

BOLT LOAD (IMPERIAL) B16 STUD

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 ASTM A193 GRADE B16 STUD														
BOLT TENSION BASED ON				50	PERCENT YIELD	REQUIRED TORQUE (ft-lb)								
BOLT SIZE DIA. x TPI	HEX NUT ACROSS FLAT	STRESS AREA (in ²)	MIN YIELD STRENGTH (psi)	BOLT LOAD (lb)	TS-801 MolySpray 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	CUSTOM (INSERT K) K=300	
													0.109	
3/4 x 10	1-1/4"	0.334	105,000	17,550	120	110	137	154	165	172	219	483	120	
7/8 x 9	1-7/16"	0.461	105,000	24,229	193	177	221	247	265	277	353	777	193	
1 x 8	1-5/8"	0.605	105,000	31,785	289	265	331	371	397	416	530	1,165	289	
1-1/8 x 8	1-13/16"	0.790	105,000	41,478	424	389	486	544	583	611	778	1,711	424	
1-1/4 x 8	2"	0.999	105,000	52,458	596	546	683	765	820	858	1,093	2,404	596	
1-3/8 x 8	2-3/16"	1.233	105,000	64,726	808	742	927	1,038	1,112	1,164	1,483	3,263	808	
1-1/2 x 8	2-3/8"	1.491	105,000	78,282	1,067	979	1,223	1,370	1,468	1,536	1,957	4,306	1,067	
1-5/8 x 8	2-9/16"	1.774	105,000	93,126	1,375	1,261	1,576	1,766	1,892	1,980	2,522	5,549	1,375	
1-3/4 x 8	2-3/4"	2.081	105,000	109,257	1,737	1,593	1,992	2,231	2,390	2,502	3,187	7,011	1,737	
1-7/8 x 8	2-15/16"	2.413	105,000	126,677	2,157	1,979	2,474	2,771	2,969	3,108	3,959	8,709	2,157	
2 x 8	3-1/8"	2.769	105,000	145,385	2,641	2,423	3,029	3,392	3,635	3,804	4,846	10,662	2,641	
2-1/8 x 8	3-5/16"	3.150	105,000	165,380	3,192	2,929	3,661	4,100	4,393	4,598	5,857	12,886	3,192	
2-1/4 x 8	3-1/2"	3.555	105,000	186,663	3,815	3,500	4,375	4,900	5,250	5,495	7,000	15,400	3,815	
2-3/8 x 8	3-11/16"	3.985	105,000	209,234	4,514	4,141	5,176	5,798	6,212	6,502	8,282	18,221	4,514	
2-1/2 x 8	3-7/8"	4.440	95,000	210,894	4,789	4,394	5,492	6,151	6,590	6,898	8,787	19,332	4,789	
2-3/4 x 8	4-1/4"	5.422	95,000	257,563	6,434	5,902	7,378	8,263	8,854	9,267	11,805	25,971	6,434	
3 x 8	4-5/8"	6.503	95,000	308,894	8,417	7,722	9,653	10,811	11,584	12,124	15,445	33,978	8,417	
3-1/4 x 8	5"	7.682	95,000	364,885	10,772	9,882	12,353	13,835	14,823	15,515	19,765	43,482	10,772	
3-1/2 x 8	5-3/8"	8.959	95,000	425,537	13,529	12,411	15,514	17,376	18,617	19,486	24,823	54,611	13,529	
3-3/4 x 8	5-3/4"	10.334	95,000	490,850	16,720	15,339	19,174	21,475	23,009	24,082	30,678	67,492	16,720	
4 x 8	6-1/8"	11.807	95,000	560,824	20,377	18,694	23,368	26,172	28,041	29,350	37,388	82,254	20,377	
4-1/4 x 8	6-1/2"	13.378	85,000	568,568	21,949	20,137	25,171	28,192	30,205	31,615	40,274	88,602	21,949	
4-1/2 x 8	6-7/8"	15.047	85,000	639,517	26,140	23,982	29,977	33,575	35,973	37,652	47,964	105,520	26,140	
4-3/4 x 8	7-1/4"	16.815	85,000	714,636	30,834	28,288	35,360	39,603	42,432	44,412	56,575	124,466	30,834	
5 x 8	7-5/8"	18.681	85,000	793,926	36,057	33,080	41,350	46,312	49,620	51,936	66,160	145,553	36,057	
5-1/4 x 8	8"	20.644	85,000	877,386	41,840	38,386	47,982	53,740	57,578	60,265	76,771	168,897	41,840	
5-1/2 x 8	8-3/8"	22.706	85,000	965,016	48,211	44,230	55,287	61,922	66,345	69,441	88,460	194,612	48,211	
5-3/4 x 8	8-3/4"	24.866	85,000	1,056,816	55,197	50,639	63,299	70,895	75,959	79,503	101,278	222,812	55,197	
6 x 8	9-1/8"	27.124	85,000	1,152,787	62,827	57,639	72,049	80,695	86,459	90,494	115,279	253,613	62,827	

TORQUE GUIDE FOR ASTM A193 GRADE B16 STUD														
BOLT TENSION BASED ON				50	PERCENT YIELD	REQUIRED TORQUE (ft-lb)								
BOLT SIZE DIA. x TPI	HEX NUT ACROSS FLAT	STRESS AREA (in ²)	MIN YIELD STRENGTH (psi)	BOLT LOAD (lb)	TS-801 MolySpray 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	CUSTOM (INSERT K) K=300	
													0.109	
3/4 x 10	1-1/4"	0.334	105,000	17,550	120	110	137	154	165	172	219	483	120	
7/8 x 9	1-7/16"	0.461	105,000	24,229	193	177	221	247	265	277	353	777	193	
1 x 8	1-5/8"	0.605	105,000	31,785	289	265	331	371	397	416	530	1,165	289	
1-1/8 x 8	1-13/16"	0.790	105,000	41,478	424	389	486	544	583	611	778	1,711	424	
1-1/4 x 8	2"	0.999	105,000	52,458	596	546	683	765	820	858	1,093	2,404	596	
1-3/8 x 8	2-3/16"	1.233	105,000	64,726	808	742	927	1,038	1,112	1,164	1,483	3,263	808	
1-1/2 x 8	2-3/8"	1.491	105,000	78,282	1,067	979	1,223	1,370	1,468	1,536	1,957	4,306	1,067	
1-5/8 x 8	2-9/16"	1.774	105,000	93,126	1,375	1,261	1,576	1,766	1,892	1,980	2,522	5,549	1,375	
1-3/4 x 8	2-3/4"	2.081	105,000	109,257	1,737	1,593	1,992	2,231	2,390	2,502	3,187	7,011	1,737	
1-7/8 x 8	2-15/16"	2.413	105,000	126,677	2,157	1,979	2,474	2,771	2,969	3,108	3,959	8,709	2,157	
2 x 8	3-1/8"	2.769	105,000	145,385	2,641	2,423	3,029	3,392	3,635	3,804	4,846	10,662	2,641	
2-1/8 x 8	3-5/16"	3.150	105,000	165,380	3,192	2,929	3,661	4,100	4,393	4,598	5,857	12,886	3,192	
2-1/4 x 8	3-1/2"	3.555	105,000	186,663	3,815	3,500	4,375	4,900	5,250	5,495	7,000	15,400	3,815	
2-3/8 x 8	3-11/16"	3.985	105,000	209,234	4,514	4,141	5,176	5,798	6,212	6,502	8,282	18,221	4,514	
2-1/2 x 8	3-7/8"	4.440	95,000	210,894	4,789	4,394	5,492	6,151	6,590	6,898	8,787	19,332	4,789	
2-3/4 x 8	4-1/4"	5.422	95,000	257,563	6,434	5,902	7,378	8,263	8,854	9,267	11,805	25,971	6,434	
3 x 8	4-5/8"	6.503	95,000	308,894	8,417	7,722	9,653	10,811	11,584	12,124	15,445	33,978	8,417	
3-1/4 x 8	5"	7.682	95,000	364,885	10,772	9,882	12,353	13,835	14,823	15,515	19,765	43,482	10,772	
3-1/2 x 8	5-3/8"	8.959	95,000	425,537	13,529	12,411	15,514	17,376	18,617	19,486	24,823	54,611	13,529	
3-3/4 x 8	5-3/4"	10.334	95,000	490,850	16,720	15,339	19,174	21,475	23,009	24,082	30,678	67,492	16,720	
4 x 8	6-1/8"	11.807	95,000	560,824	20,377	18,694	23,368	26,172	28,041	29,350	37,388	82,254	20,377	
4-1/4 x 8	6-1/2"	13.378	85,000	568,568	21,949	20,137	25,171	28,192	30,205	31,615	40,274	88,602	21,949	
4-1/2 x 8	6-7/8"	15.047	85,000	639,517	26,140	23,982	29,977	33,575	35,973	37,652	47,964	105,520	26,140	
4-3/4 x 8	7-1/4"	16.815	85,000	714,636	30,834	28,288	35,360	39,603	42,432	44,412	56,575	124,466	30,834	
5 x 8	7-5/8"	18.681	85,000	793,926	36,057	33,080	41,350	46,312	49,620	51,936	66,160	145,553	36,057	
5-1/4 x 8	8"	20.644	85,000	877,386	41,840	38,386	47,982	53,740	57,578	60,265	76,771	168,897	41,840	
5-1/2 x 8	8-3/8"	22.706	85,000	965,016	48,211	44,230	55,287	61,922	66,345	69,441	88,460	194,612	48,211	
5-3/4 x 8	8-3/4"	24.866	85,000	1,056,816	55,197	50,639	63,299	70,895	75,959	79,503	101,278	222,812	55,197	
6 x 8	9-1/8"	27.124	85,000	1,152,787	62,827	57,639	72,049	80,695	86,459	90,494	115,279	253,613	62,827	

TORQUE GUIDE FOR ASTM A193 GRADE B16 STUD														
BOLT TENSION BASED ON				60	PERCENT YIELD	REQUIRED TORQUE (ft-lb)								
BOLT SIZE DIA. x TPI	HEX NUT ACROSS FLAT	STRESS AREA (in ²)	MIN YIELD STRENGTH (psi)	BOLT LOAD (lb)	TS-801 Moly Spray 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	CUSTOM (INSERT K) K=300	
													0.109	
3/4 x 10	1-1/4"	0.334	105,000	21,060	143	132	165	184	197	207	263	579	143	
7/8 x 9	1-7/16"	0.461	105,000	29,074	231	212	265	297	318	333	424	933	231	
1x 8	1-5/8"	0.605	105,000	38,143	346	318	397	445	477	499	636	1,399	346	
1-1/8 x 8	1-13/16"	0.790	105,000	49,773	509	467	583	653	700	733	933	2,053	509	
1-1/4 x 8	2"	0.999	105,000	62,949	715	656	820	918	984	1,029	1,311	2,885	715	
1-3/8 x 8	2-3/16"	1.233	105,000	77,671	970	890	1,112	1,246	1,335	1,397	1,780	3,916	970	
1-1/2 x 8	2-3/8"	1.491	105,000	93,938	1,280	1,174	1,468	1,644	1,761	1,844	2,348	5,167	1,280	
1-5/8 x 8	2-9/16"	1.774	105,000	111,751	1,649	1,513	1,892	2,119	2,270	2,376	3,027	6,658	1,649	
1-3/4 x 8	2-3/4"	2.081	105,000	131,109	2,084	1,912	2,390	2,677	2,868	3,002	3,824	8,413	2,084	
1-7/8 x 8	2-15/16"	2.413	105,000	152,013	2,589	2,375	2,969	3,325	3,563	3,729	4,750	10,451	2,589	
2 x 8	3-1/8"	2.769	105,000	174,462	3,169	2,908	3,635	4,071	4,362	4,565	5,815	12,794	3,169	
2-1/8 x 8	3-5/16"	3.150	105,000	198,456	3,831	3,514	4,393	4,920	5,271	5,517	7,029	15,463	3,831	
2-1/4 x 8	3-1/2"	3.555	105,000	223,996	4,578	4,200	5,250	5,880	6,300	6,594	8,400	18,480	4,578	
2-3/8 x 8	3-11/16"	3.985	105,000	251,081	5,417	4,969	6,212	6,957	7,454	7,802	9,939	21,865	5,417	
2-1/2 x 8	3-7/8"	4.440	95,000	253,073	5,747	5,272	6,590	7,381	7,909	8,278	10,545	23,198	5,747	
2-3/4 x 8	4-1/4"	5.422	95,000	309,076	7,720	7,083	8,854	9,916	10,624	11,120	14,166	31,165	7,720	
3 x 8	4-5/8"	6.503	95,000	370,672	10,101	9,267	11,584	12,974	13,900	14,549	18,534	40,774	10,101	
3-1/4 x 8	5"	7.682	95,000	437,862	12,926	11,859	14,823	16,602	17,788	18,618	23,718	52,179	12,926	
3-1/2 x 8	5-3/8"	8.959	95,000	510,644	16,234	14,894	18,617	20,851	22,341	23,383	29,788	65,533	16,234	
3-3/4 x 8	5-3/4"	10.334	95,000	589,020	20,063	18,407	23,009	25,770	27,610	28,899	36,814	80,990	20,063	
4 x 8	6-1/8"	11.807	95,000	672,989	24,452	22,433	28,041	31,406	33,649	35,220	44,866	98,705	24,452	
4-1/4 x 8	6-1/2"	13.378	85,000	682,282	26,339	24,164	30,205	33,830	36,246	37,938	48,328	106,322	26,339	
4-1/2 x 8	6-7/8"	15.047	85,000	767,421	31,368	28,778	35,973	40,290	43,167	45,182	57,557	126,624	31,368	
4-3/4 x 8	7-1/4"	16.815	85,000	857,564	37,000	33,945	42,432	47,523	50,918	53,294	67,890	149,359	37,000	
5 x 8	7-5/8"	18.681	85,000	952,711	43,269	39,696	49,620	55,575	59,544	62,323	79,393	174,664	43,269	
5-1/4 x 8	8"	20.644	85,000	1,052,863	50,208	46,063	57,578	64,488	69,094	72,319	92,126	202,676	50,208	
5-1/2 x 8	8-3/8"	22.706	85,000	1,158,019	57,853	53,076	66,345	74,306	79,614	83,329	106,152	233,534	57,853	
5-3/4 x 8	8-3/4"	24.866	85,000	1,268,180	66,236	60,767	75,959	85,074	91,150	95,404	121,534	267,375	66,236	
6 x 8	9-1/8"	27.124	85,000	1,383,345	75,392	69,167	86,459	96,834	103,751	108,593	138,334	304,336	75,392	

TORQUE GUIDE FOR ASTM A193 GRADE B16 STUD														
BOLT TENSION BASED ON				70	PERCENT YIELD	REQUIRED TORQUE (ft-lb)								
BOLT SIZE DIA. x TPI	HEX NUT ACROSS FLAT	STRESS AREA (in ²)	MIN YIELD STRENGTH (psi)	BOLT LOAD (lb)	TS-801 Moly Spray 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	CUSTOM (INSERT K) K=300	
													0.109	
3/4 x 10	1-1/4"	0.334	105,000	24,570	167	154	192	215	230	241	307	676	167	
7/8 x 9	1-7/16"	0.461	105,000	33,920	270	247	309	346	371	388	495	1,088	270	
1x 8	1-5/8"	0.605	105,000	44,500	404	371	464	519	556	582	742	1,632	404	
1-1/8 x 8	1-13/16"	0.790	105,000	58,069	593	544	680	762	817	855	1,089	2,395	593	
1-1/4 x 8	2"	0.999	105,000	73,441	834	765	956	1,071	1,148	1,201	1,530	3,366	834	
1-3/8 x 8	2-3/16"	1.233	105,000	90,616	1,132	1,038	1,298	1,454	1,557	1,630	2,077	4,569	1,132	
1-1/2 x 8	2-3/8"	1.491	105,000	109,595	1,493	1,370	1,712	1,918	2,055	2,151	2,740	6,028	1,493	
1-5/8 x 8	2-9/16"	1.774	105,000	130,376	1,924	1,766	2,207	2,472	2,648	2,772	3,531	7,768	1,924	
1-3/4 x 8	2-3/4"	2.081	105,000	152,960	2,431	2,231	2,788	3,123	3,346	3,502	4,461	9,815	2,431	
1-7/8 x 8	2-15/16"	2.413	105,000	177,348	3,020	2,771	3,464	3,879	4,157	4,351	5,542	12,193	3,020	
2 x 8	3-1/8"	2.769	105,000	203,538	3,698	3,392	4,240	4,749	5,088	5,326	6,785	14,926	3,698	
2-1/8 x 8	3-5/16"	3.150	105,000	231,532	4,469	4,100	5,125	5,740	6,150	6,437	8,200	18,040	4,469	
2-1/4 x 8	3-1/2"	3.555	105,000	261,329	5,341	4,900	6,125	6,860	7,350	7,693	9,800	21,560	5,341	
2-3/8 x 8	3-11/16"	3.985	105,000	292,928	6,319	5,798	7,247	8,117	8,696	9,102	11,595	25,509	6,319	
2-1/2 x 8	3-7/8"	4.440	95,000	295,252	6,705	6,151	7,689	8,612	9,227	9,657	12,302	27,065	6,705	
2-3/4 x 8	4-1/4"	5.422	95,000	360,589	9,007	8,263	10,329	11,569	12,395	12,974	16,527	36,359	9,007	
3 x 8	4-5/8"	6.503	95,000	432,451	11,784	10,811	13,514	15,136	16,217	16,974	21,623	47,570	11,784	
3-1/4 x 8	5"	7.682	95,000	510,839	15,080	13,835	17,294	19,369	20,753	21,721	27,670	60,875	15,080	
3-1/2 x 8	5-3/8"	8.959	95,000	595,752	18,940	17,376	21,720	24,327	26,064	27,280	34,752	76,455	18,940	
3-3/4 x 8	5-3/4"	10.334	95,000	687,190	23,407	21,475	26,843	30,065	32,212	33,715	42,949	94,489	23,407	
4 x 8	6-1/8"	11.807	95,000	785,153	28,527	26,172	32,715	36,640	39,258	41,090	52,344	115,156	28,527	
4-1/4 x 8	6-1/2"	13.378	85,000	795,996	30,729	28,192	35,239	39,468	42,287	44,261	56,383	124,043	30,729	
4-1/2 x 8	6-7/8"	15.047	85,000	895,324	36,596	33,575	41,968	47,005	50,362	52,712	67,149	147,728	36,596	
4-3/4 x 8	7-1/4"	16.815	85,000	1,000,491	43,167	39,603	49,503	55,444	59,404	62,176	79,206	174,252	43,167	
5 x 8	7-5/8"	18.681	85,000	1,111,496	50,480	46,312	57,890	64,837	69,469	72,710	92,625	203,774	50,480	
5-1/4 x 8	8"	20.644	85,000	1,228,340	58,576	53,740	67,175	75,236	80,610	84,372	107,480	236,455	58,576	
5-1/2 x 8	8-3/8"	22.706	85,000	1,351,022	67,495	61,922	77,402	86,691	92,883	97,217	123,844	272,456	67,495	
5-3/4 x 8	8-3/4"	24.866	85,000	1,479,543	77,275	70,895	88,618	99,253	106,342	111,305	141,790	311,937	77,275	
6 x 8	9-1/8"	27.124	85,000	1,613,902	87,958	80,695	100,869	112,973	121,043	126,691	161,390	355,058	87,958	

TORQUE GUIDE FOR ASTM A193 GRADE B16 STUD													
BOLT TENSION BASED ON			80	PERCENT YIELD	REQUIRED TORQUE (ft-lb)								
BOLT SIZE DIA. x TPI	HEX NUT ACROSS FLAT	STRESS AREA (in ²)	MIN YIELD STRENGTH (psi)	BOLT LOAD (lb)	TS-801 MolySpray 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	CUSTOM (INSERT K) K=300
													0.109
3/4 x 10	1-1/4"	0.334	105,000	28,080	191	176	219	246	263	276	351	772	191
7/8 x 9	1-7/16"	0.461	105,000	38,766	308	283	353	396	424	444	565	1,244	308
1x 8	1-5/8"	0.605	105,000	50,857	462	424	530	593	636	665	848	1,865	462
1-1/8 x 8	1-13/16"	0.790	105,000	66,364	678	622	778	871	933	977	1,244	2,738	678
1-1/4 x 8	2"	0.999	105,000	83,933	953	874	1,093	1,224	1,311	1,373	1,749	3,847	953
1-3/8 x 8	2-3/16"	1.233	105,000	103,562	1,293	1,187	1,483	1,661	1,780	1,863	2,373	5,221	1,293
1-1/2 x 8	2-3/8"	1.491	105,000	125,251	1,707	1,566	1,957	2,192	2,348	2,458	3,131	6,889	1,707
1-5/8 x 8	2-9/16"	1.774	105,000	149,001	2,199	2,018	2,522	2,825	3,027	3,168	4,035	8,878	2,199
1-3/4 x 8	2-3/4"	2.081	105,000	174,812	2,779	2,549	3,187	3,569	3,824	4,002	5,099	11,217	2,779
1-7/8 x 8	2-15/16"	2.413	105,000	202,683	3,452	3,167	3,959	4,434	4,750	4,972	6,334	13,934	3,452
2 x 8	3-1/8"	2.769	105,000	232,615	4,226	3,877	4,846	5,428	5,815	6,087	7,754	17,058	4,226
2-1/8 x 8	3-5/16"	3.150	105,000	264,608	5,107	4,686	5,857	6,560	7,029	7,357	9,372	20,617	5,107
2-1/4 x 8	3-1/2"	3.555	105,000	298,661	6,104	5,600	7,000	7,840	8,400	8,792	11,200	24,640	6,104
2-3/8 x 8	3-11/16"	3.985	105,000	334,775	7,222	6,626	8,282	9,276	9,939	10,402	13,252	29,153	7,222
2-1/2 x 8	3-7/8"	4.440	95,000	337,431	7,662	7,030	8,787	9,842	10,545	11,037	14,060	30,931	7,662
2-3/4 x 8	4-1/4"	5.422	95,000	412,102	10,294	9,444	11,805	13,222	14,166	14,827	18,888	41,554	10,294
3 x 8	4-5/8"	6.503	95,000	494,230	13,468	12,356	15,445	17,298	18,534	19,399	24,711	54,365	13,468
3-1/4 x 8	5"	7.682	95,000	583,816	17,235	15,812	19,765	22,136	23,718	24,824	31,623	69,571	17,235
3-1/2 x 8	5-3/8"	8.959	95,000	680,859	21,646	19,858	24,823	27,802	29,788	31,178	39,717	87,377	21,646
3-3/4 x 8	5-3/4"	10.334	95,000	785,360	26,751	24,542	30,678	34,359	36,814	38,532	49,085	107,987	26,751
4 x 8	6-1/8"	11.807	95,000	897,318	32,603	29,911	37,388	41,875	44,866	46,960	59,821	131,607	32,603
4-1/4 x 8	6-1/2"	13.378	85,000	909,709	35,119	32,219	40,274	45,106	48,328	50,584	64,438	141,763	35,119
4-1/2 x 8	6-7/8"	15.047	85,000	1,023,228	41,824	38,371	47,964	53,719	57,557	60,243	76,742	168,833	41,824
4-3/4 x 8	7-1/4"	16.815	85,000	1,143,418	49,334	45,260	56,575	63,364	67,890	70,521	89,521	199,145	49,334
5 x 8	7-5/8"	18.681	85,000	1,270,282	57,692	52,928	66,160	74,100	79,393	83,098	105,857	232,885	57,692
5-1/4 x 8	8"	20.644	85,000	1,403,817	66,945	61,417	76,771	85,984	92,126	96,425	122,834	270,235	66,945
5-1/2 x 8	8-3/8"	22.706	85,000	1,544,026	77,137	70,768	88,460	99,075	106,152	111,106	141,536	311,378	77,137
5-3/4 x 8	8-3/4"	24.866	85,000	1,690,906	88,315	81,023	101,278	113,432	121,534	127,205	162,045	356,499	88,315
6 x 8	9-1/8"	27.124	85,000	1,844,460	100,523	92,223	115,279	129,112	138,334	144,790	184,446	405,781	100,523

TORQUE GUIDE FOR ASTM A193 GRADE B16 STUD													
BOLT TENSION BASED ON			90	PERCENT YIELD	REQUIRED TORQUE (ft-lb)								
BOLT SIZE DIA. x TPI	HEX NUT ACROSS FLAT	STRESS AREA (in ²)	MIN YIELD STRENGTH (psi)	BOLT LOAD (lb)	TS-801 MolySpray 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	CUSTOM (INSERT K) K=300
													0.109
3/4 x 10	1-1/4"	0.334	105,000	31,590	215	197	247	276	296	310	395	869	215
7/8 x 9	1-7/16"	0.461	105,000	43,612	347	318	398	445	477	499	636	1,399	347
1x 8	1-5/8"	0.605	105,000	57,214	520	477	596	667	715	749	954	2,098	520
1-1/8 x 8	1-13/16"	0.790	105,000	74,660	763	700	875	980	1,050	1,099	1,400	3,080	763
1-1/4 x 8	2"	0.999	105,000	94,424	1,072	984	1,229	1,377	1,475	1,544	1,967	4,328	1,072
1-3/8 x 8	2-3/16"	1.233	105,000	116,507	1,455	1,335	1,669	1,869	2,002	2,096	2,670	5,874	1,455
1-1/2 x 8	2-3/8"	1.491	105,000	140,907	1,920	1,761	2,202	2,466	2,642	2,765	3,523	7,750	1,920
1-5/8 x 8	2-9/16"	1.774	105,000	167,626	2,474	2,270	2,837	3,178	3,405	3,564	4,540	9,988	2,474
1-3/4 x 8	2-3/4"	2.081	105,000	196,663	3,126	2,868	3,585	4,015	4,302	4,503	5,736	12,619	3,126
1-7/8 x 8	2-15/16"	2.413	105,000	228,019	3,883	3,563	4,453	4,988	5,344	5,594	7,126	15,676	3,883
2 x 8	3-1/8"	2.769	105,000	261,692	4,754	4,362	5,452	6,106	6,542	6,848	8,723	19,191	4,754
2-1/8 x 8	3-5/16"	3.150	105,000	297,684	5,746	5,271	6,589	7,380	7,907	8,276	10,543	23,195	5,746
2-1/4 x 8	3-1/2"	3.555	105,000	335,994	6,867	6,300	7,875	8,820	9,450	9,891	12,600	27,720	6,867
2-3/8 x 8	3-11/16"	3.985	105,000	376,622	8,125	7,454	9,317	10,436	11,181	11,703	14,908	32,798	8,125
2-1/2 x 8	3-7/8"	4.440	95,000	379,610	8,620	7,909	9,886	11,072	11,863	12,416	15,817	34,798	8,620
2-3/4 x 8	4-1/4"	5.422	95,000	463,614	11,581	10,624	13,281	14,874	15,937	16,680	21,249	46,748	11,581
3 x 8	4-5/8"	6.503	95,000	556,009	15,151	13,900	17,375	19,460	20,850	21,823	27,800	61,161	15,151
3-1/4 x 8	5"	7.682	95,000	656,793	19,389	17,788	22,235	24,903	26,682	27,927	35,576	78,268	19,389
3-1/2 x 8	5-3/8"	8.959	95,000	765,966	24,351	22,341	27,926	31,277	33,511	35,075	44,681	98,299	24,351
3-3/4 x 8	5-3/4"	10.334	95,000	883,530	30,095	27,610	34,513	38,654	41,415	43,348	55,221	121,485	30,095
4 x 8	6-1/8"	11.807	95,000	1,009,483	36,678	33,649	42,062	47,109	50,474	52,830	67,299	148,057	36,678
4-1/4 x 8	6-1/2"	13.378	85,000	1,023,423	39,508	36,246	45,308	50,745	54,369	56,907	72,492	159,483	39,508
4-1/2 x 8	6-7/8"	15.047	85,000	1,151,131	47,052	43,167	53,959	60,434	64,751	67,773	86,335	189,937	47,052
4-3/4 x 8	7-1/4"	16.815	85,000	1,286,346	55,500	50,918	63,647	71,285	76,377	79,941	101,836	224,039	55,500
5 x 8	7-5/8"	18.681	85,000	1,429,067	64,903	59,544	74,431	83,362	89,317	93,485	119,089	261,996	64,903
5-1/4 x 8	8"	20.644	85,000	1,579,294	75,313	69,094	86,368	96,732	103,641	108,478	138,188	304,014	75,313
5-1/2 x 8	8-3/8"	22.706	85,000	1,737,029	86,779	79,614	99,517	111,459	119,421	124,994	159,228	350,301	86,779
5-3/4 x 8	8-3/4"	24.866	85,000	1,902,270	99,354	91,150	113,938	127,611	136,726	143,106	182,301	401,062	99,354
6 x 8	9-1/8"	27.124	85,000	2,075,017	113,088	103,751	129,689	145,251	155,626	162,889	207,502	456,504	113,088

TORQUE GUIDE FOR ASTM A193 GRADE B16 STUD													
BOLT TENSION BASED ON		99	PERCENT YIELD	REQUIRED TORQUE (ft-lb)									
BOLT SIZE DIA. x TPI	HEX NUT ACROSS FLAT	STRESS AREA (in ²)	MIN YIELD STRENGTH (psi)	BOLT LOAD (lb)	TS-801 MolySpray 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	CUSTOM (INSERT K) K=300
													0.109
3/4 x 10	1-1/4"	0.334	105,000	34,749	237	217	271	304	326	341	434	956	237
7/8 x 9	1-7/16"	0.461	105,000	47,973	381	350	437	490	525	549	700	1,539	381
1x 8	1-5/8"	0.605	105,000	62,935	572	524	656	734	787	823	1,049	2,308	572
1-1/8 x 8	1-13/16"	0.790	105,000	82,126	839	770	962	1,078	1,155	1,209	1,540	3,388	839
1-1/4 x 8	2"	0.999	105,000	103,867	1,179	1,082	1,352	1,515	1,623	1,699	2,164	4,761	1,179
1-3/8 x 8	2-3/16"	1.233	105,000	128,157	1,601	1,468	1,836	2,056	2,203	2,305	2,937	6,461	1,601
1-1/2 x 8	2-3/8"	1.491	105,000	154,998	2,112	1,937	2,422	2,712	2,906	3,042	3,875	8,525	2,112
1-5/8 x 8	2-9/16"	1.774	105,000	184,389	2,722	2,497	3,121	3,496	3,745	3,920	4,994	10,987	2,722
1-3/4 x 8	2-3/4"	2.081	105,000	216,330	3,439	3,155	3,944	4,417	4,732	4,953	6,310	13,881	3,439
1-7/8 x 8	2-15/16"	2.413	105,000	250,821	4,272	3,919	4,899	5,487	5,879	6,153	7,838	17,244	4,272
2 x 8	3-1/8"	2.769	105,000	287,862	5,229	4,798	5,997	6,717	7,197	7,532	9,595	21,110	5,229
2-1/8 x 8	3-5/16"	3.150	105,000	327,452	6,321	5,799	7,248	8,118	8,698	9,104	11,597	25,514	6,321
2-1/4 x 8	3-1/2"	3.555	105,000	369,593	7,554	6,930	8,662	9,702	10,395	10,880	13,860	30,491	7,554
2-3/8 x 8	3-11/16"	3.985	105,000	414,284	8,937	8,199	10,249	11,479	12,299	12,873	16,399	36,077	8,937
2-1/2 x 8	3-7/8"	4.440	95,000	417,570	9,482	8,699	10,874	12,179	13,049	13,658	17,399	38,277	9,482
2-3/4 x 8	4-1/4"	5.422	95,000	509,976	12,739	11,687	14,609	16,362	17,530	18,348	23,374	51,423	12,739
3 x 8	4-5/8"	6.503	95,000	611,609	16,666	15,290	19,113	21,406	22,935	24,006	30,580	67,277	16,666
3-1/4 x 8	5"	7.682	95,000	722,472	21,328	19,567	24,459	27,394	29,350	30,720	39,134	86,095	21,328
3-1/2 x 8	5-3/8"	8.959	95,000	842,563	26,786	24,575	30,718	34,405	36,862	38,582	49,150	108,129	26,786
3-3/4 x 8	5-3/4"	10.334	95,000	971,883	33,105	30,371	37,964	42,520	45,557	47,683	60,743	133,634	33,105
4 x 8	6-1/8"	11.807	95,000	1,110,431	40,346	37,014	46,268	51,820	55,522	58,113	74,029	162,863	40,346
4-1/4 x 8	6-1/2"	13.378	85,000	1,125,765	43,459	39,871	49,839	55,819	59,806	62,597	79,742	175,432	43,459
4-1/2 x 8	6-7/8"	15.047	85,000	1,266,244	51,758	47,484	59,355	66,478	71,226	74,550	94,968	208,930	51,758
4-3/4 x 8	7-1/4"	16.815	85,000	1,414,980	61,050	56,010	70,012	78,413	84,014	87,935	112,019	246,442	61,050
5 x 8	7-5/8"	18.681	85,000	1,571,973	71,394	65,499	81,874	91,698	98,248	102,833	130,998	288,195	71,394
5-1/4 x 8	8"	20.644	85,000	1,737,224	82,844	76,004	95,004	106,405	114,005	119,326	152,007	334,416	82,844
5-1/2 x 8	8-3/8"	22.706	85,000	1,910,732	95,457	87,575	109,469	122,605	131,363	137,493	175,150	385,331	95,457
5-3/4 x 8	8-3/4"	24.866	85,000	2,092,497	109,289	100,265	125,332	140,372	150,398	157,417	200,531	441,168	109,289
6 x 8	9-1/8"	27.124	85,000	2,282,519	124,397	114,126	142,657	159,776	171,189	179,178	228,252	502,154	124,397