

Precision Tolerances and Recommended Fits for Real-Slim Ball Bearings in Normal Applications

Selection Tables

Section 2

Type C with Endurakote Plating – Precision Class 1												
Bearing Size (Inch Series)	Bearing Diameters		Radial & Axial Runout		Rotating Shaft or Duplex DF Mounting		Stationary Shaft or Duplex DB Mounting			Bearing Diametral Clearance* (Type "X" and "C" only) Before Installation		
	Bearing Bore Nominal +.0000	Bearing O.D. Nominal +.0000	Inner Race	Outer Race	Shaft Diameter Nominal -.0000	Housing Bore Nominal -.0000	Shaft Diameter Nominal	Housing Bore Nominal				
010	-.0006	-.0007	.0005	.0008	+.0006	+.0007	-.0006	-.0012	-.0007	-.0014	.0010	.0016
015	-.0007	-.0007	.0006	.0008	+.0007	+.0007	-.0007	-.0014	-.0007	-.0014	.0012	.0018
017	-.0008	-.0007	.0008	.0010	+.0008	+.0007	-.0008	-.0016	-.0007	-.0014	.0012	.0024
020	-.0008	-.0007	.0008	.0010	+.0008	+.0007	-.0008	-.0016	-.0007	-.0014	.0012	.0024
025	-.0008	-.0007	.0008	.0010	+.0008	+.0007	-.0008	-.0016	-.0007	-.0014	.0012	.0024
030	-.0008	-.0008	.0008	.0010	+.0008	+.0008	-.0008	-.0016	-.0008	-.0016	.0012	.0024
035	-.0010	-.0008	.0010	.0012	+.0010	+.0008	-.0010	-.0020	-.0008	-.0016	.0016	.0028
040	-.0009	-.0007	.0010	.0012	+.0009	+.0007	-.0009	-.0018	-.0007	-.0014	.0016	.0028
042	-.0009	-.0009	.0010	.0014	+.0009	+.0009	-.0009	-.0018	-.0009	-.0018	.0016	.0028
045	-.0009	-.0009	.0010	.0014	+.0009	+.0009	-.0009	-.0018	-.0009	-.0018	.0016	.0028
047	-.0011	-.0009	.0012	.0014	+.0011	+.0009	-.0011	-.0022	-.0009	-.0018	.0020	.0034
050	-.0011	-.0009	.0012	.0014	+.0011	+.0009	-.0011	-.0022	-.0009	-.0018	.0020	.0034
055	-.0011	-.0011	.0012	.0016	+.0011	+.0011	-.0011	-.0022	-.0011	-.0022	.0020	.0034
060	-.0011	-.0011	.0012	.0016	+.0011	+.0011	-.0011	-.0022	-.0011	-.0022	.0020	.0034
065	-.0011	-.0011	.0012	.0016	+.0011	+.0011	-.0011	-.0022	-.0011	-.0022	.0020	.0034
070	-.0011	-.0013	.0012	.0016	+.0011	+.0013	-.0011	-.0022	-.0013	-.0026	.0024	.0042
075	-.0013	-.0013	.0016	.0018	+.0013	+.0013	-.0013	-.0026	-.0013	-.0026	.0024	.0042
080	-.0013	-.0013	.0016	.0018	+.0013	+.0013	-.0013	-.0026	-.0013	-.0026	.0024	.0042
090	-.0013	-.0013	.0016	.0018	+.0013	+.0013	-.0013	-.0026	-.0013	-.0026	.0024	.0042
100	-.0015	-.0015	.0018	.0020	+.0015	+.0015	-.0015	-.0030	-.0015	-.0030	.0028	.0048
110	-.0015	-.0015	.0018	.0020	+.0015	+.0015	-.0015	-.0030	-.0015	-.0030	.0028	.0048
120	-.0015	-.0015	.0018	.0020	+.0015	+.0015	-.0015	-.0030	-.0015	-.0030	.0028	.0048
140	-.0017	-.0017	.0018	.0020	+.0017	+.0017	-.0017	-.0034	-.0017	-.0034	.0032	.0052
160	-.0019	-.0019	.0018	.0020	+.0019	+.0019	-.0019	-.0038	-.0019	-.0038	.0036	.0056
180	-.0019	-.0019	.0020	.0020	+.0019	+.0019	-.0019	-.0038	-.0019	-.0038	.0036	.0056
200	-.0021	-.0021	.0020	.0020	+.0021	+.0021	-.0021	-.0042	-.0021	-.0042	.0040	.0060
210	-.0021	-.0021	.0020	.0020	+.0021	+.0021	-.0021	-.0042	-.0021	-.0042	.0040	.0060
220	-.0021	-.0021	.0020	.0020	+.0021	+.0021	-.0021	-.0042	-.0021	-.0042	.0040	.0060
250	-.0031	-.0031	.0020	.0020	+.0031	+.0031	-.0031	-.0062	-.0031	-.0062	.0060	.0080
300	-.0031	-.0031	.0020	.0020	+.0031	+.0031	-.0031	-.0062	-.0031	-.0062	.0060	.0080
350	-.0041	-.0041	.0020	.0020	+.0041	+.0041	-.0041	-.0082	-.0041	-.0082	.0080	.0100
400	-.0041	-.0041	.0020	.0020	+.0041	+.0041	-.0041	-.0082	-.0041	-.0082	.0080	.0100

* Diametral clearance after installation theoretically can range rather widely if all contributing bearing, housing, and shaft tolerances are at either of their extremes. Diametral clearances shown do not apply to Type A (angular contact) bearings.

Listed shaft and housing diameters are for steel supports with standard bearing diametral clearance. Recommended shaft and housing diameters can change greatly based on orientation, temperature, speed, non-standard diametral clearances, and desired performance characteristics. Contact Kaydon for design assistance when required.

Total Width Tolerance—Duplexed Type A Bearings:

Up thru 12" Bearing Bore +.000 –.010
Over 12" Bearing Bore +.000 –.020

Race Width Tolerance—Single Type C, X, A Bearings:

Up thru 12" Bearing Bore +.000 –.005
Over 12" Bearing Bore +.000 –.010

All dimensions in inches.

Precision Tolerances and Recommended Fits for Reali-Slim Bearings (continued)

Type X and A with Endurakote Plating – Precision Class 1												
Bearing Size (Inch Series)	Bearing Diameters		Radial & Axial Runout		Rotating Shaft or Duplex DF Mounting		Stationary Shaft or Duplex DB Mounting			Bearing Diametral Clearance* (Type "X" and "C" only) Before Installation		
	Bearing Bore Nominal +.0000	Bearing O.D. Nominal +.0000	Inner Race	Outer Race	Shaft Diameter Nominal -.0000	Housing Bore Nominal -.0000	Shaft Diameter Nominal	Housing Bore Nominal				
010	-.0006	-.0007	.0003	.0004	+.0006	+.0007	-.0006	-.0012	-.0007	-.0014	.0010	.0015
015	-.0007	-.0007	.0004	.0004	+.0007	+.0007	-.0007	-.0014	-.0007	-.0014	.0012	.0017
017	-.0008	-.0007	.0005	.0005	+.0008	+.0007	-.0008	-.0016	-.0007	-.0014	.0012	.0022
020	-.0008	-.0007	.0005	.0005	+.0008	+.0007	-.0008	-.0016	-.0007	-.0014	.0012	.0022
025	-.0008	-.0007	.0005	.0005	+.0008	+.0007	-.0008	-.0016	-.0007	-.0014	.0012	.0022
030	-.0008	-.0008	.0006	.0006	+.0008	+.0008	-.0008	-.0016	-.0008	-.0016	.0012	.0022
035	-.0010	-.0008	.0006	.0006	+.0010	+.0008	-.0010	-.0020	-.0008	-.0016	.0016	.0026
040	-.0009	-.0007	.0006	.0006	+.0009	+.0007	-.0009	-.0018	-.0007	-.0014	.0016	.0026
042	-.0009	-.0009	.0008	.0008	+.0009	+.0009	-.0009	-.0018	-.0009	-.0018	.0016	.0026
045	-.0009	-.0009	.0008	.0008	+.0009	+.0009	-.0009	-.0018	-.0009	-.0018	.0016	.0026
047	-.0011	-.0009	.0008	.0008	+.0011	+.0009	-.0011	-.0022	-.0009	-.0018	.0020	.0030
050	-.0011	-.0009	.0008	.0008	+.0011	+.0009	-.0011	-.0022	-.0009	-.0018	.0020	.0030
055	-.0011	-.0011	.0010	.0010	+.0011	+.0011	-.0011	-.0022	-.0011	-.0022	.0020	.0030
060	-.0011	-.0011	.0010	.0010	+.0011	+.0011	-.0011	-.0022	-.0011	-.0022	.0020	.0030
065	-.0011	-.0011	.0010	.0010	+.0011	+.0011	-.0011	-.0022	-.0011	-.0022	.0020	.0030
070	-.0011	-.0013	.0010	.0010	+.0011	+.0013	-.0011	-.0022	-.0013	-.0026	.0024	.0034
075	-.0013	-.0013	.0012	.0012	+.0013	+.0013	-.0013	-.0026	-.0013	-.0026	.0024	.0034
080	-.0013	-.0013	.0012	.0012	+.0013	+.0013	-.0013	-.0026	-.0013	-.0026	.0024	.0034
090	-.0013	-.0013	.0012	.0012	+.0013	+.0013	-.0013	-.0026	-.0013	-.0026	.0024	.0034
100	-.0015	-.0015	.0014	.0014	+.0015	+.0015	-.0015	-.0030	-.0015	-.0030	.0028	.0038
110	-.0015	-.0015	.0014	.0014	+.0015	+.0015	-.0015	-.0030	-.0015	-.0030	.0028	.0038
120	-.0015	-.0015	.0014	.0014	+.0015	+.0015	-.0015	-.0030	-.0015	-.0030	.0028	.0038
140	-.0015	-.0015	.0014	.0014	+.0015	+.0015	-.0015	-.0030	-.0015	-.0030	.0028	.0038
160	-.0017	-.0017	.0016	.0016	+.0017	+.0017	-.0017	-.0034	-.0017	-.0034	.0032	.0042
180	-.0017	-.0017	.0016	.0016	+.0017	+.0017	-.0017	-.0034	-.0017	-.0034	.0032	.0042
200	-.0019	-.0019	.0018	.0018	+.0019	+.0019	-.0019	-.0038	-.0019	-.0038	.0036	.0046
210	-.0019	-.0019	.0018	.0018	+.0019	+.0019	-.0019	-.0038	-.0019	-.0038	.0036	.0046
220	-.0019	-.0019	.0018	.0018	+.0019	+.0019	-.0019	-.0038	-.0019	-.0038	.0036	.0046
250	-.0019	-.0019	.0018	.0018	+.0019	+.0019	-.0019	-.0038	-.0019	-.0038	.0036	.0046
300	-.0019	-.0019	.0018	.0018	+.0019	+.0019	-.0019	-.0038	-.0019	-.0038	.0036	.0046
350	-.0021	-.0021	.0020	.0020	+.0021	+.0021	-.0021	-.0042	-.0021	-.0042	.0040	.0050
400	-.0021	-.0021	.0020	.0020	+.0021	+.0021	-.0021	-.0042	-.0021	-.0042	.0040	.0050

* Diametral clearance after installation theoretically can range rather widely if all contributing bearing, housing, and shaft tolerances are at either of their extremes. Diametral clearances shown do not apply to Type A (angular contact) bearings.

Listed shaft and housing diameters are for steel supports with standard bearing diametral clearance. Recommended shaft and housing diameters can change greatly based on orientation, temperature, speed, non-standard diametral clearances, and desired performance characteristics. Contact Kaydon for design assistance when required.

Total Width Tolerance—Duplexed Type A Bearings:
 Up thru 12" Bearing Bore +.000 –.010
 Over 12" Bearing Bore +.000 –.020
 Race Width Tolerance—Single Type C, X, A Bearings:
 Up thru 12" Bearing Bore +.000 –.005
 Over 12" Bearing Bore +.000 –.010

All dimensions in inches.

Precision Tolerances and Recommended Fits for Reali-Slim Bearings (continued)

Type C, X, and A with Endurakote Plating – Precision Class 3												
Bearing Size (Inch Series)	Bearing Diameters		Radial & Axial Runout		Rotating Shaft or Duplex DF Mounting		Stationary Shaft or Duplex DB Mounting			Bearing Diametral Clearance* (Type "X" and "C" only) Before Installation		
	Bearing Bore Nominal +.0000	Bearing O.D. Nominal +.0000	Inner Race	Outer Race	Shaft Diameter Nominal -.0000	Housing Bore Nominal -.0000	Shaft Diameter Nominal	Housing Bore Nominal				
010	-.0004	-.0005	.0003	.0004	+.0004	+.0005	-.0004	-.0008	-.0005	-.0010	.0007	.0011
015	-.0005	-.0005	.0004	.0004	+.0005	+.0005	-.0005	-.0010	-.0005	-.0010	.0008	.0012
017	-.0006	-.0006	.0004	.0005	+.0006	+.0006	-.0006	-.0012	-.0006	-.0012	.0008	.0018
020	-.0006	-.0006	.0004	.0005	+.0006	+.0006	-.0006	-.0012	-.0006	-.0012	.0008	.0018
025	-.0006	-.0006	.0004	.0005	+.0006	+.0006	-.0006	-.0012	-.0006	-.0012	.0008	.0018
030	-.0006	-.0006	.0004	.0006	+.0006	+.0006	-.0006	-.0012	-.0006	-.0012	.0008	.0018
035	-.0007	-.0006	.0005	.0006	+.0007	+.0006	-.0007	-.0014	-.0006	-.0012	.0010	.0020
040	-.0007	-.0006	.0005	.0006	+.0007	+.0006	-.0007	-.0014	-.0006	-.0012	.0010	.0020
042	-.0007	-.0007	.0005	.0008	+.0007	+.0007	-.0007	-.0014	-.0007	-.0014	.0010	.0020
045	-.0007	-.0007	.0005	.0008	+.0007	+.0007	-.0007	-.0014	-.0007	-.0014	.0010	.0020
047	-.0008	-.0007	.0006	.0008	+.0008	+.0007	-.0008	-.0016	-.0007	-.0014	.0012	.0022
050	-.0008	-.0007	.0006	.0008	+.0008	+.0007	-.0008	-.0016	-.0007	-.0014	.0012	.0022
055	-.0008	-.0008	.0006	.0009	+.0008	+.0008	-.0008	-.0016	-.0008	-.0016	.0012	.0022
060	-.0008	-.0008	.0006	.0009	+.0008	+.0008	-.0008	-.0016	-.0008	-.0016	.0012	.0022
065	-.0008	-.0008	.0006	.0009	+.0008	+.0008	-.0008	-.0016	-.0008	-.0016	.0012	.0022
070	-.0008	-.0009	.0006	.0010	+.0008	+.0009	-.0008	-.0016	-.0009	-.0018	.0014	.0024
075	-.0009	-.0009	.0008	.0010	+.0009	+.0009	-.0009	-.0018	-.0009	-.0018	.0014	.0024
080	-.0009	-.0009	.0008	.0010	+.0009	+.0009	-.0009	-.0018	-.0009	-.0018	.0014	.0024
090	-.0009	-.0009	.0008	.0010	+.0009	+.0009	-.0009	-.0018	-.0009	-.0018	.0014	.0024
100	-.0010	-.0010	.0010	.0012	+.0010	+.0010	-.0010	-.0020	-.0010	-.0020	.0016	.0026
110	-.0010	-.0010	.0010	.0012	+.0010	+.0010	-.0010	-.0020	-.0010	-.0020	.0016	.0026
120	-.0010	-.0011	.0010	.0014	+.0010	+.0011	-.0010	-.0020	-.0011	-.0022	.0018	.0028
140	-.0010	-.0011	.0012	.0014	+.0010	+.0011	-.0010	-.0020	-.0011	-.0022	.0018	.0028
160	-.0011	-.0012	.0014	.0016	+.0011	+.0012	-.0011	-.0022	-.0012	-.0024	.0020	.0030
180	-.0011	-.0012	.0014	.0016	+.0011	+.0012	-.0011	-.0022	-.0012	-.0024	.0020	.0030
200	-.0012	-.0014	.0016	.0018	+.0012	+.0014	-.0012	-.0024	-.0014	-.0028	.0024	.0034

* Diametral clearance after installation theoretically can range rather widely if all contributing bearing, housing, and shaft tolerances are at either of their extremes. Diametral clearances shown do not apply to Type A (angular contact) bearings.

Listed shaft and housing diameters are for steel supports with standard bearing diametral clearance. Recommended shaft and housing diameters can change greatly based on orientation, temperature, speed, non-standard diametral clearances, and desired performance characteristics. Contact Kaydon for design assistance when required.

All dimensions in inches.

Total Width Tolerance—Duplexed Type A Bearings:
 Up thru 12" Bearing Bore +.000 –.010
 Over 12" Bearing Bore +.000 –.020
 Race Width Tolerance—Single Type C, X, A Bearings:
 Up thru 12" Bearing Bore +.000 –.005
 Over 12" Bearing Bore +.000 –.010

Precision Tolerances and Recommended Fits for Reali-Slim Bearings (continued)

Type C, X, and A with Endurakote Plating – Precision Class 4

Bearing Size (Inch Series)	Bearing Diameters		Radial & Axial Runout				Rotating Shaft or Duplex DF Mounting		Stationary Shaft or Duplex DB Mounting				Bearing Diametral Clearance* (Type "X" and "C" only) Before Installation	
	Bearing Bore Nominal +.0000	Bearing O.D. Nominal +.0000	Inner Race		Outer Race		Shaft Diameter Nominal -.0000	Housing Bore Nominal -.0000	Shaft Diameter Nominal	Housing Bore Nominal				
			Radial	Axial	Radial	Axial								
010	-0.004	-0.004	.0002	.0003	.0002	.0003	+0.004	+0.004	-0.004	-0.008	-0.004	-0.008	.0005	.0009
015	-0.004	-0.004	.0002	.0003	.0002	.0003	+0.004	+0.004	-0.004	-0.008	-0.004	-0.008	.0005	.0009
017	-0.005	-0.005	.0002	.0003	.0003	.0004	+0.005	+0.005	-0.005	-0.010	-0.005	-0.010	.0006	.0012
020	-0.005	-0.005	.0002	.0003	.0003	.0004	+0.005	+0.005	-0.005	-0.010	-0.005	-0.010	.0006	.0012
025	-0.005	-0.005	.0002	.0003	.0003	.0004	+0.005	+0.005	-0.005	-0.010	-0.005	-0.010	.0006	.0012
030	-0.005	-0.005	.0002	.0003	.0004	.0005	+0.005	+0.005	-0.005	-0.010	-0.005	-0.010	.0006	.0012
035	-0.005	-0.005	.0003	.0004	.0004	.0005	+0.005	+0.005	-0.005	-0.010	-0.005	-0.010	.0006	.0012
040	-0.005	-0.005	.0003	.0004	.0004	.0005	+0.005	+0.005	-0.005	-0.010	-0.005	-0.010	.0006	.0012
042	-0.005	-0.006	.0003	.0004	.0004	.0005	+0.005	+0.006	-0.005	-0.010	-0.006	-0.012	.0008	.0014
045	-0.005	-0.006	.0003	.0004	.0004	.0005	+0.005	+0.006	-0.005	-0.010	-0.006	-0.012	.0008	.0014
047	-0.006	-0.006	.0003	.0004	.0004	.0005	+0.006	+0.006	-0.006	-0.012	-0.006	-0.012	.0008	.0014
050	-0.006	-0.006	.0003	.0004	.0004	.0005	+0.006	+0.006	-0.006	-0.012	-0.006	-0.012	.0008	.0014
055	-0.006	-0.007	.0003	.0004	.0005	.0006	+0.006	+0.007	-0.006	-0.012	-0.007	-0.014	.0010	.0016
060	-0.006	-0.007	.0003	.0004	.0005	.0006	+0.006	+0.007	-0.006	-0.012	-0.007	-0.014	.0010	.0016
065	-0.006	-0.007	.0003	.0004	.0005	.0006	+0.006	+0.007	-0.006	-0.012	-0.007	-0.014	.0010	.0016
070	-0.006	-0.007	.0003	.0004	.0005	.0006	+0.006	+0.007	-0.006	-0.012	-0.007	-0.014	.0010	.0016
075	-0.007	-0.007	.0004	.0005	.0005	.0006	+0.007	+0.007	-0.007	-0.014	-0.007	-0.014	.0010	.0016
080	-0.007	-0.007	.0004	.0005	.0005	.0006	+0.007	+0.007	-0.007	-0.014	-0.007	-0.014	.0010	.0016
090	-0.007	-0.007	.0004	.0005	.0005	.0006	+0.007	+0.007	-0.007	-0.014	-0.007	-0.014	.0010	.0016
100	-0.007	-0.007	.0005	.0006	.0006	.0007	+0.007	+0.007	-0.007	-0.014	-0.007	-0.014	.0010	.0016
110	-0.007	-0.007	.0005	.0006	.0006	.0007	+0.007	+0.007	-0.007	-0.014	-0.007	-0.014	.0010	.0016
120	-0.007	-0.008	.0005	.0006	.0007	.0008	+0.007	+0.008	-0.007	-0.014	-0.008	-0.016	.0012	.0018
140	-0.008	-0.008	.0005	.0007	.0007	.0008	+0.008	+0.008	-0.008	-0.016	-0.008	-0.016	.0012	.0018
160	-0.008	-0.009	.0007	.0008	.0008	.0009	+0.008	+0.009	-0.008	-0.016	-0.009	-0.018	.0014	.0020
180	-0.008	-0.009	.0007	.0008	.0008	.0009	+0.008	+0.009	-0.008	-0.016	-0.009	-0.018	.0014	.0020
200	-0.009	-0.010	.0008	.0009	.0009	.0010	+0.009	+0.010	-0.009	-0.018	-0.010	-0.020	.0016	.0022

* Diametral clearance after installation theoretically can range rather widely if all contributing bearing, housing, and shaft tolerances are at either of their extremes. Diametral clearances shown do not apply to Type A (angular contact) bearings.

Listed shaft and housing diameters are for steel supports with standard bearing diametral clearance. Recommended shaft and housing diameters can change greatly based on orientation, temperature, speed, non-standard diametral clearances, and desired performance characteristics. Contact Kaydon for design assistance when required.

Total Width Tolerance—Duplexed Type A Bearings:
 Up thru 12" Bearing Bore +.000 –.010
 Over 12" Bearing Bore +.000 –.020
 Race Width Tolerance—Single Type C, X, A Bearings:
 Up thru 12" Bearing Bore +.000 –.005
 Over 12" Bearing Bore +.000 –.010

All dimensions in inches.