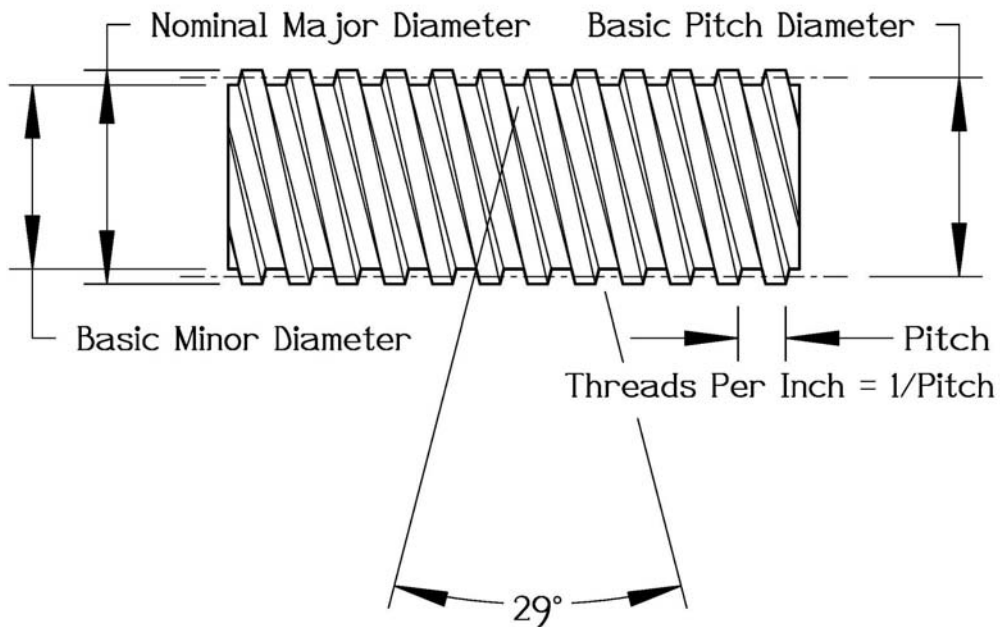


## Acme Thread Data Sheets:



The tables following provide information designer's need to apply 29° Acme threads to projects properly. Please note that callouts for Acme threads currently (2006) exist as:

X.XXXX-TPI-NG-ACME-EXTERNAL for screw threads or  
X.XXXX-TPI-NG-ACME-INTERNAL for nut threads.

Where "X.XXXX" is the nominal major diameter given to four decimal places, TPI are the threads per inch, and "NG" is the class (2G, 3G, or 4G) of fit (2 is the loosest and 4 the tightest). The class of fit (see equations on page 4) has an allowance based on a combination of the square root of the nominal major diameter and the square root of the pitch.

ACME Screw Thread Data:

Thread Designation:	Thd Clr Dia:	Tap Bore Dia (Max):	Tensile Area (in <sup>2</sup> ):	Equip Pin Dia (in):	Screw Shear Area (in <sup>2</sup> /in):	Nut Shear Area (in <sup>2</sup> /in):
.2500-16-2G-ACME	.1618	.1925	.0263	.1831	.2944	.3846
.2500-16-3G-ACME	.1702	.1925	.0285	.1906	.2943	.3846
.2500-16-4G-ACME	.1722	.1925	.0292	.1928	.2943	.3846
.3125-14-2G-ACME	.2140	.2461	.0444	.2377	.3784	.4827
.3125-14-3G-ACME	.2231	.2461	.0475	.2458	.3783	.4826
.3125-14-4G-ACME	.2254	.2461	.0484	.2482	.3783	.4825
.3750-12-2G-ACME	.2632	.2967	.0659	.2897	.4577	.5806
.3750-12-3G-ACME	.2730	.2967	.0699	.2984	.4575	.5804
.3750-12-4G-ACME	.2755	.2967	.0712	.3012	.4575	.5804
.4375-12-2G-ACME	.3253	.3592	.0972	.3518	.5557	.6787
.4375-12-3G-ACME	.3354	.3592	.1022	.3608	.5556	.6785
.4375-12-4G-ACME	.3379	.3592	.1038	.3636	.5555	.6784
.5000-10-2G-ACME	.3594	.4050	.1225	.3950	.6273	.7763
.5000-10-3G-ACME	.3704	.4050	.1288	.4049	.6271	.7760
.5000-10-4G-ACME	.3731	.4050	.1306	.4079	.6270	.7759
.6250-8-2G-ACME	.4570	.5063	.1955	.4989	.7833	.9694
.6250-8-3G-ACME	.4693	.5063	.2042	.5100	.7829	.9689
.6250-8-4G-ACME	.4723	.5063	.2069	.5133	.7828	.9688
.7500-6-2G-ACME	.5371	.5917	.2732	.5898	.9117	1.1593
.7500-6-3G-ACME	.5511	.5917	.2849	.6023	.9110	1.1583
.7500-6-4G-ACME	.5546	.5917	.2884	.6060	.9108	1.1581
.8750-6-2G-ACME	.6615	.7167	.4003	.7139	1.1072	1.3547
.8750-6-3G-ACME	.6758	.7167	.4149	.7268	1.1062	1.3536
.8750-6-4G-ACME	.6794	.7167	.4193	.7307	1.1060	1.3533
1.0000-5-2G-ACME	.7509	.8100	.5175	.8118	1.2475	1.5437
1.0000-5-3G-ACME	.7664	.8100	.5354	.8257	1.2461	1.5421
1.0000-5-4G-ACME	.7703	.8100	.5409	.8299	1.2458	1.5417
1.1250-5-2G-ACME	.8753	.9350	.6881	.9360	1.4424	1.7387
1.1250-5-3G-ACME	.8912	.9350	.7093	.9503	1.4408	1.7368
1.1250-5-4G-ACME	.8951	.9350	.7158	.9547	1.4404	1.7363
1.2500-5-2G-ACME	.9998	1.0600	.8831	1.0604	1.6374	1.9337
1.2500-5-3G-ACME	1.0159	1.0600	.9075	1.0749	1.6356	1.9315
1.2500-5-4G-ACME	1.0199	1.0600	.9150	1.0794	1.6351	1.9310
Thread Designation:	Thd Clr Dia:	Tap Bore Dia (Max):	Tensile Area (in <sup>2</sup> ):	Equip Pin Dia (in):	Screw Shear Area (in <sup>2</sup> /in):	Nut Shear Area (in <sup>2</sup> /in):

ACME Screw Thread Data:

Thread Designation:	Thd Clr Dia:	Tap Bore Dia (Max):	Tensile Area (in <sup>2</sup> ):	Equiv Pin Dia (in):	Screw Shear Area (in <sup>2</sup> /in):	Nut Shear Area (in <sup>2</sup> /in):
1.3750-4-2G-ACME	1.0719	1.1375	1.0301	1.1453	1.7465	2.1152
1.3750-4-3G-ACME	1.0896	1.1375	1.0589	1.1612	1.7438	2.1119
1.3750-4-4G-ACME	1.0940	1.1375	1.0678	1.1660	1.7431	2.1111
1.5000-4-2G-ACME	1.1965	1.2625	1.2662	1.2697	1.9406	2.3093
1.5000-4-3G-ACME	1.2144	1.2625	1.2986	1.2859	1.9376	2.3057
1.5000-4-4G-ACME	1.2188	1.2625	1.3085	1.2908	1.9368	2.3048
1.7500-4-2G-ACME	1.4456	1.5125	1.8112	1.5186	2.3289	2.6977
1.7500-4-3G-ACME	1.4640	1.5125	1.8511	1.5352	2.3252	2.6933
1.7500-4-4G-ACME	1.4685	1.5125	1.8635	1.5404	2.3242	2.6923
2.0000-4-2G-ACME	1.6948	1.7625	2.4536	1.7675	2.7173	3.0860
2.0000-4-3G-ACME	1.7136	1.7625	2.5012	1.7846	2.7128	3.0810
2.0000-4-4G-ACME	1.7183	1.7625	2.5162	1.7899	2.7117	3.0797
2.2500-3-2G-ACME	1.8572	1.9333	2.9898	1.9511	2.9465	3.4333
2.2500-3-3G-ACME	1.8783	1.9333	3.0485	1.9702	2.9392	3.4248
2.2500-3-4G-ACME	1.8835	1.9333	3.0666	1.9760	2.9374	3.4227
2.5000-3-2G-ACME	2.1065	2.1833	3.8020	2.2002	3.3311	3.8180
2.5000-3-3G-ACME	2.1279	2.1833	3.8694	2.2196	3.3227	3.8083
2.5000-3-4G-ACME	2.1333	2.1833	3.8907	2.2257	3.3206	3.8059
2.7500-3-2G-ACME	2.3558	2.4333	4.7115	2.4493	3.7158	4.2027
2.7500-3-3G-ACME	2.3776	2.4333	4.7883	2.4692	3.7062	4.1919
2.7500-3-4G-ACME	2.3831	2.4333	4.8124	2.4754	3.7039	4.1892
3.0000-2-2G-ACME	2.4326	2.5250	5.1814	2.5685	3.7306	4.4394
3.0000-2-3G-ACME	2.4579	2.5250	5.2740	2.5914	3.7135	4.4190
3.0000-2-4G-ACME	2.4642	2.5250	5.3026	2.5984	3.7092	4.4139
3.5000-2-2G-ACME	2.9314	3.0250	7.3878	3.0670	4.4777	5.1867
3.5000-2-3G-ACME	2.9574	3.0250	7.5017	3.0906	4.4566	5.1623
3.5000-2-4G-ACME	2.9638	3.0250	7.5367	3.0978	4.4514	5.1562
4.0000-2-2G-ACME	3.4302	3.5250	9.9846	3.5655	5.2251	5.9342
4.0000-2-3G-ACME	3.4568	3.5250	10.1203	3.5897	5.1999	5.9056
4.0000-2-4G-ACME	3.4634	3.5250	10.1627	3.5972	5.1936	5.8985
4.5000-2-2G-ACME	3.9291	4.0250	12.9723	4.0641	5.9727	6.6820
4.5000-2-3G-ACME	3.9503	4.0250	13.1119	4.0859	5.9433	6.6491
4.5000-2-4G-ACME	3.9631	4.0250	13.1810	4.0967	5.9360	6.6409
5.0000-2-2G-ACME	4.4281	4.5250	16.3506	4.5627	6.7206	7.4300
5.0000-2-3G-ACME	4.4558	4.5250	16.5324	4.5880	6.6868	7.3926
5.0000-2-4G-ACME	4.4627	4.5250	16.5905	4.5961	6.6784	7.3833
Thread Designation:	Thd Clr Dia:	Tap Bore Dia (Max):	Tensile Area (in <sup>2</sup> ):	Equiv Pin Dia (in):	Screw Shear Area (in <sup>2</sup> /in):	Nut Shear Area (in <sup>2</sup> /in):

### ACME Screw Thread Data:

Thd Clr Dia	= Diameter to be turned to clear threading tool on external threads.
Tap Bore Dia	= Maximum Bore Diameter for Minor Diameter of internal threads.
Tensile Area	= Effective Tensile Area (in <sup>2</sup> ) for externally threaded parts.
Equiv Pin Dia	= Diameter of Column or Pin used for column or bending calculations.
Screw Shear Area	= The amount of shear engagement per inch of length in an external thread.
Nut Shear Area	= The amount of shear engagement per inch of length in an internal thread.

### External Threads (Screws):

Major Diameter (Max):	Nominal Major Diameter
Major Diameter (Min):	Nominal Major Diameter - $\max(.05/\text{tpi}, .005)$
Basic Pitch Diameter:	Nominal Major Diameter - $.5/\text{TPI}$
Basic Minor Diameter:	Nominal Major Diameter - $1/\text{TPI}$
Pitch Diameter Maximum (2G):	Basic Pitch Diameter - $.008\sqrt{\text{Nominal Major Diameter}}$
Pitch Diameter Maximum (3G):	Basic Pitch Diameter - $.006\sqrt{\text{Nominal Major Diameter}}$
Pitch Diameter Maximum (4G):	Basic Pitch Diameter - $.004\sqrt{\text{Nominal Major Diameter}}$
Pitch Diameter Minimum (2G):	Basic Pitch Diameter - $.006\sqrt{\text{Nominal Major Diameter}} - .030\sqrt{1/\text{TPI}}$
Pitch Diameter Minimum (3G):	Basic Pitch Diameter - $.0028\sqrt{\text{Nominal Major Diameter}} - .014\sqrt{1/\text{TPI}}$
Pitch Diameter Minimum (4G):	Basic Pitch Diameter - $.002\sqrt{\text{Nominal Major Diameter}} - .010\sqrt{1/\text{TPI}}$
Minor Diameter Max (< 10TPI):	Basic Minor Diameter - $.010$
Minor Diameter Max ( $\geq 10\text{TPI}$ ):	Basic Minor Diameter - $.020$
Minor Diameter Minimum (2G):	Minor Diameter Maximum - $.009\sqrt{\text{Nominal Major Diameter}} - .045\sqrt{1/\text{TPI}}$
Minor Diameter Minimum (3G):	Minor Diameter Maximum - $.0042\sqrt{\text{Nominal Major Diameter}} - .021\sqrt{1/\text{TPI}}$
Minor Diameter Minimum (4G):	Minor Diameter Maximum - $.003\sqrt{\text{Nominal Major Diameter}} - .015\sqrt{1/\text{TPI}}$

### Internal Threads (Nuts):

Major Diameter Min (< 10TPI):	Nominal Major Diameter + $.020$
Major Diameter Min ( $\geq 10\text{TPI}$ ):	Nominal Major Diameter + $.010$
Major Diameter Max (< 10TPI):	Major Diameter Minimum + $.020$
Major Diameter Max ( $\geq 10\text{TPI}$ ):	Major Diameter Minimum + $.010$
Pitch Diameter Minimum:	Nominal Major Diameter - $.5/\text{TPI}$
Pitch Diameter Maximum (2G):	Basic Pitch Diameter + $.006\sqrt{\text{Nominal Major Diameter}} + .030\sqrt{1/\text{TPI}}$
Pitch Diameter Maximum (3G):	Basic Pitch Diameter + $.0028\sqrt{\text{Nominal Major Diameter}} + .014\sqrt{1/\text{TPI}}$
Pitch Diameter Maximum (4G):	Basic Pitch Diameter + $.002\sqrt{\text{Nominal Major Diameter}} + .010\sqrt{1/\text{TPI}}$
Minor Diameter Minimum:	Basic Minor Diameter
Minor Diameter Maximum:	Basic Diameter Minimum + $\max(.05/\text{tpi}, .005)$