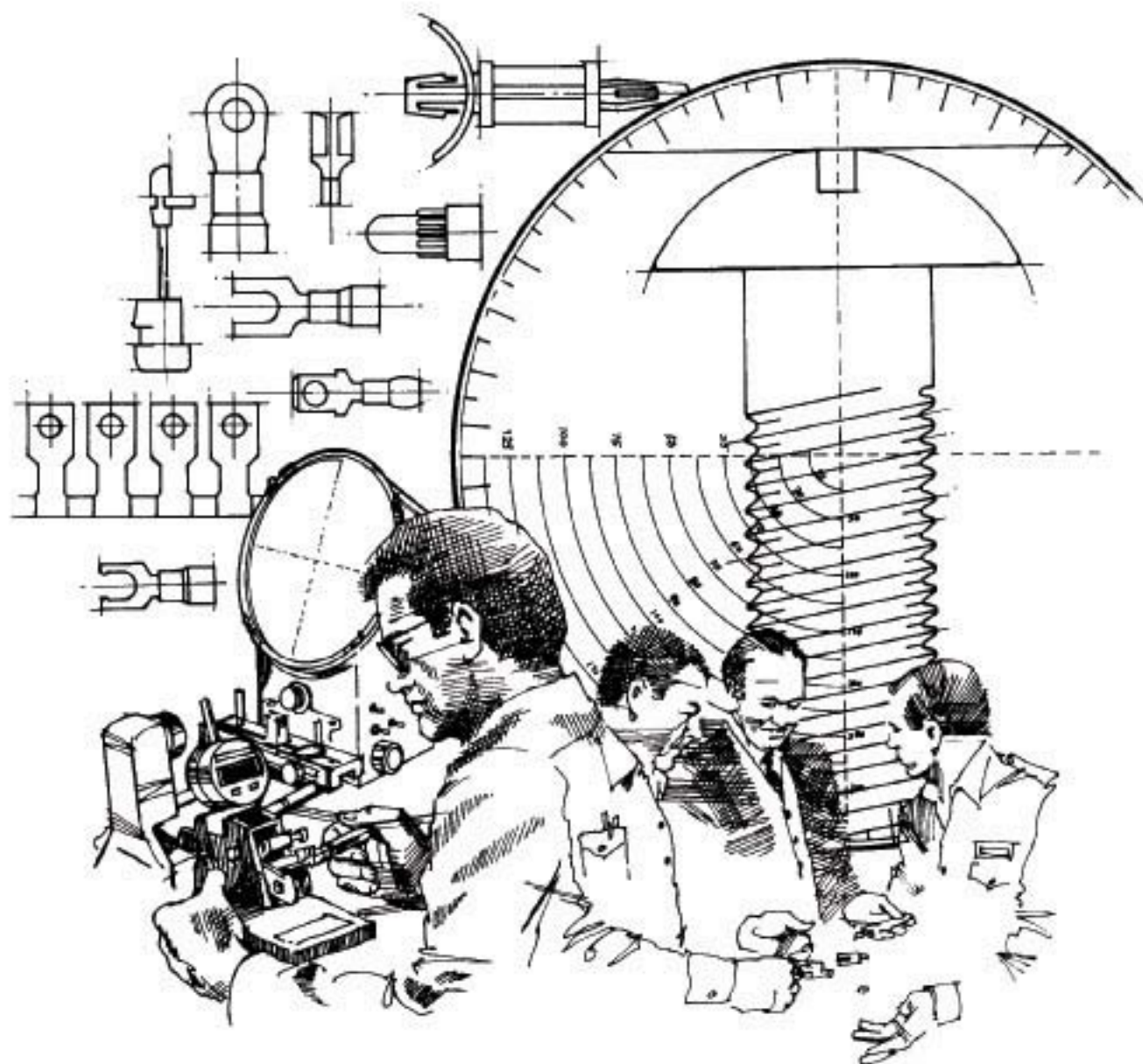


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.....228,238,240,286	229,238,240,286	231,238,240,286
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.....228,238,240,286	232,238,240,286	230,238,240,286
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Cap	Cold Forged Wing	Finished
.....255,261,291	255,269,291	255,266,291
Castle	Coupling	Finished Hex Grade 5
.....255,261,291	255,261,291	255,266,291
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Nuts (continued)

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Flat Phillips	Hex Washer Slotted	Oval Phillips
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..... 230,235,238,286	 231,235,238,286	 231,235,238,286
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®Torx is a registered trademark of the Camcar Corp. division of Textron Inds.

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Flat Phillips Taptite II®	Hex Washer Unslotted Taptite II®	Pan Phillips Plastite®
..... 228,237,286	 230,237,286	 231,251,286
Hex Washer Unslotted Plastite®		Pan Phillips Taptite II®
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® Plastite and Taptite II's are registered trademarks of the REMINC (Research Engineering & Manufacturing Inc.)

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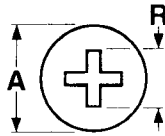
Flat Phillips	Oval Phillips	Round Phillips
..... 228,237,285	 231,237,285	 232,237,285
Flat Slotted	Oval Slotted	Round Slotted
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Additional Information

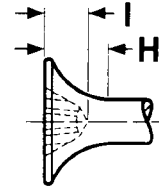
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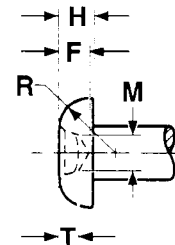
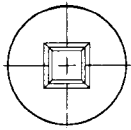


Bugle Head Drywall Screws Deck Screws Particle Board Screws



Size	A		H		R		I	
	Head Diam.		Head Hgt.		Recess Diam.		Recess Depth	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
6	.347	.315	.031	.020	.189	.176	.110	.087
7	.355	.322	.035	.020	.206	.191	.125	.102
8	.363	.330	.039	.020	.214	.201	.135	.112
10	.379	.344	.045	.034	.222	.208	.142	.137

Square Drive Pan Head Self Tapping Screws



This type of recess has a square center opening, slightly tapered side walls and a conical bottom.

Nominal Size or Basic Screw Diameter	H		R	M		T		Driver Size	P	
	Head Height		Head Radius	Recess Square		Recess Depth			Penetration Gauging Depth	
	Max	Min	Min	Max	Min	Max	Min		Max	Min
3 0.0990	0.078	0.067	0.010	0.071	0.0696	0.073	0.063	0	0.038	0.032
4 0.1120	0.086	0.075	0.010	0.071	0.0696	0.073	0.063	0	0.038	0.032
5 0.1250	0.095	0.083	0.015	0.091	0.090	0.113	0.105	1	0.065	0.057
6 0.1380	0.103	0.091	0.015	0.091	0.090	0.113	0.105	1	0.065	0.057
7 0.1510	0.111	0.099	0.015	0.091	0.090	0.113	0.105	1	0.065	0.057
8 0.1640	0.120	0.107	0.015	0.112	0.111	0.140	0.119	2	0.075	0.065
10 0.1900	0.137	0.123	0.020	0.112	0.111	0.140	0.119	2	0.075	0.065
12 0.2160	0.153	0.139	0.025	0.133	0.1315	0.165	0.155	3	0.095	0.085
1/4 0.2500	0.175	0.160	0.035	0.133	0.1315	0.165	0.155	3	0.095	0.085
5/16 0.3125	0.216	0.198	0.040	0.191	0.1895	0.201	0.191	4	0.100	0.090
3/8 0.3750	0.256	0.237	0.040	0.191	0.1895	0.201	0.191	4	0.100	0.090

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> More Pages <

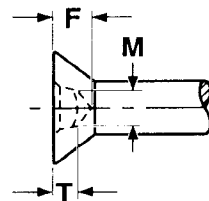
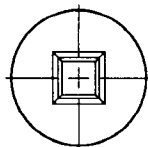
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Head Dimensions (continued)

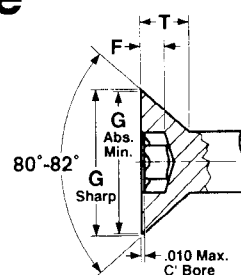
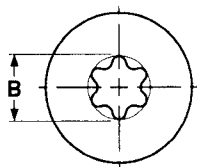
Square Drive Flat Head



This type of recess has a square center opening, slightly tapered side walls and a conical bottom.

Nominal Size or Basic Screw Diameter	M Recess Square		T Recess Depth		Driver Size	F Penetration Gauging Depth	
	Max	Min	Min	Max		Max	Min
3 0.0990	0.071	0.0696	0.073	0.063	0	0.038	0.032
4 0.1120	0.071	0.0696	0.073	0.063	0	0.038	0.032
5 0.1250	0.091	0.090	0.113	0.105	1	0.065	0.057
6 0.1380	0.091	0.090	0.113	0.105	1	0.065	0.057
7 0.1510	0.091	0.090	0.113	0.105	1	0.065	0.057
8 0.1640	0.1126	0.111	0.140	0.119	2	0.075	0.065
10 0.1900	0.1126	0.111	0.140	0.119	2	0.075	0.065
12 0.2160	0.133	0.1315	0.165	0.155	3	0.095	0.085
1/4 0.2500	0.133	0.1315	0.165	0.155	3	0.095	0.085
5/16 0.3125	0.191	0.1895	0.201	0.191	4	0.100	0.090
3/8 0.3750	0.191	0.1895	0.201	0.191	4	0.100	0.090

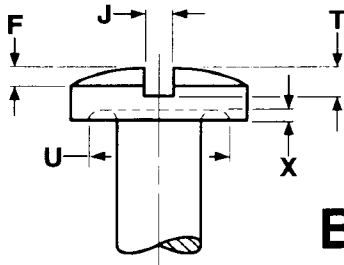
Flat Head Torx® Drive (Floorboard)



® Torx is a registered trademark of Camcar division of Textron Inds.

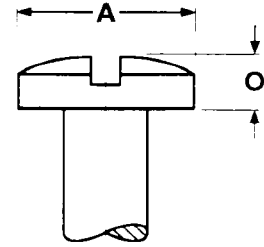
Screw Size	G		T	B	F		Drive Size
	Head Dimensions			Recess Dimensions			
	Max. Sharp	Abs. Min.	Ref.	Ref.	Gauge Penetration Min.	(Fallaway) Max. Penetration Of No-Go Gage	
1/4 (.250)	.507	.452	.153	.221	.060	.030	T30
5/16 (.312)	.635	.566	.191	.266	.087	.030	T40

Head Dimensions (continued)



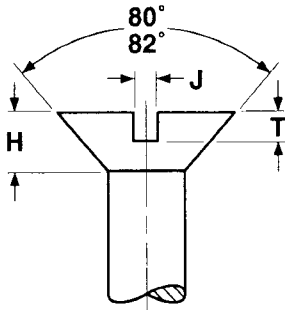
SLOTTED

Binding Head Undercut Machine Screws



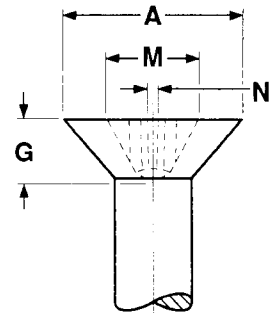
SLOTTED

Nominal Size	A		F		O		J		T		U		X	
	Head Dia.		Height of Head				Width of Slot		Depth of Slot		Dimensions of Recess			
			Hgt. of Oval		Total Hgt.						Diameter		Depth	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
2	.181	.171	.018	.013	.050	.043	.031	.023	.030	.024	.141	.124	.010	.005
4	.235	.223	.025	.018	.068	.061	.039	.031	.042	.034	.184	.161	.012	.007
6	.290	.275	.032	.024	.087	.078	.048	.039	.053	.044	.226	.199	.015	.010
8	.344	.326	.039	.029	.105	.095	.054	.045	.065	.054	.269	.236	.017	.012
10	.399	.378	.045	.034	.123	.112	.060	.050	.077	.064	.312	.274	.020	.015
1/4	.513	.488	.061	.046	.165	.152	.075	.064	.105	.088	.410	.360	.026	.021



SLOTTED

Flat Head Machine Screws Wood Screws* Tapping Screws



PHILLIPS

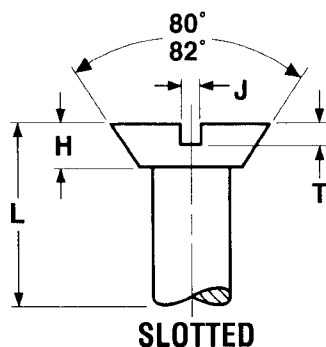
Nominal Size	A		H		J		T		M		G	N	Phillips Driver Size	
	Head Diameter		Height of Head		Width of Slot		Depth of Slot		Dimensions of Recess					
									Diameter		Depth	Width		
Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.			
2	.172	.147	.051	.040	.031	.023	.023	.015	.102	.089	.063	.017	1	
4	.225	.195	.067	.055	.039	.031	.030	.020	.128	.115	.089	.018	1	
5	.252	.220	.075	.062	.043	.035	.034	.022	.154	.141	.086	.027	2	
6	.279	.244	.083	.069	.048	.039	.038	.024	.174	.161	.106	.029	2	
7*	.305	.268	.091	.076	.048	.039	.041	.027	.182	.169	.114	.030	2	
8	.332	.292	.100	.084	.054	.045	.045	.029	.189	.176	.121	.031	2	
9*	.358	.316	.108	.091	.054	.045	.049	.032	.258	.245	.146	.034	2	
10	.385	.340	.116	.098	.060	.050	.053	.034	.204	.191	.136	.032	2-3*	
12	.438	.389	.132	.112	.067	.056	.060	.039	.268	.255	.156	.036	3	
14*	.491	.437	.148	.127	.075	.064	.068	.044	.283	.270	.171	.039	3	
1/4	.507	.452	.153	.131	.075	.064	.070	.046	.283	.270	.171	.035	3	
5/16	.635	.568	.191	.165	.084	.072	.088	.058	.365	.352	.216	.061	4	
3/8	.762	.685	.230	.200	.094	.081	.106	.070	—	—	—	—	—	
1/2	.875	.775	.223	.198	.106	.091	.103	.065	—	—	—	—	—	

Northwest Service Center

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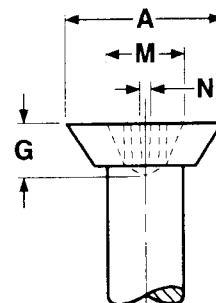
Head Dimensions (continued)

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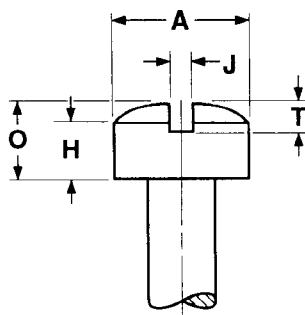
SLOTTED

Flat Head Undercut Machine Screws



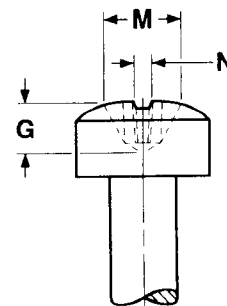
PHILLIPS

Nominal Size	L	A		H		J		T		M		G		N	Phillips Driver Size	
	These Lengths or Shorter are Undercut	Head Diameter		Height of Head		Width of Slot		Depth of Slot		Dimensions of Recess						
		Max. Edge Sharp	Min. Edge Rounded or Flat							Diameter		Depth		Width		
				Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.			
4	3/16	0.225	0.195	0.047	0.038	0.039	0.031	0.022	0.014	0.117	0.104	0.078	0.062	0.018	1	
6	3/16	0.279	0.244	0.059	0.048	0.048	0.039	0.027	0.017	0.146	0.133	0.078	0.055	0.025	2	
8	1/4	0.332	0.292	0.070	0.058	0.054	0.045	0.032	0.021	0.174	0.161	0.106	0.083	0.029	2	
10	5/16	0.385	0.340	0.081	0.068	0.060	0.050	0.037	0.024	0.189	0.176	0.121	0.098	0.030	2	
12	3/8	0.438	0.389	0.092	0.078	0.067	0.056	0.043	0.028	0.233	0.220	0.121	0.098	0.030	3	
1/4	7/16	0.507	0.452	0.107	0.092	0.075	0.064	0.050	0.032	0.250	0.237	0.136	0.113	0.032	3	
5/16	1/2	0.635	0.568	0.134	0.116	0.084	0.072	0.062	0.041	0.317	0.304	0.168	0.146	0.053	4	
3/8	9/16	0.762	0.685	0.161	0.140	0.094	0.081	0.075	0.049	0.365	0.352	0.216	0.194	0.061	4	



SLOTTED

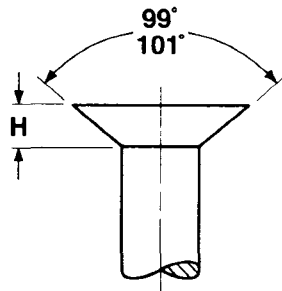
Fillister Head Machine Screws



PHILLIPS

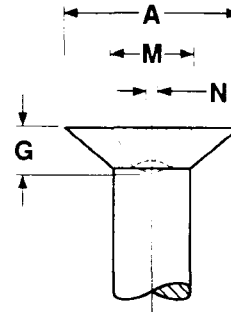
Nominal Size	A		H		O		J		T		M		G	N	Phillips Driver Size	
	Head Diameter		Height of Head				Width of Slot		Depth of Slot		Dimensions of Recess					
			Side Height		Total Height						Diameter		Depth	Width		
Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.			
2	.140	.124	.062	.053	.083	.066	.031	.023	.037	.025	—	—	—	—	—	
4	.183	.166	.079	.069	.107	.088	.039	.031	.048	.035	.122	.109	.078	.019	1	
6	.226	.208	.096	.086	.132	.111	.048	.039	.060	.045	.166	.153	.091	.028	2	
8	.270	.250	.113	.102	.156	.133	.054	.045	.071	.054	.182	.169	.108	.030	2	
10	.313	.292	.130	.118	.180	.156	.060	.050	.083	.064	.199	.186	.124	.031	2	
1/4	.414	.389	.170	.155	.237	.207	.075	.064	.109	.087	.281	.268	.161	.036	3	
5/16	.518	.490	.211	.194	.295	.262	.084	.072	.137	.110	.322	.309	.203	.042	3	

Head Dimensions (continued)



SLOTTED

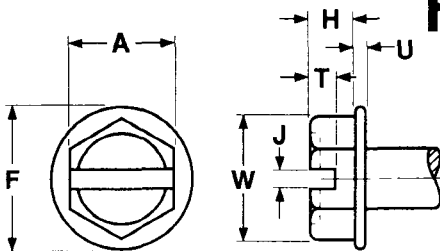
Flat Head 100° Machine Screws



PHILLIPS

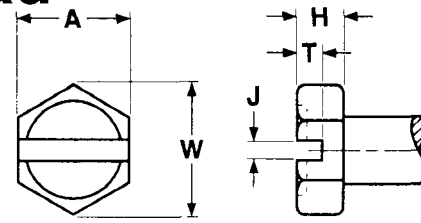
Nominal Size	A		H	M		G		N	Phillips Driver Size
	Head Diameter		Height of Head Ref.	Dimensions of Recess					
	Max. Edge Sharp	Min. Edge Rounded or Flat		Diameter		Depth		Width	
				Max.	Min.	Max.	Min.	Min.	
4	0.225	0.191	0.049	0.117	0.104	0.078	0.062	0.018	1
6	0.279	0.238	0.060	0.154	0.141	0.086	0.063	0.027	2
8	0.332	0.285	0.072	0.169	0.156	0.101	0.078	0.028	2
10	0.385	0.333	0.083	0.184	0.171	0.116	0.093	0.030	2

Hex Head Hex Washer Head



SLOTTED

Machine Screws Tapping Screws Self Drilling Screws



SLOTTED

Nominal Size	A		W	H		F		U		J		T	
	Width Across Flats		Width Across Corners	Height of Head		Diameter of Washer		Thickness of Washer		Width of Slot		Depth of Slot	
	Max.	Min.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
4	.187	.181	.202	.060	.049	.243	.225	.019	.011	.039	.031	.042	.025
6	.250	.244	.272	.093	.080	.328	.302	.025	.015	.048	.039	.053	.033
8	.250	.244	.272	.110	.096	.348	.322	.031	.019	.054	.045	.074	.052
10	.312	.305	.340	.120	.105	.414	.384	.031	.019	.060	.050	.080	.057
12	.312	.305	.340	.155	.139	.432	.398	.039	.022	.067	.056	.103	.077
14	.438	.428	.409	.190	.172	.520	.480	.050	.030	.075	.064	.111	.083
1/4	.375	.367	.409	.190	.172	.520	.480	.050	.030	.075	.064	.111	.083
5/16	.500	.489	.545	.230	.208	.676	.624	.055	.035	.084	.072	.134	.100
3/8	.562	.551	.614	.295	.270	.780	.720	.063	.037	.094	.081	.168	.131

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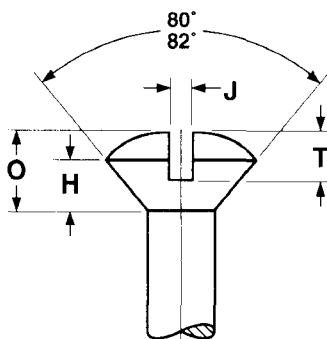
Southwest Service Center

(818) 967-6335 / (619) 236-0315

800-824-8567 / Fax: (818) 915-7065

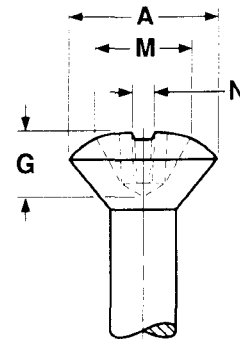
Head Dimensions (continued)

231



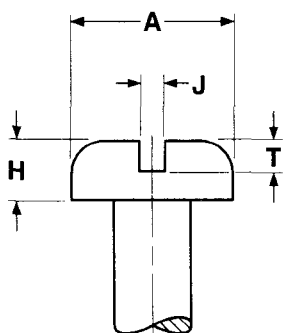
SLOTTED

Oval Head Machine Screws Tapping Screws Wood Screws*



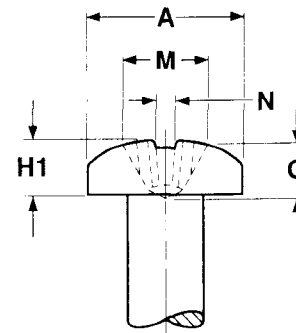
PHILLIPS

	A		H		O		J		T		M		G	N		
Nom. Size	Head Diameter		Height of Head				Width of Slot		Depth of Slot		Dimensions of Recess					Phillips Driver Size
			Side Height		Total Height						Diameter		Depth	Width		
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
5*	.252	.220	.075	.062	.116	.095	.043	.035	.067	.055	.158	.145	.085	.028	2	
6	.279	.244	.083	.069	.128	.105	.048	.039	.074	.060	.178	.165	.105	.030	2	
8	.332	.292	.100	.084	.152	.126	.054	.045	.088	.072	.192	.179	.119	.031	2	
9*	.358	.316	.108	.091	.164	.137	.054	.045	.095	.078	.216	.203	.144	.034	2	
10	.385	.340	.116	.098	.176	.148	.060	.050	.103	.084	.209	.196	.137	.033	2-3*	
12	.438	.389	.132	.112	.200	.169	.067	.056	.117	.096	.270	.257	.152	.038	3	
14*	.491	.452	.148	.127	.224	.190	.075	.064	.132	.108	.305	.292	.188	.042	3	
1/4	.507	.452	.153	.131	.232	.197	.075	.064	.136	.112	.290	.277	.173	.040	3	



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Pan Head Machine Screws Tapping Screws Self Drilling Screws



PHILLIPS

Nominal Size	A		H		H1		J		T		M		G	N	Phillips Driver Size	
	Head Diameter		Height of Head				Width of Slot		Depth of Slot		Dimensions of Recess					
			Slotted		Recessed						Diameter		Depth	Width		
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
2	.167	.155	.053	.045	.062	.053	.031	.023	.031	.022	.104	.091	.059	.017	1	
4	.219	.205	.068	.058	.080	.070	.039	.031	.040	.030	.122	.109	.078	.019	1	
6	.270	.256	.082	.072	.097	.087	.048	.039	.050	.037	.166	.153	.091	.028	2	
8	.322	.306	.096	.085	.115	.105	.054	.045	.058	.045	.182	.169	.108	.030	2	
10	.373	.357	.110	.099	.133	.122	.060	.050	.068	.053	.199	.186	.124	.031	2	
12	.425	.407	.125	.112	.151	.139	.067	.056	.077	.061	.259	.246	.141	.034	3	
1/4	.492	.473	.144	.130	.175	.162	.075	.064	.087	.070	.281	.268	.161	.036	3	
5/16	.615	.594	.178	.162	.218	.203	.084	.072	.106	.085	.350	.337	.193	.169	4	
3/8	.740	.716	.212	.195	.261	.244	.094	.081	.124	.100	.389	.376	.233	.210	4	

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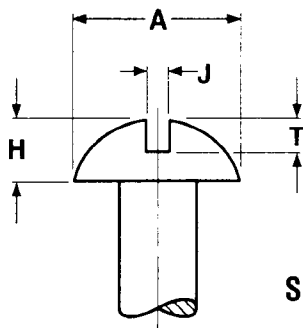
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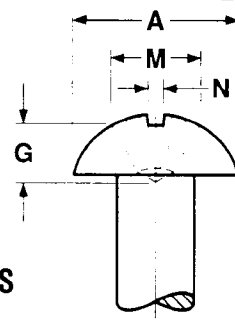
231

Head Dimensions (continued)



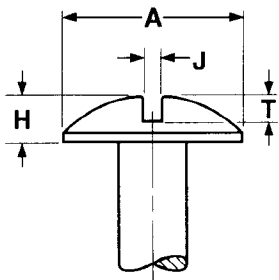
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Round Head Machine Screws Wood Screws*



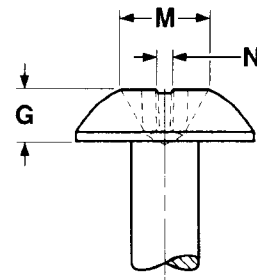
PHILLIPS

Nominal Size	A		H		J		T		M		G	N	Phillips Driver Size
	Head Diameter		Height of Head		Width of Slot		Depth of Slot		Dimensions of Recess				
									Diameter		Depth	Width	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	
2	.162	.146	.069	.059	.031	.023	.048	.037	.100	.087	.053	.017	1
4	.211	.193	.086	.075	.039	.031	.058	.044	.118	.105	.072	.019	1
5	.236	.217	.095	.083	.043	.035	.063	.047	.154	.141	.074	.027	2
6	.260	.240	.103	.091	.048	.039	.068	.051	.162	.149	.084	.027	2
7*	.285	.264	.111	.099	.048	.039	.072	.055	.170	.157	.092	.029	2
8	.309	.287	.120	.107	.054	.045	.077	.058	.178	.165	.101	.030	2
9*	.334	.311	.128	.115	.054	.045	.082	.062	.186	.173	.110	.030	2
10	.359	.334	.137	.123	.060	.050	.087	.065	.195	.182	.119	.031	2-3*
12	.408	.382	.153	.139	.067	.056	.096	.072	.249	.236	.125	.032	3
14*	.457	.429	.170	.155	.075	.064	.106	.080	.265	.252	.142	.034	3
1/4	.472	.443	.175	.160	.075	.064	.109	.082	.268	.255	.147	.034	3
5/16	.590	.557	.216	.198	.084	.072	.132	.099	-	-	-	-	-
3/8	.708	.670	.256	.237	.094	.081	.155	.117	-	-	-	-	-
1/2	.813	.766	.355	.332	.106	.091	.211	.159	-	-	-	-	-



SLOTTED

Truss Head Machine Screws Tapping Screws

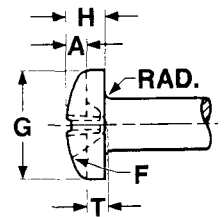
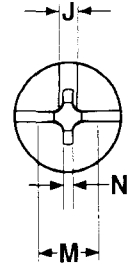


PHILLIPS

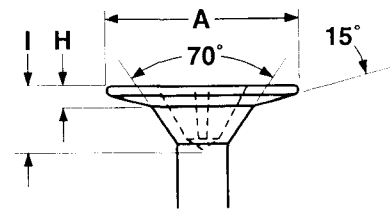
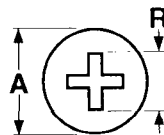
Nominal Size	A		H		J		T		M		G	N	Phillips Driver Size	
									Dimensions of Recess					
	Head Diameter		Height of Head		Width of Slot		Depth of Slot		Diameter		Depth	Width		
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
4	.257	.241	.069	.059	—	—	—	—	.112	.099	.069	.017	1	
6	.321	.303	.086	.074	.048	.039	.050	.037	.158	.145	.084	.027	2	
8	.384	.364	.102	.088	.054	.045	.058	.045	.173	.160	.099	.029	2	
10	.448	.425	.118	.103	.060	.050	.068	.053	.188	.175	.115	.030	2	
1/4	.573	.546	.150	.133	.075	.064	.087	.070	.263	.250	.143	.033	3	
5/16	.698	.666	.183	.162	.084	.072	.106	.085	—	—	—	—	—	
3/8	.823	.787	.215	.191	.094	.081	.124	.100	—	—	—	—	—	

Combination Drive Pan Head

	G	H	J		A		M	T	F	N			
Screw Size	Head Dimensions		Slot Dimensions				Recess Dimensions						Driver Size
	Head Diam	Head Hght	Width		Depth		Width	Depth	Max. Rad	Min. Wing Width	Recess Penetration		
			Max.	Min.	Max.	Min.					Max.	Min.	
0	.116	.044	—	—	—	—	.067	.039	.010	.013	.032	.014	0
	.104	.036					.054	.021					
1	.142	.053	—	—	—	—	.074	.045	.010	.014	.040	.022	0
	.130	.044					.061	.025					
2	.167	.062	.031	.023	.031	.022	.104	.059	.020	.017	.052	.034	1
	.155	.053					.091	.041					
3	.193	.071	.035	.027	.036	.026	.112	.065	.020	.019	.061	.043	1
	.180	.062					.099	.050					
4	.219	.080	.039	.031	.040	.030	.122	.078	.020	.019	.071	.053	1
	.205	.070					.109	.060					
5	.245	.089	.043	.035	.045	.034	.158	.083	.025	.028	.072	.046	2
	.231	.079					.145	.057					
6	.270	.097	.048	.039	.050	.037	.166	.091	.025	.028	.080	.055	2
	.256	.087					.153	.066					
7	.296	.106	.048	.039	.054	.041	.176	.100	.025	.029	.089	.064	2
	.281	.096					.163	.075					
8	.322	.115	.054	.045	.058	.045	.182	.108	.025	.030	.097	.071	2
	.306	.105					.169	.082					
10	.373	.133	.060	.050	.068	.053	.199	.124	.025	.031	.113	.089	2
	.357	.122					.186	.100					
12	.425	.151	.067	.056	.077	.061	.259	.141	.030	.034	.124	.098	3
	.407	.139					.246	.115					
1/4	.492	.175	.075	.064	.087	.070	.281	.161	.030	.036	.144	.118	3
	.473	.162					.268	.135					
5/16	.615	.218	.084	.072	.106	.085	.350	.193	.035	.059	.173	.149	4
	.594	.203					.337	.169					
3/8	.740	.261	—	—	—	—	.389	.233	.035	.065	.213	.190	4
	.716	.244					.376	.210					
7/16	.863	.304	—	—	—	—	.413	.259	.035	.068	.239	.214	4
	.838	.286					.400	.234					
1/2	.987	.348	—	—	—	—	.435	.280	.035	.071	.260	.235	4
	.958	.327					.422	.255					

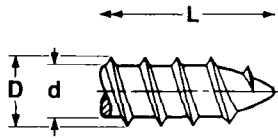


Wafer Head Self Drilling Screws



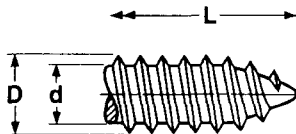
Size	A		H		R		I	
	Head Diam.		Head Hgt.		Recess Diam.		Recess Depth	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
10	.480	.450	.055	.045	.222	.208	.142	.137

Threads For Self Tappings Screws



Type A

Nominal Size or Basic Screw Diameter	Threads per Inch	D		d		L	
		Major Diameter		Minor Diameter		These Lengths or Shorter Have AB Threads	
		Max.	Min.	Max.	Min.	90° Heads	Csk Heads
6 0.139	18	0.141	0.136	0.102	0.096	1/4	5/16
7 0.155	16	0.158	0.152	0.114	0.108	5/16	3/8
8 0.165	15	0.168	0.162	0.123	0.116	3/8	7/16
10 0.192	12	0.194	0.188	0.133	0.126	3/8	1/2
12 0.218	11	0.221	0.215	0.162	0.155	7/16	9/16
14 0.252	10	0.254	0.248	0.185	0.178	1/2	5/8
20 0.330	9	0.333	0.327	0.234	0.226	11/16	13/16
24 0.385	9	0.390	0.383	0.291	0.282	3/4	1

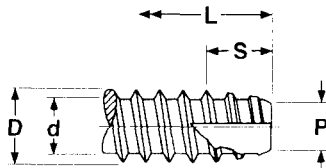


Type AB

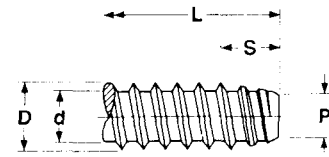
Nominal Size or Basic Screw Diameter	Threads per Inch	D		d		L	
		Major Diameter		Minor Diameter		Minimum Practical Screw Lengths	
		Max.	Min.	Max.	Min.	90° Heads	Csk Heads
4 0.1120	24	0.114	0.110	0.086	0.082	3/16	7/32
6 0.1380	20	0.139	0.135	0.104	0.099	7/32	17/64
8 0.1640	18	0.166	0.161	0.122	0.116	9/32	21/64
10 0.1900	16	0.189	0.183	0.141	0.135	21/64	3/8
12 0.2160	14	0.215	0.209	0.164	0.157	3/8	13/32
1/4 0.2500	14	0.246	0.240	0.192	0.185	13/32	15/32
5/16 0.3125	12	0.315	0.306	0.244	0.236	5/8	3/4
3/8 0.3750	12	0.380	0.371	0.309	0.299	3/8	29/32

Threads For Self Tappings Screws (continued)

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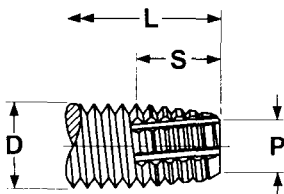
Type 25



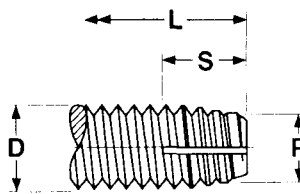
Type B

Nominal Size or Basic Screw Diameter	Threads per Inch	D		d		P		S				L			
		Major Diameter		Minor Diameter		Point Diameter		Point Taper Length				Determinant Length for Point Taper		Minimum Practical Screw Length	
								For Short Screws		For Long Screws					
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	90° Heads	Csk Heads	90° Heads	Csk Heads
2 0.0860	32	0.088	0.084	0.064	0.060	0.058	0.054	0.062	0.047	0.078	0.062	7/64	3/16	7/64	5/32
4 0.1120	24	0.114	0.110	0.086	0.082	0.079	0.074	0.083	0.063	0.104	0.083	3/16	1/4	9/64	3/16
6 0.1380	20	0.139	0.135	0.104	0.099	0.095	0.089	0.100	0.075	0.125	0.100	1/4	5/16	11/64	1/4
8 0.1640	18	0.166	0.161	0.122	0.116	0.112	0.106	0.111	0.083	0.139	0.111	5/16	7/16	3/16	1/4
10 0.1900	16	0.189	0.183	0.141	0.135	0.130	0.123	0.125	0.094	0.156	0.125	3/8	1/2	15/64	5/16
12 0.2160	14	0.215	0.209	0.164	0.157	0.152	0.145	0.143	0.107	0.179	0.143	7/16	9/16	9/32	3/8
14 0.2500	14	0.246	0.240	0.192	0.185	0.179	0.171	0.143	0.107	0.179	0.143	1/2	5/8	9/32	3/8
5/16 0.3125	12	0.315	0.306	0.244	0.236	0.230	0.222	0.167	0.125	0.196	0.161	15/32	19/32	27/32	31/32
3/8 0.3750	12	0.380	0.371	0.309	0.299	0.293	0.285	0.167	0.125	0.196	0.161	17/32	11/16	15/16	1 1/8

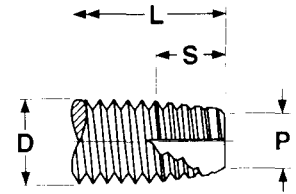
Threads and Points for Thread Cutting Screws and Self-Tapping Screws



Type F



Type 1



Type 23

Nominal Size or Basic Screw	Threads per Inch	D		P		S				L			
		Major Diameter		Point Diameter		Point Taper Length				Determinate Length for Point Taper		Minimum Practical Screw Lengths	
						For Short Screws		For Long Screws					
		Max	Min	Max	Min	Max	Min	Max	Min	90° Heads	Csk Heads	90° Heads	Csk Heads
4 0.1120	40	0.1120	0.1061	0.087	0.078	0.088	0.062	0.112	0.088	7/32	1/4	3/16	1/4
6 0.1380	32	0.1380	0.1312	0.107	0.096	0.109	0.078	0.141	0.109	1/4	5/16	1/4	5/16
8 0.1640	32	0.1640	0.1571	0.132	0.122	0.109	0.078	0.141	0.109	1/4	11/32	1/4	5/16
10 0.1900	24	0.1900	0.1818	0.148	0.135	0.146	0.104	0.188	0.146	11/32	7/16	5/16	13/32
10 0.1900	32	0.1900	0.1831	0.158	0.148	0.109	0.078	0.141	0.109	1/4	11/32	1/4	5/16
12 0.2160	24	0.2160	0.2078	0.174	0.161	0.146	0.104	0.188	0.146	11/32	7/16	5/16	13/32
1/4 0.2500	20	0.2500	0.2408	0.200	0.184	0.175	0.125	0.225	0.175	13/32	17/32	3/8	1/2
5/16 0.3125	18	0.3125	0.3026	0.257	0.239	0.194	0.139	0.250	0.194	15/32	19/32	7/16	9/16
3/8 0.3750	16	0.3750	0.3643	0.312	0.293	0.219	0.156	0.281	0.219	1/2	11/16	15/32	5/8

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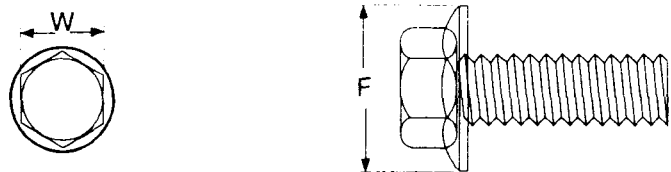
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Serrated Flange Screws

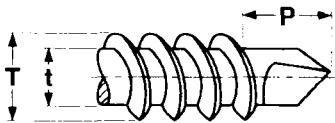
Whiz-Lock® Equivalents

®Whiz-Lock is a registered trademark of the MacLean-Fogg Co.



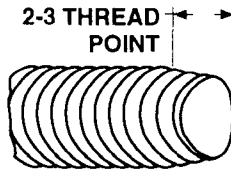
Size	W	F
	Width Across Flats	Flange Dia
1/4	.375	.522
5/16	.500	.696
3/8	.562	.782

Self-Drilling Screws

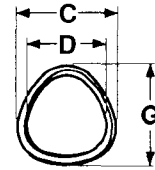


Nominal Size or Basic Screw Diameter		Threads Per Inch	T		t		P	
			Major Diameter		Minor Diameter		Protrusion Allowance	
			Max.	Min.	Max.	Min.	#2 Pt.	#3 Pt.
6	0.1380	20	0.139	0.135	0.104	0.099	0.190	-
8	0.1640	18	0.166	0.161	0.122	0.116	0.211	-
10	0.1900	16	0.189	0.183	0.141	0.135	0.235	0.300
12	0.2160	14	0.215	0.209	0.164	0.157	-	0.353
1/4	0.2500	14	0.246	0.240	0.192	0.185	-	0.393

Thread Rolling Screws



Genuine Taptite II

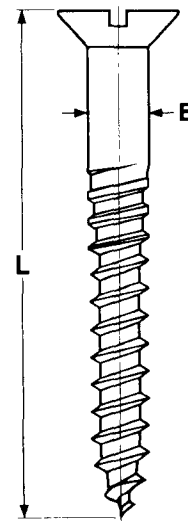


® Taptite is a registered trademark of REMINC (Research Engineering & Manufacturing Inc.)

		C		D		G	Thread Length	Torsional Strength	
		Size of Screw		Measurement Across Center		Point		(Free breaking Torque of screw)	
Inch Nominal Screw Size Dia. - T.P.I.	MM Nominal Screw Pitch Dia. - Pitch	Diameter of Circumscribing Circle		Measurement Across Center		Dia. of Circum. Circle	Screw Lengths as Listed & Shorter Thread to Head	(Free breaking Torque of screw)	
		Maximum	Minimum	Maximum	Minimum	Maximum		Minimum	
		In.	In.	In.	In.	In.		lb. In.	Nm.
2-56	2.5-0.45	.0875	.0835	.0840	.0800	.070	5/8	6	—
3-48	2.5-0.53	.1010	.0970	.0970	.0930	.081	5/8	10	—
4-40	2.8-0.64	.1145	.1105	.1095	.1055	.090	3/4	14	—
5-40	3.2-0.64	.1275	.1235	.1225	.1185	.103	7/8	22	—
6-32	3.5-0.79	.1410	.1350	.1350	.1290	.111	7/8	24	2.71
8-32	4.2-0.79	.1670	.1610	.1610	.1550	.137	1	48	5.40
10-24	4.8-1.06	.1940	.1880	.1850	.1790	.153	1 1/4	65	7.34
10-32	4.8-0.79	.1930	.1870	.1870	.1810	.163	1 1/4	81	9.15
12-24	5.5-1.06	.2200	.2140	.2110	.2050	.179	1 3/8	105	11.90
1/4-20	6.3-1.27	.2550	.2490	.2460	.2400	.206	1 1/2	160	18.10
5/16-18	7.9-1.41	.3180	.3120	.3080	.3020	.264	1 1/2	340	38.40
3/8-16	9.5-1.59	.3810	.3750	.3710	.3650	.320	1 1/2	620	70.00
7/16-14	11.1-1.81	.4445	.4385	.4315	.4255	.375	1 1/2	950	107.33
1/2-13	12.7-1.95	.5075	.5015	.4935	.4875	.433	1 1/2	1450	163.82

Wood Screws

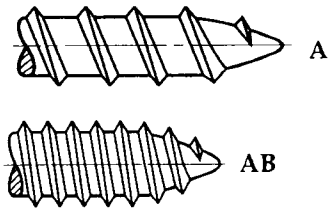
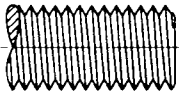
Nominal Size or Basic Screw Diameter		Threads per inch	E	
			Body Diameter	
			Max.	Min.
4	0.112	22	0.116	0.105
5	0.125	20	0.129	0.118
6	0.138	18	0.142	0.131
7	0.151	16	0.155	0.144
8	0.164	15	0.168	0.157
9	0.177	14	0.181	0.170
10	0.190	13	0.194	0.183
12	0.216	11	0.220	0.209
14	0.242	10	0.246	0.235



Tolerance on Length

Machine Screws

Nominal Screw Size	0 thru 12	1/4 thru 3/4
Nominal Screw Length	Tolerance on Length	
Up to 1/2 in., Incl.	-0.02	-0.03
Over 1/2 to 1 in., Incl.	-0.03	-0.03
Over 1 to 2 in., Incl.	-0.06	-0.06
Over 2 in.	-0.09	-0.09

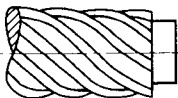
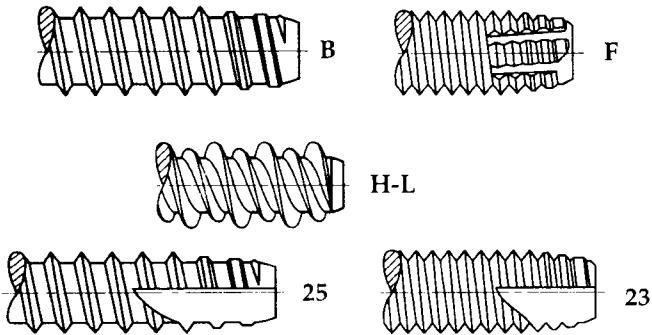


Type A – AB

Nominal Screw Length	Tolerance on Length
Up to 1 in., Incl.	± 0.03
Over 1 in.	± 0.05

Type B, F, H-L 25 and 23

Nominal Screw Length	Tolerance on Length
Up to 3/4 in., Incl.	-0.03
Over 3/4 to 1-1/2 in., Incl.	-0.05



Type U

Nominal Screw Length	Tolerance on Length
Up to 3/8 in., Incl.	±0.02
Over 3/8 in.	±0.03

Wood Screws

Nominal Screw Length	Tolerance on Length
Up to 5/8 in., Incl.	-0.03
Over 5/8 to 1-1/2 in., Incl.	-0.05
Over 1-1/2 to 2-3/4 in., Incl.	-0.06
Over 2-3/4 to 5 in., Incl.	-0.09



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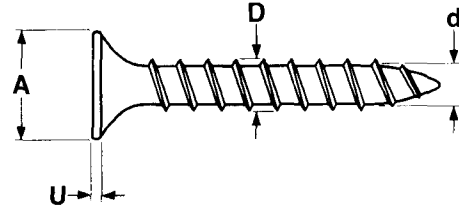
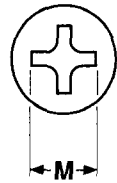
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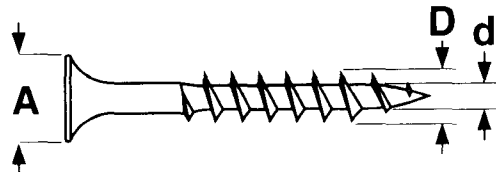
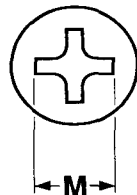
Drywall and Deck Screws

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T w i n F a s t	Screw Size	A	U	M		D	d
		Head Dia.	Head Thickness	Recess Dia.	Recess Depth	Major Dia.	Minor Dia.
	max #6 min	.340 .320	.031 .020	max .189	.107 .087	.142 .136	.102 0.96
	max #8 min	.358 .339	.039 .020	max .205	.122 .115	.168 .160	.123 .116
	max #10 min	.376 .395	.044 .034	max .221	.142 .137	.201 .193	.158 .152

Particle Board Screws



Screw Size	A	M		D	d
	Head Dia.	Recess Dia.	Recess Depth	Major Dia.	Minor Dia.
max #6 min	.333 .312	max .189	.107 .087	.142 .135	.089 .080
	.336 .326	max .205	.122 .115	.168 .161	.104 .094
max #10 min	.340 .319	max .221	.137 .142	.194 .186	.120 .110

External Threads - Class 2A



Nominal Size & Threads/Inch & Series Designat'n		Allowance	Major Diameter		Pitch Diameter		
			Max	Min	Max	Min	Tolerance
0-80	UNF	0.0005	0.0595	0.0563	0.0514	0.0496	0.0018
1-64	UNC	0.0006	0.0724	0.0686	0.0623	0.0603	0.0020
1-72	UNF	0.0006	0.0724	0.0689	0.0634	0.0615	0.0019
2-56	UNC	0.0006	0.0854	0.0813	0.0738	0.0717	0.0021
2-64	UNF	0.0006	0.0854	0.0816	0.0753	0.0733	0.0020
3-48	UNC	0.0007	0.0938	0.0938	0.0848	0.0825	0.0023
3-56	UNF	0.0007	0.0983	0.0942	0.0867	0.0845	0.0022
4-40	UNC	0.0008	0.1112	0.1061	0.0950	0.0925	0.0025
4-48	UNF	0.0007	0.1113	0.1068	0.0978	0.0954	0.0024
5-40	UNC	0.0008	0.1242	0.1191	0.1080	0.1054	0.0026
5-44	UNF	0.0007	0.1243	0.1195	0.1095	0.1070	0.0025
6-32	UNC	0.0008	0.1372	0.1312	0.1169	0.1141	0.0028
6-40	UNF	0.0008	0.1372	0.1321	0.1210	0.1184	0.0026
8-32	UNC	0.0009	0.1631	0.1571	0.1428	0.1399	0.0029
8-36	UNF	0.0008	0.1632	0.1577	0.1452	0.1424	0.0028
10-24	UNC	0.0010	0.1890	0.1818	0.1619	0.1586	0.0033
10-32	UNF	0.0009	0.1891	0.1831	0.1688	0.1658	0.0030
12-24	UNC	0.0010	0.2150	0.2078	0.1879	0.1845	0.0034
12-28	UNF	0.0010	0.2150	0.2085	0.1918	0.1886	0.0032
1/4-20	UNC	0.0011	0.2489	0.2408	0.2164	0.2127	0.0037
1/4-28	UNF	0.0010	0.2490	0.2425	0.2258	0.2225	0.0033
5/16-18	UNC	0.0012	0.3113	0.3026	0.2752	0.2712	0.0040
5/16-24	UNF	0.0011	0.3114	0.3042	0.2843	0.2806	0.0037
3/8-16	UNC	0.0013	0.3737	0.3643	0.3331	0.3287	0.0044
3/8-24	UNF	0.0011	0.3739	0.3667	0.3468	0.3430	0.0038
7/16-14	UNC	0.0014	0.4361	0.4258	0.3897	0.3850	0.0047
7/16-20	UNF	0.0013	0.4362	0.4281	0.4037	0.3995	0.0042
1/2-13	UNC	0.0015	0.4985	0.4876	0.4485	0.4435	0.0050
1/2-20	UNF	0.0013	0.4987	0.4906	0.4662	0.4619	0.0043
9/16-12	UNC	0.0016	0.5609	0.5495	0.5068	0.5016	0.0052
9/16-18	UNF	0.0014	0.5611	0.5524	0.5250	0.5205	0.0045
5/8-11	UNC	0.0016	0.6234	0.6113	0.5644	0.5589	0.0055
5/8-18	UNF	0.0014	0.6236	0.6149	0.5875	0.5828	0.0047
3/4-10	UNC	0.0018	0.7482	0.7353	0.6832	0.6773	0.0059
3/4-16	UNF	0.0015	0.7485	0.7391	0.7079	0.7029	0.0050
7/8-9	UNC	0.0019	0.8731	0.8592	0.8009	0.7946	0.0063
7/8-14	UNF	0.0016	0.8834	0.8631	0.8270	0.8216	0.0054
1-8	UNC	0.0020	0.9980	0.9830	0.9168	0.9100	0.0068
1-12	UNF	0.0018	0.9982	0.9868	0.9441	0.9382	0.0059
1-14	UNS	0.0017	0.9983	0.9880	0.9519	0.9463	0.0056
1 1/8-7	UNC	0.0022	1.1228	1.1064	1.0300	1.0228	0.0072
1 1/8-8	UN	0.0021	1.1229	1.1079	1.0417	1.0348	0.0069
1 1/8-12	UNF	0.0018	1.1232	1.1118	1.0691	1.0631	0.0060
1 1/4-7	UNC	0.0022	1.2478	1.2314	1.1550	1.1476	0.0074
1 1/4-8	UN	0.0021	1.2479	1.2329	1.1667	1.1597	0.0070



Continued...

External Threads - Class 2A (continued)

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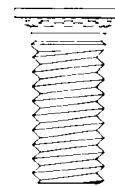
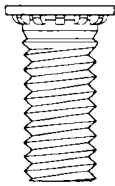


Nominal Size & Threads/Inch & Series Designat'n		Allowance	Major Diameter		Pitch Diameter		
			Max	Min	Max	Min	Tolerance
1 1/4-12	UNF	0.0018	1.2482	1.2368	1.1941	1.1879	0.0062
1 3/8-6	UNC	0.0024	1.3726	1.3544	1.2643	1.2563	0.0080
1 3/8-8	UN	0.0022	1.3728	1.3578	1.2916	1.2844	0.0072
1 3/8-12	UNF	0.0019	1.3731	1.3617	1.3190	1.3127	0.0063
1 1/2-6	UNC	0.0024	1.4976	1.4794	1.3893	1.3812	0.0081
1 1/2-8	UN	0.0022	1.4978	1.4828	1.4166	1.4093	0.0073
1 1/2-12	UNC	0.0019	1.4981	1.4867	1.4440	1.4376	0.0064
1 5/8-8	UN	0.0022	1.6228	1.6078	1.5416	1.5342	0.0074
1 3/4-5	UNC	0.0027	1.7473	1.7268	1.6174	1.6085	0.0089
1 3/4-8	UN	0.0023	1.7477	1.7327	1.6665	1.6590	0.0075
1 7/8-8	UN	0.0023	1.8727	1.8577	1.7915	1.7838	0.0077
2-4 1/2	UNC	0.0029	1.9971	1.9751	1.8528	1.8433	0.0095
2-8	UN	0.0023	1.9977	1.9827	1.9165	1.9087	0.0078
2 1/4-4.5	UNC	0.0029	2.2471	2.2251	2.1028	2.0931	0.0097
2 1/4-8	UN	0.0024	2.2476	2.2326	2.1664	2.1584	0.0080
2 1/2-4	UNC	0.0031	2.4969	2.4731	2.3345	2.3241	0.0104
2 1/2-8	UN	0.0024	2.4976	2.4826	2.4164	2.4082	0.0082
2 3/4-4	UNC	0.0032	2.7468	2.7230	2.5844	2.5739	0.0105
2 3/4-8	UN	0.0025	2.7475	2.7325	2.6663	2.6580	0.0083
3-4	UNC	0.0032	2.9968	2.9730	2.8344	2.8237	0.0107
3-8	UN	0.0026	2.9974	2.9824	2.9162	2.9077	0.0085
3 1/4-4	UNC	0.0033	3.2467	3.2229	3.0843	3.0734	0.0109
3 1/4-8	UN	0.0026	3.2474	3.2324	3.1662	3.1575	0.0087
3 1/2-4	UNC	0.0033	3.4967	3.4729	3.3343	3.3233	0.0110
3 1/2-8	UN	0.0026	3.4974	3.4824	3.4162	3.4074	0.0088
3 3/4-4	UNC	0.0034	3.7466	3.7228	3.5842	3.5730	0.0112
3 3/4-8	UN	0.0027	3.7473	3.7323	3.6661	3.6571	0.0090
4-4	UNC	0.0034	3.9966	3.9728	3.8342	3.8229	0.0113
4-8	UN	0.0027	3.9973	3.9823	3.9161	3.9070	0.0091



Self Clinching Studs

A Comparison of Part Numbers

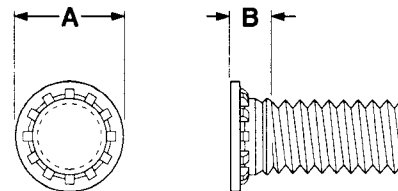


Part #	PEM® Part #	Size
04-4SC	FH440-4	4-40 x 1/4
04-5SC	FH440-5	x 5/16
04-6SC	FH440-6	x 3/8
04-8SC	FH440-8	x 1/2
04-10SC	FH440-10	x 5/8
04-12SC	FH440-12	x 3/4
06-4SC	FH632-4	6-32 x 1/4
06-5SC	FH632-5	x 5/16
06-6SC	FH632-6	x 3/8
06-8SC	FH632-8	x 1/2
06-10SC	FH632-10	x 5/8
06-12SC	FH632-12	x 3/4
06-14SC	FH632-14	x 7/8
06-16SC	FH632-16	x 1
06-20SC	FH632-20	x 1-1/4
08-4SC	FH832-4	8-32 x 1/4
08-5SC	FH832-5	x 5/16
08-6SC	FH832-6	x 3/8
08-8SC	FH832-8	x 1/2
08-10SC	FH832-10	x 5/8
08-12SC	FH832-12	x 3/4
08-14SC	FH832-14	x 7/8
08-16SC	FH832-16	x 1
08-20SC	FH832-20	x 1-1/4

Part #	PEM® Part #	Size
10-6SC	FH024-6	10-24 x 3/8
10-8SC	FH024-8	x 1/2
10-10SC	FH024-10	x 5/8
10-12SC	FH024-12	x 3/4
10-14SC	FH024-14	x 7/8
10-16SC	FH024-16	x 1
10-20SC	FH024-20	x 1-1/4
10-24SC	FH024-24	x 1-1/2
11-6SC	FH032-6	10-32 x 3/8
11-8SC	FH032-8	x 1/2
11-10SC	FH032-10	x 5/8
11-12SC	FH032-12	x 3/4
11-14SC	FH032-14	x 7/8
11-16SC	FH032-16	x 1
11-20SC	FH032-20	x 1-1/4
11-24SC	FH032-24	x 1-1/2
14-8SC	FH0420-8	1/4-20 x 1/2
14-10SC	FH0420-10	x 5/8
14-12SC	FH0420-12	x 3/4
14-14SC	FH0420-14	x 7/8
14-16SC	FH0420-16	x 1
14-20SC	FH0420-20	x 1-1/4
14-24SC	FH0420-24	x 1-1/2

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Dimensions and Specifications



Nominal Size	Threads Per In.	A		B		Min. Sheet Thickness	Min. Edge Distance to Center of Hole in Panel	Hole in Sheet +.003 -.000	Max.
		Head	Diam.	Unthreaded Length					Recommended Nut Tightening Torque (In.-lb.)
		Max.	Min.	Max.	Min.				
4	40	.204	.172	.085	.075	.040	7/32	.111	5
6	32	.235	.203	.090	.080	.040	1/4	.137	9
8	32	.266	.234	.090	.080	.040	9/32	.163	17
10	24	.282	.250	.090	.080	.040	9/32	.189	24
10	32	.282	.250	.090	.080	.040	9/32	.189	27
1/4	20	.344	.312	.135	.125	.062	5/16	.249	58

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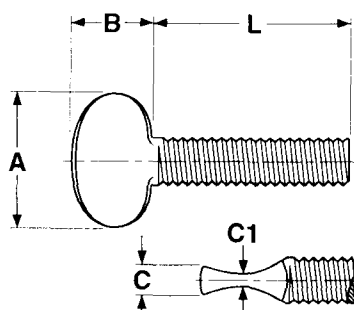
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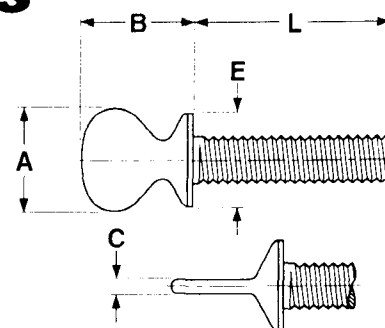
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Thumb Screws



Type P

Type S



Type P

Nominal Size or Basic Screw Diameter	Threads per Inch	A		B		C		C1		L	
		Head Width		Head Height		Head Thickness		Head Thickness		Practical Screw Lengths	
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1/4 0.250	20	1.05	0.99	0.94	0.81	0.24	0.22	0.10	0.08	3.00	0.50
5/16 0.312	18	1.21	1.15	1.00	0.88	0.27	0.25	0.11	0.09	4.00	0.50

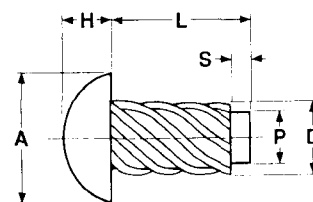
Type S

Nominal Size or Basic Screw Diameter	Threads per Inch	A		B		C		E		L	
		Head Width		Head Height		Head Thickness		Shoulder Diameter		Practical Screw Lengths	
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1/4 0.250	20	0.55	0.52	0.64	0.61	0.07	0.05	0.47	0.44	1.50	0.50

Due to the variation in head dimensions from different manufacturers, Kanebridge thumb screws may not always conform to the listed (I.F.I.) specifications.

Drive Screws - Type U

Round Head



Nominal Screw Size	Number of Threads Starts	D		A		H		P		Recommended Hole Size	
		Outside Diameter		Head Diameter		Head Height		Pilot Diameter		Drill Size No.	Hole Diameter
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.		
00	6	0.060	0.057	0.099	0.090	0.034	0.026	0.049	0.046	55	0.052
0	6	0.075	0.072	0.127	0.118	0.049	0.041	0.063	0.060	51	0.067
2	8	0.100	0.097	0.162	0.146	0.069	0.059	0.083	0.080	44	0.086
4	7	0.116	0.112	0.211	0.193	0.086	0.075	0.096	0.092	37	0.104
6	7	0.140	0.136	0.260	0.240	0.103	0.091	0.116	0.112	31	0.120
7	8	0.154	0.150	0.285	0.264	0.111	0.099	0.126	0.122	29	0.136
8	8	0.167	0.162	0.309	0.287	0.120	0.107	0.136	0.132	27	0.144
10	8	0.182	0.177	0.359	0.334	0.137	0.123	0.150	0.146	20	0.161
12	8	0.212	0.206	0.408	0.382	0.153	0.139	0.177	0.173	11	0.191
14	9	0.242	0.236	0.457	0.429	0.170	0.155	0.202	0.198	2	0.221
L	Nominal Screw Length	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1 in. and over	
S	Pilot Length	0.047	0.047	0.047	0.047	0.062	0.062	0.078	0.078	0.125	

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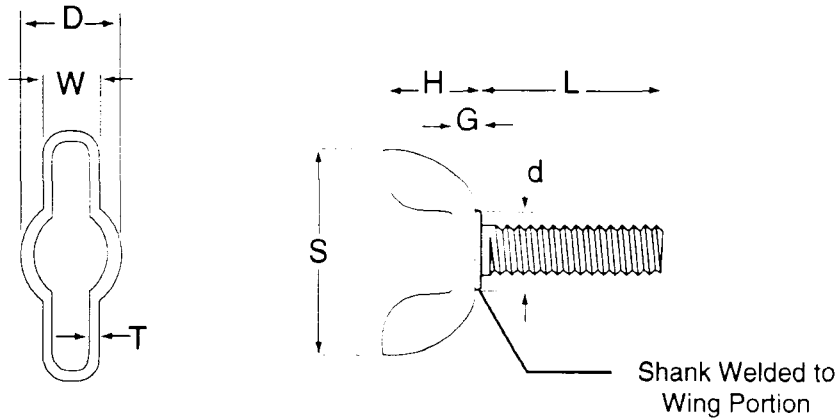
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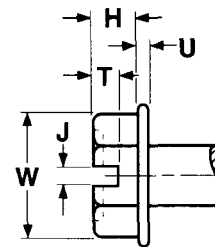
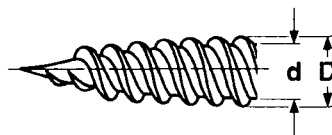
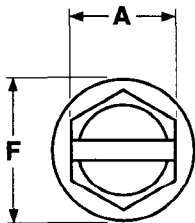
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Wing Screws



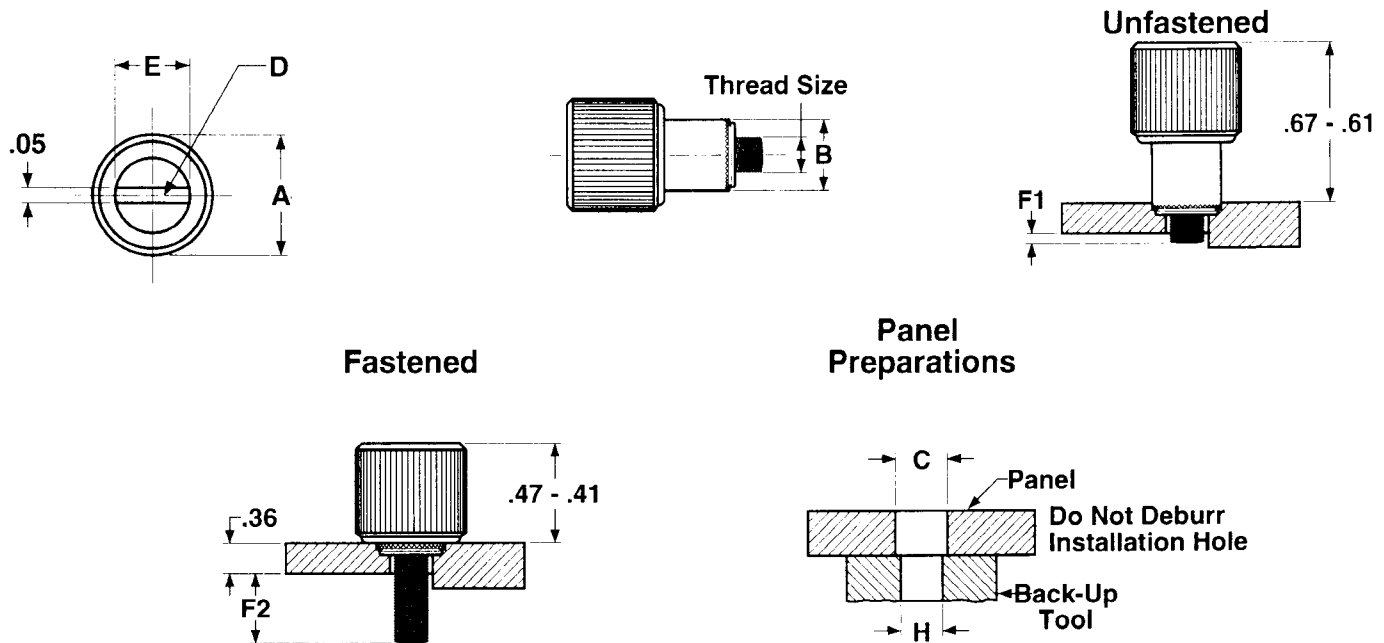
Basic Screw Dia.	Thrd per Inch	S		H		W		d		D		G		T		L	
		Wing Spread		Wing Hght		Wing Thick.		Shank Dia.		Shank Dia.		Hght		Stock Thick.		Practical Screw Lngth	
		Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
8	32	0.78	0.72	0.40	0.34	0.18	0.12	0.35	0.31	0.40	0.34	0.21	0.14	0.04	0.03	0.75	0.38
10	24	0.90	0.84	0.46	0.40	0.21	0.15	0.35	0.31	0.53	0.47	0.22	0.16	0.04	0.03	1.00	0.38
1/4	20	1.09	1.03	0.46	0.40	0.26	0.20	0.47	0.43	0.61	0.55	0.24	0.18	0.04	0.03	1.50	0.50
5/16	18	1.31	1.25	0.62	0.56	0.29	0.23	0.57	0.53	0.68	0.62	0.29	0.23	0.07	0.05	1.50	0.50

Hex Washer Slotted Self Piercing Screws



Size	A		W	H		F		U		J		T		D		d	
	Width Across Flats		Width Across Corner	Head Height		Washer Diam.		Washer Thickness		Slot Width		Slot Depth		Major Diam.		Minor Diam.	
	Max.	Min.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
6-18	.250	.244	.272	.093	.080	.328	.302	.025	.015	.048	.039	.053	.033	.141	.136	.102	.096
7-16	.250	.244	.272	.093	.080	.328	.302	.029	.017	.048	.039	.062	.040	.158	.152	.114	.108
8-15	.250	.244	.272	.110	.096	.348	.322	.031	.019	.054	.045	.074	.052	.168	.162	.123	.116
10-12	.250	.244	.272	.110	.096	.414	.384	.031	.019	.054	.045	.074	.052	.194	.188	.133	.126

Panel Fasteners Press-In Style



Part #	Thread Size	A	B	C	D	E	F	H	F1	F2	Panel Thick.
		Knob Dia.	Ferrule Dia.	Install Dia.	Slot Depth	Slot Length	Slot Width	Hole Dia.	Screw Projection		
									Unfastened	Fastened	
4760201(20/60)	6-32	.45	.247	.253-.250	.04	.27	.05	.144	.00	.19	.036
476120120	6-32	.45	.247	.253-.250	.04	.27	.05	.144	.06	.25	.036
476220120	6-32	.45	.247	.253-.250	.04	.27	.05	.144	.13	.31	.036
476320120	6-32	.45	.247	.253-.250	.04	.27	.05	.144	.19	.38	.036
4760301(20/60)	8-32	.51	.310	.315-.312	.05	.33	.05	.169	.00	.19	.036
476130120	8-32	.51	.310	.315-.312	.05	.33	.05	.169	.06	.25	.036
476230120	8-32	.51	.310	.315-.312	.05	.33	.05	.169	.13	.31	.036
476330120	8-32	.51	.310	.315-.312	.05	.33	.05	.169	.19	.38	.036
4760501(20/60)	10-32	.51	.310	.315-.312	.05	.33	.05	.169	.00	.19	.036
476150120	10-32	.51	.310	.315-.312	.05	.33	.05	.169	.06	.25	.036
476250120	10-32	.51	.310	.315-.312	.05	.33	.05	.169	.13	.31	.036
476350120	10-32	.51	.310	.315-.312	.05	.33	.05	.169	.19	.38	.036

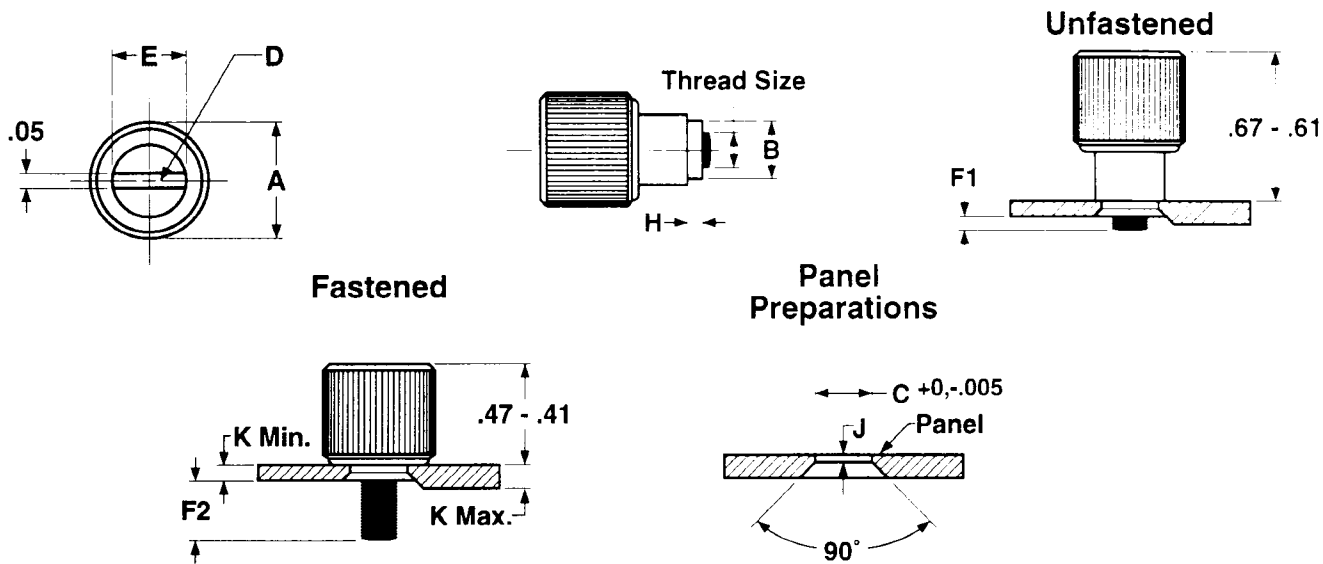
The last two digits in the part number indicate whether the item has a natural finish (20) or a black finish (60). If the part number ends in (20/60) it is offered in both natural and black finishes.

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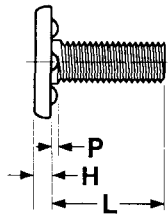
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Panel Fasteners Flare-In Style



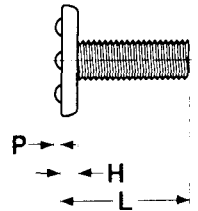
Part #	Thread Size	K	B	C	D	E	W	K		H	J	F1	F2
		Knob Dia.	Ferrule Dia.	Install Dia.	Slot Depth	Slot Length	Slot Width	Panel Thickness		Flange Length	Pilot Hole Depth	Screw Projection	
				+0, -.005				Min.	Max.			Unfastened	Fastened
4710202(10/50)	6-32	.45	.209	.218	.04	.27	.05	.058	.125	.070	.02	.00	.19
4711202(10/50)	6-32	.45	.209	.218	.04	.27	.05	.058	.125	.070	.02	.06	.25
4712202(10/50)	6-32	.45	.209	.218	.04	.27	.05	.058	.125	.070	.02	.13	.31
4713202(10/50)	6-32	.45	.209	.218	.04	.27	.05	.058	.125	.070	.02	.19	.38
4710204(10/50)	6-32	.45	.209	.218	.04	.27	.05	.126	.187	.135	.06	.06	.25
4712204(10/50)	6-32	.45	.209	.218	.04	.27	.05	.126	.187	.135	.06	.13	.31
471020610	6-32	.45	.209	.218	.04	.27	.05	.188	.250	.197	.13	.00	.19
4711206(10/50)	6-32	.45	.209	.218	.04	.27	.05	.188	.250	.197	.13	.06	.25
4710302(10/50)	8-32	.51	.262	.271	.05	.33	.05	.058	.125	.070	.02	.00	.19
4711302(10/50)	8-32	.51	.262	.271	.05	.33	.05	.058	.125	.070	.02	.06	.25
4712302(10/50)	8-32	.51	.262	.271	.05	.33	.05	.058	.125	.070	.02	.13	.31
4713302(10/50)	8-32	.51	.262	.271	.05	.33	.05	.058	.125	.070	.02	.19	.38
4711306(10/50)	8-32	.51	.262	.271	.05	.33	.05	.188	.250	.197	.13	.06	.25
4710502(10/50)	10-32	.51	.262	.271	.05	.33	.05	.058	.125	.070	.02	.00	.19
4711502(10/50)	10-32	.51	.262	.271	.05	.33	.05	.058	.125	.070	.02	.06	.25
4712502(10/50)	10-32	.51	.262	.271	.05	.33	.05	.058	.125	.070	.02	.13	.31
4713502(10/50)	10-32	.51	.262	.271	.05	.33	.05	.058	.125	.070	.02	.19	.38
4710504(10/50)	10-32	.51	.262	.271	.05	.33	.05	.126	.187	.135	.06	.00	.19
471150410	10-32	.51	.262	.271	.05	.33	.05	.126	.187	.135	.06	.06	.25
471050610	10-32	.51	.262	.271	.05	.33	.05	.188	.250	.197	.13	.00	.19
4711506(10/50)	10-32	.51	.262	.271	.05	.33	.05	.188	.250	.197	.13	.06	.25

The last two digits in the part number indicate whether the item has a natural finish (10) or a black finish (50). If the part number ends in (10/50) it is offered in both natural and black finishes.



Steel Weld Screws

Comparison of Part Numbers



Projections Under the Head

Part #	OHIO NUT & BOLT Part #	Size
0604WB	HW1104	6/32 x 1/4
0606WB	HW1106	6/32 x 3/8
0608WB	HW1108	6/32 x 1/2
0610WB	HW1110	6/32 x 5/8
0612WB	HW1112	6/32 x 3/4
0616WB	HW1116	6/32 x 1
0806WB	HW1406	8/32 x 3/8
0808WB	HW1408	8/32 x 1/2
0810WB	HW1410	8/32 x 5/8
0812WB	HW1412	8/32 x 3/4
0816WB	HW1416	8/32 x 1
1006WB	HW1506	10/24 x 3/8
1008WB	HW1508	10/24 x 1/2
1010WB	HW1510	10/24 x 5/8
1012WB	HW1512	10/24 x 3/4
1016WB	HW1516	10/24 x 1
1106WB	HW1606	10/32 x 3/8
1108WB	HW1608	10/32 x 1/2
1110WB	HW1610	10/32 x 5/8
1112WB	HW1612	10/32 x 3/4
1116WB	HW1616	10/32 x 1
1406WB	HW2106	1/4-20 x 3/8
1408WB	HW2108	1/4-20 x 1/2
1410WB	HW2110	1/4-20 x 5/8
1412WB	HW2112	1/4-20 x 3/4
1416WB	HW2116	1/4-20 x 1

Projections On Top of the Head

Part #	OHIO NUT & BOLT Part #	Size
0604WT	GW1104	6/32 x 1/4
0606WT	GW1106	6/32 x 3/8
0608WT	GW1108	6/32 x 1/2
0610WT	GW1110	6/32 x 5/8
0612WT	GW 1112	6/32 x 3/4
0616WT	GW1116	6/32 x 1
0806WT	GW1406	8/32 x 3/8
0808WT	GW1408	8/32 x 1/2
0810WT	GW1410	8/32 x 5/8
0812WT	GW1412	8/32 x 3/4
0816WT	GW1416	8/32 x 1
1006WT	GW1506	10/24 x 3/8
1008WT	GW1508	10/24 x 1/2
1010WT	GW1510	10/24 x 5/8
1012WT	GW1512	10/24 x 3/4
1016WT	GW1516	10/24 x 1
1106WT	GW1606	10/32 x 3/8
1108WT	GW1608	10/32 x 1/2
1110WT	GW1610	10/32 x 5/8
1112WT	GW1612	10/32 x 3/4
1116WT	GW1616	10/32 x 1
1406WT	GW2106	1/4-20 x 3/8
1408WT	GW2108	1/4-20 x 1/2
1410WT	GW2110	1/4-20 x 5/8
1412WT	GW2112	1/4-20 x 3/4
1416WT	GW2116	1/4-20 x 1

Projections On Top of the Head

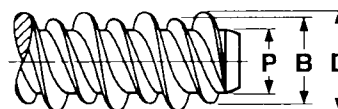
Nominal Size	Threads per Inch	D		H		P		W	
		Head Diameter		Head Height		Proj. Height		Proj. Width	
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
6	32	.260	.245	.046	.036	.022	.018	.055	.045
8	32	.324	.306	.052	.042	.027	.023	.075	.065
10	24	.388	.368	.068	.058	.032	.028	.085	.075
10	32	.388	.368	.068	.058	.032	.028	.085	.075
1/4	20	.516	.492	.083	.073	.042	.038	.105	.095

Projections Under the Head

Nominal Size	Threads per Inch	D		H		P		W	
		Head Diameter		Head Height		Proj. Height		Proj. Width	
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
6	32	.323	.303	.052	.042	.022	.018	.055	.045
8	32	.385	.365	.068	.058	.027	.023	.075	.065
10	24	.448	.428	.068	.058	.032	.028	.085	.075
10	32	.448	.428	.068	.058	.032	.028	.085	.075
1/4	30	.575	.550	.083	.073	.042	.038	.105	.095

Type High-Low Self Tapping Screws

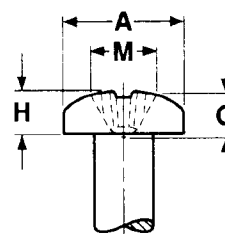
Nominal Diameter and Thread	D	B	P	Head Size
	High Thread Diameter	Low Thread Diameter	Point Diameter	
4-24	.105-.115	.086	.061-.070	3
6-19	.135-.145	.108	.080-.090	5*
8-18	.160-.170	.130	.095-.105	6
10-16	.185-.195	.145	.099-.110	8



* Special Dimensions for Pan-Head

Nominal Size	A		H		M		G		Phillips Driver Size
	Diameter of Head		Height of Head		Dimensions of Recess				
			Recessed		Diameter		Depth		
	Max	Min	Max	Min	Max	Min	Max	Min	
4*	.193	.180	.071	.062	.112	.099	.062	.053	1
6	.254	.240	.097	.087	.158	.145	.072	.046	2
8	.270	.256	.097	.087	.166	.153	.080	.055	2
10	.322	.306	.115	.105	.182	.169	.097	.071	2

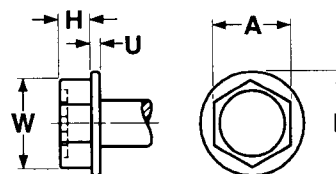
Pan Head



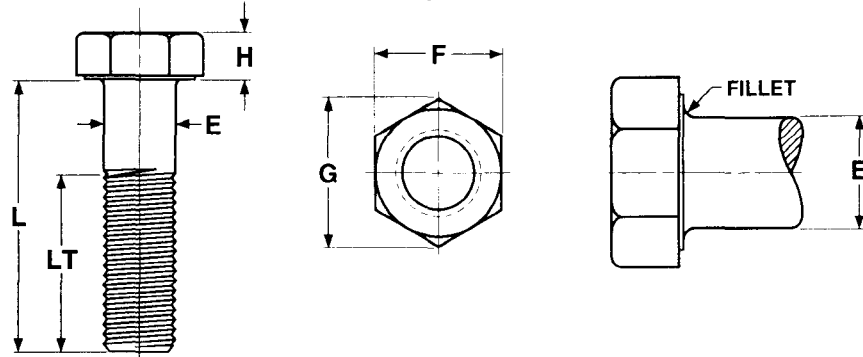
* No. 2 Head

Nominal Size	A		W	H		F		U	
	Width Across Flats		Width Across Corners	Height of Head		Diameter of Washer		Thickness of Washer	
	Max	Min	Min	Max	Min	Max	Min	Max	Min
4	.125	.120	.134	.055	.044	.177	.163	.016	.010
6	.188	.181	.202	.070	.058	.260	.240	.025	.015
8	.250	.244	.272	.093	.080	.328	.302	.025	.015
10	.250	.244	.272	.110	.096	.348	.322	.031	.019

Hex Washer Head



Hex Cap Screws



Nominal or Basic Product Dia.		E		F			G		H			R	LT	
		Body Diameter		Width Across Flats			Width Across Corners		Head Height			Radius of Fillet	Thread	Length
													For Screw Lengths ≤ 6 in.	For Screw Lengths > 6 in.
		Max.	Min.	Basic	Max.	Min.	Max.	Min.	Basic	Max.	Min.	Min.	Basic	Basic
1/4	0.2500	0.2500	0.2450	7/16	0.438	0.428	0.505	0.488	5/32	0.163	0.150	0.015	0.750	1.000
5/16	0.3125	0.3125	0.3065	1/2	0.500	0.489	0.577	0.557	13/64	0.211	0.195	0.015	0.875	1.125
3/8	0.3750	0.3750	0.3690	9/16	0.562	0.551	0.650	0.628	15/64	0.243	0.226	0.015	1.000	1.250
7/16	0.4375	0.4375	0.4305	5/8	0.625	0.612	0.722	0.698	9/32	0.291	0.272	0.015	1.125	1.375
1/2	0.5000	0.5000	0.4930	3/4	0.750	0.736	0.866	0.840	5/16	0.323	0.302	0.015	1.250	1.500
9/16	0.5625	0.5625	0.5545	13/16	0.812	0.798	0.938	0.910	23/64	0.371	0.348	0.020	1.375	1.625
5/8	0.6250	0.6250	0.6170	15/16	0.938	0.922	1.083	1.051	25/64	0.403	0.378	0.020	1.500	1.750
3/4	0.7500	0.7500	0.7410	1-1/8	1.125	1.100	1.299	1.254	15/32	0.483	0.455	0.020	1.750	2.000
7/8	0.8750	0.8750	0.8660	1-5/16	1.312	1.285	1.516	1.465	35/64	0.563	0.531	0.040	2.000	2.250
1	1.0000	1.0000	0.9900	1-1/2	1.500	1.469	1.732	1.675	39/64	0.627	0.591	0.060	2.250	2.500
1-1/8	1.1250	1.1250	1.1140	1-11/16	1.688	1.631	1.949	1.859	11/16	0.718	0.658	0.060	2.500	2.750
1-1/4	1.2500	1.2500	1.2390	1-7/8	1.875	1.812	2.165	2.066	25/32	0.813	0.749	0.060	2.750	3.000
1-3/8	1.3750	1.3750	1.3630	2-1/6	2.062	1.994	2.382	2.273	27/32	0.878	0.810	0.060	3.000	3.250
1-1/2	1.5000	1.5000	1.4880	2-1/4	2.250	2.175	2.598	2.480	15/16	0.974	0.902	0.060	3.250	3.500

Abstract of SAE J429 1985

Mechanical and Material Requirements for Grades 2, 5 & 8 Hex Head Cap Screws

Grade Designation	Products	Nominal Size Dia., In.	Full Size Bolts, Screws Studs, Sems		Machine Test Specimens of Bolts, Screws and Studs				Surface Hardness	Core Hardness		Grade Identification Marking L
			Proof Load (Stress) psi	Tensile Strength (Stress) Min.,psi	Yield Strength (Stress) Min.,psi	Tensile Strength (Stress) Min.,psi	Elongation Min.,%	Reduction of Area Min.,%	Rockwell 30N Max.	Rockwell		
										Min.	Max.	
2	Bolts, Screws, Studs	1/4 thru 3/4	55,000	74,000	57,000	74,000	18	35	—	B80	B100	None
		Over 3/4 to 1-1/2	33,000	60,000	36,000	60,000	18	35	—	B70	B100	
5	Bolts, Screws, Studs	1/4 thru 1	85,000	120,000	92,000	120,000	14	35	54	C25	C34	
		Over 1 to 1-1/2	74,000	105,000	81,000	105,000	14	35	50	C19	C30	
8	Bolts, Screws, Studs	1/4 thru 1-1/2	120,000	150,000	130,000	150,000	12	35	58.6	C33	C39	

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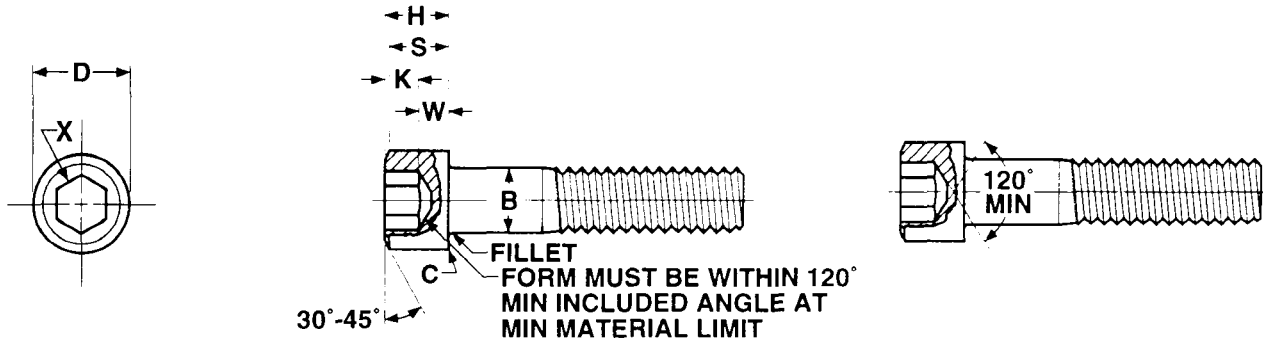
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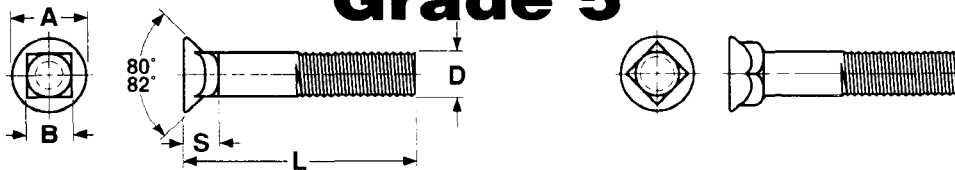
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Socket Head Cap Screws



Nominal Size or Basic Screw Dia.	B		D		H		S	C	X		K	W
	Body Dia.		Head Dia.		Head Height		Head Side Height	Chamfer or Radius	Hexagon Socket Size		Key Engage- ment	Wall Thick- ness
	Max	Min	Max	Min	Max	Min	Min	Max	Nom		Min	Min
4 .1120	.1120	.1075	.183	.176	.112	.108	.101	.005	3/32	.094	.051	.038
5 .1250	.1250	.1202	.205	.198	.125	.121	.112	.005	3/32	.094	.057	.043
6 .1380	.1380	.1329	.226	.218	.138	.134	.124	.005	7/64	.109	.064	.047
8 .1640	.1640	.1585	.270	.262	.164	.159	.148	.005	9/64	.141	.077	.056
10 .1900	.1900	.1840	.312	.303	.190	.185	.171	.005	5/32	.156	.099	.065
1/4 .2500	.2500	.2435	.375	.365	.250	.244	.225	.008	3/16	.188	.120	.095
5/16 .3125	.3125	.3053	.469	.457	.312	.306	.281	.008	1/4	.250	.151	.119
3/8 .3750	.3750	.3678	.562	.550	.375	.368	.337	.008	5/16	.312	.182	.143

No.3 Head Plow Bolts Grade 5



Nominal Diameter of Bolt	A			L	S		B	
	Diameter of Head			Feed Thickness	Depth of Square and Head		Width of Square	
	Max.	Min. Sharp	Abs. Min. With Flat	Max.	Max.	Min.	Max.	Min. (Basic)
3/8	0.708	0.671	0.656	0.031	0.312	0.281	0.387	0.375
7/16	0.826	0.781	0.766	0.036	0.364	0.328	0.450	0.438
1/2	0.945	0.890	0.875	0.042	0.417	0.375	0.515	0.500
5/8	1.147	1.094	1.063	0.050	0.506	0.456	0.640	0.625

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Slotted Flat Countersunk Head Cap Screws

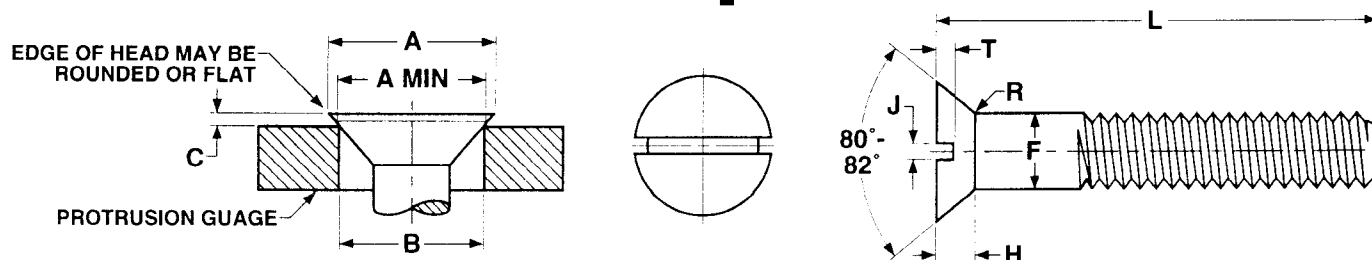
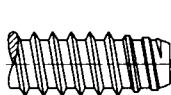


Table 1 Dimensions of Slotted Flat Countersunk Head cap Screws

Nominal Size or Basic Screw Diameter	F		A		H	J		T		R	C		B
	Body Diameter		Head Diameter		Head Height	Slot Width		Slot Depth		Fillet Radius	Protrusion Above Gaging Diameter		Gaging Dia.
			Max, Edge Sharp	Min, Edge Rounded or Flat									
	Max	Min			Ref	Max	Min	Max	Min	Max	Max	Min	
1/4 0.2500	0.2500	0.2450	0.500	0.452	0.140	0.075	0.064	0.68	0.045	0.100	0.046	0.030	0.424
5/16 0.3125	0.3125	0.3070	0.625	0.567	0.177	0.084	0.072	0.086	0.057	0.125	0.053	0.035	0.538
3/8 0.3750	0.3750	0.3690	0.750	0.682	0.210	0.094	0.081	0.103	0.068	0.150	0.060	0.040	0.651
7/16 0.4375	0.4375	0.4310	0.812	0.736	0.210	0.094	0.081	0.103	0.068	0.175	0.065	0.044	0.703
1/2 0.5000	0.5000	0.4930	0.875	0.791	0.210	0.106	0.091	0.103	0.068	0.200	0.071	0.049	0.756
9/16 0.5625	0.5625	0.5550	1.000	0.906	0.244	0.118	0.102	0.120	0.080	0.225	0.078	0.054	0.869
5/8 0.6250	0.6250	0.6170	1.125	1.020	0.281	0.133	0.116	0.137	0.091	0.250	0.085	0.058	0.982
3/4 0.7500	0.7500	0.7420	1.375	1.251	0.352	0.149	0.131	0.171	0.115	0.300	0.099	0.068	1.208
7/8 0.8750	0.8750	0.8660	1.625	1.480	0.423	0.167	0.147	0.206	0.138	0.350	0.113	0.077	1.435
1 1.0000	1.0000	0.9900	1.875	1.711	0.494	0.188	0.166	0.240	0.162	0.400	0.127	0.087	1.661
1-1/8 1.1250	1.1250	1.1140	2.062	1.880	0.529	0.196	0.178	0.257	0.173	0.450	0.141	0.096	1.826
1-1/4 1.2500	1.2500	1.2390	2.312	2.110	0.600	0.211	0.193	0.291	0.197	0.500	0.155	0.105	2.052
1-3/8 1.3750	1.3750	1.3630	2.562	2.340	0.665	0.226	0.208	0.326	0.220	0.550	0.169	0.115	2.279
1-1/2 1.5000	1.5000	1.4880	2.812	2.570	0.742	0.258	0.240	0.360	0.244	0.600	0.183	0.124	2.505

Plastite® Thread Rolling Screws



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Screw Size	C		D		Minimum Out-Of Round	Recommended Pilot Hole Sizes	
	Dia. of Circumscribing Circle		Measurements Across Center			Soft Ductile Materials	Brittle Materials
	Max.	Min.	Max.	Min.			
	6	.147	.141	.143	.137	.003	.122
8	.185	.179	.179	.173	.004	.149	.158
10	.212	.206	.208	.202	.004	.175	.185
14	.276	.270	.268	.262	.006	.224	.240

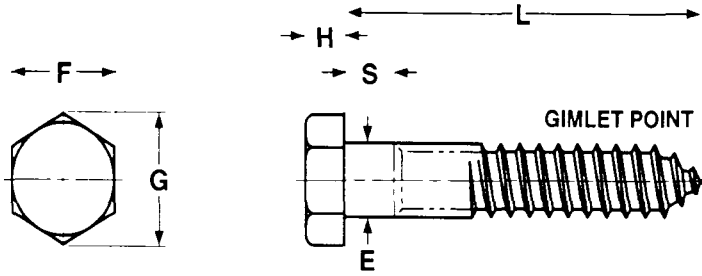
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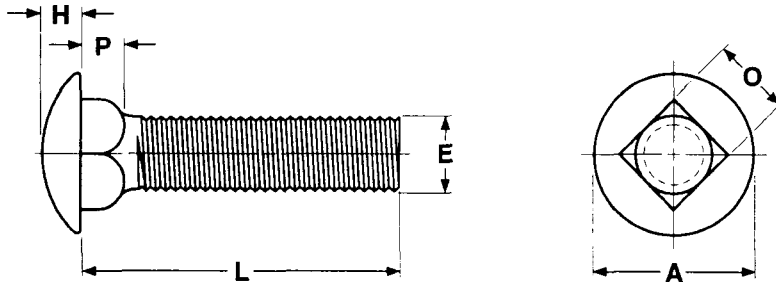
Lag Screws

Hex Head



Basic Product Diameter	Threads per Inch	E		F			G		H			S	
		Body or Shoulder Dia.		Width Across Flats			Hex Lag Screws						Shoulder Length
							Width Across Corners		Head Height				
				Max.	Min.	Basic	Max.	Min.	Max.	Min.	Basic	Max.	
1/4 0.2500	10	0.260	0.237	7/16	0.438	0.425	0.505	0.484	11/64	0.188	0.150	0.094	
5/16 0.3125	9	0.324	0.298	1/2	0.500	0.484	0.577	0.552	7/32	0.235	0.195	0.125	
3/8 0.3750	7	0.388	0.360	9/16	0.562	0.544	0.650	0.620	1/4	0.268	0.226	0.125	
7/16 0.4375	7	0.452	0.421	5/8	0.625	0.603	0.722	0.687	19/64	0.316	0.272	0.156	
1/2 0.5000	6	0.515	0.482	3/4	0.750	0.725	0.866	0.826	11/32	0.364	0.302	0.156	
5/8 0.6250	5	0.642	0.605	15/16	0.938	0.906	1.083	1.033	27/64	0.444	0.378	0.312	
3/4 0.7500	4-1/2	0.768	0.729	1-1/8	1.125	1.088	1.299	1.240	1/2	0.524	0.455	0.375	

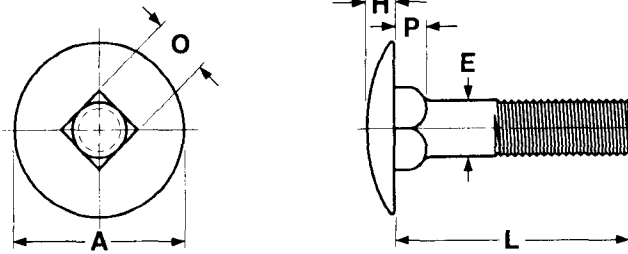
Carriage Bolts



Round Head Square Neck Bolts

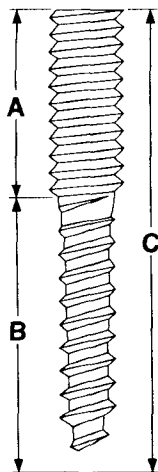
Basic Bolt Diameter		E		A		H		O		P	
		Body Diameter		Head Diameter		Head Height		Square Width		Square Depth	
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
10	0.1900	0.199	0.182	0.469	0.438	0.114	0.094	0.199	0.185	0.125	0.094
1/4	0.2500	0.260	0.237	0.594	0.563	0.145	0.125	0.260	0.245	0.156	0.125
5/16	0.3125	0.324	0.298	0.719	0.688	0.176	0.156	0.324	0.307	0.187	0.156
3/8	0.3750	0.388	0.360	0.844	0.782	0.208	0.188	0.388	0.368	0.219	0.188
7/16	0.4375	0.452	0.421	0.969	0.907	0.239	0.219	0.452	0.431	0.250	0.219
1/2	0.5000	0.515	0.483	1.094	1.032	0.270	0.250	0.515	0.492	0.281	0.250
5/8	0.6250	0.642	0.605	1.344	1.219	0.344	0.313	0.642	0.616	0.344	0.313
3/4	0.7500	0.768	0.729	1.594	1.469	0.406	0.375	0.768	0.741	0.406	0.375

Step Bolts

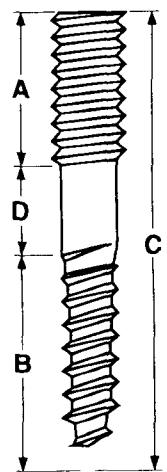


Nominal Size or Basic Bolt Diameter		E		A		H		O		P	
		Body Diameter		Head Diameter		Head Height		Square Width		Square Depth	
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
10	0.1900	0.199	0.182	0.656	0.625	0.114	0.094	0.199	0.185	0.125	0.094
1/4	0.2500	0.260	0.237	0.844	0.813	0.145	0.125	0.260	0.245	0.156	0.125
5/16	0.3125	0.324	0.298	1.031	1.000	0.176	0.156	0.324	0.307	0.187	0.156
3/8	0.3750	0.388	0.360	1.219	1.188	0.208	0.188	0.388	0.368	0.219	0.188

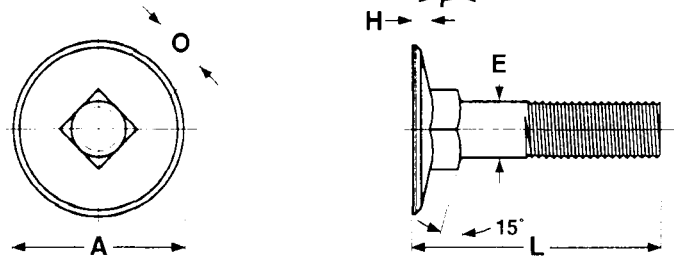
Hanger Bolts



Size		A	B	C	D
		Standard Length	Machine Thread Length	Lag Thread Length	Center Space
10-24	x1-1/2	1-1/2	5/8	7/8	—
	x1-3/4	1-3/4	3/4	1	—
	x2	2	1	1	—
	x2-1/2	2-1/2	1	1-1/2	—
	x3	3	1-1/2	1-1/2	—
1/4-20	x1-1/2	1-1/2	1/2	3/4	—
	x1-3/4	1-3/4	3/4	1	—
	x2	2	1	1	—
	x2-1/4	2-1/4	1	1-1/4	—
	x2-1/2	2-1/2	1	1-1/2	—
	x3	3	1-1/2	1-1/2	—
	x3-1/2	3-1/2	1-1/2	2	—
	x4	4	2	2	—
	x4-1/2	4-1/2	1-1/8	3	3/8
	x5	5	1-1/8	3	7/8
	x6	6	1-1/4	3	1-3/4
5/16-18	x1-1/2	1-1/2	5/8	7/8	—
	x1-3/4	1-3/4	3/4	1	—
	x2	2	1	1	—
	x2-1/4	2-1/4	1	1-1/4	—
	x2-1/2	2-1/2	1	1-1/2	—
	x2-3/4	2-3/4	1-1/4	1-1/2	—
	x3	3	1-1/2	1-1/2	—
	x3-1/2	3-1/2	1-1/2	2	—
	x4	4	2	2	—
	x4-1/2	4-1/2	1-1/8	2	7/8
	x5	5	1-1/8	3	7/8
	x5-1/2	5-1/2	1-1/8	3	1-3/8
	x6	6	1-1/4	3	1-3/4
3/8-16	x2	2	1	1	—
	x2-1/2	2-1/2	1	1-1/2	—
	x3	3	1-1/2	1-1/2	—
	x3-1/2	3-1/2	1-1/2	2	—
	x4	4	2	2	—
	x4-1/2	4-1/2	1-1/8	3	3/8
	x5	5	1-1/8	3	3/8
	x5-1/2	5-1/2	1-1/8	3	1-3/8
	x6	6	1-1/4	3	1-3/8
	x8	8	2-1/2	3	2-1/2
	x10	10	2-1/2	3	4-1/2

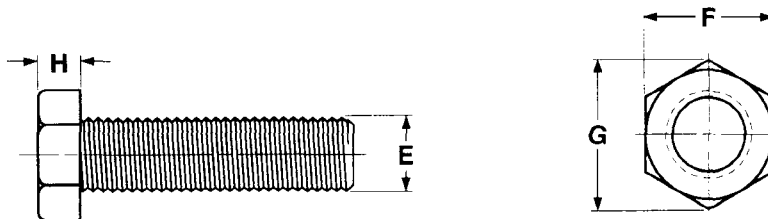


Elevator Bolts



Nominal Size or Basic Bolt Diameter		E		A			H		O		P	
		Body Diameter		Head Diameter			Head Height		Square Width		Square Depth	
				Max. Edge Sharp	Min. Edge Sharp	Min. Edge Flat						
		Max.	Min.				Max.	Min.	Max.	Min.	Max.	Min.
1/4	0.2500	0.260	0.237	1.008	0.969	0.938	0.098	0.087	0.280	0.245	0.219	0.188
5/16	0.3125	0.324	0.298	1.227	1.188	1.157	0.114	0.094	0.342	0.307	0.250	0.219
3/8	0.3750	0.388	0.360	1.352	1.312	1.272	0.145	0.125	0.405	0.368	0.250	0.219

Tap Bolts



Nominal Or Basic	E		F			G		H		
	Body Diameter		Width Across Flats			Width Across Corners		Head Height		
Product Diam.	Max.	Min.	Basic	Max.	Min.	Max.	Min.	Basic	Max.	Min.
1/4 0.2500	0.2500	0.2450	7/16	0.438	0.428	0.505	0.488	5/32	0.163	0.150
5/16 0.3125	0.3125	0.3065	1/2	0.500	0.489	0.577	0.557	13/64	0.211	0.195
3/8 0.3750	0.3750	0.3690	9/16	0.562	0.551	0.650	0.628	15/64	0.243	0.226
7/16 0.4375	0.4375	0.4305	5/8	0.625	0.612	0.722	0.698	9/32	0.291	0.272
1/2 0.5000	0.5000	0.4930	3/4	0.750	0.736	0.866	0.840	5/16	0.323	0.302
9/16 0.5625	0.5625	0.5545	13/16	0.812	0.798	0.938	0.910	23/64	0.371	0.348
5/8 0.6250	0.6250	0.6170	15/16	0.938	0.922	1.083	1.051	25/64	0.403	0.378
3/4 0.7500	0.7500	0.7410	1-1/8	1.125	1.100	1.299	1.254	15/32	0.483	0.455
7/8 0.8750	0.8750	0.8660	1-5/16	1.312	1.285	1.516	1.465	35/64	0.563	0.531
1 1.0000	1.0000	0.9900	1-1/2	1.500	1.469	1.732	1.675	39/64	0.627	0.591
1-1/8 1.1250	1.1250	1.1140	1-11/16	1.688	1.631	1.949	1.859	11/16	0.718	0.658
1-1/4 1.2500	1.2500	1.2390	1-7/8	1.875	1.812	2.165	2.066	25/32	0.813	0.749
1-3/8 1.3750	1.3750	1.3630	2-1/6	2.062	1.994	2.382	2.273	27/32	0.878	0.810
1-1/2 1.5000	1.5000	1.4880	2-1/4	2.250	2.175	2.598	2.480	15/16	0.974	0.902

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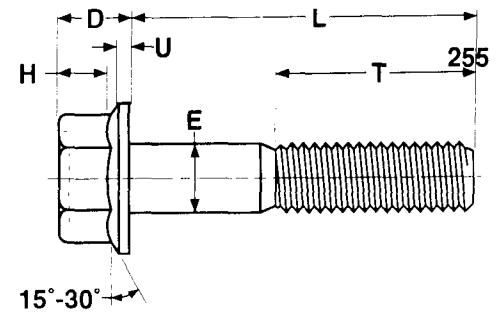
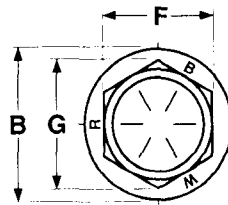
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RB&W Frame Bolts Grade 8 Alloy



Nominal Size Or Basic Major Dia. Of Thread	E		F			G		B	U	H		L _T	
	Body Dia.		Width Across Flats			Width Across Corners		Flange Dia.	Flange Thick- ness	Head Height		Thread Lngth.	
	Max.	Min.	Basic	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	L ≤ 6 In.	L > 6 In.
3/8 0.3750	0.3750	0.3690	9/16	0.5625	0.551	0.650	0.618	0.81	0.06	0.39	0.25	1.000	1.250
1/2 0.5000	0.5000	0.4930	3/4	0.7500	0.736	0.866	0.825	1.07	0.08	0.51	0.34	1.250	1.500
5/8 0.6250	0.6250	0.6170	15/16	0.9375	0.922	1.083	1.034	1.33	0.10	0.62	0.42	1.500	1.750
3/4 0.7500	0.7500	0.7410	1-1/8	1.1250	1.100	1.299	1.234	1.59	0.11	0.73	0.51	1.750	2.000

Internal Threads – Class 2B

Nominal Size & Threads/inch & Series Designat'n		Allow- ance	Minor Diameter		Pitch Diameter			Major Diameter Min
			Min	Max	Min	Max	Tolerance	
0-80	UNF	0.0005	0.0465	0.0514	0.0519	0.0542	0.0023	0.0600
1-64	UNC	0.0006	0.0561	0.0623	0.0629	0.0655	0.0026	0.0730
1-72	UNF	0.0006	0.0580	0.0635	0.0640	0.0665	0.0025	0.0730
2-56	UNC	0.0006	0.0667	0.0737	0.0744	0.0772	0.0028	0.0860
2-64	UNF	0.0006	0.0691	0.0753	0.0759	0.0786	0.0027	0.0860
3-48	UNC	0.0007	0.0764	0.0845	0.0855	0.0885	0.0030	0.0990
3-56	UNF	0.0007	0.0797	0.0865	0.0874	0.0902	0.0028	0.0990
4-40	UNC	0.0008	0.0849	0.0939	0.0958	0.0991	0.0033	0.1120
4-48	UNF	0.0007	0.0894	0.0968	0.0985	0.1016	0.0031	0.1120
5-40	UNC	0.0008	0.0979	0.1062	0.1088	0.1121	0.0033	0.1250
5-44	UNF	0.0007	0.1004	0.1079	0.1102	0.1134	0.0032	0.1250
6-32	UNC	0.0008	0.104	0.114	0.1177	0.1214	0.0037	0.1380
6-40	UNF	0.0008	0.111	0.119	0.1218	0.1252	0.0034	0.1380
8-32	UNC	0.0009	0.130	0.139	0.1437	0.1475	0.0038	0.1640
8-36	UNF	0.0008	0.134	0.142	0.1460	0.1496	0.0036	0.1640
10-24	UNC	0.0010	0.145	0.156	0.1629	0.1672	0.0043	0.1900
10-32	UNF	0.0009	0.156	0.164	0.1697	0.1736	0.0039	0.0019
12-24	UNC	0.0010	0.171	0.181	0.1889	0.1933	0.0044	0.2160
12-28	UNF	0.0010	0.177	0.186	0.1928	0.1970	0.0042	0.2160
1/4-20	UNC	0.0011	0.196	0.207	0.2175	0.2224	0.0049	0.2500
1/4-28	UNF	0.0010	0.211	0.220	0.2268	0.2311	0.0043	0.2500
5/16-18	UNC	0.0012	0.252	0.265	0.2764	0.2817	0.0053	0.3125
5/16-24	UNF	0.0011	0.267	0.277	0.2854	0.2902	0.0048	0.3125
3/8-16	UNC	0.0013	0.307	0.321	0.3344	0.3401	0.0057	0.3750
3/8-24	UNF	0.0011	0.330	0.034	0.3479	0.3528	0.0049	0.3750
7/16-14	UNC	0.0014	0.360	0.376	0.3911	0.3972	0.0061	0.4375
7/16-20	UNF	0.0013	0.383	0.395	0.4050	0.4104	0.0054	0.4375

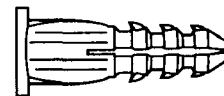
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Internal Threads – Class 2B

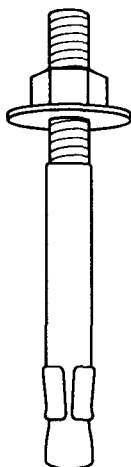
Nominal Size & Threads/Inch & Series Designat'n		Allowance	Minor Diameter		Pitch Diameter			Major Diameter Min
			Min	Max	Min	Max	Tolerance	
1/2-13	UNC	0.0015	0.417	0.434	0.4500	0.4565	0.0065	0.5000
1/2-20	UNF	0.0013	0.446	0.457	0.4675	0.4731	0.0056	0.5000
9/16-12	UNC	0.0016	0.472	0.490	0.5084	0.5152	0.0068	0.5625
9/16-18	UNF	0.0014	0.502	0.515	0.5264	0.5323	0.0059	0.5625
5/8-11	UNC	0.0016	0.527	0.546	0.5660	0.5732	0.0072	0.6250
5/8-18	UNF	0.0014	0.565	0.578	0.5889	0.5949	0.0060	0.6250
3/4-10	UNC	0.0018	0.642	0.663	0.6850	0.6927	0.0077	0.7500
3/4-16	UNF	0.0015	0.682	0.696	0.7094	0.7159	0.0065	0.7500
7/8-9	UNC	0.0019	0.755	0.778	0.8028	0.8110	0.0082	0.8750
7/8-14	UNF	0.0016	0.798	0.814	0.8286	0.8356	0.0070	0.8750
1-8	UNC	0.0020	0.865	0.890	0.9188	0.9276	0.0088	1.0000
1-12	UNF	0.0018	0.910	0.928	0.9459	0.9535	0.0076	1.0000
1-14	UNS	0.0017	0.923	0.938	0.9536	0.9609	0.0073	1.0000
1 1/8-7	UNC	0.0022	0.970	0.998	1.322	1.0416	0.0094	1.1250
1 1/8-8	UN	0.0021	0.990	1.015	1.0438	0.0528	0.0090	1.1250
1 1/8-12	UNF	0.0018	1.035	1.053	1.0709	1.0787	0.0078	1.1250
1 1/4-7	UNC	0.022	1.095	1.123	1.1572	1.668	0.0096	1.2500
1 1/4-8	UN	0.0021	1.115	1.140	1.1688	1.1780	0.0092	1.2500
1 1/4-12	UNF	0.0018	1.160	1.178	1.1959	1.2039	0.0080	1.2500
1 3/8-6	UNC	0.0024	1.195	1.225	1.2667	1.2771	0.0104	1.3750
1 3/8-8	UN	0.0022	1.240	1.265	1.2938	1.3031	0.0093	1.3750
1 3/8-12	UNF	0.0019	1.285	1.303	1.3209	1.3291	0.0082	1.3750
1 1/2-6	UNC	0.0024	1.320	1.350	1.3917	1.4022	0.0105	1.5000
1 1/2-8	UN	0.0022	1.365	1.390	1.4188	1.4283	0.0095	1.5000
1 1/2-12	UNC	0.0019	1.410	1.428	1.4459	1.4542	0.0083	1.5000
1 5/8-8	UN	0.0022	1.490	1.515	1.5438	1.5535	0.0097	1.6250
1 3/4-5	UNC	0.0027	1.534	1.568	1.6201	1.6317	0.0116	1.7500
1 3/4-8	UN	0.0023	1.615	1.640	1.6688	1.6786	0.0098	1.7500
1 7/8-8	UN	0.0023	1.740	1.765	1.7938	1.8038	0.0100	1.8750
2-4 1/2	UNC	0.0029	1.759	1.795	1.8557	1.8681	0.0124	2.0000
2-8	UN	0.0023	1.865	1.890	1.9188	1.9289	0.0101	2.0000
2 1/4-4.5	UNC	0.0029	2.009	2.045	2.1057	2.1183	0.0126	2.2500
2 1/4-8	UN	0.0024	2.115	2.140	2.1688	2.1792	0.0104	2.2500
2 1/2-4	UNC	0.0031	2.229	2.267	2.3376	2.3511	0.0135	2.5000
2 1/2-8	UN	0.0024	2.365	2.390	2.4188	2.4294	0.0106	2.5000
2 3/4-4	UNC	0.0032	2.479	2.517	2.5876	2.6013	0.0137	2.7500
2 3/4-8	UN	0.0025	2.615	2.640	2.6688	2.6796	0.0108	2.7500
3-4	UNC	0.0032	2.729	2.767	2.8376	2.8515	0.0139	3.0000
3-8	UN	0.0026	2.865	2.890	2.9188	2.9299	0.0111	3.0000
3 1/4-4	UNC	0.0033	2.979	3.017	3.0876	3.1017	0.0141	3.2500
3 1/4-8	UN	0.0026	3.115	3.140	3.1688	3.1801	0.0113	3.2500
3 1/2-4	UNC	0.0033	3.229	3.267	3.3376	3.3519	0.0143	3.5000
3 1/2-8	UN	0.0026	3.365	3.390	3.4188	3.4303	0.0115	3.5000
3 3/4-4	UNC	0.0034	3.479	3.517	3.5876	3.6021	0.0145	3.7500
3 3/4-8	UN	0.0027	3.615	3.640	3.6688	3.6805	0.0117	3.7500
4-4	UNC	0.0034	3.729	3.767	3.8376	3.8523	0.0147	4.0000
4-8	UN	0.0027	3.865	3.890	3.9188	3.9307	0.0119	4.0000

Plastic Anchors

Part #	Screw Size	Length Of Anchor	Size Of Drill	Ship Wt. Per 1000
10PA	6-8-10	15/16	3/16	1.00
12PA	10-12	1-1/8	1/4	2.08
16PA	12-14	1-7/16	5/16	3.50

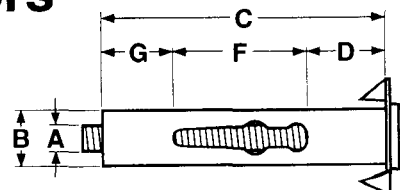


Wedge Anchors



Size	Thread Length	Hole Size	Min. Imbed.	Ship Wgt / 100
1/4 X 1-3/4	3/4	1/4	1-1/8	3.000
1/4 x 2-1/4	1	1/4	1-1/8	3.620
1/4 x 3-1/4	1	1/4	1-1/8	5.020
3/8 x 2-1/4	1-1/8	3/8	1-5/8	8.080
3/8 x 2-3/4	1-1/8	3/8	1-5/8	9.980
3/8 x 3	1-1/8	3/8	1-5/8	11.00
3/8 x 3-3/4	1-1/4	3/8	1-5/8	12.76
3/8 x 5	1-1/4	3/8	1-5/8	16.24
1/2 x 2-3/4	1-1/2	1/2	2-1/4	18.82
1/2 x 3-3/4	1-1/2	1/2	2-1/4	23.58
1/2 x 4-1/4	1-1/2	1/2	2-1/4	26.86
1/2 x 5-1/2	1-1/2	1/2	2-1/4	33.63
1/2 x 7	1-1/2	1/2	2-1/4	43.33
5/8 x 3-1/2	1-5/8	5/8	2-3/4	41.00
5/8 x 4-1/2	1-9/16	5/8	2-3/4	44.00
5/8 x 5	1-9/16	5/8	2-3/4	52.00
5/8 x 6	1-9/16	5/8	2-3/4	59.95
3/4 x 4-1/4	2-3/16	3/4	3-1/4	63.35
3/4 x 4-3/4	2-3/16	3/4	3-1/4	68.80
3/4 x 5-1/2	2-3/16	3/4	3-1/4	76.70

Hollow Wall Anchors



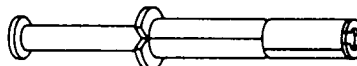
Size	A Screw	B Body	C Overall	D Sleeve	E Collar	F Expansion	G Nut	Max. Exp.	Screw Lgth.	Ship Wt. Per 100
1/8 x 5/16 XShort	6-32 (1/8)	1/4	25/32	1/8	1/2	31/64	5/32	43/64	1	1.00
1/8 x 5/16 Short	6-32 (1/8)	1/4	1-9/32	23/64	1/2	5/8	17/64	11/16	1-7/16	1.25
1/8 x 5/16 Long	6-32 (1/8)	1/4	1-23/32	51/64	1/2	5/8	17/64	11/16	1-59/64	1.75
1/4 x 1/2 Short	1/4-20 (1/4)	3/8	1-13/16	3/8	11/16	1-3/16	9/32	1-1/8	2-1/4	5.50
1/4 x 1/2 Long	1/4-20 (1/4)	3/8	2-5/16	7/8	11/16	1-3/16	9/32	1-1/8	2-1/2	6.75

Northwest Service Center
 (510) 487-2100 / (408) 773-9910
 800-824-5449 Fax: (510) 471-7018

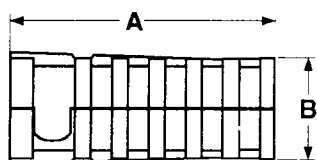
> More Pages <

Southwest Service Center
 (818) 967-6335 / (619) 236-0315
 800-824-8567 / Fax: (818) 915-7065

Hammer Drive Anchors



Size Diam. (Exclude Nail)	Outside Diam. & Drill Req.	Working Load Lbs.	Ship Wt. Per 100
10 x 7/8	3/16	60	1.00
1/4 x 3/4	1/4	150	1.25
1/4 x 1	1/4	200	2.00
1/4 x 1-1/4	1/4	250	2.75
1/4 x 1-1/2	1/4	300	3.00
1/4 x 2	1/4	400	3.06

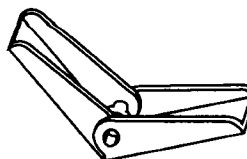


Lag Screw Shields

		A	B	
Size	Diam. Of Lag Screw w/Which Shield Is Used	Length Of Shield	Outside Diam. & Drill Req.	Ship Wght. Per 100
1/4 Short	1/4	1	1/2	3.00
1/4 Long	1/4	1-1/2	1/2	5.00
5/16 Short	5/16	1-1/4	1/2	3.00
5/16 Long	5/16	1-3/4	1/2	5.00
3/8 Short	3/8	1-3/4	5/8	7.00
3/8 Long	3/8	2-7/16	5/8	9.50
1/2 Short	1/2	2	3/4	10.50
1/2 Long	1/2	3	3/4	14.00

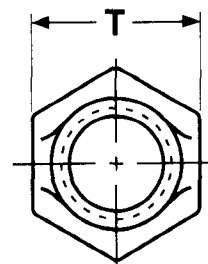
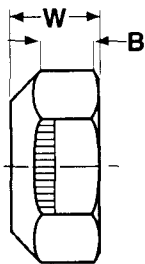
Toggle Wings

Bolt Diam.	Size Drill Req.	Ship Wght. Per 100
6-32 (1/8)	3/8	1.00
8-32 (5/32)	7/16	1.75
10-24 (3/16)	9/16	1.50
1/4-20 (1/4)	3/4	3.00
5/16-18 (5/16)	7/8	7.00
3/8-16 (3/8)	1	7.00
1/2-13 (1/2)	1-1/4	4.00

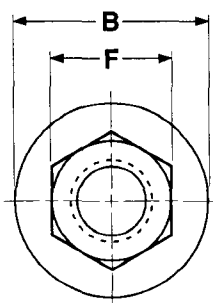


Stover[®] Locknuts

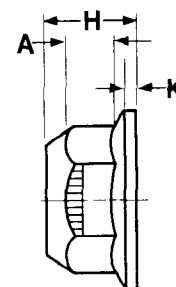
Grade C Automation Style



Nom. Size In Inches	T			W		B
	Width	Across	Flats	Overall Thickness		Hex Height
	Nom.	Max.	Min.	Max.	Min.	(Min.)
1/4	7/16	0.4385	0.428	0.226	0.212	0.145
5/16	1/2	0.5020	0.489	0.273	0.258	0.166
3/8	9/16	0.5645	0.551	0.337	0.320	0.198
7/16	11/16	0.6895	0.675	0.385	0.365	0.223
1/2	3/4	0.7520	0.736	0.448	0.427	0.262
9/16	7/8	0.8770	0.861	0.496	0.473	0.286
5/8	15/16	0.9395	0.922	0.559	0.535	0.329
3/4	1-1/8	1.1270	1.088	0.665	0.617	0.382
7/8	1-5/16	1.3145	1.2690	0.776	0.724	0.450
1	1-1/2	1.5020	1.4500	0.887	0.831	0.513



Grade GT Flange Style

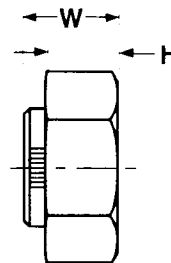
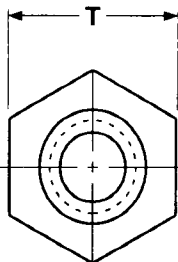


Nom. Size In Inches	F			B	H		A	K
	Width	Across	Flats	Flange Diam.	Overall Thickness		Hex Height	Flange Thick.
	Nom.	Max.	Min.	(Max.)	Max.	Min.	(Min.)	(Min.)
3/8	9/16	0.5645	0.551	0.810	0.425	0.404	0.200	0.060
1/2	3/4	0.7520	0.736	1.070	0.555	0.528	0.260	0.080
5/8	15/16	0.9395	0.922	1.330	0.690	0.646	0.320	0.100
3/4	1-1/8	1.1270	1.088	1.585	0.825	0.742	0.380	0.110

® Stover is a registered trademark of RB&W Corporation.

Stover® Locknuts

Grade C Hex Collar

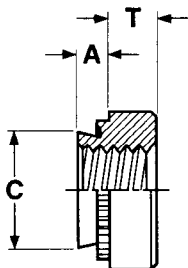


Nom. Size In Inches	T		W		H	
	Width Across Flats		Overall Thickness		Hex Height	
	Max.	Min.	Max.	Min.	Max.	Min.
1-1/8	1.688	1.631	0.999	0.939	0.657	0.636
1-1/4	1.875	1.812	1.094	1.030	0.719	0.698
1-3/8	2.062	1.994	1.206	1.138	0.793	0.771
1-1/2	2.250	2.175	1.317	1.245	0.865	0.843
1-3/4	2.625	2.538	1.540	1.460	1.012	0.989
2	3.000	2.900	1.763	1.675	1.158	1.134

® Stover is a registered trademark of RB&W Corporation.

Self Clinching Nuts

A Comparison of Part Numbers



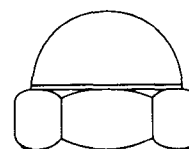
Specifications & Comparison of Part Numbers

Size	A	Minimum Sheet Thickness	Hole Size in Sheet +.003-.000	C	E	T	Part #	PEM®	Captive
	Shank Hgt. Max.			Shank Diam. Max.	Nut Dia.	Nut Hgt. Max.			
4-40-0	.030	.030-.039	.166	.165	.25	.07	04-0NCL	S-440-0	C-440-0
4-40-1	.038	.040	.166	.165	.25	.07	04-1NCL	S-440-1	C-440-1
4-40-2	.054	.056	.160	.165	.25	.07	04-2NCL	S-440-2	C-440-2
6-32-0	.030	.030-.039	.1875	.187	.28	.07	06-0NCL	S-632-0	C-632-0
6-32-1	.038	.040	.1875	.187	.28	.07	06-1NCL	S-632-1	C-632-1
6-32-2	.054	.056	.1875	.187	.28	.07	06-2NCL	S-632-2	C-632-2
8-32-0	.030	.030-.039	.213	.212	.31	.09	08-0NCL	S-832-0	C-832-0
8-32-1	.038	.040	.213	.212	.31	.09	08-1NCL	S-832-1	C-832-1
8-32-2	.054	.056	.213	.212	.31	.09	08-2NCL	S-832-2	C-832-2
10-24-0	.030	.030-.039	.250	.249	.34	.09	10-0NCL	SS-024-0	C-024-0
10-24-1	.038	.040	.250	.249	.34	.09	10-1NCL	SS-024-1	C-024-1
10-24-2	.054	.056	.250	.249	.34	.09	10-2NCL	SS-024-2	C-024-2
10-32-0	.030	.030-.039	.250	.249	.34	.09	11-0NCL	SS-032-0	C-032-0
10-32-1	.038	.040	.250	.249	.34	.09	11-1NCL	SS-032-1	C-032-1
10-32-2	.054	.065	.250	.249	.34	.09	11-2NCL	SS-032-2	C-032-2
1/4-20-1	.054	.056	.344	.343	.44	.17	14-1NCL	S-0420-1	C-0420-1
1/4-20-2	.087	.091	.344	.343	.44	.17	14-2NCL	S-0420-2	C-0420-2

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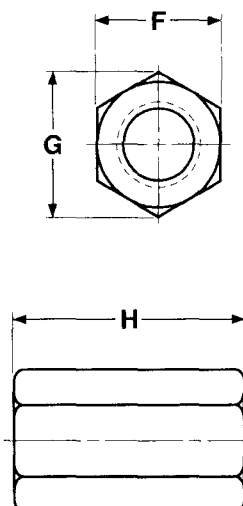
Two Piece Hex Cap Nuts

Part #	Size	Across the Flats	Overall Hght.
06NC	6-32	5/16	1/4
08NC	8-32	5/16	1/4
10NC	10-24	3/8	9/32
11NC	10-32	3/8	11/32
14NC	1/4-20	7/16	21/64
31NC	5/16-18	9/16	3/8
37NC	3/8-16	5/8	27/64
50NC	1/2-13	3/4	9/16
62NC	5/8-11	15/16	51/64



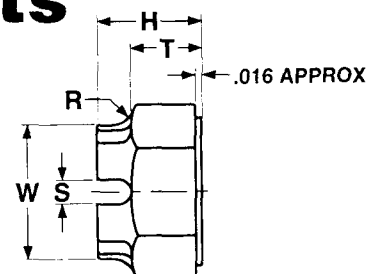
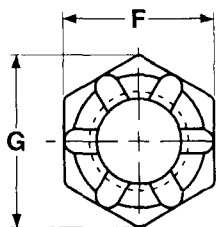
Hex Coupling Nuts

Dimensions of Hex Coupling Nuts



Nom Size or Basic Major Dia of Thread		F			G		H		
		Width Across Flats			Width Across Corners		Length		
		Basic	Max	Min	Max	Min	Basic	Max	Min
1/4	0.2500	3/8	0.375	0.365	0.433	0.416	3/4	0.76	0.74
5/16	0.3125	1/2	0.500	0.489	0.577	0.557	15/16	0.95	0.93
3/8	0.3750	9/16	0.562	0.551	0.650	0.628	1- 1/8	1.13	1.11
1/2	0.5000	3/4	0.750	0.736	0.866	0.839	1- 1/2	1.51	1.49
5/8	0.6250	15/16	0.938	0.922	1.083	1.051	1- 7/8	1.89	1.86
3/4	0.7500	1- 1/8	1.125	1.088	1.299	1.240	2- 1/4	2.27	2.22
1	1.0000	1- 1/2	1.500	1.450	1.732	1.653	3	3.03	2.97

Hex Castle Nuts



Nominal Size or Basic Major Dia of Thread		F			G		H			T			S		R	W	Runout of Bearing Surface FIR
		Width Across Flats			Width Across Corners		Thickness			Unslotted Thickness and Height of Flat			Width of Slot		Radius of Fillet	Dia of Cylin- drical	
		Basic	Max	Min	Max	Min	Basic	Max	Min	Nom	Max	Min	Max	Min	±.010	Min	Max
5/8	0.6250	15/16	0.938	0.922	1.083	1.051	23/32	0.731	0.706	1/2	0.51	0.49	0.24	0.18	0.156	0.797	0.021
3/4	0.7500	1- 1/8	1.125	1.088	1.299	1.240	13/16	0.827	0.798	9/16	0.57	0.55	0.24	0.18	0.188	0.941	0.023
7/8	0.8750	1- 5/16	1.312	1.269	1.516	1.447	29/32	0.922	0.890	21/32	0.67	0.64	0.24	0.18	0.188	1.097	0.025
1	1.0000	1- 1/2	1.500	1.450	1.732	1.653	1	1.018	0.982	23/32	0.73	0.70	0.30	0.24	0.188	1.254	0.027

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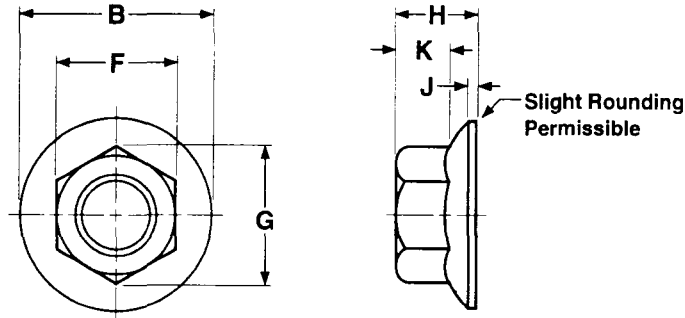
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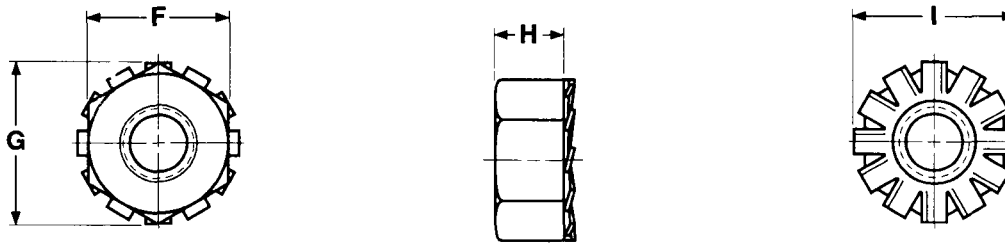
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Serrated Flange Lock Nuts



Nominal Size or Basic Major Diameter of Thread		F		G		B		H		K	J
		Width Across Flats		Width Across Corners		Flange Diameter		Nut Thickness		Wrenching Length	Flange Thickness
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.	Max.
6	0.1380	0.312	0.302	0.361	0.342	0.422	0.406	0.171	0.156	0.10	0.02
8	0.1640	0.344	0.334	0.397	0.381	0.469	0.452	0.203	0.187	0.13	0.02
10	0.1900	0.375	0.365	0.433	0.416	0.500	0.480	0.219	0.203	0.13	0.03
12	0.2160	0.438	0.428	0.505	0.488	0.594	0.574	0.236	0.222	0.14	0.04
1/4	0.2500	0.438	0.428	0.505	0.488	0.594	0.574	0.236	0.222	0.14	0.04
5/16	0.3125	0.500	0.489	0.577	0.557	0.680	0.660	0.283	0.268	0.17	0.04
3/8	0.3750	0.562	0.551	0.650	0.628	0.750	0.728	0.347	0.330	0.23	0.04
7/16	0.4375	0.688	0.675	0.794	0.768	0.937	0.910	0.395	0.375	0.26	0.04
1/2	0.5000	0.750	0.736	0.866	0.840	1.031	1.000	0.458	0.437	0.31	0.05
5/8	0.6250	0.938	0.922	1.083	1.051	1.281	1.248	0.569	0.545	0.40	0.05
3/4	0.7500	1.125	1.088	1.299	1.240	1.500	1.460	0.675	0.627	0.46	0.06

"K" Lock Nuts



Nominal Size or Basic Thread Diameter		F			G		H		I
		Width Across Flats			Width Across Corners		Thickness		Washer Diameter
					Hex				
		Basic	Max.	Min.	Max.	Min.	Max.	Min.	Ref.
4	0.1120	1/4	0.250	0.241	0.289	0.275	0.098	0.087	0.281
6	0.1380	5/16	0.312	0.302	0.361	0.344	0.114	0.102	0.344
8	0.1640	11/32	0.344	0.332	0.397	0.378	0.130	0.117	0.375
10	0.1900	3/8	0.375	0.362	0.433	0.413	0.130	0.117	0.406
1/4	0.2500	7/16	0.438	0.423	0.505	0.482	0.193	0.178	0.500
5/16	0.3125	1/2	0.500	0.489	0.577	0.557	0.273	0.258	0.578
3/8	0.3750	9/16	0.562	0.551	0.650	0.628	0.385	0.365	0.656

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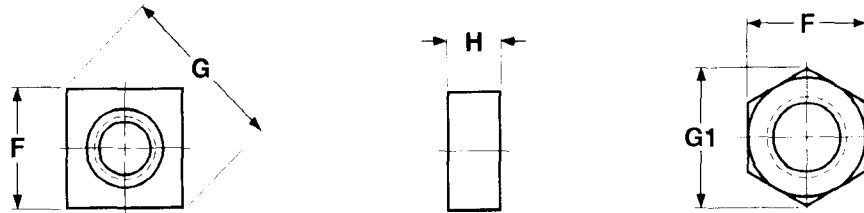
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Square and Hex Machine Screw Nuts

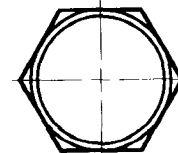
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Nominal Size or Basic Thread Diameter		F			G		G1		H	
		Width Across Flats			Width Across Corners				Thickness	
					Square		Hex			
		Basic	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
2	0.0860	3/16	0.188	0.180	0.265	0.247	0.217	0.205	0.066	0.057
3	0.0990	3/16	0.188	0.180	0.265	0.247	0.217	0.205	0.066	0.057
4	0.1120	1/4	0.250	0.241	0.354	0.331	0.289	0.275	0.098	0.087
5	0.1250	5/16	0.312	0.302	0.442	0.415	0.361	0.344	0.114	0.102
6	0.1380	5/16	0.312	0.302	0.442	0.415	0.361	0.344	0.114	0.102
8	0.1640	11/32	0.344	0.332	0.486	0.456	0.397	0.378	0.130	0.117
10	0.1900	3/8	0.375	0.362	0.530	0.497	0.433	0.413	0.130	0.117
12	0.2160	7/16	0.438	0.423	0.619	0.581	0.505	0.482	0.161	0.148
1/4	0.2500	7/16	0.438	0.423	0.619	0.581	0.505	0.482	0.193	0.178
5/16	0.3125	9/16	0.562	0.545	0.795	0.748	0.650	0.621	0.225	0.208
3/8	0.3750	5/8	0.625	0.607	0.884	0.833	0.722	0.692	0.257	0.239

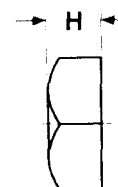
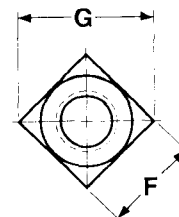
Hex Panel Nuts

Part #	Size	Across the Flats	Thickness
0202NP	1/8-27	9/16	1/8
0203NP	1/8-27	9/16	3/16
3708NP	3/8-32	1/2	3/32
3709NP	3/8-32	9/16	3/32
4603NP	15/32-32	9/16	3/32



Regular Square Nuts

Nominal or Basic Major Dia. of Thread		F			G		H		
		Width Across Flats			Width Across Corners		Thickness		
							Basic	Max.	Min.
1/4	0.2500	7/16	0.438	0.425	0.619	0.584	7/32	0.235	0.203
5/16	0.3125	9/16	0.562	0.547	0.795	0.751	17/64	0.283	0.249
3/8	0.3750	5/8	0.625	0.606	0.884	0.832	21/64	0.346	0.310
7/16	0.4375	3/4	0.750	0.728	1.061	1.000	3/8	0.394	0.356
1/2	0.5000	13/16	0.812	0.788	1.149	1.082	7/16	0.458	0.418
5/8	0.6250	1	1.000	0.969	1.414	1.330	35/64	0.569	0.525
3/4	0.7500	1-1/8	1.125	1.088	1.591	1.494	21/32	0.680	0.632
7/8	0.8750	1-5/16	1.312	1.269	1.856	1.742	49/64	0.792	0.740
1	1.0000	1-1/2	1.500	1.450	2.121	1.991	7/8	0.903	0.847
1-1/4	1.2500	1-7/8	1.875	1.812	2.652	2.458	1-3/32	1.126	1.062
1-1/2	1.5000	2-1/4	2.250	2.175	3.182	2.956	1-5/16	1.348	1.276



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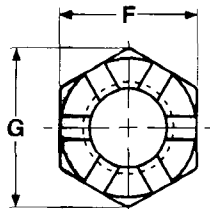
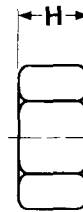
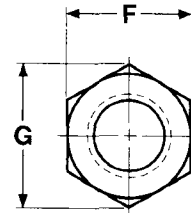
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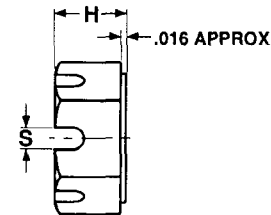
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Heavy Hex Nuts

Nominal Size or Basic Major Dia. of Thread		F			G		H		
		Width Across Flats			Width Across Corners		Thickness Heavy Hex Nuts		
		Basic	Max.	Min.	Max.	Min.	Basic	Max.	Min.
1/4	0.2500	1/2	0.500	0.488	0.577	0.556	15/64	0.250	0.218
5/16	0.3125	9/16	0.562	0.546	0.650	0.622	19/64	0.314	0.280
3/8	0.3750	11/16	0.688	0.669	0.794	0.763	23/64	0.377	0.341
7/16	0.4375	3/4	0.750	0.728	0.866	0.830	27/64	0.441	0.403
1/2	0.5000	7/8	0.875	0.850	1.010	0.969	31/64	0.504	0.464
9/16	0.5625	15/16	0.938	0.909	1.083	1.037	35/64	0.568	0.526
5/8	0.6250	1-1/16	1.062	1.031	1.227	1.175	39/64	0.631	0.587
3/4	0.7500	1-1/4	1.250	1.212	1.443	1.382	47/64	0.758	0.710
7/8	0.8750	1-7/16	1.438	1.394	1.660	1.589	55/64	0.885	0.833
1	1.0000	1-5/8	1.625	1.575	1.876	1.796	63/64	1.012	0.956
1-1/8	1.1250	1-13/16	1.812	1.756	2.093	2.002	1-7/64	1.139	1.079
1-1/4	1.2500	2	2.000	1.938	2.309	2.209	1-7/32	1.251	1.187
1-3/8	1.3750	2-3/16	2.188	2.119	2.526	2.416	1-11/32	1.378	1.310
1-1/2	1.5000	2-3/8	2.375	2.300	2.742	2.622	1-15/32	1.505	1.433
1-5/8	1.6250	2-9/16	2.562	2.481	2.959	2.828	1-19/32	1.632	1.556
1-3/4	1.7500	2-3/4	2.750	2.662	3.175	3.035	1-23/32	1.759	1.679
1-7/8	1.8750	2-15/16	2.938	2.844	3.392	3.242	1-27/32	1.886	1.802
2	2.0000	3-1/8	3.125	3.025	3.608	3.449	1-31/32	2.013	1.925
2-1/4	2.2500	3-1/2	3.500	3.388	4.041	3.862	2-13/64	2.251	2.155
2-1/2	2.5000	3-7/8	3.875	3.750	4.474	4.275	2-29/64	2.505	2.401
2-3/4	2.7500	4-1/4	4.250	4.112	4.907	4.688	2-45/64	2.759	2.647
3	3.0000	4-5/8	4.625	4.475	5.340	5.102	2-61/64	3.013	2.893
3-1/4	3.2500	5	5.000	4.838	5.774	5.515	3-3/16	3.252	3.124
3-1/2	3.5000	5-3/8	5.375	5.200	6.207	5.928	3-7/16	3.506	3.370
3-3/4	3.7500	5-3/4	5.750	5.562	6.640	6.341	3-11/16	3.760	3.616
4	4.000	6-1/8	6.125	5.925	7.073	6.755	3-15/16	4.014	3.862



Hex Slotted Nuts



Normal Size or Basic Major Dia of Thread	F			G		H			T		S		Runout Of Bearing Surface FIM
	Width Across Flats			Width Across Corners		Thickness			Unslotted Thickness		Width of Slot		
	Basic	Max	Min	Max	Min	Basic	Max	Min	Max	Min	Max	Min	
3/8 0.3750	9/16	0.562	0.551	0.650	0.628	21/64	0.337	0.320	0.21	0.19	0.15	0.12	0.018
7/16 0.4375	11/16	0.688	0.675	0.794	0.768	3/8	0.385	0.365	0.23	0.21	0.15	0.12	0.018
1/2 0.5000	3/4	0.750	0.736	0.866	0.840	7/16	0.448	0.427	0.29	0.27	0.18	0.15	0.019
5/8 0.6250	15/16	0.938	0.922	1.083	1.051	35/64	0.559	0.535	0.34	0.32	0.24	0.18	0.021
3/4 0.7500	1-1/8	1.125	1.088	1.299	1.240	41/64	0.665	0.617	0.40	0.38	0.24	0.18	0.023
7/8 0.8750	1-5/16	1.312	1.269	1.516	1.447	3/4	0.776	0.724	0.52	0.49	0.24	0.18	0.025
1 1.0000	1-1/2	1.500	1.450	1.732	1.653	55/64	0.887	0.831	0.59	0.56	0.30	0.24	0.027
1-1/8 1.1250	1-11/16	1.688	1.631	1.949	1.859	31/32	0.999	0.939	0.64	0.61	0.33	0.24	0.030
1-1/4 1.2500	1-7/8	1.875	1.812	2.165	2.066	1-1/16	1.094	1.030	0.70	0.67	0.40	0.31	0.033
1-1/2 1.5000	2-1/4	2.250	2.175	2.598	2.480	1-9/32	1.317	1.245	0.86	0.82	0.46	0.37	0.039

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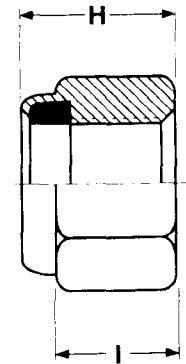
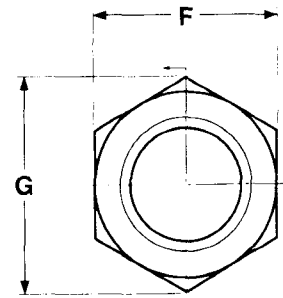
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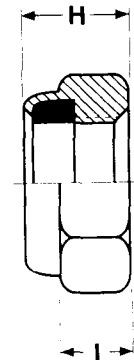
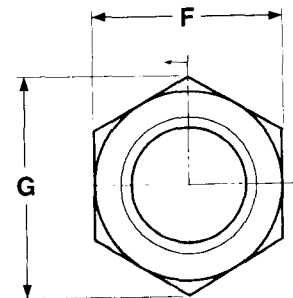
Nylon Insert Stop Nuts

Nominal Size or Basic Thread Diameter		F			H		I	G
		Width Across Flats			Thickness		Side Height	Width Across Corners
		Basic	Max.	Min.	Max.	Min.	Ref.	Ref.
4	0.1120	1/4	0.251	0.241	0.153	0.133	0.081	0.268
6	0.1380	5/16	0.313	0.302	0.188	0.168	0.103	0.399
8	0.1640	11/32	0.345	0.332	0.239	0.219	0.140	0.374
10	0.1900	3/8	0.376	0.362	0.249	0.229	0.140	0.410
1/4	0.2500	7/16	0.439	0.428	0.328	0.298	0.225	0.482
5/16	0.3125	1/2	0.502	0.489	0.359	0.329	0.250	0.552
3/8	0.3750	9/16	0.565	0.551	0.468	0.438	0.335	0.622
7/16	0.4375	11/16	0.690	0.675	0.468	0.438	0.324	0.698
1/2	0.5000	3/4	0.752	0.736	0.609	0.579	0.464	0.837
9/16	0.5625	7/8	0.877	0.861	0.656	0.626	0.469	0.978
5/8	0.6250	15/16	0.940	0.922	0.765	0.735	0.593	1.051
3/4	0.7500	1-1/8	1.127	1.088	0.890	0.860	0.742	1.191
7/8	0.8750	1-5/16	1.315	1.269	0.999	0.969	0.790	1.430
1	1.0000	1-1/2	1.502	1.450	1.078	1.061	0.825	1.615
1-1/8	1.1250	1-11/16	1.690	1.631	1.203	1.141	0.930	1.826
1-1/4	1.2500	1-7/8	1.877	1.812	1.422	1.360	1.125	2.038
1-1/2	1.5000	2-1/4	2.252	2.175	1.640	1.578	1.313	2.444

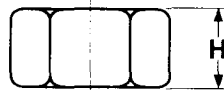
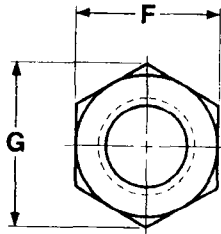


Nylon Insert Stop Nuts Thin Pattern

Nominal Size or Basic Thread Diameter		F			H		I	G
		Width Across Flats			Thickness		Side Height	Width Across Corners
		Basic	Max.	Min.	Max.	Min.	Ref.	Ref.
4	.1120	1/4	.251	.241	.124	.094	.075	.268
6	.1380	5/16	.313	.302	.140	.110	.090	.399
8	.1640	11/32	.345	.332	.187	.157	.110	.374
10	.1900	3/8	.376	.362	.187	.157	.110	.410
1/4	.2500	7/16	.439	.428	.218	.188	.125	.482
5/16	.3125	1/2	.502	.489	.265	.235	.158	.552
3/8	.3750	9/16	.565	.551	.281	.251	.150	.622
7/16	.4375	11/16	.690	.675	.328	.298	.190	.694
1/2	.5000	3/4	.752	.736	.328	.298	.225	.837
5/8	.6250	15/16	.940	.922	.406	.376	.264	1.051
3/4	.7500	1-1/8	1.127	1.088	.421	.391	.288	1.191



Finished Hex Nuts, Hex Jam and Two Way Reversible Lock Nuts



Nominal Or Basic Major Dia of Thread		F			G		H			H1		
		Width Across Flats			Width Across Corners		Thickness Hex Nuts & Reversible Lock Nuts			Thickness Hex Jam Nuts		
		Basic	Max	Min	Max	Min	Basic	Max	Min	Basic	Max	Min
8	0.1640	11/32	0.344	0.332	0.397	0.378	—	0.203	0.187	—	—	—
10	0.1900	3/8	0.375	0.362	0.433	0.413	—	0.203	0.187	—	—	—
1/4	0.2500	7/16	0.438	0.428	0.505	0.488	7/32	0.226	0.212	5/32	0.164	0.150
5/16	0.3125	1/2	0.500	0.489	0.577	0.557	17/64	0.273	0.258	3/16	0.195	0.180
3/8	0.3750	9/16	0.562	0.551	0.650	0.628	21/64	0.337	0.320	7/32	0.227	0.210
7/16	0.4375	11/16	0.688	0.675	0.794	0.768	3/8	0.385	0.365	1/4	0.260	0.240
1/2	0.5000	3/4	0.750	0.736	0.866	0.840	7/16	0.448	0.427	5/16	0.323	0.302
9/16	0.5625	7/8	0.875	0.861	1.010	0.982	31/64	0.496	0.473	5/16	0.324	0.301
5/8	0.6250	15/16	0.938	0.922	1.083	1.051	35/64	0.559	0.535	3/8	0.387	0.363
3/4	0.7500	1-1/8	1.125	1.088	1.299	1.240	41/64	0.665	0.617	27/64	0.446	0.398
7/8	0.8750	1-5/16	1.312	1.269	1.516	1.447	3/4	0.776	0.724	31/64	0.510	0.458
1	1.0000	1-1/2	1.500	1.450	1.732	1.653	55/64	0.887	0.831	35/64	0.575	0.519
1 - 1/8	1.1250	1-11/16	1.688	1.631	1.949	1.859	31/32	0.999	0.939	39/64	0.639	0.579
1 - 1/4	1.2500	1-7/8	1.875	1.812	2.165	2.066	1-1/6	1.094	1.030	23/32	0.751	0.687
1 - 3/8	1.3750	2-1/16	2.062	1.994	2.382	2.273	1-11/64	1.206	1.138	25/32	0.815	0.747
1 - 1/2	1.5000	2-1/4	2.250	2.175	2.598	2.480	1-9/32	1.317	1.245	27/32	0.880	0.808
1 - 5/8	1.6250	2-7/16	2.438	2.356	2.815	2.686	1-25/64	1.429	1.353	29/32	0.945	0.869
1 - 3/4	1.7500	2-5/8	2.625	2.538	3.031	2.893	1-1/2	1.540	1.460	31/32	1.009	0.929
2	2.0000	3	3.000	2.900	3.464	3.306	1-23/32	1.763	1.675	1-3/32	1.138	1.050
2 - 1/4	2.2500	3-3/8	3.375	3.263	3.897	3.719	1-15/16	1.986	1.890	1-7/32	1.267	1.171
2 - 1/2	2.5000	3-3/4	3.750	3.625	4.330	4.133	2-5/32	2.209	2.105	1-11/32	1.396	1.292
2 - 3/4	2.7500	4-1/8	4.125	3.988	4.763	4.546	2-3/8	2.431	2.319	1-15/32	1.525	1.413
3	3.0000	4-1/2	4.500	4.350	5.196	4.959	2-19/32	2.654	2.534	1-19/32	1.654	1.534

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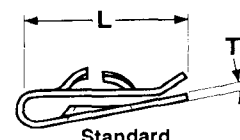
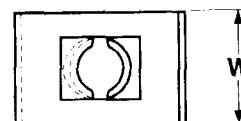
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Steel Spring Nuts

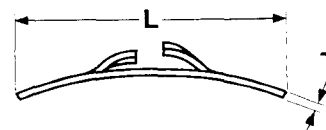
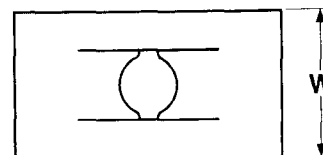
Heat Treated Spring Steel, Black Phosphate & Oil "U" Type Specifications

Part Number	Screw Size	P Panel Range	L Length	W Width	T Material Thickness	Wght. Per 1000
8090632	6/32	.025-.040	.48	.50	.017	2.66
8091632	6/32	.045-.062	.48	.50	.017	2.66
8093632	6/32	.045-.062	.65	.31	.017	2.66
8094632	6/32	.025-.040	.82	.31	.017	2.66
8095632	6/32	.045-.062	.83	.31	.017	2.66
80966	6A or B	.025-.040	.48	.50	.025	3.60
80976	6A or B	.045-.062	.47	.50	.025	3.16
81006	6A or B	.025-.040	.81	.31	.025	3.50
81016	6A or B	.045-.062	.82	.31	.025	3.50
8102832	8/32	.025-.040	.52	.50	.017	2.66
8103832	8/32	.045-.062	.52	.50	.017	2.66
8105832	8/32	.045-.062	.67	.41	.017	2.66
8106832	8/32	.025-.062	.86	.41	.017	3.50
8107832	8/32	.045-.062	.87	.41	.017	2.96
81088	8A or B	.025-.040	.52	.50	.028	5.00
81098	8A or B	.045-.062	.52	.50	.028	5.00
81128	8A or B	.025-.040	.85	.41	.028	4.00
81138	8A or B	.045-.062	.52	.41	.028	6.00
81141024	10/24	.025-.040	.58	.63	.022	5.00
81151024	10/24	.045-.062	.56	.63	.022	5.00
81171024	10/24	.045-.062	.76	.38	.022	4.50
81181024	10/24	.025-.040	.95	.38	.022	4.50
81191024	10/24	.045-.062	.95	.38	.022	5.00
812010	10A or B	.025-.040	.56	.63	.031	5.00
812110	10A or B	.045-.062	.56	.63	.031	6.00
812310	10A or B	.045-.062	.76	.50	.031	7.00
812410	10A or B	.025-.040	.96	.50	.031	8.00
812510	10A or B	.045-.062	.95	.50	.031	9.00



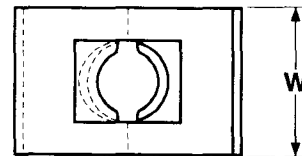
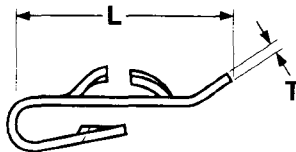
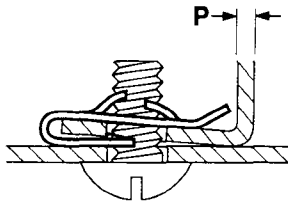
Heat Treated Spring Steel, Black Phosphate & Oil Flat Type Specifications

Part Number	Screw Size	L Length	W Width	T Material Thickness	Wght. Per 1000
105SS440	4/40	.44	.25	.012	.35
4301032	10/32	.75	.44	.017	1.60
70004	4A or B	.38	.25	.022	.90
7000632	6/32	.44	.28	.017	1.00
70006	6A or B	.50	.31	.025	1.10
7000832	8/32	.51	.31	.017	.67
70008	8A or B	.63	.41	.028	2.20
70001024	10/24	.63	.38	.022	1.37
700010	10A or B	.75	.50	.031	3.21



Steel Spring Nuts

Heat Treated Spring Steel, Black Phosphate & Oil
"J" Type Specifications



Part Number	Screw Size	P	L	W	T	Wght. Per 1000
		Panel Range	Length	Width	Material Thickness	
8019632	6/32	.025-.040	.47	.50	.017	2.00
8020632	6/32	.045-.062	.47	.50	.017	1.71
8022632	6/32	.045-.062	.63	.31	.017	2.00
8023632	6/32	.025-.040	.81	.31	.017	2.20
8024632	6/32	.045-.062	.81	.31	.017	2.20
80256	6A or B	.025-.040	.47	.50	.025	2.66
80266	6A or B	.045-.062	.47	.50	.025	2.66
80296	6A or B	.025-.062	.81	.31	.025	3.00
80306	6A or B	.045-.062	.81	.31	.025	3.00
8031832	8/32	.025-.040	.53	.50	.017	2.00
8032832	8/32	.045-.062	.52	.50	.017	2.00
8035832	8/32	.025-.040	.87	.41	.017	3.00
8036832	8/32	.045-.062	.87	.41	.017	2.50
80378	8A or B	.025-.045	.53	.50	.028	3.50
80388	8A or B	.045-.062	.53	.50	.028	3.50
80418	8A or B	.025-.040	.87	.41	.028	4.00
80428	8A or B	.045-.062	.68	.41	.028	4.00
80431024	10/24	.025-.040	.59	.63	.017	3.50
80441024	10/24	.045-.062	.59	.63	.022	4.00
80451024	10/24	.025-.040	.79	.38	.022	4.50
80481024	10/24	.045-.062	.97	.38	.022	3.50
80431032	10/32	.025-.040	.59	.63	.017	3.50
804910	10A or B	.087-.110	.58	.50	.031	5.00
805010	10A or B	.045-.062	.58	.63	.031	4.31
805310	10A or B	.025-.040	.97	.50	.031	7.00
805410	10A or B	.045-.062	.97	.50	.031	7.20

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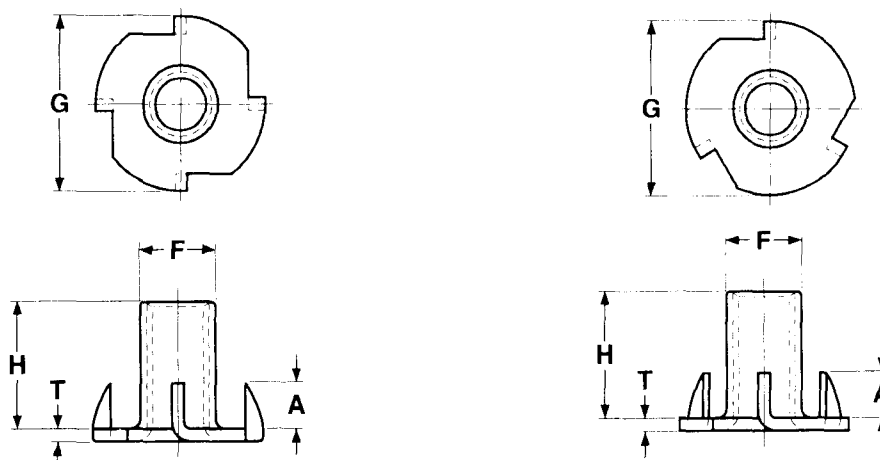
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T-Nuts, Straight Barrel

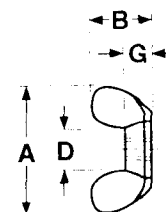
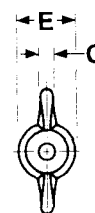


Part Number	Thread Size	G	H	F	A	T	Drill Size	LBS Per M Pcs.
		Flange Dia.	Barrel Height	Barrel Diam.	Prong Height	Material Thickness		
1005NT3	10 - 24	3/4	5/16	.243	7/32	.040	1/4	7
1005NT4	10 - 24	3/4	5/16	.243	7/32	.040	1/4	7
1105NT3	10 - 32	3/4	5/16	.243	7/32	.040	1/4	7
1105NT4	10 - 32	3/4	5/16	.243	7/32	.040	1/4	7
1405NT3	1/4 - 20	3/4	5/16	.305	7/32	.047	5/16	9
1405NT4	1/4 - 20	3/4	5/16	.305	7/32	.047	5/16	9
1407NT3	1/4 - 20	3/4	7/16	.305	5/16	.047	5/16	9
1407NT4	1/4 - 20	3/4	7/16	.305	1/4	.047	5/16	9
3106NT3	5/16 - 18	7/8	3/8	.390	1/4	.063	25/64	14
3106NT4	5/16 - 18	7/8	3/8	.390	1/4	.063	25/64	14
3110NT3	5/16 - 18	7/8	5/8	.390	5/16	.063	25/64	18
3707NT4	3/8 - 16	1	7/16	.440	11/32	.063	29/64	19

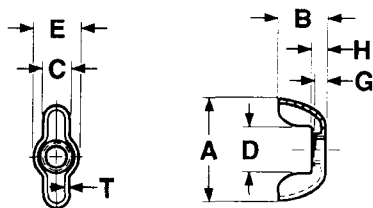
Wing Nuts

Cold Forged

Nominal Size or Basic Major Diameter of Thread	Threads per Inch	A		B		C		D		E		G	
		Wing Spread		Wing Height		Wing Thickness		Between Wings		Boss Diameter		Boss Height	
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
6 0.1380	32	0.72	0.59	0.41	0.28	0.11	0.07	0.21	0.17	0.33	0.29	0.14	0.10
8 0.1640	32	0.91	0.78	0.47	0.34	0.14	0.10	0.27	0.22	0.43	0.39	0.18	0.14
10 0.1900	24 & 32	0.91	0.78	0.47	0.34	0.14	0.10	0.27	0.22	0.45	0.39	0.18	0.14
1/4 0.2500	20	1.10	0.97	0.57	0.43	0.18	0.14	0.39	0.26	0.50	0.45	0.22	0.17
5/16 0.3125	18	1.25	1.12	0.66	0.53	0.21	0.17	0.39	0.32	0.58	0.51	0.25	0.20
3/8 0.3750	16	1.44	1.31	0.79	0.65	0.24	0.20	0.48	0.42	0.70	0.64	0.30	0.26
1/2 0.5000	13	1.94	1.81	1.00	0.87	0.33	0.26	0.65	0.54	0.93	0.86	0.39	0.35
5/8 0.6250	11	2.76	2.62	1.44	1.31	0.40	0.34	0.90	0.80	1.19	1.13	0.55	0.51
3/4 0.7500	10	2.76	2.62	1.44	1.31	0.40	0.34	0.90	0.80	1.19	1.13	0.55	0.51



Wing Nuts



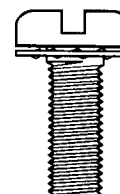
Stamped

Nominal Size or Basic Major Diameter of Thread		Threads per Inch	A		B		C		D	E		G	H	T	
			Wing Spread		Wing Height		Wing Thickness		Between Wings	Boss Diameter		Boss Height	Wall Height	Stock Thickness	
			Max.	Min.	Max.	Min.	Max.	Min.	Min.	Max.	Min.	Min.	Min.	Max.	Min.
6	0.1380	32	0.78	0.72	0.40	0.34	0.18	0.14	0.25	0.41	0.35	0.08	0.12	0.04	0.03
8	0.1640	32	0.78	0.72	0.40	0.34	0.18	0.14	0.25	0.41	0.35	0.08	0.12	0.04	0.03
10	0.1900	24 & 32	0.91	0.85	0.47	0.41	0.21	0.17	0.34	0.53	0.47	0.10	0.12	0.04	0.03
1/4	0.2500	20	1.11	1.05	0.50	0.44	0.25	0.21	0.34	0.62	0.56	0.11	0.12	0.05	0.04
5/16	0.3125	18 & 24	1.30	1.24	0.59	0.53	0.30	0.26	0.46	0.73	0.67	0.14	0.18	0.06	0.05
3/8	0.3750	16 & 24	1.41	1.34	0.67	0.61	0.34	0.30	0.69	0.83	0.77	0.16	0.18	0.06	0.05

Lock Washers For Sems

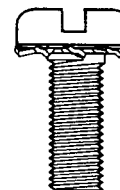
Internal Tooth

Nominal Size or Basic Screw Diameter		Washer Thickness		Washer Outside Diameter	
		Max.	Min.	Max.	Min.
4	0.1120	0.019	0.015	0.268	0.258
6	0.1380	0.021	0.017	0.288	0.278
8	0.1640	0.023	0.018	0.338	0.327
10	0.1900	0.025	0.020	0.383	0.327



External Tooth

Nominal Size or Basic Screw Diameter		Washer Thickness		Washer Outside Diameter	
		Max.	Min.	Max.	Min.
4	0.1120	0.020	0.012	0.230	0.220
6	0.1380	0.020	0.014	0.285	0.270
8	0.1640	0.023	0.018	0.320	0.305
10	0.1900	0.024	0.018	0.381	0.365



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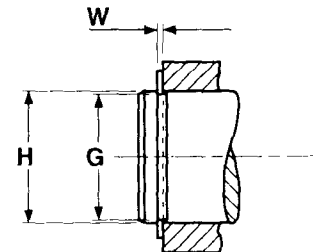
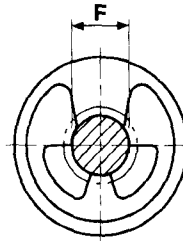
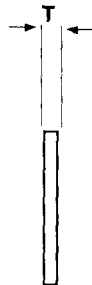
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Retaining Ring Part Number Comparison

271

	Rotor Clip	Waldes	I.R.R.	Anderton
	HO	N5000	3000	1300
	SH	5100	3100	1400
	E, SE	5133	1000	1500

Retaining Rings Type E



Ring Number	H	G	W	F	T	Weight Per/M pcs
	Shaft	Groove Dia.	Groove Width	Free Dia.	Thickness	
E-6	.062	.052	.012	.051	.010	.030
E-9	.094	.074	.020	.073	.015	.058
E-12	.125	.095	.020	.094	.015	.087
SE-14	.140	.102	.020	.100	.015	.060
E-15	.156	.116	.029	.114	.025	.210
SE-17	.172	.127	.029	.125	.025	.240
E-18	.188	.147	.029	.145	.025	.290
SE-21	.219	.188	.029	.185	.025	.470
E-25	.250	.210	.029	.207	.025	.760
SE-31	.312	.250	.029	.243	.025	.570
E-37	.375	.303	.039	.300	.035	1.50
E-43	.438	.343	.039	.337	.035	1.50
E-50	.500	.396	.046	.392	.042	2.50
E-62	.625	.485	.046	.480	.042	3.20
SE-74	.750	.625	.056	.616	.050	4.30
E-87	.875	.675	.056	.668	.050	7.60
SE-98	.984	.835	.056	.822	.050	9.20
SE-118	1.188	1.079	.068	1.066	.062	11.30

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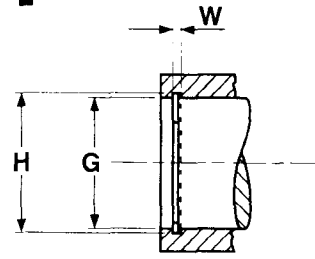
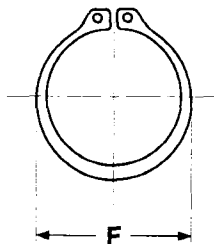
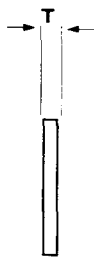
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Retaining Rings Type SH



Ring Number	H	G	W	F	T	Weight Per/M pcs
	Shaft	Groove Dia.	Groove Width	Free Dia.	Thickness	
SH-25	.250	.230	.029	.225	.025	.21
SH-28	.281	.261	.029	.256	.025	.24
SH-31	.312	.290	.029	.281	.025	.27
SH-34	.344	.321	.029	.309	.025	.31
SH-37	.375	.352	.029	.338	.025	.39
SH-40	.406	.382	.029	.366	.025	.43
SH-43	.438	.412	.029	.395	.025	.50
SH-50	.500	.468	.039	.461	.035	.91
SH-56	.562	.530	.039	.521	.035	1.10
SH-59	.594	.559	.039	.550	.035	1.20
SH-62	.625	.588	.039	.579	.035	1.30
SH-68	.688	.646	.046	.635	.042	1.80
SH-75	.750	.704	.046	.693	.042	2.10
SH-81	.812	.762	.046	.751	.042	2.50
SH-87	.875	.821	.046	.810	.042	2.80
SH-93	.938	.882	.046	.867	.042	3.10
SH-100	1.000	.940	.046	.925	.042	3.60
SH-106	1.062	.998	.056	.982	.050	4.80
SH-112	1.125	1.059	.056	1.041	.050	5.10
SH-118	1.188	1.118	.056	1.098	.050	5.60
SH-125	1.250	1.176	.056	1.156	.050	5.90
SH-131	1.312	1.232	.056	1.214	.050	6.80
SH-137	1.375	1.291	.056	1.272	.050	7.20
SH-143	1.438	1.350	.056	1.333	.050	8.10
SH-150	1.500	1.406	.056	1.387	.050	9.00
SH-156	1.562	1.468	.068	1.446	.062	12.40
SH-162	1.625	1.529	.068	1.503	.062	13.20
SH-168	1.688	1.589	.068	1.560	.062	14.80
SH-175	1.750	1.650	.068	1.618	.062	15.30
SH-181	1.812	1.708	.068	1.675	.062	16.20
SH-187	1.875	1.769	.068	1.735	.062	17.30
SH-200	2.000	1.886	.068	1.850	.062	19.00
SH-206	2.062	1.946	.086	1.906	.078	25.00
SH-212	2.125	2.003	.086	1.964	.078	26.10
SH-225	2.250	2.120	.086	2.081	.078	27.70
SH-231	2.312	2.178	.086	2.139	.078	28.00
SH-237	2.375	2.239	.086	2.197	.078	29.20
SH-243	2.438	2.299	.086	2.255	.078	29.50
SH-250	2.500	2.360	.086	2.313	.078	29.70
SH-262	2.625	2.481	.086	2.428	.078	35.00
SH-268	2.688	2.541	.086	2.485	.078	36.00
SH-275	2.750	2.602	.103	2.543	.093	42.50
SH-287	2.875	2.721	.103	2.659	.093	48.50
SH-300	3.000	2.838	.103	2.775	.093	52.00

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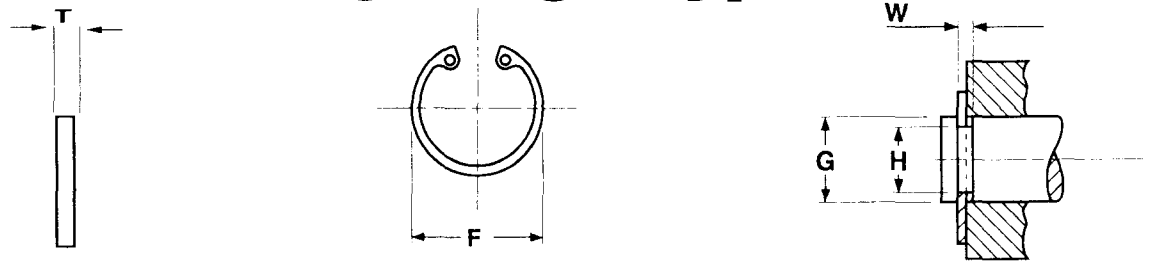
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Retaining Rings Type HO



Ring Number	H	G	W	F	T	Weight Per/M pcs
	Housing Dia.	Groove Dia.	Groove Width	Free Dia.	Thickness	
HO-25	.250	.268	.020	.280	.015	.08
HO-31	.312	.330	.020	.346	.015	.11
HO-37	.375	.397	.029	.415	.025	.25
HO-43	.438	.461	.029	.482	.025	.37
HO-50	.500	.530	.039	.548	.035	.70
HO-56	.562	.596	.039	.620	.035	.86
HO-62	.625	.665	.039	.694	.035	1.00
HO-68	.688	.732	.039	.763	.035	1.20
HO-75	.750	.796	.039	.831	.035	1.30
HO-81	.812	.862	.046	.901	.042	1.90
HO-87	.875	.931	.046	.971	.042	2.10
HO-93	.938	1.000	.046	1.041	.042	2.40
HO-100	1.000	1.066	.046	1.111	.042	2.70
HO-106	1.062	1.130	.056	1.180	.050	3.70
HO-112	1.125	1.197	.056	1.249	.050	4.00
HO-118	1.181	1.255	.056	1.319	.050	4.30
HO-125	1.250	1.330	.056	1.388	.050	4.80
HO-131	1.312	1.396	.056	1.456	.050	5.00
HO-137	1.375	1.461	.056	1.526	.050	5.10
HO-143	1.438	1.528	.056	1.596	.050	5.80
HO-150	1.500	1.594	.056	1.660	.050	6.50
HO-156	1.562	1.658	.068	1.734	.062	8.90
HO-162	1.625	1.725	.068	1.804	.062	10.00
HO-168	1.688	1.792	.068	1.874	.062	10.80
HO-175	1.750	1.858	.068	1.942	.062	10.30
HO-181	1.812	1.922	.068	2.012	.062	11.50
HO-187	1.875	1.989	.068	2.072	.062	12.80
HO-193	1.938	2.056	.068	2.141	.062	13.30
HO-200	2.000	2.122	.068	2.210	.062	14.00
HO-206	2.062	2.186	.086	2.280	.078	18.00
HO-212	2.125	2.251	.086	2.350	.078	19.40
HO-218	2.188	2.318	.086	2.415	.078	19.60
HO-225	2.250	2.382	.086	2.490	.078	21.80
HO-231	2.312	2.450	.086	2.560	.078	22.60
HO-237	2.375	2.517	.086	2.630	.078	23.20
HO-244	2.440	2.584	.086	2.702	.078	25.40
HO-250	2.500	2.648	.086	2.775	.078	25.50
HO-256	2.562	2.714	.103	2.844	.093	34.00
HO-262	2.625	2.781	.103	2.910	.093	34.50
HO-268	2.688	2.848	.103	2.980	.093	35.00
HO-275	2.750	2.914	.103	3.050	.093	35.50
HO-281	2.812	2.980	.103	3.121	.093	36.00
HO-287	2.875	3.051	.103	3.191	.093	41.00
HO-300	3.000	3.182	.103	3.325	.093	42.50

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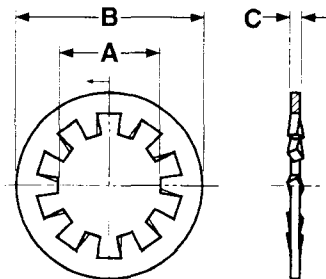
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Lock Washers

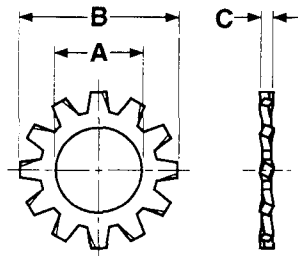
Internal Tooth

Nominal Washer Size	A Inside Diameter		B Outside Diameter		C Thickness	
	Min.	Max.	Max.	Min.	Max.	Min.
2 0.086	0.089	0.095	0.200	0.175	0.015	0.010
4 0.112	0.115	0.123	0.270	0.255	0.019	0.015
6 0.138	0.141	0.150	0.295	0.275	0.021	0.017
8 0.164	0.168	0.176	0.340	0.325	0.023	0.018
10 0.190	0.195	0.204	0.381	0.365	0.025	0.020
12 0.216	0.221	0.231	0.410	0.394	0.025	0.020
1/4 0.250	0.256	0.267	0.478	0.460	0.028	0.023
5/16 0.312	0.320	0.332	0.610	0.594	0.034	0.028
3/8 0.375	0.384	0.398	0.692	0.670	0.040	0.032
7/16 0.438	0.448	0.464	0.789	0.740	0.040	0.032
1/2 0.500	0.512	0.530	0.900	0.867	0.045	0.037
5/8 0.625	0.640	0.663	1.071	1.045	0.050	0.042
1/8 Pipe	0.425	0.410	0.615	0.595	0.022	0.017



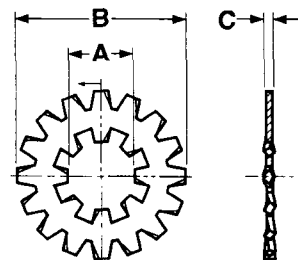
External Tooth

Nominal Washer Size	A Inside Diameter		B Outside Diameter		C Thickness	
	Min.	Max.	Max.	Min.	Max.	Min.
4 0.112	0.115	0.123	0.260	0.245	0.019	0.015
6 0.138	0.141	0.150	0.320	0.305	0.022	0.016
8 0.164	0.168	0.176	0.381	0.365	0.023	0.018
10 0.190	0.195	0.204	0.410	0.395	0.025	0.020
12 0.216	0.221	0.231	0.475	0.460	0.028	0.023
1/4 0.250	0.256	0.267	0.510	0.494	0.028	0.023
5/16 0.312	0.320	0.332	0.610	0.588	0.034	0.028
3/8 0.375	0.384	0.398	0.694	0.670	0.040	0.032
7/16 0.438	0.448	0.464	0.760	0.740	0.040	0.032
1/2 0.500	0.513	0.530	0.900	0.880	0.045	0.037
5/8 0.625	0.641	0.663	1.070	1.045	0.050	0.042

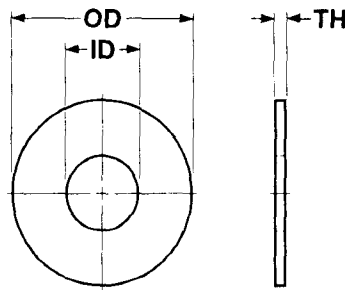


Internal – External Tooth

Nominal Washer Size	A Inside Diameter		B Outside Diameter		C Thickness	
	Min.	Max.	Max.	Min.	Max.	Min.
6 0.138	0.141	0.150	0.510	0.495	0.028	0.023
8 0.164	0.168	0.176	0.510	0.495	0.028	0.023
10 0.190	0.195	0.204	0.610	0.580	0.034	0.028
1/4 0.250	0.256	0.267	0.760	0.725	0.040	0.032



Flat Washers



Machine Screw

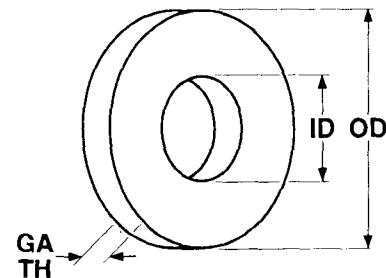
NO	ID	OD	TH	WT/M
2	.092	.219	.018	.16
4	.125	.280	.026	.36
5	.140	.280	.026	.33
6	.150	.375	.032	.83
8	.170	.375	.032	.79
10	.203	.438	.032	1.10
12	.227	.500	.048	2.22
14	.265	.562	.048	2.70

Fender Washers

Bolt Size	ID	OD	TH	Approx No. in 20 #
10	7/32	1	.051	1.4M
			.080	
1/4	9/32	1	.051	1.5M
			.080	
1/4	9/32	1-1/4	.051	.92M
			.080	
1/4	9/32	1-1/2	.051	.62M
			.080	
5/16	11/32	1-1/4	.051	.96M
			.080	
5/16	11/32	1-1/2	.051	.64M
			.080	
3/8	13/32	1-1/4	.051	.94M
			.080	
3/8	13/32	1-1/2	.051	.66M
			.080	
1/2	17/32	2	.051	.38M
			.080	

USS Washers

Bolt Size, In.	Outside Dia., In.	Inside Dia., In.	American Standard Gauge	Approx. Lbs. Per M Pcs.	Approx. No./Pcs. Per Lb.	Approx. No./Pcs. Per 20Lbs
3/16	9/16	1/4	18 (3/64)	2.8	361	7,220
1/4	3/4	5/16	16 (1/16)	6.7	149	2,980
5/16	7/8	3/8	14 (5/64)	11.5	87	1,740
3/8	1	7/16	14 (5/64)	14.9	67	1,340
7/16	1-1/4	1/2	14 (5/64)	24.4	41	820
1/2	1-3/8	9/16	12 (7/64)	38.5	26	520
9/16	1-1/2	5/8	12 (7/64)	45.5	22	440
5/8	1-3/4	1-1/16	10 (9/64)	77	13	260
3/4	2	1-3/16	9 (5/32)	110	9.1	182
7/8	2-1/4	1-5/16	8 (11/64)	153	6.5	130
1	2-1/2	1-1/16	8 (11/64)	188	5.3	106
1-1/8	2-3/4	1-1/4	8 (11/64)	220	4.5	90
1-1/4	3	1-3/8	8 (11/64)	260	3.8	76
1-3/8	3-1/4	1-1/2	7 (3/16)	333	3	60
1-1/2	3-1/2	1-5/8	7 (3/16)	385	2.6	52
1-5/8	3-3/4	1-3/4	7 (3/16)	448	2.3	46
1-3/4	4	1-7/8	7 (3/16)	500	2	40
1-7/8	4-1/4	2	7 (3/16)	569	1.8	36
2	4-1/2	2-1/8	7 (3/16)	630	1.6	32
2-1/4	4-3/4	2-3/8	5 (7/32)	826	1.2	24
2-1/2	5	2-5/8	4 (15/64)	961	1	20
2-3/4	5-1/4	2-7/8	3 (1/4)	1100	.9	18
3	5-1/2	3-1/8	2 (5/32)	1300	.8	16



SAE Washers

Bolt Size, In.	Outside Dia., In.	Inside Dia., In.	American Standard Gauge	Approx. Lbs. Per M Pcs.	Approx. No./Pcs. Per Lb.	Approx. No./Pcs. Per 20Lbs
4	5/16	1/8	21 (1/32)	.58	1650	33,000
6	3/8	5/32	18 (3/64)	1.26	790	15,800
8	7/16	3/16	18 (3/64)	1.7	585	11,700
3/16	1/2	7/32	18 (3/64)	2.3	435	8,700
12	9/16	1/4	16 (1/16)	3.4	280	5,600
1/4	5/8	9/32	16 (1/16)	4.5	222	4,400
5/16	11/16	11/32	16 (1/16)	5.2	192	3,840
3/8	13/16	13/32	16 (1/16)	7.2	140	2,800
7/16	59/64	15/32	16 (1/16)	9.5	105	2,100
1/2	1-1/16	17/32	13 (3/32)	18.3	55	1,100
9/16	1-3/16	19/32	13 (3/32)	23.4	43	860
5/8	1-5/16	21/32	13 (3/32)	27.7	36	720
3/4	1-1/2	13/16	10 (9/64)	47.4	21	420
7/8	1-3/4	15/16	10 (9/64)	63	16	320
1	2	1-1/16	10 (9/64)	83	12	240
1-1/8	2-1/4	1-3/16	10 (9/64)	109	9.2	184
1-1/4	2-1/2	1-5/16	9 (5/32)	160	6.25	125
1-3/8	2-3/4	1-7/16	9 (5/32)	190	5.25	105
1-1/2	3	1-9/16	9 (5/32)	240	4.25	85

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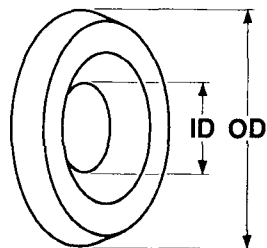
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Washer Specifications

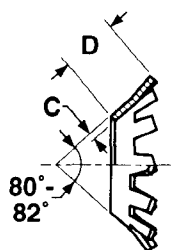
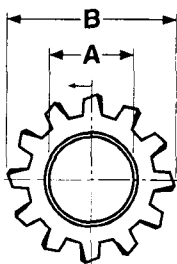
Countersunk

Finishing Washers

Screw Size	OD	ID		Wght Per M
		Min.	Max.	
6	.469	.170	.200	.8
8	.531	.180	.210	1.1
10	.593	.235	.265	1.4
12	.656	.259	.289	2.1
1/4	.781	.305	.335	2.7



Lock Washers



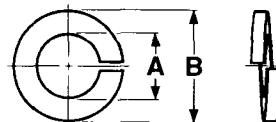
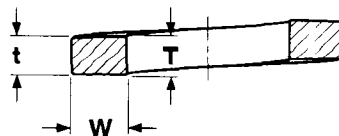
Countersunk External Tooth

Nominal Washer Size		A		B	C		D		Approx. Wght. Per 1000 Pcs.
		Inside Diameter		Outside Diameter	Thickness		Length		
		Min.	Max.	Ref.	Max.	Min.	Max.	Min.	
6	0.138	0.140	0.150	0.301	0.021	0.017	0.092	0.082	.25
8	0.164	0.167	0.177	0.340	0.021	0.017	0.105	0.088	.30
10	0.190	0.195	0.205	0.369	0.025	0.020	0.099	0.083	.40
1/4	0.250	0.255	0.267	0.468	0.025	0.020	0.128	0.113	.60

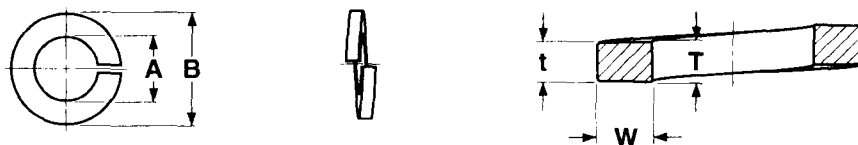
Split Lock Washers

Hi-Collar Helical Spring Lock Washers

Nominal Washer Size		A		B	W	$\frac{T+1}{2}$
		Inside		Outside Diameter	Washer Section	
		Diameter	Width		Thickness	
	Size	Min.	Max.	Max.	Min.	Min.
4	0.112	0.115	0.121	0.173	0.022	0.022
6	0.138	0.141	0.148	0.216	0.030	0.030
8	0.164	0.168	0.175	0.267	0.042	0.047
10	0.190	0.194	0.202	0.294	0.042	0.047
1/4	0.250	0.255	0.263	0.365	0.047	0.078
5/16	0.312	0.318	0.238	0.460	0.062	0.093
3/8	0.375	0.382	0.393	0.533	0.076	0.125



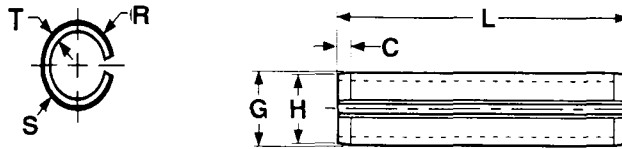
Split Lock Washers



Medium and Heavy Split Helical Spring Lock Washers

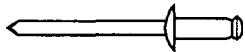
Nominal Washer Size		A		B		T		W	
		Inside Diameter		Outside Diameter		Mean Sect. Thickness (T + t) 2		Section Width	
		Max.	Min.	Med. Max.	Heavy Max.	Med. Min.	Heavy Min.	Med. Min.	Heavy Min.
2	0.086	0.094	0.088	0.172	0.182	0.020	0.025	0.035	0.040
3	0.099	0.107	0.101	0.195	0.209	0.025	0.031	0.040	0.047
4	0.112	0.120	0.114	0.209	0.223	0.025	0.031	0.040	0.047
5	0.125	0.133	0.127	0.236	0.252	0.031	0.040	0.047	0.055
6	0.138	0.148	0.141	0.250	0.266	0.031	0.040	0.047	0.055
8	0.164	0.174	0.167	0.293	0.307	0.040	0.047	0.055	0.062
10	0.190	0.200	0.193	0.334	0.350	0.047	0.056	0.062	0.070
12	0.216	0.227	0.220	0.377	0.391	0.056	0.063	0.070	0.077
1/4	0.250	0.262	0.254	0.489	0.491	0.062	0.077	0.109	0.110
5/16	0.312	0.326	0.317	0.586	0.596	0.078	0.097	0.125	0.130
3/8	0.375	0.390	0.380	0.683	0.691	0.094	0.115	0.141	0.145
7/16	0.438	0.455	0.443	0.779	0.787	0.109	0.133	0.156	0.160
1/2	0.500	0.518	0.506	0.873	0.883	0.125	0.151	0.171	0.176
9/16	0.562	0.582	0.570	0.971	0.981	0.141	0.170	0.188	0.193
5/8	0.625	0.650	0.635	1.079	1.093	0.156	0.189	0.203	0.210
11/16	0.688	0.713	0.698	1.176	1.192	0.172	0.207	0.219	0.227
3/4	0.750	0.775	0.760	1.271	1.291	0.188	0.226	0.234	0.244
13/16	0.812	0.843	0.824	1.367	1.391	0.203	0.246	0.250	0.262
7/8	0.875	0.905	0.887	1.464	1.494	0.219	0.266	0.266	0.281
15/16	0.938	0.970	0.950	1.560	1.594	0.234	0.284	0.281	0.298
1	1.000	1.042	1.017	1.661	1.705	0.250	0.306	0.297	0.319
1-1/16	1.062	1.107	1.080	1.756	1.808	0.266	0.326	0.312	0.338
1-1/8	1.125	1.172	1.144	1.853	1.909	0.281	0.345	0.328	0.356
1-3/16	1.188	1.237	1.208	1.950	2.008	0.297	0.364	0.344	0.373
1-1/4	1.250	1.302	1.271	2.045	2.113	0.312	0.384	0.359	0.393
1-5/16	1.312	1.366	1.334	2.141	2.211	0.328	0.403	0.375	0.410
1-3/8	1.375	1.432	1.398	2.239	2.311	0.344	0.422	0.391	0.427
1-7/16	1.438	1.497	1.462	2.334	2.406	0.359	0.440	0.406	0.442
1-1/2	1.500	1.561	1.525	2.430	2.502	0.375	0.458	0.422	0.458

Spring Pins



G			H	C	Wall Thickness	Recommended Hole Size		Min. Double Shear Stngth In Pounds
Pin Diam. Nominal	Max. Diam. Go Ring Gage	$\frac{R + S + T}{3}$	Chamfer Diam. Max.	Chamfer Length Nom.		Min.	Max.	
.062	.069	.066	.059	.011	.012	.062	.065	425
.078	.086	.083	.075	.014	.018	.078	.081	650
.094	.103	.099	.091	.018	.022	.094	.097	1,000
.125	.135	.131	.122	.024	.028	.125	.129	2,100
.156	.167	.162	.151	.028	.032	.156	.160	3,000
.187	.199	.194	.182	.036	.040	.187	.192	4,400
.219	.232	.226	.214	.042	.048	.219	.224	5,700
.250	.264	.258	.245	.042	.050	.250	.256	7,700
.312	.328	.321	.306	.060	.062	.312	.318	11,500
.375	.392	.385	.368	.060	.077	.375	.382	17,600
.437	.456	.448	.430	.060	.077	.437	.445	20,000
.500	.521	.513	.485	.060	.094	.500	.510	25,800

Comparison of Part Numbers



Blind Rivets Steel Rivet Steel Mandrel

PART NO.	AFC	POP	MARSON	STAR	CELUS	CHERRY	GESIPA
SDS41	SBS41	SD41BS	SB4-1	4-1SSD	S/S41D	SSP-41	GSMD41S
SDS42	SBS42	SD42BS	SB4-2	4-2SSD	S/S42D	SSP-42	GSMD42S
SDS43	SBS43	SD43BS	SB4-3	4-3SSD	S/S43D	SSP-43	GSMD43S
SDS44	SBS44	SD44BS	SB4-4	4-4SSD	S/S44D	SSP-44	GSMD44S
SDS45	SBS45	SD45BS	SB4-5	4-5SSD	S/S45D	SSP-45	GSMD45S
SDS46	SBS46	SD46BS	SB4-6	4-6SSD	S/S46D	SSP-46	GSMD46S
SDS52	SBS52	SD52BS	SB5-2	5-2SSD	S/S52D	SSP-52	GSMD52S
SDS53	SBS53	—	SB5-3	5-3SSD	S/S53D	—	GSMD53S
SDS54	SBS54	SD54BS	SB5-4	5-4SSD	S/S54D	SSP-54	GSMD54S
SDS56	SBS56	SD56BS	SB5-6	5-6SSD	S/S56D	SSP-56	GSMD56S
SDS58	SBS58	—	SB5-8	5-8SSD	S/S58D	SSP-58	GSMD58S
SDS62	SBS62	SD62BS	SB6-2	6-2SSD	S/S62D	SSP-62	GSMD62S
SDS64	SBS64	SD64BS	SB6-4	6-4SSD	S/S64D	SSP-64	GSMD64S
SDS66	SBS66	SD66BS	SB6-6	6-6SSD	S/S66D	SSP-66	GSMD66S
SDS68	SBS68	SD68BS	SB6-8	6-8SSD	S/S68D	SSP-68	GSMD68S
SDS610	SBS610	SD610BS	SB6-10	6-10SSD	S/S810D	SSP-610	GSMD610S

Copper Rivet Steel Mandrel

PART NO.	AFC	POP	MARSON	STAR	CELUS	CHERRY	GESIPA
KDS42	CBS42	CD42BS	CB4-2	4-2CCD	C/S42D	USP-42	GSMD-42C
KDS43	CBS43	CD43BS	CB4-34	4-3CCD	C/S43D	USP-43	GSMD43C

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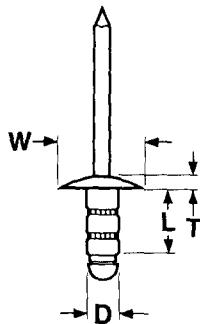
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Comparison of Part Numbers

Steel Rivet Steel Mandrel Large Flange

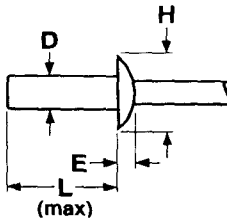
PART NO.	AFC	POP	MARSON	STAR	CELUS	CHERRY	GESIPA
SDS64L	SBS64L	SD64BSLF	SBL6-4	6-4SSLF	S/S64LF	SSL-64	GSML64S
SDS66L	SBS66L	SD66BSLF	SBL6-6	6-6SSLF	S/S66LF	SSL-66	GSML66S
SDS68L	SBS68L	SD68BSLF	SBL6-8	6-8SSLF	S/S68LF	SSL-68	GSML68S
SDS610L	SBS610L	SD610BSLF	SBL6-10	6-10SSLF	S/S610LF	SSL-610	GSML610S

Multi-Grip Blind Rivets



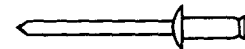
Part #	D	L	Grip Range	W	T
	Body Diam.	Length		Head	
				Width	Thick
MGAS43	1/8"	.315	0-.197	.256	.032
MGAS45	1/8"	.450	0-.335	.256	.032
MGAS53	5/32"	.374	0-.216	.315	.045
MGAS63	3/16"	.390	0-.197	.375	.051
MGAS66	3/16"	.590	0-.390	.375	.051

Closed End Rivets



Part Number	D	Hole Size & Drill No.	Grip Range Inches	L	H	E
	Rivet Body Diam.			Length Under Head	Head Diam.	Head Height
ADSC62	.187	.192-.196 #11	.063-.125	.345	.375	.081
ADSC64	(3/16)		.126-.250	.470	.375	.081
ADSC66			.251-.375	.595	.375	.081
ADSC68			.376-.500	.720	.375	.081

Blind Rivets



A Breakdown of our Part Numbers

RIVET MATERIAL A — ALUMINUM S — STEEL (ZP) SS - STAINLESS

MANDREL MATERIAL A — ALUMINUM S — STEEL (ZP) SS - STAINLESS

GRIP RANGE In 16ths of an inch ($6/16 = 3/8$)

ADA66L

L This L indicates that the dome head is the Large Flange style.

RIVET DIAMETER in 32nd's of an inch ($6/32 = 3/16$)

HEAD STYLE D Dome

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Comparison of Part Numbers

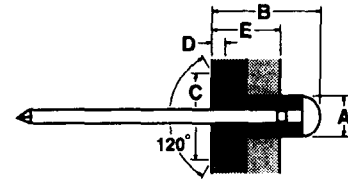
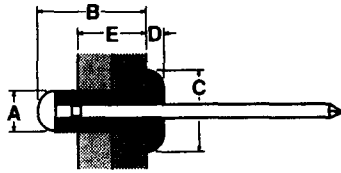
Stainless Steel Rivet Stainless Steel Mandrel Aluminum Rivet Aluminum Mandrel

PART NO.	AFC	POP	MARSON	STAR	CELUS	CHERRY	GESIPA
ADA41	ABA41	AD41ABS	AB4-1A	4-1AAD	A/A41D	AAP41	GAMD41A
ADA42	ABA42	AD42ABS	AB4-2A	4-2AAD	A/A42D	AAP42	GAMD42A
ADA43	ABA43	AD43ABS	AB4-3A	4-3AAD	A/A43D	AAP43	GAMD43A
ADA44	ABA44	AD44ABS	AB4-4A	4-4AAD	A/A44D	AAP44	GAMD44A
ADA45	ABA45	AD45ABS	AB4-5A	4-5AAD	A/A45D	AAP45	GAMD45A
ADA46	ABA46	AD46ABS	AB4-6A	4-6AAD	A/A46D	AAP46	GAMD46A
ADA48	ABA48	AD48ABS	AB4-8A	4-8AAD	A/A48D	AAP48	GAMD48A
ADA52	ABA52	AD52ABS	AB5-2A	5-2AAD	A/A52D	AAP52	GAMD52A
ADA53	ABA53	—	AB5-3A	5-3AAD	A/A53D	—	GAMD53A
ADA54	ABA54	AD54ABS	AB5-4A	5-4AAD	A/A54D	AAP54	GAMD54A
ADA56	ABA56	AD56ABS	AB5-6A	5-6AAD	A/A56D	AAP56	GAMD56A
ADA58	ABA58	AD58ABS	AB5-8A	5-8AAD	A/A58D	AAP58	GAMD58A
ADA510	ABA510	—	—	—	—	AAP10	—
ADA512	—	—	—	—	—	—	—
ADA62	ABA62	AD62ABS	AB6-2A	6-2AAD	A/A62D	AAP62	GAMD62A
ADA64	ABA64	AD64ABS	AB6-4A	6-4AAD	A/A64D	AAP64	GAMD64A
ADA66	ABA66	AD66ABS	AB6-6A	6-6AAD	A/A66D	AAP66	GAMD66A
ADA68	ABA68	AD68ABS	AB6-8A	6-8AAD	A/A68D	AAP68	GAMD68A
ADA610	ABA610	AD610ABS	AB6-10A	6-10AAD	A/A610D	AAP610	GAMD610A
ADA612	ABA612	AD612ABS	AB6-12A	—	—	AAP612	GAMD612A
ADA614	—	—	—	—	—	—	GAMD614A
ADA616	—	—	—	—	—	—	GAMD616A
ADA618	—	—	—	—	—	—	—
ADA620	—	—	—	—	—	—	—
ADA622	—	—	—	—	—	—	—
SSDSS42	FBF42	SSD42SSBS	SSB4-2S	4-2SSDS	SS/SS42D	CCP-42	GSSMD42SS
SSDSS43	FBF43	SSD43SSBS	SSB4-3S	4-3SSDS	SS/SS43D	CCP-43	GSSMD43SS
SSDSS44	FBF44	SSD44SSBS	SSB4-4S	4-4SSDS	SS/SS44D	CCP-44	GSSMD43SS
SSDSS46	FBF46	SSD46SSBS	SSB4-6S	4-6SSDS	SS/SS46D	CCP-46	GSSMD46SS
SSDSS48	FBF48	SSD48SSBS	SSB4-8S	4-8SSDS	SS/SS48D	CCP-48	GSSMD48SS
SSDSS52	FBF52	SSD52SSBS	SSB5-2S	5-2SSDS	SS/SS52D	CCP-52	GSSMD53SS
SSDSS54	FBF54	SSD54SSBS	SSB5-4S	5-4SSDS	SS/SS54D	CCP-54	GSSMD54SS
SSDSS56	FBF56	SSD56SSBS	SSB5-6S	5-6SSDS	SS/SS56D	CCP-56	GSSMD56SS
SSDSS58	FBF58	SSD58SSBS	SSB5-8S	5-8SSDS	SS/SS58D	CCP-58	GSSMD58SS
SSDSS62	FBF62	SSD62SSBS	SSB6-2S	6-2SSDS	SS/SS62D	CCP-62	GSSMD62SS
SSDSS64	FBF64	SSD64SSBS	SSB6-4S	6-4SSDS	SS/SS64D	CCP-64	GSSMD64SS
SSDSS66	FBF66	SSD66SSBS	SSB6-6S	6-6SSDS	SS/SS66D	CCP-66	GSSMD66SS
SSDSS68	FBF68	SSD68SSBS	SSB6-8S	6-8SSDS	SS/SS68D	CCP-68	GSSMD68SS

Aluminum Rivet Aluminum Mandrel Large Flange

PART NO.	AFC	POP	MARSON	STAR	CELUS	CHERRY	GESIPA
ADA44L	ABA44L	AD44BSLF	ABL4-4A	4-4AALF	A/A44LF	AAL-44	GAML44A
ADA64L	ABA64L	AD64BSLF	ABL6-4A	—	A/A64LF	AAL-64	GAML64A
ADA66L	ABA66L	AD66BSLF	ABL6-6A	6-6AALF	A/A66LF	AAL-66	GAML66A
ADA68L	ABA68L	AD68BSLF	ABL6-8A	6-8AALF	A/A68LF	AAL-68	GAML68A
ADA610L	ABA610L	AD610BSLF	ABL6-10A	6-10AALF	A/A610LF	AAL-610	GAML610A

U-FIX Brand Blind Rivet Specifications

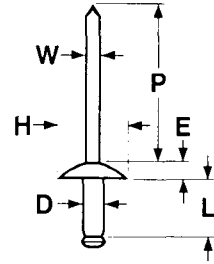


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KANE BRIDGE PART #	*AVDEL PART #	A	B	C	D	E	SHEAR STRENGTH Lbs.	TENSILE STRENGTH Lbs.	HOLE SIZE
		RIVET Dia.	BARREL LENGTH	HEAD Dia.	HEAD HEIGHT	GRIP RANGE			
X-0410	1692-0410	1/8	.350-.410	.313-.337	.033-.045	.031-.187	76	110	.136
X-0414	1692-0414	1/8	.480-.530	.313-.337	.033-.045	.125-.312	76	110	.136
X-0514	1692-0514	5/32	.490-.540	.363-.387	.046-.058	.125-.312	120	175	.166
X-0516	1692-0526	5/32	.550-.610	.363-.387	.046-.058	.156-.375	120	175	.166
X-0521	1692-0521	5/32	.715-.760	.363-.387	.046-.058	.236-.543	120	175	.166
X-0613	1692-0613	3/16	.470-.550	.613-.637	.063-.075	.062-.250	155	230	.199
X-0621	1692-0621	3/16	.720-.780	.613-.637	.063-.075	.250-.500	155	230	.199
X-0631	1692-0631	3/16	1.03-1.09	.613-.637	.063-.075	.500-.781	155	230	.199
D-0410	1693-0410	1/8	.350-.410	.193-.217	.033-.045	.031-.187	76	110	.136
D-0412	1693-0412	1/8	.410-.470	.198-.217	.033-.045	.093-.250	76	110	.136
D-0414	1693-0414	1/8	.480-.530	.193-.217	.033-.045	.125-.312	76	110	.136
D-0512	1693-0512	5/32	.430-.480	.233-.257	.046-.058	.046-.250	120	175	.166
D-0516	1693-0516	5/32	.550-.610	.233-.257	.046-.058	.156-.375	120	175	.166
D-0613	1693-0613	3/16	.470-.550	.327-.351	.059-.071	.062-.250	155	230	.199
D-0619	1693-0619	3/16	.660-.730	.327-.351	.059-.071	.187-.437	155	230	.199
D-0621	1693-0621	3/16	.720-.780	.327-.351	.059-.071	.250-.500	155	230	.199
D-0631	1693-0631	3/16	1.03-1.09	.327-.351	.059-.071	.500-.781	155	230	.199
L-0410	1691-0410	1/8	.350-.410	.243-.262	.034-.041	.031-.187	76	110	.136
L-0412	1691-0412	1/8	.410-.470	.243-.262	.034-.041	.093-.250	76	110	.136
L-0414	1691-0414	1/8	.480-.530	.243-.262	.034-.041	.125-.312	76	110	.136
L-0416	1691-0416	1/8	.540-.590	.243-.262	.034-.041	.187-.375	76	110	.136
L-0512	1691-0512	5/32	.430-.480	.302-.321	.044-.051	.046-.250	120	175	.166
L-0514	1691-0514	5/32	.490-.540	.302-.321	.044-.051	.125-.312	120	175	.166
L-0516	1691-0516	5/32	.550-.610	.302-.321	.044-.051	.156-.375	120	175	.166
L-0521	1691-0521	5/32	.715-.760	.302-.321	.044-.051	.236-.543	120	175	.166
L-0613	1691-0613	3/16	.470-.550	.377-.396	.054-.061	.062-.250	155	230	.199
L-0619	1691-0619	3/16	.660-.730	.377-.396	.054-.061	.187-.437	155	230	.199
L-0621	1691-0621	3/16	.720-.780	.377-.396	.054-.061	.250-.500	155	230	.199
L-0631	1691-0631	3/16	1.03-1.09	.377-.396	.054-.061	.500-.781	155	230	.199
C-0412	1682-0412	1/8	.410-.470	.198-.217	.026-.034	.093-.250	76	110	.136
C-0414	1682-0414	1/8	.480-.530	.198-.217	.026-.034	.155-.312	76	110	.136
C-0416	1682-0416	1/8	.540-.590	.198-.217	.026-.034	.187-.375	76	110	.136
C-0514	1682-0514	5/32	.490-.550	.238-.257	.028-.036	.109-.312	120	175	.166
C-0615	1682-0615	3/16	.520-.610	.343-.351	.047-.055	.125-.312	155	230	.199
C-0621	1682-0621	3/16	.710-.800	.343-.351	.047-.055	.250-.500	155	230	.199

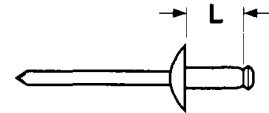
Blind Rivet Specifications

Dome Head — Large Flange Head



Rivet Number	Nominal Rivet Diameter	D		Recom- mended Hole Size		Drill Size	H		E	H		E	W	P		
		Body Diameter					Dome				Large Flange				Man- drel Di- ameter	Protru- sion
							Head Diameter		Head Height	Head Diameter		Head Height				
		Max.	Min.	Max.	Min.		Max.	Min.	Max.	Max.	Min.	Max.	Nom.	Min.		
3	3/32	0.096	0.090	0.100	0.097	#41	0.198	0.178	0.032	0.293	0.269	0.040	0.057	1.00		
4	1/8	0.128	0.122	0.133	0.129	#30	0.262	0.238	0.040	0.390	0.360	0.085	0.076	1.00		
5	5/32	0.159	0.153	0.164	0.160	#20	0.328	0.296	0.050	0.488	0.448	0.075	0.095	1.06		
6	3/16	0.191	0.183	0.196	0.192	#11	0.394	0.356	0.060	0.650	0.600	0.092	0.114	1.06		
8	1/4	0.255	0.246	0.261	0.57	F	0.525	0.475	0.080	0.780	0.720	0.107	0.151	1.25		

Application Data



Rivet Number	Grip Range	L	Weight Lb./M			Rivet Number	Grip Range	L	Weight Lb./M		
		Barrel Length	ADA	ADS	SDS			Barrel Length	ADA	ADS	SDS
31	.020-.062	.187	—	1.15	—	516	.876-1.000	1.175	—	5.70	—
32	.020-.125	.250	—	1.17	—	62	.020 - .125	.325	2.54	5.93	7.40
33	.087-.187	.312	—	1.20	—	64	.188 - .250	.450	2.73	6.15	8.00
34	.126-.250	.375	—	1.22	—	64L	.188 - .250	.450	3.74	6.93	—
41	.020-.062	.212	.88	2.19	2.50	66	.251 - .375	.575	2.89	6.77	9.18
42	.063-.125	.275	.90	2.22	2.70	66L	.251 - .375	.575	3.92	7.54	—
43	.126-.187	.337	.94	2.27	2.76	68	.376 - .500	.700	3.16	6.95	9.65
44	.188-.250	.400	1.03	2.37	2.93	68L	.376 - .500	.700	4.17	7.79	—
44L	.188-.250	.400	—	2.53	—	610	.510 - .625	.825	3.59	7.71	10.72
45	.251-.312	.462	1.10	2.49	3.24	610L	.510 - .625	.825	4.50	8.61	—
46	.313-.375	.525	1.15	2.53	3.30	612	.626 - .750	.950	3.72	7.95	—
48	.376-.500	.650	1.21	2.68	4.89	614	.751 - .875	1.075	4.10	9.81	—
52	.020-.125	.300	1.64	3.91	5.06	616	.876 - 1.000	1.200	4.22	10.05	—
53	.125-.187	.362	1.67	3.97	5.19	618	1.001 - 1.125	1.325	4.28	10.16	—
54	.188-.250	.425	1.72	4.00	5.60	620	1.126 - 1.250	1.450	4.35	10.32	—
56	.251-.375	.550	1.92	4.26	6.14	622	1.251 - 1.375	1.575	4.42	11.10	—
58	.376-.500	.675	2.10	4.65	—	84	.126 - .250	.500	—	13.40	—
510	.501-.625	.800	2.22	4.93	—	86	.251 - .375	.625	—	13.75	—
512	.626-.750	.925	2.44	5.22	—	88	.376 - .500	.750	—	14.10	—
514	.751-.875	1.050	3.30	5.53	—	810	.501 - .625	.875	—	15.95	—

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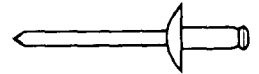
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Comparison of Part Numbers

Aluminum Rivet Steel Mandrel Large Flange

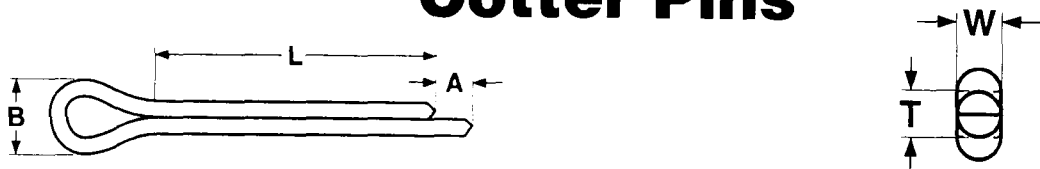


PART NO.	AFC	POP	MARSON	STAR	CELUS	CHERRY	GESIPA
ADS64L	ABS64L	—	ABL6-4	—	A/S64LF	BSL-64	GSML64A
ADS66L	ABS66L	AD66BSLF	ABL6-6	6-6ASLF	A/S66LF	BSL-66	GSML66A
ADS68L	ABS68L	AD68BSLF	ABL6-8	6-8ASLF	A/S68LF	BSL-68	GSML68A
ADS610L	ABS610L	AD610BSLF	ABL6-10	6-10ASLF	A/S610LF	BSL-610	GSML610A

Aluminum Rivet Steel Mandrel

PART NO.	AFC	POP	MARSON	STAR	CELUS	CHERRY	GESIPA
ADS31	—	—	—	—	—	—	—
ADS32	ABS32	AD32BS	AB3-2	32ASD	A/S32D	BSP32	GSMD32A
ADS33	—	—	—	—	—	—	—
ADS34	ABS34	AD34BS	AB3-4	34ASD	A/S34D	BSP34	GSMD34A
ADS41	ABS41	AD41BS	AB4-1	4-1ASD	A/S41D	BSP41	GSMD41A
ADS42	ABS42	AD42BS	AB4-2	4-2ASD	A/S42D	BSP42	GSMD42A
ADS43	ABS43	AD43BS	AB4-3	4-3ASD	A/S43	BSP43	GSMD43A
ADS44	ABS44	AD44BS	AB4-4	4-4ASD	A/S44D	BSP44	GSMD44A
ADS45	ABS45	AD45BS	AB4-5	4-5ASD	A/S45D	BSP45	GSMD45A
ADS46	ABS46	AD46BS	AB4-6	4-6ASD	A/S46D	BSP46	GSMD46A
ADS48	ABS48	AD48BS	AB4-8	4-8ASD	A/S48	BSP48	GSMD48A
ADS52	ABS52	AD52BS	AB5-2	5-2ASD	A/S52D	BSP52	GSMD52A
ADS53	ABS53	AD53BS	AB5-3	5-3ASD	A/S53D	—	GSMD53A
ADS54	ABS54	AD54BS	AB5-4	5-4ASD	A/S54D	BSP54	GSMD54A
ADS56	ABS56	AD56BS	AB5-6	5-6ASD	A/S56D	BSP56	GSMD56A
ADS58	ABS58	AD58BS	AB5-8	5-8ASD	A/S58D	BSP58	GSMD58A
ADS510	ABS510	—	—	—	—	BSP510	—
ADS512	—	—	—	—	—	—	—
ADS514	—	—	—	—	—	—	—
ADS516	—	—	—	—	—	—	—
ADS62	ABS62	AD62BS	AB6-2	6-2ASD	A/S62D	BSP62	GSMD62A
ADS64	ABS64	AD64BS	AB6-4	6-4ASD	A/S64D	BSP64	GSMD64A
ADS66	ABS66	AD66BS	AB6-6	6-6ASD	A/S66D	BSP66	GSMD66A
ADS68	ABS68	AD68BS	AB6-8	6-8ASD	A/S68D	BSP68	GSMD68A
ADS610	ABS610	AD610BS	AB6-10	6-10ASD	A/S610D	BSP610	GSMD610A
ADS612	ABS612	AD612BS	AB6-12	—	A/S612D	BSP612	GSMD612A
ADS614	—	—	—	—	—	—	GSMD614A
ADS616	—	—	—	—	—	—	—
ADS618	—	—	—	—	—	—	—
ADS620	—	—	—	—	—	—	—
ADS622	—	—	—	—	—	—	—
ADS84	ABS84	AD84BS	AB8-4	—	A/S84D	BSP84	GSMD84A
ADS86	ABS86	AD86BS	AB8-6	—	A/S86D	BSP86	GSMD86A
ADS88	ABS88	AD88BS	—	—	A/S88D	BSP88	GSMD88A

Cotter Pins



Nominal Size Or Basic Pin Diameter		T		W		B	A	Recomend. Hole Size
		Total Shank Diameter		Wire Width		Head Diameter	Extended Prong Length	
		Max.	Min.	Max.	Min.	Min.	Min.	
1/32	0.031	0.032	0.028	0.032	0.022	0.06	0.01	0.047
3/64	0.047	0.048	0.044	0.048	0.035	0.09	0.02	0.062
1/16	0.062	0.060	0.056	0.060	0.044	0.12	0.03	0.078
5/64	0.078	0.076	0.072	0.076	0.057	0.16	0.04	0.094
3/32	0.094	0.090	0.086	0.090	0.069	0.19	0.04	0.109
7/64	0.109	0.104	0.100	0.104	0.080	0.22	0.05	0.125
1/8	0.125	0.120	0.116	0.120	0.093	0.25	0.06	0.141
9/64	0.141	0.134	0.130	0.134	0.104	0.28	0.06	0.156
5/32	0.156	0.150	0.146	0.150	0.116	0.31	0.07	0.172
3/16	0.188	0.176	0.172	0.176	0.137	0.38	0.09	0.203
7/32	0.219	0.207	0.202	0.207	0.161	0.44	0.10	0.234
1/4	0.250	0.225	0.220	0.225	0.176	0.50	0.11	0.266
5/16	0.312	0.280	0.275	0.280	0.220	0.62	0.14	0.312
3/8	0.375	0.335	0.329	0.335	0.263	0.75	0.16	0.375
7/16	0.438	0.406	0.400	0.406	0.320	0.88	0.20	0.438
1/2	0.500	0.473	0.467	0.473	0.373	1.00	0.23	0.500
5/8	0.625	0.598	0.590	0.598	0.472	1.25	0.30	0.625
3/4	0.750	0.723	0.715	0.723	0.572	1.50	0.36	0.750

Weights of Cotter Pins

(Approximate weight of 1000 pins in pounds)

Screw Size Length (Inches)	1/16	3/32	1/8	5/32	3/16	1/4	5/16	3/8	1/2
1/4	.60	—	—	—	—	—	—	—	—
1/2	.60	1.30	2.70	—	—	—	—	—	—
3/4	.75	1.70	3.30	5.30	8.40	—	—	—	—
1	.95	2.20	4.30	6.90	10.40	18.90	—	—	—
1-1/4	—	2.60	5.10	8.00	12.10	20.70	36.30	—	—
1-1/2	—	3.10	5.60	9.50	13.90	24.20	40.10	—	—
1-3/4	—	3.50	6.60	10.30	15.30	26.80	44.10	—	—
2	—	4.00	7.40	11.50	17.10	29.70	51.80	—	154.00
2-1/4	—	4.45	8.25	13.40	18.90	32.90	55.60	79.00	160.00
2-1/2	—	4.95	8.90	14.00	20.30	34.50	59.40	86.50	186.00
3	—	6.00	10.50	16.50	23.70	40.30	67.70	104.10	203.00
3-1/2	—	—	—	—	27.10	46.90	76.50	112.30	226.00
4	—	—	—	—	30.30	52.00	83.80	124.30	253.00
5	—	—	—	—	—	60.00	102.90	152.40	—
6	—	—	—	—	—	—	—	167.50	—

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Insert Bits

Selecting the correct point size

Point Size	Body Diameter	Wood Screws	Machine Screws	Sheet Metal Screws
0		No. 0 1	No. 0 1	No. 0 1
1	3/16	2 3 4	2 3 4	2 3 4
2	1/4	5 6 7 8 9 10	5 6 8 10 — —	5 6 7 8 10 —
3	5/16	12 14 16	12 1/4 5/16	12 14
4	3/8	18 20 24	3/8 7/16 1/2	— — —

Weights

Weights of Wood Screws

(Approximate weight of 1000 steel wood screws in pounds)

Length (Inches) \ Screw Size	4	5	6	7	8	9	10	12	14
1/4	0.7	—	—	—	—	—	—	—	—
3/8	1.0	1.2	1.4	1.7	2.3	—	—	—	—
1/2	1.2	1.6	1.9	2.3	2.9	3.2	3.8	—	—
5/8	1.5	1.8	2.2	2.8	3.2	3.9	4.4	7.5	—
3/4	1.7	2.1	2.7	3.2	3.8	4.5	5.1	7.8	8.9
7/8	2.0	2.5	3.0	3.7	4.2	5.2	5.9	8.1	9.8
1	2.4	2.9	3.4	4.1	4.9	5.7	6.6	8.8	10.9
1-1/4	2.8	4.3	4.3	5.5	6.2	7.2	8.4	11.0	13.7
1-1/2	3.3	4.5	5.3	6.2	7.4	8.6	10.0	13.0	16.5
1-3/4	4.2	5.1	6.1	7.3	8.7	10.0	11.4	14.7	18.5
2	—	—	6.9	8.3	9.6	11.3	12.6	17.4	21.3
2-1/4	—	—	8.2	9.5	11.0	12.8	15.0	19.2	24.7
2-1/2	—	—	8.6	10.4	11.7	14.7	16.3	22.4	26.8
2-3/4	—	—	—	—	13.8	15.4	18.8	23.9	29.0
3	—	—	—	—	14.9	17.4	20.1	26.3	32.1
3-1/2	—	—	—	—	18.5	22.0	24.3	31.1	37.7
4	—	—	—	—	22.5	—	29.8	34.1	42.9

NOTES: 1. Brass Wood Screw weights are calculated by multiplying the above by 1.08.

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Weights

Weights of Machine Screws, Thread Rolling Screws, Thread Cutting Screws Type F, 23, 1 and Self Tapping Screws Type High-Low (Approximate weight of 1000 screws in pounds)

- NOTES:** 1. The weights below are based on Pan Head Machine Screws. Thread cutting screws will weigh slightly less depending on the size of point slot, also other head styles vary slightly from the weights below.
2. Brass Machine Screw weights are calculated by multiplying the above by 1.08.

Screw Size Length (Inches)	2-56	4-40	6-32	8-32	10-24	10-32	12-24	1/4-20	5/16-18	3/8-16
1/8	0.4	0.7	1.4	—	—	—	—	—	—	—
3/16	0.5	0.9	1.5	2.5	3.8	3.9	—	—	—	—
1/4	0.6	1.0	1.7	2.8	4.1	4.3	5.6	8.5	—	—
5/16	0.6	1.2	1.9	3.1	4.4	4.6	6.1	9.1	16.7	—
3/8	0.7	1.3	2.1	3.4	4.8	5.0	6.5	9.8	17.7	29.2
7/16	0.8	1.5	2.2	3.6	5.1	5.4	6.9	10.4	18.8	30.7
1/2	0.8	1.6	2.4	3.9	5.4	5.8	7.4	11.1	19.8	32.2
9/16	0.9	1.7	2.6	4.2	5.8	6.2	7.8	11.7	20.9	33.6
5/8	1.0	1.8	2.8	4.5	6.2	6.6	8.3	12.4	21.9	35.1
3/4	1.1	2.1	3.2	5.0	6.9	7.3	9.2	13.6	24.0	38.0
7/8	1.3	2.3	3.5	5.6	7.6	8.1	10.1	14.9	26.1	41.0
1	1.4	2.5	3.9	6.2	8.3	8.9	11.0	16.1	28.2	44.0
1-1/8	—	2.8	4.3	6.7	9.0	9.6	11.9	17.4	30.2	47.0
1-1/4	—	3.0	4.6	7.3	9.7	10.4	12.8	18.7	32.3	49.8
1-1/2	—	3.5	5.3	8.3	11.1	11.9	14.7	21.2	36.5	55.8
1-3/4	—	3.9	6.1	9.4	12.5	13.5	16.5	23.7	40.7	61.7
2	—	4.3	6.8	10.6	13.8	15.0	18.3	26.2	44.8	67.6
2-1/4	—	—	7.6	11.8	15.2	16.6	20.1	28.8	49.0	73.5
2-1/2	—	—	8.3	12.9	16.6	18.1	22.0	31.3	53.2	79.5
2-3/4	—	—	9.1	13.9	18.0	19.7	23.8	33.9	57.3	85.3
3	—	—	9.8	15.0	19.4	21.2	25.6	36.4	61.5	91.3
3-1/4	—	—	—	16.2	20.8	22.7	27.4	39.0	65.7	97.0
3-1/2	—	—	—	17.4	22.2	24.2	29.2	41.5	70.0	103.0
3-3/4	—	—	—	—	23.6	25.8	31.0	44.0	74.0	109.0
4	—	—	12.4	18.9	25.0	27.3	32.8	46.6	78.2	115.0
4-1/2	—	—	—	—	27.7	30.4	36.6	51.6	86.5	127.0
5	—	—	—	—	30.5	35.5	40.2	56.7	95.0	139.0
5-1/2	—	—	—	—	33.3	36.6	43.8	61.8	103.3	151.0
6	—	—	—	—	36.0	39.6	47.5	67.0	111.7	163.0

Weights of Self Tapping and Drilling Screws and Thread Cutting Screws Type 25

(Approximate weight of 1000 screws in pounds)

- NOTE:** The weights below are based on Pan Head Type AB Tapping Screws. Type B Tapping Screws will weigh slightly more, also other head styles will vary slightly from the weights below.

Screw Size Length (Inches)	2	4	6	8	10	12	14	5/16	3/8
3/16	0.4	0.8	1.3	—	—	—	—	—	—
1/4	0.5	1.0	1.4	2.4	—	—	—	—	—
5/16	0.6	1.1	1.7	2.6	—	—	—	16.7	—
3/8	0.7	1.2	1.9	2.8	4.3	5.7	—	17.7	29.2
1/2	0.8	1.4	2.2	3.3	4.8	6.6	9.4	19.8	32.2
5/8	0.9	1.6	2.5	3.8	5.4	7.3	10.5	21.9	35.1
3/4	1.0	1.9	2.9	4.2	5.9	8.1	11.5	24.0	38.0
7/8	—	2.1	3.2	4.7	6.5	8.9	12.6	26.1	41.0
1	—	2.3	3.6	5.2	7.1	9.7	13.7	28.2	44.0
1-1/4	—	—	4.3	6.2	8.3	11.5	15.9	32.3	49.8
1-1/2	—	—	5.0	7.2	9.5	13.2	18.1	36.5	55.8
1-3/4	—	—	5.7	8.1	10.7	14.8	20.4	40.7	61.7
2	—	—	—	9.0	11.9	16.4	22.5	44.8	67.6
2-1/4	—	—	—	—	13.1	18.1	24.7	49.0	73.5
2-1/2	—	—	—	—	14.3	19.8	26.9	53.2	79.5
2-3/4	—	—	—	—	—	21.4	29.1	57.3	85.3
3	—	—	—	—	16.5	23.0	31.3	61.6	91.3

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Weights

Round Head Drive Screws

(Approximate weight of 1000 screws in pounds.)

Length	00	0	2	4	6	8	10	12	14
1/8	.105	.211	.41	.8	1.2	—	—	—	—
3/16	.137	.275	.59	.9	1.5	2.4	—	—	—
1/4	.1428	.278	.61	1.0	1.7	2.6	3.4	—	—
5/16	.15	.360	.69	1.1	1.8	2.7	—	—	—
3/8	.16	.44	.79	1.2	2.0	3.2	4.0	5.9	8.56
1/2	—	.53	.96	—	2.4	3.4	4.6	6.82	9.7
5/8	—	—	—	—	2.8	3.6	5.2	7.62	10.7
3/4	—	—	—	—	—	—	—	8.52	12.2

Thumb Screws Plain and Shoulder

(Approximate weight of 1000 screws in pounds.)

Length	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2
1/4 P	10.5	13	17	19	22	27	32
1/4 S	13.8	16.3	20	22.5	25	30	—

Flat and Lock Washers

(Approximate weight of 1000 washers in pounds.)

Type Size	Machine Screw	Hi Collar	Internal Tooth	Int. Ext. Tooth	External Tooth	Medium Split	Fender	
							Size	Weight
2	.16	—	.05	—	—	.10	10 x 1	13.14
4	.36	.06	.14	—	.10	.15	1/4 x 1	12.80
5	.33	—	—	—	—	.24	1/4 x 1 1/4	20.60
6	.83	.15	.18	.25	.22	.27	1/4 x 1 1/2	30.18
8	.79	.41	.26	.30	.35	.50	5/16 x 1 1/4	20.10
10	1.10	.44	.39	.40	.37	.70	5/16 x 1 1/2	30.00
12	2.22	—	.48	—	.63	1.10	3/8 x 1 1/4	19.85
1/4	2.70	1.03	.61	.60	.66	2.20	3/8 x 1 1/2	29.75
5/16	—	1.96	1.23	—	1.13	3.80	1/2 x 2	51.68
3/8	—	3.82	1.91	—	1.51	6.00		
7/16	—	—	2.15	—	1.53	9.00		
1/2	—	—	3.29	—	2.62	12.70		
5/8	—	—	5.19	—	4.50	23.60		

Cotter Pins

(Approximate weight of 1000 pins in pounds.)

Screw Size Length (Inches)	1/16	3/32	1/8	5/32	3/16	1/4	5/16	3/8	1/2
1/4	.60	—	—	—	—	—	—	—	—
1/2	.60	1.30	2.70	—	—	—	—	—	—
3/4	.75	1.70	3.30	5.30	8.40	—	—	—	—
1	.95	2.20	4.30	6.90	10.40	18.90	—	—	—
1-1/4	—	2.60	5.10	8.00	12.10	20.70	36.30	—	—
1-1/2	—	3.10	5.60	9.50	13.90	24.20	40.10	—	—
1-3/4	—	3.50	6.60	10.30	15.30	26.80	44.10	—	—
2	—	4.00	7.40	11.50	17.10	29.70	51.80	—	154.00
2-1/4	—	4.45	8.25	13.40	18.90	32.90	55.60	79.00	160.00
2-1/2	—	4.95	8.90	14.00	20.30	34.50	59.40	86.50	186.00
3	—	6.00	10.50	16.50	23.70	40.30	67.70	104.10	203.00
3-1/2	—	—	—	—	27.10	46.90	76.50	112.30	226.00
4	—	—	—	—	30.30	52.00	83.80	124.30	253.00
5	—	—	—	—	—	60.00	102.90	152.40	—
6	—	—	—	—	—	—	—	167.50	—

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Weights of Lag Screws

(Approximate weight of 1000 screws in pounds)

Screw Size Length (Inches)	1/4	5/16	3/8	1/2	5/8	3/4
1	1.78	2.97	4.13	—	—	—
1-1/4	2.06	3.41	4.76	—	—	—
1-1/2	2.34	3.85	5.39	11.60	—	—
1-3/4	2.62	4.29	6.02	—	—	—
2	2.90	4.73	6.65	13.90	23.30	—
2-1/2	3.46	5.61	7.91	16.10	26.90	41.60
2-3/4	3.74	—	—	—	—	—
3	4.02	6.50	9.19	18.40	30.50	46.90
3-1/2	4.58	7.38	10.50	20.60	34.10	52.10
4	5.14	8.27	11.70	22.90	37.70	57.30
4-1/2	5.70	9.15	13.00	25.20	41.30	62.50
5	6.25	10.00	14.20	27.50	44.80	67.80
5-1/2	6.81	10.90	15.50	29.70	48.40	—
6	7.36	11.80	16.70	32.00	52.00	78.20
6-1/2	—	—	18.00	34.20	—	—
7	—	—	19.20	36.50	59.10	88.70
8	—	—	21.70	41.10	66.30	99.10
9	—	—	—	45.60	73.50	—
10	—	—	27.20	51.00	82.00	122.00
11	—	—	—	56.40	90.50	—
12	—	—	33.20	61.80	99.00	146.00

Elevator Bolts

(approximate weight of 100 pieces in pounds)

Screw Size Length (Inches)	1/4-20	5/16-18	3/8-16
1	2.00	3.60	5.70
1 1/4	2.40	4.10	6.40
1 1/2	2.80	4.70	7.10
1 3/4	3.10	5.20	7.85
2	3.40	5.70	8.70
2 1/2	4.10	6.80	9.70
3	4.80	12.30	11.70

Hex Panel Nuts

(approximate weight of 1000 pieces in pounds)

Thread Size	Part #	Weight
1/8-27	0202NP	5.00
1/8-27	0203NP	7.65
3/8-32	3708NP	2.50
3/8-32	3709NP	3.80
15/32-32	4603NP	2.46

Weights

U-Fix Brand Multi-Grip Blind Rivet Weight

(approximate weight of 1000 pieces in pounds)

Rivet Size \ Rivet Style	Lrge. Flange Dome	Dome	Low Profile	Counter- Sunk
0410	2.31	2.20	2.23	—
0412	2.62	2.38	2.40	2.36
0414	2.71	2.43	2.47	—
0416	—	—	2.51	—
0512	4.37	3.81	3.95	—
0514	—	—	—	3.81
0516	4.74	4.14	4.30	—
0521	4.94	4.34	4.59	—
0613	7.39	5.95	6.04	—
0615	—	—	—	5.93
0619	—	6.72	6.83	—
0621	8.00	6.83	6.92	6.70
0631	9.37	8.16	8.27	—

Step Bolts

(approximate weight of 100 pieces in pounds)

Screw Size \ Length (Inches)	10-24	1/2-20	5/16-18	3/8-16
3/4	—	1.90	3.36	—
1	1.60	2.00	3.60	6.09
1 1/4	1.90	2.40	4.10	6.40
1 1/2	2.20	2.80	4.85	7.10
2	—	3.40	5.70	8.70
2 1/2	—	—	—	9.70
3	—	—	—	10.74

SEMS

(approximate weight of 1000 pieces in pounds)

Screw Size \ Length (Inches)	4-40	6-32	8-32	10-24	10-32
1/4	1.1	1.8	—	—	—
5/16	1.2	1.9	3.1	—	—
3/8	1.3	2.2	3.2	4.7	5.1
1/2	1.5	2.5	3.8	5.2	6.0
5/8	—	—	—	—	6.7
3/4	—	—	—	—	7.3
1	—	—	—	—	9.2

Weights

Drywall, Deck and Particle Board Screws

(approximate weight of 1000 pieces in pounds)

Length (Inches) \ Screw Size	6	7	8	10
1	3.60	3.08	—	—
1 1/8	3.90	—	—	—
1 1/4	3.94	3.92	—	—
1 1/2	3.99	—	—	—
1 5/8	5.10	7.60	—	—
1 3/4	6.10	—	—	—
1 7/8	6.45	7.70	—	—
2	7.05	8.30	—	—
2 1/4	7.10	9.50	—	—
2 3/8	—	—	8.74	—
2 1/2	—	—	10.14	—
2 5/8	—	—	11.36	—
2 3/4	—	—	13.80	—
3	—	—	14.90	—
3 1/2	—	—	—	19.10
3 3/4	—	—	—	20.30
4	—	—	—	21.50
4 1/2	—	—	—	23.90
5	—	—	—	26.30
6	—	—	—	31.10

Weld Screws

(approximate weight of 1000 pieces in pounds)

Length (Inches) \ Screw Size	6-32	8-32	10-24	10-32
1/4	1.70	—	—	—
3/8	2.00	3.40	4.79	5.00
1/2	2.40	3.92	5.40	5.66
5/8	2.80	4.50	5.95	6.15
3/4	3.20	5.00	6.90	7.30
1	3.90	6.20	8.03	8.57

Plow Bolts

(approximate weight of 100 pieces in pounds)

Length (Inches) \ Screw Size	3/8-16	7/16-14	1/2-13	5/8-11
1	3.30	—	—	—
1 1/4	3.92	5.11	7.90	—
1 1/2	4.67	6.00	8.64	—
1 3/4	5.45	7.05	9.89	—
2	6.30	8.11	11.27	17.54
2 1/4	—	9.17	12.34	—
2 1/2	7.80	10.23	14.03	21.85
3	—	12.35	16.79	26.16

Nuts

(approximate weight of 1000 pieces in pounds)

Type Size	Castle	Hex Coupl.	Square Machine	Serrated Flange	Two Way Rev. Lock	Square	Slotted	Hex Jam	Finished Hex	Heavy Hex
6	—	—	2.36	3.65	—	—	—	—	—	—
8	—	—	2.89	3.50	3.87	—	—	—	—	—
10	—	—	3.75	6.23	4.70	—	—	—	—	—
12	—	—	6.90	—	—	—	—	—	—	—
1/4	—	18.70	7.21	9.00	7.70	8.93	6.03	5.15	7.14	11.60
5/16	—	122.70	14.05	12.30	11.40	18.10	9.40	7.67	10.70	17.20
3/8	—	111.60	18.81	17.80	16.80	26.30	13.10	10.50	15.05	31.40
7/16	—	—	—	34.50	29.10	43.60	23.60	18.60	26.48	41.60
1/2	—	103.60	—	49.00	27.40	57.80	31.60	26.20	34.64	65.40
9/16	—	—	—	—	60.20	—	49.40	36.80	53.25	81.50
5/8	75.73	174.40	—	89.20	75.00	108.00	60.70	49.30	72.00	119.00
3/4	119.60	282.00	—	142.60	119.00	154.00	103.00	77.00	111.20	193.00
7/8	179.33	—	—	—	189.00	245.00	171.00	120.00	188.20	297.00
1	259.20	717.00	—	—	282.00	363.00	250.00	176.00	262.80	425.00
1 1/8	—	—	—	—	—	525.00	358.00	247.00	388.33	592.00
1 1/4	—	—	—	—	—	706.00	475.00	361.00	562.85	786.00
1 3/8	—	—	—	—	—	—	655.00	479.00	697.00	1,020.00
1 1/2	—	—	—	—	—	1,220.00	829.00	609.00	907.50	1,310.00
1 5/8	—	—	—	—	—	—	—	—	1,251.50	1,620.00
1 3/4	—	—	—	—	—	—	—	1,000.00	1,336.00	2,040.00
1 7/8	—	—	—	—	—	—	—	—	—	2,410.00
2	—	—	—	—	—	—	—	1,600.00	2,233.33	2,990.00
2 1/4	—	—	—	—	—	—	—	—	3,170.00	4,190.00
2 1/2	—	—	—	—	—	—	—	—	4,350.00	5,640.00
2 3/4	—	—	—	—	—	—	—	—	5,730.00	7,380.00
3	—	—	—	—	—	—	—	—	7,400.00	9,500.00
3 1/4	—	—	—	—	—	—	—	—	—	11,940.00
3 1/2	—	—	—	—	—	—	—	—	—	15,260.00
3 3/4	—	—	—	—	—	—	—	—	—	18,120.00
4	—	—	—	—	—	—	—	—	—	21,800.00

Nuts

(approximate weight of 1000 pieces in pounds)

Type Size	Machine Screw	Small Pattern	K-Lock Nut	Nylon Insert Stop Nuts	Cold Forged Wing Nuts	Stamped Wing Nuts	Cap Nuts
2-56	0.40	—	—	—	—	—	—
3-48	0.40	—	—	—	—	—	—
4-40	1.10	3/16 X 1/16 0.30	1.20	1.40	—	—	—
5-40	2.10	—	2.28	—	—	—	—
6-32	2.10	1/4 X 3/32 1.00	2.30	2.60	3.80	3.00	4.00
8-32	2.70	1/4 X 3/32 0.80	3.10	4.20	7.50	3.00	4.00
		5/16 X 7/64 1.90	—	—	—	—	—
10-24	3.20	—	3.60	5.00	7.40	4.00	5.00
10-32	3.20	—	3.60	5.00	7.40	4.00	5.00
12-24	5.60	—	—	—	—	—	—
1/4-20	6.60	—	7.10	9.00	13.00	8.00	7.00
1/4-28	6.50	—	7.10	9.00	13.00	—	—
5/16-18	12.90	—	11.80	12.00	23.00	10.70	17
3/8-16	16.80	—	16.30	18.00	37.00	16.00	23

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Weights of Carriage Bolts

(approximate weight of 100 pieces in pounds)

Length (Inches)	Screw Size	10	1/4	5/16	3/8	7/16	1/2	5/8	3/4
1/2		.61	.15	1.45	—	—	—	—	—
5/8		.69	.34	1.87	—	—	—	—	—
3/4		.73	.64	2.27	3.66	—	—	—	—
1		.87	.89	2.68	4.26	5.91	7.94	—	—
1 1/4		1.06	1.23	3.14	4.86	6.73	9.10	—	—
1 1/2		1.25	1.56	3.67	5.66	7.66	10.30	—	—
1 3/4		1.45	1.90	4.19	6.38	8.69	11.70	—	—
2		1.64	2.24	4.72	7.14	9.72	13.10	21.70	33.20
2 1/4		1.84	2.57	5.24	7.90	10.90	14.50	—	—
2 1/2		2.03	2.91	5.77	8.66	11.90	15.80	25.90	39.20
2 3/4		—	3.25	6.29	9.41	13.00	17.20	—	—
3		2.42	3.58	6.82	10.20	14.00	18.60	30.10	45.30
3 1/4		—	3.92	7.34	10.90	—	20.00	—	—
3 1/2		2.81	4.26	7.87	11.70	16.10	21.40	34.30	51.30
3 3/4		—	4.59	8.39	12.40	—	22.80	—	—
4		—	4.93	8.92	13.20	18.10	24.20	38.50	57.40
4 1/2		—	5.61	10.00	14.70	20.20	26.90	42.70	63.40
5		—	6.28	11.10	16.30	22.30	29.70	46.90	69.40
5 1/2		—	6.96	12.20	17.80	24.50	32.40	51.10	75.50
6		—	7.65	13.30	19.40	26.60	35.10	55.30	81.50
6 1/2		—	8.22	14.10	20.60	—	37.20	59.10	87.10
7		—	8.89	15.20	22.20	—	39.50	63.30	93.10
7 1/2		—	9.60	16.20	23.70	—	42.10	67.50	99.20
8		—	10.20	17.30	25.20	—	44.70	71.60	105.20
8 1/2		—	—	18.70	27.70	—	48.90	75.80	—
9		—	—	19.60	29.30	—	53.10	80.00	117.20
9 1/2		—	—	20.50	30.90	—	57.30	84.20	—
10		—	—	39.14	32.50	—	61.50	88.40	129.20
11		—	—	—	34.10	—	69.90	96.80	141.20
11 1/2		—	—	—	—	—	74.10	—	—
12		—	—	—	37.30	—	78.30	105.20	153.20
13		—	—	—	—	—	86.70	—	—
14		—	—	—	—	—	95.10	122.00	177.20
15		—	—	—	—	—	103.50	—	—
16		—	—	—	—	—	111.90	—	—

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Weights of Hex Head Cap Screws

(Approximate weight of 100 screws in pounds)

	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1	1 1/8	1 1/4	1 3/8	1 1/2
3/8	1.05	—	—	—	—	—	—	—	—	—	—	—	—	—
1/2	1.18	1.99	2.93	—	—	—	—	—	—	—	—	—	—	—
5/8	1.31	2.20	3.24	—	—	—	—	—	—	—	—	—	—	—
3/4	1.44	2.41	3.55	5.08	8.10	—	—	—	—	—	—	—	—	—
7/8	1.57	2.62	3.86	5.50	8.66	—	—	—	—	—	—	—	—	—
1	1.74	2.83	4.17	5.92	9.22	11.28	15.16	24.46	36.78	51.42	70.4	94.3	121.9	156.9
1 1/4	2.08	3.37	4.86	6.76	10.34	12.71	16.93	27.06	40.35	56.10	76.3	101.7	130.8	167.6
1 1/2	2.43	3.91	5.64	7.82	11.59	14.14	18.70	29.66	43.92	60.78	82.2	109.1	139.7	178.4
1 3/4	2.77	4.45	6.42	8.88	12.97	15.89	20.66	32.26	47.49	65.46	88.1	116.6	148.6	189.1
2	3.12	4.99	7.19	9.94	14.35	17.64	22.82	35.12	51.06	70.14	94.0	124.0	157.5	199.8
2 1/4	3.46	5.52	7.97	11.00	15.73	19.39	24.97	38.23	54.96	74.82	99.9	131.5	166.4	210.6
2 1/2	3.81	6.06	8.74	12.06	17.11	21.14	27.13	41.34	59.19	79.92	105.8	138.9	175.3	221.3
2 3/4	4.15	6.60	9.52	13.12	18.49	22.90	29.28	44.45	63.42	85.44	112.3	146.3	184.2	232.0
3	4.50	7.14	10.30	14.18	19.87	24.65	31.44	47.56	67.65	90.96	119.3	154.4	193.1	242.8
3 1/4	4.84	7.68	11.07	15.24	21.25	26.40	33.59	50.67	71.88	96.48	126.3	163.0	202.8	253.5
3 1/2	5.19	8.21	11.85	16.30	22.63	28.15	35.75	53.78	76.11	102.00	133.3	171.7	213.3	265.1
3 3/4	5.53	8.75	12.62	17.36	24.01	29.90	37.90	56.89	80.34	107.52	140.3	180.3	223.8	277.6
4	5.88	9.29	13.40	18.41	25.39	31.65	40.06	60.00	84.57	113.04	147.3	188.9	234.2	290.0
4 1/4	6.41	10.07	14.59	19.95	27.07	33.23	42.70	62.44	86.22	116.84	153.2	196.4	243.6	301.6
4 1/2	6.57	10.37	14.95	20.53	28.15	35.15	44.37	66.22	93.03	124.08	161.3	206.2	255.2	314.9
4 3/4	6.83	10.78	15.54	21.35	29.27	36.55	46.14	68.86	96.75	129.04	167.8	214.4	265.4	327.5
5	7.26	11.44	16.50	22.65	30.91	38.65	48.68	72.44	101.49	135.12	175.4	223.5	276.2	339.9
5 1/4	7.55	11.89	17.20	23.55	32.14	40.19	50.62	75.33	105.54	140.52	182.4	232.4	287.2	353.5
5 1/2	7.95	12.52	18.06	24.77	33.67	42.16	52.99	78.66	109.95	146.16	189.4	240.8	297.1	364.8
5 3/4	8.26	13.02	18.78	25.76	35.01	43.84	55.10	81.80	114.34	152.0	196.0	250.4	308.9	379.4
6	8.64	13.6	19.6	26.9	36.4	45.66	57.3	84.9	118.4	157	203	258	318	390
6 1/4	8.88	14.0	20.2	27.3	37.2	—	59.5	87.9	122	164	211	270	330	405
6 1/2	9.22	14.5	20.9	28.3	38.6	49.16	61.6	90.9	127	170	218	278	341	417
6 3/4	9.55	15.0	21.7	29.4	39.5	—	63.7	93.9	131	175	225	286	351	430
7	9.89	15.5	22.5	30.4	40.9	52.66	65.8	96.9	135	180	232	295	362	442
7 1/4	10.2	16.1	23.2	31.4	42.3	—	67.9	100	139	186	238	303	372	455
7 1/2	10.6	16.6	24.0	32.5	43.5	56.16	70.0	103	143	191	245	311	383	467
7 3/4	10.9	17.1	24.7	33.5	44.9	—	72.0	106	147	196	252	320	393	480
8	11.2	17.7	25.5	34.5	46.1	59.66	74.1	109	151	202	259	328	404	492
8 1/2	11.9	18.7	27.0	36.6	48.8	—	78.3	115	159	213	272	345	424	517
9	12.6	19.8	28.5	38.6	51.5	—	82.4	121	168	223	286	362	446	542
9 1/2	13.3	20.8	30.1	40.7	54.2	—	86.6	127	176	234	300	379	466	567
10	13.9	21.9	31.6	42.8	57.0	—	90.8	133	184	245	313	395	488	592
10 1/2	14.6	22.9	33.1	44.8	59.6	—	94.9	139	192	255	327	412	508	617
11	15.3	24.0	34.6	46.9	62.3	—	99.1	145	201	266	340	429	530	642
11 1/2	15.9	25.0	36.1	48.9	65.0	—	103	151	209	277	354	446	550	667
12	16.6	26.1	37.6	51.0	67.6	—	107	158	217	288	368	462	572	692

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— Diameters —

Weights

Spring Pin

(approximate weight of 1000 pieces in pounds)

Nominal Diameter												
Length	.062	.078	.094	.125	.156	.187	.219	.250	.312	.375	.437	.500
0.187	.10	.20	—	—	—	—	—	—	—	—	—	—
0.250	.13	.27	.36	.60	—	—	—	—	—	—	—	—
0.312	.16	.34	.45	—	—	—	—	—	—	—	—	—
0.375	.19	.41	.54	.88	—	—	—	—	—	—	—	—
0.437	.22	.47	.62	1.03	1.56	—	—	—	—	—	—	—
0.500	.26	.54	.71	1.19	1.80	2.51	—	4.39	—	—	—	—
0.562	.29	.60	.79	1.34	2.03	2.85	3.95	—	—	—	—	—
0.625	.32	.66	.88	1.49	2.27	3.19	4.42	4.92	—	—	—	—
0.687	.35	.73	.96	1.65	2.50	3.52	4.89	5.51	—	—	—	—
0.750	.39	.79	1.05	1.80	2.74	3.85	5.35	6.21	9.88	—	—	—
0.812	.42	.86	1.13	1.96	2.97	4.18	5.82	6.79	10.75	—	—	—
0.875	.45	.92	1.22	2.12	3.21	4.53	6.29	7.38	11.63	—	—	—
0.937	.48	.98	1.31	2.27	3.45	4.86	6.75	7.97	12.51	—	—	—
1.000	.51	1.05	1.39	2.42	3.68	5.19	7.22	8.56	13.39	19.80	25.04	—
1.125	—	1.17	1.58	2.74	4.12	5.86	8.16	9.74	15.14	—	—	—
1.250	—	1.28	1.75	3.06	4.57	6.53	9.11	10.91	16.90	25.15	31.46	39.06
1.375	—	1.40	1.93	3.38	5.02	7.20	10.05	12.09	18.65	—	—	—
1.500	—	1.52	2.10	3.70	5.47	7.86	10.99	13.27	20.40	30.50	37.88	48.15
1.625	—	—	—	4.03	5.92	8.54	11.93	14.45	22.16	—	—	—
1.750	—	—	—	4.35	6.37	9.20	12.87	15.62	24.02	35.85	44.30	57.25
1.875	—	—	—	4.78	6.82	9.88	13.81	16.80	25.78	—	—	—
2.000	—	—	—	5.01	7.27	10.54	14.76	17.98	27.53	41.20	50.72	66.34
2.250	—	—	—	—	8.16	11.88	16.64	20.33	31.04	46.55	57.14	75.44
2.500	—	—	—	—	9.06	13.21	17.45	22.68	34.55	51.90	63.56	84.53
2.750	—	—	—	—	—	—	19.33	25.04	38.06	57.25	69.98	93.63
3.000	—	—	—	—	—	—	21.22	27.39	41.57	62.60	76.40	102.72
3.250	—	—	—	—	—	—	—	29.75	45.08	67.95	82.82	111.82
3.500	—	—	—	—	—	—	—	32.10	48.59	73.30	89.24	120.91
3.750	—	—	—	—	—	—	—	—	52.10	78.65	95.66	130.01
4.000	—	—	—	—	—	—	—	—	55.61	84.00	102.08	139.10

Self Clinching Studs

(approximate weight of 1000 pieces in pounds)

Length (Inches)	4-40	6-32	8-32	10-24	10-32	1/4-20
1/4	.60	.80	1.10	—	—	—
5/16	—	1.00	—	—	—	—
3/8	.90	1.20	1.90	2.40	2.50	—
1/2	1.10	1.70	2.40	3.20	3.20	5.50
5/8	1.40	1.90	2.90	3.90	3.90	6.50
3/4	—	2.30	3.40	4.70	4.80	8.20
7/8	—	—	—	—	—	9.50
1	—	3.80	4.60	6.10	6.30	10.60
1 1/8	—	—	—	—	—	11.90
1 1/4	—	—	5.90	—	8.10	13.30
1 1/2	—	—	7.00	—	—	—

Northwest Service Center

(510) 487-2100 / (408) 773-9910
800-824-5449 Fax: (510) 471-7018

> More Pages <

Southwest Service Center

(818) 967-6335 / (619) 236-0315
800-824-8567 / Fax: (818) 915-7065

Weights

Hanger Bolts

(approximate weight of 1000 pieces in pounds)

Length (Inches) \ Screw Size	10	1/4	5/16	3/8
1 1/2	8.00	14.00	22.00	—
1 3/4	9.00	16.00	26.00	—
2	11.00	19.00	31.00	45.00
2 1/4	—	21.00	35.00	—
2 1/2	13.00	24.00	39.00	58.00
2 3/4	—	—	43.00	—
3	16.00	29.00	47.00	70.00
3 1/2	—	34.00	55.00	82.00
3 3/4	—	—	59.00	—
4	—	39.00	63.00	94.00
4 1/2	—	44.00	71.00	108.00
5	—	49.00	79.00	118.00
5 1/2	—	—	88.00	130.00
6	—	59.00	96.00	142.00
8	—	—	—	190.00
10	—	—	—	238.00

Self Clinching Nuts

Size	Approx. Wght. Per M
4-40	1.40
6-32	1.18
8-32	1.67
10-24	1.90
10-32	1.90
1/4-20	5.70

Metric/Standard Conversion Chart for Sheet Metal Screws

Diameters		Lengths	
Standard (Inches)	Metric (Millimeters)	Standard (Inches)	Metric (Millimeters)
2	2.2	1/4	6.5
4	2.9	3/8	9.5
6	3.5	1/2	13
7	3.9	5/8	16
8	4.2	3/4	19
10	4.8	7/8	22
12	5.5	1	25
14	6.3	1-1/4	32
		1-1/2	38
		1-3/4	45
		2	50

All D.I.N. and I.S.O. Metric Sheet Metal Screws are actually standard inch sizes that are converted into millimeters. If you are quoting a metric sheet metal screw you can offer a standard sheet metal screw by using this chart.
Example:
#6 x 1/2 is also 3.5 x 13

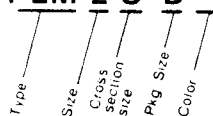
Military Standard Cross Reference to PANDUIT Part Numbers

CABLE TIE PART NUMBER SYSTEM

COLOR CHART

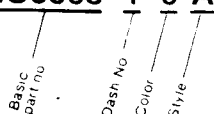
PANDUIT Part Number System

PLM 2 S-D



Military Standard Part Number System

MS3368-1-9 A

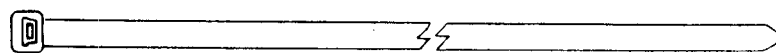


Color	Natural	Black*	Brown	Red	Orange	Yellow	Green	Blue	Purple	Gray
Panduit Color No	None	00	1	2	3	4	5	6	7	8
MS3367										
MS3368	9	0	1	2	3	4	5	6	7	8
MS17821										
MS17822										
Color No										
MS18034	NN	BK	BR	R	OR	Y	GN	BL	P	GY
MS18035										
Color No										

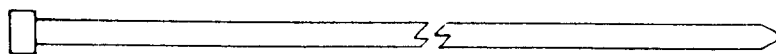
*Weather resistant per MIL-M-20693 composition A type II.

CABLE TIES

PANDUIT Part Number	Military Standard Part Number	Previous Military Standard Part Numbers
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PANDUIT® PAN-TY® Cable Ties (PLT)



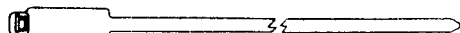
PANDUIT® STA-STRAP® Cable Ties (SST)

Applicable Specification: MIL-S-23190D
Applicable Standard: MS3367

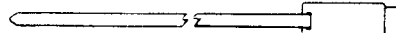
PLT2S-C (M)	MS3367-1.*	MS17821-1.*	MS18034-1.*
PLT4S-C (M)	MS3367-2.*	MS17821-2.*	MS18034-2.*
PLT4H-L (D) +	MS3367-3.*	MS17821-3.*	MS18034-3.*
PLT7M-M	MS3367-4.*	MS17821-4.*	MS18034-4.*
PLT1M-C (M)	MS3367-4.*	MS17821-4.*	MS18034-4.*
PLT1M-XMR	MS3367-4.*	None	None
PLT1.51-C (M)	MS3367-5.*	—	MS18034-5.*
PLT8LH-L (D) +	MS3367-6.*	—	MS18034-6.*
PLT3S-C (M)	MS3367-7.*	—	MS18034-7.*
SST2S-C (M)	MS3367-1.*	MS17821-1.*	MS18034-1.*
SST4S-C (M)	MS3367-2.*	MS17821-2.*	MS18034-2.*
SST4H-L (D) +	MS3367-3.*	MS17821-3.*	MS18034-3.*
SST1M-C (M)	MS3367-4.*	MS17821-4.*	MS18034-4.*
SST1.51-C (M)	MS3367-5.*	—	MS18034-5.*
SST8H-L (D) +	MS3367-6.*	—	MS18034-6.*
SST3S-C (M)	MS3367-7.*	—	MS18034-7.*

+ These parts also available in C.

*This digit represents color code. See Color Chart above.

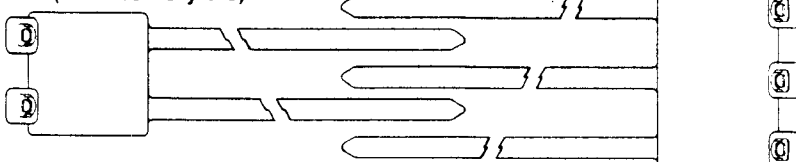


PANDUIT® PAN-TY® Marker Tie
(PLM2S & 4S - Style A)



PANDUIT® STA-STRAP® Marker Tie
(SSM2S & 4S - Style B)

PANDUIT® PAN-TY® Marker Tie
(PL2M2S - Style C)



PANDUIT® PAN-TY® Marker Tie
(PL3M2S - Style D)

PLM2S-C (D)	MS3368-1.*A	MS17822-1.*	MS18035-1.*
SSM2S-C (D)	MS3368-1.*B	MS17822-1.*	MS18035-1.*
PLM4S-C (D)	MS3368-2.*A	MS17822-2.*	MS18035-2.*
SSM4S-L (D)	MS3368-2.*B	MS17822-2.*	MS18035-2.*
PL2M2S-L (D)	MS3368-3.*C	—	MS18035-3.*
PL3M2S-L (D)	MS3368-4.*D	—	MS18035-4.*
PLM1M-C (M)	MS3368-5.*E	—	MS18035-5.*

*This digit represents color code. See Color Chart above.

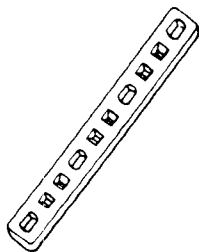


PANDUIT® PAN-TY® Marker Tie
(PLM1M - Style E)

Applicable Specification: MIL-S-23190D

Applicable Standard: MS3368

MOUNTING DEVICES



PANDUIT
Multiple Tie Plate (MTP)

Applicable Specification: MIL-S-23190D
Applicable Standard: MS3339

PANDUIT Part Number	Military Standard Part Number
---------------------	-------------------------------

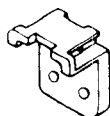
MTP1S-E6	MS3339-1-9
MTP2S-E6	MS3339-2-9
MTP3S-E6	MS3339-3-9
MTP4S-E6	MS3339-4-9
MTP5S-E6	MS3339-5-9
MTP1H-E6	MS3339-6-9
MTP2H-E6	MS3339-7-9
MTP3H-E6	MS3339-8-9
MTP4H-E6	MS3339-9-9
MTP5H-E6	MS3339-10-9
MTP6H-E6	MS3339-11-9



PANDUIT Lightning Hole Mount (LHM-Type IV)

Applicable Specification: MIL-S-23190D
Applicable Standard: MS3340

LHMS-S6	MS3340-1-9
---------	------------



PANDUIT Right Angle Mount (RAM-Type IV)

Applicable Specification: MIL-S-23190D
Applicable Standard: MS3341

RAMH-S6	MS3341-1-9
RAMS-S3	MS3341-2-9

Product Information

Bumpon™ Protective Products



May, 1993

Bumpon products are pressure sensitive backed molded polyurethane shapes.

They are made of a durable, resilient polyurethane polymer formulated especially for its unique high coefficient of friction and excellent resistance to marring and staining. An aggressive, high tack pressure sensitive adhesive protected with an easy release liner makes application fast and easy.

Standard Shapes

Transparent

Product Number
Colors
Width inches (mm)
Height inches (mm)
1

			
SJ-5302	SJ-5306	SJ-5303	SJ-5312
Transparent	Transparent	Transparent	Transparent
0.312 (7.9)	0.375 (9.5)	0.44 (11.1)	0.50 (12.7)
0.085 (2.2)	0.150 (3.8)	0.20 (5.0)	0.14 (3.5)
8x18 Matrix	6x9 Matrix	8x7 Matrix	8x7 Matrix

Hemisphere

Product Number
Colors
Width inches (mm)
Height inches (mm)
Form

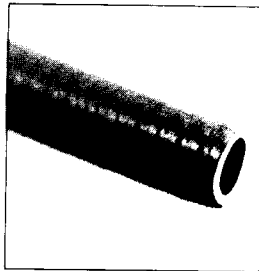
			
SJ-5003	SJ-5027	SJ-5017	SJ-5009
White, Gray, Brown, Black	White, Gray, Brown, Black	White, Gray, Brown, Black	White, Gray, Brown, Black
0.44 (11.1)	0.63 (16.0)	0.75 (19.0)	0.88 (22.3)
0.20 (5.0)	0.31 (7.9)	0.38 (9.6)	0.40 (10.1)
8x7 Matrix	5x8 Matrix	4x10 Matrix	3x8 Matrix

Cylindrical

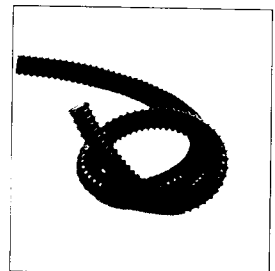
Product Number
Colors
Width inches (mm)
Height inches (mm)
Form

			
SJ-5012	SJ-5001	SJ-5744	SJ-5514
White, Gray, Brown, Black	Black, Gray	Black	White, Gray, Brown, Black
0.50 (12.7)	0.50 (12.7)	0.75 (19)	0.81 (20.6)
0.14 (3.5)	0.14 (3.5)	0.16 (4.0)	0.52 (13.1)
8x7 Matrix	5x8 Matrix	4x10 Matrix	4x1 Row

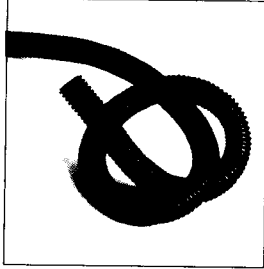
HEYCO® LIQUID TIGHT FITTINGS & CONDUITS



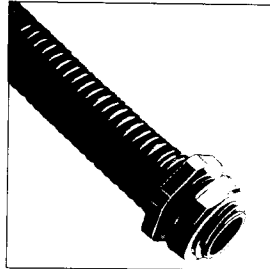
Heyco-Flex™ I Liquid Tight Conduit 1-2



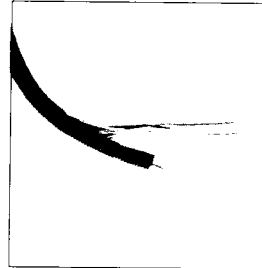
Heyco-Flex™ II Liquid Tight Tubing 1-3



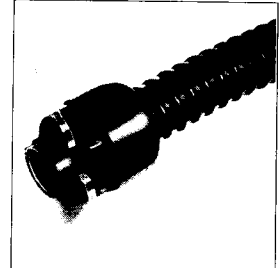
Heyco-Flex™ III Liquid Tight Halogen-Free Tubing 1-4



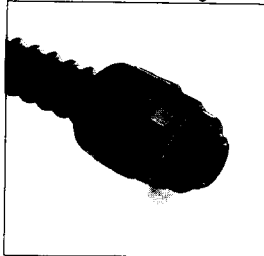
Heyco-Flex™ IV Industrial Grade Nylon Liquid Tight Tubing 1-5



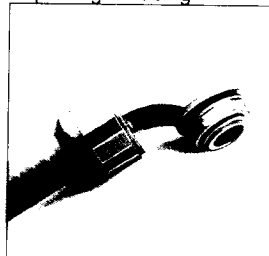
Heyco-Flex™ V Slit Convuluted Tubing 1-6



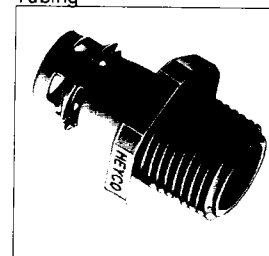
Heyco-Flex™ Nylon Snap-In Connector 1-7



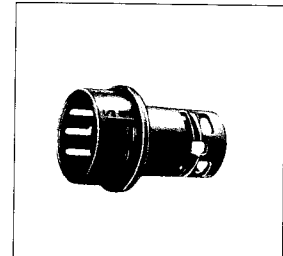
Heyco-Flex™ Nylon Straight Connectors 1-8



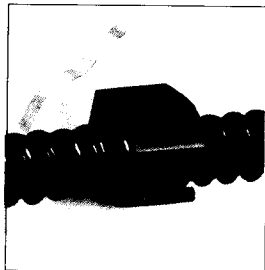
Heyco-Flex™ Nylon Sweep Connector 1-9



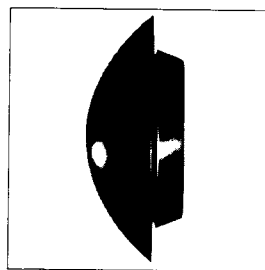
Heyco-Flex™ III Nylon Straight Connector 1-10



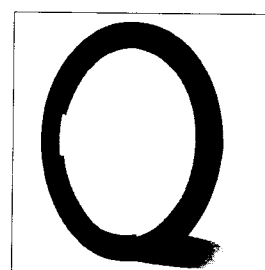
Heyco-Flex™ IV Nylon Snap-In Connector 1-11



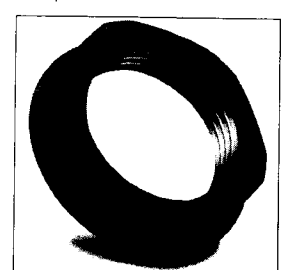
Heyco-Flex™ Mounting Brackets 1-12



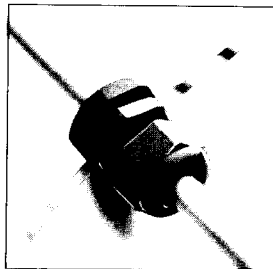
Liquid Tight Knock-out Seals 1-12



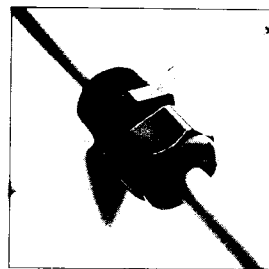
Sealing Washers 1-13



Nylon NPT & PG Locknuts 1-13



Liquid Tight PG Hubs Straight-Thru Fittings 1-14



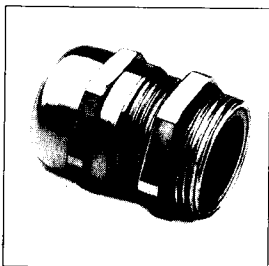
Liquid Tight NPT Hubs Straight-Thru Fittings 1-15



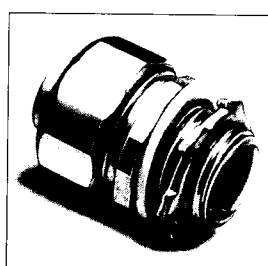
Liquid Tight "Long Threads" Straight-Thru Fittings 1-16



Liquid Tight Metric Hub Straight-Thru Fittings 1-16



Metal Liquid Tight Straight-Thru Fittings 1-17



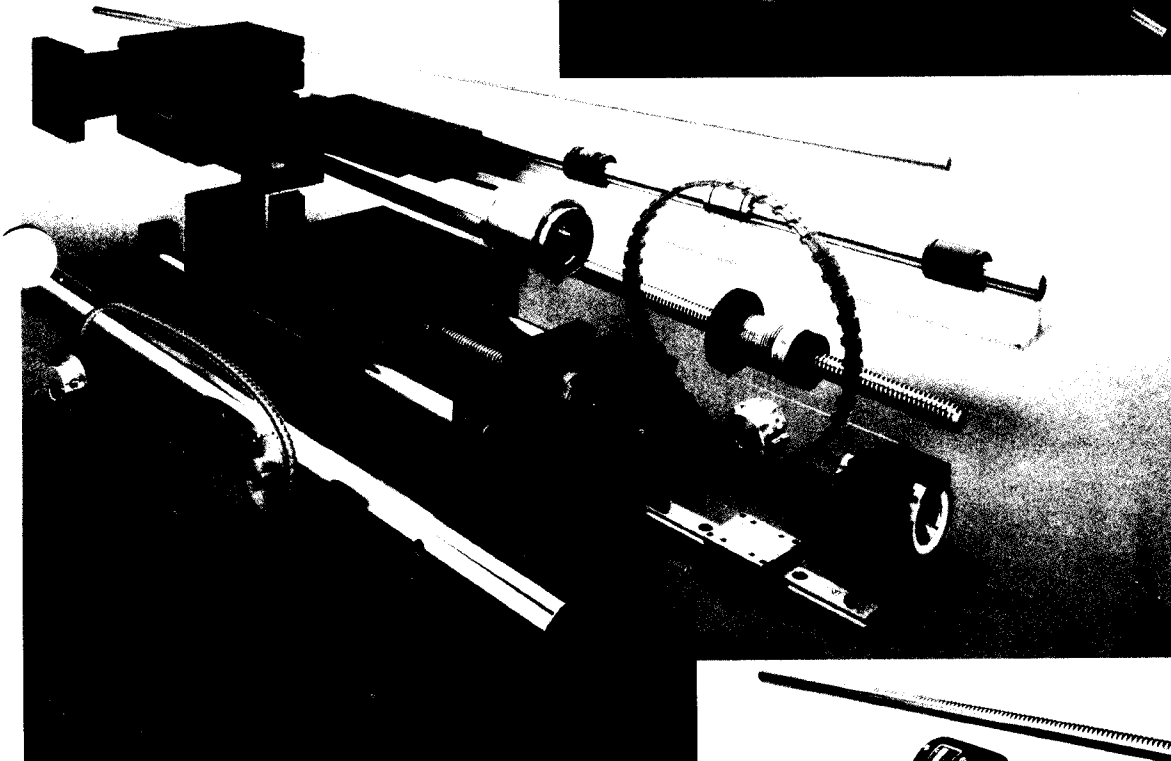
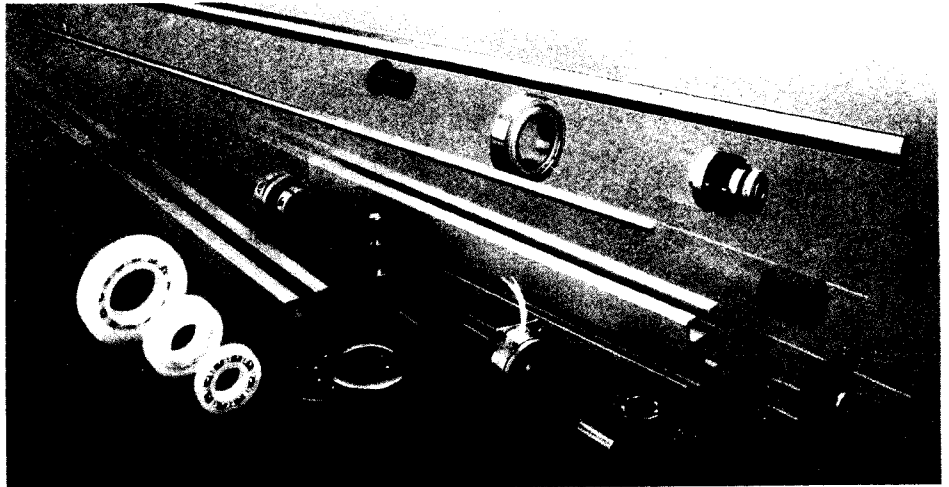
Steel Straight Connectors 1-17



Liquid Tight Pigtail Fittings 1-18, 1-19



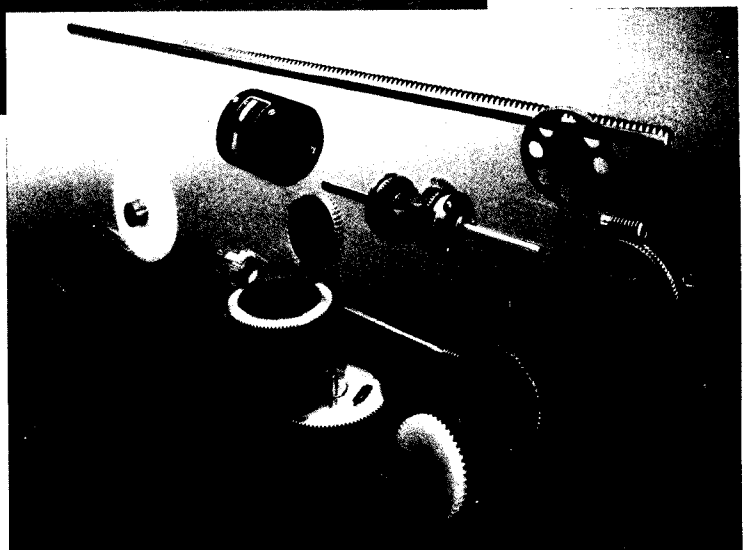
Liquid Tight Right Angle Fittings 1-20



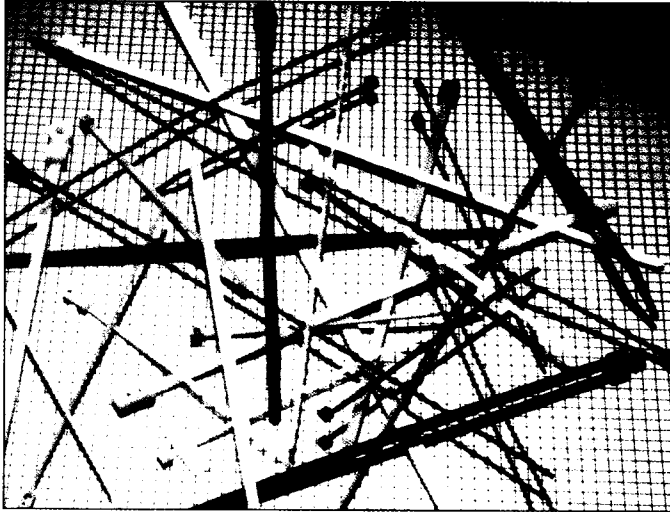
**Precision Mechanical
Components**

**Motion/Positioning
Products**

Gear Products



RICHCO—EXPERTS IN MANUFACTURING QUALITY PLASTIC PRODUCTS...

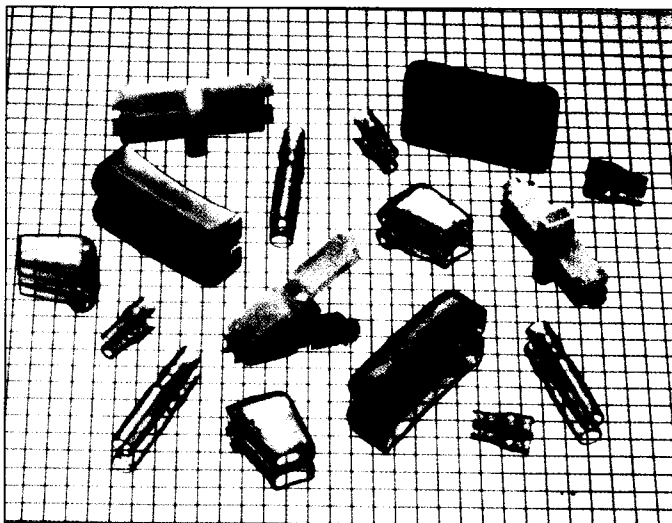
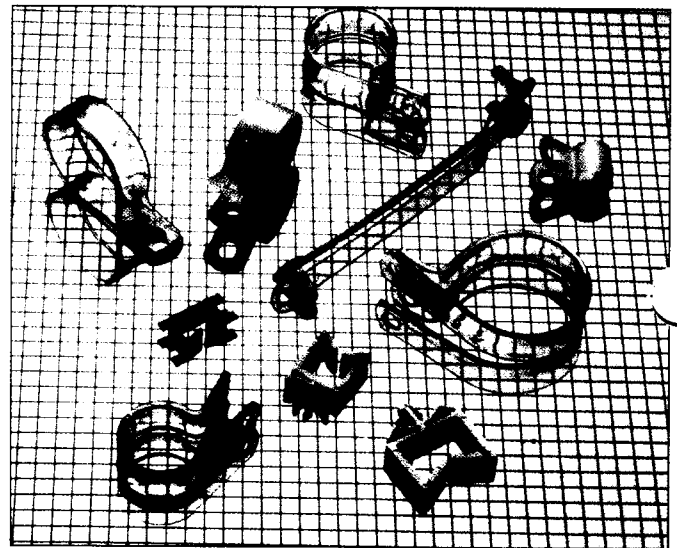


COMMITTED TO CONTINUED GROWTH

Richco has adhered to our basic principals and goals since our inception in 1954...To design and manufacture the finest quality plastic parts, to price them competitively and deliver them promptly. We have five facilities in the United States and eleven Richco offices world wide. With this tremendous growth we have been able to offer state of the art design to our customers specific requirements. Each facility has its own unique function which enables Richco to maintain its high standard of quality components and create new, innovative products for the future.

ALWAYS PURSUING OUR CUSTOMERS NEEDS

Most of the components in our catalog have been developed as a direct result of actively pursuing engineers in the field who have expressed a specific design need to Richco's engineering team. Our engineers are always ready to assist in the design of your new product. Whether it is a custom molded or extruded part we will follow through from prototype to production until you have the perfect product for your needs.



LOOK FOR ALL OF OUR

NEW PRODUCTS!




Richco



AVK INDUSTRIAL PRODUCTS

AVK Industrial Products is a manufacturer of world class Blind Threaded Captive Fasteners. Our internally threaded captive nuts and externally threaded captive studs are installed from the front side of the workpiece. This feature provides you with many design and assembly advantages over conventional fasteners such as press-in, weld-in-place and loose hardware.



The **A-L Series Insert** features a large diameter, low profile head making it ideal for use in punched or even hand drilled out-of-round holes. The A-L Series offers the highest all around strength characteristics and is by far AVK's most versatile product. The A-L Series can be installed after finish.



The **A-H Series Insert** features a hex body design that when used in a hex hole produces the ultimate in spin-out torque resistance. This feature is important when SPC and/or a prevailing torque thread lock is required. The A-H Series can be installed after finish.



The **A-K Series Insert**, similar to the A-L, features a minimized head profile that allows for nearly flush installations without the need for special hole preparations such as countersinking or dimpling. The A-K Series can be installed after finish.



The **A-W Series Insert** can be installed into most any material softer than itself and thicker than .030/.76 mm. The A-W Series is particularly useful in thick hand-layed-up fiberglass and blind hole applications in aluminum castings.



The **A-L Series Sealed Head Insert** incorporates an underhead bonded PVC foam seal that is ideal for weather resistant sealing requirements.



The **A-O Series Insert** features a low profile head design which virtually eliminates the need for countersink drilling or dimpling of the parent material to achieve flush installations.

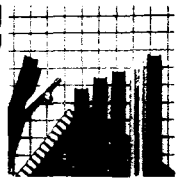
Over 10,000 Products



Snap-In, Flame Retardant and Deep Channel Card Guides



Vertical Card Guides



Interchangeable Card Guides



Circular Card Guides



Card Ejectors, Inserters/Extractors & Handles



PCB Card Retainers



12- and 15-Station LED Strip Mounts



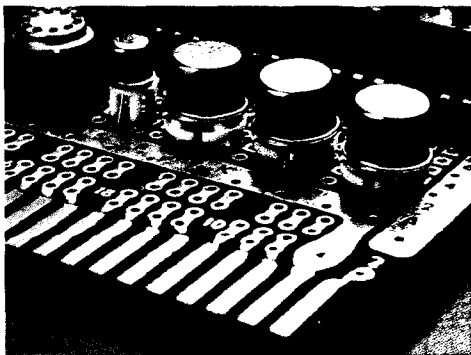
Self-Retaining Extruded LED Mounts for T-1, T-1 3/4 and T-1 3/4 (3 lead)

Unique Problem Solvers That Uniformly Position, Elevate, Protect and Improve Printed Circuit Board Assembly & Packaging.

Keeping pace with the advancing methods of electronic packaging and assembly, including practical solutions for challenging board-level technologies such as IC cards, lighted display arrays and smaller components, Bivar continues to lead the industry in the provision of low-cost products that assure precise component alignment, accurate elevation and consistent uniformity. With their use, you will experience lower assembly costs, reduced rework and rejects, and greater control of assembly and quality processes.

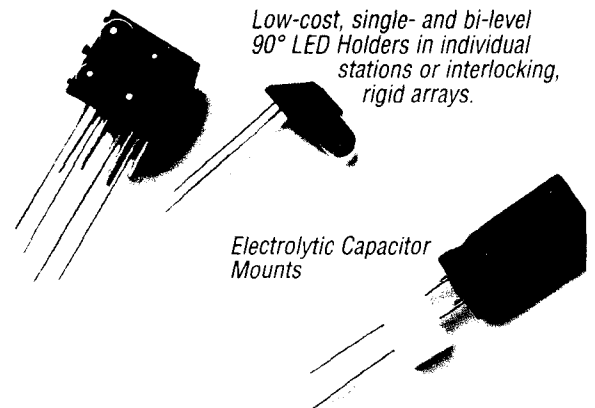
Like the products before them, dozens of new products in this all-new catalog have been designed by working closely with customer engineering, designers, manufacturing and production, quality assurance and purchasing, to assure the true value, selection and availability of any Bivar product. Many new designs are the result of early discussions where, through prior experience, the customer has an appreciation of Bivar's response and capabilities. Such early sharing often leads to significant cost-savings and faster realization in bringing new products to market.

Selecting Bivar is the answer to immediate availability worldwide. And, your assurance of quality, service and responsiveness will be realized the first time you call any of Bivar's authorized distributors or representatives.



Permanent mounts and spacers protect fragile leads during assembly and assure accurate elevation, with many styles serving as lead-forming fixtures.

Printed circuit board card guides, ejectors, inserter/extractors, handles and PCB retainers.



BUILT TO RIGID STANDARDS

All Bivar products are precision manufactured to exacting specifications and made from the finest materials available, including many rated 94V-0 or 94V-2 by U.L. Bivar also offers one of industry's largest selections of standard products that meet the latest revisions of MIL-M-38527 and CID A-A55485.

DESIGNED TO SAVE MONEY

Bivar's component mounts, spacers, and PCB packaging products solve many assembly problems by minimizing rework or replacement, and by providing lower cost alternatives to traditional designs. Several Bivar products allow use of fewer actual products or serve multiple purposes, reducing the need for otherwise large inventories.

COMPLETE SPECIFICATIONS, PRICING & CROSS-REFERENCE

Every product in this catalog is presented in complete detail including dimensioned drawings (standard and metric), part numbers, MIL-Spec or CID references, material specifications and tolerances. For your convenience, a price list is provided with this catalog, and you will find a concise Cross Reference to popular industry standard or discontinued manufacturer's products on page 5.

Bivar

ACF Components & Fasteners, Inc.

Northwest Service Center:
31012 Huntwood Avenue
Hayward, CA 94544
(510) 487-2100

Southwest Service Center:
742 Arrow Grand Circle
Covina, CA 91722
(818) 967-6335

	DECIMALS	MILLIMETERS
$\frac{1}{64}$	0.015625	0.397
$\frac{1}{32}$	.03125	0.794
$\frac{3}{64}$	.046875	1.191
$\frac{1}{16}$	.0625	1.588
$\frac{5}{64}$	.078125	1.984
$\frac{3}{32}$	.09375	2.381
$\frac{7}{64}$	.109375	2.778
$\frac{1}{8}$	.1250	3.175
$\frac{9}{64}$	.140625	3.572
$\frac{5}{32}$	.15625	3.969
$\frac{11}{64}$	.171875	4.366
$\frac{3}{16}$	.1875	4.763
$\frac{13}{64}$	.203125	5.159
$\frac{7}{32}$	.21875	5.556
$\frac{15}{64}$	.234375	5.953
$\frac{1}{4}$	.2500	6.350
$\frac{17}{64}$	.265625	6.747
$\frac{9}{32}$	.28125	7.144
$\frac{19}{64}$	.296875	7.541
$\frac{5}{16}$	.3125	7.938
$\frac{21}{64}$	.328125	8.334
$\frac{11}{32}$	.34375	8.731
$\frac{23}{64}$	.359375	9.128
$\frac{3}{8}$	.3750	9.525
$\frac{25}{64}$	.390625	9.922
$\frac{13}{32}$	.40625	10.319
$\frac{27}{64}$	.421875	10.716
$\frac{7}{16}$	.4375	11.113
$\frac{29}{64}$	.453125	11.509
$\frac{15}{32}$	.46875	11.906
$\frac{31}{64}$	.484375	12.303
$\frac{1}{2}$	.5000	12.700

1 mm = .03937"

	DECIMALS	MILLIMETERS
$\frac{33}{64}$	0.515625	13.097
$\frac{17}{32}$	.53125	13.494
$\frac{35}{64}$	.546875	13.891
$\frac{9}{16}$	.5625	14.288
$\frac{37}{64}$	.578125	14.684
$\frac{19}{32}$	.59375	15.081
$\frac{39}{64}$	.609375	15.478
$\frac{5}{8}$	.6250	15.875
$\frac{41}{64}$	.640625	16.272
$\frac{21}{32}$	.65625	16.669
$\frac{43}{64}$	.671875	17.066
$\frac{11}{16}$	.6875	17.463
$\frac{45}{64}$	.703125	17.859
$\frac{23}{32}$	.71875	18.256
$\frac{47}{64}$	.734375	18.653
$\frac{3}{4}$	.7500	19.050
$\frac{49}{64}$	.765625	19.447
$\frac{25}{32}$	.78125	19.844
$\frac{51}{64}$	.796875	20.241
$\frac{13}{16}$	.8125	20.638
$\frac{53}{64}$	.828125	21.034
$\frac{27}{32}$	.84375	21.431
$\frac{55}{64}$	.859375	21.828
$\frac{7}{8}$	.8750	22.225
$\frac{57}{64}$	.890625	22.622
$\frac{29}{32}$	.90625	23.019
$\frac{59}{64}$	.921875	23.416
$\frac{15}{16}$	.9375	23.813
$\frac{61}{64}$	.953125	24.209
$\frac{31}{32}$	.96875	24.606
$\frac{63}{64}$	.984375	25.003
1	1.000	25.400

.001" = .0254 mm

MM	INCHES	MM	INCHES
.1	.0039	46	1.8110
.2	.0079	47	1.8504
.3	.0118	48	1.8898
.4	.0157	49	1.9291
.5	.0197	50	1.9685
.6	.0236	51	2.0079
.7	.0276	52	2.0472
.8	.0315	53	2.0866
.9	.0354	54	2.1260
1	.0394	55	2.1654
2	.0787	56	2.2047
3	.1181	57	2.2441
4	.1575	58	2.2835
5	.1969	59	2.3228
6	.2362	60	2.3622
7	.2756	61	2.4016
8	.3150	62	2.4409
9	.3543	63	2.4803
10	.3937	64	2.5197
11	.4331	65	2.5591
12	.4724	66	2.5984
13	.5118	67	2.6378
14	.5512	68	2.6772
15	.5906	69	2.7165
16	.6299	70	2.7559
17	.6693	71	2.7953
18	.7087	72	2.8346
19	.7480	73	2.8740
20	.7874	74	2.9134
21	.8268	75	2.9528
22	.8661	76	2.9921
23	.9055	77	3.0315
24	.9449	78	3.0709
25	.9843	79	3.1102
26	1.0236	80	3.1496
27	1.0630	81	3.1890
28	1.1024	82	3.2283
29	1.1417	83	3.2677
30	1.1811	84	3.3071
31	1.2205	85	3.3465
32	1.2598	86	3.3858
33	1.2992	87	3.4252
34	1.3386	88	3.4646
35	1.3780	89	3.5039
36	1.4173	90	3.5433
37	1.4567	91	3.5827
38	1.4961	92	3.6220
39	1.5354	93	3.6614
40	1.5748	94	3.7008
41	1.6142	95	3.7402
42	1.6535	96	3.7795
43	1.6929	97	3.8189
44	1.7323	98	3.8583
45	1.7717	99	3.8976
		100	3.9370

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