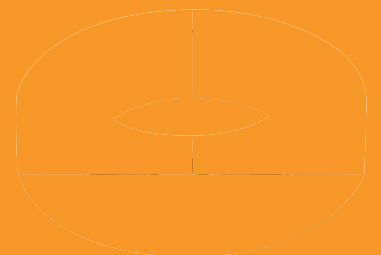


TIMKEN



TIMKEN® TAPERED ROLLER BEARING CATALOG



STANDARD LOCKNUTS, LOCKWASHERS AND TONGUED WASHERS – INCH

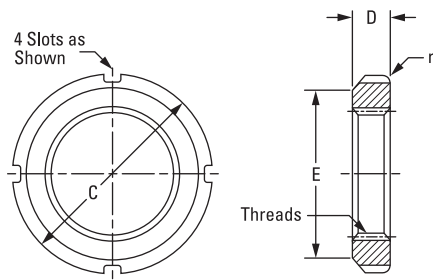


Fig. 52. Locknuts (threads are ISO 965/1, class 5H).

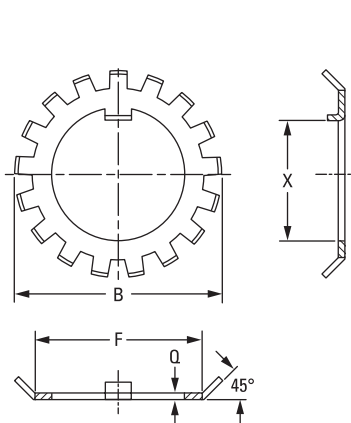


Fig. 53. Lockwashers.

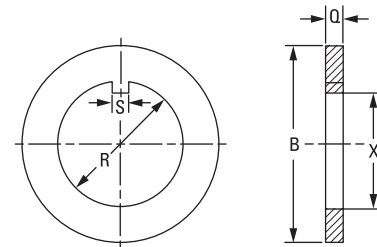


Fig. 54. Tongued washers.

Threads are American National, Form NS, Class 3, with thread length based on 45° chamfer.

ABMA Locknut Number	Locknut Dimensions						Lockwasher Dimensions					Tongued Washer Dimensions						
	Threads		Outside Dia.	Thick- ness	Free Outside Dia.	Corner Radius	ABMA Lock- washer Number	Max. Dia. Over Tangs	Face Dia.	Thick- ness	No. of Tangs	Tongued Washer Number	Bore		Outside Dia.	Thick- ness	Key	
	Min. Value of Major Dia.	Thread Sizes											Min.	Max.			Max.	Min.
		in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
N-00	0.391	32	0.755	0.229	0.625	0.047	TW100	0.891	0.625	0.032	9	K91500	0.406	0.421	0.798	0.109	0.120	0.334
N-01	0.469	32	0.880	0.323	0.719	0.047	TW101	1.031	0.719	0.032	9	K91501	0.484	0.499	0.923	0.109	0.120	0.412
N-02	0.586	32	1.005	0.323	0.813	0.047	TW102	1.156	0.813	0.048	11	K91502	0.601	0.616	1.173	0.125	0.120	0.513
N-03	0.664	32	1.130	0.354	0.938	0.047	TW103	1.344	0.938	0.048	11	K91503	0.679	0.694	1.173	0.125	0.120	0.591
N-04	0.781	32	1.380	0.385	1.125	0.047	TW104	1.563	1.125	0.052	11	K91504	0.801	0.816	1.423	0.125	0.176	0.713
N-05	0.969	32	1.568	0.416	1.281	0.047	TW105	1.703	1.281	0.052	13	K91505	0.989	1.009	1.860	0.125	0.176	0.897
N-06	1.173	18	1.755	0.416	1.500	0.047	TW106	1.953	1.500	0.052	13	K91506	1.193	1.213	1.860	0.125	0.176	1.081
TN-065	1.312	18	2.068	0.448	1.813	0.063	TW065	2.234	1.813	0.052	15	K915065	1.333	1.353	2.173	0.125	0.176	1.221
TN-07	1.376	18	2.068	0.448	1.813	0.063	TW107	2.250	1.813	0.052	15	K91507	1.396	1.416	2.173	0.125	0.176	1.284
TN-08	1.563	18	2.255	0.448	2.000	0.063	TW108	2.484	2.000	0.062	15	K91508	1.583	1.603	2.735	0.156	0.290	1.461
TN-09	1.767	18	2.536	0.448	2.281	0.063	TW109	2.719	2.281	0.062	17	K91509	1.792	1.817	2.735	0.156	0.290	1.670
TN-10	1.967	18	2.693	0.510	2.438	0.063	TW110	2.922	2.438	0.062	17	K91510	1.992	2.017	3.235	0.156	0.290	1.870
TN-11	2.157	18	2.974	0.510	2.656	0.063	TW111	3.094	2.656	0.062	17	K91511	2.182	2.207	3.235	0.156	0.290	2.060
TN-12	2.360	18	3.161	0.541	2.844	0.063	TW112	3.328	2.844	0.072	17	K91512	2.400	2.425	3.735	0.187	0.290	2.248
TN-13	2.548	18	3.380	0.573	3.063	0.094	TW113	3.563	3.063	0.072	19	K91513	2.588	2.613	3.735	0.187	0.290	2.436
TN-14	2.751	18	3.360	0.573	3.313	0.094	TW114	3.813	3.313	0.072	19	K91514	2.791	2.816	3.735	0.187	0.290	2.639
TAN-15	2.933	12	3.880	0.604	3.563	0.094	TW115	4.047	3.563	0.085	19	K91515	2.973	3.003	4.173	0.218	0.290	2.808
TAN-16	3.137	12	4.161	0.604	3.844	0.094	TW116	4.391	3.844	0.085	19	K91516	3.177	3.207	4.173	0.218	0.353	3.012
TAN-17	3.340	12	4.411	0.635	4.031	0.094	TW117	4.625	4.031	0.085	19	K91517	3.395	3.425	4.610	0.218	0.353	3.230
TAN-18	3.527	12	4.661	0.698	4.281	0.094	TW118	4.953	4.281	0.115	19	K91518	3.582	3.612	5.110	0.250	0.353	3.387
TAN-19	3.730	12	4.943	0.729	4.563	0.125	TW119	5.234	4.563	0.115	19	K91519	3.800	3.830	5.110	0.250	0.353	3.605
TAN-20	3.918	12	5.193	0.760	4.813	0.125	TW120	5.484	4.813	0.115	19	K91520	3.988	4.018	5.610	0.250	0.353	3.778
TAN-21	4.122	12	5.443	0.760	5.000	0.125	TW121	5.703	5.000	0.115	19	K91521	4.192	4.222	5.610	0.250	0.353	3.982
TAN-22	4.325	12	5.724	0.791	5.281	0.125	TW122	6.000	5.281	0.130	19	K91522	4.395	4.425	6.110	0.281	0.353	4.170
TAN-24	4.716	12	6.130	0.823	5.688	0.125	TW124	6.531	5.688	0.155	19	K91524	4.801	4.831	6.735	0.375	0.353	4.551
TAN-26	5.106	12	6.755	0.885	6.188	0.125	TW126	7.047	6.188	0.155	19	K91526	5.191	5.226	7.485	0.375	0.435	4.921
TAN-128	5.497	12	7.099	1.198	6.531	0.125	TW128	7.438	6.531	0.155	19	K91528	5.582	5.617	7.485	0.375	0.590	5.312
TAN-130	5.888	12	7.693	1.260	7.063	0.125	TW130	8.063	7.063	0.193	19	K91530	5.983	6.018	7.985	0.375	0.590	5.675
TAN-132	6.284	8	8.068	1.291	7.438	0.156	TW132	8.453	7.438	0.193	19	K91532	6.389	6.424	8.485	0.375	0.590	6.081
TAN-134	6.659	8	8.661	1.354	8.031	0.156	TW134	9.078	8.031	0.193	19	K91534	6.764	6.799	8.985	0.375	0.715	6.456
TAN-136	7.066	8	9.068	1.416	8.375	0.156	TW136	9.438	8.375	0.193	19	K91536	7.171	7.206	9.235	0.375	0.715	6.863
TAN-138	7.472	8	9.474	1.416	8.781	0.156	TW138	9.859	8.781	0.193	19	K91538	7.577	7.612	9.735	0.375	0.715	7.269
TAN-140	7.847	8	9.849	1.510	9.156	0.156	TW140	10.406	9.156	0.193	19	K91540	7.982	8.017	10.110	0.375	0.840	7.674

SHAFT THREAD AND KEYWAY DIMENSIONS FOR STANDARD LOCKNUTS, LOCKWASHERS AND TONGUED WASHERS

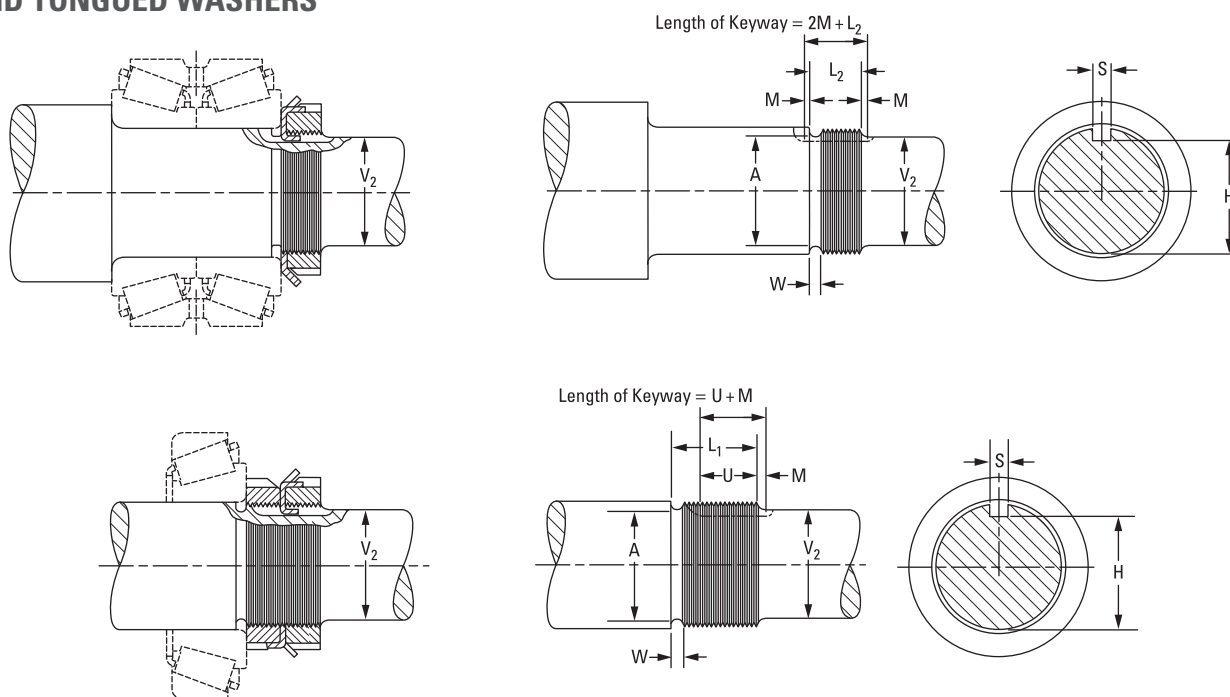


Fig. 55. Locknuts, lockwashers and tongued washers.

These dimensions are ABMA standards.

Threads											Shaft Ext. Dia. V ₂ Max.	Thread Length		Keyway				
ABMA Locknut Number	Number Per Inch	Major Diameter			Pitch Diameter ⁽¹⁾			Minor Diameter	Relief Diameter	Relief Width +0.016 0.000		+0.016 -0.000	+0.016 -0.000	Depth Max.	Width			
		Max.	Tol.	Min.	Max.	Tol.	Min.					Max.	A		W	L ₁	L ₂	H
	in.	in.	in.	in.	in.	in.	in.		in.	in.	in.	in.	in.	in.	in.	in.	in.	
N-00	32	0.391	0.0054	0.3856	0.3707	0.0026	0.3681	0.3257	0.3371 ± 0.005	0.062	0.312	0.593	0.375	0.287	0.125	0.094	0.469	
N-01	32	0.469	0.0054	0.4636	0.4487	0.0026	0.4461	0.4307	0.4151 ± 0.005	0.062	0.406	0.781	0.468	0.366	0.125	0.094	0.562	
N-02	32	0.586	0.0054	0.5806	0.5657	0.0030	0.5627	0.5477	0.5321 ± 0.005	0.062	0.500	0.812	0.500	0.485	0.125	0.094	0.594	
N-03	32	0.664	0.0054	0.6586	0.6437	0.0030	0.6407	0.6257	0.6101 ± 0.005	0.062	0.562	0.875	0.531	0.564	0.125	0.094	0.625	
N-04	32	0.781	0.0054	0.7756	0.7607	0.0034	0.7573	0.7427	0.7271 ± 0.005	0.062	0.703	0.906	0.531	0.676	0.188	0.094	0.625	
N-05	32	0.969	0.0054	0.9636	0.9487	0.0034	0.9453	0.9307	0.9151 ± 0.005	0.062	0.875	1.000	0.593	0.835	0.188	0.125	0.719	
N-06	18	1.173	0.0082	1.1648	1.1369	0.0040	1.1329	1.1048	1.0892 ± 0.005	0.093	1.062	1.000	0.593	1.040	0.188	0.125	0.719	
TN-065	18	1.312	0.0082	1.3043	1.2764	0.0040	1.2724	1.2443	1.2287 ± 0.005	0.093	1.188	1.062	0.625	1.180	0.188	0.125	0.750	
TN-07	18	1.376	0.0082	1.3678	1.3399	0.0040	1.3359	1.3078	1.2922 ± 0.005	0.093	1.250	1.062	0.625	1.244	0.188	0.125	0.750	
TN-08	18	1.563	0.0082	1.5548	1.5269	0.0045	1.5224	1.4948	1.4792 ± 0.005	0.093	1.438	1.062	0.625	1.422	0.312	0.125	0.750	
TN-09	18	1.767	0.0082	1.7588	1.7309	0.0045	1.7264	1.6988	1.6832 ± 0.005	0.125	1.656	1.062	0.625	1.628	0.312	0.156	0.781	
TN-10	18	1.967	0.0082	1.9588	1.9309	0.0045	1.9264	1.8988	1.8832 ± 0.005	0.125	1.859	1.187	0.687	1.830	0.312	0.156	0.844	
TN-11	18	2.157	0.0082	2.1488	2.1209	0.0051	2.1158	2.0888	2.0732 ± 0.005	0.125	2.047	1.187	0.687	2.021	0.312	0.156	0.844	
TN-12	18	2.360	0.0082	2.3518	2.3239	0.0051	2.3188	2.2918	2.2762 ± 0.005	0.125	2.250	1.281	0.750	2.194	0.312	0.156	0.906	
TN-13	18	2.548	0.0082	2.5398	2.5119	0.0051	2.5068	2.4798	2.4642 ± 0.005	0.125	2.422	1.343	0.781	2.382	0.312	0.156	0.938	
TN-14	18	2.751	0.0082	2.7428	2.7149	0.0051	2.7098	2.6828	2.6672 ± 0.005	0.125	2.625	1.343	0.781	2.586	0.312	0.250	1.000	
TAN-15	12	2.933	0.0112	2.9218	2.8789	0.0054	2.8735	2.8308	2.7995 ± '0.010	0.156	2.781	1.406	0.812	2.737	0.312	0.250	1.031	

⁽¹⁾This standard is applicable to steel nuts. When either the nut or the shaft is made of stainless steel, aluminum, or other material having a tendency to seize, it is recommended that the maximum thread diameter of the shaft, both major and pitch, be reduced by 20 percent of the listed pitch diameter tolerance.

⁽²⁾Suggested tolerance on these dimensions of +0.016/-0.000 in.

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