

**BOLT LOAD (IMPERIAL) SOCKET HEAD CAP SCREWS B7  
40% - 99% YIELD**



<b>Southwest Texas</b> 4802 Baldwin Blvd. Corpus Christi 78408 361-888-5080	<b>West Texas</b> 3508 S County Rd 1290 Odessa, TX 78765 432-561-8481	<b>Main Office</b> 12420 Texaco Rd Houston, TX 77013 713-453-6677	<b>Southeast Texas</b> 2484 W Cardinal #4 Beaumont, TX 77705 409-840-9699	<b>Central &amp; East Texas</b> 7900 Rodeo Trl. #500 Mansfield, TX 76063 682-334-2679
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**BOLT LOADS**

**TORQUE GUIDE FOR SOCKET HEAD CAP SCREWS (INCH)**  
MATERIAL **ASTM A547 ALLOY STEEL**

BOLT TENSION BASED ON **40** PERCENT YIELD

BOLT SIZE	THREADS PER INCH	HEX A.F.	STRESS AREA (in) <sup>2</sup>	MIN YIELD STRENGTH	BOLT TENSION	REQUIRED TORQUE (FtLbs)								
						LoaDISC TS801 MOLY K=.109	MOLYBDENUM DISULFIDE K=.100	MOLY/LEAD OXIDE/GRAPHITE K=.125	COPPER & GRAPHITE K=.140	NICKEL & GRAPHITE K=.150	API SA2 K=.157	MACHINE OIL K=.20	DRY STEEL K=.440	CUSTOM INSERT 0.125
5/8	11	0.500	0.226	155,000	14,005	80	73	91	102	109	115	146	321	91
3/4	10	0.625	0.334	155,000	20,726	141	130	162	181	194	203	259	570	162
7/8	9	0.750	0.461	155,000	28,613	227	209	261	292	313	328	417	918	261
1	8	0.750	0.605	155,000	37,537	341	313	391	438	469	491	626	1,376	391
1 1/8	7	0.875	0.763	155,000	47,299	483	443	554	621	665	696	887	1,951	554
1 1/4	7	0.875	0.969	155,000	60,054	682	626	782	876	938	982	1,251	2,752	782
1 3/8	6	1.000	1.154	155,000	71,566	894	820	1,025	1,148	1,230	1,287	1,640	3,608	1,025
1 1/2	6	1.000	1.405	155,000	87,081	1,186	1,089	1,361	1,524	1,633	1,709	2,177	4,789	1,361
1 3/4	5	1.250	1.898	155,000	117,706	1,871	1,717	2,146	2,403	2,575	2,695	3,433	7,553	2,146
2	4.5	1.500	2.497	155,000	154,811	2,812	2,580	3,225	3,612	3,870	4,051	5,160	11,353	3,225
2 1/4	4.5	1.750	3.246	155,000	201,254	4,113	3,774	4,717	5,283	5,660	5,924	7,547	16,603	4,717
2 1/2	4	1.750	3.997	155,000	247,801	5,627	5,163	6,453	7,228	7,744	8,105	10,325	22,715	6,453
2 3/4	4	2.000	4.932	155,000	305,753	7,637	7,007	8,759	9,810	10,510	11,001	14,014	30,830	8,759
3	4	2.250	5.964	155,000	369,789	10,077	9,245	11,556	12,943	13,867	14,514	18,489	40,677	11,556

**TORQUE GUIDE FOR SOCKET HEAD CAP SCREWS (INCH)**  
MATERIAL **ASTM A547 ALLOY STEEL**

BOLT TENSION BASED ON **50** PERCENT YIELD

BOLT SIZE	THREADS PER INCH	HEX A.F.	STRESS AREA (in) <sup>2</sup>	MIN YIELD STRENGTH	BOLT TENSION	REQUIRED TORQUE (FtLbs)								
						LoaDISC TS801 MOLY K=.109	MOLYBDENUM DISULFIDE K=.100	MOLY/LEAD OXIDE/GRAPHITE K=.125	COPPER & GRAPHITE K=.140	NICKEL & GRAPHITE K=.150	API SA2 K=.157	MACHINE OIL K=.20	DRY STEEL K=.440	CUSTOM INSERT 0.125
5/8	11	0.500	0.226	155,000	17,506	99	91	114	128	137	143	182	401	114
3/4	10	0.625	0.334	155,000	25,908	176	162	202	227	243	254	324	712	202
7/8	9	0.750	0.461	155,000	35,766	284	261	326	365	391	409	522	1,147	326
1	8	0.750	0.605	155,000	46,921	426	391	489	547	587	614	782	1,720	489
1 1/8	7	0.875	0.763	155,000	59,124	604	554	693	776	831	870	1,109	2,439	693
1 1/4	7	0.875	0.969	155,000	75,068	852	782	977	1,095	1,173	1,228	1,564	3,441	977
1 3/8	6	1.000	1.154	155,000	89,458	1,117	1,025	1,281	1,435	1,538	1,609	2,050	4,510	1,281
1 1/2	6	1.000	1.405	155,000	108,852	1,483	1,361	1,701	1,905	2,041	2,136	2,721	5,987	1,701
1 3/4	5	1.250	1.898	155,000	147,133	2,339	2,146	2,682	3,004	3,219	3,369	4,291	9,441	2,682
2	4.5	1.500	2.497	155,000	193,514	3,516	3,225	4,032	4,515	4,838	5,064	6,450	14,191	4,032
2 1/4	4.5	1.750	3.246	155,000	251,568	5,141	4,717	5,896	6,604	7,075	7,406	9,434	20,754	5,896
2 1/2	4	1.750	3.997	155,000	309,751	7,034	6,453	8,066	9,034	9,680	10,131	12,906	28,394	8,066
2 3/4	4	2.000	4.932	155,000	382,191	9,547	8,759	10,948	12,262	13,138	13,751	17,517	38,538	10,948
3	4	2.250	5.964	155,000	462,236	12,596	11,556	14,445	16,178	17,334	18,143	23,112	50,846	14,445

TORQUE GUIDE FOR SOCKET HEAD CAP SCREWS (INCH)															
MATERIAL ASTM A547 ALLOY STEEL															
BOLT TENSION BASED ON			60	PERCENT YIELD			REQUIRED TORQUE (FtLbs)								
BOLT SIZE	THREADS PER INCH	HEX A.F.	STRESS AREA (in) <sup>2</sup>	MIN YIELD STRENGTH	BOLT TENSION	LoaDISC TS801 MOLY K=.109	MOLYBDENUM DISULFIDE K=.100	MOLY/LEAD OXIDE/GRAPHITE K=.125	COPPER & GRAPHITE K=.140	NICKEL & GRAPHITE K=.150	API SA2 K=.157	MACHINE OIL K=.20	DRY STEEL K=.440	CUSTOM INSERT 0.125	
5/8	11	0.500	0.226	155,000	21,007	119	109	137	153	164	172	219	481	137	
3/4	10	0.625	0.334	155,000	31,089	212	194	243	272	291	305	389	855	243	
7/8	9	0.750	0.461	155,000	42,919	341	313	391	438	469	491	626	1,377	391	
1	8	0.750	0.605	155,000	56,306	511	469	587	657	704	737	938	2,065	587	
1 1/8	7	0.875	0.763	155,000	70,948	725	665	831	931	998	1,044	1,330	2,927	831	
1 1/4	7	0.875	0.969	155,000	90,081	1,023	938	1,173	1,314	1,408	1,473	1,877	4,129	1,173	
1 3/8	6	1.000	1.154	155,000	107,349	1,341	1,230	1,538	1,722	1,845	1,931	2,460	5,412	1,538	
1 1/2	6	1.000	1.405	155,000	130,622	1,780	1,633	2,041	2,286	2,449	2,563	3,266	7,184	2,041	
1 3/4	5	1.250	1.898	155,000	176,560	2,807	2,575	3,219	3,605	3,862	4,042	5,150	11,329	3,219	
2	4.5	1.500	2.497	155,000	232,217	4,219	3,870	4,838	5,418	5,805	6,076	7,741	17,029	4,838	
2 1/4	4.5	1.750	3.246	155,000	301,881	6,170	5,660	7,075	7,924	8,490	8,887	11,321	24,905	7,075	
2 1/2	4	1.750	3.997	155,000	371,702	8,441	7,744	9,680	10,841	11,616	12,158	15,488	34,073	9,680	
2 3/4	4	2.000	4.932	155,000	458,630	11,456	10,510	13,138	14,714	15,765	16,501	21,021	46,245	13,138	
3	4	2.250	5.964	155,000	554,683	15,115	13,867	17,334	19,414	20,801	21,771	27,734	61,015	17,334	

TORQUE GUIDE FOR SOCKET HEAD CAP SCREWS (INCH)															
MATERIAL ASTM A547 ALLOY STEEL															
BOLT TENSION BASED ON			70	PERCENT YIELD			REQUIRED TORQUE (FtLbs)								
BOLT SIZE	THREADS PER INCH	HEX A.F.	STRESS AREA (in) <sup>2</sup>	MIN YIELD STRENGTH	BOLT TENSION	LoaDISC TS801 MOLY K=.109	MOLYBDENUM DISULFIDE K=.100	MOLY/LEAD OXIDE/GRAPHITE K=.125	COPPER & GRAPHITE K=.140	NICKEL & GRAPHITE K=.150	API SA2 K=.157	MACHINE OIL K=.20	DRY STEEL K=.440	CUSTOM INSERT 0.125	
5/8	11	0.500	0.226	155,000	24,509	139	128	160	179	191	200	255	562	160	
3/4	10	0.625	0.334	155,000	36,271	247	227	283	317	340	356	453	997	283	
7/8	9	0.750	0.461	155,000	50,073	398	365	456	511	548	573	730	1,606	456	
1	8	0.750	0.605	155,000	65,690	597	547	684	766	821	859	1,095	2,409	684	
1 1/8	7	0.875	0.763	155,000	82,773	846	776	970	1,086	1,164	1,218	1,552	3,414	970	
1 1/4	7	0.875	0.969	155,000	105,095	1,193	1,095	1,368	1,533	1,642	1,719	2,189	4,817	1,368	
1 3/8	6	1.000	1.154	155,000	125,241	1,564	1,435	1,794	2,009	2,153	2,253	2,870	6,314	1,794	
1 1/2	6	1.000	1.405	155,000	152,392	2,076	1,905	2,381	2,667	2,857	2,991	3,810	8,382	2,381	
1 3/4	5	1.250	1.898	155,000	205,986	3,274	3,004	3,755	4,206	4,506	4,716	6,008	13,217	3,755	
2	4.5	1.500	2.497	155,000	270,919	4,922	4,515	5,644	6,321	6,773	7,089	9,031	19,867	5,644	
2 1/4	4.5	1.750	3.246	155,000	352,195	7,198	6,604	8,255	9,245	9,905	10,368	13,207	29,056	8,255	
2 1/2	4	1.750	3.997	155,000	433,652	9,848	9,034	11,293	12,648	13,552	14,184	18,069	39,751	11,293	
2 3/4	4	2.000	4.932	155,000	535,068	13,366	12,262	15,327	17,167	18,393	19,251	24,524	53,953	15,327	
3	4	2.250	5.964	155,000	647,130	17,634	16,178	20,223	22,650	24,267	25,400	32,357	71,184	20,223	

TORQUE GUIDE FOR SOCKET HEAD CAP SCREWS (INCH)														
MATERIAL ASTM A547 ALLOY STEEL														
BOLT TENSION BASED ON			80	PERCENT YIELD		REQUIRED TORQUE (FtLbs)								
BOLT SIZE	THREADS PER INCH	HEX A.F.	STRESS AREA (in) <sup>2</sup>	MIN YIELD STRENGTH	BOLT TENSION	LoaDISC TS801 MOLY K=.109	MOLYBDENUM DISULFIDE K=.100	MOLY/LEAD OXIDE/GRAPHITE K=.125	COPPER & GRAPHITE K=.140	NICKEL & GRAPHITE K=.150	API SA2 K=.157	MACHINE OIL K=.20	DRY STEEL K=.440	CUSTOM INSERT 0.125
5/8	11	0.500	0.226	155,000	28,010	159	146	182	204	219	229	292	642	182
3/4	10	0.625	0.334	155,000	41,452	282	259	324	363	389	407	518	1,140	324
7/8	9	0.750	0.461	155,000	57,226	455	417	522	584	626	655	835	1,836	522
1	8	0.750	0.605	155,000	75,074	682	626	782	876	938	982	1,251	2,753	782
1 1/8	7	0.875	0.763	155,000	94,598	967	887	1,109	1,242	1,330	1,392	1,774	3,902	1,109
1 1/4	7	0.875	0.969	155,000	120,109	1,364	1,251	1,564	1,752	1,877	1,964	2,502	5,505	1,564
1 3/8	6	1.000	1.154	155,000	143,133	1,788	1,640	2,050	2,296	2,460	2,575	3,280	7,216	2,050
1 1/2	6	1.000	1.405	155,000	174,163	2,373	2,177	2,721	3,048	3,266	3,418	4,354	9,579	2,721
1 3/4	5	1.250	1.898	155,000	235,413	3,742	3,433	4,291	4,806	5,150	5,390	6,866	15,106	4,291
2	4.5	1.500	2.497	155,000	309,622	5,625	5,160	6,450	7,225	7,741	8,102	10,321	22,706	6,450
2 1/4	4.5	1.750	3.246	155,000	402,508	8,226	7,547	9,434	10,566	11,321	11,849	15,094	33,207	9,434
2 1/2	4	1.750	3.997	155,000	495,602	11,254	10,325	12,906	14,455	15,488	16,210	20,650	45,430	12,906
2 3/4	4	2.000	4.932	155,000	611,506	15,275	14,014	17,517	19,619	21,021	22,001	28,027	61,660	17,517
3	4	2.250	5.964	155,000	739,578	20,153	18,489	23,112	25,885	27,734	29,028	36,979	81,354	23,112

TORQUE GUIDE FOR SOCKET HEAD CAP SCREWS (INCH)														
MATERIAL ASTM A547 ALLOY STEEL														
BOLT TENSION BASED ON			90	PERCENT YIELD		REQUIRED TORQUE (FtLbs)								
BOLT SIZE	THREADS PER INCH	HEX A.F.	STRESS AREA (in) <sup>2</sup>	MIN YIELD STRENGTH	BOLT TENSION	LoaDISC TS801 MOLY K=.109	MOLYBDENUM DISULFIDE K=.100	MOLY/LEAD OXIDE/GRAPHITE K=.125	COPPER & GRAPHITE K=.140	NICKEL & GRAPHITE K=.150	API SA2 K=.157	MACHINE OIL K=.20	DRY STEEL K=.440	CUSTOM INSERT 0.125
5/8	11	0.500	0.226	155,000	31,511	179	164	205	230	246	258	328	722	205
3/4	10	0.625	0.334	155,000	46,634	318	291	364	408	437	458	583	1,282	364
7/8	9	0.750	0.461	155,000	64,379	512	469	587	657	704	737	939	2,065	587
1	8	0.750	0.605	155,000	84,458	767	704	880	985	1,056	1,105	1,408	3,097	880
1 1/8	7	0.875	0.763	155,000	106,423	1,088	998	1,247	1,397	1,497	1,566	1,995	4,390	1,247
1 1/4	7	0.875	0.969	155,000	135,122	1,534	1,408	1,759	1,971	2,111	2,210	2,815	6,193	1,759
1 3/8	6	1.000	1.154	155,000	161,024	2,011	1,845	2,306	2,583	2,768	2,897	3,690	8,118	2,306
1 1/2	6	1.000	1.405	155,000	195,933	2,670	2,449	3,061	3,429	3,674	3,845	4,898	10,776	3,061
1 3/4	5	1.250	1.898	155,000	264,840	4,210	3,862	4,828	5,407	5,793	6,064	7,724	16,994	4,828
2	4.5	1.500	2.497	155,000	348,325	6,328	5,805	7,257	8,128	8,708	9,115	11,611	25,544	7,257
2 1/4	4.5	1.750	3.246	155,000	452,822	9,255	8,490	10,613	11,887	12,736	13,330	16,981	37,358	10,613
2 1/2	4	1.750	3.997	155,000	557,552	12,661	11,616	14,520	16,262	17,424	18,237	23,231	51,109	14,520
2 3/4	4	2.000	4.932	155,000	687,944	17,184	15,765	19,707	22,072	23,648	24,752	31,531	69,368	19,707
3	4	2.250	5.964	155,000	832,025	22,673	20,801	26,001	29,121	31,201	32,657	41,601	91,523	26,001

**TORQUE GUIDE FOR SOCKET HEAD CAP SCREWS (INCH)**

MATERIAL **ASTM A547 ALLOY STEEL**

BOLT TENSION BASED ON **99** PERCENT YIELD

**REQUIRED TORQUE (FtLbs)**

BOLT SIZE	THREADS PER INCH	HEX A.F.	STRESS AREA (in) <sup>2</sup>	MIN YIELD STRENGTH	BOLT TENSION	LoaDISC TS801 MOLY K=.109	MOLYBDENUM DISULFIDE K=.100	MOLY/LEAD OXIDE/GRAPHITE K=.125	COPPER & GRAPHITE K=.140	NICKEL & GRAPHITE K=.150	API SA2 K=.157	MACHINE OIL K=.20	DRY STEEL K=.440	CUSTOM INSERT 0.125
5/8	11	0.500	0.226	155,000	34,662	197	181	226	253	271	283	361	794	226
3/4	10	0.625	0.334	155,000	51,297	349	321	401	449	481	503	641	1,411	401
7/8	9	0.750	0.461	155,000	70,817	563	516	645	723	775	811	1,033	2,272	645
1	8	0.750	0.605	155,000	92,904	844	774	968	1,084	1,161	1,215	1,548	3,406	968
1 1/8	7	0.875	0.763	155,000	117,065	1,196	1,097	1,372	1,536	1,646	1,723	2,195	4,829	1,372
1 1/4	7	0.875	0.969	155,000	148,634	1,688	1,548	1,935	2,168	2,322	2,431	3,097	6,812	1,935
1 3/8	6	1.000	1.154	155,000	177,127	2,212	2,030	2,537	2,841	3,044	3,186	4,059	8,930	2,537
1 1/2	6	1.000	1.405	155,000	215,526	2,937	2,694	3,368	3,772	4,041	4,230	5,388	11,854	3,368
1 3/4	5	1.250	1.898	155,000	291,324	4,631	4,248	5,311	5,948	6,373	6,670	8,497	18,693	5,311
2	4.5	1.500	2.497	155,000	383,158	6,961	6,386	7,982	8,940	9,579	10,026	12,772	28,098	7,982
2 1/4	4.5	1.750	3.246	155,000	498,104	10,180	9,339	11,674	13,075	14,009	14,663	18,679	41,094	11,674
2 1/2	4	1.750	3.997	155,000	613,308	13,927	12,777	15,972	17,888	19,166	20,060	25,554	56,220	15,972
2 3/4	4	2.000	4.932	155,000	756,739	18,903	17,342	21,677	24,279	26,013	27,227	34,684	76,304	21,677
3	4	2.250	5.964	155,000	915,227	24,940	22,881	28,601	32,033	34,321	35,923	45,761	100,675	28,601