



Acme - The Transversal Motion Thread

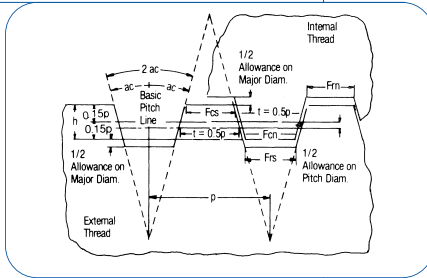
Designating General Purpose and Centralizing Acmes

The correct manner to describe these threads is:

(A) 1-1/2 - 4NA - 2G describes a 1-1/2" major diameter (1-1/2), 0.25 or 4 pitch (4), Acme thread (NA), Class 2 General Purpose type (2G).

(B) 2-1/2 - 3NA - 3C - LH describes a 2-1/2" major diameter (2-1/2), 3 or 0.3333 pitch (3), Acme thread (NA), Class 3 Centralizing type (3C), left hand (LH).

(C) 2 - 0.25 - 0.5L - 2NA - 3G. This describes a 2" major diameter (2), 1/4 or 0.25 pitch (4), 0.50 or 1/2 lead (0.5L), double Acme thread (2NA), Class 3 General Purpose type (3G).



STANDARD STUB ACME THREAD FORM, BASIC DIMENSIONS

Threads Per Inch	Pitch, P	Height of thread (basic), h=0.3p	Total height Thread hs=ht (basic), t=p/2	Thread thickness (basic), t=p/2	Crest of internal thread (basic), F=0.4224p	Root of internal thread Fm=0.4224p-0.259 x allowance
16	0.06250	0.01875	0.0238	0.03125	0.0264	0.0238
14	0.07143	0.02143	0.0264	0.3571	0.0302	0.0276
12	0.08333	0.02500	0.0300	0.04167	0.0352	0.0326
10	0.10000	0.03000	0.0400	0.05000	0.0422	0.0370
9	0.11111	0.03333	0.0433	0.05556	0.0469	0.0417
8	0.12500	0.03750	0.0475	0.06250	0.0528	0.0476
7	0.14286	0.04286	0.0529	0.07143	0.0603	0.0551
6	0.16667	0.05000	0.0600	0.08333	0.0704	0.0652
5	0.20000	0.06000	0.0700	0.10000	0.0845	0.0793
4	0.25000	0.07500	0.0850	0.12500	0.1056	0.1004
3-1/2	0.28571	0.08571	0.0957	0.14286	0.1207	0.1155
3	0.33333	0.10000	0.1100	0.16667	0.1408	0.1356
2-1/2	0.40000	0.12000	0.1300	0.20000	0.1690	0.1638
2	0.50000	0.15000	0.1600	0.25000	0.2112	0.2060
1-1/2	0.66667	0.20000	0.2100	0.33333	0.2816	0.2764
1-1/3	0.75000	0.22500	0.2350	0.37500	0.3168	0.3116
1	1.00000	0.30000	0.3100	0.50000	0.4224	0.4172

"Stub" Acme

Originally derived from the General Purpose form, the Stub Acme is generally used for applications where a coarse pitch thread of shallow depth must be used due to mechanical or metallurgical considerations.

What would a typical Stub Acme be used for? A standard 1-1/2 - 5P Acme is planned for a part, but the amount of metal removal would reduce the minor diameter to the point where the torque would twist the part. The solution: use a 1-1/2", 5 pitch two start, or 1-1/2", 5 pitch Stub Acme.

Thread height for Standard Stub Acmes is equal to 0.3 times the pitch, while the height of a Standard Acme is 1/2 of the pitch. Otherwise, the forms are identical.

Here is how to correctly describe a Stub Acme: 1/2" - 10 Stub Acme - 2G corresponds to 1/2" nominal size, 10 pitch Stub Acme, Class 2G. (Class 2G is the same as for the General Purpose Acme.)



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Modified Stub Acme Threads

Recognizing that the Standard Stub Acme does not always provide an accepted thread for all applications, basic data for two other commonly used forms have been tabulated. These are designated Modified Forms 1 and 2. Always use the Standard Stub Acme form in preference to the Modified forms where it is practical.

Where a fit with less backlash is needed, the tolerances and allowances for General Purpose threads can be used to determine limiting dimensions for mating threads. For special designs, allowances and tolerances can be taken directly from the Standard Stub Acme threads.

Therefore, the major diameter and basic thread thickness at the pitch line for both external and internal threads will be the same as those for Standard Stub Acmes.

Pitch and minor diameters will vary from the data shown in Table IV for the following:

For Modified Form 1, (M1) - the pitch and minor diameters will be smaller than similar values for the standard form.

For Modified Form 2, (M2) - the pitch and minor diameters will be larger than the values for the standard form.

Modified Stub Acmes are designated as follows:

1/2" -20 Stub Acme M1 indicates a Modified Form 1 right hand thread.

Changing M1 to M2 changes the designation to a Modified Form 2 thread.

Adding LH after M1 or M2 (e.g. 1/2 - 20 Stub Acme - M1 - LH) changes the designation from a right to a left hand thread.

M1 AND M2 STUB ACME THREAD FORMS, BASIC DIMENSIONS

Threads Per Inch, n	Pitch, P	Height of thread (basic), h=0.375p	Total height of thread hs=h+1/2 allowance	Thread thickness (basic), t=p/2	Width of flat at crest of internal thread (basic), Fcn=0.4030p	Threads per inch, n	Pitch P	Height of thread (basic), h=0.250p	Total height of thread hs=h+1/2 allowance	Thread thickness (basic), t=p/2	Width of flat at crest of internal thread (basic), Fcn=0.4353p	
											Inch	Inch
16	0.06250	0.02344	0.0284	0.03125	0.0252	16	0.06250	0.01563	0.0206	0.03125	0.0272	
14	0.07143	0.02679	0.0318	0.03572	0.0288	14	0.07143	0.01786	0.0229	0.03571	0.0311	
12	0.08333	0.03125	0.0363	0.04167	0.0336	12	0.08333	0.02083	0.0258	0.04167	0.0363	
10	0.10000	0.03750	0.0475	0.05000	0.0403	10	0.10000	0.02500	0.0350	0.5000	0.0435	
9	0.11111	0.04167	0.0517	0.05556	0.0448	9	0.11111	0.02778	0.0378	0.05556	0.0484	
8	0.12500	0.04688	0.0569	0.06250	0.0504	8	0.12500	0.03125	0.0413	0.06250	0.0544	
7	0.14286	0.05357	0.0636	0.07143	0.0576	7	0.14286	0.03571	0.0457	0.07143	0.0622	
6	0.16667	0.06250	0.0725	0.08333	0.0672	6	0.16667	0.04167	0.0517	0.8333	0.0726	
5	0.20000	0.07500	0.0850	0.10000	0.0806	5	0.20000	0.05000	0.0600	0.10000	0.0871	
4	0.25000	0.09375	0.1038	0.12500	0.1008	4	0.25000	0.06250	0.0725	0.12500	0.1088	
3-1/2	0.28571	0.10714	0.1171	0.14286	0.1151	3-1/2	0.28571	0.7143	0.0814	0.14286	0.1244	
3	0.33333	0.12500	0.1350	0.16667	0.1343	3	0.33333	0.08333	0.0933	0.16667	0.1451	
2-1/2	0.40000	0.15000	0.1600	0.20000	0.1612	2-1/2	0.40000	0.10000	0.1100	0.20000	0.1741	
2	0.50000	0.18750	0.1975	0.25000	0.2015	2	0.50000	0.12500	0.1350	0.25000	0.2177	
1-1/2	0.66667	0.25000	0.2600	0.33333	0.2687	1-1/2	0.66667	0.16667	0.1767	0.33333	0.2902	
1-1/3	0.75000	0.28125	0.2913	0.37500	0.3023	1-1/3	0.75000	0.18750	0.1975	0.37500	0.3265	
1	1.00000	0.37500	0.3850	0.50000	0.4030	1	1.00000	0.25000	0.2600	0.50000	0.4353	

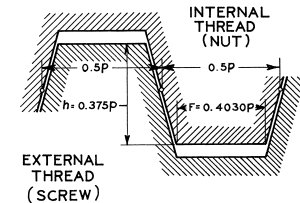
*Allowance is shown in table XIII. 3, column 4 in Screw-Thread Standards for Federal Services, Handbook H-28, part III.

Special Diameter/Pitches

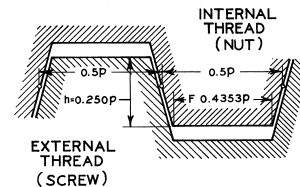
While standard series for Acme threads have been established, information on a wide range of special diameter and pitch combinations (with corresponding tolerances for special applications) is available from Landis Threading Systems.

Standard Acmes can be produced with a die head on diameters ranging from 1/2 to 4".

Acmes larger than 4" can also be threaded if finer pitches are involved.



Modified Form 1 Stub Acme thread with basic height of 0.375 pitch.



Modified Form 2 Stub Acme thread with basic height of 0.25 pitch.