

BOLT LOAD METRIC (GRADE 12.9)

40% - 99% YIELD



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

BOLT LOADS

TORQUE GUIDE FOR ISO R898 GRADE 12.9				REQUIRED TORQUE (N-m)								
MINIMUM YIELD (Mpa)			1100	PERCENT YIELD								
BOLT LOAD BASED ON			40	PERCENT YIELD								
BOLT SIZE DIA. x P	HEX NUT ACROSS FLAT (mm)	STRESS AREA (mm) ²	BOLT LOAD (kN)	LoaDISC TS 801 Moly K=.109	MOLY 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=.300 K=.300	CUSTOM (INSERT K)
M20x2.5	30	245	107.72	235	215	269	302	323	338	431	646	338
M22x2.5	32	303	133.50	320	294	367	411	441	461	587	881	461
M24x3	36	353	155.11	406	372	465	521	558	584	745	1,117	584
M27x3	41	459	202.15	595	546	682	764	819	857	1,092	1,637	857
M30x3.5	46	561	246.67	807	740	925	1,036	1,110	1,162	1,480	2,220	1,162
M33x3.5	50	694	305.18	1,098	1,007	1,259	1,410	1,511	1,581	2,014	3,021	1,581
M36x4	55	817	359.38	1,410	1,294	1,617	1,811	1,941	2,031	2,588	3,881	2,031
M39x4	60	976	429.35	1,825	1,674	2,093	2,344	2,512	2,629	3,349	5,023	2,629
M42x4.5	65	1121	493.22	2,258	2,072	2,589	2,900	3,107	3,252	4,143	6,215	3,252
M45x4.5	70	1306	574.67	2,819	2,586	3,233	3,620	3,879	4,060	5,172	7,758	4,060
M48x5	75	1473	648.22	3,391	3,111	3,889	4,356	4,667	4,885	6,223	9,334	4,885
M52x5	80	1758	773.48	4,384	4,022	5,028	5,631	6,033	6,315	8,044	12,066	6,315
M56x5.5	85	2030	893.25	5,452	5,002	6,253	7,003	7,503	7,853	10,004	15,007	7,853
M60x5.5	90	2362	1,039.33	6,797	6,236	7,795	8,730	9,354	9,791	12,472	18,708	9,791
M64x6	95	2676	1,177.48	8,214	7,536	9,420	10,550	11,304	11,831	15,072	22,608	11,831
M68x6	100	3055	1,344.38	9,965	9,142	11,427	12,799	13,713	14,353	18,284	27,425	14,353
M72x6	105	3460	1,522.35	11,947	10,961	13,701	15,345	16,441	17,209	21,922	32,883	17,209
M76x6	110	3889	1,711.37	14,177	13,006	16,258	18,209	19,510	20,420	26,013	39,019	20,420
M80x6	115	4344	1,911.45	16,668	15,292	19,114	21,408	22,937	24,008	30,583	45,875	24,008
M90x6	130	5591	2,460.03	24,133	22,140	27,675	30,996	33,210	34,760	44,281	66,421	34,760
M100x6	145	6995	3,077.73	33,547	30,777	38,472	43,088	46,166	48,320	61,555	92,332	48,320
M110x6	155	8556	3,764.54	45,137	41,410	51,762	57,974	62,115	65,014	82,820	124,230	65,014
M125x6	180	11192	4,924.35	67,094	61,554	76,943	86,176	92,331	96,640	123,109	184,663	96,640

TORQUE GUIDE FOR ISO R898 GRADE 12.9						REQUIRED TORQUE (N-m)						
MINIMUM YIELD (Mpa)			1100									
BOLT LOAD BASED ON			50			PERCENT YIELD						
BOLT SIZE DIA. x P	HEX NUT ACROSS FLAT (mm)	STRESS AREA (mm) ²	BOLT LOAD (kN)	LoaDISC TS 801 MOLY K=.109	MOLY 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=.300 K=.300	CUSTOM (INSERT K)
M20x2.5	30	245	134.64	294	269	337	377	404	423	539	808	423
M22x2.5	32	303	166.88	400	367	459	514	551	576	734	1,101	576
M24x3	36	353	193.89	507	465	582	651	698	731	931	1,396	731
M27x3	41	459	252.69	744	682	853	955	1,023	1,071	1,365	2,047	1,071
M30x3.5	46	561	308.34	1,008	925	1,156	1,295	1,388	1,452	1,850	2,775	1,452
M33x3.5	50	694	381.47	1,372	1,259	1,574	1,762	1,888	1,976	2,518	3,777	1,976
M36x4	55	817	449.22	1,763	1,617	2,021	2,264	2,426	2,539	3,234	4,852	2,539
M39x4	60	976	536.69	2,281	2,093	2,616	2,930	3,140	3,286	4,186	6,279	3,286
M42x4.5	65	1121	616.53	2,822	2,589	3,237	3,625	3,884	4,065	5,179	7,768	4,065
M45x4.5	70	1306	718.33	3,523	3,233	4,041	4,526	4,849	5,075	6,465	9,698	5,075
M48x5	75	1473	810.27	4,239	3,889	4,862	5,445	5,834	6,106	7,779	11,668	6,106
M52x5	80	1758	966.85	5,480	5,028	6,285	7,039	7,541	7,893	10,055	15,083	7,893
M56x5.5	85	2030	1,116.56	6,815	6,253	7,816	8,754	9,379	9,817	12,505	18,758	9,817
M60x5.5	90	2362	1,299.17	8,497	7,795	9,744	10,913	11,692	12,238	15,590	23,385	12,238
M64x6	95	2676	1,471.85	10,268	9,420	11,775	13,188	14,130	14,789	18,840	28,259	14,789
M68x6	100	3055	1,680.48	12,456	11,427	14,284	15,998	17,141	17,941	22,855	34,282	17,941
M72x6	105	3460	1,902.93	14,934	13,701	17,126	19,182	20,552	21,511	27,402	41,103	21,511
M76x6	110	3889	2,139.21	17,721	16,258	20,322	22,761	24,387	25,525	32,516	48,774	25,525
M80x6	115	4344	2,389.31	20,835	19,114	23,893	26,760	28,672	30,010	38,229	57,343	30,010
M90x6	130	5591	3,075.04	30,166	27,675	34,594	38,745	41,513	43,450	55,351	83,026	43,450
M100x6	145	6995	3,847.16	41,934	38,472	48,089	53,860	57,707	60,400	76,943	115,415	60,400
M110x6	155	8556	4,705.67	56,421	51,762	64,703	72,467	77,644	81,267	103,525	155,287	81,267
M125x6	180	11192	6,155.43	83,868	76,943	96,179	107,720	115,414	120,800	153,886	230,829	120,800

TORQUE GUIDE FOR ISO R898 GRADE 12.9						REQUIRED TORQUE (N-m)						
MINIMUM YIELD (Mpa)			1100									
BOLT LOAD BASED ON			60			PERCENT YIELD						
BOLT SIZE DIA. x P	HEX NUT ACROSS FLAT (mm)	STRESS AREA (mm) ²	BOLT LOAD (kN)	LoaDISC TS 801 MOLY K=.109	MOLY 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=.300 K=.300	CUSTOM (INSERT K)
M20x2.5	30	245	161.57	352	323	404	452	485	507	646	969	507
M22x2.5	32	303	200.25	480	441	551	617	661	692	881	1,322	692
M24x3	36	353	232.67	609	558	698	782	838	877	1,117	1,675	877
M27x3	41	459	303.22	892	819	1,023	1,146	1,228	1,285	1,637	2,456	1,285
M30x3.5	46	561	370.01	1,210	1,110	1,388	1,554	1,665	1,743	2,220	3,330	1,743
M33x3.5	50	694	457.77	1,647	1,511	1,888	2,115	2,266	2,372	3,021	4,532	2,372
M36x4	55	817	539.06	2,115	1,941	2,426	2,717	2,911	3,047	3,881	5,822	3,047
M39x4	60	976	644.03	2,738	2,512	3,140	3,516	3,768	3,943	5,023	7,535	3,943
M42x4.5	65	1121	739.84	3,387	3,107	3,884	4,350	4,661	4,878	6,215	9,322	4,878
M45x4.5	70	1306	862.00	4,228	3,879	4,849	5,431	5,819	6,090	7,758	11,637	6,090
M48x5	75	1473	972.32	5,087	4,667	5,834	6,534	7,001	7,327	9,334	14,001	7,327
M52x5	80	1758	1,160.22	6,576	6,033	7,541	8,446	9,050	9,472	12,066	18,099	9,472
M56x5.5	85	2030	1,339.87	8,179	7,503	9,379	10,505	11,255	11,780	15,007	22,510	11,780
M60x5.5	90	2362	1,559.00	10,196	9,354	11,692	13,096	14,031	14,686	18,708	28,062	14,686
M64x6	95	2676	1,766.22	12,321	11,304	14,130	15,825	16,956	17,747	22,608	33,911	17,747
M68x6	100	3055	2,016.57	14,947	13,713	17,141	19,198	20,569	21,529	27,425	41,138	21,529
M72x6	105	3460	2,283.52	17,921	16,441	20,552	23,018	24,662	25,813	32,883	49,324	25,813
M76x6	110	3889	2,567.05	21,265	19,510	24,387	27,313	29,264	30,630	39,019	58,529	30,630
M80x6	115	4344	2,867.17	25,002	22,937	28,672	32,112	34,406	36,012	45,875	68,812	36,012
M90x6	130	5591	3,690.04	36,199	33,210	41,513	46,495	49,816	52,140	66,421	99,631	52,140
M100x6	145	6995	4,616.59	50,321	46,166	57,707	64,632	69,249	72,480	92,332	138,498	72,480
M110x6	155	8556	5,646.81	67,705	62,115	77,644	86,961	93,172	97,520	124,230	186,345	97,520
M125x6	180	11192	7,386.52	100,641	92,331	115,414	129,264	138,497	144,960	184,663	276,994	144,960

TORQUE GUIDE FOR ISO R898 GRADE 12.9												
MINIMUM YIELD (Mpa)			1100	REQUIRED TORQUE (N-m)								
BOLT LOAD BASED ON			70	PERCENT YIELD								
BOLT SIZE DIA. x P	HEX NUT ACROSS FLAT (mm)	STRESS AREA (mm) ²	BOLT LOAD (kN)	LoaDISC TS 801 MOLY K=.109	MOLY 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=.300 K=.300	CUSTOM (INSERT K)
M20x2.5	30	245	188.50	411	377	471	528	566	592	754	1,131	592
M22x2.5	32	303	233.63	560	514	642	720	771	807	1,028	1,542	807
M24x3	36	353	271.44	710	651	814	912	977	1,023	1,303	1,954	1,023
M27x3	41	459	353.76	1,041	955	1,194	1,337	1,433	1,500	1,910	2,865	1,500
M30x3.5	46	561	431.68	1,412	1,295	1,619	1,813	1,943	2,033	2,590	3,885	2,033
M33x3.5	50	694	534.06	1,921	1,762	2,203	2,467	2,644	2,767	3,525	5,287	2,767
M36x4	55	817	628.91	2,468	2,264	2,830	3,170	3,396	3,555	4,528	6,792	3,555
M39x4	60	976	751.36	3,194	2,930	3,663	4,102	4,395	4,601	5,861	8,791	4,601
M42x4.5	65	1121	863.14	3,951	3,625	4,531	5,075	5,438	5,692	7,250	10,876	5,692
M45x4.5	70	1306	1,005.67	4,933	4,526	5,657	6,336	6,788	7,105	9,051	13,577	7,105
M48x5	75	1473	1,134.38	5,935	5,445	6,806	7,623	8,168	8,549	10,890	16,335	8,549
M52x5	80	1758	1,353.59	7,672	7,039	8,798	9,854	10,558	11,051	14,077	21,116	11,051
M56x5.5	85	2030	1,563.18	9,542	8,754	10,942	12,255	13,131	13,744	17,508	26,261	13,744
M60x5.5	90	2362	1,818.83	11,895	10,913	13,641	15,278	16,369	17,133	21,826	32,739	17,133
M64x6	95	2676	2,060.59	14,375	13,188	16,485	18,463	19,782	20,705	26,376	39,563	20,705
M68x6	100	3055	2,352.67	17,438	15,998	19,998	22,397	23,997	25,117	31,996	47,994	25,117
M72x6	105	3460	2,664.11	20,908	19,182	23,977	26,854	28,772	30,115	38,363	57,545	30,115
M76x6	110	3889	2,994.89	24,810	22,761	28,451	31,866	34,142	35,735	45,522	68,284	35,735
M80x6	115	4344	3,345.03	29,169	26,760	33,450	37,464	40,140	42,014	53,521	80,281	42,014
M90x6	130	5591	4,305.05	42,233	38,745	48,432	54,244	58,118	60,830	77,491	116,236	60,830
M100x6	145	6995	5,386.02	58,708	53,860	67,325	75,404	80,790	84,561	107,720	161,581	84,561
M110x6	155	8556	6,587.94	78,989	72,467	90,584	101,454	108,701	113,774	144,935	217,402	113,774
M125x6	180	11192	8,617.60	117,415	107,720	134,650	150,808	161,580	169,120	215,440	323,160	169,120

TORQUE GUIDE FOR ISO R898 GRADE 12.9												
MINIMUM YIELD (Mpa)			1100	REQUIRED TORQUE (N-m)								
BOLT LOAD BASED ON			80	PERCENT YIELD								
BOLT SIZE DIA. x P	HEX NUT ACROSS FLAT (mm)	STRESS AREA (mm) ²	BOLT LOAD (kN)	LoaDISC TS 801 MOLY K=.109	MOLY 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=.300 K=.300	CUSTOM (INSERT K)
M20x2.5	30	245	215.43	470	431	539	603	646	676	862	1,293	676
M22x2.5	32	303	267.01	640	587	734	822	881	922	1,175	1,762	922
M24x3	36	353	310.22	812	745	931	1,042	1,117	1,169	1,489	2,234	1,169
M27x3	41	459	404.30	1,190	1,092	1,365	1,528	1,637	1,714	2,183	3,275	1,714
M30x3.5	46	561	493.34	1,613	1,480	1,850	2,072	2,220	2,324	2,960	4,440	2,324
M33x3.5	50	694	610.36	2,195	2,014	2,518	2,820	3,021	3,162	4,028	6,043	3,162
M36x4	55	817	718.75	2,820	2,588	3,234	3,623	3,881	4,062	5,175	7,763	4,062
M39x4	60	976	858.70	3,650	3,349	4,186	4,689	5,023	5,258	6,698	10,047	5,258
M42x4.5	65	1121	986.45	4,516	4,143	5,179	5,800	6,215	6,505	8,286	12,429	6,505
M45x4.5	70	1306	1,149.34	5,637	5,172	6,465	7,241	7,758	8,120	10,344	15,516	8,120
M48x5	75	1473	1,296.43	6,783	6,223	7,779	8,712	9,334	9,770	12,446	18,669	9,770
M52x5	80	1758	1,546.96	8,768	8,044	10,055	11,262	12,066	12,629	16,088	24,133	12,629
M56x5.5	85	2030	1,786.49	10,905	10,004	12,505	14,006	15,007	15,707	20,009	30,013	15,707
M60x5.5	90	2362	2,078.66	13,594	12,472	15,590	17,461	18,708	19,581	24,944	37,416	19,581
M64x6	95	2676	2,354.96	16,428	15,072	18,840	21,100	22,608	23,663	30,143	45,215	23,663
M68x6	100	3055	2,688.77	19,929	18,284	22,855	25,597	27,425	28,705	36,567	54,851	28,705
M72x6	105	3460	3,044.69	23,895	21,922	27,402	30,690	32,883	34,417	43,844	65,765	34,417
M76x6	110	3889	3,422.74	28,354	26,013	32,516	36,418	39,019	40,840	52,026	78,038	40,840
M80x6	115	4344	3,822.90	33,336	30,583	38,229	42,816	45,875	48,016	61,166	91,750	48,016
M90x6	130	5591	4,920.06	48,266	44,281	55,351	61,993	66,421	69,520	88,561	132,842	69,520
M100x6	145	6995	6,155.45	67,094	61,555	76,943	86,176	92,332	96,641	123,109	184,664	96,641
M110x6	155	8556	7,529.07	90,274	82,820	103,525	115,948	124,230	130,027	165,640	248,459	130,027
M125x6	180	11192	9,848.69	134,188	123,109	153,886	172,352	184,663	193,281	246,217	369,326	193,281

TORQUE GUIDE FOR ISO R898 GRADE 12.9												
MINIMUM YIELD (Mpa)			1100		REQUIRED TORQUE (N-m)							
BOLT LOAD BASED ON			90		PERCENT YIELD							
BOLT SIZE DIA. x P	HEX NUT ACROSS FLAT (mm)	STRESS AREA (mm) ²	BOLT LOAD (kN)	LoaDISC TS 801 MOLY K=.109	MOLY 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=.300 K=.300	CUSTOM (INSERT K)
M20x2.5	30	245	242.36	528	485	606	679	727	761	969	1,454	761
M22x2.5	32	303	300.38	720	661	826	925	991	1,038	1,322	1,983	1,038
M24x3	36	353	349.00	913	838	1,047	1,173	1,256	1,315	1,675	2,513	1,315
M27x3	41	459	454.84	1,339	1,228	1,535	1,719	1,842	1,928	2,456	3,684	1,928
M30x3.5	46	561	555.01	1,815	1,665	2,081	2,331	2,498	2,614	3,330	4,995	2,614
M33x3.5	50	694	686.65	2,470	2,266	2,832	3,172	3,399	3,558	4,532	6,798	3,558
M36x4	55	817	808.60	3,173	2,911	3,639	4,075	4,366	4,570	5,822	8,733	4,570
M39x4	60	976	966.04	4,107	3,768	4,709	5,275	5,651	5,915	7,535	11,303	5,915
M42x4.5	65	1121	1,109.75	5,080	4,661	5,826	6,525	6,991	7,318	9,322	13,983	7,318
M45x4.5	70	1306	1,293.00	6,342	5,819	7,273	8,146	8,728	9,135	11,637	17,456	9,135
M48x5	75	1473	1,458.49	7,631	7,001	8,751	9,801	10,501	10,991	14,001	21,002	10,991
M52x5	80	1758	1,740.33	9,864	9,050	11,312	12,670	13,575	14,208	18,099	27,149	14,208
M56x5.5	85	2030	2,009.81	12,268	11,255	14,069	15,757	16,882	17,670	22,510	33,765	17,670
M60x5.5	90	2362	2,338.50	15,294	14,031	17,539	19,643	21,046	22,029	28,062	42,093	22,029
M64x6	95	2676	2,649.33	18,482	16,956	21,195	23,738	25,434	26,620	33,911	50,867	26,620
M68x6	100	3055	3,024.86	22,420	20,569	25,711	28,797	30,854	32,293	41,138	61,707	32,293
M72x6	105	3460	3,425.28	26,882	24,662	30,828	34,527	36,993	38,719	49,324	73,986	38,719
M76x6	110	3889	3,850.58	31,898	29,264	36,580	40,970	43,897	45,945	58,529	87,793	45,945
M80x6	115	4344	4,300.76	37,503	34,406	43,008	48,168	51,609	54,018	68,812	103,218	54,018
M90x6	130	5591	5,535.07	54,299	49,816	62,269	69,742	74,723	78,210	99,631	149,447	78,210
M100x6	145	6995	6,924.88	75,481	69,249	86,561	96,948	103,873	108,721	138,498	207,746	108,721
M110x6	155	8556	8,470.21	101,558	93,172	116,465	130,441	139,758	146,281	186,345	279,517	146,281
M125x6	180	11192	11,079.78	150,962	138,497	173,122	193,896	207,746	217,441	276,994	415,492	217,441

TORQUE GUIDE FOR ISO R898 GRADE 12.9												
MINIMUM YIELD (Mpa)			1100		REQUIRED TORQUE (N-m)							
BOLT LOAD BASED ON			99		PERCENT YIELD							
BOLT SIZE DIA. x P	HEX NUT ACROSS FLAT (mm)	STRESS AREA (mm) ²	BOLT LOAD (kN)	LoaDISC TS 801 MOLY K=.109	MOLY 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=.300 K=.300	CUSTOM (INSERT K)
M20x2.5	30	245	266.60	581	533	666	746	800	837	1,066	1,600	837
M22x2.5	32	303	330.42	792	727	909	1,018	1,090	1,141	1,454	2,181	1,141
M24x3	36	353	383.90	1,004	921	1,152	1,290	1,382	1,447	1,843	2,764	1,447
M27x3	41	459	500.32	1,472	1,351	1,689	1,891	2,026	2,121	2,702	4,053	2,121
M30x3.5	46	561	610.51	1,996	1,832	2,289	2,564	2,747	2,876	3,663	5,495	2,876
M33x3.5	50	694	755.32	2,717	2,493	3,116	3,490	3,739	3,913	4,985	7,478	3,913
M36x4	55	817	889.46	3,490	3,202	4,003	4,483	4,803	5,027	6,404	9,606	5,027
M39x4	60	976	1,062.64	4,517	4,144	5,180	5,802	6,216	6,507	8,289	12,433	6,507
M42x4.5	65	1121	1,220.73	5,589	5,127	6,409	7,178	7,691	8,049	10,254	15,381	8,049
M45x4.5	70	1306	1,422.30	6,976	6,400	8,000	8,961	9,601	10,049	12,801	19,201	10,049
M48x5	75	1473	1,604.34	8,394	7,701	9,626	10,781	11,551	12,090	15,402	23,102	12,090
M52x5	80	1758	1,914.36	10,851	9,955	12,443	13,937	14,932	15,629	19,909	29,864	15,629
M56x5.5	85	2030	2,210.79	13,495	12,380	15,476	17,333	18,571	19,437	24,761	37,141	19,437
M60x5.5	90	2362	2,572.35	16,823	15,434	19,293	21,608	23,151	24,232	30,868	46,302	24,232
M64x6	95	2676	2,914.26	20,330	18,651	23,314	26,112	27,977	29,282	37,302	55,954	29,282
M68x6	100	3055	3,327.35	24,662	22,626	28,282	31,676	33,939	35,523	45,252	67,878	35,523
M72x6	105	3460	3,767.81	29,570	27,128	33,910	37,979	40,692	42,591	54,256	81,385	42,591
M76x6	110	3889	4,235.64	35,088	32,191	40,239	45,067	48,286	50,540	64,382	96,572	50,540
M80x6	115	4344	4,730.83	41,253	37,847	47,308	52,985	56,770	59,419	75,693	113,540	59,419
M90x6	130	5591	6,088.57	59,729	54,797	68,496	76,716	82,196	86,032	109,594	164,391	86,032
M100x6	145	6995	7,617.37	83,029	76,174	95,217	106,643	114,261	119,593	152,347	228,521	119,593
M110x6	155	8556	9,317.23	111,714	102,490	128,112	143,485	153,734	160,909	204,979	307,469	160,909
M125x6	180	11192	12,187.76	166,058	152,347	190,434	213,286	228,520	239,185	304,694	457,041	239,185