

Tolerance classes

Tolerance classes and the corresponding values for specific tolerance characteristics are defined in DIN 620 / ISO 492.

Tolerances for radial bearings, except tapered roller bearings

Tolerance class P0

Inner ring		Units: μm			
<i>d</i> mm		Δ_{dmp} Dimension		Δ_{Bs} Dimension	
		upper	lower	oberes	lower
over	to				
0,6 ¹⁾	2,5	0	-8	0	-40
2,5	10	0	-8	0	-120
10	18	0	-8	0	-120
18	30	0	-10	0	-120
30	50	0	-12	0	-120
50	80	0	-15	0	-150
80	120	0	-20	0	-200
120	180	0	-25	0	-250
180	250	0	-30	0	-300
250	315	0	-35	0	-350
315	400	0	-40	0	-400
400	500	0	-45	0	-450
500	630	0	-50	0	-500
630	800	0	-75	0	-750
800	1000	0	-100	0	-1000

¹⁾ This diameter is included

Tolerance class P6

Inner ring		Units: μm			
<i>d</i> mm		Δ_{dmp} Dimension		Δ_{Bs} Dimension	
		upper	lower	upper	lower
over	to				
0,6 ¹⁾	2,5	0	-7	0	-40
2,5	10	0	-7	0	-120
10	18	0	-7	0	-120
18	30	0	-8	0	-120
30	50	0	-10	0	-120
50	80	0	-12	0	-150
80	120	0	-15	0	-200
120	180	0	-18	0	-250
180	250	0	-22	0	-300
250	315	0	-25	0	-350
315	400	0	-30	0	-400
400	500	0	-35	0	-450

¹⁾ This diameter is included

Outer ring

Outer ring		Units: μm			
<i>D</i> mm		Δ_{Dmp} Dimension		Δ_{Cs} Dimension	
		upper	lower	oberes	lower
over	to				
2,5 ¹⁾	6	0	-8	0	-40
6	18	0	-8	0	-120
18	30	0	-9	0	-120
30	50	0	-11	0	-120
50	80	0	-13	0	-120
80	120	0	-15	0	-150
120	150	0	-18	0	-200
150	180	0	-25	0	-250
180	250	0	-30	0	-300
250	315	0	-35	0	-350
315	400	0	-40	0	-400
400	500	0	-45	0	-450
500	630	0	-50	0	-500
630	800	0	-75	0	-750
800	1000	0	-100	0	-1000

¹⁾ This diameter is included

Outer ring

Outer ring		Units: μm			
<i>D</i> mm		Δ_{Dmp} Dimension		Δ_{Cs} Dimension	
		upper	lower	upper	lower
over	to				
2,5 ¹⁾	6	0	-7	0	-40
6	18	0	-7	0	-120
18	30	0	-8	0	-120
30	50	0	-9	0	-120
50	80	0	-11	0	-120
80	120	0	-13	0	-150
120	150	0	-15	0	-200
150	180	0	-18	0	-250
180	250	0	-20	0	-300
250	315	0	-25	0	-350
315	400	0	-28	0	-400
400	500	0	-33	0	-450
500	630	0	-38	0	-500
630	800	0	-45	0	-
800	1000	0	-60	0	-

¹⁾ This diameter is included

Tolerance class P5

Inner ring		Units: μm			
<i>d</i> mm		Δ_{dmp}		Δ_{Bs}	
		Dimension		Dimension	
over	to	upper	lower	upper	lower
0,6 ¹⁾	2,5	0	-5	0	-40
2,5	10	0	-5	0	-40
10	18	0	-5	0	-80
18	30	0	-6	0	-120
30	50	0	-8	0	-120
50	80	0	-9	0	-150
80	120	0	-10	0	-200
120	180	0	-13	0	-250
180	250	0	-15	0	-300
250	315	0	-18	0	-350
315	400	0	-23	0	-400

¹⁾ This diameter is included

Tolerance class P4

Inner ring		Units: μm			
<i>d</i> mm		Δ_{dmp}		Δ_{Bs}	
		Dimension		Dimension	
over	to	upper	lower	upper	lower
0,6 ¹⁾	2,5	0	-4	0	-40
2,5	10	0	-4	0	-40
10	18	0	-4	0	-80
18	30	0	-5	0	-120
30	50	0	-6	0	-120
50	80	0	-7	0	-150
80	120	0	-8	0	-200
120	180	0	-10	0	-250
180	250	0	-12	0	-300

¹⁾ This diameter is included

Outer ring

		Units: μm			
<i>D</i> mm		Δ_{Dmp}		Δ_{Cs}	
		Dimension		Dimension	
over	to	upper	lower	oberes	lower
2,5 ¹⁾	6	0	-5	0	-40
6	18	0	-5	0	-40
18	30	0	-6	0	-80
30	50	0	-7	0	-120
50	80	0	-9	0	-120
80	120	0	-10	0	-150
120	150	0	-11	0	-200
150	180	0	-13	0	-250
180	250	0	-15	0	-300
250	315	0	-18	0	-350
315	400	0	-20	0	-400
400	500	0	-23	0	-
500	630	0	-28	0	-
630	800	0	-35	0	-

¹⁾ This diameter is included

Outer ring

		Units: μm			
<i>D</i> mm		Δ_{Dmp}		Δ_{Cs}	
		Dimension		Dimension	
over	to	upper	lower	upper	lower
2,5 ¹⁾	6	0	-4	0	-40
6	18	0	-4	0	-40
18	30	0	-5	0	-80
30	50	0	-6	0	-120
50	80	0	-7	0	-120
80	120	0	-8	0	-150
120	150	0	-9	0	-200
150	180	0	-10	0	-250
180	250	0	-11	0	-300
250	315	0	-13	0	-350
315	400	0	-15	0	-450

¹⁾ This diameter is included

Tolerance class P2

Inner ring		<i>Units: μm</i>			
d mm		Δ_{dmp}		Δ_{Bs}	
		Dimension		Dimension	
over	to	upper	lower	upper	lower
0,6¹⁾	2,5	0	-2,5	0	-40
2,5	10	0	-2,5	0	-40
10	18	0	-2,5	0	-80
18	30	0	-2,5	0	-120
30	50	0	-2,5	0	-120
50	80	0	-4	0	-150
80	120	0	-5	0	-200
120	150	0	-7	0	-250
150	180	0	-7	0	-300
180	250	0	-8	0	-350

¹⁾ This diameter is included

Outer ring		<i>Units: μm</i>			
D mm		Δ_{Dmp}		Δ_{Cs}	
		Dimension		Dimension	
over	to	upper	lower	upper	lower
0,6¹⁾	2,5	0	-2,5	0	-40
2,5	10	0	-2,5	0	-40
10	18	0	-2,5	0	-80
18	30	0	-4	0	-120
30	50	0	-4	0	-120
50	80	0	-4	0	-150
80	120	0	-5	0	-200
120	150	0	-5	0	-250
150	180	0	-7	0	-300
180	250	0	-8	0	-350
250	315	0	-8	0	-
315	440	0	-10	0	-

¹⁾ This diameter is included

Tolerances for tapered roller bearings

Tolerance class P0

Inner ring		Units: μm	
d mm		Δ_{dmp} Dimension	
over	to	upper	lower
10	18	0	-12
18	30	0	-12
30	50	0	-12
50	80	0	-15
80	120	0	-20
120	180	0	-25
180	250	0	-30
250	315	0	-35
315	400	0	-40

Outer ring		Units: μm	
D mm		Δ_{Dmp} Dimension	
over	to	upper	lower
18	30	0	-12
30	50	0	-14
50	80	0	-16
80	120	0	-18
120	150	0	-20
150	180	0	-25
180	250	0	-30
250	315	0	-35
315	400	0	-40
400	500	0	-45
500	630	0	-50

Bearing width and width of rings				Units: μm			
d mm		Δ_{Bs} Dimension IR		Δ_{Cs} Dimension OR		Δ_{Ts} Dimension	
over	to	upper	lower	upper	lower	upper	lower
10	18	0	-120	0	-120	+200	0
18	30	0	-120	0	-120	+200	0
30	50	0	-120	0	-120	+200	0
50	80	0	-150	0	-150	+200	0
80	120	0	-200	0	-200	+200	-200
120	180	0	-250	0	-250	+350	-250
180	250	0	-300	0	-300	+350	-250
250	315	0	-350	0	-350	+350	-250
315	400	0	-400	0	-400	+400	-400

Legend	Definition nach DIN ISO 1132
d	Nominal diameter of the borehole
D	Nominal outer diameter
Δd_{mp}	Deviation of the mean bore diameter in one plane
ΔB_s	Deviation of a single inner ring width
ΔD_{mp}	Deviation of the mean external diameter in one plane
ΔC_s	Deviation of a single outer ring width
ΔT_s	Deviation of individual bearing width; Deviation between actual individual bearing width and nominal bearing width

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