

Appendix 3 ANSI Running and Sliding Fits (RC)

American National Standard Running and Sliding Fits (ANSI B4.1-1967, R1979)

Tolerance limits given in body of table are added or subtracted to basic size (as indicated by + or - sign) to obtain maximum and minimum sizes of mating parts.

Nominal Size Range, Inches Over To	Class RC 1			Class RC 2			Class RC 3			Class RC 4		
	Clearance*	Standard Tolerance Limits		Clearance*	Standard Tolerance Limits		Clearance*	Standard Tolerance Limits		Clearance*	Standard Tolerance Limits	
		Hole H5	Shaft g4		Hole H6	Shaft g5		Hole H7	Shaft f6		Hole H8	Shaft f7
Values shown below are in thousandths of an inch												
0- 0.12	0.1 0.45	+ 0.2 0	- 0.1 - 0.25	0.1 0.55	+ 0.25 0	0.1 0.3	0.3 0.95	+ 0.4 0	- 0.3 - 0.55	0.3 1.3	+ 0.6 0	- 0.3 0.7
0.12- 0.24	0.15 0.5	+ 0.2 0	- 0.15 - 0.3	0.15 0.65	+ 0.3 0	0.15 0.35	0.4 1.12	+ 0.5 0	- 0.4 - 0.7	0.4 1.6	+ 0.7 0	- 0.4 0.9
0.24- 0.40	0.2 0.6	+ 0.25 0	- 0.2 - 0.35	0.2 0.85	+ 0.4 0	0.2 0.45	0.5 1.5	+ 0.6 0	- 0.5 - 0.9	0.5 2.0	+ 0.9 0	- 0.5 - 1.1
0.40- 0.71	0.25 0.75	+ 0.3 0	- 0.25 - 0.45	0.25 0.95	+ 0.4 0	0.25 0.55	0.6 1.7	+ 0.7 0	- 0.6 - 1.0	0.6 2.3	+ 1.0 0	- 0.6 - 1.3
0.71- 1.19	0.3 0.95	+ 0.4 0	- 0.3 - 0.55	0.3 1.2	+ 0.5 0	0.3 0.7	0.8 2.1	+ 0.8 0	- 0.8 - 1.3	0.8 2.8	+ 1.2 0	- 0.8 - 1.6
1.19- 1.97	0.4 1.1	+ 0.4 0	- 0.4 - 0.7	0.4 1.4	+ 0.6 0	0.4 0.8	1.0 2.6	+ 1.0 0	- 1.0 - 1.6	1.0 3.6	+ 1.6 0	- 1.0 - 2.0
1.97- 3.15	0.4 1.2	+ 0.5 0	- 0.4 - 0.7	0.4 1.6	+ 0.7 0	0.4 0.9	1.2 3.1	+ 1.2 0	- 1.2 - 1.9	1.2 4.2	+ 1.8 0	- 1.2 - 2.4
3.15- 4.73	0.5 1.5	+ 0.6 0	- 0.5 - 0.9	0.5 2.0	+ 0.9 0	0.5 - 1.1	1.4 3.7	+ 1.4 0	- 1.4 - 2.3	1.4 5.0	+ 2.2 0	- 1.4 - 2.8
4.73- 7.09	0.6 1.8	+ 0.7 0	- 0.6 - 1.1	0.6 2.3	+ 1.0 0	0.6 - 1.3	1.6 4.2	+ 1.6 0	- 1.6 - 2.6	1.6 5.7	+ 2.5 0	- 1.6 - 3.2
7.09- 9.85	0.6 2.0	+ 0.8 0	- 0.6 - 1.2	0.6 2.6	+ 1.2 0	0.6 - 1.4	2.0 5.0	+ 1.8 0	- 2.0 - 3.2	2.0 6.6	+ 2.8 0	- 2.0 - 3.8
9.85-12.41	0.8 2.3	+ 0.9 0	- 0.8 - 1.4	0.8 2.9	+ 1.2 0	0.8 - 1.7	2.5 5.7	+ 2.0 0	- 2.5 - 3.7	2.5 7.5	+ 3.0 0	- 2.5 - 4.5
12.41-15.75	1.0 2.7	+ 1.0 0	- 1.0 - 1.7	1.0 3.4	+ 1.4 0	1.0 - 2.0	3.0 6.6	+ 2.2 0	- 3.0 - 4.4	3.0 8.7	+ 3.5 0	- 3.0 - 5.2
15.75-19.69	1.2 3.0	+ 1.0 0	- 1.2 - 2.0	1.2 3.8	+ 1.6 0	1.2 - 2.2	4.0 8.1	+ 2.5 0	- 4.0 - 5.6	4.0 10.5	+ 4.0 0	- 4.0 6.5

See footnotes at end of table.

Nominal Size Range, Inches Over To	Class RC 5			Class RC 6			Class RC 7			Class RC 8			Class RC 9		
	Clearance*	Standard Tolerance Limits		Clearance*	Standard Tolerance Limits		Clearance*	Standard Tolerance Limits		Clearance*	Standard Tolerance Limits		Clearance*	Standard Tolerance Limits	
		Hole H8	Shaft e7		Hole H9	Shaft e8		Hole H9	Shaft d8		Hole H10	Shaft c9		Hole H11	Shaft
Values shown below are in thousandths of an inch															
0- 0.12	0.6 1.6	+ 0.6 0	- 0.6 - 1.0	0.6 2.2	+ 1.0 0	- 0.6 - 1.2	1.0 2.6	+ 1.0 0	- 1.0 - 1.6	2.5 5.1	+ 1.6 0	- 2.5 - 3.5	4.0 8.1	+ 2.5 0	- 4.0 - 5.6
0.12- 0.24	0.8 2.0	+ 0.7 0	- 0.8 - 1.3	0.8 2.7	+ 1.2 0	- 0.8 - 1.5	1.2 3.1	+ 1.2 0	- 1.2 - 1.9	2.8 5.8	+ 1.8 0	- 2.8 - 4.0	4.5 9.0	+ 3.0 0	- 4.5 - 6.0
0.24- 0.40	1.0 2.5	+ 0.9 0	- 1.0 - 1.6	1.0 3.3	+ 1.4 0	- 1.0 - 1.9	1.6 3.9	+ 1.4 0	- 1.6 - 2.5	3.0 6.6	+ 2.2 0	- 3.0 - 4.4	5.0 10.7	+ 3.5 0	- 5.0 - 7.2
0.40- 0.71	1.2 2.9	+ 1.0 0	- 1.2 - 1.9	1.2 3.8	+ 1.6 0	- 1.2 - 2.2	2.0 4.6	+ 1.6 0	- 2.0 - 3.0	3.5 7.9	+ 2.8 0	- 3.5 - 5.1	6.0 12.8	+ 4.0 0	- 6.0 - 8.8
0.71- 1.19	1.6 3.6	+ 1.2 0	- 1.6 - 2.4	1.6 4.8	+ 2.0 0	- 1.6 - 2.8	2.5 5.7	+ 2.0 0	- 2.5 - 3.7	4.5 10.0	+ 3.5 0	- 4.5 - 6.5	7.0 15.5	+ 5.0 0	- 7.0 - 10.5
1.19- 1.97	2.0 4.6	+ 1.6 0	- 2.0 - 3.0	2.0 6.1	+ 2.5 0	- 2.0 - 3.6	3.0 7.1	+ 2.5 0	- 3.0 - 4.6	5.0 11.5	+ 4.0 0	- 5.0 - 7.5	8.0 18.0	+ 6.0 0	- 8.0 - 12.0
1.97- 3.15	2.5 5.5	+ 1.8 0	- 2.5 - 3.7	2.5 7.3	+ 3.0 0	- 2.5 - 4.3	4.0 8.8	+ 3.0 0	- 4.0 - 5.8	6.0 13.5	+ 4.5 0	- 6.0 - 9.0	9.0 20.5	+ 7.0 0	- 9.0 - 13.5
3.15- 4.73	3.0 6.6	+ 2.2 0	- 3.0 - 4.4	3.0 8.7	+ 3.5 0	- 3.0 - 5.2	5.0 10.7	+ 3.5 0	- 5.0 - 7.2	7.0 15.5	+ 5.0 0	- 7.0 - 10.5	10.0 24.0	+ 9.0 0	- 10.0 - 15.0
4.73- 7.09	3.5 7.6	+ 2.5 0	- 3.5 - 5.1	3.5 10.0	+ 4.0 0	- 3.5 - 6.0	6.0 12.5	+ 4.0 0	- 6.0 - 8.5	8.0 18.0	+ 6.0 0	- 8.0 - 12.0	12.0 28.0	+ 10.0 0	- 12.0 - 18.0
7.09- 9.85	4.0 8.6	+ 2.8 0	- 4.0 - 5.8	4.0 11.3	+ 4.5 0	- 4.0 - 6.8	7.0 14.3	+ 4.5 0	- 7.0 - 9.8	10.0 21.5	+ 7.0 0	- 10.0 - 14.5	15.0 34.0	+ 12.0 0	- 15.0 - 22.0
9.85-12.41	5.0 10.0	+ 3.0 0	- 5.0 - 7.0	5.0 13.0	+ 5.0 0	- 5.0 - 8.0	8.0 16.0	+ 5.0 0	- 8.0 - 11.0	12.0 25.0	+ 8.0 0	- 12.0 - 17.0	18.0 38.0	+ 12.0 0	- 18.0 - 28.0
12.41-15.75	6.0 11.7	+ 3.5 0	- 6.0 - 8.2	6.0 15.5	+ 6.0 0	- 6.0 - 9.5	10.0 19.5	+ 6.0 0	- 10.0 - 13.5	14.0 29.0	+ 9.0 0	- 14.0 - 20.0	22.0 45.0	+ 14.0 0	- 22.0 - 31.0
15.75-19.69	8.0 14.5	+ 4.0 0	- 8.0 - 10.5	8.0 18.0	+ 6.0 0	- 8.0 - 12.0	12.0 22.0	+ 6.0 0	- 12.0 - 16.0	16.0 32.0	+ 10.0 0	- 16.0 - 22.0	25.0 51.0	+ 16.0 0	- 25.0 - 35.0

All data above heavy lines are in accord with ABC agreements. Symbols H5, g4, etc. are hole and shaft designations in ABC system. Limits for sizes above 19.69 inches are also given in the ANSI Standard.

* Pairs of values shown represent minimum and maximum amounts of clearance.

Appendix 4 ANSI Clearance Locational Fits (LC)

American National Standard Clearance Locational Fits (ANSI B4.1-1967, R1979)

Tolerance limits given in body of table are added or subtracted to basic size (as indicated by + or - sign) to obtain maximum and minimum sizes mating parts.

Nominal Size Range, Inches Over To	Class LC 1			Class LC 2			Class LC 3			Class LC 4			Class LC 5		
	Clearance*	Standard Tolerance Limits		Clearance*	Standard Tolerance Limits		Clearance*	Standard Tolerance Limits		Clearance*	Standard Tolerance Limits		Clearance*	Standard Tolerance Limits	
		Hole H6	Shaft h5		Hole H7	Shaft h6		Hole H8	Shaft h7		Hole H10	Shaft h9		Hole H7	Shaft g6
Values shown below are in thousandths of an inch															
0- 0.12	0 0.45	+0.25 0	0 -0.2	0 0.65	+0.4 0	0 -0.25	0 1	+0.6 0	0 -0.4	0 2.6	+1.6 0	0 -1.0	0.1 0.75	+0.4 0	-0.1 -0.3
0.12- 0.24	0 0.5	+0.3 0	0 -0.2	0 0.8	+0.5 0	0 -0.3	0 1.2	+0.7 0	0 -0.5	0 3.0	+1.8 0	0 -1.2	0.15 0.95	+0.5 0	-0.1 -0.4
0.24- 0.40	0 0.65	+0.4 0	0 -0.25	0 1.0	+0.6 0	0 -0.4	0 1.5	+0.9 0	0 -0.6	0 3.6	+2.2 0	0 -1.4	0.2 1.2	+0.6 0	-0.2 -0.6
0.40- 0.71	0 0.7	+0.4 0	0 -0.3	0 1.1	+0.7 0	0 -0.4	0 1.7	+1.0 0	0 -0.7	0 4.4	+2.8 0	0 -1.6	0.25 1.35	+0.7 0	-0.2 -0.6
0.71- 1.19	0 0.9	+0.5 0	0 -0.4	0 1.3	+0.8 0	0 -0.5	0 2	+1.2 0	0 -0.8	0 5.5	+3.5 0	0 -2.0	0.3 1.6	+0.8 0	-0.3 -0.8
1.19- 1.97	0 1.0	+0.6 0	0 -0.4	0 1.6	+1.0 0	0 -0.6	0 2.6	+1.6 0	0 -1	0 6.5	+4.0 0	0 -2.5	0.4 2.0	+1.0 0	-0.4 -1.0
1.97- 3.15	0 1.2	+0.7 0	0 -0.5	0 1.9	+1.2 0	0 -0.7	0 3	+1.8 0	0 -1.2	0 7.5	+4.5 0	0 -3	0.4 2.3	+1.2 0	-0.4 -1.1
3.15- 4.73	0 1.5	+0.9 0	0 -0.6	0 2.3	+1.4 0	0 -0.9	0 3.6	+2.2 0	0 -1.4	0 8.5	+5.0 0	0 -3.5	0.5 2.8	+1.4 0	-0.5 -1.4
4.73- 7.09	0 1.7	+1.0 0	0 -0.7	0 2.6	+1.6 0	0 -1.0	0 4.1	+2.5 0	0 -1.6	0 10.0	+6.0 0	0 -4	0.6 3.2	+1.6 0	-0.6 -1.6
7.09- 9.85	0 2.0	+1.2 0	0 -0.8	0 3.0	+1.8 0	0 -1.2	0 4.6	+2.8 0	0 -1.8	0 11.5	+7.0 0	0 -4.5	0.6 3.6	+1.8 0	-0.6 -1.8
9.85-12.41	0 2.1	+1.2 0	0 -0.9	0 3.2	+2.0 0	0 -1.2	0 5	+3.0 0	0 -2.0	0 13.0	+8.0 0	0 -5	0.7 3.9	+2.0 0	-0.7 -1.9
12.41-15.75	0 2.4	+1.4 0	0 -1.0	0 3.6	+2.2 0	0 -1.4	0 5.7	+3.5 0	0 -2.2	0 15.0	+9.0 0	0 -6	0.7 4.3	+2.2 0	-0.7 -2.1
15.75-19.69	0 2.6	+1.6 0	0 -1.0	0 4.1	+2.5 0	0 -1.6	0 6.5	+4 0	0 -2.5	0 16.0	+10.0 0	0 -6	0.8 4.9	+2.5 0	-0.8 -2.4

See footnotes at end of table.

Nominal Size Range, Inches Over To	Class LC 6			Class LC 7			Class LC 8			Class LC 9			Class LC 10			Class LC 11		
	Clearance*	Std. Tolerance Limits		Clearance*	Std. Tolerance Limits		Clearance*	Std. Tolerance Limits		Clearance*	Std. Tolerance Limits		Clearance*	Std. Tolerance Limits		Clearance*	Std. Tolerance Limits	
		Hole H9	Shaft f8		Hole H10	Shaft e9		Hole H10	Shaft d9		Hole H11	Shaft c10		Hole H12	Shaft		Hole H13	Shaft
Values shown below are in thousandths of an inch																		
0- 0.12	0.3 1.9	+1.0 0	-0.3 -0.9	0.6 3.2	+1.6 0	-0.6 -1.6	1.0 2.0	+1.6 0	-1.0 -2.0	2.5 6.6	+2.5 0	-2.5 -4.1	4 12	+4 0	-4 -8	5 17	+6 0	-5 -11
0.12- 0.24	0.4 2.3	+1.2 0	-0.4 -1.1	0.8 3.8	+1.8 0	-0.8 -2.0	1.2 4.2	+1.8 0	-1.2 -2.4	2.8 7.6	+3.0 0	-2.8 -4.6	4.5 14.5	+5 0	-4.5 -9.5	6 20	+7 0	-6 -13
0.24- 0.40	0.5 2.8	+1.4 0	-0.5 -1.4	1.0 4.6	+2.2 0	-1.0 -2.4	1.6 5.2	+2.2 0	-1.6 -3.0	3.0 8.7	+3.5 0	-3.0 -5.2	5 17	+6 0	-5 -11	7 25	+9 0	-7 -16
0.40- 0.71	0.6 3.2	+1.6 0	-0.6 -1.6	1.2 5.6	+2.8 0	-1.2 -2.8	2.0 6.4	+2.8 0	-2.0 -3.6	3.5 10.3	+4.0 0	-3.5 -6.3	6 20	+7 0	-6 -13	8 28	+10 0	-8 -18
0.71- 1.19	0.8 4.0	+2.0 0	-0.8 -2.0	1.6 7.1	+3.5 0	-1.6 -3.6	2.5 8.0	+3.5 0	-2.5 -4.5	4.5 13.0	+5.0 0	-4.5 -8.0	7 23	+8 0	-7 -15	10 34	+12 0	-10 -22
1.19- 1.97	1.0 5.1	+2.5 0	-1.0 -2.6	2.0 8.5	+4.0 0	-2.0 -4.5	3.6 9.5	+4.0 0	-3.0 -5.5	5.0 15.0	+6 0	-5.0 -9.0	8 28	+10 0	-8 -18	12 44	+16 0	-12 -28
1.97- 3.15	1.2 6.0	+3.0 0	-1.0 -3.0	2.5 10.0	+4.5 0	-2.5 -5.5	4.0 11.5	+4.5 0	-4.0 -7.0	6.0 17.5	+7 0	-6.0 -10.5	10 34	+12 0	-10 -22	14 50	+18 0	-14 -32
3.15- 4.73	1.4 7.1	+3.5 0	-1.4 -3.6	3.0 11.5	+5.0 0	-3.0 -6.5	5.0 13.5	+5.0 0	-5.0 -8.5	7 21	+9 0	-7 -12	11 39	+14 0	-11 -25	16 60	+22 0	-16 -38
4.73- 7.09	1.6 8.1	+4.0 0	-1.6 -4.1	3.5 13.5	+6.0 0	-3.5 -7.5	6 16	+6 0	-6 -10	8 24	+10 0	-8 -14	12 44	+16 0	-12 -28	18 68	+25 0	-18 -43
7.09- 9.85	2.0 9.3	+4.5 0	-2.0 -4.8	4.0 15.5	+7.0 0	-4.0 -8.5	7 18.5	+7 0	-7 -11.5	10 29	+12 0	-10 -17	16 52	+18 0	-16 -34	22 78	+28 0	-22 -50
9.85-12.41	2.2 10.2	+5.0 0	-2.2 -5.2	4.5 17.5	+8.0 0	-4.5 -9.5	7 20	+8 0	-7 -12	12 32	+12 0	-12 -20	20 60	+20 0	-20 -40	28 88	+30 0	-28 -58
12.41-15.75	2.5 12.0	+6.0 0	-2.5 -6.0	5.0 20.0	+9.0 0	-5 -11	8 23	+9 0	-8 -14	14 37	+14 0	-14 -23	22 66	+22 0	-22 -44	30 100	+35 0	-30 -65
15.75-19.69	2.8 12.8	+6.0 0	-2.8 -6.8	5.0 21.0	+10.0 0	-5 -11	9 25	+10 0	-9 -15	16 42	+16 0	-16 -26	25 75	+25 0	-25 -50	35 115	+40 0	-35 -75

All data above heavy lines are in accordance with American-British-Canadian (ABC) agreements. Symbols H6, H7, s6, etc. are hole and shaft designations in ABC system. Limits for sizes above 19.69 inches are not covered by ABC agreements but are given in the ANSI Standard.

* Pairs of values shown represent minimum and maximum amounts of interference resulting from application of standard tolerance limits.

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Appendix 5 ANSI Transition Locational Fits (LT)

ANSI Standard Transition Locational Fits (ANSI B4.1-1967, R1979)

Nominal Size Range, Inches Over To	Class LT 1			Class LT 2			Class LT 3			Class LT 4			Class LT 5			Class LT 6			
	Fit*	Std. Tolerance Limit		Fit*	Std. Tolerance Limits		Fit*	Std. Tolerance Limits		Fit*	Std. Tolerance Limits		Fit*	Std. Tolerance Limits		Fit*	Std. Tolerance Limits		
		H7	js6		H8	js7		H7	k6		H8	k7		H7	ns6		H7	ns7	
	Values shown below are in thousandths of an inch																		
0- 0.12	-0.12 +0.52	+0.4 0	-0.12 -0.12	-0.2 +0.8	-0.6 0	+0.2 -0.2								0.5 +0.15	-0.4 0	-0.5 -0.25	-0.65 +0.15	+0.4 0	+0.65 +0.25
0.12- 0.24	-0.15 +0.65	+0.5 0	+0.15 -0.15	-0.25 +0.95	-0.7 0	+0.25 -0.25								0.6 -0.2	+0.5 0	+0.6 +0.3	-0.8 +0.2	+0.5 0	+0.8 +0.3
0.24- 0.40	-0.2 +0.8	+0.6 0	+0.2 -0.2	0.3 +1.2	+0.9 0	+0.3 -0.3	-0.5 +0.5	+0.6 0	+0.5 +0.1	-0.7 +0.8	+0.9 0	+0.7 +0.2	0.8 +0.2	-0.6 +0.6	+0.8 +0.4	-1.0 +0.2	-0.6 0	+1.0 +0.4	+0.8 +0.5
0.40- 0.71	-0.2 +0.9	+0.7 0	+0.2 -0.2	-0.35 +1.35	+1.0 0	+0.35 -0.35	-0.5 +0.6	+0.7 0	+0.5 +0.1	-0.8 +0.9	+1.0 0	+0.8 +0.2	-0.9 +0.2	+0.7 +0.2	+0.9 +0.5	-1.2 +0.2	-0.6 0	+1.2 +0.5	+0.7 +0.5
0.71- 1.19	-0.25 +1.05	+0.8 0	+0.25 -0.25	-0.4 +1.6	+1.2 0	+0.4 -0.4	-0.6 +0.7	-0.8 0	+0.6 +0.1	-0.9 +1.1	+1.2 0	+0.9 +0.1	-1.1 +0.2	+0.8 +0.6	+1.1 +0.6	1.4 +0.2	+0.8 0	+1.4 +0.6	+1.2 +0.8
1.19- 1.97	-0.3 +1.3	+1.0 0	+0.3 -0.3	-0.5 +2.1	+1.6 0	+0.5 -0.5	-0.7 +0.9	+1.0 0	+0.7 +0.1	-1.1 +1.5	+1.6 0	+1.1 +0.1	-1.3 +0.3	-1.0 +0.7	+1.3 +0.7	-1.7 +0.3	+1.0 0	+1.7 +0.7	+1.1 +0.7
1.97- 3.15	-0.3 +1.5	+1.2 0	+0.3 -0.3	-0.6 +2.4	+1.8 0	+0.6 -0.6	-0.8 +1.1	+1.2 0	+0.8 +0.1	-1.3 +1.7	+1.8 0	+1.3 +0.1	-1.5 +0.4	+1.2 +0.8	+1.5 +0.8	-2.0 +0.4	+1.2 0	+2.0 +0.8	+1.2 +0.8
3.15- 4.73	-0.4 +1.8	+1.4 0	+0.4 -0.4	-0.7 +2.9	+2.2 0	+0.7 -0.7	-1.0 +1.3	+1.4 0	+1.0 +0.1	-1.5 +2.1	+2.2 0	+1.5 +0.1	-1.9 +0.4	+1.4 +0.4	+1.9 +1.0	-2.4 +0.4	+1.4 0	+2.4 +1.0	+2.4 +1.0
4.73- 7.09	-0.5 +2.1	+1.6 0	+0.5 -0.5	-0.8 +3.3	+2.5 0	+0.8 -0.8	-1.1 +1.5	+1.6 0	+1.1 +0.1	-1.7 +2.4	+2.5 0	+1.7 +0.1	-2.2 +0.4	+1.6 +0.4	+2.2 +1.2	-2.8 +0.4	+1.6 0	+2.8 +1.2	+2.8 +1.2
7.09- 9.85	-0.6 +2.4	+1.8 0	+0.6 -0.6	-0.9 +3.7	+2.8 0	+0.9 -0.9	-1.4 +1.6	+1.8 0	+1.4 +0.2	-2.0 +2.6	+2.8 0	+2.0 +0.2	-2.6 +0.4	+1.8 +0.4	+2.6 +1.4	-3.2 +0.4	+1.8 0	+3.2 +1.4	+3.2 +1.4
9.85-12.41	-0.6 +2.6	+2.0 0	+0.6 -0.6	-1.0 +4.0	+3.0 0	+1.0 -1.0	-1.4 +1.8	+2.0 0	+1.4 +0.2	-2.2 +2.8	+3.0 0	+2.2 +0.2	-2.6 +0.6	+2.0 +0.4	+2.6 +1.4	-3.4 +0.6	+2.0 0	+3.4 +1.4	+3.4 +1.4
12.41-15.75	-0.7 +2.9	+2.2 0	+0.7 -0.7	-1.0 +4.5	+3.5 0	+1.0 -1.0	-1.6 +2.0	+2.2 0	+1.6 +0.2	-2.4 +3.3	+3.5 0	+2.4 +0.2	-3.0 +0.6	+2.2 +0.6	+3.0 +1.6	-3.8 +0.6	+2.2 0	+3.8 +1.6	+3.8 +1.6
15.75-19.69	-0.8 +3.3	+2.5 0	+0.8 -0.8	-1.2 +5.2	+4.0 0	+1.2 -1.2	-1.8 +2.3	+2.5 0	+1.8 +0.2	-2.7 +3.8	+4.0 0	+2.7 +0.2	-3.4 +0.7	+2.5 +0.7	+3.4 +1.8	-4.3 +0.7	+2.5 0	+4.3 +1.8	+4.3 +1.8

All data above heavy lines are in accord with ABC agreements. Symbols H7, js6, etc. are hole and shaft designations in ABC system.
 * Pairs of values shown represent maximum amount of interference (-) and maximum amount of clearance (+) resulting from application of standard tolerance limits.
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Appendix 6 ANSI Interference Locational Fits (LN)

ANSI Standard Interference Locational Fits (ANSI B4.1-1967, R1979)

Tolerance limits given in body of table are added or subtracted to basic size (as indicated by + or - sign) to obtain maximum and minimum sizes of mating parts.

Nominal Size Range, Inches	Class LN 1			Class LN 2			Class LN 3		
	Limits of Inter- ference	Standard Limits		Limits of Inter- ference	Standard Limits		Limits of Inter- ference	Standard Limits	
		Hole H6	Shaft n5		Hole H7	Shaft p6		Hole H7	Shaft r6
Over To	Values shown below are given in thousandths of an inch								
0- 0.12	0 0.45	+0.25 0	+0.45 +0.25	0 0.65	+0.4 0	+0.65 +0.4	0.1 0.75	+0.4 0	+0.75 +0.5
0.12- 0.24	0 0.5	+0.3 0	+0.5 +0.3	0 0.8	+0.5 0	+0.8 +0.5	0.1 0.9	+0.5 0	+0.9 +0.6
0.24- 0.40	0 0.65	+0.4 0	+0.65 +0.4	0 1.0	+0.6 0	+1.0 +0.6	0.2 1.2	+0.6 0	+1.2 +0.8
0.40- 0.71	0 0.8	+0.4 0	+0.8 +0.4	0 1.1	+0.7 0	+1.1 +0.7	0.3 1.4	+0.7 0	+1.4 +1.0
0.71- 1.19	0 1.0	+0.5 0	+1.0 +0.5	0 1.3	+0.8 0	+1.3 +0.8	0.4 1.7	+0.8 0	+1.7 +1.2
1.19- 1.97	0 1.1	+0.6 0	+1.1 +0.6	0 1.6	+1.0 0	+1.6 +1.0	0.4 2.0	+1.0 0	+2.0 +1.4
1.97- 3.15	0.1 1.3	+0.7 0	+1.3 +0.8	0.2 2.1	+1.2 0	+2.1 +1.4	0.4 2.3	+1.2 0	+2.3 +1.6
3.15- 4.73	0.1 1.6	+0.9 0	+1.6 +1.0	0.2 2.5	+1.4 0	+2.5 +1.6	0.6 2.9	+1.4 0	+2.9 +2.0
4.73- 7.09	0.2 1.9	+1.0 0	+1.9 +1.2	0.2 2.8	+1.6 0	+2.8 +1.8	0.9 3.5	+1.6 0	+3.5 +2.5
7.09- 9.85	0.2 2.2	+1.2 0	+2.2 +1.4	0.2 3.2	+1.8 0	+3.2 +2.0	1.2 4.2	+1.8 0	+4.2 +3.0
9.85-12.41	0.2 2.3	+1.2 0	+2.3 +1.4	0.2 3.4	+2.0 0	+3.4 +2.2	1.5 4.7	+2.0 0	+4.7 +3.5
12.41-15.75	0.2 2.6	+1.4 0	+2.6 +1.6	0.3 3.9	+2.2 0	+3.9 +2.5	2.3 5.9	+2.2 0	+5.9 +4.5
15.75-19.69	0.2 2.8	+1.6 0	+2.8 +1.8	0.3 4.4	+2.5 0	+4.4 +2.8	2.5 6.6	+2.5 0	+6.6 +5.0

All data in this table are in accordance with American-British-Canadian (ABC) agreements. Limits for sizes above 19.69 inches are not covered by ABC agreements but are given in the ANSI Standard.
 Symbols H7, p6, etc. are hole and shaft designations in ABC system.
 * Pairs of values shown represent minimum and maximum amounts of interference resulting from application of standard tolerance limits.

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Appendix 7 ANSI Force and Shrink Fits (FN)

ANSI Standard Force and Shrink Fits (ANSI B4.1-1967, R1979)

Nominal Size Range, Inches	Class FN 1			Class FN 2			Class FN 3			Class FN 4			Class FN 5		
	Interference*	Standard Tolerance Limits		Interference*	Standard Tolerance Limits		Interference*	Standard Tolerance Limits		Interference*	Standard Tolerance Limits		Interference*	Standard Tolerance Limits	
		Hole H6	Shaft		Hole H7	Shaft s6		Hole H7	Shaft t6		Hole H7	Shaft u6		Hole H8	Shaft x7
Over To	Values shown below are in thousandths of an inch														
0-0.12	0.05 0.5	+0.25 0	+0.5 +0.3	0.2 0.85	+0.4 0	+0.85 -0.6				0.3 0.95	+0.4 0	+0.95 +0.7	0.3 1.3	+0.6 0	+1.3 +0.9
0.12-0.24	0.1 0.6	+0.3 0	+0.6 +0.4	0.2 1.0	+0.5 0	+1.0 -0.7				0.4 1.2	+0.5 0	+1.2 +0.9	0.5 1.7	+0.7 0	+1.7 +1.2
0.24-0.40	0.1 0.75	+0.4 0	+0.75 +0.5	0.4 1.4	+0.6 0	+1.4 -1.0				0.6 1.6	+0.6 0	+1.6 +1.2	0.5 2.0	+0.9 0	+2.0 +1.4
0.40-0.56	0.1 0.8	+0.4 0	+0.8 +0.5	0.5 1.6	+0.7 0	+1.6 +1.2				0.7 1.8	+0.7 0	+1.8 +1.4	0.6 2.3	+1.0 0	+2.3 +1.6
0.56-0.71	0.2 0.9	+0.4 0	+0.9 +0.6	0.5 1.6	+0.7 0	+1.6 +1.2				0.7 1.8	+0.7 0	+1.8 +1.4	0.8 2.5	+1.0 0	+2.5 +1.8
0.71-0.95	0.2 1.1	+0.5 0	+1.1 +0.7	0.6 1.9	+0.8 0	+1.9 +1.4				0.8 2.1	+0.8 0	+2.1 +1.6	1.0 3.0	+1.2 0	+3.0 +2.2
0.95-1.19	0.3 1.2	+0.5 0	+1.2 +0.8	0.6 1.9	+0.8 0	+1.9 +1.4	0.8 2.1	+0.8 0	+2.1 +1.6	1.0 2.3	+0.8 0	+2.3 +1.8	1.3 3.3	+1.2 0	+3.3 +2.5
1.19-1.58	0.3 1.3	+0.6 0	+1.3 +0.9	0.8 2.4	+1.0 0	+2.4 +1.8	1.0 2.6	+1.0 0	+2.6 +2.0	1.5 3.1	+1.0 0	+3.1 +2.5	1.4 4.0	+1.6 0	+4.0 +3.0
1.58-1.97	0.4 1.4	+0.6 0	+1.4 +1.0	0.8 2.4	+1.0 0	+2.4 +1.8	1.2 2.8	+1.0 0	+2.8 +2.2	1.8 3.4	+1.0 0	+3.4 +2.8	2.4 5.0	+1.6 0	+5.0 +4.0
1.97-2.56	0.6 1.8	+0.7 0	+1.8 +1.3	0.8 2.7	+1.2 0	+2.7 +2.0	1.3 3.2	+1.2 0	+3.2 +2.5	2.3 4.2	+1.2 0	+4.2 +3.5	3.2 6.2	+1.8 0	+6.2 +5.0
2.56-3.15	0.7 1.9	+0.7 0	+1.9 +1.4	1.0 2.9	+1.2 0	+2.9 +2.2	1.8 3.7	+1.2 0	+3.7 +3.0	2.8 4.7	+1.2 0	+4.7 +4.0	4.2 7.2	+1.8 0	+7.2 +6.0
3.15-3.94	0.9 2.4	+0.9 0	+2.4 +1.8	1.4 3.7	+1.4 0	+3.7 +2.8	2.1 4.4	+1.4 0	+4.4 +3.5	3.6 5.9	+1.4 0	+5.9 +5.0	4.8 8.4	+2.2 0	+8.4 +7.0
3.94-4.73	1.1 2.6	+0.9 0	+2.6 +2.0	1.6 3.9	+1.4 0	+3.9 +3.0	2.6 4.9	+1.4 0	+4.9 +4.0	4.6 6.9	+1.4 0	+6.9 +6.0	5.8 9.4	+2.2 0	+9.4 +8.0

See footnotes at end of table.

Nominal Size Range, Inches	Class FN 1			Class FN 2			Class FN 3			Class FN 4			Class FN 5		
	Interference*	Standard Tolerance Limits		Interference*	Standard Tolerance Limits		Interference*	Standard Tolerance Limits		Interference*	Standard Tolerance Limits		Interference*	Standard Tolerance Limits	
		Hole H6	Shaft		Hole H7	Shaft s6		Hole H7	Shaft t6		Hole H7	Shaft u6		Hole H8	Shaft x7
Over To	Values shown below are in thousandths of an inch														
4.73- 5.52	1.2 2.9	+1.0 0	+2.9 +2.2	1.9 4.5	+1.6 0	+4.5 +3.5	3.4 6.0	+1.6 0	+6.0 +5.0	5.4 8.0	+1.6 0	+8.0 +7.0	7.5 11.6	+2.5 0	+11.6 +10.0
5.52- 6.30	1.5 3.2	+1.0 0	+3.2 +2.5	2.4 5.0	+1.6 0	+5.0 +4.0	3.4 6.0	+1.6 0	+6.0 +5.0	5.4 8.0	+1.6 0	+8.0 +7.0	9.5 13.6	+2.5 0	+13.6 +12.0
6.30- 7.09	1.8 3.5	+1.0 0	+3.5 +2.8	2.9 5.5	+1.6 0	+5.5 +4.5	4.4 7.0	+1.6 0	+7.0 +6.0	6.4 9.0	+1.6 0	+9.0 +8.0	9.5 13.6	+2.5 0	+13.6 +12.0
7.09- 7.88	1.8 3.8	+1.2 0	+3.8 +3.0	3.2 6.2	+1.8 0	+6.2 +5.0	5.2 8.2	+1.8 0	+8.2 +7.0	7.2 10.2	+1.8 0	+10.2 +9.0	11.2 15.8	+2.8 0	+15.8 +14.0
7.88- 8.86	2.3 4.3	+1.2 0	+4.3 +3.5	3.2 6.2	+1.8 0	+6.2 +5.0	5.2 8.2	+1.8 0	+8.2 +7.0	8.2 11.2	+1.8 0	+11.2 +10.0	13.2 17.8	+2.8 0	+17.8 +16.0
8.86- 9.85	2.3 4.3	+1.2 0	+4.3 +3.5	4.2 7.2	+1.8 0	+7.2 +6.0	6.2 9.2	+1.8 0	+9.2 +8.0	10.2 13.2	+1.8 0	+13.2 +12.0	13.2 17.8	+2.8 0	+17.8 +16.0
9.85-11.03	2.8 4.9	+1.2 0	+4.9 +4.0	4.0 7.2	+2.0 0	+7.2 +6.0	7.0 10.2	+2.0 0	+10.2 +9.0	10.0 13.2	+2.0 0	+13.2 +12.0	15.0 20.0	+3.0 0	+20.0 +18.0
11.03-12.41	2.8 4.9	+1.2 0	+4.9 +4.0	5.0 8.2	+2.0 0	+8.2 +7.0	7.0 10.2	+2.0 0	+10.2 +9.0	12.0 15.2	+2.0 0	+15.2 +14.0	17.0 22.0	+3.0 0	+22.0 +20.0
12.41-13.98	3.1 5.5	+1.4 0	+5.5 +4.5	5.8 9.4	+2.2 0	+9.4 +8.0	7.8 11.4	+2.2 0	+11.4 +10.0	13.8 17.4	+2.2 0	+17.4 +16.0	18.5 24.2	+3.5 0	+24.2 +22.0
13.98-15.75	3.6 6.1	+1.4 0	+6.1 +5.0	5.8 9.4	+2.2 0	+9.4 +8.0	9.8 13.4	+2.2 0	+13.4 +12.0	15.8 19.4	+2.2 0	+19.4 +18.0	21.5 27.2	+3.5 0	+27.2 +25.0
15.75-17.72	4.4 7.0	+1.6 0	+7.0 +6.0	6.5 10.6	+2.5 0	+10.6 +9.0	9.5 13.6	+2.5 0	+13.6 +12.0	17.5 21.6	+2.5 0	+21.6 +20.0	24.0 30.5	+4.0 0	+30.5 +28.0
17.72-19.69	4.4 7.0	+1.6 0	+7.0 +6.0	7.5 11.6	+2.5 0	+11.6 +10.0	11.5 15.6	+2.5 0	+15.6 +14.0	19.5 23.6	+2.5 0	+23.6 +22.0	26.0 32.5	+4.0 0	+32.5 +30.0

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* Pairs of values shown represent minimum and maximum amounts of interference resulting from application of standard tolerance limits.

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