



Standard Part

Tapping Screws Inch

STPD110
87366937
Rev BG
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1. SCOPE

The fasteners defined by this standard are pan, flat, oval, round, hexagon, hexagon washer, and truss headed tapping screws.

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3. GENERAL

This standard may differ in some respects with certain segments of ANSI. In recognition of these differences, the sizes and tolerance ranges used were established in an effort to enable the use of commercially available items, dimensionally interchangeable worldwide.

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4. RELATED DOCUMENTS

4.1 RELATED STANDARDS

CNH STPA020—Fastener Finishes and Material Specifications

ANSI / ASME B1.1—Unified Screw Threads

ASME B18.6.3— Machine Screws, Tapping Screws, and Metallic Drive Screws (Inch Series)

ISO 10664—Hexalobular Internal Driving Feature For Bolts and Screws

SAE J1061—Surface Discontinuities on General Application Bolts, Screws, and Studs

SAE J429—Mechanical and Material Requirements for Externally Threaded Fasteners

4.2 REPLACED DOCUMENTS

Case D-001—Tapping Screws (General Specifications)

Case D-002—Flat Head Tapping Screws - Dimensional Requirements

Case D-003—Flat Head Type AB, B, BF, BT - Cross Recess - Preferred

Case D-005—Flat Head Type AB, B, BF, BT - Slotted - Non Preferred

Case D-006—Flat Head Type D, F, T - Cross Recess - Preferred

Case D-009—Oval Head Tapping Screws - Dimensional Requirements

Case D-010—Oval Head Type AB, B, BF, BT - Cross Recess - Preferred

Case D-011—Oval Head Type AB, B BF, BT - Cross Recess – Non-Preferred

Case D-013—Oval Head Type D, F, T - Cross Recess - Preferred

Case D-014—Oval Head Type D, F, T - Cross Recess – Non-Preferred

Case D-015—Oval Head Type D, F, T - Slotted – Non-Preferred

Case D-016—Pan Head Tapping Screws - Dimensional Requirements

Case D-017—Pan Head Type AB, B, BF, BT - Cross Recess - Preferred

Case D-018—Pan Head Type AB, B BF, BT - Cross Recess – Non-Preferred

Case D-019—Pan Head Type AB, B, BF, BT - Slotted – Non-Preferred

Case D-020—Pan Head Type D, F, T - Cross Recess - Preferred

Case D-021—Pan Head Type D, F, T - Cross Recess – Non-Preferred

Case D-022—Pan Head Type D, F, T - Slotted – Non-Preferred

Case D-023—Hexagon Head Tapping Screws - Dimensional Requirements

Case D-024—Hex Head Type AB, B, BF, BT - Preferred

Case D-025—Hex Head Type AB, B, BF, BT – Non-Preferred

Case D-026—Hex Head Type D F, T - Preferred

Case D-027—Hex Head Type D F, T – Non-Preferred

Case D-028—Hex Washer Head Type AB, B, BF, BT - Preferred

Case D-029—Hex Washer Head Type AB, B, BF, BT – Non-Preferred

Case D-030—Hex Washer Head Type D, F, T - Preferred

Case D-031—Hex Washer Head Type D, F, T – Non-Preferred

Case D-032—Hex Washer Head Type C - Not Recommended For New Design

Case D-033—Truss Head Tapping Screws - Dimensional Requirements

Case D-034—Truss Head Type AB B BT, BF - Cross Recess - Not Recommended

Case D-039—Special Tapping Screws – Non-Preferred

FNHA 1-B-170.00—Self Tapping Screws—Thread Forming and Thread Cutting

5. REQUIREMENTS

5.1 POINT TYPE

Point types are A, B, BF, BT, D, F, T.

5.2 HEAD TYPE

Head types are flat, oval, pan, hexagon, hexagon washer, and truss head.

5.3 DRIVE TYPE

Drive types in this standard include

Slotted
Cross recessed
TORX® or Equivalent.

5.4 MATERIAL

High quality low carbon steel, case hardened to meet the performance requirements set forth for Tapping Screw Material per ASME B18.6.3. Core hardness of Rockwell C28-38 (Preferably no higher than C36). Minimum case hardness of Rockwell C45.

#7 size tapping screw shall meet the ASME B18.6.3 requirements except will have a Total Case Depth of 0.003" - 0.008".

5.5 FINISH

The finish is per Fastener Finishes and Material Specifications STPA020

5.6 PHYSICAL DIMENSIONS

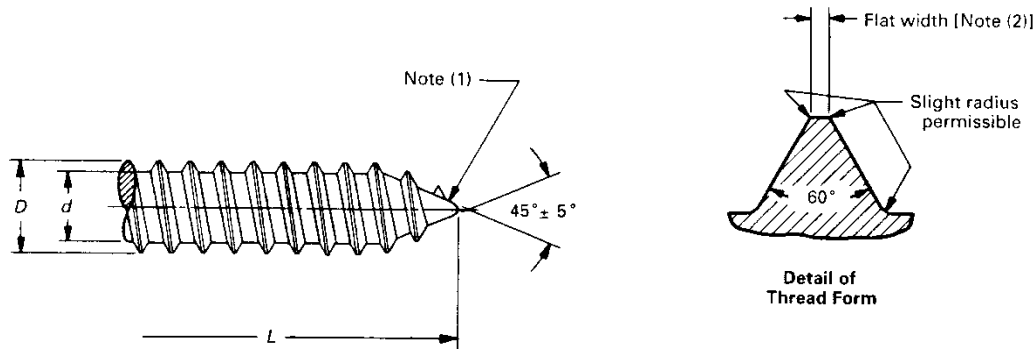
The screw thread geometry shall be coarse or fine pitch, according to ANSI / ASME B1.1 before plating. The general dimensions shall meet the requirements in the appropriate tables listed. Referenced standards (latest versions), where applicable, shall be considered to be a part of this standard.

5.7 SURFACE DISCONTINUITIES

All screws listed in this standard shall meet the Surface Discontinuities on General Applications Bolts, Screws and Studs per SAE J1061 requirement.

6. CROSS REFERENCE

For cross reference listing of company part numbers, go to [CNH Catalogue](#).

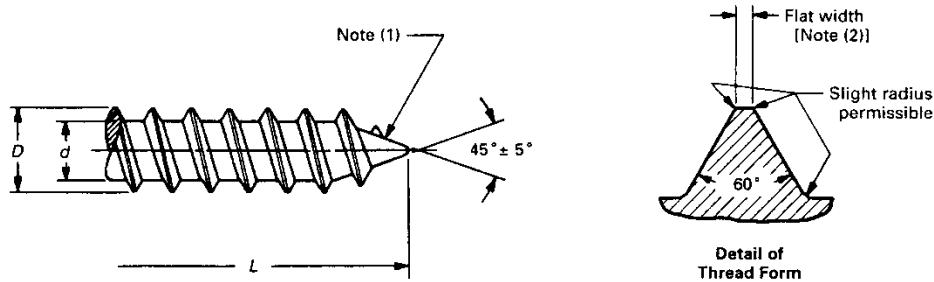
TABLE 1: General Dimensions Type AB Thread Forming Screws


Nominal Size	Threads per Inch	Major Diameter (D)		Minor Diameter (d)		Min. Practical Nom. Screw Lengths (L)	
		Max	Min	Max	Min	90° Heads	Csk. Heads
#4 (.1120)	24	.114	.108	.086	.082	7/32	9/32
#6 (.1380)	20	.139	.132	.104	.099	9/32	11/32
#8 (.1640)	18	.166	.159	.122	.116	5/16	3/8
#10 (.1900)	16	.189	.182	.141	.135	3/8	7/16
#12 (.2160)	14	.215	.208	.164	.157	7/16	21/32
1/4 (.2500)	14	.246	.237	.192	.185	1/2	19/32
5/16 (.3125)	12	.315	.306	.244	.236	5/8	3/4
3/8 (.3750)	12	.380	.371	.309	.299	3/4	29/32

NOTES:

- (1) No extrusions of excess metal beyond apex of the point resulting from thread rolling shall be permissible. A slight rounding or truncation of the point is desirable.
- (2) The width of the flat at crest of thread shall not exceed 0.004 in. for sizes up to and including No. 8 and 0.006 in for larger sizes.

TABLE 2: General Dimensions Type A Thread Forming Screws
(Not Recommended for New Designs—Use Type AB)

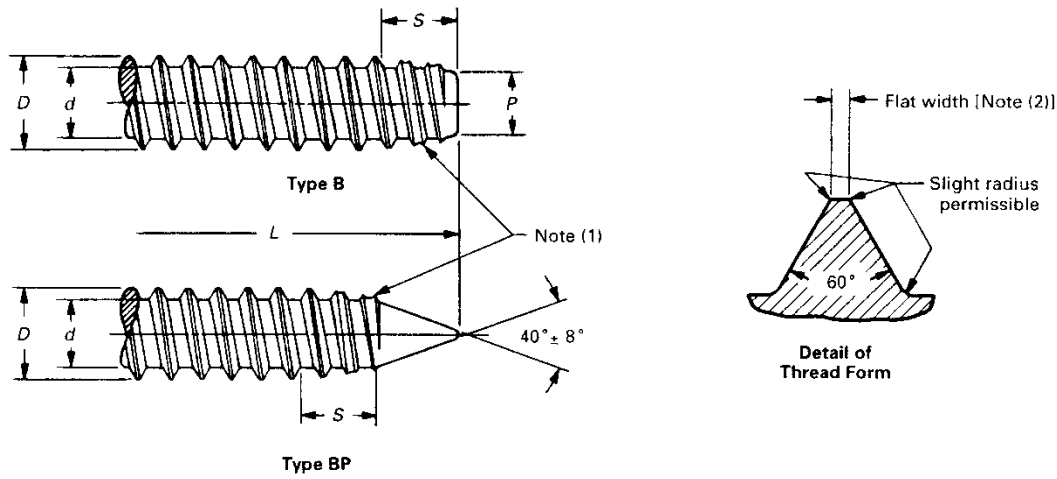


Nominal Size	Threads per Inch	Major Diameter (D)		Minor Diameter (d)		For These Length or Shorter, Use Type AB (L)	
		Max	Min	Max	Min	90° Heads	Csk. Heads
#4 (.1120)	24	.114	.110	.083	.078	3/16	1/4
#6 (.1380)	18	.141	.136	.102	.096	1/4	5/16
#8 (.1640)	15	.168	.162	.123	.116	3/8	7/16
#10 (.1900)	12	.194	.188	.133	.126	3/8	1/2
#12 (.2160)	11	.221	.215	.162	.155	7/16	9/16
#14 (.2420)	10	.254	.248	.185	.178	1/2	5/8
#16 (.2680)	10	.280	.274	.197	.189	9/16	3/4

NOTES:

- (1) No extrusions of excess metal beyond apex of the point resulting from thread rolling shall be permissible. A slight rounding or truncation of the point is desirable.
- (2) The width of the flat at crest of thread shall not exceed 0.004 in. for sizes up to and including No. 8 and 0.006 in for larger sizes.

TABLE 3: General Dimensions Type B and BP Threading Forming Screws

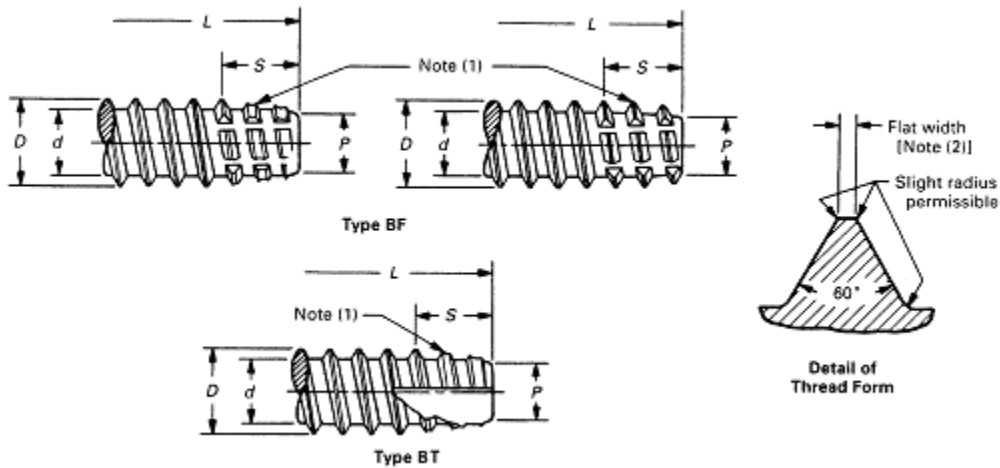


Nominal Size	Threads per Inch	Major Diameter (D)		Minor Diameter (d)		Point Diameter Ref.	Point Taper Length (S)		Min. Practical Nom. Screw Lengths (L)			
		Max	Min	Max	Min		Max	Min	Type B		Type BP	
									90° Heads	Csk. Heads	90° Heads	Csk. Heads
#6 (.1380)	20	.139	.132	.104	.099	.095	.100	.075	1/4	9/32	3/8	7/16
#7 (.1510)	19	.154	.147	.115	.109	.105	.105	.079	1/4	5/16	13/32	12/32
#8 (.1640)	18	.166	.159	.122	.116	.112	.111	.083	9/32	11/32	7/16	1/2
#10 (.1900)	16	.189	.182	.141	.135	.130	.125	.094	5/16	3/8	1/2	19/32
#12 (.2160)	14	.215	.208	.164	.157	.152	.143	.107	11/32	7/16		
1/4 (.2500)	14	.246	.237	.192	.185	.179	.143	.107	3/8	1/2	21/32	3/4
5/16 (.3125)	12	.315	.306	.244	.236	.230	.167	.125	15/32	19/32	27/32	31/32
3/8 (.3750)	12	.380	.371	.309	.299	.293	.167	.125	17/32	11/16	15/16	1 1/8

NOTES:

- (1) Threads within point taper length shall have unfinished crests.
- (2) The width of the flat at crest of thread shall not exceed .004 in. for sizes up to and including No. 8, and .006 for larger sizes.

TABLE 4: General Dimensions Type BF and BT Thread Cutting Screws

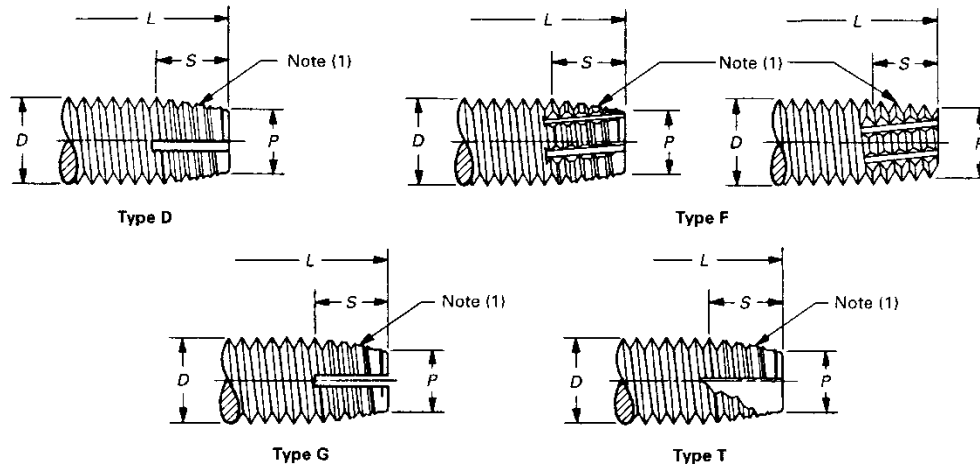


Nominal Size	Threads per Inch	Major Diameter (D)		Minor Diameter (d)		Point Diameter (P)	Point Taper Length (S)		Min. Practical Nom. Screw Thread Lengths (L)	
		Max	Min	Max	Min	Ref.	Max	Min	90° Heads	Csk. Heads
#4 (.1120)	24	.114	.108	.086	.082	.079	.083	.063	3/16	1/4
#6 (.1380)	20	.139	.132	.104	.099	.095	.100	.075	1/4	9/32
#8 (.1640)	18	.166	.159	.122	.116	.112	.111	.083	9/32	11/32
#10 (.1900)	16	.189	.182	.141	.135	.130	.125	.094	5/16	3/8
1/4 (.2500)	14	.246	.237	.192	.185	.179	.143	.107	3/8	1/2
5/16 (.3125)	12	.315	.306	.244	.236	.230	.167	.125	15/32	19/32

NOTES:

(1) Points of screws shall be tapered and fluted or slotted as illustrated above for the respective types. The flute on Type BT screws shall have an included angle of 90° to 95° and the thread cutting edge located above the axis of screw. Tapered threads shall have unfinished crests, and the flutes or slots shall extend through first full thread beyond taper except for type BF screws on which tapered threads may be complete at the manufacturer's option and flutes may be one pitch short of first full form thread. Other details of taper and flute design shall be optional with manufacturer provided the screws meet specified performance requirements.

(2) The width of the flat at crest of thread shall not exceed .004 in. for sizes up to and including No. 8, and .006 for larger sizes.

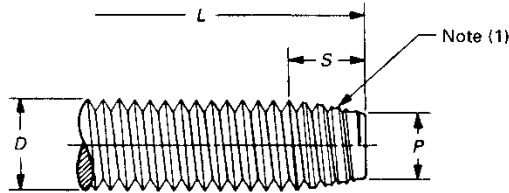
TABLE 5: General Dimensions Type D, F, G, and T Thread Cutting Screws


Nominal Size	Threads per Inch	Major Diameter (D)		Point Dia. (P)	Point Taper Length (S)				Determinant Lengths for Point Taper (L)		Min. Practical Nom. Screw Lengths (L)	
		Max	Min		Ref	For Short Screws		For Long Screws		90° Heads	Csk. Heads	90° Heads
					Max	Min	Max	Min				
#4 (.112)	40	.1120	.1061	.087	.088	.062	.112	.088	7/32	1/4	3/16	1/4
#4 (.112)	48	.1120	.1068	.091	.073	.052	.094	.073	3/16	7/32	5/32	7/32
#6 (.1380)	32	.1380	.1312	.107	.109	.078	.141	.109	1/4	5/16	1/4	5/16
#6 (.1380)	40	.1380	.1321	.113	.088	.062	.112	.088	7/32	9/32	3/16	1/4
#8 (.1640)	32	.1640	.1571	.132	.109	.078	.141	.109	1/4	11/32	1/4	5/16
#8 (.1640)	36	.1640	.1577	.136	.097	.069	.125	.097	7/32	5/16	7/32	9/32
#10 (.1900)	24	.1900	.1818	.148	.146	.104	.188	.146	11/32	7/16	5/16	13/32
#10 (.1900)	32	.1900	.1831	.158	.109	.078	.141	.109	1/4	11/32	1/4	5/16
#12 (.2160)	24	.2160	.2078	.174	.146	.104	.188	.146	11/32	7/16	5/16	13/32
#12 (.2160)	28	.2160	.2085	.180	.125	.089	.161	.125	5/16	13/32	9/32	3/8
1/4 (.2500)	20	.2500	.2408	.200	.175	.125	.225	.175	13/32	17/32	3/8	1/2
1/4 (.2500)	28	.2500	.2425	.214	.125	.089	.161	.125	5/16	13/32	9/32	3/8
5/16 (.3125)	18	.3125	.3026	.257	.194	.139	.250	.194	15/32	19/32	7/16	9/16
5/16 (.3125)	24	.3125	.3042	.271	.146	.104	.188	.146	11/32	15/32	5/16	15/32
7/16 (.4375)	20	.4375	.4281	.387	.175	.125	.225	.175	13/32	9/16	3/8	17/32
3/8 (.3750)	16	.3750	.3643	.312	.219	.156	.281	.219	1/2	11/16	15/32	5/6
3/8 (.3750)	24	.3750	.3667	.333	.146	.104	.188	.146	11/32	1/2	5/16	1/2

NOTES:

(1) Points of screws shall be tapered and fluted or slotted as illustrated above for the respective types. The flute on Type T screws shall have an included angle of 90° to 95° and the thread cutting edge located above the axis of screw. Tapered threads shall have unfinished crests, and the flutes or slots shall extend through first full thread beyond taper except for type F screws on which tapered threads may be complete at the manufacturer's option and flutes may be one pitch short of first full form thread. Other details of taper and flute design shall be optional with manufacturer provided the screws meet specified performance requirements.

TABLE 6: General Dimensions Type C Thread Forming Screws
(Not Recommended for New Designs)

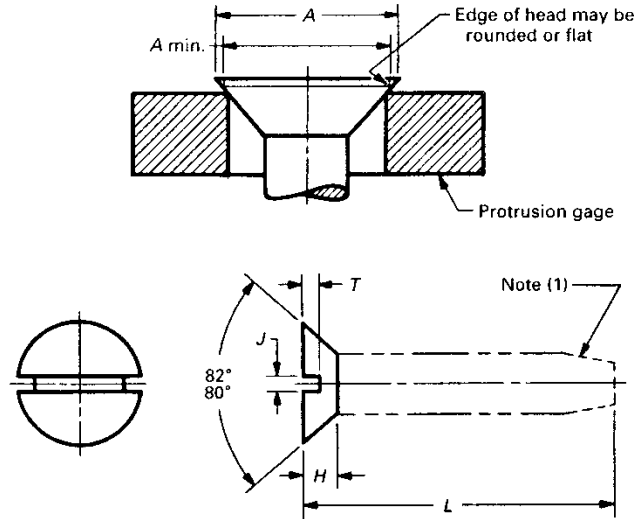


Nominal Size	Threads per Inch	Major Diameter (D)		Point Dia. (P)	Point Taper Length (S)				Determinant Lengths for Point Taper (L)		Min. Practical Nominal Screw Lengths (L)	
		Max	Min		Short Screws		Long Screws		90° Heads	Csk Heads	90° Heads	Csk Heads
		Ref	Max	Min	Max	Min	Max	Min				
#4 (.1120)	40	.1120	.1061	.087	.088	.062	.112	.088	7/32	1/4	3/16	1/4
#4 (.1120)	48	.1120	.1068	.091	.073	.052	.094	.073	3/16	7/32	5/32	7/32
#6 (.1380)	32	.1380	.1312	.107	.109	.078	.141	.109	1/4	5/16	1/4	5/16
#6 (.1380)	40	.1380	.1321	.113	.088	.062	.112	.088	7/32	9/32	3/16	1/4
#8 (.1640)	32	.1640	.1571	.132	.109	.078	.141	.109	1/4	11/32	1/4	5/16
#8 (.1640)	36	.1640	.1577	.136	.097	.069	.125	.097	7/32	5/16	7/32	9/32
#10 (.1900)	24	.1900	.1818	.148	.146	.104	.188	.146	11/32	7/16	5/16	13/32
#10 (.1900)	32	.1900	.1831	.158	.109	.078	.141	.109	1/4	11/32	1/4	5/16
#12 (.2160)	24	.2160	.2078	.179	.146	.104	.188	.116	11/32	7/16	5/16	13/32
#12 (.2160)	28	.2160	.2085	.180	.125	.089	.161	.125	5/16	13/32	9/32	3/8
1/4 (.2500)	20	.2500	.2408	.200	.175	.125	.225	.175	13/32	17/32	3/8	1/2
1/4 (.2500)	28	.2500	.2425	.214	.125	.089	.161	.125	5/16	13/32	9/32	3/8
5/16 (.3125)	18	.3125	.3026	.257	.194	.139	.250	.194	15/32	19/32	7/16	9/16
5/16 (.3125)	24	.3125	.3042	.271	.146	.104	.188	.146	11/32	15/32	5/16	15/32
3/8 (.3750)	16	.3750	.3643	.312	.219	.156	.281	.219	1/2	11/16	15/32	5/8
3/8 (.3750)	24	.3750	.3667	.333	.146	.104	.188	.146	11/32	1/2	5/16	1/2

NOTES:

- (1) Threads within point taper length shall have unfinished crests.

TABLE 7: General Dimensions Slotted Flat Countersunk Head
(Not Recommended for New Designs)

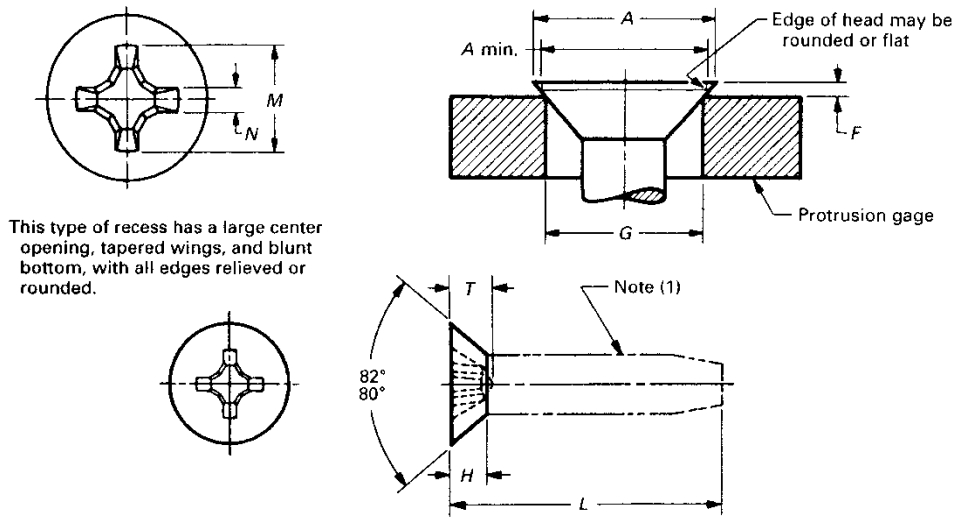


Nominal Size	Applicable to Screw Types ⁽¹⁾	These Lengths or Shorter Are Undercut (L)		Head Diameter (A)		Head Height (H)	Slot Width (J)		Slot Depth (T)	
		Types AB & A	Other Types	Max	Min	Ref	Max	Min	Max	Min
#4 (.1120)	● ◆ ▲ ■	1/4	1/4	.212	.191	.067	.039	.031	.030	.020
#6 (.1380)	● ◆ ▲ ■	5/16	5/16	.262	.238	.083	.048	.039	.038	.024
#8 (.1640)	● ◆ ▲ ■	7/16	7/16	.312	.285	.100	.054	.045	.045	.029
#10 (.1900)	● ◆ ▲ ■	1/2	1/2	.362	.333	.116	.060	.050	.053	.034
#12 (.2160)	● ◆ ▲ ■	9/16	9/16	.412	.380	.132	.067	.067	.060	.039
1/4 (.2500)	● ▲ ■	5/8	5/8	.477	.442	.153	.075	.064	.070	.046
5/16 (.3125)	● ▲ ■	13/16	5/8	.597	.556	.191	.084	.072	.088	.058
3/8 (.3750)	▲ ■	—	5/8	.717	.670	.230	.094	.081	.106	.070
7/16 (.4375)	▲	—	3/4	.760	.715	.223	.094	.081	.103	.066

NOTES:

- (1) Applicable to screw types as indicated by code symbols below.
- Type AB thread forming
 - ◆ Type A thread forming, except short lengths
 - ▲ Types B and BP thread forming and BF and BT thread cutting
 - Type C thread forming and Types D, F, G, and T thread cutting

TABLE 8: General Dimensions Cross Recessed Flat Countersunk Head

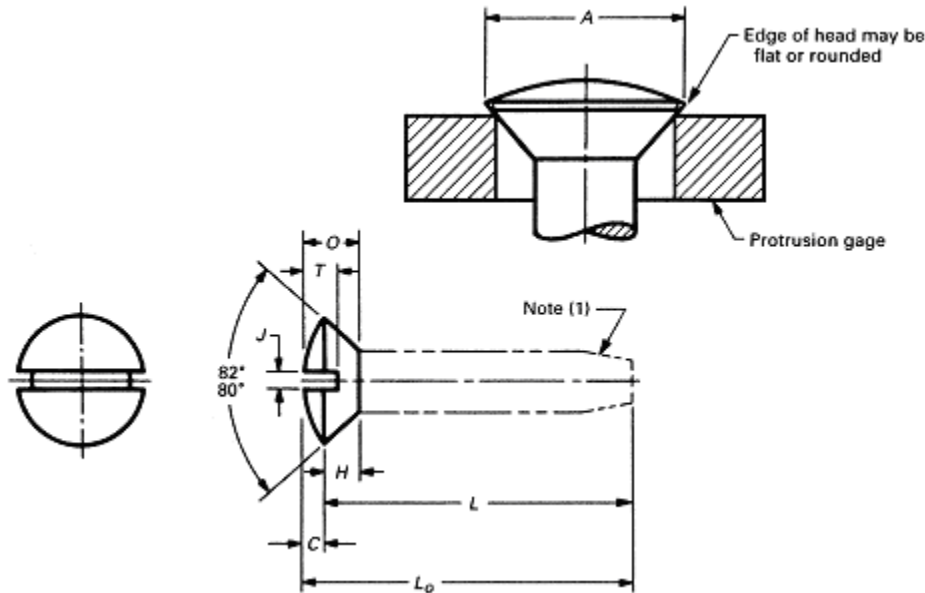


Nominal Size	Applicable to Screw Types ⁽¹⁾	These Lengths or Shorter Are Undercut (L)		Head Diameter (A)		Head Height (H)	Recess Diameter (M)	Recess Depth (T)	Recess Width (N)	Drive Size	Recess Penetration Gaging Depth	
		Types AB & A	Other Types	Max	Min	Ref	Ref	Ref	Ref		Max	Min
#4 (.1120)	● ◆ ▲ ■	1/4	1/4	.212	.191	.067	.122	.081	.018	1	.082	.066
#6 (.1380)	● ◆ ▲ ■	5/16	5/16	.262	.238	.083	.168	.094	.029	3	.095	.072
#8 (.1640)	● ◆ ▲ ■	7/16	7/16	.312	.285	.100	.182	.110	.030	2	.110	.087
#10 (.1900)	● ◆ ▲ ■	1/2	1/2	.362	.333	.116	.198	.124	.032	2	.125	.102
#12 (.2160)	● ◆ ▲ ■	9/16	9/16	.412	.380	.132	.262	.144	.035	3	.139	.116
1/4 (.2500)	● ▲ ■	5/8	5/8	.477	.442	.153	.276	.160	.036	3	.154	.131
5/16 (.3125)	● ▲ ■	13/16	5/8	.597	.556	.191	.358	.205	.061	4	.196	.174
3/8 (.3750)	▲ ■	—	5/8	.717	.670	.230	.386	.234	.065	4	.225	.203
7/16 (.4375)	▲	—	3/4	.760	.715	.223	.402	.250	.068	4	.241	.219

NOTES:

- (1) Applicable to screw types as indicated by code symbols below.
- Type AB thread forming
 - ◆ Type A thread forming, except short lengths
 - ▲ Types B and BP thread forming and BF and BT thread cutting
 - Type C thread forming and Types D, F, G, and T thread cutting

TABLE 9: General Dimensions Slotted Oval Head
(Not Recommended)

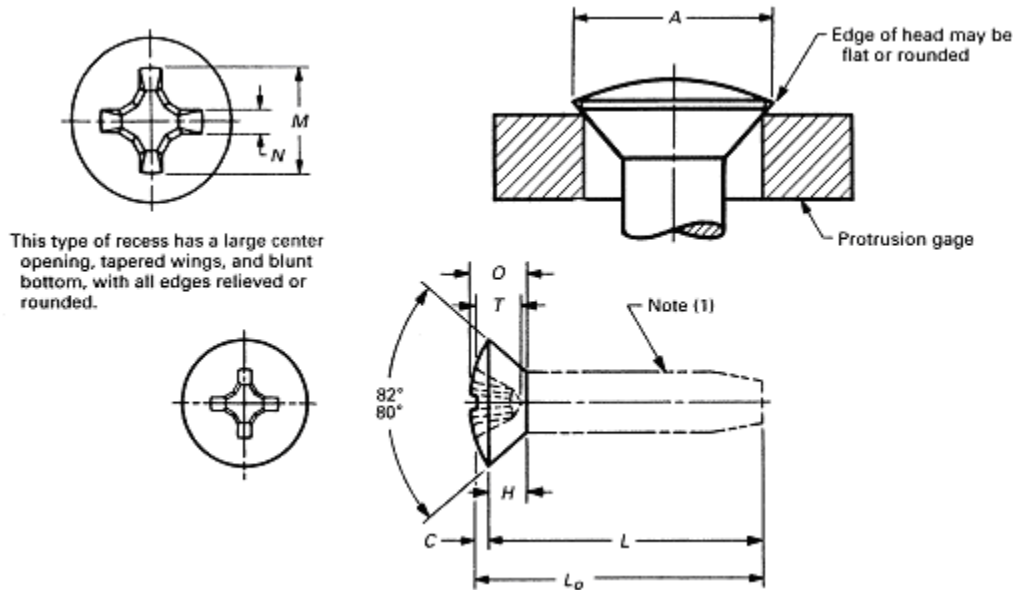


Nominal Size	Applicable to Screw Types ⁽¹⁾	These Lengths or Shorter Are Undercut (L)		Head Diameter (A)		Head Side Height (H)	Head Crown Height (C)	Total Head Height (O)	Slot Width (J)		Slot Depth (T)	
		Types AB & A	Other Types	Max	Min	Ref	Ref	Ref	Max	Min	Max	Min
#4 (.1120)	● ◆ ▲ ■	1/4	1/4	.212	.191	.067	.037	.104	.039	.031	.059	.049
#6 (.1380)	● ◆ ▲ ■	5/16	5/16	.262	.238	.083	.045	.128	.048	.039	.074	.060
#8 (.1640)	● ◆ ▲ ■	7/16	7/16	.312	.285	.100	.052	.152	.054	.045	.088	.072
#10 (.1900)	● ◆ ▲ ■	1/2	1/2	.362	.333	.116	.060	.176	.060	.050	.103	.084
#12 (.2160)	● ◆ ▲ ■	9/16	9/16	.412	.380	.132	.068	.200	.067	.067	.117	.096
1/4 (.2500)	● ▲ ■	5/8	5/8	.477	.442	.153	.079	.232	.075	.064	.136	.112
5/16 (.3125)	● ▲ ■	13/16	5/8	.597	.556	.191	.099	.290	.084	.072	.171	.141
3/8 (.3750)	▲ ■	—	5/8	.717	.670	.230	.117	.347	.094	.081	.206	.170
7/16 (.4375)	▲	—	3/4	.760	.715	.223	.122	.345	.094	.081	.210	.174

NOTES:

- (1) Applicable to screw types as indicated by code symbols below.
- Type AB thread forming
 - ◆ Type A thread forming, except short lengths
 - ▲ Types B and BP thread forming and BF and BT thread cutting
 - Type C thread forming and Types D, F, G, and T thread cutting

TABLE 10: General Dimensions Cross Recessed Oval Head



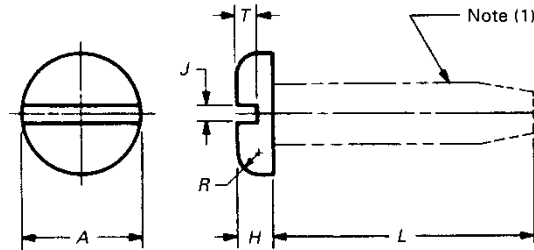
This type of recess has a large center opening, tapered wings, and blunt bottom, with all edges relieved or rounded.

Nominal Size	Applicable to Screw Types ⁽¹⁾	These Lengths or Shorter Are Undercut (L)		Head Diameter (A)		Head Side Height (H)	Head Crown Height (C)	Total Head Height (O)	Recess Dia. (M)	Recess Depth (T)	Recess Width (N)	Driver Size
		Types AB & A	Other Types	Max	Min	Ref	Ref	Ref	Ref	Ref	Ref	
#4 (.1120)	● ◆ ▲ ■	1/4	1/4	.212	.191	.067	.037	.104	.130	.086	.019	1
#6 (.1380)	● ◆ ▲ ■	5/16	5/16	.262	.238	.083	.045	.128	.172	.092	.030	2
#8 (.1640)	● ◆ ▲ ■	7/16	7/16	.312	.285	.100	.052	.152	.186	.107	.031	2
#10 (.1900)	● ◆ ▲ ■	1/2	1/2	.362	.333	.116	.060	.176	.202	.125	.033	2
#12 (.2160)	● ◆ ▲ ■	9/16	9/16	.412	.380	.132	.068	.200	.264	.140	.038	3
1/4 (.2500)	● ▲ ■	5/8	5/8	.477	.442	.153	.079	.232	.284	.160	.040	3
5/16 (.3125)	● ▲ ■	13/16	5/8	.597	.556	.191	.099	.290	.384	.226	.065	4
3/8 (.3750)	▲ ■	---	5/8	.717	.670	.230	.117	.347	.404	.245	.068	4
7/16 (.4375)	▲	---	3/4	.760	.715	.223	.122	.345	.416	.257	.070	4

NOTES:

- (1) Applicable to screw types as indicated by code symbols below.
- Type AB thread forming
 - ◆ Type A thread forming, except short lengths
 - ▲ Types B and BP thread forming and BF and BT thread cutting
 - Type C thread forming and Types D, F, G, and T thread cutting

TABLE 11: General Dimensions Slotted Pan Head
(Not Recommended)

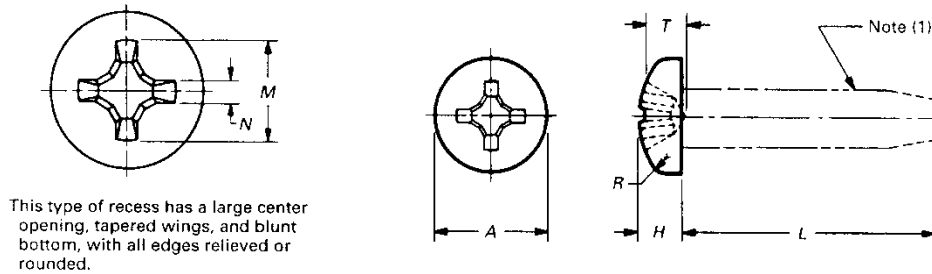


Nominal Size	Applicable to Screw Types ⁽¹⁾	Head Diameter (A)		Head Height (H)		Head Radius (R)	Slot Width (J)		Slot Depth (T)	
		Max	Min	Max	Min	Max	Max	Min	Max	Min
#4 (.1120)	● ◆ ▲ ■	.219	.205	.068	.058	.042	.039	.031	.040	.030
#6 (.1380)	● ◆ ▲ ■	.270	.256	.082	.072	.046	.048	.039	.050	.037
#8 (.1640)	● ◆ ▲ ■	.322	.306	.096	.085	.052	.054	.045	.058	.045
#10 (.1900)	● ◆ ▲ ■	.373	.357	.110	.099	.061	.060	.050	.068	.053
#12 (.2160)	● ◆ ▲ ■	.425	.407	.125	.112	.078	.067	.056	.077	.061
1/4 (.2500)	● ▲ ■	.492	.473	.144	.130	.087	.075	.064	.087	.070
5/16 (.3125)	● ▲ ■	.615	.594	.178	.162	.099	.084	.072	.106	.085
3/8 (.3750)	▲ ■	.740	.716	.212	.195	.143	.094	.081	.124	.100
7/16 (.4375)	▲	.863	.837	.247	.228	.153	.094	.081	.142	.116

NOTES:

- (1) Applicable to screw types as indicated by code symbols below.
- Type AB thread forming
 - ◆ Type A thread forming, except short lengths
 - ▲ Types B and BP thread forming and BF and BT thread cutting
 - Type C thread forming and Types D, F, G, and T thread cutting

TABLE 12: General Dimensions Cross Recess Pan Head

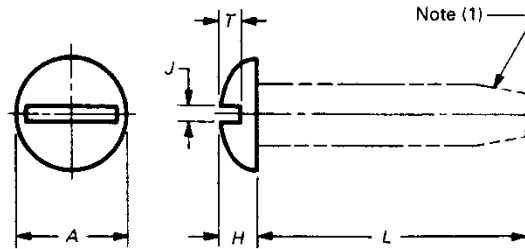


Nominal Size	Applicable to Screw Types ⁽¹⁾	Head Diameter (A)		Head Height (H)		Head Radius (R)	Recess Dia. (M)	Recess Depth (T)	Recess Width (N)	Driver Size
		Max	Min	Max	Min	Max	Ref	Ref	Ref	
#4 (.1120)	● ◆ ▲ ■	.219	.205	.080	.070	.010	.116	.069	.019	1
#6 (.1380)	● ◆ ▲ ■	.270	.256	.097	.087	.015	.160	.078	.028	2
#8 (.1640)	● ◆ ▲ ■	.322	.306	.115	.105	.015	.176	.095	.030	2
#10 (.1900)	● ◆ ▲ ■	.373	.357	.133	.122	.020	.192	.112	.031	2
#12 (.2160)	● ◆ ▲ ■	.425	.407	.151	.139	.025	.252	.128	.034	3
1/4 (.2500)	● ▲ ■	.492	.473	.175	.162	.035	.274	.148	.036	3
5/16 (.3125)	● ▲ ■	.615	.594	.218	.203	.040	.344	.181	.059	4
3/8 (.3750)	▲ ■	.740	.716	.261	.244	.040	.382	.222	.065	4
7/16 (.4375)	▲	.863	.837	.305	.284	.050	.406	.246	.068	4

NOTES:

- (1) Applicable to screw types as indicated by code symbols below.
- Type AB thread forming
 - ◆ Type A thread forming, except short lengths
 - ▲ Types B and BP thread forming and BF and BT thread cutting
 - Type C thread forming and Types D, F, G, and T thread cutting

TABLE 13: General Dimensions Slotted Round Head
(Not Recommended—Use Pan Head)

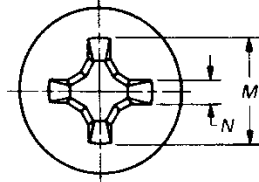


Nominal Size	Applicable to Screw Types ⁽¹⁾	Head Diameter (A)		Head Height (H)		Slot Width (J)		Slot Depth (T)	
		Max	Min	Max	Min	Max	Min	Max	Min
#4 (.1120)	◆ ▲ ■	.211	.193	.086	.075	.039	.031	.058	.044
#6 (.1380)	◆ ▲ ■	.260	.240	.103	.091	.048	.039	.068	.051
#8 (.1640)	◆ ▲ ■	.309	.287	.120	.107	.054	.045	.077	.058
#10 (.1900)	◆ ▲ ■	.359	.334	.137	.123	.060	.050	.087	.065
#12 (.2160)	◆ ▲ ■	.408	.382	.153	.139	.067	.056	.096	.073
1/4 (.2500)	▲ ■	.472	.443	.175	.160	.075	.064	.109	.082
5/16 (.3125)	▲ ■	.590	.557	.216	.198	.084	.072	.132	.099
3/8 (.3750)	▲ ■	.708	.670	.256	.237	.094	.081	.155	.117
7/16 (.4375)	▲	.750	.707	.328	.307	.094	.081	.196	.148

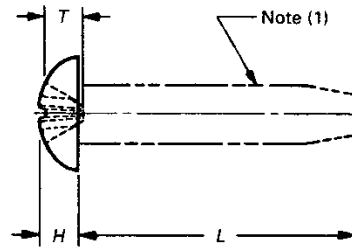
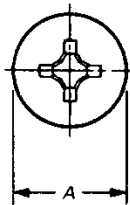
NOTES:

- (1) Applicable to screw types as indicated by code symbols below.
- ◆ Type A thread forming, except short lengths
 - ▲ Types B and BP thread forming and BF and BT thread cutting
 - Type C thread forming and Types D, F, G, and T thread cutting

TABLE 14: General Dimensions Cross Recess Round Head
(Not Recommended—Use Pan Head)



This type of recess has a large center opening, tapered wings, and blunt bottom, with all edges relieved or rounded.

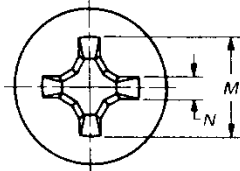


Nominal Size	Applicable to Screw Types ⁽¹⁾	Head Diameter (A)		Head Height (H)		Recess Dia. (M)	Recess Depth (T)	Recess Width (N)	Driver Size
		Max	Min	Max	Min				
#4 (.1120)	◆ ▲ ■	.211	.193	.086	.075	.112	.062	.019	1
#6 (.1380)	◆ ▲ ■	.260	.240	.103	.091	.156	.070	.027	2
#8 (.1640)	◆ ▲ ■	.309	.287	.120	.107	.172	.088	.030	2
#10 (.1900)	◆ ▲ ■	.359	.334	.137	.123	.188	.106	.031	2
#12 (.2160)	◆ ▲ ■	.408	.382	.153	.139	.242	.112	.032	3
1/4 (.2500)	▲ ■	.472	.443	.175	.160	.262	.134	.034	3
5/16 (.3125)	▲ ■	.590	.557	.216	.198	.302	.174	.040	4
3/8 (.3750)	▲ ■	.708	.670	.256	.237	.380	.215	.064	4
7/16 (.4375)	▲	.750	.707	.328	.307	.396	.228	.066	4

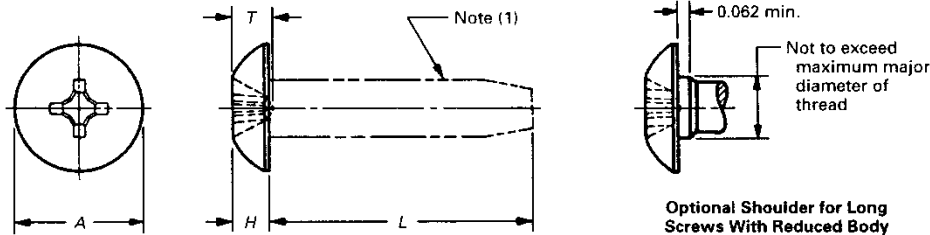
NOTES:

- (1) Applicable to screw types as indicated by code symbols below.
- ◆ Type A thread forming, except short lengths
 - ▲ Types B and BP thread forming and BF and BT thread cutting
 - Type C thread forming and Types D, F, G, and T thread cutting

TABLE 15: General Dimensions Cross Recess Truss Head
(Not Recommended for New Designs)



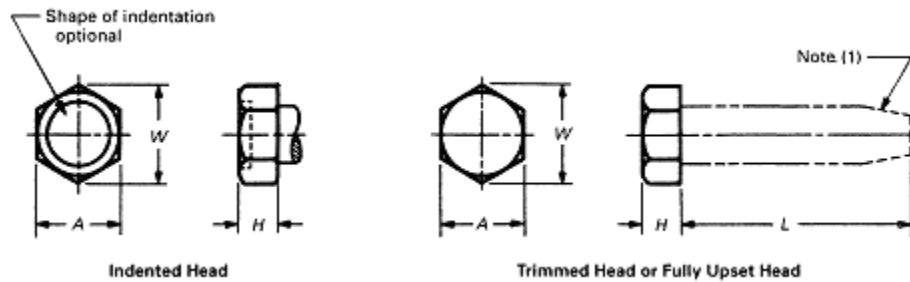
This type of recess has a large center opening, tapered wings, and blunt bottom, with all edges relieved or rounded.



Nominal Size	Applicable to Screw Types ⁽¹⁾	Head Diameter (A)		Head Height (H)		Recess Dia. (M) Ref	Recess Depth (T) Ref	Recess Width (N) Ref	Driver Size
		Max	Min	Max	Min				
#4 (.1120)	● ◆ ▲ ■	.257	.241	.069	.059	.106	.060	.018	1
#6 (.1380)	● ◆ ▲ ■	.321	.303	.086	.074	.152	.072	.027	2
#8 (.1640)	● ◆ ▲ ■	.384	.364	.102	.088	.166	.086	.029	2
#10 (.1900)	● ◆ ▲ ■	.448	.425	.118	.103	.182	.102	.030	2
#12 (.2160)	● ◆ ▲ ■	.511	.487	.134	.118	.242	.116	.032	3
1/4 (.2500)	● ▲ ■	.573	.546	.150	.133	.256	.130	.033	3
5/16 (.3125)	● ▲ ■	.698	.666	.183	.162	.346	.180	.059	4
3/8 (.3750)	▲ ■	.823	.787	.215	.191	.376	.214	.063	4
7/16 (.4375)	▲	.948	.907	.248	.221	.408	.244	.068	4

NOTES:

- (1) Applicable to screw types as indicated by code symbols below.
- Type AB thread forming
 - ◆ Type A thread forming, except short lengths
 - ▲ Types B and BP thread forming and BF and BT thread cutting
 - Type C thread forming and Types D, F, G, and T thread cutting

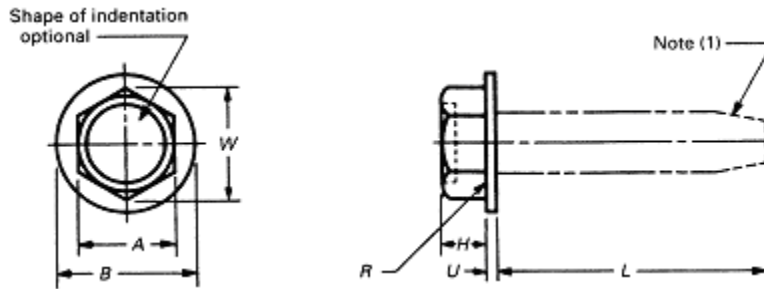
TABLE 16: General Dimensions Hexagon Head (HH)


Nominal Size	Applicable to Screw Types ⁽¹⁾	Width Across Flats (A)		Across Corners (W)	Head Height (H)	
		Max	Min	Min	Max	Min
#4 (.1120)	● ◆ ▲ ■	.188	.181	.202	.060	.049
#6 (.1380)	● ◆ ▲ ■	.250	.244	.272	.093	.080
#8 (.1640)	● ◆ ▲ ■	.250	.244	.272	.110	.096
#10 (.1900)	● ◆ ▲ ■	.312	.305	.340	.120	.105
#12 (.216)	● ◆ ▲ ■	.312	.305	.340	.155	.139
1/4 (.2500)	● ▲ ■	.375	.367	.409	.190	.172
5/16 (.3125)	● ▲ ■	.500	.489	.545	.230	.208
3/8 (.3750)	▲ ■	.562	.551	.614	.295	.270
7/16 (.4375)	▲ ■	.625	.610	.682	.348	.321

NOTES:

- (1) Applicable to screw types as indicated by code symbols below.
- Type AB thread forming
 - ◆ Type A thread forming, except short lengths
 - ▲ Types B and BP thread forming and BF and BT thread cutting
 - Type C thread forming and Types D, F, G, and T thread cutting

TABLE 17: General Dimensions Hex Washer Head (HWHD)

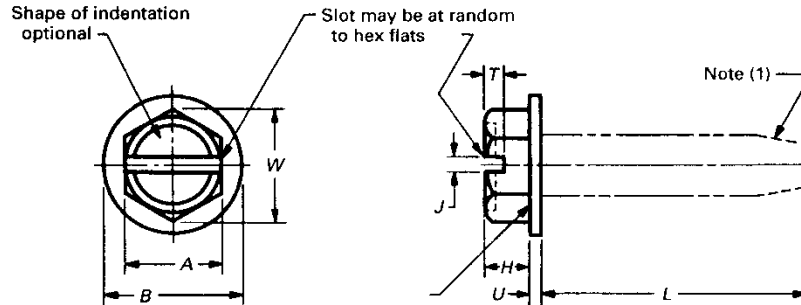


Nominal Size	Applicable to Screw Types ⁽¹⁾	Width Across Flats (A)		Across Corners (W)	Head Height (H)		Washer Diameter (B)		Washer Thickness (U)	
		Max	Min	Min	Max	Min	Max	Min	Max	Min
#4 (.1120)	● ◆ ▲ ■	.188	.181	.202	.060	.049	.243	.225	.019	.011
#6 (.1380)	● ◆ ▲ ■	.250	.244	.272	.093	.080	.328	.302	.025	.015
#8 (.1640)	● ◆ ▲ ■	.250	.244	.272	.110	.096	.348	.322	.031	.019
#10 (.1900)	● ◆ ▲ ■	.312	.305	.340	.120	.105	.414	.384	.031	.019
#12 (.216)	● ◆ ▲ ■	.312	.305	.340	.155	.139	.432	.398	.039	.022
1/4 (.2500)	● ▲ ■	.375	.367	.409	.190	.172	.520	.480	.050	.030
5/16 (.3125)	● ▲ ■	.500	.489	.545	.230	.208	.676	.624	.055	.035
3/8 (.3750)	▲ ■	.562	.551	.614	.295	.270	.780	.720	.063	.037
7/16 (.4375)	▲ ■	.625	.610	.682	.348	.321	.870	.790	.073	.043

NOTES:

- (1) Applicable to screw types as indicated by code symbols below.
- Type AB thread forming
 - ◆ Type A thread forming, except short lengths
 - ▲ Types B and BP thread forming and BF and BT thread cutting
 - Type C thread forming and Types D, F, G, and T thread cutting

TABLE 18: General Dimensions Slotted Hex Washer Head
(Not Recommended for New Design)



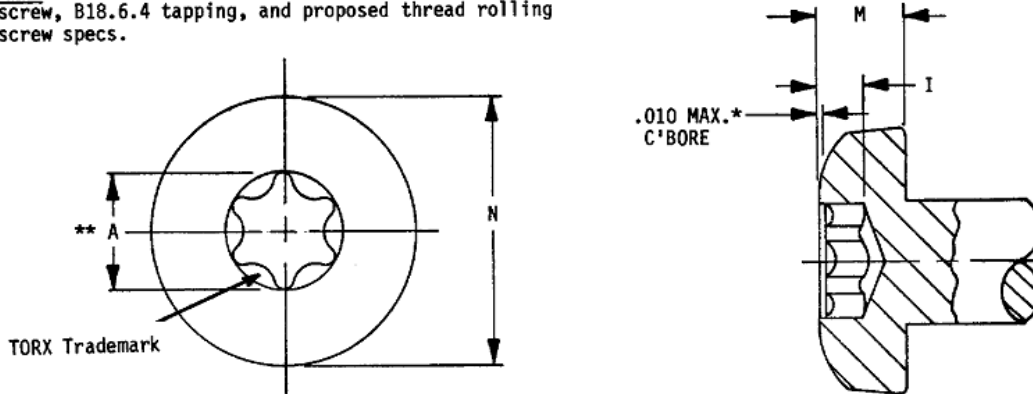
Nominal Size	Applicable to Screw Types ⁽¹⁾	Width Across Flats (A)		Across Corners (W)	Head Height (H)		Washer Diameter (B)		Washer Thickness (U)		Slot Width (J)		Slot Depth (T)	
		Max	Min	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
#4 (.1120)	● ◆ ▲ ■	.188	.181	.202	.060	.049	.243	.225	.019	.011	.039	.031	.042	.025
#6 (.1380)	● ◆ ▲ ■	.250	.244	.272	.093	.080	.328	.302	.025	.015	.048	.039	.053	.033
#8 (.1640)	● ◆ ▲ ■	.250	.244	.272	.110	.096	.348	.322	.031	.019	.054	.045	.074	.052
#10 (.1900)	● ◆ ▲ ■	.312	.305	.340	.120	.105	.414	.384	.031	.019	.060	.050	.080	.057
#12 (.216)	● ◆ ▲ ■	.312	.305	.340	.155	.139	.432	.398	.039	.022	.067	.056	.103	.077
1/4 (.2500)	● ▲ ■	.375	.367	.409	.190	.172	.520	.480	.050	.030	.075	.064	.111	.083
5/16 (.3125)	● ▲ ■	.500	.489	.545	.230	.208	.676	.624	.055	.035	.084	.072	.134	.100
3/8 (.3750)	▲ ■	.562	.551	.614	.295	.270	.780	.720	.063	.037	.094	.081	.168	.131

NOTES:

- (1) Applicable to screw types as indicated by code symbols below.
- Type AB thread forming
 - ◆ Type A thread forming, except short lengths
 - ▲ Types B and BP thread forming and BF and BT thread cutting
 - Type C thread forming and Types D, F, G, and T thread cutting

TABLE 19: General Dimensions Pan Head - TORX® or Equivalent

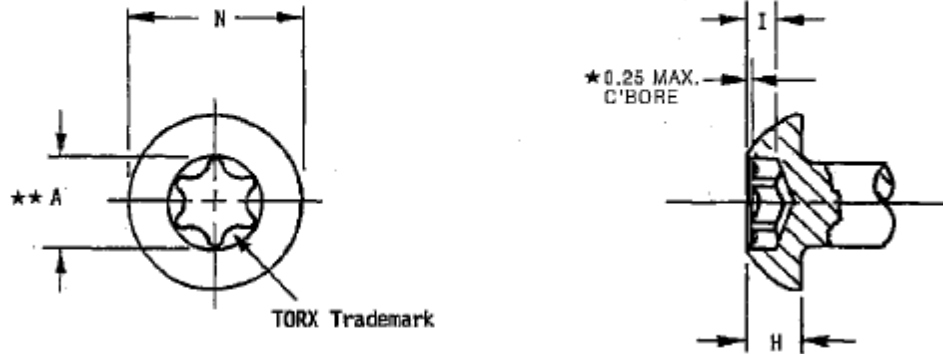
NOTE: Head dimensions based on ANSI B18.6.3 machine screw, B18.6.4 tapping, and proposed thread rolling screw specs.



Drive Size	Screw Size		Head Dimensions				Recess Dimensions	
			N		M		A	I
			Max	Min	Max	Min		
T1							0.035	
T2							0.039	
T3							0.047	
T4							0.053	
T5							0.058	
T6	0.073	1	0.142	0.130	0.053	0.044	0.069	0.025
T8	0.086	2	0.167	0.155	0.062	0.053	0.094	0.030
TS	0.099	3	0.193	0.180	0.071	0.062	0.094	0.033
T10	0.112	4	0.219	0.205	0.080	0.070	0.111	0.035
T10	0.125	5	0.245	0.231	0.089	0.079	0.111	0.045
T15	0.138	6	0.270	0.256	0.097	0.087	0.132	0.045
T20	0.164	8	0.322	0.306	0.115	0.105	0.155	0.055
T25	0.190	10	0.373	0.357	0.133	0.122	0.178	0.070
T27	0.216	12	0.425	0.407	0.151	0.139	0.200	0.070
T30	0.250	1/4	0.492	0.473	0.175	0.162	0.221	0.085
T40	0.312	5/16	0.615	0.594	0.218	0.203	0.266	0.105
T45	0.375	3/8	0.740	0.716	0.261	0.244	0.312	0.130
T50	0.437	7/16	0.862	0.836	0.305	0.284	0.352	0.144
T55	0.500	1/2	0.987	0.958	0.348	0.325	0.446	0.165

TABLE 20: General Dimensions Socket Button Head Tapping Screws - TORX® or Equivalent

NOTE: HEAD DIMENSIONS BASED ON ANSI/ASME B18.3.4M
 SOCKET BUTTON HEAD CAP SCREWS (METRIC SERIES)



Drive Size	Screw Size		Head Dimensions				Recess Dimensions	
			N		H		A	I
			Max	Min	Max	Min		
T8	0.112	4	.224	.212	.064	.056	.094	.032
T10	0.125	5	.261	.247	.075	.066	.111	.040
T15	0.164	8	.299	.285	.086	.076	.131	.045
T25	0.190	10	.374	.359	.108	.098	.177	.055
T27	0.250	1/4	.413	.396	.129	.118	.200	.065
T40	0.312	5/16	.551	.534	.173	.159	.266	.095
T45	0.375	3/8	.688	.672	.216	.204	.311	.110
T55	0.500	1/2	.964	.944	.259	.245	.446	.145
T60	0.625	5/8	1.102	1.081	.346	.332	.529	.145

TABLE 21: Flat Head Tapping Screws

Head Type	Diameter	Length	Drive Type	Point Type	Material	Finish	Part Number
FH	#6-20	3/8	C/R	B	CST	ZND	86502975
FH	#6-20	5/8	C/R	AB	CST	BZN	47596670
FH	#6-32	1/2	C/R	F	CST	ZND	47756356
FH	#6-32	1/2	C/R	F	SST	PLN	47839933
FH	#6-32	1	C/R	F	SST	PLN	47839934
FH	#8-18	1/2	SLT	B	CST	PLN	86625196
FH	#8-32	1/2	C/R	T	CST	ZND	84218883
FH	#10-16	5/8	SLT	AB	CST	PLN	86625225
FH	#10-16	3/4	SLT	B	CST	ZND	280180
FH	#10-16	1	C/R	B	CST	PHC	86508356
FH	#10-16	1.5	TORX*	AB	CST	BZN	90347418
FH	¼-20	1	C/R	F	CST	PHC	86616032
FH	5/16-18	1	C/R	D	CST	ZND	166481
FH	5/16-18	1	C/R	F	CST	PHC	86520435
FH	5/16-18	1	TORX*	F	CST	ZND	86539501

* Or equivalent

TABLE 22: Oval Head Tapping Screws

Head Type	Diameter	Length	Drive Type	Point Type	Material	Finish	Part Number
OVL	#6-20	3/4	C/R	AB	CST	ZND	86615980
OVL	#8-18	5/8	C/R	AB	CST	ZND	80281054
OVL	#8-18	1-3/4	C/R	AB	CST	ZND	87017483
OVL	#8-18	1-1/4	C/R	AB	CST	ZND	84144657
OVL	#10-16	3/4	C/R	AB	CST	PTF	86625205
OVL	#10-16	3/4	C/R	AB	CST	ZND	87552796
OVL	#10-16	3/4	C/R	B	CST	ZND	86616008
OVL	#10-16	1-1/4	C/R	AB	CST	ZND	83990793
OVL	#10-16	1-1/4	C/R	AB	CST	DAC	91752836

TABLE 23: Pan Head Tapping Screws

Head Type	Diameter	Length	Drive Type	Point Type	Material	Finish	Part Number
PAN	#4-24	1/2	C/R	AB	CST	ZND	47924518
PAN	#6-20	3/8	C/R	AB	CST	ZND	50631
PAN	#6-20	1/2	C/R	AB	CST	POL	87307802
PAN	#6-20	1/2	C/R	B	CST	ZND	50773
PAN	#6-20	1/2	SLT	B	CST	ZND	280325
PAN	#6-20	5/8	C/R	B	CST	ZND	86637783
PAN	#6-20	5/8	TORX*	B	CST	BLO	87733386
PAN	#6-20	3/4	C/R	AB	CST	ZND	86016884
PAN	#6-20	3/4	C/R	B	CST	ZND	86637784

* Or equivalent

TABLE 23: Pan Head Tapping Screws (Continued)

Head Type	Diameter	Length	Drive Type	Point Type	Material	Finish	Part Number
PAN	#6-20	7/8	TORX*	AB	CST	POL	84187832
PAN	#6-20	1	C/R	B	CST	ZND	86050261
PAN	#6-20	1	TORX*	B	CST	BLO	84204176
PAN	#6-20	1-1/4	C/R	B	CST	ZND	86616004
PAN	#6-32	5/16	C/R	F	CST	ZND	21304
PAN	#6-32	5/8	C/R	D	CST	ZND	86625195
PAN	#8-16	5/8	C/R	SPCL	CST	ZND	86625161
PAN	#8-18	3/16	C/R	B	CST	ZND	86641297
PAN	#8-18	1/4	C/R	B	CST	ZND	87684280
PAN	#8-18	1/4	SLT	B	CST	ZND	280916
PAN	#8-18	3/8	C/R	AB	CST	ZND	86538
PAN	#8-18	1/2	C/R	AB	CST	ZND	17862
PAN	#8-18	1/2	C/R	B	CST	ZND	86632692
PAN	#8-18	1/2	C/R	B	CST	BGM	47871605
PAN	#8-18	3/4	C/R	AB	CST	ZND	86511331
PAN	#8-18	3/4	SLT	B	CST	ZND	281020
PAN	#8-32	5/16	SLT	F	CST	PLN	27293
PAN	#8-32	3/8	C/R	F	CST	ZND	51608398
PAN	#8-32	3/8	C/R	T	CST	ZND	86637785
PAN	#8-32	1/2	TORX*	F	CST	ZND	47741703
PAN	#8-32	1/2	C/R	F	SST	PLN	91760868
PAN	#8-32	5/8	C/R	T	SST	PLN	87016394
PAN	#8-32	1	TORX*	F	CST	ZND	47741735
PAN	#10-16	5/16	C/R	B	CST	ZND	529942
PAN	#10-16	3/8	C/R	AB	CST	PHC	86624116
PAN	#10-16	3/8	C/R	AB	CST	ZND	84402314
PAN	#10-16	1/2	C/R	AB	CST	PHC	9419328
PAN	#10-16	1/2	C/R	AB	CST	POL	87307796
PAN	#10-16	1/2	C/R	AB	CST	ZND	86511046
PAN	#10-16	1/2	SLT	AB	CST	ZND	20343
PAN	#10-16	5/8	C/R	AB	CST	ZND	84173781
PAN	#10-16	3/4	C/R	AB	CST	PTF	86900238
PAN	#10-16	1	C/R	AB	CST	PTF	87016541
PAN	#10-16	1	C/R	AB	CST	ZND	86625168
PAN	#10-16	1-1/4	C/R	AB	CST	ZND	87034816
PAN	#10-16	1-1/2	C/R	AB	CST	PTF	86625169
PAN	#10-24	3/8	C/R	F	CST	ZND	51608400
PAN	#10-24	3/8	SLT	D	CST	ZND	171716
PAN	#10-24	5/8	C/R	T	CST	ZND	86624118
PAN	#10-24	3/4	C/R	D	CST	ZND	87016542
PAN	#10-24	3/4	SLT	F	CST	PLN	88608
PAN	#10-32	1/2	C/R	D	CST	ZND	167163
PAN	#10-32	2-1/4	C/R	D	CST	BZN	86625187
PAN	#12-14	5/8	C/R	B	SST	PLN	90510397
PAN	1/4-14	1/2	C/R	B	CST	ZND	87334944
PAN	1/4-14	5/8	C/R	AB	CST	ZND	84173779
PAN	1/4-14	3/4	C/R	AB	CST	BZN	47876707
PAN	1/4-20	3/4	C/R	F	CST	ZND	87492860
PAN	5/16-18	1-1/2	TORX*	F	CST	PHC	84559727

* Or equivalent

TABLE 23: Pan Head Tapping Screws (Continued)

Head Type	Diameter	Length	Drive Type	Point Type	Material	Finish	Part Number
PAN	3/8-16	1-1/4	TORX*	F	CST	BZN	84312232

* Or equivalent

TABLE 24: Round Head Tapping Screws

Head Type	Diameter	Length	Drive Type	Point Type	Material	Finish	Part Number
RND	#6-20	1/2	C/R	B	CST	ZND	280154
RND	#6-20	1/2	SLT	B	CST	PLN	87788
RND	#6-20	1/2	SLT	B	CST	ZND	86615992
RND	#6-32	1	SLT	F	CST	ZND	88995
RND	#7-19	1/2	SLT	B	CST	ZND	280255
RND	#8-18	1/4	SLT	B	CST	PLN	87688
RND	#8-18	3/8	C/R	A	CST	ZND	88990
RND	#8-18	3/8	SLT	A	CST	ZND	86615978
RND	#8-18	1/2	SLT	B	CST	PLN	84908
RND	#8-18	1/2	SLT	B	CST	ZND	87654
RND	#8-18	1	SLT	B	CST	ZND	88839
RND	#10-12	5/8	SLT	A	CST	ZND	86615979
RND	#10-16	3/8	SLT	B	CST	PLN	80766
RND	#10-16	1/2	SLT	B	CST	PLN	80994
RND	#12-24	5/8	SLT	D	CST	ZND	86616014
RND	1/4-14	1/2	SLT	B	CST	ZND	87687

TABLE 25: Truss Head Tapping Screws

Head Type	Diameter	Length	Drive Type	Point Type	Material	Finish	Part Number
TRS	#10-16	3/8	C/R	B	CST	ZND	280449

TABLE 26: Hexagon Head (HH) Tapping Screws

Head Type	Diameter	Length	Drive Type	Point Type	Material	Finish	Part Number
HH	#8-18	1/2	HEX	AB	CST	ZND	20466
HH	#8-32	3/8	HEX	D	CST	ZND	172292
HH	#8-32	3/8	HEX	F	CST	PLN	84911
HH	#8-32	3/8	HEX	F	CST	ZND	86642312
HH	#8-32	1/2	HEX	F	CST	ZND	280977
HH	#10-16	1/2	HEX	AB	CST	ZND	19268
HH	#10-16	1/2	HEX	B	CST	ZND	87824
HH	#10-16	5/8	SLT	B	CST	ZND	86616006
HH	#10-16	3/4	HEX	B	CST	PLN	86616007
HH	#10-16	1	HEX	B	CST	PLN	87548
HH	#10-24	3/8	HEX	F	CST	ZND	86625181
HH	#10-24	5/8	HEX	F	CST	ZND	86616035
HH	#12-14	5/8	HEX	AB	CST	ZND	86615989
HH	#12-24	5/8	HEX	D	CST	ZND	86616013
HH	#12-24	1	HEX	D	CST	ZND	86616015
HH	1/4-14	1/2	HEX	B	CST	ZND	87667
HH	1/4-14	3/4	HEX	B	CST	ZND	88946
HH	1/4-14	1	HEX	AB	CST	ZND	86516065
HH	1/4-14	1	HEX	B	CST	ZND	281008
HH	1/4-20	3/8	HEX	F	CST	ZND	280472
HH	1/4-20	1/2	HEX	D	CST	ZND	20376
HH	1/4-20	1/2	HEX	F	CST	ZND	86616016
HH	1/4-20	5/8	HEX	D	CST	ZND	12872
HH	1/4-20	5/8	HEX	F	CST	ZND	87759658
HH	1/4-20	3/4	HEX	F	CST	PLN	9707609
HH	1/4-20	1-1/4	HEX	F	CST	PHC	280786
HH	1/4-20	1-1/2	HEX	F	CST	ZND	280979

TABLE 26: Hexagon Head Tapping Screws (Continued)

Head Type	Diameter	Length	Drive Type	Point Type	Material	Finish	Part Number
HH	5/16-12	1/2	HEX	B	CST	ZND	87346
HH	5/16-12	3/4	HEX	B	CST	PLN	87871
HH	5/16-12	3/4	HEX	B	CST	ZND	87887
HH	5/16-12	1	HEX	B	CST	ZND	280519
HH	5/16-12	1-1/4	SLT	B	CST	ZND	88825
HH	5/16-18	1/2	HEX	D	CST	ZND	86616010
HH	5/16-18	5/8	HEX	D	CST	ZND	86616011
HH	5/16-18	3/4	SLT	D	CST	ZND	172455
HH	5/16-18	1	HEX	D	CST	ZND	15823
HH	5/16-18	1	HEX	F	CST	ZND	280146
HH	5/16-18	1-1/4	HEX	D	CST	ZND	175997
HH	3/8-12	3/4	HEX	B	CST	ZND	86615991
HH	3/8-16	1	HEX	D	CST	ZND	84315
HH	3/8-16	1	HEX	F	CST	ZND	86625190
HH	3/8-16	1-1/4	HEX	D	CST	ZND	176019
HH	3/8-16	1-1/2	HEX	F	CST	ZND	86624952

TABLE 27: Hexagon Washer Head (HWHD) Tapping Screws

Head Type	Diameter	Length	Drive Type	Point Type	Material	Finish	Part Number
HWHD	#4-24	3/8	HEX	AB	CST	ZND	87035701
HWHD	#6-20	1/4	HEX	AB	CST	PHC	87016543
HWHD	#6-20	3/8	SLT	AB	CST	ZND	50767
HWHD	#8-18	1/4	HEX	B	CST	ZND	90387115
HWHD	#8-18	3/8	SLT	AB	CST	ZND	281048
HWHD	#8-18	1/2	HEX	AB	CST	ZND	86637790
HWHD	#8-32	3/8	HEX	D	CST	PHC	9424856
HWHD	#8-32	3/8	HEX	T	CST	ZND	87016545
HWHD	#10-16	3/8	HEX	AB	CST	PHC	9419320
HWHD	#10-16	3/8	HEX	B	CST	ZND	86500939
HWHD	#10-16	3/8	SLT	AB	CST	ZND	84360
HWHD	#10-16	1/2	HEX	AB	CST	POL	87307801
HWHD	#10-16	1/2	HEX	AB	CST	ZND	87036181
HWHD	#10-16	1/2	HEX	B	CST	ZND	86551278
HWHD	#10-16	3/4	HEX	AB	CST	PHC	86505916
HWHD	#10-16	3/4	HEX	AB	CST	ZND	86625160
HWHD	#10-16	3/4	HEX	B	CST	ZND	86500940
HWHD	#10-16	1	HEX	AB	CST	POL	87307806
HWHD	#10-16	1	HEX	AB	CST	PTF	86625167
HWHD	#10-16	1	HEX	B	CST	ZND	86545826
HWHD	#10-24	1/2	HEX	D	CST	ZND	86624112
HWHD	#10-24	1/2	HEX	F	CST	ZND	281050

TABLE 27: Hexagon Washer Head Tapping Screws (Continued)

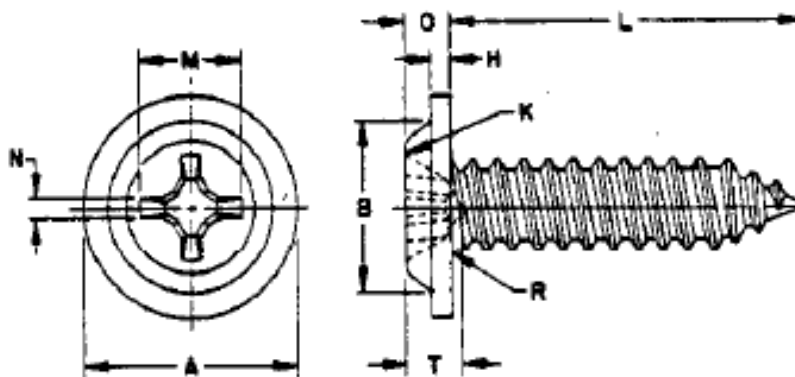
Head Type	Diameter	Length	Drive Type	Point Type	Material	Finish	Part Number
HWHD	#10-24	5/8	HEX	D	CST	ZND	84554739
HWHD	#10-24	3/4	HEX	D	CST	ZND	86637791
HWHD	#10-24	1-1/2	HEX	D	CST	ZND	87032822
HWHD	#10-24	1-1/2	HEX	T	CST	ZND	87033643
HWHD	#10-32	2	SLT	D	CST	ZND	87470068
HWHD	#10-32	2-1/4	SLT	D	CST	ZND	87470069
HWHD	#12-14	1-1/4	HEX	AB	CST	ZND	86615990
HWHD	#12-24	3/8	HEX	C	CST	ZND	86624119
HWHD	#12-24	5/8	HEX	F	CST	ZND	87040922
HWHD	1/4-14	3/8	SLT	AB	CST	ZND	84733
HWHD	1/4-14	1/2	HEX	AB	CST	ZND	86625162
HWHD	1/4-14	3/4	HEX	AB	CST	PHC	87019672
HWHD	1/4-14	1-1/2	HEX	AB	CST	ZND	86977692
HWHD	1/4-14	2-1/2	HEX	AB	CST	ZND	86533305
HWHD	1/4-20	5/16	SLT	F	CST	ZND	86592478
HWHD	1/4-20	3/4	HEX	D	CST	BKC	86625163
HWHD	1/4-20	3/4	HEX	T	CST	ZND	86624115
HWHD	1/4-20	1	HEX	D	CST	ZND	87393624
HWHD	1/4-20	1-3/4	HEX	F	CST	ZND	87497919
HWHD	5/16-12	3/4	HEX	AB	CST	ZND	86978776
HWHD	5/16-12	1	SLT	B	CST	ZND	280799
HWHD	5/16-18	1-1/4	HEX	C	CST	ZND	84209928
HWHD	5/16-18	1/2	HEX	D	CST	ZND	87034818
HWHD	5/16-18	5/8	HEX	F	CST	ZND	87039762
HWHD	5/16-18	3/4	HEX	D	CST	ZND	87034817
HWHD	5/16-18	3/4	HEX	F	CST	ZND	87563124
HWHD	5/16-18	7/8	HEX	F	CST	ZND	87577839
HWHD	5/16-18	1-1/4	HEX	F	CST	ZND	87302303
HWHD	7/16-20	1	HEX	D	CST	ZND	87477171
HWHD	3/8-12	3/4	HEX	AB	CST	ZND	87030040
HWHD	3/8-16	3/4	HEX	F	CST	ZND	48126449
HWHD	3/8-16	1	HEX	F	CST	ZND	280476

TABLE 28: Socket Button Head Tapping Screws

Head Type	Diameter	Length	Drive Type	Point Type	Material	Finish	Part Number
Button Soc	#10-32	5/8	Torx*	F	CST	BLO	87733384
Button Soc	1/4-14	5/8	Torx*	B	CST	ZND	92046264

* Or equivalent

TABLE 29: General Dimensions Round Washer Head Tapping Screws



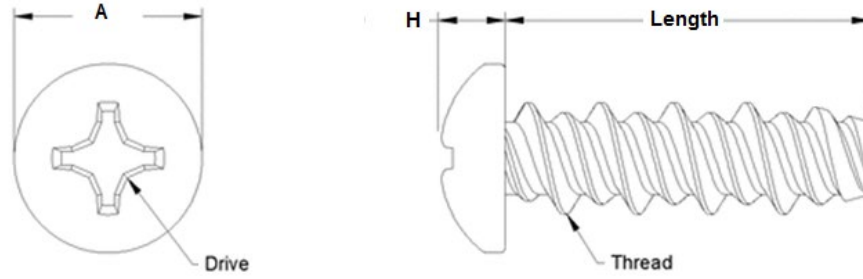
Dia	Drive Size	Drive Type	Point Type	M	T	N (min.)	K(min.)
#8-18	#2	C/R (Phillips)	AB	.182 - .195	.104-.127	.032	.025

Dia	B	O	H	R (max.)
#8-18	.310 - .322	.107-.120	.036-.051	.040

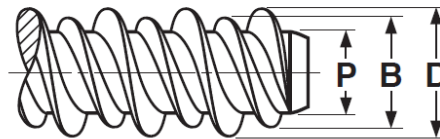
TABLE 30: Round Washer Head Tapping Screws

Head Type	Diameter	Length	A (Washer Dia)	Material	Finish	Part Number
RDWSH	#8-18	5/8	.380- .358	CST	ZND	82857759
RDWSH	#8-18	5/8	.380- .358	CST	BZN	83908703

TABLE 31: General Dimensions Pan Head High-Low Tapping Screws
For use in soft (Plastics) or low density materials



Point Type B



Nominal Size	A		H		Recess Diameter		G		Driver Size
	Head Diameter		Head Height				Recess Depth		
	Max	Min	Max	Min	Max	Min	Max	Min	
2 & 3	.167	.155	.062	.053	.104	.091	.052	.034	1
4	.193	.180	.071	.062	.112	.099	.061	.043	1
5	.219	.205	.080	.070	.116	.103	.071	.053	1
6	.254	.240	.097	.087	.158	.145	.072	.046	2
7 & 8	.270	.256	.097	.087	.166	.153	.080	.055	2
10	.322	.306	.115	.105	.182	.169	.097	.071	2
11 & 12	.373	.357	.133	.122	.199	.186	.113	.089	2
1/4	.492	.473	.175	.162	.281	.268	.144	.118	3

Screw size	D	B	P	Recommended Pilot Hole Diameter	
				Flexural Modulus of Plastic up to 200,000 P.S.I.	Flexural Modulus of Plastic 200,000 - 400,000 P.S.I.
2-32	.084 - .090	.069	.050 - .058	0.0670	0.0700
3-28	.095 - .105	.078	.057 - .065	0.0730	0.0781
4-24	.105 - .115	.086	.061 - .070	0.0810	0.0860
5-20	.119 - .125	.100	.073 - .082	0.0935	0.0995
6-19	.135 - .145	.108	.080 - .090	0.1015	0.1100
7-19	.148 - .158	.130	.089 - .100	0.1200	0.1250
8-18	.160 - .170	.130	.095 - .105	0.1200	0.1285
10-16	.185 - .195	.145	.099 - .110	0.1360	0.1440
12-16	.210 - .220	.167	.125 - .137	0.1570	0.1660
1/4-15	.250 - .260	.200	.161 - .175	0.1890	0.2010

Recommended Pilot Hole diameter is provided as a reference guide only. Actual hole size could vary depending on type of plastic, boss diameter, and length of thread engagement.

TABLE 32: Pan Head High-Low Tapping Screws

Head Type	Diameter	Length	Drive Type	Point Type	Material	Finish	Part Number
PAN	#5-20	1/4	Torx*	B (Hi-Lo)	CST	BZN	48184704
PAN	#5-22	1/2	C/R	AB (Hi-Lo)	CST	ZND	87021940
PAN	#6-19	1/4	C/R	AB (Hi-Lo)	CST	ZND	86977872
PAN	#6-19	3/8	C/R	B (Hi-Lo)	CST	BGM	47380614
PAN	#6-19	3/8	C/R	B (Hi-Lo)	CST	ZND	47756330
PAN	#6-19	1/2	C/R	B (Hi-Lo)	@SST	PLN	90387083
PAN	#6-19	3/4	C/R	AB (Hi-Lo)	CST	ZND	87041438
PAN	#7-19	7/16	C/R	AB (Hi-Lo)	CST	BZN	47757363
PAN	#7-19	1/2	C/R	AB (Hi-Lo)	CST	BZN	47363725
PAN	#7-19	1/2	Torx*	B (Hi-Lo)	CST	BZN	47947757
HWHD	#8-18	5/8	HEX	AB (Hi-Lo)	CST	ZND	48162317
PAN	#8-18	1/2	Torx* (T15)	B (Hi-Lo)	CST	ZND	51575700
PAN	#8-18	5/8	Torx* (T15)	B (Hi-Lo)	CST	ZND	48180670
PAN	#8-18	3/4	C/R	AB (Hi-Lo)	SST	PLN	91896404
PAN	#10-16	1/2	C/R	AB (Hi-Lo)	CST	BZN	87564728
PAN	#10-16	5/8	C/R	B (Hi-Lo)	SST	PLN	84415413
PAN	#10-16	3/4	C/R	AB (Hi-Lo)	CST	PHC	87582901
PAN	#10-16	3/4	C/R	AB (Hi-Lo)	SST	PLN	92094559
PAN	#12-16	1-1/4	C/R	B (Hi-Lo)	SST	PLN	47920484
HWHD	1/4-15	1/2	HEX	B (Hi-Lo)	CST	ZND	48183559

* Or equivalent

@ 18-8 Stainless Steel