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ANSI Standard Hardware Menu ASME/ANSI B1.8-1988 (R2001) provides for the Stub Acme screw thread for those unusual applications where, due to mechanical or metallurgical considerations, a coarse pitch thread of shallow depth is required. The fit of Stub Acme threads corresponds to the Class 2G General Purpose Acme thread in American National Standard ANSI B1.5-1988. For a fit having less backlash, the tolerances and allowances for Classes 3G or 4G General Purpose Acme threads may be used. American National Standard Stub Acme Single-Start Screw Threads Table Chart ASME/ANSI B1.8-1988 (R2001) Nominal Diameter 14 516 38 716 1/2 58 34 78 1 118 114 138 Threads per Inch 16 14 12 12 10 8 6 6 5 5 5 4 External Threads Major Dia. Max 0.2500 0.3125 0.3750 0.4375 0.5000 0.6250 0.7500 0.8750 1.0000 1.1250 1.2500 1.3750 Major Dia. Min 0.2469 0.3089 0.3708 0.4333 0.4950 0.6188 0.7417 0.8667 0.9900 1.1150 1.2400 1.3625 Pitch Dia. Max 0.2272 0.2871 0.3451 0.4076 0.4643 0.5812 0.6931 0.8175 0.9320 1.0565 1.1811 1.2906 Pitch Dia. Min 0.2167 0.2757 0.3328 0.3950 0.4506 0.5658 0.6757 0.7996 0.9126 1.0367 1.1610 1.2686 Minor Dia Max. 0.2024 0.2597 0.3150 0.3775 0.4200 0.5300 0.6300 0.7550 0.8600 0.9850 1.1100 1.2050 Minor Dia Min 0.1919 0.2483 0.3027 0.3649 0.4063 0.5146 0.6126 0.7371 0.8406 0.9652 1.0899 1.1830 Internal Threads Major Dia. Min 0.2600 0.3225 0.3850 0.4475 0.5200 0.6450 0.7700 0.8950 1.0200 1.1450 1.2700 1.3950 Major Dia. Max 0.2705 0.3339 0.3973 0.4601 0.5337 0.6604 0.7874 0.9129 1.0394 1.1648 1.2901 1.4170 Pitch Dia. Min 0.2312 0.2911 0.3500 0.4125 0.4700 0.5875 0.7000 0.8250 0.9400 1.0650 1.1900 1.3000 Pitch Dia. Max 0.2417 0.3025 0.3623 0.4251 0.4837 0.6029 0.7174 0.8429 0.9594 1.0848 1.2101 1.3220 Minor Dia. Min 0.2125 0.2696 0.3250 0.3875 0.4400 0.5500 0.6500 0.7750 0.8800 1.0050 1.1300 1.2250 Minor Dia. Max 0.2156 0.2732 0.3292 0.3917 0.4450 0.5562 0.6583 0.7833 0.8900 1.0150 1.1400 1.2375 Nominal Diameter 1 12 1 34 2 2 14 2 12 2 34 3 3 12 4 4 12 5 5 Threads per Inch 4 4 4 3 3 3 2 2 2 2 2 2 External Threads Major Dia. Max 1.5000 1.7500 2.0000 2.2500 2.5000 2.7500 3.0000 3.5000 4.0000 4.5000 5.0000 5.0000 Major Dia. Min 1.4875 1.7375 1.9875 2.2333 2.4833 2.7333 2.9750 3.4750 3.9750 4.4750 4.9750 4.9750 Pitch Dia. Max 1.4152 1.6645 1.9137 2.1380 2.3874 2.6367 2.8360 3.3350 3.8340 4.3330 4.8319 4.831 Pitch Dia. Min 1.3929 1.6416 1.8902 2.1117 2.3606 2.6094 2.8044 3.3026 3.8008 4.2991 4.7973 4.7973 Minor Dia. Max 1.3300 1.5800 1.8300 2.0300 2.2800 2.5300 2.6800 3.1800 3.6800 4.1800 4.6800 4.6800 Minor Dia. Min 1.3077 1.5571 1.8065 2.0037 2.2532 2.5027 2.6484 3.1476 3.6468 4.1461 4.6454 4.6454 Internal Threads Major Dia. Min 1.5200 1.7700 2.0200 2.2700 2.5200 2.7700 3.0200 3.5200 4.0200 4.5200 5.0200 5.0200 Major Dia. Max 1.5423 1.7929 2.0435 2.2963 2.5468 2.7973 3.0516 3.5524 4.0532 4.5539 5.0546 5.0546 Pitch Dia. Min 1.4250 1.6750 1.9250 2.1500 2.4000 2.6500 2.8500 3.3500 3.8500 4.3500 4.8500 4.8500 Pitch Dia. Max 1.4473 1.6979 1.9485 2.1763 2.4268 2.6773 2.8816 3.3824 3.8832 4.3839 4.8846 4.8846 Minor Dia. Min 1.3500 1.6000 1.8500 2.0500 2.3000 2.5500 2.7000 3.2000 3.7000 4.2000 4.7000 4.7000 Minor Dia. Max 1.3625 1.6125 1.8625 2.0667 2.3167 2.5667 2.7250 3.2250 3.7250 4.2250 4.7250 4.7250 Related: Related Resources: hardware ANSI Hardware Engineering Data External ACME Thread General Purpose Size Table Chart The following table defines recommended industry standard sizes for Internal ACME General Purpose Threads per American National Standard ASME/ANSI B1.5. All dimensional data is given in inches. Designation Size Decimal TPI Tol. Class Minor Dia. Pitch Dia. Min. Max. Min. Max. 1/4-16 ACME 0.25 16 2G 0.1875 0.1925 0.2188 0.2293 1/4-16 ACME 0.25 16 3G 0.1875 0.1925 0.2188 0.2237 1/4-16 ACME 0.25 16 4G 0.1875 0.1925 0.2188 0.2223 1/4-16 ACME 0.25 16 5G 0.1875 0.1925 0.2188 0.2216 5/16-14 ACME 0.3125 14 2G 0.2411 0.2461 0.2768 0.2882 5/16-14 ACME 0.3125 14 3G 0.2411 0.2461 0.2768 0.2821 5/16-14 ACME 0.3125 14 4G 0.2411 0.2461 0.2768 0.2806 5/16-14 ACME 0.3125 14 5G 0.2411 0.2461 0.2768 0.2798 3/8-12 ACME 0.375 12 2G 0.2917 0.2967 0.3333 0.3456 3/8-12 ACME 0.375 12 3G 0.2917 0.2967 0.3333 0.3391 3/8-12 ACME 0.375 12 4G 0.2917 0.2967 0.3333 0.3374 3/8-12 ACME 0.375 12 5G 0.2917 0.2967 0.3333 0.3366 7/16-12 ACME 0.4375 12 2G 0.3542 0.3592 0.3958 0.4084 7/16-12 ACME 0.4375 12 3G 0.3542 0.3592 0.3958 0.4017 7/16-12 ACME 0.4375 12 4G 0.3542 0.3592 0.3958 0.4000 7/16-12 ACME 0.4375 12 5G 0.3542 0.3592 0.3958 0.3992 1/2-10 ACME 0.5 10 2G 0.4000 0.4050 0.4500 0.4637 1/2-10 ACME 0.5 10 3G 0.4000 0.4050 0.4500 0.4564 1/2-10 ACME 0.5 10 4G 0.4000 0.4050 0.4500 0.4546 1/2-10 ACME 0.5 10 5G 0.4000 0.4050 0.4500 0.4537 5/8-8 ACME 0.625 8 2G 0.5000 0.5062 0.5625 0.5779 5/8-8 ACME 0.625 8 3G 0.5000 0.5062 0.5625 0.5697 5/8-8 ACME 0.625 8 4G 0.5000 0.5062 0.5625 0.5676 5/8-8 ACME 0.625 8 5G 0.5000 0.5062 0.5625 0.5666 3/4-6 ACME 0.75 6 2G 0.5833 0.5916 0.6667 0.6841 3/4-6 ACME 0.75 6 3G 0.5833 0.5916 0.6667 0.6748 3/4-6 ACME 0.75 6 4G 0.5833 0.5916 0.6667 0.6725 3/4-6 ACME 0.75 6 5G 0.5833 0.5916 0.6667 0.6714 7/8-6 ACME 0.875 6 2G 0.7083 0.7166 0.7917 0.8096 7/8-6 ACME 0.875 6 3G 0.7083 0.7166 0.7917 0.8000 7/8-6 ACME 0.875 6 4G 0.7083 0.7166 0.7917 0.7977 7/8-6 ACME 0.875 6 5G 0.7083 0.7166 0.7917 0.7965 1-5 ACME 1 5 2G 0.8000 0.8100 0.9000 0.9194 1-5 ACME 1 5 3G 0.8000 0.8100 0.9000 0.9091 1-5 ACME 1 5 4G 0.8000 0.8100 0.9000 0.9065 1-5 ACME 1 5 5G 0.8000 0.8100 0.9000 0.9052 1 1/8-5 ACME 1.125 5 2G 0.9250 0.9350 1.0250 1.0448 1 1/8-5 ACME 1.125 5 3G 0.9250 0.9350 1.0250 1.0342 1 1/8-5 ACME 1.125 5 4G 0.9250 0.9350 1.0250 1.0316 1 1/8-5 ACME 1.125 5 5G 0.9250 0.9350 1.0250 1.0303 1 1/4-5 ACME 1.25 5 2G 1.0500 1.0600 1.1500 1.1701 1 1/4-5 ACME 1.25 5 3G 1.0500 1.0600 1.1500 1.1594 1 1/4-5 ACME 1.25 5 4G 1.0500 1.0600 1.1500 1.1567 1 1/4-5 ACME 1.25 4 5G 1.0500 1.0600 1.1500 1.1554 1 3/8-4 ACME 1.375 4 2G 1.1250 1.1375 1.2500 1.2720 1 3/8-4 ACME 1.375 4 3G 1.1250 1.1375 1.2500 1.2603 1 3/8-4 ACME 1.375 4 4G 1.1250 1.1375 1.2500 1.2573 1 3/8-4 ACME 1.375 4 5G 1.1250 1.1375 1.2500 1.2559 1 1/2-4 ACME 1.5 4 2G 1.2500 1.2625 1.3750 1.3973 1 1/2-4 ACME 1.5 4 3G 1.2500 1.2625 1.3750 1.3854 1 1/2-4 ACME 1.5 4 4G 1.2500 1.2625 1.3750 1.3824 1 1/2-4 ACME 1.5 4 5G 1.2500 1.2625 1.3750 1.3810 1 3/4-4 ACME 1.75 4 2G 1.5000 1.5125 1.6250 1.6479 1 3/4-4 ACME 1.75 4 3G 1.5000 1.5125 1.6250 1.6357 1 3/4-4 ACME 1.75 4 4G 1.5000 1.5125 1.6250 1.6326 1 3/4-4 ACME 1.75 4 5G 1.5000 1.5125 1.6250 1.6311 2-4 ACME 2 4 2G 1.7500 1.7625 1.8750 1.8985 2-4 ACME 2 4 3G 1.7500 1.7625 1.8750 1.8860 2-4 ACME 2 4 4G 1.7500 1.7625 1.8750 1.8828 2-4 ACME 2 4 5G 1.7500 1.7625 1.8750 1.8813 2 1/4-3 ACME 2.25 3 2G 1.9167 1.9334 2.0833 2.1096 2 1/4-3 ACME 2.25 3 3G 1.9167 1.9334 2.0833 2.0956 2 1/4-3 ACME 2.25 3 4G 1.9167 1.9334 2.0833 2.0921 2 1/4-3 ACME 2.25 3 5G 1.9167 1.9334 2.0833 2.0903 2 1/2-3 ACME 2.5 3 2G 2.1667 2.1834 2.3333 2.3601 2 1/2-3 ACME 2.5 3 3G 2.1667 2.1834 2.3333 2.3458 2 1/2-3 ACME 2.5 3 4G 2.1667 2.1834 2.3333 2.3422 2 1/2-3 ACME 2.5 3 5G 2.1667 2.1834 2.3333 2.3404 2 3/4-3 ACME 2.75 3 2G 2.4169 2.4334 2.5833 2.6106 2 3/4-3 ACME 2.75 3 3G 2.4169 2.4334 2.5833 2.5960 2 3/4-3 ACME 2.75 3 4G 2.4169 2.4334 2.5833 2.5924 2 3/4-3 ACME 2.75 3 5G 2.4169 2.4334 2.5833 2.5906 3-2 ACME 3 2 2G 2.5000 2.5250 2.7500 2.7816 3-2 ACME 3 2 3G 2.5000 2.5250 2.7500 2.7647 3-2 ACME 3 2 4G 2.5000 2.5250 2.7500 2.7605 3-2 ACME 3 2 5G 2.5000 2.5250 2.7500 2.7584 3 1/2-2 ACME 3.5 2 2G 3.0000 3.0250 3.2500 3.2824 3 1/2-2 ACME 3.5 2 3G 3.0000 3.0250 3.2500 3.2651 3 1/2-2 ACME 3.5 2 4G 3.0000 3.0250 3.2500 3.2608 3 1/2-2 ACME 3.5 2 5G 3.0000 3.0250 3.2500 3.2587 4-2 ACME 4 2 2G 3.5000 3.5250 3.7500 3.7832 4-2 ACME 4 2 3G 3.5000 3.5250 3.7500 3.7655 4-2 ACME 4 2 4G 3.5000 3.5250 3.7500 3.7611 4-2 ACME 4 2 5G 3.5000 3.5250 3.7500 3.7589 4 1/2-2 ACME 4.5 2 2G 4.0000 4.0250 4.2500 4.2839 4 1/2-2 ACME 4.5 2 3G 4.0000 4.0250 4.2500 4.2658 4 1/2-2 ACME 4.5 2 4G 4.0000 4.0250 4.2500 4.2613 4 1/2-2 ACME 4.5 2 5G 4.0000 4.0250 4.2500 4.2591 5-2 ACME 5 2 2G 4.5000 4.5250 4.7500 4.7846 5-2 ACME 5 2 3G 4.5000 4.5250 4.7500 4.7662 5-2 ACME 5 2 4G 4.5000 4.5250 4.7500 4.7615 5-2 ACME 5 2 5G 4.5000 4.5250 4.7500 4.7592 Designation TPI Major Dia. Tap Drill Min. Max. 1/4-16 ACME 16 0.2600 0.2700 0.1875 1/4-16 ACME 16 0.2600 0.2700 0.1875 1/4-16 ACME 16 0.2600 0.2700 0.1875 1/4-16 ACME 16 0.2600 0.2700 0.1875 5/16-14 ACME 14 0.3225 0.3325 0.2411 5/16-14 ACME 14 0.3225 0.3325 0.2411 5/16-14 ACME 14 0.3225 0.3325 0.2411 5/16-14 ACME 14 0.3225 0.3325 0.2411 3/8-12 ACME 12 0.3850 0.3950 0.2917 3/8-12 ACME 12 0.3850 0.3950 0.2917 3/8-12 ACME 12 0.3850 0.3950 0.2917 3/8-12 ACME 12 0.3850 0.3950 0.2917 7/16-12 ACME 12 0.4475 0.4575 0.3542 7/16-12 ACME 12 0.4475 0.4575 0.3542 7/16-12 ACME 12 0.4475 0.4575 0.3542 7/16-12 ACME 12 0.4475 0.4575 0.3542 1/2-10 ACME 10 0.52 0.5400 0.4000 1/2-10 ACME 10 0.52 0.5400 0.4000 1/2-10 ACME 10 0.52 0.5400 0.4000 1/2-10 ACME 10 0.52 0.5400 0.4000 5/8-8 ACME 8 0.645 0.6650 0.5000 5/8-8 ACME 8 0.645 0.6650 0.5000 5/8-8 ACME 8 0.645 0.6650 0.5000 5/8-8 ACME 8 0.645 0.6650 0.5000 3/4-6 ACME 6 0.77 0.7900 0.5833 3/4-6 ACME 6 0.77 0.7900 0.5833 3/4-6 ACME 6 0.77 0.7900 0.5833 3/4-6 ACME 6 0.77 0.7900 0.5833 7/8-6 ACME 6 0.895 0.9150 0.7083 7/8-6 ACME 6 0.895 0.9150 0.7083 7/8-6 ACME 6 0.895 0.9150 0.7083 7/8-6 ACME 6 0.895 0.9150 0.7083 1-5 ACME 5 1.02 1.0400 0.8000 1-5 ACME 5 1.02 1.0400 0.8000 1-5 ACME 5 1.02 1.0400 0.8000 1-5 ACME 5 1.02 1.0400 0.8000 1 1/8-5 ACME 5 1.145 1.165 0.9250 1 1/8-5 ACME 5 1.145 1.165 0.9250 1 1/8-5 ACME 5 1.145 1.165 0.9250 1 1/8-5 ACME 5 1.145 1.165 0.9250 1 1/4-5 ACME 5 1.27 1.29 1.0500 1 1/4-5 ACME 5 1.27 1.29 1.0500 1 1/4-5 ACME 5 1.27 1.29 1.0500 1 1/4-5 ACME 4 1.27 1.29 1.0500 1 3/8-4 ACME 4 1.395 1.415 1.1250 1 3/8-4 ACME 4 1.395 1.415 1.1250 1 3/8-4 ACME 4 1.395 1.415 1.1250 1 3/8-4 ACME 4 1.395 1.415 1.1250 1 1/2-4 ACME 4 1.52 1.54 1.2500 1 1/2-4 ACME 4 1.52 1.54 1.2500 1 1/2-4 ACME 4 1.52 1.54 1.2500 1 1/2-4 ACME 4 1.52 1.54 1.2500 1 3/4-4 ACME 4 1.77 1.79 1.5000 1 3/4-4 ACME 4 1.77 1.79 1.5000 1 3/4-4 ACME 4 1.77 1.79 1.5000 1 3/4-4 ACME 4 1.77 1.79 1.5000 2-4 ACME 4 2.02 2.04 1.7500 2-4 ACME 4 2.02 2.04 1.7500 2-4 ACME 4 2.02 2.04 1.7500 2-4 ACME 4 2.02 2.04 1.7500 2 1/4-3 ACME 3 2.27 2.29 1.9167 2 1/4-3 ACME 3 2.27 2.29 1.9167 2 1/4-3 ACME 3 2.27 2.29 1.9167 2 1/4-3 ACME 3 2.27 2.29 1.9167 2 1/2-3 ACME 3 2.52 2.54 2.1667 2 1/2-3 ACME 3 2.52 2.54 2.1667 2 1/2-3 ACME 3 2.52 2.54 2.1667 2 1/2-3 ACME 3 2.52 2.54 2.1667 2 3/4-3 ACME 3 2.77 2.79 2.4169 2 3/4-3 ACME 3 2.77 2.79 2.4169 2 3/4-3 ACME 3 2.77 2.79 2.4169 2 3/4-3 ACME 3 2.77 2.79 2.4169 3-2 ACME 2 3.02 3.04 2.5000 3-2 ACME 2 3.02 3.04 2.5000 3-2 ACME 2 3.02 3.04 2.5000 3-2 ACME 2 3.02 3.04 2.5000 3 1/2-2 ACME 2 3.52 3.54 3.0000 3 1/2-2 ACME 2 3.52 3.54 3.0000 3 1/2-2 ACME 2 3.52 3.54 3.0000 3 1/2-2 ACME 2 3.52 3.54 3.0000 4-2 ACME 2 4.02 4.04 3.5000 4-2 ACME 2 4.02 4.04 3.5000 4-2 ACME 2 4.02 4.04 3.5000 4-2 ACME 2 4.02 4.04 3.5000 4 1/2-2 ACME 2 4.52 4.54 4.0000 4 1/2-2 ACME 2 4.52 4.54 4.0000 4 1/2-2 ACME 2 4.52 4.54 4.0000 4 1/2-2 ACME 2 4.52 4.54 4.0000 5-2 ACME 2 5.02 5.04 4.5000 5-2 ACME 2 5.02 5.04 4.5000 5-2 ACME 2 5.02 5.04 4.5000 5-2 ACME 2 5.02 5.04 4.5000 Related: About us| Contact us| Disclaimer | Privacy PolicyCopyright 2013-2023 The dimensions listed below can be used to determine the diameter along with the thread pitch. For further clarification of thread per inch, please download our gauge guide.External Thread Dimensions Major Dia.Pitch Dia.Minor Dia. Designation Size DecimalTPITol. ClassMaxMinMaxMinMax Min 3/8-12 Acme0.375122G0.3750.370.32840.31610.28170.2632 1/2-10 Acme0.5102G0.50.4950.44430.43060.380.3594 5/8- 4 Acme0.62542G STUB0.6250.6190.54210.5240.4550.4327 5/8-6 Acme0.62562G0.6250.61670.53480.51740.43830.4128 5/8-8 Acme0.62582G0.6250.61880.55620.54080.480.457 5/8- 10 Acme0.625102G0.6250.620.56930.55560.5050.4844 3/4-5 Acme0.7552G0.750.740.6420.62260.530.5009 3/4-6 Acme0.7562G0.750.74170.65980.64240.56330.5371 3/4-8 Acme0.7582G0.750.74380.68120.66580.6050.582 3/4-10 Acme0.75102G0.750.7450.69310.67840.630.608 7/8-5 Acme0.87552G0.8750.8650.7670.74760.6550.6259 7/8-6 Acme0.87562G0.8750.86670.78420.76630.68830.6615 7/8-8 Acme0.87572G0.8750.86880.80620.79080.730.707 1-4 Acme0.87542G10.98750.86520.84290.730.6965 1-5 Acme152G10.990.8920.87260.780.7509 1-6 Acme162G10.99170.90980.89290.81330.7871 1-8 Acme182G10.99380.93120.91580.8550.832 1-10Acme1102G10.9950.9420.92640.880.8568 1 1/8-4 Acme1.12542G1.1251.11250.99020.96790.8550.8219 1 1/8-5 Acme1.12552G1.1251.1151.01650.99670.9050.8753 1 1/8-6 Acme1.12562G1.1251.11671.03121.01630.93830.9115 1 1/4-4 Acme1.2542G1.251.23751.11521.09290.980.9465 1 1/4-5 Acme1.2552G1.251.241.14111.1211.030.9998 1 1/4-6 Acme1.2562G1.251.24171.15981.14241.06331.0371 1 1/4-8 Acme1.2582G1.251.24371.17861.16121.1051.079 1 3/8-4 Acme1.37542G1.3751.36251.24061.21861.1051.0719 1 3/8-5 Acme1.37552G1.3751.3651.26611.24611.1551.124 1 3/8-6 Acme1.37562G1.3751.36671.28481.26741.18831.1621 1 1/2-4 Acme1.542G1.51.48751.36521.34291.231.1965 1 1/2-5 Acme1.552G1.51.491.3921.37261.281.2209 1 1/2-6Acme1.562G1.51.48341.40981.39241.31331.2871 1 3/4-4 Acme1.7542G1.751.73751.61451.59161.481.4456 1 3/4-5 Acme1.7552G1.751.741.6421.62261.531.5009 1 3/4-6 Acme1.7562G1.751.74171.65611.63591.56331.5331 2-4 Acme242G21.98751.86371.84021.731.6948 2 1/4 - 4 Acme2.2542G2.252.23752.11372.09021.981.9448 2 1/2 -4 Acme2.542G2.52.48752.36372.34022.232.1948 Internal Thread Dimensions Major Dia.Pitch Dia. Minor Dia. Designation Size DecimalTPITol. ClassMaxMinMaxMinMax Min 3/8-12 Acme0.375122G0.3750.3850.34570.33330.2967 0.2917 1/2-10 Acme0.5102G0.540.520.46370.450.4050.4 5/8- 4 Acme0.62542G STUB0.66470.6450.56970.550.48750.475 5/8-6 Acme0.62562G0.6650.6450.55870.54170.46670.4583 5/8-8 Acme0.62582G0.6650.6450.57790.56250.50620.5 3/4-5 Acme0.7552G0.790.770.66860.650.560.55 3/4-6 Acme0.7562G0.790.770.68410.66670.57170.5833 3/4-8 Acme0.7582G0.790.770.70330.68750.63120.625 3/4-10 Acme0.75102G0.790.770.71470.70.6550.65 7/8-5 Acme0.87552G0.9150.8950.794 0.7750.6850.675 7/8-6 Acme0.87562G0.9150.8950.80950.79170.71670.7083 7/8-8 Acme0.87582G0.9150.8950.82870.81250.75620.75 1-4 Acme0.87542G1.041.020.8960.8750.76250.75 1-5 Acme152G1.041.020.91940.90.810.8 1-6 Acme162G1.041.020.93490.91670.84170.8333 1-8 Acme182G1.041.020.95410.93750.8812 0.875 1-10 Acme1102G1.041.020.96550.950.9050.9 1 1/8-4 Acme1.12542G1.1651.1451.021410.88750.875 1 1/8-5 Acme1.12552G1.1651.1451.04881.0250.9350.925 1 1/8-6 Acme1.12562G1.1651.1451.0603 1.04170.096670.9583 1 1/4-4 Acme1.2542G1.291.271.14671.1251.01251 1 1/4-5 Acme1.2552G1.291.271.17011.151.061.05 1 1/4-6 Acme1.2562G1.291.271.18561.16671.09171.0833 1 3/8-4 Acme1.37542G1.4151.3951.2721.251.3751.125 1 3/8-5 Acme1.37552G1.4151.3951.29551.2751.1851.175 1 3/8-6 Acme1.37562G1.4151.3951.31091.29171.2167 1.2083 1 1/2-4 Acme1.542G1.541.521.39731.3751.26251.25 1 1/2-5 Acme1.552G1.541.521.42081.41.311.3 1 1/2-6Acme1.562G1.541.521.43631.41671.34171.333 1 3/4-4 Acme1.7542G1.791.771.64791.6251.51251.5 1 3/4-5 Acme1.7552G1.791.771.67141.651.561.55 1 3/4-6 Acme1.7562G1.791.771.68691.66671.59171.5833 2-4 Acme242G2.042.021.89851.8751.76251.75 2 1/4 - 4 Acme2.2542G2.29062.272.1492.01252.1252 2 1/2 -4 Acme2.542G2.542.522.39952.3752.26252.25 Comparison of ISO and DIN Standards.ISO metric trapezoidal screw threads standard, ISO 2904 - 1977, describes the system of general purpose metric threads for use in mechanisms and structures. The standard is in basic agreement with trapezoidal metric thread DIN 103. The DIN 103 standard applies a particular pitch for a particular diameter of thread, but the ISO standard applies a variety of pitchs for a particular diameter. In ISO 2904 - 1977, the same clearance is applied to both the major diameter and minor diameter, but in DIN 103 the clearance in the minor diameter is two or three times greater than clearance in the major diameter. 8 - 22 24 - 36 38 - 50 52 - 75 80 - 110 115 - 135 140 - 160 165 - 180 185 - 200 205 - 230 235 - 260 270 - 315 320 - 360 365 - 415 420 -460 470 -530 540 - 630 670 - 800 850 - 1000 1060 - 1120 Acme is a trapezoidal thread profile with a 29 V angle, defined in ASTM B1.5. It is the most popular thread used for traversing linear motion (For example, lead screws and power screws) due to its ability to withstand large loads and ease of manufacturing. It is found in industrial equipment such as CNC machines and conveyors, as well as everyday-life equipment such as a jack, which we use to replace a flat tire.Acme threads were first developed in the late 1800s by the American industrialist inventor William Sellers. Sellers aimed to create a leadscrew thread design that was stronger and easier to manufacture than the square thread design commonly used at the time. The resulting trapezoidal thread form became known as the Acme thread and quickly gained popularity in the design of lead screws and power screws. Easly obtain all the dimensions and tolerances with our AcmeThreadCalculatorBasic designation syntax:Nominal Diameter in Inch FractionPitch in TPISeries: G General / C CentralizedClass: 2, 3, or 4. Indicates the precision.Diameter:The diameter can range between 1/4 to 5.It is also allowed to denote the diameters with a decimal value. For example, 0.250 (1/4), 0.4375 (7/16), etc.Pitch:By default, the pitch is given in TPI. For example, 1/4-20 means a thread with a pitch of 20 TPI (1/20=0.05).On multiple starts threads (see below), the pitch is indicated by distance. For example, 1/4-0.05P means a thread with a pitch of 0.05 (same as 20 TPI).Series:G General use.C Centralized. This classdefines a more restricted clearance at the major diameter of both the internal and external screws that prevent wedging on the flanks.Class:The class is defined by a number between 2 and 4.2 Lower precision.4 Higher precision. Internal and external designations are exactly the same. You cannot tell from the description alone if the thread is external or internal.Additional Parameters:Direction: By default, the thread is right-hand. For a left-hand thread, add the suffix -LH.Number of Starts: By default, all threads have a single start. Thus, the lead equals the pitch. For a multiple-start thread, the lead is also indicated by the letter L. For example, 1/4 0.0625P 0.1875L-ACMEdenotes a 0.25 ACME thread with 3 starts. (0.1875/0.0625=3) The basic dimensions are nominal dimensions of the ACME profile without allowances and tolerances (The series and class define that see below). They are based on standard ASTM B1.5. The basic dimensions can be used for design. However, for manufacturing and machining, you need the allowable range of each dimension. This data can be found in the ASTM standard or in the Limits and Dimensions section below. All the basic dimensions are derived from simple formulas based on the threads nominal diameter and pitch. All the above terms are explain in the video \(\begin{array}{l}\large d= \text{Diameter from designation} \\\large n = \text{TPI from designation} \\\large P = \frac{n}{TPI} \\\large h = \frac{P}{2} \\\large d _2= d\,-\,h \\\large d_1 = d\,-\,P \\\large F = 0.3707 \times P \\\large 2\times\alpha = 29^{\circ} \\\large \lambda = \tan^{-1} \left (\frac{P \times S}{\pi \times d_2} \right)\end{array} \) \(\begin{array}{l}\large D= \text{Diameter from designation} \\\large n = \text{TPI from designation} \\\large P = \frac{n}{TPI} \\\large h = \frac{P}{2} \\\large D _2= D\,-\,h \\\large D_1 = D\,-\,P \\\large F = 0.3707 \times P \\\large 2\times\alpha = 29^{\circ} \\\large \lambda = \tan^{-1} \left (\frac{P \times S}{\pi \times D_2} \right)\end{array} \) Click the Thread Link to get the Full Thread Data for all classes in Inch and Metric units * Click icon to show Additional columns.(*) All dimensions are in Inches To manufacture or measure a thread, one has to know the maximum and minimum permissible values of the basic dimensions. These values are calculated according to the thread series and class (See below).Definition of terms:Allowance (Deviation):The minimum permissible distance between the basic and actual profile.Tolerance:The width of the tolerance field of a diameter on the actual thread profile. (Pitch, Major & Minor diameters)A small allowance means that the assembly of a male and female thread will be harder, but after assembly, there will be less freedom of movement.A large allowance means that the assembly of a male and female thread will be easier, but after assembly, there will be more freedom of movement.The allowance size does not influence a threads production difficulty or price.A wide tolerance is easier and cheaper to produce but yields a larger spread between threads.A narrow tolerance is challenging to produce and more expensive but yields a smaller spread between threads.ACME threads are divided into 3 series:G (General Purpose) The most commonly used Acme threads.Wedging can occur under loads; therefore, it is recommended for applications where the screw and nut are supported individually.It has 3 precision classes 2G, 3G, and 4G.C (Centralized) Tighter clearance between the internal and external threads. That prevents wedging on the flanks.More suitable for applications with higher load.It shares the exact basic dimensions of the C series. The difference is only in the tolerances.It has 3 precision classes 2C, 3C, and 4C.Stub Compact threads with a 43% shorter stub height than standard Acme.Short and truncated thread profile, suitable for applications with limited space.Unlike G & C series, it only has a single precision class.They are defined in a separate ASTM document number B1.8.Series G & C have 3 preciosn classes:2G/2C Least accurate and more commonly used.3G/3C Medium accuracy.4G/4C Highest accuracy, recommended to reduce backlash.ASTM B1.5 defines how to calculate the tolerance of the following parameters:Major diameter (d / D)Minor diameter (d1 / D1)Pitch diameter (d2 / D2)Pitch & Lead (P / L)Angles between flanks () The below formulas are not valid for the following cases:Centralizes Acme series.Engagement lengths that are larger than twice the major diameter.Threads with multiple starts.TPI values that are not one of 2-6, 8, 10, 12, 14, or 16.Nominal diameters that are not one of 1/4, 5/16, 3/8, 7/16, 1/2, 3/4, 7/8, 1, 1-1/8, 1-1/4, 1-3/8, 1-1/2, 1-3/4, 2, 2-1/2, 2-3/4, 3, 3-1/2, 4, 4-1/2, or 5 Inches. For these cases, read the small print in ASTM B1.5 or use our AcmeThreadCalculator that handles all cases!Allowance for major and minor diameters (el): Equals 0.002 for pitches of 10 TPI or coarser. For finer pitches, use 0.001.Allowance for pitch diameters (es): Should be obtained from ASM B1.5 (table 9). It cannot be calculated by a formula. You can either obtain it from the standard or use our below calculator. Pitch diameter tolerance (TD2): Should be obtained from ASM B1.5 (tables 5-7) or calculated with the below formula. \(TD_2 = K_P \times \sqrt{P} + K_D \times \sqrt{D} \)ClassKpKd2G / 3C0.030.0063G / 3C0.0140.00284G / 4C0.010.002Major diameter tolerance (Td): Equals to the TPI divided by 20. (But if less than 0.005, 0.005 should be used). \(\begin{array}{l}\large d_{max} = d_{nom} \\\large d_{min} = d_{max}\,-\,T_d \\\large d_{2\,max} = d_{2\,nom}\,-\,es \\\large d_{2\,min} = d_{2\,max}\,-\,T_{d2} \\\large d_{1\,max} = d_{1\,nom}\,-\,el \\\large d_{1\,min} = d_{1\,max}\,-\,1.5 \times T_{d2}\end{array} \) \(\begin{array}{l}\large D_{min} = D_{nom}\,+\,el \\\large D_{max} = D_{min}\,+\,el \\\large D_{2\,min} = D_{2\,nom} \\\large D_{2\,max} = D_{2\,min}\,+\,T_{d2} \\\large D_{1\,min} = D_{1\,nom} \\\large D_{1\,max} = D_{1\,min}\,+\,T_{d}\end{array} \)Because of the nature of its use cases and the limited list of standard configurations, special Acme threads are commonly used.What is considered a special Acme thread?A Diameter-Pitch combination that does not appear in this list.Multiple-Start threads.An engagement length that is larger than twice the major diameter. The AcmeThreadCalculator handles also Special Threads!The standard list of Acme threads in ASTM B1.5 has only one pitch option per diameter. However, playing with the pitch is an important design consideration since it allows us to increase the traverse speed by using a coarser pitch or increasing the accuracy by choosing a finer one. When opting for a special thread, ASTM B1.5 provides each pitch with the minimum and maximum allowed diameters.Premisable Diamter-Pitch Combinations For s thread with an intermediate pitch value, use the diameters shown for the next coarser pitch in the graph.To get the dimensions for such a thread, follow the formulas provided above or our AcmeThreadCalculator, which knows how to handle any diameter-pitch combination.Multiple-Start Acme threads are popular since they can bump up the traverse speed in multiples of 2, 3, 4, or more.The dimensions given in the standard are valid only for single-start threads. Use the below procedure to adjust the limits according to the number of starts.External threads (Screws) are not affected. The data for single-start threads should be used.For internal threads (Nuts), the allowance for major, minor, and pitch diameters is increased (relative to an equivalent single-start thread) by Kxes. K depends on the number of starts: for 2 starts k=0.5, 3 starts k=0.75, and for 4 starts or more, k=1.Our AcmeThreadCalculator also handles multiple-start threads!Increasing the length of the engagement means using a lengthier nut that can support higher forces. The data listed in ASTM B1.5 and the formulas given above are valid for engagement lengths up to twice the major diameter. The pitch diameter allowance (es) should be increased by 0.1xesx(LE- 2xd) when LE>2XD. Our AcmeThreadCalculator also handles all engagement lengths.The ACME thread is a trapezoidal thread form widely recognized in mechanical engineering for its strength, ease of manufacture, and versatility in applications requiring significant load-bearing capacity or precise linear motion. Named after the Acme Screw Machine Company, which developed it in 1894, this thread profile has become a cornerstone in industries ranging from machinery to aerospace. Standardized initially in 1921, the ACME thread remains a dominant inch-based trapezoidal thread system globally, even as metric threads have overtaken other thread types in many applications. This article provides a comprehensive exploration of the ACME thread dimensions chart for both internal and external threads, delving into its profile, formulas, classes, sizes, and practical applications. It aims to serve as an authoritative resource for engineers, machinists, and researchers by presenting detailed data, mathematical underpinnings, and comparative analyses.BE-CU.com The ACME thread is characterized by its distinctive trapezoidal shape, featuring a 29-degree included flank angle and, in its general-purpose form, a thread height equal to half the pitch. Unlike the square threads it was designed to replace, the ACME thread offers superior manufacturability and wear resistance, making it ideal for power screws, lead screws, and other mechanisms requiring controlled motion or high torque transmission. Its broad, flat crests and roots enhance its strength, while the 29-degree angle facilitates smoother engagement compared to the sharper profiles of V-threads. The ACME threads standardization under ASME/ANSI B1.5 for general-purpose threads and ASME/ANSI B1.8 for stub variants ensures consistency across industries, with dimensions expressed in inches to maintain compatibility with imperial systems. The ACME thread emerged during the late 19th century as a response to the limitations of square threads, which, while strong, were difficult to machine and prone to rapid wear. In 1894, the Acme Screw Machine Company, under the guidance of engineer William Sellers, introduced the ACME thread as a robust alternative. Sellers aimed to create a thread form that balanced strength, manufacturability, and durability, resulting in a trapezoidal profile that quickly gained traction.By 1921, the thread was standardized in the United States, cementing its status as a preferred choice for lead screws and power transmission components. Unlike metric trapezoidal threads (e.g., the ISO-standardized Tr thread with a 30-degree angle), the ACME thread retained its inch-based dimensions, reflecting its origins in American industrial practice. The evolution of the ACME thread reflects broader trends in mechanical engineering, where standardization and interchangeability became critical as industries scaled. Its adoption in applications such as lathes, milling machines, jacks, and aircraft flaps underscores its versatility. Over time, refinements led to the development of specialized variantsGeneral Purpose (G), Centralizing (C), and Stub ACMEeach tailored to specific operational demands. These variants, governed by distinct standards, offer engineers a range of options to optimize performance, whether for free movement, high-load stability, or compact design. ACME Thread Profile and Geometry The ACME threads defining feature is its trapezoidal profile, which distinguishes it from triangular (V-shaped) threads and square threads. The threads geometry includes a 29-degree included angle between the flanks, a thread height of 0.5P (where P is the pitch) in general-purpose applications, and flat crests and roots. This configuration provides a wider base than a square thread of equivalent size, enhancing load-bearing capacity and reducing stress concentrations. The flat apex and valley also simplify machining compared to square threads, which require precise tool geometry that complicates production. Mathematically, the basic dimensions of the ACME thread profile are derived from the pitch (P), defined as the distance between adjacent thread crests or, equivalently, the reciprocal of threads per inch (TPI). For a single-start thread, the leadthe axial distance advanced per revolutionequals the pitch. The fundamental formulas for the ACME thread profile are: Pitch (P): P=1/TPIThread Height (h): h=0.5PMajor Diameter (D): Nominal diameter of the threadPitch Diameter (D): D2=Dh=D0.5PMinor Diameter (D): D1=D2h=DP These dimensions represent the basic profile, excluding allowances and tolerances, which are adjusted based on the thread class (e.g., 2G, 3G, 4G). The 29-degree flank angle ensures a balance between strength and manufacturability, while the flat crests and rootstypically 0.3707P wide at the crest of the external thread and slightly wider at the internal threadprovide clearance and reduce wear. For multiple-start ACME threads, the lead increases proportionally to the number of starts (n), such that: This adjustment allows for faster traversal speeds, a feature exploited in applications like CNC machinery, though it complicates internal thread tolerances, as discussed later. Designation System ACME threads follow a standardized designation system that conveys critical information about their size, pitch, series, and precision class. The format is typically expressed as: DTPISeriesClass D D: Nominal major diameter in inches (e.g., 1/2, 0.500, or fractional equivalents from 1/4 to 5 inches)TPI: Threads per inch (e.g., 10, indicating a pitch of 0.1 inches)Series: G (General Purpose), C (Centralizing), or StubClass: Precision level (e.g., 2G, 3G, 4G for General Purpose; 2C, 3C, 4C for Centralizing) For example, 1/2-10-ACME-2G denotes a thread with a 0.5-inch major diameter, 10 threads per inch, General Purpose series, and Class 2G fit. Additional qualifiers, such as -LH for left-hand threads or L followed by lead distance for multiple-start threads (e.g., 1/4-0.0625P-0.1875L-ACME), provide further specificity. This system ensures clarity in design and manufacturing, aligning with ASME/ANSI standards. Thread Series and Classes The ACME thread family encompasses three primary series, each with distinct characteristics and precision classes: General Purpose (G) Series The G series, standardized under ASME/ANSI B1.5, is the most widely used ACME thread type. Designed for interchangeability and ease of assembly, it features a 29-degree angle and a thread height of 0.5P. It is intended for applications where the nut and screw are independently supported, avoiding radial loads that could cause wedging. The series includes three precision classes: 2G: The preferred class for general applications, offering moderate clearance for free movement and ease of assembly.3G: Tighter tolerances than 2G, reducing backlash for improved precision.4G: The highest precision in the G series, minimizing end play for applications requiring exact positioning. Centralizing (C) Series Also governed by ASME/ANSI B1.5, the C series shares the G series basic dimensions but restricts clearance at the major diameter of both internal and external threads. This design prevents flank wedging under radial loads, making it suitable for high-load scenarios like feed screws. Precision classes include: 2C: Standard fit with reduced clearance compared to 2G.3C: Enhanced precision over 2C.4C: Maximum precision, with additional classes (5C, 6C) available but not recommended for new designs. Stub ACME Series Defined by ASME/ANSI B1.8, the Stub ACME thread features a reduced thread height0.3P instead of 0.5Presulting in a shorter, truncated profile. This compactness suits applications with limited space or where shallow threads are mechanically advantageous. Unlike the G and C series, it has a single precision class, aligned with 2G tolerances, though Modified Forms (M1, M2) offer alternative heights (0.375P and 0.25P, respectively). Dimension Charts and Tolerances The following tables present recommended industry-standard sizes for internal and external ACME threads per ASME/ANSI B1.5 (General Purpose) and B1.8 (Stub), with all dimensions in inches. These charts include major, pitch, and minor diameters, along with tolerances for each class, providing a practical reference for design and machining. External ACME Thread General Purpose Size Chart (ASME/ANSI B1.5) Nominal Size (D)TPIPitch (P)Major Diameter (Max/Min)Pitch Diameter (Max/Min)Minor Diameter (Max/Min)Class1/4160.06250.2500 / 0.24100.2188 / 0.21280.1875 / 0.17952G1/4160.06250.2500 / 0.24300.2188 / 0.21480.1875 / 0.18153G1/4160.06250.2500 / 0.24500.2188 / 0.21680.1875 / 0.18354G1/2100.10000.5000 / 0.48800.4500 / 0.44200.4000 / 0.38802G1/2100.10000.5000 / 0.49100.4500 / 0.44500.4000 / 0.39103G1/2100.10000.5000 / 0.49400.4500 / 0.44800.4000 / 0.39404G150.20001.0000 / 0.98200.9000 / 0.88800.8000 / 0.78202G150.20001.0000 / 0.98700.9000 / 0.89300.8000 / 0.78703G150.20001.0000 / 0.99200.9000 / 0.89800.8000 / 0.79204G Internal ACME Thread General Purpose Size Chart (ASME/ANSI B1.5) Nominal Size (D)TPIPitch (P)Major Diameter (Min/Max)Pitch Diameter (Min/Max)Minor Diameter (Min/Max)Class1/4160.06250.2500 / 0.26000.2188 / 0.22480.1875 / 0.19552G1/4160.06250.2500 / 0.25700.2188 / 0.22280.1875 / 0.19353G1/4160.06250.2500 / 0.25400.2188 / 0.22080.1875 / 0.19154G1/2100.10000.5000 / 0.51400.4500 / 0.45800.4000 / 0.41202G1/2100.10000.5000 / 0.50900.4500 / 0.45500.4000 / 0.40903G1/2100.10000.5000 / 0.50400.4500 / 0.45200.4000 / 0.40604G150.20001.0000 / 1.02200.9000 / 0.91200.8000 / 0.81802G150.20001.0000 / 1.01700.9000 / 0.90700.8000 / 0.81303G150.20001.0000 / 1.01200.9000 / 0.90200.8000 / 0.80804G Stub ACME Thread Dimensions (ASME/ANSI B1.8) Nominal Size (D)TPIPitch (P)Thread Height (h)Major Diameter (Max/Min)Pitch Diameter (Max/Min)Minor Diameter (Max/Min)1/4160.06250.01875 (0.3P)0.2500 / 0.24100.2313 / 0.22530.2125 / 0.20451/2100.10000.0300 (0.3P)0.5000 / 0.48800.4700 / 0.46200.4400 / 0.4280150.20000.0600 (0.3P)1.0000 / 0.98200.9400 / 0.92800.8800 / 0.8620 Formulas and Calculations To compute ACME thread dimensions beyond basic values, engineers rely on formulas that incorporate allowances (es) and tolerances, adjusted by class and series. For General Purpose threads: External Thread Major Diameter Allowance: es=0.020P0.5 es = 0.020P^{0.5} es=0.020P0.5 (Class 2G)Pitch Diameter Tolerance: Varies by class (e.g., 0.0060 for 2G, 0.0040 for 3G, 0.0020 for 4G at 10 TPI)Root-Crest Clearance: Minimum 0.01 inch for TPI 10, 0.005 inch for finer pitches For multiple-start threads, internal thread allowances increase by a factor Kes K \cdot es Kes, where K=0.5 K = 0.5 K=0.5 (2 starts), 0.75 (3 starts), or 1.0 (4+ starts). Stub ACME threads adjust the height term in the formulas: Stub Height: h=0.3PPitch Diameter: D2=D0.3PMinor Diameter: D1=D0.6P These calculations ensure threads meet functional requirements, such as load capacity or positional accuracy, while adhering to manufacturing constraints. Applications and Advantages ACME threads excel in applications requiring robust power transmission or precise linear motion. Common uses include: Lead Screws: In lathes and CNC machines for controlled movement.Jacks and Presses: For lifting or pressing with high torque.Valve Stems: In oil and gas systems for reliable sealing.Aircraft Flaps: For durable actuation under load. Advantages include higher strength than square threads, easier machining than square or V-threads, and compatibility with split nuts for wear compensation. However, lower efficiency due to friction and potential radial loading in G-series threads are notable drawbacks, mitigated by the C-series design. Compared to metric trapezoidal threads (Tr, 30-degree angle), ACME threads offer greater standardization in imperial systems and a slightly shallower angle for improved wear resistance. Versus square threads, ACME provides easier production and better wear adjustment, though at reduced efficiency. The Stub ACMEs compact height contrasts with the full 0.5P height of G and C series, trading depth for space efficiency. The ACME threads enduring relevance stems from its balanced design, standardized dimensions, and adaptability across industries. This articles detailed charts and formulas equip practitioners with the tools to specify, design, and machine ACME threads effectively, ensuring performance in demanding applications. BE-CU.COM As an accomplished CNC machining Service Manufacturer and CNC shop, BE-CU Prototype has been specialized in OEM CNC lathing, custom CNC machining parts production and rapid CNC machining services China for over 35 years and always maintaining the highest standard in delivery speed and reliable quality of precision CNC manufacturing components. With the help of high-level technology and efficient equipment, as well as rigorous attitude, BE-CU passed the ISO9001:2015 quality certification, which supports the long-term development of CNC milling services, CNC turning services, CNC milling-turning, CNC drilling services, 3/4/5 axis machining, gear machining services, CNC machining China custom parts and service, small parts machining, etc.Our CNC machining products can be utilized in a broad range of industries. Contact us for email: BE-CU professional CNC parts machining involves CNC metal parts manufacturing, plastic CNC machining, and some difficult materials. The following table defines recommended industry standard sizes for Internal ACME General Purpose Threads per American National Standard ASME/ANSI B1.5. All dimensional data is given in inches. ACME threads are vital components in modern machinery and equipment. Their robust design, standardized specifications, and versatile application make them indispensable in mechanical engineering. This article breaks down the ACME Thread designation, profile, angle, calculation formulas, series & classes, and dimensions with size charts for internal and external ACME threads.What Is ACME Thread?The ACME thread, developed by Acme Screw Machine Company in 1894 and standardized in 1921, represents a significant milestone in mechanical engineering. Despite its name often being mistaken for an abbreviation, Acme is simply derived from the companys name. While metric threads have become dominant for many other thread types worldwide, the inch-based ACME thread maintains its position as the international leader among trapezoidal threads. The ACME thread is characterized by its distinctive trapezoidal profile, featuring a 29 flank angle and a thread height equal to half the pitch in general-purpose applications.ACME Thread AngleACME Thread DesignationThis thread follows a specific designation system where threads are identified by their nominal diameter in inches and pitch in threads per inch. An ACME screw thread is indicated by D P ACME SC.D refers to the nominal diameter: Expressed in inches (fractional or decimal, 1/4 to 5)P refers to pitch: Threads Per Inch (TPI) or pitch distanceS refers to Series: G (General) or C (Centralized)C refers to class: 2 (lower precision) to 4 (higher precision)For instance, a 1/2-10-ACME 2G designation indicates an ACME Thread with 1/2 diameter, 10 threads per inch, General purpose series, Class 2 precision.ACME Thread Profile and Calculation Formulad = diameter from designationn = TPI from designationP = n/TPIh = P/2d2 = d-hd1= d-PACME Thread Series and ClassesAccording to ANSI/ASME B1.5 standard, there are 3 typical series or ACME screw threads.1. G Series (General Purpose)The most commonly used ACME thread type with a 29 included angle. It is susceptible to wedging under loads and requires individual support for screws and nuts. This series is recommended for standard applications and features three precision classes: 2G, 3G, and 4G.Classes:2G: Least accurate, commonly used.3G: Medium accuracy.4G: Highest accuracy, recommended to reduce backlash.2. C Series (Centralized)This series maintains the same basic dimensions as the G series but with tighter tolerances and limited clearance at the major diameter of both internal and external threads. It prevents wedging on flanks and part sagging, making it better suited for high-load applications. The series features three primary precision classes: 2C, 3C, and 4C, with additional classes 5C and 6C (not recommended for new designs).Classes:2C: Similar to 2G but with tighter tolerances.3C: Medium accuracy.4C: Highest accuracy, minimizes backlash.3. Stub SeriesThe Stub series features a 43% shorter thread height compared to standard ACME and has a truncated thread profile. It is ideal for applications with space constraints and only has one precision class (corresponds to 2G). Defined in ASTM B1.8, it can be applied to both General and Centralizing ACME threads and uses the same major/minor diameter allowances as G and C series.ACME Thread DimensionsInternal ACME Thread Size ChartACME ThreadDesignationNominalSizeTPIClassMinorDiameterPitchDiameterMajorDiametermin.max.min.max.min.max.1/4-16 ACME0.25162G0.18750.19250.21880.22930.26000.27003G0.22374G0.22235/16-14 ACME0.3125142G0.24110.24610.27680.28820.32250.33253G0.28214G0.28063/8-12 ACME0.375122G0.29170.29670.33330.34560.38500.39503G0.33914G0.33747/16-12 ACME0.4375122G0.35420.35920.39580.40840.44750.45753G0.40174G0.40001/2-10 ACME0.5102G0.40000.40500.45000.46370.52000.54003G0.45644G0.45465/8-8 ACME0.62582G0.50000.50620.56250.57790.64500.66503G0.56974G0.56763/4-6 ACME0.7562G0.58330.59160.66670.68410.77000.79003G0.67484G0.67257/8-6 ACME0.87562G0.70830.71660.79170.80960.89500.91503G0.80004G0.79771-5 ACME152G0.80000.81000.90000.91941.02001.04003G0.90914G0.90651 1/8-5 ACME1.12552G0.92500.93501.02501.04481.14501.16503G1.03424G1.03161 1/4-5 ACME1.2552G1.05001.06001.15001.17011.27001.29003G1.15944G1.15671 3/8-4 ACME1.37542G1.12501.13751.25001.27201.39501.41503G1.26034G1.25731 1/2-4 ACME1.542G1.25001.26251.37501.39731.52001.54003G1.38544G1.38241 3/4 ACME1.7542G1.50001.51251.62501.64791.77001.79003G1.63574G1.63262-4 ACME242G1.75001.76251.87501.89852.02002.04003G1.88604G1.88282 1/4-3 ACME2.2532G1.91671.93342.08332.10962.27002.29003G2.09564G2.09212 1/2-3 ACME2.532G2.16672.18342.33332.36012.52002.54003G2.34584G2.34222 3/4-3 ACME2.7532G2.41672.43342.58332.61062.77002.79003G2.59604G2.59243-2 ACME322G2.50002.52502.75002.78163.02003.04003G2.76474G2.76053 1/2-2 ACME3.522G3.00003.02503.25003.28243.52003.54003G3.26514G3.26084-2 ACME422G3.50003.52503.75003.78324.02004.04003G3.76554G3.76114 1/2-2 ACME4.522G4.00004.02504.25004.28394.52004.54003G4.26584G4.26135-2 ACME522G4.50004.52004.75004.78465.02005.04003G4.76624G4.7615External ACME Thread Size ChartACME ThreadDesignationNominalSizeTPIClassMajorDiameterPitchDiameterMinorDiametermax.min.max.min.max.min.1/4-16 ACME0.25162G0.25000.24500.21480.20430.17750.16183G0.21580.21090.17014G0.21680.21330.17235/16-14 ACME0.3125142G0.31250.30750.27280.26140.23110.21403G0.27380.26850.22314G0.27480.27100.22543/8-12 ACME0.375122G0.37500.37000.32840.31610.28170.26323G0.32960.32380.27314G0.33090.32680.27557/16-12 ACME0.4375122G0.43750.43250.39090.37830.34420.32533G0.39210.38620.33544G0.39340.38920.33791/2-10 ACME0.5102G0.50000.49500.44430.43060.38000.35943G0.44580.43940.37044G0.44720.44260.37315/8-8 ACME0.62582G0.62500.61880.55620.54080.48000.45703G0.55780.55060.46934G0.55930.55420.47233/4-6 ACME0.7562G0.75000.74170.65980.64240.56330.53713G0.66150.65340.55114G0.66320.65740.55467/8-6 ACME0.87562G0.87500.86670.78420.76630.68830.66153G0.78610.77780.67584G0.78800.78200.67941-5 ACME152G1.00000.99000.89200.87260.78000.75093G0.89400.88490.76644G0.89600.88950.77031 1/8-5 ACME1.12552G1.12501.11501.01650.99670.90500.87533G1.01861.00940.89124G1.02081.01420.89511 1/4-5 ACME1.2552G1.25001.24001.14111.12101.03000.99983G1.14331.13391.01594G1.14551.13881.01991 3/8-4 ACME1.37542G1.37501.36251.24061.21861.10501.07193G1.24301.23271.08964G1.24531.23801.09401 1/2-4 ACME1.542G1.50001.48751.36521.34291.23001.19653G1.36771.35731.21444G1.37011.36271.21881 3/4-4 ACME1.7542G1.75001.73751.61451.59161.48001.44563G1.61711.60641.46394G1.61981.61221.46852-4 ACME242G2.00001.98751.86371.84021.73001.69483G1.86651.85551.71364G1.86931.86151.71832 1/4-3 ACME2.2532G2.25002.23332.07132.0451.89671.85723G2.07432.0621.87834G2.07732.06851.88352 1/2-3 ACME2.532G2.50002.48332.32072.29392.14672.10653G2.32382.31132.12794G2.32702.31812.13332 3/4-3 ACME2.7532G2.75002.73332.57002.54272.39672.35583G2.57342.56072.37764G2.57672.56762.38313-2 ACME322G3.00002.97502.73602.70442.48002.43263G2.73952.72482.45794G2.74302.73252.46423 1/2-2 ACME3.522G3.50003.47503.23503.20262.98002.93133G3.23883.22372.95734G3.24253.23172.96384-2 ACME422G4.00003.97503.73403.70083.48003.43023G3.73803.72253.45684G3.74203.73093.46344 1/2-2 ACME4.522G4.50004.47504.23304.19913.98003.92913G4.23734.22153.95624G4.24154.23023.96305-2 ACME522G5.00004.97504.73194.69734.48004.42813G4.73644.72024.45584G4.74094.72944.4627

Internal acme thread dimensions. Internal acme thread. Stub acme thread standard pdf. 4 stub acme thread dimensions. Stub acme thread dimensions. Stub acme thread profile. Stub acme. Stub acme m2.