

Flange Bolting - H13 Tool Steel (Inch)

Bolt Size	Part Number	Inch Dimensions					Flat Load (lbs)	*Torque (ft-lbs)
		O.D. D _e	I.D. D _i	Thick t	Dish h _o	Height l _o		
1/2"	H13 -1- 30	1.010	0.529	0.116	0.015	0.131	4,488	30
	H13 -1- 45	1.010	0.529	0.145	0.013	0.158	7,596	45
	H13 -1- 60	1.010	0.529	0.142	0.014	0.156	7,683	60
5/8"	H13 -2- 30	1.146	0.642	0.145	0.013	0.158	6,208	60
	H13 -2- 45	1.146	0.642	0.175	0.012	0.187	10,073	90
	H13 -2- 60	1.146	0.642	0.185	0.013	0.198	12,892	120
3/4"	H13 -3- 30	1.368	0.760	0.175	0.016	0.191	9,360	100
	H13 -3- 45	1.368	0.760	0.215	0.014	0.229	15,188	150
	H13 -3- 60	1.368	0.760	0.222	0.014	0.236	16,721	200
7/8"	H13 -4- 30	1.587	0.893	0.202	0.021	0.223	14,190	160
	H13 -4- 45	1.587	0.893	0.245	0.018	0.263	21,701	240
	H13 -4- 60	1.587	0.893	0.282	0.015	0.297	27,578	320
1"	H13 -5- 30	1.807	1.023	0.231	0.024	0.255	18,805	245
	H13 -5- 45	1.807	1.023	0.280	0.020	0.300	27,909	368
	H13 -5- 60	1.807	1.023	0.315	0.018	0.333	35,763	490
1-1/8"	H13 -6- 30	2.022	1.148	0.265	0.023	0.288	21,784	355
	H13 -6- 45	2.022	1.148	0.320	0.022	0.342	36,690	533
	H13 -6- 60	2.022	1.148	0.368	0.018	0.386	45,655	710
1-1/4"	H13 -7- 30	2.307	1.274	0.300	0.030	0.330	30,940	500
	H13 -7- 45	2.307	1.274	0.366	0.024	0.390	44,945	750
	H13 -7- 60	2.307	1.274	0.406	0.023	0.429	58,794	1,000
1-3/8"	H13 -8- 30	2.467	1.400	0.333	0.030	0.360	36,845	680
	H13 -8- 45	2.467	1.400	0.400	0.026	0.426	56,869	1,020
	H13 -8- 60	2.467	1.400	0.446	0.024	0.470	72,767	1,360
1-1/2"	H13 -9- 30	2.680	1.525	0.363	0.032	0.395	44,432	800
	H13 -9- 45	2.680	1.525	0.440	0.028	0.468	69,238	1,200
	H13 -9- 60	2.680	1.525	0.505	0.024	0.529	89,725	1,600
1-5/8"	H13 -10- 30	2.950	1.650	0.396	0.035	0.431	51,307	1,100
	H13 -10- 45	2.950	1.650	0.484	0.031	0.515	82,969	1,650
	H13 -10- 60	2.950	1.650	0.543	0.029	0.572	109,601	2,200
1-3/4"	H13 -11- 30	3.170	1.775	0.431	0.039	0.470	63,891	1,500
	H13 -11- 45	3.170	1.775	0.521	0.033	0.554	95,493	2,250
	H13 -11- 60	3.170	1.775	0.591	0.029	0.620	122,491	3,000
1-7/8"	H13 -12- 30	3.390	1.909	0.465	0.041	0.506	73,882	2,000
	H13 -12- 45	3.390	1.902	0.563	0.034	0.597	108,743	3,000
	H13 -12- 60	3.390	1.902	0.616	0.031	0.647	129,868	4,000
2"	H13 -13- 30	3.598	2.025	0.542	0.035	0.577	88,898	2,200
	H13 -13- 45	3.598	2.025	0.608	0.032	0.640	114,732	3,300
	H13 -13- 60	3.598	2.025	0.635	0.031	0.666	126,621	4,400
2-1/4"	H13 -14- 30	4.038	2.281	0.559	0.047	0.606	104,308	3,180
	H13 -14- 45	4.038	2.281	0.687	0.041	0.728	168,903	4,770
	H13 -14- 60	4.038	2.281	0.715	0.035	0.750	162,544	6,360
2-1/2"	H13 -15- 30	4.480	2.530	0.635	0.050	0.685	132,115	4,400
	H13 -15- 45	4.480	2.530	0.762	0.044	0.806	200,899	6,600
	H13 -15- 60	4.480	2.530	0.782	0.043	0.825	212,202	8,800
2-3/4"	H13 -16- 30	4.918	2.778	0.693	0.055	0.748	156,780	5,920
	H13 -16- 45	4.918	2.778	0.843	0.047	0.890	241,161	8,880
	H13 -16- 60	4.918	2.778	0.869	0.044	0.913	247,308	11,840
3"	H13 -17- 30	5.358	3.028	0.760	0.062	0.822	196,477	7,720
	H13 -17- 45	5.358	3.028	0.928	0.052	0.980	300,004	11,580
	H13 -17- 60	5.358	3.028	0.974	0.045	1.019	300,171	15,440
3-1/4"	H13 -18- 60	5.397	3.293	0.970	0.044	1.014	308,191	-----
3-1/2"	H13 -19- 60	6.130	3.525	1.175	0.046	1.221	417,985	-----
3-3/4"	H13 -20- 60	6.665	3.818	1.215	0.052	1.267	440,379	-----
4"	H13 -21- 60	7.130	4.050	1.350	0.059	1.409	594,417	-----

-30 denotes 30,000 psi bolt stress
 -45 denotes 45,000 psi bolt stress
 -60 denotes 60,000 psi bolt stress

* Torque values for sizes 1-1/8" and larger are based on the 8-pitch thread series for flanged piping