

BOLT LOAD IMPERIAL (A449 STUD)

40% - 99% YIELD



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

BOLT LOADS

TORQUE GUIDE FOR ASTM A449 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)	
3/4 x 10	1-1/4"	0.334	92,000	12,302	84	77	96	108	115	121	154	231	84	
7/8 x 9	1-7/16"	0.461	92,000	16,983	135	124	155	173	186	194	248	372	135	
1x 8	1-5/8"	0.605	92,000	22,280	202	186	232	260	279	291	371	557	202	
1-1/8 x 8	1-13/16"	0.790	81,000	25,598	262	240	300	336	360	377	480	720	262	
1-1/4 x 8	2"	0.999	81,000	32,374	368	337	422	472	506	529	674	1,012	368	
1-3/8 x 8	2-3/16"	1.233	81,000	39,945	499	458	572	641	687	719	915	1,373	499	
1-1/2 x 8	2-3/8"	1.491	81,000	48,311	658	604	755	845	906	948	1,208	1,812	658	
1-5/8 x 8	2-9/16"	1.774	58,000	41,153	607	557	697	780	836	875	1,115	1,672	607	
1-3/4 x 8	2-3/4"	2.081	58,000	48,281	767	704	880	986	1,056	1,105	1,408	2,112	767	
1-7/8 x 8	2-15/16"	2.413	58,000	55,979	953	875	1,093	1,225	1,312	1,373	1,749	2,624	953	
2 x 8	3-1/8"	2.769	58,000	64,246	1,167	1,071	1,338	1,499	1,606	1,681	2,142	3,212	1,167	
2-1/8 x 8	3-5/16"	3.150	58,000	73,082	1,411	1,294	1,618	1,812	1,941	2,032	2,588	3,882	1,411	
2-1/4 x 8	3-1/2"	3.555	58,000	82,487	1,686	1,547	1,933	2,165	2,320	2,428	3,093	4,640	1,686	
2-3/8 x 8	3-11/16"	3.985	58,000	92,462	1,995	1,830	2,287	2,562	2,745	2,873	3,660	5,490	1,995	
2-1/2 x 8	3-7/8"	4.440	58,000	103,005	2,339	2,146	2,682	3,004	3,219	3,369	4,292	6,438	2,339	
2-3/4 x 8	4-1/4"	5.422	58,000	125,799	3,142	2,883	3,604	4,036	4,324	4,526	5,766	8,649	3,142	
3 x 8	4-5/8"	6.503	58,000	150,870	4,111	3,772	4,715	5,280	5,658	5,922	7,544	11,315	4,111	

TORQUE GUIDE FOR ASTM A449 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	92,000	15,377	105	96	120	135	144	151	192	288	105	
7/8 x 9	1-7/16"	0.461	92,000	21,229	169	155	193	217	232	243	310	464	169	
1x 8	1-5/8"	0.605	92,000	27,850	253	232	290	325	348	364	464	696	253	
1-1/8 x 8	1-13/16"	0.790	81,000	31,997	327	300	375	420	450	471	600	900	327	
1-1/4 x 8	2"	0.999	81,000	40,468	459	422	527	590	632	662	843	1,265	459	
1-3/8 x 8	2-3/16"	1.233	81,000	49,931	624	572	715	801	858	898	1,144	1,716	624	
1-1/2 x 8	2-3/8"	1.491	81,000	60,389	823	755	944	1,057	1,132	1,185	1,510	2,265	823	
1-5/8 x 8	2-9/16"	1.774	58,000	51,441	759	697	871	975	1,045	1,094	1,393	2,090	759	
1-3/4 x 8	2-3/4"	2.081	58,000	60,352	959	880	1,100	1,232	1,320	1,382	1,760	2,640	959	
1-7/8 x 8	2-15/16"	2.413	58,000	69,974	1,192	1,093	1,367	1,531	1,640	1,717	2,187	3,280	1,192	
2 x 8	3-1/8"	2.769	58,000	80,308	1,459	1,338	1,673	1,874	2,008	2,101	2,677	4,015	1,459	
2-1/8 x 8	3-5/16"	3.150	58,000	91,353	1,763	1,618	2,022	2,265	2,427	2,540	3,235	4,853	1,763	
2-1/4 x 8	3-1/2"	3.555	58,000	103,109	2,107	1,933	2,417	2,707	2,900	3,035	3,867	5,800	2,107	
2-3/8 x 8	3-11/16"	3.985	58,000	115,577	2,493	2,287	2,859	3,202	3,431	3,591	4,575	6,862	2,493	
2-1/2 x 8	3-7/8"	4.440	58,000	128,756	2,924	2,682	3,353	3,755	4,024	4,211	5,365	8,047	2,924	
2-3/4 x 8	4-1/4"	5.422	58,000	157,249	3,928	3,604	4,505	5,045	5,405	5,658	7,207	10,811	3,928	
3 x 8	4-5/8"	6.503	58,000	188,588	5,139	4,715	5,893	6,601	7,072	7,402	9,429	14,144	5,139	

TORQUE GUIDE FOR ASTM A449 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	92,000	18,453	126	115	144	161	173	181	231	346	126	
7/8 x 9	1-7/16"	0.461	92,000	25,475	202	186	232	260	279	292	372	557	202	
1x 8	1-5/8"	0.605	92,000	33,420	304	279	348	390	418	437	557	836	304	
1-1/8 x 8	1-13/16"	0.790	81,000	38,397	392	360	450	504	540	565	720	1,080	392	
1-1/4 x 8	2"	0.999	81,000	48,561	551	506	632	708	759	794	1,012	1,518	551	
1-3/8 x 8	2-3/16"	1.233	81,000	59,918	748	687	858	961	1,030	1,078	1,373	2,060	748	
1-1/2 x 8	2-3/8"	1.491	81,000	72,467	987	906	1,132	1,268	1,359	1,422	1,812	2,718	987	
1-5/8 x 8	2-9/16"	1.774	58,000	61,729	911	836	1,045	1,170	1,254	1,312	1,672	2,508	911	
1-3/4 x 8	2-3/4"	2.081	58,000	72,422	1,151	1,056	1,320	1,479	1,584	1,658	2,112	3,168	1,151	
1-7/8 x 8	2-15/16"	2.413	58,000	83,969	1,430	1,312	1,640	1,837	1,968	2,060	2,624	3,936	1,430	
2 x 8	3-1/8"	2.769	58,000	96,369	1,751	1,606	2,008	2,249	2,409	2,522	3,212	4,818	1,751	
2-1/8 x 8	3-5/16"	3.150	58,000	109,623	2,116	1,941	2,427	2,718	2,912	3,048	3,882	5,824	2,116	
2-1/4 x 8	3-1/2"	3.555	58,000	123,731	2,529	2,320	2,900	3,248	3,480	3,642	4,640	6,960	2,529	
2-3/8 x 8	3-11/16"	3.985	58,000	138,693	2,992	2,745	3,431	3,843	4,117	4,310	5,490	8,235	2,992	
2-1/2 x 8	3-7/8"	4.440	58,000	154,508	3,509	3,219	4,024	4,506	4,828	5,054	6,438	9,657	3,509	
2-3/4 x 8	4-1/4"	5.422	58,000	188,699	4,714	4,324	5,405	6,054	6,487	6,789	8,649	12,973	4,714	
3 x 8	4-5/8"	6.503	58,000	226,305	6,167	5,658	7,072	7,921	8,486	8,882	11,315	16,973	6,167	

TORQUE GUIDE FOR ASTM A449 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	92,000	21,528	147	135	168	188	202	211	269	404	147	
7/8 x 9	1-7/16"	0.461	92,000	29,721	236	217	271	303	325	340	433	650	236	
1x 8	1-5/8"	0.605	92,000	38,990	354	325	406	455	487	510	650	975	354	
1-1/8 x 8	1-13/16"	0.790	81,000	44,796	458	420	525	588	630	659	840	1,260	458	
1-1/4 x 8	2"	0.999	81,000	56,655	643	590	738	826	885	927	1,180	1,770	643	
1-3/8 x 8	2-3/16"	1.233	81,000	69,904	873	801	1,001	1,121	1,201	1,258	1,602	2,403	873	
1-1/2 x 8	2-3/8"	1.491	81,000	84,544	1,152	1,057	1,321	1,480	1,585	1,659	2,114	3,170	1,152	
1-5/8 x 8	2-9/16"	1.774	58,000	72,017	1,063	975	1,219	1,365	1,463	1,531	1,950	2,926	1,063	
1-3/4 x 8	2-3/4"	2.081	58,000	84,492	1,343	1,232	1,540	1,725	1,848	1,935	2,464	3,697	1,343	
1-7/8 x 8	2-15/16"	2.413	58,000	97,964	1,668	1,531	1,913	2,143	2,296	2,403	3,061	4,592	1,668	
2 x 8	3-1/8"	2.769	58,000	112,431	2,042	1,874	2,342	2,623	2,811	2,942	3,748	5,622	2,042	
2-1/8 x 8	3-5/16"	3.150	58,000	127,894	2,469	2,265	2,831	3,171	3,397	3,556	4,530	6,794	2,469	
2-1/4 x 8	3-1/2"	3.555	58,000	144,353	2,950	2,707	3,383	3,789	4,060	4,249	5,413	8,120	2,950	
2-3/8 x 8	3-11/16"	3.985	58,000	161,808	3,491	3,202	4,003	4,483	4,804	5,028	6,405	9,607	3,491	
2-1/2 x 8	3-7/8"	4.440	58,000	180,259	4,093	3,755	4,694	5,258	5,633	5,896	7,511	11,266	4,093	
2-3/4 x 8	4-1/4"	5.422	58,000	220,149	5,499	5,045	6,306	7,063	7,568	7,921	10,090	15,135	5,499	
3 x 8	4-5/8"	6.503	58,000	264,023	7,195	6,601	8,251	9,241	9,901	10,363	13,201	19,802	7,195	

TORQUE GUIDE FOR ASTM A449 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	92,000	24,604	168	154	192	215	231	241	308	461	168	
7/8 x 9	1-7/16"	0.461	92,000	33,966	270	248	310	347	372	389	495	743	270	
1x 8	1-5/8"	0.605	92,000	44,560	405	371	464	520	557	583	743	1,114	405	
1-1/8 x 8	1-13/16"	0.790	81,000	51,195	523	480	600	672	720	754	960	1,440	523	
1-1/4 x 8	2"	0.999	81,000	64,748	735	674	843	944	1,012	1,059	1,349	2,023	735	
1-3/8 x 8	2-3/16"	1.233	81,000	79,890	998	915	1,144	1,282	1,373	1,437	1,831	2,746	998	
1-1/2 x 8	2-3/8"	1.491	81,000	96,622	1,316	1,208	1,510	1,691	1,812	1,896	2,416	3,623	1,316	
1-5/8 x 8	2-9/16"	1.774	58,000	82,305	1,215	1,115	1,393	1,560	1,672	1,750	2,229	3,344	1,215	
1-3/4 x 8	2-3/4"	2.081	58,000	96,563	1,535	1,408	1,760	1,971	2,112	2,211	2,816	4,225	1,535	
1-7/8 x 8	2-15/16"	2.413	58,000	111,958	1,907	1,749	2,187	2,449	2,624	2,746	3,499	5,248	1,907	
2 x 8	3-1/8"	2.769	58,000	128,492	2,334	2,142	2,677	2,998	3,212	3,362	4,283	6,425	2,334	
2-1/8 x 8	3-5/16"	3.150	58,000	146,164	2,821	2,588	3,235	3,624	3,882	4,064	5,177	7,765	2,821	
2-1/4 x 8	3-1/2"	3.555	58,000	164,975	3,372	3,093	3,867	4,331	4,640	4,856	6,187	9,280	3,372	
2-3/8 x 8	3-11/16"	3.985	58,000	184,923	3,989	3,660	4,575	5,124	5,490	5,746	7,320	10,980	3,989	
2-1/2 x 8	3-7/8"	4.440	58,000	206,010	4,678	4,292	5,365	6,009	6,438	6,738	8,584	12,876	4,678	
2-3/4 x 8	4-1/4"	5.422	58,000	251,599	6,285	5,766	7,207	8,072	8,649	9,052	11,532	17,297	6,285	
3 x 8	4-5/8"	6.503	58,000	301,740	8,222	7,544	9,429	10,561	11,315	11,843	15,087	22,631	8,222	

TORQUE GUIDE FOR ASTM A449 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	92,000	27,679	189	173	216	242	259	272	346	519	189	
7/8 x 9	1-7/16"	0.461	92,000	38,212	304	279	348	390	418	437	557	836	304	
1x 8	1-5/8"	0.605	92,000	50,130	455	418	522	585	627	656	836	1,253	455	
1-1/8 x 8	1-13/16"	0.790	81,000	57,595	589	540	675	756	810	848	1,080	1,620	589	
1-1/4 x 8	2"	0.999	81,000	72,842	827	759	948	1,062	1,138	1,191	1,518	2,276	827	
1-3/8 x 8	2-3/16"	1.233	81,000	89,877	1,123	1,030	1,287	1,442	1,545	1,617	2,060	3,090	1,123	
1-1/2 x 8	2-3/8"	1.491	81,000	108,700	1,481	1,359	1,698	1,902	2,038	2,133	2,718	4,076	1,481	
1-5/8 x 8	2-9/16"	1.774	58,000	92,594	1,367	1,254	1,567	1,755	1,881	1,969	2,508	3,762	1,367	
1-3/4 x 8	2-3/4"	2.081	58,000	108,633	1,727	1,584	1,980	2,218	2,376	2,487	3,168	4,753	1,727	
1-7/8 x 8	2-15/16"	2.413	58,000	125,953	2,145	1,968	2,460	2,755	2,952	3,090	3,936	5,904	2,145	
2 x 8	3-1/8"	2.769	58,000	144,554	2,626	2,409	3,012	3,373	3,614	3,782	4,818	7,228	2,626	
2-1/8 x 8	3-5/16"	3.150	58,000	164,435	3,174	2,912	3,640	4,077	4,368	4,572	5,824	8,736	3,174	
2-1/4 x 8	3-1/2"	3.555	58,000	185,597	3,793	3,480	4,350	4,872	5,220	5,464	6,960	10,440	3,793	
2-3/8 x 8	3-11/16"	3.985	58,000	208,039	4,488	4,117	5,147	5,764	6,176	6,464	8,235	12,352	4,488	
2-1/2 x 8	3-7/8"	4.440	58,000	231,762	5,263	4,828	6,035	6,760	7,243	7,581	9,657	14,485	5,263	
2-3/4 x 8	4-1/4"	5.422	58,000	283,049	7,070	6,487	8,108	9,081	9,730	10,184	12,973	19,460	7,070	
3 x 8	4-5/8"	6.503	58,000	339,458	9,250	8,486	10,608	11,881	12,730	13,324	16,973	25,459	9,250	

TORQUE GUIDE FOR ASTM A449 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	92,000	30,447	207	190	238	266	285	299	381	571	207	
7/8 x 9	1-7/16"	0.461	92,000	42,033	334	306	383	429	460	481	613	919	334	
1x 8	1-5/8"	0.605	92,000	55,143	501	460	574	643	689	721	919	1,379	501	
1-1/8 x 8	1-13/16"	0.790	81,000	63,354	647	594	742	832	891	932	1,188	1,782	647	
1-1/4 x 8	2"	0.999	81,000	80,126	910	835	1,043	1,168	1,252	1,310	1,669	2,504	910	
1-3/8 x 8	2-3/16"	1.233	81,000	98,864	1,235	1,133	1,416	1,586	1,699	1,779	2,266	3,398	1,235	
1-1/2 x 8	2-3/8"	1.491	81,000	119,570	1,629	1,495	1,868	2,092	2,242	2,347	2,989	4,484	1,629	
1-5/8 x 8	2-9/16"	1.774	58,000	101,853	1,503	1,379	1,724	1,931	2,069	2,165	2,759	4,138	1,503	
1-3/4 x 8	2-3/4"	2.081	58,000	119,496	1,899	1,743	2,178	2,440	2,614	2,736	3,485	5,228	1,899	
1-7/8 x 8	2-15/16"	2.413	58,000	138,549	2,360	2,165	2,706	3,031	3,247	3,399	4,330	6,494	2,360	
2 x 8	3-1/8"	2.769	58,000	159,009	2,889	2,650	3,313	3,710	3,975	4,161	5,300	7,950	2,889	
2-1/8 x 8	3-5/16"	3.150	58,000	180,878	3,491	3,203	4,004	4,484	4,805	5,029	6,406	9,609	3,491	
2-1/4 x 8	3-1/2"	3.555	58,000	204,156	4,172	3,828	4,785	5,359	5,742	6,010	7,656	11,484	4,172	
2-3/8 x 8	3-11/16"	3.985	58,000	228,843	4,937	4,529	5,661	6,341	6,794	7,111	9,058	13,588	4,937	
2-1/2 x 8	3-7/8"	4.440	58,000	254,938	5,789	5,311	6,639	7,436	7,967	8,339	10,622	15,934	5,789	
2-3/4 x 8	4-1/4"	5.422	58,000	311,354	7,777	7,135	8,919	9,989	10,703	11,202	14,270	21,406	7,777	
3 x 8	4-5/8"	6.503	58,000	373,404	10,175	9,335	11,669	13,069	14,003	14,656	18,670	28,005	10,175	

