4Dimension™ Strut

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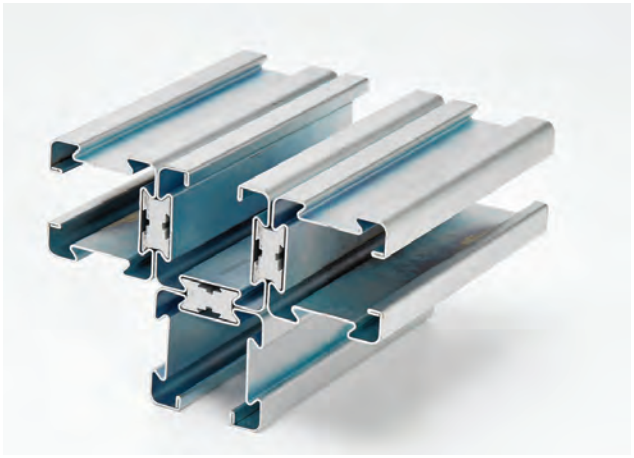
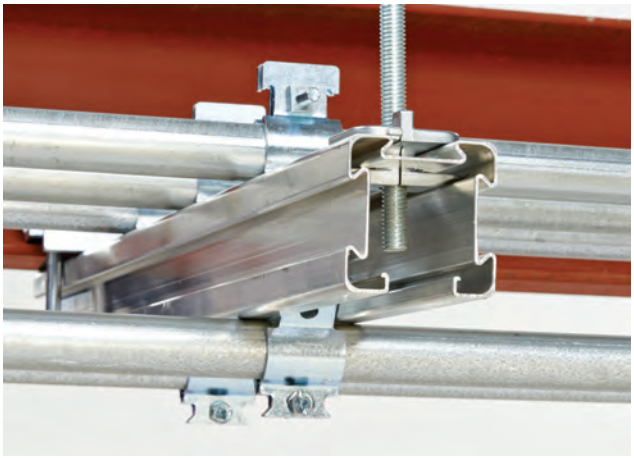
4Dimension™ Information

Changing how we build our future

Eaton's 4Dimension strut system changes how installers will build and install support systems for electrical, mechanical, plumbing, HVAC and data centers in new and retrofit commercial and industrial applications.

The revolutionary strut profile design and innovative accessories help installers compress project schedules and cut material costs without sacrificing load while increasing configuration flexibility.





Innovative Features

- Profiles with two-sided and four-sided functionality
- Superior strength, lighter weight for improved performance
- Modular design provides versatility
- SH hole accepts 5/8" hardware
- Innovative fitting solutions with virtually hundreds of possibilities
- Ideal for new and retrofit applications
- Meets or exceeds MFMA standards
- Patents pending

Lowest Total Cost Solution

- Up to 50% reduction in installation time for trapeze applications
- Up to 50% reduction in material cost in many applications
- Helps save space and weight by fully utilizing multiple sides for ease and flexibility of installation
- Functional replacement for back to back strut system, with considerable cost, time, and material savings
- Multi-side design reduces complexity of higher cost fittings required for many applications
- Compatible with most traditional fittings and accessories (shown throughout catalog with the following symbol )

For more information, visit www.cooperbline.com/4Dimension.

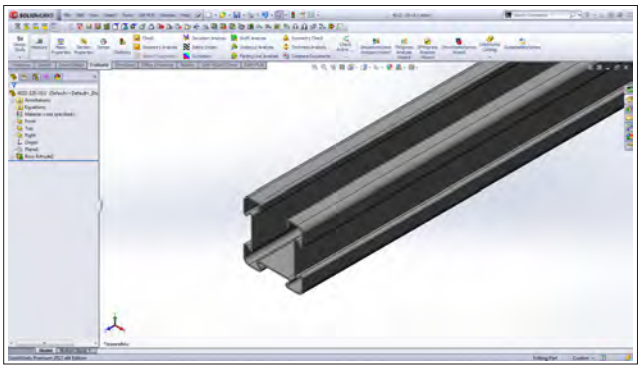
CoSPEC Specifier Center is designed to help you easily SELECT, VIEW and DOWNLOAD Eaton's B-Line Series product design content in any one of nearly one hundred non-proprietary and proprietary CAD, BIM, PDMS, and graphics formats, which helps speed the integration of the content into your design project.

Features

- Easy integration and configuration
- Comprehensive library of 2D drawings and 3D models for CAD, BIM, PDMS, SP3D, and graphics output
- The most up to date software versions and product data information are always available
- Submittals and specification sheets in PDF format
- Proprietary file format outputs are native to the chosen software

Nearly a Hundred Download Options

- Aveva PDMS and Intergraph SmartPlant SP3D (on select products) content
- Autodesk Revit output available
- Proprietary formats from AutoCAD to SolidWorks to Catia
- Non-proprietary formats like DXF and STEP, and more
- Graphics files in a number of formats including EPS



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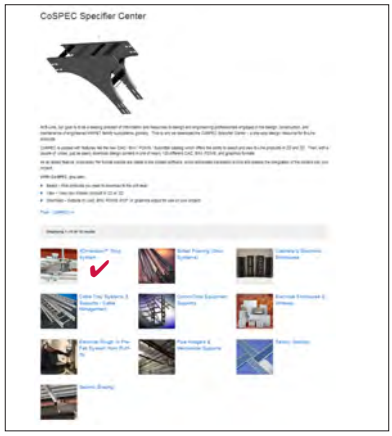
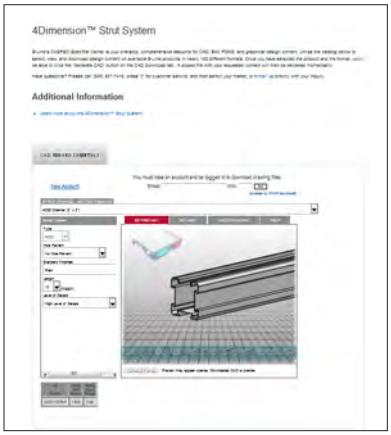
Select



View



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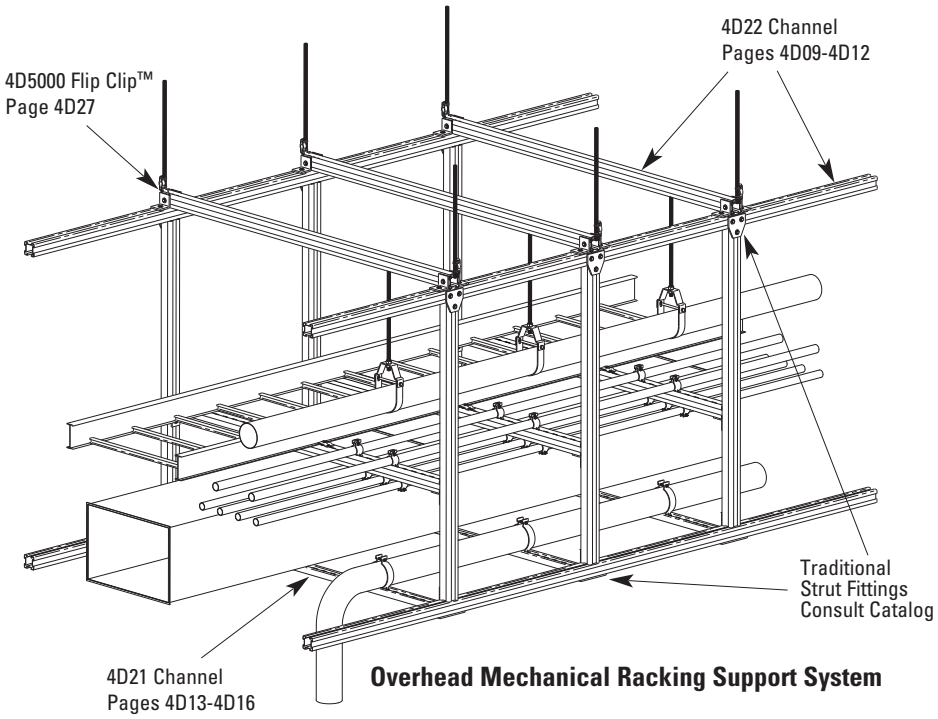
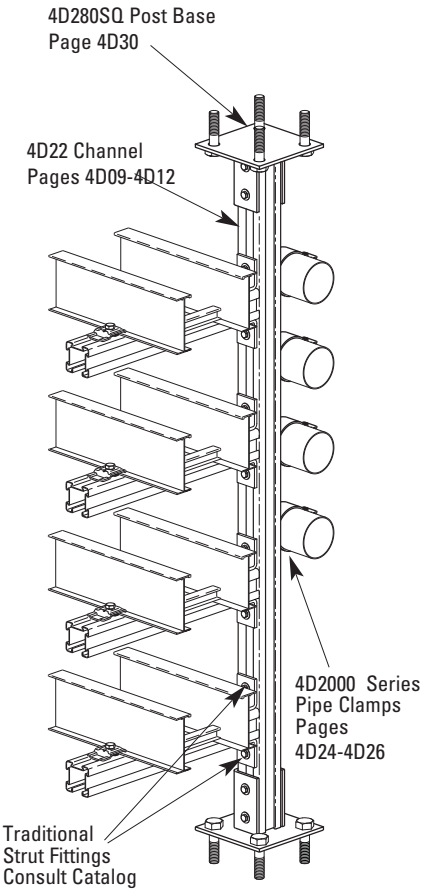
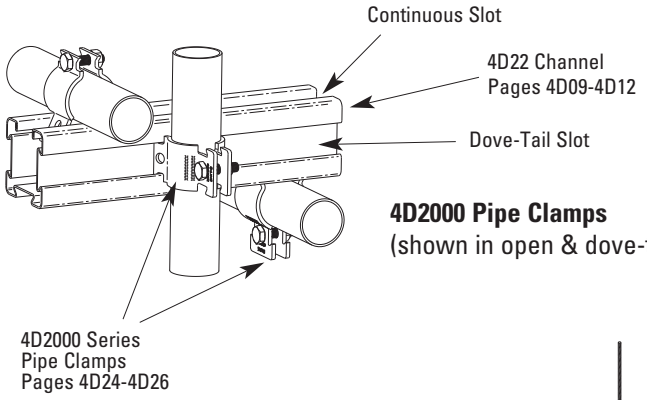
4Dimension™ Applications



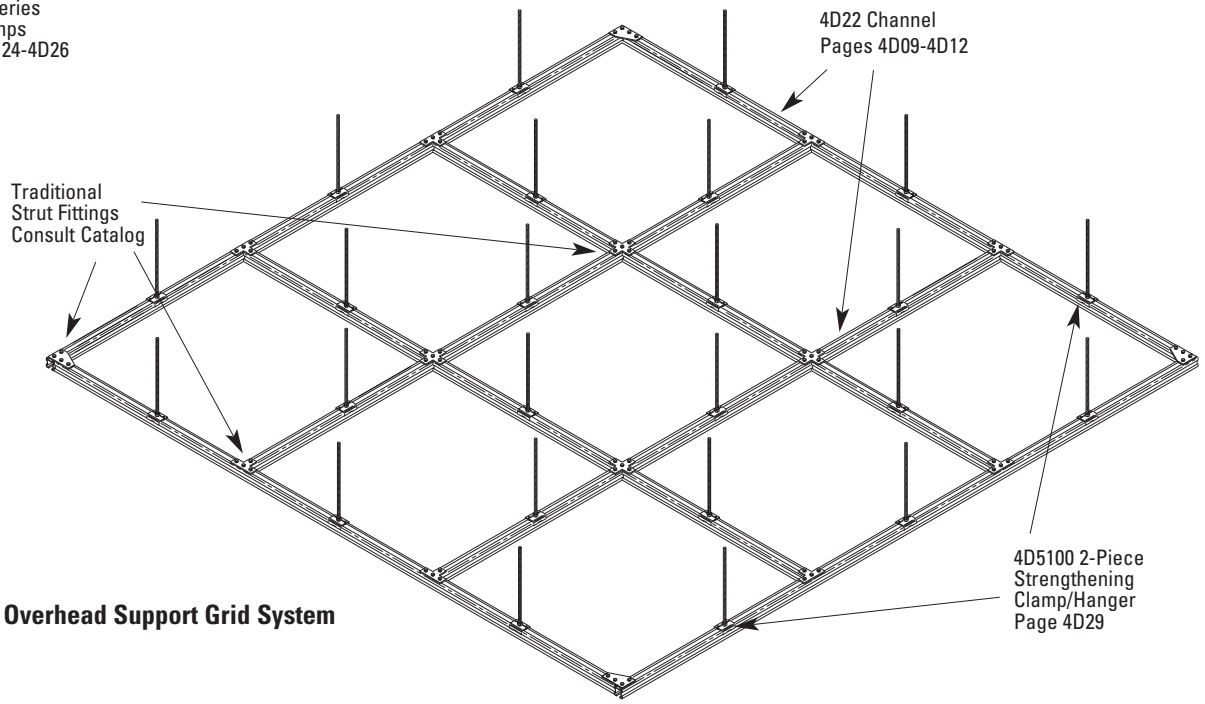
Overhead Mechanical Racking Support System



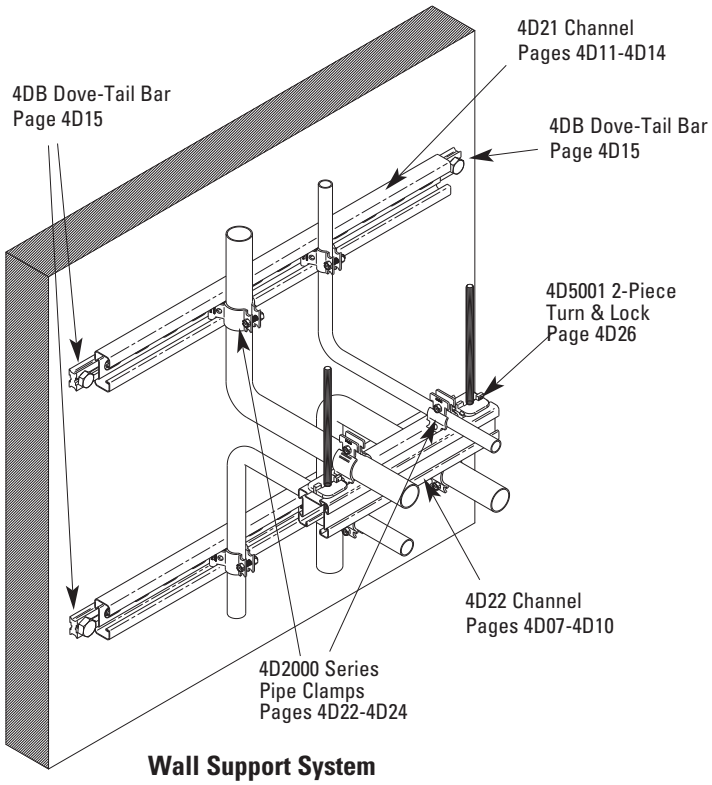
Column Support with 4Dimension Cantilever Supports



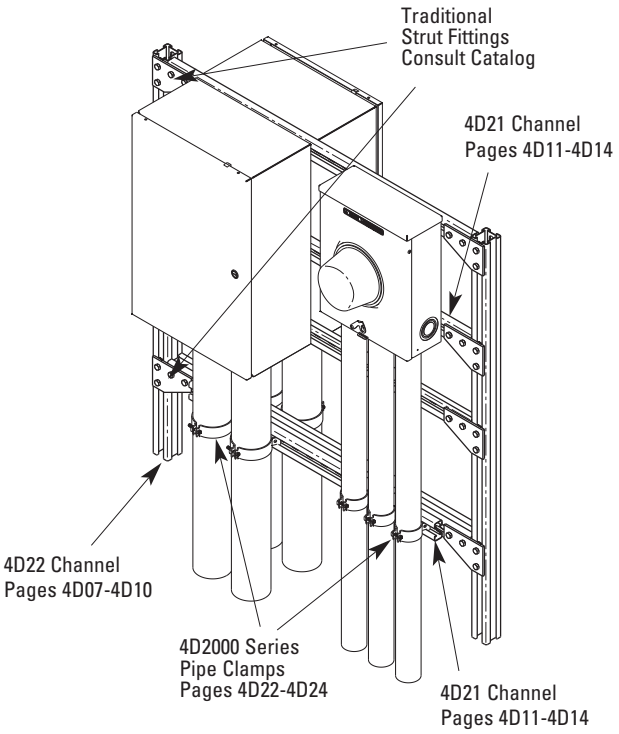
4D2000 Pipe Clamps
(shown in open & dove-tail sides)



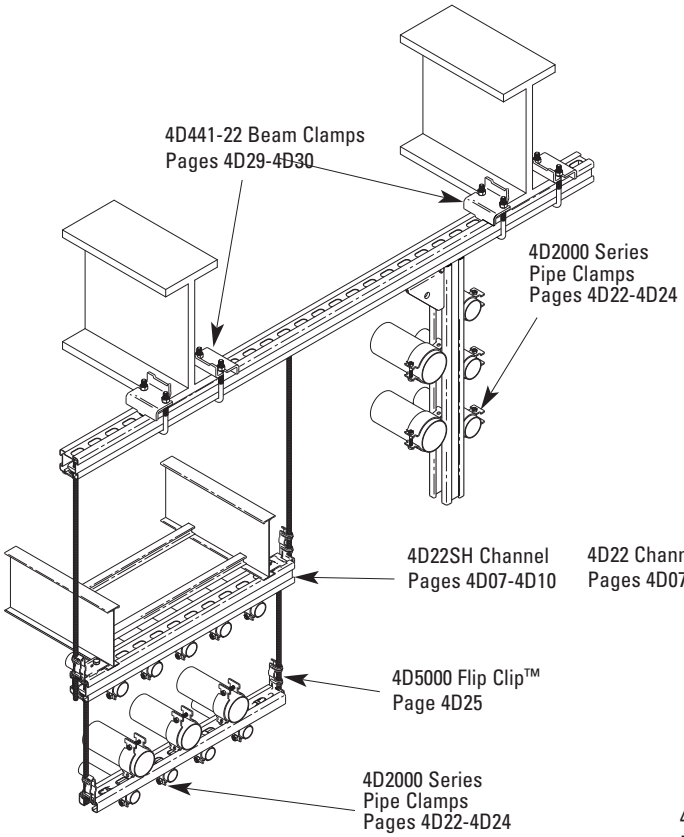
Overhead Support Grid System



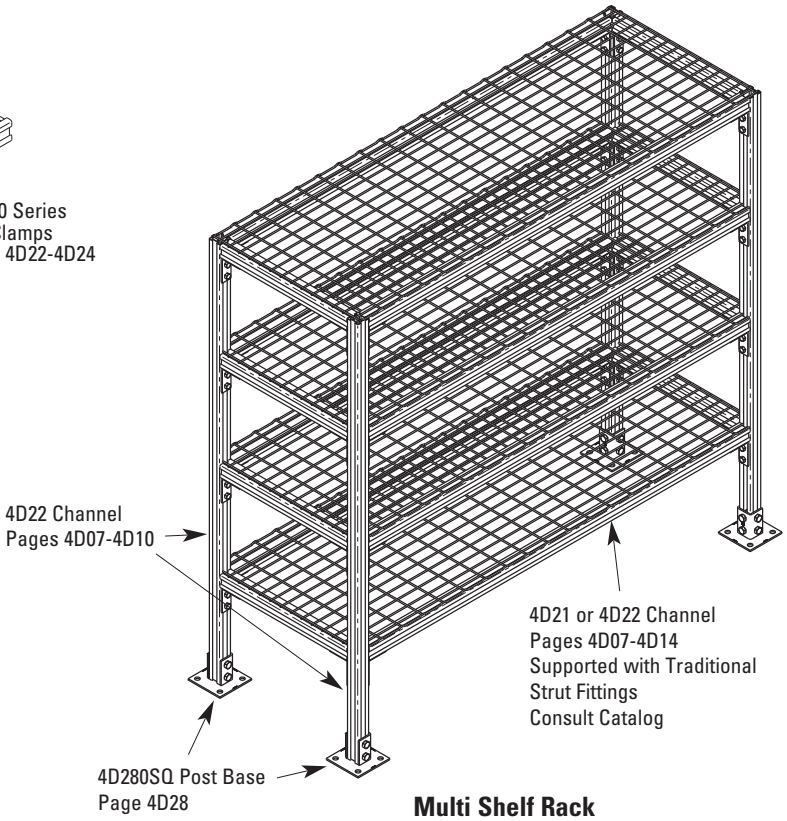
Wall Support System



Utility Support System



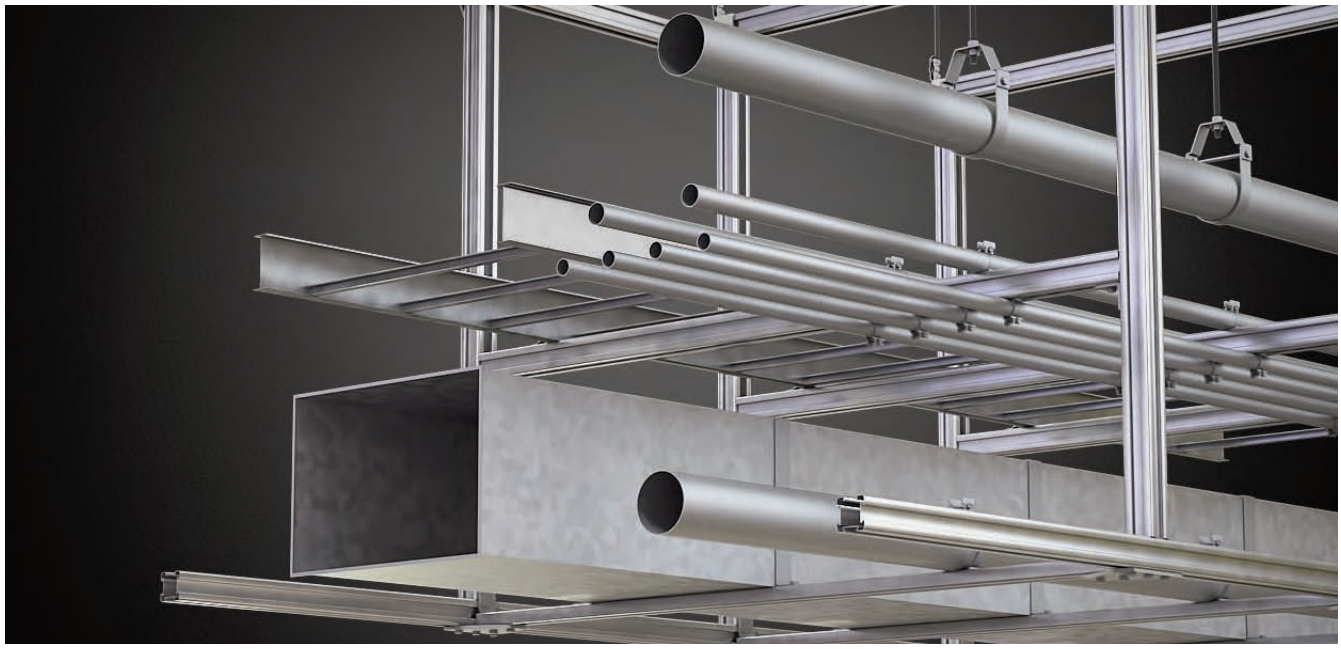
Overhead I-Beam Support



Multi Shelf Rack
(using FLEXTRAY™ flats for shelves)

Dimensions are in inches unless otherwise noted. Metric dimensions are in parentheses and are in millimeters unless otherwise noted.

4Dimension™ Channels



Channel
4Dimension channel is cold formed on our modern rolling mills from 18 Ga. (1.2mm) low carbon steel. A continuous slot with inturned lips and up to three dovetail designed sides provide the ability to make attachments at any point on any side.

Lengths & Tolerances
All channels excluding SH style: ± 1/8" (3.2mm) on 10' (3.05m) and ± 3/16" (4.76mm) on 20' (6.09m)
All 'SH' channels only: ± 1/4" (6.35mm) on 10' (3.05m) and ± 1/2" (12.70mm) on 20' (6.09m)
Custom lengths are available upon request.

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

Dove-Tail Sides
A variety of pre-punched 9/16" (14.3 mm) diameter hole patterns are available in our channels. These hole patterns provide an economical alternative to costly field drilling required for many applications.

Materials & Finishes (Unless otherwise noted)
Steel: Plain & Pre-galvanized
18 Ga. (1.2)

Note: A minimum order may apply on special material and finishes.

Finish Code	Finish	Specification
PLN	Plain	ASTM A1011, 50,000 PSI min. yield
GRN	DURA GREEN™	
GLV	Pre-Galvanized	ASTM A653 50,000 PSI min. yield
HDG	Hot-Dipped Galvanized	ASTM A123
YZN	Yellow Zinc Chromate	ASTM B633 SC3 Type II
SS4	Stainless Steel Type 304	ASTM A240
SS6	Stainless Steel Type 316	ASTM A240

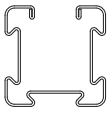
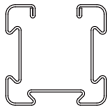
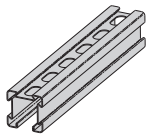
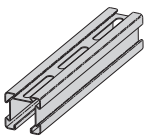
Design Load (Steel & Stainless Steel)
The design loads given for strut beam loads are based on a simple beam condition. This allowable stress results in a safety factor of 1.68.

Metric
Metric dimensions are shown in parentheses. Unless noted, all metric dimensions are in millimeters.

Compatability of strut products with 4Dimension Strut System
Throughout the catalog, strut products that are compatible with the 4Dimension strut system will be flagged with the following symbol.

Selection Chart

for Channels, Materials and Hole Patterns

Channel Type	Channel Dimensions		Material & Thickness *			Channel Hole Pattern	
	Height	Width	Steel	Stainless Steel Type 304	Stainless Steel Type 316	SH 5/8" x 1 1/4" slots on 2" centers	S 13/32" x 3" slots
			1	3	4		
4D21	1 1/16" (27.0)	2 1/8" (54.0)	18 Ga.	18 Ga.	18 Ga.	1 2 3	1 2 3
4D22	2 1/8" (54.0)	2 1/8" (54.0)	18 Ga.	18 Ga.	18 Ga.	1 2 3	1 2 3

The selection has been prepared to provide a reference for available channel, materials and hole patterns. Material types available for various hole patterns are defined by numbers 1 thru 3.
Some stainless steel channels with hole patterns are available on special order only.

*Metric equivalent for thicknesses:
18 Ga. = 1.2 mm

Properties may vary due to commercial tolerances of the material.

1 Steel
2 Type 304 Stainless Steel
3 Type 316 Stainless Steel

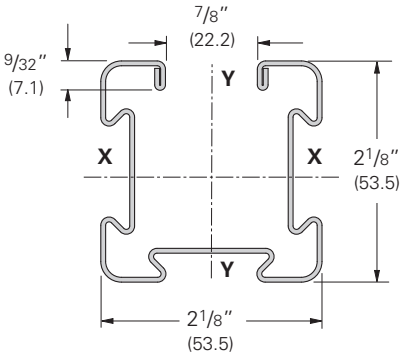
Channel Part Numbering Example:
4D22 SH - 120 GLV

Channel Type	Hole Patterns	Length	Material/Finish
4D21	SH (pg. 8 & 12)	120	GRN
4D22	S (pg. 8 & 12)	240	GLV
	Leave Blank for no hole pattern		HDG
			YZN
			SS4
			SS6

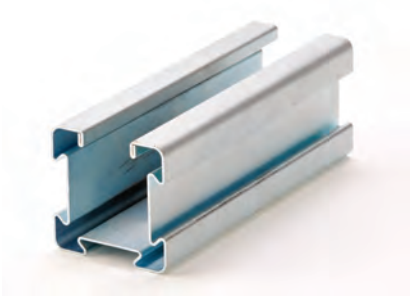
Dimensions are in inches unless otherwise noted. Metric dimensions are in parentheses and are in millimeters unless otherwise noted.

4Dimension™ Channels

4D22 Channel - 2 1/8" (53.5mm) x 2 1/8" (53.5mm)



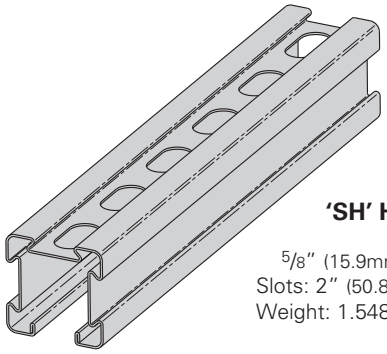
- Thickness: 18 Gauge (1.2mm)
- Standard Lengths:
  10' (3.05m) & 20' (6.09m)
- Finish: Plain, DURA GREEN™,
  Pre-Galvanized, HDG, SS4, SS6
- Bundle Size: 320 ft. (97.6m)
- Bundle Dimensions:
  10ft - 11" (279.4mm) x 10 11/16" (271.5mm)
  20ft - 11" (279.4mm) x 6 3/8" (161.9mm)
- Patent Pending



4D22 Section Properties

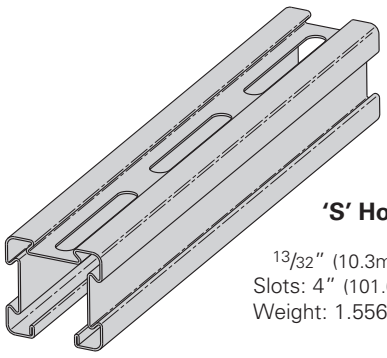
Channel	Weight lbs./ft.	Weight kg/m	Areas of Section in.²	Areas of Section cm²	X - X Axis: Moment of Inertia (I) in.⁴	X - X Axis: Moment of Inertia (I) cm⁴	X - X Axis: Section Modulus (S) in.³	X - X Axis: Section Modulus (S) cm³	X - X Axis: Radius of Gyration (r) in.	X - X Axis: Radius of Gyration (r) cm	Y - Y Axis: Moment of Inertia (I) in.⁴	Y - Y Axis: Moment of Inertia (I) cm⁴	Y - Y Axis: Section Modulus (S) in.³	Y - Y Axis: Section Modulus (S) cm³	Y - Y Axis: Radius of Gyration (r) in.	Y - Y Axis: Radius of Gyration (r) cm
4D22	1.603	(2.39)	0.470	(3.03)	0.262	(10.91)	0.236	(3.87)	0.747	(1.90)	0.280	(11.65)	0.266	(4.36)	0.772	(1.96)
4D22A	3.206	(4.78)	0.940	(6.06)	1.453	(60.47)	0.690	(11.31)	1.243	(3.16)	0.560	(23.30)	0.532	(8.72)	0.772	(1.96)

Calculations of section properties are based on metal thicknesses as determined by the AISI Cold-Formed Steel Design Manual.



'SH' Hole Pattern

5/8" (15.9mm) x 1 1/4" (31.8mm)
Slots: 2" (50.8mm) centers
Weight: 1.548 lbs./ft. (2.30kg/m)

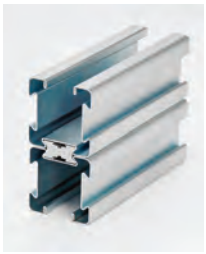
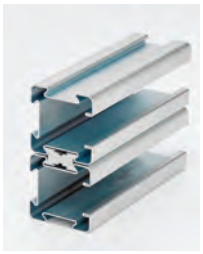
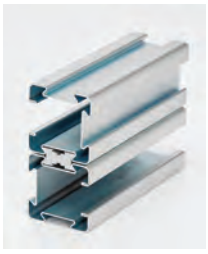
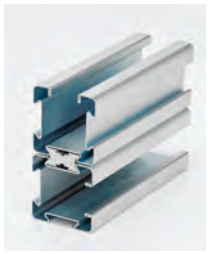


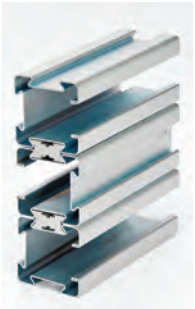
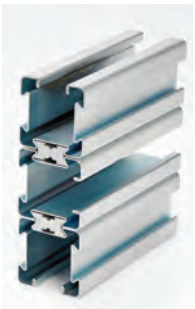
'S' Hole Pattern

13/32" (10.3mm) x 3" (76.2mm)
Slots: 4" (101.6mm) centers
Weight: 1.556 lbs./ft. (2.32kg/m)

Sample Combinations

Various combinations, as shown below, can be assembled in the field by using the 4DB (dove-tail bar) or the 4D5101 (snap-on clamp).


4D22 Channel - 2 1/8" (53.5mm) x 2 1/8" (53.5mm) Load Data

Beam Load Data

4D22 Beam Span		Uniform Load		Deflection		Uniform Load @ Deflection = 1/240 Span		1/360 Span	
In.	mm	Lbs.	kN	In.	mm	Lbs.	kN	Lbs.	kN
12	(305)	2871	(12.77)	0.05	(1.27)	2871	(12.77)	2523	(11.22)
24	(609)	1872	(8.33)	0.10	(2.54)	1872	(8.33)	1645	(7.31)
36	(914)	1249	(5.55)	0.17	(4.32)	1249	(5.55)	866	(3.85)
48	(1219)	936	(4.16)	0.22	(5.59)	936	(4.16)	649	(2.88)
60	(1524)	749	(3.33)	0.43	(10.92)	480	(2.13)	244	(1.08)
72	(1829)	624	(2.77)	0.52	(13.21)	400	(1.78)	203	(0.90)
84	(2133)	535	(2.38)	0.70	(17.78)	309	(1.37)	184	(0.82)
96	(2438)	468	(2.08)	0.80	(20.32)	270	(1.20)	161	(0.71)
108	(2743)	416	(1.85)	1.00	(25.40)	230	(1.02)	148	(0.66)
120	(3048)	374	(1.66)	1.12	(28.45)	207	(0.92)	133	(0.59)

Based on simple beam condition using test methods according to MFMA standards. To determine concentrated load capacity at mid-span, multiply uniform load by 0.5 and corresponding deflection by 0.8.

Column Load Data

4D22 Unbraced Height		Max. Column Loading K = .80 Loaded@ C.G.		Loaded@ Slot Face		Max. Column Loading (Loaded @ C.G.) K = .65		K = 1.0		K = 1.2	
In.	mm	Lbs.	kN	Lbs.	kN	Lbs.	kN	Lbs.	kN	Lbs.	kN
12	(305)	12105	(53.84)	4900	(21.79)	12177	(54.16)	11888	(52.88)	11502	(51.16)
24	(609)	10690	(47.55)	4623	(20.56)	11321	(50.35)	9791	(43.55)	8940	(39.76)
36	(914)	8792	(39.10)	4087	(18.18)	9829	(43.72)	7210	(32.07)	6113	(27.19)
48	(1219)	7110	(31.62)	3499	(15.56)	8326	(37.03)	5356	(23.82)	4256	(18.93)
60	(1524)	5290	(23.53)	2930	(13.03)	6915	(30.76)	4099	(18.23)	3306	(14.70)
72	(1829)	4188	(18.63)	2508	(11.15)	5400	(24.02)	3344	(14.87)	2676	(11.90)
84	(2133)	3536	(15.73)	2237	(9.95)	4599	(20.45)	2545	(11.32)	2074	(9.22)
96	(2438)	3145	(13.99)	1839	(8.18)	3614	(16.07)	2114	(9.40)	1692	(7.52)
108	(2743)	2381	(10.59)	1607	(7.15)	3024	(13.45)	1807	(8.04)	1417	(6,30)
120	(3048)	1955	(8.69)	1325	(5.89)	2519	(11.20)	1524	(6.78)	1163	(5.17)

**Where the slenderness ratio $\frac{KL}{r}$ exceeds 200, and K = end fixity factor, L = actual length and r = radius of gyration.

Back-To-Back - 4D22 Channel - 2 1/8" (53.5mm) x 4 1/4" (107.0mm) Load Data

Beam Load Data

4D22 Beam Span In.	mm	Assembly Style	Uniform Load Lbs.	kN	Deflection In.	mm	Uniform Load @ 1/240 Span Lbs.	kN	Uniform Load @ 1/360 Span Lbs.	kN
12	(305)	4DB3	2610	(11.61)	0.07	(1.78)	2490	(11.07)	1282	(5.70)
		4DDN	2610	(11.61)	0.06	(1.52)	2610	(11.61)	2004	(8.91)
		4D5101	2088	(9.29)	0.07	(1.78)	2088	(9.29)	1549	(6.89)
24	(609)	4DB3	2610	(11.61)	0.13	(3.30)	2490	(11.07)	1282	(5.70)
		4DDN	2610	(11.61)	0.11	(2.79)	2610	(11.61)	2004	(8.91)
		4D5101	2088	(9.29)	0.14	(3.55)	2088	(9.29)	1549	(6.89)
36	(914)	4DB3	2610	(11.61)	0.26	(6.60)	1771	(7.88)	957	(4.25)
		4DDN	2610	(11.61)	0.23	(5.84)	2142	(9.53)	1414	(6.29)
		4D5101	2088	(9.29)	0.20	(5.08)	1998	(8.89)	1279	(5.69)
48	(1219)	4DB3	2405	(10.70)	0.35	(8.89)	1632	(7.26)	882	(3.92)
		4DDN	2405	(10.70)	0.31	(7.87)	1974	(8.78)	1303	(5.79)
		4D5101	1924	(8.56)	0,26	(6.60)	1841	(8.19)	1179	(5.24)
60	(1524)	4DB3	1924	(8.56)	0.49	(12.44)	1191	(5.30)	763	(3.39)
		4DDN	1924	(8.56)	0.50	(12.70)	1234	(5.89)	828	(3.68)
		4D5101	1539	(6.84)	0.40	(10.16)	1198	(5.33)	796	(3.54)
72	(1829)	4DB3	1602	(7.12)	0.59	(14.98)	992	(4.41)	636	(2.83)
		4DDN	1603	(7.13)	0.60	(15.24)	1028	(4.57)	690	(3.07)
		4D5101	1282	(5.70)	0.48	(12.19)	998	(4.44)	663	(2,95)
84	(2133)	4DDN	1374	(6.11)	0.87	(22.10)	810	(3.60)	549	(2.44)
		4D5101	1099	(4.89)	0.71	(18.03)	771	(3.43)	513	(2.28)
96	(2438)	4DDN	1202	(5.34)	0.99	(25.14)	620	(2.31)	420	(1.87)
		4D5101	962	(4.28)	0.81	(20.57)	590	(2.62)	393	(1.75)
108	(2743)	4DDN	1069	(4.75)	1.35	(34.29)	511	(2.27)	342	(1.52)
		4D5101	855	(3.80)	1.10	(27.94)	490	(2.18)	325	(1.44)
120	(3048)	4DDN	962	(4.28)	1.50	(38.10)	414	(1.84)	277	(1.23)
		4D5101	770	(3.42)	1.22	(30.99)	397	(1.76)	263	(1.17)

Loading based on 4DB3, 4DDN and 4D5101 installed on 24" (609mm) intervals using the 4D22A configuration.

4DB3 Assembly
(see page 4D17 for product information)

4DDN Assembly
(see page 4D18 for product information)

4D5101 Assembly
(see page 4D18 for product information)

Back-To-Back - 4D22 Channel - 2 1/8" (53.5mm) x 4 1/4" (107.0mm) Load Data

Column Load Data

4D22 Unbraced Height		Assembly Style	Max. Column Loading K = .80 Loaded@ C.G.		Loaded@ Slot Face		Max. Column Loading (Loaded @ C.G.) K = .65		K = 1.0		K = 1.2	
In.	mm		Lbs.	kN	Lbs.	kN	Lbs.	kN	Lbs.	kN	Lbs.	kN
12	(305)	See Note	25322	(112.64)	8286	(36.86)	25188	(112.04)	26265	(112.38)	25013	(111.26)
24	(609)	See Note	24634	(109.58)	8112	(36.08)	24878	(110.66)	24380	(108.44)	23660	(105.28)
36	(914)	See Note	23701	(105.43)	7737	(34.42)	24391	(108.49)	22876	(101.76)	21767	(96.82)
48	(1219)	See Note	22259	(99.01)	6701	(29.81)	23019	(102.39)	20792	(92.49)	18624	(82.84)
60	(1524)	See Note	20541	(91.37)	5292	(23.54)	21957	(97.67)	18086	(80.45)	15045	(66.92)
72	(1829)	See Note	18803	(83.64)	4234	(18.83)	21029	(93.54)	15059	(66.98)	11008	(48.97)
84	(2133)	See Note	15966	(71.02)	3409	(15.16)	19131	(85.10)	11406	(50.73)	7971	(35.46)
96	(2438)	See Note	13469	(59.91)	2661	(11.84)	17157	(76.32)	8672	(38.57)	6107	(27.16)
108	(2743)	See Note	10675	(47.48)	2233	(9.93)	15412	(68.56)	6869	(30.55)	4745	(21.11)
120	(3048)	See Note	8564	(38.09)	1735	(7.71)	13014	(57.89)	5495	(24.44)	3805	(16.93)

Note: Loading based on 4DB3, 4DDN or 4D5101 installed on 24" (609mm) intervals using the 4D22A configuration.

4DB3 Assembly
(see page 4D17 for product information)

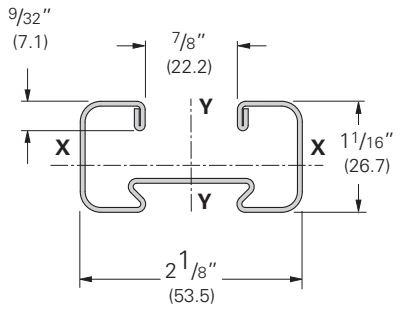
4DDN Assembly
(see page 4D18 for product information)

4D5101 Assembly
(see page 4D18 for product information)

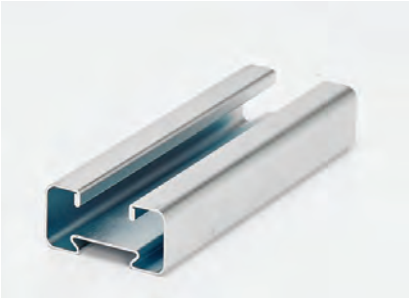
Dimensions are in inches unless otherwise noted. Metric dimensions are in parentheses and are in millimeters unless otherwise noted.

4Dimension™ Channels

4D21 Channel - 2 1/8" (53.5mm) x 1 1/16" (26.7mm)

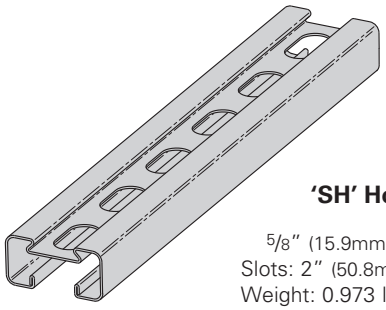


- Thickness: 18 Gauge (1.2mm)
- Standard Lengths:
  10' (3.05m) & 20' (6.09m)
- Finish: Plain, DURA GREEN™,
  Pre-Galvanized, HDG, SS4, SS6
- Bundle Size: 320 ft. (97.6m)
- Bundle Dimensions:
  10ft - 11" (279.4mm) x 6 1/2" (165.1mm)
  20ft - 11" (279.4mm) x 4 5/16" (109.5mm)
- Patent Pending



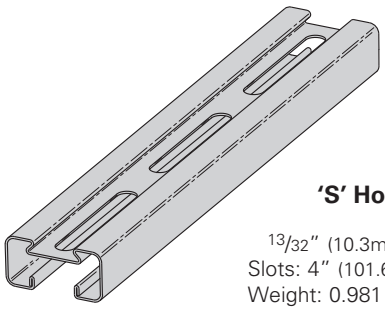
4D21 Section Properties					X - X Axis						Y - Y Axis					
Channel	Weight		Areas of Section		Moment of Inertia (I)		Section Modulus (S)		Radius of Gyration (r)		Moment of Inertia (I)		Section Modulus (S)		Radius of Gyration (r)	
	lbs./ft.	kg/m	in.^{2}	cm^2	in.^{4}	cm^4	in.^{3}	cm^3	in.	cm	in.^{4}	cm^4	in.^{3}	cm^3	in.	cm
4D21	1.032	(1.54)	0.302	(1.95)	0.042	(1.76)	0.077	(1.26)	0.374	(0.95)	0.167	(6.97)	0.159	(2.60)	0.744	(1.89)
4D21A	2.064	(3.08)	0.605	(3.90)	0.238	(9.89)	0.226	(3.70)	0.627	(1.59)	0.335	(13.95)	0.318	(5.21)	0.744	(1.89)

Calculations of section properties are based on metal thicknesses as determined by the AISI Cold-Formed Steel Design Manual.



'SH' Hole Pattern

5/8" (15.9mm) x 1 1/4" (31.8mm)
Slots: 2" (50.8mm) centers
Weight: 0.973 lbs./ft. (1.45kg/m)

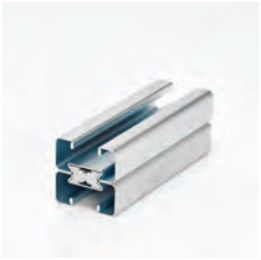


'S' Hole Pattern

13/32" (10.3mm) x 3" (76.2mm)
Slots: 4" (101.6mm) centers
Weight: 0.981 lbs./ft. (1.46kg/m)

Sample Combinations

Various combinations, as shown below, can be assembled in the field by using the 4DB (dove-tail bar).



4D21 Channel - 2 1/8" (53.5mm) x 1 1/16" (26.7mm) Load Data

Beam Load Data

4D21 Beam Span		Uniform Load		Deflection		Uniform Load @ Deflection = 1/240 Span		1/360 Span	
In.	mm	Lbs.	kN	In.	mm	Lbs.	kN	Lbs.	kN
12	(305)	1187	(5.28)	0.09	(2.22)	749	(3.33)	414	(1.84)
24	(609)	593	(2.64)	0.18	(4.45)	374	(1.66)	207	(0.92)
36	(914)	396	(1.76)	0.30	(7.66)	237	(1.05)	145	(0.64)
48	(1219)	297	(1.32)	0.40	(10.21)	178	(0.79)	109	(0.48)
60	(1524)	238	(1.06)	0.68	(17.25)	108	(0.48)	70	(0.31)
72	(1829)	198	(0.88)	0.82	(20.70)	90	(0.40)	58	(0.26)
84	(2133)	169	(0.75)	1.32	(33.49)	49	(0.21)	29	(0.13)
96	(2438)	149	(0.66)	1.51	(38.28)	43	(0.19)	26	(0.11)
108	(2743)	132	(0.59)	2.01	(51.07)	37	(0.16)	24	(0.10)
120	(3048)	119	(0.53)	2.23	(56.74)	33	(0.14)	22	(0.09)

Based on simple beam condition using test methods according to MFMA standards. To determine concentrated load capacity at mid-span, multiply uniform load by 0.5 and corresponding deflection by 0.8.

Column Load Data

4D21 Unbraced Height		Max. Column Loading K = .80 Loaded@ C.G.		Loaded@ Slot Face		Max. Column Loading (Loaded @ C.G.) K = .65		K = 1.0		K = 1.2	
In.	mm	Lbs.	kN	Lbs.	kN	Lbs.	kN	Lbs.	kN	Lbs.	kN
12	(305)	9365	(41.65)	3493	(15.53)	9465	(42.10)	9166	(40.77)	8917	(39.66)
24	(609)	8367	(37.21)	3084	(13.72)	8715	(38.76)	7200	(32.02)	5986	(26.62)
36	(914)	6045	(26.89)	2410	(10.72)	7430	(33.05)	3998	(17.78)	2792	(12.42)
48	(1219)	3555	(15.81)	1744	(7.76)	5286	(23.51)	2254	(10.02)	1574	(7.00)
60	(1524)	2277	(10.13)	1296	(5.76)	3413	(15.18)	1453	(6.46)	1009	(4.49)
72	(1829)	1585	(7.05)	1006	(4.47)	2424	(10.78)	1020	(4.53)	703**	(3.12)
84	(2133)	1182	(5.26)	797	(3.54)	1762	(7.84)	756**	(3.36)	520**	(2.31)
96	(2438)	896**	(3.98)	639	(2.84)	1365	(6.07)	567**	(2.52)	--	(--)
108	(2743)	703**	(3.12)	535	(2.38)	1081	(4.81)	--	(--)	--	(--)
120	(3048)	578**	(2.57)	443	(1.97)	863**	(3.84)	--	(--)	--	(--)

**Where the slenderness ratio $\frac{KL}{r}$ exceeds 200, and K = end fixity factor, L = actual length and r = radius of gyration.

Dimensions are in inches unless otherwise noted. Metric dimensions are in parentheses and are in millimeters unless otherwise noted.

Back-To-Back - 4D21 Channel - 2 1/8" (53.5mm) x 2 1/8" (153.5mm) Load Data

Beam Load Data

4D21 Beam Span In.	mm	Assembly Style	Uniform Load Lbs.	kN	Deflection In.	mm	Uniform Load @ 1/240 Span Lbs.	kN	Uniform Load @ 1/360 Span Lbs.	kN
12	(305)	4DB3	1270	(5.65)	0.11	(2.79)	572	(2.54)	328	(1.46)
		4DDN	1270	(5.65)	0.10	(2.54)	752	(3.34)	454	(2.02)
24	(609)	4DB3	1270	(5.65)	0.22	(5.59)	572	(2.54)	328	(1.46)
		4DDN	1270	(15.65)	0.19	(4.82)	752	(3.34)	454	(2.02)
36	(914)	4DB3	1013	(4.50)	0.41	(10.41)	422	(1.88)	262	(1.16)
		4DDN	1013	(4.50)	0.41	(10.41)	424	(1.88)	256	(1.14)
48	(1219)	4DB3	759	(3.37)	0.55	(13.97)	316	(1.40)	196	(0.87)
		4DDN	759	(3.37)	0.55	(13.87)	318	(1.41)	192	(0.85)
60	(1524)	4DB3	608	(2.70)	0.88	(22.35)	199	(0.88)	127	(0.56)
		4DDN	608	(2.70)	0.84	(21.33)	242	(1.07)	168	(0.75)
72	(1829)	4DB3	506	(2.25)	1.06	(26.92)	166	(0,74)	106	(0.47)
		4DDN	506	(2.25)	1.01	(25.65)	201	(0.89)	140	(0.62)
84	(2133)	4DDN	434	(1.93)	1.53	(38.86)	165	(0.73)	112	(0.50)
96	(2438)	4DDN	380	(1.69)	1.75	(44.45)	126	(0.56)	86	(0.38)
108	(2743)	4DDN	338	(1.50)	2.47	(62.74)	101	(0.45)	69	(0.30)
120	(3048)	4DDN	304	(1.35)	2.74	(69.59)	82	(0.36)	56	(0.25)

Loading based on 4DB3 and 4DDN installed on 24" (609mm) intervals using thr 4D21A configuration.

4DB3 Assembly
(see page 4D17 for product information)

4DDN Assembly
(see page 4D18 for product information)

Back-To-Back - 4D21 Channel - 2 1/8" (53.5mm) x 2 1/8" (53.5mm) Load Data

Column Load Data

4D21 Unbraced Height		Assembly Style	Max. Column Loading K = .80 Loaded@ C.G.		Loaded@ Slot Face		Max. Column Loading (Loaded @ C.G.) K = .65		K = 1.0		K = 1.2	
In.	mm		Lbs.	kN	Lbs.	kN	Lbs.	kN	Lbs.	kN	Lbs.	kN
12	(305)	See Note	21287	(94.69)	5930	(26.38)	21601	(96.09)	21123	(93.96)	20584	(91.56)
24	(609)	See Note	19501	(86.74)	5577	(24.80)	20267	(90.15)	18462	(82.12)	17259	(76.77)
36	(914)	See Note	17030	(75.75)	4982	(22.16)	18383	(81.77)	15088	(67.11)	12502	(55.61)
48	(1219)	See Note	14343	(63.80)	4413	(19.63)	16280	(72.41)	10941	(48.67)	7621	(33.90)
60	(1524)	See Note	11290	(50.22)	3944	(17.54)	14430	(64.19)	7191	(31.98)	4907	(21.83)
72	(1829)	See Note	7750	(34.47)	3271	(14.55)	11666	(51.89)	5037	(22.41)	3476	(15.46)
84	(2133)	See Note	5672	(25.23)	2727	(12.13)	8563	(38.09)	3647	(16.22)	2533	(11.27)
96	(2438)	See Note	4411	(19.62)	2292	(10.19)	6685	(29.73)	2805	(11.48)	1941	(8.63)
108	(2743)	See Note	3479	(15.48)	1958	(8.71)	5234	(23.28)	2204	(9.80)	1542**	(6.86)
120	(3048)	See Note	2834	(12.60)	1700	(7.56)	4258	(18.94)	1806	(8.03)	1325**	(5.89)

Note: Loading based on 4DB3 or 4DDN installed on 24" (609mm) intervals using the 4D21A configuration.

**Where the slenderness ratio $\frac{KL}{r}$ exceeds 200, and K = end fixity factor, L = actual length and r = radius of gyration.

4DB3 Assembly
(see page 4D17 for product information)

4DDN Assembly
(see page 4D18 for product information)

4Dimension™ Back-To-Back Accessories

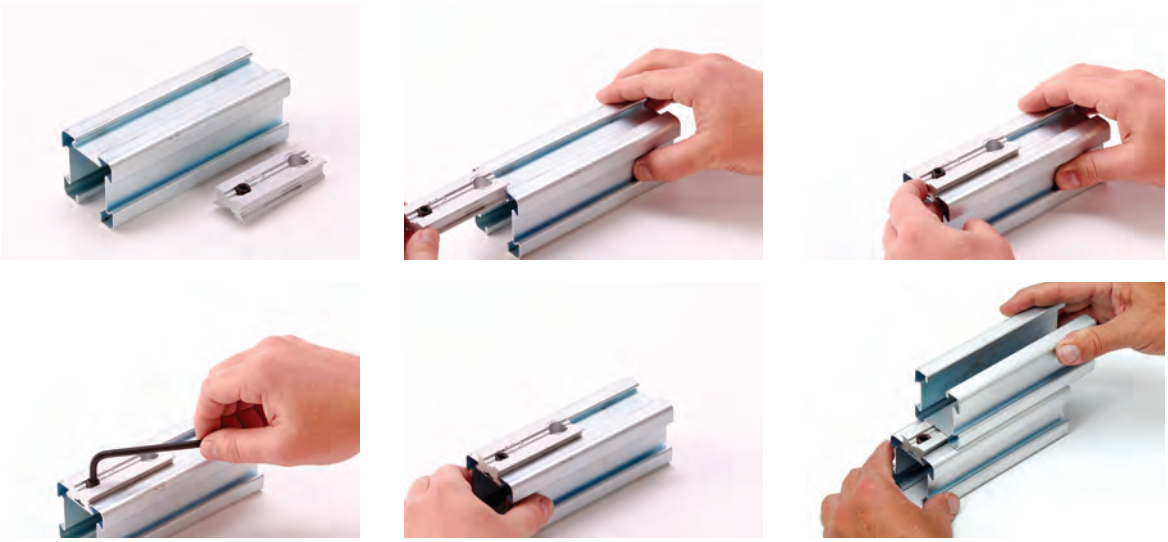
4DB - Dove-Tail Bar (Exclusively for 4Dimension Strut - Dove-Tail Sides)

- For horizontal applications only
- Recommend 3/8"-16 x 1/2" (12.7mm) long cone point set screw for threaded hole - torque to 4 ft/lbs. (5Nm)
- Bar thickness - 1/2" (12.7mm)
- 1/4"-20 or 3/8"-16 threaded hole; 17/32" (13.5mm) clearance hole
- Spring that locks into slot on 4Dimension channels for easy installation
- Aluminum - clear anodized
- Patent Pending

Part No.	Thread Size	Pull-Out Strength		Trapeze Loading		Wt./C	
		Lbs.	kN	Lbs.	kN	Lbs.	kg
4DB3-1/4	1/4"-20	690	(3.07)	465	(2.07)	11	(4.99)
4DB3-3/8	3/8"-16	690	(3.07)	465	(2.07)	11	(4.99)
4DB5-1/4	1/4"-20	490	(2.18)	500	(2.22)	19	(8.62)
4DB5-3/8	3/8"-16	490	(2.18)	500	(2.22)	19	(8.62)
4DB7-1/4	1/4"-20	460	(2.04)	435	(1.93)	27	(12.25)
4DB7-3/8	3/8"-16	460	(2.04)	435	(1.93)	27	(12.25)

Safety Factor of 2.5
Loading based on 24" (609mm) span

Back-To-Back Installation



Wall Mount Installation

4DDN - Dual Dove-Tail Nut (Exclusively for 4Dimension Strut - Dove-Tail Sides)

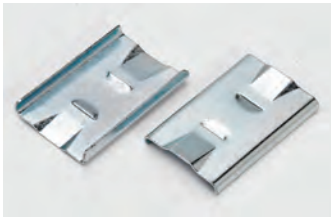
- One 4Dimension channel must have 'SH' slot pattern
- Torque to 19 ft./lbs. (26Nm)
- Zinc or Stainless Steel Type 316 (add SS6 to part number)
- Hex head wrench size - 9/16"
- Patent Pending

Part No.	Pull-Out Strength Lbs.	kN	Slip Strength Lbs.	kN	Wt./C Lbs.	kg
4DDN228	325	(1.44)	55	(0.24)	11.4	(5.17)

Safety Factor of 2.5

Installation

4D5101 - Back-To-Back Snap On Clamp (Exclusively for 4Dimension Strut)



- Works with 4D22 strut only
- Can be adjusted/removed with a flat head screwdriver
- Length - 2" (50.8mm)
- Recommended use in pairs
- Zinc plated steel
- For horizontal applications only
- Patent Pending

Part No.	Pull-Out Strength Lbs.	kN	Wt./C Lbs.	kg
4D5101	400	(1.78)	2.9	(1.31)

Safety Factor of 2.5

Dove-Tail Sides Installation

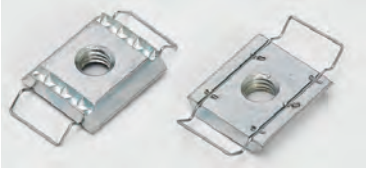
Dimensions are in inches unless otherwise noted. Metric dimensions are in parentheses and are in millimeters unless otherwise noted.

4Dimension™ Channel Nuts

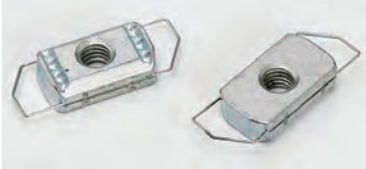
Nut Type	4Dimension Channel		Thread Size			
	4D21	4D22	1/4"-20	5/16"-18	3/8"-16	1/2"-13
4DTN	✔	✔	✔	✔	✔	--
4DSN	✔	✔	✔	✔	✔	--
4DWN *	✔	✔	✔	✔	✔	✔
4DNW	✔	✔	✔	✔	✔	--
NW Series *	✔	✔	✔	✔	✔	✔
N Series *	✔	✔	✔	✔	✔	✔
N-WO Series *	✔	✔	✔	✔	✔	✔
TN Series *	✔	✔	✔	✔	✔	✔

* Can only be used on open side of 4Dimension channel.

4DTN
Dove-Tail Twirl-Nut™
(page 4D20)



4DSN
Dove-Tail Slide-In Nut
(page 4D20)



4DWN
Wire Wing Channel Nut
(page 4D21)

4DNW
Dove-Tail Combo Nut Washer
(page 4D21)

NW Series
Combo Nut Washer
(page 4D22)

N-Series
Spring Nut
(page 4D22)

N-WO Series
Nut Without Spring
(page 4D23)

TN Series
Twirl-Nut™
(page 4D23)

4DTN - Dove-Tail Twirl-Nut™ (Exclusively for 4Dimension Strut - Dove-Tail Sides)

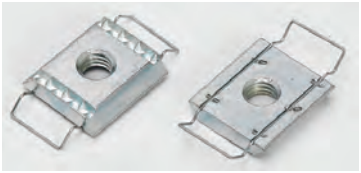
- Used in dove-tail sides only
- Installs with quarter turn
- Recommended bolt length in dove-tail side - 1/2" (12.7mm)
- Zinc plated steel or Stainless Steel Type 316 (add SS6 to part number)
- Safety Factor 3.0
- Patent Pending

Part No.	Thread Size	Nut Thickness In.	mm	Pull-Out Strength Lbs.	kN	Slip Strength Lbs.	kN	Wt./C Lbs.	kg
4DTN224	1/4"-20	15/64"	(5.9)	400	(1.78)	300	(1.33)	4.4	(1.99)
4DTN223	5/16"-18	15/64"	(5.9)	490	(2.18)	300	(1.33)	4.2	(1.90)
4DTN228	3/8"-16	15/64"	(5.9)	490	(2.18)	350	(1.55)	4.1	(1.86)

To achieve catalog load rating, total thread engagement is required.

Dove-Tail Sides Installation

4DSN - Dove-Tail Slide-In Nut (Exclusively for 4Dimension Strut - All Sides)



- Can be used in dove-tail sides (4D21 & 4D22) and open side (4D22)
- Recommended bolt length in dove-tail side - 1/2" (12.7mm)
- Can be used in traditional channel by bending wire down
- Zinc plated steel or Stainless Steel Type 316 (add SS6 to part number)
- Safety Factor 3.0
- Patent Pending
- Reference instruction sheet for proper assembly and installation

Part No.	Thread Size	Nut Thickness In.	mm	Pull-Out Strength Open Lbs.	kN	Dove-Tail Lbs.	kN	Slip Strength Open Lbs.	kN	Dove-Tail Lbs.	kN	Wt./C Lbs.	kg
4DSN224	1/4"-20	1/4"	(6.3)	450	(2.00)	281	(1.25)	330	(1.47)	300	(1.33)	7.1	(3.22)
4DSN223	5/16"-18	1/4"	(6.3)	867	(3.85)	489	(2.17)	767	(3.41)	300	(1.33)	7.0	(3.17)
4DSN228	3/8"-16	1/4"	(6.3)	883	(3.93)	446	(1.98)	1067	(4.74)	300	(1.33)	6.8	(3.08)

To achieve catalog load rating, total thread engagement is required.

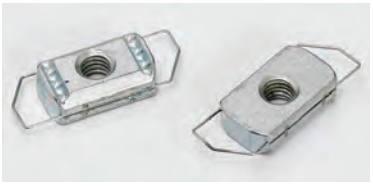
Open Side Installation

Dove-Tail Sides Installation

Dimensions are in inches unless otherwise noted. Metric dimensions are in parentheses and are in millimeters unless otherwise noted.

4Dimension™ Channel Nuts

4DWN - Wire Wing Channel Nut (Exclusively for 4Dimension Strut - Open Side)



- Used in open side only (4D21 & 4D22)
- Can be used in traditional channel by bending wire down
- Zinc plated steel or Stainless Steel Type 316 (add SS6 to part number)
- Safety Factor 3
- Patent Pending

Part No.	Thread Size	Nut Thickness In.	mm	Pull-Out Strength Lbs.	kN	Slip Strength Lbs.	kN	Wt./C Lbs.	kg
4DWN224	1/4"-20	23/64"	(9.1)	450	(2.00)	330	(1.47)	8.1	(3.67)
4DWN223	5/16"-18	23/64"	(9.1)	750	(3.33)	450	(2.00)	7.9	(3.58)
4DWN228	3/8"-16	23/64"	(9.1)	850	(3.78)	800	(3.56)	7.7	(3.49)
4DWN225	1/2"-13	23/64"	(9.1)	1020	(4.53)	1250	(5.56)	7.0	(3.17)

Open Side Installation

4DNW - Dove-Tail Combo Nut Washer (Exclusively for 4Dimension Strut - Dove-Tail Side)

- Used in dove-tail side only
- Installs with quarter turn
- To lock combo nut washer in place a hex nut (sold separately) is required
- Zinc plated steel or Stainless Steel Type 316 (add SS6 to part number)
- Safety Factor 3
- Patent Pending

Part No.	Thread Size	Nut Thickness In.	mm	Pull-Out Strength Lbs.	kN	Slip Strength Lbs.	kN	Wt./C Lbs.	kg
4DNW224	1/4-20	15/64"	(5.9)	400	(1.78)	300	(1.33)	15.3	(6.94)
4DNW223	5/16-18	15/64"	(5.9)	490	(2.18)	300	(1.33)	15.1	(6.85)
4DNW228	3/8-16	15/64"	(5.9)	490	(2.18)	350	(1.55)	14.7	(66.7)

Dove-Tail Side Installation

NW Series - Combo Nut Washer (Traditional Strut & 4Dimension Strut - Open Side)

- Used in open side only
- Zinc plated steel or Stainless Steel Type 316 (add SS6 to part number)
- To lock combo nut washer in place a hex nut (sold separately) is required
- Safety Factor 3
- Patent # 7,604,444

Part No.	Thread Size	Nut Thickness		Pull-Out Strength		Slip Strength		Wt./C	
		In.	mm	Lbs.	kN	Lbs.	kN	Lbs.	kg
NW524	1/4"-20	1/4"	(6.3)	450	(2.00)	330	(1.47)	11.9	(5.40)
NW528	3/8"-16	3/8"	(9.5)	1100	(4.89)	800	(3.56)	13.8	(6.26)
NW525	1/2"-13	3/8"	(9.5)	1275	(5.67)	1500	(6.67)	13.1	(5.94)

Open Side Installation

N Series - Spring Nut (Traditional Strut & 4Dimension Strut - Open Side)

- Used in open side only
- Zinc plated steel or Stainless Steel Type 316 (add SS6 to part number)
- Safety Factor 3

Part No.	Thread Size	Nut Thickness		Pull-Out Strength		Slip Strength		Wt./C	
		In.	mm	Lbs.	kN	Lbs.	kN	Lbs.	kg
N224	1/4"-20	1/4"	(6.3)	450	(2.00)	330	(1.47)	6.7	(3.04)
N228	3/8"-16	3/8"	(9.5)	1100	(4.89)	800	(3.56)	9.3	(4.22)
N225	1/2"-13	1/2"	(12.7)	1275	(5.67)	1500	(6.67)	11.6	(5.26)

Open Side Installation

Dimensions are in inches unless otherwise noted. Metric dimensions are in parentheses and are in millimeters unless otherwise noted.

4Dimension™ Channel Nuts

NWO Series - Spring Nut without Spring (Traditional Strut & 4Dimension Strut - Open Side)

- Used in open side only
- Zinc plated steel or Stainless Steel Type 316 (add SS6 to part number)
- Safety Factor 3

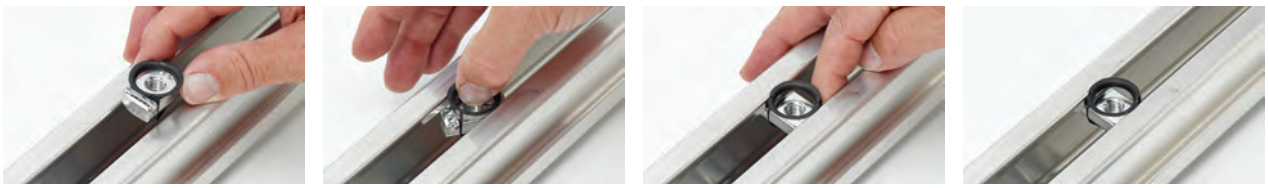
Part No.	Thread Size	Nut Thickness		Pull-Out Strength		Slip Strength		Wt./C	
		In.	mm	Lbs.	kN	Lbs.	kN	Lbs.	kg
N224WO	1/4"-20	1/4"	(6.3)	450	(2.00)	330	(1.47)	6.7	(3.04)
N228WO	3/8"-16	3/8"	(9.5)	1100	(4.89)	800	(3.56)	9.3	(4.22)
N225WO	1/2"-13	1/2"	(12.7)	1275	(5.67)	1500	(6.67)	11.6	(5.26)

TN Series - Twirl-Nut™ (Traditional Strut & 4Dimension Strut - Open Side)

- Used in open side only
- Zinc plated steel
- Safety Factor 3

Part No.	Thread Size	Nut Thickness		Pull-Out Strength		Slip Strength		Wt./C	
		In.	mm	Lbs.	kN	Lbs.	kN	Lbs.	kg
TN224	1/4"-20	1/4"	(6.3)	450	(2.00)	330	(1.47)	6.7	(3.04)
TN228	3/8"-16	3/8"	(9.5)	1100	(4.89)	800	(3.56)	9.3	(4.22)
TN225	1/2"-13	1/2"	(12.7)	1275	(5.67)	1500	(6.67)	11.6	(5.26)

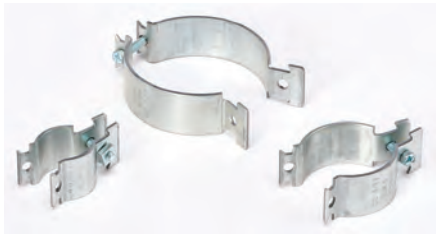
Open Side Installation

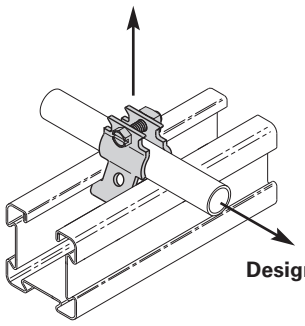


4D2000 Series
O.D. Pipe & Conduit Clamps

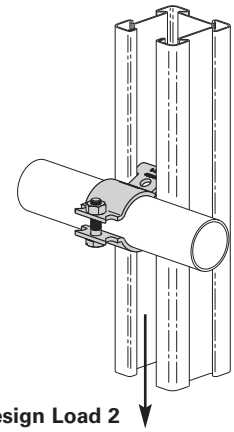
- Safety Factor of 3 (open side)
  Safety Factor of 3 (dove-tail side)
- Add PA to suffix for pre-assembled pipe clamps
- Includes Combination Recess Hex Head Machine Screw and Square Nut.
- Material: 12 Ga. (2.6)
  ASTM A1011 33,000 PSI min. yield
- Standard finishes: ZN, HDG, SS4, SS6, DCU, AL
- Patent Pending

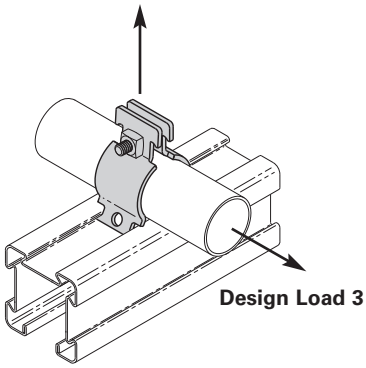
Universal Pipe Clamps
(Interchangable With 4Dimension & Traditional Strut In Dove-Tail & Open Sides)



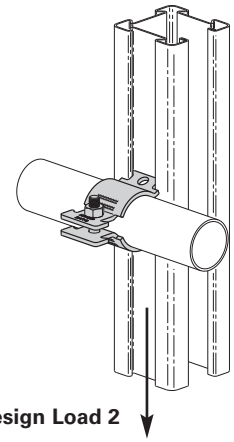


Open Side Design Loads





Dove-Tail Side Design Loads



Open Side Installation

Dove-Tail Side Installation

Dimensions are in inches unless otherwise noted. Metric dimensions are in parentheses and are in millimeters unless otherwise noted.

4Dimension™ Pipe Clamps

Universal Pipe Clamps

(Interchangable With 4Dimension & Traditional Strut In Dove-Tail & Open Sides)

Part No.	O.D. Tubing Size in.	(mm)	EMT Conduit Size in.	(mm)	Rigid Conduit Size in.	(mm)	Copper Tubing Size in.	(mm)	Hardware Size	Clamp Weight Per 100 Pair Lbs.	(kg)	* † Wt. Per 100 ft. (30.5m) Lbs.	(kg)	** Wt. Per 100 ft. (30.5m) Lbs.	(kg)
4D2023	1/4″	(6.3)	–	–	–	–	–	–	1/4″-20	8	(3.6)	15.0†	(6.8)	–	(–)
4D2024	3/8″	(9.5)	–	–	–	–	1/4″	(6)	1/4″-20	8	(3.6)	27.4†	(12.4)	17.7	(8.0)
4D2025	1/2″	(12.7)	–	–	–	–	3/8″	(10)	1/4″-20	9	(4.1)	50.2†	(22.8)	32.4	(14.7)
4D2026	5/8″	(15.9)	–	–	–	–	1/2″	(15)	1/4″-20	10	(4.5)	69.5†	(31.5)	43.9	(19.0)
4D2000	–	–	3/8″	(10)	–	–	–	–	1/4″-20	10	(4.5)	36.6*	(16.6)	–	(–)
4D2001	–	–	1/2″	(15)	3/8″	(10)	–	–	1/4″-20	10	(4.5)	65.1*	(29.5)	–	(–)
4D2027	3/4″	(19.0)	–	–	–	–	–	–	1/4″-20	10	(4.5)	89.5†	(40.6)	–	(–)
4D2008	7/8″	(22.2)	–	–	1/2″	(15)	3/4″	(20)	1/4″-20	11	(5.0)	101.1*	(45.9)	83.0	(37.6)
4D2002	–	–	3/4″	(20)	–	–	–	–	1/4″-20	11	(5.0)	84.3*	(38.2)	–	(–)
4D2009	1″	(25.4)	–	–	3/4″	(20)	–	–	1/4″-20	15	(6.8)	145.8*	(66.1)	–	(–)
4D2030	1 1/8″	(28.6)	–	–	–	–	1″	(25)	1/4″-20	15	(6.8)	166.8†	(75.6)	117.7	(53.3)
4D2003	–	–	1″	(25)	–	–	–	–	1/4″-20	16	(7.2)	130.3*	(59.1)	–	(–)
4D2031	1 1/4″	(31.7)	–	–	–	–	–	–	1/4″-20	16	(7.2)	192.5†	(87.3)	–	(–)
4D2010	1 3/8″	(34.9)	–	–	1″	(25)	1 1/4″	(32)	1/4″-20	17	(7.7)	219.3*	(99.5)	156.8	(71.1)
4D2004	1 1/2″	(38.1)	1 1/4″	(32)	–	–	–	–	1/4″-20	19	(8.6)	212.3*	(96.3)	–	(–)
4D2011	1 5/8″	(41.3)	–	–	1 1/4″	(32)	1 1/2″	(40)	1/4″-20	19	(8.6)	318.3*	(144.4)	210.7	(95.6)
4D2005	1 3/4″	(44.4)	1 1/2″	(40)	–	–	–	–	5/16″-18	28	(12.7)	269.8*	(122.4)	–	(–)
4D2012	1 7/8″	(47.6)	–	–	1 1/2″	(40)	–	–	5/16″-18	30	(13.6)	408.8*	(185.4)	–	(–)
4D2037	2″	(50.8)	–	–	–	–	–	–	5/16″-18	30	(13.6)	370.8†	(168.2)	–	(–)
4D2038	2 1/8″	(54.0)	–	–	–	–	2″	(50)	5/16″-18	32	(14.5)	451.5†	(204.8)	336.6	(152.7)
4D2006	–	–	2″	(50)	–	–	–	–	5/16″-18	33	(14.9)	401.8*	(182.3)	–	(–)
4D2039	2 1/4″	(57.1)	–	–	–	–	–	–	5/16″-18	32	(14.5)	476.8†	(216.3)	–	(–)
4D2013	2 3/8″	(60.3)	–	–	2″	(50)	–	–	5/16″-18	34	(15.4)	479.5*	(217.5)	–	(–)
4D2041	2 1/2″	(63.5)	–	–	–	–	–	–	5/16″-18	35	(15.9)	553.5†	(251.0)	–	(–)
4D2042	2 5/8″	(66.7)	–	–	–	–	2 1/2″	(65)	5/16″-18	35	(15.9)	593.5†	(269.2)	454.6	(206.2)
4D2043	2 3/4″	(69.8)	–	–	–	–	–	–	5/16″-18	38	(17.2)	634.3†	(287.7)	–	(–)
4D2014	2 7/8″	(73.0)	–	–	2 1/2″	(65)	–	–	5/16″-18	38	(17.2)	737.7*	(334.6)	–	(–)
4D2045	3″	(76.2)	–	–	–	–	–	–	5/16″-18	38	(17.2)	874.1†	(396.5)	–	(–)
4D2046	3 1/8″	(79.4)	–	–	–	–	3″	(80)	5/16″-18	39	(17.7)	925.4†	(419.7)	628.0	(284.8)
4D2047	3 1/4″	(82.5)	–	–	–	–	–	–	5/16″-18	41	(18.6)	978.0†	(443.6)	–	(–)
4D2048	3 3/8″	(85.7)	–	–	–	–	–	–	5/16″-18	43	(19.5)	1115.7†	(506.1)	–	(–)
4D2015	3 1/2″	(88.9)	–	–	3″	(80)	–	–	5/16″-18	44	(20.0)	1007.0*	(456.8)	–	(–)
4D2050	3 5/8″	(92.1)	–	–	–	–	3 1/2″	(90)	5/16″-18	54	(24.5)	1233.5†	(559.5)	828.1	(375.6)
4D2051	3 3/4″	(95.1)	–	–	–	–	–	–	5/16″-18	57	(25.8)	1294.0†	(586.9)	–	(–)
4D2052	3 7/8″	(98.4)	–	–	–	–	–	–	5/16″-18	55	(25.0)	1355.6†	(614.9)	–	(–)
4D2016	4″	(101.6)	–	–	3 1/2″	(90)	–	–	5/16″-18	57	(25.8)	12674.8*	(573.7)	–	(–)

* Weight of conduit/tubing and conductors per 100 ft. (30.5m). Where clamp size fits multiple conduit/pipe sizes the weight is for the heaviest size.
** Weight of copper tubing and water per 100 ft. (30.5m).
† Weight of OD tubing and water per 100 ft. (30.5m) based on the mid-range tubing thicknesses.

Universal Pipe Clamps

(Interchangable With 4Dimension & Traditional Strut In Dove-Tail & Open Sides)

Part No.	Design Load 1†				Design Load 2†				Design Load 3†			
	Open Side		Dove-Tail Side		Open Side		Dove-Tail Side		Open Side		Dove-Tail Side	
	Lbs.	(kN)	Lbs.	(kN)	Lbs.	(kN)	Lbs.	(kN)	Lbs.	(kN)	Lbs.	(kN)
4D2023	800	(3.56)	300	(1.33)	80	(0.35)	80	(0.35)	65	(0.29)	65	(0.29)
4D2024	800	(3.56)	300	(1.33)	80	(0.35)	80	(0.35)	65	(0.29)	65	(0.29)
4D2025	800	(3.56)	300	(1.33)	80	(0.35)	80	(0.35)	65	(0.29)	65	(0.29)
4D2026	800	(3.56)	300	(1.33)	80	(0.35)	80	(0.35)	65	(0.29)	65	(0.29)
4D2000	800	(3.56)	300	(1.33)	80	(0.35)	80	(0.35)	65	(0.29)	65	(0.29)
4D2001	800	(3.56)	300	(1.33)	80	(0.35)	80	(0.35)	65	(0.29)	65	(0.29)
4D2027	800	(3.56)	300	(1.33)	80	(0.35)	80	(0.35)	65	(0.29)	65	(0.29)
4D2008	800	(3.56)	300	(1.33)	80	(0.35)	80	(0.35)	65	(0.29)	65	(0.29)
4D2002	800	(3.56)	300	(1.33)	80	(0.35)	80	(0.35)	65	(0.29)	65	(0.29)
4D2009	800	(3.56)	300	(1.33)	80	(0.35)	80	(0.35)	65	(0.29)	65	(0.29)
4D2030	800	(3.56)	400	(1.78)	100	(0.44)	80	(0.35)	100	(0.44)	65	(0.29)
4D2003	800	(3.56)	400	(1.78)	100	(0.44)	80	(0.35)	100	(0.44)	65	(0.29)
4D2031	800	(3.56)	400	(1.78)	100	(0.44)	80	(0.35)	100	(0.44)	65	(0.29)
4D2010	800	(3.56)	400	(1.78)	100	(0.44)	80	(0.35)	100	(0.44)	65	(0.29)
4D2004	800	(3.56)	400	(1.78)	100	(0.44)	80	(0.35)	100	(0.44)	65	(0.29)
4D2011	800	(3.56)	400	(1.78)	100	(0.44)	80	(0.35)	100	(0.44)	65	(0.29)
4D2005	800	(3.56)	400	(1.78)	100	(0.44)	85	(0.38)	100	(0.44)	70	(0.31)
4D2012	800	(3.56)	400	(1.78)	100	(0.44)	85	(0.38)	100	(0.44)	70	(0.31)
4D2037	800	(3.56)	400	(1.78)	100	(0.44)	85	(0.38)	100	(0.44)	70	(0.31)
4D2038	800	(3.56)	400	(1.78)	100	(0.44)	85	(0.38)	100	(0.44)	70	(0.31)
4D2006	800	(3.56)	400	(1.78)	100	(0.44)	85	(0.38)	100	(0.44)	70	(0.31)
4D2039	1000	(4.45)	400	(1.78)	80	(0.35)	80	(0.35)	80	(0.35)	70	(0.31)
4D2013	1000	(4.45)	400	(1.78)	80	(0.35)	80	(0.35)	80	(0.35)	70	(0.31)
4D2041	1000	(4.45)	400	(1.78)	80	(0.35)	80	(0.35)	80	(0.35)	70	(0.31)
4D2042	1000	(4.45)	400	(1.78)	80	(0.35)	80	(0.35)	80	(0.35)	70	(0.31)
4D2043	1000	(4.45)	400	(1.78)	80	(0.35)	80	(0.35)	80	(0.35)	70	(0.31)
4D2014	1000	(4.45)	400	(1.78)	80	(0.35)	80	(0.35)	80	(0.35)	70	(0.31)
4D2045	1000	(4.45)	400	(1.78)	80	(0.35)	80	(0.35)	80	(0.35)	70	(0.31)
4D2046	1000	(4.45)	400	(1.78)	80	(0.35)	80	(0.35)	80	(0.35)	70	(0.31)
4D2047	1000	(4.45)	400	(1.78)	80	(0.35)	80	(0.35)	80	(0.35)	70	(0.31)
4D2048	1000	(4.45)	400	(1.78)	80	(0.35)	80	(0.35)	80	(0.35)	70	(0.31)
4D2015	1000	(4.45)	400	(1.78)	80	(0.35)	80	(0.35)	80	(0.35)	70	(0.31)
4D2050	1000	(4.45)	400	(1.78)	80	(0.35)	80	(0.35)	80	(0.35)	70	(0.31)
4D2051	1000	(4.45)	400	(1.78)	80	(0.35)	80	(0.35)	80	(0.35)	70	(0.31)
4D2052	1000	(4.45)	400	(1.78)	80	(0.35)	80	(0.35)	80	(0.35)	70	(0.31)
4D2016	1000	(4.45)	400	(1.78)	80	(0.35)	80	(0.35)	80	(0.35)	70	(0.31)

† Safety factor of 3 on open slot and dove tail slot.

Dimensions are in inches unless otherwise noted. Metric dimensions are in parentheses and are in millimeters unless otherwise noted.

4D5000 - Flip Clip™ Trapeze Hanger

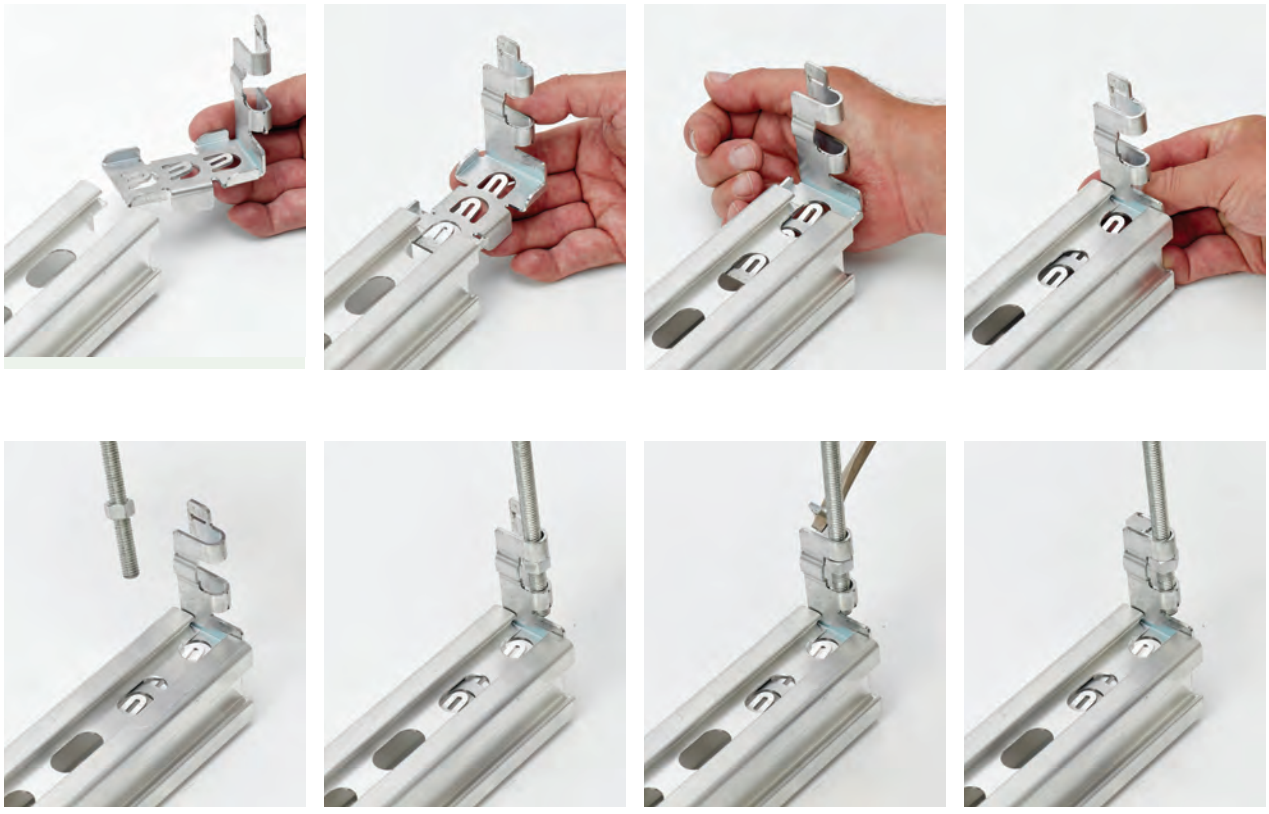
(Exclusively for 4Dimension Strut)

- Mechanically locks in place when used with 4Dimension SH hole pattern channel *
- Recommend a self-tapping set screw when used in 4Dimension solid channel or S hole pattern channel
- Requires hex nut for location placement on ATR
- Provides more usable area for trapeze application
- Sold in pieces (when used as trapeze hangers, two pieces are required)
- Loading Safety Factor: 2.5
- Zinc plated steel or Stainless Steel Type 316 (add SS6 to part number)
- Patent Pending

Part No.	Rod Size	Design Load Lbs.	Design Load kN	Wt./C Lbs.	Wt./C kg
4D5000-3/8	3/8"-16	770	(3.42)	23.8	(10.79)
4D5000-1/2	1/2"-13	880	(3.56)	25.3	(11.47)

Design load when used in pairs as a trapeze solution.
Consult beam loading charts for channel loading.

Installation
(shown in the upright position)



Ensure both top and bottom lock tabs are bent to secure All Threaded Rod.
* Helps ensure the tab on the horizontal side is bent to engage in the SH slot.

4D5001 - 2-Piece Turn & Lock Trapeze Hanger
(Exclusively for 4Dimension Strut)

- Can be installed in any desired position on the ATR, helping eliminate the need to thread hex nuts up along ATR
- No additional hardware required
- Used in 'SH' slot with open face of channel facing up or down
- Interlocking/alignment tabs on top of part for easy assembly, installation, and adjustment
- Sold in pairs as shown below (one left side and one right side)
- When used as trapeze hangers, two sets are required
- Loading Safety Factor: 2.5
- Patent Pending

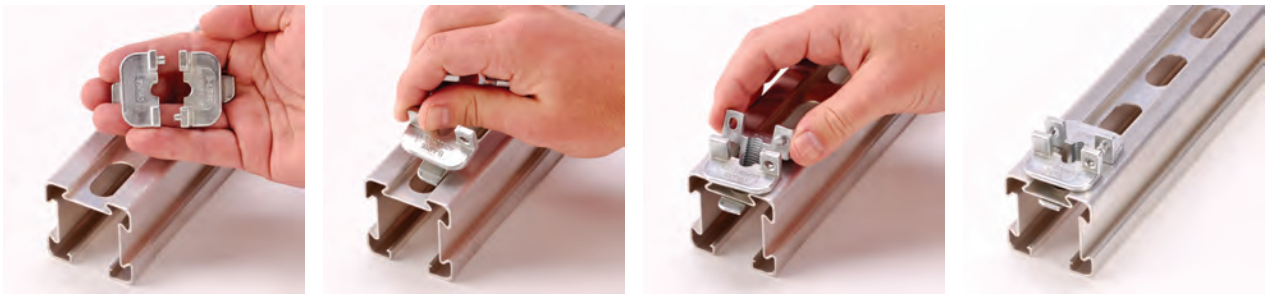
Left & Right Sides
(one pair as shown)

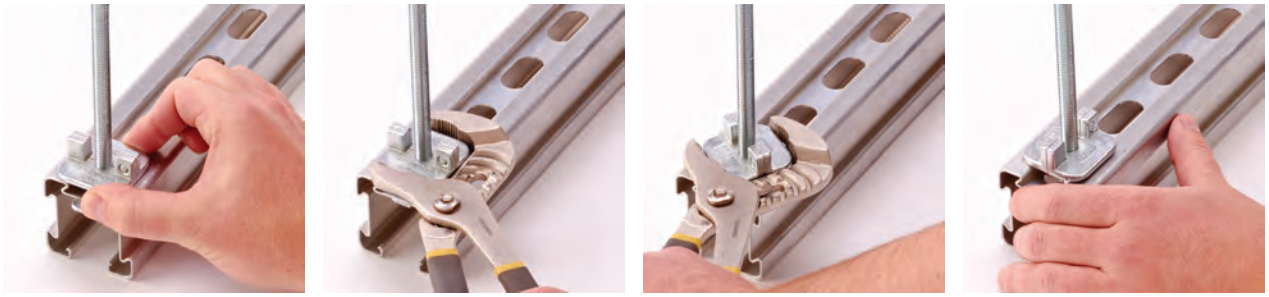
Note:
Not to be used in continuous open slot or solid dove-tail slot.

Part No.	Thread Size	Loading Lbs.	Loading kN	Wt./C Lbs.	Wt./C kg
4D5001	3/8"-16	1155	(5.14)	24.8	(11.25)

Design load when used in pairs as a trapeze solution.
Consult beam loading charts for channel loading.

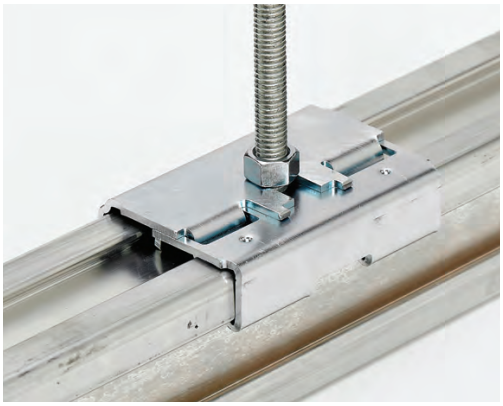
Installation





4D5100 - 2 Piece Strengthening Clamp
(Exclusively for 4Dimension Strut)

- For use on 4D22 channel only
- Shipped as one piece that can be snapped apart for installation
- Also designed to be used as a rod hanger
- Loading Safety Factor: 2.5
- Pre-Galv steel or Stainless Steel
  Type 316 (add SS6 to part number)
- Patent Pending



Part No.	Thread Size	Wt./C Lbs.	Wt./C kg
4D5100-3/8	3/8"-16	44.1	(20.00)
4D5100-1/2	1/2"-13	43.9	(19.91)

Part No.	Loading Lbs.	Loading kN
4D5100-3/8	785	(3.49)
4D5100-1/2	935	(4.16)

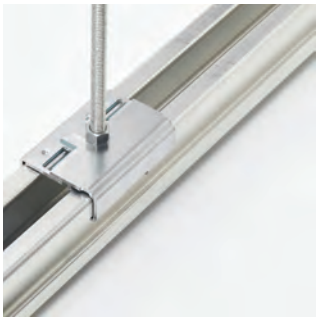
Design load when used individually.
Consult beam loading charts for channel loading.

Installation

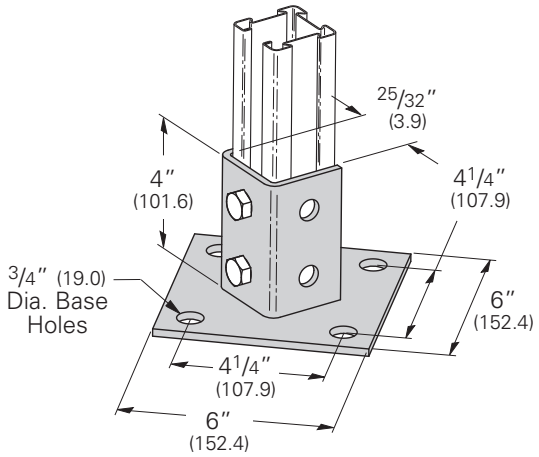








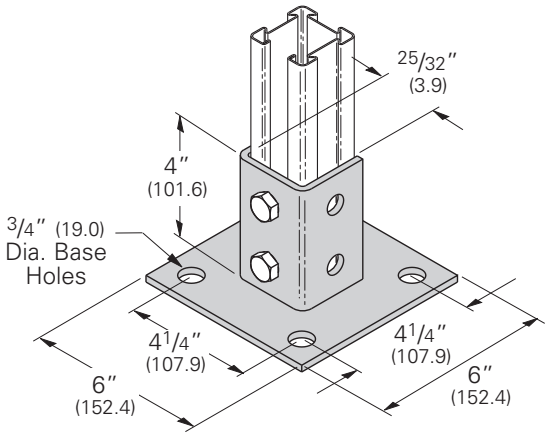
4D280 Post Bases
(Exclusively for 4Dimension Strut)



- Standard finishes: ZN, GRN, HDG, SS4
- Used with 4D22 and 4D21
- Weight Per 100: 365 lbs. (165.5kg)

Part No.	Wt./C Lbs.	kg
4D280	365	(165.5)

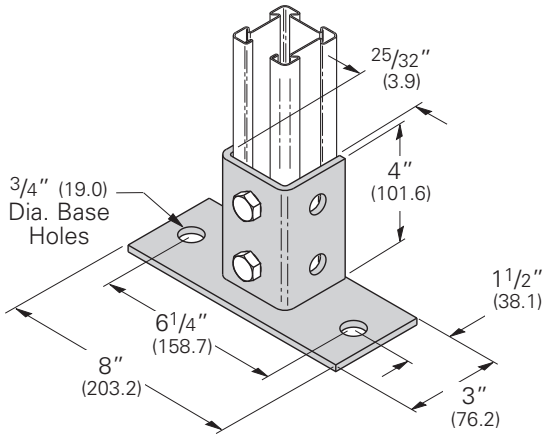
4D280SQ Post Bases
(Exclusively for 4Dimension Strut)



- Standard finishes: ZN, GRN, HDG, SS4
- Used with 4D22 and 4D21
- Weight Per 100: 365 lbs. (165.5kg)

Part No.	Wt./C Lbs.	kg
4D280SQ	365	(165.5)

4D280FL Post Bases
(Exclusively for 4Dimension Strut)



- Standard finishes: ZN, GRN, HDG, SS4
- Used with 4D22 and 4D21
- Weight Per 100: 296 lbs. (134.2kg)

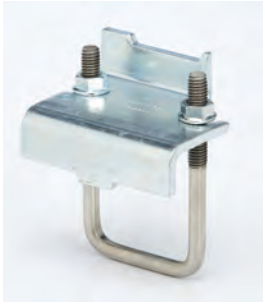
Part No.	Wt./C Lbs.	kg
4D280FL	296	(134.2)

Dimensions are in inches unless otherwise noted. Metric dimensions are in parentheses and are in millimeters unless otherwise noted.

4D441 Series - Universal Beam Clamps

(Interchangable With 4Dimension & Traditional Strut)

Part No.	Fits Channel Sizes	U-Bolt Length in. mm	Wt./C Lbs. kg
4D441-21	4D21, B52, B54, B56	$3^{5}/_{32}$" (80.1)	102 (46.3)
4D441-22	4D22 & 4D21A Style B22, B24, B26, B52A, B54A, B56A	$4^{5}/_{32}$" (105.5)	107 (48.5)
4D441-22A	4D22 Back-To-Back Style B22A, B24A, B26A, B11	$6^{1}/_{32}$" (153.2)	116 (52.6)

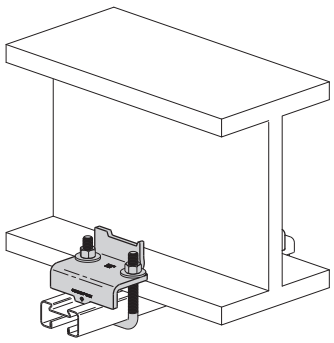


For Use With 4Dimension Strut

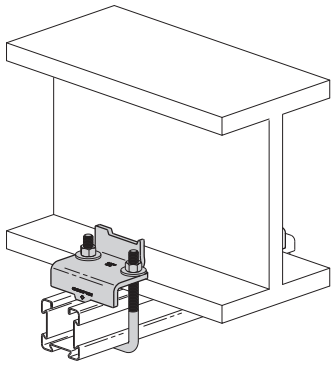
- Designed to be used with 4Dimension and traditional strut
- Design Load 1200 lbs. (5.34kN) when used in pairs
- Safety Factor of 3
- $^{3}/_{4}$" (19.0mm) maximum flange thickness
- Recommended torque: 150 in-lbs. (16.9N•m)
- U-Bolt comes pre-assembled with hardware
- Sold in pieces
- Standard finishes: Zinc Plated, HDG, SS4
- Patent Pending

For Use With Traditional Strut

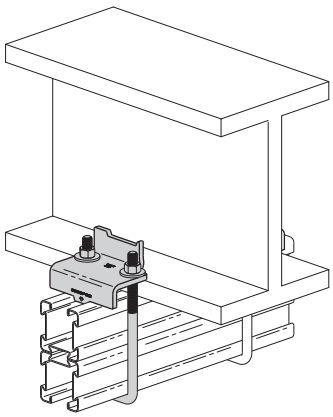
4Dimension Strut



4D441-21

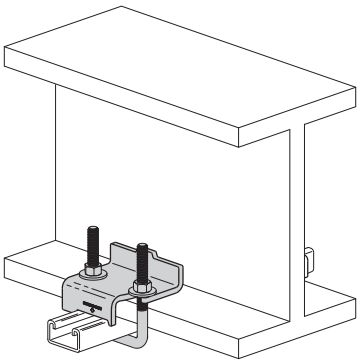


4D441-22

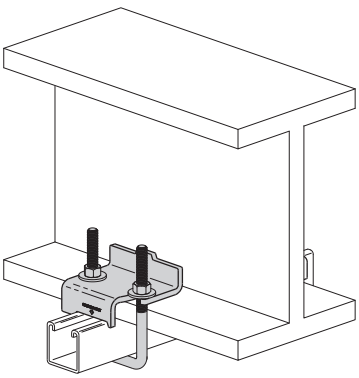


4D441-22A

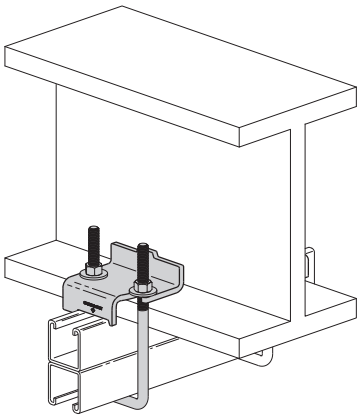
Tradtional Strut



4D441-21



4D441-22



4D441-22A

4D441 Series - Universal Beam Clamps
(Interchangable With 4Dimension & Traditional Strut) cont.

Installation







Ensure that the U-Bolt is fully secured/nested in beam clamp slot.

Compatible with Traditional Strut


4Dimension™ Photos

4Dimension Strut System

Universal pipe clamp works on all sides of 4Dimension strut

4Dimension Strut System example

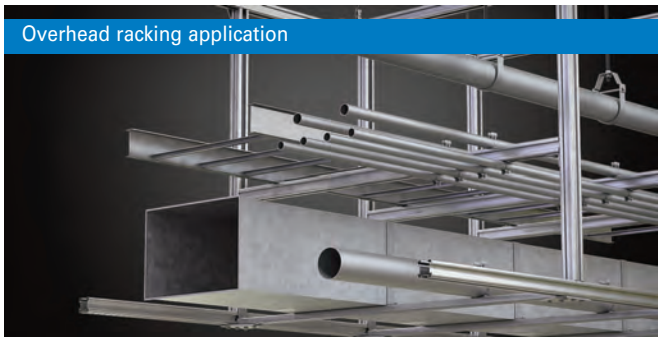
Up to 50% reduction in installation and materials

Three innovative 4Dimension channel nuts

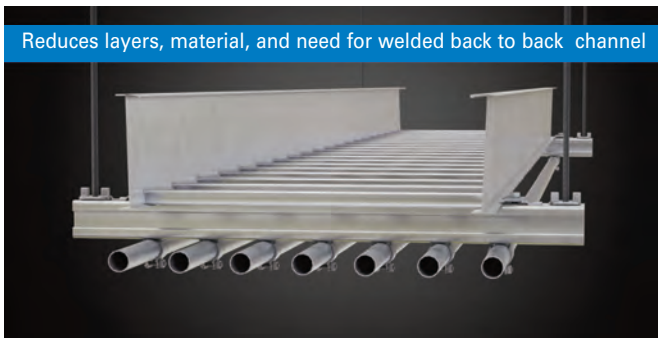
Fully leverages all sides for ease of design and construction

Superior strength - Lighter weight - Modular design

Overhead racking application



Reduces layers, material, and need for welded back to back channel



Additional 4Dimension system applications

Hydraulic Strut Cutter
(For 4Dimension Strut & Various Traditional Channels)

- Patented **esp*** hydraulic strut cutter easily cuts 4Dimension strut and a variety of B-Line strut profiles to size in seconds
- Produces clean cuts without burrs or sharp edges - no post processing necessary
- Lightweight, black anodized 7075-T651 aluminum frame is portable to the jobsite - 65 lbs. (29.4kg)
- Collapsible handle creates a sturdy operations platform
- 10,000psi hydraulic power source and hose with universal coupling (sold separately) required for operation
- Adjustable material rest* feeds strut sections straight into cutter
- Adjustable backstop* provides for easy production cutting
- Die sets available for cutting 4D21, 4D22, B22, B24, B26, B52, B54, B56 strut profiles
- Die life: thousands of cuts from a single set of blades

*requires two (2) sections of 1" OD tubing - sold separately

* **esp** (edwards strut pro) is a product logo used by Edwards Manufacturing Company

Part No.	Description	Wt./C Lbs.	kg
BHSC100	complete esp set includes cutter, hydraulic pump & hose, material rest, backstop and the three (3) die sets listed below	173	(78.5)
	Die Sets for Channel		
BHSC100B22	B22, B24, B26, B52, B54, B56	13	(5.9)
BHSC1004D22	4D22	13	(5.9)
BHSC1004D21	4D21	13	(5.9)