

Table 331

Special Taps

GROUND THREAD AMERICAN NATIONAL FORM

GENERAL

The following tables and formulae are used in determining the limits and tolerances for ground thread taps having special diameter or special pitch or both, unless otherwise specified.

LEAD TOLERANCE

A maximum lead error of plus or minus .0005" in one inch of thread is permitted.

ANGLE TOLERANCE

Threads Per Inch	Error in Half Angle
4 to 5½—Incl.	20' Plus or Minus
6 to 9—Incl.	25' Plus or Minus
10 to 80—Incl.	30' Plus or Minus

FORMULAE

Max. Major Dia. = Basic plus A

Max. Pitch Dia. = Min. plus D

Min. Major Dia. = Max. Minus B

Min. Pitch Dia. = Basic plus C

In the above formulae: —

A Constant to add:

35% of the theoretical truncation for 4 to 5 threads per inch

40% for 5½ to 12 threads per inch

45% for 13 to 80 threads per inch

To nearest .0005" for 8 or more threads per inch and to nearest

.001" for less than 8 threads per inch

B Major diameter tolerance

C Amount over basic for minimum pitch diameter

D Pitch diameter tolerance

NOTE: When the tap major diameter must be determined from a specified tap pitch diameter, the maximum major diameter equals the minimum specified pitch diameter **minus** constant C, **plus** the basic National single thread height, **plus** constant A.

VALUES FOR A, B, C AND D

THREADS PER INCH	A	B	C			D			
			To 5/8" Incl.	Over 5/8" to 2 1/2" Incl.	Over 2 1/2"	To 1" Incl.	Over 1" to 1 1/2" Incl.	Over 1 1/2" to 2 1/2" Incl.	Over 2 1/2"
80	.0015	.0010	.0005	.0010	.0015	.0005	.0010	.0010	.0015
56	.0015	.0010	.0005	.0010	.0015	.0005	.0010	.0010	.0015
48	.0020	.0010	.0005	.0010	.0015	.0005	.0010	.0010	.0015
44	.0020	.0010	.0005	.0010	.0015	.0005	.0010	.0010	.0015
40	.0025	.0010	.0005	.0010	.0015	.0005	.0010	.0010	.0015
36	.0025	.0010	.0005	.0010	.0015	.0005	.0010	.0010	.0015
32	.0030	.0010	.0010	.0010	.0015	.0005	.0010	.0010	.0015
28	.0035	.0010	.0010	.0010	.0015	.0005	.0010	.0010	.0015
24	.0040	.0010	.0010	.0010	.0015	.0005	.0010	.0015	.0015
20	.0050	.0010	.0010	.0010	.0015	.0005	.0010	.0015	.0015
18	.0055	.0010	.0010	.0010	.0015	.0005	.0010	.0015	.0015
16	.0060	.0010	.0010	.0010	.0015	.0005	.0010	.0015	.0020
14	.0070	.0010	.0010	.0015	.0015	.0005	.0010	.0015	.0020
13	.0075	.0010	.0010	.0015	.0015	.0005	.0010	.0015	.0020
12	.0075	.0010	.0010	.0015	.0015	.0005	.0010	.0015	.0020
11	.0080	.0010	.0010	.0015	.0020	.0005	.0010	.0015	.0020
10	.0090	.0015	....	.0015	.0020	.0005	.0010	.0015	.0020
9	.0100	.0015	....	.0015	.0020	.0005	.0010	.0015	.0020
8	.0110	.0015	....	.0015	.0020	.0005	.0010	.0015	.0020
7	.0120	.0020	....	.0015	.0020	.0010	.0010	.0020	.0025
6	.0140	.0020	....	.0015	.0020	.0010	.0010	.0020	.0025
5½	.0160	.0025	....	.0015	.0020	.0010	.0015	.0020	.0025
5	.0160	.0025	....	.0015	.0020	.0010	.0015	.0020	.0025
4½	.0170	.0025	....	.0015	.0020	.0010	.0015	.0020	.0025
4	.0190	.0025	....	.0015	.0020	.0010	.0015	.0020	.0025

For intermediate pitches use value for next coarser pitch.