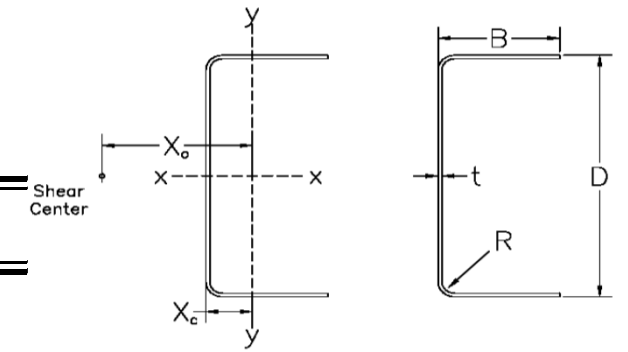




Channel Sections: Gross Section Properties

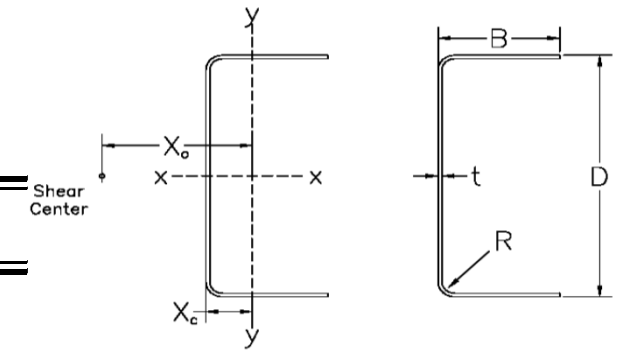


1. Section properties are calculated in accordance with the 2016 AISI North American Specification for the Design of Cold-Formed Steel Structural Members.
2. Material: A1011 HSLAS Grade 55 Class 1 Steel or A653 SS Grade 55 Steel
3. Strength Increase due to Cold Working has been applied where applicable
4. Web Crippling values are based on a 4 inch bearing length, one flange fastened to support
5. Appropriate factors of safety have been applied for Allowable Stress Design (ASD)
6. Strength calculations based on a fully braced condition
7. Consult with an engineering professional before using the above design aids

Member	Ga.	Dimensions				Gross Section Properties													
		D (in)	B (in)	t _{design} (in)	R (in)	Area (in ²)	Weight (lb/ft)	Axis X-X			Axis Y-Y				Centroid	Shear Center	Torsional Properties		
								I _x (in ⁴)	S _x TOP & BOT (in ³)	r _x (in)	I _y (in ⁴)	S _y LEFT (in ³)	S _y RIGHT (in ³)	r _y (in)	X _c (in)	X _o (in)	J (in ⁴)	C _w (in ⁶)	j (in)
4.1875	x 2	12	2.10	0.1016	0.1875	0.81	2.74	2.23	1.06	1.66	0.36	0.62	0.24	0.66	0.58	-1.32	0.0028	0.993	2.466
4.1875	x 2	14	2.05	0.0689	0.1875	0.55	1.86	1.52	0.73	1.67	0.23	0.43	0.15	0.65	0.55	-1.28	0.0009	0.660	2.463
4.1875	x 2	16	2.03	0.0579	0.1875	0.46	1.56	1.28	0.61	1.67	0.19	0.36	0.13	0.65	0.53	-1.27	0.0005	0.549	2.461
4.1875	x 2.5	12	2.60	0.1016	0.1875	0.91	3.09	2.65	1.27	1.70	0.64	0.83	0.35	0.84	0.78	-1.76	0.0031	1.798	2.718
4.1875	x 2.5	14	2.55	0.0689	0.1875	0.62	2.10	1.81	0.87	1.71	0.42	0.57	0.23	0.83	0.74	-1.72	0.001	1.204	2.704
4.1875	x 2.5	16	2.53	0.0579	0.1875	0.52	1.76	1.53	0.73	1.72	0.35	0.48	0.19	0.82	0.73	-1.70	0.0006	1.004	2.698
4.1875	x 3	12	3.10	0.1016	0.1875	1.01	3.44	3.07	1.47	1.74	1.04	1.06	0.49	1.01	0.98	-2.21	0.0035	2.933	3.044
4.1875	x 3	14	3.05	0.0689	0.1875	0.69	2.33	2.11	1.01	1.75	0.69	0.72	0.33	1.00	0.95	-2.17	0.0011	1.975	3.025
4.1875	x 3	16	3.03	0.0579	0.1875	0.58	1.96	1.77	0.85	1.76	0.57	0.61	0.27	1.00	0.94	-2.15	0.0006	1.651	3.016
6.1875	x 2	12	2.10	0.1016	0.1875	1.01	3.44	5.57	1.80	2.34	0.40	0.85	0.25	0.63	0.47	-1.13	0.0035	2.564	3.506
6.1875	x 2	14	2.05	0.0689	0.1875	0.69	2.33	3.79	1.22	2.35	0.26	0.59	0.16	0.62	0.44	-1.10	0.0011	1.691	3.534
6.1875	x 2	16	2.03	0.0579	0.1875	0.58	1.96	3.18	1.03	2.35	0.22	0.50	0.14	0.61	0.43	-1.08	0.0006	1.402	3.544
6.1875	x 2.5	12	2.60	0.1016	0.1875	1.12	3.78	6.51	2.10	2.42	0.73	1.14	0.37	0.81	0.64	-1.53	0.0038	4.607	3.495
6.1875	x 2.5	14	2.55	0.0689	0.1875	0.76	2.56	4.43	1.43	2.42	0.48	0.78	0.25	0.80	0.61	-1.49	0.0012	3.065	3.502
6.1875	x 2.5	16	2.53	0.0579	0.1875	0.63	2.15	3.73	1.21	2.43	0.40	0.66	0.21	0.79	0.60	-1.48	0.0007	2.550	3.505
6.1875	x 3	12	3.10	0.1016	0.1875	1.22	4.13	7.45	2.41	2.47	1.19	1.43	0.52	0.99	0.83	-1.95	0.0042	7.459	3.641
6.1875	x 3	14	3.05	0.0689	0.1875	0.82	2.80	5.08	1.64	2.48	0.78	0.98	0.35	0.97	0.80	-1.91	0.0013	4.989	3.637
6.1875	x 3	16	3.03	0.0579	0.1875	0.69	2.35	4.27	1.38	2.49	0.65	0.83	0.29	0.97	0.78	-1.90	0.0008	4.161	3.635
8.1875	x 2	12	2.10	0.1016	0.1875	1.22	4.13	10.94	2.67	3.00	0.43	1.08	0.26	0.60	0.40	-0.99	0.0042	5.032	5.057
8.1875	x 2	14	2.05	0.0689	0.1875	0.82	2.80	7.43	1.81	3.00	0.28	0.75	0.17	0.58	0.37	-0.96	0.0013	3.306	5.124
8.1875	x 2	16	2.03	0.0579	0.1875	0.69	2.35	6.24	1.52	3.00	0.23	0.63	0.14	0.58	0.36	-0.95	0.0008	2.737	5.150
8.1875	x 2.5	12	2.60	0.1016	0.1875	1.32	4.47	12.60	3.08	3.09	0.79	1.43	0.39	0.77	0.55	-1.35	0.0045	9.030	4.688
8.1875	x 2.5	14	2.55	0.0689	0.1875	0.89	3.03	8.56	2.09	3.10	0.52	0.99	0.26	0.76	0.52	-1.33	0.0014	5.984	4.722
8.1875	x 2.5	16	2.53	0.0579	0.1875	0.75	2.55	7.20	1.76	3.10	0.43	0.84	0.21	0.76	0.51	-1.31	0.0008	4.972	4.735
8.1875	x 3	12	3.10	0.1016	0.1875	1.42	4.82	14.26	3.48	3.17	1.29	1.80	0.54	0.95	0.72	-1.75	0.0049	14.584	4.591
8.1875	x 3	14	3.05	0.0689	0.1875	0.96	3.27	9.70	2.37	3.18	0.85	1.24	0.36	0.94	0.69	-1.71	0.0015	9.718	4.607
8.1875	x 3	16	3.03	0.0579	0.1875	0.81	2.75	8.15	1.99	3.18	0.71	1.05	0.30	0.94	0.68	-1.70	0.0009	8.095	4.612
10.1875	x 2	12	2.10	0.1016	0.1875	1.42	4.82	18.74	3.68	3.63	0.46	1.29	0.26	0.57	0.35	-0.88	0.0049	8.472	7.110
10.1875	x 2	14	2.05	0.0689	0.1875	0.96	3.27	12.72	2.50	3.64	0.29	0.90	0.17	0.55	0.33	-0.85	0.0015	5.551	7.224
10.1875	x 2	16	2.03	0.0579	0.1875	0.81	2.75	10.68	2.10	3.64	0.24	0.77	0.14	0.55	0.32	-0.84	0.0009	4.591	7.271
10.1875	x 2.5	12	2.60	0.1016	0.1875	1.52	5.16	21.33	4.19	3.74	0.84	1.72	0.40	0.74	0.49	-1.22	0.0052	15.220	6.290
10.1875	x 2.5	14	2.55	0.0689	0.1875	1.03	3.50	14.48	2.84	3.75	0.55	1.19	0.26	0.73	0.46	-1.19	0.0016	10.060	6.356
10.1875	x 2.5	16	2.53	0.0579	0.1875	0.87	2.94	12.17	2.39	3.75	0.45	1.01	0.22	0.72	0.45	-1.18	0.001	8.352	6.382
10.1875	x 3	12	3.10	0.1016	0.1875	1.62	5.51	23.91	4.69	3.84	1.37	2.17	0.56	0.92	0.63	-1.58	0.0056	24.575	5.887
10.1875	x 3	14	3.05	0.0689	0.1875	1.10	3.74	16.24	3.19	3.84	0.90	1.49	0.37	0.91	0.60	-1.56	0.0017	16.338	5.925
10.1875	x 3	16	3.03	0.0579	0.1875	0.92	3.14	13.65	2.68	3.85	0.75	1.26	0.31	0.90	0.59	-1.54	0.001	13.598	5.940
12.1875	x 2	12	2.10	0.1016	0.1875	1.62	5.51	29.39	4.82	4.25	0.47	1.50	0.26	0.54	0.31	-0.79	0.0056	12.933	9.660
12.1875	x 2	14	2.05	0.0689	0.1875	1.10	3.74	19.93	3.27	4.26	0.30	1.05	0.17	0.53	0.29	-0.77	0.0017	8.457	9.832
12.1875	x 2	16	2.03	0.0579	0.1875	0.92	3.14	16.73	2.75	4.26	0.25	0.90	0.14	0.52	0.28	-0.76	0.001	6.989	9.902



Channel Sections: Gross Section Properties



1. Section properties are calculated in accordance with the 2016 AISI North American Specification for the Design of Cold-Formed Steel Structural Members.
2. Material: A1011 HSLAS Grade 55 Class 1 Steel or A653 SS Grade 55 Steel
3. Strength Increase due to Cold Working has been applied where applicable
4. Web Crippling values are based on a 4 inch bearing length, one flange fastened to support
5. Appropriate factors of safety have been applied for Allowable Stress Design (ASD)
6. Strength calculations based on a fully braced condition
7. Consult with an engineering professional before using the above design aids

Member	Ga.	Dimensions				Gross Section Properties													
		D (in)	B (in)	t _{design} (in)	R (in)	Area A (in ²)	Weight (lb/ft)	Axis X-X			Axis Y-Y				Centroid	Shear Center	Torsional Properties		
								I _x (in ⁴)	S _x TOP & BOT (in ³)	r _x (in)	I _y (in ⁴)	S _y LEFT (in ³)	S _y RIGHT (in ³)	r _y (in)	X _c (in)	X _o (in)	J (in ⁴)	C _w (in ⁶)	j (in)
12.1875 x 2.5	12	12.1875	2.60	0.1016	0.1875	1.73	5.86	33.10	5.43	4.38	0.87	2.01	0.40	0.71	0.43	-1.11	0.0059	23.285	8.295
12.1875 x 2.5	14	12.1875	2.55	0.0689	0.1875	1.17	3.97	22.46	3.69	4.38	0.57	1.39	0.27	0.70	0.41	-1.09	0.0018	15.363	8.398
12.1875 x 2.5	16	12.1875	2.53	0.0579	0.1875	0.98	3.34	18.86	3.10	4.38	0.47	1.18	0.22	0.69	0.40	-1.07	0.0011	12.746	8.440
12.1875 x 3	12	12.1875	3.10	0.1016	0.1875	1.83	6.20	36.81	6.04	4.49	1.43	2.52	0.57	0.89	0.57	-1.45	0.0063	37.630	7.523
12.1875 x 3	14	12.1875	3.05	0.0689	0.1875	1.24	4.21	24.99	4.10	4.49	0.94	1.74	0.38	0.87	0.54	-1.43	0.002	24.975	7.588
12.1875 x 3	16	12.1875	3.03	0.0579	0.1875	1.04	3.53	20.99	3.45	4.49	0.78	1.47	0.31	0.87	0.53	-1.41	0.0012	20.775	7.614