

P2 and ABEC 9 Precision Tolerances

In Accordance with ISO 492 and ABMA 20 Standards



Phone: (800) 323-5725

Inner Ring Tolerance - Metric									
Nominal ID [mm]		2.5					80		
	Including	10	18	30	50	80	120		
Δ _{dmp} [μm]	Max	0	0	0	0	0	0		
Average ID tolerance	Min	-2.5	-2.5	-2.5	-2.5	-4.0	-5.0		
Δ _{ds} (Bearing Series 60 & 62) [μm]	Max	0	0	0	0	0	0		
Single ID tolerance	Min	-2.5	-2.5	-2.5	-2.5	-4.0	-5.0		
V _{dp max} (Bearing Series 618 & 619) [µm] Difference between largest and smallest ID	Max	2.5	2.5	2.5	2.5	2.5	5.0		
V _{dp max} (Bearing Series 60) [µm] Difference between largest and smallest ID	Max	2.5	2.5	2.5	2.5	4.0	5.0		
V _{dp max} (Bearing Series 62) [μm] Difference between largest and smallest ID	Max	2.5	2.5	2.5	2.5	4.0	5.0		
V _{dmp max} [µm] Difference between largest average ID and smallest average ID in different planes	Max	1.5	1.5	1.5	1.5	2.0	2.5		
K _{ia max} [µm] Assembled bearing inner ring radial runout	Max	1.5	1.5	2.5	2.5	2.5	2.5		
S _{d max} [µm] Inner ring face runout	Max	1.5	1.5	1.5	1.5	1.5	2.5		
S _{ia max} [µm] Assembled bearing inner ring axial runout	Max	1.5	1.5	2.5	2.5	2.5	2.0		
Δ _{BS} Single Bearing [μm]	Max	0	0	0	0	0	0		
Single inner ring width tolerance	Min	-40	-80	-120	-120	-150	-200		
Δ _{BS} Bearing Pair [μm]	Max	0	0	0	0	0	0		
Inner ring pair width tolerance	Min	-250	-250	-250	-250	-250	-380		
V _{BS max} [µm] Difference between largest and smallest width	Max	1.5	1.5	1.5	1.5	1.5	2.5		

Outer Ring Tolerance - Metric									
Nominal OD [mm]	Above	6	18	30	50	80	120	150	
Normilal OD [mm]	Including	18	30	50	80	120	150	180	
Δ _{Dmp} [μm]	Max	0	0	0	0	0	0	0	
Average OD tolerance	Min	-2.5	-4.0	-4.0	-4.0	-5.0	-5.0	-7.0	
Δ _{Ds} (Bearing Series 60 & 62) [μm]	Max	0	0	0	0	0	0	0	
Single OD tolerance	Min	-2.5	-4.0	-4.0	-4.0	-5.0	-5.0	-7.0	
V _{Dp max} (Bearing Series 618 & 619) [µm] Difference between largest and smallest OD	Max	2.5	4.0	4.0	4.0	5.0	5.0	7.0	
V _{Dp max} (Bearing Series 60) [μm] Difference between largest and smallest OD	Max	2.5	4.0	4.0	4.0	5.0	5.0	7.0	
V _{Dp max} (Bearing Series 62) [μm] Difference between largest and smallest OD	Max	2.5	4.0	4.0	4.0	5.0	5.0	7.0	
V _{Dmp max} [µm] Difference between largest average OD and smallest average OD in different planes	Max	1.5	2.0	2.0	2.0	2.5	2.5	3.5	
K _{ea max} [μm] Assembled bearing outer ring radial runout	Max	1.5	2.5	2.5	4.0	5.0	5.0	5.0	
S _{D max} [µm] Outer ring face runout	Max	1.5	1.5	1.5	1.5	2.5	2.5	2.5	
Sea max [µm] Assembled bearing outer ring axial runout	Max	1.5	2.5	2.5	4.0	5.0	5.0	5.0	
Δ _{CS} Single Bearing [μm] Single outer ring width tolerance	Max Min	Identical to the $\Lambda_{\rm BS}$ of the inner ring of the same hearing							
Δ _{CS} Bearing Pair [μm] Outer ring pair width tolerance	Max Min	Identical to the $\Lambda_{\rm BS}$ of the inner ring of the same hearing							
V _{CS max} [μm] Difference between largest and smallest width	Max	1.5	1.5	1.5	1.5	1.5	2.5	2.5	

Inner Ring Tolerance - Imperial									
Nominal ID [inch]	Above	0.0984	0.3937	0.7087	1.1811	1.9685	3.1496		
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Δ _{dmp} [0.0001"]	Max	0	0	0	0	0	0		
Average ID tolerance	Min	-1.0	-1.0	-1.0	-1.0	-1.6	-2.0		
Δ _{ds} (Bearing Series 60 & 62) [0.0001"]	Max	0	0	0	0	0	0		
Single ID tolerance	Min	-1.0	-1.0	-1.0	-1.0	-1.6	-2.0		
V _{dp max} (Bearing Series 618 & 619) [0.0001"] Difference between largest and smallest ID	Max	1.0	1.0	1.0	1.0	1.0	2.0		
V _{dp max} (Bearing Series 60) [0.0001"] Difference between largest and smallest ID	Max	1.0	1.0	1.0	1.0	1.6	2.0		
V _{dp max} (Bearing Series 62) [0.0001"] Difference between largest and smallest ID	Max	1.0	1.0	1.0	1.0	1.6	2.0		
V _{dmp max} [0.0001"] Difference between largest average ID and smallest average ID in different planes	Max	0.6	0.6	0.6	0.6	0.8	1.0		
K _{ia max} [0.0001"] Assembled bearing inner ring radial runout	Max	0.6	0.6	1.0	1.0	1.0	1.0		
S _{d max} [0.0001"] Inner ring face runout	Max	0.6	0.6	0.6	0.6	0.6	1.0		
S _{ia max} [0.0001"] Assembled bearing inner ring axial runout	Max	0.6	0.6	1.0	1.0	1.0	0.8		
Δ _{BS} Single Bearing [0.0001"]	Max	0	0	0	0	0	0		
Single inner ring width tolerance	Min	-15.7	-31.5	-47.2	-47.2	-59.1	-78.7		
Δ _{BS} Bearing Pair [0.0001"]	Max	0	0	0	0	0	0		
Inner ring pair width tolerance	Min	-98.4	-98.4	-98.4	-98.4	-98.4	-149.6		
V _{BS max} [0.0001"] Difference between largest and smallest width	Max	0.6	0.6	0.6	0.6	0.6	1.0		

Outer Ring Tolerance - Imperial										
Nominal OD [Inch]	Above	0.2362	0.7087	1.1811	1.9685	3.1496	4.7244	5.9055		
	Including	0.7087	1.1811	1.9685	3.1496	4.7244	5.9055	7.0866		
Δ _{Dmp} [0.0001"]	Max	0	0	0	0	0	0	0		
Average OD tolerance	Min	-1.0	-1.6	-1.6	-1.6	-2.0	-2.0	-2.8		
Δ _{Ds} (Bearing Series 60 & 62) [0.0001"]	Max	0	0	0	0	0	0	0		
Single OD tolerance	Min	-1.0	-1.6	-1.6	-1.6	-2.0	-2.0	-2.8		
V _{Dp max} (Bearing Series 618 & 619) [0.0001"] Difference between largest and smallest OD	Max	1.0	1.6	1.6	1.6	2.0	2.0	2.8		
V _{Dp max} (Bearing Series 60) [0.0001"] Difference between largest and smallest OD	Max	1.0	1.6	1.6	1.6	2.0	2.0	2.8		
V _{Dp max} (Bearing Series 62) [0.0001"] Difference between largest and smallest OD	Max	1.0	1.6	1.6	1.6	2.0	2.0	2.8		
V _{Dmp max} [0.0001"] Difference between largest average OD and smallest average OD in different planes	Max	0.6	0.8	0.8	0.8	1.0	1.0	1.4		
K _{ea max} [0.0001"] Assembled bearing outer ring radial runout	Max	0.6	1.0	1.0	1.6	2.0	2.0	2.0		
S _{D max} [0.0001"] Outer ring face runout	Max	0.6	0.6	0.6	0.6	1.0	1.0	1.0		
S _{ea max} [0.0001"] Assembled bearing outer ring axial runout	Max	0.6	1.0	1.0	1.6	2.0	2.0	2.0		
Δ _{CS} Single Bearing [0.0001"] Single outer ring width tolerance	Max Min	Identical to the App of the inner ring of the same hearing								
Δ _{CS} Bearing Pair [0.0001"] Outer ring pair width tolerance	Max Min	Max Identical to the Ass of the inner ring of the same bearing								
V _{CS max} [0.0001"] Difference between largest and smallest width	Max	0.6	0.6	0.6	0.6	0.6	1.0	1.0		