

ISO Tolerances for Shafts (ISO 286-2)

	Nominal Shaft Sizes (mm)																															
over	3	6	10	18	30	40	50	65	80	100	120	140	160	180	200	225	250	280	315	355												
inc.	6	10	18	30	40	50	65	80	100	120	140	160	180	200	225	250	280	315	355	400												
micrometres																																
Grade	All limits below with + sign																															
a12	-270 -390	-280 -430	-290 -470	-300 -510	-310 -560	-320 -570	-340 -640	-360 -660	-380 -730	-410 -760	-460 -860	-520 -920	-580 -980	-660 -1120	-740 -1200	-820 -1280	-920 -1440	-1050 -1570	-1200 -1770	-1350 -1920												
d6	-30 -38	-40 -49	-50 -61	-65 -78	-80 -96		-100 -119		-120 -142		-145 -170			-170 -199			-190 -222		-210 -246													
e6	-20 -28	-25 -34	-32 -43	-40 -53	-50 -66		-60 -79		-72 -94		-85 -110			-100 -129			-110 -142		-125 -161													
e13	-20 -200	-25 -245	-32 -302	-40 -370	-50 -440		-60 -520		-72 -612		-85 -715			-100 -820			-110 -920		-125 -1015													
f5	-10 -15	-13 -19	-16 -24	-20 -29	-25 -36		-30 -43		-36 -51		-43 -61			-50 -70			-56 -79		-62 -87													
f6	-10 -18	-13 -22	-16 -27	-20 -33	-25 -41		-30 -49		-36 -58		-43 -68			-50 -79			-56 -88		-62 -98													
f7	-10 -22	-13 -28	-16 -34	-20 -41	-25 -50		-30 -60		-36 -71		-43 -83			-50 -96			-56 -108		-62 -119													
g5	-4 -9	-5 -11	-6 -14	-7 -16	-9 -20		-10 -23		-12 -27		-14 -32			-15 -35			-17 -40		-18 -43													
g6	-4 -12	-5 -14	-6 -17	-7 -20	-9 -25		-10 -29		-12 -34		-14 -39			-15 -44			-17 -49		-18 -54													
g7	-4 -16	-5 -20	-6 -24	-7 -28	-9 -34		-10 -40		-12 -47		-14 -54			-15 -61			-17 -69		-18 -75													
h4	0 -4	0 -4	0 -5	0 -6	0 -7		0 -8		0 -10		0 -12			0 -14			0 -16		0 -18													
h5	0 -5	0 -6	0 -8	0 -9	0 -11		0 -13		0 -15		0 -18			0 -20			0 -23		0 -25													
h6	0 -8	0 -9	0 -11	0 -13	0 -16		0 -19		0 -22		0 -25			0 -29			0 -32		0 -36													
h7	0 -12	0 -15	0 -18	0 -21	0 -25		0 -30		0 -35		0 -40			0 -46			0 -52		0 -57													
h8	0 -18	0 -22	0 -27	0 -33	0 -39		0 -46		0 -54		0 -63			0 -72			0 -81		0 -89													
h9	0 -30	0 -36	0 -43	0 -52	0 -62		0 -74		0 -87		0 -100			0 -115			0 -130		0 -140													
h10	0 -48	0 -58	0 -70	0 -84	0 -100		0 -120		0 -140		0 -160			0 -185			0 -210		0 -230													
h11	0 -75	0 -90	0 -110	0 -130	0 -160		0 -190		0 -220		0 -250			0 -290			0 -320		0 -360													
h12	0 -120	0 -150	0 -180	0 -210	0 -250		0 -300		0 -350		0 -400			0 -460			0 -520		0 -570													
j5	+3 -2	+4 -2	+5 -3	+5 -4	+6 -5		+6 -7		+6 -9		+7 -11			+7 -13			+7 -16		+7 -18													
j6	+6 -2	+7 -2	+8 -3	+9 -4	+11 -5		+12 -7		+13 -9		+14 -11			+16 -13			+16 -16		+18 -18													
j7	+8 -4	+10 -5	+12 -6	+13 -8	+15 -10		+18 -12		+20 -15		+22 -18			+25 -21			+26 -26		+29 -28													
js5	+2.5 -2.5	+3 -3	+4 -4	+4.5 -4.5	+5.5 -5.5		+6.5 -6.5		+7.5 -7.5		+9 -9			+10 -10			+11.5 -11.5		+12.5 -12.5													
js6	+4 -4	+4.5 -4.5	+5.5 -5.5	+6.5 -6.5	+8 -8		+9.5 -9.5		+11 -11		+12.5 -12.5			+14.5 -14.5			+16 -16		+18 -18													
js7	+6 -6	+7.5 -7.5	+9 -9	+10.5 -10.5	+12.5 -12.5		+15 -15		+17.5 -17.5		+20 -20			+23 -23			+26 -26		+28.5 -28.5													
k5	+6 +1	+7 +1	+9 +1	+11 +2	+13 +2		+15 +2		+18 +3		+21 +3			+24 +4			+27 +4		+29 +4													
k6	+9 +1	+10 +1	+12 +1	+15 +2	+18 +2		+21 +2		+25 +3		+28 +3			+33 +4			+36 +4		+40 +4													
k7	+13 +1	+16 +1	+19 +1	+23 +2	+27 +2		+32 +2		+38 +3		+43 +3			+50 +4			+56 +4		+61 +4													
m5	+9 +4	+12 +6	+15 +7	+17 +8	+20 +9		+24 +11		+28 +13		+33 +15			+37 +17			+43 +20		+46 +21													
m6	+12 +4	+15 +6	+18 +7	+21 +8	+25 +9		+30 +11		+35 +13		+40 +15			+46 +17			+52 +20		+57 +21													
m7	+16 +4	+21 +6	+25 +7	+29 +8	+34 +9		+41 +11		+48 +13		+55 +15			+63 +17			+72 +20		+78 +21													
n5	+13 +8	+16 +10	+20 +12	+24 +15	+28 +17		+33 +20		+38 +23		+45 +27			+51 +31			+57 +34		+62 +37													
n6	+16 +8	+19 +10	+23 +12	+28 +15	+33 +17		+39 +20		+45 +23		+52 +27			+60 +31			+66 +34		+73 +37													
n7	+20 +8	+25 +10	+30 +12	+36 +15	+42 +17		+50 +20		+58 +23		+67 +27			+77 +31			+86 +34		+94 +37													
p5	+17 +12	+21 +15	+26 +18	+31 +22	+37 +26		+45 +32		+52 +37		+61 +43			+70 +50			+79 +56		+87 +62													
p6	+20 +12	+24 +15	+29 +18	+35 +22	+42 +26		+51 +32		+59 +37		+68 +43			+79 +50			+88 +56		+98 +62													
r6	+23 +15	+28 +19	+34 +23	+41 +28	+50 +34		+60 +41		+73 +51		+76 +54		+88 +63		+90 +65		+93 +68		+106 +77		+109 +80		+113 +84		+126 +94		+130 +98		+144 +108		+150 +114	
	Nominal Shaft Sizes (mm)																															
over	3	6	10	18	30	40	50	65	80	100	120	140	160	180	200	225	250	280	315	355												
inc.	6	10	18	30	40	50	65	80	100	120	140	160	180	200	225	250	280	315	355	400												
micrometres																																

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