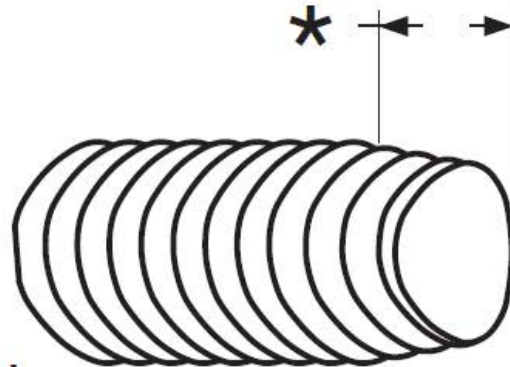




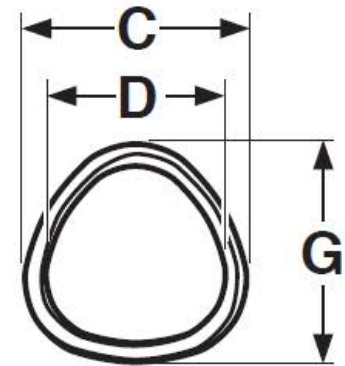
545 Basket Road • Webster, NY 14580
Toll Free • 800.691.0292 | Local • 585.265.1990 | Fax • 585.265.6678
sales@fastenersdirect.com
www.fastenersdirect.com

SELF-TAPPING SCREWS

Thread Rolling Screws



*2-3 Pitch Lead Length





545 Basket Road • Webster, NY 14580
 Toll Free • 800.691.0292 | Local • 585.265.1990 | Fax • 585.265.6678
sales@fastenersdirect.com
www.fastenersdirect.com

SELF-TAPPING SCREWS

Thread Rolling Screws

TAPTITE II THREAD ROLLING SCREWS

Nominal Screw Width	Screw Body Dimensions				Point Diameter of Circumscribing Circle	
	C		D			G
	Diameter of Circumscribing Circle		Measurement Across Center			
	Max	Min	Max	Min	Max	
2-56	.0875	.0835	.0840	.0800	.070	
3-48	.1010	.0970	.0970	.0930	.081	
4-40	.1145	.1105	.1095	.1055	.090	
5-40	.1275	.1235	.1225	.1185	.103	
6-32	.1410	.1350	.1350	.1290	.111	
8-32	.1670	.1610	.1610	.1550	.137	
10-24	.1940	.1880	.1860	.1800	.153	
10-32	.1930	.1870	.1870	.1810	.163	
12-24	.2200	.2140	.2120	.2060	.179	
1/4-20	.2550	.2490	.2450	.2390	.206	
5/16-18	.3180	.3120	.307	.301	.264	
3/8-16	.3810	.3750	.3685	.3625	.320	
1/2-13	.5075	.5015	.4920	.4860	.432	



545 Basket Road • Webster, NY 14580
 Toll Free • 800.691.0292 | Local • 585.265.1990 | Fax • 585.265.6678
 sales@fastenersdirect.com
 www.fastenersdirect.com

SELF-TAPPING SCREWS

Thread Rolling Screws

Tolerance on Length	Nominal Screw Size	Nominal Screw Length		
		To 3/4" incl.	Over 3/4" to 1.5" incl.	Over 1.5"
	All Diameters	-0.03	-0.05	-0.06
Description	Trilobular thread rolling screw. As each lobe of the screw moves through the pilot hole in the nut material, it forms and work-hardens the nut thread metal, producing an uninterrupted grain flow.			
Applications / Advantages	For drilled, punched or corred holes in all ductile metals and punch extruded metals. Eliminates chips, requires low drive torque and provides excellent resistance to vibrational loosening.			
Material	Steel		Stainless	
	Steel thread rolling screws shall be made from cold-heading steel conforming to the following chemical composition: • Carbon: 0.13-0.27% • Manganese: 0.64-1.71%		18-8: 18-8 stainless steel 410: 410 austenitic stainless steel	
Heat Treatment	Screws shall be quenched in liquid and then tempered by reheating to 650* F minimum		410SS: An ideal method of hardening 410 stainless steel screws is a bright hardening process, which typically involves a vacuum furnace. Another key factor affecting hardness is the chemistry of the fastener — most elements have maximum values but not minimums. This fact can contribute to hardness variance. 18-8 is only hardenable by cold-working	
Case Hardness	Rockwell C45 minimum		-	
Case Depth	2-56 through 6-32 diameters: .002 - .007 8-32 through 12-24 diameters: .004 - .009 1/4-20 diameter & larger: .005 - .011		-	
Hardness	Core: Rockwell C28-38		18-8: Rockwell B90 - C20 (approximately) 410: Rockwell C38 - 46 (approximately)	
Plating	--		Stainless thread rolling screws are supplied passivated and waxed.	



545 Basket Road • Webster, NY 14580
 Toll Free • 800.691.0292 | Local • 585.265.1990 | Fax • 585.265.6678
 sales@fastenersdirect.com
 www.fastenersdirect.com

SELF-TAPPING SCREWS

Thread Rolling Screws

TAPTITE II RECOMMENDED PILOT HOLE SIZES FOR VARIOUS MATERIAL THICKNESS

Appli- cation Duty Class	Light 0.3 Diamter of Material			Medium-Light 0.5 Di- ameter of Material			Medium-Heavy 0.75 Diameter of Material			Full Strength 1.0 Di- ameter of Material			Extended 1.25 Diame- ter of Material		
% of Thread	90%			85%			80%			75%			70%		
Nominal Size	Material Thick- ness	Pilot Hole	Drill Size	Material Thick- ness	Pilot Hole	Drill Size	Material Thick- ness	Pilot Hole	Drill Size	Material Thick- ness	Pilot Hole	Drill Size	Material Thick- ness	Pilot Hole	Drill Size
2-56	.017-.034	.0756	.0748	.034-.052	.0761	.076	.052-.073	.0767	.0763	.073-.095	.0773	.0781	.095-.169	.0779	.0781
3-48	.020-.040	.040	.868	.040-.059	.0875	.0866	.059-.084	.0882	.089	.084-.110	.0888	.089	.110-.141	.0895	.089
4-40	.022-.045	.0974	.098	.045-.067	.0982	.098	.067-.095	.099	.0995	.095-.126	.0998	.0995	.126-.157	.1006	.0995
5-40	.025-.051	.1104	.1102	.051-.075	.1112	.111	.075-.106	.112	.113	.106-.141	.1128	.113	.141-.175	.1136	.113
6-32	.028-.066	.1197	.120	.066-.083	.1207	.120	.083-.117	.1218	.122	.117-.152	.1228	.122	.152-.193	.1238	.125
8-32	.033-.066	.1457	.1457	.066-.098	.1467	.147	.098-.141	.1478	.1476	.141-.180	.1488	.1496	.180-.230	.1498	.1496
10-24	.038-.079	.1656	.166	.079-.114	.167	.1673	.114-.162	.1683	.1695	.162-.209	.1697	.1695	.209-.266	.171	.1719
10-32	.038-.079	.1717	.1719	.079-.114	.1727	.173	.117-.162	.1738	.173	.162-.209	.1748	.1732	.209-.266	.1758	.177
12-24	.043-.086	.1916	.191	.086-.130	.193	.1929	.130-.184	.1943	.196	.184-.238	.1957	.196	.238-.302	.197	.1969
1/4-20	.050-.100	.2208	.221	.100-.150	.2224	.2244	.150.213	.224	.2244	.213-.275	.2256	.2264	.275-.350	.2273	.228
5/16-18	.062-.126	.2800	.2795	.126-.188	.2818	.2812	.188-.266	.2836	.2835	.266-.345	.2854	.2854	.345-.438	.2872	.2874
3/8-16	.075-.150	.3384	.3386	.150-.225	.3405	.3386	.225-.319	.3425	.3425	.319-.413	.3445	.3455	.413-.525	.3466	.3465
1/2-13	.100-.200	.455	.4531	.200-.300	.4575	.4531	.300-.425	.460	.4531	.425-.550	.4625	.4688	.550-.700	.465	.488



545 Basket Road • Webster, NY 14580
 Toll Free • 800.691.0292 | Local • 585.265.1990 | Fax • 585.265.6678
 sales@fastenersdirect.com
 www.fastenersdirect.com

SELF-TAPPING SCREWS

Thread Rolling Screws

TAPTITE SUGGESTED HOLE SIZES AT VARIOUS PERCENTAGES OF THREAD ENGAGEMENT

Nominal Screw Size	Percent Thread													
	100	95	90	85	80	75	70	65	60	55	50	45	40	35
	Pilot Hole Sizes													
2-56	.0744	.0750	.0756	.0761	.0767	.0773	.0779	.0785	.0790	.0796	.0802	.0808	.0814	.0819
3-48	.0855	.0861	.0868	.0875	.0882	.0888	.0895	.0902	.0909	.0916	.0922	.0929	.0936	.0943
4-40	.0958	.0966	.0974	.0982	.0990	.0998	.1006	.1014	.1023	.1031	.1039	.1047	.1055	.1063
5-40	.1088	.1096	.1104	.1112	.1120	.1128	.1136	.1144	.1153	.1161	.1169	.1177	.1185	.1193
6-32	.1177	.1187	.1197	.1207	.1218	.1228	.1136	.1144	.1153	.1161	.1169	.1177	.1185	.1193
8-32	.1437	.1447	.1457	.1467	.1478	.1488	.1498	.1508	.1518	.1528	.1538	.1549	.1559	.1569
10-24	.1629	.1643	.1656	.1670	.1683	.1697	.1710	.1724	.1738	.1751	.1765	.1778	.1792	.1805
10-32	.1697	.1707	.1717	.1727	.1738	.1748	.1758	.1768	.1778	.1788	.1798	.1809	.1819	.1829
12-24	.1889	.1903	.1916	.1930	.1943	.1954	.1970	.1954	.1998	.2011	.2025	.2038	.2052	.2065
1/4-20	.2175	.2191	.2208	.2224	.2240	.2256	.2273	.2289	.2305	.2321	.2338	.2354	.2370	.2386
5/16-18	.2764	.2782	.2800	.2818	.2836	.2854	.2872	.2890	.2908	.2926	.2944	.2963	.2981	.2999
3/8-16	.3344	.3364	.3384	.3405	.3425	.3445	.3466	.3486	.3506	.3527	.3547	.3567	.3588	.3608
1/2-13	.4500	.4525	.4550	.4575	.4600	.4625	.4650	.4675	.4700	.4725	.4750	.4775	.4800	.4825

(1) Pilot holes listed under 90% & 85% (thread percent) also recommended for single punch extruded holes.

NOTES:

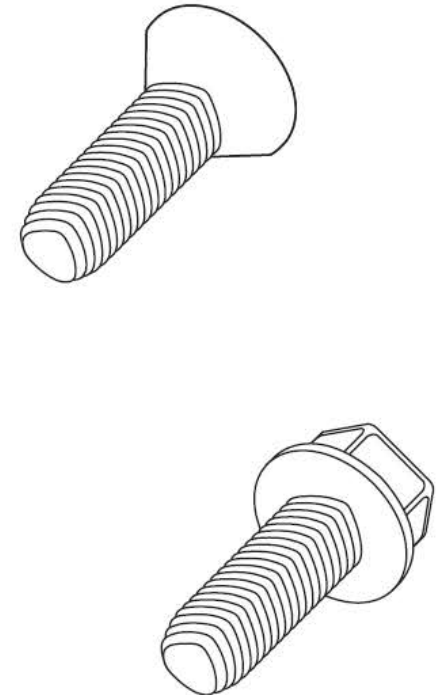
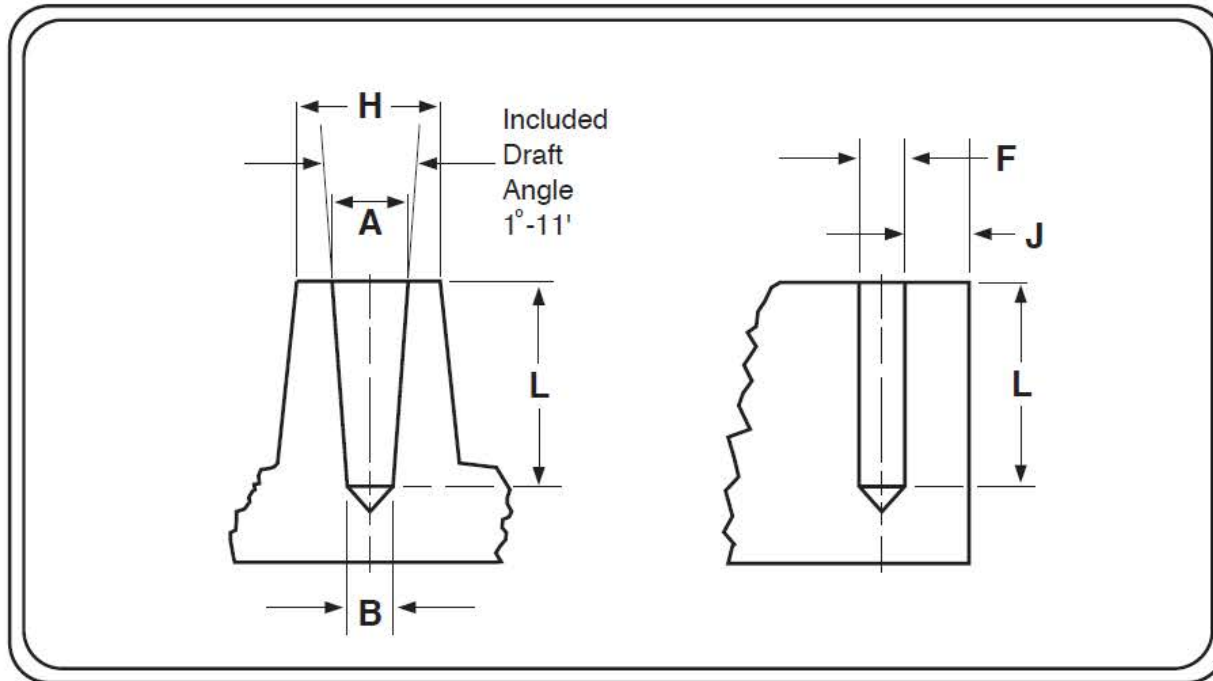
- (1) The above values are based on a linear relation between hole size and percentage thread engagement, the hole data becomes less accurate for engagement less than 70%. The chart indicates that a 10-32 screw in a .1738 hole size provides 80% thread engagement.
- (2) These holes are based on the US basic thread depth of .6495 times the pitch and are calculated using nominal screw diameters.



545 Basket Road • Webster, NY 14580
Toll Free • 800.691.0292 | Local • 585.265.1990 | Fax • 585.265.6678
sales@fastenersdirect.com
www.fastenersdirect.com

SELF-TAPPING SCREWS

Thread Rolling Screws





545 Basket Road • Webster, NY 14580
 Toll Free • 800.691.0292 | Local • 585.265.1990 | Fax • 585.265.6678
 sales@fastenersdirect.com
 www.fastenersdirect.com

SELF-TAPPING SCREWS

Thread Rolling Screws

TAPTITE II SUGGESTED HOLE SIZES FOR ALUMINUM OR ZINC DIE CASTING								
Screw Size	A		B		F Hole Diameter as Drilled	L Length of Thread Engagement	H Boss Diameter	J Distance to Enge for No Measurable Distortion
	Top		Bottom					
	Hole Diameter as Cast Std. Taper							
	Max	Min	Max	Min				
2-56	.081	.078	.077	.074	.077	.172	.197	.046
3-48	.093	.090	.088	.085	.088	.198	.208	.054
4-40	.105	.102	.099	.096	.099	.224	.220	.065
5-40	.118	.115	.112	.109	.112	.250	.232	.065
6-32	.128	.125	.122	.119	.122	.276	.242	.081
8-32	.155	.152	.148	.145	.148	.328	.272	.081
10-24	.177	.174	.168	.165	.168	.380	.315	.108
10-32	.182	.179	.174	.171	.174	.380	.315	.081
1/4-20	.235	.232	.224	.221	.224	.500	.415	.130
5/16-18	.297	.294	.284	.281	.284	.625	.519	.144
3/8-16	.359	.356	.343	.340	.343	.750	.623	.162
1/2-13	.481	.478	.460	.457	.460	1.000	.830	.200

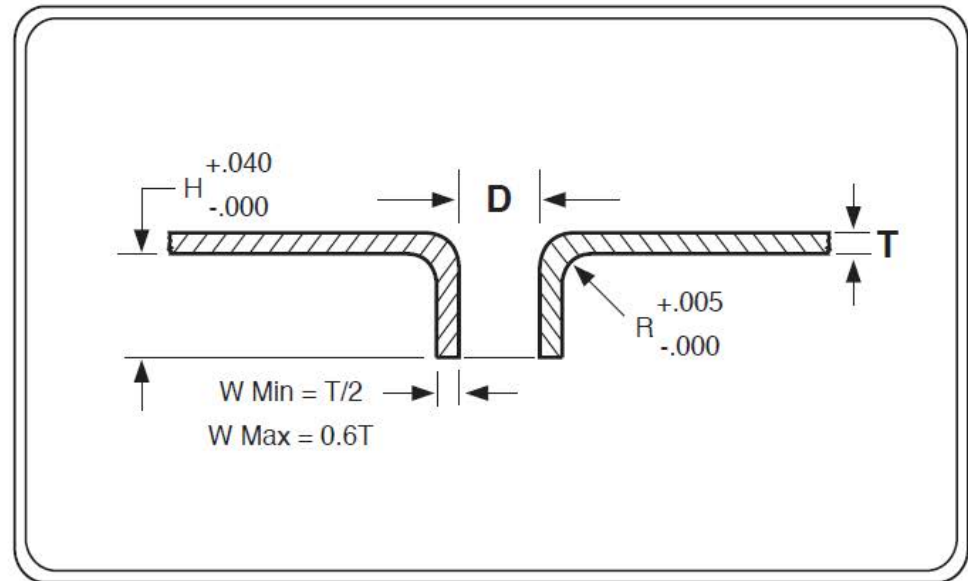
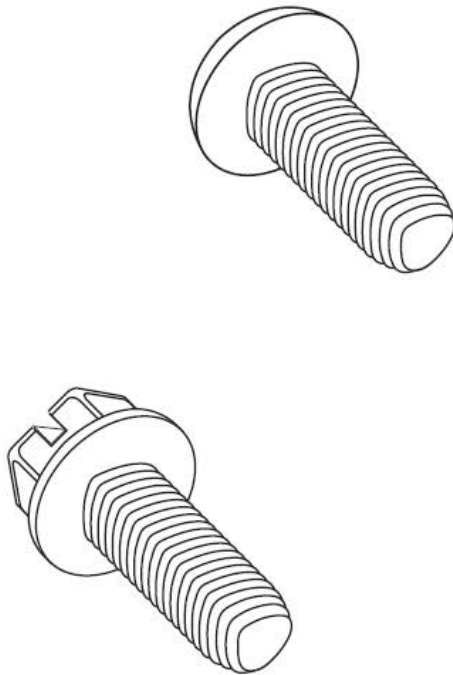
NOTES:
 (1) The minimum length of thread engagement should be equal to twice the diameter of the screw (to approach utilizing available screw strength). The diameter, to ensure optimum performance, should provide for 65% to 75% thread engagement.



545 Basket Road • Webster, NY 14580
Toll Free • 800.691.0292 | Local • 585.265.1990 | Fax • 585.265.6678
sales@fastenersdirect.com
www.fastenersdirect.com

SELF-TAPPING SCREWS

Thread Rolling Screws





545 Basket Road • Webster, NY 14580
 Toll Free • 800.691.0292 | Local • 585.265.1990 | Fax • 585.265.6678
 sales@fastenersdirect.com
 www.fastenersdirect.com

SELF-TAPPING SCREWS

Thread Rolling Screws

TAPTITE II SUGGESTED EXTRUDED HOLES IN LIGHT-GAUGE STEEL												
Inch Thickness T	.02	.03	.04	.06	.09	.13	.16	.19	.22	.25	.31	.38
Screw Size	Hole Sizes - D											
6-32	.118 .120	.118 .121	.119 .122	.120 .123	.122 .125	-	-	-	-	-	-	-
8-32	.144 .146	.144 .147	.145 .148	.146 .149	.147 .150	.148 .152	-	-	-	-	-	-
10-24	.163 .165	.163 .166	.164 .167	.165 .168	.166 .170	.168 .173	-	-	-	-	-	-
10-32	.170 .172	.170 .173	.171 .174	.172 .175	.173 .176	.174 .177	-	-	-	-	-	-
12-24	.189 .191	.189 .192	.190 .193	.191 .194	.192 .196	.193 .197	.195 .200	.198 .203	-	-	-	-
1/4-20	-	-	.218 .220	.218 .221	.219 .223	.221 .225	.224 .228	.227 .231	.228 .233	.230 .235	-	-
5/16-18	-	-	-	.277 .279	.278 .280	.279 .281	.280 .283	.281 .285	.283 .288	.285 .290	-	-
3/8-16	-	-	-	-	-	.335 .337	.336 .338	.337 .340	.337 .340	.342 .346	.344 .349	-
1/2-13	-	-	-	-	-	-	-	.450 .453	.452 .455	.454 .457	.455 .460	.459 .464

D Hole Diameter

NOTES:

- (1) Taptite II Screws will develop almost twice the failure torque in extruded holes, providing maximum joint integrity.
- (2) The above chart indicates that an extruded hole diameter of .166" to .170" is suggested in .090" thick when using a 10-24 Taptite II screw.



545 Basket Road • Webster, NY 14580
 Toll Free • 800.691.0292 | Local • 585.265.1990 | Fax • 585.265.6678
 sales@fastenersdirect.com
 www.fastenersdirect.com

SELF-TAPPING SCREWS

Thread Rolling Screws

TAPTITE II TYPICAL TORQUE PERFORMANCE IN COLD ROLLED STEEL

Screw Size	Plate Thickness	Hole Size	Nearest Drill Size	Thread Forming Torque	Prevailing First Removal Torque	Recommended Assembly Torque	Failure Torque
2-56	.0469	.075	1.9mm	1-2	.5-1	4	6-7*
	.0625	.076	#48	1-2	.5-1	4	8-10*
	.938	.079	#47	1-2	.5-1	5	11-14*
3-48	.0625	.087	2.2mm	3-4	1-2	6	14-15*
	.0938	.089	#43	3-5	1-2	7	15-16*
	.1250	.090	#43	4-6	1-2	7	15-18*
4-40	.0312	.098	#40	2-3	1-2	6	8-11*
	.0625	.102	2.6mm	3-4	1-2	9	15-18*
	.0938	.102	2.6mm	3-4	1-2	11	22-27*
5-40	.0625	.111	#34	4-5	2-3	12	22-29*
	.0938	.113	#33	4-7	3-4	18	34-41*
	.1250	.116	#32	6-8	4-5	20	38-46*
6-32	.0625	.120	#31	4-7	3-4	14	25-30*
	.0938	.120	#31	4-7	3-4	14	25-30*
	.1250	.125	1/8	6-9	4-6	22	39-45*



545 Basket Road • Webster, NY 14580
 Toll Free • 800.691.0292 | Local • 585.265.1990 | Fax • 585.265.6678
 sales@fastenersdirect.com
 www.fastenersdirect.com

SELF-TAPPING SCREWS

Thread Rolling Screws

TAPTITE II TYPICAL TORQUE PERFORMANCE IN COLD ROLLED STEEL (CONTINUED)							
Screw Size	Plate Thickness	Hole Size	Nearest Drill Size	Thread Forming Torque	Prevailing First Removal Torque	Recommended Assembly Torque	Failure Torque
8-32	.0938	.147	#26	10-13	5-7	30	65-75*
	.1250	.150	3.8MM	11-14	4-7	45	75-85
	.1875	.150	3.8MM	16-20	8-11	45	75-95*
10-24	.0938	.172	11/64	14-18	5-8	35	65-80*
	.1250	.172	11/64	17-22	9-13	45	80-90*
	.1875	.177	11/64	17-22	9-13	55	100-115*
10-32	.0938	.173	#17	11-14	9-13	35	80-95*
	.1250	.177	#16	12-16	9-13	50	100-120*
	.1875	.177	#16	12-16	12-16	70	115-140*
12-24	.1250	.196	#9	19-24	9-12	65	95-115*
	.1875	.199	#8	21-26	10-14	85	135-155*
	.2500	.203	13/64	21-26	10-14	85	150-170*
1/4-20	.1250	.224	5.7MM	30-36	18-28	85	170-195*
	.1875	.224	5.7MM	45-55	25-35	125	205-235*
	.2500	.228	#1	55-65	25-35	125	205-235*



545 Basket Road • Webster, NY 14580
 Toll Free • 800.691.0292 | Local • 585.265.1990 | Fax • 585.265.6678
 sales@fastenersdirect.com
 www.fastenersdirect.com

SELF-TAPPING SCREWS

Thread Rolling Screws

TAPTITE II TYPICAL TORQUE PERFORMANCE IN COLD ROLLED STEEL (CONTINUED)							
Screw Size	Plate Thickness	Hole Size	Nearest Drill Size	Thread Forming Torque	Prevailing First Removal Torque	Recommended Assembly Torque	Failure Torque
5/16-18	.1875	.281	K	75-85	40-50	160	380-410*
	.2500	.285	7.25MM	75-85	40-50	225	425-465*
	.3125	.285	7.25MM	80-90	55-65	250	450-500*
3/8-16	.2500	.348	S	90-100	45-55	350	825-875*
	.3125	.348	S	110-125	50-60	400	950-1000*
	.3750	.354	9MM	95-110	30-45	450	950-1000*
1/2-13	.250	.465	29/64	150-180	60-80	500	975-1075*
	.3750	.469	15/32	185-215	60-90	850	1600-1800*
	.5000	.469	15/32	235-275	75-105	1000	1900-2200*
* INDICATES PROBABILITY THAT NUT THREADS WILL STRIP.				*INDICATES PROBABILITY THAT SCREW WILL BREAK.			

- NOTES:
- (1) Torque value are listed in pound-inches. Plate dimensions are listed in inches.
 - (2) Torque values were developed using hex washer head screws, zinc plated plus wax driven at low speed under laboratory controlled conditions. The values shown only represent these controlled conditions and should not be used in lieu of proper application testing.
 - (3) The recommended tightening torque is intended to include approximately 30,000 to 50,000 psi clamping force.
 - (4) Prevailing first removal torque, the torque necessary to remove the screw after the head has been unseated, is an indication of Taptite II screws' inherent resistance to loosening under vibration, even without the screw head being seated.



545 Basket Road • Webster, NY 14580
Toll Free • 800.691.0292 | Local • 585.265.1990 | Fax • 585.265.6678
sales@fastenersdirect.com
www.fastenersdirect.com

SELF-TAPPING SCREWS

Thread Rolling Screws

MECHANICAL PROPERTIES OF HARDENED 410 STAINLESS STEEL TAPTITE II THREAD ROLLING SCREWS	
Nominal Diameter and Thread Pitch	Torsional Strength (Inch - Lbs.)
	Min.
4-40	11.5
5-40	17.8
6-32	21.3
8-32	42.2
10-24	57.3
10-32	73.7
12-24	95.6
1/4-20	142
1/4-28	184