

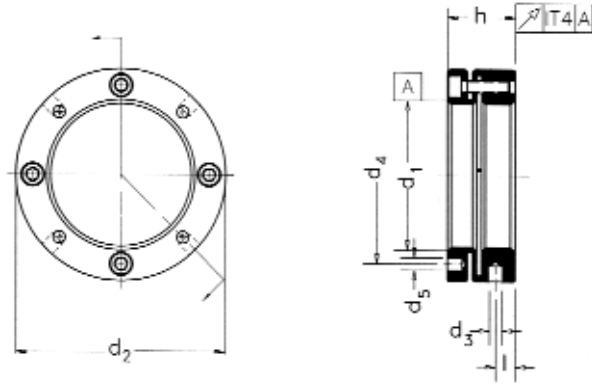
SPIETH Adjustable Locknuts Series MSR - Inch

Fig. 12

Designation of a locknut with
 $d_1 = 17\text{mm} \times 32\text{ threads/in.}$
 Locknut MSR 17 x 32
 $d_1 = 5/8" \times 18\text{ threads/in.}$
 Locknut MSR 5/8" x 18

The allowable axial loads specified in the table are guideline values calculated with a safety margin of 1.6

- under static load, based on the minimum yield point,
- under dynamic loads, based on the minimum fatigue strength.



MSR ($d_1 \times \text{thread}$) in	Equivalent bearing nut	Dimensions in inches						Clamp screws			Calculation factor A	Locknut- specific allowance B	Allowable axial load		Mass moment of inertia J	
		d_2	$d_3^{1)}$	d_4	$d_5^{1)}$	l	h	Sizes	n	T_s			dyn.	stat.		
ANSF class 3								SHCS	Qty	in lbs	mm	N	kN	kN	kg cm ²	
17 x 32	N-03	1.38	.158	1.00	.169	.19	.70	M 4x12	4	25	1.092	3947	19	25	0.147	
20 x 32	N-04	1.57	.158	1.12	.169	.19	.70	M 4x12	4	25	1.270	3900	22	29	0.283	
25 x 32	N-05	1.77	.197	1.36	.169	.25	.78	M 4x12	4	25	1.524	3822	33	47	0.488	
30 x 18	N-06	1.89	.197	1.52	.169	.25	.78	M 4x12	4	25	1.905	3744	38	57	0.588	
35 x 18	N-07	2.09	.197	1.71	.169	.27	.86	M 4x16	4	25	2.210	3666	47	66	0.914	
40 x 18	N-08	2.28	.197	1.91	.169	.27	.86	M 4x16	4	25	2.464	3588	49	66	1.254	
45 x 18	N-09	2.68	.236	2.17	.169	.25	.86	M 4x16	6	25	2.769	5265	53	84	2.494	
50 x 18	N-10	2.76	.236	2.30	.169	.35	.98	M 4x18	6	25	3.073	5148	71	94	2.909	
55 x 18	N-11	2.95	.236	2.50	.169	.35	.98	M 4x18	6	25	3.353	5031	72	96	3.690	
60 x 18	N-12	3.31	.236	2.78	.209	.35	1.02	M 5x18	6	40	3.632	8001	123	163	6.317	
65 x 18	N-13	3.50	.236	2.97	.209	.41	1.10	M 5x20	6	40	3.912	7811	134	177	7.708	
70 x 18	N-14	3.74	.315	3.19	.209	.37	1.10	M 5x20	6	40	4.217	7620	153	203	10.500	
75 x 12	AN-15	3.94	.315	3.43	.252	.34	1.10	M 6x20	6	75	4.572	10530	121	160	12.346	
80 x 12	AN-16	4.33	.315	3.62	.252	.43	1.26	M 6x22	6	75	4.877	10260	194	258	22.033	
85 x 12	AN-17	4.53	.315	3.82	.252	.43	1.26	M 6x22	6	75	5.182	9990	198	262	25.660	
90 x 12	AN-18	4.72	.315	4.06	.252	.43	1.26	M 6x22	6	75	5.436	9720	200	265	29.615	
95 x 12	AN-19	4.92	.315	4.25	.252	.43	1.26	M 6x22	6	75	5.741	9450	203	268	34.017	
100 x 12	AN-20	5.12	.315	4.45	.252	.43	1.26	M 6x22	6	75	6.020	9180	205	271	38.838	
105 x 12	AN-21	5.31	.315	4.65	.252	.43	1.26	M 6x22	6	75	6.325	8910	207	274	44.097	
110 x 12	AN-22	5.51	.315	4.84	.252	.43	1.26	M 6x22	6	75	6.604	8370	248	239	64.164	
120 x 12	AN-24	6.10	.315	5.32	.252	.51	1.41	M 6x25	6	75	7.188	8100	308	408	89.668	
130 x 12	AN-26	6.50	.315	5.71	.252	.51	1.41	M 6x25	6	75	7.772	7560	306	405	110.500	
140 x 12	AN-28	7.09	.394	6.10	.252	.47	1.41	M 6x25	8	75	8.331	9360	359	476	160.977	
150 x 12	AN-30	7.50	.394	6.50	.252	.47	1.41	M 6x25	8	75	8.915	8640	369	489	197.954	
160 x 8	AN-32	8.07	.394	7.08	.331	.55	1.57	M 8x30	8	155	9.652	14520	417	552	301.314	
170 x 8	AN-34	8.50	.394	7.40	.331	.55	1.57	M 8x30	8	155	10.185	13200	423	560	353.347	
180 x 8	AN-36	9.06	.394	8.87	.331	.55	1.57	M 8x30	8	155	10.770	11880	489	648	477.504	
190 x 8	AN-38	9.45	.394	8.27	.331	.55	1.57	M 8x30	8	155	11.405	10560	495	656	550.330	
200 x 8	AN-40	9.65	.394	8.58	.331	.55	1.57	M 8x30	8	155	11.938	9240	436	578	544.727	
AMERICAN STANDARD CLASS 3 FIT																
5/8" x 18	—	1.38	.187	.96	.187	.19	.70	8-32 x .50	4	25	1.092	3962	19	25	0.147	
3/4" x 16	—	1.56	.187	1.12	.187	.19	.70	8-32 x .50	4	25	1.295	3916	22	29	0.283	
7/8" x 14	—	1.56	.187	1.20	.187	.19	.70	8-32 x .50	4	25	1.524	3869	23	32	0.270	
1" x 12	—	1.75	.187	1.36	.187	.25	.78	8-32 x .50	4	25	1.702	3822	33	47	0.488	
1-1/8" x 12	—	1.88	.187	1.44	.187	.25	.78	8-32 x .50	4	25	1.905	3775	36	53	0.504	
1-1/4" x 12	—	2.00	.201	1.60	.187	.27	.86	8-32 x .50	4	25	2.108	3713	44	64	0.743	
1-3/8" x 12	—	2.12	.201	1.71	.187	.27	.86	8-32 x .63	4	25	2.286	3666	47	66	0.914	
1-1/2" x 12	—	2.25	.201	1.83	.187	.27	.86	8-32 x .63	4	25	2.464	3620	50	75	1.337	
1-5/8" x 12	—	2.38	.201	1.98	.187	.27	.86	8-32 x .63	4	25	2.642	3572	49	66	1.254	
1-3/4" x 12	—	2.69	.201	2.17	.187	.25	.86	8-32 x .63	6	25	2.820	5265	53	84	2.494	
1-7/8" x 12	—	2.69	.250	2.23	.187	.26	.86	8-32 x .63	6	25	3.023	5195	70	94	2.631	
2" x 12	—	2.75	.250	2.34	.187	.35	.98	8-32 x .75	6	25	3.200	5125	72	96	2.909	
2-1/4" x 12	—	3.00	.250	2.58	.187	.35	.98	8-32 x .75	6	25	3.581	8077	122	161	5.811	
2-1/2" x 12	—	3.50	.328	2.94	.219	.38	1.10	10-32 x .75	6	40	3.937	7849	135	175	7.331	
2-3/4" x 12	—	3.75	.328	3.19	.219	.37	1.10	10-32 x .75	6	40	4.318	7620	153	203	10.500	
3" x 12	—	4.00	.328	3.49	.281	.33	1.10	1/4-20 x .75	6	75	4.674	10476	136	180	12.346	

1) In same quantity as clamp screws.
 Spanner wrenches available upon request.

Specifications are subject to change without notice.
 Specials available upon request.

Special Locknuts with American Standard Threads are made to your specifications. We invite you to furnish a sketch or layout indicating your design specifications. We will submit recommendations and application sketches to guarantee an optimum design.

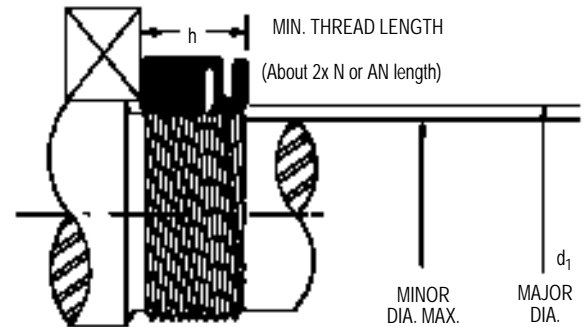
MALE THREAD DATA

AMERICAN NATIONAL STD. FINE-CLASS 3 FIT
Limiting Dimensions for External Threads (Bolts)
to Suit Spieth Adjustable Locknuts

Dimensions in Inches

SPIETH MSR Locknut	Equiv. lock-nut no.	Major dia.		Minor dia.-max.	Pitch dia.		h
		Max.	Min.		Max.	Min.	
Special	N-00	.391	.386	.3527	.3707	.3681	.75
Special	N-01	.469	.464	.4307	.4487	.4461	.75
Special	N-02	.586	.581	.5477	.5657	.5627	.75
17x32	N-03	.664	.659	.6257	.6437	.6407	.75
20x32	N-04	.781	.776	.7427	.7607	.7573	.75
25x32	N-05	.969	.964	.9307	.9487	.9453	.75
30x18	N-06	1.173	1.165	1.1048	1.1369	1.1329	.81
35x18	N-07	1.376	1.368	1.3078	1.3399	1.3359	.88
40x18	N-08	1.563	1.555	1.4948	1.5269	1.5224	.88
45x18	N-09	1.767	1.759	1.6988	1.7309	1.7264	.88
50x18	N-10	1.967	1.959	1.8988	1.9309	1.9264	1.06
55x18	N-11	2.157	2.149	2.0888	2.1209	2.1158	1.06
60x18	N-12	2.360	2.352	2.2918	2.3239	2.3188	1.06
65x18	N-13	2.548	2.540	2.4798	2.5119	2.5068	1.12
70x18	N-14	2.751	2.743	2.6828	2.7149	2.7098	1.12
75x12	AN-15	2.933	2.922	2.8308	2.8789	2.8735	1.12
80x12	AN-16	3.137	3.126	3.0348	3.0829	3.0770	1.28
85x12	AN-17	3.340	3.329	3.2378	3.2859	3.2785	1.28
90x12	AN-18	3.527	3.516	3.4248	3.4729	3.4655	1.28
95x12	AN-19	3.730	3.719	3.6278	3.6759	3.6685	1.28
100x12	AN-20	3.918	3.907	3.8158	3.8639	3.8565	1.28
105x12	AN-21	4.122	4.111	4.0198	4.0679	4.0596	1.28
110x12	AN-22	4.325	4.314	4.2228	4.2709	4.2626	1.28
120x12	AN-24	4.716	4.705	4.6138	4.6619	4.6536	1.50
130x12	AN-26	5.106	5.095	5.0038	5.0519	5.0436	1.50
140x12	AN-28	5.497	5.486	5.3948	5.4429	5.4346	1.50
150x12	AN-30	5.888	5.877	5.7858	5.8339	5.8256	1.50
160x 8	AN-32	6.284	6.269	6.1306	6.2028	6.1937	1.62
170 x 8	AN-34	6.659	6.644	6.5056	6.5778	6.5687	1.62
180x 8	AN-36	7.066	7.051	6.9126	6.9848	6.9757	1.62
190x 8	AN-38	7.472	7.457	7.3186	7.3908	7.3817	1.62
200x 8	AN-40	7.847	7.832	7.6936	7.7658	7.7544	1.62

Fig. 13



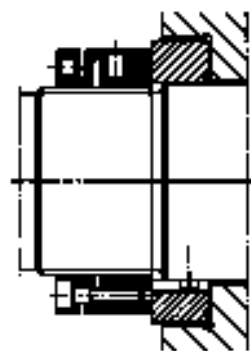
SPIETH MSR Locknut	Major dia.		Minor dia.-max.	Pitch dia.		h
	Max.	Min.		Max.	Min.	
5/8"-18	.625	.6168	.5568	.5889	.5859	.75
3/4"-16	.750	.7410	.6733	.7094	.7062	.75
7/8"-14	.875	.8652	.7874	.8286	.8250	.75
1"-12	1.000	.9886	.8978	.9459	.9415	.75
1-1/8"-12	1.125	1.1136	1.0228	1.0709	1.0664	.81
1-1/4"-12	1.250	1.2388	1.1478	1.1959	1.1919	.88
1-3/8"-12	1.375	1.3638	1.2728	1.3209	1.3169	.88
1-1/2"-12	1.500	1.4888	1.3978	1.4459	1.4419	.88
1-5/8"-12	1.625	1.6138	1.5228	1.5709	1.5664	.88
1-3/4"-12	1.750	1.7388	1.6478	1.6959	1.6913	.88
1-7/8"-12	1.875	1.8638	1.7728	1.8209	1.8163	.88
2"-12	2.000	1.9888	1.8978	1.9459	1.9412	1.06
2-1/4"-12	2.250	2.2388	2.1478	2.1959	2.1911	1.06
2-1/2"-12	2.500	2.4888	2.3978	2.4459	2.4410	1.12
2-3/4"-12	2.750	2.7388	2.6478	2.6959	2.6909	1.12
3"-12	3.000	2.9888	2.8978	2.9459	2.9408	1.12

Fig. 14



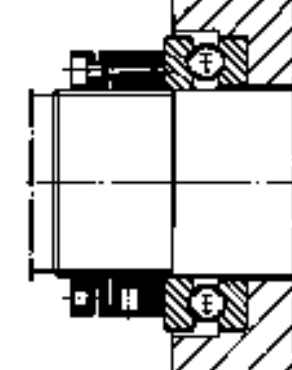
Axial positioning of spring on shaft.

Fig. 15



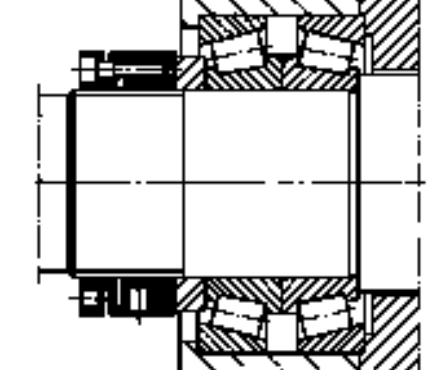
Axial play adjustment on thrust washer.

Fig. 16



Adjustment of axial thrust bearings.

Fig. 17



Ball screw end mounting.