

BOLT LOAD IMPERIAL (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 STUD					REQUIRED TORQUE (FtLbs)									
BOLT TENSION BASED ON				40	PERCENT YIELD									
BOLT SIZE DIA. x TPI	HEX NUT ACROSS FLAT	STRESS AREA (IN ²)	MIN YIELD STRENGTH (PSI)	BOLT TENSION (LBS)	LoaDISC TS 801MOLY 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 K) 0.125	
3/4 x 10	1-1/4"	0.334	160,000	21,395	146	134	167	187	201	210	267	401	167	
7/8 x 9	1-7/16"	0.461	160,000	29,536	235	215	269	302	323	338	431	646	269	
1x 8	1-5/8"	0.605	160,000	38,748	352	323	404	452	484	507	646	969	404	
1-1/8 x 8	1-13/16"	0.790	160,000	50,563	517	474	593	664	711	744	948	1,422	593	
1-1/4 x 8	2"	0.999	160,000	63,949	726	666	833	933	999	1,046	1,332	1,998	833	
1-3/8 x 8	2-3/16"	1.233	160,000	78,904	985	904	1,130	1,266	1,356	1,419	1,808	2,712	1,130	
1-1/2 x 8	2-3/8"	1.491	160,000	95,429	1,300	1,193	1,491	1,670	1,789	1,873	2,386	3,579	1,491	
1-5/8 x 8	2-9/16"	1.774	160,000	113,525	1,676	1,537	1,922	2,152	2,306	2,414	3,075	4,612	1,922	
1-3/4 x 8	2-3/4"	2.081	160,000	133,190	2,117	1,942	2,428	2,719	2,914	3,049	3,885	5,827	2,428	
1-7/8 x 8	2-15/16"	2.413	160,000	154,425	2,630	2,413	3,016	3,378	3,619	3,788	4,826	7,239	3,016	
2 x 8	3-1/8"	2.769	160,000	177,231	3,220	2,954	3,692	4,135	4,431	4,638	5,908	8,862	3,692	
2-1/8 x 8	3-5/16"	3.150	160,000	201,606	3,891	3,570	4,463	4,998	5,355	5,605	7,140	10,710	4,463	
2-1/4 x 8	3-1/2"	3.555	160,000	227,551	4,651	4,267	5,333	5,973	6,400	6,699	8,533	12,800	5,333	
2-3/8 x 8	3-11/16"	3.985	160,000	255,067	5,503	5,048	6,310	7,067	7,572	7,926	10,096	15,145	6,310	
2-1/2 x 8	3-7/8"	4.440	160,000	284,152	6,453	5,920	7,400	8,288	8,880	9,294	11,840	17,760	7,400	
2-3/4 x 8	4-1/4"	5.422	160,000	347,033	8,669	7,953	9,941	11,134	11,929	12,486	15,906	23,859	9,941	
3 x 8	4-5/8"	6.503	160,000	416,194	11,341	10,405	13,006	14,567	15,607	16,336	20,810	31,215	13,006	
3-1/4 x 8	5"	7.682	160,000	491,634	14,513	13,315	16,644	18,641	19,973	20,905	26,630	39,945	16,644	
3-1/2 x 8	5-3/8"	8.959	160,000	573,355	18,228	16,723	20,904	23,412	25,084	26,255	33,446	50,169	20,904	
3-3/4 x 8	5-3/4"	10.334	160,000	661,356	22,527	20,667	25,834	28,934	31,001	32,448	41,335	62,002	25,834	
4 x 8	6-1/8"	11.807	160,000	755,636	27,455	25,188	31,485	35,263	37,782	39,545	50,376	75,564	31,485	
4-1/4 x 8	6-1/2"	13.378	160,000	856,197	33,053	30,324	37,905	42,453	45,485	47,608	60,647	90,971	37,905	
4-1/2 x 8	6-7/8"	15.047	160,000	963,038	39,364	36,114	45,142	50,559	54,171	56,699	72,228	108,342	45,142	
4-3/4 x 8	7-1/4"	16.815	160,000	1,076,158	46,432	42,598	53,247	59,637	63,897	66,879	85,196	127,794	53,247	
5 x 8	7-5/8"	18.681	160,000	1,195,559	54,298	49,815	62,269	69,741	74,722	78,209	99,630	149,445	62,269	
5-1/4 x 8	8"	20.644	160,000	1,321,240	63,007	57,804	72,255	80,926	86,706	90,753	115,608	173,413	72,255	
5-1/2 x 8	8-3/8"	22.706	160,000	1,453,201	72,599	66,605	83,256	93,247	99,908	104,570	133,210	199,815	83,256	
5-3/4 x 8	8-3/4"	24.866	160,000	1,591,441	83,120	76,257	95,321	106,759	114,385	119,723	152,513	228,770	95,321	
6 x 8	9-1/8"	27.124	160,000	1,735,962	94,610	86,798	108,498	121,517	130,197	136,273	173,596	260,394	108,498	

TORQUE GUIDE FOR ISO R898 GRADE 12.9 STUD					REQUIRED TORQUE (FtLbs)									
BOLT TENSION BASED ON			50	PERCENT YIELD										
BOLT SIZE DIA. x TPI	HEX NUT ACROSS FLAT	STRESS AREA (IN ²)	MIN YIELD STRENGTH (PSI)	BOLT TENSION (LBS)	LoaDISC TS 801MOLY 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 K)	
3/4 x 10	1-1/4"	0.334	160,000	26,743	182	167	209	234	251	262	334	501	209	
7/8 x 9	1-7/16"	0.461	160,000	36,920	293	269	337	377	404	423	538	808	337	
1 x 8	1-5/8"	0.605	160,000	48,435	440	404	505	565	605	634	807	1,211	505	
1-1/8 x 8	1-13/16"	0.790	160,000	63,204	646	593	741	830	889	930	1,185	1,778	741	
1-1/4 x 8	2"	0.999	160,000	79,936	908	833	1,041	1,166	1,249	1,307	1,665	2,498	1,041	
1-3/8 x 8	2-3/16"	1.233	160,000	98,630	1,232	1,130	1,413	1,582	1,695	1,774	2,260	3,390	1,413	
1-1/2 x 8	2-3/8"	1.491	160,000	119,287	1,625	1,491	1,864	2,088	2,237	2,341	2,982	4,473	1,864	
1-5/8 x 8	2-9/16"	1.774	160,000	141,906	2,095	1,922	2,402	2,690	2,882	3,017	3,843	5,765	2,402	
1-3/4 x 8	2-3/4"	2.081	160,000	166,488	2,646	2,428	3,035	3,399	3,642	3,812	4,856	7,284	3,035	
1-7/8 x 8	2-15/16"	2.413	160,000	193,032	3,288	3,016	3,770	4,223	4,524	4,735	6,032	9,048	3,770	
2 x 8	3-1/8"	2.769	160,000	221,538	4,025	3,692	4,615	5,169	5,538	5,797	7,385	11,077	4,615	
2-1/8 x 8	3-5/16"	3.150	160,000	252,008	4,864	4,463	5,578	6,248	6,694	7,006	8,925	13,388	5,578	
2-1/4 x 8	3-1/2"	3.555	160,000	284,439	5,813	5,333	6,667	7,467	8,000	8,373	10,666	16,000	6,667	
2-3/8 x 8	3-11/16"	3.985	160,000	318,834	6,878	6,310	7,888	8,834	9,465	9,907	12,620	18,931	7,888	
2-1/2 x 8	3-7/8"	4.440	160,000	355,190	8,066	7,400	9,250	10,360	11,100	11,618	14,800	22,199	9,250	
2-3/4 x 8	4-1/4"	5.422	160,000	433,791	10,836	9,941	12,426	13,917	14,912	15,607	19,882	29,823	12,426	
3 x 8	4-5/8"	6.503	160,000	520,242	14,177	13,006	16,258	18,208	19,509	20,419	26,012	39,018	16,258	
3-1/4 x 8	5"	7.682	160,000	614,543	18,142	16,644	20,805	23,301	24,966	26,131	33,288	49,932	20,805	
3-1/2 x 8	5-3/8"	8.959	160,000	716,694	22,785	20,904	26,129	29,265	31,355	32,819	41,807	62,711	26,129	
3-3/4 x 8	5-3/4"	10.334	160,000	826,695	28,159	25,834	32,293	36,168	38,751	40,560	51,668	77,503	32,293	
4 x 8	6-1/8"	11.807	160,000	944,545	34,318	31,485	39,356	44,079	47,227	49,431	62,970	94,455	39,356	
4-1/4 x 8	6-1/2"	13.378	160,000	1,070,246	41,316	37,905	47,381	53,066	56,857	59,510	75,809	113,714	47,381	
4-1/2 x 8	6-7/8"	15.047	160,000	1,203,797	49,205	45,142	56,428	63,199	67,714	70,874	90,285	135,427	56,428	
4-3/4 x 8	7-1/4"	16.815	160,000	1,345,198	58,040	53,247	66,559	74,546	79,871	83,598	106,495	159,742	66,559	
5 x 8	7-5/8"	18.681	160,000	1,494,449	67,873	62,269	77,836	87,176	93,403	97,762	124,537	186,806	77,836	
5-1/4 x 8	8"	20.644	160,000	1,651,550	78,758	72,255	90,319	101,157	108,383	113,441	144,511	216,766	90,319	
5-1/2 x 8	8-3/8"	22.706	160,000	1,816,501	90,749	83,256	104,070	116,559	124,884	130,712	166,513	249,769	104,070	
5-3/4 x 8	8-3/4"	24.866	160,000	1,989,302	103,900	95,321	119,151	133,449	142,981	149,653	190,641	285,962	119,151	
6 x 8	9-1/8"	27.124	160,000	2,169,952	118,262	108,498	135,622	151,897	162,746	170,341	216,995	325,493	135,622	

TORQUE GUIDE FOR ISO R898 GRADE 12.9 STUD					REQUIRED TORQUE (FtLbs)									
BOLT TENSION BASED ON			60	PERCENT YIELD										
BOLT SIZE DIA. x TPI	HEX NUT ACROSS FLAT	STRESS AREA (IN ²)	MIN YIELD STRENGTH (PSI)	BOLT TENSION (LBS)	LoaDISC TS 801MOLY 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 K)	
3/4 x 10	1-1/4"	0.334	160,000	32,092	219	201	251	281	301	315	401	602	251	
7/8 x 9	1-7/16"	0.461	160,000	44,304	352	323	404	452	485	507	646	969	404	
1 x 8	1-5/8"	0.605	160,000	58,122	528	484	605	678	727	760	969	1,453	605	
1-1/8 x 8	1-13/16"	0.790	160,000	75,845	775	711	889	995	1,067	1,116	1,422	2,133	889	
1-1/4 x 8	2"	0.999	160,000	95,923	1,089	999	1,249	1,399	1,499	1,569	1,998	2,998	1,249	
1-3/8 x 8	2-3/16"	1.233	160,000	118,356	1,478	1,356	1,695	1,899	2,034	2,129	2,712	4,068	1,695	
1-1/2 x 8	2-3/8"	1.491	160,000	143,144	1,950	1,789	2,237	2,505	2,684	2,809	3,579	5,368	2,237	
1-5/8 x 8	2-9/16"	1.774	160,000	170,287	2,514	2,306	2,882	3,228	3,459	3,620	4,612	6,918	2,882	
1-3/4 x 8	2-3/4"	2.081	160,000	199,785	3,176	2,914	3,642	4,079	4,370	4,574	5,827	8,741	3,642	
1-7/8 x 8	2-15/16"	2.413	160,000	231,638	3,945	3,619	4,524	5,067	5,429	5,682	7,239	10,858	4,524	
2 x 8	3-1/8"	2.769	160,000	265,846	4,830	4,431	5,538	6,203	6,646	6,956	8,862	13,292	5,538	
2-1/8 x 8	3-5/16"	3.150	160,000	302,409	5,837	5,355	6,694	7,497	8,033	8,408	10,710	16,065	6,694	
2-1/4 x 8	3-1/2"	3.555	160,000	341,327	6,976	6,400	8,000	8,960	9,600	10,048	12,800	19,200	8,000	
2-3/8 x 8	3-11/16"	3.985	160,000	382,600	8,254	7,572	9,465	10,601	11,358	11,889	15,145	22,717	9,465	
2-1/2 x 8	3-7/8"	4.440	160,000	426,228	9,679	8,880	11,100	12,432	13,320	13,941	17,760	26,639	11,100	
2-3/4 x 8	4-1/4"	5.422	160,000	520,549	13,003	11,929	14,912	16,701	17,894	18,729	23,859	35,788	14,912	
3 x 8	4-5/8"	6.503	160,000	624,290	17,012	15,607	19,509	21,850	23,411	24,503	31,215	46,822	19,509	
3-1/4 x 8	5"	7.682	160,000	737,451	21,770	19,973	24,966	27,962	29,959	31,357	39,945	59,918	24,966	
3-1/2 x 8	5-3/8"	8.959	160,000	860,032	27,342	25,084	31,355	35,118	37,626	39,382	50,169	75,253	31,355	
3-3/4 x 8	5-3/4"	10.334	160,000	992,033	33,791	31,001	38,751	43,401	46,502	48,672	62,002	93,003	38,751	
4 x 8	6-1/8"	11.807	160,000	1,133,455	41,182	37,782	47,227	52,895	56,673	59,317	75,564	113,345	47,227	
4-1/4 x 8	6-1/2"	13.378	160,000	1,284,296	49,579	45,485	56,857	63,680	68,228	71,412	90,971	136,456	56,857	
4-1/2 x 8	6-7/8"	15.047	160,000	1,444,557	59,046	54,171	67,714	75,839	81,256	85,048	108,342	162,513	67,714	
4-3/4 x 8	7-1/4"	16.815	160,000	1,614,238	69,648	63,897	79,871	89,456	95,845	100,318	127,794	191,691	79,871	
5 x 8	7-5/8"	18.681	160,000	1,793,339	81,447	74,722	93,403	104,611	112,084	117,314	149,445	224,167	93,403	
5-1/4 x 8	8"	20.644	160,000	1,981,860	94,510	86,706	108,383	121,389	130,060	136,129	173,413	260,119	108,383	
5-1/2 x 8	8-3/8"	22.706	160,000	2,179,801	108,899	99,908	124,884	139,871	149,861	156,855	199,815	299,723	124,884	
5-3/4 x 8	8-3/4"	24.866	160,000	2,387,162	124,679	114,385	142,981	160,139	171,577	179,584	228,770	343,155	142,981	
6 x 8	9-1/8"	27.124	160,000	2,603,943	141,915	130,197	162,746	182,276	195,296	204,410	260,394	390,591	162,746	

TORQUE GUIDE FOR ISO R898 GRADE 12.9 STUD					REQUIRED TORQUE (FtLbs)								
BOLT TENSION BASED ON			70	PERCENT YIELD									
BOLT SIZE DIA. x TPI	HEX NUT ACROSS FLAT	STRESS AREA (IN ²)	MIN YIELD STRENGTH (PSI)	BOLT TENSION (LBS)	LoaDISC TS 801MOLY 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 K)
3/4 x 10	1-1/4"	0.334	160,000	37,441	255	234	293	328	351	367	468	702	293
7/8 x 9	1-7/16"	0.461	160,000	51,688	411	377	471	528	565	592	754	1,131	471
1x 8	1-5/8"	0.605	160,000	67,809	616	565	706	791	848	887	1,130	1,695	706
1-1/8 x 8	1-13/16"	0.790	160,000	88,486	904	830	1,037	1,161	1,244	1,302	1,659	2,489	1,037
1-1/4 x 8	2"	0.999	160,000	111,910	1,271	1,166	1,457	1,632	1,749	1,830	2,331	3,497	1,457
1-3/8 x 8	2-3/16"	1.233	160,000	138,082	1,725	1,582	1,978	2,215	2,373	2,484	3,164	4,747	1,978
1-1/2 x 8	2-3/8"	1.491	160,000	167,001	2,275	2,088	2,609	2,923	3,131	3,277	4,175	6,263	2,609
1-5/8 x 8	2-9/16"	1.774	160,000	198,668	2,932	2,690	3,363	3,766	4,035	4,224	5,381	8,071	3,363
1-3/4 x 8	2-3/4"	2.081	160,000	233,083	3,705	3,399	4,249	4,759	5,099	5,337	6,798	10,197	4,249
1-7/8 x 8	2-15/16"	2.413	160,000	270,244	4,603	4,223	5,278	5,912	6,334	6,629	8,445	12,668	5,278
2 x 8	3-1/8"	2.769	160,000	310,154	5,634	5,169	6,462	7,237	7,754	8,116	10,338	15,508	6,462
2-1/8 x 8	3-5/16"	3.150	160,000	352,811	6,810	6,248	7,810	8,747	9,372	9,809	12,495	18,743	7,810
2-1/4 x 8	3-1/2"	3.555	160,000	398,215	8,139	7,467	9,333	10,453	11,200	11,722	14,933	22,400	9,333
2-3/8 x 8	3-11/16"	3.985	160,000	446,367	9,629	8,834	11,043	12,368	13,252	13,870	17,669	26,503	11,043
2-1/2 x 8	3-7/8"	4.440	160,000	497,266	11,292	10,360	12,950	14,504	15,540	16,265	20,719	31,079	12,950
2-3/4 x 8	4-1/4"	5.422	160,000	607,307	15,170	13,917	17,397	19,484	20,876	21,850	27,835	41,752	17,397
3 x 8	4-5/8"	6.503	160,000	728,339	19,847	18,208	22,761	25,492	27,313	28,587	36,417	54,625	22,761
3-1/4 x 8	5"	7.682	160,000	860,360	25,399	23,301	29,127	32,622	34,952	36,583	46,603	69,904	29,127
3-1/2 x 8	5-3/8"	8.959	160,000	1,003,371	31,899	29,265	36,581	40,971	43,897	45,946	58,530	87,795	36,581
3-3/4 x 8	5-3/4"	10.334	160,000	1,157,372	39,423	36,168	45,210	50,635	54,252	56,784	72,336	108,504	45,210
4 x 8	6-1/8"	11.807	160,000	1,322,364	48,046	44,079	55,098	61,710	66,118	69,204	88,158	132,236	55,098
4-1/4 x 8	6-1/2"	13.378	160,000	1,498,345	57,842	53,066	66,333	74,293	79,600	83,314	106,133	159,199	66,333
4-1/2 x 8	6-7/8"	15.047	160,000	1,685,316	68,887	63,199	78,999	88,479	94,799	99,223	126,399	189,598	78,999
4-3/4 x 8	7-1/4"	16.815	160,000	1,883,277	81,256	74,546	93,183	104,365	111,820	117,038	149,093	223,639	93,183
5 x 8	7-5/8"	18.681	160,000	2,092,228	95,022	87,176	108,970	122,047	130,764	136,867	174,352	261,529	108,970
5-1/4 x 8	8"	20.644	160,000	2,312,170	110,262	101,157	126,447	141,620	151,736	158,817	202,315	303,472	126,447
5-1/2 x 8	8-3/8"	22.706	160,000	2,543,101	127,049	116,559	145,698	163,182	174,838	182,997	233,118	349,676	145,698
5-3/4 x 8	8-3/4"	24.866	160,000	2,785,022	145,459	133,449	166,811	186,829	200,173	209,515	266,898	400,347	166,811
6 x 8	9-1/8"	27.124	160,000	3,037,933	165,567	151,897	189,871	212,655	227,845	238,478	303,793	455,690	189,871

TORQUE GUIDE FOR ISO R898 GRADE 12.9 STUD					REQUIRED TORQUE (FtLbs)								
BOLT TENSION BASED ON			80	PERCENT YIELD									
BOLT SIZE DIA. x TPI	HEX NUT ACROSS FLAT	STRESS AREA (IN ²)	MIN YIELD STRENGTH (PSI)	BOLT TENSION (LBS)	LoaDISC TS 801MOLY 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 K)
3/4 x 10	1-1/4"	0.334	160,000	42,789	292	267	334	374	401	420	535	802	334
7/8 x 9	1-7/16"	0.461	160,000	59,072	469	431	538	603	646	676	861	1,292	538
1x 8	1-5/8"	0.605	160,000	77,496	704	646	807	904	969	1,014	1,292	1,937	807
1-1/8 x 8	1-13/16"	0.790	160,000	101,127	1,033	948	1,185	1,327	1,422	1,488	1,896	2,844	1,185
1-1/4 x 8	2"	0.999	160,000	127,897	1,452	1,332	1,665	1,865	1,998	2,092	2,665	3,997	1,665
1-3/8 x 8	2-3/16"	1.233	160,000	157,808	1,971	1,808	2,260	2,532	2,712	2,839	3,616	5,425	2,260
1-1/2 x 8	2-3/8"	1.491	160,000	190,859	2,600	2,386	2,982	3,340	3,579	3,746	4,771	7,157	2,982
1-5/8 x 8	2-9/16"	1.774	160,000	227,049	3,351	3,075	3,843	4,304	4,612	4,827	6,149	9,224	3,843
1-3/4 x 8	2-3/4"	2.081	160,000	266,380	4,234	3,885	4,856	5,439	5,827	6,099	7,769	11,654	4,856
1-7/8 x 8	2-15/16"	2.413	160,000	308,851	5,260	4,826	6,032	6,756	7,239	7,576	9,652	14,477	6,032
2 x 8	3-1/8"	2.769	160,000	354,462	6,439	5,908	7,385	8,271	8,862	9,275	11,815	17,723	7,385
2-1/8 x 8	3-5/16"	3.150	160,000	403,212	7,783	7,140	8,925	9,996	10,710	11,210	14,280	21,421	8,925
2-1/4 x 8	3-1/2"	3.555	160,000	455,103	9,301	8,533	10,666	11,946	12,800	13,397	17,066	25,600	10,666
2-3/8 x 8	3-11/16"	3.985	160,000	510,134	11,005	10,096	12,620	14,135	15,145	15,851	20,193	30,289	12,620
2-1/2 x 8	3-7/8"	4.440	160,000	568,304	12,905	11,840	14,800	16,576	17,760	18,588	23,679	35,519	14,800
2-3/4 x 8	4-1/4"	5.422	160,000	694,066	17,337	15,906	19,882	22,268	23,859	24,972	31,811	47,717	19,882
3 x 8	4-5/8"	6.503	160,000	832,387	22,683	20,810	26,012	29,134	31,215	32,671	41,619	62,429	26,012
3-1/4 x 8	5"	7.682	160,000	983,268	29,027	26,630	33,288	37,282	39,945	41,809	53,260	79,891	33,288
3-1/2 x 8	5-3/8"	8.959	160,000	1,146,710	36,456	33,446	41,807	46,824	50,169	52,510	66,891	100,337	41,807
3-3/4 x 8	5-3/4"	10.334	160,000	1,322,711	45,055	41,335	51,668	57,869	62,002	64,896	82,669	124,004	51,668
4 x 8	6-1/8"	11.807	160,000	1,511,273	54,910	50,376	62,970	70,526	75,564	79,090	100,752	151,127	62,970
4-1/4 x 8	6-1/2"	13.378	160,000	1,712,394	66,106	60,647	75,809	84,906	90,971	95,216	121,295	181,942	75,809
4-1/2 x 8	6-7/8"	15.047	160,000	1,926,075	78,728	72,228	90,285	101,119	108,342	113,398	144,456	216,683	90,285
4-3/4 x 8	7-1/4"	16.815	160,000	2,152,317	92,864	85,196	106,495	119,274	127,794	133,758	170,392	255,588	106,495
5 x 8	7-5/8"	18.681	160,000	2,391,118	108,597	99,630	124,537	139,482	149,445	156,419	199,260	298,890	124,537
5-1/4 x 8	8"	20.644	160,000	2,642,480	126,013	115,608	144,511	161,852	173,413	181,505	231,217	346,825	144,511
5-1/2 x 8	8-3/8"	22.706	160,000	2,906,401	145,199	133,210	166,513	186,494	199,815	209,140	266,420	399,630	166,513
5-3/4 x 8	8-3/4"	24.866	160,000	3,182,882	166,239	152,513	190,641	213,518	228,770	239,446	305,026	457,539	190,641
6 x 8	9-1/8"	27.124	160,000	3,471,924	189,220	173,596	216,995	243,035	260,394	272,546	347,192	520,789	216,995

TORQUE GUIDE FOR ISO R898 GRADE 12.9 STUD					REQUIRED TORQUE (FtLbs)								
BOLT TENSION BASED ON			90	PERCENT YIELD									
BOLT SIZE DIA. x TPI	HEX NUT ACROSS FLAT	STRESS AREA (IN ²)	MIN YIELD STRENGTH (PSI)	BOLT TENSION (LBS)	LoaDISC TS 801MOLY 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 K)
3/4 x 10	1-1/4"	0.334	160,000	48,138	328	301	376	421	451	472	602	903	376
7/8 x 9	1-7/16"	0.461	160,000	66,456	528	485	606	678	727	761	969	1,454	606
1x 8	1-5/8"	0.605	160,000	87,183	792	727	908	1,017	1,090	1,141	1,453	2,180	908
1-1/8 x 8	1-13/16"	0.790	160,000	113,767	1,163	1,067	1,333	1,493	1,600	1,675	2,133	3,200	1,333
1-1/4 x 8	2"	0.999	160,000	143,884	1,634	1,499	1,873	2,098	2,248	2,353	2,998	4,496	1,873
1-3/8 x 8	2-3/16"	1.233	160,000	177,534	2,217	2,034	2,543	2,848	3,051	3,194	4,068	6,103	2,543
1-1/2 x 8	2-3/8"	1.491	160,000	214,716	2,926	2,684	3,355	3,758	4,026	4,214	5,368	8,052	3,355
1-5/8 x 8	2-9/16"	1.774	160,000	255,431	3,770	3,459	4,324	4,843	5,188	5,431	6,918	10,377	4,324
1-3/4 x 8	2-3/4"	2.081	160,000	299,678	4,764	4,370	5,463	6,118	6,555	6,861	8,741	13,111	5,463
1-7/8 x 8	2-15/16"	2.413	160,000	347,457	5,918	5,429	6,786	7,601	8,144	8,524	10,858	16,287	6,786
2 x 8	3-1/8"	2.769	160,000	398,769	7,244	6,646	8,308	9,305	9,969	10,434	13,292	19,938	8,308
2-1/8 x 8	3-5/16"	3.150	160,000	453,614	8,756	8,033	10,041	11,246	12,049	12,611	16,065	24,098	10,041
2-1/4 x 8	3-1/2"	3.555	160,000	511,991	10,464	9,600	12,000	13,440	14,400	15,072	19,200	28,799	12,000
2-3/8 x 8	3-11/16"	3.985	160,000	573,900	12,381	11,358	14,198	15,902	17,038	17,833	22,717	34,075	14,198
2-1/2 x 8	3-7/8"	4.440	160,000	639,342	14,518	13,320	16,650	18,647	19,979	20,912	26,639	39,959	16,650
2-3/4 x 8	4-1/4"	5.422	160,000	780,824	19,504	17,894	22,367	25,051	26,841	28,093	35,788	53,682	22,367
3 x 8	4-5/8"	6.503	160,000	936,435	25,518	23,411	29,264	32,775	35,116	36,755	46,822	70,233	29,264
3-1/4 x 8	5"	7.682	160,000	1,106,177	32,655	29,959	37,449	41,943	44,938	47,036	59,918	89,877	37,449
3-1/2 x 8	5-3/8"	8.959	160,000	1,290,049	41,013	37,626	47,033	52,677	56,440	59,073	75,253	112,879	47,033
3-3/4 x 8	5-3/4"	10.334	160,000	1,488,050	50,687	46,502	58,127	65,102	69,752	73,007	93,003	139,505	58,127
4 x 8	6-1/8"	11.807	160,000	1,700,182	61,773	56,673	70,841	79,342	85,009	88,976	113,345	170,018	70,841
4-1/4 x 8	6-1/2"	13.378	160,000	1,926,443	74,369	68,228	85,285	95,519	102,342	107,118	136,456	204,685	85,285
4-1/2 x 8	6-7/8"	15.047	160,000	2,166,835	88,569	81,256	101,570	113,759	121,884	127,572	162,513	243,769	101,570
4-3/4 x 8	7-1/4"	16.815	160,000	2,421,356	104,471	95,845	119,807	134,184	143,768	150,477	191,691	287,536	119,807
5 x 8	7-5/8"	18.681	160,000	2,690,008	122,171	112,084	140,105	156,917	168,126	175,971	224,167	336,251	140,105
5-1/4 x 8	8"	20.644	160,000	2,972,790	141,765	130,060	162,574	182,083	195,089	204,193	260,119	390,179	162,574
5-1/2 x 8	8-3/8"	22.706	160,000	3,269,701	163,349	149,861	187,327	209,806	224,792	235,282	299,723	449,584	187,327
5-3/4 x 8	8-3/4"	24.866	160,000	3,580,743	187,019	171,577	214,472	240,208	257,366	269,376	343,155	514,732	214,472
6 x 8	9-1/8"	27.124	160,000	3,905,914	212,872	195,296	244,120	273,414	292,944	306,614	390,591	585,887	244,120

TORQUE GUIDE FOR ISO R898 GRADE 12.9 STUD					REQUIRED TORQUE (FtLbs)								
BOLT TENSION BASED ON			99	PERCENT YIELD									
BOLT SIZE DIA. x TPI	HEX NUT ACROSS FLAT	STRESS AREA (IN ²)	MIN YIELD STRENGTH (PSI)	BOLT TENSION (LBS)	LoaDISC TS 801MOLY 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 K)
3/4 x 10	1-1/4"	0.334	160,000	52,952	361	331	414	463	496	520	662	993	414
7/8 x 9	1-7/16"	0.461	160,000	73,101	581	533	666	746	800	837	1,066	1,599	666
1x 8	1-5/8"	0.605	160,000	95,901	871	799	999	1,119	1,199	1,255	1,598	2,398	999
1-1/8 x 8	1-13/16"	0.790	160,000	125,144	1,279	1,173	1,467	1,643	1,760	1,842	2,346	3,520	1,467
1-1/4 x 8	2"	0.999	160,000	158,273	1,797	1,649	2,061	2,308	2,473	2,588	3,297	4,946	2,061
1-3/8 x 8	2-3/16"	1.233	160,000	195,287	2,439	2,238	2,797	3,133	3,357	3,513	4,475	6,713	2,797
1-1/2 x 8	2-3/8"	1.491	160,000	236,188	3,218	2,952	3,690	4,133	4,429	4,635	5,905	8,857	3,690
1-5/8 x 8	2-9/16"	1.774	160,000	280,974	4,147	3,805	4,756	5,327	5,707	5,974	7,610	11,415	4,756
1-3/4 x 8	2-3/4"	2.081	160,000	329,645	5,240	4,807	6,009	6,730	7,211	7,548	9,615	14,422	6,009
1-7/8 x 8	2-15/16"	2.413	160,000	382,203	6,509	5,972	7,465	8,361	8,958	9,376	11,944	17,916	7,465
2 x 8	3-1/8"	2.769	160,000	438,646	7,969	7,311	9,138	10,235	10,966	11,478	14,622	21,932	9,138
2-1/8 x 8	3-5/16"	3.150	160,000	498,975	9,631	8,836	11,045	12,370	13,254	13,873	17,672	26,508	11,045
2-1/4 x 8	3-1/2"	3.555	160,000	563,190	11,510	10,560	13,200	14,784	15,840	16,579	21,120	31,679	13,200
2-3/8 x 8	3-11/16"	3.985	160,000	631,290	13,619	12,494	15,618	17,492	18,741	19,616	24,989	37,483	15,618
2-1/2 x 8	3-7/8"	4.440	160,000	703,277	15,970	14,652	18,314	20,512	21,977	23,003	29,303	43,955	18,314
2-3/4 x 8	4-1/4"	5.422	160,000	858,906	21,455	19,683	24,604	27,557	29,525	30,903	39,367	59,050	24,604
3 x 8	4-5/8"	6.503	160,000	1,030,079	28,070	25,752	32,190	36,053	38,628	40,431	51,504	77,256	32,190
3-1/4 x 8	5"	7.682	160,000	1,216,795	35,921	32,955	41,194	46,137	49,432	51,739	65,910	98,865	41,194
3-1/2 x 8	5-3/8"	8.959	160,000	1,419,053	45,114	41,389	51,736	57,945	62,084	64,981	82,778	124,167	51,736
3-3/4 x 8	5-3/4"	10.334	160,000	1,636,855	55,755	51,152	63,940	71,612	76,728	80,308	102,303	153,455	63,940
4 x 8	6-1/8"	11.807	160,000	1,870,200	67,951	62,340	77,925	87,276	93,510	97,874	124,680	187,020	77,925
4-1/4 x 8	6-1/2"	13.378	160,000	2,119,088	81,806	75,051	93,814	105,071	112,577	117,830	150,102	225,153	93,814
4-1/2 x 8	6-7/8"	15.047	160,000	2,383,518	97,426	89,382	111,727	125,135	134,073	140,330	178,764	268,146	111,727
4-3/4 x 8	7-1/4"	16.815	160,000	2,663,492	114,919	105,430	131,787	147,602	158,145	165,525	210,860	316,290	131,787
5 x 8	7-5/8"	18.681	160,000	2,959,009	134,388	123,292	154,115	172,609	184,938	193,568	246,584	369,876	154,115
5-1/4 x 8	8"	20.644	160,000	3,270,069	155,941	143,066	178,832	200,292	214,598	224,613	286,131	429,197	178,832
5-1/2 x 8	8-3/8"	22.706	160,000	3,596,671	179,684	164,847	206,059	230,786	247,271	258,810	329,695	494,542	206,059
5-3/4 x 8	8-3/4"	24.866	160,000	3,938,817	205,721	188,735	235,919	264,229	283,102	296,314	377,470	566,205	235,919
6 x 8	9-1/8"	27.124	160,000	4,296,506	234,160	214,825	268,532	300,755	322,238	337,276	429,651	644,476	268,532