordered separately.

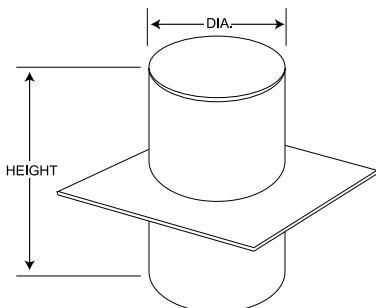
PIPE SLEEVES

**FIG. 901  
SPLIT SLEEVE**



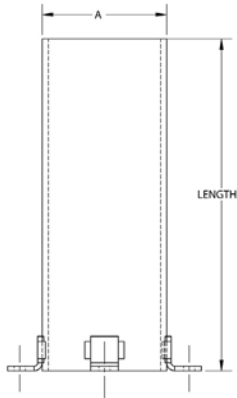
**Material:** Carbonsteel; galvanized, sheet metal  
**Service:** Split sleeves are furnished in all diameters and lengths  
**Ordering:** Specify Part No., diameter.  
**Note:** 24 GA. Mat'l is the norm. Other gauges available.

**FIG. 902  
Q DECK SLEEVE**



**Material:** Carbonsteel; galvanized, sheet metal  
**Service:** Deck sleeves are furnished in all diameters and heights  
**Ordering:** Specify Part No., diameter and height.

**FIG. 910**  
**PIPE SLEEVE WITH WELDED LUGS**

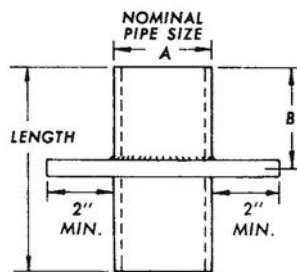


Manufactured  
in the USA

**Material:** Steel pipe, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized or painted.  
**Service:** When attached to concrete forms, sleeve provides smooth sealable channel for piping, eliminating the need to core drill. Nailing lugs facilitate fastening to forms.  
**Ordering:** Specify pipe size (A dimension), length, figure number and finish.

PIPE SLEEVES

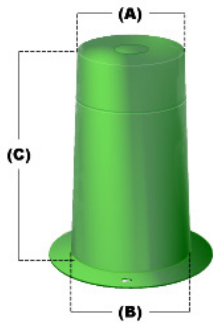
**FIG. 915**  
**WATERPROOF SLEEVE**



Manufactured  
in the USA

**Material:** Steel pipe and 1/4" steel plate (water stop). Also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized or painted.  
**Service:** When installed in concrete forms, sleeve provides smooth, sealable channel for piping. Water stop prevents water migration around outside of sleeve.  
**Ordering:** Specify nominal pipe size (A dimension), overall length, B dimension, figure number and finish.

**FIG. PCS  
PLASTIC CRETE-SLEEVES**



**Material:** Crete-Sleeve® Plastic Hole Forms are injection molded with durable, high-density polyethylene (HDPE)

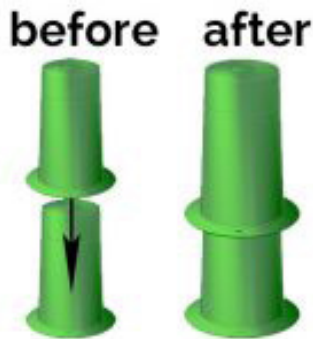
**Color:** Green

**Service:** Crete-Sleeve® Plastic Hole Forms include the following features:

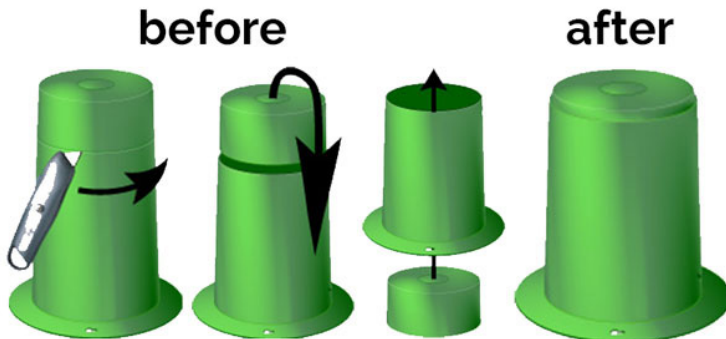
- They can be used horizontally and vertically for both wall and floor installations.
- They are manufactured with a flange that allows you to quickly install our product with nails, screws, staples or wires.
- Crete-Sleeve® is easily removable because concrete will not stick to high density polyethylene.
- They can be telescoped or cut for any slab thickness by cutting off the flange and stacking them to the desired height so both pieces can be removed once the concrete has cured.
- They are 100% recyclable.
- They are available in 9 sizes to meet any construction need.

**Notes:** Crete-Sleeve® Plastic Hole Forms come in 9 different sizes, making them versatile enough to meet any construction need. Crete-Sleeves are adjustable to any application. For slabs deeper than 8 3/4", simply telescope two or more Crete-Sleeves together. For slabs shallower than 8 3/4" or for slabs that have a smooth finish, cut off the tops of Crete-Sleeves and push them through the bottom halves.

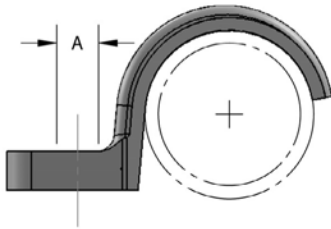
PIPE SLEEVES



Top Hole Diameter A	Base Hole Diameter B	Overall Length C	ITP Part Number	Hole Size
1-1/2"	1-3/4"	8-3/4"	PCS112	1-1/2"
2"	2-13/32"	8-3/4"	PCS2	2"
3"	3-13/32"	8-3/4"	PCS3	3"
4"	4-13/32"	8-3/4"	PCS4	4"
5"	5-13/32"	8-3/4"	PCS5	5"
6"	6-13/32"	8-3/4"	PCS6	6"
8"	8-7/16"	8-3/4"	PCS8	8"
10"	10-7/16"	9-1/8"	PCS10	10"
12"	12-7/16"	9-1/8"	PCS12	12"



**FIG. 126**  
**ONE HOLE CLAMP**



**Material:** Malleable iron  
**Finish:** Electro-galvanized.  
**Service:** Designed for the support of conduit, cable or pipe on walls or sides of beams. Not recommended for horizontal use on ceilings or bottom of beams.  
**Ordering:** Specify pipe size and figure number.

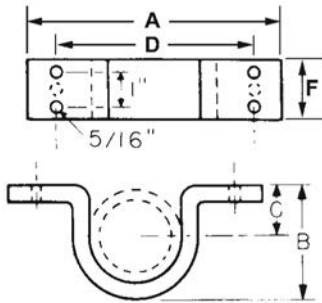
PIPE SIZE	PIPE/CABLE/CONDUIT OD	HOLE DIAM A	BOLT/SCREW SIZE	WEIGHT EACH (lbs)
1/2	0.840	5/16	1/4	0.04
3/4	1.050	5/16	1/4	0.05
1	1.315	5/16	1/4	0.09
1 1/4	1.660	3/8	1/4	0.12
1 1/2	1.900	7/16	3/8	0.16
2	2.375	7/16	3/8	0.25
2 1/2	2.875	11/16	5/8	0.49
3	3.500	11/16	5/8	0.82
4	4.500	3/4	5/8	1.30

STRAPS



Manufactured in the USA

FIG. 180  
SHORT CLIP



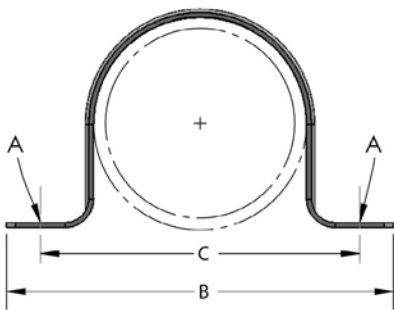
**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain or electro-galvanized.  
**Service:** Designed to support pipe close to ceiling or wall.  
**Ordering:** Specify size, figure number and finish.  
**Notes:** Available in stainless steel and hot-dip galvanized. Sizes 1/2" to 2" are furnished with two screw holes. Sizes 2 1/2" to 4" are furnished with four screw holes.  
 \* Radius edge 1/2" to 2" with 2 holes.  
 \* Square edge 2 1/2" to 4" with four holes.

PIPE SIZE	PIPE OD	MATERIAL	A	B	C	D	F	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
1/2	0.840	11ga	3 3/16	1 1/8	9/16	2 1/16	1 1/4	0.165	300
3/4	1.050		3 1/2	1 3/8	5/8	2 3/8		0.190	
1	1.315		4	1 5/8	3/4	2 7/8		0.235	
1 1/4	1.660		4 7/8	1 7/8	15/16	3 5/16		0.260	
1 1/2	1.900		4 13/16	2 3/16	1 1/8	3 11/16		0.400	
2	2.375	8ga	5 1/2	2 3/4	1 3/8	4 3/8	1 3/4	0.490	400
2 1/2	2.875		6 3/8	3 1/8	1 5/8	5 3/8		0.910	
3	3.500		7 1/8	3 3/4	1 15/16	6 1/8		0.950	
3 1/2	4.000		7 3/8	4 5/16	2 3/16	6 3/8		1.050	
4	4.500		7 3/4	4 13/16	2 7/16	6 3/4		1.160	

STRAPS



**FIG. 231**  
**TWO HOLE PIPE STRAP**

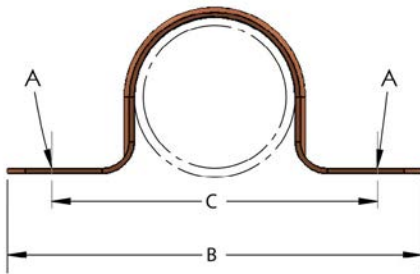


**Material:** Pre-galvanized carbon steel.  
**Finish:** Pre-galvanized.  
**Service:** Designed as a light duty support of schedule <sup>40</sup>/<sub>80</sub> sized pipe. Attaches directly to horizontal or vertical structural member.  
**Ordering:** Specify pipe size and figure number.  
**Notes:** Available domestic

PIPE SIZE	PIPE OD	MATERIAL SIZE	A HOLE SIZE	B	C	WGT EACH (lbs)
1/4	0.540	22ga x 3/4	7/32	2 1/8	1 1/4	0.01
3/8	0.675	22ga x 3/4		2 1/4	1 1/2	0.03
1/2	0.840	18ga x 3/4		2 5/8	1 7/8	0.04
3/4	1.050	18ga x 3/4		2 3/4	2	0.07
1	1.315	16ga x 1	9/32	3 3/8	2 5/8	0.09
1 1/4	1.660	16ga x 1		4 1/4	3 1/4	0.10
1 1/2	1.900	15ga x 1		4 3/8	3 3/8	0.13
2	2.375	14ga x 1		5	4	0.18
2 1/2	2.875	12ga x 1	11/32	6 1/4	4 3/4	0.26
3	3.500	12ga x 1		7 1/4	5 3/4	0.32
4	4.500	12ga x 1		8 3/8	6 7/8	0.40
6	6.625	12ga x 1 1/4		11 1/8	9 5/8	0.75

STRAPS

**FIG. 231CT**  
**COPPER TWO HOLE TUBING STRAP**



**Material:** Carbon steel.  
**Finish:** Copper plated.  
**Service:** Designed as a light duty support for copper tubing. Attaches directly to horizontal or vertical structural member.  
**Ordering:** Specify tube size and figure number.  
**Notes:** Available domestic

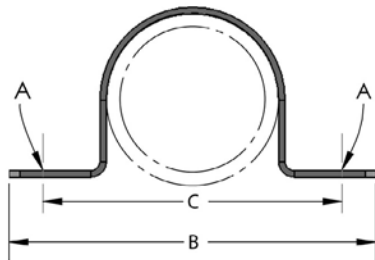
PIPE SIZE	PIPE OD	MATERIAL SIZE	A HOLE SIZE	B	C	WGT EACH (lbs)
1/4	0.375	20ga x 1/2	3/16	1 3/4	1 1/8	0.01
3/8	0.500	20ga x 1/2		1 7/8	1 1/4	
1/2	0.625	20ga x 1/2		2 1/8	1 1/2	
3/4	0.875	20ga x 1/2		2 3/8	1 5/8	0.02
1	1.125	20ga x 1/2		2 7/8	2 1/4	
1 1/4	1.375	20ga x 1/2		3 1/8	2 1/2	
1 1/2	1.625	18ga x 3/4	7/32	3 5/8	2 3/4	0.05
2	2.125	18ga x 3/4		4 1/4	3 3/8	0.06

STRAPS



Manufactured in the USA

FIG. 231SS  
TWO HOLE PIPE STRAP, 316 STAINLESS STEEL, IPS  
FIG. 231OD  
TWO HOLE PIPE STRAP, 316 STAINLESS STEEL, O.D.



**Material:** Type 316 stainless steel.  
**Service:** Designed as a light duty support for schedule <sup>40</sup>/<sub>80</sub> sized pipe. Attaches directly to horizontal or vertical structural member.  
**Ordering:** Specify pipe size or o.d. tubing size and figure number.  
**Notes:** Stainless steel hangers are recommended for application where protection from corrosive environment is needed.

PIPE SIZE	PIPE OD	MATERIAL SIZE	A HOLE SIZE	B	C	WGT EACH (lbs)
1/4 OD	0.250	16ga x 7/8	9/32	2 9/16	1 9/16	.030
1/4	0.540			2 3/4	1 3/4	.035
3/8 OD	0.375			2 5/8	1 5/8	.030
3/8	0.675			3	2	.045
1/2 OD	0.500			2 13/16	1 13/16	.035
1/2	0.840			3 1/8	2 1/8	0.45
3/4 OD	0.750			3	2	.040
3/4	1.050			3 3/8	2 3/8	.060
1 OD	1.000			3 1/4	2 1/4	.050
1	1.315			3 7/8	2 7/8	.060
1 1/4	1.660	13ga x 3/4	11/32	4 1/4	3 1/4	.105
1 1/2	1.900			4 7/16	3 7/16	.115
2	2.375			5	4	.135
2 1/2	2.875			5 1/4	4 1/4	.165
3	3.500			6	5	.190
4	4.500			11ga x 1	7/16	7 1/4
6	6.625	8ga x 1 1/4	9/16	11	9 7/16	1.15

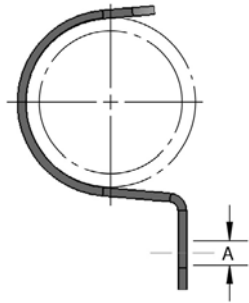
STRAPS



**FIG. 233**  
**ONE HOLE PIPE STRAP**



Manufactured  
in the USA



**Material:** Pre-galvanized carbon steel.  
**Finish:** Pre-galvanized.  
**Service:** Designed to support schedule <sup>40</sup>/<sub>80</sub> steel sized piping or sizes in a horizontal position from sides of structural member. Fastener hole may be above or below the pipe.  
**Ordering:** Specify pipe size and figure number.

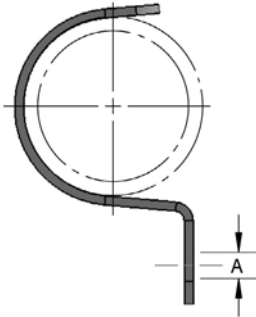
PIPE SIZE	PIPE OD	MATERIAL SIZE	A HOLE SIZE	WGT EACH (lbs)
1/4	0.540	16ga x 1/2	9/32	0.02
3/8	0.675	13ga x 3/4	9/32	0.04
1/2	0.840	13ga x 3/4	9/32	0.05
3/4	1.050	13ga x 3/4	9/32	0.06
1	1.315	11ga x 1	13/32	0.06
1 1/4	1.660	11ga x 1	13/32	0.17
1 1/2	1.900	11ga x 1	13/32	0.18
2	2.375	11ga x 1	21/32	0.36

STRAPS



Manufactured in the USA

FIG. 233SS  
ONE HOLE PIPE STRAP, 316 STAINLESS STEEL, IPS  
FIG. 233OD  
ONE HOLE PIPE STRAP, 316 STAINLESS STEEL, O.D.



**Material:** 316 stainless steel.  
**Service:** Designed to support schedule <sup>40</sup>/<sub>80</sub> steel sized piping or tubing sizes in a horizontal position from sides of structural member. Fastener hole may be above or below the pipe.  
**Ordering:** Specify pipe size or OD tube size, and figure number.  
**Notes:** Stainless steel hangers are recommended for applications where protection from corrosive environments is needed.

PIPE SIZE	PIPE OD	MATERIAL SIZE	A HOLE SIZE	WGT EACH (lbs)
1/4 OD	0.250	16ga x 7/8	9/32	.015
1/4	0.540			.030
3/8 OD	0.375			.015
3/8	0.675			.030
1/2 OD	0.500	13ga x 3/4		.035
1/2	0.840			.040
3/4 OD	0.750			.045
3/4	1.050			.055
1 OD	1.000	11ga x 1	5/16	.055
1	1.315			.065
1 1/4	1.660			.145
1 1/2	1.900			.170
2	2.375	.195		

STRAPS



**FIG. 235**  
**WIRE PIPE HOOK**



Manufactured in the USA



**Material:** Carbon steel.  
**Finish:** Plain (235B) or plastic coated .  
**Service:** Designed to support steel pipe horizontally by driving nail points into wood members.  
**Ordering:** Specify pipe size, length and figure number and finish.

PIPE SIZE	WGT EACH (lbs) LENGTH				
	4"	6"	8"	10"	12"
1/2	0.05	0.06	0.08	0.1	0.12
3/4					
1					
1 1/4					
1 1/2					
2					

STRAPS

**FIG. 235CT**  
**WIRE PIPE HOOK, COPPER**



Manufactured in the USA

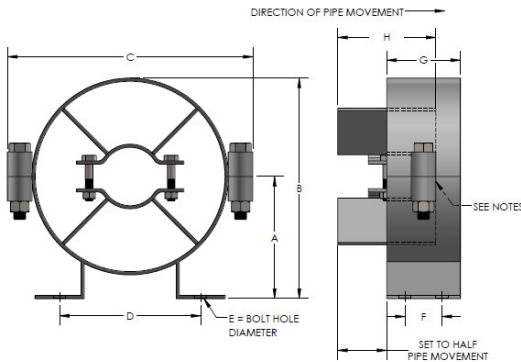


**Material:** Pre-copper plated carbon steel.  
**Finish:** Copper plated.  
**Service:** Designed to support copper tubing horizontally by driving nail points into wood members.  
**Ordering:** Specify tube size, length and figure number.

PIPE SIZE	WGT EACH (lbs) LENGTH				
	4"	6"	8"	10"	12"
1/2	0.05	0.06	0.08	0.1	0.12
3/4					
1					
1 1/4					
1 1/2					
2					



**FIG. 255**  
**PIPE ALIGNMENT GUIDE (SINGLE SPIDER CLAMP)**



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized, or painted.  
**Service:** Designed for use with insulated or non-insulated pipe lines to maintain alignment of piping through axial expansion and contraction cycles. Proper alignment of the adjoining pipe is of vital importance in the proper functioning of expansion joints in the line. Pipe guides are not designed to support any piping system weight. Therefore additional supports are required. Therefore the use of two or more guides on both sides of the expansion joint is recommended to avoid a pivoting effect in the line. Maximum temperature: 650°F.  
**Ordering:** Specify pipe size, insulation thickness, figure number and size number.



Model	A	B	C	D	E	F	G	H	Wgt Each (lbs)
23	3-1/2"	5-7/8"	6-1/8"	4-1/8"	5/8"	1-3/4"	3"	4"	7
24	4"	6-3/4"	7-1/8"	4-3/8"	5/8"	1-3/4"	3"	4"	8
25	4-3/8"	7-5/8"	8-1/8"	5-1/8"	5/8"	1-3/4"	3"	4"	9
26	5-1/4"	9-1/4"	10-1/8"	6-1/8"	5/8"	1-3/4"	3"	4"	11
27	6-1/4"	11-5/8"	12-1/8"	7"	5/8"	2-3/4"	4"	6"	17
28	7"	13-3/8"	14-1/8"	8-1/4"	5/8"	2-3/4"	4"	6"	20
29	7-7/8"	15-1/8"	16-1/8"	9-7/8"	3/4"	4"	6"	8"	40
30	8-7/8"	17"	18-1/8"	10-7/8"	3/4"	4"	6"	8"	48
31	9-3/4"	18-3/4"	20-1/8"	11-7/8"	3/4"	4"	6"	8"	54
32	10-7/8"	21"	22-1/8"	11-3/4"	3/4"	4"	6"	8"	61
33	12-1/8"	23-1/8"	24-1/8"	14-1/2"	7/8"	6"	8"	8"	89
34	13"	25"	26-1/8"	15-1/2"	7/8"	6"	8"	8"	102
35	14-3/4"	27-3/4"	28-1/8"	17-1/8"	1-1/8"	6"	8"	12"	110
36	16-1/2"	31-1/2"	32-1/8"	19-1/4"	1-1/8"	6"	8"	12"	150

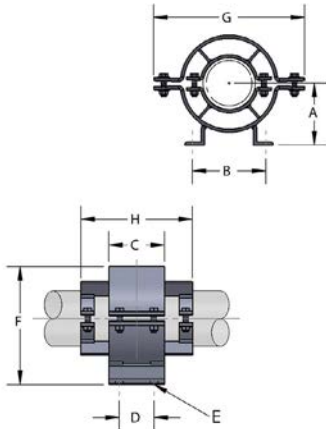
Guide Size Selection Table							
Pipe Size	Insulation Thickness (in)						
	1	1 1/2	2	2 1/2	3	3 1/2	4
1/2"	23	23	24	26	26	26	27
3/4"	23	24	25	26	26	27	27
1"	23	24	25	26	26	27	27
1-1/4"	23	24	25	26	26	27	27
1-1/2"	24	24	25	26	26	27	27
2"	24	25	26	26	27	27	28
2-1/2"	25	25	26	26	27	27	28
3"	25	26	26	27	27	28	28
4"	26	26	27	27	28	28	29
5"	27	27	27	28	28	29	30
6"	27	27	28	28	29	30	30
8"	28	28	29	30	30	31	31
10"	30	30	30	31	31	32	32
12"	31	31	31	32	32	33	33
14"	32	32	32	32	33	33	34
16"	33	33	33	33	34	34	35
18"	34	34	34	34	35	35	-
20"	35	35	35	35	36	36	36
24"	36	36	36	36	-	-	-

PIPE GUIDES & SLIDES



Manufactured in the USA

**FIG. 256  
PIPE ALIGNMENT GUIDE**



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized or painted.  
**Service:** Designed for use with insulated or non-insulated pipe lines to maintain alignment of piping through axial expansion and contraction cycles. Proper alignment of the adjoining pipe is of vital importance in the proper functioning of expansion joints in the line. Pipe guides are not designed to support any piping system weight, therefore additional supports are required. The use of two or more guides on both sides of the expansion joint is recommended to avoid a pivoting effect in the line. Maximum temperature is 750°F.  
**Ordering:** Specify pipe size, insulation thickness, figure number and size number.

SIZE NO.	A	B	C	D	E BOLT SIZE	F	G	H	WGT EACH (lbs)
2	4	5 3/8	4	2 1/2	1/2	7 1/16	9 1/2	8	13.00
3	4 1/2	5 3/4			1/2	8 1/4	11 1/4	8	15.00
4	6	7	6	4	1/2	10 3/4	12 3/4	10	26.00
5	7 1/2	8 5/16			5/8	13 1/4	15 1/2	10	35.00
6	8 1/2	8 3/4	8	5	5/8	15 1/2	17 1/2	12	48.00
7	9 1/4	11 1/16			3/4	17	18 3/8	12	59.00
8	10 1/8	12			3/4	18 3/4	20 1/2	12	66.00
9	11	13 1/4			3/4	20 1/4	22 3/8	12	69.00
10	12	13 9/16			7/8	22 1/4	24	12	88.00
11	13 3/4	15 1/4			7/8	26	28	12	132.00
12	14 3/4	15 3/4			7/8	28	30	12	144.00
13	16 1/4	18 3/4			1	31 1/2	34	12	153.00
14	18 1/4	19 1/2	1	35 1/2	38	12	172.00		

GUIDE SIZE SELECTION TABLE								
PIPE SIZE	J-INSULATION THICKNESS							
	0	1	1 1/2	2	2 1/2	3	4	5
1	2	2	2	3	4	4	5	6
1 1/4	2	2	3	4	4	5	5	6
1 1/2	2	2	3	4	4	5	6	7
2	2	2	3	4	4	5	6	7
2 1/2	3	3	4	4	5	5	6	7
3	3	3	4	4	5	5	6	8
3 1/2	4	4	4	5	5	6	7	8
4	4	4	4	5	5	6	7	8
5	5	5	5	5	6	6	8	9
6	5	5	5	6	6	7	8	9
8	7	7	7	7	8	8	9	10
10	9	9	9	9	9	9	10	11
12	10	10	10	10	10	10	11	11
14	11	11	11	11	11	11	11	12
16	11	11	11	11	11	11	12	13
18	12	12	12	12	12	12	13	13
20	13	13	13	13	13	13	13	14
24	14	14	14	14	14	14	14	-

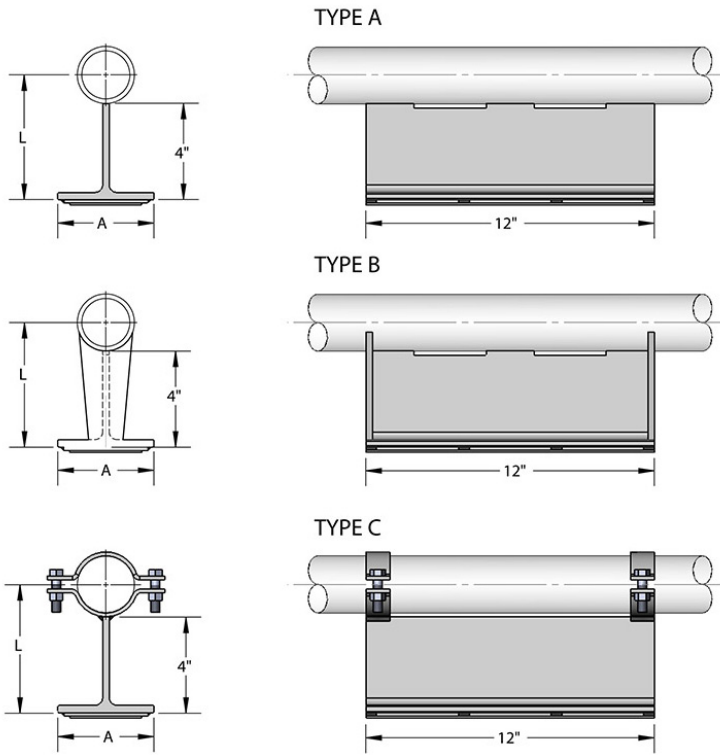
PIPE GUIDES & SLIDES



**FIG. 4000 SERIES  
PIPE SLIDE TEE**



Manufactured  
in the USA



**Material:** Carbon steel tee with or without PTFE slide pad, also available in 304 and 316 stainless steel.

**Finish:** Plain, galvanized or painted.

**Service:** Designed for the support of pipe where horizontal movement may occur due to expansion and contraction and a low coefficient of friction is required. May be welded or clamped to pipe.

**Approvals:** Complies with Federal Specification A-A-1192A (Type# 35) and Manufacturers' Standardization Society MSS SP 58 and SP 69 (Type# 35).

**Ordering:** Specify pipe size, figure number, type, finish and pipe clamp figure number. Order slide base (Fig. 4100) if required.

**Notes:** Designed to minimize heat loss through tee. Tee without PTFE to be used as a pipe anchor only. No lubrication required.

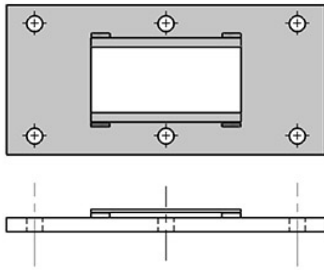
PIPE SIZE	A	L
2	4	5 <sup>3</sup> / <sub>16</sub>
2 1/2		5 <sup>7</sup> / <sub>16</sub>
3		5 <sup>3</sup> / <sub>4</sub>
4		6 <sup>1</sup> / <sub>4</sub>
5		6 <sup>13</sup> / <sub>16</sub>
6		7 <sup>5</sup> / <sub>16</sub>
8		8 <sup>5</sup> / <sub>16</sub>
10		9 <sup>3</sup> / <sub>8</sub>
12		10 <sup>3</sup> / <sub>8</sub>
14		11
16	12	
18	7	13
20		14
24		16

PIPE GUIDES & SLIDES



Manufactured in the USA

**FIG. 4100 SERIES  
SLIDE PLATES**



TYPE A

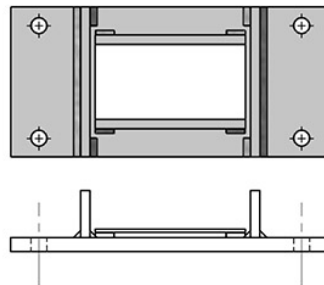
**Material:** Carbon steel, PTFE bonded base. (304 and 316 stainless steel).

**Finish:** Plain, galvanized or painted.

**Service:** Base support for pipe slides. Wider and longer pads can be furnished for heavier loads and greater movement.

Slide plates must be attached to supporting beam or structure by bolting or tack welding. They are not structural members in themselves. Use only with PTFE pipe slides.

**Ordering:** Specify figure number, type and size. Indicate if bolt holes are required.



TYPE B

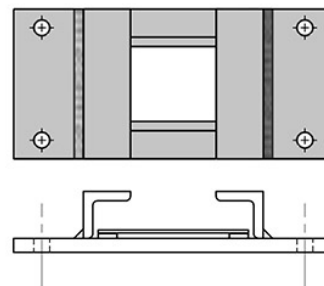
**Material:** Carbon steel, PTFE bonded base. (304 and 316 stainless steel).

**Finish:** Plain, galvanized or painted.

**Service:** Supports pie slides where only axial movement is allowed. Acts as horizontal restraint in one direction.

Slide plates must be attached to supporting beam or structure by bolting or tack welding. They are not structural members in themselves. Use only with PTFE pipe slides.

**Ordering:** Specify figure number, type and size. Indicate if bolt holes are required.



TYPE C

**Material:** Carbon steel, PTFE bonded base. (304 and 316 stainless steel).

**Finish:** Plain, galvanized or painted.

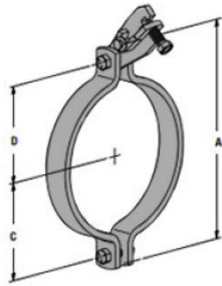
**Service:** Supports pipe slide where horizontal movement on one plane is desired and pipe may have a tendency to buckle or rotate.

Slide plates must be attached to supporting beam or structure by bolting or tack welding. They are not structural members in themselves. Use only with PTFE pipe slides.

**Ordering:** Specify figure number, type and size. Indicate if bolt holes are required.



FIG. 4L  
"In-Line" Sway Brace Attachment



**Material:** Steel  
**Finish:** Plain, Electro-Galvanized, or Stainless Steel.  
**Service:** Multi-functional attachment to structure or braced pipe fitting.  
**Approvals:** Underwriters Laboratories Listed in the USA (UL) and Canada (cUL). Approved Factory Mutual Engineering (FM). Approved by the State of California Office of Statewide Health Planning and Development (OSHPD).  
**Ordering:** Figure number and finish.  
**Notes:** The cross reference number for this product is Fig 031

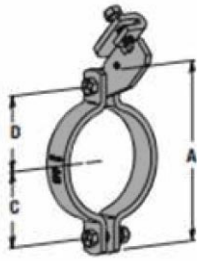
Pipe Size in (mm)	A		C		D		Bolt Size	Max Horizontal Design Load (cULus) lbs/(kN)	Approximate Wgt/100 in (mm)
	in	mm	in	mm	in	mm			
2-1/2 (65)	6-7/16	163.5	2-1/2	63.5	2-3/4	69.8	1/2"-13	2015 (8.96)	253 (114.7)
3 (80)	7	177.8	2-3/4	69.8	3-1/16	77.8	1/2"-13	2015 (8.96)	268 (121.5)
4 (100)	8-1/2	215.9	3-3/8	85.7	3-11/16	93.7	1/2"-13	2015 (8.96)	348 (157.8)
5 (125)	9-3/4	247.6	3-7/8	98.4	4-3/8	111.1	1/2"-13	2015 (8.96)	380 (172.3)
6 (150)	11-1/2	292.1	5	127.0	5-1/8	130.2	1/2"-13	2015 (8.96)	640 (290.3)
8 (200)	13-1/4	336.5	5-5/8	142.8	5-3/8	142.8	1/2"-13	2015 (8.96)	728 (330.2)

Pipe Size in (mm)	Max Horizontal Design Load (cULus) lbs/(kN)	Max Horizontal Design Load (FM) **							
		30-44 degrees		45-59 degrees		60-74 degrees		75-90degrees	
		Lbs	kN	Lbs	kN	Lbs	kN	Lbs	kN
2-1/2 (65)	2015 (8.96)	1030	4.58	1180	5.24	1420	6.31	1590	7.07
3 (80)	2015 (8.96)	1030	4.58	1180	5.24	1420	6.31	1590	7.07
4 (100)	2015 (8.96)	530	2.36	730	3.25	890	3.96	990	4.40
5 (125)	2015 (8.96)	530	2.36	730	3.25	890	3.96	990	4.40
6 (150)	2015 (8.96)	530	2.36	730	3.25	890	3.96	990	4.40
8 (200)	2015 (8.96)	490	2.18	680	3.02	830	3.96	930	4.13

SEISMIC  
ATTACHMENTS



**FIG. 4LA**  
**"In-Line" Sway Brace Attachment**



**Material:** Steel  
**Finish:** Plain, Electro-Galvanized.  
**Service:** For bracing pipe against sway and seismic disturbance.  
**Approvals:** Underwriters Laboratories Listed in the USA (UL) and Canada (cUL) 1" (25mm) through 10" (250mm) pipe. Approved Factory Mutual Engineering (FM) 1" (25mm) through 12" (300mm) pipe.  
**Ordering:** Figure number, pipe size, and finish.

The diagram represents pipe sizes for 1" through 4"

Pipe Size	A		C		D		Bolt Size	Approximate Wgt/100 in (mm)
	in	mm	in	mm	in	mm		
1 (25)	3 <sup>-19/32</sup>	91.2	1 <sup>-5/16</sup>	33.5	1 <sup>-5/16</sup>	33.5	3/8"-16	119 (54.0)
1-1/4 (32)	3 <sup>-29/32</sup>	99.3	1 <sup>-3/8</sup>	35.3	1 <sup>-3/8</sup>	35.3	3/8"-16	123 (55.8)
1-1/2 (40)	4 <sup>-5/32</sup>	105.7	1 <sup>-1/2</sup>	38.5	1 <sup>-1/2</sup>	38.5	3/8"-16	127 (57.6)
2 (50)	5 <sup>-11/32</sup>	135.6	2 <sup>-1/32</sup>	51.9	2 <sup>-1/16</sup>	51.9	3/8"-16	142 (64.4)
2-1/2 (65)	6 <sup>-1/2</sup>	148.7	2 <sup>-5/16</sup>	58.5	2 <sup>-5/16</sup>	58.5	3/8"-16	173 (78.5)
3 (80)	5 <sup>-27/32</sup>	164.9	2 <sup>-5/8</sup>	66.6	2 <sup>-5/8</sup>	66.6	3/8"-16	187 (84.8)
3-1/2 (90)	7 <sup>-13/32</sup>	188.1	2 <sup>-7/8</sup>	73.1	2 <sup>-7/8</sup>	73.1	3/8"-16	198 (89.8)
4 (100)	7 <sup>-17/32</sup>	191.3	3 <sup>-1/8</sup>	79.5	3 <sup>-1/8</sup>	79.5	3/8"-16	209 (94.8)
5 (125)	8 <sup>-1/4</sup>	222.3	3 <sup>-5/8</sup>	92.1	3 <sup>-5/8</sup>	92.1	1/2"-13	298 (135.2)
6 (150)	10 <sup>-5/8</sup>	269.9	4 <sup>-9/16</sup>	115.9	4 <sup>-9/16</sup>	115.9	1/2"-13	521 (236.3)
8 (200)	12 <sup>-13/16</sup>	325.5	5 <sup>-9/16</sup>	143.7	5 <sup>-21/32</sup>	143.7	1/2"-13	629 (285.3)
10 (250)	16 <sup>-1/2</sup>	419.1	7 <sup>-1/4</sup>	184.2	7 <sup>-1/4</sup>	184.2	1/2"-13	1320 (598.7)
12 (300)	18 <sup>-1/2</sup>	469.9	8 <sup>-1/4</sup>	309.6	8 <sup>-1/4</sup>	309.6	1/2"-13	1496 (678.6)

(additional charts on the following page)



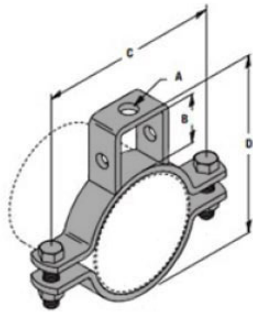
**FIG. 4LA “In-Line” Sway Brace Attachment**  
(continued from previous page)

Longitudinal Loads Pipe Size in (mm)	Max Horizontal Design Load (UL) lbs (kN)	Max Horizontal Design Load (FM)							
		30-44 degrees		45-59 degrees		60-74 degrees		75-90degrees	
		Lbs	kN	Lbs	kN	Lbs	kN	Lbs	kN
1 (25)	1000 (4.45)	680	3.02	970	4.31	1190	5.29	1320	5.87
1-1/4 (32)	1000 (4.45)	680	3.02	970	4.31	1190	5.29	1320	5.87
1-1/2 (40)	1000 (4.45)	680	3.02	970	4.31	1190	5.29	1320	5.87
2 (50)	1000 (4.45)	680	3.02	860	3.82	1030	4.58	1320	5.87
2-1/2 (65)	1000 (4.45)	680	3.02	970	4.31	1190	5.29	1320	5.87
3 (80)	1000 (4.45)	680	3.02	970	4.31	1190	5.29	1320	5.87
3-1/2 (90)	1000 (4.45)	680	3.02	970	4.31	1190	5.29	1320	5.87
4 (100)	1000 (4.45)	680	3.02	970	4.31	1190	5.29	1320	5.87
5 (125)	1600 (7.11)	-	-	-	-	-	-	-	-
6 (150)	1600 (7.11)	1620	7.20	2260	10.05	2010	8.94	2220	9.87
8 (200)	2015 (8.96)	1620	7.20	1660	7.38	1570	6.98	1740	7.74
10 (250)	2765 (12.30)	1620	7.20	1660	7.38	1570	6.98	1740	7.74
12 (300)	--	1620	7.20	1660	7.38	1570	6.98	1740	7.74

Lateral Loads Pipe Size in (mm)	Max Horizontal Design Load (UL) lbs (kN)	Max Horizontal Design Load (FM)							
		30-44 degrees		45-59 degrees		60-74 degrees		75-90degrees	
		Lbs	kN	Lbs	kN	Lbs	kN	Lbs	kN
1 (25)	1000 (4.45)	680	3.02	970	4.31	1190	5.29	1320	5.87
1-1/4 (32)	1000 (4.45)	680	3.02	970	4.31	1190	5.29	1320	5.87
1-1/2 (40)	1000 (4.45)	680	3.02	970	4.31	1190	5.29	1320	5.87
2 (50)	1000 (4.45)	680	3.02	970	4.31	1190	5.29	1320	5.87
2-1/2 (65)	1000 (4.45)	680	3.02	970	4.31	1190	5.29	1320	5.87
3 (80)	1000 (4.45)	680	3.02	970	4.31	1190	5.29	1320	5.87
3-1/2 (90)	1000 (4.45)	680	3.02	970	4.31	1190	5.29	1320	5.87
4 (100)	1000 (4.45)	680	3.02	970	4.31	1190	5.29	1320	5.87
5 (125)	1600 (7.11)	-	-	-	-	-	-	-	-
6 (150)	1600 (7.11)	1620	7.20	2300	10.23	2820	13.96	3140	13.96
8 (200)	2015 (8.96)	1620	7.20	2300	10.23	2820	13.96	3140	13.96
10 (250)	2765 (12.30)	1620	7.20	2300	10.23	2820	13.96	3140	13.96
12 (300)	--	1620	7.20	2300	10.23	2820	13.96	3140	13.96

SEISMIC ATTACHMENTS

**FIG. 4B**  
Pipe Clamp for Sway Bracing



**Material:** Steel  
**Finish:** Plain, Electro-Plated  
**Service:** For bracing pipe against sway and seismic disturbance.  
**Approvals:** Approved by the State of California Office of Statewide Health Planning and Development (OSHPD).  
**Ordering:** Specify pipe size and finish.  
**Notes:** The cross reference number for this product is Fig 040.

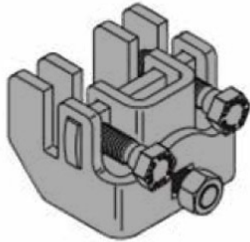
Pipe Size	Rod Size	B		C		D		Bolt Size	Design Load	Approximate Wgt/100
		in	mm	in	mm	in	mm			
3/4	3/8"-16	1	25.4	2-7/8	73.0	2-5/8	66.7	5/16"-18	330 (1.47)	56 (25.4)
1 (25)	3/8"-16	1	25.4	3-1/4	82.5	2-15/16	74.6	5/16"-18	330 (1.47)	60 (27.2)
1-1/4 (32)	3/8"-16	1	25.4	3-9/16	90.6	3-1/4	82.5	5/16"-18	330 (1.47)	74 (33.5)
1-1/2 (40)	3/8"-16	1	25.4	3-13/16	96.8	3-7/16	87.3	5/16"-18	330 (1.47)	79 (35.8)
2 (50)	3/8"-16	1-1/2	38.1	5-1/8	130.2	4-5/8	117.5	5/16"-18	440 (1.78)	156 (70.7)
2-1/2 (65)	1/2"-13	1-3/4	44.4	5-5/8	142.9	5-3/8	136.5	3/8"-16	440 (1.78)	176 (79.8)
3 (80)	1/2"-13	1-7/8	47.6	6-3/4	171.4	6-1/8	155.5	3/8"-16	660 (2.93)	198 (89.9)
3-1/2 (90)	1/2"-13	2	50.8	7-1/4	184.1	6-3/4	171.4	3/8"-16	660 (2.93)	219 (99.3)
4 (100)	5/8"-11	2	50.8	8-5/8	219.1	7-1/4	184.1	1/2"-13	800 (3.56)	288 (130.6)
5 (125)	5/8"-11	2	50.8	9-7/8	250.8	8-5/16	211.1	5/8"-11	980 (4.36)	390 (176.9)
6 (150)	3/4"-10	2-1/8	54.0	10-15/16	277.8	9-1/2	241.3	5/8"-11	980 (4.36)	448 (203.2)
8 (200)	7/8"-9	2-1/8	54.0	13-7/16	341.2	11-1/2	292.1	3/4"-10	1200 (5.34)	691 (313.4)



**FIG. 825**  
Bar Joist Sway Brace Attachment To Steel



Manufactured in the USA Excluding 21LI

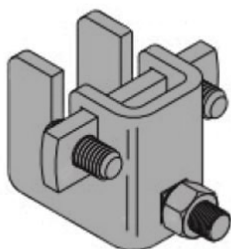


**Material:** Steel  
**Finish:** Plain or Electro-Galvanized  
**Service:** To attach sway brace assemblies and/or hanger assemblies to structural steel members.  
**Approvals:** Underwriters Laboratories Listed in the USA (UL) and Canada (cUL). Factory Mutual (FM) approved. Approved by the State of California Office of Statewide Health Planning and Development (OSHPD).  
**Ordering:** Figure number and finish.

Max Horizontal Design Load (FM) Lateral – Parallel to the Beam Maximum 3/8" Thick Flange							
30-44 degrees		45-59 degrees		60-74 degrees		75-90 degrees	
Lbs	kN	Lbs	kN	Lbs	kN	Lbs	kN
990	4.40	1360	6.05	1670	7.43	1860	8.27

Max Horizontal Design Load (FM) Lateral – Perpendicular to the Beam Maximum 3/8" Thick Flange							
30-44 degrees		45-59 degrees		60-74 degrees		75-90 degrees	
Lbs	kN	Lbs	kN	Lbs	kN	Lbs	kN
460	2.04	630	2.80	770	3.42	860	3.82

**FIG. 825A**  
Bar Joist Sway Brace Attachment To Steel

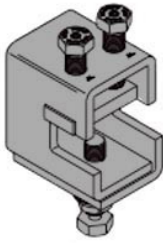


**Material:** Steel  
**Finish:** Plain or Electro-Galvanized  
**Service:** To attach sway bracing to steel open web structural members.  
**Approvals:** Underwriters Laboratories Listed in the USA (UL) and Canada (cUL).  
**Ordering:** Figure number and finish.

SEISMIC ATTACHMENTS



**FIG. 828**  
**Universal Swivel Sway Brace Attachment to Steel**



**Material:** Steel  
**Finish:** Plain or Electro-Galvanized  
**Service:** To attach bracing to various types of steel structural members.  
**Approvals:** Underwriters Laboratories Listed in the USA (UL) and Canada (cUL). Factory Mutual (FM) approved.  
**Ordering:** Figure number and finish.

Max Horizontal Design Load (UL), Max Horizontal Design Load Across Beam 2015 lbs (8.96kN), Max Horizontal Design Load Along Beam 2015 lbs. (8.96kN)

Max Horizontal Design Load (FM) With Brace Perpendicular to the Beam Brace Angle (degrees from vertical)							
30-44 degrees		45-59 degrees		60-74 degrees		75-90 degrees	
Lbs	kN	Lbs	kN	Lbs	kN	Lbs	kN
1570	6.98	2220	9.87	1210	5.38	700	3.11

Max Horizontal Design Load (FM) With Brace Parallel to the Beam Brace Angle (degrees from vertical)							
30-44 degrees		45-59 degrees		60-74 degrees		75-90 degrees	
Lbs	kN	Lbs	kN	Lbs	kN	Lbs	kN
690	3.07	970	4.31	1210	5.38	1330	5.91

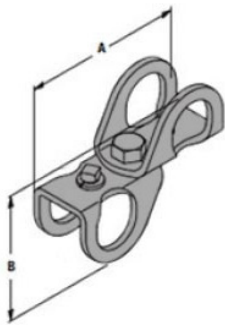
FM Approved design loads are based on ASD design method.

SEISMIC ATTACHMENTS





**FIG. 907**  
4-Way Sway Brace Attachment



**Material:** Steel, hardened cone (or cup) point set screw.  
**Finish:** Plain.  
**Service:** For bracing pipe against sway and seismic disturbances; functions as a longitude brace connection when attached to a lateral brace pipe. Bracing connection must be positioned as close as physically possible to the braced pipe.  
**Approvals:** Approved by the State of California Office of Statewide Health Planning and Development (OSHPD).  
**Ordering:** Figure number, bracing pipe sizes, and finish.

Can be attached on either side of the pipe being braced.

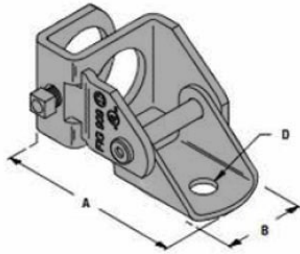
Part Number	Brace Pipe Size		A		B		Maximum Design Load lbs (kN)	Approximate Wgt/100 lbs (kg)
	in	mm	in	mm	in	mm		
907 -1 x 1	1 x 1	25 x 25	4-3/4	120.6	4-3/4	120.6	655* (2.91)	103 (46.7)
907 - 1 x 1-1/4	1 x 1-1/4	25 x 32	5-3/16	128.6	4-13/16	122.2	655* (2.91)	107 (48.5)
1-1/4 x 1-1/4	1-1/4 x 1-1/4	32 x 32	5-3/8	136.5	5-1/4	133.1	655* (2.91)	109 (49.4)

\* Load will accommodate up to 4" (100mm) pipe at maximum spacing.

SEISMIC ATTACHMENTS



**FIG. 909SA**  
No-Thread Swivel Sway Brace Attachment

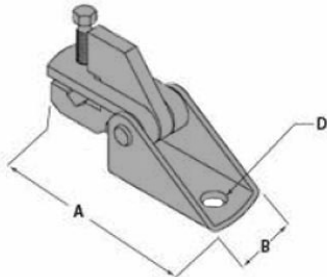


**Material:** Steel, hardened cone point screw.  
**Finish:** Plain.  
**Service:** The structural component of a sway and seismic bracing system.  
**Approvals:** Underwriters Laboratories Listed in the USA (UL) and Canada (cUL). Approved by the State of California Office of Statewide Health Planning and Development (OSHPD).  
**Ordering:** Figure number, fastener attachment size, and finish.

Part Number	Hole Size D		A		B		Maximum Design Load lbs (kN)	Approximate Wgt/100 lbs (kg)
	in	mm	in	mm	in	mm		
909SA - 3/8	13/32	10.3	6	152.4	1-5/8	41.3	2015 (8.96)	92 (41.7)
909SA - 1/2	17/32	13.5	6	152.4	1-5/8	41.3	2015 (8.96)	91 (41.3)
909SA - 5/8	11/16	17.5	6	152.4	1-5/8	41.3	2015 (8.96)	90 (40.8)
909SA - 3/4	13/16	20.6	6	152.4	1-5/8	41.3	2015 (8.96)	89 (40.4)



**FIG. 980**  
Universal Swivel Sway Brace Attachment



**Material:** Steel  
**Finish:** Plain, Electro-Galvanized, or Stainless Steel.  
**Service:** Multi-functional attachment to structure or braced pipe fitting.  
**Approvals:** Underwriters Laboratories Listed in the USA (UL) and Canada (cUL). Approved Factory Mutual Engineering (FM). Approved by the State of California Office of Statewide Health Planning and Development (OSHPD).  
**Ordering:** Figure number and finish.  
**Notes:** The cross reference number for this product is Fig 030

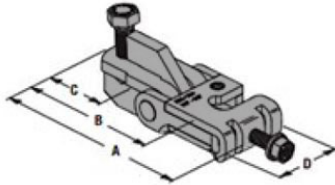
Part Number	A		B		D*		Max Horizontal Design Load (cULus) lbs/(kN)	Max Horizontal Design Load (FM) **								Approx Wgt/100 in (mm)
	in	mm	in	mm	in	mm		30-44 de-grees		45-59 de-grees		60-74 degrees		75-90 degrees		
								Lbs	kN	Lbs	kN	Lbs	kN	Lbs	kN	
3/8	5-1/4	133.3	1-7/8	47.6	13/32	10.3	2015 (8.96)	1320	5.87	1970	8.76	2310	10.27	2550	11.34	149 (67.6)
1/2	5-1/4	133.3	1-7/8	47.6	17/32	13.5	2015 (8.96)	1320	5.87	1970	8.76	2310	10.27	2550	11.34	148 (67.1)
5/8	5-1/4	133.3	1-7/8	47.6	11/16	17.5	2015 (8.96)	1320	5.87	1970	8.76	2310	10.27	2550	11.34	147 (66.7)
3/4	5-1/4	133.3	1-7/8	47.6	13/16	20.5	2015 (8.96)	1320	5.87	1970	8.76	2310	10.27	2550	11.34	146 (66.2)

\* Mounting attachment hole size.  
 \*\* Installed with 1" or 1-1/4" Schedule 40 brace pipe.

SEISMIC ATTACHMENTS



**FIG. 981**  
Fast Attach – Universal Swivel Sway Brace Attachment

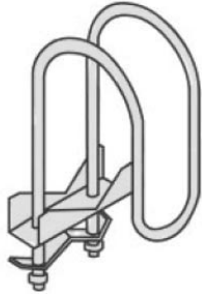


**Material:** Steel  
**Finish:** Electro-Galvanized  
**Service:** Multi-functional attachment to hanger rod, trapeze rod, structure or braced pipe fitting.  
**Approvals:** Approved by the State of California Office of Statewide Health Planning and Development (OSHPD).  
**Ordering:** Figure number, rod size.

Part Number	Rod Size Range	A		B		C		D		Max Horizontal Design Load lbs (kN)	Approximate Weight/100 lbs. (kg)
		in	mm	in	mm	in	mm	in	mm		
981-S	3/8" thru 35/8"	5-1/8	130.2	4-1/8	104.8	1-1/4	31.7	2-1/4	57.1	2015 (8.96)	88 (39.9)
981-L	3/4" & 7/8"	5-1/8	130.2	4-1/8	104.8	1-1/4	31.7	2-1/4	57.1	2015 (8.96)	82 (37.2)



Fig. 1000  
"Fast Clamp" Sway Brace Attachment



Max. Horizontal Design Load (UL) – 1" (25mm) through 2" (50mm) pipe size 655 lbs. (2.91kN)

**Material:** Steel  
**Finish:** Plain  
**Service:** A restraint device intended for lateral bracing.  
**Approvals:** Underwriters Laboratories Listed in the USA (UL) and Canada (cUL). Approved for use with Allied Dyna Flow sprinkler pipe up to 2" as restraint device. Maximum horizontal design load is 655 lbs. (2.91kN) Torque requirement is 6-8ft./lbs. (8-10Nm). Approved by the State of California Office of Statewide Health Planning and Development (OSHPG).  
**Ordering:** Order first by pipe size to be braced, followed by pipe size used for bracing, figure number, and finish.  
**Notes:** The cross reference number for this product is Fig 010

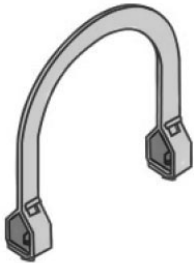
Pipe Size in (mm)	Approximate Weight/100				Max Horizontal Design Load (FM)*							
	1" Brace Pipe		1-1/4" Brace Pipe		30-44 degrees		45-59 degrees		60-74 degrees		75-90 degrees	
	Lbs	(Kg)	Lbs	(Kg)	Lbs	kN	Lbs	kN	Lbs	kN	Lbs	kN
1 (25)	71.6	32.5	75.8	34.4	200	0.89	280	1.24	340	1.51	380	1.69
1-1/4 (32)	74.8	33.9	79.1	35.9	200	0.89	280	1.24	340	1.51	380	1.69
1-1/2 (40)	77.8	35.3	82.1	37.2	200	0.89	280	1.24	340	1.51	380	1.69
2 (50)	84.1	38.1	88.4	40.1	200	0.89	280	1.24	340	1.51	380	1.69
2-1/2 (65)	90.2	40.9	94.6	42.9	200	0.89	280	1.24	340	1.51	380	1.69
3 (80)	97.3	44.1	101.7	46.1	230	1.02	320	320	400	1.78	450	2.00
3-1/2 (90)	104.0	47.2	108.4	49.2	230	1.02	320	320	400	1.78	450	2.00
4 (100)	110.3	50.0	114.6	52.0	230	1.02	320	320	400	1.78	450	2.00
5 (125)	123.1	55.8	127.4	57.8	-	-	-	-	-	-	-	-
6 (150)	136.5	61.9	140.8	63.8	-	-	-	-	-	-	-	-

\* Max Horizontal Design Load (FM) Notes

- Load rating for LW above refers to FM Approved Lightwall Pipe commonly referred to as "Schedule 7". These ratings may also be applied with EN 10220 and GB/T 8163 steel pipe.
- Load rating for "Schedule 10" above may be applied to GB/T 3092, EN 10255M, and H, or JIS G3454, FM Approved Thinwall, or "Schedule 40" steel pipes.



Fig. 1001  
Sway Brace Attachment



**Material:** Steel  
**Finish:** Plain or Electro-Galvanized.  
**Service:** For bracing pipe against sway and seismic disturbance.  
**Approvals:** Underwriters Laboratories Listed in the USA (UL) and Canada (cUL). Approved by Factory Mutual Engineering (FM). Approved by the State of California Office of Statewide Health Planning and Development (OSHPD).  
**Ordering:** Indicate pipe size to be braced, followed by pipe size used for bracing, figure number, and finish.  
**Notes:** The cross reference number for this product is Fig 015

Pipe Size in (mm)	Approximate Weight/100				Max Horizontal Design Load (FM) *							
	1" Brace Pipe		1-1/4" Brace Pipe		30-44 degrees		45-59 degrees		60-74 degrees		75-90 degrees	
	Lbs	(Kg)	Lbs	(Kg)	Lbs	(kN)	Lbs	(kN)	Lbs	(kN)	Lbs	(kN)
1 (25)	100.0	45.3	118.0	53.5	1800	8.00	2550	11.34	3120	13.88	3490	25.52
1-1/4 (32)	100.0	45.3	114.0	51.7	1230	5.47	1740	7.74	2140	9.52	2380	10.58
1-1/2 (40)	100.0	45.3	115.0	52.1	1230	54.7	1740	7.74	2140	9.52	2380	10.58
2 (50)	108.0	49.0	121.0	54.9	1230	5.47	1740	7.74	2140	9.52	2380	10.58
2-1/2 (65)	138.6	62.8	160.4	72.7	800	3.56	1130	5.02	1380	6.14	1540	6.85
3 (80)	147.2	66.7	168.7	76.5	850	3.78	1200	5.34	1470	6.54	1640	7.29
4 (100)	160.9	73.0	182.4	82.7	850	3.78	1200	5.34	1470	6.54	1640	7.29
6 (150)	190.0	86.2	211.4	95.9	510	2.27	730	3.25	890	3.96	990	4.40
8 (200)	217.4	98.6	238.8	108.3	510	2.27	730	3.25	890	3.96	990	4.40

\* Max Horizontal Design Load (FM) Notes

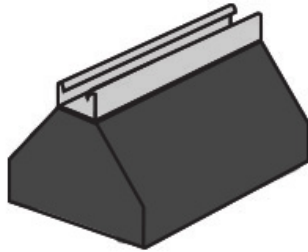
- For Sch 7, Sch 10, & Sch 40 Pipe
- FM Approved when used with 1 or 1-1/4 inch NPS Schedule 40 GB/T 3091, EN 10255H, or JIS G3451 steel pipe as the brace member.
- Load rating for LW above refers to FM Approved Lightwall Pipe commonly referred to as "Schedule 7". These ratings may also be applied with EN 10220 and GB/T 8163 steel pipe.
- Load rating for "Schedule 10" above may be applied to GB/T 3092, EN 10255M, and H, or JIS G3454, FM Approved Thinwall, or "Schedule 40" steel pipes.

Pipe Size in (mm)	Max Horizontal Design Load (UL) - Lbs					
	Schedule 7		Schedule 10		Schedule 40	
	1"	1-1/4"	1"	1-1/4"	1"	1-1/4"
1 (25)	-	-	1000	1000	1000	1000
1-1/4 (32)	1000	1000	1000	1000	1000	1000
1-1/2 (40)	1000	1000	1500	1500	1500	1500
2 (50)	1000	1000	2015	2015	2015	2015
2-1/2 (65)	1600	1600	2015	2015	2015	2015
3 (80)	1600	1600	2015	2015	2015	2015
4 (100)	1600	1600	2015	2015	2015	2015
6 (150)	1600	1600	2015	2015	2015	2015
8 (200)	1600	1600	2015	2015	2015	2015

SEISMIC ATTACHMENTS



**FIG. DBS**  
**BASE WITH 14 GA. (1.9MM)**  
**GALV. CHANNEL – 1" (25.4MM) HIGH**



**Dimensions:** 5" (127mm) High x 6" (152mm) Wide x Length (overall length)

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

**Ultimate Load Capacity:**

(uniform load) For roof loading, consult roof manufacturer or engineer. As with most commercial roofs, the weakest point may be the insulation board beneath the rubber membrane.

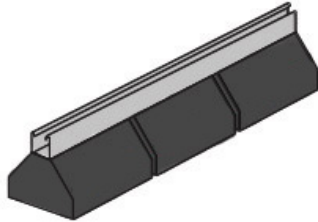
ROOFTOP  
SUPPORTS

UPC/Part #	Model #	Height in (mm)	Width in (mm)	Overall Length	Weight Each	Ultimate Load Capacity
782051/50035	DB 5	5 (127)	6 (152)	4.8 (122)	2.75 (1.25kg)	200 lbs (0.89kN)
782051/49972	DB 10	5 (127)	6 (152)	9.6 (244)	5.28 (2.39kg)	500 lbs (2.22kN)
782051/49974	DB 20	5 (127)	6 (152)	20.2 (5123)	10.63 (4.82kg)	1000 lbs (4.45kN)
782051/50021	DB 30	5 (127)	6 (152)	30.8 (782)	15.99 (7.25kg)	1500 lbs (6.67kN)
782051/50022	DB 40	5 (127)	6 (152)	41.4 (1052)	21.34 (9.68kg)	2000 lbs (8.89kN)
782051/50023	DB 48	5 (127)	6 (152)	52.0 (1321)	26.70 (12.4kg)	2500 lbs (11.12kN)



**FIG. DB6S**  
**BASE WITH 12 GA. (2.6MM)**  
**GALV. CHANNEL – 2-7/16" (62MM) HIGH**

ROOFTOP  
SUPPORTS



**Dimensions:** 6-7/16" (163mm) High  
 x 6" (152mm) Wide  
 x Length (overall length)

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

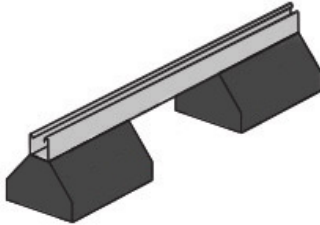
**Ultimate Load Capacity:**  
 (uniform load) For roof loading, consult roof manufacturer or engineer. As with most commercial roofs, the weakest point may be the insulation board beneath the rubber membrane.

UPC/Part #	Model #	Height in (mm)	Width in (mm)	Overall Length	Weight Each	Ultimate Load Capacity
782051/50024	DB6 10	6-7/16 (163)	6 (152)	9.6 (244mm)	6.36 (2.88kg)	500 lbs (2.22kN)
782051/50025	DB6 20	6-7/16 (163)	6 (152)	20.2 (513)	12.90 (5.85kg)	1000 lbs (4.45kN)
782051/50026	DB6 30	6-7/16 (163)	6 (152)	30.8 (782)	19.45 (8.82kg)	1500 lbs (6.67kN)
782051/50027	DB6 40	6-7/16 (163)	6 (152)	41.4 (1052)	26.00 (11.79kg)	2000 lbs (8.89kN)
782051/50028	DB6 48	6-7/16 (163)	6 (152)	52.0 (1321)	32.55 (14.76kg)	2500 lbs (11.12kN)





**FIG. DB10S**  
**2 BASES WITH 12 GA. (2.6MM)**  
**GALV CHANNEL – 1<sup>-5/8</sup>" (41MM) HIGH**



ROOFTOP SUPPORTS

**Dimensions:** 5<sup>-5/8</sup>" (143mm) High  
 x 6" (152mm) Wide  
 x Length (bridge length)

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

**Ultimate Load Capacity:**  
 1000 lbs. (4.45kN), (uniform load) For roof loading, consult roof manufacturer or engineer. As with most commercial roofs, the weakest point may be the insulation board beneath the rubber membrane.

UPC/Part #	Model #	Height / in (mm)	Width / in (mm)	Individual Base Length	Bridge Length	Weight Each	Ultimate Load Capacity
782051/50029	DB10 28	5 <sup>-5/8</sup> " (143mm)	6 (152)	9.6" (244mm)	28" (711mm)	2.75 (1.25kg)	1000 lbs. (4.45kN)
782051/50031	DB610 36	5 <sup>-5/8</sup> " (143mm)	6 (152)	9.6" (244mm)	36" (914mm)	5.28 (2.39kg)	1000 lbs. (4.45kN)
782051/50032	DB10 42	5 <sup>-5/8</sup> " (143mm)	6 (152)	9.6" (244mm)	42" (1067mm)	10.63 (4.82kg)	1000 lbs. (4.45kN)
782051/50033	DB10 50	5 <sup>-5/8</sup> " (143mm)	6 (152)	9.6" (244mm)	50" (1270mm)	15.99 (7.25kg)	1000 lbs. (4.45kN)
782051/50034	DB10 60	5 <sup>-5/8</sup> " (143mm)	6 (152)	9.6" (244mm)	60" (1524mm)	21.34 (9.68kg)	1000 lbs. (4.45kN)

**FIG. DBDSS**  
**2 BASE SUPPORTS WITH 12 GA. (2.6MM)**  
**GALV CHANNEL – 1<sup>-5/8</sup>" (41MM) HIGH**

ROOFTOP  
 SUPPORTS



**Dimensions:** Height (overall) x Width (overall) x Length (overall)

**Riser Channels (SH Style):** 1<sup>-5/8</sup>" (41mm) x 1<sup>-5/8</sup>" (41mm) x 12 ga (2.6mm)

**Fittings & Hardware:** Electro-Plated Steel

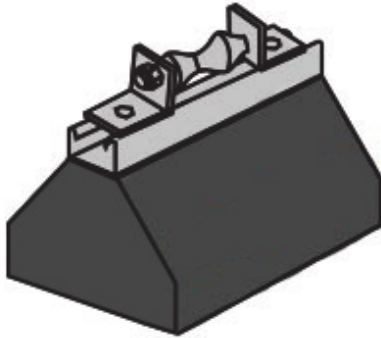
**Ordering:** Specify figure number and model number.

**Ultimate Load Capacity:** 1000 lbs. (4.45kN), (uniform load)  
 For roof loading, consult roof manufacturer or engineer. As with most commercial roofs, the weakest point may be the insulation board beneath the rubber membrane.

UPC/Part #	Model #	A (minimum)	A (maximum) / in (mm)	B / in (mm)	Weight Each	Height (overall) in (mm)	Width (overall) in (mm)	Length (overall) in (mm)
782051/50717	DB 2318 DS	10.56" (268mm)	20.75 (527)	13.50 (343)	33.31 (15.11kg)	23 (584)	25 <sup>-5/8</sup> (651)	20.2 (513)
782051/50718	DB 2918 DS	10.56" (268mm)	26.75 (679)	13.50 (343)	35.00 (15.88kg)	29 (736)	25 <sup>-5/8</sup> (651)	20.2 (513)
782051/50719	DB 4118 DS	10.56" (268mm)	38.75 (984)	13.50 (343)	38.40 (17.42kg)	41 (1041)	25 <sup>-5/8</sup> (651)	20.2 (513)
782051/50720	DB 5318 DS	10.56" (268mm)	50.75 (1289)	13.50 (343)	41.80 (18.96kg)	53 (1346)	25 <sup>-5/8</sup> (651)	20.2 (513)
782051/50721	DB 2324 DS	10.56" (268mm)	20.75 (527)	19.50 (495)	34.15 (15.49kg)	23 (584)	31 <sup>-5/8</sup> (803)	20.2 (513)
782051/50722	DB 2924 DS	10.56" (268mm)	26.75 (679)	19.50 (495)	35.84 (16.26kg)	29 (736)	31 <sup>-5/8</sup> (803)	20.2 (513)
782051/50723	DB 4124 DS	10.56" (268mm)	38.75 (984)	19.50 (495)	39.25 (17.80kg)	41 (1041)	31 <sup>-5/8</sup> (803)	20.2 (513)
782051/50724	DB 5324 DS	10.56" (268mm)	50.75 (1289)	19.50 (495)	42.65 (19.34kg)	53 (1346)	31 <sup>-5/8</sup> (803)	20.2 (513)
782051/50725	DB 2336 DS	10.56" (268mm)	20.75 (527)	31.50 (800)	35.84 (16.26kg)	23 (584)	43 <sup>-5/8</sup> (1108)	20.2 (513)
782051/50726	DB 2936 DS	10.56" (268mm)	26.75 (679)	31.50 (800)	37.55 (17.03kg)	29 (736)	43 <sup>-5/8</sup> (1108)	20.2 (513)
782051/50727	DB 4136 DS	10.56" (268mm)	38.75 (984)	31.50 (800)	40.95 (18.57kg)	41 (1041)	43 <sup>-5/8</sup> (1108)	20.2 (513)
782051/50728	DB 5336 DS	10.56" (268mm)	50.75 (1289)	31.50 (800)	44.34 (20.11kg)	53 (1346)	43 <sup>-5/8</sup> (1108)	20.2 (513)
782051/50729	DB 2348 DS	10.56" (268mm)	20.75 (527)	43.50 (1105)	37.55 (17.03kg)	23 (584)	55 <sup>-5/8</sup> (1415)	20.2 (513)
782051/50730	DB 2948 DS	10.56" (268mm)	26.75 (679)	43.50 (1105)	39.25 (17.80kg)	29 (736)	55 <sup>-5/8</sup> (1415)	20.2 (513)
782051/50731	DB 4148 DS	10.56" (268mm)	38.75 (984)	43.50 (1105)	42.65 (19.34kg)	41 (1041)	55 <sup>-5/8</sup> (1415)	20.2 (513)
782051/50732	DB 5348 DS	10.56" (268mm)	50.75 (1289)	43.50 (1105)	46.03 (20.88kg)	53 (1346)	55 <sup>-5/8</sup> (1415)	20.2 (513)



**FIG. DBRSF  
BASE WITH 14 GA. (1.MM) GALV CHANNEL –  
1" (25.4MM) HIGH AND PIPE ROLLER ASSEMBLY**



**Dimensions:** Height to Bottom of Pipe x 6" (152mm) Wide x Long (length)

**Pipe Roller Material:** Cast Iron – Electro-Plated

**Brackets, Axle, & Hardware:** Electro-Plated Steel

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

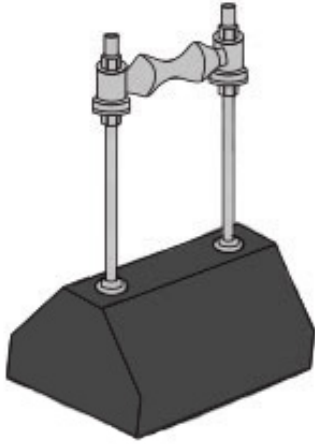
**Ultimate Load Capacity:** (uniform load) For roof loading, consult roof manufacturer or engineer. As with most commercial roofs, the weakest point may be the insulation board beneath the rubber membrane.

ROOFTOP  
SUPPORTS

UPC/Part #	Model #	Height ** / in (mm)	Width / in (mm)	Length / in (mm)	Weight Each	Ultimate Load Capacity
782051/50745	DBR 2 – 3-1/2	7.09 (180)	6 (152)	9.6 (244)	5.28 (2.39kg)	500 lbs (2.22kN)
782051/50746	DBR 4 – 6	7.09 (180)	6 (152)	9.6 (244)	10.63 (4.82kg)	500 lbs (2.22kN)
782051/50747	DBR 8 – 10	8.34 (212)	6 (152)	20.2 (5123)	15.99 (7.25kg)	1000 lbs (4.45kN)
782051/50748	DBR 12 – 14	8.34 (212)	6 (152)	20.2 (5123)	21.34 (9.68kg)	1000 lbs (4.45kN)
782051/50749	DBR 16 – 20	8.34 (212)	6 (152)	20.2 (5123)	26.70 (12.11kg)	1000 lbs (4.45kN)



**FIG. DBRSA  
BASE WITH TWO 1/2" (12.17MM) – 13" (330MM)  
ELECTRO ZINC ALL THREADED ROD RISERS  
AND A B 3114 – 3-1/2" (88.9) PIPE ROLL WITH SOCKETS**



**Dimensions:** Overall Height as Specified Base – 4" High (101mm) x 6" (152mm) Wide x 9.6" (244mm) Length (base length)

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

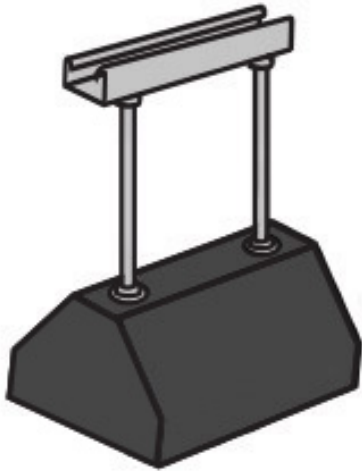
**Ultimate Load Capacity:** 200 lbs. (0.89kN) For roof loading, consult roof manufacturer or engineer. As with most commercial roofs, the weakest point may be the insulation board beneath the rubber membrane.

UPC/Part #	Model #	Adjustable Height	Width / in (mm)	Length / in (mm)	Weight Each	Ultimate Load Capacity
782051/50750	DBR 10-12	up to 12" (305mm)	6 (152)	9.6 (244)	6.46 (2.93kg)	200 lbs. (0.89kN)

ROOFTOP  
SUPPORTS



**FIG. DBRES**  
**BASE WITH TWO 1/2" (12.7MM) –**  
**13 ELECTRO ZINC ALL THREADED ROD RISERS**  
**AND 14 GA. (1.9MM) GALV. SLOTTED CHANNEL**



**Dimensions:** Overall Height as Specified Base – 4" High (101mm) x 6" (152mm) Wide x 9.6" (244mm) Length (base length)

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

**Ultimate Load Capacity**  
 200 lbs. (0.89kN) For roof loading, consult roof manufacturer or engineer. As with most commercial roofs, the weakest point may be the insulation board beneath the rubber membrane.

UPC/Part #	Model #	Adjustable Height / in (mm)	Width / in (mm)	Channel Length	Weight Each	Ultimate Load Capacity
782051/50036	DBE 10 – 8	5-1/2 – 8 (140 – 203)	6 (152)	9.35" (152mm)	5.68 (2.58kg)	200 lbs. (0.89kN)
782051/50037	DBE 10 – 12	5-1/2 – 12 (140 – 305)	6 (152)	9.35" (152mm)	5.72 (2.59kg)	200 lbs. (0.89kN)
782051/50038	DBE 10 – 16	5-1/2 – 16 (140 – 406)	6 (152)	9.35" (152mm)	5.76 (2.61kg)	200 lbs. (0.89kN)



**FIG. DBMSA  
BASE WITH 3/8" – 16 ELECTRO ZINC ALL THREADED ROD AND  
HINGED PIPE CLAMP**



ROOFTOP SUPPORTS

**Dimensions:** Height to Pipe Center x 6" (152mm) Wide x 4.8" (12mm) Long (overall length)

**Pipe Clamp Material:** Malleable Iron

**Threaded Rod / Hardware:** Electro-Plated Steel

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

**Ultimate Load Capacity:** 50 lbs. (0.22kN), (uniform load)  
For roof loading, consult roof manufacturer or engineer. As with most commercial roofs, the weakest point may be the insulation board beneath the rubber membrane.

UPC/Part #	Model #	Height (Min) ** in (mm)	Height (Max) ** in (mm)	Width / in (mm)	Length / in (mm)	Weight Each	Ultimate Load Capacity
782051/50733	DBM 1/2 CT	9.69 (246)	11.19 (284)	6 (152)	4.80 (122)	2.75 (1.25kg)	50 lbs. (0.22kN)
782051/50734	DBM 3/4 CT	9.84 (250)	11.34 (288)	6 (152)	4.80 (122)	2.76 (1.25kg)	50 lbs. (0.22kN)
782051/50735	DBM 1 CT	9.95 (253)	11.45 (291)	6 (152)	4.80 (122)	2.84 (1.29kg)	50 lbs. (0.22kN)
782051/50736	DBM 1-1/4 CT	10.13 (257)	11.63 (295)	6 (152)	4.80 (122)	1.95 (1.34kg)	50 lbs. (0.22kN)
782051/50747	DBM 1-1/2 CT	10.28 (261)	11.78 (299mm)	6 (152)	4.80 (122)	2.96 (1.34kg)	50 lbs. (0.22kN)
782051/50738	DBM 2 CT	10.53 (267)	12.03 (305)	6 (152)	4.80 (122)	3.03 (1.37kg)	50 lbs. (0.22kN)

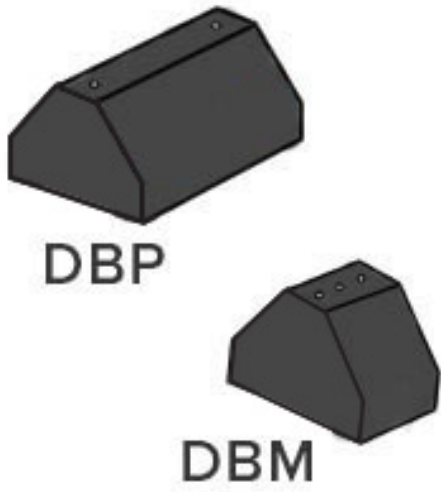
**Chart Notes**  
- Copper Tubing Supports  
\*\* From bottom of rubber block to bottom of pipe/tubing.

UPC/Part #	Model #	Height (Min) ** in (mm)	Height (Max) ** in (mm)	Width / in (mm)	Length / in (mm)	Weight Each	Ultimate Load Capacity
782051/50739	DBM 1/2	9.86 (250)	11.36 (288)	6 (152)	4.80 (122)	2.78 (1.26kg)	50 lbs. (0.22kN)
782051/50740	DBM 3/4	10.06 (255)	11.56 (293)	6 (152)	4.80 (122)	2.84 (1.29kg)	50 lbs. (0.22kN)
782051/50741	DBM 1	10.14 (257)	11.64 (296)	6 (152)	4.80 (122)	2.86 (1.30kg)	50 lbs. (0.22kN)
782051/50742	DBM 1-1/4	10.25 (260)	11.75 (298)	6 (152)	4.80 (122)	2.93 (1.33kg)	50 lbs. (0.22kN)
782051/50743	DBM 1-1/2	10.42 (265)	11.92 (303)	6 (152)	4.80 (122)	2.99 (1.36kg)	50 lbs. (0.22kN)
782051/50744	DBM 2	10.66 (271)	12.16 (309)	6 (152)	4.80 (122)	3.10 (1.41kg)	50 lbs. (0.22kN)

**Chart Notes**  
- Steel Pipe Supports  
\*\* From bottom of rubber block to bottom of pipe/tubing.



**FIG. DBMSO**  
**BASE WITH 3/8" – 16 ELECTRO ZINC ALL THREADED ROD AND**  
**HINGED PIPE CLAMP (BASE ONLY)**



**Dimensions:** 4" (101mm) High x 6" (152mm) Wide x 9.6" (244mm) Long (base length)

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

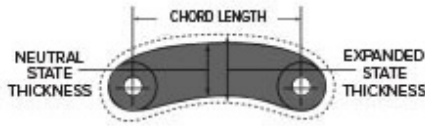
**Ultimate Load Capacity:**  
 (uniform load) For roof loading, consult roof manufacturer or engineer. As with most commercial roofs, the weakest point may be the insulation board beneath the rubber membrane.

UPC/Part #	Model #	Height / in (mm)	Width / in (mm)	Length / in (mm)	Weight Each	Ultimate Load Capacity
782051/49691	DBP	4 (101)	6 (152)	9.6 (244)	4.48 (2.03kg)	500 lbs (2.22kN)
782051/50005	DBM	4 (101)	6 (152)	4.8 (122)	2.35 (1.07kg)	200 lbs (0.89kN)



**FIG. PS  
PIPE LINK SEAL**

PIPE LINK SEALS



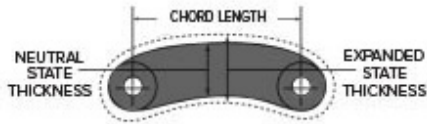
**Service:** Designed to provide a gas and water tight seal. All sizes have been tested to withstand a hydro-static seal up to 20 psig or 40 feet of head pressure in addition to withstanding temperatures up to 250 degrees Fahrenheit.

**Notes:** Minimum Recommended sleeve length or wall thickness is 4 inches for pipe link seal model PS-325 and 6 inches for models PS-400 and larger.

Pipe Size (in)	Pipe OD (in)	Steel Pipe Sleeve				PVC Pipe Sleeve			Cast of Core Bit Drilled Hole		
		Pipe Size	Sleeve ID	Seal Part #	required # of links	Sleeve ID	Seal Part #	required # of links	Hole ID	Seal Part #	required # of links
1/2	0.840	2	2.067	PS-200	4	2.150	PS-275	5	2	PS-200	4
3/4	1.050	2-1/2	2,469	PS-275	5	2.600	PS-300	4	2-1/2	PS-275	5
1	1.315	2-1/2	2,469	PS-200	5	2.600	PS-275	7	3	PS-300	4
1-1/4	1.660	3	3.068	PS-275	7	3.166	PS-300	5	3	PS-275	7
1-1/2	1.900	3-1/2	3.548	PS-300	5	3.166	PS-275	9	3-1/2	PS-300	5
2	2.375	4	4.026	PS-300	6	4.070	PS-315	7	4	PS-300	6
2-1/2	2.875	4	4.026	PS-325	9	4.070	PS-200	10	4	PS-200	9
3	3.500	5	5.047	PS-300	8	4.070	PS-200	11	5	PS-300	8
3-1/2	4.000	6	6.065	PS-425	5	6.000	PS-325	5	6	PS-325	5
4	4.500	6	6.065	PS-300	10	6.000	PS-300	11	6	PS-300	10
5	5.563	8	7.981	PS-425	6	7.805	PS-325	7	8	PS-425	6
6	6.625	10	10.020	PS-475	10	9.728	PS-400	7	10	PS-475	10
8	8.625	12	12.000	PS-475	12	11.538	PS-400	9	12	PS-475	12
10	10.750	14	13.250	PS-425	10	—	—	—	14	PS-400	10
12	12.750	16	15.250	PS-425	12	—	—	—	16	PS-400	12
14	14.000	18	17.250	PS-400	13	—	—	—	16	PS-325	15
16	16.000	20	19.250	PS-410	20	—	—	—	18	PS-325	17
18	18.000	24	23.250	PS-500	16	—	—	—	22	PS-575	20
20	20.000	24	23.250	PS-400	18	—	—	—	24	PS-575	22
22	22.000	24	23.250	PS-300	47	—	—	—	26	PS-575	24
24	24.000	30	29.250	PS-500	21	—	—	—	28	PS-575	26
26	26.000	30	29.250	PS-400	23	—	—	—	30	PS-575	28
28	28.000	34	33.250	PS-500	24	—	—	—	32	PS-325	30
30	30.000	36	35.250	PS-500	26	—	—	—	34	PS-575	32
32	32.000	36	35.250	PS-475	40	—	—	—	36	PS-575	34
34	34.000	40	39.250	PS-500	29	—	—	—	38	PS-575	36
36	36.000	42	41.000	PS-500	31	—	—	—	40	PS-575	38
42	42.000	48	47.000	PS-400	36	—	—	—	46	PS-575	44
48	48.000	54	53.000	PS-500	41	—	—	—	52	PS-325	50



**FIG. PSCT  
PIPE LINK SEAL**



**Service:** Designed to provide a gas and water tight seal. All sizes have been tested to withstand a hydro-static seal up to 20 psig or 40 feet of head pressure in addition to withstanding temperatures up to 250 degrees Fahrenheit.

**Notes:** Minimum Recommended sleeve length or wall thickness is 4 inches for pipe link seal model PS-325 and 6 inches for models PS-400 and larger.

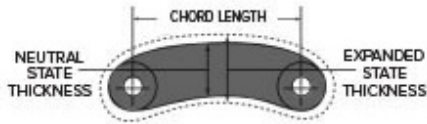
PIPE LINK SEALS

Pipe Size (in)	Pipe OD (in)	Steel Pipe Sleeve				PVC Pipe Sleeve			Cast of Core Bit Drilled Hole		
		Pipe Size	Sleeve ID	Seal Part #	required # of links	Sleeve ID	Seal Part #	required # of links	Hole ID	Seal Part #	required # of links
1/2	0.625	2	2.067	PS-275	4	2.150	PS-300	3	2	PS-275	4
3/4	0.875	2	2.067	PS-200	4	2.600	PS-315	4	2	PS-200	4
1	1.125	2-1/2	2.469	PS-275	5	2.600	PS-275	5	2-1/2	PS-275	5
1-1/4	1.375	3	3.068	PS-300	4	3.166	PS-315	5	3	PS-300	4
1-1/2	1.625	3	3.068	PS-275	7	3.166	PS-300	5	3	PS-275	7
2	2.125	3-1/2	3.548	PS-275	8	4.070	PS-315	7	3-1/2	PS-275	8
2-1/2	2.625	4	4.026	PS-275	10	4.070	PS-275	12	4	PS-275	10
3	3.125	5	5.047	PS-325	4	6.000	PS-400	4	5	PS-325	4
4	4.125	6	6.065	PS-325	5	6.000	PS-315	11	6	PS-325	5
6	6.125	8	7.981	PS-325	7	9.728	PS-475	9	8	PS-325	7
8	8.125	10	10.020	PS-325	9	11.538	PS-475	12	10	PS-325	9
10	10.125	14	12.000	PS-400	10	—	—	—	14	PS-400	14
12	12.125	16	15.250	PS-400	12	—	—	—	16	PS-400	16



**FIG. PSE  
PIPE LINK SEAL FOR ELECTRICAL METALLIC TUBING (EMT)**

PIPE LINK SEALS



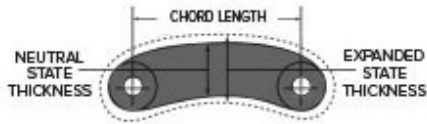
**Service:** Designed to provide a gas and water tight seal. All sizes have been tested to withstand a hydro-static seal up to 20 psig or 40 feet of head pressure in addition to withstanding temperatures up to 250 degrees Fahrenheit.

**Notes:** Minimum Recommended sleeve length or wall thickness is 4 inches for pipe link seal model PS-325 and 6 inches for models PS-400 and larger.

Pipe Size (in)	Pipe OD (in)	Steel Pipe Sleeve				PVC Pipe Sleeve			Cast of Core Bit Drilled Hole		
		Pipe Size	Sleeve ID	Seal Part #	required # of links	Sleeve ID	Seal Part #	required # of links	Hole ID	Seal Part #	required # of links
1/2	0.706	2	2.067	PS-275	4	2.150	PS-275	5	2	PS-275	4
3/4	0.922	2	2.067	PS-200	4	2.600	PS-300	4	2	PS-200	4
1	1.163	3	3.068	PS-315	4	2.600	PS-275	7	3	PS-315	4
1-1/4	1.510	3	3.068	PS-300	4	3.166	PS-300	5	3	PS-300	4
1-1/2	1.740	3-1/2	3.548	PS-315	5	3.166	PS-275	8	3-1/2	PS-315	7
2	2.197	4	4.026	PS-315	6	4.070	PS-315	7	4	PS-315	8
2-1/2	2.875	4	4.026	PS-200	9	4.070	PS-200	10	4	PS-200	10
3	3.500	5	5.047	PS-300	8	6.000	PS-425	4	5	PS-300	4
3-1/2	4.000	6	6.065	PS-325	5	6.000	PS-325	5	6	PS-325	5
4	4.500	6	6.065	PS-300	10	6.000	PS-300	11	6	PS-300	7



**FIG. PSI**  
**PIPE LINK SEAL FOR INTERMEDIATE METAL CONDUIT (IMC)**



**Service:** Designed to provide a gas and water tight seal. All sizes have been tested to withstand a hydro-static seal up to 20 psig or 40 feet of head pressure in addition to withstanding temperatures up to 250 degrees Fahrenheit.

**Notes:** Minimum Recommended sleeve length or wall thickness is 4 inches for pipe link seal model PS-325 and 6 inches for models PS-400 and larger.

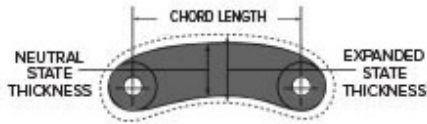
PIPE LINK SEALS

Pipe Size (in)	Pipe OD (in)	Steel Pipe Sleeve				PVC Pipe Sleeve			Cast of Core Bit Drilled Hole		
		Pipe Size	Sleeve ID	Seal Part #	required # of links	Sleeve ID	Seal Part #	required # of links	Hole ID	Seal Part #	required # of links
1/2	0.815	2	2.067	PS-200	4	2.150	PS-275	5	2	PS-200	4
3/4	1.029	2	2.067	PS-200	4	2.600	PS-300	4	2-1/2	PS-275	6
1	1.290	2-1/2	2.469	PS-275	6	2.600	PS-275	7	3	PS-300	4
1-1/4	1.638	3-1/2	3.548	PS-315	5	3.166	PS-300	5	3	PS-275	7
1-1/2	1.883	3-1/2	3.548	PS-300	5	3.166	PS-275	9	3-1/2	PS-300	5
2	2.360	4	4.026	PS-300	6	4.070	PS-315	7	4	PS-300	6
2-1/2	2.857	4	4.026	PS-200	9	4.070	PS-200	10	4	PS-200	9
3	3.476	5	5.047	PS-300	8	6.000	PS-425	4	5	PS-300	8
3-1/2	3.971	6	6.065	PS-325	5	6.000	PS-325	5	6	PS-325	5
4	4.466	6	6.065	PS-300	10	6.000	PS-300	11	6	PS-300	10



**FIG. FIG PSR  
PIPE LINK SEAL FOR RIGID STEEL CONDUIT (RSC)**

PIPE LINK SEALS



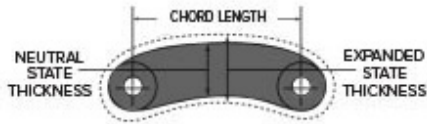
**Service:** Designed to provide a gas and water tight seal. All sizes have been tested to withstand a hydro-static seal up to 20 psig or 40 feet of head pressure in addition to withstanding temperatures up to 250 degrees Fahrenheit.

**Notes:** Minimum Recommended sleeve length or wall thickness is 4 inches for pipe link seal model PS-325 and 6 inches for models PS-400 and larger.

Pipe Size (in)	Pipe OD (in)	Steel Pipe Sleeve				PVC Pipe Sleeve			Cast of Core Bit Drilled Hole		
		Pipe Size	Sleeve ID	Seal Part #	required # of links	Sleeve ID	Seal Part #	required # of links	Hole ID	Seal Part #	required # of links
1/2	0.840	2	2.067	PS-200	4	2.150	PS-275	5	2	PS-200	4
3/4	1.050	2-1/2	2.469	PS-275	6	2.600	PS-300	4	2-1/2	PS-275	6
1	1.315	2-1/2	2.469	PS-200	5	2.600	PS-275	7	3	PS-300	4
1-1/4	1.660	3-1/2	3.548	PS-315	5	3.166	PS-300	5	3	PS-275	7
1-1/2	1.500	3-1/2	3.548	PS-300	5	3.166	PS-300	5	3-1/2	PS-200	5
2	2.375	4	4.026	PS-300	6	4.070	PS-300	7	4	PS-300	6
2-1/2	2.875	4	4.026	PS-200	9	6.000	PS-400	4	4	PS-200	9
3	3.500	5	5.047	PS-300	8	6.000	PS-425	4	5	PS-300	8
3-1/2	4.000	6	6.065	PS-325	5	6.000	PS-325	5	6	PS-325	5
4	4.500	6	6.065	PS-300	10	6.000	PS-275	18	6	PS-300	10
5	5.563	8	7.981	PS-425	6	7.803	PS-325	7	8	PS-425	6
6	6.625	8	7.981	PS-300	15	9.728	PS-400	7	10	PS-475	10



**FIG. PSDI  
PIPE LINK SEAL FOR DUCTILE IRON PIPE (AWWA-TYPE)**



**Service:** Designed to provide a gas and water tight seal. All sizes have been tested to withstand a hydro-static seal up to 20 psig or 40 feet of head pressure in addition to withstanding temperatures up to 250 degrees Fahrenheit.

**Notes:** Minimum Recommended sleeve length or wall thickness is 4 inches for pipe link seal model PS-325 and 6 inches for models PS-400 and larger.

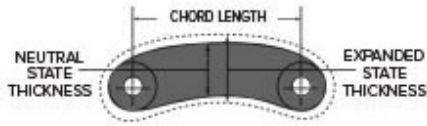
PIPE LINK SEALS

Pipe Size (in)	Pipe OD (in)	Steel Pipe Sleeve				PVC Pipe Sleeve			Cast of Core Bit Drilled Hole		
		Pipe Size	Sleeve ID	Seal Part #	required # of links	Sleeve ID	Seal Part #	required # of links	Hole ID	Seal Part #	required # of links
2	2.500	4	4.026	PS-300	6	4.070	PS-300	7	4	PS-300	6
2-1/2	2.750	5	5.047	PS-325	4	6.000	PS-400	4	5	PS-325	5
3	3.960	6	6.065	PS-325	5	6.000	PS-325	5	6	PS-325	5
4	4.800	8	7.981	PS-410	7	7.803	PS-400	5	8	PS-400	5
6	6.900	10	10.020	PS-400	7	9.728	PS-425	7	10	PS-400	7
8	9.050	12	12.000	PS-400	9	11.538	PS-425	9	12	PS-400	9
10	11.100	14	13.250	PS-325	12	—	—	—	14	PS-400	10
12	13.200	16	15.250	PS-325	14	—	—	—	16	PS-425	12
14	15.300	18	17.250	PS-325	16	—	—	—	18	PS-425	14
16	17.400	20	19.250	PS-315	38	—	—	—	20	PS-425	16
18	19.500	24	23.250	PS-475	25	—	—	—	22	PS-425	18
20	21.600	26	25.250	PS-475	28	—	—	—	26	PS-525	19
24	25.800	30	29.250	PS-400	23	—	—	—	30	PS-575	28
30	32.000	36	35.500	PS-475	40	—	—	—	36	PS-575	34
36	38.300	42	41.000	PS-425	34	—	—	—	43	PS-525	33
42	44.500	48	47.000	PS-425	40	—	—	—	49	PS-525	38
48	50.800	54	53.000	PS-325	53	—	—	—	56	PS-500	43



**FIG. PSC**  
**PIPE LINK SEAL FOR CAST IRON SOIL PIPE (EXTRA HEAVY)**

PIPE LINK SEALS



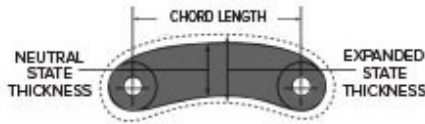
**Service:** Designed to provide a gas and water tight seal. All sizes have been tested to withstand a hydro-static seal up to 20 psig or 40 feet of head pressure in addition to withstanding temperatures up to 250 degrees Fahrenheit.

**Notes:** Minimum Recommended sleeve length or wall thickness is 4 inches for pipe link seal model PS-325 and 6 inches for models PS-400 and larger.

Pipe Size (in)	Pipe OD (in)	Steel Pipe Sleeve				PVC Pipe Sleeve			Cast of Core Bit Drilled Hole		
		Pipe Size	Sleeve ID	Seal Part #	required # of links	Sleeve ID	Seal Part #	required # of links	Hole ID	Seal Part #	required # of links
2	2.380	4	4.026	PS-300	6	4.070	PS-300	7	4	PS-300	6
3	3.500	5	5.047	PS-300	8	6.000	PS-425	4	5	PS-300	8
4	4.500	6	6.065	PS-300	10	7.803	PS-475	7	6	PS-300	10
5	5.500	8	7.981	PS-425	6	9.728	PS-575	8	8	PS-425	6
6	6.500	10	10.020	PS-475	10	9.728	PS-400	7	10	PS-475	10
8	8.620	12	12.000	PS-475	12	11.538	PS-400	9	12	PS-475	12
10	10.750	14	13.250	PS-425	10	—	—	—	—	PS-400	10
12	12.750	16	15.250	PS-425	12	—	—	—	—	PS-400	12
15	15.880	20	19.250	PS-400	15	—	—	—	—	PS-575	18



**FIG. PSCI  
PIPE LINK SEAL FOR CAST IRON SOIL PIPE  
(SERVICE WEIGHT)**



**Service:** Designed to provide a gas and water tight seal. All sizes have been tested to withstand a hydro-static seal up to 20 psig or 40 feet of head pressure in addition to withstanding temperatures up to 250 degrees Fahrenheit.

**Notes:** Minimum Recommended sleeve length or wall thickness is 4 inches for pipe link seal model PS-325 and 6 inches for models PS-400 and larger.

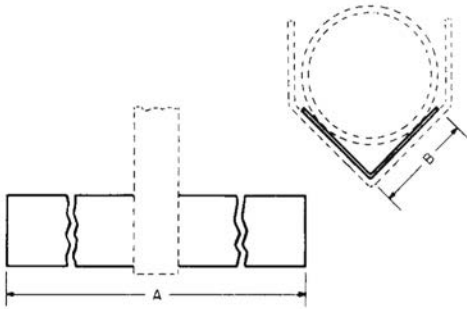
PIPE LINK SEALS

Pipe Size (in)	Pipe OD (in)	Steel Pipe Sleeve				PVC Pipe Sleeve			Cast of Core Bit Drilled Hole		
		Pipe Size	Sleeve ID	Seal Part #	required # of links	Sleeve ID	Seal Part #	required # of links	Hole ID	Seal Part #	required # of links
2	2.300	4	1.026	PS-300	6	4.070	PS-315	7	4	PS-300	6
3	3.300	5	5.047	PS-315	8	6.000	PS-425	4	5	PS-315	8
4	4.300	6	6.065	PS-315	10	7.803	PS-400	5	6	PS-315	10
5	5.300	8	10.020	PS-425	6	9.728	PS-575	8	8	PS-425	6
6	6.300	10	10.020	PS-475	10	9.728	PS-475	10	10	PS-475	10
8	8.380	12	12.000	PS-475	12	11.538	PS-400	9	9	PS-475	12
10	10.500	14	13.250	PS-425	10	—	—	—	—	PS-475	14
12	12.500	16	15.250	PS-425	12	—	—	—	—	PS-475	17
15	15.620	20	19.250	PS-475	21	—	—	—	—	PS-425	15



Manufactured in the USA

FIG. 12  
V-CHANNEL



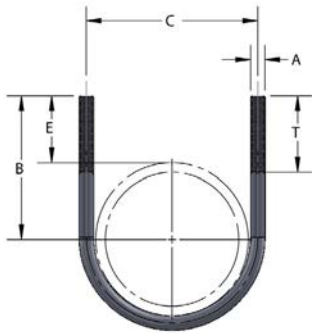
**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Pre-galvanized.  
**Service:** Designed for the support of plastic or other flexible pipe systems. Use with FIG. 11V "V" bottom clevis hanger. Hangers should be placed as close to channel joints as possible.  
**Ordering:** Specify size number and figure number.

SIZE NUMBER	FOR PIPE SIZE	MATERIAL SIZE	CHANNEL LENGTH A	B	WGT EACH (lbs)	MAX REC LOAD (lbs)
2	1/2 to 2	18 ga	10'	1 1/2	5.4	150
2	2 1/2 to 4	18 ga	10'	3	10.5	250

MISCELLANEOUS



**FIG. 37**  
**LIGHT DUTY U-BOLT (LESS NUTS)**



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized.  
**Service:** Designed as a support, guide or anchor for light duty pipe.  
**Ordering:** Specify pipe size, figure number and finish. Hex nuts can be ordered separately.  
**Notes:** Available domestic.

PIPE SIZE	PIPE OD	A	B	C	E	T	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
3/8	0.675	1/4	1 1/8	1	13/16	3/4	.04	485
1/2	0.840	1/4	2 1/16	1 1/4	1 5/8	1 3/4	.06	
3/4	1.050	1/4	2 1/8	1 3/8	1 5/8	1 3/4	.06	
1	1.315	1/4	2 5/16	1 5/8	1 5/8	1 3/4	.06	
1 1/4	1.660	1/4	2 7/16	2	1 5/8	1 3/4	.08	
1 1/2	1.900	1/4	2 1/2	2 1/4	1 9/16	1 3/4	.08	
2	2.375	1/4	2 3/4	2 11/16	1 9/16	1 3/4	.10	1220
2 1/2	2.875	3/8	3 1/8	3 3/8	1 11/16	2	.28	
3	3.500	3/8	3 1/2	3 7/8	1 3/4	2	.32	
3 1/2	4.000	3/8	3 11/16	4 1/2	1 11/16	2	.34	
4	4.500	3/8	3 7/8	4 7/8	1 5/8	2	.38	
5	5.563	3/8	4 5/8	6	1 13/16	2 1/4	.46	2260
6	6.625	1/2	5 1/8	7 1/4	1 13/16	2 1/4	.94	
8	8.625	1/2	6 1/8	9 1/8	1 13/16	2 1/4	1.16	

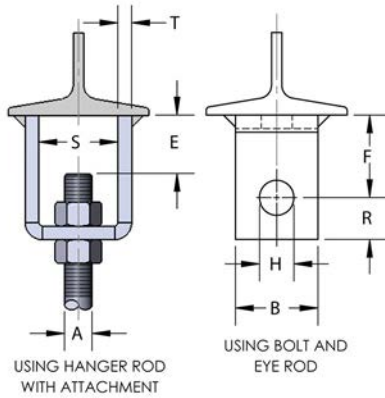
MISCELLANEOUS



Manufactured in the USA

FIG. 66L  
WELDING BEAM ATTACHMENT

FIG. 66W  
WELDING BEAM ATTACHMENT WITH BOLT & NUT



"E" dimension includes exposed rod threads beyond bottom of the hex nut. Exposed rod thread dimension is equal to the diameter of the rod used.

**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, painted or electro-galvanized.  
**Service:** Designed for the attachment of hanger rod to the bottom flange of steel beams where heavy loads and large hanger rod sizes are required.  
**Approvals:** Complies with Federal Specification WW-H-171-E (Type# 22), A-A-1192A (Type# 22), and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 22).  
**Ordering:** Specify rod size, figure number and finish.  
**Notes:** Can be welded in either the upright or inverted position when ordered with hardware.  $\frac{3}{8}$  to  $1\text{-}\frac{1}{8}$  supplied with bolts and nuts.  $1\text{-}\frac{1}{4}$  and larger supplied with pins and cotters.

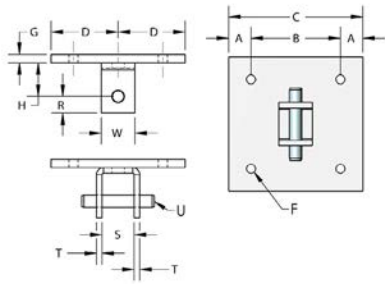
MISCELLANEOUS

SIZE A	BOLT OR PIN SIZE	B	E	F	H	R	S	T	WEIGHT EACH (lbs)		MAX REC LOAD (lbs)	
									W/O BOLT & NUT	WITH BOLT & NUT	650°F	750°F
$\frac{3}{8}$	$\frac{1}{2} \times 2\frac{3}{4}$	2	$1\frac{7}{8}$	2	$\frac{9}{16}$	$\frac{7}{8}$	$1\frac{1}{2}$	3ga	0.835	1.055	610	510
$\frac{1}{2}$	$\frac{5}{8} \times 2\frac{3}{4}$	2	$1\frac{5}{8}$	2	$\frac{11}{16}$	$\frac{7}{8}$	$1\frac{1}{2}$	3ga	0.790	1.150	1130	940
$\frac{5}{8}$	$\frac{3}{4} \times 3$	2	$1\frac{3}{8}$	2	$\frac{13}{16}$	$\frac{7}{8}$	$1\frac{1}{2}$	3ga	0.770	1.350	1810	1510
$\frac{3}{4}$	$\frac{7}{8} \times 3\frac{1}{2}$	$2\frac{1}{2}$	$1\frac{3}{8}$	2	$\frac{29}{32}$	$1\frac{1}{8}$	$1\frac{9}{16}$	$\frac{3}{8}$	1.640	2.560	2710	2260
$\frac{7}{8}$	$1 \times 4$	$2\frac{1}{2}$	$2\frac{1}{4}$	3	$1\frac{1}{16}$	$1\frac{1}{4}$	$2\frac{1}{16}$	$\frac{3}{8}$	2.240	3.600	3770	3150
1	$1\frac{1}{8} \times 5$	3	$2\frac{3}{4}$	3	$1\frac{1}{4}$	$1\frac{1}{2}$	$2\frac{3}{4}$	$\frac{1}{2}$	4.270	6.290	4960	4150
$1\frac{1}{4}$	$1\frac{3}{8} \times 6\frac{1}{2}$	4	$2\frac{7}{8}$	3	$1\frac{1}{2}$	2	3	$\frac{5}{8}$	8.090	10.220	8000	6660
$1\frac{1}{2}$	$1\frac{5}{8} \times 6\frac{1}{2}$	5	4	4	$1\frac{3}{4}$	$2\frac{1}{2}$	$3\frac{1}{2}$	$\frac{3}{4}$	15.600	19.020	11630	9700
$1\frac{3}{4}$	$1\frac{7}{8} \times 6\frac{7}{8}$	5	5	5	2	$2\frac{3}{4}$	$3\frac{3}{4}$	$\frac{3}{4}$	18.700	24.180	15700	14000
2	$2\frac{1}{4} \times 6\frac{7}{8}$	6	$5\frac{1}{4}$	5	$2\frac{3}{8}$	$3\frac{1}{4}$	$3\frac{3}{4}$	$\frac{3}{4}$	22.800	30.550	20700	18460

**FIG. 67**  
CONCRETE CLEVIS PLATE



Manufactured in the USA



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain or electro-galvanized.  
**Service:** Designed for the attachment to concrete ceilings where flexibility is desired. Normally used in conjunction with FIG. 13 weldless eye nut or FIG. #26W welded eye rod.  
**Ordering:** Specify rod size, figure number and finish.

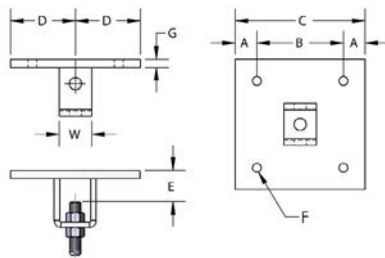
ROD SIZE (inch)	A	B	C	D	F	G	H	S	T	U	W	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
3/8	1	8	10	5	9/16	3/8	2	1 1/2	1/4	1/2	2	11.87	610
1/2	1	8	10	5	9/16	3/8	2	1 1/2	1/4	5/8	2	12.01	1130
5/8	1	8	10	5	9/16	1/2	2	1 1/2	1/4	3/4	2	15.75	1810
3/4	1	8	10	5	11/16	1/2	2	1 3/4	3/8	7/8	2 1/2	16.99	2710
7/8	1	8	10	5	11/16	1/2	3	2 1/4	3/8	1	2 1/2	18.14	3770
1	2	8	12	6	13/16	3/4	3	2 3/4	1/2	1 1/8	3	37.01	4960
1 1/8	2	8	12	6	15/16	3/4	3	2 3/4	5/8	1 3/8	3	37.90	6230
1 1/4	2	8	12	6	15/16	3/4	3	3	5/8	1 3/8	4	40.72	8000
1 1/2	2	8	12	6	1 1/8	1	4	3 1/2	3/4	1 5/8	5	60.00	11630

MISCELLANEOUS

**FIG. 68**  
CONCRETE ROD ATTACHMENT



Manufactured in the USA



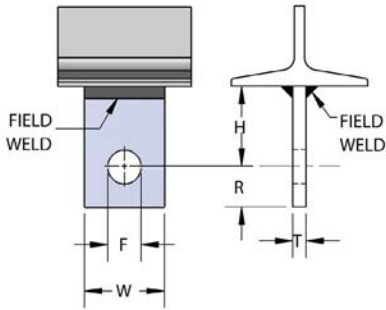
**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain or electro-galvanized.  
**Service:** Designed for the attachment of hanger rod to concrete ceilings where vertical adjustment of hanger is desired.  
**Ordering:** Specify rod size, figure number and finish.

ROD SIZE (inch)	A	B	C	D	F	G	W	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
3/8	1	8	10	5	9/16	3/8	2	11.66	610
1/2	1	8	10	5	9/16	3/8	2	11.66	1130
5/8	1	8	10	5	9/16	1/2	2	15.16	1810
3/4	1	8	10	5	11/16	1/2	2 1/2	16.12	2710
7/8	1	8	10	5	11/16	1/2	2 1/2	16.73	3770
1	2	8	12	6	13/16	3/4	3	34.99	4960
1 1/8	2	8	12	6	13/16	3/4	3	35.22	6230
1 1/4	2	8	12	6	13/16	3/4	4	38.81	8000



Manufactured in the USA

FIG. 69L (LONG)  
FIG. 69S (SHORT)  
STRUCTURAL WELDING LUG



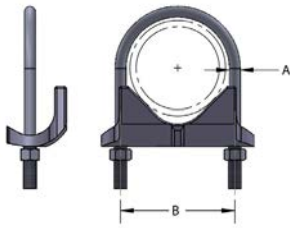
**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain or electro-galvanized.  
**Service:** Designed to be welded to structural members and used in conjunction with figure #909 forged steel clevis with pin and cotters.  
**Approvals:** Complies with Federal Specification WW-H-171-E (Type# 57), A-A-1192A (Type# 57), and Manufacturers' Standardization Society MSS SP-58 and SP-69 (Type# 57).  
**Ordering:** Specify rod size, figure number, finish and whether long or short lug is required.

MISCELLANEOUS

FIG. 69S, 69L						FIG. 69S (Short)		FIG. 69L (Long)			
ROD SIZE A*	PIN OR BOLT DIA.	F	R	T	W	MAX LOAD		ROD TAKE OUT - H	WEIGHT (lbs)	ROD TAKE OUT - H	WEIGHT (lbs)
						650°F	750°F				
1/2	5/8	11/16	1 1/4	1/4	2 1/2	1350	1057	1 1/2	0.48	3	0.75
5/8	3/4	13/16		1/4		2160	1692		0.41	3	0.68
3/4	7/8	15/16		3/8		3230	2530		0.60	3	1.00
7/8	1	1 1/8		3/8		4480	3508	0.71	3	0.98	
1	1 1/8	1 1/4	1 1/2	1/2	3	5900	4620	2	1.2	3	1.60
1 1/4	1 3/8	1 1/2	2	5/8	4	9500	7440	3	3.0	4	3.70
1 1/2	1 5/8	1 3/4	2 1/2	3/4	5	13800	10807		4.8	4 1/2	6.40
1 3/4	1 7/8	2		3/4		18600	14566		4.7	4 1/2	6.30
2	2 1/4	2 3/8	3	3/4	6	24600	19265	4	7.2	4 1/2	8.80
2 1/4	2 1/2	2 3/8		3/4		32300	25295	7.6	—	—	
2 1/2	2 3/4	2 7/8	4	1	8	39800	31169	4 1/2	15.5	—	—
2 3/4	3	3 1/8		1		49400	38687		15.1	—	—
3	3 1/4	3 3/8		1		60100	47066	16.0	—	—	
3 1/4	3 1/2	3 5/8	4 1/2	1	9	71900	56307	5	18.9	—	—
3 1/2	3 3/4	3 7/8		1 1/2		84700	66331		31.3	—	—
3 3/4	4	4 1/8		1 3/4		98500	77139	35.9	—	—	

\*Note: Rod size "A" is the assembly rod diameter. Dimension not shown on drawing

**FIG. 136**  
**RIGHT ANGLE CLAMP**

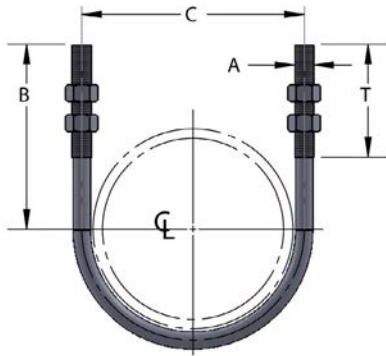


**Material:** Malleable iron with carbon steel u-bolt and nuts.  
**Finish:** Electro-galvanized.  
**Service:** Designed for anchoring pipe or conduit at a right angle to structural members.  
**Ordering:** Specify pipe size and figure number.

PIPE SIZE	PIPE OD	A	B	WEIGHT EACH (lbs)
1/2	0.840	5/16	2	0.40
3/4	1.050		2 1/8	0.42
1	1.315		2 3/8	0.48
1 1/4	1.660		3	0.55
1 1/2	1.900		3 1/2	0.57
2	2.375	3/8	4	0.89
2 1/2	2.875		4 3/8	1.10
3	3.500		5	1.14
3 1/2	4.000		5 1/2	1.30
3	4.500		6	1.40

MISCELLANEOUS

**FIG. 137**  
**STANDARD U-BOLT WITH 4 HEX NUTS**



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized.  
**Service:** Designed for support or guide of heavy loads.  
**Approvals:** Complies with Federal Specifications WW-H-171-E (Type# 24), A-A-1192 A (Type# 24), and MSS SP-58 and SP-69 (Type# 24).  
**Ordering:** Specify pipe size, figure number and finish. Sizes 1/2" to 1" can be furnished with 3/8" rod size.  
**Notes:** U-bolts with longer tangents or longer threads are available. Also available with plastic coating.  
**Available domestic**

MISCELLANEOUS

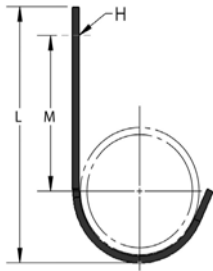
PIPE SIZE	PIPE OD	A	B	C	T	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
1/2	0.840	1/4-20	2 3/4	1 3/16	2 3/8	0.10	485
3/4	1.050	1/4-20	2 3/4	1 3/8	2 3/8	0.10	485
1	1.315	1/4-20	2 3/4	1 5/8	2 3/8	0.10	485
1 1/4	1.660	3/8-16	2 7/8	2 1/16	2 3/8	0.26	1220
1 1/2	1.900	3/8-16	3	2 3/8	2 1/2	0.28	1220
2	2.375	3/8-16	3 1/4	2 13/16	2 1/2	0.32	1220
2 1/2	2.875	1/2-13	3 3/4	3 7/16	3	0.70	2260
3	3.500	1/2-13	4	4 1/16	3	0.76	2260
3 1/2	4.000	1/2-13	4 1/4	4 9/16	3	0.80	2260
4	4.500	1/2-13	4 1/2	5 1/16	3	0.86	2260
5	5.563	1/2-13	5	6 1/8	3	1.00	2260
6	6.625	5/8-11	6 1/8	7 3/8	3 3/4	1.98	3620
8	8.625	5/8-11	7 1/8	9 3/8	3 3/4	2.26	3620
10	10.750	3/4-10	8 3/8	11 5/8	4	3.94	5420
12	12.750	7/8-9	9 5/8	13 3/4	4 1/4	6.40	7540
14	14.000	7/8-9	10 1/4	15	4 3/4	8.30	7540
16	16.000	7/8-9	11 1/4	17	4 3/4	9.20	7540
18	18.000	1-8	12 5/8	19 1/8	4 3/4	13.50	9920
20	20.000	1-8	13 5/8	21 1/8	4 3/4	14.60	9920
24	24.000	1-8	15 5/8	25 1/8	4 3/4	16.90	9920



**FIG. 145**  
RETURN LINE STRAIGHT J-HOOK



Manufactured in the USA



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized.  
**Service:** Designed for supporting light pipe loads next to wall.  
**Ordering:** Specify pipe size, figure number and finish.

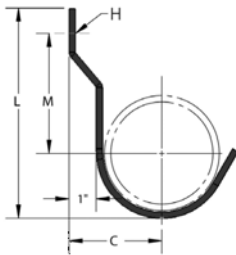
PIPE SIZE	PIPE OD	MATERIAL SIZE	H	L	M	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
1/2	0.840	1 1/4 x 1/4	9/16	6 3/8	5	0.55	350
3/4	1.050	1 1/4 x 1/4		6 1/2		0.59	
1	1.315	1 1/4 x 1/4		6 11/16		0.82	
1 1/4	1.660	1 1/4 x 1/4		6 13/16		0.84	600
1 1/2	1.900	1 1/2 x 1/4		6 15/16		1.09	
2	2.375	1 1/2 x 1/4		7 3/16		1.15	
2 1/2	2.875	1 1/2 x 1/4		7 7/16		1.23	
3	3.500	1 1/2 x 1/4		7 3/4		1.39	
3 1/2	4.000	1 1/2 x 1/4		8		1.48	
4	4.500	1 1/2 x 1/4	8 1/4	1.58			

MISCELLANEOUS

**FIG. 146**  
OFFSET J-HOOK



Manufactured in the USA



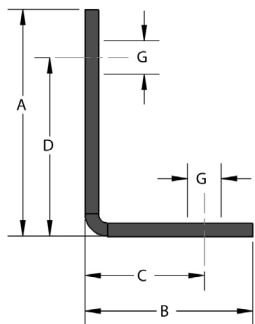
**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized.  
**Service:** Designed for supporting light pipe loads with 1" offset from wall to provide clearance for fittings.  
**Ordering:** Specify pipe size, figure number and finish.

PIPE SIZE	PIPE OD	MATERIAL SIZE	C	H	L	M	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
1/2	0.840	1 1/4 x 1/4	1 5/8	9/16	6 3/8	5	0.55	350
3/4	1.050		1 11/16		6 1/2	5	0.59	
1	1.315		1 15/16		6 11/16	5	0.82	
1 1/4	1.660		2 1/16		6 13/16	5	0.84	600
1 1/2	1.900	2 7/16	6 15/16		5	1.09		
2	2.375	2 7/16	7 3/16		5	1.15		
2 1/2	2.875	2 11/16	7 7/16		5	1.23		
3	3.500	3	7 3/4		5	1.39		
3 1/2	4.000	3 1/4	8		5	1.48		
4	4.500	3 1/2	8 1/4	5	1.58	700		
5	5.563	2 x 1/4	4 3/16	10	6 1/4		2.40	
6	6.625		4 11/16	11	7		2.80	



Manufactured in the USA

**FIG. 152**  
**RETURN LINE ANGLE**

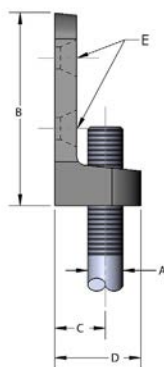


**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain.  
**Service:** Designed to enable the field mechanic to obtain different distances from wall to center of pipe line by turning the angle to distance required. They are made in light and heavy material and will support pipes 2, 3 or 4 inches from wall to center of pipe.  
**Approvals:** Complies with Federal Specifications WW-H-171-E (Type# 21), A-A-1192 A (Type# 21), and MSS SP-58 and SP-69 (Type# 21).  
**Ordering:** Specify size number, figure number and finish.

MISCELLANEOUS

SIZE NO.	MATERIAL	A	B	C	D	G	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
1	4ga	3 <sup>13</sup> / <sub>16</sub>	2 <sup>13</sup> / <sub>16</sub>	2	3	9/16	0.425	180
2	4ga	4 <sup>13</sup> / <sub>16</sub>	3 <sup>13</sup> / <sub>16</sub>	3	4		0.585	180
3	3/8	3 <sup>7</sup> / <sub>8</sub>	2 <sup>7</sup> / <sub>8</sub>	2	3		0.870	390
4	3/8	4 <sup>7</sup> / <sub>8</sub>	3 <sup>7</sup> / <sub>8</sub>	3	4		1.175	390
5	4ga	6 <sup>15</sup> / <sub>16</sub>	4 <sup>15</sup> / <sub>16</sub>	4	6		0.825	180
6	3/8	6 <sup>15</sup> / <sub>16</sub>	4 <sup>15</sup> / <sub>16</sub>	4	6		1.650	190

**FIG. 153**  
**SIDE BEAM CONNECTOR**



**Material:** Malleable iron.  
**Finish:** Plain or electro-galvanized.  
**Service:** Designed for mounting to sides of wood beams using figure 59 drive screws. Bottom hole is tapped for rod.  
**Ordering:** Specify rod size, figure number and finish.

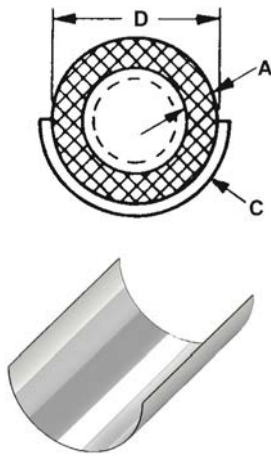
SIZE A	B	C	D	E SCREW SIZE	WEIGHT EACH (lbs)	MAX REC LOAD (lbs)
3/8-16	2 <sup>1</sup> / <sub>8</sub>	5/8	15/16	#12	0.13	250
1/2-13	2 <sup>3</sup> / <sub>4</sub>	3/4	1 <sup>3</sup> / <sub>16</sub>	#14	0.29	480





Manufactured in the USA

**FIG. 167**  
**PIPE COVERING PROTECTION SHIELD**



**Material:** Pre-galvanized carbon steel, also available in 304 and 316 stainless steel.

**Finish:** Pre-galvanized.

**Service:** Designed for outside of foam or fiberglass insulation on stationary pipe lines (not designed for pipe rollers) to prevent crushing of insulation without breaking the vapor barrier.

**Approvals:** Complies with Federal Specifications WW-H-171-E (Type# 41), A-A-1192 A (Type# 40), and MSS SP-58 and SP-69 (Type# 40).

**Ordering:** Specify shield size and figure number.

**Notes:** Also available in 304 stainless steel.

SIZE NO. SHIELD	B LENGTH	C STOCK SIZE	D DIAMETER	HANGER SIZE	WEIGHT EACH (lbs)	
0	12	24ga	1 7/8	1 1/2	0.25	
1			2 3/8	2	0.31	
2			2 7/8	2 1/2	0.37	
3		18ga	16ga	3 1/2	3	0.90
4				4	3 1/2	0.95
5				4 1/2	4	1.10
6				5	5	1.25
7				5 5/16	5	1.40
8				6 5/8	6	1.65
9				7 3/8	8	1.90
10				8 3/8	8	2.10
13				9 3/8	10	2.35
14				10 3/4	10	2.65
15				11 3/4	12	2.95
16				12 3/4	12	3.15
17				14	14	4.45
18				15	16	4.46
19		16	16	4.90		
20		17	18	5.15		
21		18	18	5.50		
22		19	20	5.70		
23		20	20	6.35		
24		21	24	6.45		
25		22	24	6.60		
26		23	24	7.00		
27		24	24	7.85		
28		26	30	7.90		
29		27	30	8.05		
30		28	30	8.60		

(additional charts on the following page)

MISCELLANEOUS



FIG. 167 PIPE COVERING PROTECTION SHIELD  
(continued from previous page)

PIPE SIZE	A-INSULATION THICKNESS				
	1/2	3/4	1	1 1/2	2
1/2	0	1	—	—	—
3/4	1	1	2	4	6
1	1	2	3	5	7
1 1/4	2	3	3	6	7
1 1/2	2	3	4	6	7
2	3	4	5	7	8
2 1/2	4	5	6	7	8
3	5	6	7	8	9
3 1/2	—	—	8	9	10
4	—	—	8	9	10
5	—	—	9	10	13
6	—	—	10	13	14
8	—	—	14	15	16
10	—	—	16	17	18
12	—	—	18	19	20
14	—	—	19	20	21
16	—	—	21	22	23
18	—	—	23	24	25
20	—	—	25	26	27
24	—	—	28	29	30

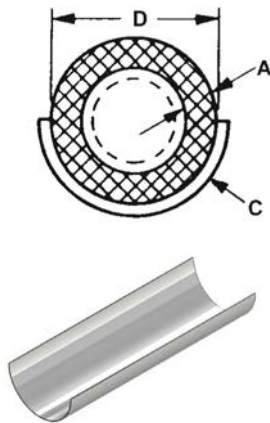
TUBING SIZE	A-INSULATION THICKNESS				
	1/2	3/4	1	1 1/2	2
1/2	0	1	2	4	5
3/4	0	1	2	4	6
1	1	2	3	4	6
1 1/4	1	2	3	5	7
1 1/2	2	3	3	5	7
2	3	4	4	6	8
2 1/2	4	5	5	7	8
3	5	6	6	8	9
3 1/2	6	7	7	8	9
4	7	7	8	9	10
5	8	8	9	10	13
6	9	9	10	13	14

MISCELLANEOUS

**FIG. 167MSS**  
**"MSS" PIPE COVERING PROTECTION SHIELD**



Manufactured  
in the USA



**Material:** Pre-galvanized carbon steel, also available in 304 and 316 stainless steel.

**Finish:** Pre-galvanized.

**Service:** Designed for outside of foam or fiberglass insulation on stationary pipe lines (not designed for pipe rollers) to prevent crushing of insulation without breaking the vapor barrier.

**Approvals:** Complies with Federal Specifications WW-H-171-E (Type# 26), A-A-1192 A (Type# 26), and MSS SP-58 and SP-69 (Type# 26).

**Ordering:** Specify shield size and figure number.

**Notes:** Also available in 304 stainless steel.

SIZE NO. SHIELD	B LENGTH	C STOCK SIZE	SHIELD ID/ INSULATION OD	HANGER SIZE	WEIGHT EACH (lbs)		
X1A	12	18ga	1 7/8	1 1/2	0.53		
1A			2 3/8	2	0.68		
2A			2 7/8	2 1/2	0.82		
3A			3 1/2	3	1.02		
4A			4	3 1/2	1.13		
5A			4 1/2	4	1.26		
6A			5	5	1.42		
7A			5 9/16	5	1.58		
8A			18	16ga	6 5/8	6	2.33
9A					7 5/8	7	2.66
10A	8 5/8	8			3.00		
9B	7 3/8	7			3.99		
10B	8 5/8	8			4.49		
11B	9 3/8	10			5.03		
12B	10 3/4	10			5.62		
13C	24	14ga			11 3/4	12	10.12
14C			12 3/4	12	10.94		
15C			14	14	12.03		
16C			15	16	12.92		
17C			16	16	13.74		
18C			17	18	14.63		
19C			18	18	21.33		
20C			19	20	22.56		
21C		20	20	23.79			
22C		12ga	21	24	24.92		
23C			22	24	26.15		
24C			23	24	27.37		
25C			24	24	28.51		
26C			26	30	30.87		
27C			27	30	32.09		
28C			28	30	33.22		

(additional charts on the following page)

MISCELLANEOUS



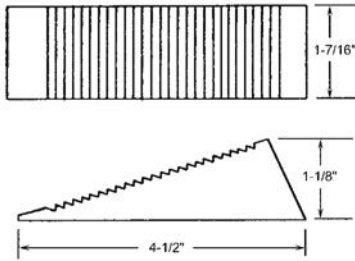
FIG. 167MSS “MSS” PIPE COVERING PROTECTION SHIELD  
(continued from previous page)

SHIELD SIZE SELECTION FOR NORMAL PIPE					
PIPE SIZE	A-INSULATION THICKNESS				
	1/2	3/4	1	1 1/2	2
1/2	1A	1A	—	—	—
3/4	1A	2A	3A	4A	6A
1	1A	2A	3A	5A	7A
1 1/4	2A	3A	4A	6A	7A
1 1/2	2A	3A	4A	6A	8A
2	3A	4A	5A	7A	8A
2 1/2	4A	5A	—	8A	9A
3	5A	6A	7A	8A	9A
3 1/2	—	—	8A	9A	10A
4	—	—	8A	9A	10A
5	—	—	9A/9B	10A/10B	11B
6	—	—	10A/10B	11B	12B
8	—	—	12B	13C	14C
10	—	—	14C	15C	16C
12	—	—	16C	17C	18C
14	—	—	17C	18C	19C
16	—	—	19C	20C	21C
18	—	—	21C	22C	23C
20	—	—	23C	24C	25C
24	—	—	26C	27C	28C

SHIELD SIZE SELECTION FOR NORMAL PIPE					
TUBING SIZE	A-INSULATION THICKNESS				
	1/2	3/4	1	1 1/2	2
1/2	X1A	1A	2A	4A	5A
3/4	X1A	1A	2A	4A	6A
1	1A	2A	3A	5A	7A
1 1/4	1A	2A	3A	5A	7A
1 1/2	2A	3A	4A	6A	8A
2	3A	4A	5A	7A	8A
2 1/2	4A	5A	6A	8A	8A
3	5A	6A	7A	8A	9A
3 1/2	6A	7A	8A	8A	9A/9B
4	7A	8A	8A	9A	10A/10B
5	8A	8A	9A	10A	11B
6	9A	9A	10A	11B	12B

MISCELLANEOUS

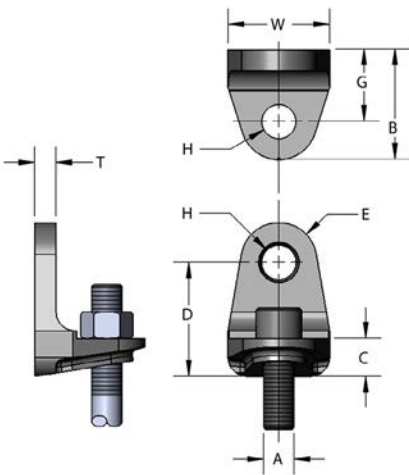
**FIG. 200**  
**BATH TUB WEDGE**



**Material:** Malleable iron.  
**Service:** Used for leveling and shimming tubs during and after installation.  
**Ordering:** Specify figure number.

WEIGHT EACH (lbs)
0.80

**FIG. 202**  
**SIDE BEAM BRACKET**



**Material:** Malleable iron.  
**Finish:** Plain.  
**Service:** Designed for attaching hanger rod to the side of steel or wooden beams.  
**Approvals:** Complies with Federal Specifications WW-H-171-E (Type# 35), A-A-1192 A (Type# 35), and MSS SP-58 and SP-69 (Type# 35).  
**Ordering:** Specify rod size and figure number.

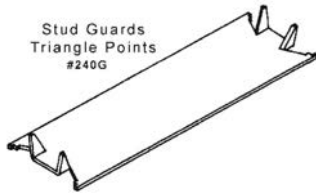
SIZE A	PIPE SIZE	B	C	D	E	H	T	W	WEIGHT EACH (lbs)
3/8-16	1/2 to 2	1 5/16	9/16	1 1/2	1/2	15/16	1/4	1 5/16	0.27
1/2-13	2 1/2 to 3 1/2	1 13/16	5/8	1 7/8	5/8	9/16	5/16	1 5/8	0.48

MISCELLANEOUS



Manufactured in the USA

FIG. 240  
STUD GUARD, TRIANGLE POINT  
FIG. 245  
STUD GUARD, TWIST POINT



Stud Guards  
Triangle Points  
#240G



Stud Guards  
Twist Points  
#245G

**Material:** Carbon steel.  
**Finish:** Pre-galvanized.  
**Service:** Designed to protect piping and electrical lines that pass through wood framing from damage due to penetration from drywall or other fasteners. Simple installation with a hammer.  
**Ordering:** Specify size & figure number.

PART NUMBER	GAUGE	SIZE WIDTH x LENGTH	STYLE	WGT EACH (lbs)
240G	18	1 1/2 x 3	TRIANGLE POINT	0.06
		1 1/2 x 5		0.10
		1 1/2 x 6		0.12
245G	19	1 1/2 x 3	TWIST POINT	0.06
		1 1/2 x 6		0.11

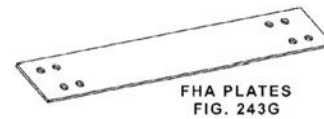
MISCELLANEOUS



Manufactured in the USA

FIG. 241  
NAIL PLATE (NON-FHA)  
FIG. 243  
NAIL PLATE (FHA)

**Material:** Carbon steel.  
**Finish:** Pre-galvanized.  
**Service:** Designed to protect piping and electrical lines that pass through metal framing from damage due to penetration from drywall or other fasteners. Attach with metal framing screws.  
**Ordering:** Specify size, gauge and figure number.



MISCELLANEOUS

PROTECTIVE PLATES (NON FHA) --241G SERIES		
GAUGE	SIZE WIDTH x LENGTH	WGT EACH (lbs)
18	1 1/2 x 3	0.065
	1 1/2 x 6	0.125

PROTECTIVE PLATES (FHA) -- 243G SERIES		
GAUGE	SIZE WIDTH x LENGTH	WGT EACH (lbs)
18	1 1/2 X 9	0.180
	1 1/2 X 12	0.250
	1 1/2 X 18	0.380
	1 1/2 X 24	0.500
	3 X 6	0.250
	3 X 9	0.380
	3 X 12	0.520
16	3 X 18	0.780
	1 1/2 X 9	0.240
	1 1/2 X 12	0.320
	1 1/2 X 18	0.480
13	1 1/2 X 24	0.640
	1 1/2 X 9	0.350
	1 1/2 X 12	0.470
	1 1/2 X 18	0.700
	1 1/2 X 24	0.980



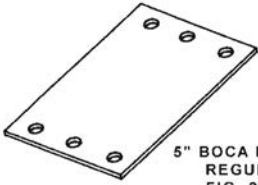
Manufactured in the USA

FIG. 242G  
(REGULAR)

FIG. 242GSN  
(SELF NAILING) BOCA SAFETY PLATE



5" X 8" BOCA PLATES  
SELF NAILING  
FIG. 242GSN



5" BOCA PLATES  
REGULAR  
FIG. 242G

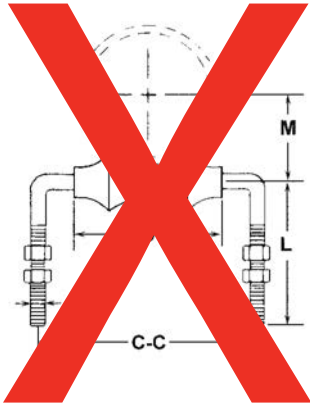
**Material:** Carbon steel.  
**Finish:** Pre-galvanized.  
**Service:** Designed to protect piping and electrical lines that pass through metal framing from damage due to penetration from drywall or other fasteners. Should attach with metal framing screws.  
**Ordering:** Specify regular or self nailing style and figure number.

PART NUMBER	GAUGE	SIZE WIDTH x LENGTH	STYLE	WGT EACH (lbs)
242G	16	5 x 8	Regular (holes)	0.70
242GSN			Self Nailing	

MISCELLANEOUS



**FIG. 271**  
**ADJUSTABLE ROLLER SUPPORT**



**Discontinued**

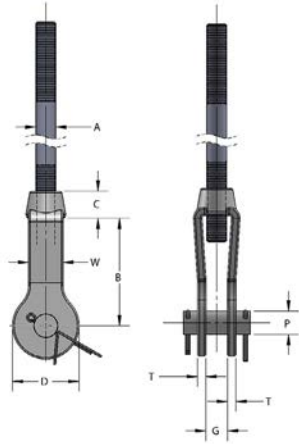
<b>Material:</b>	Carbon steel rod with cast iron roller.
<b>Finish:</b>	Plain, galvanized or painted.
<b>Service:</b>	Designed for support of pipe where longitudinal movement of pipe may occur due to expansion and contraction, and where vertical adjustment may be necessary.
<b>Ordering:</b>	Specify roller size, figure number and finish. Please remember to consider insulation thickness when sizing rollers.
<b>Notes:</b>	<b>Available domestic</b>

MISCELLANEOUS



Manufactured in the USA Excluding 909I

FIG. 909 FORGED STEEL CLEVIS, DOMESTIC  
 FIG. 909I FORGED STEEL CLEVIS

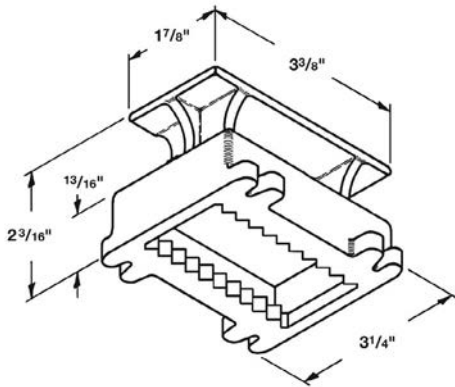


**Material:** Forged steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized, or hot-dip galvanized.  
**Service:** Designed for use on high temperature piping installations.  
**Approvals:** Complies with Federal Specification WW-H-171-E (Type# 14), A-A-1192A (Type# 14) and Manufacturers' Standardization Society MSS SP 58 and SP 69 (Type# 14).  
**Ordering:** Specify size number, rod size, finish and part number. If other than standard dimension sizes required, specify size number, rod size, pin size and grip.  
**Notes:** Forged clevis are standardly supplied with pin and cotter pins. When figure number 909 I is supplied hot-dip galvanized the threading is not tapped oversize.

MISCELLANEOUS

SIZE A	CLEVIS SIZE NO.	B	C	D	G GRIP	P PIN DIA.	T	W	WGT EACH (lbs)	MAX REC LOAD (lbs)	
										650°F	750°F
3/8-16	2	3 9/16	5/8	1 7/16	1/2	1/2	5/16	1 1/16	1.0	610	540
1/2-13	2	3 9/16	5/8	1 7/16	1/2	5/8	5/16	1 1/16	1.0	1130	1010
5/8-11	2	3 9/16	5/8	1 7/16	5/8	3/4	5/16	1 1/16	1.1	1810	1610
3/4-10	2 1/2	4	1	2 1/2	3/4	7/8	5/16	1 1/4	2.3	2710	2420
7/8-9	2 1/2	4	1	2 1/2	7/8	1	5/16	1 1/4	2.5	3770	3360
1-8	3	5 1/16	1 1/4	3	1	1 1/8	1/2	1 1/2	5.1	4960	4420
1 1/8-7	3 3 1/2 4	5 1/16	1 1/4	3	1 1/8	1 1/4	1/2	1 1/2	5.2	6230	5560
1 1/4-7		5 1/16	1 1/4	3	1 1/4	1 3/8	1/2	1 1/2	5.6	8000	7140
1 1/2-6		6	1 1/2	3 1/2	1 1/2	1 5/8	1/2	1 3/4	8.1	11630	10370
1 3/4-5		6	1 3/4	4	1 3/4	1 7/8	1/2	2	9.0	14700	14000

**FIG. 982**  
**MALLEABLE CONCRETE INSERT BOX**



**Material:** Malleable iron body and nut.

**Finish:** Black or galvanized.

**Approvals:** The  $\frac{3}{8}$ " rod size is Underwriters Laboratories listed and Factory Mutual approved for use with up to 4" size pipe while the  $\frac{1}{2}$ " through  $\frac{7}{8}$ " rod sizes are listed/approved for use with up to 8" size pipe. Complies with Federal Specification WW-H-171E (Type 18) and Manufacturers Standardization Society SP-69 (Type 18).

**Features:**

- Cast body prevents concrete seepage.
- Opening in top of insert provides for use of reinforcing rods up to  $\frac{7}{8}$ " in diameter. Sides of insert are recessed for reinforcing rods up to 1" in diameter.
- Low height, broad flat bottom and widely separated nail slots minimize displacement during constructions.
- The nut, held in place by V-type teeth on both insert and nut, can be raised and moved from side to side providing for lateral adjustment.
- Rod is locked in place by screwing it firmly against the top of the recess.
- One body size.

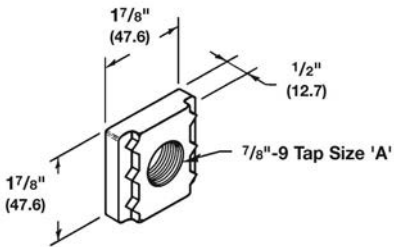
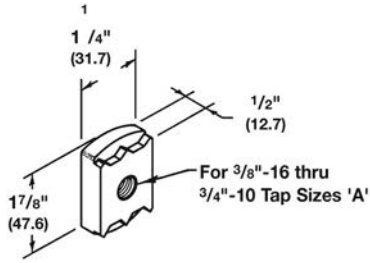
**Ordering:** Specify figure number, name, size of nut tapping of nut is required.

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	NUT SIZE	MAXIMUM RECOMMENDED LOAD (lbs)*	WEIGHT (approx.) LBS EACH
INSERT COMPLETE WITH NUT	$\frac{3}{8}$	610	1.5
	$\frac{1}{2}$	1130	1.5
	$\frac{5}{8}$	1140	1.5
	$\frac{3}{4}$	1140	1.5
	$\frac{7}{8}$	1140	1.5
INSERT ONLY	—	—	1.3
NUT ONLY	$\frac{3}{8}$	—	.20
	$\frac{1}{2}$	—	.21
	$\frac{5}{8}$	—	.20
	$\frac{3}{4}$	—	.22
	$\frac{7}{8}$	—	.21

\* Based on insert and nut only. Rating is subject to the condition that the concrete used is of sufficient strength to hold the insert.

**FIG. 983**  
**MALLEABLE IRON INSERT NUT**



**Material:** Malleable Iron  
**Finish:** Plain or Electro-Plated  
**Service:** Designed for use with Fig.# 982 Malleable Iron Insert.  
**Ordering:** Specify size and finish.

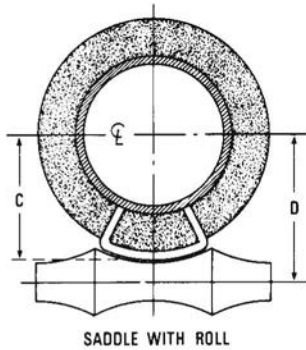
TAP SIZE 'A'	DESIGN LOAD		WT./C	
	LBS	kN	LBS	kg
3/8"-16	610	(2.71)	22	(10.0)
1/2"-13	1130	(5.02)	22	(10.0)
5/8"-11	1140	(5.07)	20	(9.1)
3/4"-10	1140	(5.07)	19	(8.6)
7/8"-9	1140	(5.07)	29	(13.1)

MISCELLANEOUS



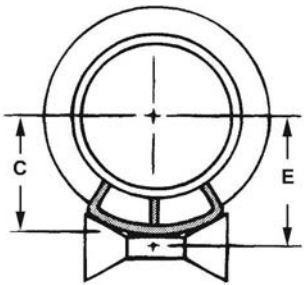
Manufactured  
in the USA

FIG. 1900 (1" INSULATION)  
 FIG. 1901 (1 1/2" INSULATION)  
 FIG. 1902 (2" INSULATION)  
 FIG. 1903 (2 1/2" INSULATION)  
 FIG. 1904 (3" INSULATION)  
 FIG. 1905 (4" INSULATION)  
 PIPE COVERING PROTECTION SADDLES



**Material:** Carbon steel, also available in 304 and 316 stainless steel.  
**Finish:** Plain, electro-galvanized.  
**Service:** Designed for use on insulated high temperature pipe lines to protect insulation from damage and minimize heat loss.  
**Approvals:** Complies with Federal Specification WW-H-171-E (Type# 40A and 40B), A-A- 1192A (Type# 39A and 39B) and Manufacturers' Standardization Society MSS SP 58 and SP 69 (Type#39Aand 39B).  
**Ordering:** Specify pipe size, insulation size and/or figure number.  
**Notes:** All saddles are 12 inches long with side edges beveled in. Stainless steel and alloy saddles are available and priced on application.

MISCELLANEOUS



(Charts on following 3 pages)





**FIG. 1900-1905 PIPE COVERING PROTECTION SADDLES**  
(continued from previous page)

MISCELLANEOUS

PIPE SIZE	FIG. NO.	ACTUAL THICKNESS OF COVERING	HANGER ROLLER SIZE			CENTER LINE OF PIPE TO OUTSIDE OF SADDLE, C	CENTER LINE OF PIPE TO CENTER LINE OF ROLL, D	CENTER LINE OF PIPE TO CENTER LINE OF ROLL, E	WGT EACH (lbs)	MAX REC LOAD (lbs)	
			USE WITH FIG. NO.								
			273 275 277	272	279-S						
3/4	1900	7/8	2	2 1/2	2-3 1/2	1 9/16	1 15/16	2 1/4	0.93	1200	
	1901	1 7/16	3	3 1/2		2 1/8	2 5/8	2 7/8	1.74	1200	
	1902	2 1/16	4	5		2 3/4	3 3/8	3 3/8	2.60	1200	
1	1900	1 1/16	2 1/2	3		1 13/16	2 1/4	2 7/16	0.93	1200	
	1901	1 9/16	3	4		2 7/16	2 15/16	3	1.74	1200	
	1902	2 1/8	4	5		2 7/8	3 1/2	3 1/2	2.60	1200	
1 1/4	1900	7/8	2 1/2	3		1 15/16	2 1/2	2 9/16	1.32	1200	
	1901	1 5/8	3 1/2	5		2 9/16	3 1/8	3 3/16	1.82	1200	
	1902	2 1/16	5	5		3 1/16	3 11/16	3 11/16	2.60	1200	
1 1/2	1900	1	3	3 1/2		4-6	2 1/8	2 5/8	2 11/16	1.32	1200
	1901	1 1/2	3 1/2	5			2 11/16	3 1/4	3 5/16	1.82	1200
	1902	2 5/16	5	6			6 7/16	4 1/8	3 7/8	2.75	1800
	1903	2 13/16	7	7	3 13/16		4 5/8	4 1/2	3.01	1800	
2	1900	1 1/16	3 1/2	4	2-3 1/2	2 7/16	3	3 1/16	1.34	1200	
	1901	1 9/16	4	5		2 7/8	3 1/2	3 9/16	1.98	1200	
	1902	2 1/8	5	6	4-6	3 11/16	4 3/8	4 3/16	2.80	1800	
	1903	2 5/8	7	7		3 15/16	4 3/4	4 3/4	3.18	1800	
	1904	3 1/8	8	8		4 11/16	5 1/2	5 1/4	3.97	1800	
2 1/2	1900	1 1/16	3 1/2	5	2-3 1/2	2 11/16	3 1/4	3 5/16	1.34	1200	
	1901	1 7/8	5	6		3 3/4	4 1/8	3 15/16	1.98	1200	
	1902	2 5/16	6	7	4-6	3 15/16	4 5/8	4 1/2	2.80	1800	
	1903	2 7/8	7	7		4 7/16	5 1/4	5	3.20	1800	
	1904	3 3/8	8	10		4 15/16	5 3/4	5 1/2	3.98	1800	
3	1900	1	4	5	2-3 1/2	2 15/16	3 1/2	3 9/16	1.48	1200	
	1901	1 9/16	5	6		3 1/2	4 3/16	4 1/4	2.08	1800	
	1902	2 1/16	7	7	4-6	4 1/8	4 7/8	4 11/16	2.90	1800	
	1903	2 9/16	8	8		4 11/16	5 3/8	5 5/16	3.01	1800	
	1904	3 1/16	10	10		5	5 15/16	6 1/16	4.49	1800	
3 1/2	1900	1 1/4	5	6	4-6	3 7/16	4	3 15/16	1.48	1200	
	1901	1 13/16	7	7		4	4 11/16	4 1/2	2.08	1800	
	1902	2 1/4	8	8		4 3/8	5 3/16	5	2.90	1800	
	1903	2 3/4	8	10	8-10	4 13/16	5 3/4	5 11/16	3.43	1800	
	1904	3 5/16	10	10		5 1/2	6 7/16	6 3/8	4.49	1800	

(additional chart on the following page)



**FIG. 1900-1905 PIPE COVERING PROTECTION SADDLES**  
(continued from previous page)

PIPE SIZE	FIG. NO.	ACTUAL THICKNESS OF COVERING	HANGER ROLLER SIZE			CENTER LINE OF PIPE TO OUTSIDE OF SADDLE, C	CENTER LINE OF PIPE TO CENTER LINE OF ROLL, D	CENTER LINE OF PIPE TO CENTER LINE OF ROLL, E	WGT EACH (lbs)	MAX REC LOAD (lbs)
			USE WITH FIG. NO.							
			273 275 277	272	279-S					
4	1900	1 <sup>11</sup> / <sub>16</sub>	5	6	4-6	3 <sup>9</sup> / <sub>16</sub>	4 <sup>3</sup> / <sub>16</sub>	4 <sup>3</sup> / <sub>16</sub>	1.58	1800
	1901	1 <sup>9</sup> / <sub>16</sub>	7	7		3 <sup>7</sup> / <sub>8</sub>	4 <sup>11</sup> / <sub>16</sub>	4 <sup>3</sup> / <sub>4</sub>	2.14	1800
	1902	2 <sup>1</sup> / <sub>16</sub>	8	8		4 <sup>11</sup> / <sub>16</sub>	5 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>4</sub>	2.95	1800
	1903	2 <sup>9</sup> / <sub>16</sub>	8	10	8-10	5 <sup>1</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>16</sub>	6	3.43	1800
	1904	3 <sup>1</sup> / <sub>16</sub>	10	10		5 <sup>9</sup> / <sub>16</sub>	6 <sup>1</sup> / <sub>2</sub>	6 <sup>5</sup> / <sub>8</sub>	4.49	1800
	1905	4 <sup>1</sup> / <sub>16</sub>	12	14		6 <sup>9</sup> / <sub>16</sub>	7 <sup>11</sup> / <sub>16</sub>	7 <sup>9</sup> / <sub>16</sub>	6.09	1800
5	1900	1	7	7	4-6	4 <sup>1</sup> / <sub>8</sub>	4 <sup>13</sup> / <sub>16</sub>	4 <sup>3</sup> / <sub>4</sub>	2.62	1800
	1901	1 <sup>1</sup> / <sub>2</sub>	8	8		4 <sup>1</sup> / <sub>2</sub>	5 <sup>5</sup> / <sub>16</sub>	5 <sup>3</sup> / <sub>8</sub>	3.30	1800
	1902	2	8	10	8-10	4 <sup>15</sup> / <sub>16</sub>	5 <sup>7</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>8</sub>	3.45	1800
6	1900	1	8	8	4-6	4 <sup>9</sup> / <sub>16</sub>	5 <sup>3</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>4</sub>	3.82	1800
	1901	1 <sup>1</sup> / <sub>2</sub>	8	10		8-10	5 <sup>1</sup> / <sub>16</sub>	5 <sup>7</sup> / <sub>8</sub>	6	4.28
	1902	2	10	12	5 <sup>1</sup> / <sub>2</sub>		6 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>2</sub>	5.40	1800
	1903	2 <sup>1</sup> / <sub>2</sub>	10	12	6 <sup>1</sup> / <sub>16</sub>		7 <sup>1</sup> / <sub>16</sub>	7 <sup>1</sup> / <sub>4</sub>	6.85	1800
	1904	3	12	12	6 <sup>9</sup> / <sub>16</sub>		7 <sup>5</sup> / <sub>8</sub>	7 <sup>5</sup> / <sub>8</sub>	7.69	1800
	1905	4 <sup>1</sup> / <sub>8</sub>	14	16	12-14	7 <sup>5</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>8</sub>	8 <sup>3</sup> / <sub>4</sub>	10.24	1800
8	1901	1 <sup>1</sup> / <sub>2</sub>	10	12	8-10	6	7 <sup>1</sup> / <sub>8</sub>	7 <sup>1</sup> / <sub>16</sub>	5.82	1800
	1902	2	12	12		6 <sup>1</sup> / <sub>2</sub>	7 <sup>5</sup> / <sub>8</sub>	7 <sup>9</sup> / <sub>16</sub>	6.41	1800
	1903	2 <sup>11</sup> / <sub>16</sub>	12	14		7 <sup>1</sup> / <sub>4</sub>	8 <sup>5</sup> / <sub>16</sub>	8 <sup>3</sup> / <sub>16</sub>	7.21	1800
	1904	3 <sup>1</sup> / <sub>8</sub>	14	16	12-14	7 <sup>5</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>8</sub>	8 <sup>3</sup> / <sub>4</sub>	9.14	1800
	1905	4 <sup>1</sup> / <sub>8</sub>	16	18		8 <sup>11</sup> / <sub>16</sub>	10 <sup>1</sup> / <sub>8</sub>	9 <sup>7</sup> / <sub>8</sub>	10.24	1800
10	1901	1 <sup>9</sup> / <sub>16</sub>	12	14	8-10	7 <sup>1</sup> / <sub>4</sub>	8 <sup>5</sup> / <sub>16</sub>	8 <sup>5</sup> / <sub>16</sub>	6.66	1800
	1902	2 <sup>1</sup> / <sub>16</sub>	14	16	12-14	7 <sup>5</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>16</sub>	8 <sup>13</sup> / <sub>16</sub>	8.57	1800
	1903	2 <sup>9</sup> / <sub>16</sub>	14	16		8 <sup>3</sup> / <sub>16</sub>	9 <sup>5</sup> / <sub>8</sub>	9 <sup>5</sup> / <sub>16</sub>	8.91	1800
	1904	3 <sup>1</sup> / <sub>16</sub>	16	18	16-20	8 <sup>7</sup> / <sub>8</sub>	10 <sup>1</sup> / <sub>4</sub>	10	11.10	1800
	1905	4 <sup>1</sup> / <sub>16</sub>	18	20		9 <sup>11</sup> / <sub>16</sub>	11 <sup>5</sup> / <sub>16</sub>	11 <sup>1</sup> / <sub>8</sub>	14.10	1800
12	1901	1 <sup>1</sup> / <sub>2</sub>	14	16	12-14	8 <sup>1</sup> / <sub>16</sub>	9 <sup>5</sup> / <sub>8</sub>	9 <sup>1</sup> / <sub>4</sub>	7.61	5000
	1902	2 <sup>1</sup> / <sub>16</sub>	16	18		8 <sup>13</sup> / <sub>16</sub>	10 <sup>3</sup> / <sub>16</sub>	10	8.73	5000
	1903	2 <sup>5</sup> / <sub>8</sub>	16	18	16-20	9 <sup>1</sup> / <sub>8</sub>	10 <sup>11</sup> / <sub>16</sub>	10 <sup>1</sup> / <sub>2</sub>	9.69	5000
	1904	3 <sup>1</sup> / <sub>16</sub>	18	20		9 <sup>11</sup> / <sub>16</sub>	11 <sup>5</sup> / <sub>16</sub>	11	11.38	5000
	1905	4 <sup>1</sup> / <sub>8</sub>	20	--		10 <sup>13</sup> / <sub>16</sub>	12 <sup>3</sup> / <sub>8</sub>	12 <sup>3</sup> / <sub>16</sub>	14.20	5000
14	1901	1 <sup>1</sup> / <sub>2</sub>	16	18	12-14	8 <sup>7</sup> / <sub>8</sub>	10 <sup>3</sup> / <sub>16</sub>	10 <sup>1</sup> / <sub>16</sub>	7.67	5000
	1902	2	16	18	16-20	9 <sup>1</sup> / <sub>4</sub>	10 <sup>3</sup> / <sub>4</sub>	10 <sup>11</sup> / <sub>16</sub>	9.43	5000
	1903	2 <sup>1</sup> / <sub>2</sub>	18	20		9 <sup>3</sup> / <sub>4</sub>	11 <sup>5</sup> / <sub>16</sub>	11 <sup>3</sup> / <sub>16</sub>	9.69	5000
	1904	3	18	20	10 <sup>1</sup> / <sub>4</sub>	11 <sup>7</sup> / <sub>8</sub>	11 <sup>5</sup> / <sub>8</sub>	11.82	5000	
	1905	4	20	--	24	11 <sup>7</sup> / <sub>16</sub>	13 <sup>1</sup> / <sub>8</sub>	12 <sup>5</sup> / <sub>8</sub>	18.48	7200

MISCELLANEOUS



**FIG. 1900-1905 PIPE COVERING PROTECTION SADDLES**  
(continued from previous page)

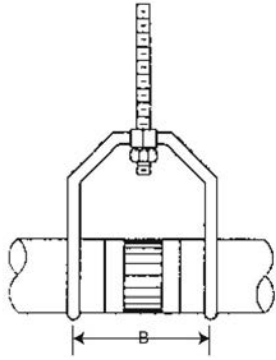
MISCELLANEOUS

PIPE SIZE	FIG. NO.	ACTUAL THICKNESS OF COVERING	HANGER ROLLER SIZE			CENTER LINE OF PIPE TO OUTSIDE OF SADDLE, C	CENTER LINE OF PIPE TO CENTER LINE OF ROLL, D	CENTER LINE OF PIPE TO CENTER LINE OF ROLL, E	WGT EACH (lbs)	MAX REC LOAD (lbs)
			USE WITH FIG. NO.							
			273 275 277	272	279-S					
16	1901	1 1/2	18	20	16-20	9 7/8	11 3/8	11 1/8	8.35	5000
	1902	2				10 1/4	11 7/8	11 9/16	10.00	5000
	1903	2 1/2	20	--		10 7/8	12 7/16	12 3/16	14.62	7200
	1904	3	24	--	24	11 3/16	13 1/8	12 7/16	18.17	7200
	1905	4		--	12 5/16	14 3/16	12 3/16	21.80	7200	
18	1901	1 1/2	20	--	16-20	10 7/8	12 1/2	12 3/16	8.92	5000
	1902	2		--		11 1/2	13 1/16	12 11/16	13.19	7200
	1903	2 1/2	--	12		13 15/16	13 1/16	16.89	7200	
	1904	3	24	--	24	12 5/16	14 1/4	13 5/8	18.20	7200
	1905	4		--		13 1/2	15 7/16	14 3/4	21.95	7200
1901	1 1/2	--		11 3/4		13 11/16	13 1/16	13.76	7200	
1902	2	--	12 5/16	14 1/4		13 5/8	14.98	7200		
1903	2 1/2	--	12 7/8	14 13/16		14 3/16	16.79	7200		
1904	3	--	13 1/2	15 1/2	14 3/4	18.40	7200			
1905	4	30	--	30	143/16	16 5/8	15 7/8	22.83	7200	
1901	1 1/2		--		135/8	16 1/16	15 1/4	16.05	7200	
1902	2		--		143/16	16 5/8	15 3/4	17.62	7200	
1903	2 1/2		--		143/4	17 3/16	16 7/16	18.75	7200	
1904	3		--		153/8	17 13/16	17	19.72	7200	
1905	4	--	169/16	19	19 1/4	23.14	7200			





**FIG. V6600 SERIES  
CAST IRON DWV HANGER**



**Material:** Carbon steel  
**Finish:** Plain  
**Service:** Designed for the suspension of no hub or service weight cast iron pipe.  
**Ordering:** Specify size and figure number.

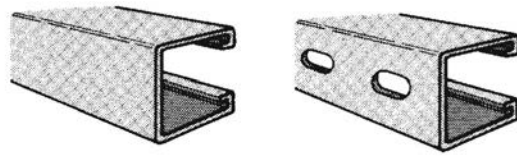
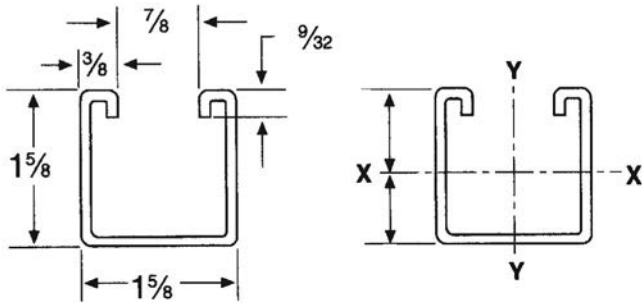
PIPE SIZE	B	WGT EACH	MAX REC LOAD (lbs)
2	3 <sup>7</sup> / <sub>8</sub>	.605	598
3	4 <sup>3</sup> / <sub>4</sub>	.675	598
4	4 <sup>7</sup> / <sub>8</sub>	.780	598
6	6 <sup>1</sup> / <sub>2</sub>	2.100	1108

MISCELLANEOUS



Manufactured in the USA

## 7000 & 7001



1-<sup>5</sup>/<sub>8</sub>" x 1-<sup>5</sup>/<sub>8</sub>"

12 GAUGE STRUT SOLID & SLOTTED

I.T.P. Part #	Finish	Standard Length	Weight Per foot (Lbs.)
7000 (SOLID)	Plain Pre-Galvanized Green Painted	10' or 20'	1.90
7001 (SLOTTED)			1.85

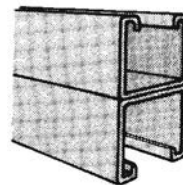
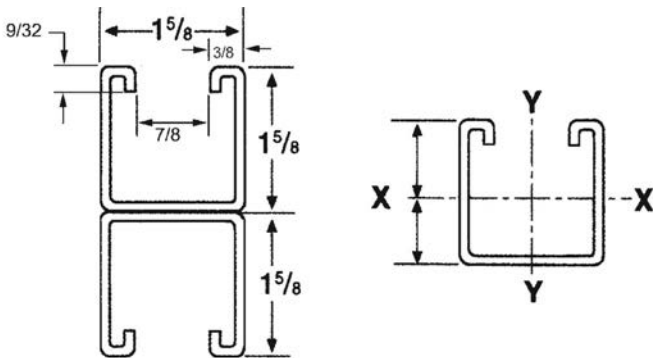
NOTE: 304 and 316 stainless, PVC coated and hot-dipped galvanized are available.

STRUT

## 7000A & 7001A



Manufactured in the USA



1-<sup>5</sup>/<sub>8</sub>" x 1-<sup>5</sup>/<sub>8</sub>"

12 GAUGE BACK-TO-BACK STRUT  
SOLID & SLOTTED

I.T.P. Part #	Finish	Standard Length	Weight Per foot (Lbs.)
7000A (SOLID)	Plain Pre-Galvanized Green Painted	10' or 20'	3.80
7001A (SLOTTED)			3.70

NOTE: 304 and 316 stainless, PVC coated and hot-dipped galvanized are available.



## Properties of Section

I.T.P. FIGURE NUMBER	Wt./Ft. Lbs.	Area of Section Sq. In.	X-X Axis			Y-Y Axis		
			I in 4	S in 3	r in.	I in 4	S in 3	r in.
7000	1.94	.544	0.180	0.195	05.75	0.233	0.287	0.655
7000A	3.88	1.088	0.896	0.570	0.908	0.466	0.574	0.655

I = Moment of Inertia  
 S = Section Modulus  
 r = Radius of Gyration

## Beam and Column Loads

SPAN OR COLUMN (IN)	I.T.P. FIGURE NUMBER	MAX LOAD OF COLUMN LOADED @ C.G. (LBS)	STATIC BEAM LOAD (X-X AXIS)			
			ALLOWABLE UNIFORM LOAD @ 25,000 PSI (LBS)	DEFLECTION @ 25,000 PSI (IN)	UNIFORM LOAD @ L/240 (LBS)	UNIFORM LOAD @ L/360 (LBS)
12	7000	7,109	3,249	0.014	**	**
	7000A	14,862	2,610	0.008	**	**
18	7000	6,549	2,166	0.031	**	**
	7000A	14,402	2,610 ***	0.018	**	**
24	7000	5,938	1,625	0.055	**	**
	7000A	13,919	2,610 ***	0.032	**	**
30	7000	5,337	1,300	0.086	**	1,257
	7000A	13,473	2,610 ***	0.050	**	**
36	7000	4,771	1,083	0.124	**	873
	7000A	13,090	2,610 ***	0.072	**	**
42	7000	4,242	928	0.169	**	641
	7000A	12,771	2610 ***	0.099	**	**
48	7000	3,745	812	0.220	737	491
	7000A	12,511	2,374	0.129	**	**
60	7000	3,012	650	0.344	471	314
	7000A	11,685	1,899	0.202	**	1,566
72	7000	2,514	542	0.496	327	218
	7000A	10,078	1,582	0.291	**	1,087
84	7000	2,136	464	0.675	240	160
	7000A	8,180	1,356	0.396	1,199	799
96	7000	1,834	406	0.882	184	123
	7000A	6,291	1,187	0.517	917	611
108	7000	1,585	361	1.116	145	97
	7000A	4,971	1,055	0.655	725	483
120	7000	*	325	1.378	117	78
	7000A	4,026	949	0.808	587	391
180	7000	*	217	3.099	52	35
	7000A	*	633	1.819	261	174
240	7000	*	163	5.510	29	19
	7000A	*	474	3.233	147	98

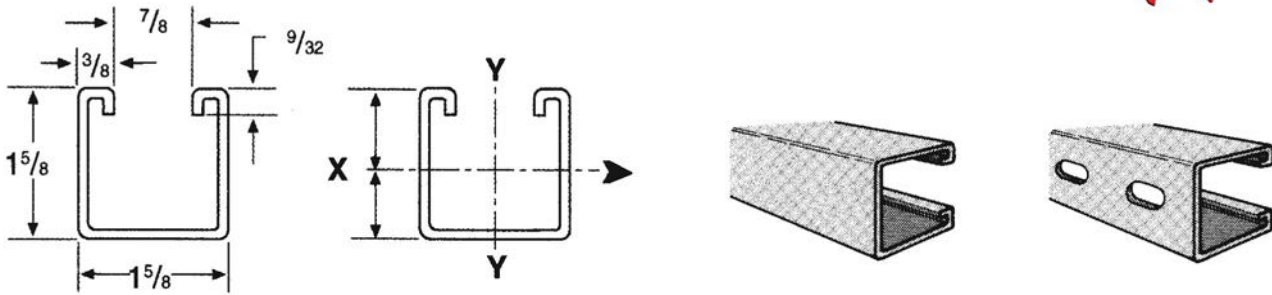
STRUT

- \* Not recommended - KL/r exceeds 200
- \*\* For these loads, the uniform beam capacity is lower than the L/240 or L/360 beam capacity and is therefore the governing restraint
- \*\*\* Load limited by spotweld shear

- NOTES
- The beam capacities shown above include the weight of the strut beam. The beam weight must be subtracted from these capacities to arrive at the net beam capacity.
  - Allowable beam loads are based on a uniform loaded, simply supported beam. For capacities of a beam loaded at midspan at a single point, multiply the beam capacity by 50% and deflection by 80%.
  - The above chart shows beam capacities for strut without holes. For strut with holes, multiply the following: 7/8" diameter Knockout by 82%, Round Hole 3/4" by 85% and Round Hole 9/16" by 88%, Slotted 9/16" x 1-1/8" by 88%, 13/32" x 3" by 90%.



7100 & 7101



1-5/8" x 1-5/8"

14 GAUGE STRUT SOLID & SLOTTED

I.T.P. Part #	Finish	Standard Length	Weight Per foot (Lbs.)
7100 (SOLID)	Plain Pre-Galvanized Green Painted	10' or 20'	1.40
7101 (SLOTTED)			1.36

NOTE: 304 and 316 stainless, PVC coated and hot-dipped galvanized are available.

STRUT



## Properties of Section

I.T.P. FIGURE NUMBER	Wt./Ft. Lbs.	Area of Section Sq. In.	X-X Axis			Y-Y Axis		
			I in 4	S in 3	r in.	I in 4	S in 3	r in.
7100	1.45	.407	0.143	0.158	0.593	0.179	0.221	0.664

I = Moment of Inertia  
 S = Section Modulus  
 r = Radius of Gyration

## Beam and Column Loads

SPAN OR COLUMN (IN)	I.T.P. FIGURE NUMBER	MAX LOAD OF COLUMN LOADED @ C.G. (LBS)	STATIC BEAM LOAD (X-X AXIS)			
			ALLOWABLE UNIFORM LOAD @ 25,000 PSI (LBS)	DEFLECTION @ 25,000 PSI (IN)	UNIFORM LOAD @ L/240 (LBS)	UNIFORM LOAD @ L/360 (LBS)
12	7100	5,548	2,631	0.014	**	**
18	7100	5,066	1,754	0.032	**	**
24	7100	4,473	1,316	0.056	**	**
30	7100	3,817	1,052	0.088	**	**
36	7100	3,141	877	0.126	**	695
42	7100	2,546	752	0.172	**	511
48	7100	2,148	658	0.224	587	391
60	7100	1,659	526	0.350	376	250
72	7100	1,370	439	0.504	261	174
84	7100	1,174	376	0.687	192	128
96	7100	1,028	329	0.897	147	98
108	7100	911	292	1.135	116	77
120	7100	*	263	1,140	94	63
180	7100	*	175	3.153	42	28
240	7100	*	132	5.605	23	16

STRUT

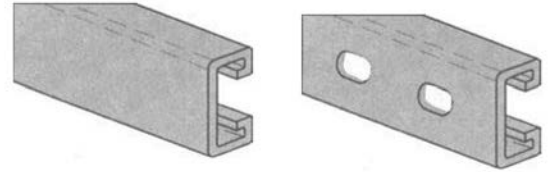
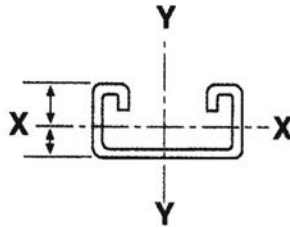
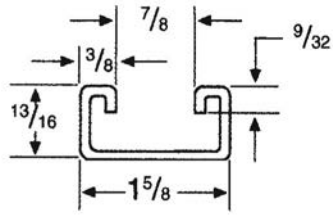
- \* Not recommended - KL/r exceeds 200
- \*\* For these loads, the uniform beam capacity is lower than the L/240 or L/360 beam capacity and is therefore the governing restraint
- \*\*\* Load limited by spotweld shear

**NOTES**

1. The beam capacities shown above include the weight of the strut beam. The beam weight must be subtracted from these capacities to arrive at the net beam capacity.
2. Allowable beam loads are based on a uniform loaded, simply supported beam. For capacities of a beam loaded at midspan at a single point, multiply the beam capacity by 50% and deflection by 80%.
3. The above chart shows beam capacities for strut without holes. For strut with holes, multiply the following:  $\frac{7}{8}$ " diameter Knockout by 82%, Round Hole  $\frac{3}{4}$ " by 85% and Round Hole  $\frac{9}{16}$ " by 88%, Slotted  $\frac{9}{16}$ " x  $1-\frac{1}{8}$ " by 88% and Slotted  $\frac{13}{32}$ " x 3" by 90%.



7200 & 7201



13/16" x 1-5/8"

14 GAUGE STRUT SOLID & SLOTTED

I.T.P. Part #	Finish	Standard Length	Weight Per foot (Lbs.)
7200 (SOLID)	Plain Pre-Galvanized Green Painted	10' or 20'	.97
7201 (SLOTTED)			.87

NOTE: 304 and 316 stainless, PVC coated and hot-dipped galvanized are available.

STRUT



## Properties of Section

I.T.P. FIGURE NUMBER	Wt./Ft. Lbs.	Area of Section Sq. In.	X-X Axis			Y-Y Axis		
			I in 4	S in 3	r in.	I in 4	S in 3	r in.
7200	1.03	0.286	0.025	0.053	0.298	0.106	0.131	0.610

I = Moment of Inertia  
 S = Section Modulus  
 r = Radius of Gyration

## Beam and Column Loads

SPAN OR COLUMN (IN)	I.T.P. FIGURE NUMBER	MAX LOAD OF COLUMN LOADED @ C.G. (LBS)	STATIC BEAM LOAD (X-X AXIS)			
			ALLOWABLE UNIFORM LOAD @ 25,000 PSI (LBS)	DEFLECTION @ 25,000 PSI (IN)	UNIFORM LOAD @ L/240 (LBS)	UNIFORM LOAD @ L/360 (LBS)
12	7200	3,598	887	0.027	**	**
18	7200	3,340	591	0.060	**	493
24	7200	3,086	444	0.106	416	277
30	7200	2,854	355	0.166	266	177
36	7200	2,654	296	0.240	185	123
42	7200	2,449	254	0.327	136	91
48	7200	2,259	222	0.427	104	69
60	7200	*	177	0.667	66	14
72	7200	*	148	0.960	46	31
84	7200	*	127	1.037	34	23
96	7200	*	111	1.707	26	17
108	7200	*	99	2.160	21	14
120	7200	*	89	2.668	17	11
180	7200	*	59	6.003	7	5
240	7200	*	44	10.672	4	3

STRUT

- \* Not recommended - KL/r exceeds 200
- \*\* For these loads, the uniform beam capacity is lower than the L/240 or L/360 beam capacity and is therefore the governing restraint
- \*\*\* Load limited by spotweld shear

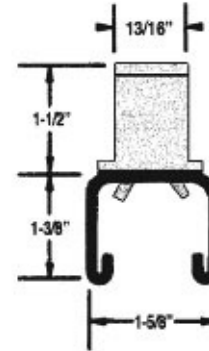
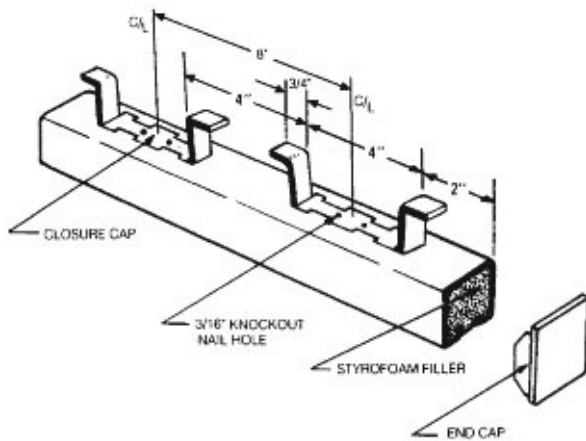
**NOTES**

1. The beam capacities shown above include the weight of the strut beam. The beam weight must be subtracted from these capacities to arrive at the net beam capacity.
2. Allowable beam loads are based on a uniform loaded, simply supported beam. For capacities of a beam loaded at midspan at a single point, multiply the beam capacity by 50% and deflection by 80%.
3. The above chart shows beam capacities for strut without holes. For strut with holes, multiply the following:  $\frac{7}{8}$ " diameter Knockout by 82%, Round Hole  $\frac{3}{4}$ " by 85% and Round Hole  $\frac{9}{16}$ " by 88%, Slotted  $\frac{9}{16}$ " x  $1-\frac{1}{8}$ " by 88% and Slotted  $\frac{13}{32}$ " x 3" by 90%.



Manufactured in the USA

7225



1-3/8" x 1-5/8"

12 GAUGE CONTINUOUS CONCRETE INSERT

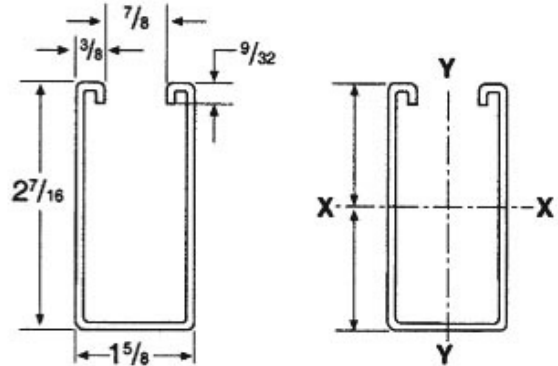
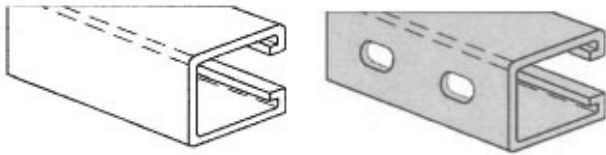
STRUT

I.T.P. Part#	Finish	Standard Length
7225	Plain Pre-Galvanized	10' or 20' Other lengths available
<b>FEATURES:</b> <ul style="list-style-type: none"> <li>Loading data was calculated in a concrete mixture which was proportioned so that the compression strength of the concrete was 2,500 to 3,000 pounds per square inch and that the load is dependent on the surrounding concrete.</li> <li>Tests were performed with a safety factor of 3, and in accordance with the MFMA Specifications.</li> <li>Concrete inserts are supplied with an end cap and either a styrofoam filler or plastic strip installed in the insert channel to prevent concrete seepage.</li> <li>Inserts should be secured to forms at 16" intervals.</li> <li>When ordering, please indicate finish and either foam filler, or plastic closure.</li> </ul>		

I.T.P. FIGURE NUMBER	Length/ Inch	Weight C. Pcs.	Max. Allowable Load Per Section
7225	3	87	500
7225	4	103	800
7225	6	134	1000
7225	8	206	1200
7225	12	188	2000
7225	18	282	2000
7225	24	376	2000
7225	30	470	2000
7225	36	564	2000
7225	48	752	2000
7225	60	940	2000
7225	72	1128	2000
7225	84	1316	2000
7225	96	1504	2000
7225	108	1692	2000
7225	120	1880	2000
7225	240	3760	2000



## 7230 & 7231



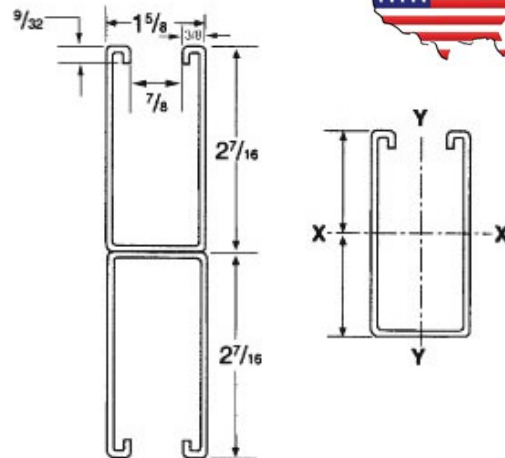
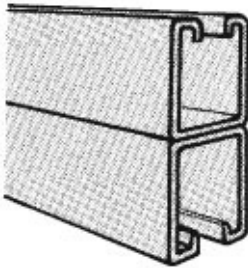
2-7/16" x 1-5/8"

12 GAUGE STRUT SOLID & SLOTTED

I.T.P. Part #	Finish	Standard Length	Weight Per foot (Lbs.)
7230 (SOLID)	Plain Pre-Galvanized Green Painted	10' or 20'	2.59
7231 (SLOTTED)			2.52

NOTE: 304 and 316 stainless, PVC coated and hot-dipped galvanized are available.

## 7241 & 7240



2-7/16" x 1-5/8"

12 GAUGE BACK-TO-BACK STRUT

SOLID & SLOTTED

I.T.P. Part #	Finish	Standard Length	Weight Per foot (Lbs.)
7241 (SOLID)	Plain Pre-Galvanized Green Painted	10' or 20'	5.04
7240 (SLOTTED)			5.18

NOTE: 304 and 316 stainless, PVC coated and hot-dipped galvanized are available.



## Properties of Section

I.T.P. FIGURE NUMBER	Wt./Ft. Lbs.	Area of Section Sq. In.	X-X Axis			Y-Y Axis		
			I in 4	S in 3	r in.	I in 4	S in 3	r in.
7230	2.54	0.714	0.509	0.378	0.844	0.331	0.408	0.681
7240	5.08	1.142	2.721	1.141	1.381	0.663	0.815	0.681

I = Moment of Inertia  
 S = Section Modulus  
 r = Radius of Gyration

## Beam and Column Loads

SPAN OR COLUMN (IN)	I.T.P. FIGURE NUMBER	MAX LOAD OF COLUMN LOADED @ C.G. (LBS)	STATIC BEAM LOAD (X-X AXIS)			
			ALLOWABLE UNIFORM LOAD @ 25,000 PSI (LBS)	DEFLECTION @ 25,000 PSI (IN)	UNIFORM LOAD @ L/240 (LBS)	UNIFORM LOAD @ L/360 (LBS)
12	7230	9,774	6,305	0.009	**	**
	7240	20,586	3,880 ***	0.005	**	**
18	7230	8,861	4,203	0.021	**	**
	7240	19,931	3,880 ***	0.012	**	**
24	7230	7,744	3,125	0.038	**	**
	7240	19,144	3,880 ***	0.021	**	**
30	7230	6,524	2,522	0.059	**	**
	7240	18,304	3,880 ***	0.033	**	**
36	7230	5,275	2,102	0.085	**	**
	7240	17,474	3,880 ***	0.048	**	**
42	7230	4,284	1,801	0.116	**	**
	7240	16,693	3,880 ***	0.065	**	**
48	7230	3,629	1,576	0.151	**	1,390
	7240	15,981	3,880 ***	0.085	**	**
60	7230	2,824	1,261	0.236	**	890
	7240	14,790	3,803	0.133	**	**
72	7230	2,346	1,051	0.340	927	618
	7240	13,881	3,169	0.192	**	**
84	7230	2,021	901	0.463	681	454
	7240	12,054	2,716	0.261	**	2,427
96	7230	1,778	788	0.605	521	347
	7240	9,409	2,377	0.341	**	1,858
108	7230	1,584	701	0.765	412	275
	7240	7,434	2,113	0.431	**	1,468
120	7230	1,422	630	0.945	334	222
	7240	6,022	1,901	0.532	1,784	1,189
180	7230	*	420	2.126	148	99
	7240	*	1,268	1.199	793	529
240	7230	*	315	3.780	83	56
	7240	*	951	2.131	446	297

STRUT

- \* Not recommended - KL/r exceeds 200
- \*\* For these loads, the uniform beam capacity is lower than the L/240 or L/360 beam capacity and is therefore the governing restraint
- \*\*\* Load limited by spotweld shear

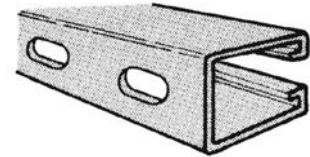
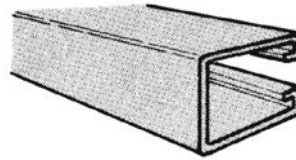
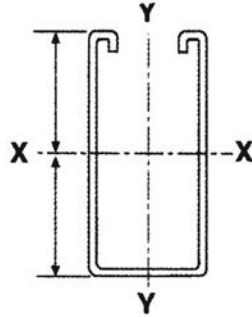
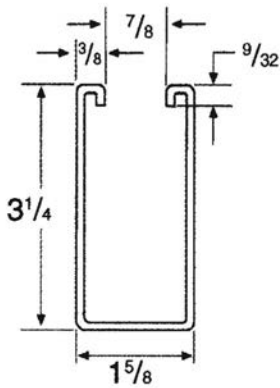
**NOTES**

1. The beam capacities shown above include the weight of the strut beam. The beam weight must be subtracted from these capacities to arrive at the net beam capacity.
2. Allowable beam loads are based on a uniform loaded, simply supported beam. For capacities of a beam loaded at midspan at a single point, multiply the beam capacity by 50% and deflection by 80%.
3. The above chart shows beam capacities for strut without holes. For strut with holes, multiply the following:  $\frac{7}{8}$ " diameter Knockout by 82%, Round Hole  $\frac{3}{4}$ " by 85% and Round Hole  $\frac{9}{16}$ " by 88%, Slotted  $\frac{9}{16}$ " x  $1-\frac{1}{8}$ " by 88% and Slotted  $\frac{13}{32}$ " x 3" by 90%.



Manufactured in the USA

7250 & 7251



3-1/4" x 1-5/8"

12 GAUGE STRUT SOLID & SLOTTED

I.T.P. Part #	Finish	Standard Length	Weight Per foot (Lbs.)
7250 (SOLID)	Plain Pre-Galvanized Green Painted	10' or 20'	3.13
7251 (SLOTTED)			3.08

NOTE: 304 and 316 stainless, PVC coated and hot-dipped galvanized are available.

STRUT



## Properties of Section

I.T.P. FIGURE NUMBER	Wt./Ft. Lbs.	Area of Section Sq. In.	X-X Axis			Y-Y Axis		
			I in 4	S in 3	r in.	I in 4	S in 3	r in.
7250	3.13	.844	1.073	0.609	1.102	0.429	0.529	0.697

I = Moment of Inertia  
 S = Section Modulus  
 r = Radius of Gyration

## Beam and Column Loads

SPAN OR COLUMN (IN)	I.T.P. FIGURE NUMBER	MAX LOAD OF COLUMN LOADED @ C.G. (LBS)	STATIC BEAM LOAD (X-X AXIS)			
			ALLOWABLE UNIFORM LOAD @ 25,000 PSI (LBS)	DEFLECTION @ 25,000 PSI (IN)	UNIFORM LOAD @ L/240 (LBS)	UNIFORM LOAD @ L/360 (LBS)
12	7250	12,428	10,155	0.007	**	**
18	7250	11,161	6,770	0.016	**	**
24	7250	9,531	5,077	0.029	**	**
30	7250	7,642	4,062	0.045	**	**
36	7250	5,767	3,385	0.065	**	**
42	7250	4,550	2,901	0.088	**	**
48	7250	3,754	2,539	.115	**	**
60	7250	2,830	2,031	0.180	**	1,876
72	7250	2,268	1,692	0.260	**	1,303
84	7250	1,972	1,451	0.354	1,436	957
96	7250	1,688	1,269	0.462	1,099	733
108	7250	1,509	1,128	0.585	869	579
120	7250	1,366	1,015	0.722	703	469
180	7250	*	667	1.624	313	208
240	7250	*	508	2.887	176	117

STRUT

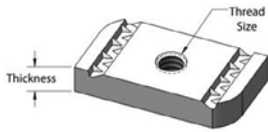
- \* Not recommended - KL/r exceeds 200
- \*\* For these loads, the uniform beam capacity is lower than the L/240 or L/360 beam capacity and is therefore the governing restraint
- \*\*\* Load limited by spotweld shear

### NOTES

1. The beam capacities shown above include the weight of the strut beam. The beam weight must be subtracted from these capacities to arrive at the net beam capacity.
2. Allowable beam loads are based on a uniform loaded, simply supported beam. For capacities of a beam loaded at midspan at a single point, multiply the beam capacity by 50% and deflection by 80%.
3. The above chart shows beam capacities for strut without holes. For strut with holes, multiply the following:  $\frac{7}{8}$ " diameter Knockout by 82%, Round Hole  $\frac{3}{4}$ " by 85% and Round Hole  $\frac{9}{16}$ " by 88%, Slotted  $\frac{9}{16}$ " x  $1\text{-}\frac{1}{8}$ " by 88% and Slotted  $\frac{13}{32}$ " x 3" by 90%.

8000

STRUT NUT WITHOUT SPRING

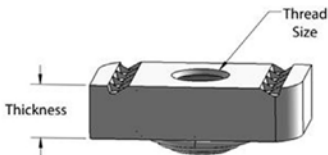


**Material:** Electro-galvanized carbon steel. Also available in 316 stainless steel.

Rod (Thread) Size	Thickness	Weight Each (lbs)
#8-32	1/4"	0.06
#10-24		0.06
#10-32		0.06
1/4"	3/8"	0.06
5/16"		0.09
3/8"		0.09
7/16"		0.09
1/2"	1/2"	0.09
5/8"		0.13
3/4"		0.13
7/8"		0.13

8050

STRUT NUT WITH SHORT SPRING

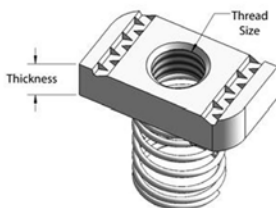


**Material:** Electro-galvanized carbon steel. Also available in 316 stainless steel.

Rod (Thread) Size	Thickness	Weight Each (lbs)
#8-32	1/4"	0.07
#10-24		0.07
#10-32		0.07
1/4"	3/8"	0.07
5/16"		0.06
3/8"		0.09
7/16"		0.09
1/2"	1/2"	0.09
5/8"		0.10

8100

STRUT NUT WITH REGULAR SPRING



**Material:** Electro-galvanized carbon steel. Also available in 316 stainless steel.

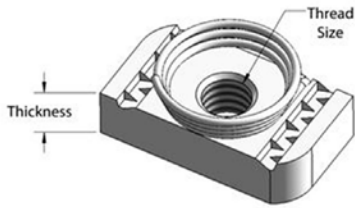
Note: To be used on 1-3/8" and 1-5/8" strut.

Rod (Thread) Size	Thickness	Weight Each (lbs)
#8-32	1/4"	0.075
#10-24		0.075
#10-32		0.075
1/4"	3/8"	0.070
5/16"		0.100
3/8"		0.100
7/16"		0.100
1/2"	1/2"	0.120
5/8"		0.150
3/4"		0.150
7/8"		0.150

STRUT NUTS & STRUT CLAMPS

# 8150

## TOP SPRING STRUT NUT



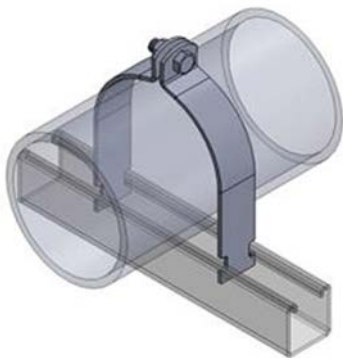
Rod (Thread) Size	Thickness	Weight Each (lbs)
#8-32	1/4"	0.07
#10-24		0.07
#10-32		0.07
1/4"		0.07
5/16"	3/8"	0.10
3/8"		0.10
1/2"		0.12

**Material:** Electro-galvanized carbon steel. Also available in 316 stainless steel.

Note: Not to be used on 13/16" or 1" strut.

# 8200 & 8200SS

## RIGID IPS STRUT CLAMP ASSEMBLED



STRUT NUTS & STRUT CLAMPS

Pipe Size	Pipe OD	Max Rec Load (lbs)	Weight Each (lbs)
3/8"	0.675	400	0.10
1/2"	0.840		0.10
3/4"	1.050	600	0.15
1"	1.315		0.17
1-1/4"	1.660		0.18
1-1/2"	1.900	800	0.29
2"	2.375		0.34
2-1/2"	2.875		0.40
3"	3.500		0.47
3-1/2"	4.000	1000	0.62
4"	4.500		0.67
5"	5.563		0.80
6"	6.625		1.02
8"	8.625		1.30
10"	10.750		1.43
12"	12.750	1.75	

**Material:** 8200-Electro-galvanized carbon steel 8200SS-304 stainless steel

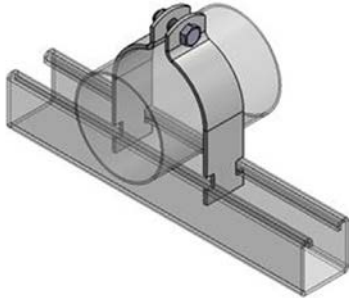
Also available in 316 stainless steel.



8250

OD Tubing Strut Clamp Assembled

**Material:** Electro-galvanized carbon steel.  
Also available in 304 stainless steel.



Pipe Size	Max Rec Load (lbs)	Weight Each (lbs)	Pipe Size	Max Rec Load (lbs)	Weight Each (lbs)
1/4"	400	0.09	3-3/4"	1000	0.51
3/8"		0.09	3-7/8"		0.52
1/2"		0.07	4"		0.52
5/8"		0.09	4-1/8"		0.53
3/4"		0.13	4-1/4"		0.54
7/8"		0.14	4-3/8"		0.55
1"	600	0.15	4-1/2"	1000	0.55
1-1/8"		0.16	4-5/8"		0.57
1-1/4"		0.18	4-3/4"		0.58
1-3/8"		0.19	4-7/8"		0.60
1-1/2"		0.20	5"		0.62
1-5/8"		0.21	5-1/8"		0.64
1-3/4"	800	0.22	5-1/4"	1000	0.66
1-7/8"		0.22	5-3/8"		0.68
2"		0.23	5-1/2"		0.70
2-1/8"		0.23	5-5/8"		0.72
2-1/4"		0.25	5-3/4"		0.74
2-3/8"		0.26	5-7/8"		0.76
2-1/2"		0.38	6"		0.79
2-5/8"		0.38	6-1/8"		0.83
2-3/4"		0.39	6-1/4"		0.87
2-7/8"		0.40	6-3/8"		0.90
3"		0.42	6-1/2"		0.95
3-1/8"		0.44	6-5/8"		1.02
3-1/4"		0.46	6-3/4"		1.05
3-3/8"		0.48	6-7/8"		1.10
3-1/2"		0.50	7"		1.16
3-5/8"		0.50	8-3/8"		1.25

STRUT NUTS & STRUT CLAMPS

USE THE FOLLOWING CLAMPS FOR NO-HUB CAST IRON SOIL PIPE

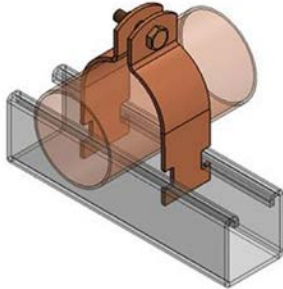
No-Hub Cast Iron Nominal Pipe Size	Use The Following Strut Clamp
1-1/2"	8200 - 1-1/2"
2"	8200 - 2"
3"	8250 - 3-3/8"
4"	8250 - 4-3/8"
5"	8250 - 5-3/8"
6"	8250 - 6-3/8"
8"	8250 - 8-3/8"
10"-12"	CALL

# 8300CT & 8300CTP

COPPER TUBING STRUT PIPE CLAMP - ASSEMBLED

EPOXY COATED COPPER-GARD (CT) and COPPER PLATED (CTP)

**Material:** Epoxy coated over electro-galvanized steel (CT).  
Copper plated carbon steel (CTP).  
Also available in 316 stainless steel.



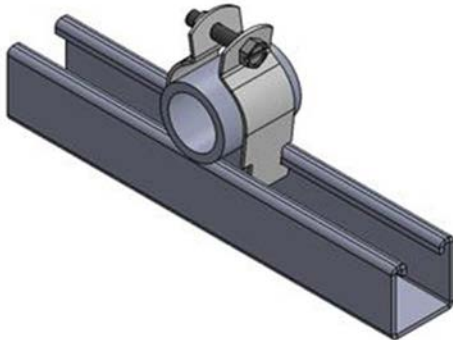
Copper-Gard epoxy products offer superior corrosion protection

Tube Size	Max Rec Load (lbs)	Weight Each (lbs)
3/8"	400	0.09
1/2"		0.10
3/4"		0.12
1"	600	0.15
1-1/4"		0.17
1-1/2"		0.19
2"	800	0.32
2-1/2"		0.37
3"		0.43
3-1/2"	1000	0.56
4"		0.62
5"		0.75
6"		0.96

# 8350

UNIVERSAL PIPE STRUT CLAMP ASSEMBLED

STRUT NUTS & STRUT CLAMPS



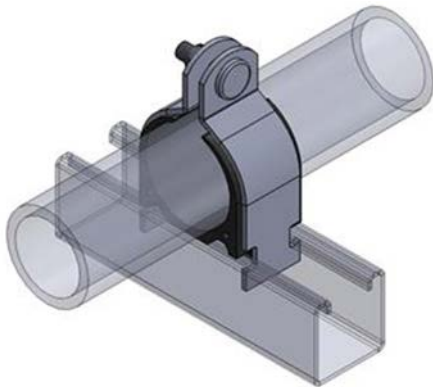
**Material:** Electro-galvanized carbon steel.  
Also available in 316 stainless steel.

Pipe Size	OD SIZE RANGE	Max Rec Load (lbs)	Weight Each (lbs)
3/8"	.557 - .706	400	0.18
1/2"	.701 - .875		0.20
3/4"	.917 - 1.031		0.22
1"	1.125 - 1.375		0.24
1-1/4"	1.50 - 1.691		0.27
1-1/2"	1.735 - 1.931	600	0.30
2"	2.192 - 2.40		0.35



8500

CUSHION STRUT CLAMP

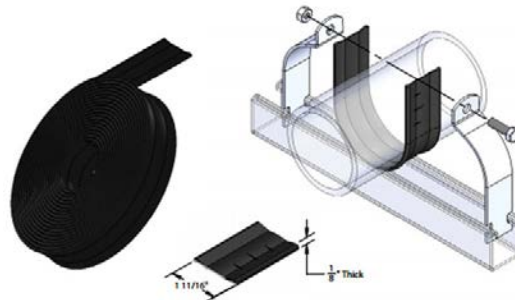


**Material:** Electro-galvanized steel with thermoplastic insulating liner.  
 Also available in IPS sizes.  
 Also available in 316 stainless steel.

OD Size	Nom. Tube Size	Weight Each (lbs)
1/4"	1/8"	0.110
3/8"	1/4"	0.110
1/2"	3/8"	0.110
5/8"	1/2"	0.120
3/4"	5/8"	0.130
7/8"	3/4"	0.200
1"	7/8"	0.210
1-1/8"	1"	0.275
1-1/4"	1-1/8"	0.292
1-3/8"	1-1/4"	0.310
1-1/2"	1-3/8"	0.354
1-5/8"	1-1/2"	0.400
1-3/4"	1-5/8"	0.413
1-7/8"	1-3/4"	0.425
2"	1-7/8"	0.454
2-1/8"	2"	0.483
2-3/8"	2-1/4"	0.600
2-5/8"	2-1/2"	0.610
3-1/8"	3"	0.650
4-1/8"	4"	0.900

8550

CUSHION PIPE WRAP



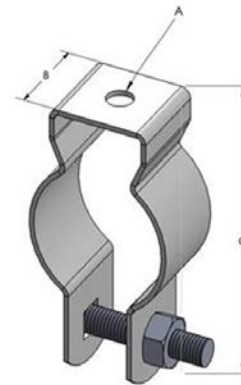
**Material:** Elastomer (EPDM)  
**Dimensions:** 1/8" thick x 1-11/16" wide.  
**Weight:** 2.50 lbs per roll.  
**Note:** This cushion wrap is designed for use with HVAC, refrigeration and hydraulic lines. Wrap can be cut to size for any pipe material and size. It provides protection from galvanic action between dissimilar metals, as well as absorbs sound and vibration between pipe and mounting materials. Service temperature -70° to +300° fahrenheit.

STRUT NUTS & STRUT CLAMPS

8575

**CONDUIT CLAMP**  
with bolt & nut

**Material:** Electro-galvanized carbon steel.

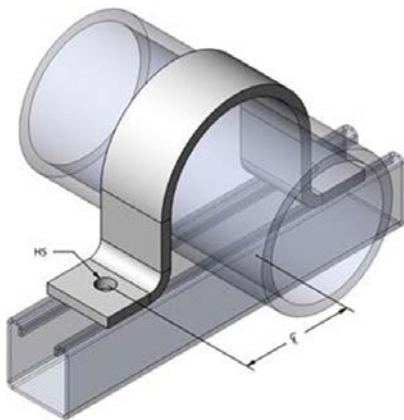


Size	FITS RIGID & PIPE SIZE	FITS EMT	A	B	C	Weight Each (lbs)
1/2"	3/8" & 1/2"	1/2"	1/4"	3/4"	1-7/8"	0.062
3/4"	3/4"	3/4"	1/4"	3/4"	2-1/8"	0.08
1"	1"	1"	1/4"	7/8"	2-9/16"	0.10
1-1/4"	1-1/4"	1-1/2"	1/4"	7/8"	3"	0.11
1-1/2"	1-1/2"	-	1/4"	1"	3-1/8"	0.12
2"	2"	2"	5/16"	1-1/4"	3-7/8"	0.23

9110HD

**Material:** Electro-galvanized carbon steel. SST 316 & 304

**TWO HOLE  
HOLD DOWN CLAMP**

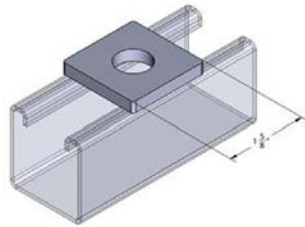


Pipe Size	HS (in.)	CL (in.)	Weight Each (lbs)
1/2"	5/16"	15/16"	.23
3/4"	5/16"	1"	.26
1"	5/16"	1-1/8"	.31
1-1/4"	5/16"	1-5/16"	.35
1-1/2"	5/16"	1-7/16"	.39
2"	7/16"	2-1/8"	.94
2-1/2"	7/16"	2-3/8"	1.14
3"	7/16"	2-11/16"	1.33
3-1/2"	7/16"	2-15/16"	1.52
4"	9/16"	3-3/16"	1.76
5"	9/16"	3-3/4"	1.98
6"	9/16"	4-1/4"	2.25

STRUT NUTS & STRUT CLAMPS

## 9001FF

SQUARE STRUT  
WASHER  
1-5/8" X 1-5/8"

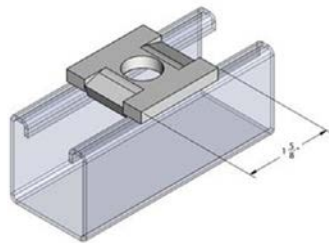


**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"

Rod size	Weight
1/4"	.18
3/8"	.18
1/2"	.17
5/8"	.16
3/4"	.16
7/8"	.15

## 9002FF

SQUARE WASHER  
WITH GUIDES  
1-5/8" X 1-5/8"

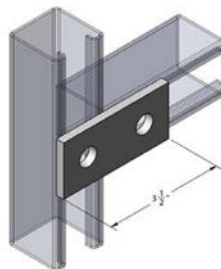


**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"

Rod size	Weight
1/4"	.18
3/8"	.18
1/2"	.17
5/8"	.16
3/4"	.16

## 9003FF

2-HOLE  
SPLICE PLATE  
1-5/8" X 3-1/2"



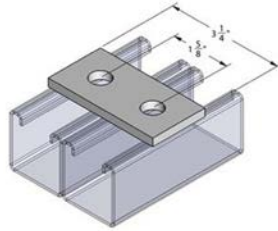
**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .37

STRUT  
ACCESSORIES



## 9004FF

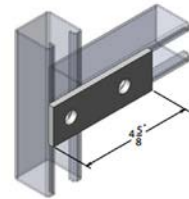
2-HOLE SPLICE PLATE  
SIDE TO SIDE STRUT  
1-5/8" X 3-1/4"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .34

## 9005FF

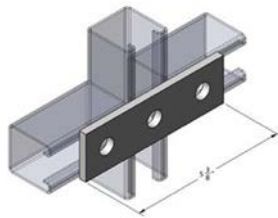
2-HOLE SPLICE PLATE  
1-5/8" X 4-5/8"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .46

## 9006FF

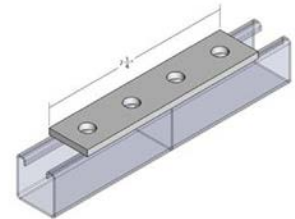
3-HOLE SPLICE PLATE  
1-5/8" X 5-3/8"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .55

## 9007FF

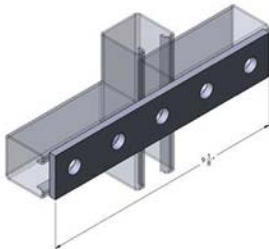
4-HOLE SPLICE PLATE  
1-5/8" X 7-1/4"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .76

## 9008FF

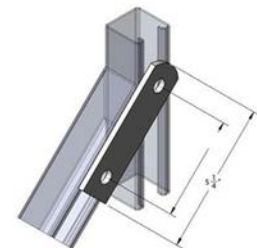
5-HOLE SPLICE PLATE  
1-5/8" X 9-1/8"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .95

## 9009FF

2-HOLE  
SWIVEL PLATE  
1-5/8" X 5-1/4"



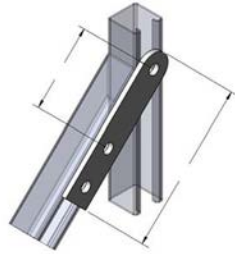
**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .48

STRUT  
ACCESSORIES



## 9010FF

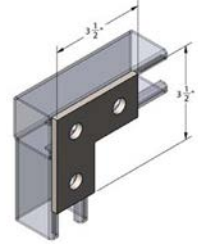
3-HOLE  
SWIVEL PLATE  
1-5/8" X 7-1/8"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .69

## 9011FF

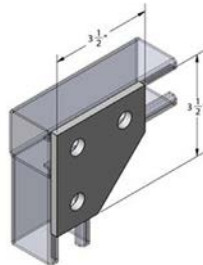
3-HOLE  
CORNER PLATE  
3-1/2" X 3-1/2"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .56

## 9012FF

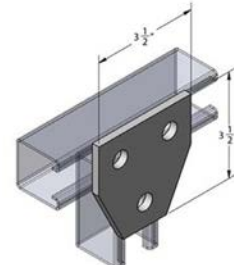
3-HOLE  
CORNER GUSSET  
3-1/2" X 3-1/2"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .70

## 9013FF

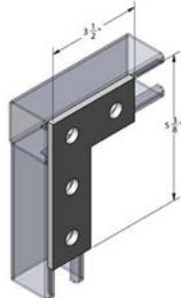
3-HOLE  
TEE GUSSET  
3-1/2" X 3-1/2"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .70

## 9014FF

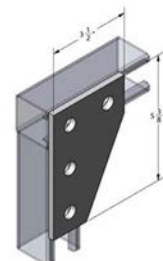
4-HOLE CORNER PLATE  
3-1/2" X 5-3/8"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .75

## 9015FF

4-HOLE TEE  
CORNER GUSSET  
3-1/2" X 5-3/8"

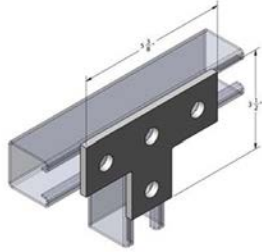


**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 1.02



## 9016FF

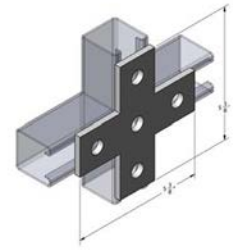
4-HOLE TEE PLATE  
3-1/2" X 5-3/8"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .75

## 9017FF

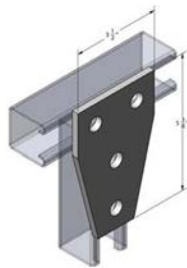
5-HOLE CROSS PLATE  
5-3/8" X 5-3/8"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 1.00

## 9018FF

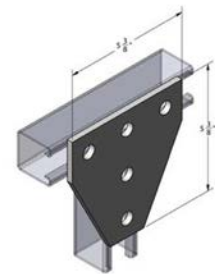
4-HOLE  
TEE GUSSET  
3-1/2" X 5-3/8"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 1.00

## 9019FF

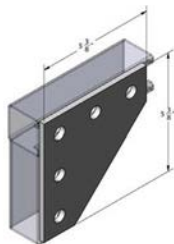
5-HOLE  
TEE GUSSET  
5-3/8" X 5-3/8"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 1.43

## 9020FF

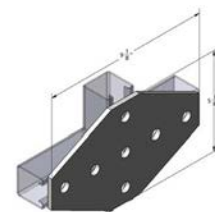
5-HOLE  
CORNER GUSSET  
5-3/8" X 5-3/8"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 1.45

## 9021FF

7-HOLE  
CROSS GUSSET  
5-3/8" X 9-1/8"



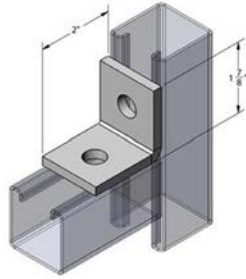
**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 2.32

STRUT  
ACCESSORIES



## 9022CA

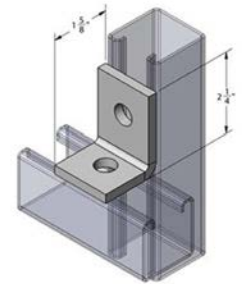
2-HOLE  
CORNER ANGLE  
1-7/8" X 2"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .37

## 9023CA

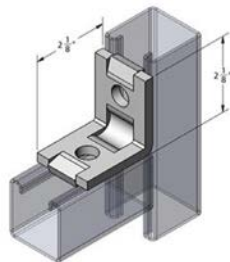
2-HOLE  
CORNER ANGLE  
1-5/8" X 2 1/4"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .37

## 9024CA

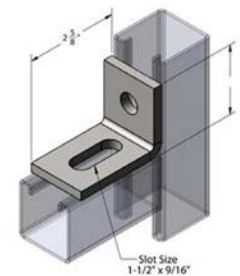
2-HOLE  
CORNER ANGLE  
2-1/8" X 2-1/8"  
WITH GUIDES



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .41

## 9025CA

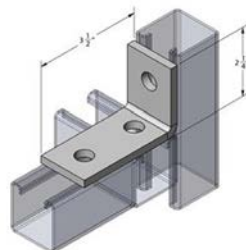
1-HOLE  
ADJUSTABLE CORNER  
ANGLE WITH SLOT  
1-7/8" X 2-5/8"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .38

## 9026CA

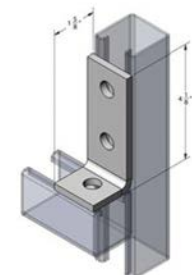
3-HOLE  
CORNER ANGLE  
2-1/4" X 3-1/2"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .56

## 9027CA

3-HOLE  
CORNER ANGLE  
1-5/8" X 4-1/8"

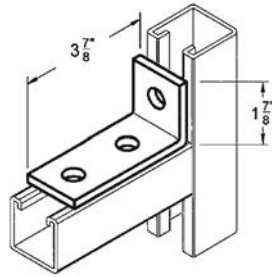


**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .56



## 9028CA

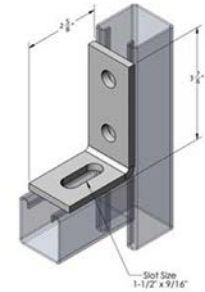
3-HOLE  
CORNER ANGLE  
1-7/8" X 3-7/8"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .58

## 9029CA

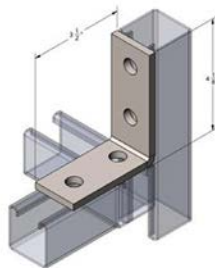
2-HOLE  
ADJUSTABLE CORNER  
ANGLE WITH SLOT  
2-5/8" X 3-7/8"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .61

## 9030CA

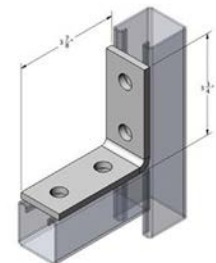
4-HOLE  
CORNER ANGLE  
3-1/2" X 4-1/8"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .78

## 9031CA

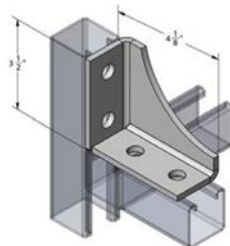
4-HOLE  
CORNER ANGLE  
3-3/4" X 3-7/8"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .76

## 9032CA

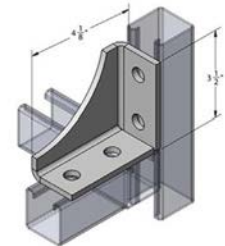
4-HOLE WEBBED  
CORNER ANGLE,  
RIGHT HAND  
3-1/2" X 4-1/8"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 1.12

## 9033CA

4-HOLE WEBBED  
CORNER ANGLE,  
LEFT HAND  
3-1/2" X 4-1/8"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 1.12

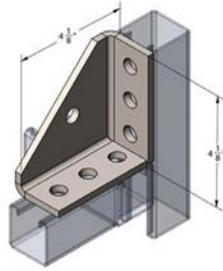
STRUT  
ACCESSORIES





## 9034CA

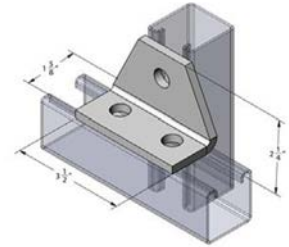
7-HOLE  
UNIVERSAL  
CORNER ANGLE  
4-1/8" X 4-1/8"



<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	1.32

## 9035CA

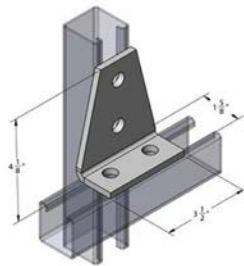
3-HOLE  
SHELF GUSSET  
ANGLE 1-5/8" X 2-1/4"



<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	.67

## 9036CA

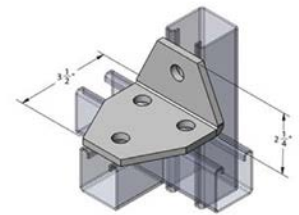
4-HOLE  
SHELF GUSSET  
ANGLE 1-5/8" X 4-1/8"



<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	1.02

## 9037CA

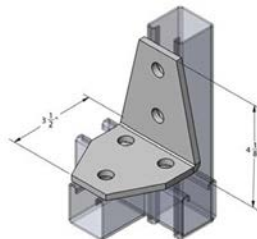
4-HOLE  
SHELF GUSSET  
3-WAY ANGLE  
2-1/4" X 3-1/2"



<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	1.01

## 9038CA

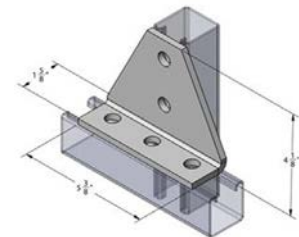
5-HOLE  
SHELF GUSSET  
3-WAY ANGLE  
3-1/2" X 4-1/8"



<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	1.35

## 9039CA

5-HOLE  
SHELF GUSSET  
ANGLE 1-5/8" X 4-1/8"



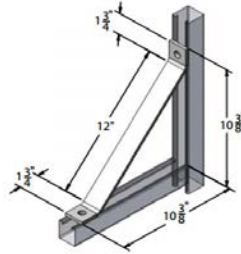
<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	1.41

STRUT  
ACCESSORIES



## 9040CA

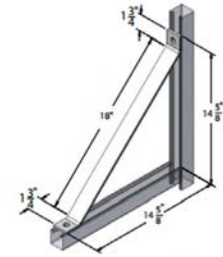
2-HOLE 45°  
KNEE BRACE 12"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 1.65

## 9042CA

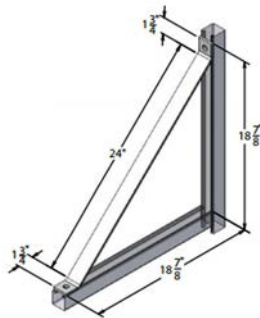
2-HOLE 45°  
KNEE BRACE 18"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 2.34

## 9043CA

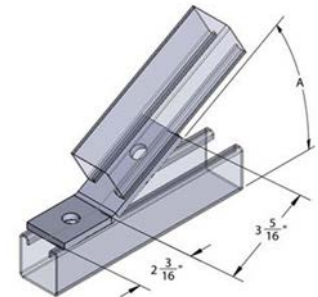
2-HOLE 45°  
KNEE BRACE 24"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 3.03

## 9044AF

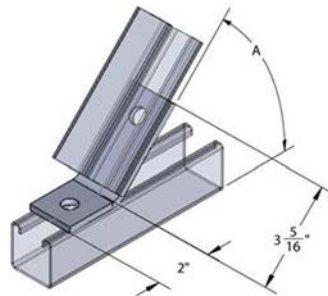
2-HOLE OPEN  
ANGLE 30°  
2-3/8" X 3-1/8"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .59

## 9045AF

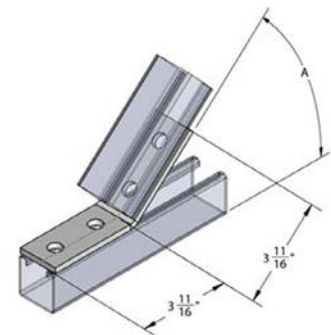
2-HOLE OPEN  
ANGLE 45°  
2-3/8" X 3-1/8"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .59

## 9046AF

4-HOLE OPEN  
ANGLE 45°  
3-1/2" X 3-11/16"



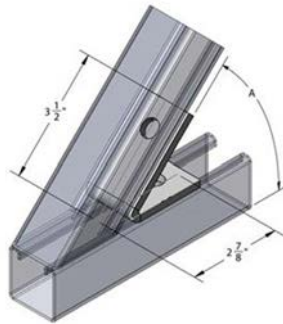
**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .78

STRUT  
ACCESSORIES



## 9047AF

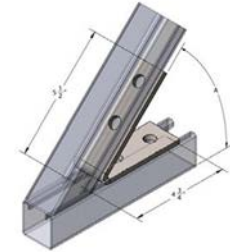
2-HOLE CLOSED  
ANGLE 45°  
2-1/2" X 3-1/2"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .56

## 9048AF

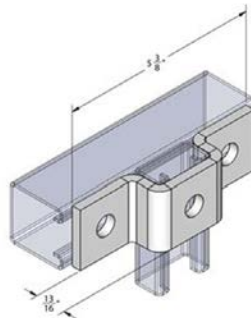
4-HOLE CLOSED  
ANGLE 45°  
4-3/8" X 5"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .95

## 9049UF

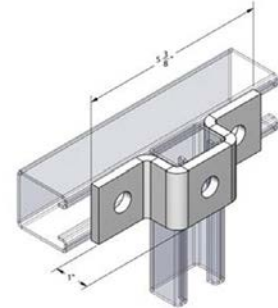
3-HOLE "U" SUPPORT  
FOR 1-5/8" X 13/16" STRUT



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .70

## 9050UF

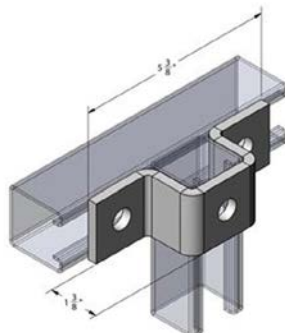
3-HOLE "U" SUPPORT  
FOR 1-5/8" X 1" STRUT



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .71

## 9051UF

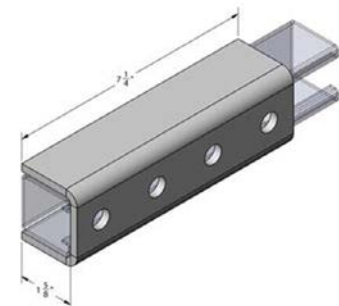
3-HOLE "U" SUPPORT  
FOR 1-5/8" X 1-3/8" STRUT



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .84

## 9052UF

4-HOLE  
SPLICE CLEVIS FOR  
1-5/8" X 1-5/8" STRUT

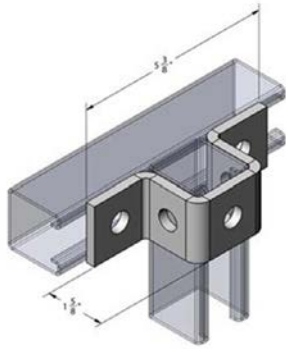


**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 2.33



## 9053UF

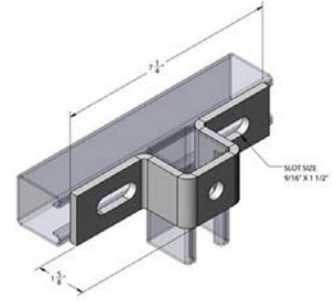
5-HOLE "U" SUPPORT  
FOR 1-5/8" X 1-5/8"  
STRUT



<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	.85

## 9054UF

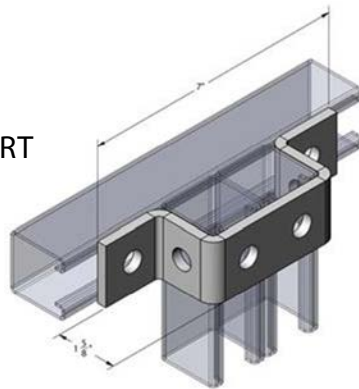
ADJUSTABLE 1-HOLE,  
2 SLOT "U" SUPPORT  
FOR 1-5/8" X 1-5/8"  
STRUT



<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	1.03

## 9055UF

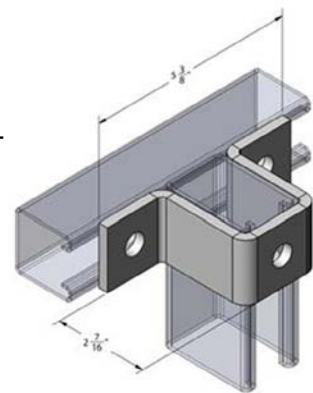
6-HOLE "U" SUPPORT  
FOR 1-5/8" X 1-5/8"  
DOUBLE STRUT



<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	1.05

## 9056UF

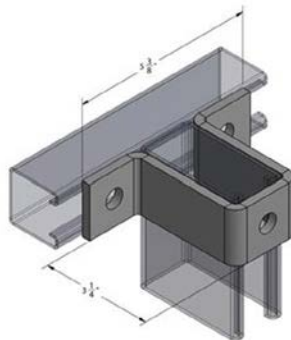
3-HOLE "U" SUPPORT  
FOR 1-5/8" X 2-7/16"  
STRUT



<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	1.08

## 9057UF

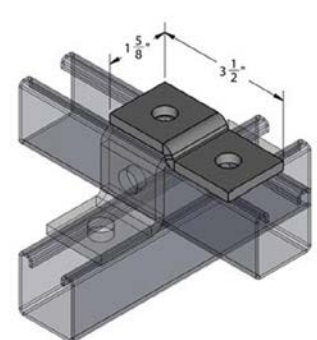
3-HOLE "U" SUPPORT  
FOR 3-1/4" STRUT



<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	1.26

## 9058ZF

2-HOLE  
OFFSET "Z" SUPPORT



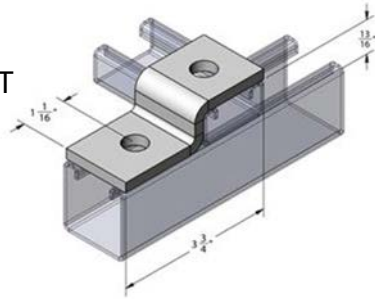
<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	.38

STRUT  
ACCESSORIES



### 9059ZF

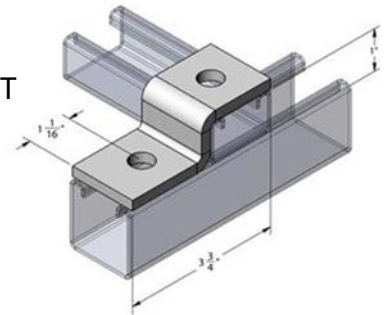
2-HOLE "Z" SUPPORT  
FOR 1-5/8" X 13/16"  
STRUT



<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	.43

### 9060ZF

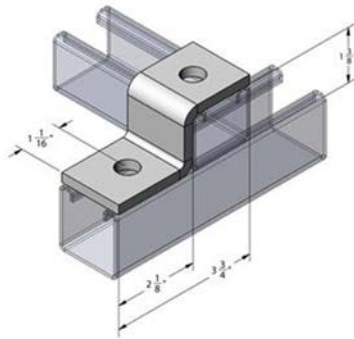
2-HOLE "Z" SUPPORT  
FOR 1-5/8" X 13/16"  
STRUT



<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	.44

### 9061ZF

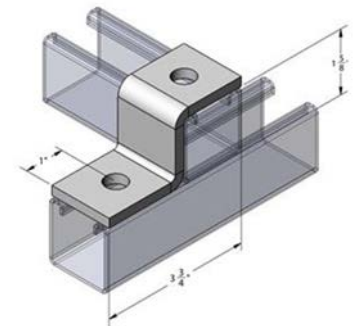
2-HOLE "Z" SUPPO  
FOR 1-5/8" X 1-3/8"  
STRUT



<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	.51

### 9062ZF

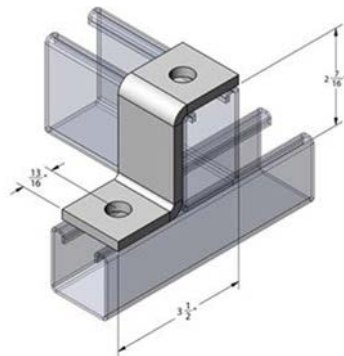
2-HOLE "Z" SUPPOF  
FOR 1-5/8" X 1-5/8"  
STRUT



<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	.52

### 9063ZF

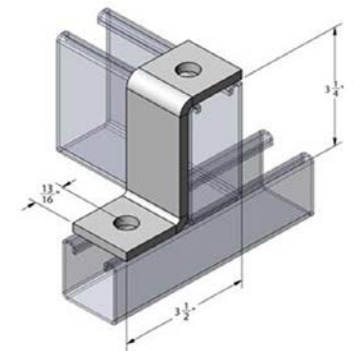
2-HOLE "Z" SUPPORT  
FOR 1-5/8" X 2-7/16"  
STRUT



<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	.64

### 9064ZF

2-HOLE "Z" SUPPORT  
FOR 1-5/8" X 3-1/4"  
STRUT OR STRUT  
COMBINATION



<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	.70

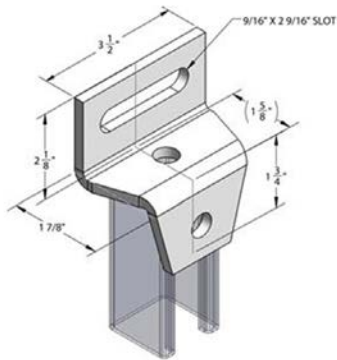
STRUT  
ACCESSORIES





## 9065ZF

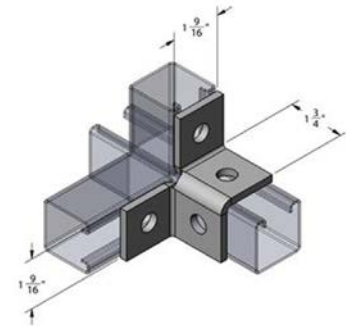
ADJUSTABLE  
OFFSET GUSSETED  
"Z" SUPPORT



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .97

## 9066WF

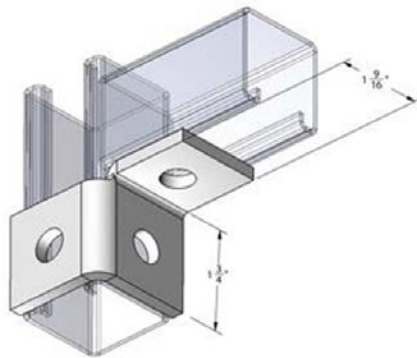
4-HOLE  
DOUBLE CORNER  
CONNECTION



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .76

## 9067WF

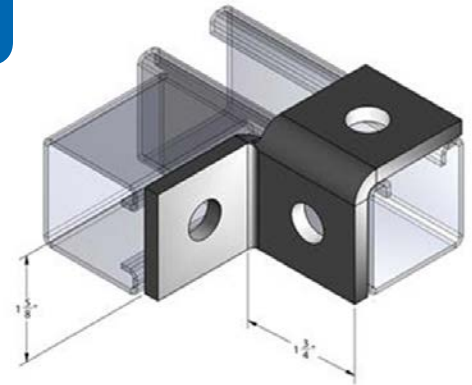
2-HOLE  
SINGLE CORNER  
CONNECTION -  
RIGHT HAND



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .60

## 9068WF

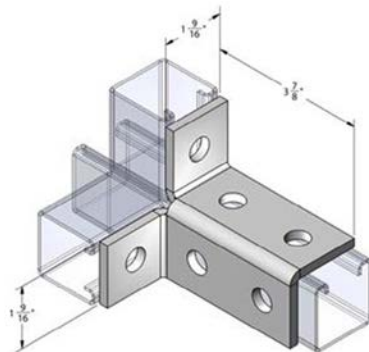
2-HOLE  
SINGLE CORNER  
CONNECTION -  
LEFT HAND



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** .60

## 9069WF

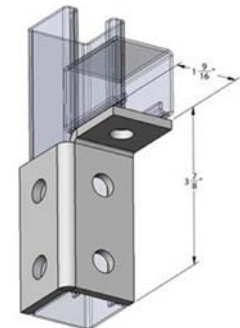
6-HOLE  
DOUBLE CORNER  
CONNECTION



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 1.10

## 9070WF

5-HOLE  
SINGLE CORNER  
CONNECTION -  
RIGHT HAND



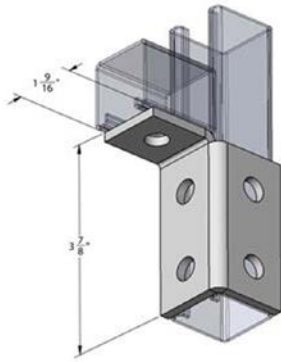
**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 1.00

STRUT  
ACCESSORIES



## 9071WF

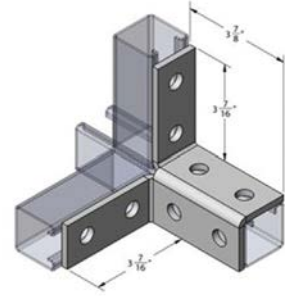
5-HOLE  
SINGLE CORNER  
CONNECTION -  
LEFT HAND



<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	1.00

## 9072WF

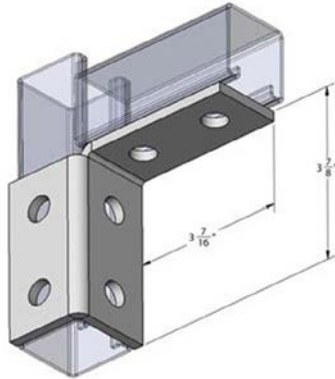
8-HOLE  
DOUBLE CORNER  
CONNECTION



<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	1.52

## 9073WF

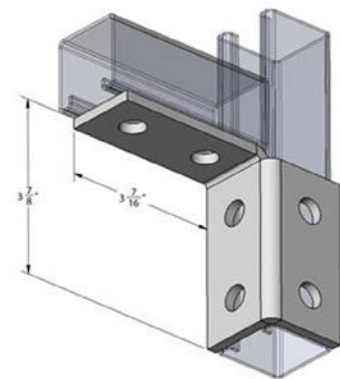
6-HOLE  
SINGLE CORNER  
CONNECTION -  
RIGHT HAND



<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	1.20

## 9074WF

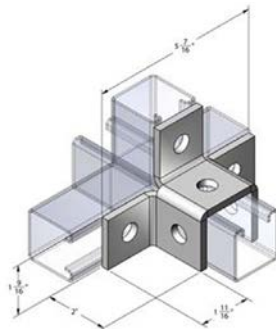
6-HOLE  
SINGLE CORNER  
CONNECTION -  
LEFT HAND



<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	1.20

## 9075WF

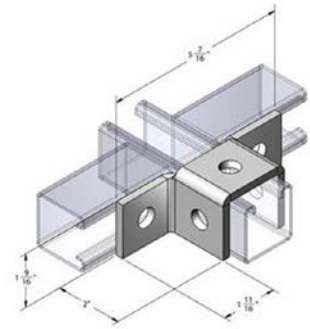
6-HOLE  
TRIPLE WING  
CONNECTION



<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	1.12

## 9076WF

5-HOLE  
DOUBLE WING  
CONNECTION



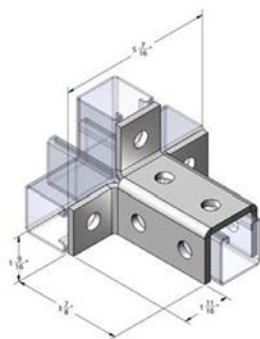
<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	.93

STRUT  
ACCESSORIES



## 9077WF

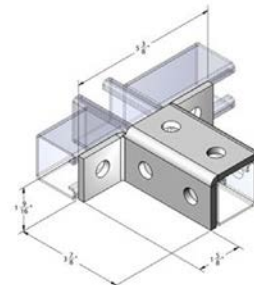
9-HOLE  
TRIPLE WING  
CONNECTION



<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	1.77

## 9078WF

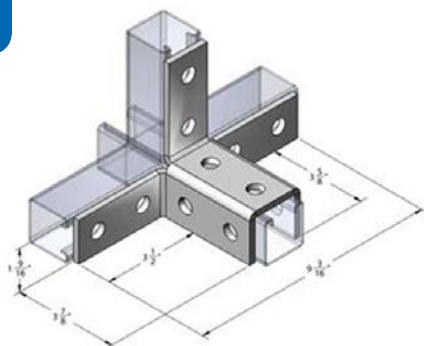
8-HOLE  
DOUBLE WING  
CONNECTION



<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	1.56

## 9079WF

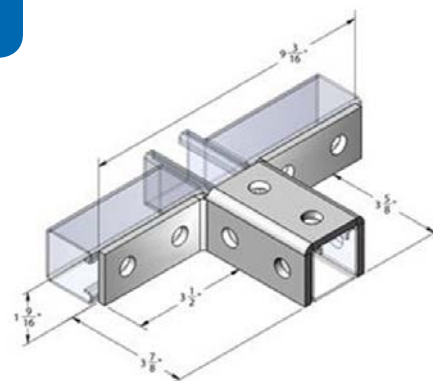
12-HOLE  
TRIPLE WING  
CONNECTION



<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	2.34

## 9080WF

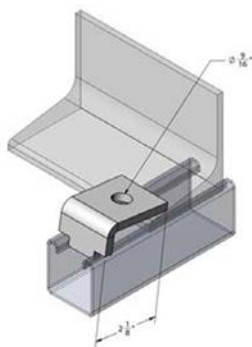
10-HOLE  
DOUBLE WING  
CONNECTION



<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	1.93

## 9081BC

STRUT BEAM CLAMP  
NOTCHED



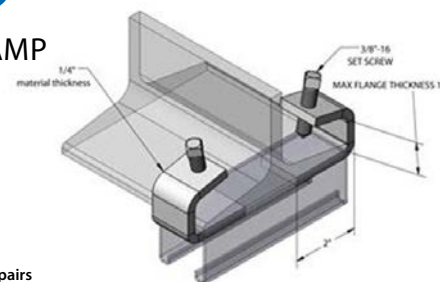
Material is 1-5/8" wide x 1/4" thick  
Clamp requires 1/2"-13 HCS and 1/2" channel nut

Design load 1100 lbs when used in pairs

<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	.28

## 9082BC

STRUT BEAM CLAMP  
LIGHT DUTY  
1/4" THICK



Max flange thickness 1"  
3/8"-16 set screw

Design load 550 lbs when used in pairs

<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	.62

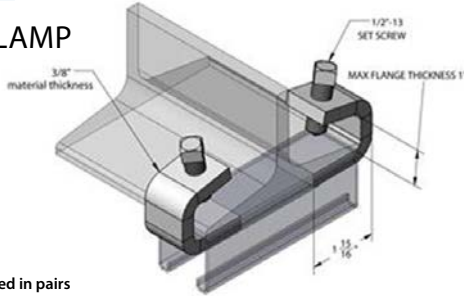
STRUT  
ACCESSORIES





## 9083BC

**STRUT BEAM CLAMP  
HEAVY DUTY  
3/8" THICK**



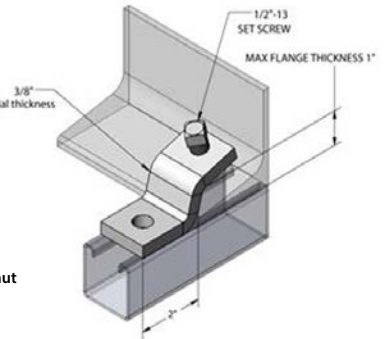
Max flange thickness 1"  
1/2"-13 set screw

Design load 1000 lbs when used in pairs

<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	.93

## 9084BC

**STRUT "Z" BEAM  
CLAMP HEAVY DUTY  
3/8" THICK**

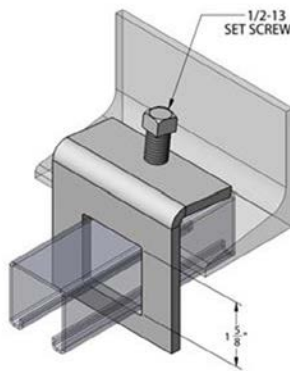


Max Flange thickness 1"  
Clamp requires 1/2"-13 HCS and 1/2" channel nut  
1/2" -13 set screw  
Design load 1100 lbs when used in pairs

<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	.64

## 9085BC

**STRUT BEAM CLAMP,  
WINDOW TYPE FOR  
1-5/8" STRUT**



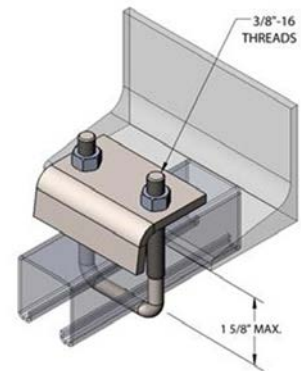
1/2"-13 set screw

Design load 950 lbs when used in pairs

<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	1.06

## 9086BC

**STRUT U-BOLT  
BEAM CLAMP FOR  
13/16" AND 1-5/8"  
STRUT**



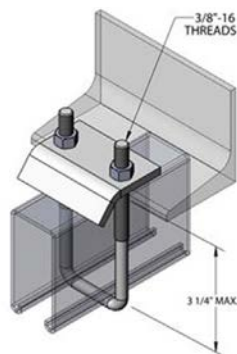
3/8" - 16 threads

Design load 1200 lbs when used in pairs

<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	.84

## 9087BC

**STRUT U-BOLT  
BEAM CLAMP FOR  
2-7/16" AND 3-1/4"  
STRUT**



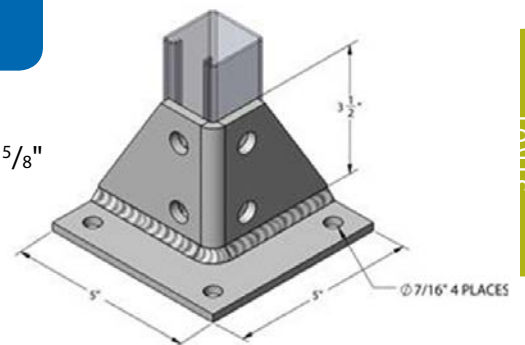
3/8" - 16 threads

Design load 1200 lbs when used in pairs

<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	.93

## 9088PB

**POST BASE  
FOR 1-5/8" X 1-5/8"  
STRUT  
5-1/8" X 5-1/8"  
BASE**

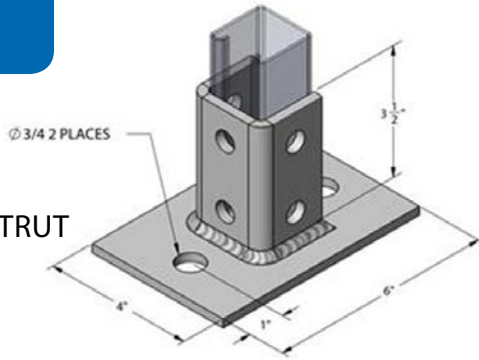


<b>Material:</b>	1/4"
<b>Finish:</b>	Electro-Galvanized, SST 316 & 304
<b>Hole Dim:</b>	9/16"
<b>Wt. Each (lbs):</b>	2.88



### 9089PB

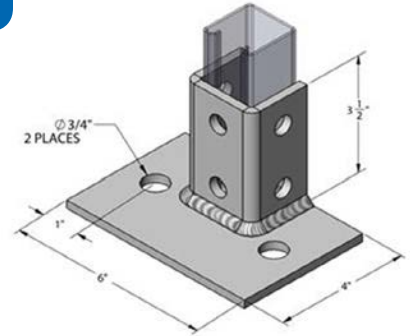
POST BASE  
SQUARE FOR  
1-5/8" X 1-5/8" STRUT  
4" X 6" BASE



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 3.12

### 9090PB

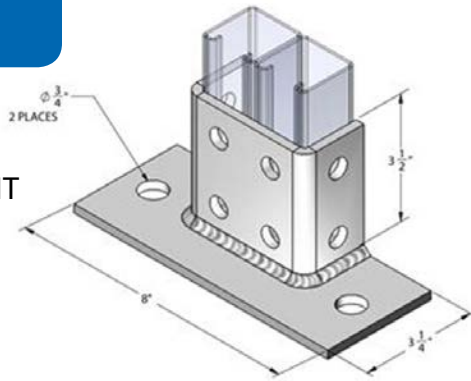
POST BASE -  
FLUSH MOUNT  
FOR 1-5/8" X 1-5/8"  
STRUT  
4" X 6" BASE



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 3.12

### 9091PB

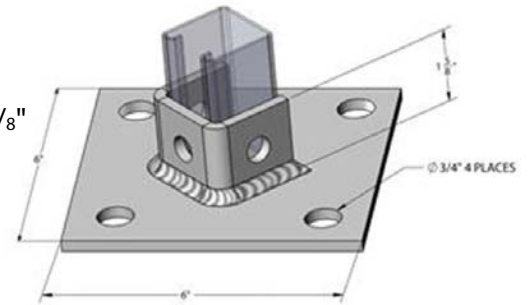
POST BASE  
FLUSH MOUNT  
FOR  
1-5/8" X 3-1/4"  
STRUT  
4" X 7" BASE



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 3.20

### 9092PB

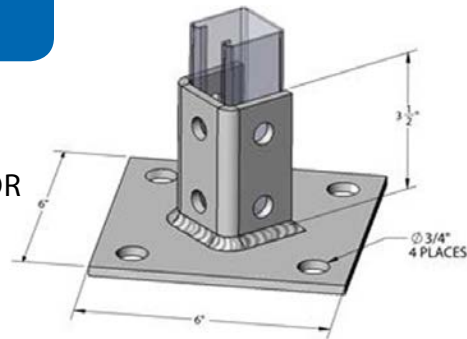
POST BASE  
FOR 1-5/8" X 1-5/8"  
STRUT  
6" X 6" BASE



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 3.20

### 9093PB

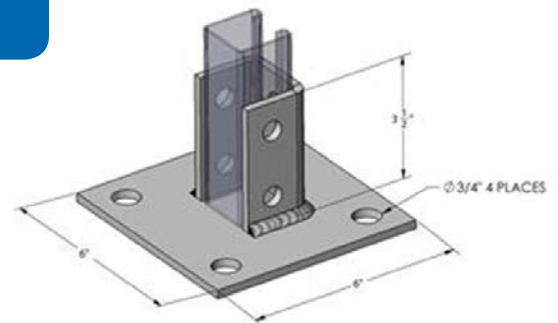
POST BASE -  
DIAGONAL FOR  
1-5/8" X 1-5/8"  
STRUT



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 3.92

### 9094PB

POST BASE -  
SQUARE FOR  
1-5/8" X 1-5/8"  
STRUT



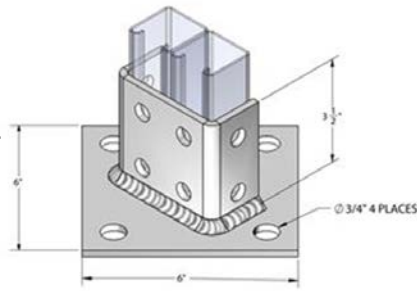
**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 3.92

STRUT  
ACCESSORIES



## 9095PB

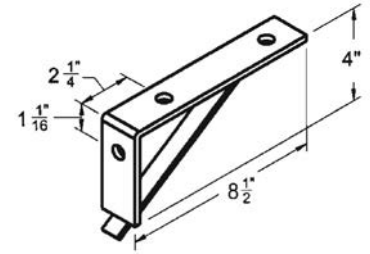
POST BASE FOR  
1-5/8" X 3-1/4" STRUT  
6" X 6" BASE



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 4.04

## 9103BB

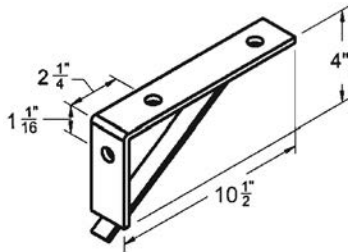
HEAVY DUTY  
BRACKET 8-1/2"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 1.68

## 9104BB

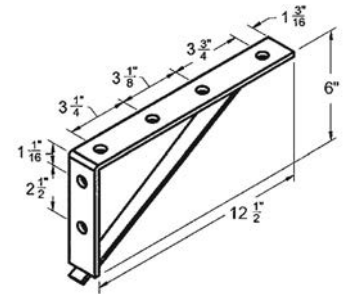
HEAVY DUTY  
BRACKET 10-1/2"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 2.02

## 9105BB

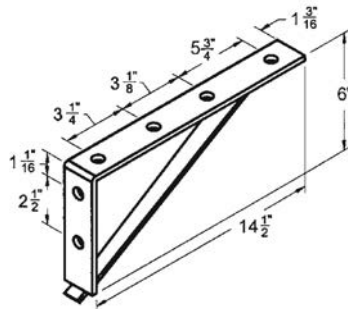
HEAVY DUTY  
BRACKET 12-1/2"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 2.58

## 9106BB

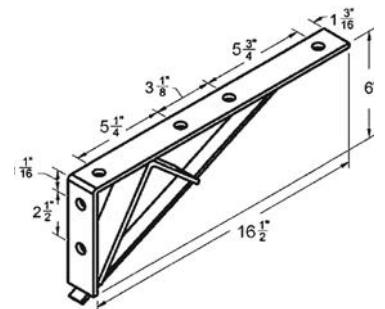
HEAVY DUTY  
BRACKET 14-1/2"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 2.92

## 9107BB

HEAVY DUTY  
SHELF BRACKET  
BRACKET 16-1/2"



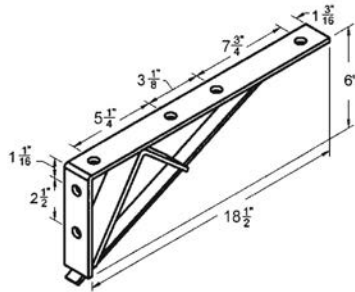
**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 3.81

STRUT  
ACCESSORIES



9108BB

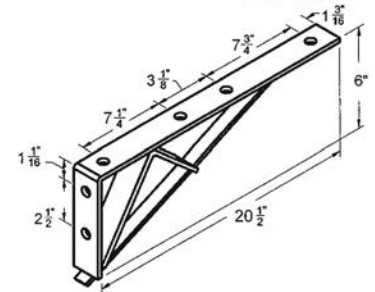
HEAVY  
DUTY SHELF  
BRACKET 18-1/2"



**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 4.16

9109BB

HEAVY  
DUTY SHELF  
BRACKET 20-1/2"

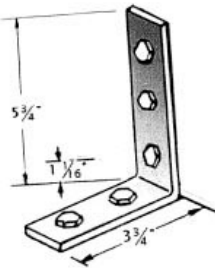


**Material:** 1/4"  
**Finish:** Electro-Galvanized, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 4.61

9150CA

MODEL A

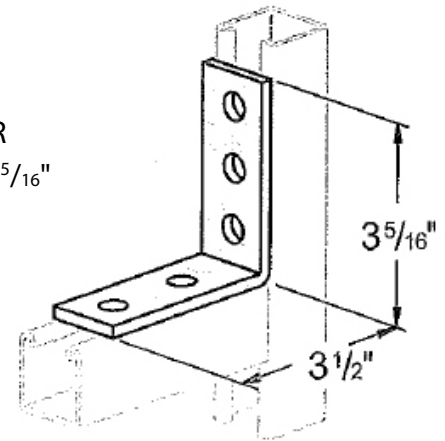
5-HOLE CORNER  
ANGLE 3-3/4 X 5-3/4"



**Material:** 1/4"  
**Finish:** Electro-galvanized, SST 316 & 304  
**Hole Dim:** 9/16"

MODEL B

5-HOLE CORNER  
ANGLE 3-1/2 X 3-5/16"

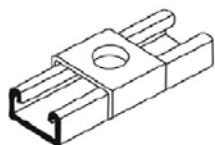


STRUT  
ACCESSORIES



# UW-450

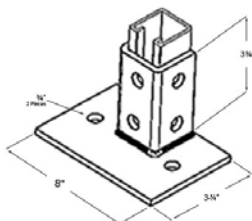
11 GA. "U" SADDLE WASHER 1-5/8" WIDE WITH 15/32" RETURN



Part Number	Std. Pkg.	Weight Per 100 Pcs.
UW-450-3/8 7/16" Hole	As Required	14
UW-450-1/2 9/16" Hole	As Required	13
UW-450-5/8 11/16" Hole	As Required	13
UW-450-3/4 13/16" Hole	As Required	13

## PB-280-FL PLTD

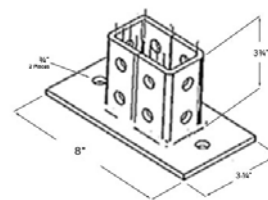
FLUSH MOUNT POST BASE  
FOR 1-5/8" X 1-5/8" STRUT  
3-1/4" X 8" BASE  
TWO 3/4" HOLES



**Material:** 1/4"  
**Finish:** Electro-Plated, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 3.12

## PB-2064 PLTD

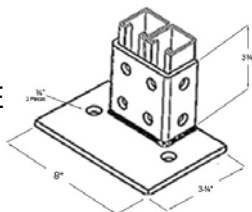
SQUARED POST BASE  
FOR 1-5/8" X 3-1/4" STRUT  
4" X 7" BASE  
TWO 9/16" HOLES



**Material:** 1/4"  
**Finish:** Electro-Plated, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 3.11

## PB-3064-FL PLTD

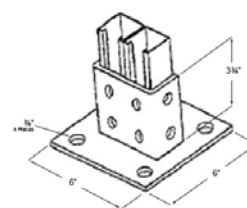
FLUSH MOUNT POST BASE  
FOR 1-5/8" X 3-1/4" STRUT  
3-1/4" X 8" BASE  
TWO 3/4" HOLES



**Material:** 1/4"  
**Finish:** Electro-Plated, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 3.11

## PB-3064-SQ PLTD

SQUARED POST BASE  
FOR 1-5/8" X 3-1/4" STRUT  
6" SQUARE BASE  
FOUR 3/4" HOLES



**Material:** 1/4"  
**Finish:** Electro-Plated, SST 316 & 304  
**Hole Dim:** 9/16"  
**Wt. Each (lbs):** 3.75

STRUT  
ACCESSORIES



CARBIDE HAMMER DRILL BITS

4-PLUS

- Rotary Hammer Drill
- Self Centering Chisel Point
- Special Tungsten Carbide Tip
- Copper / Silver Brazing
- ANSI Specification
- Fastest Dust Removal
- Fastest Drilling Speeds
- Clean Round Holes
- Polished Finish
- Industrial Quality
  - Concrete
  - Masonry
  - Stone
  - Brick
  - Aggregates



SDS-PLUS					
PART NUMBER	DRILL SIZE	X	O/A LENGTH	DRILLING DEPTH	HEAD STYLE
715S41064	5/32"	X	4-1/2"	2"	4-PLUS
715S61064		X	6-1/4"	4"	4-PLUS
715S41264	3/16"	X	4-1/2"	2"	4-PLUS
715S61264		X	6-1/4"	4"	4-PLUS
715S81264		X	8-1/4"	6"	4-PLUS
715S10316		X	10"	8"	4-PLUS
715S12316		X	12"	10"	4-PLUS
715S14316		X	14"	12"	4-PLUS
715S16316	7/32"	X	16"	14"	4-PLUS
715S41464		X	4-1/2"	2"	4-PLUS
715S61464		X	6-1/4"	4"	4-PLUS
715S81464		X	8-1/4"	6"	4-PLUS
715S11732		X	11"	9"	4-PLUS
715S16732		X	16"	14"	4-PLUS
715S20732	1/4"	X	20"	18"	4-PLUS
715S41664		X	4-1/2"	2"	4-PLUS
715S61664		X	6-1/4"	4"	4-PLUS
715S91664		X	8-1/4"	6"	4-PLUS
715S11014		X	11"	9"	4-PLUS
715S14014		X	14"	12"	4-PLUS
715S16014	5/16"	X	16"	14"	4-PLUS
715S20014		X	20"	18"	4-PLUS
715S62064		X	6-1/4"	4"	4-PLUS
715S92064		X	8-1/4"	6"	4-PLUS
715S12516		X	12"	10"	4-PLUS
715S62464		3/8"	X	6-1/4"	4"
715S92464	X		8-1/4"	6"	4-PLUS
715S10038	X		10-1/4"	8"	4-PLUS
715S12038	X		12-1/4"	10"	4-PLUS
715S18038	X		18"	16"	4-PLUS
715S24038	X		24"	22"	4-PLUS
715S62864	7/16"	X	6-1/4"	4"	4-PLUS
715S10716		X	10-1/4"	8"	4-PLUS
715S12716		X	12-1/4"	10"	4-PLUS
715S18716		X	18"	16"	4-PLUS
715S63264	1/2"	X	6-1/4"	4"	4-PLUS
715S10012		X	10-1/4"	8"	4-PLUS
715S12012		X	12-1/4"	10"	4-PLUS
715S12018		X	18"	16"	4-PLUS
715S12024		X	24"	22"	4-PLUS
715S63664	9/16"	X	6 1/4"	4"	4-PLUS
715S10916		X	10 1/4"	8"	4-PLUS
715S12916		X	12 1/4"	10"	4-PLUS
715S18916		X	18"	16"	4-PLUS



**CARBIDE HAMMER DRILL BITS**  
(continued)

**3 Head Styles:**



**4-PLUS**



A new, fast, & tough carbide tip provides long life, easy centering, and fast drilling through all aggregates, concrete, masonry, brick, stone, and even rebar!



**REGULAR**



Traditional Tungsten Carbide Tip with Copper Silver Brazing for clean drilling through all aggregates, concrete, masonry, brick, & stone. Regular heads are found on SDS-PLUS sizes over 5/8".



**X-CUTTER**

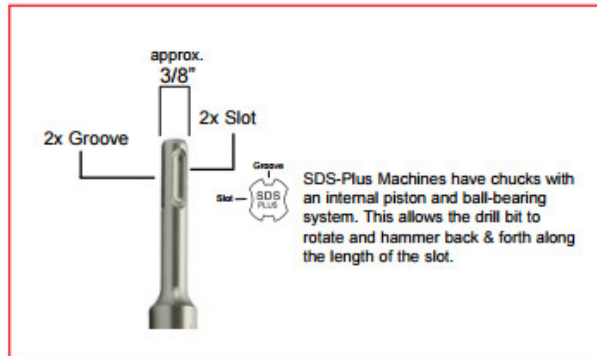


4 Sided Traditional Tungsten Carbide Tip with Copper Silver Brazing for super fast clean drilling all aggregates, concrete, masonry, brick, & stone. Will not cut rebar.



For Drop-In Anchors

- Rotary Hammer Drill
- STOP - Lip Prevents Over-Drilling
- Drill Exact Depth for Drop-In Anchor
- Less Likely to hit Rebar
- ANSI Specification



**4-PLUS**



SDS-PLUS with STOP Rotary Hammer Bit			
PART NUMBER	DRILL SIZE	DRILL DEPTH	ANCHOR SIZE
STP-617	3/8"	1 1/16"	1/4"
STP-813	1/2"	1 3/16"	3/8" short
STP-827		1 1/16"	3/8"
STP-1019	5/8"	1 3/16"	1/2" short
STP-1033		2 1/16"	1/2"

**CARBIDE HAMMER DRILL BITS**  
(continued)

**X-CUTTER**

- Rotary Hammer Drill
- Self Centering Chisel Point
- Special Tungsten Carbide Tip
- Copper / Silver Brazing
- ANSI Specification
- Fastest Dust Removal
- Fastest Drilling Speeds
- Clean Round Holes
- Polished Finish
- Industrial Quality
  - Reinforced Concrete
  - Masonry
  - Stone
  - Brick
  - Aggregates

SDS-PLUS					
PART NUMBER	DRILL SIZE	X	O/A LENGTH	DRILLING DEPTH	HEAD STYLE
750TE010	5/8"	X	8"	6"	X-CUTTER
750TE020		X	10"	8"	X-CUTTER
750TE030		X	12"	10"	X-CUTTER
750TE040		X	18"	16"	X-CUTTER
750TE060	1 1/16"	X	10"	8"	X-CUTTER
750TE070		X	12"	10"	X-CUTTER
750TE080		X	18"	16"	X-CUTTER
750TE090	3/4"	X	8"	6"	X-CUTTER
750TE100		X	10"	8"	X-CUTTER
750TE110		X	12"	10"	X-CUTTER
750TE120		X	18"	16"	X-CUTTER
750TE130	27/32"	X	10"	8"	X-CUTTER
750TE140	7/8"	X	8"	6"	X-CUTTER
750TE150		X	10"	8"	X-CUTTER
750TE160		X	12"	10"	X-CUTTER
750TE170		X	18"	16"	X-CUTTER
750TE190	1"	X	10"	8"	X-CUTTER
750TE200		X	12"	10"	X-CUTTER
750TE210		X	18"	16"	X-CUTTER
750TE220	1 1/8"	X	10"	8"	X-CUTTER
750TE230		X	18"	16"	X-CUTTER
750TE240	1 1/4"	X	18"	16"	X-CUTTER



**X-Cutter**

- ◆ 4 x 90° Head Symmetry
- ◆ Centering Tip for Pinpoint Accuracy
- ◆ Reinforcing Chamfers
- ◆ Maximum Carbide / Steel Interface
- ◆ Low Vibration for Increased Rotational Stability
- ◆ ANSI Specification



## BOLT-PAKS

### Quality Control

Extraordinary caution is used to assure the quality and correct sizing of the components that make up Bolt-Paks. Bolts and nuts are selected for their consistent quality and conformance to standard. Nuts are visually inspected for correct sizing, fractures, and other defects. Gaskets are inspected for thickness and irregular cuts, and are checked for I.D. and O.D. measurement. Rigid quality control gives assurance that every component of every "PAK" is usable for the purpose for which it is intended.

### Package Features

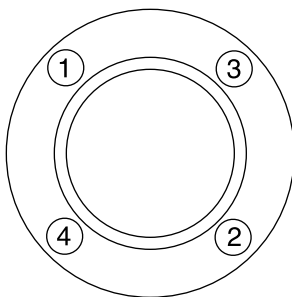
The component configuration of the "PAKS" is the result of years of research spent in developing a "PAK" that would be durable, minimal in size, and yet accommodate maximum pipe size requirements. Components are carefully placed to attain proper balance, and to maximize sealing. All "PAKS" are marked under the film as to catalog number, nominal pipe size, and pressure class.

### Installation of Flange Accessories

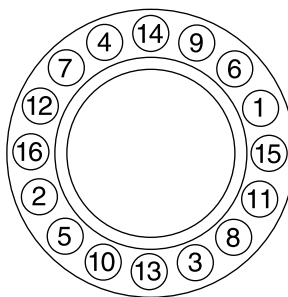
The following procedures and precautionary measures are recommended to insure a satisfactory flanged joint:

1. Inspect flanges for proper surface finish and flatness. Flanges with surface pits, and other than flat surfaces should not be used.
2. Be sure gasket is centered on the flange before tightening bolts.
3. Use a torque wrench and well lubricated bolts to install bolts in the numerical order as indicated in the figure below. Bolts must be tightened uniformly to insure correct initial loading.
4. Re-torque 24 to 36 hours after coming on stream.

FOUR-BOLT



MULTI-BOLT





## Material Standards

Materials used in the flange accessory “PAKS” are chosen to conform to materials in general use in the piping industry, and to comply with ASTM, API and ANSI material and dimensional standards. Specifications other than these are sometimes difficult to identify and an interpretation of intent is required. Every effort is made to assist in specification identity, but we do not warrant such interpretations to be the materials intended by the specifying engineer.

On the previous page are the specifications of materials used in standard “PAKS.” Due to the wide range of product types and grades available, only those most commonly used are listed. Other material types, grades and combinations are available by giving full description.

## Plating Specifications

**Hot Dipped Galvanized** – Zinc is applied by the hot-dip method in accordance with the requirements of ASTM Standard A153.

**Mechanical Galvanized** – Zinc is applied in a rotating drum (mechanical plating) in a series of operations in accordance with the requirements of ASTM Standard B454. A Class 50 coating is applied with the thickness specified as .002 inch.

**Electroplated Zinc** – Zinc is applied in an electroplated coating in accordance with the requirements of ASTM Standard A164.

**Electroplated Cadmium** – Cadmium is applied in an electroplated coating in accordance with the requirements of ASTM Standard A165.



## Standard PAKS

Standard “PAKS” contain materials most commonly used in the general construction industry. Made in pressure ranges thru 300 psi, they offer a wide range of sizes and gasket materials available from stock. Bolting used in these “PAKS” meet specification ASTM A-307, Grade 2 with finished hex nuts. Bolt sizes used as standard are as follows:

Nominal Pipe Size	125 lb. Sets		150 lb. Sets		300 lb. Sets	
	Quantity	Size	Quantity	Size	Quantity	Size
1/2"			4	1/2 x 1 3/4	4	1/2 x 2
3/4"			4	1/2 x 1 3/4	4	5/8 x 2 1/4
1"	4	1/2 x 2	4	1/2 x 1 3/4	4	5/8 x 2 1/2
1 1/4"	4	1/2 x 2	4	1/2 x 2	4	5/8 x 2 1/2
1 1/2"	4	1/2 x 2	4	1/2 x 2	4	3/4 x 2 3/4
2"	4	5/8 x 2 1/2	4	5/8 x 2 1/4	8	5/8 x 2 3/4
2 1/2"	4	5/8 x 2 1/2	4	5/8 x 2 1/2	8	3/4 x 3 1/4
3"	4	5/8 x 2 1/2	4	5/8 x 2 1/2	8	3/4 x 3 1/2
4"	4	5/8 x 3	4	5/8 x 3	8	3/4 x 3 1/2
5"	8	3/4 x 3	8	3/4 x 3	8	3/4 x 4
6"	8	3/4 x 3 1/4	8	3/4 x 3 1/4	12	3/4 x 4
8"	8	3/4 x 3 1/2	8	3/4 x 3 1/2	12	7/8 x 4 1/2
10"	8	7/8 x 3 3/4	8	7/8 x 3 3/4	16	1 x 5 1/4
12"	12	7/8 x 4	12	7/8 x 3 3/4	16	1 1/8 x 5 1/2
14"	12	1 x 4 1/2	12	1 x 4 1/4	20	1 1/8 x 6
16"	16	1 x 4 1/2	16	1 x 4 1/2	20	1 1/4 x 6 1/2
18"	16	1 1/8 x 5	16	1 1/8 x 4 3/4	24	1 1/4 x 6 1/2
20"	20	1 1/8 x 5	20	1 1/8 x 5	24	1 1/4 x 7
24"	20	1 1/4 x 5 1/2	20	1 1/4 x 5 1/2	24	1 1/2 x 8
30"			28	1 1/4 x 6		
36"			32	1 1/2 x 7		



## Stud PAKS

The RC series alloy stud “PAKS” are offered as standard in pressure classes thru 1500 psi. Stud bolting (in Grades B7, B8, B16, etc.) is offered in this series to meet the demands of highly corrosive conditions. Gaskets in standard “PAKS” are available in Asbestos, non-asbestos, spiral wound, etc. as specified.

Standard stud sizes and stud quantities are as follows:

Pipe Size	150 lb. Sets		300 lb. Sets		600 lb. Sets		900 lb. Sets	
	Quantity	Size	Quantity	Size	Quantity	Size	Quantity	Size
1/2"	4	1/2 x 2 1/2	4	1/2 x 2 3/4	4	1/2 x 3 1/4	4	3/4 x 4 1/4
3/4"	4	1/2 x 2 1/2	4	5/8 x 3	4	5/8 x 3 1/2	4	3/4 x 4 1/2
1"	4	1/2 x 2 3/4	4	5/8 x 3 1/4	4	5/8 x 3 3/4	4	7/8 x 5
1 1/4"	4	1/2 x 2 3/4	4	5/8 x 3 1/4	4	5/8 x 4	4	7/8 x 5
1 1/2"	4	1/2 x 3	4	3/4 x 3 3/4	4	3/4 x 4 1/4	4	1 x 5 1/2
2"	4	5/8 x 3 1/4	8	5/8 x 3 1/2	8	5/8 x 4 1/4	8	7/8 x 5 3/4
2 1/2"	4	5/8 x 3 1/2	8	3/4 x 3 1/2	8	3/4 x 4 3/4	8	1 x 6 1/4
3"	4	5/8 x 3 3/4	8	3/4 x 4	8	3/4 x 5	8	7/8 x 5 3/4
4"	8	5/8 x 3 3/4	8	3/4 x 4 1/4	8	7/8 x 5 3/4	8	1 1/8 x 6 3/4
5"	8	3/4 x 4	8	3/4 x 4 1/2	8	1 x 6 1/2		1 1/4 x 7 1/4
6"	8	3/4 x 4	12	3/4 x 4 3/4	12	1 x 6 1/2	12	1 1/8 x 7 3/4
8"	8	3/4 x 4 1/4	12	7/8 x 5 1/2	12	1 x 7 3/4	12	1 3/8 x 8 3/4
10"	12	7/8 x 4 3/4	16	1 x 6 1/4	16	1 1/4 x 8 1/2		
12"	12	7/8 x 4 3/4	16	1 1/8 x 6 3/4	20	1 1/4 x 8 3/4		
14"	12	1 x 5 1/4	20	1 1/8 x 7				
16"	16	1 x 5 1/2	20	1 1/4 x 7 1/2				
18"	16	1 1/8 x 6	24	1 1/4 x 7 3/4				
20"	20	1 1/8 x 6 1/4	24	1 1/4 x 8 1/4				
24"	20	1 1/4 x 7	24	1 1/2 x 9 1/4				



## Ring Joint PAKS

A.P.I. Ring Joint “PAKS” (RJ Series) contain alloy studs and a ring type gasket machined from solid metal. Used primarily in the petroleum industry, these “PAKS” are excellent for high-pressure, high-temperature service where operating conditions require a special joint design. “PAKS” are offered in pressure classes 300 through 2,500 PSI with various alloy studs (cadmium plated) and with soft iron rings as standard.

Ring numbers and standard stud sizes are as follows:

Nominal Pipe Size	300 PSI		600 PSI		900 PSI		1500 PSI		2500 PSI	
	Ring No.	Stud Size	Ring No.	Stud Size	Ring No.	Stud Size	Ring No.	Stud Size	Ring No.	Stud Size
1/2"	R11	1/2 x 3	R11	1/2 x 3	R12	3/4 x 4 1/2	R12	3/4 x 4 1/4	R13	3/4 x 5 1/4
3/4"	R13	5/8 x 3 1/2	R13	5/8 x 3 1/2	R14	3/4 x 4 1/2	R14	3/4 x 4 1/2	R16	3/4 x 5 1/4
1"	R16	5/8 x 3 3/4	R16	5/8 x 3 3/4	R16	7/8 x 5	R16	7/8 x 5	R18	7/8 x 5 3/4
1 1/4"	R18	5/8 x 3 3/4	R18	5/8 x 4	R18	7/8 x 5	R18	7/8 x 5	R21	1 x 6 1/2
1 1/2"	R20	3/4 x 4 1/4	R20	3/4 x 4 1/4	R20	1 x 5 1/2	R20	1 x 5 1/2	R23	1 1/8 x 7 1/4
2"	R23	5/8 x 4 1/4	R23	5/8 x 4 1/2	R24	7/8 x 5 3/4	R24	7/8 x 5 3/4	R26	1 x 7 1/2
2 1/2"	R26	3/4 x 4 3/4	R26	3/4 x 5	R27	1 x 6 1/4	R27	1 x 6 1/4	R28	1 1/8 x 8 1/4
3"	R31	3/4 x 5	R31	3/4 x 5 1/4	R31	7/8 x 6	R35	1 7/8 x 7	R32	1 1/4 x 9 1/4
4"	R37	3/4 x 5 1/4	R37	7/8 x 6	R37	1 1/8 x 7	R39	1 1/4 x 7 3/4	R38	1 1/2 x 10 3/4
6"	R45	3/4 x 5 3/4	R45	1 x 7	R45	1 1/8 x 7 3/4	R46	1 1/8 x 10 1/2		
8"	R49	7/8 x 6 1/4	R49	1 1/8 x 7 3/4	R49	1 3/8 x 9				
10"	R53	1 x 7	R53	1 1/4 x 8 3/4						
12"	R57	1 1/8 x 7 1/2	R57	1 1/4 x 9						



## Butterfly Valve PAKS

Due to the lack of bolting standards in butterfly valves, additional dimensional information is sometimes required to assure proper bolt lengths and quantities in the packs.

Larger sizes of flanged valves usually have two or more body tapings requiring special length capscrews. The quantity and lengths of these capscrews must be given at time of order placement.

Although lug type “LBV” valve bolting is more standardized than wafer type “WBV” flanged type, manufacturers specifications should be checked.

Standard bolting sizes for LBV and WBV “PAKS” are as follows:

Nominal Pipe Size	LBV Capscrews		WBV Machine Bolts	
	Quantity	Size	Quantity	Size
2"	8	$\frac{5}{8} \times 1 \frac{1}{4}$	4	$\frac{5}{8} \times 4$
2 1/2"	8	$\frac{5}{8} \times 1 \frac{1}{4}$	4	$\frac{5}{8} \times 4 \frac{1}{2}$
3"	8	$\frac{5}{8} \times 1 \frac{1}{2}$	4	$\frac{5}{8} \times 4 \frac{1}{2}$
4"	16	$\frac{5}{8} \times 1 \frac{1}{2}$	8	$\frac{5}{8} \times 5$
5"	16	$\frac{3}{4} \times 1 \frac{3}{4}$	8	$\frac{3}{4} \times 5 \frac{1}{2}$
6"	16	$\frac{3}{4} \times 2$	8	$\frac{3}{4} \times 5 \frac{1}{2}$
8"	16	$\frac{3}{4} \times 2 \frac{1}{2}$	8	$\frac{3}{4} \times 6$
10"	24	$\frac{7}{8} \times 2 \frac{1}{4}$	12	$\frac{7}{8} \times 6 \frac{1}{4}$
12"	24	$\frac{7}{8} \times 2 \frac{1}{2}$	12	$\frac{7}{8} \times 7 \frac{1}{2}$



# FLANGE BOLT CHART

Pipe Size	150#				
	Flange OD	Number of Bolts	Flange to Flange Bolt Siz	Standard Butterfly	AP Butterfly
1/2"	3 1/2	4	1/2 x 3/4	-----	-----
3/4"	3 7/8	4	1/2 x 3/4	-----	-----
1"	4 1/4	4	1/2 x 3/4	-----	-----
1 1/4"	4 5/8	4	1/2 x 2	-----	-----
1 1/2"	5	4	1/2 x 2	-----	-----
2"	6	4	5/8 x 2 1/4	5/8 x 1 1/4	-----
2 1/2"	7	4	5/8 x 2 1/4	5/8 x 1 1/4	5/8 x 1 3/4
3"	7 1/2	4	5/8 x 2 1/4	5/8 x 1 1/4	5/8 x 1 3/4
4"	9	8	5/8 x 3	5/8 x 1 1/4	5/8 x 2
5"	10	8	3/4 x 3	3/4 x 1 3/4	3/4 x 2
6"	11	8	3/4 x 3 1/4	3/4 x 2	3/4 x 2
8"	13 1/2	8	3/4 x 3 1/2	3/4 x 2 1/4	3/4 x 2 1/4
10"	16	12	7/8 x 3 3/4	7/8 x 2 1/4	7/8 x 2 1/2
12"	19	12	7/8 x 3 3/4	7/8 x 2 1/2	7/8 x 2 3/4
14"	21	12	1 x 4 1/4	1 x 2 1/2	1 x 3
16"	23 1/2	16	1 x 4 1/2	1 x 3 1/4	1 x 3
18"	25	16	1 1/8 x 4 3/4	1 1/8 x 3 1/2	1 1/8 (8) x 3 1/4
20"	27 1/2	20	1 1/8 x 5	1 1/8 x 4	1 1/8 (8) x 3 3/4
24"	32	20	1 1/4 x 5 1/2	1 1/4 x 4	1 1/4 (8) x 4

Pipe Size	300#			
	Flange OD	Number of Bolts	Flange to Flange Bolt Size	Lug Style B-F
1/2"	3 3/4	4	1/2 x 2	-----
3/4"	4 5/8	4	5/8 x 2 1/4	-----
1"	4 7/8	4	5/8 x 2 1/2	-----
1 1/4"	5 1/4	4	5/8 x 2 1/2	-----
1 1/2"	6 1/8	4	3/4 x 2 3/4	-----
2"	6 1/2	8	5/8 x 2 3/4	-----
2 1/2"	7 1/2	8	3/4 x 3 1/4	3/4 x 1 3/4
3"	8 1/4	8	3/4 x 3 1/2	3/4 x 2
4"	10	8	3/4 x 3 1/2	3/4 x 2 1/4
5"	11	8	3/4 x 4	3/4 x 2 1/4
6"	12 1/2	12	3/4 x 4	3/4 x 2 1/2
8"	15	12	7/8 x 4 1/2	7/8 x 3
10"	17 1/2	16	1 x 5 1/4	1 x 3 1/4
12"	20 1/2	16	1 1/8 x 5 1/2	1 1/8 (8) x 3 3/4
14"	23	20	1 1/8 x 6	1 1/8 (8) x 3 3/4
16"	25 1/2	20	1 1/4 x 6	1 1/4 (8) x 3 3/4
18"	28	24	1 1/4 x 6 1/2	1 1/4 (8) x 4
20"	30 1/2	24	1 1/4 x 7	1 1/4 (8) x 4
24"	36	24	1 1/8 x 8	20-1 1/2 (8) x 5



## Maximum Horizontal Spacing Between Hangers/Supports

Nom. Pipe or Tube Dia.	Standard Weight Steel Pipe		Copper Tube	
	Water Service (Ft)	Vapor Service (Ft)	Water Service (Ft)	Vapor Service (Ft)
1/4	7	8	5	5
3/8	7	8	5	6
1/2	7	8	5	6
3/4	7	9	5	7
1	7	9	6	8
1 1/4	7	9	7	9
1 1/2	9	12	8	10
2	10	13	8	11
2 1/2	11	14	9	13
3	12	15	10	14
3 1/2	13	16	11	15
4	14	17	12	16
5	16	19	13	18
6	17	21	14	20
8	19	24	16	23
10	22	26	18	25
12	23	30	19	28
14	25	32	--	--
16	27	35	--	--
18	28	37	--	--
20	30	39	--	--
24	32	42	--	--
30	33	44	--	--





## Maximum Horizontal Spacing Between Hangers/Supports (continued)

Support spacings for PVC and CPVC pipe systems are greatly influenced by operating temperature. The charts below recommend horizontal spacing based on pipe size, schedule, material (PVC or industrial grade CPVC), and operating temperature. Hangers/supports should not be clamped tightly because axial movement of plastic pipe would be restricted. These charts are based on continuous spans and uninsulated lines carrying liquids.

Pipe Size (in)	SCHEDULE 40 PVC Temperature °F					SCHEDULE 80 PVC Temperature °F				
	60°	80°	100°	120°	140°	60°	80°	100°	120°	140°
1/4	4	3 1/2	3 1/2	2	2	4	4	3 1/2	2 1/2	2
3/8	4	4	3 1/2	2 1/2	2	4 1/2	4 1/2	4	2 1/2	2 1/2
1/2	4 1/2	4 1/2	4	2 1/2	2 1/2	5	4 1/2	4 1/2	3	2 1/2
3/4	5	4 1/2	4	2 1/2	2 1/2	5 1/2	5	4 1/2	3	2 1/2
1	5 1/2	5	4 1/2	3	2 1/2	6	5 1/2	5	3 1/2	3
1 1/4	5 1/2	5 1/2	5	3	3	6	6	5 1/2	3 1/2	3
1 1/2	6	5 1/2	5	3 1/2	3	6 1/2	6	5 1/2	3 1/2	3 1/2
2	6	5 1/2	5	3 1/2	3	7	6 1/2	6	4	3 1/2
2 1/2	7	6 1/2	6	4	3 1/2	7 1/2	7 1/2	6 1/2	4 1/2	4
3	7	7	6	4	3 1/2	8	7 1/2	7	4 1/2	4
3 1/2	7 1/2	7	6 1/2	4	4	8 1/2	8	7 1/2	5	4 1/2
4	7 1/2	7	6 1/2	4 1/2	4	9	8 1/2	7 1/2	5	4 1/2
5	8	7 1/2	7	4 1/2	4	9 1/2	9	8	5 1/2	5
6	8 1/2	8	7 1/2	5	4 1/2	10	9 1/2	9	6	5
8	9	8 1/2	8	5	4 1/2	11	10 1/2	9 1/2	6 1/2	5 1/2
10	10	9	8 1/2	5 1/2	5	12	11	10	7	6
12	11 1/2	10 1/2	9 1/2	6 1/2	5 1/2	13	12	10 1/2	7 1/2	6 1/2
14	12	11	10	7	6	13 1/2	13	11	8	7
16	12 1/2	11 1/2	10 1/2	7 1/2	6 1/2	14	13 1/2	11 1/2	8 1/2	7 1/2
<b>SDR 41 PVC</b>					<b>SDR 26 PVC</b>					
18	13	12	11	8	7	14 1/2	14	12	9	8
20	13 1/2	12 1/2	11 1/2	8 1/2	7 1/2	15	14 1/2	12 1/2	9 1/2	8 1/2
24	14	13	12	9	8	15 1/2	15	13	10	9

Pipe Size (in)	SCHEDULE 40 CPVC Temperature °F						SCHEDULE 80 CPVC Temperature °F					
	73°	100°	120°	140°	160°	180°	73°	100°	120°	140°	160°	180°
1/2	5	4 1/2	4 1/2	4	2 1/2	2 1/2	5 1/2	5	4 1/2	4 1/2	3	2 1/2
3/4	5	5	4 1/2	4	2 1/2	2 1/2	5 1/2	5 1/2	5	4 1/2	3	2 1/2
1	5 1/2	5 1/2	5	4 1/2	3	2 1/2	6	6	5 1/2	5	3 1/2	3
1 1/4	5 1/2	5 1/2	5 1/2	5	3	3	6 1/2	6	6	5 1/2	3 1/2	3
1 1/2	6	6	5 1/2	5	3 1/2	3	7	6 1/2	6	5 1/2	3 1/2	3 1/2
2	6	6	5 1/2	5	3 1/2	3	7	7	6 1/2	6	4	3 1/2
2 1/2	7	7	6 1/2	6	4	3 1/2	8	7 1/2	7 1/2	6 1/2	4 1/2	4
3	7	7	7	6	4	3 1/2	8	8	7 1/2	7	4 1/2	4
3 1/2	7 1/2	7 1/2	7	6 1/2	4	4	8 1/2	8 1/2	8	7 1/2	5	4 1/2
4	7 1/2	7 1/2	7	6 1/2	4 1/2	4	8 1/2	9	8 1/2	7 1/2	5	4 1/2
6	8 1/2	8	7 1/2	7	5	4 1/2	10	9 1/2	9	8	5 1/2	5
8	9 1/2	9	8 1/2	7 1/2	5 1/2	5	11	10 1/2	10	9	6	5 1/2
10	10 1/2	10	9 1/2	8	6	5 1/2	11 1/2	11	10 1/2	9 1/2	6 1/2	6
12	11 1/2	10 1/2	10	8 1/2	6 1/2	6	12 1/2	12	11 1/2	10 1/2	7 1/2	6 1/2

**Notes:**

1. Charts above are not applicable where loads between supports are concentrated (e.g. valves, flanges, expansion joints, etc.), or where there is a change in line direction. Hangers/supports should be located adjacent to joints, branch connections and changes in direction.
2. Risers should be installed independently of adjacent horizontal hangers/supports.
3. Cast Iron Pipe: maximum spacing should be 12 feet with at least one hanger/support for each pipe section.



## Load Ratings of Carbon Steel Threaded Rod

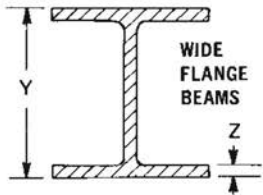
Nominal Rod Diameter (in inches)	Root Area of Coarse Thread (in <sup>2</sup> )	Maximum Safe Load (lbs) Rod Temperature, 650°F	Maximum Safe Load (lbs) Rod Temperature, 750°F
1/4	0.027	240	210
3/8	0.068	610	540
1/2	0.126	1130	1010
5/8	0.202	1810	1610
3/4	0.302	2710	2420
7/8	0.419	3770	3360
1	0.552	4960	4420
1 1/8	0.693	6230	5560
1 1/4	0.889	8000	7140
1 1/2	1.293	11630	10370
1 3/4	1.744	15700	14000
2	2.292	20700	18460
2 1/4	3.021	27200	24260
2 1/2	3.716	33500	29880

## Maximum Applied Torques C-Clamps & Top Beam Clamps

Thread Size	Torque Value (lbs)
1/4	40
3/8	60
1/2	125
5/8	250
3/4	400
7/8	665
Extracted from MSS-SP-69 (types 19 & 23)	

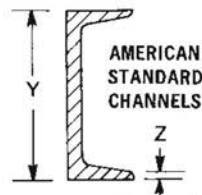
The ultimate load-carrying capacity of a clamp is rapidly reduced when the set screw is excessively turned upon clamp installation. Proper installation technique is to set the screw finger tight, then turn the set screw a one half to three quarter turn. Extra turning will open up the clamp and cause the rod hole to be out of alignment.

## BEAM DIMENSIONS (inches) • WEIGHTS

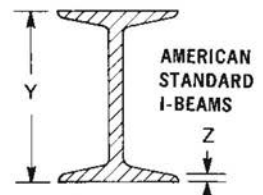


Nominal Size, Y	Wgt. per ft., lb.	Flange width	Thick. of fl'g., Z
5	18.5	5	.420
6	25	6	.456
8	17	5½	.308
	20	5½	.378
	24	6½	.398
	28	6½	.463
	31	8	.433
	35	8	.493
	40	8½	.558
	48	8½	.683
58	8½	.808	
67	8½	.933	
10	21	5½	.340
	25	5½	.430
	29	5½	.500
	33	8	.433
	39	8	.528
	45	8	.618
	49	10	.558
	54	10	.618
	60	10½	.683
	66	10½	.748
	72	10½	.808
	77	10½	.868
89	10½	.998	
100	10½	1.118	
112	10½	1.248	
12	27	6½	.400
	31	6½	.465
	36	6½	.540
	40	8	.516
	45	8	.576
	50	8½	.641
	53	10	.576
	58	10	.641
	65	12	.606
	72	12	.671
	79	12½	.736
	85	12½	.796
	92	12½	.856
	99	12½	.921
106	12½	.986	
120	12½	1.106	
133	12½	1.236	
161	12½	1.486	
190	12½	1.736	
14	30	6¾	.383
	34	6¾	.453
	38	6¾	.513
	43	8	.528
	48	8	.593
	53	8	.658
	61	10	.643
	68	10	.718
	74	10½	.783
	78	12	.718
84	12	.778	
87	14½	.688	
95	14½	.748	
103	14½	.813	

Nominal Size, Y	Wgt. per ft., lb.	Flange width	Thick. of fl'g., Z	
14	111	14¾	.873	
	119	14¾	.938	
	127	14¾	.998	
	136	14¾	1.063	
	142	15½	1.063	
	150	15½	1.128	
	158	15½	1.188	
	167	15½	1.248	
	176	15½	1.313	
	184	15½	1.378	
	193	15½	1.438	
	202	15½	1.503	
	211	15½	1.563	
	219	15½	1.623	
228	15½	1.688		
237	15½	1.748		
16	36	7	.428	
	40	7	.503	
	45	7	.563	
	50	7½	.628	
	58	8½	.645	
	64	8½	.715	
	71	8½	.795	
	78	8½	.875	
	88	11½	.795	
	96	11½	.875	
18	50	7½	.570	
	55	7½	.630	
	60	7½	.695	
	64	8¾	.686	
	70	8¾	.751	
	77	8¾	.831	
	85	8¾	.911	
	96	11¾	.831	
	105	11¾	.911	
	114	11¾	.991	
21	62	8¾	.615	
	68	8¾	.685	
	73	8¾	.740	
	82	9	.795	
	96	9	.935	
	112	13	.865	
	127	13	.985	
	142	13¾	1.095	
	24	76	9	.682
		84	9	.772
94		9	.872	
100		12	.775	
110		12	.885	
120		12½	.930	
130		14	.900	
145		14	1.020	
160		14¾	1.135	
27		94	10	.747
	102	10	.827	
	114	10½	.932	
	145	14	.975	
	160	14	1.075	
	177	14¾	1.190	
	30	108	10½	.750
116		10½	.875	
124		10½	.930	
132		10½	1.00	
172		15	1.065	
190		15	1.185	
210		15½	1.315	



Depth of Section, Y	Wgt. per ft., lb.	Flange width	Mean Thick. of fl'g., Z
3	4.1	1¾	.25
	5.0	1½	.25
	6.0	1¾	.25
4	5.4	1¾	.313
	7.25	1¾	.313
5	6.7	1¾	.313
	9.0	1¾	.313
6	8.2	1¾	.375
	10.5	2	.375
7	9.8	2½	.375
	12.25	2¼	.375
8	11.5	2¼	.375
	13.75	2½	.375
9	13.4	2¾	.438
	15.0	2½	.438
10	20.0	2¾	.438
	30.0	3	.438
	20.7	3	.50
12	25.0	3	.50
	30.0	3¾	.50
15	33.9	3¾	.625
	50.0	3¾	.625
18	42.7	4	.625
	45.8	4	.625
	51.9	4½	.625
58	4¼	.625	



Depth of section, Y	Wgt. per ft., lb.	Flange width	Mean Thick. of fl'g., Z
3	5.7	2¾	.25
	7.5	2½	.25
4	7.7	2¾	.313
	9.5	2¾	.313
5	10.0	3	.313
	14.75	3¾	.313
6	12.5	3¾	.375
	17.25	3¾	.375
7	15.3	3¾	.375
	20.0	3¾	.375
8	18.4	4	.438
	23.0	4¾	.438
10	25.4	4¾	.50
	35.0	5	.50
12	31.8	5	.563
	35.0	5½	.563
	40.8	5¼	.688
15	50.0	5½	.625
	50.0	5½	.625
18	54.7	6	.688
	70.0	6¼	.688
20	65.4	6¼	.813
	75.0	6¾	.813
	85.0	7	.938
24	95.0	7¼	.875
	79.9	7	.875
24	90.0	7½	1.125
	100.0	7¼	1.125
	105.9	7¾	1.125
	120.0	8	1.125



## Steel Pipe Data SCHEDULE 40 & 80

Pipe Size	Pipe O.D.	Schedule No.	Wall Thickness	Weight Per Foot (lbs)	
				Pipe	Pipe filled with water
3/8	0.675	40	0.091	0.567	0.650
		80	0.126	0.740	0.800
1/2	0.84	40	0.109	0.850	0.980
		80	0.147	1.090	1.190
3/4	1.05	40	0.113	1.130	1.360
		80	0.154	1.470	1.660
1	1.315	40	0.133	1.680	2.050
		80	0.179	2.170	2.480
1 1/4	1.66	40	0.140	2.270	2.920
		80	0.191	3.000	3.550
1 1/2	1.9	40	0.145	2.720	3.600
		80	0.200	3.630	4.400
2	2.375	40	0.154	3.650	5.100
		80	0.218	5.020	6.300
2 1/2	2.875	40	0.230	5.790	7.860
		80	0.276	7.660	9.490
3	3.5	40	0.216	7.580	10.780
		80	0.300	10.250	13.110
3 1/2	4	40	0.226	9.110	13.400
		80	0.318	12.510	16.360
4	4.5	40	0.237	10.790	16.300
		80	0.337	14.980	19.960
5	5.563	40	0.258	14.620	23.290
		80	0.375	20.780	28.660
6	6.625	40	0.280	18.970	31.490
		80	0.432	28.570	39.860
8	8.625	40	0.322	28.550	50.150
		80	0.500	43.390	63.190
10	10.75	40	0.365	40.480	74.580
		80	0.593	64.400	95.500
12	12.75	40	0.406	53.600	102.100
		80	0.687	88.600	132.600
14	14	40	0.437	63.000	121.500
		80	0.750	107.000	158.200
16	16	40	0.500	83.000	159.500
		80	0.843	137.000	206.700
18	18	40	0.563	105.000	202.200
		80	0.937	171.000	259.500
20	20	40	0.593	123.000	243.400
		80	1.031	209.000	318.400
24	24	40	0.687	171.000	345.200
		80	1.218	297.000	455.200
30	30	20	0.500	158.000	444.000
36	36	API	0.500	190.000	607.000



## Copper Tubing Data

Type L					
Tube Size	Tubing O.D.	Tubing O.D. (inches)	Wall Thickness	Weight per Foot (lbs)	
				Tubing	Tubing Filled with Water
1/4	3/8	0.375	0.030	0.126	0.160
3/8	1/2	0.500	0.035	0.198	0.260
1/2	5/8	0.625	0.040	0.285	0.385
5/8	3/4	0.750	0.042	0.362	0.513
3/4	7/8	0.875	0.045	0.455	0.664
1	1 1/8	1.125	0.050	0.655	1.012
1 1/4	1 3/8	1.375	0.055	0.884	1.430
1 1/2	1 5/8	1.625	0.060	1.140	1.910
2	2 1/8	2.125	0.070	1.750	3.091
2 1/2	2 5/8	2.625	0.080	2.480	4.544
3	3 1/8	3.125	0.090	3.330	6.279
3 1/2	3 5/8	3.625	0.100	4.290	8.279
4	4 1/8	4.125	0.110	5.380	10.568
5	5 1/8	5.125	0.125	7.610	15.691
6	6 1/8	6.125	0.140	10.200	21.816
8	8 1/8	8.125	0.200	19.290	39.579
10	10 1/8	10.125	0.250	30.100	61.690
12	12 1/8	12.125	0.280	40.400	85.826

Type K					
Tube Size	Tubing O.D.	Tubing O.D. (inches)	Wall Thickness	Weight per Foot (lbs)	
				Tubing	Tubing Filled with Water
1/4	3/8	0.375	0.035	0.145	0.177
3/8	1/2	0.500	0.049	0.269	0.324
1/2	5/8	0.625	0.049	0.344	0.438
5/8	3/4	0.750	0.049	0.418	0.562
3/4	7/8	0.875	0.065	0.641	0.829
1	1 1/8	1.125	0.065	0.839	1.176
1 1/4	1 3/8	1.375	0.065	1.040	1.567
1 1/2	1 5/8	1.625	0.072	1.360	2.103
2	2 1/8	2.125	0.083	2.060	3.370
2 1/2	2 5/8	2.625	0.095	2.920	4.920
3	3 1/8	3.125	0.109	4.000	6.960
3 1/2	3 5/8	3.625	0.120	5.120	9.020
4	4 1/8	4.125	0.134	6.510	11.570
5	5 1/8	5.125	0.160	9.670	17.670
6	6 1/8	6.125	0.192	13.870	25.070
8	8 1/8	8.125	0.271	25.900	45.400
10	10 1/8	10.125	0.338	40.300	70.723
12	12 1/8	12.125	0.405	57.800	101.475



## AWWA Ductile Iron Pipe Data

Thickness and dimensions of 3" through 64" Ductile Iron Pipe conform to ANSI/AWWA C151/A21.51.					
Nom. Pipe Size	Thickness Class	O.D. D.I. Pipe	Wall Thickness	Weight per Foot (lbs)	
				Pipe	Pipe Filled with Water
3	53	3.96	.31	11.40	15.20
4	53	4.80	.32	14.40	20.30
6	53	6.90	.34	22.20	35.30
8	53	9.05	.36	31.50	54.50
10	53	11.10	.38	41.10	77.50
12	53	13.20	.40	51.60	103.90
14	53	15.30	.42	63.60	134.70
16	53	17.40	.43	74.30	167.40
18	53	19.50	.44	85.40	203.30
20	53	21.60	.45	96.90	242.70
24	53	25.80	.47	121.10	422.30
30	53	32.00	.51	163.80	490.30
36	53	38.30	.58	223.60	692.90
42	53	44.50	.65	293.60	928.50
48	53	50.80	.72	370.50	1199.40

Weights are based on thickness Class 53. Due to numerous pressure and thickness classes, varying pipe lengths and piping connections (eg. bell and gasket, mechanical, etc.) above weights should be considered an average for all ductile iron piping systems.

## AWWA C-900 PVC Water Pipe Data - Class 100, 150, 200

Nom Size	O.D. C-900	Wall Thickness	Weight per Foot (lbs)	
			Pipe	Pipe Filled with Water
DR 25 -- CLASS 100				
4	4.800	0.192	1.846	10.290
6	6.900	0.276	3.831	21.290
8	9.050	0.362	6.618	36.648
10	11.100	0.444	10.005	55.190
12	13.200	0.528	14.180	78.080
DR 18 -- CLASS 150				
4	4.800	0.267	2.522	10.400
6	6.900	0.383	5.226	21.518
8	9.050	0.503	9.040	37.077
10	11.100	0.617	13.666	55.836
12	13.200	0.733	19.354	79.000
DR 14 -- CLASS 200				
4	4.800	0.343	3.182	10.515
6	6.900	0.493	6.605	21.745
8	9.050	0.646	11.410	37.480
10	11.100	0.793	17.250	56.480
12	13.200	0.943	24.450	79.910



## SERVICE WEIGHT CAST IRON SOIL PIPE DATA (Bell & Spigot Type)

Nominal Pipe Size	O.D. of Cast Iron Pipe (Barrel)	Wall Thickness	Weight Per Foot (lbs)	
			Pipe*	Pipe Filled With Water
2	2.30	.170	4.10	5.60
3	3.30	.170	6.00	9.40
4	4.30	.180	7.90	14.10
5	5.30	.180	10.00	22.30
6	6.30	.180	12.40	26.30
8	8.38	.230	18.10	43.80
10	10.50	.280	26.00	66.60
12	12.50	.280	34.60	92.80
15	15.88	.360	52.50	149.10

\* Based on 10 foot length

## EXTRA HEAVY CAST IRON SOIL PIPE DATA (Bell & Spigot Type)

Nominal Pipe Size	O.D. of Cast Iron Pipe (Barrel)	Wall Thickness	Weight Per Foot (lbs)	
			Pipe*	Pipe Filled With Water
2	2.38	.190	4.50	6.10
3	3.50	.250	8.40	12.10
4	4.50	.250	10.50	17.00
5	5.50	.250	13.40	23.60
6	6.50	.250	15.70	30.40
8	8.62	.310	24.60	50.70
10	10.75	.370	37.50	78.30
12	12.75	.370	47.10	105.90
15	15.88	.440	67.60	159.40

\* Based on 10 foot length

## NO-HUB CAST IRON SOIL PIPE DATA

Nominal Pipe Size	O.D. of Cast Iron Pipe	Wall Thickness	Weight Per Foot (lbs)	
			Pipe	Pipe Filled With Water
1 1/2	1.90	.16	2.9	6.40
2	2.35	.16	3.8	8.80
3	3.35	.16	5.4	13.70
4	4.38	.19	7.1	19.90
5	5.30	.19	9.8	27.70
6	6.30	.19	11.8	34.80
8	8.38	.23	16.5	56.00
10	10.56	.28	25.5	68.84
12	12.50	.28	31.8	94.31
15	15.83	.36	49.3	145.50



## CPVC Plastic Pipe Data - SCHEDULE 40 & 80

Pipe Size	O.D. CPVC PLASTIC PIPE	Schedule No.	Wall Thickness	Weight Per Foot (in LBS)	
				Pipe	Pipe Filled With Water
3/8	0.675	40	0.091	.122	.205
		80	0.126	.154	.215
1/2	0.840	40	0.109	.180	.312
		80	0.147	.225	.326
3/4	1.050	40	0.113	.239	.469
		80	0.154	.305	.491
1	1.315	40	0.133	.352	.726
		80	0.179	.449	.760
1 1/4	1.660	40	0.140	.475	1.122
		80	0.191	.618	1.173
1 1/2	1.900	40	0.145	.568	1.450
		80	0.200	.751	1.516
2	2.375	40	0.154	.761	2.213
		80	0.218	1.040	2.319
2 1/2	2.875	40	0.203	1.201	3.273
		80	0.276	1.584	3.418
3	3.500	40	0.216	1.572	4.772
		80	0.300	2.124	4.984
3 1/2	4.000	40	0.226	1.905	6.185
		80	0.318	2.607	12.642
4	4.500	40	0.237	2.239	7.749
		80	0.337	3.105	8.085
5	5.563	40	0.258	3.062	11.722
		80	0.375	4.343	12.213
6	6.625	40	0.280	3.945	16.455
		80	0.432	5.929	17.219
8	8.625	40	0.322	5.920	27.520
		80	0.500	9.051	28.851
10	10.750	40	0.365	8.406	42.506
		80	0.593	13.429	44.529
12	12.750	40	0.406	11.172	59.672
		80	0.687	18.458	62.458
14	14.00	40	0.437	13.262	71.762
		80	0.750	22.224	73.424
16	16.00	40	0.500	17.312	93.812
		80	0.843	28.557	98.257





## PVC Plastic Pipe Data - SCHEDULE 40 & 80

Pipe Size	O.D. PVC PLASTIC PIPE	Schedule No.	Wall Thickness	Weight Per Foot (lbs)	
				Pipe	Pipe Filled With Water
3/8	0.675	40	0.091	.109	.192
		80	0.126	.138	.199
1/2	0.840	40	0.109	.161	.293
		80	0.147	.202	.303
3/4	1.050	40	0.113	.214	.444
		80	0.154	.273	.459
1	1.315	40	0.133	.315	.689
		80	0.179	.402	.713
1 1/4	1.660	40	0.140	.426	1.073
		80	0.191	.554	1.109
1 1/2	1.900	40	0.145	.509	1.391
		80	0.200	.673	1.438
2	2.375	40	0.154	.682	2.134
		80	0.218	.932	2.211
2 1/2	2.875	40	0.203	1.076	3.148
		80	0.276	1.419	3.253
3	3.500	40	0.216	1.409	4.609
		80	0.300	1.903	4.763
3 1/2	4.000	40	0.226	1.697	5.977
		80	0.318	2.322	6.172
4	4.500	40	0.237	2.006	7.510
		80	0.337	2.782	7.762
5	5.563	40	0.258	2.726	11.386
		80	0.375	3.867	11.737
6	6.625	40	0.280	3.535	16.045
		80	0.432	5.313	16.603
8	8.625	40	0.322	5.305	26.905
		80	0.500	8.058	27.858
10	10.750	40	0.365	7.532	41.632
		80	0.593	11.956	43.056
12	12.750	40	0.406	9.949	58.449
		80	0.687	16.437	60.437
14	14.000	40	0.437	11.810	70.310
		80	0.750	19.790	70.990
16	16.000	40	0.500	15.416	91.916
		80	0.843	25.430	95.130
18	18.000	40	0.563	20.112	117.312
		80	0.937	31.830	120.330
20	20.000	40	0.593	23.624	144.024
		80	1.031	40.091	149.491
24	24.000	40	0.687	32.873	207.073
		80	1.218	56.882	215.082

## Vinyl Coated Hanger Supports

I.T.P. offers many products with a vinyl coating which prevents galvanic reaction between materials, reduces noise and can be used where contact between plastic or glass pipe and the metal hanger/support is not desirable. The items shown below are readily available with vinyl coating. Other items are available upon request.



FIG. 50 P.C.  
RISER CLAMP

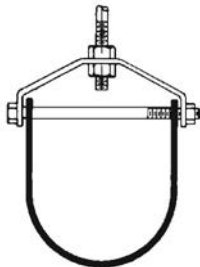


FIG. 110 P.C.  
CLEVIS HANGER



FIG. 137 P.C.  
U-BOLT

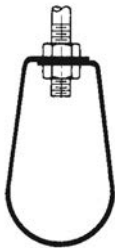


FIG. 31 P.C.  
BAND HANGER



FIG. 310 P.C.  
"EM-LOK"



FIG. 235 P.C.  
WIRE PIPE HOOK



FIG. 237 P.C.  
DWV PIPE HANGER



## SDR-35 PVC Sewer Pipe Data

Nominal Size	O.D. SDR-35 PVC Sewer Pipe	Wall Thickness	Weight Per Foot (lbs)
			Pipe*
4	4.215	.120	1.053
6	6.275	.180	2.361
8	8.400	.240	4.222
10	10.500	.300	6.617
12	12.500	.360	9.480
15	15.300	.437	14.219
18	18.701	.536	21.510
21	22.047	.632	30.261
24	24.803	.711	38.642

\* Based on 13 foot length

## Glass Pipe Data

Pipe Size	O.D. Glass Pipe	Schedule	Wall Thickness	Weight Per Foot (lbs)	
				Pipe	Pipe Filled With Water
1	1.31	Heavy	.16	.60	.95
1 1/2	1.84	Regular	.12	.64	1.53
		Heavy	.17	.87	1.63
2	2.34	Regular	.14	.94	2.39
		Heavy	.17	1.10	2.46
3	3.41	Regular	.17	1.60	4.79
		Heavy	.20	2.00	5.06
4	4.53	Regular	.20	2.60	8.39
		Heavy	.26	3.40	8.84
6	6.66	Regular	.24	4.70	17.48
		Heavy	.33	6.30	18.72

Spacing of hangers for glass pipe should be every 8-10 feet.  
Hangers should be padded or vinyl coated.



## Rigid Steel Conduit Data (Heavy Wall Conduit)

Nominal Size EMT Conduit	O.D. Conduit	Weight Conduit w/coupling	Approx. Weight Conduit and Conductor (lbs/ft.)	
			Lead Covered	Not Lead Covered
3/8	.675	.515	.805	.651
1/2	.840	.80	1.17	1.04
3/4	1.050	1.09	1.75	1.40
1	1.315	1.65	2.62	2.35
1 1/4	1.660	2.15	4.31	3.58
1 1/2	1.900	2.58	5.89	4.55
2	2.375	3.52	8.53	7.21
2 1/2	2.875	5.67	11.51	10.22
3	3.500	7.14	16.51	14.51
3 1/2	4.000	8.60	19.05	17.49
4	4.500	10.00	24.75	21.48
5	5.563	13.20	35.87	30.83
6	6.625	17.85	50.69	43.43

## Electrical Metallic Tubing Data

Nominal Size EMT Conduit	O.D. Conduit	Weight Conduit w/cp/g	Approx. Weight Conduit and Conductor lbs/ft.
3/8	.577	.23	.366
1/2	.706	.29	.54
3/4	.922	.45	1.16
1	1.163	.65	1.83
1 1/4	1.510	.96	2.96
1 1/2	1.740	1.11	3.68
2	2.197	1.41	4.45
2 1/2	2.875	2.15	6.41
3	3.500	2.60	9.30
3 1/2	4.000	3.25	12.15
4	4.500	3.90	15.40

## Intermediate Metal Conduit Data

Nominal Size EMT Conduit	O.D. Conduit	Weight Conduit w/coupling	Approx. Weight Conduit and Conductor (lbs/ft.)	
			Lead Covered	Not Lead Covered
1/2	.815	.60	.97	.84
3/4	1.029	.82	1.48	1.13
1	1.290	1.16	2.13	1.86
1 1/4	1.638	1.50	3.66	2.93
1 1/2	1.883	1.82	5.13	3.79
2	2.360	2.42	7.43	6.11
2 1/2	2.857	4.28	10.12	8.83
3	3.476	5.26	14.63	12.63
3 1/2	3.971	6.12	16.57	15.01
4	4.466	6.82	21.57	18.30



TECHNICAL INFORMATION

THERMAL EXPANSION OF PIPE MATERIALS

Dimensions

Inches Per Foot
Millimeters Per Meter

TEMPERATURE	CARBON STEEL THROUGH 3% CCR MO	ALLOY STEELS THROUGH 9% CR MO	STAINLESS STEELS (304, 316, 347)	COPPER	BRASS	ALUMINUM
0	-0.0051		-0.0078	-0.0079	-0.0081	-0.0104
-17.8	-0.4250		-0.6500	-0.6583	-0.6750	-0.8666
50	-0.0015		-0.0022	-0.0022	-0.0023	-0.0030
10.0	-0.1250		-0.1833	-0.1833	-0.1917	-0.2500
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
21	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
100	0.0023	0.0022	0.0034	0.0034	0.0035	0.0046
37.8	0.1917	0.1833	0.2833	0.2833	0.2917	0.3833
150	0.0061	0.0058	0.0090	0.0091	0.0093	0.0123
65.6	0.5083	0.4833	0.7500	0.7583	0.7750	1.0250
200	0.0099	0.0094	0.0146	0.0151	0.0152	0.0200
93.3	0.8250	0.7833	1.2166	1.2583	1.2666	1.6666
250	0.0141	0.0132	0.0203	0.0208	0.0214	0.0283
121	1.1750	1.1000	1.6916	1.7333	1.7833	2.3582
300	0.0182	0.0171	0.0261	0.0267	0.0276	0.0366
149	1.5166	1.4249	2.1749	2.2249	2.2999	3.0499
350	0.0266	0.0210	0.0321	0.0327	0.0340	0.0452
177	1.8833	1.7499	2.6749	2.7249	2.8332	3.7665
400	0.0270	0.0250	0.0380	0.0388	0.0405	0.0539
204	2.2499	2.0833	3.1665	3.2332	3.3749	4.4195
450	0.0316	0.0292	0.0440	0.0449	0.0472	0.0628
232	2.6332	2.4332	3.6665	3.7415	3.9332	5.2331
500	0.0362	0.0335	0.0501	0.0512	0.0540	0.0717
260	3.0165	2.7916	4.1748	4.2665	4.4998	5.9748
550	0.0411	0.0379	0.0562	0.0574	0.0610	0.0810
288	3.4249	3.1582	4.6831	4.7831	5.0831	6.7497
600	0.0460	0.0424	0.0624	0.0639	0.0680	0.0903
316	3.8332	3.5332	5.1998	5.3248	5.6664	7.5247
650	0.0512	0.0469	0.0687	0.0703	0.0753	
343	4.2665	3.9082	5.7248	5.8581	6.2747	
700	0.0563	0.0514	0.0750	0.0768	0.0826	
371	4.6915	4.2832	6.2498	6.3997	6.8831	
750	0.0617	0.0562	0.0815	0.0834	0.0902	
399	5.1415	4.6831	6.7914	6.9497	7.5164	
800	0.0670	0.0610	0.0880	0.0900	0.0978	
427	5.5831	5.0831	7.3330	7.4997	8.1497	
850	0.0726	0.0658	0.0946	0.0967	0.1056	
454	6.0498	5.4831	7.8830	8.0580	8.7996	
900	0.0781	0.0707	0.1012	0.1037	0.1135	
482	6.5081	5.8914	8.4330	8.6413	9.4580	
950	0.0835	0.0756	0.1080	0.1105	0.1216	
510	6.9581	6.2997	8.9996	9.2080	10.1329	
1000	0.0889	0.0806	0.1148	0.1175	0.1298	
538	7.4080	6.7164	9.5663	9.7913	10.8162	
1050	0.0946	0.0855	0.1216			
566	7.8830	7.1247	10.1329			
1100	0.1004	0.0905	0.1284			
593	8.3663	7.5414	10.6996			



**TECHNICAL INFORMATION**

**MAXIMUM HORIZONTAL HANGER SPACING**

NOMINAL PIPE SIZE OR TUBE DIA.	STANDARD WEIGHT STEEL PIPE SERVICE (FEET/METERS)		COPPER TUBING SERVICE (FEET/METERS)	
	WATER	VAPOR	WATER	VAPOR
1/4	7	8	5	45
8	21.3	2.44	1.52	1.52
3/8	7	8	5	6
10	2.13	2.44	1.52	1.83
1/2	7	8	5	6
15	2.13	2.44	1.52	1.83
3/4	7	9	5	7
20	2.13	2.74	1.52	2.13
1	7	9	6	8
25	2.13	2.74	1.83	2.44
1 1/4	7	9	7	9
32	2.13	2.74	2.13	2.74
1 1/2	9	12	8	10
40	2.74	3.66	2.44	3.05
2	10	13	8	11
50	3.05	3.96	2.44	3.35
2 1/2	11	14	9	13
65	3.35	4.27	2.74	3.96
3	12	15	10	14
80	3.66	4.57	3.05	4.27
3 1/2	13	16	11	15
90	3.96	4.88	3.35	4.57
4	14	17	12	16
100	4.27	5.18	3.66	4.88
5	16	19	13	18
125	4.88	5.79	3.96	5.49
6	17	21	14	20
150	5.18	6.40	4.27	6.10
8	19	24	16	23
200	5.79	7.32	4.88	7.01
10	22	26	18	25
250	6.71	7.92	5.49	7.62
12	23	30	19	28
300	7.01	9.14	5.79	8.53
14	25	32		
350	7.62	9.75		
16	27	35		
400	8.23	10.67		
18	28	37		
450	8.53	11.28		
20	30	39		
500	9.14	11.89		
24	32	42		
600	9.75	12.80		
30	33	44		
750	10.06	13.41		

Note: Local codes and specifications may require hanger spacing less than the values shown above.

**GAUGE THICKNESS**

GAUGE	MINIMUM	NOMINAL
3	0.215	0.239
3	5.461	6.071
7	0.167	0.179
7	4.242	4.547
11	0.108	0.120
11	2.743	3.048
12	0.093	0.105
12	2.362	2.667
13	0.080	0.090
13	2.032	2.286
14	0.066	0.075
14	1.676	1.905
16	0.053	0.060
16	1.346	1.524
18	0.042	0.048
18	1.067	1.219



**TECHNICAL INFORMATION**

**USEFUL WEIGHT FORMULAS**

**PIPE**

Weight (lb/ft) = 10.68 x T x (D - T) x F

**PIPE CONTENTS**

Weight (lb/ft) = 0.3405 x G x (D - 2T)<sup>2</sup>

**LEGEND**

- D = Outside Diameter (inches)
- F = Material Weight Factor
- G = Specific Gravity of Pipe Contents  
Normally 1.0 for water, 0 for air and steam.
- L = Length (inches)
- T = Pipe Wall, Plate, or Bar Thickness (inches)
- W = Width (inches)

**PLATE AND BAR**

Weight (lb) = 0.2833 x T x W x L x F

**ROUND ROD**

Weight (lb/ft) = 2.67D<sup>2</sup>

**MATERIAL WEIGHT FACTORS**

Carbon Steel & Cr-Mo.....	1.00
Aluminum.....	0.35
Brass.....	1.12
Cast Iron.....	0.91
Copper.....	1.14
Ferritic stainless steel.....	0.95
Austenitic stainless steel.....	1.02
Wrought iron.....	0.98

**CALCULATING OF PIPE INSULATION WEIGHT**

The weight per foot of insulation is calculated by using the weight factor "X" from the table below and multiplying by the insulation density (lbs/cu-ft).

**EXAMPLE:** A 16" pipe with 3½" of insulation is found to have a weight factor of 1.49 (from table below.) With an insulation density of 11 lb/cu-ft, the calculation for insulation weight is 1.49 x 11 = 16.39

**INSULATION WIGHT FACTOR – X**

NOMINAL PIPE SIZE	NOMINAL INSULATION THICKNESS										
	1"	1½"	2"	2½"	3"	3½"	4"	4½"	5"	5½"	6"
1	.057	.10	.16	.23	.31	.40					
1¼	.051	.12	.15	.22	.30	.39					
1½	.066	.11	.21	.29	.38	.48					
2	.080	.14	.21	.29	.37	.47	.59				
2½	.091	.19	.27	.36	.46	.58	.70	.83			
3	.100	.17	.25	.34	.44	.56	.68	.81			
2½	.150	.23	.31	.41	.54	.66	.78	—	.97		
4	.130	.21	.30	.39	.51	.63	.77	.96	1.10		
5	.150	.24	.34	.45	.58	.71	.88	1.04	1.20		
6	.170	.27	.38	.51	.64	.83	.97	1.13	1.34		
8		.34	.47	.66	.80	.97	1.17	1.36	1.56	1.75	
10		.43	.59	.75	.93	1.12	1.32	1.54	1.76	1.99	
12		.50	.68	.88	1.07	1.28	1.52	1.74	1.99	2.24	2.50
14		.51	.70	.90	1.11	1.34	1.57	1.81	2.07	2.34	2.62
16		.57	.78	1.01	1.24	1.49	1.74	2.01	2.29	2.58	2.88
18		.64	.87	1.12	1.37	1.64	1.92	2.21	2.51	2.82	3.14
20		.70	.93	1.23	1.50	1.79	2.09	2.40	2.73	3.06	3.40
24		.83	1.13	1.44	1.77	2.10	2.44	2.80	3.16	3.54	3.92

**General Formula:** For pipe sizes not shown in the table above (special O.D. pipe, etc.), use the following formula to determine the insulation weight:

**Insulation Weight:** (lb/ft) = 0.218 x I x T x (T + D)

- Where:**
- I = Insulation density (lb/cu-ft)
  - T = Insulation thickness (inches)
  - D = Outside diameter of pipe (inches)



TECHNICAL INFORMATION

HANGER SPACING FOR PVC AND CPVC PIPING

		PVC										CPVC											
PIPE		60° F		80° F		100° F		120° F		140° F		73° F		100° F		120° F		140° F		160° F		180° F	
Size	Sch.	ft	mm	ft	mm	ft	mm	ft	mm	ft	mm	ft	mm	ft	mm	ft	mm	ft	mm	ft	mm	ft	mm
½"	40	4.5	1.37	4.5	1.37	4.0	1.22	2.5	0.76	2.5	0.76	5.0	1.52	4.5	1.37	4.5	1.37	4.0	1.22	2.5	0.76	2.5	0.76
	80	5.0	1.52	4.5	1.37	4.5	1.37	3.0	0.91	2.5	0.75	5.5	1.68	5.5	1.68	4.5	1.37	4.5	1.37	3.0	0.91	2.5	0.76
	120	5.0	1.52	5.0	1.52	4.5	1.37	3.0	0.91	2.5	0.76												
¾"	40	5.0	1.52	4.5	1.37	4.0	1.22	2.5	0.76	2.5	0.76	5.0	1.52	5.0	1.52	4.5	1.37	4.0	1.22	2.5	0.76	2.5	0.76
	80	5.5	1.68	5.0	1.52	4.5	1.37	3.0	0.91	2.5	0.76	5.5	1.68	5.5	1.68	5.0	1.52	4.5	1.37	3.0	0.91	2.5	0.76
	120	5.5	1.68	5.0	1.52	4.5	1.37	3.0	0.91	3.0	0.91												
1"	40	5.5	1.68	5.0	1.52	4.5	1.37	3.0	0.91	2.5	0.76	5.5	1.68	5.5	1.68	5.0	1.52	4.5	1.37	3.0	0.91	2.5	0.76
	80	6.0	1.83	5.5	1.68	5.0	1.52	3.5	1.07	3.0	0.91	6.0	1.83	6.0	1.83	5.5	1.68	5.0	1.52	3.5	1.07	3.0	0.91
	120	6.0	1.83	5.5	1.68	5.0	1.52	3.5	1.07	3.0	0.91												
1¼"	40	5.5	1.68	5.5	1.68	5.0	1.52	3.0	0.91	3.0	0.91	5.5	1.68	5.5	1.68	5.5	1.68	5.0	1.52	3.0	1.07	3.0	0.91
	80	6.0	1.89	6.0	1.83	5.5	1.68	3.5	1.07	3.0	0.91	6.5	1.98	6.0	1.83	6.0	1.83	5.5	1.68	3.5	1.07	3.0	0.91
	120	6.5	1.98	6.0	1.83	5.5	1.68	3.5	1.07	3.5	1.07												
1½"	40	6.0	1.83	5.5	1.68	5.0	1.52	3.5	1.07	3.0	0.91	6.0	1.83	6.0	1.83	5.5	1.68	5.0	1.52	3.5	1.07	3.0	0.91
	80	6.5	1.98	6.0	1.83	5.5	1.68	3.5	1.07	3.5	1.07	7.0	2.13	6.5	1.98	6.0	1.83	5.5	1.68	3.5	1.22	3.5	1.07
	120	6.5	1.98	6.5	1.98	6.0	1.83	4.0	1.22	3.5	1.07												
2"	40	6.0	1.83	5.5	1.68	5.0	1.52	3.5	1.07	3.0	0.91	6.0	1.83	6.0	1.83	5.5	1.68	5.0	1.52	3.5	1.22	3.0	0.91
	80	7.0	2.13	6.5	1.98	6.0	1.83	4.0	1.22	3.5	1.07	7.0	2.13	7.0	2.13	6.5	1.98	6.0	1.83	4.0	1.37	3.5	1.07
	120	7.5	2.29	7.0	2.13	6.5	1.98	4.0	1.22	3.5	1.07												
2½"	40	7.0	2.13	6.5	1.98	6.0	1.83	4.0	1.22	3.5	1.07	7.0	2.13	7.0	2.13	6.5	1.98	6.0	1.83	4.0	1.22	3.5	1.07
	80	7.5	2.29	7.5	2.29	6.5	1.98	4.5	1.37	4.0	1.22	8.0	2.44	7.5	2.29	7.5	2.29	6.5	1.98	4.5	1.37	4.0	1.22
	120	8.5	2.44	7.5	2.29	7.0	2.13	4.5	1.37	4.0	1.22												
3"	40	7.0	2.13	7.0	2.13	6.0	1.83	4.0	1.22	3.5	1.07	7.0	2.13	7.0	2.13	7.0	2.13	6.0	1.83	4.0	1.22	3.5	1.07
	80	8.0	2.44	7.5	2.29	7.0	2.13	4.5	1.37	4.0	1.22	8.0	2.44	8.0	2.44	7.5	2.29	7.0	2.13	4.5	1.37	4.0	1.22
	120	8.5	2.59	8.0	2.44	7.5	2.29	5.0	1.52	4.5	1.37												
3½"	40	7.5	2.29	7.0	2.13	6.5	1.98	4.0	1.22	4.0	1.22	7.5	2.29	7.5	2.29	7.0	2.13	6.5	1.98	4.0	1.22	4.0	1.22
	80	8.5	2.59	8.0	2.44	7.5	2.29	5.0	1.52	4.5	1.37	8.5	2.59	8.5	2.59	8.0	2.44	7.5	2.29	5.0	1.52	4.5	1.37
4"	40	7.5	2.29	7.0	2.13	6.5	1.98	4.5	1.37	4.0	1.22	7.5	2.29	7.5	2.29	7.0	2.13	6.5	1.98	4.5	1.37	4.0	1.22
	80	9.5	2.74	8.5	2.59	7.5	2.29	5.0	1.52	4.5	1.37	8.5	2.59	9.0	2.74	8.5	2.59	7.5	2.29	5.0	1.52	4.5	1.37
	120	9.5	2.90	9.0	2.74	8.5	2.59	5.5	1.68	5.0	1.52												
5"	40	8.0	2.44	7.5	2.29	7.0	2.13	4.5	1.37	4.0	1.22	8.0	2.44	8.0	2.44	7.5	2.29	7.0	2.13	5.0	1.52	4.5	1.37
	80	9.5	2.90	9.0	2.74	8.0	2.44	5.5	1.68	5.0	1.52	9.0	2.74	9.0	2.74	8.5	2.59	8.0	2.44	5.5	1.68	5.0	1.52
6"	40	8.5	2.59	8.0	2.44	7.5	2.29	5.0	1.52	4.5	1.37	8.5	2.59	8.0	2.44	7.5	2.29	7.0	2.13	5.0	1.52	4.5	1.37
	80	10.0	3.05	9.5	2.90	9.0	2.74	6.0	1.83	5.0	1.52	10.0	3.05	9.5	2.90	9.0	2.74	8.0	2.44	5.5	1.68	5.0	1.52
	120	11.5	3.51	10.5	3.20	9.5	2.90	6.5	1.98	6.0	1.83												
8"	40	9.0	2.74	8.5	2.59	8.0	2.44	5.0	1.52	4.5	1.37	9.5	2.90	9.0	2.74	8.5	2.59	7.5	2.29	5.5	1.68	5.0	1.52
	80	11.0	3.35	10.5	3.20	9.5	2.90	6.5	1.98	5.5	1.68	11.0	3.35	10.5	3.20	10.0	3.05	9.0	2.74	6.0	1.83	5.5	1.68
10"	40	10.0	3.05	9.0	2.74	8.5	2.59	5.5	1.68	5.0	1.52	10.5	3.20	10.0	3.05	9.5	2.90	8.0	2.44	6.0	1.83	0.56	0.17
	80	12.0	3.66	11.0	3.35	10.0	3.05	7.0	2.13	6.0	1.83	11.5	3.51	11.0	3.35	10.5	3.20	9.5	2.90	6.5	1.98	0.60	0.18
12"	40	11.5	3.51	10.5	3.20	9.5	2.90	6.5	1.98	5.5	1.68	11.5	3.51	10.5	3.20	10.5	3.05	8.5	2.59	6.5	1.98	6.0	1.83
	80	13.0	3.39	12.0	3.66	10.5	3.20	7.5	2.29	6.5	1.98	12.5	3.81	12.0	3.66	11.5	3.51	10.5	3.20	7.5	2.29	6.5	1.98
14"	40	12.0	3.66	11.0	3.35	10.0	3.05	7.0	2.13	6.0	1.83												
	80	13.5	4.11	13.0	3.96	11.0	3.35	8.0	2.44	7.0	2.13												
16"	40	12.5	3.81	11.5	3.51	10.5	3.21	7.5	2.29	6.5	1.98												
	80	14.0	4.27	13.5	4.11	11.5	3.51	8.5	2.59	7.5	2.29												
18"	40	13.0	3.96	12.0	3.66	11.0	3.35	8.0	2.44	7.0	2.13												
	80	14.5	4.42	14.0	4.27	12.0	3.66	9.0	2.74	8.0	2.44												
20"	40	13.5	4.11	12.5	3.81	11.5	3.51	8.5	2.59	7.5	2.29												
	80	15.0	4.57	14.5	4.42	12.5	3.81	9.5	2.90	8.5	2.59												
24"	40	14.0	4.27	13.0	3.96	12.0	3.66	9.0	2.74	8.0	2.44												
	80	18.5	5.64	15.0	4.57	13.0	3.96	10.0	3.05	9.0	2.74												





TECHNICAL INFORMATION

REFERENCE DATA – METRIC CONVERSION CHART

	TO CONVERT FROM	TO	MULTIPLY BY
<b>Angle</b>	degree	radian (rad)	$1.745329 \times 10^{-2}$
	radian (rad)	degree	$5.729578 \times 10^{+1}$
<b>Area</b>	foot <sup>2</sup>	square meter (m <sup>2</sup> )	$9.290304 \times 10^{-2}$
	inch <sup>2</sup>	square meter (m <sup>2</sup> )	$6.451600 \times 10^{-4}$
	circular mil	square inch (in <sup>2</sup> )	$5.067075 \times 10^{-10}$
	square centimeter (cm <sup>2</sup> )	foot <sup>2</sup>	$1.550003 \times 10^{-1}$
	square meter (m <sup>2</sup> )	inch <sup>2</sup>	$1.076391 \times 10^{+1}$
	square meter (m <sup>2</sup> )	circular mil	$1.550003 \times 10^{+3}$
<b>Bending Moment of Torque</b>	lbf-ft	newton meter (N•m)	1.355818
	lbf-in	newton meter (N•m)	$1.129848 \times 10^{-1}$
	N•m	lbf-ft	$7.375621 \times 10^{-1}$
	N•m	lbf-in	8.850748
<b>Force</b>	pounds-force (lbf)	newtons (N)	4.448222
<b>Length</b>	foot (ft)	meter (m)	$3.048000 \times 10^{-1}$
	inch (in)	meter (m)	$2.540000 \times 10^{-2}$
	mil	meter (m)	$2.540000 \times 10^{-5}$
	inch (in)	micrometer (µm)	$2.540000 \times 10^{+4}$
	meter (m)	foot (ft)	3.280840
	meter (m)	inch (in)	$3.937008 \times 10^{+1}$
	meter (m)	mil	$3.937008 \times 10^{+4}$
	micrometer (µm)	inch (in)	$3.937008 \times 10^{-5}$
<b>Mass</b>	ounces (avoirdupois)	kilogram (kg)	$2.834952 \times 10^{-2}$
	pounds (avoirdupois)	kilogram (kg)	$4.535924 \times 10^{-1}$
	ton (short, 2000 lb)	kilogram (kg)	$9.071847 \times 10^{+2}$
	ton (long, 2240 lb)	kilogram (kg)	$1.016047 \times 10^{+3}$
	kilogram (kg)	ounces (avoirdupois)	$3.527396 \times 10^{+1}$
	kilogram (kg)	pounds (avoirdupois)	2.204622
	kilogram (kg)	ton (short, 2000 lb)	$1.102311 \times 10^{-3}$
	kilogram (kg)	ton (long, 2240 lb)	$9.842064 \times 10^{-4}$
<b>Mass Per Unit Length</b>	lb/ft	kilogram per meter (kg/m)	1.488164
	lb/in	kilogram per meter (kg/m)	$1.785797 \times 10^{+1}$
	kg/m	lb/ft	$6.719689 \times 10^{-1}$
	kg/m	lb/in	$5.599741 \times 10^{-2}$
<b>Mass Per Unit Volume</b>	lb/ft <sup>3</sup>	kilogram per cubic meter (kg/m <sup>3</sup> )	1.601846 x 10 <sup>-1</sup>
	lb/in <sup>3</sup>	kilogram per cubic meter (kg/m <sup>3</sup> )	$2.767990 \times 10^{+4}$
	kg/m <sup>3</sup>	lb/ft <sup>3</sup>	$6.242797 \times 10^{-2}$
	kg/m <sup>3</sup>	lb/in <sup>3</sup>	$3.612730 \times 10^{-5}$
	lbs/ft <sup>3</sup>	lbs/in <sup>3</sup>	$1.728000 \times 10^{+3}$
<b>Mass Per Area Unit</b>	lb/ft <sup>2</sup>	kilogram per square meter (kg/m <sup>2</sup> )	4.882428
	kg/m <sup>2</sup>	pound per square foot (lb/ft <sup>2</sup> )	$2.048161 \times 10^{-1}$
<b>Pressure or Stress</b>	lbf/in <sup>2</sup> (psi)	pascal (Pa)	$6.894757 \times 10^{+3}$
	kip/in <sup>2</sup> (ksi)	pascal (Pa)	$6.894757 \times 10^{+6}$
	lbf/in <sup>2</sup> (psi)	megapascals (MPa)	$6.894757 \times 10^{-3}$
	pascal (Pa)	pounds force per sq. inch (psi)	$1.450377 \times 10^{-4}$
	pascal (Pa)	kip per sq. inch (ksi)	$1.450377 \times 10^{-7}$
	megapascals (MPa)	lbf/in <sup>2</sup> (psi)	$1.450377 \times 10^{+2}$
<b>Section Properties</b>	section modulus S (in <sup>3</sup> )	S (m <sup>3</sup> )	$1.638706 \times 10^{-5}$
	section modulus S (M <sup>3</sup> )	S (in <sup>3</sup> )	$6.102374 \times 10^{+4}$
	moment of inertia I (in <sup>4</sup> )	I (m <sup>4</sup> )	$4.162314 \times 10^{-7}$
	moment of inertia I (M <sup>4</sup> )	I (in <sup>4</sup> )	$2.402510 \times 10^{+6}$
	modulus of elasticity E (psi)	E (Pa)	$6.894757 \times 10^{+3}$
	modulus of elasticity E (Pa)	E (psi)	$1.450377 \times 10^{-4}$
<b>Temperature</b>	degree Fahrenheit	degree Celsius	$t^{\circ C} = (t^{\circ F} - 32) / 1.8$
	degree Celsius	degree Fahrenheit	$t^{\circ F} = 1.8 t^{\circ C} + 32$
<b>Volume</b>	foot <sup>3</sup>	cubic meter (m <sup>3</sup> )	$2.831685 \times 10^{-2}$
	inch <sup>3</sup>	cubic meter (m <sup>3</sup> )	$1.638706 \times 10^{-2}$
	cubic centimeter (cm <sup>3</sup> )	cubic inch (in <sup>3</sup> )	$6.102374 \times 10^{-2}$
	cubic meter (m <sup>3</sup> )	foot <sup>3</sup>	$3.531466 \times 10^{+1}$
	cubic meter (m <sup>3</sup> )	inch <sup>3</sup>	$6.102376 \times 10^{+4}$
	gallon (U.S. liquid)	cubic meter (m <sup>3</sup> )	$3.785412 \times 10^{-3}$

ASME ABBREVIATIONS

AISC	=	American Institute of Steel Construction
AISI	=	American Iron & Steel Institute
ANSI	=	American National Standards Institute
ASTM	=	American Society for Testing & Materials
AWWA	=	American Water Works Association
Dia.	=	Diameter
Ft.	=	Feet
Ga	=	Gauge
I.D.	=	Inside Diameter
In.	=	Inch
Lbs.	=	Pounds
Max.	=	Maximum
Min.	=	Minimum
MSS	=	Manufacturers' Standardization Society
NFPA	=	National Fire Protection Association
O.D.	=	Outside Diameter
Oz.	=	Ounces
psi	=	Pounds Per Square Inch
PVC	=	Poly Vinyl Chloride
UNC	=	Unified Course Threads
UNC R	=	Unified Course Threads (Rounded Root)

METRIC SYMBOLS

cm	=	centimeter
kg	=	kilogram
kN	=	kilonewton
m	=	meter
µm	=	micrometer
mm	=	millimeter
MPa	=	megapascal
N	=	newton
Nm	=	newton-meter
Pa	=	pascal

## TECHNICAL INFORMATION

### WELDING

#### BASIC WELDING SYMBOLS AND THEIR LOCATION SIGNIFICANCE

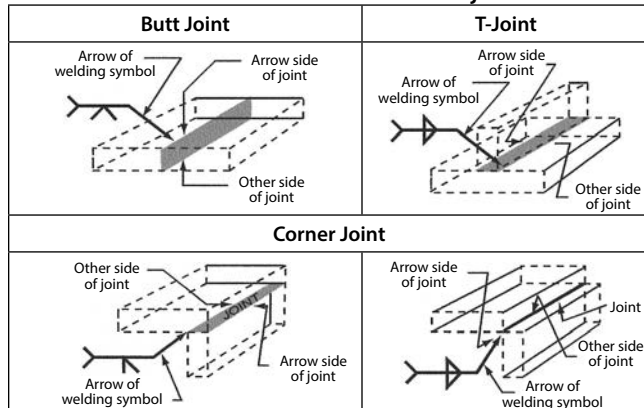
Location Significance	Flange							
	Fillet	Plug or Slot	Spot or Projection	Seam	Back or backing	Surfacing	Edge	Corner
Arrow Side								
Other Side						not used		
Both Side		not used	not used	not used	not used	not used	not used	not used
No arrow side or other side significance	not used	not used			not used	not used	not used	not used

#### SUPPLEMENTARY SYMBOLS USED WITH WELDING SYMBOLS

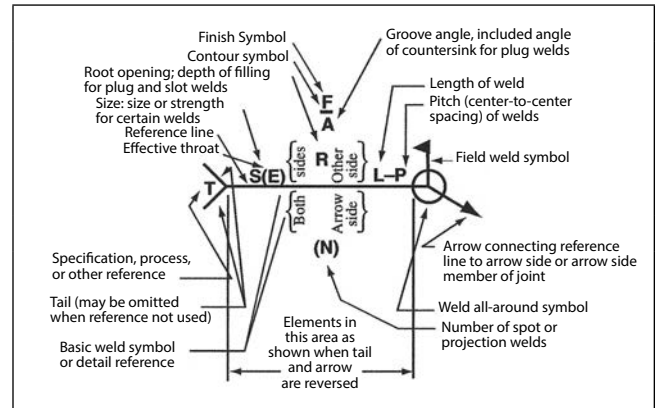
Flush Contour Symbol		Convex Contour Symbol			
Flush contour symbol indicates face of weld to be made flush. When used without a finish symbol, indicates weld to be welded flush without subsequent finishing		Finish symbol (user's standard) indicates method of obtaining specified contour but not degree of finish.			
Convex contour symbol indicates face of weld to be finished to convex contour.		Finish symbol (user's standard) indicates method of obtaining specified contour but not degree of finish.			
Weld-All-Around Symbol		Melt-Thru Symbol		Field Weld Symbol	
Weld-all-around symbol indicates that weld extends completely around the joint.		Melt-thru symbol is not dimensioned (except height)		Field weld symbol indicates that weld is to be made at a place other than that of initial construction	
		Any applicable weld symbol			

#### BASIC JOINTS –

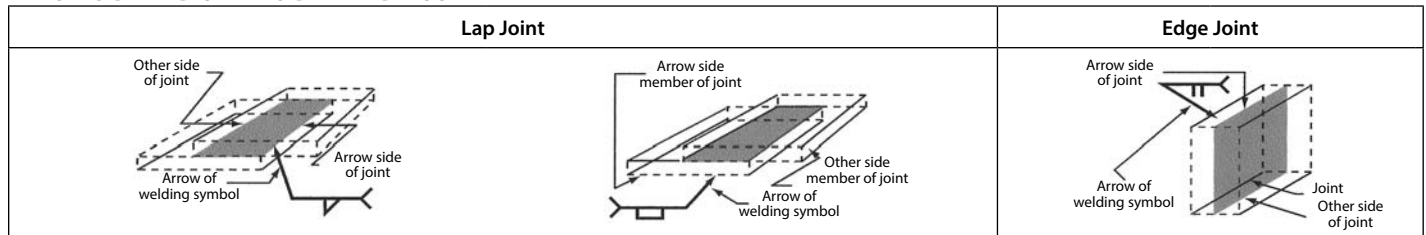
##### Identification of arrow side and other side of joint



##### LOCATION OF ELEMENTS OF A WELDING SYMBOL



#### ARROW SIDE AND OTHER SIDE MEMBER JOINT



#### DESIGNATION OF WELDING AND ALLIED PROCESSES BY LETTERS

AAC..... air carbon arc cutting	B..... brazing	CW..... cold welding	ESW..... electroslag welding	FOC..... chemical flux cutting
AAW..... air acetylene welding	BB..... block brazing	DB..... dip brazing	EXW..... explosion welding	FOW..... forge welding
AAB..... adhesive bonding	BMAW..... bare metal arc welding	DFB..... diffusion brazing	FB..... furnace brazing	FRW..... friction welding
AB..... arc brazing	CAC..... carbon arc cutting	DFW..... diffusion welding	FCAW..... flux cored arc welding	FS..... furnace soldering
AC..... arc cutting	CAW..... carbon arc welding	DS..... dip soldering	FCAW-EG..... flux cored arc welding-electrogas	FW..... flash welding
AHW..... automatic hydrogen welding	CAW-G..... gas carbon arc welding	EASP..... electric arc spraying	FLB..... flow brazing	GMAC..... gas metal arc cutting
AOC..... oxygen arc cutting	CAW-S..... shielded carbon arc welding	EBC..... electron beam cutting	FLOW..... flow welding	GMAW..... gas metal arc welding
AW..... arc welding	CAW-T..... twin carbon arc welding	EBW..... electron beam welding	FLSP..... flame spraying	GMAW-EG..... gas metal arc welding-electrogas



# Technical Data

## Materials

### CARBON STEEL

Channel is formed from high quality, structural grade carbon steel and has been manufactured in accordance with ASTM A570 specification Grade 33 (hot rolled) or ASTM-366 (cold rolled).

### STAINLESS STEEL

Channel is formed from chromium-nickel stainless steel manufactured in accordance with ASTM A420 specification offered in both AISI Type 304 and 316 material. Stainless steel is resistant to corrosion and is ideal for use in extreme ambient temperatures.

## Finishes

### PRE-GALVANIZED

A hot dip mill galvanized coating is produced by continuously passing the steel through a bath of molten zinc in accordance with ASTM A653. This coating is applied to steel master coils prior to slitting and fabrication. Pre-galvanized steel is not recommended for outdoor, unprotected use. It is suitable for extended exposure in dry mildly corrosive environments.

### HOT DIP GALVANIZED - AFTER FABRICATION

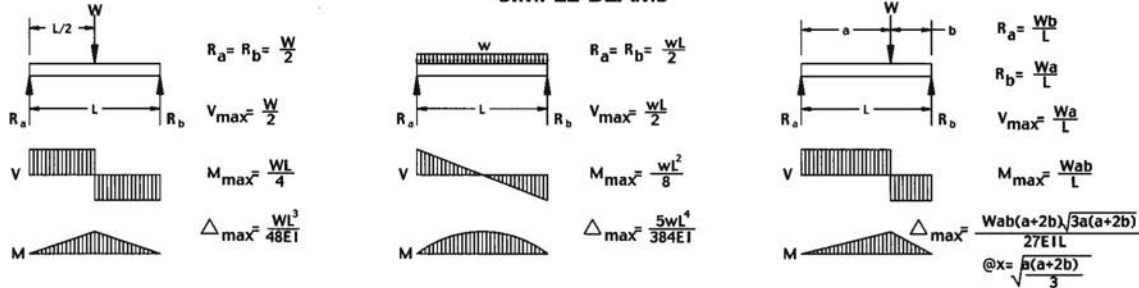
The finished channel is completely immersed in a bath of molten zinc, resulting in the complete coating of all surfaces of the product, including edges and welds. Channel that is hot dip galvanized has a total coating weight of 3.0 ounces of zinc per square foot (1.5 ounces per side) in accordance with ASTM A123 specification. This coating provides superior results for prolonged outdoor exposure applications.

### GREEN POWDER COATING

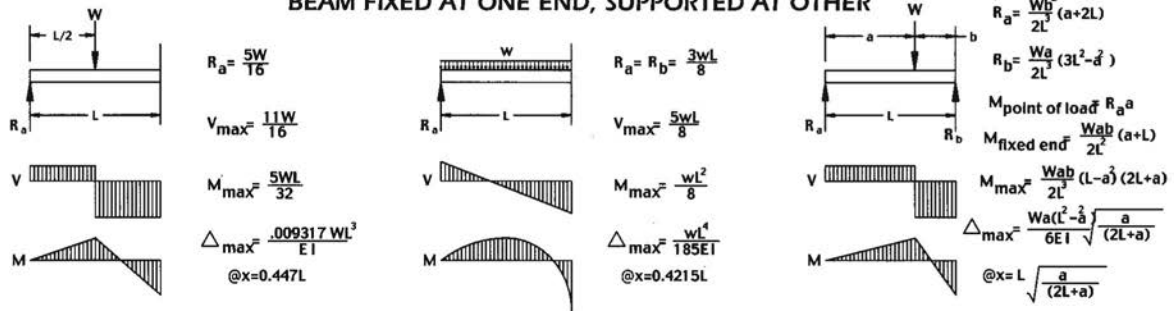
Channel is coated after fabrication with a polyester powder finish. This coating provides a high quality appearance as well as surface durability. Once the channel is pre-treated and cleaned through a bonderite process, the coating is applied using an electro-static spray process. The channel then proceeds through a baking process which results in a chemical bond between the channel and the polyester powder finish.

# Common Beam Loading Formulas

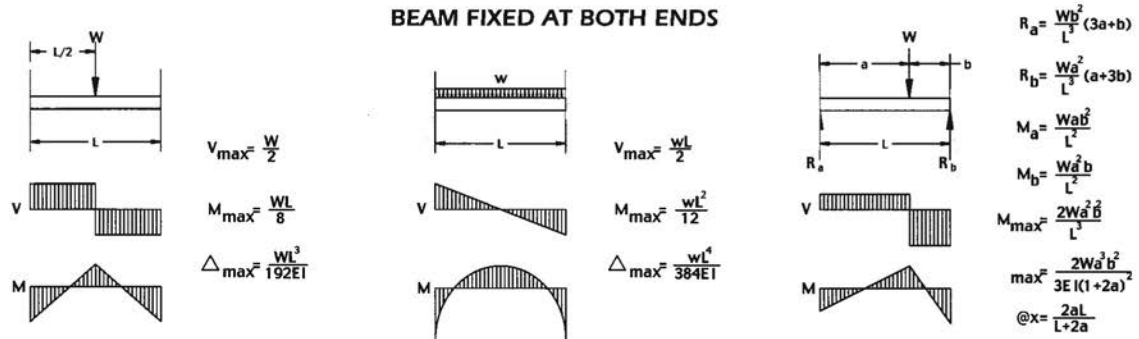
## SIMPLE BEAMS



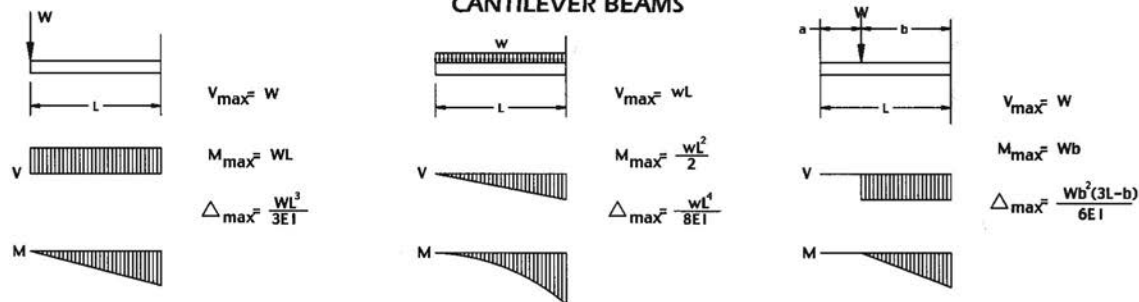
## BEAM FIXED AT ONE END, SUPPORTED AT OTHER



## BEAM FIXED AT BOTH ENDS



## CANTILEVER BEAMS



R- Reaction  
M-Moment  
W-Concentrated Load

w-Uniform Load (Weight/Unit Length)  
V-Shear  
L-Length

Δ-Deflection  
E-Modulus of Elasticity  
I-Moment of Inertia

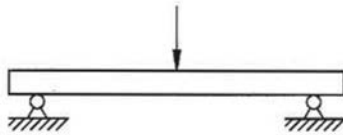
# Fundamentals of Design

## BEAMS

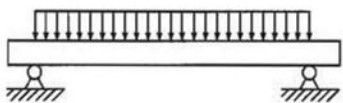
Beams are members which are subjected to loads at right angles (perpendicular) to their length. Most commonly, beams are horizontal and are therefore subjected to vertical loads usually related to gravity, i.e.-a shelf, platform or support for pipe or conduit. Loads cause beams to bend, called deflection. The ultimate consideration when designing a beam structure is whether or not it is strong enough. In other words, will it hold the anticipated load and provide a safety factor for unanticipated loads or other variations in conditions. A beam's ability to support a load is determined by its allowable bending moment and resulting amount of deflection. This load carrying ability is dependent on a number of factors: the amount of load, the type of load, the manner in which the beam is supported and the stiffness of the beam (a function of the beam's shape and the material from which it is made).

### Types of Beam Loading

**Point Load** – A point load is concentrated at a single point along the beam's span (in reality, the load is concentrated over a very small length of the beam).

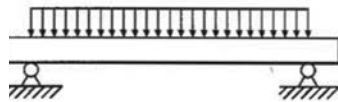


**Uniform Load** – A uniform load is spread evenly over the length of the beam from support to support.

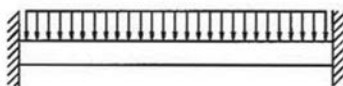


### Types of Beam Support Conditions

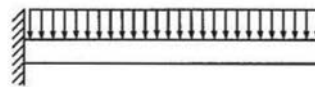
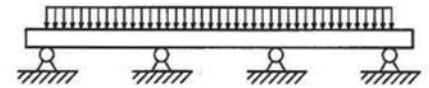
**Simple Beam** – A simple beam is supported at both ends by non-fixed connections which prevent vertical movement at the support point, but allow the beam to rotate or flex into a normal deflected shape. The majority of bolted metal framing connections closely approximate these conditions. The loading data presented in this catalog is based on simple beam analysis unless otherwise noted.



**Fixed Beam** – A fixed beam has rigid connections at each end that restrict the rotation of the beam and resist its deflection. The increased stiffness provided by this resistance to rotation provides a greater load capacity than that of an equivalent simple beam. A fixed-end beam would result when a channel span is welded to rigid upright supports.



**Continuous Beam** – A continuous beam rests on more than two supports. The outside spans of a continuous beam will act like simple beams, while the interior spans will behave in a manner similar to fixed beams.

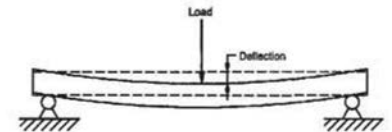


**Cantilever Beams** – A cantilever beam is supported by a fixed, rigid connection at one end and is totally unsupported at the opposite end. Shelf brackets and many of the strut brackets shown in this catalog are examples of cantilever beams.

is totally unsupported at the opposite end. Shelf brackets and many of the strut brackets shown in this catalog are examples of cantilever beams.

### Loading and Deflection

All beams will deflect or "sag" when a load is applied. The magnitude of the deflection is dependent on the following factors:



- The amount of load plus the weight of the beam itself.
- The manner in which the load is distributed.
- The method by which the beam is supported.
- The cross sectional shape of the beam.
- The material from which the beam is made.

The stiffness of the beam derived from its cross sectional shape is defined by its "Moment of Inertia" or "I". The greater the "I" value of a beam, the greater its stiffness and the smaller its deflection. "I" values are given for both major axis (X-X and Y-Y). Increasing the height of the strut channel (Y-Y axis) is a straightforward way to increase its stiffness and lower its deflection.

The stiffness of a beam derived from its material composition is defined by its "Modulus of Elasticity" or "E". The greater the "E" value of the beam's material, the stiffer it is, and the smaller the deflection. A material's elasticity does not necessarily relate to its strength but rather its deflection under a given load.

The beam capacities in this catalog include the weight of the beam itself. Therefore, the strut beam weight must be subtracted from the loading capacities given to provide the net beam capacity.





## Catalog Cross Reference Listing COOPER B-LINE

CHANNEL DENOTED BY BLUE SHADING

COOPER B-LINE	I.T.P.	COOPER B-LINE	I.T.P.	COOPER B-LINE	I.T.P.
B11	7250	B140	9011FF	B333-1	9054UF
B11A	7251	B141	9006FF	B334	9021FF
B12	7230	B142	9015FF	B337	9013FF
B12A	7240	B143	9014FF	B340	9004FF
B12SH	7231	B155	9047AF	B341	9007FF
B12SHA	7241	B162	9044AF	B342	9008FF
B22	7000	B172	9052UF	B355	9081BC
B22A	7000A	B187 (9")	9103BB	B368	9048AF
B22SH	7001	B188 (12")	9105BB	B371	9025CA
B22SHA	7001A	B189 (15")	9106BB	B371-2	9029CA
B24	7100	B201	9001FF SERIES	B441-22	9086BC
B24SH	7101	B201D	9002FF SERIES	B441-22A	9087BC
B32I	7225	B202	9001FF SERIES	B515	9065ZF
B54	7200	B202-1	9001FF SERIES	B526	9058ZF
B54SH	7201	B202D	9002FF SERIES	B528	9005FF
B101	9023CA	B202-1D	9002FF SERIES	B532	9019FF
B102	9026CA	B202-2	9001FF SERIES	B533	9039CA
B103	9027CA	B202-2D	9002FF SERIES	B541	9104BB
B104	9030CA	B211	9084BC	B556	9020FF
B105	9062ZF	B212-1/4	9082BC	B844 (4" X 4")	9034CA
B106-12	9063ZF	B212-3/8	9083BC	B1999	8550
B106-52	9059ZF	B230	9022CA	B2007PA	8200 SERIES
B106-32	9061ZF	B231 (2-1/4" X 2-1/4")	9024CA	B2008PA	8200 SERIES
B106-42	9060ZF	B232	9028CA	B2008SS4PA	8200SS SERIES
B107	9053UF	B248	9046AF	B2009PA	8200 SERIES
B107-22A	9057UF	B261-12	9040CA	B2009SS4PA	8200SS SERIES
B110	9064ZF	B261-18	9042CA	B2010PA	8200 SERIES
B115 (3-3/4" X 3-15/16")	9031CA	B261-24	9043CA	B2010SS4PA	8200SS SERIES
B116-12	9056UF	B266	9055UF	B2011PA	8200 SERIES
B116-32	9051UF	B267L	9068WF	B2011SS4PA	8200SS SERIES
B116-42	9050UF	B267R	9067WF	B2012PA	8200 SERIES
B116-52	9049UF	B268L	9071WF	B2012SS4PA	8200SS SERIES
B118	9036CA	B268R	9070WF	B2013PA	8200 SERIES
B119	9066WF	B269L	9074WF	B2013PA (ZN)	8250 SERIES
B120	9069WF	B271	9076WF	B2013SS4PA	8200SS SERIES
B121	9072WF	B272	9078WF	B2014PA	8200 SERIES
B122	9075WF	B273	9080WF	B2014PA (ZN)	8250 SERIES
B123	9079WF	B278	9088PB	B2014SS4PA	8200SS SERIES
B124	9077WF	B279SQ	9092PB	B2015PA	8200 SERIES
B125	9035CA	B280	9093PB	B2015PA (ZN)	8250 SERIES
B126	9037CA	B280FL (3-1/8" X 8")	9090PB	B2015SS4PA	8200SS SERIES
B127	9038CA	B280SQ	9094PB	B2016PA	8200 SERIES
B129	9003FF	B281	9095PB	B2016PA (ZN)	8250 SERIES
B132	9017FF	B281FL (3-1/8" X 8")	9091PB	B2016SS4PA	8200SS SERIES
B133	9016FF	B290	9107BB	B2017PA	8200 SERIES
B135	9012FF	B291	9108BB	B2017PA (ZN)	8250 SERIES
B136	9018FF	B292	9109BB	B2017SS4PA	8200SS SERIES
B138 (1-5/8" X 4-5/8")	9009FF	B314	9085BC	B2018PA (ZN)	8250 SERIES
B139 (1-5/8" X 6-1/2")	9010FF	B269R	9073WF		

CONTINUED



## Catalog Cross Reference Listing COOPER B-LINE - continued

COOPER B-LINE	I.T.P.	COOPER B-LINE	I.T.P.	COOPER B-LINE	I.T.P.
B2019PA	8200 SERIES	B2062PA (ZN)	8250 SERIES	N223WO	8000 SERIES
B2019SS4PA	8200SS SERIES	B2063PA (ZN)	8250 SERIES	N224	8100 SERIES
B2020PA	8200 SERIES	B2064PA (ZN)	8250 SERIES	N224SS6	8100SX SERIES
B2020PA (ZN)	8250 SERIES	B2065PA (ZN)	8250 SERIES	N224WO	8000 SERIES
B2020SS4PA	8200SS SERIES	B2066PA (ZN)	8250 SERIES	N225	8100 SERIES
B2022PA	8200 SERIES	B2067PA (ZN)	8250 SERIES	N225SS6	8100SX SERIES
B2023PA (ZN)	8250 SERIES	B2068PA (ZN)	8250 SERIES	N225WO	8000 SERIES
B2024PA (ZN)	8250 SERIES	B2069PA (ZN)	8250 SERIES	N226	8100 SERIES
B2025PA (DCU)	8300CT/8300CTP SERIES	B2110PA (DCU)	8300CT/8300CTP SERIES	N226WO	8000 SERIES
B2025PA (ZN)	8250 SERIES	B2110PA (ZN)	8250 SERIES	N227	8100 SERIES
B2026PA (DCU)	8300CT/8300CTP SERIES	B2111PA (ZN)	8250 SERIES	N227WO	8000 SERIES
B2026PA (ZN)	8250 SERIES	B2112PA (ZN)	8250 SERIES	N228	8100 SERIES
B2027PA (ZN)	8250 SERIES	B2113PA (ZN)	8250 SERIES	N228SS6	8100SX SERIES
B2028PA (DCU)	8300CT/8300CTP SERIES	B2115PA (ZN)	8250 SERIES	N228WO	8000 SERIES
B2028PA (ZN)	8250 SERIES	B2116PA (ZN)	8250 SERIES	N255	8100 SERIES
B2029PA (ZN)	8250 SERIES	B2117PA (ZN)	8250 SERIES	N255SS6	8100SX SERIES
B2030PA (DCU)	8300CT/8300CTP SERIES	B2128PA (ZN)	8250 SERIES	N255WO	8000 SERIES
B2030PA (ZN)	8250 SERIES	B2130PA	8200 SERIES	N275	8100 SERIES
B2031PA (ZN)	8250 SERIES	B2132PA	8200 SERIES	N275WO	8000 SERIES
B2032PA (DCU)	8300CT/8300CTP SERIES	B2207PA	8350 SERIES	N278	8100 SERIES
B2032PA (ZN)	8250 SERIES	B2208PA	8350 SERIES	N278WO	8000 SERIES
B2033PA (ZN)	8250 SERIES	B2209PA	8350 SERIES	N521	8050 SERIES
B2034PA (DCU)	8300CT/8300CTP SERIES	B2210PA	8350 SERIES	N522	8050 SERIES
B2034PA (ZN)	8250 SERIES	B2211PA	8350 SERIES	N523	8050 SERIES
B2035PA (ZN)	8250 SERIES	B2212PA	8350 SERIES	N524	8050 SERIES
B2036PA (ZN)	8250 SERIES	B2213PA	8350 SERIES	N525	8050 SERIES
B2037PA (ZN)	8250 SERIES	B2400 SERIES	9110HD SERIES	N526	8050 SERIES
B2038PA (DCU)	8300CT/8300CTP SERIES	BVT025	8500 SERIES	N527	8050 SERIES
B2038PA (ZN)	8250 SERIES	BVT037	8500 SERIES	N528	8050 SERIES
B2039PA (ZN)	8250 SERIES	BVT050	8500 SERIES	N555	8050 SERIES
B2041PA (ZN)	8250 SERIES	BVT062	8500 SERIES	TN221	8150 SERIES *
B2042PA (DCU)	8300CT/8300CTP SERIES	BVT075	8500 SERIES	TN222	8150 SERIES *
B2042PA (ZN)	8250 SERIES	BVT087	8500 SERIES	TN223	8150 SERIES *
B2043PA (ZN)	8250 SERIES	BVT100	8500 SERIES	TN224	8150 SERIES *
B2045PA (ZN)	8250 SERIES	BVT112	8500 SERIES	TN225	8150 SERIES *
B2046PA (DCU)	8300CT/8300CTP SERIES	BVT125	8500 SERIES	TN227	8150 SERIES *
B2046PA (ZN)	8250 SERIES	BVT137	8500 SERIES	TN228	8150 SERIES *
B2047PA (ZN)	8250 SERIES	BVT150	8500 SERIES	TN525	8150 SERIES *
B2048PA (ZN)	8250 SERIES	BVT162	8500 SERIES		
B2050PA (DCU)	8300CT/8300CTP SERIES	BVT175	8500 SERIES		
B2050PA (ZN)	8250 SERIES	BVT187	8500 SERIES		
B2051PA (ZN)	8250 SERIES	BVT200	8500 SERIES		
B2052PA (ZN)	8250 SERIES	BVT212	8500 SERIES		
B2054PA (DCU)	8300CT/8300CTP SERIES	BVT262	8500 SERIES		
B2054PA (ZN)	8250 SERIES	BVT312	8500 SERIES		
B2055PA (ZN)	8250 SERIES	BVT412	8500 SERIES		
B2056PA (ZN)	8250 SERIES	N221	8100 SERIES		
B2058PA (ZN)	8250 SERIES	N221WO	8000 SERIES		
B2059PA (ZN)	8250 SERIES	N222	8100 SERIES		
B2060PA (ZN)	8250 SERIES	N222WO	8000 SERIES		
B2062PA (DCU)	8300CT/8300CTP SERIES	N223	8100 SERIES		

\*SIMILAR BUT NOT IDENTICAL



## Catalog Cross Reference Listing ERICO

CHANNEL DENOTED BY BLUE SHADING

ERICO	I.T.P.	ERICO	I.T.P.	ERICO	I.T.P.
A12	7000	L15	9025CA	W19	9075WF
A12A	7000A	L18 (EG)	9026CA	W20	9077WF
A12AHS	7001A	L19 (1-7/8" X 3-7/8")	9028CA	W21	9079WF
A12HS	7001	L20 (EG)	9027CA	Z17	9063ZF
A14	7100	L21	9029CA	Z14	9058ZF
A14HS	7101	L23 (EG)	9034CA	Z25	9065ZF
B1200NCT	7225	L32	9037CA	Z10C0000EG	9059ZF
C14	7200	L33	9038CA	Z10D0000EG	9063ZF
C14HS	7201	L34	9036CA	Z10M0000EG	9060ZF
D12	7230	L40	9039CA		
D12A	7240	L43	9035CA		
D12AHS	7241	L46 30 DEGREE	9044AF		
D12HS	7231	L46 45 DEGREE	9045AF		
E12	7250	L47 45 DEGREE	9047AF		
E12HS	7251	L100000EG	9023CA		
BC16A000EG	9085BC	L220000EG	9030CA		
BC17A000EG	9086BC	L441200EG	9040CA		
BC17D000EG	9087BC	L441800EG	9042CA		
BC21	9084BC	NUT SERIES	8000		
BC1800037EG	9083BC	OD SERIES	8250		
BC200000EG	9081BC	P09 (BASE = 3-1/2" X 6")	9089PB		
COPC	8300CT/8300CTP SERIES	P09F	9090PB		
F090000EG	9003FF	P10SQ	9092PB		
F11-F12 SERIES	9002FF SERIES	P11 SQ	9094PB		
F13-F18 (EG)	9001FF SERIES	P15	9088PB		
F20	9006FF	P110000EG	9093PB		
F21	9008FF	RIGD-EG	8200		
F22	9004FF	SPRA SERIES	8100		
F23	9007FF	SPRC SERIES	8050		
F25	9016FF	STR 2 SERIES	9110HD		
F26	9009FF	TCC SERIES	8500		
F27	9010FF	TSNT SERIES	8150		
F28	9017FF	U11C	9049UF		
F30	9013FF	U12D	9056UF		
F31	9018FF	U13 (7-1/4")	9054UF		
F32	9019FF	U24A	9052UF		
F33	9015FF	UNIV SERIES	8350 SERIES		
F34	9020FF	VS20	8550		
F35	9012FF	W12	9066WF		
F36	9011FF	W13	9069WF		
F37	9014FF	W14	9072WF		
F38	9021FF	W16	9076WF		
L08	9024CA	W17	9078WF		
L11 (1-7/8" X 2")	9022CA	W18	9080WF		





## Catalog Cross Reference Listing PHD

CHANNEL DENOTED BY BLUE SHADING					
PHD	I.T.P.	PHD	I.T.P.	PHD	I.T.P.
1001	7000 (10')	5023	9010FF	5610	9070WF
1002	7000 (20')	5025	9011FF	5611	9071WF
1011	7001 (10')	5030	9014FF	5615	9073WF
1022	7001 (20')	5035	9016FF	5616	9074WF
1101	7100 (10')	5040	9017FF	5620	9066WF
1102	7100 (20')	5045	9012FF	5625	9069WF
1111	7101 (10')	5050	9015FF	5630	9072WF
1112	7101 (20')	5060	9020FF	5635	9076WF
1301	7200 (10')	5065	9013FF	5640	9078WF
1302	7200 (20')	5075	9018FF	5645	9080WF
1311	7201 (10')	5080	9019FF	5650	9075WF
1312	7201 (20')	5095	9021FF	5655	9079WF
1501	7250 (10')	5110 (1-5/8" X 2-1/4")	9023CA	5660	9077WF
1502	7250 (20')	5112	9022CA	5730	9052UF
1511	7251 (10')	5119	9024CA	6010	9092PB
1512	7251 (20')	5120 (2-5/16" X 3-1/2")	9026CA	6020	9093PB
1601	7230 (10')	5121 (1-5/8" X 4-3/16")	9027CA	6025	9094PB
1602	7230 (20')	5122	9028CA	6030 (3-1/8" X 8")	9090PB
1611	7231 (10')	5130 (3-1/2" X 4-3/16")	9030CA	6050	9095PB
1612	7231 (20')	5131 (3-13/16" X 3-7/8")	9031CA	6065 (BASE = 3-1/8" X 8")	9091PB
4000	7225	5165	9034CA	6095	9088PB
1001A	7000A (10')	5180	9035CA	6101	9103BB
1002A	7000A (20')	5185 (1-5/8" X 4-3/16")	9036CA	6102	9104BB
1011A	7001A (10')	5190	9039CA	6121	9105BB
1012A	7001A (20')	5200	9037CA	6122	9106BB
1601A	7240 (10')	5205	9038CA	6123	9107BB
1601A SH	7241 (10')	5221	9025CA	6124	9108BB
1602A	7240 (20')	5230	9029CA	6125	9109BB
1602A SH	7241 (20')	5304	9044AF	7011	9082BC
2001-2016	8200 SERIES	5315	9045AF	7012	9083BC
2001SS-2016SS	8200SS SERIES	5345	9046AF	7030	9084BC
2101-2107	8350 SERIES	5361	9047AF	7040	9081BC
2302-2314	8300CTP/83000CT SERIES	5371	9048AF	7060	9085BC
2401-2461	8250 SERIES	5410	9040CA	7070	9086BC
2501-2514	8500 SERIES	5412	9042CA	7075	9087BC
2600	8550	5501	9049UF	7251-7262	9110HD SERIES
3001-3011	8000 SERIES	5503	9053UF		
3101-3111	8100 SERIES	5505	9056UF		
3101SS-3111SS	8100SX SERIES	5507	9057UF		
3201-3209	8050 SERIES	5530	9054UF		
5000-5004	9001FF SERIES	5521	9055UF		
5005-5008	9002FF SERIES	5551	9059ZF		
5011	9005FF	5553	9063ZF		
5012	9004FF	5554	9062ZF		
5013	9006FF	5556	9058ZF		
5015	9007FF	5590	9065ZF		
5019	9008FF	5600	9067WF		
5020	9009FF	5601	9068WF		



## Catalog Cross Reference Listing POWERSTRUT

CHANNEL DENOTED BY BLUE SHADING

POWERSTRUT	I.T.P.	POWERSTRUT	I.T.P.	POWERSTRUT	I.T.P.
PS100	7250	PS 670	9077WF	PS 1100 SERIES	8200
PS100 EH	7251	PS 679	9057UF	PS 1100 SS SERIES	8200SS
PS150	7230	PS 685	9084BC	PS 1200 CPLT SERIES	8300CT/8300CTP SERIES
PS150 2T3	7240	PS 686	9081BC	PS 1200 EG SERIES	8250
PS150 2T3 EH	7241	PS 687-A (3 HOLES-2 SLOTS)	9054UF	PS 1300 SERIES	8350
PS150 EH	7231	PS 692	9065ZF	PS 1400 SERIES	8500
PS200	7000	PS 710	9051UF	PS 2112	9021FF
PS200 2T3	7000A	PS 711	9061ZF	PS 2128-L	9074WF
PS200 EH	7001	PS 712	9017FF	PS 2128-R	9073WF
PS200 EH 2T3	7001A	PS 714	9016FF	PS 2131-L	9071WF
PS210	7100	PS 718	9011FF	PS 2131-R	9070WF
PS210 EH	7101	PS 721	9055UF	PS 2190	9020FF
PS349 10' W/O	7225 (10')	PS 732-10	9104BB	PS 2504	9002FF
PS349 20' W/O	7225 (20')	PS 732-12	9105BB	PS 2545	9025CA
PS500	7200	PS 732-14	9106BB	PS 2601	9063ZF
PS500 EH	7201	PS 732-8	9103BB	PS 2648	9056UF
PS 601	9003FF	PS 744	9012FF	PS 2651-A	9086BC
PS 602	9006FF	PS 745	9028CA	PS 3033	9093PB
PS 603	9022CA	PS 746	9035CA	PS 3040	9088PB
PS 604	9023CA	PS 747	9018FF	PS 3049	9029CA
PS 605 (2-5/16" X 3-1/2")	9026CA	PS 748 (1-5/8" X 4-3/16")	9036CA	PS 3064	9095PB
PS 606 (1-5/8" X 4-3/16")	9027CA	PS 750	9015FF	PS 3126 SERIES	9110HD
PS 607 (3-1/2" X 4-3/16")	9030CA	PS 756 (1-5/8" X 3-1/2")	9064ZF	PS 3373 (4" X 4")	9034CA
PS 608-L	9033CA	PS 781-45 DEGREE	9046AF	PS 3792	8550
PS 608-R	9032CA	PS 793-45 DEGREE	9048AF	PS NS SERIES	8000
PS 611	9062ZF	PS 806	9024CA	PS NSS SERIES	8000
PS 612	9060ZF	PS 821	9078WF	PSRS SERIES	8100
PS 613	9053UF	PS 854	9019FF	PSSS SERIES	8050
PS 614	9037CA	PS 855-1	9085BC	PS TG SERIES	8150
PS 615	9038CA	PS 888	9007FF		
PS 616	9052UF	PS 907	9082BC		
PS 617	9010FF	PS 913	9080WF		
PS 618	9009FF	PS 922-L	9068WF		
PS 619 SERIES	9001FF	PS 922-R	9067WF		
PS 620	9004FF	PS 923	9076WF		
PS 624-45 DEGREE	9047AF	PS 925	9013FF		
PS 633-30 DEGREE	9044AF	PS 926-12	9040CA		
PS 633-45 DEGREE	9045AF	PS 926-18	9042CA		
PS 660 (3-13/16" X 3-7/8")	9031CA	PS 926-24	9043CA		
PS 665	9066WF	PS 927	9039CA		
PS 666	9069WF	PS 928	9059ZF		
PS 667	9072WF	PS 929	9049UF		
PS 668	9075WF	PS 978	9050UF		
PS 669	9079WF	PS 998	9083BC		



## Catalog Cross Reference Listing SUPERSTRUT

CHANNEL DENOTED BY BLUE SHADING

SUPERSTRUT	I.T.P.	SUPERSTRUT	I.T.P.	SUPERSTRUT	I.T.P.
A-1200	7000	AB-255	9012FF	X-207	9007FF
A-1200HS	7001	AB-257	9015FF	X-208	9008FF
A-1202	7000A	AB-261	9019FF	X-299	9025CA
A-1202HS	7001A	AB-263	9020FF	512	9081BC
A-1400	7100	AB-265	9018FF	701 SERIES	8250 SERIES
A-1400HS	7101	AB-274 (1-5/8" X 2-1/4")	9035CA	702 SERIES	8200 SERIES
B-1400	7200	AB-299	9024CA	702SS	8200SS SERIES
B-1400HS	7201	AP-232	9093PB	703 SERIES	8350 SERIES
C-302	7225	AP-232-SQ	9094PB		
E-1200	7230	AP-235	9095PB		
E-1200HS	7231	AW-204	9066WF		
E-1202	7240	AW-205-L	9068WF		
E-1202HS	7241	AW-205-R	9067WF		
H-1200	7250	AW-214	9069WF		
H-1200HS	7251	AW-219	9080WF		
A-100	8100	AW-220	9076WF		
A-208	9052UF	AW-224	9078WF		
A-209	9062ZF	AW-226	9075WF		
A-210	9053UF	AW-228	9079WF		
A-211	9057UF	B-100 SERIES	8050		
A-212	9055UF	B-209	9059ZF		
A-217	9072WF	B-210	9049UF		
A-218	9077WF	C-209	9061ZF		
A-597	9085BC	C-210	9051UF		
A-716 SERIES	8500	C-708-U SERIES	9110HD		
AB-100 SERIES	8000	CM-100	8150 *		
AB-201 (1-5/8" X 2-1/4")	9023CA	CT-701	8300CTP/83000CT SERIES		
AB-202 (1-7/8" X 2")	9022CA	CZ-209	9064ZF		
AB-203	9027CA	E-210	9056UF		
AB-204	9026CA	EZ-209	9063ZF		
AB-206	9003FF	N-205	9031CA		
AB-207	9006FF	S-204	9103BB		
AB-213	9032CA	S-205	9104BB		
AB-214	9033CA	S-217	9105BB		
AB-216 (3-1/2" X 4-1/8")	9038CA	S-218	9106BB		
AB-219	9011FF	S-222	9107BB		
AB-220	9016FF	S-226	9108BB		
AB-225	9047AF	S-236	9109BB		
AB-227	9045AF	S-716	8550		
AB-239-2 (17")	9042CA	U-501	9086BC		
AB239-3 (25-1/2")	9043CA	U-502	9087BC		
AB-240 (7")	9010FF	U-510	9084BC		
AB-241 SERIES	9001FF SERIES	U-514	9082BC		
AB-253	9017FF	U-514-A	9083BC		

\* SPECS DIFFER BUT PART IS FUNCTIONALLY EQUIVALENT



## Catalog Cross Reference Listing TOLCO

CHANNEL DENOTED BY BLUE SHADING

TOLCO	I.T.P.	TOLCO	I.T.P.	TOLCO	I.T.P.
A12	7000	F36	9011FF	U24	9052UF
A12A	7000A	F37	9014FF	UNIV SERIES	8350
A12AHS	7001A	F38	9021FF	W10 (R)	9067WF
A12HS	7001	L08	9024CA	W10(L)	9068WF
A14	7100	L10 (1-5/8" X 2-1/4")	9023CA	W11 (L)	9074WF
A14HS	7101	L11	9022CA	W11 (R)	9073WF
B12 INSERT	7225	L15	9025CA	W12	9066WF
C14	7200	L18	9026CA	W13	9069WF
C14HS	7201	L19 (1-7/8" X 3-7/8")	9028CA	W14	9072WF
D12	7230	L20	9027CA	W16	9076WF
D12A	7240	L21	9029CA	W17	9078WF
D12AHS	7241	L22	9030CA	W18	9080WF
D12HS	7231	L23L	9033CA	W19	9075WF
E12	7250	L23R	9032CA	W20	9077WF
E12HS	7251	L23U (ONLY 6 HOLES)	9034CA	W21	9079WF
BC16 (A)	9085BC	L32	9037CA	2 STR SERIES	9110HD
BC17 (A)	9086BC	L33 (3-1/2" X 4-1/8")	9038CA	Z25	9065ZF
BC17 (E)	9087BC	L34	9036CA	Z10 (B)	9061ZF
BC18 (3/8")	9082BC	L40	9039CA	Z10 (C)	9059ZF
BC18 (1/2")	9083BC	L43 (1-5/8" X 2-1/4")	9035CA	Z10 (D)	9063ZF
BC20	9081BC	L44 (12")	9040CA		
BC21	9084BC	L44 (18")	9042CA		
BR11 (8-1/2")	9103BB	L45-30 DEGREE	9044AF		
BR11 (10-1/2")	9104BB	L45-45 DEGREE	9045AF		
BR11 (12-1/2")	9105BB	L46-45 DEGREE	9046AF		
BR11 (14-1/2")	9106BB	L47-45 DEGREE	9047AF		
BR12	9107BB	L48-45 DEGREE	9048AF		
CUSH CLAMP SERIES	8500	NUT SERIES	8000		
F09	9003FF	OD SERIES	8250		
F11-F12	9002FF	P10SQ	9092PB		
F14-F18	9001FF	P11	9093PB		
F20	9006FF	P11F	9090PB		
F22	9004FF	P11SQ	9094PB		
F23	9007FF	P13F (3-1/8" X 8" BASE)	9091PB		
F25	9016FF	P13	9095PB		
F26	9009FF	P15	9088PB		
F27	9010FF	RIGD SERIES	8200		
F28	9017FF	SPRA SERIES	8100		
F30	9013FF	SPRC SERIES	8050		
F31	9018FF	TSN SERIES	8150		
F32	9019FF	U11	9049UF		
F33	9015FF	U12	9056UF		
F34	9020FF	U13 (7-1/4")	9054UF		
F35	9012FF	U16	9057UF		



## Catalog Cross Reference Listing UNISTRUT

CHANNEL DENOTED BY BLUE SHADING

UNISTRUT	I.T.P.	UNISTRUT	I.T.P.	UNISTRUT	I.T.P.
P1000	7000	P1068 (1-5/8" X 2-1/4")	9023CA	P2027CC	8300CTP/8300CT SERIES
P1000T	7001	P1109- P1126	8200	P2029CC	8300CTP/8300CT SERIES
P1001	7000A	P1109SS-P1126ASS	8200SS	P2031CC	8300CTP/8300CT SERIES
P1001T	7001A	P1117CC	8300CTP/8300CT SERIES	P2033CC	8300CTP/8300CT SERIES
P1100	7100	P1117E-P1120E	8250 SERIES	P2035CC	8300CTP/8300CT SERIES
P1100T	7101	P1118CC	8300CTP/8300CT SERIES	P2039CC	8300CTP/8300CT SERIES
P3265 (10 FT)	7225	P1186	9047AF	P2043CC	8300CTP/8300CT SERIES
P3270 (20 FT)	7225	P1211	8350 SERIES	P2047CC	8300CTP/8300CT SERIES
P4100	7200	P1212	8350 SERIES	P2051CC	8300CTP/8300CT SERIES
P4100T	7201	P1213	8350 SERIES	P2055CC	8300CTP/8300CT SERIES
P5000	7250	P1214	8350 SERIES	P2063CC	8300CTP/8300CT SERIES
P5000T	7251	P1215	8350 SERIES	P2070-61CC	8300CTP/8300CT SERIES
P5500	7230	P1217	8350 SERIES	P2070-83	8250 SERIES
P5500T	7231	P1272S	9082BC	P2072A	9093PB
P5501	7240	P1325	9030CA	P2073A	9095PB
P5501T	7241	P1326	9027CA	P2101	9044AF
004T008	8500 SERIES	P1334	9012FF	P2223	9066WF
006T010	8500 SERIES	P1346	9028CA	P2224	9069WF
008T012	8500 SERIES	P1356	9013FF	P2225	9072WF
010T014	8500 SERIES	P1357 (1-5/8" X 2-1/4")	9035CA	P2227	9075WF
012T016	8500 SERIES	P1358	9018FF	P2228	9077WF
014T018	8500 SERIES	P1359	9036CA	P2229	9079WF
016T020	8500 SERIES	P1377	9052UF	P2235 (3-1/2" X 4-1/8")	9038CA
018T022	8500 SERIES	P1379S	9084BC	P2324	9010FF
020T024	8500 SERIES	P1380	9015FF	P2325	9009FF
022T026	8500 SERIES	P1380 A	9014FF	P2341 L	9068WF
024N028	8500 SERIES	P1386	9081BC	P2341 R	9067WF
026N030	8500 SERIES	P1430E	8250 SERIES	P2343-L	9074WF
028N032	8500 SERIES	P1453	9064ZF	P2343-R	9073WF
030N034	8500 SERIES	P1454	9058ZF	P2345	9076WF
032N036	8500 SERIES	P1458	9026CA	P2346	9078WF
034N040	8500 SERIES	P1546	9045AF	P2347	9080WF
038N044	8500 SERIES	P1579	9037CA	P2471 (3/4")	9001FF SERIES
042N048	8500 SERIES	P1726	9019FF	P2484 (4" X 4")	9032CA
050N056	8500 SERIES	P1728	9039CA	P2484W (4" X 4")	9033CA
066N074	8500 SERIES	P1737	9057UF	P2490 (7/8")	9001FF SERIES
P1006-P1024	8100	P1747	9029CA	P2558 SERIES	9110HD
P1012	8000 SERIES	P1750	9025CA	P2600	8550
P1023	8000 SERIES	P1769	9103BB	P2626 (2-1/8" X 2-1/8")	9024CA
P1024	8000 SERIES	P1771	9104BB	P2785	9086BC
P1026 (1-7/8" X 2")	9022CA	P1773	9105BB	P2786	9087BC
P1028	9017FF	P1775	9106BB	P2863 (3/8")	9002FF SERIES
P1031	9016FF	P1777	9107BB	P2864 (1/2")	9002FF SERIES
P1036	9011FF	P1796S	9085BC	P3006-P3010	8000 SERIES
P1043A	9055UF	P1873	9020FF	P3045	9061ZF
P1045	9062ZF	P1887	9088PB	P3047	9051UF
P1047	9053UF	P1924	9004FF	P4006-P4010	8050 SERIES
P1048	9054UF	P1941	9008FF	P4012S	8050 SERIES
P1063 (3/8")	9001FF SERIES	P1950	9021FF	P4045	9059ZF
P1064 (1/2")	9001FF SERIES	P1964 (5/8")	9001FF SERIES	P4047	9049UF
P1065	9003FF	P1985S	9083BC	P5545	9063ZF
P1066	9006FF	P2024E-2070-70E	8250 SERIES	P5547	9056UF
P1067	9007FF	P2026CC	8300CTP/8300CT SERIES		



## INDEX BY PRODUCT NAME

Product Name	Page	Figure #	Product Name	Page	Figure #
"Fast Clamp" Sway Brace Attachment	139	1000	Corner Connections	212	9066WF-9080WF
"HANDY SPLIT" RING HANGER	23	40HS	Corporation Eye Bolt	72	575
"In-Line" Sway Brace Attachment	129	4L	Cushion Pipe Wrap	199	8550
"In-Line" Sway Brace Attachment	130	4LA	Double Bolt Pipe Clamp	65	189, 189A, 189H
"U" Supports	209	9049UF-9057UF	Double Expansion Shields	90	79
"Z" Supports	210	9058ZF-9065ZF	Drive Screw	86	59
1/4" Beam Clamp	49	60G	Drop In Anchor	87	73
12-14 Gauge Struts	184	7000-7251	DWV Hanger	38	237
4-Way Sway Brace Attachment	135	907	Electrical Rod Support Clamp	50	63
5-Hole Corner Angle 3-3/4 x 5-3/4)	218	9150CA	Extended C-Clamp with Locknut	48	25L
Adjustable Bolt On Flange Support Kit	113	431KT	Extended Pipe Clamp	64	97
Adjustable Clevis Hanger	20	110, 110GI	Extension Piece	54	157
Adjustable Pipe Roller Stand	102	280S, 280SS	Eye Rod	80	26, 26W
Adjustable Pipe Saddle Support	109	426	Eye Socket	80	47
Adjustable Pipe Saddle Support Kit	111	428KT	Fast Attach – Universal Swivel Sway Brace Attachment	138	981
Adjustable Pipe Saddle Support with U-Bolt	110	427	Fender Washer	82	52F
Adjustable Pipe Saddle Support with U-Bolt Kit	112	429KT	Flange Plates	25	41AB
Adjustable Pipe Support	107	421, 422	Flat Top Clevis Hanger	16	11F
Adjustable Rod Beam Clamp	53	159	Forged Steel Clevis	176	909, 909I
Adjustable Roller Hanger	40	272, 272SS	Four Bolt Socket Clamp	72	595
Adjustable Roller Support	175	271	Four Section Rodding Band	71	570
Adjustable Swivel Ring Hanger	32	310G, 310CT, 310CTI, 310NF	Hanger Bolts	84	55
Adjustable Two-Rod Roller Hanger	43	277, 277S	Hanger Flange Plate	24	41A
Adjustable Two-Rod Roller Support	42	273	Hanger Rod	85	57
Anchor Bolt	89	77	Heavy Beam Clamp Assembly	56	450
Angle Bracket	83	53	Heavy Duty Brackets	217	9103BB-9109BB
Bar Joist Sway Brace Attachment To Steel	133	825, 825A	Heavy Duty Riser Clamp	62	50HD
Bath Tub Wedge	171	200	Heavy Duty Two-Bolt Pipe Clamp	70	216
Band Hanger	30	31	Heavy Welded Bracket	98	802
Beam Clamp	51	150	Hex Head Bolt	86	58
Bevel Washer	87	72	Hex Lag Screw	88	74
Boca Safety Plate	174	242G, 242GSN	Hex Nut	85	56, 56H
Cast Iron DWV Hanger	183	V6600	Junior Top Beam Clamp	50	62
Clevis Hanger with Extended Bottom	19	11X	Knee Braces	208	9040CA-9043CA
Clevis Hanger with Welded Shield	18	11WS	Light Duty U-Bolt (Less Nuts)	159	37
Clevis Hanger, Ductile Iron	15	11CI	Light Welded Bracket	97	800
Clevis Hanger	14	11, 11GI	Light Welded Steel Bracket and Clip	99	820, 820C
Concrete Clevis Plate	161	67	Lock Washer	83	52L
Concrete Insert	92	81, 81N	Machine Eyebolt	77	26M
Concrete Rod Attachment	161	68	Malleable Beam Clamp with Extension Piece	55	229
Conduit Clamp	200	8575	Malleable Concrete Insert Box	177	982
Continuous Threaded Rod	84	54	Malleable Iron Center Load Beam Clamp	54	218
Copper Band Hanger	31	31CT, 31CTI	Malleable Iron Clamp with Locknut	47	23L
Copper Clevis Hanger	21	110CT, 110CTI	Malleable Iron Insert Nut	178	983
Corner Angles & Gussets	205	9022CA-9039CA	Manhole Drop Pipe Clamp	75	903
			Medium Welded Bracket	98	801



## INDEX BY PRODUCT NAME

Product Name	Page	Figure #	Product Name	Page	Figure #
Metal Deck Anchor Bolt	94	685	Short Clip	118	180
Milford Hanger	37	131CT	Shoulder Eyebolt	79	26DFS
Mini Drop-In Anchors	88	73SD	Side Beam Bracket	171	202
Nail Plate	173	241, 243	Side Beam Connector	166	153
Nailing Sleeve	114	900	Side Steel Beam Clamp	52	156
Natick Hangers	35	127CT	Slide Plates	128	4100
Neoprene Hanger	103	34	Socket Clamp	74	600
No-Thread Swivel Sway Brace Attachment	136	909SA	Socket Clamp Washer	73	599
Offset J-Hook	165	146	Split Ring Extension Hanger	24	41, 41CT, 41H, 41HCT, 41SSI, 41SXI
Offset Pipe Clamp	63	95	Split Ring Hanger	25	41B
One Hole Clamp	117	126	Split Sleeve	114	901
One Hole Pipe Strap	122	233, 233SS, 233OD	Spring Wing Toggle and Bolt	92	83
Open & Closed Angles	208	9044AF-9048AF	Spring Wing Toggle Head Only	93	84
Perforated Hanger Strapping	39	239	Spring-Flex and Neoprene Hanger	105	36
Pipe Alignment Guide	125	255	Spring-Flex Hanger	104	35
Pipe Alignment Guide	126	256	Square Strut Washer	201	9001FF
Pipe Clamp for Sway Bracing	132	4B	Square Washer with Guides	201	9002FF
Pipe Covering Protection Shield	167	167, 167MMS	Standard Steel Pipe Clamp	68	212
Pipe Link Seals	150	PS	Standard U-Bolt with 4 Hex Nuts	164	137
Pipe Roller Stand	101	279S, 279SS	Steel Beam Clamp	52	155
Pipe Saddle Support	106	420	Steel C-Clamp	45	21, 21L, 21LI
Pipe Saddle Support with U-Bolt	108	425	Steel Washer Plate	89	75
Pipe Sleeve with Welded Lugs	115	910	Structural Welding Lug	162	69
Pipe Slide Tee	127	4000	Strut Beam Clamp	214	9081BC-9087BC
Plastic Coated Clevis Hanger	22	110PC	Strut Clamps	196	8200-8500
Plastic Crete-Sleeves	116	PCS	Strut Nuts	195	8000-8150
Plates & Gussets	201	9003FF-9021FF	Stud Guard	172	240, 245
Post Bases	215	9088PB-9095PB	Sway Brace Attachment	140	1001
Purlin Clamp	47	24	Top Beam Clamp	49	61
Q Deck Sleeve	114	902	Turnbuckle	94	320, 320I
Reducing Rod Coupling	81	51R	Turnbuckle Adjuster	93	58
Regular Eyebolt	77	26DF	Two Hole Hold Down Clamp	200	9110HD
Retaining Strap	46	21R	Two Hole Knee Brace	204	9040CA-9043CA
Retaining Strap	46	22R	Two Hole Pipe Strap	119	231
Return Line Angle	166	152	Universal Swivel Sway Brace Attachment to Steel	134	828
Return Line Straight J-Hook	165	145	Universal Swivel Sway Brace Attachment	137	980
Right Angle Clamp	163	136	V Bottom Clevis Hanger	17	11V
Riser Clamp	58	50, 50CT, 50CTI	Van (Bell) Hanger	36	129B
Riser Clamp for Plastic Pipe	57	48, 49PC	V-Channel	158	12
Rod Coupling	81	51	Waterproof Sleeve	115	229
Roller Chair	100	275	Wedge Anchor	91	80
Rooftop Supports	141	DBS	Welding Beam Attachment	160	66L, 66W
Round Steel Washer	82	52	Weldless Eyenut	76	13, 13I, 13L
Saddle Washer	219	UW450	Wire Pipe Hook	124	235, 235CT
Short Arm Riser Clamp	61	50SA			



**INDEX BY PRODUCT FIGURE NUMBER**

FIGURE #	PAGE #	FIGURE #	PAGE #	FIGURE #	PAGE #	FIGURE #	PAGE #
4L	129	72, 73	87	271	175	7200, 7201	188-189
4LA	130-131	73SD, 74	88	272, 272SS	40, 41	7225	190
4B	131	75, 77	89	273	42	7230, 7231	191-192
11, 11GI	14	79	90	275	100	7241, 7240	191-192
11CI	15	80	91	277	43	7250, 7251	193-194
11F	16	81, 81N, 83	92	277SS	44	8000, 8050, 8100	195
11V	17	84	93	279S, 279SS	101	8150, 8200, 8200SS	196
11WS	18	95	63	280S, 280SS	102	8250	197
11X	19	97	64	310G	32	8300CT, 8300CTP & 8350	198
12	158	110, 110GI	20	310CT, 310CTI	33	8500, 8550	199
13, 13I, 13L	76	110CT, 110CTI	21	310NF	34	8575	200
21, 21L, 21LI	45	110PC	22	320, 320I	94	9001FF - 9003FF	201
21R, 22R	46	114	93	420	106	9004FF - 9009FF	202
23L, 24	47	126	117	421, 422	107	9010FF - 9015FF	203
25L	48	127CT	35	425	108	9016FF - 9021FF	204
26, 26W	80	129B, 129CT, 129CTP	36	426	109	9022CA - 9027CA	205
26DF, 26DFS, 26M	77 - 79	131CT,	37	427	110	9028CA - 9033CA	206
31	30	136	163	428KT	111	9034CA - 9039CA	207
31CT, 31CTI	31	137	164	429KT	112	9040CA - 9043CA	208
34	103	145, 146	165	431KT	113	9044AF - 9046AF	208
35	104	150	51	450	56	9047AF - 9048AF	209
36	105	152, 153	165	570	71	9049UF - 9052UF	209
37	159	155, 156	52	575, 595	72	9053UF - 9057UF	210
40HS	23	157	54	599, 599A	73	9058ZF	210
41, 41A	24	158, 159	53	600	74	9059ZF-9064ZF	211
41AB, 41B	25	167	167-168	685	94	9065ZF	212
41CT,	26	167MMS, 167MSS	169-170	800	97	9066WF - 9070WF	212
41H	27	180	117	801, 802	98	9071WF-9076WF	213
41HCT	28	189	65	820, 820C	99	9077WF - 9080WF	214
41SSI, 41SXI	29	189A	66	825, 825A	133	9081BC, 9082BC	214
47	80	189H	67	828	134	9083BC - 9087BC	215
48, 49PC	57	200, 202	171	900, 901, 902	114	9088PB	215
50	58	212, 212DIP	68, 69	903	75	9089PB-9094PB	216
50CT, 50CTI	60	216	70	907	135	9095PB	217
50DIP	59	218	54	909, 909I	176	9103BB - 9107BB	217
50HD	62	229	55	909SA	136	9108BB - 9109BB	218
50SA	61	231	119	910, 915	115	9110HD	200
51, 51R	81	231CT	120	980	137	9150CA	218
52, 52F	82	231SS, 231OD	121	981	138	UW-450,	219
52L, 53	83	233	122	982	177	PB-280-FL PLTD	219
54, 55	84	233SS, 233OD	123	983	178	PB-2064 PLTD	219
56, 56H, 57	85	235, 235CT	124	1000	139	PB-2064-FL PLTD	219
58, 59	86	237	38	1001	140	PB-3064-SQ PLTD	219
60G, 61	49	239	39	1900-1905	179-182	V6600	183
62, 63	50	240, 245	172	4000	127	EZ18	95
63EWM	51	241, 243	173	4100	128	PAK10, PAK14	95
66L, 66W	160	242G, 242GSN	174	7000, 7001	184-185	LSA516	96
67, 68	161	255	125	7000A, 7001A	184-185	BI	96
69L, 69S	162	256	126	7100, 7101	186-187	WK	96





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