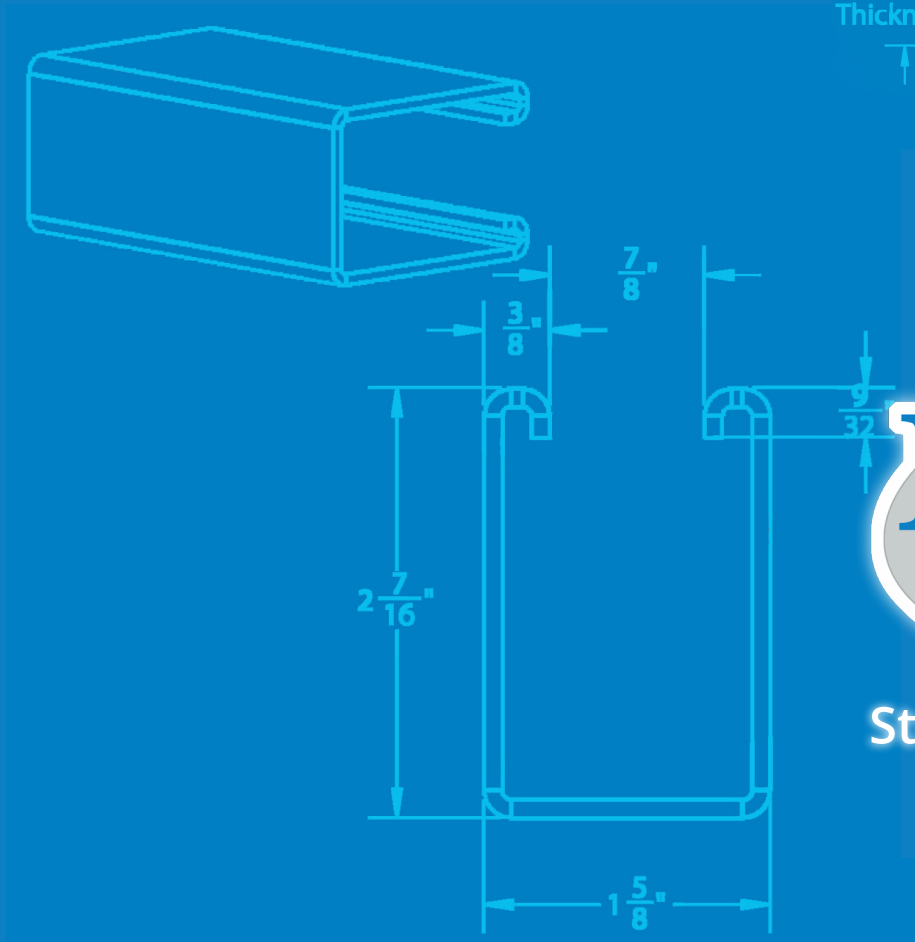
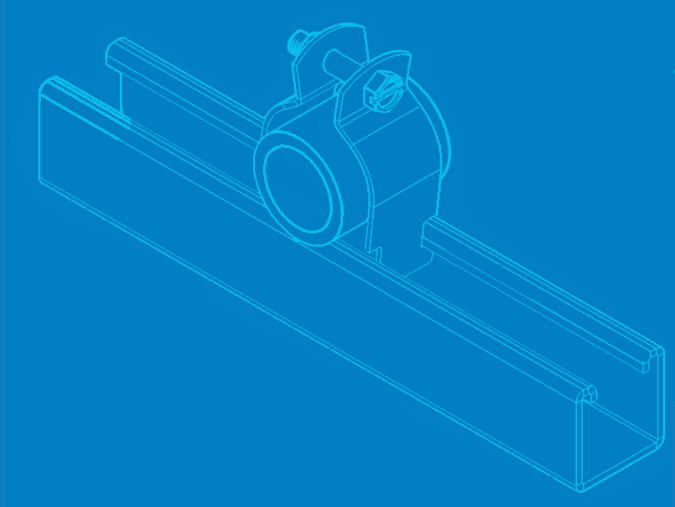
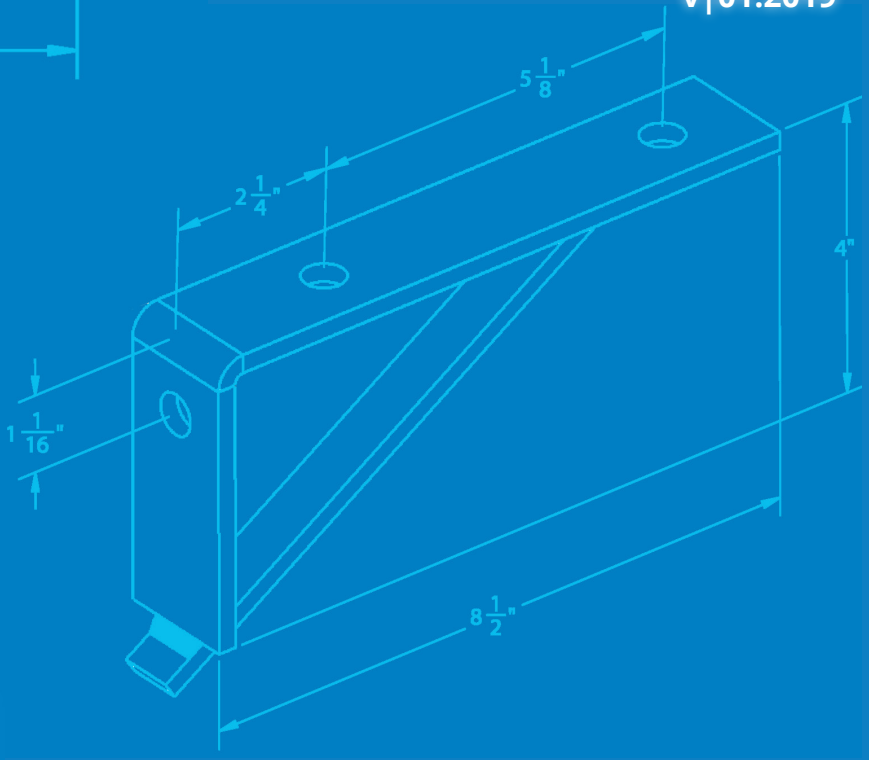


EMPIRE
INDUSTRIES, INC

Strut and Strut Accessories Engineering Catalog.

v|01.2019





Empire Industries, Inc. is proud to present its new Strut and Strut accessory Engineering Catalog, Version 01.2019. This catalog contains our complete line of strut and strut accessories. The products listed in this catalog service the residential, commercial and industrial piping markets.

Established in 1942, Empire is a privately owned, third generation family business with its main plant (55,000sq. ft.) located in Manchester, CT. Empire also supplies specialty stampings and castings for the marine, hardware, aftermarket automotive and sporting goods industries.

Empire Industries ownership, management and employees take a tremendous amount of pride in making sure its customers receive the best quality product and customer service in the industry. We have the people and knowledge to respond quickly to customer requirements for standard items as well as custom fabricated and specialty finished products.

Products offered for sale in this catalog are designed and manufactured for use in systems only as described herein. Empire is not responsible for injuries and damage which may result from improper and or negligent installation of these products. Product design is subject to change without notification.

For additional information about our company or products, please call our factory direct. For the most up to date product offerings, specifications and industry relevant documentation, visit our website and eCatalog at empireindustries.com.

We appreciate the opportunity to serve your needs.

Sincerely,
Empire Industries, Inc and its Employees

MATERIALS/FINISHES

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

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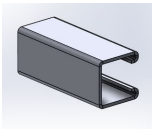
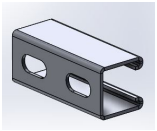
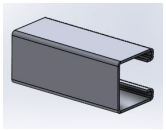
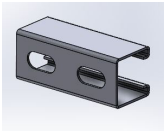
6 
FIG. 7000
1-5/8 x 1-5/8
12ga solid strut
channel

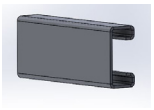
6
FIG. 7000A
1-5/8 x 1-5/8 12ga solid
back to back strut channel

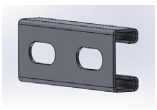
6 
FIG. 7001
1-5/8 x 1-5/8
12ga slotted
strut channel

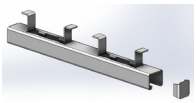
6
FIG. 7001A
1-5/8 x 1-5/8 12ga slotted
back to back strut channel

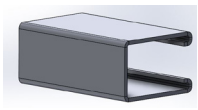
8 
FIG. 7100
1-5/8 x 1-5/8
14ga solid strut
channel

8 
FIG. 7101
1-5/8 x 1-5/8
14ga slotted
strut channel

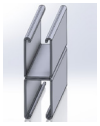
10 
FIG. 7200
13/16 x 1-5/8
14ga solid strut
channel

10 
FIG. 7201
13/16 x 1-5/8
14ga slotted
strut channel

12 
FIG. 7225
1-3/8 x 1-5/8
12ga continuous
concrete insert

14 
FIG. 7230
2-7/16 x 1-5/8
12ga solid strut
channel

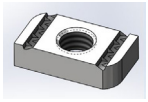
14
FIG. 7231
2-7/16 x 1-5/8
12ga slotted
strut channel

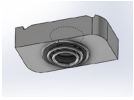
14 
FIG. 7241
2-7/16 x 1-5/8
12ga solid back
to back strut
channel

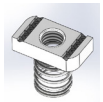
14
FIG. 7240
2-7/16 x 1-5/8
12ga slotted
back to back
strut channel

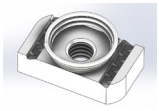
16
FIG. 7250
3-1/4 x 1-5/8
12ga solid strut
channel

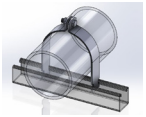
16
FIG. 7251
3-1/4 x 1-5/8
12ga slotted
strut channel

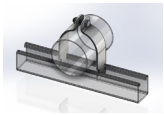
18 
FIG. 8000
strut nut
without spring

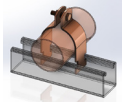
18 
FIG. 8050
strut nut
with short
spring

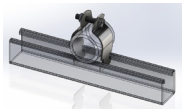
18 
FIG. 8100
strut nut
with regular
spring

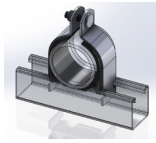
18 
FIG. 8150
top spring
strut nut

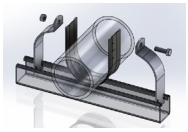
19 
FIG. 8200
rigid IPS strut clamp
assembled

20 
FIG. 8250
OD tubing strut clamp
assembled

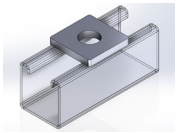
21 
FIG. 8300CT / CTP
copper tubing strut
clamp, assembled -
copper epoxy (copper-
gard) / copper plated

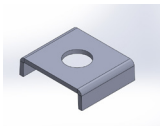
21 
FIG. 8350
universal strut clamp
assembled

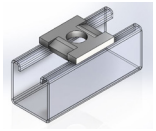
22 
FIG. 8500
cushion strut clamp

22 
FIG. 8550
cushion pipe wrap

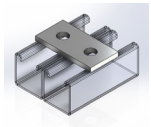
23
FIG. 8575
conduit clamp
with bolt and nut

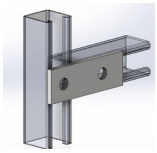
24 
FIG. 9001FF
square strut washer
1-5/8 x 1-5/8

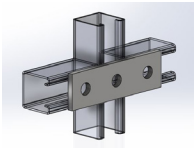
24 
FIG. 9001UFF
u-saddle strut
washer
1-5/8 x 1-5/8

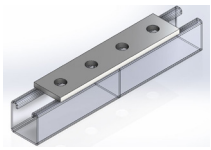
24 
FIG. 9002FF
square strut washer
with guides
1-5/8 x 1-5/8

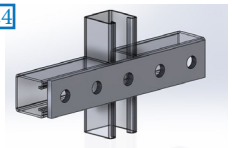
24
FIG. 9003FF
2-hole splice plate
1-5/8 x 3-1/2

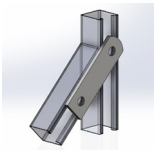
24 
FIG. 9004FF
2-hole splice plate
side by side strut
1-5/8 x 3-1/4

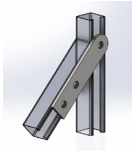
24 
FIG. 9005FF
2-hole splice plate
1-5/8 x 4-5/8

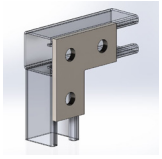
24 
FIG. 9006FF
3-hole splice plate
1-5/8 x 5-3/8

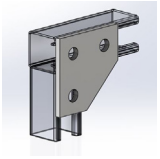
24 
FIG. 9007FF
4-hole splice plate
1-5/8 x 7-1/4

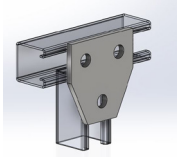
24 
FIG. 9008FF
5-hole splice plate
1-5/8 x 9-1/8

25 
FIG. 9009FF
2-hole swivel plate
1-5/8 x 5-1/4

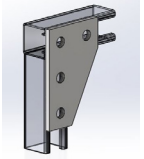
25 
FIG. 9010FF
3-hole swivel plate
1-5/8 x 7-1/8

25 
FIG. 9011FF
3-hole corner plate
3-1/2 x 3-1/2

25 
FIG. 9012FF
3-hole corner gusset
3-1/2 x 3-1/2

26 
FIG. 9013FF
3-hole tee gusset
3-1/2 x 3-1/2

25
FIG. 9014FF
4-hole corner plate
3-1/2 x 5-3/8

25 
FIG. 9015FF
4-hole corner gusset
3-1/2 x 5-3/8

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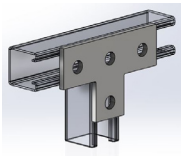
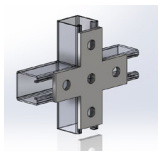
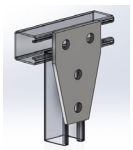
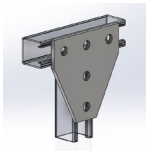
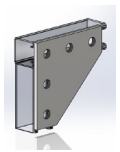
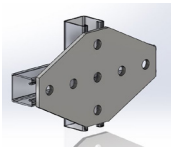
26 
FIG. 9016FF
4-hole tee plate
3-1/2 x 5-3/8

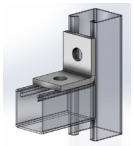
26 
FIG. 9017FF
5-hole cross plate
5-3/8 x 5-3/8

26 
FIG. 9018FF
4-hole tee gusset
3-1/2 x 5-3/8

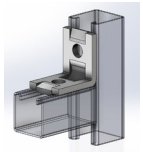
26 
FIG. 9019FF
5-hole tee gusset
5-3/8 x 5-3/8

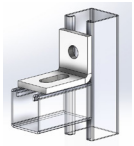
25 
FIG. 9020FF
5-hole corner gusset
5-3/8 x 5-3/8

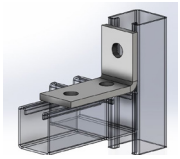
26 
FIG. 9021FF
7-hole cross gusset
5-3/8 x 9-1/8

27 
FIG. 9022CA
2-hole corner angle
1-7/8 x 2

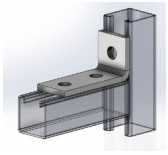
27
FIG. 9023CA
2-hole corner angle
1-5/8 x 2-1/4

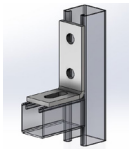
27 
FIG. 9024CA
2-hole corner angle
with guides
2-1/8 x 2-1/8

27 
FIG. 9025CA
1-hole adjustable corner
angle with slot
1-7/8 x 2-5/8

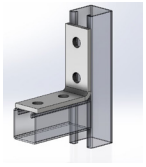
27 
FIG. 9026CA
3-hole corner angle
2-1/4 x 3-1/2

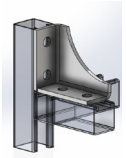
27
FIG. 9027CA
3-hole corner angle
1-5/8 x 4-1/8

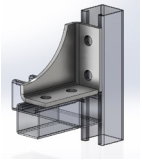
27 
FIG. 9028CA
3-hole corner angle
1-7/8 x 3-7/8

27 
FIG. 9029CA
2-hole adjustable corner
angle with slot
2-5/8 x 3-7/8

27
FIG. 9030CA
4-hole corner angle
3-1/2 x 4-1/8

27 
FIG. 9031CA
4-hole corner angle
3-3/4 x 3-7/8

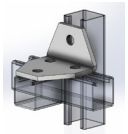
27 
FIG. 9032CA
4-hole webbed
corner angle, RH
3-3/4 x 4-1/8

27 
FIG. 9033CA
4-hole webbed
corner angle, LH
3-3/4 x 4-1/8

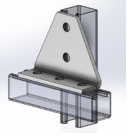
28
FIG. 9034CA
7-hole universal
corner angle
4-1/8 x 4-1/8

28
FIG. 9035CA
3-hole shelf gusset
angle
4-1/8 x 4-1/8

28
FIG. 9036CA
4-hole shelf gusset
angle
1-5/8 x 4-1/8

28 
FIG. 9037CA
4-hole shelf gusset
3 way angle
2-1/4 x 3-1/2

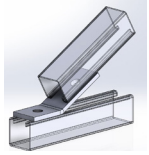
28
FIG. 9038CA
5-hole shelf gusset
3 way angle
3-1/2 x 4-1/8

28 
FIG. 9039CA
5-hole shelf gusset
angle
1-5/8 x 4-1/8

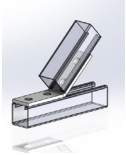
28
FIG. 9040CA
2-hole 45˚ knee
brace, 12”

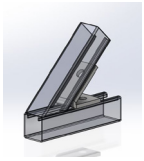
28
FIG. 9042CA
2-hole 45˚ knee
brace, 18”

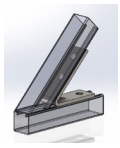
28
FIG. 9043CA
2-hole 45˚ knee
brace, 24”

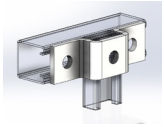
29 
FIG. 9044AF
2-hole open angle
30˚
2-3/8 x 3-1/8

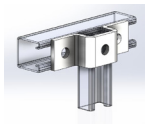
29
FIG. 9045AF
2-hole open angle
45˚
2-3/8 x 3-1/8

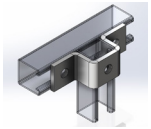
29 
FIG. 9046AF
4-hole open angle
45˚
3-1/2 x 3-11/16

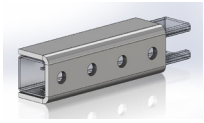
29 
FIG. 9047AF
2-hole closed angle
45˚
2-1/2 x 3-1/2

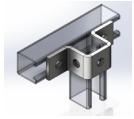
29 
FIG. 9048AF
4-hole closed angle
45˚
4-3/8 x 5

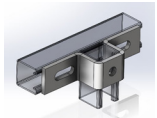
30 
FIG. 9049UF
3-hole “u” support
for
1-5/8 x 13/16 strut

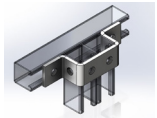
30 
FIG. 9050UF
3-hole “u” support
for
1-5/8 x 1 strut

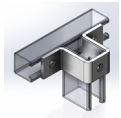
30 
FIG. 9051UF
3-hole “u” support
for
1-5/8 x 1-3/8 strut

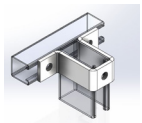
30 
FIG. 9052UF
4-hole splice clevis
for
1-5/8 x 1-5/8 strut

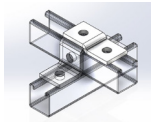
30 
FIG. 9053UF
5-hole “u” support
for
1-5/8 x 1-5/8 strut

30 
FIG. 9054UF
adjustable 1-hole,
2-slot “u” support
for
1-5/8 x 1-5/8 strut

30 
FIG. 9055UF
6-hole “u” support
for double
1-5/8 x 1-5/8 strut

30 
FIG. 9056UF
3-hole “u” support
for
1-5/8 x 2-7/16 strut

30 
FIG. 9057UF
3-hole “u” support
for
1-5/8 x 3-1/4 strut

31 
FIG. 9058ZF
2-hole offset “z”
support

31

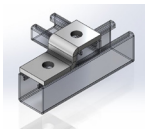


FIG. 9058ZF
2-hole offset "z" support

31

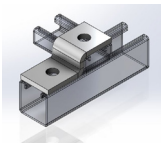


FIG. 9059ZF
2-hole "z" support for 1-5/8 x 13/16 strut

31

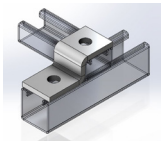


FIG. 9060ZF
2-hole "z" support for 1-5/8 x 1 strut

31

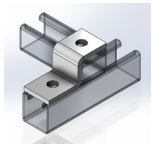


FIG. 9061ZF
2-hole "z" support for 1-5/8 x 1-3/8 strut

31

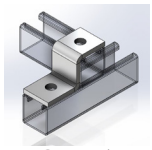


FIG. 9062ZF
2-hole "z" support for 1-5/8 x 1-5/8 strut

31

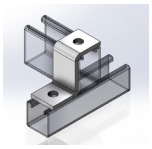


FIG. 9063ZF
2-hole "z" support for 1-5/8 x 2-7/16 strut

31

FIG. 9064ZF
2-hole "z" support for 1-5/8 x3-1/4 strut or strut combination

31

FIG. 9065ZF
adjustable offset gusetted "z" support

32

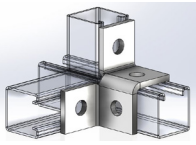


FIG. 9066WF
4-hole double corner connection

32

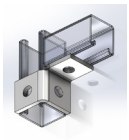


FIG. 9067WF
2-hole single corner connection, RH

32

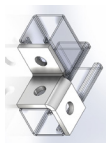


FIG. 9068WF
2-hole single corner connection, LH

32

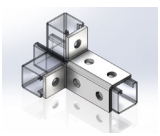


FIG. 9069WF
6-hole double corner connection

32

FIG. 9070WF
5-hole single corner connection, RH

32

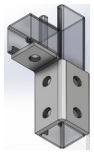


FIG. 9071WF
5-hole single corner connection, LH

32

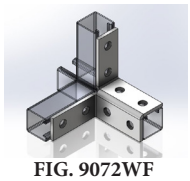


FIG. 9072WF
8-hole double corner connection

32

FIG. 9073WF
6-hole single corner connection, RH

33

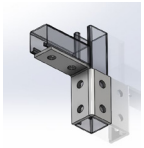


FIG. 9074WF
6-hole single corner connection, LH

33

FIG. 9075WF
6-hole triple wing connection

33

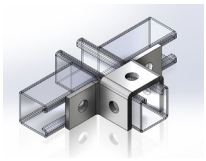


FIG. 9076WF
5-hole double wing connection

33

FIG. 9077WF
9-hole triple wing connection

33

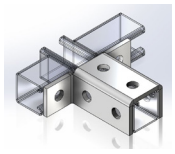


FIG. 9078WF
8-hole double wing connection

33

FIG. 9079WF
12-hole triple wing connection

33

FIG. 9080WF
10-hole double wing connection

34

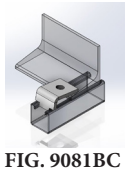


FIG. 9081BC
strut beam clamp, notched

34

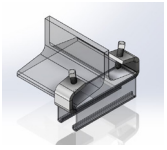


FIG. 9082BC
strut beam clamp, light duty. 1/4" thick

34

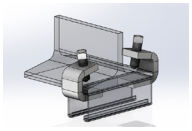


FIG. 9083BC
strut beam clamp, heavy duty. 3/8" thick

34

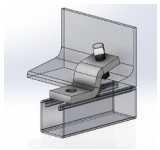


FIG. 9084BC
strut "z" beam clamp, heavy duty

34

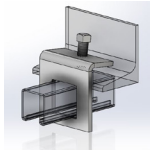


FIG. 9085BC
strut beam clamp, window type for 1-5/8 strut

34

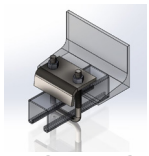


FIG. 9086BC
strut u-bolt beam clamp for 13/16 and 1-5/8 strut

34

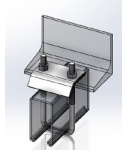


FIG. 9087BC
strut u-bolt beam clamp for 2-7/16 and 3-1/4 strut

35

FIG. 7505RT
mini rooftop support block

35

FIG. 7510RT
rooftop support block

36

FIG. 7510RTE
rooftop support block w/ adjustable elevated strut channel

36

FIG. 7520RT
rooftop support block 20" w/ 13/16" pre-galv strut

37

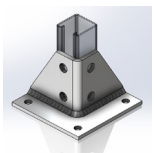


FIG. 9088PB
post base for 1-5/8 x 1-5/8 strut, 5-1/8 base

37

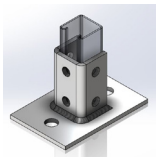


FIG. 9089PB
post base for 1-5/8 x 1-5/8 strut, 4 x 6 base

37

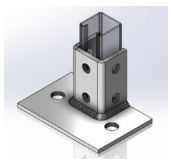


FIG. 9090PB
post base - flush mount for 1-5/8 x 1-5/8 strut, 4 x 6 base

37

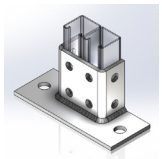


FIG. 9091PB
post base for 1-5/8 x 3-1/4 strut, 4 x 7 base

37

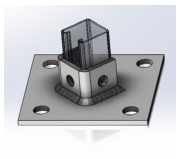


FIG. 9092PB
post base for 1-5/8 x 3-1/4 strut, 6 base

37

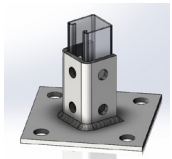


FIG. 9093PB
post base - diagonal for 1-5/8 x 1-5/8 strut, 6 base

37

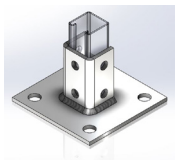


FIG. 9094PB
post base - square for 1-5/8 x 1-5/8 strut, 6 base

37

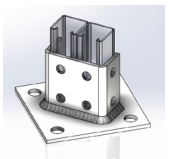


FIG. 9095PB
post base for 1-5/8 x 3-1/4 strut, 6 base

PICTORAL INDEX

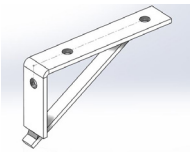
38 

FIG. 9103BB - FIG. 9109BB
heavy duty brackets, 8-1/2 - 20-1/2

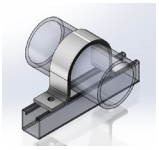
39 

FIG. 9110HD
2-hole hold down clamp

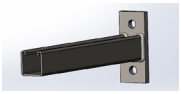
39 

FIG. 9200
single channel reversible bracket

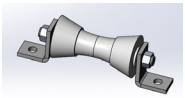
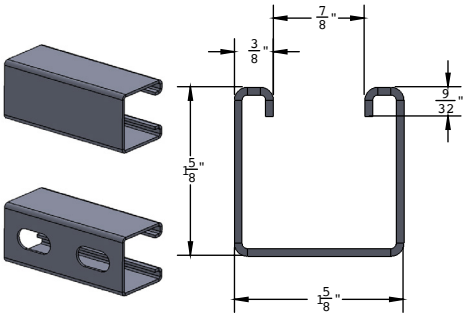
40 

FIG. 9650Z
strut roller support

SERIES: 7000
strut channel

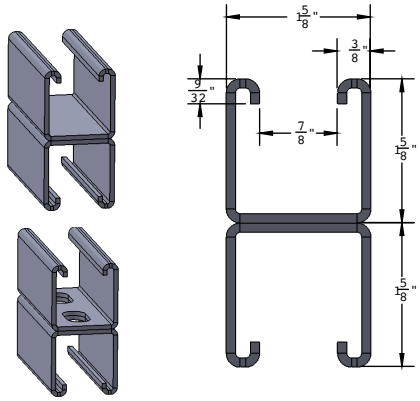
7000 7001
12 ga strut solid and slotted
1-5/8" x 1-5/8"



Domestically Manufactured

Type:	7000 (Solid)	7001 (Slotted)
Materials/Finishes:	Zinc Plated (7000Z)	Zinc Plated (7001Z)
	T-304 Stainless (7000SS)	T-304 Stainless (7001SS)
	T-316 Stainless (7000SX)	T-316 Stainless (7001SX)
Lengths:	10' & 20'	10' & 20'
WGT/FT (lbs):	1.90	1.85

7000A 7001A
12 ga back to back strut
solid and slotted
1-5/8" x 1-5/8"

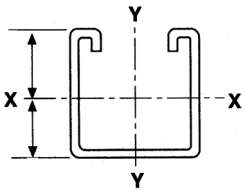


Domestically Manufactured

Type:	7000A (Solid)	7001A (Slotted)
Materials/Finishes:	Zinc Plated (7000AZ)	Zinc Plated (7001AZ)
	T-304 Stainless (7000ASS)	T-304 Stainless (7001ASS)
	T-316 Stainless (7000ASX)	T-316 Stainless (7001ASX)
Lengths:	10' & 20'	10' & 20'
WGT/FT (lbs):	3.80	3.70

7000 & 7000A
technical data

PROPERTIES OF SECTION



			X-X Axis			Y-Y Axis		
EMPIRE FIGURE NUMBER	Wt./Ft. (Lbs)	Area of Section (Sq. In.)	I in 4	S in 3	r in	I in 4	S in 3	r in
7000	1.94	.552	0.188	0.208	0.584	0.236	0.290	0.654
7000A	3.88	1.104	0.947	0.583	0.926	0.473	0.582	0.655

I = Moment of Inertia

S = Section Modulus

r = Radious of Gyration

BEAM AND COLUMN LOADS

SPAN OR COLUMN (in)	EMPIRE 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 7000A	7,109 14,862	3,249 2,610	0.014 0.008	** **	** **
18	7000 7000A	6,549 14,402	2,116 2,610***	0.031 0.018	** **	** **
24	7000 7000A	5,938 13,919	1,625 2,610***	0.055 0.032	** **	** **
30	7000 7000A	5,337 13,437	1,300 2,610***	0.086 0.050	** **	1,257 **
36	7000 7000A	4,771 13,090	1,083 2,610***	0.124 0.072	** **	873 **
42	7000 7000A	4,242 12,771	928 2,610***	0.169 0.099	** **	641 **
48	7000 7000A	3,745 12,511	812 2,374	0.220 0.129	737 **	491 **
60	7000 7000A	3,012 11,685	650 1,899	0.344 0.202	471 **	314 1,566
72	7000 7000A	2,514 10,078	542 1,582	0.496 0.291	327 **	218 1,087
84	7000 7000A	2,136 8,180	464 1,356	0.675 0.396	240 1,199	160 799
96	7000 7000A	1,834 6,291	406 1,187	0.882 0.517	184 917	123 611
108	7000 7000A	1,585 4,971	361 1,055	1.116 0.655	145 725	97 483
120	7000 7000A	* 4,026	325 949	1.378 0.808	117 587	78 391
180	7000 7000A	* *	217 633	3.099 1.819	52 261	35 174
240	7000 7000A	* *	163 474	5.510 3.233	29 147	19 98

* Not Recommended - KL/r exceeds 200

** For these loads, the uniform beam capacity is lower than the L/240 or L/360 beam capacityand is therefore the governing restraint

*** Load limited by spotweld shear

NOTES

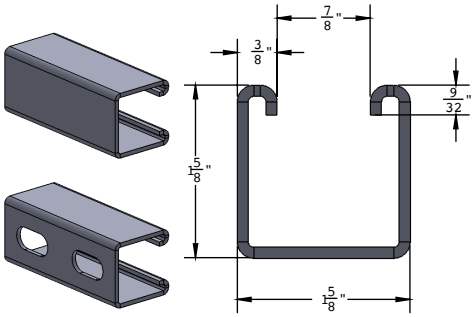
1.) The beam capacities shown above include the weight of the strut beam. The beam weight must be subtracted from these capacities to arrive at the net beam capacity.

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: 7/8" diameter knockout by 82%, 3/4" round hole by 85%, 9/16" round hole by 88%, 9/16" x 1-1/8" slotted by 88%, and 13/32" x 3" slotted by 90%.

SERIES: 7000
strut channel

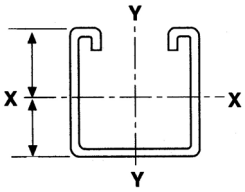
7100 7101
14 ga strut solid and slotted
1-5/8” x 1-5/8”



Domestically Manufactured

Type:	7100 (Solid)	7101 (Slotted)
Materials/Finishes:	Zinc Plated (7100Z)	Zinc Plated (7101Z)
	T-304 Stainless (7100SS)	T-304 Stainless (7101SS)
	T-316 Stainless (7100SX)	T-316 Stainless (7101SX)
Lengths:	10’ & 20’	10’ & 20’
WGT/FT (lbs):	1.40	1.36

PROPERTIES OF SECTION



			X-X Axis			Y-Y Axis		
EMPIRE FIGURE NUMBER	Wt./Ft. (Lbs)	Area of Section (Sq. In.)	I in 4	S in 3	r in	I in 4	S in 3	r in
7100	1.45	.416	0.149	0.166	0.598	0.183	0.225	0.663

I = Moment of Inertia

S = Section Modulus

r = Radious of Gyration

BEAM AND COLUMN LOADS

SPAN OR COLUMN (in)	EMPIRE 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

* Not Recommended - KL/r exceeds 200
** For these loads, the uniform beam capacity is lower than the L/240 or L/360 beam capacityand is therefore the governing restraint
*** Load limited by spotweld shear

NOTES

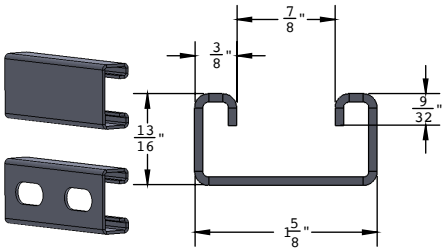
1.) The beam capacities shown above include the weight of the strut beam. The beam weight must be subtracted from these capacities to arrive at the net beam capacity.

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: 7/8" diameter knockout by 82%, 3/4" round hole by 85%, 9/16" round hole by 88%, 9/16" x 1-1/8" slotted by 88%, and 13/32" x 3" slotted by 90%.

SERIES: 7000
strut channel

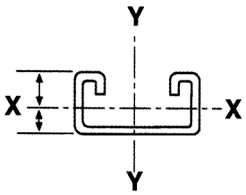
7200 7201
14 ga strut solid and slotted
13/16" x 1-5/8"



Domestically Manufactured

Type:	7200 (Solid)	7201 (Slotted)
Materials/Finishes:	Zinc Plated (7200Z)	Zinc Plated (7201Z)
	T-304 Stainless (7200SS)	T-304 Stainless (7201SS)
	T-316 Stainless (7200SX)	T-316 Stainless (7201SX)
Lengths:	10' & 20'	10' & 20'
WGT/FT (lbs):	.97	.87

PROPERTIES OF SECTION



			X-X Axis			Y-Y Axis		
EMPIRE FIGURE NUMBER	Wt./Ft. (Lbs)	Area of Section (Sq. In.)	I in 4	S in 3	r in	I in 4	S in 3	r in
7200	1.03	0.294	0.027	0.058	0.303	0.110	0.135	0.612

I = Moment of Inertia

S = Section Modulus

r = Radious of Gyration

BEAM AND COLUMN LOADS

SPAN OR COLUMN (in)	EMPIRE 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	2,449	296	0.240	185	123
42	7200	2,259	254	0.327	136	91
48	7200	*	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

* Not Recommended - KL/r exceeds 200
** For these loads, the uniform beam capacity is lower than the L/240 or L/360 beam capacityand is therefore the governing restraint
*** Load limited by spotweld shear

NOTES

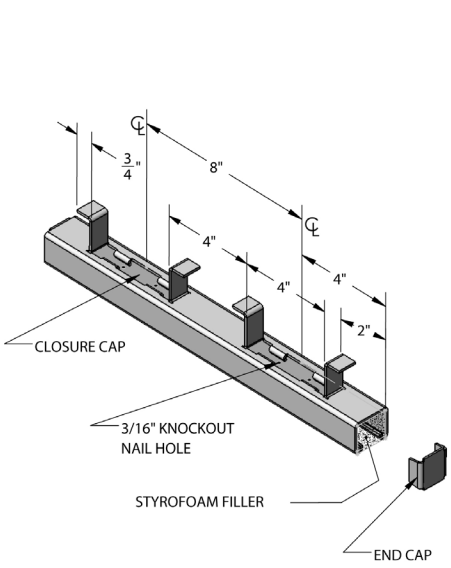
1.) The beam capacities shown above include the weight of the strut beam. The beam weight must be subtracted from these capacities to arrive at the net beam capacity.

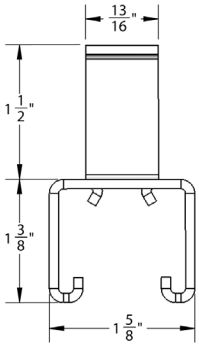
2.) Allowable beam loads are based on a uniform loaded, simply supported beam. For capacities of a beam loaded at midspan at a single point, multiply the beam capacity by 50% and deflection by 80%.

3.) **The above chart shows beam capacities for strut without holes.** For strut with holes, multiply the following: 7/8" diameter knockout by 82%, 3/4" round hole by 85%, 9/16" round hole by 88%, 9/16" x 1-1/8" slotted by 88%, and 13/32" x 3" slotted by 90%.

SERIES: 7000
strut channel

7225
12ga continuous concrete insert
1-3/8” x 1-5/8”





Type:	7225	
Materials/Finishes:	Plain (7225B)	Zinc Plated (7225Z)
Lengths:	10’ & 20’	10’ & 20’

Domestically Manufactured

Notes:

- Loading data was calculated in a concrete mix 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 dependant on the surrounding concrete.

- Tests were performed with a safety factor of 3 and in accordance with the MFMA Specifications.

- Concrete inserts are supplied with and end cap and either a styrofoam filler or plastic strip installed in the insert channel to prevent concrete seepage.

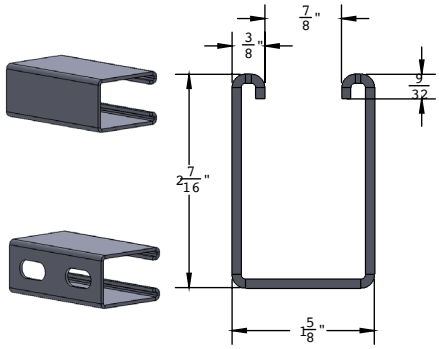
- Inserts should be secured to forms at 16" intervals.

- When ordering, please indacate finish and either foam filler or plastic closure.

EMPIRE FIGURE NUMBER	LENGTH (in)	WGT C. PCS	MAX ALLOWABLE LOAD / SECT.
7225	3	87	500
7225	4	103	800
7225	6	134	1000
7225	8	206	1200
7225	12	188	1800
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

SERIES: 7000
strut channel

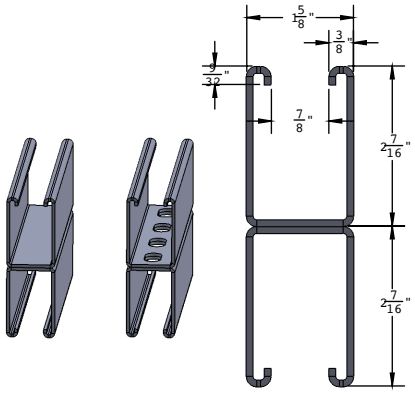
7230 7231
12 ga strut solid and slotted
2-7/16” x 1-5/8”



Domestically Manufactured

Type:	7230 (Solid)	7231 (Slotted)
Materials/Finishes:	Zinc Plated (7230Z)	Zinc Plated (7231Z)
	T-304 Stainless (7230SS)	T-304 Stainless (7231SS)
	T-316 Stainless (7230SX)	T-316 Stainless (7231SX)
Lengths:	10’ & 20’	10’ & 20’
WGT/FT (lbs):	2.59	2.52

7240 7241
12 ga back to back strut solid and slotted
2-7/16” x 1-5/8”

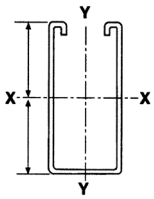


Domestically Manufactured

Type:	7240 (Solid)	7241 (Slotted)
Materials/Finishes:	Zinc Plated (7240Z)	Zinc Plated (7241Z)
	T-304 Stainless (7240SS)	T-304 Stainless (7241SS)
	T-316 Stainless (7240SX)	T-316 Stainless (7241SX)
Lengths:	10’ & 20’	10’ & 20’
WGT/FT (lbs):	5.18	5.04

7230 & 7240
technical data

PROPERTIES OF SECTION



			X-X Axis			Y-Y Axis		
EMPIRE FIGURE NUMBER	Wt./Ft. (Lbs)	Area of Section (Sq. In.)	I in 4	S in 3	r in	I in 4	S in 3	r in
7230	2.54	0.720	0.525	0.396	0.854	0.334	0.411	0.681
7240	5.08	1.439	2.832	1.162	1.403	0.667	0.820	0.681

I = Moment of Inertia

S = Section Modulus

r = Radious of Gyration

BEAM AND COLUMN LOADS

SPAN OR COLUMN (in)	EMPIRE 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 7240	9,774 20,586	6,305 3,880***	0.009 0.005	** **	** **
18	7230 7240	8,861 19,931	4,203 3,880***	0.021 0.012	** **	** **
24	7230 7240	7,744 19,144	3,125 3,880***	0.038 0.021	** **	** **
30	7230 7240	6,524 18,304	2,522 3,880***	0.059 0.033	** **	** **
36	7230 7240	5,275 17,474	2,102 3,880***	0.085 0.048	** **	** **
42	7230 7240	4,284 16,693	1,801 3,880***	0.116 0.065	** **	** **
48	7230 7240	3,629 15,981	1,576 3,880***	0.151 0.085	** **	1,390 **
60	7230 7240	2,824 14,790	1,261 3,803	0.236 0.133	** **	890 **
72	7230 7240	2,346 13,881	1,051 3,169	0.340 0.192	927 **	618 **
84	7230 7240	2,021 12,054	901 2,716	0.463 0.261	681 **	454 2,427
96	7230 7240	1,778 3,409	788 2,377	0.605 0.341	521 **	347 1,858
108	7230 7240	1,584 7,434	701 2,113	0.765 0.431	412 **	275 1,468
120	7230 7240	1,422 6,022	630 1,901	0.945 0.532	334 1,784	222 1,189
180	7230 7240	* *	420 1,268	2.126 1.199	148 793	99 529
240	7230 7240	* *	315 951	3.780 2.131	83 446	56 297

* Not Recommended - KL/r exceeds 200

** For these loads, the uniform beam capacity is lower than the L/240 or L/360 beam capacityand is therefore the governing restraint

*** Load limited by spotweld shear

NOTES

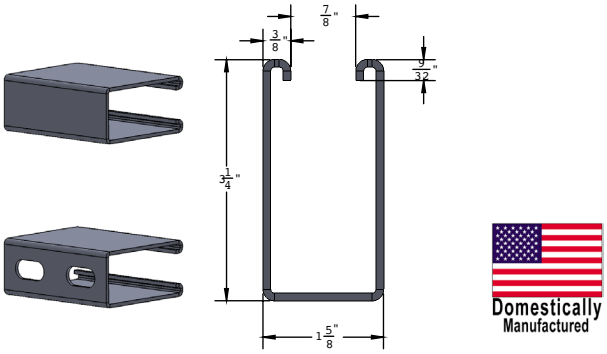
1.) The beam capacities shown above include the weight of the strut beam. The beam weight must be subtracted from these capacities to arrive at the net beam capacity.

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: 7/8" diameter knockout by 82%, 3/4" round hole by 85%, 9/16" round hole by 88%, 9/16" x 1-1/8" slotted by 88%, and 13/32" x 3" slotted by 90%.

SERIES: 7000
strut channel

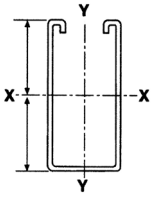
7250 7251
12 ga strut solid and slotted
3-1/4” x 1-5/8”



Domestically Manufactured

Type:	7250 (Solid)	7251 (Slotted)
Materials/Finishes:	Zinc Plated (7250Z)	Zinc Plated (7251Z)
	T-304 Stainless (7250SS)	T-304 Stainless (7251SS)
	T-316 Stainless (7250SX)	T-316 Stainless (7251SX)
Lengths:	10’ & 20’	10’ & 20’
WGT/FT (lbs):	3.13	3.08

PROPERTIES OF SECTION



			X-X Axis			Y-Y Axis		
EMPIRE FIGURE NUMBER	Wt./Ft. (Lbs)	Area of Section (Sq. In.)	I in 4	S in 3	r in	I in 4	S in 3	r in
7250	3.13	.887	1.100	0.633	1.114	0.431	0.530	0.697

I = Moment of Inertia

S = Section Modulus

r = Radious of Gyration

BEAM AND COLUMN LOADS

SPAN OR COLUMN (in)	EMPIRE 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	0.115	**	**
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

* Not Recommended - KL/r exceeds 200
** For these loads, the uniform beam capacity is lower than the L/240 or L/360 beam capacityand is therefore the governing restraint
*** Load limited by spotweld shear

NOTES

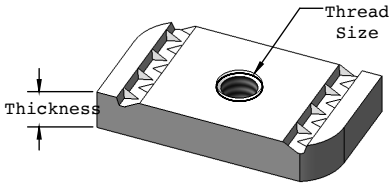
1.) The beam capacities shown above include the weight of the strut beam. The beam weight must be subtracted from these capacities to arrive at the net beam capacity.

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: 7/8" diameter knockout by 82%, 3/4" round hole by 85%, 9/16" round hole by 88%, 9/16" x 1-1/8" slotted by 88%, and 13/32" x 3" slotted by 90%.

SERIES: 8000
strut nuts

8000
strut nut w/o spring

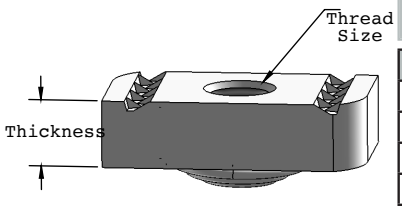


Materials/Finishes:	Zinc Plated (8000Z)
	T-316 Stainless (8000SX)

ROD (THREAD) SIZE	THICKNESS	WGT EACH (lbs)
* #8-32	1/4	0.06
* #10-24	1/4	0.06
* #10-32	1/4	0.06
1/4	1/4	0.06

ROD (THREAD) SIZE	THICKNESS	WGT EACH (lbs)
5/16	3/8	0.09
3/8	3/8	0.09
* 7/16	3/8	0.09
1/2	3/8	0.09
5/8	1/2	0.13
3/4	1/2	0.13
7/8	1/2	0.13
* NOT AVAILABLE IN T-316 STAINLESS		

8050
strut nut w/ short spring

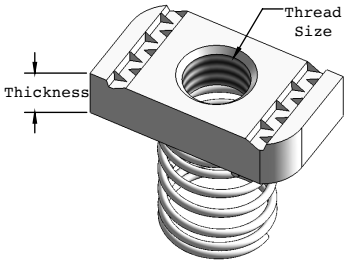


Materials/Finishes:	Zinc Plated (8050Z)
	T-316 Stainless (8050SX)

ROD (THREAD) SIZE	THICKNESS	WGT EACH (lbs)
* #8-32	1/4	0.07
* #10-24	1/4	0.07
* #10-32	1/4	0.07
1/4	1/4	0.07

ROD (THREAD) SIZE	THICKNESS	WGT EACH (lbs)
5/16	3/8	0.06
3/8	3/8	0.09
* 7/16	3/8	0.09
1/2	3/8	0.09
* 5/8	1/2	0.10
* NOT AVAILABLE IN T-316 STAINLESS		

8100
strut nut w/ regular spring

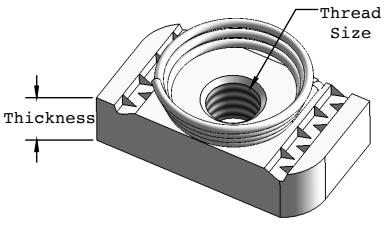


Materials/Finishes:	Zinc Plated (8100Z)
	T-316 Stainless (8100SX)
Notes:	Not to be used on 13/16" or 1" Strut.

ROD (THREAD) SIZE	THICKNESS	WGT EACH (lbs)
#8-32	1/4	0.75
#10-24	1/4	0.75
#10-32	1/4	0.75
1/4	1/4	0.70

ROD (THREAD) SIZE	THICKNESS	WGT EACH (lbs)
5/16	3/8	0.100
3/8	3/8	0.100
7/16	3/8	0.100
1/2	3/8	0.120
5/8	1/2	0.150
3/4	1/2	0.150
7/8	1/2	0.150

8150
top spring strut nut

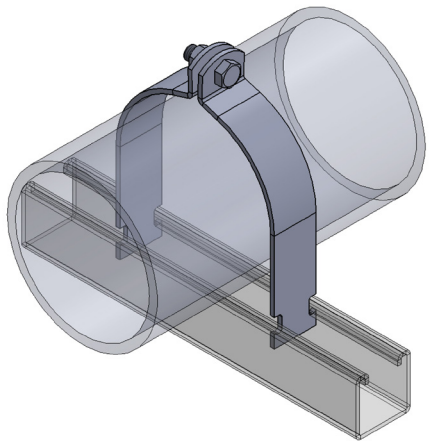


Materials/Finishes:	Zinc Plated (8150Z)
Notes:	To be used on 1-3/8" & 1-5/8" strut.

ROD (THREAD) SIZE	THICKNESS	WGT EACH (lbs)
#8-32	1/4	0.07
#10-24	1/4	0.07
#10-32	1/4	0.07
1/4	1/4	0.07

ROD (THREAD) SIZE	THICKNESS	WGT EACH (lbs)
5/16	3/8	0.10
3/8	3/8	0.10
1/2	3/8	0.12

SERIES: 8200
rigid ips strut clamp assembled

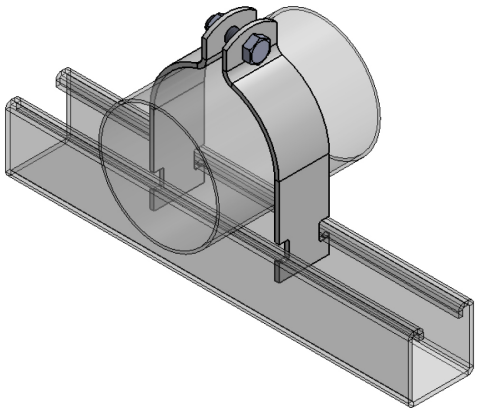


Materials/Finishes	Zinc Plated (8200Z)	T-304 Stainless (8200SS)
	T-316 Stainless (8200SX)	
Variants:	N/A	
Service:	Designed to steady a horizontal run of pipe against a perpendicular section of strut.	
Approvals:	N/A	
Ordering:	Specify figure number, finish and pipe size.	
Notes:	N/A	

PIPE SIZE	PIPE OD	MAX REC LOAD (lbs)	WGT EACH (lbs)
3/8	0.675	400	0.10
1/2	0.840	400	0.10
3/4	1.050	600	0.15
1	1.315	600	0.17
1-1/4	1.660	600	0.18
1-1/2	1.900	800	0.29
2	2.375	800	0.34
2-1/2	2.875	800	0.40
3	3.500	800	0.47
3-1/2	4.000	1000	0.62
4	4.500	1000	0.67
5	5.563	1000	0.80
6	6.625	1000	1.02
8	8.625	1000	1.30
10	10.750	1000	1.43
12	12.750	1000	1.75

NO-HUB CAST IRON SOIL PIPE CLAMP SIZES	
NO-HUB CAST IRON NOMINAL PIPE SIZE	USE THE FOLLOWING STRUT CLAMP
1-1/2	1-1/2 IPS
2	2 IPS

8250
od tubing strut clamp assembled

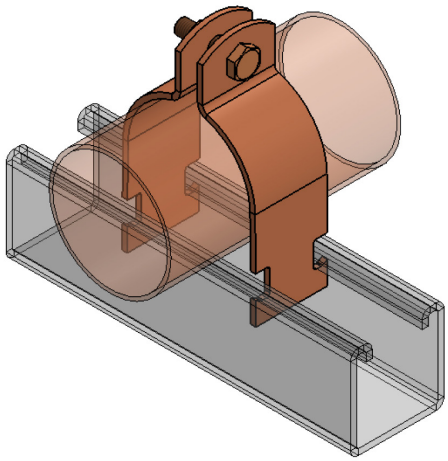


Materials/Finishes	Zinc Plated (8250Z)	T-304 Stainless (8250SS)
	T-316 Stainless (8250SX)	
Variants:	N/A	
Service:	Designed to steady a horizontal run of pipe against a perpendicular section of strut.	
Approvals:	N/A	
Ordering:	Specify figure number, finish and pipe size.	
Notes:	N/A	

NO-HUB CAST IRON SOIL PIPE CLAMP SIZES	
NO-HUB CAST IRON NOMINAL PIPE SIZE	**USE THE FOLLOWING STRUT CLAMP**
3	3-3/8 OD
4	4-3/8 OD
5	5-3/8 OD
6	6-3/8 OD
8	8-3/8 OD
10-12	CALL

PIPE SIZE	MAX REC LOAD (lbs)	WGT EACH (lbs)	PIPE SIZE	MAX REC LOAD (lbs)	WGT EACH (lbs)
1/4	400	0.09	3-3/4	1000	0.51
3/8	400	0.09	3-7/8	1000	0.52
1/2	400	0.07	4	1000	0.52
5/8	400	0.09	4-1/8	1000	0.53
3/4	400	0.13	4-1/4	1000	0.54
7/8	400	0.14	4-3/8	1000	0.55
1	600	0.15	4-1/2	1000	0.55
1-1/8	600	0.16	4-5/8	1000	0.57
1-1/4	600	0.18	4-3/4	1000	0.58
1-3/8	600	0.19	4-7/8	1000	0.60
1-1/2	600	0.20	5	1000	0.62
1-5/8	600	0.21	5-1/8	1000	0.64
1-3/4	800	0.22	5-1/4	1000	0.66
1-7/8	800	0.22	5-3/8	1000	0.68
2	800	0.23	5-1/2	1000	0.70
2-1/8	800	0.23	5-5/8	1000	0.72
2-1/4	800	0.25	5-3/4	1000	0.74
2-3/8	800	0.26	5-7/8	1000	0.76
2-1/2	800	0.38	6	1000	0.79
2-5/8	800	0.38	6-1/8	1000	0.83
2-3/4	800	0.39	6-1/4	1000	0.87
2-7/8	800	0.40	6-3/8	1000	0.90
3	800	0.42	6-1/2	1000	0.95
3-1/8	800	0.44	6-5/8	1000	1.02
3-1/4	800	0.46	6-3/4	1000	1.05
3-3/8	800	0.48	6-7/8	1000	1.10
3-1/2	800	0.50	7	1000	1.16
3-5/8	800	0.50	8-3/8	1000	1.25

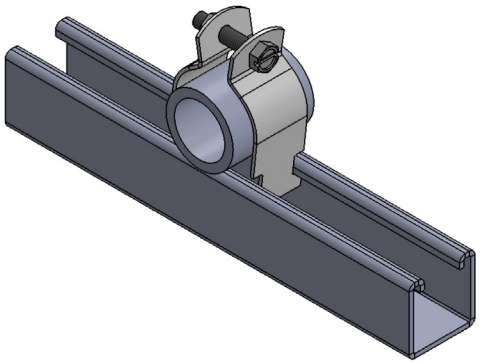
SERIES: 8300
copper tubing strut pipe clamp assembled



Materials/Finishes	Copper Epoxy Coated *Copper-Gard* (8300CT)
	Copper Plated (8300CTP)
Variants:	N/A
Service:	Designed to steady a horizontal run of copper tubing against a perpendicular section of strut.
Approvals:	N/A
Ordering:	Specify figure number, finish and pipe size.
Notes:	N/A

TUBE SIZE	MAX REC LOAD (lbs)	WGT EACH (lbs)
3/8	400	0.09
1/2	400	0.10
3/4	400	0.12
1	600	0.15
1-1/4	600	0.17
1-1/2	600	0.19
2	800	0.32
2-1/2	800	0.37
3	800	0.43
3-1/2	1000	0.56
4	1000	0.62
5	1000	0.75
6	1000	0.96

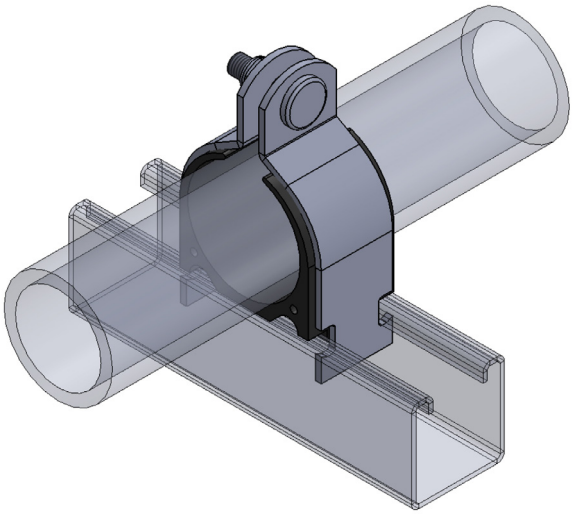
8350
universal strut pipe clamp assembled



Materials/Finishes	Zinc Plated Carbon Steel (8350Z)
Variants:	N/A
Service:	Designed to steady a horizontal run of copper tubing against a perpendicular section of strut.
Approvals:	N/A
Ordering:	Specify figure number, finish and pipe size.
Notes:	N/A

PIPE SIZE	OD SIZE RANGE	MAX REC LOAD (lbs)	WGT EACH (lbs)
3/8	.557 - .706	400	0.18
1/2	.701 - .875	400	0.20
3/4	.917 - 1.031	400	0.22
1	1.125 - 1.375	400	0.24
1-1/4	1.50 - 1.691	400	0.27
1-1/2	1.735 - 1.931	600	0.30
2	2.192 - 2.40	600	0.35

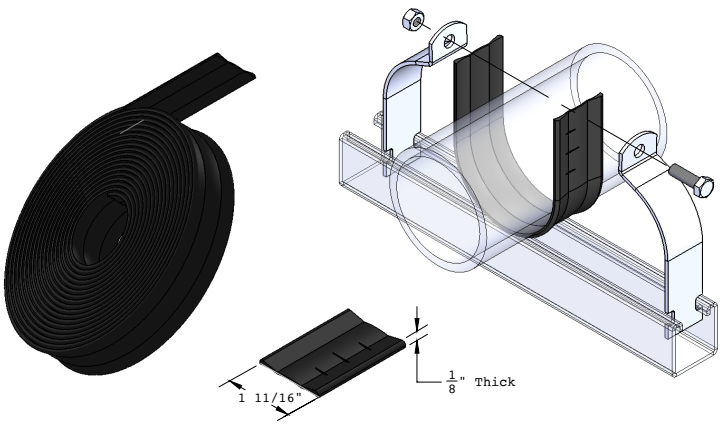
8500
cushion strut clamp



Materials/Finishes	Zinc Plated Carbon Steel (8500Z)	T-304 Stainless (8500SS)
	T-316 Stainless (8500SS)	
Variants:	N/A	
Service:	Designed to steady a horizontal run of pipe against a perpendicular section of strut.	
Approvals:	N/A	
Ordering:	Specify figure number, finish and pipe size.	
Notes:	Also available in IPS sizes. Thermoplastic insulating liner.	

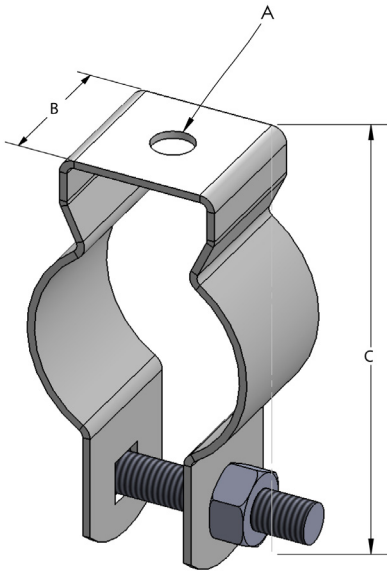
PIPE SIZE	NOMINAL TUBE SIZE	WGT EACH (lbs)
1/4	1/8	0.110
3/8	1/4	0.110
1/2	3/8	0.110
5/8	1/2	0.120
3/4	5/8	0.130
7/8	3/4	0.200
1	7/8	0.210
1-1/8	1	0.275
1-1/4	1-1/8	0.292
1-3/8	1-1/4	0.310
1-1/2	1-3/8	0.354
1-5/8	1-1/2	0.400
1-3/4	1-5/8	0.413
1-7/8	1-3/4	0.425
2	1-7/8	0.454
2-1/8	2	0.483
2-3/8	2-1/4	0.600
2-5/8	2-1/4	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 X 25' length
Service:	Designed for use with HVAC, refrigeration and hydraulic lines to provide protection from galvanic action between dissimilar metals and to absorb vibration between pipe and mounting hardware. Wrap can be cut to size for any pipe material.
Service Temperature:	-70˚ to +300˚ F
Weight:	2.50 lbs / roll
Notes:	N/A

8575
conduit clamp with bolt and nut

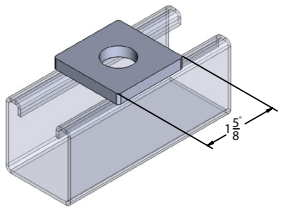


Materials/Finishes:	Zinc Plated Carbon Steel (8575Z)	T-316 Stainless (8575SX)
Variants:	N/A	
Service:	Designed for suspending light pipe or conduit.	
Approvals:	N/A	
Ordering:	Specify figure number, finish, pipe/conduit type and size.	
Notes:	N/A	

SIZE	FITS RIGID & PIPE SIZE	FITS EMT	A	B	C	WGT 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

9001FF - 9008FF
flat fittings: linear

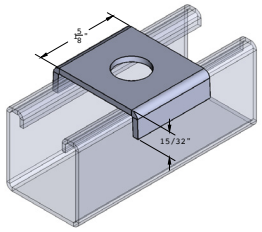
9001FF
square strut washer



Materials/ Finishes:	Zinc Plated (9001FFZ)
	T-304 Stainless (9001FFSS)
	T-316 Stainless (9001FFSX)
Thickness:	1/4"

ROD SIZE	WGT EACH (lbs)
1/4	0.18
3/8	0.18
1/2	0.17
5/8	0.16
3/4	0.16
7/8	0.15

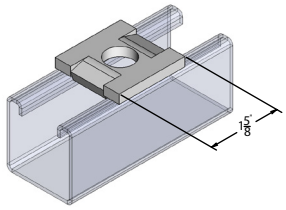
9001UFF
u-saddle strut washer



Materials/ Finishes:	Zinc Plated (9002FFZ)
	T-304 Stainless (9002FFSS)
	T-316 Stainless (9002FFSX)
Thickness:	1/4"

ROD SIZE	WGT EACH (lbs)
1/4	0.18
3/8	0.18
1/2	0.17
5/8	0.16
3/4	0.16
7/8	0.15

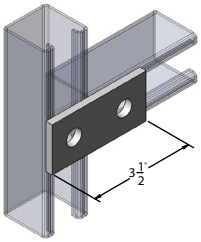
9002FF
square strut washer w/ guides



Materials/ Finishes:	Zinc Plated (9003FFZ)
	T-304 Stainless (9003FFSS)
	T-316 Stainless (9003FFSX)
Thickness:	1/4"

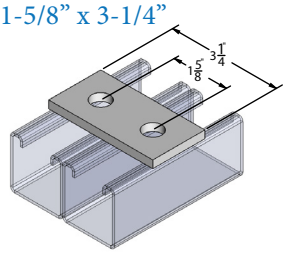
ROD SIZE	WGT EACH (lbs)
1/4	0.18
3/8	0.18
1/2	0.17
5/8	0.16
3/4	0.16

9003FF
2-hole splice plate
1-5/8" x 3-1/2"



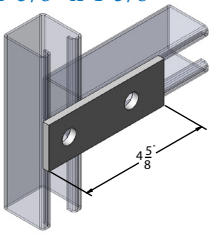
Materials/ Finishes:	Zinc Plated (9004FFZ)
	T-304 Stainless (9004FFSS)
	T-316 Stainless (9004FFSX)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	.34

9004FF
2-hole splice plate
side to side strut
1-5/8" x 3-1/4"



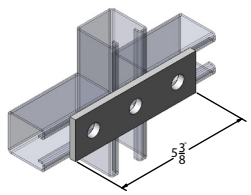
Materials/ Finishes:	Zinc Plated (9005FFZ)
	T-304 Stainless (9005FFSS)
	T-316 Stainless (9005FFSX)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	.46

9005FF
2-hole splice plate
1-5/8" x 4-5/8"



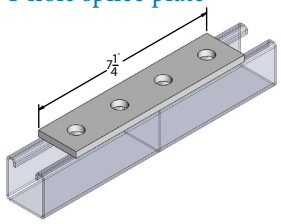
Materials/ Finishes:	Zinc Plated (9006FFZ)
	T-304 Stainless (9006FFSS)
	T-316 Stainless (9006FFSX)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	.55

9006FF
3-hole splice plate
1-5/8" x 5-3/8"



Materials/ Finishes:	Zinc Plated (9007FFZ)
	T-304 Stainless (9007FFSS)
	T-316 Stainless (9007FFSX)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	.76

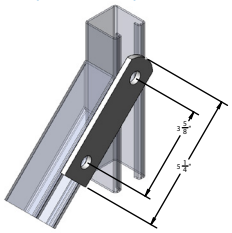
9007FF
4-hole splice plate



Materials/ Finishes:	Zinc Plated (9008FFZ)
	T-304 Stainless (9008FFSS)
	T-316 Stainless (9008FFSX)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	.95

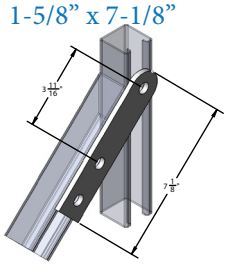
9009FF - 9020FF
flat fittings: corners

9009FF
2-hole swivel plate
1-5/8” x 5-1/4”



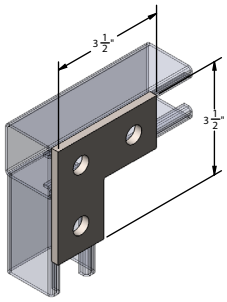
Materials/Finishes:	Zinc Plated (9009FFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.48

9010FF
3-hole swivel plate
1-5/8” x 7-1/8”



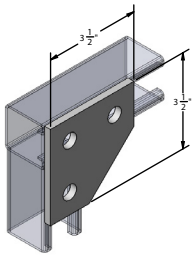
Materials/Finishes:	Zinc Plated (9010FFZ)
	T-304 Stainless (9010FFSS)
	T-316 Stainless (9010FFSX)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.69

9011FF
3-hole corner plate
3-1/2” x 3-1/2”



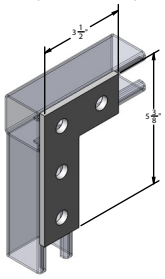
Materials/Finishes:	Zinc Plated (9011FFZ)
	T-304 Stainless (9011FFSS)
	T-316 Stainless (9011FFSX)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.56

9012FF
3-hole corner gusset
3-1/2” x 3-1/2”



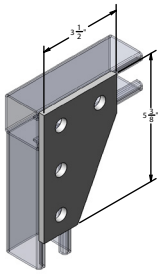
Materials/Finishes:	Zinc Plated (9012FFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.70

9014FF
4-hole corner plate
3-1/2” x 5-3/8”



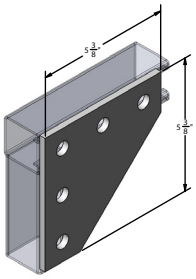
Materials/Finishes:	Zinc Plated (9014FFZ)
	T-304 Stainless (9014FFSS)
	T-316 Stainless (9014FFSX)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.75

9015FF
4-hole corner gusset
3-1/2” x 5-3/8”



Materials/Finishes:	Zinc Plated (9015FFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	1.02

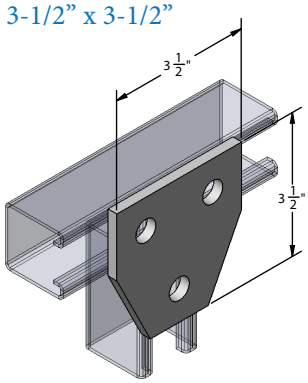
9020FF
5-hole corner gusset
5-3/8” x 5-3/8”



Materials/Finishes:	Zinc Plated (9020FFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	1.45

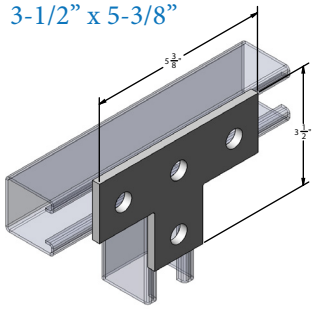
9013FF - 9021FF
flat fittings: tees and crosses

9013FF
3-hole tee gusset
3-1/2” x 3-1/2”



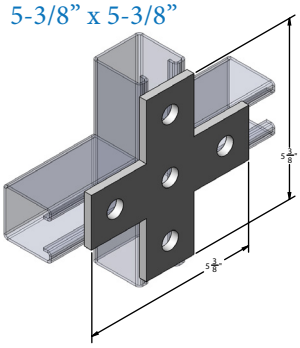
Materials/Finishes:	Zinc Plated (9013FFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.70

9016FF
4-hole tee plate
3-1/2” x 5-3/8”



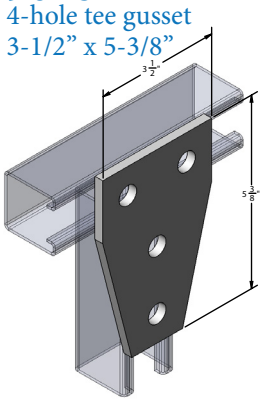
Materials/Finishes:	Zinc Plated (9016FFZ)
	T-304 Stainless (9016FFSS)
	T-316 Stainless (9016FFSX)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	..75

9017FF
5-hole cross plate
5-3/8” x 5-3/8”



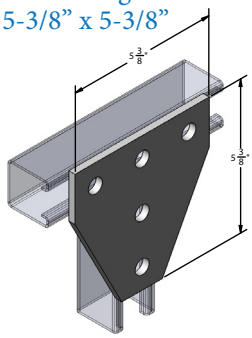
Materials/Finishes:	Zinc Plated (9017FFZ)
	T-304 Stainless (9017FFSS)
	T-316 Stainless (9017FFSX)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	1.00

9018FF
4-hole tee gusset
3-1/2” x 5-3/8”



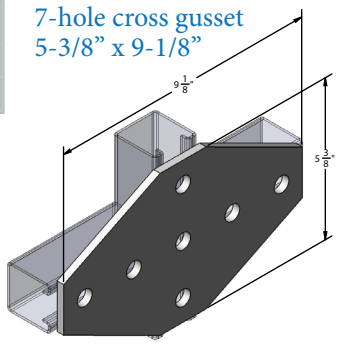
Materials/Finishes:	Zinc Plated (9018FFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	1.00

9019FF
5-hole tee gusset
5-3/8” x 5-3/8”



Materials/Finishes:	Zinc Plated (9019FFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	1.43

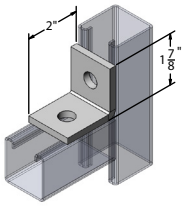
9021FF
7-hole cross gusset
5-3/8” x 9-1/8”



Materials/Finishes:	Zinc Plated (9021FFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	2.31

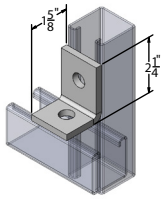
9022CA - 9043CA
corner angles

9022CA
2-hole corner angle
1-7/8" x 2"



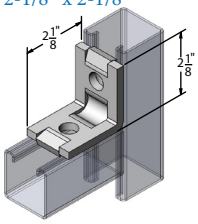
Materials/Finishes:	Zinc Plated (9022CAZ)
	T-304 Stainless (9022CASS)
	T-316 Stainless (9022CASX)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	.37

9023CA
2-hole corner angle
2-1/4" x 1-5/8"



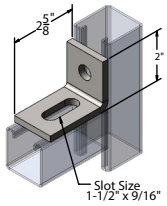
Materials/Finishes:	Zinc Plated (9023CAZ)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	.37

9024CA
2-hole corner angle
w/ guides
2-1/8" x 2-1/8"



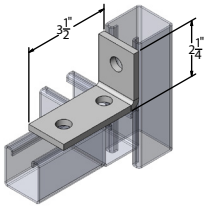
Materials/Finishes:	Zinc Plated (9024CAZ)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	.41

9025CA
1-hole adjustable corner angle
w/ slot
2" x 2-5/8"



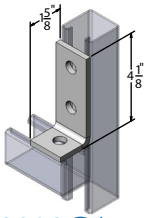
Materials/Finishes:	Zinc Plated (9025CAZ)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	.38

9026CA
3-hole corner angle
2-1/4" x 3-1/2"



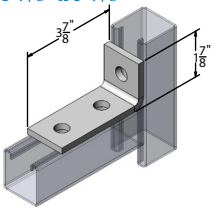
Materials/Finishes:	Zinc Plated (9026CAZ)
	T-304 Stainless (9026CASS)
	T-316 Stainless (9026CASX)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	.56

9027CA
3-hole corner angle
4-1/8" x 1-5/8"



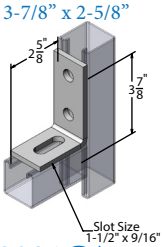
Materials/Finishes:	Zinc Plated (9027CAZ)
	T-304 Stainless (9027CASS)
	T-316 Stainless (9027CASX)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	.56

9028CA
3-hole corner angle
1-7/8" x 3-7/8"



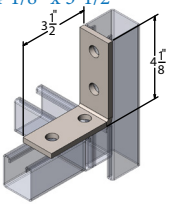
Materials/Finishes:	Zinc Plated (9028CAZ)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	.58

9029CA
2-hole adjustable corner angle
w/ slot
3-7/8" x 2-5/8"



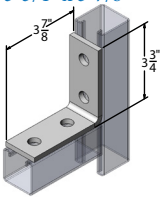
Materials/Finishes:	Zinc Plated (9029CAZ)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	.61

9030CA
4-hole corner angle
4-1/8" x 3-1/2"



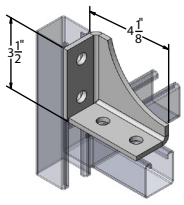
Materials/Finishes:	Zinc Plated (9030CAZ)
	T-304 Stainless (9030CASS)
	T-316 Stainless (9030CASX)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	.78

9031CA
4-hole corner angle
3-3/4" x 3-7/8"



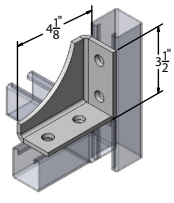
Materials/Finishes:	Zinc Plated (9031CAZ)
	T-304 Stainless (9031CASS)
	T-316 Stainless (9031CASX)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	.76

9032CA
4-hole webbed
corner angle, r.h.
4-1/8" x 3-1/2"



Materials/Finishes:	Zinc Plated (9032CAZ)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	1.12

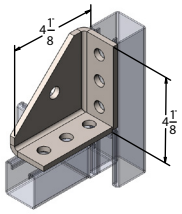
9033CA
4-hole webbed
corner angle, l.h.
3-1/2" x 4-1/8"



Materials/Finishes:	Zinc Plated (9033CAZ)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	1.12

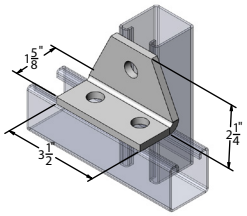
9022CA - 9043CA
corner angles (continued)

9034CA
7-hole universal corner angle
4-1/8" x 4-1/8"



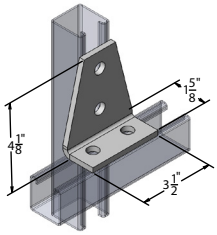
Materials/Finishes:	Zinc Plated (9034CAZ)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	1.32

9035CA
3-hole shelf gusset angle
1-5/8" x 2-1/4"



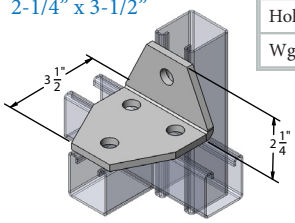
Materials/Finishes:	Zinc Plated (9035CAZ)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	.67

9036CA
4-hole shelf gusset angle
1-5/8" x 4-1/8"



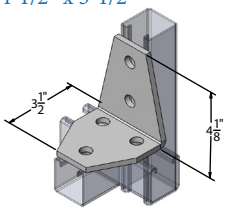
Materials/Finishes:	Zinc Plated (9036CAZ)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	1.02

9037CA
4-hole shelf gusset 3-way angle
2-1/4" x 3-1/2"



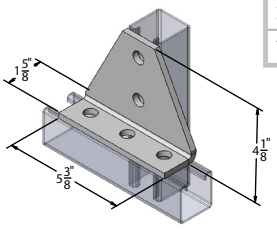
Materials/Finishes:	Zinc Plated (9037CAZ)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	1.01

9038CA
5-hole shelf gusset 3-way angle
4-1/2" x 3-1/2"



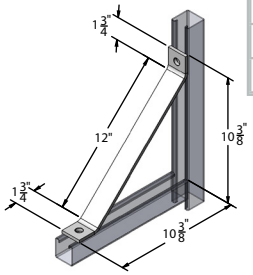
Materials/Finishes:	Zinc Plated (9038CAZ)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	1.35

9039CA
5-hole shelf gusset angle
1-5/8" x 4-1/8"



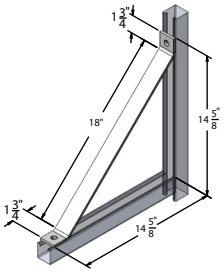
Materials/Finishes:	Zinc Plated (9039CAZ)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	1.41

9040CA
2-hole 45° knee brace 12"



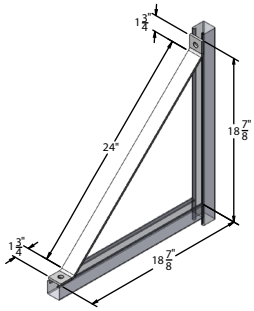
Materials/Finishes:	Zinc Plated (9040CAZ)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	1.65

9042CA
2-hole 45° knee brace 18"



Materials/Finishes:	Zinc Plated (9042CAZ)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	2.34

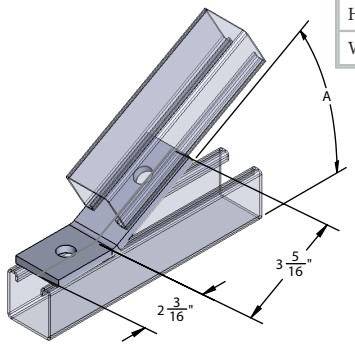
9043CA
2-hole 45° knee brace 24"



Materials/Finishes:	Zinc Plated (9043CAZ)
	T-304 Stainless (9043CASS)
	T-316 Stainless (9043CASX)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	3.03

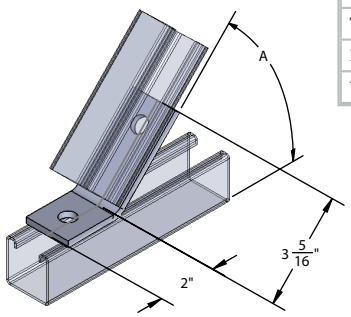
9044AF - 9048AF
angle fittings

9044AF
2-hole open angle 30˚
2-3/8" x 3-1/8"



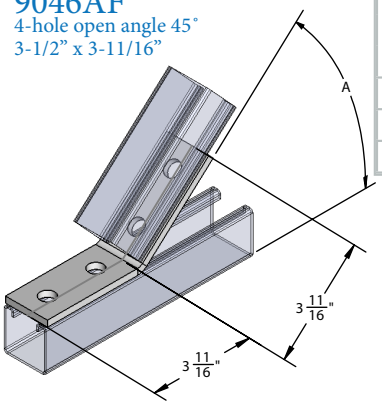
Materials/Finishes:	Zinc Plated (9044AFZ)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	.59

9045AF
2-hole open angle 45˚
2-3/8" x 3-1/8"



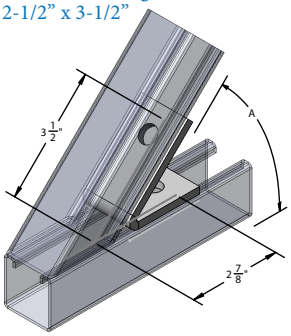
Materials/Finishes:	Zinc Plated (9045AFZ)
	T-304 Stainless (9045AFSS)
	T-316 Stainless (9045AFSX)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	.59

9046AF
4-hole open angle 45˚
3-1/2" x 3-11/16"



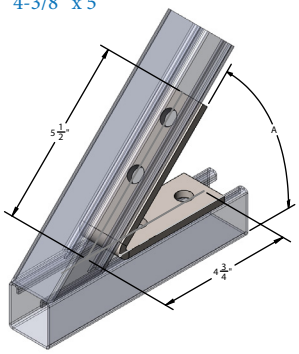
Materials/Finishes:	Zinc Plated (9046AFZ)
	T-304 Stainless (9046AFSS)
	T-316 Stainless (9046AFSX)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	.78

9047AF
2-hole closed angle 45˚
2-1/2" x 3-1/2"



Materials/Finishes:	Zinc Plated (9047AFZ)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	.56

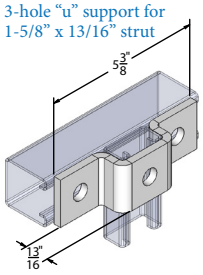
9048AF
4-hole closed angle 45˚
4-3/8" x 5"



Materials/Finishes:	Zinc Plated (9048AFZ)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	.95

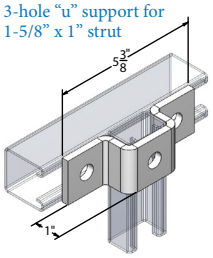
9049UF - 9057UF
“u” shaped fittings

9049UF
3-hole “u” support for 1-5/8” x 13/16” strut



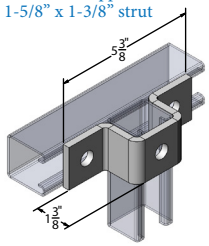
Materials/Finishes:	Zinc Plated (9049UFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.70

9050UF
3-hole “u” support for 1-5/8” x 1” strut



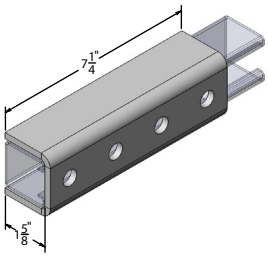
Materials/Finishes:	Zinc Plated (9050UFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.71

9051UF
3-hole “u” support for 1-5/8” x 1-3/8” strut



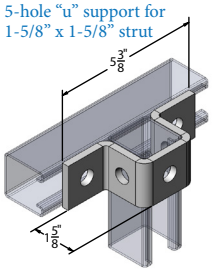
Materials/Finishes:	Zinc Plated (9051UFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.84

9052UF
4-hole splice clevis for 1-5/8” x 1-5/8”



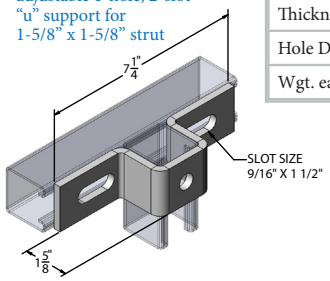
Materials/Finishes:	Zinc Plated (9052UFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	2.33

9053UF
5-hole “u” support for 1-5/8” x 1-5/8” strut



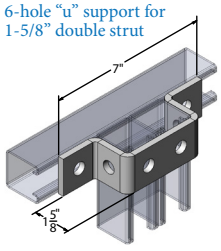
Materials/Finishes:	Zinc Plated (9053UFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.85

9054UF
adjustable 1-hole, 2-slot “u” support for 1-5/8” x 1-5/8” strut



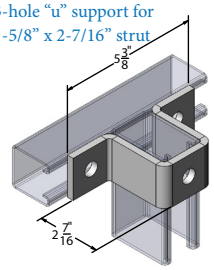
Materials/Finishes:	Zinc Plated (9054UFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	1.03

9055UF
6-hole “u” support for 1-5/8” double strut



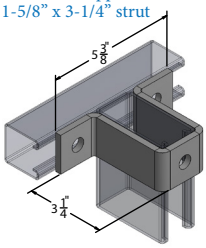
Materials/Finishes:	Zinc Plated (9055UFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	1.05

9056UF
3-hole “u” support for 1-5/8” x 2-7/16” strut



Materials/Finishes:	Zinc Plated (9056UFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	1.08

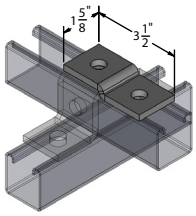
9057UF
3-hole “u” support for 1-5/8” x 3-1/4” strut



Materials/Finishes:	Zinc Plated (9057UFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	1.26

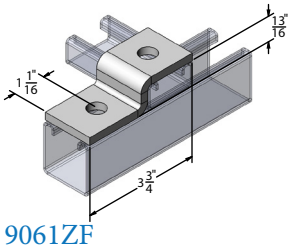
9058ZF - 9065ZF
“z” shaped fittings

9058ZF
2-hole offset“z” support



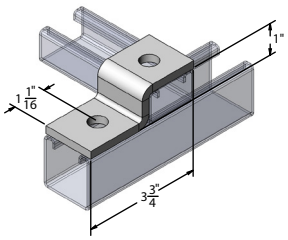
Materials/Finishes:	Zinc Plated (9058ZFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.38

9059ZF
2-hole “z” support for 1-5/8” x 13/16” strut



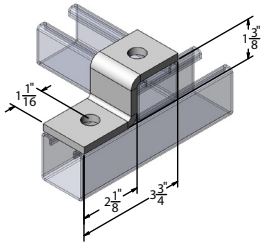
Materials/Finishes:	Zinc Plated (9059ZFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.43

9060ZF
2-hole “z” support for 1-5/8” x 1” strut



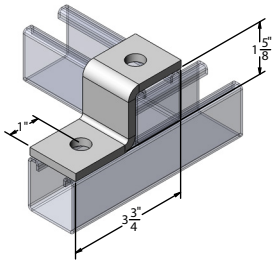
Materials/Finishes:	Zinc Plated (9060ZFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.44

9061ZF
2-hole “z” support for 1-5/8” x 1-3/8” strut



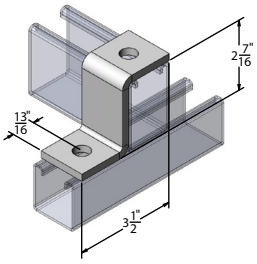
Materials/Finishes:	Zinc Plated (9061ZFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.51

9062ZF
2-hole “z” support for 1-5/8” x 1-5/8” strut



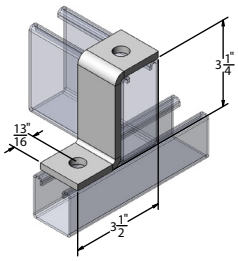
Materials/Finishes:	Zinc Plated (9062ZFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.52

9063ZF
2-hole “z” support for 1-5/8” x 2-7/16” strut



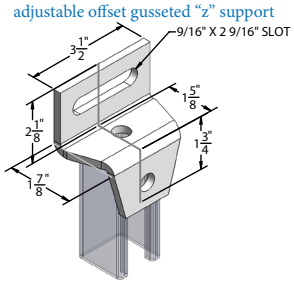
Materials/Finishes:	Zinc Plated (9063ZFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.64

9064ZF
2-hole “z” support for 1-5/8” x 3-1/4” strut



Materials/Finishes:	Zinc Plated (9064ZFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.70

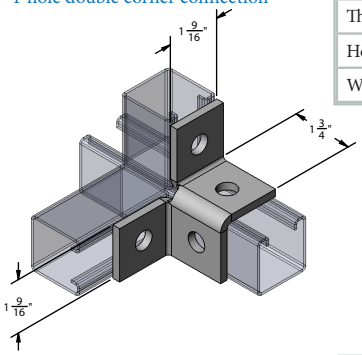
9065ZF
adjustable offset gusseted “z” support



Materials/Finishes:	Zinc Plated (9065ZFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.97

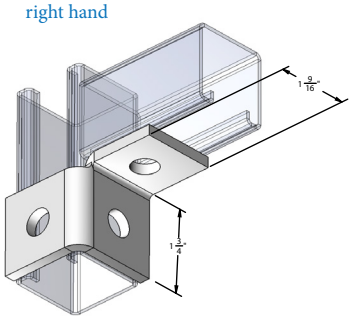
9066WF - 9080WF
winged fittings

9066WF
4-hole double corner connection



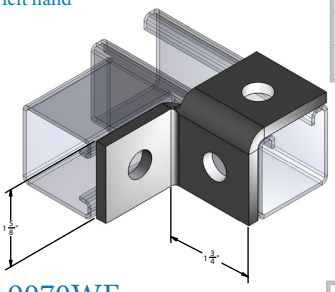
Materials/Finishes:	Zinc Plated (9066WFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.38

9067WF
2-hole single corner connection
right hand



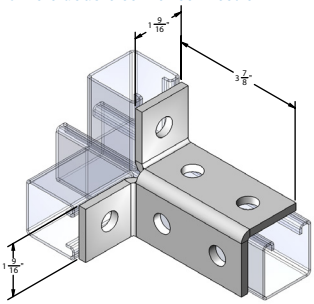
Materials/Finishes:	Zinc Plated (9067WFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.43

9068WF
2-hole single corner connection
left hand



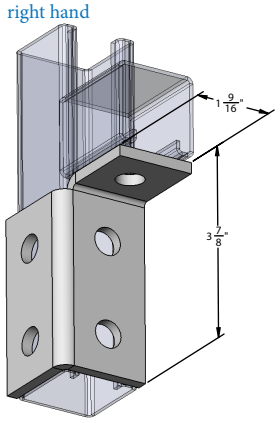
Materials/Finishes:	Zinc Plated (9068WFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.44

9069WF
6-hole double corner connection



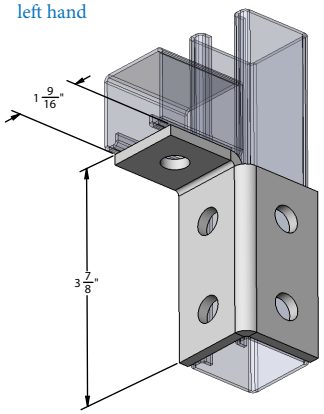
Materials/Finishes:	Zinc Plated (9069WFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.51

9070WF
5-hole single corner connection
right hand



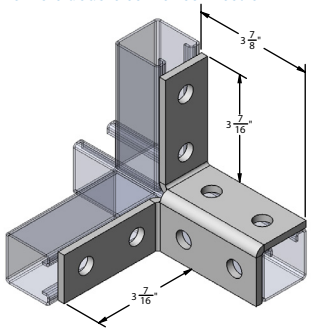
Materials/Finishes:	Zinc Plated (9070WFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.52

9071WF
5-hole single corner connection
left hand



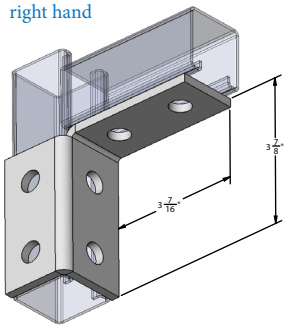
Materials/Finishes:	Zinc Plated (9071WFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.64

9072WF
8-hole double corner connection



Materials/Finishes:	Zinc Plated (9072WFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.70

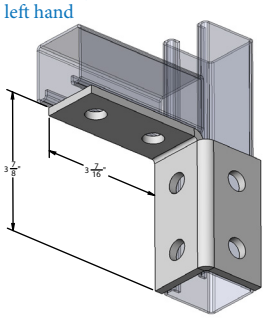
9073WF
6-hole single corner connection
right hand



Materials/Finishes:	Zinc Plated (9073WFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.97

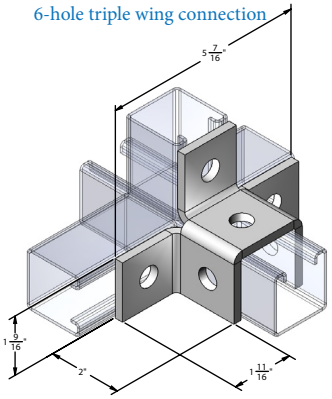
9066WF - 9080WF
winged fittings (continued)

9074WF
6-hole single corner connection
left hand



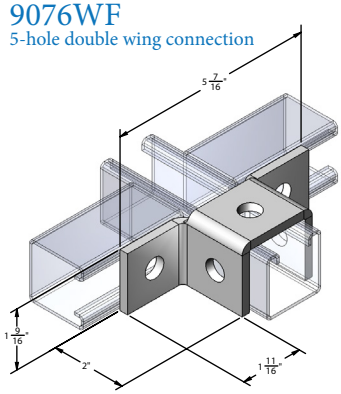
Materials/Finishes:	Zinc Plated (9074WFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.70

9075WF
6-hole triple wing connection



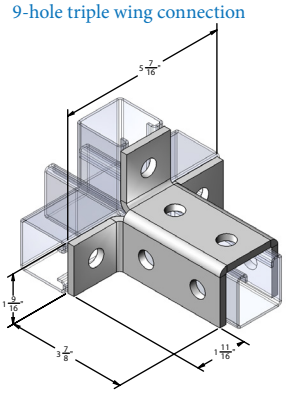
Materials/Finishes:	Zinc Plated (9075WFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.70

9076WF
5-hole double wing connection



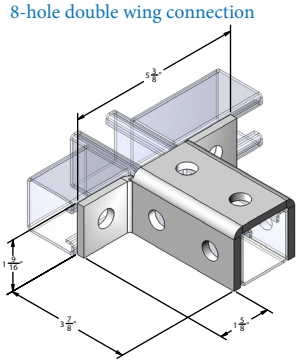
Materials/Finishes:	Zinc Plated (9076WFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.70

9077WF
9-hole triple wing connection



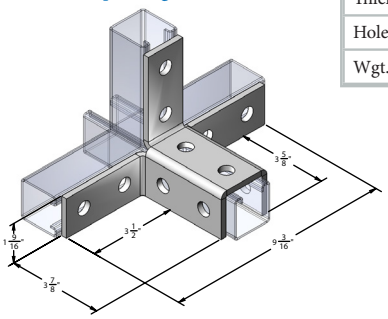
Materials/Finishes:	Zinc Plated (9077WFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.70

9078WF
8-hole double wing connection



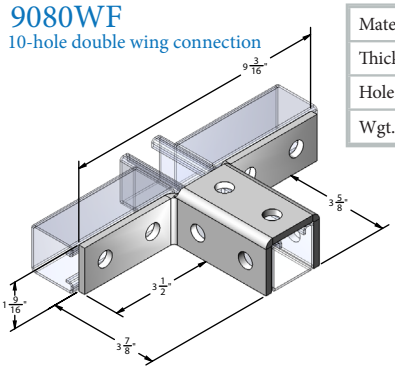
Materials/Finishes:	Zinc Plated (9078WFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.70

9079WF
12-hole triple wing connection



Materials/Finishes:	Zinc Plated (9079WFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.70

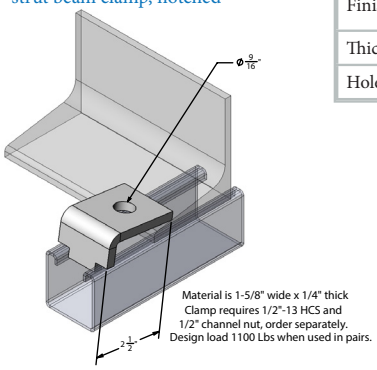
9080WF
10-hole double wing connection



Materials/Finishes:	Zinc Plated (9080WFZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.70

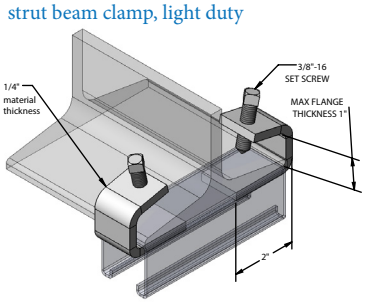
9081BC - 9087BC
beam clamps

9081BC
strut beam clamp, notched



Materials/ Finishes:	Zinc Plated (9081BCZ)
	T-304 Stainless Steel (9081BCSS)
Thickness:	1/4”
Hole Dim:	9/16”

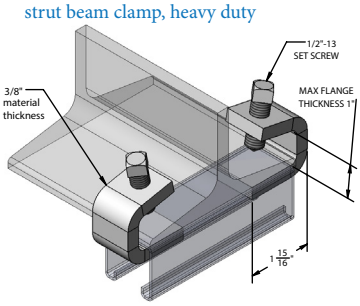
9082BC
strut beam clamp, light duty



Design load 550 Lbs when used in pairs.

Materials/Finishes:	Zinc Plated (9082BCZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.28

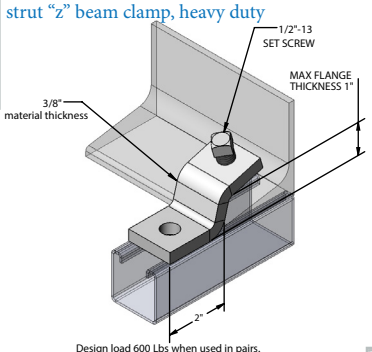
9083BC
strut beam clamp, heavy duty



Design load 1000 Lbs when used in pairs.

Materials/Finishes:	Zinc Plated (9083BCZ)
Thickness:	3/8”
Hole Dim:	9/16”
Wgt. each (lbs)	.93

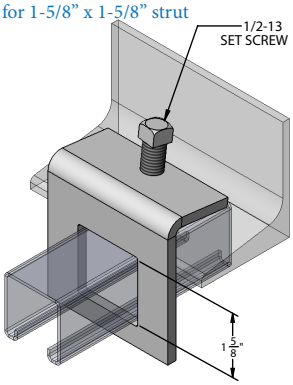
9084BC
strut “z” beam clamp, heavy duty



Design load 600 Lbs when used in pairs.
Clamp requires 1/2"-13 HCS and 1/2" channel nut, order separately.

Materials/Finishes:	Zinc Plated (9084BCZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.64

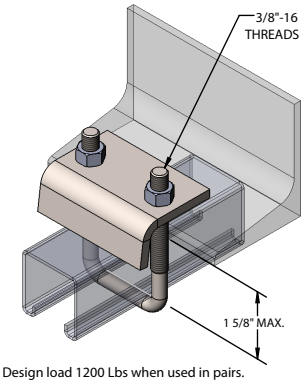
9085BC
strut beam clamp, window type
for 1-5/8” x 1-5/8” strut



Design load 950 Lbs when used in pairs.

Materials/Finishes:	Zinc Plated (9085BCZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	1.06

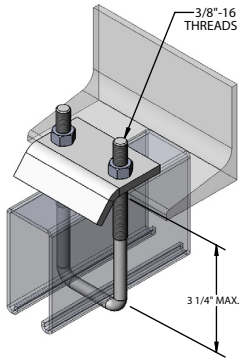
9086BC
strut u-bolt beam clamp for
13/16” - 1-5/8” strut



Design load 1200 Lbs when used in pairs.

Materials/Finishes:	Zinc Plated (9086BCZ)
	T-304 Stainless (9086BCSS)
	T-316 Stainless (9086BCSX)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.64

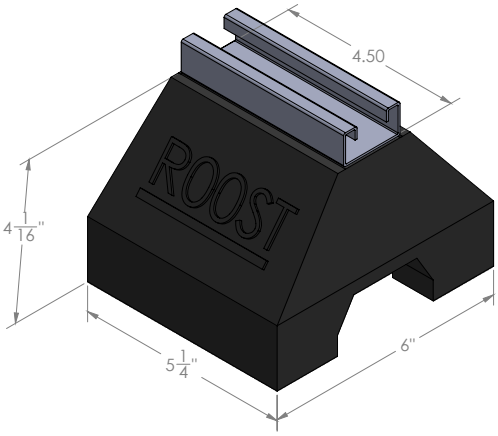
9087BC
strut u-bolt beam clamp for
2-7/16” x 3-1/4” strut



Design load 1200 Lbs when used in pairs.

Materials/Finishes:	Zinc Plated (9087BCZ)
	T-304 Stainless (9087BCSS)
	T-316 Stainless (9087BCSX)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	.93

7505-RT
mini rooftop support block



Materials/ Finishes:	100% Recycled Rubber Base with 13/16" X 1-5/8" Pre-Galvanized Strut Channel (7505RT7200Z)
Variants:	100% Recycled Rubber Base Only (7505RT)
Approvals:	Complies with Manufacturer's Standardization Society (MSS) SP-58 (Type 62)
Weight (lbs):	3.20
Uniform Load Capacity (lbs):	250
Ordering:	Specify figure number.
Notes:	Uniform Load Capacity for the components in the 7505RT7200Z assembly only. Consult roofing manufacturer or engineer for roof loading compatability.

7510-RT
rooftop support block

FIG. 7510RT7200Z

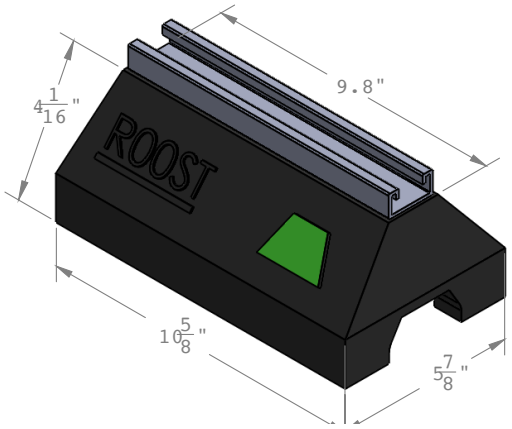
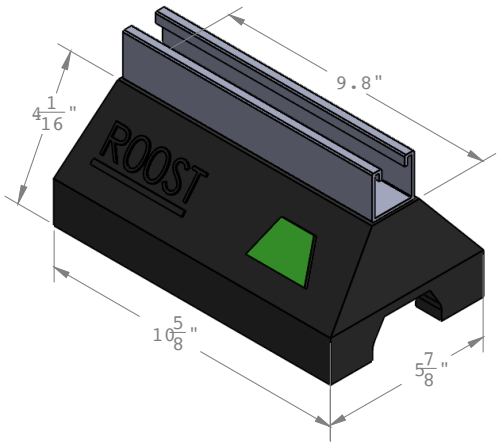
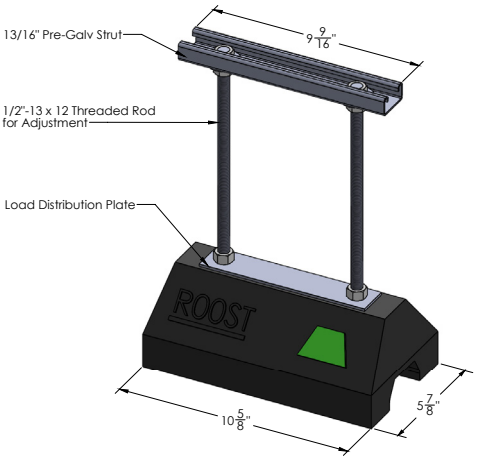


FIG. 7510RT7100Z



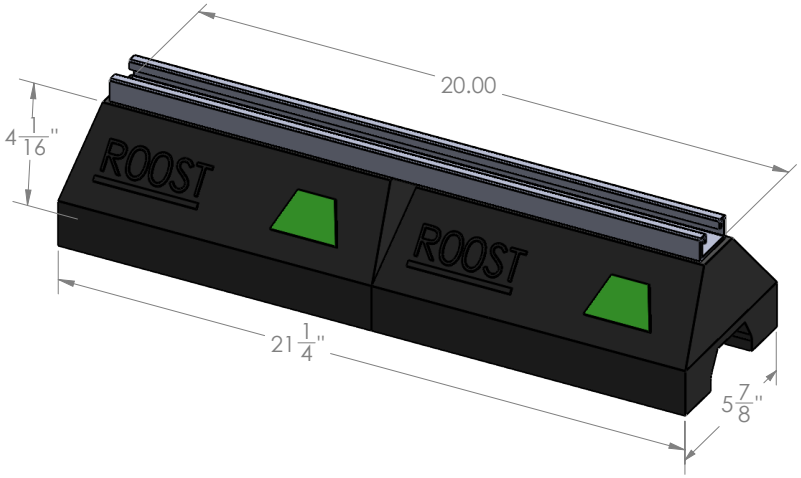
Materials/ Finishes:	100% Recycled Rubber Base with 13/16" X 1-5/8" Pre-Galvanized Strut Channel (7510RT7200Z)
Variants:	100% Recycled Rubber Base with 1-5/8" X 1-5/8" Pre-Galvanized Strut Channel (7510RT7100Z)
	100% Recycled Rubber Base Only (7510RT)
Approvals:	Complies with Manufacturer's Standardization Society (MSS) SP-58 (Type 62)
Weight (lbs):	6.00
Uniform Load Capacity (lbs):	500
Ordering:	Specify figure number.
Notes:	Uniform Load Capacity for the components in the 7510RT7200Z and 7510RT7100Z assemblies only. Consult roofing manufacturer or engineer for roof loading compatability.

7510-RTE
rooftop support block w/ adjustable elevated strut channel



Materials/ Finishes:	100% Recycled Rubber Base with elevated (6"-12") 13/16" Pre-Galvanized Strut Channel (7510RTE7200Z1200)
Approvals:	N/A
Weight (lbs):	7.6
Uniform Load Capacity (lbs):	500
Ordering:	Specify figure number.
Notes:	Uniform Load Capacity for the components in the 7510RT7200Z1200 assembly only. Consult roofing manufacturer or engineer for roof loading compatability. Hardware is zinc plated

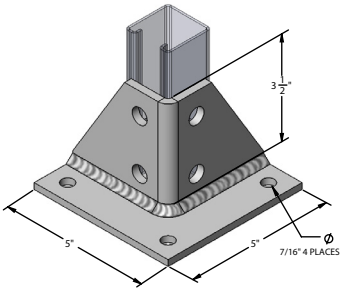
7520-RT
rooftop support block 20"



Materials/ Finishes:	100% Recycled Rubber Base with Pre-Galvanized Strut Channel (7520RT7200Z)
Variants:	N/A
Weight (lbs):	12.00
Uniform Load Capacity (lbs):	1,000
Ordering:	Specify figure number.

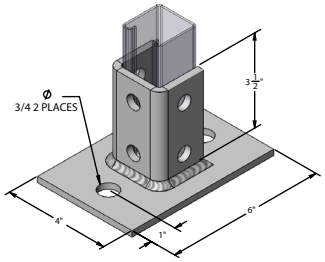
9088PB - 9095PB
post bases (continued)

9088PB
post base for 1-5/8" x 1-5/8" strut



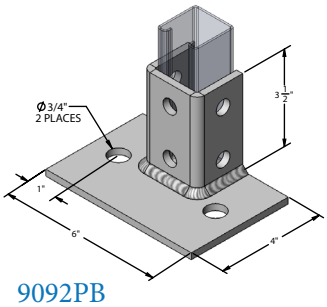
Materials/Finishes:	Zinc Plated (9088PBZ)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	2.88

9089PB
post base for 1-5/8" x 1-5/8" strut



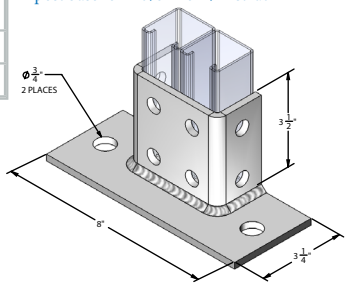
Materials/Finishes:	Zinc Plated (9089PBZ)
	Hot-Dip Galvanized (9089HDG)
	T-304 Stainless (9089PBSS)
	T-316 Stainless (9089PBSX)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	3.12

9090PB
post base - flush mount for 1-5/8" x 1-5/8" strut.



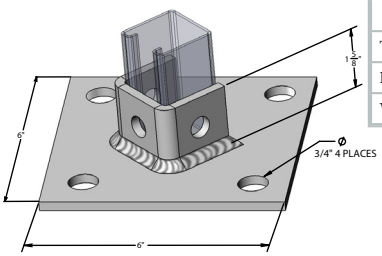
Materials/Finishes:	Zinc Plated (9090PBZ)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	3.12

9091PB
post base for 1-5/8" x 3-1/4" strut



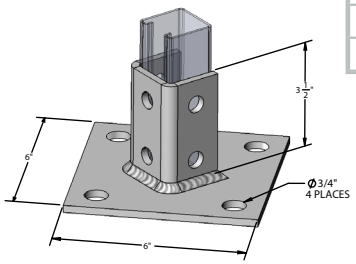
Materials/Finishes:	Zinc Plated (9091PBZ)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	3.20

9092PB
post base - diagonal for 1-5/8" x 1-5/8" strut



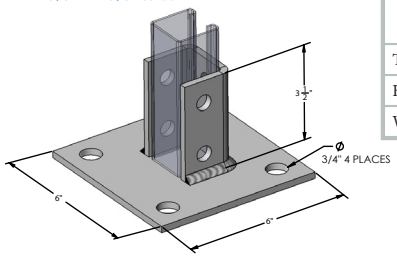
Materials/Finishes:	Zinc Plated (9092PBZ)
	T-304 Stainless (9092PBSS)
	T-316 Stainless (9092PBSX)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	3.14

9093PB
post base - diagonal for 1-5/8" x 1-5/8" strut



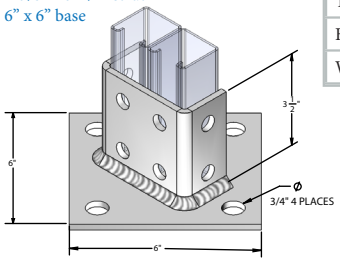
Materials/Finishes:	Zinc Plated (9093PBZ)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	3.92

9094PB
post base - square for 1-5/8" x 1-5/8" strut



Materials/Finishes:	Zinc Plated (9094PBZ)
	T-304 Stainless (9094PBSS)
	T-316 Stainless (9094PBSX)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	3.92

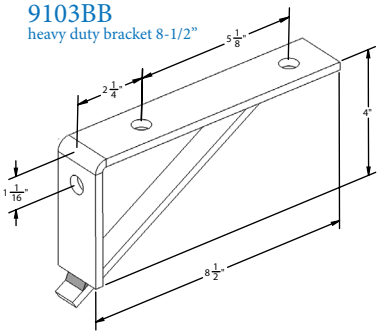
9095PB
post base for 1-5/8" x 3-1/4" strut 6" x 6" base



Materials/Finishes:	Zinc Plated (9095PBZ)
Thickness:	1/4"
Hole Dim:	9/16"
Wgt. each (lbs)	4.04

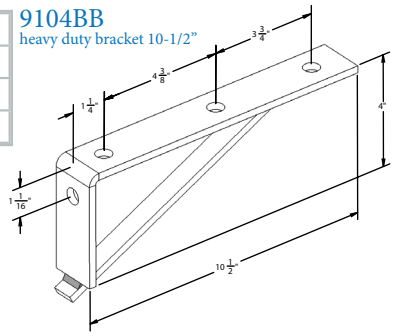
9103BB - 9109BB
brackets

9103BB
heavy duty bracket 8-1/2”



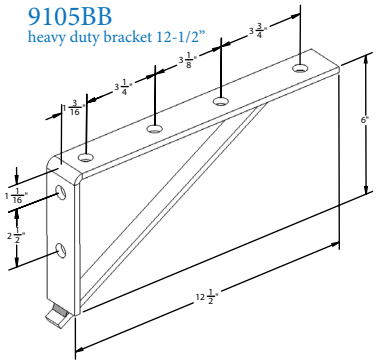
Materials/Finishes:	Zinc Plated (9103BBZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	1.68

9104BB
heavy duty bracket 10-1/2”



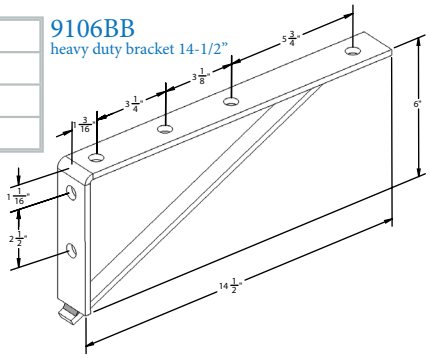
Materials/Finishes:	Zinc Plated (9104BBZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	2.02

9105BB
heavy duty bracket 12-1/2”



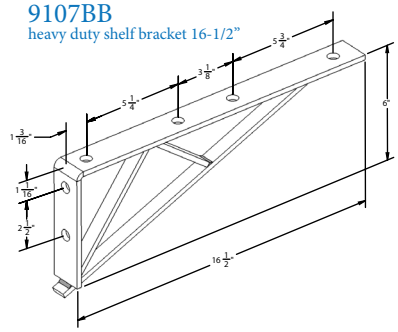
Materials/Finishes:	Zinc Plated (9105BBZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	2.58

9106BB
heavy duty bracket 14-1/2”



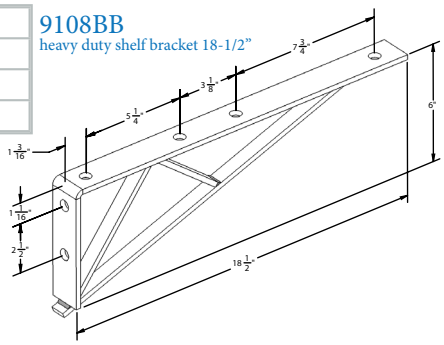
Materials/Finishes:	Zinc Plated (9106BBZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	2.92

9107BB
heavy duty shelf bracket 16-1/2”



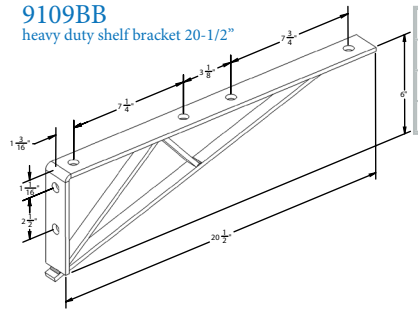
Materials/Finishes:	Zinc Plated (9107BBZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	3.81

9108BB
heavy duty shelf bracket 18-1/2”



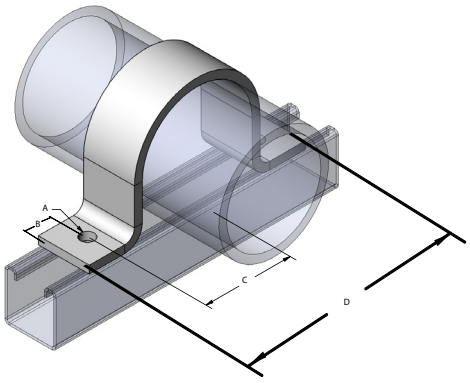
Materials/Finishes:	Zinc Plated (9108BBZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	4.16

9109BB
heavy duty shelf bracket 20-1/2”



Materials/Finishes:	Zinc Plated (9106BBZ)
Thickness:	1/4”
Hole Dim:	9/16”
Wgt. each (lbs)	4.61

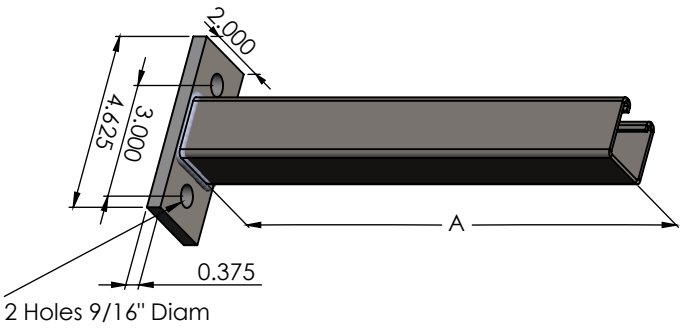
9110HD
two hole hold down clamp



Materials/Finishes	Plain Carbon Steel (9110HD)	Electro-Galvanized (9110HDG)
	T-304 Stainless (9110HDSS)	T-316 Stainless (9110HDSX)
Service:	Designed to steady a horizontal run of pipe against a perpendicular section of strut.	
Ordering:	Specify figure number, finish and pipe size.	

PIPE SIZE	A	B	C	D	WGT EACH (LBS)
1/2	5/16	3/8	1-1/4	3-1/8	.23
3/4	5/16	3/8	1-3/8	3-3/8	.26
1	5/16	3/8	1-9/16	3-3/4	.31
1-1/4	5/16	3/8	1-11/16	4	.35
1-1/2	5/16	3/8	1-13/16	4-1/4	.39
2	7/16	1/2	2-9/16	6	.94
2-1/2	7/16	1/2	2-13/16	6-1/2	1.14
3	7/16	1/2	2-15/16	6-3/4	1.33
3-1/2	7/16	1/2	3-7/16	7-3/4	1.52
4	9/16	5/8	3-1/2	8-1/8	1.76
5	9/16	5/8	4-13/16	9-1/2	1.98
6	9/16	5/8	4-3/8	9-7/8	2.25
8	9/16	5/8	5-11/16	12-1/2	2.80
10	9/16	5/8	6-13/16	14-3/4	3.35
12	9/16	5/8	7-7/8	16-7/8	3.90

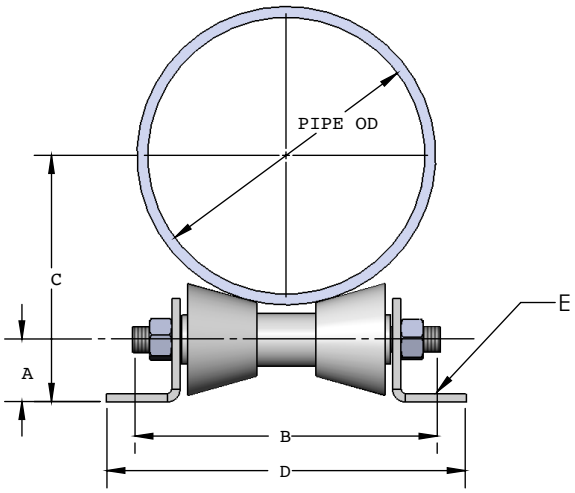
9200
single channel reversible bracket



Materials/ Finishes	Zinc Plated (9200Z)
Ordering:	Specify figure number, finish and length.

A	WGT EACH (lbs)	MAX REC LOAD (lbs)
6	1.85	1200
12	2.93	600
15	2.9	N/A
18	4.01	400
24	5.09	300
30	6	N/A
36	7	N/A

9650
strut roller support



Materials/Finishes	Zinc Plated (9650Z)	Hot-Dip Galvanized (9650HDG)
	T-304 Stainless (9650SS)	T-316 Stainless (9650SX)
Ordering:	Specify figure number, finish and pipe OD.	

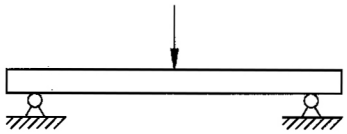
PIPE SIZE	A	B	C	D	E	AXLE SIZE
2	1-7/16	5-5/8	3-3/8	7-1/4	9/16	1/2 X 5-1/8
2-1/2	1-7/16	5-5/8	3-11/16	7-1/4	9/16	1/2 X 5-1/8
3	1-7/16	5-5/8	4	7-1/4	9/16	1/2 X 5-1/8
3-1/2	1-7/16	5-5/8	4-1/4	7-1/4	9/16	1/2 X 5-1/8
4	1-7/16	6-5/8	4-5/16	8-1/4	9/16	3/4 X 6-1/8
5	1-7/16	6-5/8	4-7/8	8-1/4	9/16	3/4 X 6-1/8
6	1-7/16	6-5/8	5-7/16	8-1/4	9/16	3/4 X 6-1/8
8	1-13/16	8-5/8	7-1/8	10-1/4	9/16	7/8 X -9
10	1-13/16	8-5/8	8-3/16	10-1/4	9/16	7/8 X -9
12	2-7/16	11-3/4	9-15/16	14	13/16	1-1/8 X 11-1/2
14	2-7/16	11-3/4	10-9/16	14	13/16	1-1/8 X 11-1/2
16	2-5/8	12-3/4	11-7/8	15	13/16	1-1/4 x 13
18	2-5/8	12-3/4	12-15/16	15	13/16	1-1/4 x 13
20	2-5/8	12-3/4	14	15	13/16	1-1/4 x 13

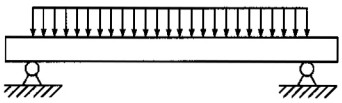
BEAMS

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).

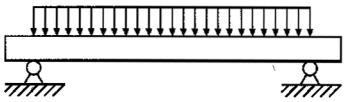


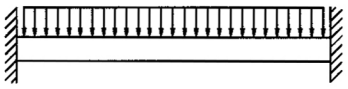


Uniform Load - A uniform load is spread evenly over the length of the beam from support to support.

Types of Beam Support Conditions

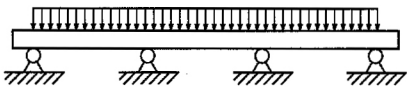
Simple Beam - A simple beam is supported at both ends by non-fixed connections which prevent vertical movement at the support point, but allow the beam to rotate or flex into a normal deflected shape. The majority of bolted metal framing connections closely approximate these conditions. The loading data presented in this catalog is based on simple beam analysis unless otherwise noted.

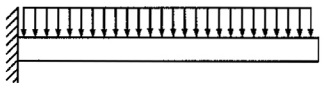




Fixed Beam - A fixed beam has rigid connections at each end that restrict the rotation of the beam and resist its deflection. The increased stiffness provided by this resistance to rotation provides a greater load capacity than that of an equivalent simple beam. A fixed-end beam would result when a channel 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.

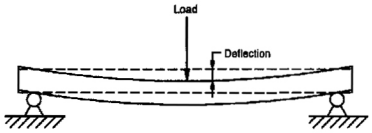




Cantilever Beams - A cantilever beam is supported by a fixed, rigid connection at one end and is totally unsupported at the opposite end. Shelf brackets and many of the strut brackets shown in this catalog are examples of cantilever beams.

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:



(a) The amount of load plus the weight of the beam itself.
(b) The manner in which the load is distributed.
(c) The method by which the beam is supported.
(d) The cross sectional shape of the beam.
(e) The material from which the beam is made.

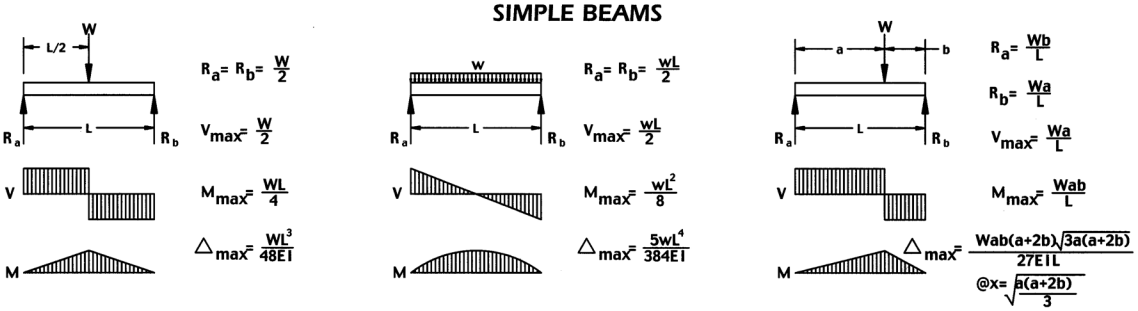
The stiffness of the beam derived from its cross sectional shape is defined by its "Moment of Inertia' or "I". The greater the "I" value of a beam, the greater its stiffness and the smaller its deflection. "I" values are given for both major axis (X-X and Y-Y). Increasing the height of the strut channel (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.

REFERENCE GUIDES
common beam loading formulas

SIMPLE BEAMS

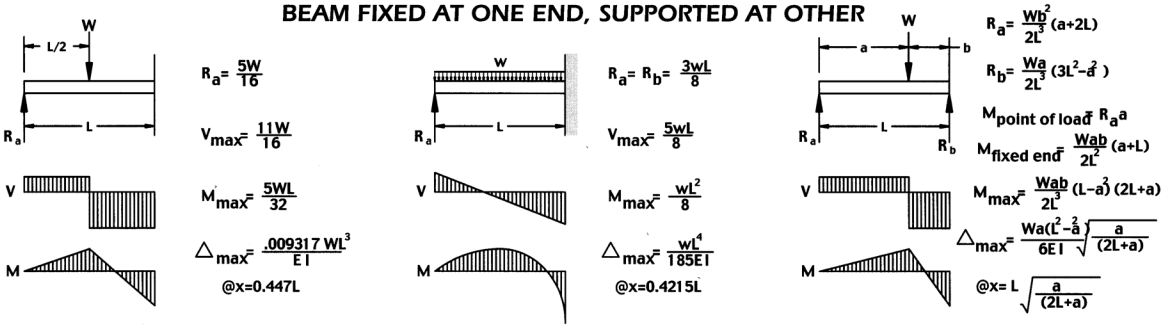


$R_a = R_b = \frac{W}{2}$ $V_{max} = \frac{W}{2}$ $M_{max} = \frac{WL}{4}$ $\Delta_{max} = \frac{WL^3}{48EI}$

$R_a = R_b = \frac{wL}{2}$ $V_{max} = \frac{wL}{2}$ $M_{max} = \frac{wL^2}{8}$ $\Delta_{max} = \frac{5wL^4}{384EI}$

$R_a = \frac{Wb}{L}$ $R_b = \frac{Wa}{L}$ $V_{max} = \frac{Wa}{L}$ $M_{max} = \frac{Wab}{L}$ $\Delta_{max} = \frac{Wab(a+2b)\sqrt{3a(a+2b)}}{27EIL}$ $@x = \sqrt{\frac{a(a+2b)}{3}}$

BEAM FIXED AT ONE END, SUPPORTED AT OTHER

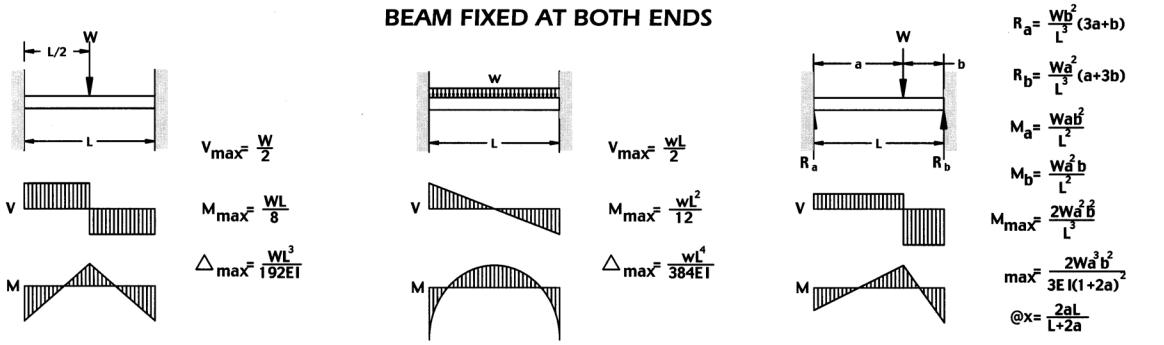


$R_a = \frac{5W}{16}$ $V_{max} = \frac{11W}{16}$ $M_{max} = \frac{5WL}{32}$ $\Delta_{max} = \frac{.009317\,WL^3}{EI}$ $@x = 0.447L$

$R_a = R_b = \frac{3wL}{8}$ $V_{max} = \frac{5wL}{8}$ $M_{max} = \frac{wL^2}{8}$ $\Delta_{max} = \frac{wL^4}{185EI}$ $@x = 0.4215L$

$R_a = \frac{Wb^2}{2L^3}(a+2L)$ $R_b = \frac{Wa}{2L^3}(3L^2-a^2)$ $M_{point\ of\ load} = R_a a$ $M_{fixed\ end} = \frac{Wab}{2L^2}(a+L)$ $M_{max} = \frac{Wab}{2L^3}(L-a^2)(2L+a)$ $\Delta_{max} = \frac{Wa(L^2-a^2)}{6EI}\sqrt{\frac{a}{(2L+a)}}$ $@x = L\sqrt{\frac{a}{(2L+a)}}$

BEAM FIXED AT BOTH ENDS

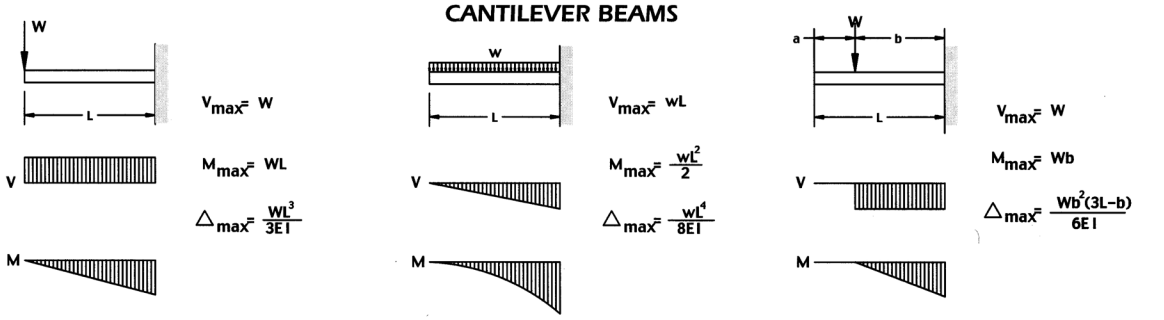


$V_{max} = \frac{W}{2}$ $M_{max} = \frac{WL}{8}$ $\Delta_{max} = \frac{WL^3}{192EI}$

$V_{max} = \frac{wL}{2}$ $M_{max} = \frac{wL^2}{12}$ $\Delta_{max} = \frac{wL^4}{384EI}$

$R_a = \frac{Wb^2}{L^3}(3a+b)$ $R_b = \frac{Wa^2}{L^3}(a+3b)$ $M_a = \frac{Wab^2}{L^2}$ $M_b = \frac{Wa^2b}{L^2}$ $M_{max} = \frac{2Wa^2b^2}{L^3}$ $max = \frac{2Wa^3b^2}{3EI(1+2a)^2}$ $@x = \frac{2aL}{L+2a}$

CANTILEVER BEAMS



$V_{max} = W$ $M_{max} = WL$ $\Delta_{max} = \frac{WL^3}{3EI}$

$V_{max} = wL$ $M_{max} = \frac{wL^2}{2}$ $\Delta_{max} = \frac{wL^4}{8EI}$

$V_{max} = W$ $M_{max} = Wb$ $\Delta_{max} = \frac{Wb^2(3L-b)}{6EI}$

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

CROSS REFERENCE

cooper b-line

COOPER B-LINE	EMPIRE	COOPER B-LINE	EMPIRE	COOPER B-LINE	EMPIRE
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	B2013 PA	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	8200 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 4-4/8”)	9009FF	B314	9085BC	B2018PA (ZN)	8250 SERIES
B138 (1-5/8” x 6-1/2”)	9010FF	B269R	9073WF		CONTINUED

CROSS REFERENCE
cooper b-line

COOPER B-LINE	EMPIRE	COOPER B-LINE	EMPIRE	COOPER B-LINE	EMPIRE
B2019PA	8200 SERIES	B3060PA (ZN)	8250 SERIES	N221WO	8000 SERIES
B2019PA (ZN)	8200SS SERIES	B3062PA (DCU)	8300CT/8300CTP SERIES	N222	8100 SERIES
B2020PA	8200 SERIES	B3062PA (ZN)	8250 SERIES	N222WO	8000 SERIES
B2020PA (ZN)	8250 SERIES	B3063PA (ZN)	8250 SERIES	N223	8100 SERIES
B2020SS4PA	8200SS SERIES	B3064PA (ZN)	8250 SERIES	N223WO	8000 SERIES
B2022PA	8200 SERIES	B3065PA (ZN)	8250 SERIES	N224	8100 SERIES
B2023PA (ZN)	8250 SERIES	B3066PA (ZN)	8250 SERIES	N2244SS6	8100SX SERIES
B2024PA (ZN)	8250 SERIES	B3067PA (ZN)	8250 SERIES	N224WO	8000 SERIES
B2025PA (DCU)	8300CT/8300CTP SERIES	B3068PA (ZN)	8250 SERIES	N225	8100 SERIES
B2025PA (ZN)	8250 SERIES	B3069PA (ZN)	8250 SERIES	N225SS6	8100SX SERIES
B2026PA (DCU)	8300CT/8300CTP SERIES	B2110PA (DCU)	8300CT/8300CTP SERIES	N225WO	8000 SERIES
B2026PA (ZN)	8250 SERIES	B2110PA (ZN)	8250 SERIES	N226	8100 SERIES
B2027PA (ZN)	8250 SERIES	B2111PA (ZN)	8250 SERIES	N226WO	8000 SERIES
B2028PA (DCU)	8300CT/8300CTP SERIES	B2112PA (ZN)	8250 SERIES	N227	8100 SERIES
B2028PA (ZN)	8250 SERIES	B2113PA (ZN)	8250 SERIES	N227WO	8000 SERIES
B2029PA (ZN)	8250 SERIES	B2115PA (ZN)	8250 SERIES	N228	8100 SERIES
B2030PA (DCU)	8300CT/8300CTP SERIES	B2116PA (ZN)	8250 SERIES	N228SS6	8100SX SERIES
B2030PA (ZN)	8250 SERIES	B2117PA (ZN)	8250 SERIES	N228WO	8000 SERIES
B2031PA (ZN)	8250 SERIES	B2128PA (ZN)	8250 SERIES	N255	8100 SERIES
B2032PA (DCU)	8300CT/8300CTP SERIES	B2130PA	8200 SERIES	N255SS6	8100SX SERIES
B2032PA (ZN)	8250 SERIES	B2132PA	8200 SERIES	N255WO	8000 SERIES
B2033PA (ZN)	8250 SERIES	B2207PA	8350 SERIES	N275	8100 SERIES
B2034PA (DCU)	8300CT/8300CTP SERIES	B2208PA	8350 SERIES	N275WO	8000 SERIES
B2034PA (ZN)	8250 SERIES	B2209PA	8350 SERIES	N278	8100 SERIES
B3035PA (ZN)	8250 SERIES	B2210PA	8350 SERIES	N278WO	8000 SERIES
B3036PA (ZN)	8250 SERIES	B2211PA	8350 SERIES	N521	8050 SERIES
B3037PA (ZN)	8250 SERIES	B2212PA	8350 SERIES	N522	8050 SERIES
B3038PA (DCU)	8300CT/8300CTP SERIES	B2213PA	8350 SERIES	N523	8050 SERIES
B3038PA (ZN)	8250 SERIES	B2400 SERIES	9110HD SERIES	N524	8050 SERIES
B3039PA (ZN)	8250 SERIES	BVT025	8500 SERIES	N525	8050 SERIES
B3041PA (ZN)	8250 SERIES	BVT037	8500 SERIES	N526	8050 SERIES
B3042PA (DCU)	8300CT/8300CTP SERIES	BVT050	8500 SERIES	N527	8050 SERIES
B3042PA (ZN)	8250 SERIES	BVT062	8500 SERIES	N528	8050 SERIES
B3043PA (ZN)	8250 SERIES	BVT075	8500 SERIES	N555	8050 SERIES
B3045PA (ZN)	8250 SERIES	BVT087	8500 SERIES	TN221	8150 SERIES*
B3046PA (DCU)	8300CT/8300CTP SERIES	BVT100	8500 SERIES	TN222	8150 SERIES*
B3046PA (ZN)	8250 SERIES	BVT112	8500 SERIES	TN223	8150 SERIES*
B3047PA (ZN)	8250 SERIES	BVT125	8500 SERIES	TN224	8150 SERIES*
B3048PA (ZN)	8250 SERIES	BVT137	8500 SERIES	TN225	8150 SERIES*
B3050PA (DCU)	8300CT/8300CTP SERIES	BVT150	8500 SERIES	TN227	8150 SERIES*
B3050PA (ZN)	8250 SERIES	BVT162	8500 SERIES	TN228	8150 SERIES*
B3051PA (ZN)	8250 SERIES	BVT175	8500 SERIES	TN525	8150 SERIES*
B3052PA (ZN)	8250 SERIES	BVT187	8500 SERIES		
B3054PA (DCU)	8300CT/8300CTP SERIES	BVT200	8500 SERIES		
B3054PA (ZN)	8250 SERIES	BVT212	8500 SERIES		
B3055PA (ZN)	8250 SERIES	BVT262	8500 SERIES		
B3056PA (ZN)	8250 SERIES	BVT312	8500 SERIES		
B3058PA (ZN)	8250 SERIES	BVT412	8500 SERIES		
B3059PA (ZN)	8250 SERIES	N221	8100 SERIES	* SIMILAR BUT NOT IDENTICAL	

CROSS REFERENCE

erico

ERICO	EMPIRE	ERICO	EMPIRE	ERICO	EMPIRE
A12	7000	L23 (EG)	9034CA		
A12A	7000A	L32	9037CA		
A12AHS	7001A	L33	9038CA		
A12HS	7001	L34	9036CA		
A14	7100	L40	9039CA		
A14HS	7101	L43	9035CA		
B1200NCT	7225	L46 30 DEGREE	9044AF		
C14	7200	L46 45 DEGREE	9045AF		
C14HS	7201	L47 45 DEGREE	9047AF		
D12	7230	L100000EG	9023CA		
D12A	7240	L220000EG	9030CA		
D12AHS	7241	L441200EG	9040CA		
D12HA	7231	L441800EG	9042CA		
E12	7250	NUT SERIES	8000		
E12HS	7251	OD SERIES	8250		
BC16A000EG	9085BC	P09 (BASE = 3-12" X 6")	9089PB		
BC17A000EG	9086BC	P09F	9090PB		
BC17D000EG	9087BC	P10SQ	9092PB		
BC21	9084BC	P11SQ	9094PB		
BC1800037EG	9083BC	P15	9088PB		
BC200000EG	9081BC	P110000EG	9093PB		
COPC	8300CT/8300CTP SERIES	RIGD-EG	8200		
F090000EG	9003FF	SPRA SERIES	8100		
F11-F12 SERIES	9002FF SERIES	SPRC SERIES	8050		
F13-F18 EG	9001FF SERIES	STR 2 SERIES	9110HD		
F20	9006FF	TCC SERIES	8500		
F21	9008FF	TSNT SERIES	8150		
F22	9004FF	U11C	9049UF		
F23	9007FF	U12D	9056UF		
F25	9016FF	U13 (7-1/4")	9054UF		
F26	9009FF	U24A	9052UF		
F27	9010FF	UNIV SERIES	8350 SERIES		
F28	9017FF	VS20	8550		
F30	9013FF	W12	9066WF		
F31	9018FF	W13	9069WF		
F32	9019FF	W14	9072WF		
F33	9015FF	W16	9076WF		
F34	9020FF	W17	9078WF		
F35	9012FF	W18	9080WF		
F36	9011FF	W19	9075WF		
F37	9014FF	W20	9077WF		
F38	9021FF	W21	9079WF		
L08	9024CA	Z17	9063ZF		
L11 (1-7/8" X 2")	9022CA	Z14	9058ZF		
L15	9025CA	Z25	9065ZF		
L18 (EG)	9026CA	Z10C0000EG	9059ZF		
L19 (1-7/8" X 3-7/8")	9028CA	Z10D0000EG	9063ZF		
L20 (EG)	9027CA	Z10M0000EG	9060ZF		
L21	9029CA				

CROSS REFERENCE

phd

PHD	EMPIRE	PHD	EMPIRE	PHD	EMPIRE
1001	7000 (10’)	5025	9011FF	5615	9073WF
1002	7000 (20’)	5030	9014FF	5616	9074WF
1011	7001 (10’)	5035	9016FF	5620	9066WF
1022	7001 (20’)	5040	9017FF	5625	9069WF
1101	7100 (10’)	5045	9012FF	5630	9072WF
1102	7100 (20’)	5050	9015FF	5635	9076WF
1111	7101 (10’)	5060	9020FF	5640	9078WF
1112	7101 (20’)	5065	9013FF	5645	9080WF
1301	7200 (10’)	5075	9018FF	5650	9075WF
1302	7200 (20’)	5080	9019FF	5655	9079WF
1311	7201 (10’)	5095	9021FF	5660	9077WF
1312	7201 (20’)	5110 (1-5/8 x 2-1/4)	9023CA	5730	9052UF
1501	7250 (10’)	5112	9022CA	6010	9092PB
1502	7250 (20’)	5119	9024CA	6020	9093PB
1511	7251 (10’)	5120 (2-5/16 x 3-1/2)	9026CA	6025	9094PB
1512	7251 (20’)	5121 (1-5/8 x 4-3/16)	9027CA	6030 (3-1/8 x 8)	9090PB
1601	7230 (10’)	5122	9028CA	6050	9095PB
1602	7230 (20’)	5130 (3-1/2 x 4-3/16)	9030CA	6065 (3-1/8 x 8)	9091PB
1611	7231 (10’)	5131 (3-13/16 x 3-7/8)	9031CA	6095	9088PB
1612	7231 (20’)	5165	9034CA	6101	9103BB
4000	7225	5180	9035CA	6102	9104BB
1001A	7000A (10’)	5185 (1-5/8 x 4-3/16)	9036CA	6121	9105BB
1002A	7000A (20’)	5190	9039CA	6122	9106BB
1011A	7001A (10’)	5200	9037CA	6123	9107BB
1012A	7001A (20’)	5205	9038CA	6124	9108BB
1601A	7240 (10’)	5221	9025CA	6125	9109BB
1601A SH	7241 (10’)	5230	9029CA	7011	9082BC
1602A	7240 (20’)	5304	9044AF	7012	9083BC
1602A SH	7241 (20’)	5315	9045AF	7030	9084BC
2001-2016	8200 SERIES	5345	9046AF	7040	9081BC
2001SS-2016SS	8200SS SERIES	5361	9047AF	7060	9085BC
2101-2107	8350 SERIES	5371	9048AF	7070	9086BC
2302-2314	8300CT/8300CTP SERIES	5410	9040CA	7075	9087BC
2401-2461	8250 SERIES	5412	9042CA	7251-7262	9110HD
2501-2514	8500 SERIES	5501	9049UF		
2600	8550	5503	9053UF		
3001-3011	8000 SERIES	5505	9056UF		
3101-3111	8100 SERIES	5507	9057UF		
3101SS-3111SS	8100SX SERIES	5530	9054UF		
3201-3209	8050 SERIES	5521	9055UF		
5000-5004	9001FF SERIES	5551	9059ZF		
5005-5008	9002FF SERIES	5553	9063ZF		
5011	9005FF	5554	9062ZF		
5012	9004FF	5556	9058ZF		
5013	9006FF	5590	9065ZF		
5015	9007FF	5600	9067WF		
5019	9008FF	5601	9068WF		
5020	9009FF	5610	9070WF		
5023	9010FF	5611	9071WF		

CROSS REFERENCE
power strut

POWER STRUT	EMPIRE	POWER STRUT	EMPIRE	POWER STRUT	EMPIRE
PS100	7250	PS 692	9065ZF	PS 2131-R	9070WF
PS100 EH	7251	PS 710	9051UF	PS 2190	9020FF
PS150	7230	PS 711	9061ZF	PS 2504	9002FF
PS150 2T3	7240	PS 712	9017FF	PS 2545	9025CA
PS150 2T3 EH	7241	PS 714	9016FF	PS 2601	9063ZF
PS150 EH	7231	PS 718	9011FF	PS 2648	9056UF
PS200	7000	PS 721	9055UF	PS 2651-A	9086BC
PS200 2T3	7000A	PS 732-10	9104BB	PS 3033	9093PB
PS200 EH	7001	PS 732-12	9105BB	PS 3040	9088PB
PS200 EH 2T3	7001A	PS 732-14	9106BB	PS 3049	9029CA
PS210	7100	PS 732-8	9103BB	PS 3064	9095PB
PS210 EH	7101	PS 744	9012FF	PS 3126 SERIES	9110HD
PS349 10" W/O	7225 (10')	PS 745	9028CA	PS 3373 (4 X 4)	9034CA
PS349 20" W/O	7225 (20')	PS 746	9035CA	PS 3792	8550
PS500	7200	PS 747	9018FF	PS NS SERIES	8000
PS500 EH	7201	PS 748 (1-5/8 X 4-3/16)	9036CA	PS NSS SERIES	8000
PS 601	9003FF	PS 750	9015FF	PSRS SERIES	8100
PS 602	9006FF	PS 756 (1-5/8 X 3-1/2)	9064ZF	PSSS SERIES	8050
PS 603	9022CA	PS 781-45 DEGREE	9046AF	PS TG SERIES	8150
PS 604	9023CA	PS 793-45 DEGREE	9048AF		
PS 605 (2-5/16 X 3-1/2)	9026CA	PS 806	9024CA		
PS 606 (1-5/8 X 4-3/16)	9027CA	PS 821	9078WF		
PS 607 (1-5/8 X 4-3/16)	9030CA	PS 854	9019FF		
PS 608-L	9033CA	PS 855-1	9085BC		
PS 608-R	9032CA	PS 888	9007FF		
PS 611	9062ZF	PS 907	9082BC		
PS 612	9060ZF	PS 913	9080WF		
PS 613	9053UF	PS 922-L	9068WF		
PS 614	9037CA	PS 922-R	9067WF		
PS 615	9038CA	PS 923	9076WF		
PS 616	9052UF	PS 925	9013FF		
PS 617	9010FF	PS 926-12	9040CA		
PS 618	9009FF	PS 926-18	9042CA		
PS 619 SERIES	9001FF	PS 926-24	9043CA		
PS 620	9004FF	PS 927	9039CA		
PS 624 45 DEGREE	9047AF	PS 928	9059ZF		
PS 633 30 DEGREE	9044AF	PS 929	9049UF		
PS 633 45 DEGREE	9045AF	PS 978	9050UF		
PS 660 (3-13/16 X 3-7/8)	9031CA	PS 998	9083BC		
PS 665	9066WF	PS 1100 SERIES	8200		
PS 666	9069WF	PS 1100 SS SERIES	8200SS		
PS 667	9072WF	PS 1200 CPLT SERIES	8300CT/8300CTP SERIES		
PS 668	9075WF	PS 1200 EG SERIES	8250		
PS 669	9079WF	PS 1300 SERIES	8350		
PS 670	9077WF	PS 1400 SERIES	8500		
PS 679	9057UF	PS 2112	9021FF		
PS 685	9084BC	PS 2128-L	9074WF		
PS 686	9081BC	PS 2128-R	9072WF		
PS 687-A (3 HOLES-2 SLOTS)	9054UF	PS 2131-L	9071WF		

CROSS REFERENCE
tolco

TOLCO	EMPIRE	TOLCO	EMPIRE	TOLCO	EMPIRE
A12	7000	L11	9022CA	W17	9078WF
A12A	7000A	L15	9025CA	W18	9080WF
A12AHS	7001A	L18	9026CA	W19	9075WF
A12HS	7001	L19 (1-7/8 X 3-7/8)	9028CA	W20	9077WF
A14	7100	L20	9027CA	W21	9079WF
A12HS	7101	L21	9029CA	2 STR SERIES	9110HD
B12 INSERT	7225	L22	9030CA	Z25	9065ZF
C14	7200	L23L	9033CA	Z10 (B)	9061ZF
C14HS	7201	L23R	9032CA	Z10 (C)	9059ZF
D12	7230	L23U (ONLY 6 HOLES)	9034CA	Z10 (D)	9063ZF
D12A	7240	L32	9037CA		
D12AHS	7241	L33 (3-1/2 X 4-1/8)	9038CA		
D12HS	7231	L34	9036CA		
E12	7250	L40	9039CA		
E12HS	7251	L43 (1-5/8 X 2-1/4)	9035CA		
BC16 (A)	9085BC	L44 (12”)	9040CA		
BC17 (A)	9086BC	L44 (18”)	9042CA		
BC17(E)	9087BC	L45-30 DEGREE	9044AF		
BC18 (3/8”)	9082BC	L45-45 DEGREE	9045AF		
BC18 (1/2”)	9083BC	L46-45 DEGREE	9046AF		
BC20	9081BC	L47-45DEGREE	9047AF		
BC21	9084BC	L48-45 DEGREE	9048AF		
BR11 (8-1/2”)	9103BB	NUT SERIES	8000		
BR11 (10-1/2”)	9104BB	OD SERIES	8250		
BR11 (12-1/2”)	9105BB	P10SQ	9092PB		
BR11 (14-1/2”)	9106BB	P11	9093PB		
BR12	9107BB	P11F	9090PB		
CUSH CLAMP SERIES	8500	P11SQ	9094PB		
F09	9003FF	P13F (3-1/8 X 8 BASE)	9091PB		
F11-F12	9002FF	P13	9095PB		
F14-F18	9001FF	P15	9088PB		
F20	9006FF	RIGD SERIES	8200		
F22	9004FF	SPRA SERIES	8100		
F23	9007FF	SPRC SERIES	8050		
F25	9016FF	TSN SERIES	8150		
F26	9009FF	U11	9049UF		
F27	9010FF	U12	9056UF		
F28	9017FF	U13 (7-1/4”)	9054UF		
F30	9013FF	U16	9057UF		
F31	9018FF	U24	9052UF		
F32	9019FF	UNIV SERIES	8350		
F33	9015FF	W10 (R)	9067WF		
F34	9020FF	W10 (L)	9068WF		
F35	9012FF	W11 (L)	9074WF		
F36	9011FF	W11 (R)	9073WF		
F37	9014FF	W12	9066WF		
F38	9021FF	W13	9069WF		
L08	9024CA	W14	9072WF		
L10 (1-5/8 X 2-1/4)	9023CA	W16	9076WF		

CROSS REFERENCE

unistrut

UNISTRUT	EMPIRE	UNISTRUT	EMPIRE	UNISTRUT	EMPIRE
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
P100PT	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')	7225	P1186	9047AF	P2043CC	8300CTP/8300CT SERIES
P3270 (20')	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	8250SERIES	P5547	9056UF
P1067	9007FF	P2026CC	8300CTP/8300CT SERIES		

NOTES

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NOTES

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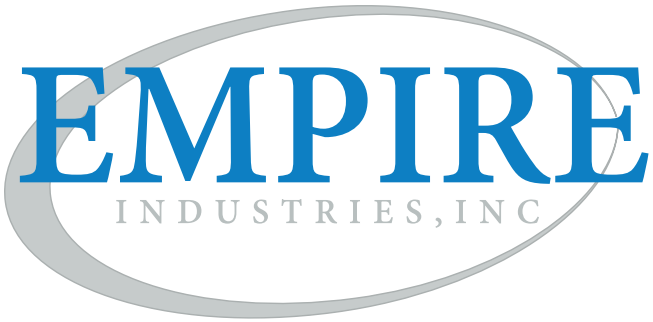

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