A Broad and Versatile Metal Framing Line Backed

More Than 8,000 Quality Products

The Power–Strut metal framing system can be regarded as a basic building material. Our metal framing system is an erector set concept, using channel and fittings to solve many applications. You can conceal metal framing in the basic structure of a building or run it along the surface of walls, ceilings and floors. An endless array of fittings provide freedom to work at virtually any angle along any surface to shape a support system that fits your exact needs.

Available finishes include hot–dipped galvanized, pregalvanized, electro–galvanized and painted, along with material choices of steel, stainless steel and aluminum.

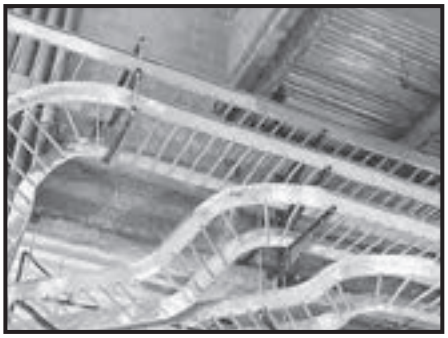
Beyond its versatility as a basic building material, metal framing is popular for more exotic applications such as clean rooms, satellite dish supports, x–ray supports, storage racks, theater screens, tunnel stanchions and offshore platform catwalks. While the uses of metal framing are truly unlimited, they fall in to three major categories.

Electrical Systems

Versatile metal framing is widely used by electrical contractors to support conduit, panel boxes, raceway systems and other electrical components. In addition, Power–Strut channel can be used as a wiring raceway. Products marked with the UL symbol in this catalog are listed by Underwriter's Laboratories for use in raceway applications.

Channel raceways or support systems can be attached to ceilings, wood or steel beams, inside columns or imbedded in concrete. Trapeze systems can support conduit from either the top or bottom.

As a lighting support system, metal framing helps assure proper alignment over long spans. As a raceway system, channel offers an opportunity to reduce construction costs through more efficient use of installation labor. The exceptional versatility of channel gives contractors more flexibility in solving miscellaneous problems which may arise at the job site.



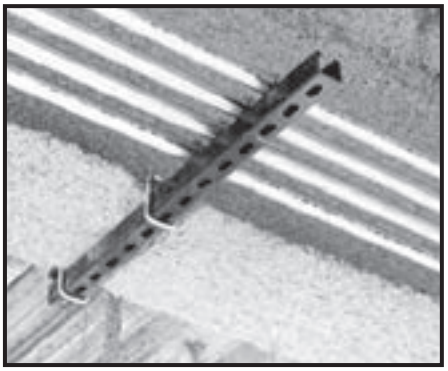
by a Leading Reputation for Quality and Service.

Mechanical Systems That Reduce Costs

For mechanical support of HVAC, plumbing and fire protection systems, the versatility of metal framing systems is unmatched. It is by far the most popular framing system with contractors because the wide variety of fittings and support devices available help solve virtually any support problem without expensive welding.

Piping stanchions, ceiling and wall-mounted supports and tunnel supports are common metal framing applications. Concrete insert, shelf bracket, wall and ceiling-mounted systems provide flexible solutions to any piping support applications.

In addition, pipe support products such as Power-Wrap and cushioned clamps provide insulation to prevent potential damage from noise, vibration, temperature variations and metal-to-metal contact.



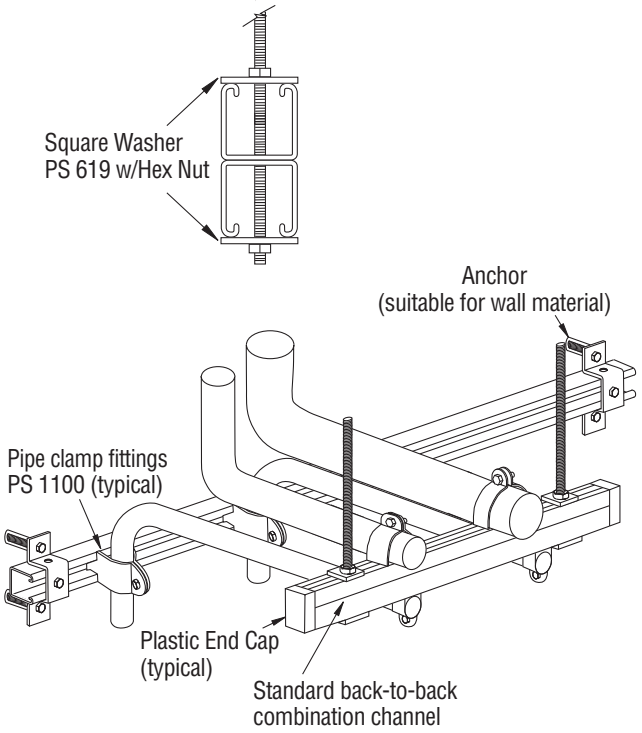
OEM Components and Maintenance

Metal Framing systems provide convenient solutions for maintenance and retrofit requirements in processing and manufacturing facilities. Also, Power-Strut products can be used as cost-effective components in OEM applications. For example, channel can be used as conveyor stands and side rails or provide framing for panel cabinetry products, or for generator, motor and pump supports.

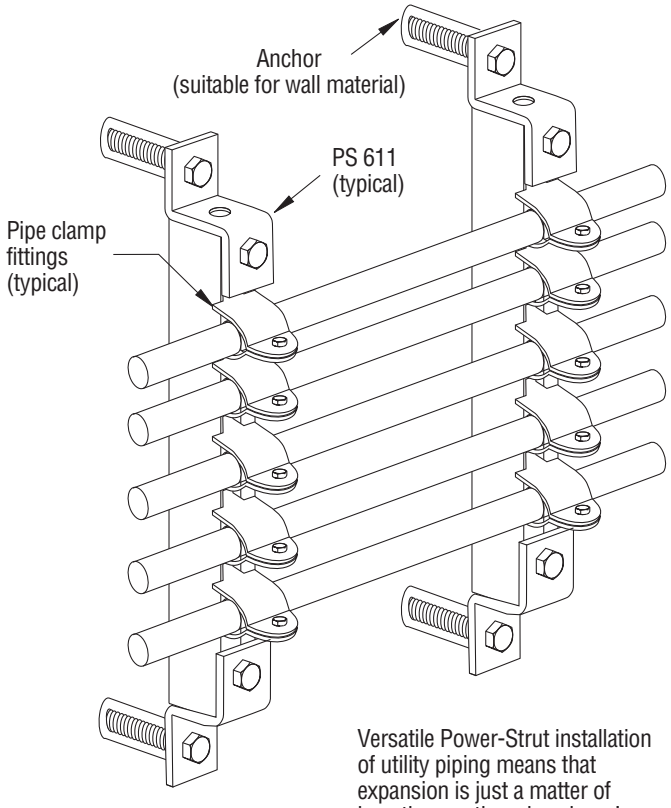
The complete line of products and leading reputation for quality and service make Power-Strut your practical choice for metal framing. Contact your local Power-Strut representative for additional information.

EXAMPLE APPLICATIONS

Overhead Support Vertical to Horizontal

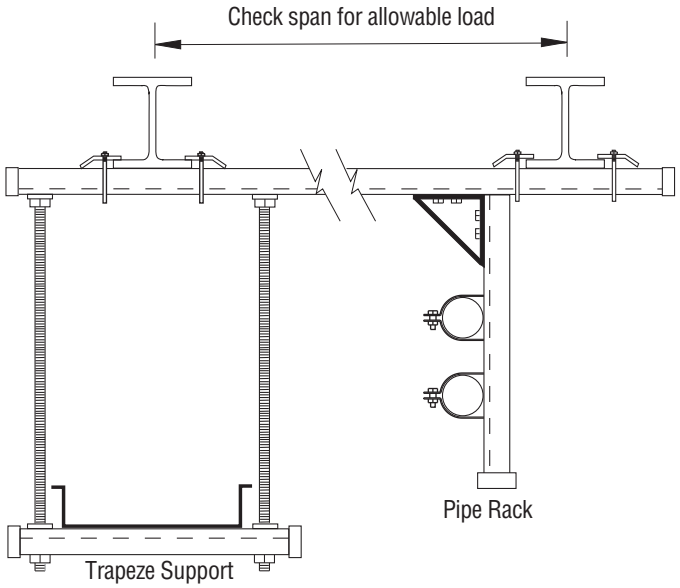


Wall Mount Organize & Control MultiShelf or Utility Support

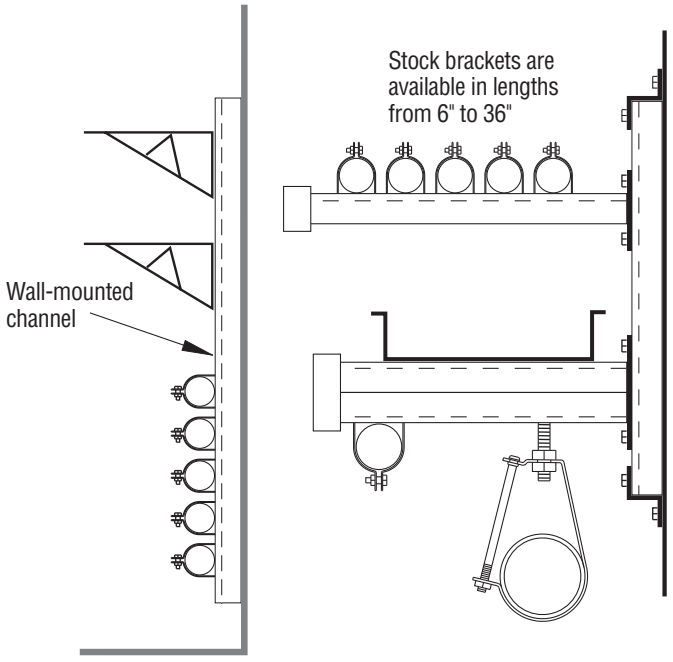


Versatile Power-Strut installation of utility piping means that expansion is just a matter of inserting another pipe clamp!

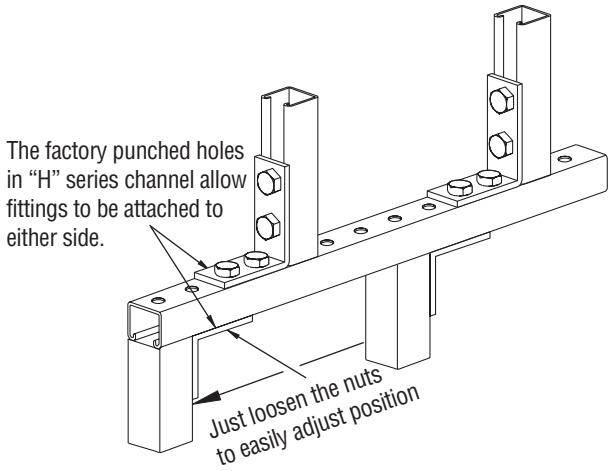
Overhead Multi-Use Support Systems Using Channel Attached to "I" Beams



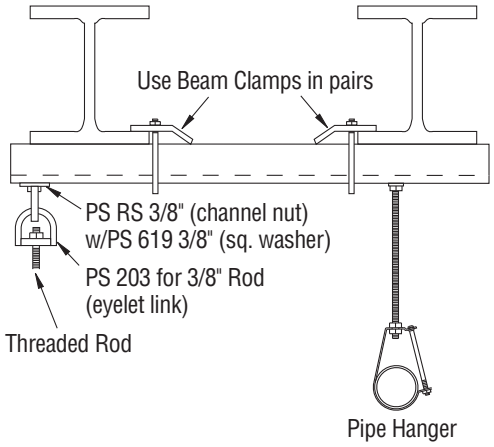
Wall Mounted Brackets



Standard Channel and Fitting Assembly

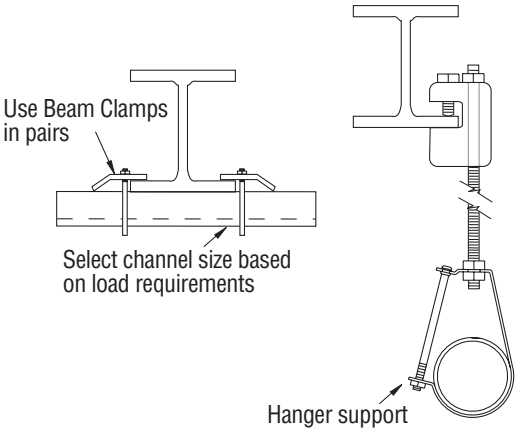


Supports for Threaded Rod Attachments Between Beams



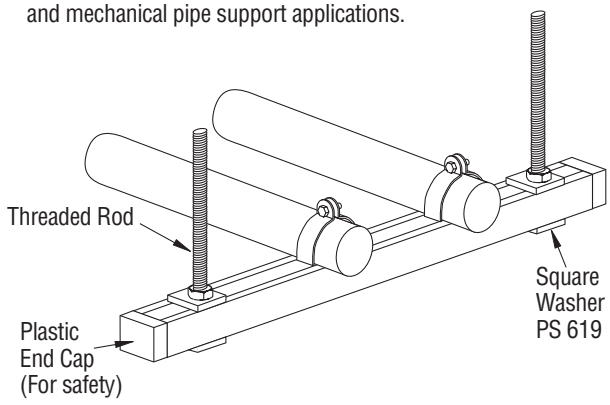
Select channel size based on load requirements

Supports for Threaded Rod Attachments to Single Beams

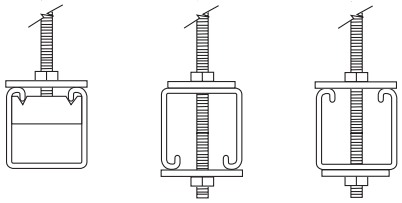


Trapeze Support System

Power-Strut metal framing is ideal for electrical and mechanical pipe support applications.

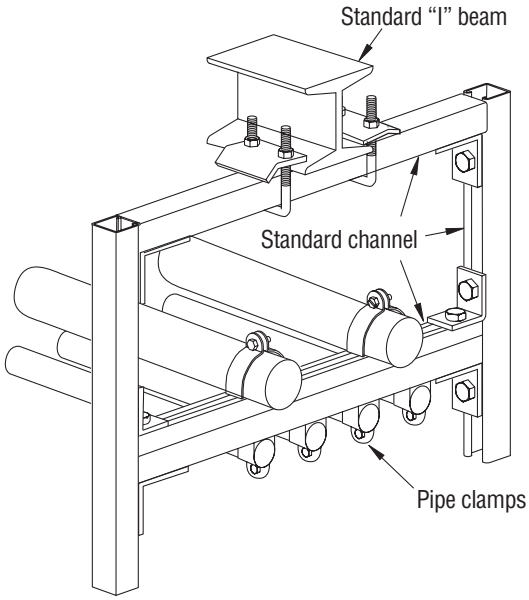


Acceptable Methods to Hang Channels

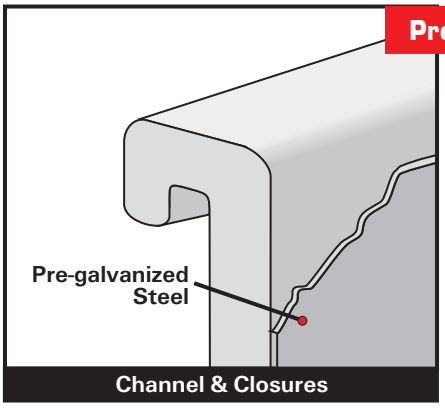


Pre-slotted channel allow through channel connections

Ganged Pipe Support



Pregalvanized (PG)

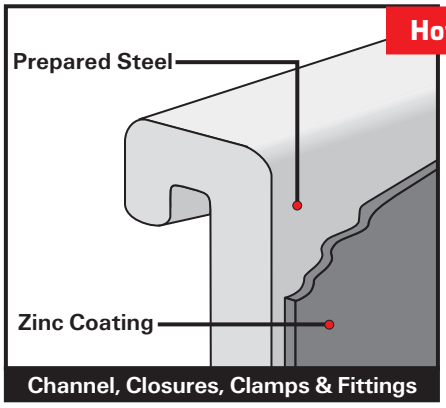


Channel & Closures

Material (steel strip) is coated with zinc by hot-dip process prior to roll-forming or press operations.

The zinc coating conforms to ASTM A653, Grade 90 General Requirement for Steel Sheet, Zinc–Coated (Galvanized) by Hot Dip Process.

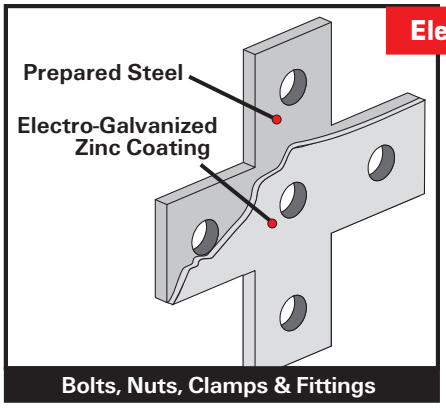
Hot-Dipped Galvanized (HG)



Channel, Closures, Clamps & Fittings

Material is coated with zinc after being roll-formed or after all manufacturing operations are completed, conforming to ASTM A123 or A153.

Electro-Galvanized (EG)



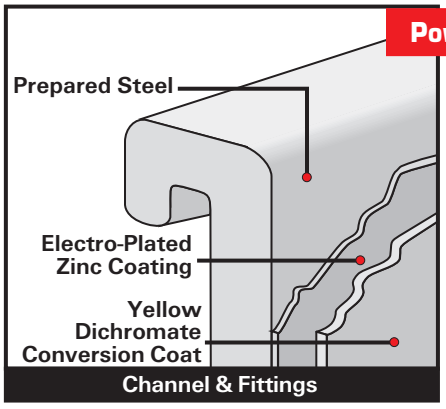
Bolts, Nuts, Clamps & Fittings

Fittings and hardware are electrolytically coated with zinc to commercial standards (ASTM-B633 Type III C1).

SC1 (mild) has a Zinc coating of 0.2 and is recommended for dry indoor use. SC1 is the standard finish thickness.

SC3 (Severe) has a Zinc coating of 0.5 mill and is the standard finish thickness only on UL Listed raceway products.

Power-Gold (ZD)



Channel & Fittings

An Electro-galvanized zinc plate is applied with a cohesive molecular bond to the steel base metal, in compliance with the ASTM B633 standard. Yellow Dichromate is applied over the zinc and results in a gold appearance which acts as a nonporous barrier sealant.

SC1 (mild), recommended for dry indoor use, has a Zinc coating of 0.2 and is the standard finish thickness

SC3 (Severe) has a Zinc coating of 0.5 mill and is the standard finish thickness only on UL Listed raceway products.

ZINC COATING

Power-Strut products are available in four types of zinc coatings:

- Electroplated (EG)
- Pregalvanized (PG)
- Hot-Dipped Galvanized (HG)
- Yellow Dichromate (ZD)

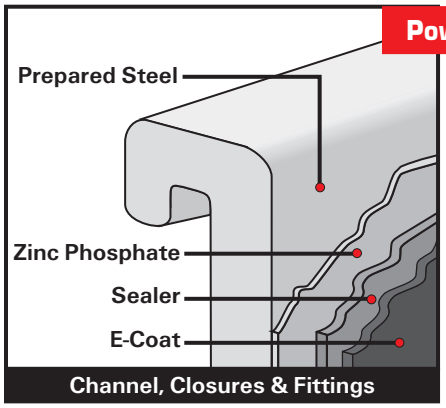
Zinc coatings offer two types of protection:

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

The service life of zinc coating is directly related to the zinc coating thickness as shown below.

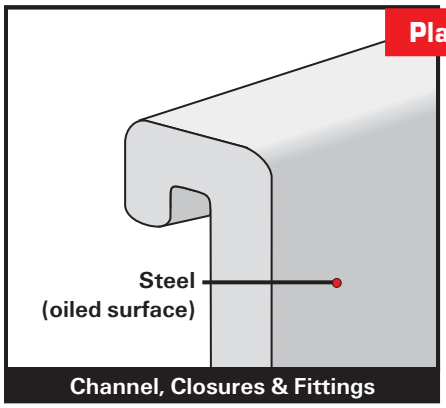
COMPARISON OF ZINC GALVANIZED FINISHES

Finish	Zinc Thickness
Hot-Dipped Galvanized	2.6 MIL
Pregalvanized	0.75 MIL
Electro-Galvanized (SC1)	0.2 MIL
Electro-Galvanized (SC3)	0.5 MIL
Power-Gold (SC1)	0.2 MIL
Power-Gold (SC3)	0.5 MIL



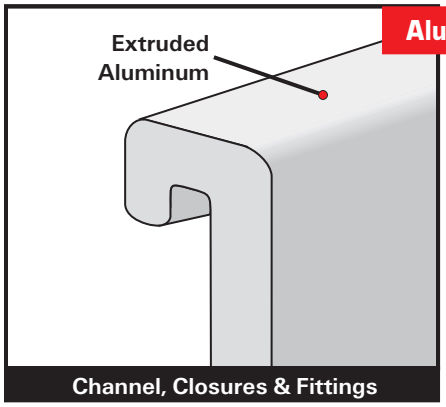
Power-Green® (GR)

Channel and parts are cleaned and phosphated. Immediately afterward, a uniform coat of rust-inhibiting thermoset epoxy paint is applied by cathodic electro-deposition and thoroughly baked.



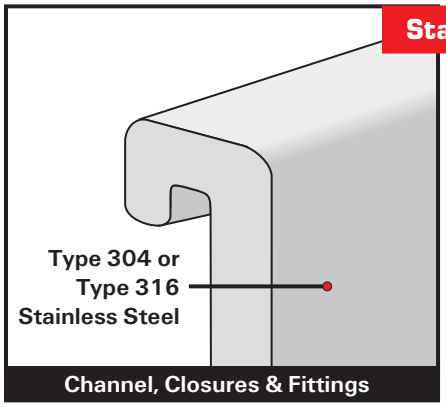
Plain (PL)

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



Aluminum (AL)

Channel is extruded aluminum in accordance with ASTM B221 Type 6063-T6.



Stainless Steel (SS)

Material in accordance with ASTM A240 (Type 304 or type 316).

POWER-GREEN® TECHNICAL DATA

STEEL SUBSTRATE PREPARATION
Eight stage continuous cleaning, rinse, zinc phosphate conversion coating and sealer.

COATING
Thermoset epoxy

Color: Federal Highway Green Color Tolerance Chart PR Color No. 4.

Hardness: 2H+

Coating Process: Cathodic Electrodeposition.

PERFORMANCE
Salt Spray:

Scribed: exceeds 400 hrs per ASTM B117. (⅛ Creep)

Unscribed: exceeds 600 hours per ASTM B117. (6% Red Rust)

ENVIRONMENTAL ISSUES
Formulated as a "heavy metal"- free coating (trace elements only).

Outgassing in service: essentially none at 350°F for 24 hrs.

Finishes (Ordering):

When ordering, add the finish to the part number.

Examples: PS 200-10 PG
PS 200-10 ZD
PS 200-10 GR
PS 200-10 HG

SPECIFICATIONS

Materials:

Channel* & Closures – Pregalvanized
ASTM A653 Grade 33, Steel Sheet Zinc Coated by Hot Dip Process

Channel* – Plain, Painted or Hot Dip Galvanized
ASTM A–1011 Grade 33, Hot Rolled Carbon Steel Sheet and Strip, Structural Quality

Channel* – Stainless Steel
ASTM A–240, Type 304, Heat Resisting Chromium and Chromium–Nickel Stainless Steel Plate, Sheet, Strip for Pressure Vessel

Channel* – Aluminum
ASTM B–221, Type 6063 T6, Aluminum Alloy Extruded Bar, Rod, Wire, Shape and Tube

Closures – Plain, Painted or Hot Dip Galvanized
ASTM A1008, Steel, Strip, Carbon, Cold–Rolled

Fittings* – Steel
ASTM A575, A576, A635, A1011 SS Grade 33, A1011 HSLAS Grade 45 or A36

Fittings* – Aluminum
ASTM B–209

Accessories – Steel
ASTM A575, A576, A635, A1011 SS Grade 33, A1011 HSLAS Grade 45, A653 Grade 33 or A36

Pipe Clamps – Steel
A–1011SS Grade 33

Pipe Clamps – Stainless Steel
ASTM A–240, Type 304

Pipe Clamps – Aluminum
ASTM B-209, 5052, H32 Grade, Sheet and Plate

Channel Nuts
ASTM (1/4" & 5/16") A1011 SS Grade 33, (3/8", 7/16" & 1/2") A576 Grade 1015 Modified, (5/8" & 3/4") A36 or A675 Grade 60, (7/8") A36, Case hardened to RC25 min.

Hex Nuts and Bolts
ASTM A–563, Grade A and ASTM A–307, Grade A

Threaded Rod
Low Carbon Steel
Yield = 32 ksi min.
Tensile = 52 ksi min

* Channel referenced is 1⅝" wide, fittings referenced are for 1⅝" channel.
† Some ¼" fittings are produced from A-36 Structural Steel.

Product Load Testing

Product testing is an important Part of Power-Strut's Quality Assurance Program. We utilize our own testing facilities, as well as those of independent testing laboratories, to determine design loads with proper and adequate safety factors. These design loads are indicated, where applicable, throughout the catalog. Loads are based on AISI Specification For The Design Of Cold-Formed Steel Structural Members, 2007 Edition.

Destructive and non-destructive testing procedures are used to test for variables such as corrosion, conductivity, electro-static dissipation, ultra-violet resistance, wind resistance, dimensional accuracy, material integrity and slip resistance.

In short, if there's a specification to meet, Power-Strut will develop a test to quantify and verify it. Using design properties of the Power-Strut framing members, load data given in this catalog, and/or design procedures of the American Iron & Steel Institute Specification For The Design Of Cold-Formed Steel Structural Members, 2007 Edition, it is possible to design any type of structure within the capabilities of the system.

Assemblies or connections that cannot be calculated using provisions of the AISI specifications must be established by application-specific tests.

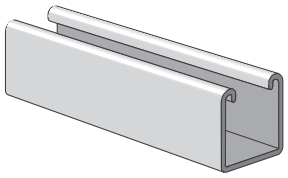
We reserve the right to make specification changes without notice.

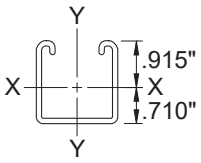
While every effort has been made to assure the accuracy of information contained in this catalog at the time of publication, we cannot accept responsibility for inaccuracies resulting from undetected errors or omissions.

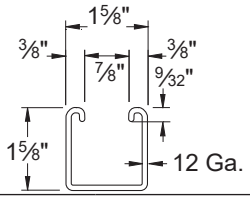
CHANNEL

Finish: Plain, Painted Green, Zinc dichromate, Hot-dip galvanized or Pregalvanized **Order By:** No., Length and Finish

PS 200 – Steel Channel (1⅝" x 1⅝" x 12 ga.)



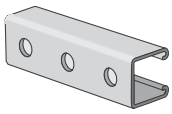


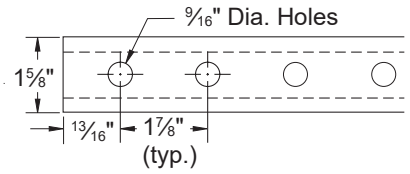


ELEMENTS OF SECTION – PS 200

Weight (lbs./100 ft.)	Area of Section (Inch²)	X-X Axis			Y-Y Axis		
		Moment of Inertia (Inch⁴)	Section Modulus (Inch³)	Radius of Gyration (Inch)	Moment of Inertia (Inch⁴)	Section Modulus (Inch³)	Radius of Gyration (Inch)
189	0.555	0.185	0.202	0.577	0.236	0.290	0.651

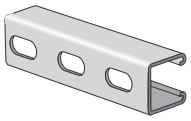
PS 200 H – Channel with Holes

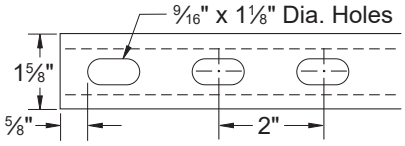




Weight: 186 lbs./100 ft.

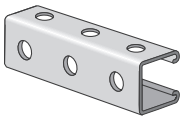
PS 200 EH – Channel with Elongated Holes

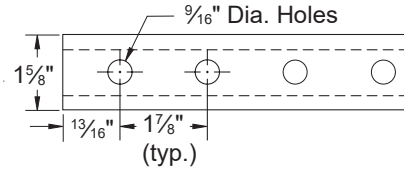




Weight: 185 lbs./100 ft.

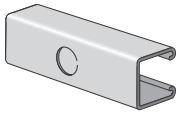
PS 200 H3 – Channel with Holes

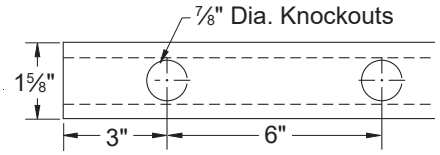




Weight: 175 lbs./100 ft.

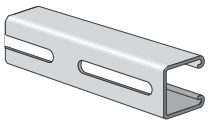
PS 200 K06 – Channel with Knockouts

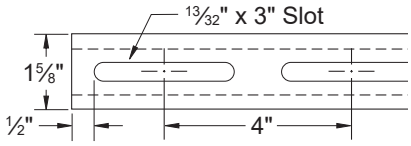




Weight: 189 lbs./100 ft.

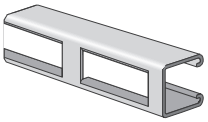
PS 200 S – Channel with Slots

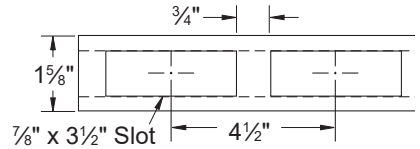




Weight: 185 lbs./100 ft.

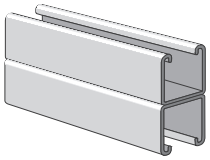
PS 200 SB – Channel with Slotted Back

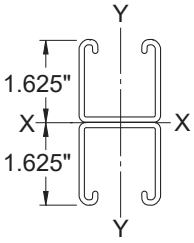


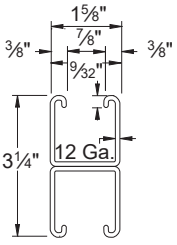


Weight: 173 lbs./100 ft.

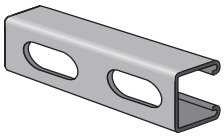
PS 200 2T3 – Steel Channel (1⅝" x 3¼" x 12 ga.)

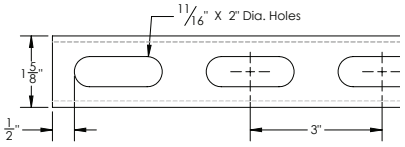






PS 200 WT – Channel with Wide Slots

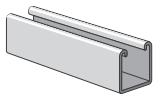




Weight: 185 lbs./100 ft.

ELEMENTS OF SECTION – PS 200 2T3

Weight (lbs./100 ft.)	Area of Section (Inch²)	X-X Axis			Y-Y Axis		
		Moment of Inertia (Inch⁴)	Section Modulus (Inch³)	Radius of Gyration (Inch)	Moment of Inertia (Inch⁴)	Section Modulus (Inch³)	Radius of Gyration (Inch)
378	1.111	0.928	0.571	0.914	0.471	0.580	0.651



PS 200 & PS 200 2T3 – Load Data

BEAM LOADING – PS 200

Span (in)	Max Allowable Uniform Load (lb)	Defl. at Uniform Load (in)	Uniform Loading at Deflection		
			Span/180 (lbs)	Span/240 (lbs)	Span/360 (lbs)
24	1,690	0.06	1,690	1,690	1,690
36	1,130	0.13	1,130	1,130	900
48	850	0.22	850	760	500
60	680	0.35	650	480	320
72	560	0.50	450	340	220
84	480	0.68	330	250	160
96	420	0.89	250	190	130
108	380	1.14	200	150	100
120	340	1.40	160	120	80
144	280	2.00	110	80	60
168	240	2.72	80	60	40
192	210	3.55	60	50	NR
216	190	4.58	50	40	NR
240	170	5.62	40	NR	NR

* Bearing load may govern capacity.

NR - Not Recommended

This load table is based on a solid channel section.

For concentrated load at center of span, divide uniform load by 2 and multiply corresponding deflection by 0.8.

Loads include weight of channel, which must be deducted.

Loads must be multiplied by the applicable unbraced factor from page 42.

For Pierced Channels, reduce beam load values as follows:

PS-200-EH	15%	PS-200-S	15%
PS-200-H	10%	PS-200-K06	5%
PS-200-SB	30%	PS-200-WT	15%

For Extruded Aluminum Channels, reduce beam load values 38%.

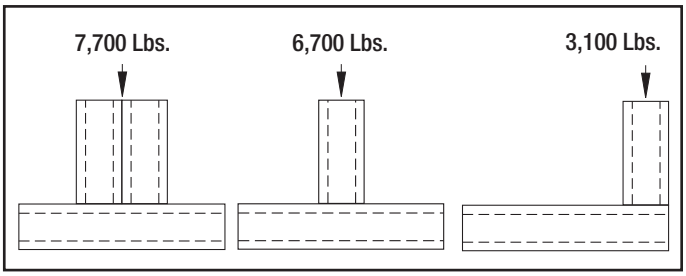
COLUMN LOADING – PS 200

Unbraced Height (in)	Max. Allowable Load at Slot Face (lbs)	Maximum Column Load Applied at C.G.			
		K = 0.65 (lbs)	K = 0.80 (lbs)	K =1.0 (lbs)	K = 1.2 (lbs)
24	3,550	10,740	9,890	8,770	7,740
36	3,190	8,910	7,740	6,390	5,310
48	2,770	7,260	6,010	4,690	3,800
60	2,380	5,910	4,690	3,630	2,960
72	2,080	4,840	3,800	2,960	2,400
84	1,860	4,040	3,200	2,480	1,980
96	1,670	3,480	2,750	2,110	1,660
108	1,510	3,050	2,400	1,810	**
120	1,380	2,700	2,110	**	**
144	1,150	2,180	1,660	**	**

** $^{KL}/_{r}$>200

Column loads are for allowable axial loads and must be reduced for eccentric loading.

PS200 – Crush Loads



Resistance to Slip – 1,500 lbs. per bolt when ½" PS NS channel nuts are used.
Pull Out Strength – 2,000 lbs. per bolt when ½" PS NS channel nuts are used.

BEAM LOADING – PS 200 2T3

Span (in)	Max Allowable Uniform Load (lb)	Defl. at Uniform Load (in)	Uniform Loading at Deflection		
			Span/180 (lbs)	Span/240 (lbs)	Span/360 (lbs)
24	3,500 *	0.02	3,500 *	3,500 *	3,500 *
36	3,190	0.07	3,190	3,190	3,190
48	2,390	0.13	2,390	2,390	2,390
60	1,910	0.20	1,910	1,910	1,620
72	1,600	0.28	1,600	1,600	1,130
84	1,370	0.39	1,370	1,240	830
96	1,200	0.51	1,200	950	630
108	1,060	0.64	1,000	750	500
120	960	0.79	810	610	410
144	800	1.14	560	420	280
168	680	1.53	410	310	210
192	600	2.02	320	240	160
216	530	2.54	250	190	130
240	480	3.16	200	150	100

*Load limited by spot weld shear.

For concentrated load at center of span, divide uniform load by 2 and multiply corresponding deflection by 0.8. This load table is based on a solid channel section.

Loads include weight of channel, which must be deducted.

Loads must be multiplied by the applicable unbraced factor from page 42.

COLUMN LOADING – PS 200 2T3

Unbraced Height (in)	Max. Allowable Load at Slot Face (lbs)	Maximum Column Load Applied at C.G.			
		K = 0.65 (lbs)	K = 0.80 (lbs)	K =1.0 (lbs)	K = 1.2 (lbs)
24	6,430	24,280	23,610	22,700	21,820
36	6,290	22,810	21,820	20,650	19,670
48	6,160	21,410	20,300	18,670	16,160
60	6,000	20,210	18,670	15,520	12,390
72	5,620	18,970	16,160	12,390	8,950
84	5,170	16,950	13,630	9,470	6,580
96	4,690	14,890	11,190	7,250	5,040
108	4,170	12,850	8,950	5,730	3,980
120	3,690	10,900	7,250	4,640	**
144	2,930	7,630	5,040	**	**

** $^{KL}/_{r}$>200

Column loads are for allowable axial loads and must be reduced for eccentric loading.

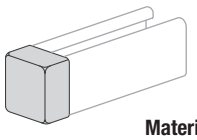
For Pierced Channels, reduce beam load values as follows:

PS 200 2T3 EH 15%

(See PS 200 2T3 EH on page28.)

PS 6153 - Strut Safety End Cap

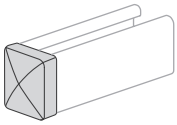
(For OSHA Req'd End of Hand Rail)



Material: Red Colored PVC

Part No.	Use With	Wt./100 pcs.
PS-6153-1	PS-100, PS200 2T3	5.0
PS-6153-2	PS-200,PS-210	2.8
PS-6153-3	PS-300	2.5
PS-6153-5	PS-500, PS-520, PS560	2.0

PS 6152 – Decorative End Cap



Finish: Electro-galvanized
Use With: PS-200, PS-210

Weight: 10 lbs./100 pcs.

PS 9050 – Green Touch-up Spray Paint

Aerosol can may be subject to shipping restrictions

Weight: 253 lbs./100

Lateral Bracing Load Reduction Charts

Lateral Bracing Factors										
Span		Single Channel								
Ft.	In	PS 100	PS 150	PS 200	PS 210	PS 300	PS 400	PS 500	PS 520	PS 560
2	24	0.98	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00
3	36	0.85	0.89	0.94	0.89	0.96	1.00	0.98	1.00	0.94
4	48	0.70	0.77	0.88	0.78	0.91	0.98	0.94	1.00	0.88
5	60	0.55	0.67	0.82	0.68	0.88	0.96	0.91	1.00	0.83
6	72	0.44	0.58	0.78	0.59	0.84	0.94	0.89	0.98	0.79
7	84	0.38	0.51	0.75	0.52	0.82	0.92	0.86	0.97	0.75
8	96	0.33	0.46	0.71	0.47	0.79	0.91	0.84	0.96	0.72
9	108	0.30	0.42	0.69	0.43	0.77	0.89	0.82	0.95	0.69
10	120	0.28	0.40	0.66	0.40	0.75	0.87	0.80	0.93	0.66
12	144	0.24	0.36	0.61	0.36	0.70	0.84	0.76	0.91	0.60
14	168	0.22	0.32	0.55	0.32	0.66	0.81	0.73	0.89	0.55
16	192	0.21	0.30	0.51	0.30	0.62	0.78	0.69	0.86	0.50
18	216	0.19	0.28	0.47	0.28	0.58	0.75	0.65	0.84	0.47
20	240	0.18	0.26	0.44	0.26	0.54	0.72	0.61	0.81	0.43

Lateral Bracing Factors										
Span		Double Channel								
Ft.	In	PS 100 2T3	PS 150 2T3	PS 200 2T3	PS 210 2T3	PS 300 2T3	PS 400 2T3	PS 500 2T3	PS 520 2T3	PS 560 2T3
2	24	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
3	36	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
4	48	0.97	0.98	1.00	0.98	1.00	1.00	1.00	1.00	0.98
5	60	0.90	0.93	0.97	0.93	0.98	1.00	0.96	1.00	0.93
6	72	0.83	0.87	0.93	0.87	0.95	0.97	0.92	0.97	0.88
7	84	0.76	0.81	0.89	0.82	0.92	0.95	0.89	0.95	0.83
8	96	0.68	0.76	0.85	0.76	0.88	0.92	0.85	0.92	0.79
9	108	0.61	0.70	0.81	0.70	0.85	0.90	0.81	0.90	0.74
10	120	0.54	0.64	0.78	0.65	0.82	0.87	0.78	0.87	0.69
12	144	0.43	0.53	0.70	0.54	0.76	0.82	0.71	0.83	0.60
14	168	0.35	0.45	0.63	0.45	0.70	0.77	0.64	0.78	0.51
16	192	0.30	0.39	0.56	0.39	0.64	0.72	0.57	0.73	0.44
18	216	0.27	0.34	0.49	0.34	0.58	0.67	0.50	0.68	0.39
20	240	0.24	0.30	0.44	0.31	0.52	0.62	0.45	0.63	0.35