

BOLT LOAD (METRIC) SOCKET HEAD CAP SCREWS (MATERIAL GR 5.6)

40% - 99% YIELD



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

TORQUE GUIDE FOR ISO R898 GRADE 5.6												
MINIMUM YIELD (Mpa)		300										
BOLT LOAD BASED ON		40 PERCENT YIELD										
REQUIRED TORQUE (N-m)												
BOLT SIZE DIA. x P	HEX NUT ACROSS FLAT (mm)	STRESS AREA (mm) ²	BOLT LOAD (kN)	LoaDISC TS 801 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=.200	DRY STEEL K=.440 K=.300	CUSTOM (INSERT 0.109)
M20x2.5	30	245	29.38	64	59	73	82	88	92	118	259	64
M22x2.5	32	303	36.41	87	80	100	112	120	126	160	352	87
M24x3	36	353	42.30	111	102	127	142	152	159	203	447	111
M27x3	41	459	55.13	162	149	186	208	223	234	298	655	162
M30x3.5	46	561	67.27	220	202	252	283	303	317	404	888	220
M33x3.5	50	694	83.23	299	275	343	385	412	431	549	1,209	299
M36x4	55	817	98.01	385	353	441	494	529	554	706	1,553	385
M39x4	60	976	117.10	498	457	571	639	685	717	913	2,009	498
M42x4.5	65	1121	134.52	616	565	706	791	847	887	1,130	2,486	616
M45x4.5	70	1306	156.73	769	705	882	987	1,058	1,107	1,411	3,103	769
M48x5	75	1473	176.79	925	849	1,061	1,188	1,273	1,332	1,697	3,734	925
M52x5	80	1758	210.95	1,196	1,097	1,371	1,536	1,645	1,722	2,194	4,827	1,196
M56x5.5	85	2030	243.61	1,487	1,364	1,705	1,910	2,046	2,142	2,728	6,003	1,487
M60x5.5	90	2362	283.45	1,854	1,701	2,126	2,381	2,551	2,670	3,401	7,483	1,854
M64x6	95	2676	321.13	2,240	2,055	2,569	2,877	3,083	3,227	4,110	9,043	2,240
M68x6	100	3055	366.65	2,718	2,493	3,117	3,491	3,740	3,914	4,986	10,970	2,718
M72x6	105	3460	415.19	3,258	2,989	3,737	4,185	4,484	4,693	5,979	13,153	3,258
M76x6	110	3889	466.74	3,866	3,547	4,434	4,966	5,321	5,569	7,094	15,608	3,866
M80x6	115	4344	521.30	4,546	4,170	5,213	5,839	6,256	6,548	8,341	18,350	4,546
M90x6	130	5591	670.92	6,582	6,038	7,548	8,454	9,057	9,480	12,077	26,568	6,582
M100x6	145	6995	839.38	9,149	8,394	10,492	11,751	12,591	13,178	16,788	36,933	9,149
M110x6	155	8556	1,026.69	12,310	11,294	14,117	15,811	16,940	17,731	22,587	49,692	12,310
M125x6	180	11192	1,343.00	18,298	16,788	20,984	23,503	25,181	26,356	33,575	73,865	18,298

TORQUE GUIDE FOR ISO R898 GRADE 5.6												
MINIMUM YIELD (Mpa)		300										
BOLT LOAD BASED ON		50 PERCENT YIELD										
REQUIRED TORQUE (N-m)												
BOLT SIZE DIA. x P	HEX NUT ACROSS FLAT (mm)	STRESS AREA (mm) ²	BOLT LOAD (kN)	LoaDISC TS 801 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=.200	DRY STEEL K=.440 K=.300	CUSTOM (INSERT 0.109)
M20x2.5	30	245	36.72	80	73	92	103	110	115	147	323	80
M22x2.5	32	303	45.51	109	100	125	140	150	157	200	441	109
M24x3	36	353	52.88	138	127	159	178	190	199	254	558	138
M27x3	41	459	68.91	203	186	233	260	279	292	372	819	203
M30x3.5	46	561	84.09	275	252	315	353	378	396	505	1,110	275
M33x3.5	50	694	104.04	374	343	429	481	515	539	687	1,511	374
M36x4	55	817	122.51	481	441	551	617	662	692	882	1,941	481
M39x4	60	976	146.37	622	571	714	799	856	896	1,142	2,512	622
M42x4.5	65	1121	168.14	770	706	883	989	1,059	1,109	1,412	3,107	770
M45x4.5	70	1306	195.91	961	882	1,102	1,234	1,322	1,384	1,763	3,879	961
M48x5	75	1473	220.98	1,156	1,061	1,326	1,485	1,591	1,665	2,121	4,667	1,156
M52x5	80	1758	263.69	1,495	1,371	1,714	1,920	2,057	2,153	2,742	6,033	1,495
M56x5.5	85	2030	304.52	1,859	1,705	2,132	2,387	2,558	2,677	3,411	7,503	1,859
M60x5.5	90	2362	354.32	2,317	2,126	2,657	2,976	3,189	3,338	4,252	9,354	2,317
M64x6	95	2676	401.41	2,800	2,569	3,211	3,597	3,854	4,033	5,138	11,304	2,800
M68x6	100	3055	458.31	3,397	3,117	3,896	4,363	4,675	4,893	6,233	13,713	3,397
M72x6	105	3460	518.98	4,073	3,737	4,671	5,231	5,605	5,867	7,473	16,441	4,073
M76x6	110	3889	583.42	4,833	4,434	5,542	6,208	6,651	6,961	8,868	19,510	4,833
M80x6	115	4344	651.63	5,682	5,213	6,516	7,298	7,820	8,184	10,426	22,937	5,682
M90x6	130	5591	838.65	8,227	7,548	9,435	10,567	11,322	11,850	15,096	33,210	8,227
M100x6	145	6995	1,049.22	11,437	10,492	13,115	14,689	15,738	16,473	20,984	46,166	11,437
M110x6	155	8556	1,283.36	15,388	14,117	17,646	19,764	21,176	22,164	28,234	62,115	15,388
M125x6	180	11192	1,678.75	22,873	20,984	26,231	29,378	31,477	32,946	41,969	92,331	22,873

TORQUE GUIDE FOR ISO R898 GRADE 5.6				BOLT LOADS								
MINIMUM YIELD (Mpa)			300									
BOLT LOAD BASED ON			60			PERCENT YIELD						
REQUIRED TORQUE (N-m)												
BOLT SIZE DIA. x P	HEX NUT ACROSS FLAT (mm)	STRESS AREA (mm) ²	BOLT LOAD (kN)	LoaDISC TS 801 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=.200	DRY STEEL K=.440 K=.300	CUSTOM (INSERT)
												0.109
M20x2.5	30	245	44.07	96	88	110	123	132	138	176	388	96
M22x2.5	32	303	54.61	131	120	150	168	180	189	240	529	131
M24x3	36	353	63.45	166	152	190	213	228	239	305	670	166
M27x3	41	459	82.70	243	223	279	313	335	351	447	982	243
M30x3.5	46	561	100.91	330	303	378	424	454	475	605	1,332	330
M33x3.5	50	694	124.85	449	412	515	577	618	647	824	1,813	449
M36x4	55	817	147.02	577	529	662	741	794	831	1,059	2,329	577
M39x4	60	976	175.64	747	685	856	959	1,028	1,075	1,370	3,014	747
M42x4.5	65	1121	201.77	924	847	1,059	1,186	1,271	1,330	1,695	3,729	924
M45x4.5	70	1306	235.09	1,153	1,058	1,322	1,481	1,587	1,661	2,116	4,655	1,153
M48x5	75	1473	265.18	1,387	1,273	1,591	1,782	1,909	1,998	2,546	5,601	1,387
M52x5	80	1758	316.42	1,793	1,645	2,057	2,304	2,468	2,583	3,291	7,240	1,793
M56x5.5	85	2030	365.42	2,231	2,046	2,558	2,865	3,070	3,213	4,093	9,004	2,231
M60x5.5	90	2362	425.18	2,781	2,551	3,189	3,572	3,827	4,005	5,102	11,225	2,781
M64x6	95	2676	481.70	3,360	3,083	3,854	4,316	4,624	4,840	6,166	13,565	3,360
M68x6	100	3055	549.97	4,076	3,740	4,675	5,236	5,610	5,872	7,480	16,455	4,076
M72x6	105	3460	622.78	4,888	4,484	5,605	6,278	6,726	7,040	8,968	19,730	4,888
M76x6	110	3889	700.11	5,800	5,321	6,651	7,449	7,981	8,354	10,642	23,412	5,800
M80x6	115	4344	781.96	6,819	6,256	7,820	8,758	9,383	9,821	12,511	27,525	6,819
M90x6	130	5591	1,006.38	9,873	9,057	11,322	12,680	13,586	14,220	18,115	39,852	9,873
M100x6	145	6995	1,259.07	13,724	12,591	15,738	17,627	18,886	19,767	25,181	55,399	13,724
M110x6	155	8556	1,540.04	18,465	16,940	21,176	23,717	25,411	26,596	33,881	74,538	18,465
M125x6	180	11192	2,014.50	27,448	25,181	31,477	35,254	37,772	39,535	50,363	110,798	27,448

TORQUE GUIDE FOR ISO R898 GRADE 5.6				BOLT LOADS								
MINIMUM YIELD (Mpa)			300									
BOLT LOAD BASED ON			70			PERCENT YIELD						
REQUIRED TORQUE (N-m)												
BOLT SIZE DIA. x P	HEX NUT ACROSS FLAT (mm)	STRESS AREA (mm) ²	BOLT LOAD (kN)	LoaDISC TS 801 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=.200	DRY STEEL K=.440 K=.300	CUSTOM (INSERT)
												0.109
M20x2.5	30	245	51.41	112	103	129	144	154	161	206	452	112
M22x2.5	32	303	63.72	153	140	175	196	210	220	280	617	153
M24x3	36	353	74.03	194	178	222	249	267	279	355	782	194
M27x3	41	459	96.48	284	260	326	365	391	409	521	1,146	284
M30x3.5	46	561	117.73	385	353	441	494	530	555	706	1,554	385
M33x3.5	50	694	145.65	524	481	601	673	721	755	961	2,115	524
M36x4	55	817	171.52	673	617	772	864	926	969	1,235	2,717	673
M39x4	60	976	204.92	871	799	999	1,119	1,199	1,255	1,598	3,516	871
M42x4.5	65	1121	235.40	1,078	989	1,236	1,384	1,483	1,552	1,977	4,350	1,078
M45x4.5	70	1306	274.27	1,345	1,234	1,543	1,728	1,851	1,938	2,468	5,431	1,345
M48x5	75	1473	309.38	1,619	1,485	1,856	2,079	2,228	2,331	2,970	6,534	1,619
M52x5	80	1758	369.16	2,092	1,920	2,400	2,687	2,879	3,014	3,839	8,446	2,092
M56x5.5	85	2030	426.32	2,602	2,387	2,984	3,342	3,581	3,748	4,775	10,505	2,602
M60x5.5	90	2362	496.04	3,244	2,976	3,720	4,167	4,464	4,673	5,953	13,096	3,244
M64x6	95	2676	561.98	3,920	3,597	4,496	5,035	5,395	5,647	7,193	15,825	3,920
M68x6	100	3055	641.64	4,756	4,363	5,454	6,108	6,545	6,850	8,726	19,198	4,756
M72x6	105	3460	726.57	5,702	5,231	6,539	7,324	7,847	8,213	10,463	23,018	5,702
M76x6	110	3889	816.79	6,766	6,208	7,759	8,691	9,311	9,746	12,415	27,313	6,766
M80x6	115	4344	912.28	7,955	7,298	9,123	10,218	10,947	11,458	14,597	32,112	7,955
M90x6	130	5591	1,174.10	11,518	10,567	13,209	14,794	15,850	16,590	21,134	46,495	11,518
M100x6	145	6995	1,468.91	16,011	14,689	18,361	20,565	22,034	23,062	29,378	64,632	16,011
M110x6	155	8556	1,796.71	21,543	19,764	24,705	27,669	29,646	31,029	39,528	86,961	21,543
M125x6	180	11192	2,350.26	32,022	29,378	36,723	41,129	44,067	46,124	58,756	129,264	32,022

TORQUE GUIDE FOR ISO R898 GRADE 5.6				BOLT LOADS								
MINIMUM YIELD (Mpa)			300									
BOLT LOAD BASED ON			80									
				REQUIRED TORQUE (N-m)								
BOLT SIZE DIA. x P	HEX NUT ACROSS FLAT (mm)	STRESS AREA (mm) ²	BOLT LOAD (kN)	LoaDISC TS 801 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=.200	DRY STEEL K=.440 K=.300	CUSTOM (INSERT) 0.109
M20x2.5	30	245	58.75	128	118	147	165	176	184	235	517	128
M22x2.5	32	303	72.82	175	160	200	224	240	252	320	705	175
M24x3	36	353	84.61	221	203	254	284	305	319	406	893	221
M27x3	41	459	110.26	325	298	372	417	447	467	595	1,310	325
M30x3.5	46	561	134.55	440	404	505	565	605	634	807	1,776	440
M33x3.5	50	694	166.46	599	549	687	769	824	862	1,099	2,417	599
M36x4	55	817	196.02	769	706	882	988	1,059	1,108	1,411	3,105	769
M39x4	60	976	234.19	996	913	1,142	1,279	1,370	1,434	1,827	4,019	996
M42x4.5	65	1121	269.03	1,232	1,130	1,412	1,582	1,695	1,774	2,260	4,972	1,232
M45x4.5	70	1306	313.46	1,537	1,411	1,763	1,975	2,116	2,215	2,821	6,206	1,537
M48x5	75	1473	353.57	1,850	1,697	2,121	2,376	2,546	2,665	3,394	7,467	1,850
M52x5	80	1758	421.90	2,391	2,194	2,742	3,071	3,291	3,444	4,388	9,653	2,391
M56x5.5	85	2030	487.23	2,974	2,728	3,411	3,820	4,093	4,284	5,457	12,005	2,974
M60x5.5	90	2362	566.91	3,708	3,401	4,252	4,762	5,102	5,340	6,803	14,966	3,708
M64x6	95	2676	642.26	4,480	4,110	5,138	5,755	6,166	6,453	8,221	18,086	4,480
M68x6	100	3055	733.30	5,435	4,986	6,233	6,981	7,480	7,829	9,973	21,940	5,435
M72x6	105	3460	830.37	6,517	5,979	7,473	8,370	8,968	9,387	11,957	26,306	6,517
M76x6	110	3889	933.47	7,733	7,094	8,868	9,932	10,642	11,138	14,189	31,215	7,733
M80x6	115	4344	1,042.61	9,092	8,341	10,426	11,677	12,511	13,095	16,682	36,700	9,092
M90x6	130	5591	1,341.83	13,163	12,077	15,096	16,907	18,115	18,960	24,153	53,137	13,163
M100x6	145	6995	1,678.76	18,298	16,788	20,984	23,503	25,181	26,357	33,575	73,865	18,298
M110x6	155	8556	2,053.38	24,620	22,587	28,234	31,622	33,881	35,462	45,174	99,384	24,620
M125x6	180	11192	2,686.01	36,597	33,575	41,969	47,005	50,363	52,713	67,150	147,730	36,597

TORQUE GUIDE FOR ISO R898 GRADE 5.6				BOLT LOADS								
MINIMUM YIELD (Mpa)			300									
BOLT LOAD BASED ON			90									
				REQUIRED TORQUE (N-m)								
BOLT SIZE DIA. x P	HEX NUT ACROSS FLAT (mm)	STRESS AREA (mm) ²	BOLT LOAD (kN)	LoaDISC TS 801 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=.200	DRY STEEL K=.440 K=.300	CUSTOM (INSERT) 0.109
M20x2.5	30	245	66.10	144	132	165	185	198	208	264	582	144
M22x2.5	32	303	81.92	196	180	225	252	270	283	360	793	196
M24x3	36	353	95.18	249	228	286	320	343	359	457	1,005	249
M27x3	41	459	124.05	365	335	419	469	502	526	670	1,474	365
M30x3.5	46	561	151.37	495	454	568	636	681	713	908	1,998	495
M33x3.5	50	694	187.27	674	618	772	865	927	970	1,236	2,719	674
M36x4	55	817	220.53	865	794	992	1,111	1,191	1,246	1,588	3,493	865
M39x4	60	976	263.47	1,120	1,028	1,284	1,439	1,541	1,613	2,055	4,521	1,120
M42x4.5	65	1121	302.66	1,386	1,271	1,589	1,780	1,907	1,996	2,542	5,593	1,386
M45x4.5	70	1306	352.64	1,730	1,587	1,984	2,222	2,380	2,491	3,174	6,982	1,730
M48x5	75	1473	397.77	2,081	1,909	2,387	2,673	2,864	2,998	3,819	8,401	2,081
M52x5	80	1758	474.64	2,690	2,468	3,085	3,455	3,702	3,875	4,936	10,860	2,690
M56x5.5	85	2030	548.13	3,346	3,070	3,837	4,297	4,604	4,819	6,139	13,506	3,346
M60x5.5	90	2362	637.77	4,171	3,827	4,783	5,357	5,740	6,008	7,653	16,837	4,171
M64x6	95	2676	722.54	5,040	4,624	5,780	6,474	6,936	7,260	9,249	20,347	5,040
M68x6	100	3055	824.96	6,115	5,610	7,012	7,854	8,415	8,807	11,219	24,683	6,115
M72x6	105	3460	934.17	7,331	6,726	8,408	9,416	10,089	10,560	13,452	29,594	7,331
M76x6	110	3889	1,050.16	8,700	7,981	9,976	11,174	11,972	12,530	15,962	35,117	8,700
M80x6	115	4344	1,172.93	10,228	9,383	11,729	13,137	14,075	14,732	18,767	41,287	10,228
M90x6	130	5591	1,509.56	14,809	13,586	16,983	19,020	20,379	21,330	27,172	59,779	14,809
M100x6	145	6995	1,888.60	20,586	18,886	23,608	26,440	28,329	29,651	37,772	83,099	20,586
M110x6	155	8556	2,310.06	27,698	25,411	31,763	35,575	38,116	39,895	50,821	111,807	27,698
M125x6	180	11192	3,021.76	41,171	37,772	47,215	52,881	56,658	59,302	75,544	166,197	41,171

TORQUE GUIDE FOR ISO R898 GRADE 5.6				BOLT LOADS								
MINIMUM YIELD (Mpa)			300									
BOLT LOAD BASED ON			99									
				REQUIRED TORQUE (N-m)								
BOLT SIZE DIA. x P	HEX NUT ACROSS FLAT (mm)	STRESS AREA (mm) ²	BOLT LOAD (kN)	LoaDISC TS 801 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=.200	DRY STEEL K=.440 K=.300	CUSTOM (INSERT 0.109
M20x2.5	30	245	72.71	159	145	182	204	218	228	291	640	159
M22x2.5	32	303	90.11	216	198	248	278	297	311	397	872	216
M24x3	36	353	104.70	274	251	314	352	377	395	503	1,106	274
M27x3	41	459	136.45	402	368	461	516	553	578	737	1,621	402
M30x3.5	46	561	166.50	544	500	624	699	749	784	999	2,198	544
M33x3.5	50	694	206.00	741	680	850	952	1,020	1,067	1,360	2,991	741
M36x4	55	817	242.58	952	873	1,092	1,223	1,310	1,371	1,747	3,842	952
M39x4	60	976	289.81	1,232	1,130	1,413	1,582	1,695	1,775	2,261	4,973	1,232
M42x4.5	65	1121	332.93	1,524	1,398	1,748	1,958	2,097	2,195	2,797	6,152	1,524
M45x4.5	70	1306	387.90	1,903	1,746	2,182	2,444	2,618	2,741	3,491	7,680	1,903
M48x5	75	1473	437.55	2,289	2,100	2,625	2,940	3,150	3,297	4,200	9,241	2,289
M52x5	80	1758	522.10	2,959	2,715	3,394	3,801	4,072	4,262	5,430	11,946	2,959
M56x5.5	85	2030	602.94	3,680	3,376	4,221	4,727	5,065	5,301	6,753	14,856	3,680
M60x5.5	90	2362	701.55	4,588	4,209	5,262	5,893	6,314	6,609	8,419	18,521	4,588
M64x6	95	2676	794.80	5,545	5,087	6,358	7,121	7,630	7,986	10,173	22,381	5,545
M68x6	100	3055	907.46	6,726	6,171	7,713	8,639	9,256	9,688	12,341	27,151	6,726
M72x6	105	3460	1,027.58	8,064	7,399	9,248	10,358	11,098	11,616	14,797	32,554	8,064
M76x6	110	3889	1,155.17	9,569	8,779	10,974	12,291	13,169	13,784	17,559	38,629	9,569
M80x6	115	4344	1,290.23	11,251	10,322	12,902	14,451	15,483	16,205	20,644	45,416	11,251
M90x6	130	5591	1,660.52	16,290	14,945	18,681	20,923	22,417	23,463	29,889	65,757	16,290
M100x6	145	6995	2,077.46	22,644	20,775	25,968	29,085	31,162	32,616	41,549	91,408	22,644
M110x6	155	8556	2,541.06	30,467	27,952	34,940	39,132	41,928	43,884	55,903	122,987	30,467
M125x6	180	11192	3,323.93	45,289	41,549	51,936	58,169	62,324	65,232	83,098	182,816	45,289

