

ENGR. DATA FOR D•F® BRAND 1022 CARBON STEEL SCREWS

WARNING: You must specify or purchase D•F brand screws if you are referencing the data on pages 72 & 73. **Otherwise, buyer beware!**
WARNING: Do not use sq dr impact wrenches or hex impacting drivers to install screws. These tools produce too much torque - they can shear off the head of a screw or over torque an installed screw. An over torqued installed screw could fatigue over time and result in potential fastener failure. Dynamic Fastener recommends always and only using a screwgun with a clutch, such as the DeWalt DCF622, DW267, DW268, or DW269 to install screws.

ULTIMATE AVERAGE PULLOUT VALUES IN METAL (POUNDS)

FASTENER	STEEL GAUGE														
		DIA.	POINT	26	24	22	20	18	16	14	12	3/16"	1/4"	3/8"	1/2"
#6	T2	134	179	275	296	471	629	962							
#8	T2	168	177	283	298	491	800	978							
#10	T17	218	261	444	480	585									
	T1	195	249	308	357	565	961	1,163							
	T2	148	244	283	368	547	853	1,023	1,436						
	T3	142	204	288	299	499	760	1,041	1,388						
#12	T17	203	283	388	495	670									
	T1	165	288	376	390	649	1,179	1,619	1,991						
	T3	143	172	259	341	551	838	941	1,630	2,780					
	T4					495	742	1,059	1,587	3,245	4,013				
	T5					487	792	1,027	1,746	3,796	4,208				
#14	T1 13-TPI	214	238	406	562	758	1,008	1,275							
	T1 14-TPI	224	313	545	562	800	1,113	1,547							
	T2	244	268	355	420	615	1,134	1,385	1,785						
	T3	161	225	296	346	613	1,034	1,297	1,602	3,382					
	T4						863	1,181	1,642	3,415	5,304				
Fenderheads	T5										5,528	5,593	6,244		
#17	AB	253	324	410	442	553	940	1,144	1,843	3,672	4,249				
#18	T1	275	415	614			1,469								
5/16-12	T3						1,007	1,425	2,218	4,616	6,486				
5/16-18	T3						830	1,147	1,565	3,633	4,629				

ULTIMATE AVERAGE PULLOUT VALUES IN WOOD (POUNDS)

OUR CODE	FASTENER	PLYWOOD		2x4 PINE	
		1/2"	3/4"	1"	1 1/2"
CS AS	8-15 T-17 S/S	212	551	662	
MW	9-14	381	534	736	1,047
MW	9-14 S/S	362	500	894	1,272
MW	10-16 Hi-Lo	393	552	763	1,289
CS AC	10-12 T-17	358	572	837	921 (1 1/2")
CS AS	10-12 T-17 S/S	329	637	969	1,299
CS AC	12-11 T-17	341	610	1,027	1,240
CS AS	12-11 T-17 S/S	444	623	766	1,321
MW	12-16 Hi-Lo	422	626	855	956 (1 1/2")
CST1	14-13 T-1	460	640	677	1,110
AC AS	14-10 T-17	449	641	870	1,538
MW	17-10 T-17	346	663		
HT	10-16 T-1	412	637	740	970

NOTE: Pullout values in wood will vary drastically more than pullout values in steel because of the vast inconsistencies of wood. These pullout values should be used as only a guideline. A job site pull test is required for any fastener in any application if you need to know the pullout values for your specific project. Users must determine and apply appropriate safety factors. All tests were performed in laboratory conditions. Some pullout tests in wood were performed by Dynamic Fastener.

ULTIMATE AVERAGE PULLOUT VALUES IN CONCRETE (POUNDS)

OUR CODE	FASTENER	2,700 PSI CONCRETE	
		1"	1 3/4"
CST1	14-13 T-1	278	664
TCS/TCZ	DYNA-CON	754	-

ULTIMATE AVERAGE SHEAR VALUES (POUNDS)

FASTENER	STEEL GAUGE												
		DIA.	POINT	26-26	24-24	22-22	20-20	18-18	16-16	14-14	12-12	1/8-1/8	1/4-1/4
#6	T2	290	351	531	758	845							
#8	T2	296	391	550	740	1,060							
#10	T1	416	523	742	884	1,373							
	T2	303	440	629	830	1,206							
	T3				728	1,263	1,592	1,674					
#12	T1	414	649	987	1018	1,452							
	T3				769	1,358	1,774	2,332	2,478				
	T4								2,074	2,207			
	T5								2,198	2,207	2,364		
#14	T1 13-TPI	355	505	719	1,076	1,474							
	T1 14-TPI	544	684	1,143	1,244	1,764							
	T3				930	1,442	1,889	2,697	2,890				
1/4-20	T5								3,362	3,448	3,759		
#18	T1	493	648	1021									
5/16-12	T3						2,399	3,638	4,482	4,675			
5/16-18	T3						2,057	3,120	5,297	6,493			

FASTENER VALUES

FASTENER DIA.	POINT	TENSILE	TENSILE	SHEAR	TORQUE	
		(LBS. MIN)	(AVG. LBS. ULTIMATE)	(AVG. LBS. ULTIMATE)	(MIN. IN-LBS.)	(ULTIMATE IN-LBS.)
6-20	T2	1,284	1,656	983	25	53
8-18	T2	1,544	2,466	1,319	42	74
10-16	T2	1,936	3,298	1,929	61	114
12-14	T3	2,778	4,216	2,741	92	215
12-24	T4	3,020	3,999	2,365	100	206
12-24	T5	3,188	4,535	2,289	150	215
14-14	T3	4,060	4,769	3,834	150	253
14-20	T5	4,225	5,940	3,651	150	338
Fenderheads	17-14 AB	5,300	6,437	5,188	180	569

All tests were conducted under laboratory conditions. Ultimate values are listed. The user or specifier must determine and apply appropriate safety factors. Unless otherwise provided, a 4-to-1 safety factor is commonly used. Because actual applications vary and are uncontrollable by Dynamic Fastener, we assume no liability for the use of this data.

ENGR. DATA FOR D•F® BRAND STAINLESS STEEL SCREWS

D•F® brand carbon steel, 410 stainless steel, 300 series stainless steel and Bi-Metal engineering values listed on pg 72 and pg 73 are the result of our extensive testing by an independent testing laboratory. Since this is our testing on our D•F® screws, then you must specify or purchase D•F® brand screws if you're referencing the data from pages 72 or 73. **Otherwise, buyer beware!**

ULTIMATE AVERAGE PULLOUT VALUES IN METAL (POUNDS)

	FASTENER		STEEL GAUGE												
	DIA.	POINT	26	24	22	20	18	16	14	12	3/16"	1/4"	3/8"	1/2"	
BI-METAL	#10	T2	108	167	248	282	480	694	725	1,120					
		T3	103	121	180	286	402	654	670	1,049	1,936				
	#12	T5					433	598	796	1,191	2,540	2,890			
		T1	209	260	359	511	712	920	1,168						
	#14	T3	133	198	242	280	497	673	871	1,274	2,326				
		T5										3,361	3,849	3,976	
410 S/S	#8	T2	132	141	235	313	512	628	820						
		T2	126	222	234	299	465	639	810	1,264					
	#12	T3	132	166	198	242	429	698	769	1,158	2,559				
		T4					427	533	768	1,154					
	#14	T5					530	792	1,044	1,669	3,568	3,871			
		T1	195	252	387	477	748	961	1,203						
	#14	T3	138	196	212	289	449	657	857	1,233	3,087				

FASTENER VALUES

	FASTENER DIA.	POINT	TENSILE	SHEAR	TORQUE	
			(AVG. LBS. ULT.)	(AVG. LBS. ULTIMATE)	(MIN. IN-LBS.)	(ULTIMATE IN-LBS.)
BI-METAL	10-16	T2	2,109	1,476	47	72
	12-14	T3	1,715	1,476	77	98
	12-24	T5	2,662	2,031	77	98
	14-14	T1	911	1,757	120	152
	14-14	T3	2,889	2,685	120	138
300 S/S	14-20	T5	4,005	2,850	120	162
	8-18	T2		967		
	10-16	T3		1,684		
	12-11	T4	1,982	2,090		
	12-14	T3	2,823	2,224	90	93
410 S/S	14-14	T3	3,647	2,980	150	152
	8-18	T2	2,132	1,612		
	10-16	T2		1,633		104
	10-16	T3		2,466		
	12-14	T3	3,924	2,982		142
	12-24	T4		3,017		174
	12-24	T5	4,753	3,098		149
14-14	T1		3,153		224	
14-14	T3	4,736	3,814		228	

NOMINAL SCREW SIZES

SHEET STEEL GAUGES

Thread Diameter	Decimal Equivalent	Common Sheet Steel Gauges	Decimal Equivalent
#6	.140	LIGHT	.014
#7	.150		
#8	.160		
#9	.180		
#10	.190		
#11	.200		
#12	.210	MEDIUM	.048
#13	.230		
#14	.242		
1/4	.250		
#17	.285		
#18	.304		

All Bi-Metal values shown were tested with only the stainless steel threads engaged in the substrate. The carbon steel drill point and lead threads would be penetrating through the back side of the substrate.

ULTIMATE AVERAGE SHEAR VALUES (POUNDS)

	FASTENER		STEEL GAUGE									
	DIA.	POINT	26-26	24-24	22-22	20-20	18-18	16-16	14-14	12-12	1/8-1/8	1/4-1/4
410 S/S	#8	T2	246	313	491	671	1,050					
		T2	285	295	479	624	1,047					
	#12	T3				702	1,006	1,330	1,792	2,399		
		T4								2,534	3,007	
	#14	T5								2,677	2,977	2,859
		T1	396	457	928	998	1,559					
#14	T3				716	1,115	1,428	1,979	2,901			

6061-T6 ALUM TO ALUM

	FASTENER		THICKNESS		
	DIA.	POINT	1/16-1/16	1/16-1/8	1/8-1/8
300 S/S	#8	T2	971	1,168	
	#10	T3	915	1,449	
	#12	T3	937	1,790	1,835
	#14	T3	1,140	1,913	2,305

6061-T6 ALUM TO STEEL

	FASTENER		THICKNESS		
	DIA.	POINT	1/16-1/8	1/8-1/8	1/8-1/4
BI-METAL	#10	T2	1,743		
	#12	T3	1,633		
	#12	T5	1,768	2,040	2,125
	#14	T3	1,783		
	#14	T5	1,893	2,731	2,906

All tests were conducted under laboratory conditions. Ultimate values are listed. The user or specifier must determine and apply appropriate safety factors. Unless otherwise provided, a 4-to-1 safety factor is commonly used. Because actual applications vary and are uncontrollable by Dynamic Fastener, we assume no liability for the use of this data. This document is subject to revision. We reserve the right to make technical changes.