

**YOUR FULL LINE FASTENER DISTRIBUTOR  
(Screws, Nuts, Bolts, Hardware Packaging)**

**PRECISION SCREW PRODUCTS, INC.**

1215 KARL COURT  
SUITE 205

WAUCONDA, IL 60084

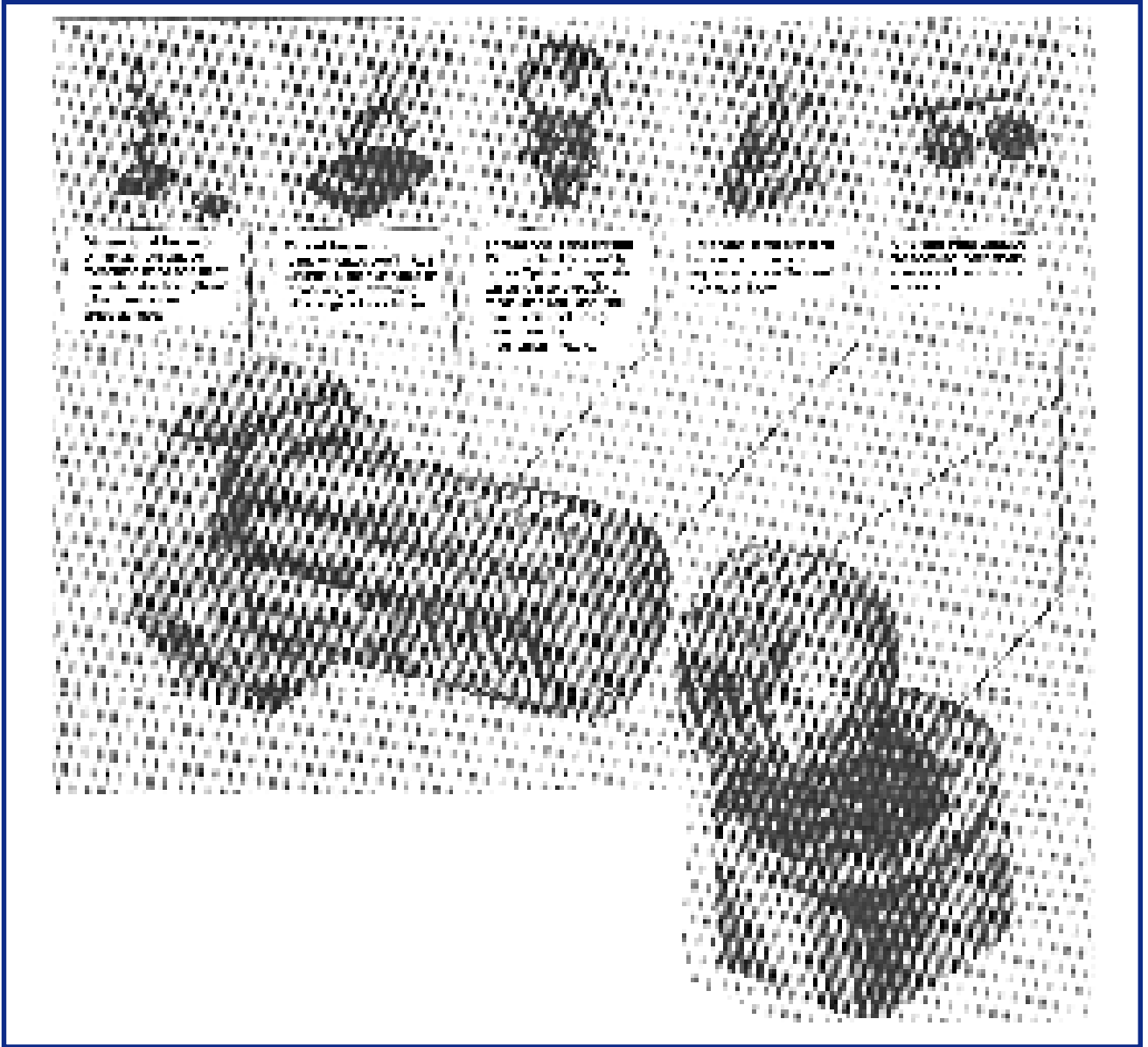
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800-286-BOLT (2658)

[www.precisioncrewprod.com](http://www.precisioncrewprod.com)

# QUALITY ASSURANCE PROMISE

Our Quality Assurance Manual is the cornerstone of our Quality Program. It sets the guidelines for inspection procedures, gaging, documentation, and calibration schedules. It provides concrete structure for our program, insuring TIMELESS CONTINUITY. We will be pleased to send you a copy of our Quality Assurance Manual upon your request.



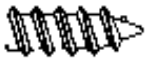
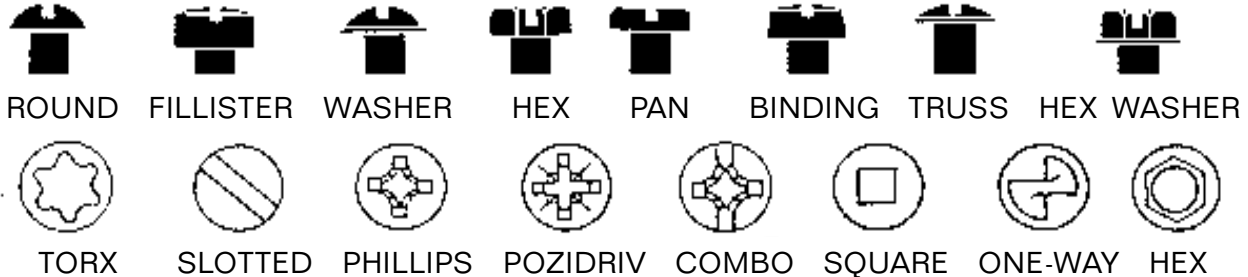
In addition to our own IN-HOUSE quality program, we continually audit our manufacturer's operations and procedures, many of whom use STATISTICAL PROCESS CONTROL.

Precision Screw Products can furnish Dimensional Inspection Reports, Physical and Chemical Reports, and Certificates of Compliance upon request.

# SCREWS

[Tapping, Thread Forming, Thread Cutting, Machine]

## HEAD STYLES AND DRIVES AVAILABLE FOR ALL SCREWS



**TYPE A [ASA-A]:** Sheet metal screw for use in thin metal .015 to .050 thick. Used with drilled, punched or nested holes in sheet metal, resin impregnated plywood, asbestos combination, and others.



**TYPE AB [ASA-BA]:** A sheet metal screw combining locating type point of Type A with thread size and pitch of Type B. Normal limitations of Type B apply.



**TYPE B [ASA-B]:** A sheet metal screw for use in heavier metal .050 to .200 thick. Larger root diameter with finer thread pitch for light and heavy sheet metal nonferrous castings, plastics, impregnated plywood, asbestos combinations, and other materials.



**High Performance Thread Forming Screws:** Thread forming screws have specially designed threads and points which permit the screw to form a mating internal thread by applying intermittent pressures at the crest of the screw's thread rather than over its full thread flank.



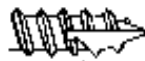
**TYPE C [ASA-C]:** A thread forming screw with either coarse or fine pitch machine screw thread and blunt tapered point. Eliminates chips and permits replacement with standard screw in the field. Higher driving torque required. Usable in heavy sheet metal and die castings.



**TYPE [ASA-F]:** A thread cutting screw with machine thread with blunt point, having multi-cutting edges and chip cavities. For heavy gauge sheet metal, aluminum, zinc and lead castings, cast iron, brass and plastic.



**TYPE 23 [ASA-T]:** A thread cutting screw in the fine thread series offering maximum thread cutting area and excellent chip clearing, with maximum tightening torques.



**TYPE 17 [ASA-17]:** A thread cutting screw for wood with a coarse tapping screw thread and a special long sharp point fluted to capture chips.



**TYPE 1 [ASA-D]:** A thread cutting screw with single flute for general use. Produces a fine standard machine screw thread for field replacement.

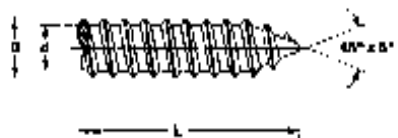


**TYPE 25 [ASA-BT]:** A thread cutting screw similar to Type 23 point except with coarse Type B thread. For plastics and other soft materials with large chip clearing and cutting edges.



**TYPE U [ASA-U]:** A thread forming screw with high Helix thread for driving or hammering into sheet metals, castings, fiber or plastics for permanent, quick assemblies.

# DIMENSIONS OF SCREW THREADS



Dimensions of Threads and Points for Type AB Thread Forming Tapping Screws

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
0	0.0600	0.060	0.054	0.036	0.033	1/8	5/32
1	0.0730	0.075	0.069	0.046	0.046	5/32	3/16
2	0.0860	0.088	0.082	0.064	0.060	3/16	7/32
3	0.0990	0.101	0.095	0.075	0.071	3/16	1/4
4	0.1120	0.114	0.108	0.086	0.082	7/32	9/32
5	0.1250	0.130	0.123	0.094	0.090	1/4	5/16
6	0.1380	0.139	0.132	0.104	0.099	9/32	11/32
7	0.1510	0.154	0.147	0.115	0.109	5/16	3/8
8	0.1640	0.166	0.159	0.122	0.116	5/16	3/8
10	0.1900	0.189	0.182	0.141	0.135	3/8	7/16
12	0.2160	0.215	0.208	0.164	0.157	7/16	17/32
1/4	0.2500	0.246	0.237	0.185	0.182	1/2	19/32
5/16	0.3125	0.315	0.306	0.244	0.236	5/8	3/4
3/8	0.3750	0.380	0.371	0.309	0.299	3/4	29/32
7/16	0.4375	0.440	0.429	0.359	0.349	7/8	1 1/32
1/2	0.5000	0.504	0.493	0.423	0.413	1	1 5/32

All parts available in your choice of plating.

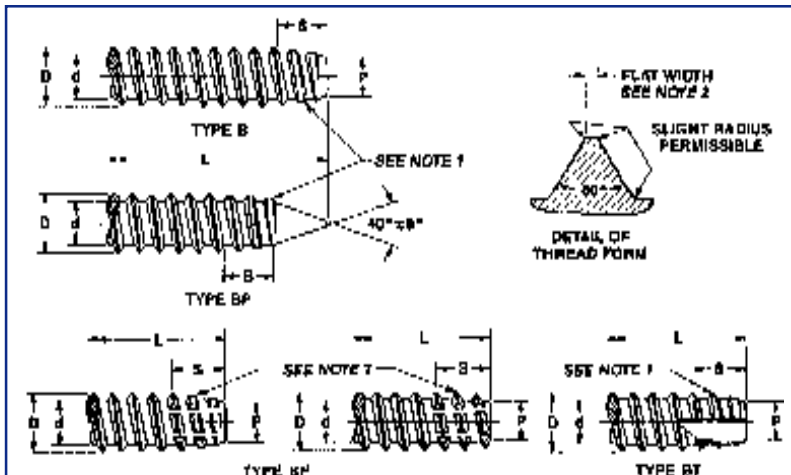


Table 7 Dimensions of Threads and Points for Types B and BF Thread Forming and Types BF and BT Thread Cutting Tapping Screws

Nominal Size or Basic Screw Diameter	Threads per inch	D		d		P		S		L				
		Major Diameter		Minor Diameter		Point Diameter		Point Taper Length		Minimum Practical Nominal Screw Lengths				
		Max	Min	Max	Min	Max	Min	Max	Min	90° Heads	Csk Heads	90° Heads	Csk Heads	
0	0.0600	0.060	0.054	0.036	0.033	0.031	0.027	0.042	0.038	0.031	1/8	1/8	5/32	3/16
1	0.0730	0.075	0.069	0.049	0.046	0.044	0.040	0.048	0.038	0.031	1/8	1/8	5/32	3/16
2	0.0860	0.088	0.082	0.064	0.060	0.058	0.054	0.062	0.047	0.031	1/8	1/8	5/32	3/16
3	0.0990	0.101	0.095	0.075	0.071	0.068	0.063	0.071	0.054	0.031	1/8	1/8	5/32	3/16
4	0.1120	0.114	0.108	0.086	0.082	0.079	0.074	0.083	0.063	0.031	1/8	1/8	5/32	3/16
5	0.1250	0.130	0.123	0.094	0.090	0.087	0.082	0.100	0.075	0.031	1/8	1/8	5/32	3/16
6	0.1380	0.139	0.132	0.104	0.099	0.095	0.089	0.100	0.075	0.031	1/8	1/8	5/32	3/16
7	0.1510	0.154	0.147	0.115	0.109	0.105	0.099	0.105	0.079	0.031	1/8	1/8	5/32	3/16
8	0.1640	0.166	0.159	0.122	0.116	0.112	0.106	0.111	0.083	0.031	1/8	1/8	5/32	3/16
10	0.1900	0.189	0.182	0.141	0.135	0.130	0.123	0.125	0.094	0.031	1/8	1/8	5/32	3/16
12	0.2160	0.215	0.208	0.164	0.157	0.152	0.145	0.143	0.107	0.031	1/8	1/8	5/32	3/16
1/4	0.2500	0.246	0.237	0.185	0.182	0.179	0.171	0.143	0.107	0.031	1/8	1/8	5/32	3/16
5/16	0.3125	0.315	0.306	0.244	0.236	0.230	0.222	0.167	0.125	0.031	1/8	1/8	5/32	3/16
3/8	0.3750	0.380	0.371	0.309	0.299	0.293	0.285	0.167	0.125	0.031	1/8	1/8	5/32	3/16
7/16	0.4375	0.440	0.429	0.349	0.349	0.343	0.335	0.200	0.150	0.031	1/8	1/8	5/32	3/16
1/2	0.5000	0.504	0.493	0.423	0.413	0.407	0.399	0.200	0.150	0.031	1/8	1/8	5/32	3/16

All electroplated parts tested for the presence of hydrogen embrittlement.

## SELF-DRILLING SCREWS



Nominal Size or Basic Screw Diameter	Threads per inch	T		t		P		
		Major Diameter		Major 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

Custom Head Painting & Fastener Assembling Available. Call or Fax for Pricing.

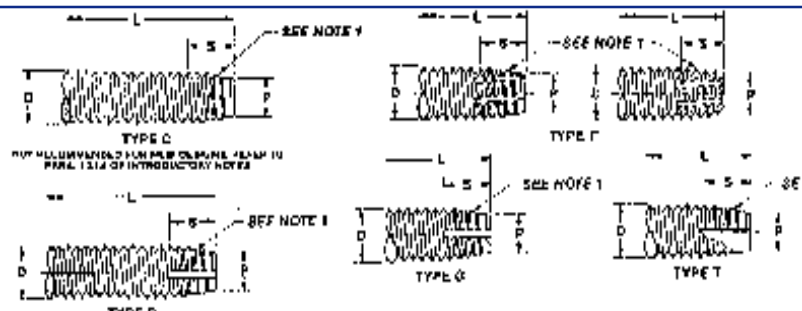


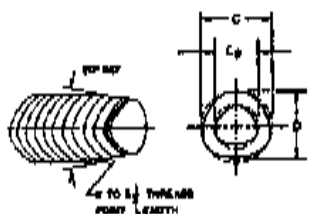
Table 8 Dimensions of Threads and Points for Type C Thread Forming and Types D, F, G and T Thread Cutting Tapping Screws

Nominal Size or Basic Screw Diameter	Threads per inch	D		P		S				L			
		Major Diameter		Point Diameter		Point Taper Length				Determinant Lengths for Point Taper			
		Max	Min	Max	Min	For Short Screws		For Long Screws		90° Heads	Csk Heads		
2	0.0860	0.086	0.0813	0.068	0.061	0.062	0.045	0.080	0.062	5/32	3/16	5/32	3/16
3	0.0990	0.099	0.0943	0.076	0.069	0.073	0.052	0.094	0.073	3/16	7/32	5/32	7/32
4	0.1120	0.112	0.1073	0.089	0.082	0.092	0.045	0.100	0.082	5/32	3/16	5/32	3/16
5	0.1250	0.125	0.1203	0.099	0.092	0.103	0.052	0.109	0.092	7/32	1/4	3/16	1/4
6	0.1380	0.138	0.1333	0.107	0.099	0.108	0.062	0.112	0.088	7/32	1/4	3/16	1/4
8	0.1640	0.164	0.1593	0.125	0.117	0.126	0.073	0.122	0.094	7/32	1/4	3/16	1/4
10	0.1900	0.190	0.1853	0.141	0.133	0.142	0.083	0.141	0.109	1/4	5/16	1/4	5/16
12	0.2160	0.216	0.2113	0.159	0.151	0.160	0.094	0.159	0.126	1/4	5/16	1/4	5/16
1/4	0.2500	0.250	0.2453	0.185	0.177	0.186	0.105	0.185	0.152	1/2	3/4	1/2	3/4
5/16	0.3125	0.312	0.3073	0.225	0.217	0.226	0.117	0.225	0.182	5/8	3/4	5/8	3/4
3/8	0.3750	0.375	0.3703	0.263	0.255	0.264	0.128	0.263	0.219	1/2	11/16	5/8	3/4
7/16	0.4375	0.437	0.4323	0.317	0.309	0.318	0.139	0.317	0.250	3/4	1 1/8	1 1/8	1 1/8
1/2	0.5000	0.500	0.4953	0.361	0.353	0.362	0.150	0.361	0.261	3/4	1 1/8	1 1/8	1 1/8
5/8	0.6250	0.625	0.6203	0.437	0.429	0.438	0.161	0.437	0.271	1 1/8	1 3/4	1 3/4	1 3/4
3/4	0.7500	0.750	0.7453	0.521	0.513	0.522	0.172	0.521	0.281	1 1/2	1 3/4	1 3/4	1 3/4
7/8	0.8750	0.875	0.8703	0.605	0.597	0.606	0.183	0.605	0.291	1 3/4	1 3/4	1 3/4	1 3/4
1	1.0000	1.000	0.9953	0.689	0.681	0.690	0.195	0.689	0.301	1 3/4	1 3/4	1 3/4	1 3/4

# HIGH PERFORMANCE THREAD ROLLING SCREWS

## Thread and Point Specifications

Nominal Screw Size and Threads per Inch	Screw Diameter	C		D		CP	
		Diameter of Circumscribing Center		Measurement Across Center		Circumscribing Circle (Point)	
		Basic	Max	Min	Max	Min	Max
No. 4	40	0.1120	0.1145	0.1105	0.1095	0.1055	0.090
6	32	0.1380	0.1410	0.1350	0.1350	0.1290	0.111
8	32	0.1640	0.1670	0.1610	0.1610	0.1550	0.137
10	32	0.1900	0.1940	0.1880	0.1850	0.1790	0.153
1/4	20	0.250	0.2550	0.2490	0.2460	0.2400	0.206



**ALL FASTENERS  
AVAILABLE  
IN A VARIETY  
OF MATERIALS.**

**Stainless Steel  
(All Types)**

**Brass**

**Aluminum**

**Carbon & Alloy  
Steels**

**Silicon Bronze**

**Any Materials  
Not Shown,  
Please Call**

## WOOD SCREWS

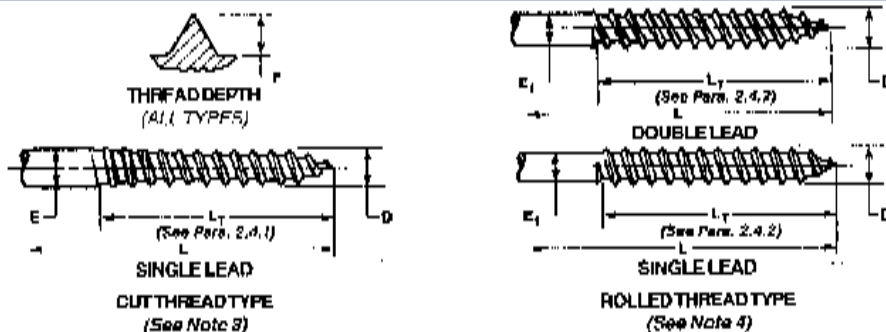
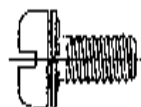


Table 1 Dimensions of Threads and Body Diameters for Wood Screws

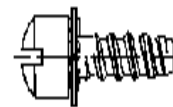
Nominal Size or Basic Screw Diameter	Threads per inch	D		E		E <sub>1</sub>		F
		Thread Major Diameter		Body Diameter (Cut Thread)		Body Diameter (Rolled Thread)		Thread Depth
		Max	Min	Max	Min	Max	Min	Min
0	0.060	0.064	0.053	0.064	0.053	0.055	0.044	0.010
1	0.073	0.077	0.066	0.077	0.066	0.066	0.055	0.010
2	0.086	0.090	0.079	0.090	0.079	0.075	0.064	0.010
3	0.099	0.103	0.092	0.103	0.092	0.086	0.075	0.014
4	0.112	0.116	0.105	0.116	0.105	0.095	0.084	0.016
5	0.125	0.129	0.118	0.129	0.118	0.107	0.096	0.018
6	0.138	0.142	0.131	0.142	0.131	0.118	0.107	0.020
7	0.151	0.155	0.144	0.155	0.144	0.127	0.116	0.022
8	0.164	0.168	0.157	0.168	0.157	0.136	0.1254	0.023
9	0.177	0.181	0.170	0.181	0.170	0.147	0.136	0.026
10	0.190	0.194	0.183	0.194	0.183	0.157	0.146	0.030
12	0.216	0.220	0.209	0.220	0.209	0.176	0.165	0.031
14	0.242	0.246	0.235	0.246	0.235	0.201	0.190	0.035
16	0.268	0.272	0.261	0.272	0.261	0.214	0.203	0.038
18	0.294	0.298	0.287	0.298	0.287	0.237	0.226	0.042
20	0.320	0.324	0.313	0.324	0.313	0.260	0.249	0.046
24	0.372	0.376	0.365	0.376	0.365	0.303	0.292	0.050

## DIMENSIONS OF INTERNAL TOOTH LOCK WASHERS FOR SEMS

Nominal Size or Basic Screw Diameter	Pan, Fillister, Hex and Hex Washer Head Screws				
	Washer Thickness		Washer Outside Diameter		
	Max	Min	Max	Min	
2	0.0860	0.016	0.010	0.185	0.175
3	0.0990	0.019	0.015	0.225	0.215
4	0.1120	0.019	0.015	0.268	0.258
5	0.1250	0.021	0.017	0.268	0.258
6	0.1380	0.021	0.017	0.268	0.278
7	0.1510	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	0.372
12	0.2160	0.025	0.020	0.408	0.396
1/4	0.2500	0.028	0.023	0.478	0.466
5/16	0.3125	0.034	0.028	0.610	0.597
3/8	0.3750	0.040	0.032	0.692	0.678

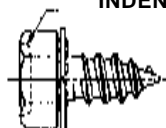


PAN HEAD MACHINE SCREW

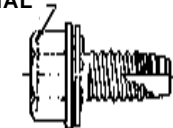


FILLISTER HEAD TYPE B TAPPING SCREW

INDENTATION OPTIONAL



HEX HEAD (NOTE 3) TYPE AB TAPPING SCREW



HEX WASHER HEAD TYPE T TAPPING SCREW



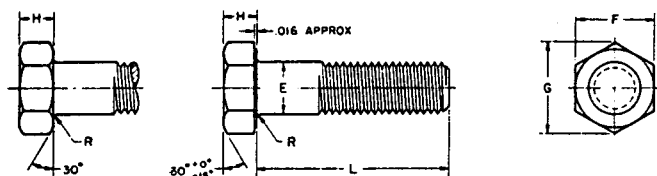
# BOLTS & CAP SCREWS

**Chemical & Physical  
Certification  
upon request**

**All cap screws available  
from domestic  
manufacturers.**

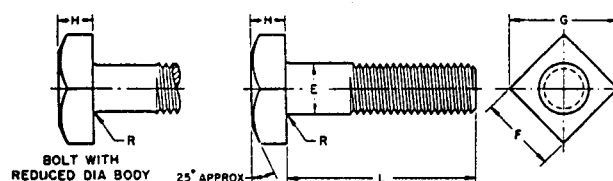
GRADE MARKING	SPECIFICATIONS	MATERIAL	BOLT AND SCREW SIZE, IN.	PROOF LOAD, PSI.	TENSILE STRENGTH MIN., PSI.
NO MARK	SAE - Grade 1 ASTM - A 307	Low Carbon Steel	1/4 thru 1 1/2	33,000	60,000
	SAE - Grade 2		1/4 thru 1 1/2 Over 1 1/2 thru 4	33,000 55,000	60,000 55,000
	SAE - Grade 3	Medium Carbon Steel, Cold Worked	1/4 thru 1/2 Over 1/2 thru 5/8	85,000 80,000	110,000 100,000
	SAE - Grade 5 ASTM - A 449	Medium Carbon Steel, Quenched and Tempered	1/4 thru 1 Over 1 thru 1 1/2	85,000 74,000	120,000 105,000
			1/4 thru 1 Over 1 thru 1 1/2 Over 1 1/2 thru 3	85,000 74,000 55,000	120,000 105,000 90,000
	SAE - Grade 5.1	Low or Medium Carbon Steel, Quenched and Tempered with Assembled Lock Washer	Up to 3/8 incl.	85,000	120,000
	SAE - Grade 8 ASTM - A 354 Grade BD	Medium Carbon Alloy Steel Quenched and Tempered	1/4 thru 1 1/2	120,000	150,000
		Alloy Steel, Quenched and Tempered			

## HEX CAP SCREWS



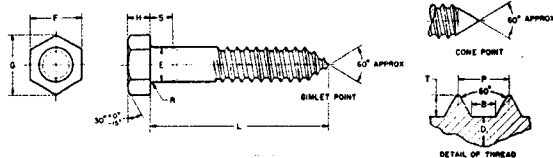
Nominal Size or Basic Product Dia.	Body Dia. E		Width Across Flats F			Width Across Corners G			Height H		Radius of Fillet R		
	Max	Min	Basic	Max	Min	Basic	Max	Min	Basic	Max	Min		
1/4	0.2500	0.2500	0.2450	7/16	0.4375	0.428	0.505	0.488	5/32	0.163	0.150	0.025	0.015
5/16	0.3125	0.3125	0.3065	1/2	0.5000	0.489	0.577	0.557	13/64	0.211	0.195	0.025	0.015
3/8	0.3750	0.3750	0.3690	9/16	0.5625	0.551	0.650	0.628	15/64	0.243	0.226	0.025	0.015
7/16	0.4375	0.4375	0.4305	5/8	0.6250	0.612	0.722	0.698	9/32	0.291	0.272	0.025	0.015
1/2	0.5000	0.5000	0.4930	3/4	0.7500	0.736	0.866	0.840	5/16	0.323	0.302	0.025	0.015
9/16	0.5625	0.5625	0.5545	13/16	0.8125	0.798	0.938	0.910	29/64	0.371	0.348	0.045	0.020
5/8	0.6250	0.6250	0.6170	15/16	0.9375	0.922	1.083	1.051	25/64	0.403	0.378	0.045	0.020
3/4	0.7500	0.7500	0.7410	1 1/8	1.1250	1.100	1.299	1.254	15/32	0.483	0.455	0.045	0.020
7/8	0.8750	0.8750	0.8660	1 1/4	1.3125	1.285	1.516	1.465	35/64	0.563	0.531	0.065	0.040
1	1.0000	1.0000	0.9900	1 1/2	1.5000	1.469	1.732	1.675	39/64	0.627	0.591	0.095	0.060
1 1/8	1.1250	1.1250	1.1140	1 11/16	1.6875	1.631	1.949	1.889	11/16	0.718	0.668	0.095	0.060
1 1/4	1.2500	1.2500	1.2390	1 7/8	1.8750	1.812	2.165	2.096	25/32	0.813	0.749	0.095	0.060
1 3/8	1.3750	1.3750	1.3630	2 1/16	2.0625	1.994	2.382	2.273	27/32	0.878	0.810	0.095	0.060
1 1/2	1.5000	1.5000	1.4880	2 1/4	2.2500	2.175	2.596	2.480	15/32	0.974	0.902	0.095	0.060
1 3/4	1.7500	1.7500	1.7380	2 3/8	2.6250	2.538	3.031	2.893	1 3/32	1.134	1.054	0.095	0.060
2	2.0000	2.0000	1.9880	3	3.0000	2.900	3.464	3.306	1 7/32	1.263	1.175	0.095	0.060

## SQUARE BOLTS



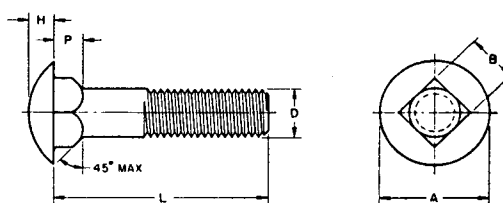
Nominal Size or Basic Product Dia.	Body Dia. E		Width Across Flash F			Width Across Corners G			Height H			Radius of Fillet R
	Max	Basic	Max	Min	Max	Min	Basic	Max	Min	Basic	Max	
1/4	0.2500	0.260	3/8	0.3750	0.362	0.530	0.498	11/64	0.188	0.156	0.031	
5/16	0.3125	0.324	1/2	0.5000	0.484	0.707	0.665	13/64	0.220	0.186	0.031	
3/8	0.3750	0.388	9/16	0.5625	0.544	0.795	0.747	1/4	0.268	0.232	0.031	
7/16	0.4375	0.452	5/8	0.6250	0.603	0.884	0.828	19/64	0.316	0.278	0.031	
1/2	0.5000	0.515	3/4	0.7500	0.725	1.061	0.995	21/64	0.348	0.308	0.031	
5/8	0.6250	0.642	15/16	0.9375	0.906	1.326	1.244	27/64	0.444	0.400	0.062	
3/4	0.7500	0.768	1 1/8	1.1250	1.088	1.591	1.494	1/2	0.524	0.476	0.062	
7/8	0.8750	0.895	1 1/4	1.2500	1.209	1.856	1.742	19/32	0.620	0.568	0.062	
1	1.0000	1.022	1 1/2	1.5000	1.450	2.121	1.991	21/32	0.684	0.628	0.093	
1 1/8	1.1250	1.149	1 11/16	1.6875	1.631	2.386	2.239	3/4	0.780	0.720	0.093	
1 1/4	1.2500	1.277	1 7/8	1.8750	1.812	2.652	2.489	27/32	0.876	0.812	0.093	
1 3/8	1.3750	1.404	2 1/16	2.0625	1.994	2.917	2.738	29/32	0.940	0.872	0.093	
1 1/2	1.5000	1.531	2 1/4	2.2500	2.175	3.182	2.986	1	1.036	0.964	0.093	

## LAG SCREWS



Nominal Size or Basic Product Dia.	Width Across Flash F			Width Across Corners G		Height H			
	Basic	Max	Min	Max	Min	Basic	Max	Min	
1/4	0.2500	7/16	0.4375	0.425	0.505	0.484	11/64	0.188	0.150
5/16	0.3125	1/2	0.5000	0.484	0.577	0.552	7/32	0.235	0.195
3/8	0.3750	9/16	0.5625	0.544	0.650	0.620	1/4	0.268	0.226
7/16	0.4375	5/8	0.6250	0.603	0.722	0.687	19/64	0.316	0.272
1/2	0.5000	3/4	0.7500	0.725	0.866	0.826	11/32	0.364	0.302
5/8	0.6250	15/16	0.9375	0.906	1.083	1.033	27/64	0.444	0.378
3/4	0.7500	1 1/8	1.1250	1.088	1.299	1.240	1/2	0.524	0.455
7/8	0.8750	1 1/4	1.3125	1.269	1.516	1.447	37/64	0.604	0.531
1	1.0000	1 1/2	1.5000	1.450	1.732	1.652	43/64	0.700	0.591
1 1/8	1.1250	1 7/8	1.6875	1.631	1.949	1.859	3/4	0.780	0.658
1 1/4	1.2500	2	1.8750	1.812	2.165	2.066	27/32	0.876	0.749

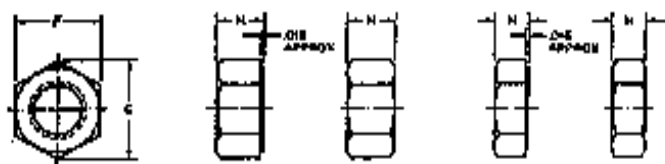
## ROUND HEAD SQUARE NECK BOLTS



Size	Body Dia.	Diameter of Head A			Height of Head H		Depth of Square P		Width of Square B				
		Max	Min	Basic	Max	Min	Max	Min	Max				
No. 10	24	0.199	0.438	7/16	0.438	0.469	3/32	0.094	0.114	0.094	0.125	0.185	0.199
1/4	20	0.260	0.563	9/16	0.563	0.594	1/8	0.125	0.145	0.125	0.156	0.245	0.260
5/16	18	0.324	0.688	11/16	0.688	0.719	5/32	0.156	0.176	0.156	0.187	0.307	0.324
3/8	16	0.388	0.782	13/16	0.813	0.844	3/16	0.188	0.208	0.188	0.219	0.368	0.388
7/16	14	0.452	0.907	15/16	0.938	0.969	7/32	0.219	0.239	0.219	0.250	0.431	0.452
1/2	13	0.515	1.032	1 1/16	1.063	1.094	1/4	0.250	0.270	0.250	0.281	0.492	0.515
5/8	11	0.642	1.219	15/16	1.313	1.344	5/16	0.313	0.344	0.313	0.344	0.616	0.642
3/4	10	0.768	1.469	19/16	1.563	1.594	3/8	0.375	0.406	0.375	0.406	0.741	0.768
7/8	9	0.895	1.719	1 13/16	1.813	1.844	7/16	0.438	0.469	0.438	0.469	0.865	0.895
1	8	1.022	1.969	2 1/16	2.063	2.094	1/2	0.500	0.531	0.500	0.531	0.990	1.022

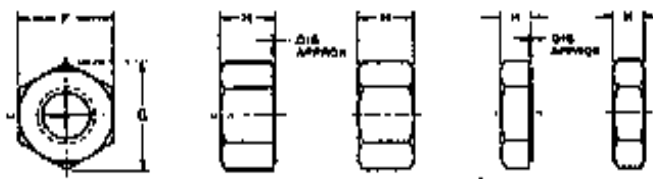
# NUTS

## HEX NUTS AND HEX JAM NUTS



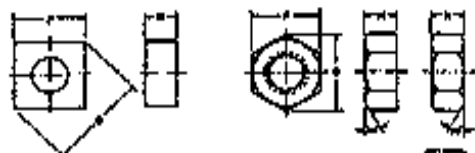
Nominal Size or Basic Major Dia. of Thread	Width Across Flash F			Width Across Corners G			Thickness Hex Nuts H			Thickness Hex Jam Nuts H		
	Basic	Max	Min	Basic	Max	Min	Basic	Max	Min	Basic	Max	Min
1/4	0.2500	7/16	0.4375	0.428	0.505	0.488	7/32	0.226	0.212	0.52	0.163	0.150
5/16	0.3125	1/2	0.5000	0.489	0.577	0.557	17/64	0.273	0.258	3/16	0.195	0.180
3/8	0.3750	9/16	0.5625	0.551	0.650	0.628	21/64	0.337	0.320	7/32	0.227	0.210
7/16	0.4375	11/16	0.6875	0.675	0.794	0.768	3/8	0.385	0.365	1/4	0.260	0.240
1/2	0.5000	3/4	0.7500	0.736	0.866	0.840	7/16	0.448	0.427	5/16	0.323	0.302
5/8	0.5625	7/8	0.8750	0.861	1.010	0.982	31/64	0.496	0.473	5/16	0.324	0.301
9/16	0.6250	15/16	0.9375	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	1.1250	1.088	1.259	1.240	41/64	0.665	0.617	27/64	0.446	0.388
7/8	0.8750	1 1/4	1.3125	1.269	1.516	1.447	3/4	0.776	0.724	31/64	0.510	0.458
1	1.0000	1 1/2	1.5000	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	1.6875	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	1.8750	1.812	2.165	2.066	1 1/16	1.094	1.030	23/32	0.751	0.687
1 3/8	1.3750	2 1/16	2.0625	1.994	2.382	2.273	1 1/8	1.206	1.138	25/32	0.815	0.747
1 1/2	1.5000	2 1/4	2.2500	2.175	2.599	2.480	1 9/32	1.317	1.245	27/32	0.880	0.808

## HEAVY HEX NUTS AND HEAVY HEX JAM NUTS



Nominal Size or Basic Major Dia. of Thread	Width Across Flats F			Width Across Corners G			Thickness Heavy Hex Nuts H			Thickness Heavy Hex Jam Nuts H		
	Basic	Max	Min	Basic	Max	Min	Basic	Max	Min	Basic	Max	Min
1/4	0.2500	1/2	0.5000	0.488	0.577	0.556	15/64	0.250	0.218	11/64	0.188	0.156
5/16	0.3125	9/16	0.5625	0.546	0.650	0.622	19/64	0.314	0.280	13/64	0.220	0.186
3/8	0.3750	11/16	0.6875	0.669	0.794	0.763	23/64	0.377	0.341	15/64	0.252	0.216
7/16	0.4375	3/4	0.7500	0.728	0.866	0.830	27/64	0.441	0.403	17/64	0.285	0.247
1/2	0.5000	7/8	0.8750	0.850	1.010	0.969	31/64	0.504	0.464	19/64	0.317	0.277
5/8	0.5625	15/16	0.9375	0.909	1.083	1.037	35/64	0.568	0.526	21/64	0.349	0.307
3/4	0.7500	1 1/8	1.1250	1.082	1.312	1.271	39/64	0.631	0.587	23/64	0.381	0.337
7/8	0.8750	1 1/4	1.2500	1.212	1.443	1.382	43/64	0.694	0.648	25/64	0.413	0.368
1	1.0000	1 1/2	1.5000	1.455	1.686	1.625	47/64	0.757	0.710	27/64	0.446	0.398
1 1/8	1.1250	1 13/16	1.8125	1.765	2.093	2.002	1 1/64	1.139	1.079	33/64	0.639	0.579
1 1/4	1.2500	2	2.0000	1.938	2.309	2.209	1 7/32	1.251	1.187	23/32	0.751	0.687
1 3/8	1.3750	2 3/16	2.1875	2.119	2.526	2.416	1 11/32	1.378	1.310	25/32	0.815	0.747
1 1/2	1.5000	2 3/8	2.3750	2.300	2.742	2.622	1 15/32	1.505	1.433	27/32	0.880	0.808
1 5/8	1.6250	2 5/8	2.5625	2.481	2.959	2.828	1 19/32	1.632	1.556	29/32	0.944	0.868
1 3/4	1.7500	3	2.7500	2.662	3.175	3.035	1 23/32	1.759	1.679	31/32	1.009	0.929
1 7/8	1.8750	3 1/8	2.9375	2.844	3.392	3.242	1 27/32	1.886	1.802	1 1/32	1.073	0.989
2	2.0000	3 1/4	3.1250	3.025	3.608	3.449	1 31/32	2.013	1.925	1 3/32	1.138	1.050
2 1/4	2.2500	3 3/8	3.5000	3.338	4.041	3.862	2 1/64	2.251	2.155	1 13/64	1.251	1.155
2 1/2	2.5000	3 7/8	3.8750	3.750	4.474	4.275	2 29/64	2.505	2.401	1 29/64	1.505	1.401
2 3/4	2.7500	4 1/4	4.2500	4.112	4.907	4.688	2 45/64	2.759	2.647	1 37/64	1.634	1.522
3	3.0000	5	4.6250	4.475	5.340	5.102	2 61/64	3.013	2.893	1 45/64	1.783	1.643
3 1/4	3.2500	5 1/8	5.0000	4.838	5.714	5.515	3 3/16	3.252	3.124	1 53/64	1.876	1.748
3 1/2	3.5000	5 3/8	5.3750	5.200	6.207	5.928	3 7/16	3.506	3.370	1 51/64	2.006	1.870
3 3/4	3.7500	5 3/4	5.7500	5.562	6.640	6.341	3 11/16	3.760	3.616	2 1/16	2.134	1.990
4	4.0000	6 1/8	6.1250	5.925	7.073	6.755	3 15/16	4.014	3.862	2 3/16	2.264	2.112

## SQUARE AND HEX MACHINE SCREW NUTS

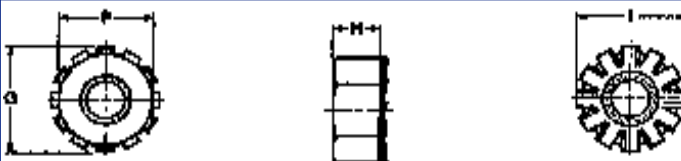


Nominal Size	Major Diameter of Thread	F				G				G			
		Width Across Flats				Width Across Corners				Width Across Corners			
		Square				Hex				Hex			
		Basic	Max	Min	Max	Min	Max	Min	Norm	Max	Min	Max	Min
0	0.0600	5/32	0.156	0.150	0.221	0.206	0.180	0.171	3/64	0.050	0.043		
1	0.0730	3/32	0.156	0.150	0.221	0.206	0.180	0.171	3/64	0.050	0.043		
2	0.0860	5/16	0.187	0.180	0.265	0.247	0.217	0.205	1/16	0.066	0.057		
3	0.0990	3/16	0.187	0.180	0.265	0.247	0.217	0.205	1/16	0.066	0.057		
4	0.1120	1/4	0.250	0.241	0.354	0.331	0.289	0.275	3/32	0.098	0.087		
5	0.1250	5/16	0.312	0.302	0.442	0.415	0.361	0.344	7/64	0.114	0.102		
6	0.1380	5/16	0.312	0.302	0.442	0.415	0.361	0.344	7/64	0.114	0.102		
8	0.1640	11/32	0.344	0.332	0.486	0.456	0.397	0.378	1/8	0.130	0.117		
10	0.1900	3/8	0.375	0.362	0.530	0.497	0.433	0.413	1/8	0.130	0.117		
12	0.2160	7/16	0.437	0.423	0.619	0.581	0.505	0.482	5/32	0.161	0.148		
1/4	0.2500	7/16	0.437	0.423	0.619	0.581	0.505	0.482	3/16	0.193	0.178		
5/16	0.3125	9/16	0.562	0.545	0.795	0.748	0.650	0.621	7/32	0.225	0.208		
3/8	0.3750	5/8	0.625	0.607	0.884	0.833	0.722	0.692	1/4	0.257	0.239		

## NYLON INSERT STOP NUTS

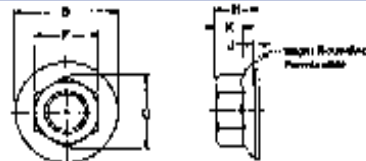
Nominal Size or Basic Major Dia. of Thread	F			H		I	G
	Width Across Flats			Thickness		Side Height	Width Across Corners
	Basic	Max	Min	Max	Min	Ref.	Ref.
4	0.1120	1/4	0.251	0.243	0.153	0.133	0.081
6	0.1380	5/16	0.313	0.305	0.188	0.168	0.103
8	0.164	11/32	0.345	0.336	0.239	0.219	0.140
10	0.190	3/8	0.376	0.367	0.249	0.229	0.140
1/4	0.250	7/16	0.439	0.430	0.328	0.298	0.225
5/16	0.3125	1/2	0.502	0.492	0.359	0.329	0.250
3/8	0.3750	9/16	0.564	0.553	0.468	0.438	0.335
7/16	0.4375	1 1/16	0.627	0.616	0.468	0.438	0.324
1/2	0.5000	3/4	0.752	0.741	0.609	0.579	0.464
5/8	0.5625	7/8	0.877	0.865	0.666	0.626	0.489
3/4	0.6250	1 1/8	0.940	0.928	0.755	0.735	0.593
7/8	0.7500	1 1/8	1.064	1.052	0.890	0.860	0.742
1	0.8750	1 1/2	1.252	1.239	0.999	0.969	0.790
1 1/8	1.0000	1 1/2	1.440	1.427	1.078	1.061	0.825
1 1/4	1.1250	1 13/16	1.627	1.614	1.203	1.141	0.930
1 1/2	1.2500	2 1/8	1.815	1.801	1.422	1.360	1.125
1 3/4	1.3750	2 1/4	2.197	2.159	1.640	1.578	1.313

## "K" LOCK NUTS



Nominal Size or Basic Thread Diameter	F			G		H		G
	Width Across Flats			Width Across Corners		Thickness		Width Across Corners
	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
6	0.1380	5/16	0.312	0.302	0.361	0.344	0.114	0.102
8	0.1640	11/32	0.344	0.332	0.397	0.378	0.130	0.117
10	0.1900	3/8	0.375	0.362	0.433	0.413	0.130	0.117
1/4	0.2500	7/16	0.438	0.423	0.505	0.482	0.193	0.178
5/16	0.3125	1/2	0.500	0.489	0.577	0.557	0.273	0.258
3/8	0.3750	5/8	0.562	0.551	0.650	0.628	0.385	0.365

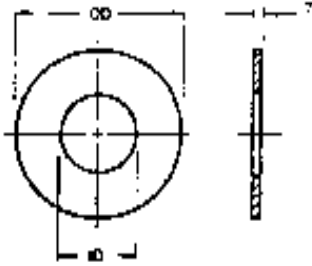
## SERRATED FLANGE LOCK NUTS



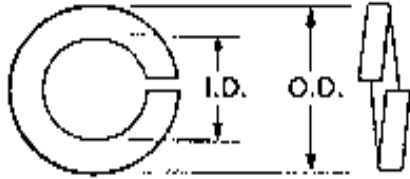
Nominal Size or Basic Major Diameter of Thread	F		G		B		H		J	K	
	Width Across Flats		Width Across Corners		Flange Diameter		Nut Thickness		Wrenching Length	Flange Thickness	
	Max	Min	Max	Min	Max	Min	Max	Min	Min	Max	
6	0.1380	0.312	0.302	0.361	0.342	0.422	0.406	0.171	0.156	0.10	0.02
8	0.1640	0.344	0.334	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	0.498	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

**OTHER NUTS AVAILABLE: Slotted • Wing • All Locking Nuts**  
**Please call or fax for special requirements.**

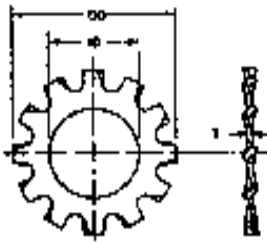
# WASHERS



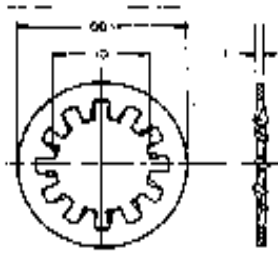
**USS FLAT WASHERS  
SAE FLAT WASHER  
TYPE B (NARROW, REGULAR, WIDE)  
STRUCTURAL WASHER PER ASTM F**



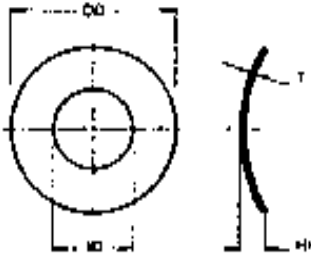
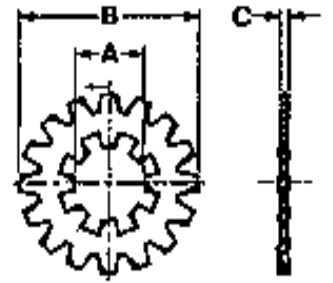
**MEDIUM SPLIT LOCKWASHER  
LIGHT SPLIT LOCKWASHER  
HAYV SPLIT LOCKWASHER  
EXTRA DUTY SPLIT LOCKWASHER**



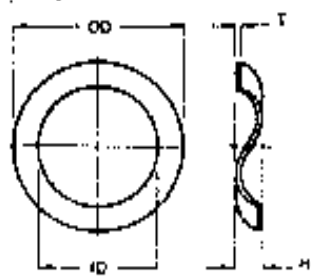
**EXTERNAL  
TOOTH  
LOCKWASHER**



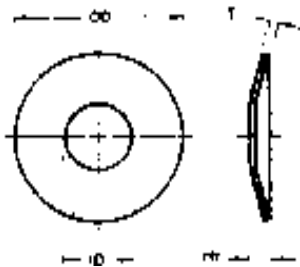
**INTERNAL  
TOOTH  
LOCKWASHER**



**ONE WAVE  
TENSION  
WASHER**



**THREE WAVE  
TENSION  
WASHER**

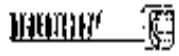


**BELLEVILLE SPRING WASHER**

**All washers available in a variety of materials and platings.  
Give us a call with your specifications.**



# SOCKET SCREWS



**SOCKET HEAD  
CAP SCREWS**



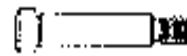
**HEXAGON  
SOCKET**



**SPLINE  
SOCKET**



**BUTTON HEAD  
CAP SCREWS**



**HEAD SHOULDER SCREWS  
KEY**



**CAP SCREWS  
COUNTERSUNK HEAD**

# SET SCREWS



**SQUARE HEAD SET SCREWS**



**SOCKET SET SCREWS**



**FLAT POINT**



**CONE POINT**



**HEX POINT**



**CUP POINT**



**OVAL POINT**

## SLOTTED HEADLESS SET SCREWS

# RIVETS



**PAN HEAD**



**FLAT HEAD  
COUNTERSUNK**



**BUTTON HEAD**



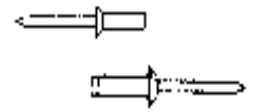
**FLAT HEAD**



**TRUSS HEAD**

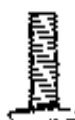


**TINNERS**



**MANDREL  
BLIND RIVET**

# WELDING FASTENERS



**WELD SCREWS**



**WELD NUTS**



# THUMB SCREWS



**TYPE A**



**TYPE B**



# STUDS



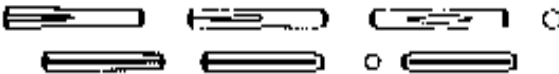
**DOUBLE END STUDS**



**CONTINUOUS THREAD STUDS**

# PINS

## GROOVED



**CLEVIS**

## EXTENDED PRONG SQUARE CUT



**UNHARDENED GROOVED DOWEL**

## COTTER



## HAMMER LOCK



**HARDENED AND GROOVED DOWEL**