

## RECOMMENDED TORQUE FOR FLANGE BOLTING (B7/L7 STUDS)

Stud Diameter		Link Size	A.F.	A.F.	Tension	Tension	RAPID-TORC ® TOOL & PRESSURE		Torque	Torque	RAPID-TORC ® TOOL & PRESSURE		Torque	Torque
Inches	Metric	Reference	Inches	Metric	Kn	lbf	Bolt Stress - 52.5 ksi or 360 Mpa		Nm	Ft.lbs	Bolt Stress - 52.5 ksi or 360 Mpa		Nm	Ft.lbs
Recommended Torques for Flange Bolting							Stud Yield Point 105 ksi or 720 Mpa				Stud Yield Point 105 ksi or 720 Mpa			
Source: Api 6-A, Latest Edition Appendix D, Table D1 & D2							Stud Quality B7 - L7		Friction		Stud Quality B7 - L7		Friction	
ANSI / API 6A / ISO 10423:2003 Feb 1, 2005									<i>f</i> =0,07	<i>f</i> =0,07			<i>f</i> =0,13	<i>f</i> =0,13
Recommended Rapid-Torc machine											Recommended Rapid-Torc machine			
1/2"	12,70	14	7/8"	22,224	33	7450	MANUAL WRENCH 100 Nm		48	35	MANUAL WRENCH 100 Nm		80	59
5/8"	15,88	101	1 1/16"	27,000	52	11865	MANUAL WRENCH 100 Nm		92	68	MANUAL WRENCH 200 Nm		155	115
3/4"	19,05	104	1 1/4"	31,740	78	17559	MANUAL WRENCH 200 Nm		160	118	MANUAL WRENCH 300 Nm		270	200
7/8"	22,23	107	1 7/16"	36,511	107	24241	MANUAL WRENCH 300 Nm		253	188	MANUAL 550 Nm	RTX-2 @ 1,800 PSI	429	319
1"	25,40	110	1 5/8"	41,274	141	31802	MANUAL 550 Nm	RTX-2 @ 1,700 PSI	376	279	RTX-2 @ 2,700 PSI		639	474
1 1/8"	28,58	113	1 13/16"	46,000	184	41499	RTX-2 @ 2,400 PSI		540	401	RTX-2 @ 4,000 PSI		925	686
1 1/4"	31,75	200	2"	50,799	232	52484	RTX-2 @ 3,200 PSI		745	553	RTX-2 @ 5,6000 PSI		1285	953
1 3/8"	34,93	203	2 3/16"	55,561	286	64759	RTX-2 @ 4,400 PSI		996	739	RTX-2 @ 7,600 PSI		1727	1281
1 1/2"	38,10	206	2 3/8"	60,324	346	78322	RTX-2 @ 5,600 PSI		1297	962	RTX-4 @ 4,400 PSI		2261	1677
1 5/8"	41,28	209	2 9/16"	65,000	412	93173	RTX-2 @ 7,200 PSI		1653	1226	RTX-4 @ 5,500 PSI		2894	2146
1 3/4"	44,45	212	2 3/4"	69,848	484	109313	RTX-2 @ 9,000 PSI	RTX-4 @ 4,000 PSI	2069	1534	RTX-4 @ 7,000 PSI		3636	2696
1 7/8"	47,63	215	2 15/16"	74,611	561	126741	RTX-4 @ 4,900 PSI		2549	1890	RTX-4 @ 8,600 PSI		4493	3332
2"	50,80	302	3 1/8"	79,373	644	145458	RTX-4 @ 5,900 PSI		3097	2297	RTX-8 @ 5,100 PSI		5476	4061
2 1/4"	57,15	308	3 1/2"	88,898	826	186758	RTX-4 @ 8,500 PSI	RTX-8 @ 4,100 PSI	4418	3276	RTX-8 @ 7,200 PSI		7851	5822
2 1/2"	63,50	314	3 7/8"	98,423	1.032	233212	RTX-8 @ 5,600 PSI		6068	4500	RTX-14 @ 6,000 PSI		10828	8030

Stud Diameter		Link Size	A.F.	A.F.	Tension	Tension	B7-L7 - 47,5 ksi or 327,5 Mpa		Torque	Torque	B7-L7 - 47,5 ksi or 327,5 Mpa		Torque	Torque
Inches	Metric	Reference	Inches	Metric	Kn	lbf	Stud Yield Point 95 ksi or 655 Mpa		Nm	ft. lbs	Stud Yield Point 95 ksi or 655 Mpa		Nm	ft. lbs
Recommended Torques for Flange Bolting									<i>f=0,07</i>	<i>f=0,07</i>			<i>f=0,13</i>	<i>f=0,13</i>
Source: Api 6-A, Latest Edition Appendix D, Table D1 & D2														
ANSI / API 6A / ISO 10423:2003 Feb 1, 2005							Recommended Rapid-Torc machine				Recommended Rapid-Torc machine			
2 5/8"	66,68	401	4 1/16"	103,180	1.040	233765	RTX-8 @ 5,900 PSI		6394	4716	RTX-14 @ 6,400 PSI		11429	8430
2 3/4"	69,85	404	4 1/4"	107,948	1.146	257694	RTX-8 @ 6,700 PSI		7354	5424	RTX-14 @ 7,300 PSI		13168	9712
3"	76,20	410	4 5/8"	117,472	1.375	309050	RTX-8 @ 8,700 PSI	RTX-14 @ 5,300 PSI	9555	7047	RTX-14 @ 9,500 PSI	RTX-18 @ 7,200 PSI	17156	12654
3 1/4"	82,55	500	5"	126,998	1.624	365070	RTX-14 @ 6,700 PSI		12154	8965	RTX-18 @ 9,050 PSI	RTX-30 @ 5,200 PSI	21878	16136
3 1/2"	88,90	506	5 3/8"	136,525	1.899	426891								
3 3/4"	95,25	512	5 3/4"	146,050	2.185	491099	RTX-18 @ 7,800 PSI		18685	13782	RTX-30 @ 7,800 PSI		33766	24905
3 7/8"	98,43	515	5 15/16"	150,810	2.338	525521	RTX-18 @ 8,500 PSI	RTX-30 @ 4,800 PSI	20620	15208	RTX-30 @ 8,700 PSI		37293	27506
4"	101,60	602	6 1/8"	155,570	2.496	561108	RTX-18 @ 9,400 PSI	RTX-30 @ 5,300 PSI	22683	16730	RTX-30 @ 9,500 PSI		41057	30282

The tables in this document are for the convenience of the user only and are based on calculations which assume certain friction coefficients for the friction between studs and nuts, and between the nuts and the flanges face. Threads dimensions, surface finish of studs, nuts, flange face, degree of parallelism, lubrication, coating are some factors which affect the relationship between nut torque and stud stress.

Two Coefficient of friction are used in the tables.

A Coefficient of friction of 0,13 approximates the friction with threads and nut bearing surfaces being bare metal well-lubricated with thread compound tested in accordance with ISO 13678. A coefficient of friction of 0,07 approximates threads and nut face coated with fluoropolymer material

Minimum B7 Stud Yield Strength in PSI: From Bolt size 3/4" up to 2 1/2": 105,000 psi - From Bolt size 2 3/4" up to 4": 95,000 psi - From 4" up to 6": 75,000 psi

Tools recommendation are based on the concept "Best to Tight"<sup>TM</sup>. User must anticipate the disassembly.

If no overhead limited clearance, RT Series w/ Square Drive using Impact Socket is perfect. Check on [www.rapidtorc.com](http://www.rapidtorc.com) or email to [sales@rapidtorc.com](mailto:sales@rapidtorc.com)

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