

## P6 and ABEC 3 Precision Tolerances

In Accordance with ISO 492 and ABMA 20 Standards



Phone: (800) 323-5725

Inner Ring Tolerance - Metric									
Nominal ID [mm]	Above	2.5	10	18	30	50	80		
	Including	10	18	30	50	80	120		
Δ <sub>dmp</sub> [μm]	Max	0	0	0	0	0	0		
Average ID tolerance	Min	-7.0	-7.0	-8.0	-10.0	-12.0	-15.0		
Δ <sub>ds</sub> (Bearing Series 60 & 62) [μm]	Max								
Single ID tolerance	Min								
V <sub>dp max</sub> (Bearing Series 618 & 619) [µm]	Max	9.0	9.0	10.0	13.0	15.0	19.0		
Difference between largest and smallest ID	IVIAA						19.0		
V <sub>dp max</sub> (Bearing Series 60) [μm]	Max	7.0	7.0	8.0	10.0	15.0	19.0		
Difference between largest and smallest ID	IVIAA	7.0	7.0	0.0	10.0	13.0	19.0		
V <sub>dp max</sub> (Bearing Series 62) [μm]	Max	5.0	5.0	6.0	8.0	9.0	11.0		
Difference between largest and smallest ID	IVIGA	5.0	3.0	0.0	0.0	3.0	11.0		
V <sub>dmp max</sub> [μm]									
Difference between largest average ID and	Max	5.0	5.0	6.0	8.0	9.0	11.0		
smallest average ID in different planes									
K <sub>ia max</sub> [µm]	Max	6.0	7.0	8.0	10.0	10.0	13.0		
Assembled bearing inner ring radial runout									
S <sub>d max</sub> [µm]	Max								
Inner ring face runout									
Sia max [µm]	Max								
Assembled bearing inner ring axial runout	Mari				0	0	0		
Δ <sub>BS</sub> Single Bearing [μm]	Max	0	0	0			"		
Single inner ring width tolerance	Min	-120	-120	-120	-120	-150	-200		
Δ <sub>BS</sub> Bearing Pair [μm]	Max	0	0	0	0	0	0		
Inner ring pair width tolerance	Min	-250	-250	-250	-250	-380	-380		
V <sub>BS max</sub> [μm]	Max	15.0	20.0	20.0	20.0	25.0	25.0		
Difference between largest and smallest width									

Outer Ring Tolerance - Metric									
Nominal OD [mm]	Above	6	18	30	50	80	120	150	
	Including	18	30	50	80	120	150	180	
Δ <sub>Dmp</sub> [μm]	Max	0	0	0	0	0	0	0	
Average OD tolerance	Min	-7.0	-8.0	-9.0	-11.0	-13.0	-15.0	-18.0	
Δ <sub>Ds</sub> (Bearing Series 60 & 62) [μm]	Max								
Single OD tolerance	Min								
V <sub>Dp max</sub> (Bearing Series 618 & 619) [μm]	Max	9.0	10.0	11.0	14.0	16.0	19.0	23.0	
Difference between largest and smallest OD	IVICA								
V <sub>Dp max</sub> (Bearing Series 60) [μm]	Max	7.0	8.0	9.0	11.0	16.0	19.0	23.0	
Difference between largest and smallest OD	IVIOX	7.0	0.0	0.0	11.0	10.0	10.0	20.0	
V <sub>Dp max</sub> (Bearing Series 62) [μm]	Max	5.0	6.0	7.0	8.0	10.0	11.0	14.0	
Difference between largest and smallest OD									
V <sub>Dmp max</sub> [µm]		- 0				400			
Difference between largest average OD and smallest average OD in different planes	Max	5.0	6.0	7.0	8.0	10.0	11.0	14.0	
Kea max [µm]									
Assembled bearing outer ring radial runout	Max	8.0	9.0	10.0	13.0	18.0	20.0	23.0	
S <sub>D max</sub> [µm]									
Outer ring face runout	Max								
Sea max [µm]									
Assembled bearing outer ring axial runout	Max								
Δ <sub>CS</sub> Single Bearing [μm]	Max								
Single outer ring width tolerance	Min	Identical to the App of the inner ring of the same hearing							
Δ <sub>CS</sub> Bearing Pair [μm]	Max	1.2	4:14- "	- 4 -50					
Outer ring pair width tolerance	Min	Min Identical to the Δ <sub>BS</sub> of the inner ring of the same bearing							
V <sub>CS max</sub> [µm]	Many Industrial to the VDO of the imposition of the								
Difference between largest and smallest width	Max	Identical to the VBS of the inner ring of the same bearing							

Inner Ring Tolerance - Imperial									
Nominal ID [inch]	Above	0.0984	0.3937	0.7087	1.1811	1.9685	3.1496		
	Including	0.3937	0.7087	1.1811	1.9685	3.1496	4.7244		
Δ <sub>dmp</sub> [0.0001"]	Max	0	0	0	0	0	0		
Average ID tolerance	Min	-2.8	-2.8	-3.1	-3.9	-4.7	-5.9		
Δ <sub>ds</sub> (Bearing Series 60 & 62) [0.0001"]	Max								
Single ID tolerance	Min								
V <sub>dp max</sub> (Bearing Series 618 & 619) [0.0001"]	Max	3.5	3.5	3.9	5.1	5.9	7.5		
Difference between largest and smallest ID	IVIAX						7.5		
V <sub>dp max</sub> (Bearing Series 60) [0.0001"]	Max	2.8	2.8	3.1	3.9	5.9	7.5		
Difference between largest and smallest ID	IVIAX								
V <sub>dp max</sub> (Bearing Series 62) [0.0001"]	Max	2.0	2.0	2.4	3.1	3.5	4.3		
Difference between largest and smallest ID									
V <sub>dmp max</sub> [0.0001"]									
Difference between largest average ID and	Max	2.0	2.0	2.4	3.1	3.5	4.3		
smallest average ID in different planes									
K <sub>ia max</sub> [0.0001"]	Max	2.4	2.8	3.1	3.9	3.9	5.1		
Assembled bearing inner ring radial runout				-					
S <sub>d max</sub> [0.0001"]	Max								
Inner ring face runout									
S <sub>ia max</sub> [0.0001"]	Max								
Assembled bearing inner ring axial runout									
Δ <sub>BS</sub> Single Bearing [0.0001"]	Max		0	0	0	0	0		
Single inner ring width tolerance	Min	-47.2	-47.2	-47.2	-47.2	-59.1	-78.7		
Δ <sub>BS</sub> 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	-149.6	-149.6		
V <sub>BS max</sub> [0.0001"]	Max	5.9	7.9	7.9	7.9	9.8	9.8		
Difference between largest and smallest width	IVIAX	5.5	1.5	1.5	7.9	9.0	9.0		

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 <sub>Dmp</sub> [0.0001"]	Max	0	0	0	0	0	0	0	
Average OD tolerance	Min	-2.8	-3.1	-3.5	-4.3	-5.1	-5.9	-7.1	
Δ <sub>Ds</sub> (Bearing Series 60 & 62) [0.0001"]	Max								
Single OD tolerance	Min								
V <sub>Dp max</sub> (Bearing Series 618 & 619) [0.0001"]	Max	3.5	3.9	4.3	5.5	6.3	7.5	9.1	
Difference between largest and smallest OD	IVIAX								
V <sub>Dp max</sub> (Bearing Series 60) [0.0001"]	Max	2.8	3.1	3.5	4.3	6.3	7.5	9.1	
Difference between largest and smallest OD									
V <sub>Dp max</sub> (Bearing Series 62) [0.0001"]	Max	2.0	2.4	2.8	3.1	3.9	4.3	5.5	
Difference between largest and smallest OD	IVIGA	2.0	2.7	2.0	5.1	5.5	4.5	5.5	
V <sub>Dmp max</sub> [0.0001"]									
Difference between largest average OD and	Max	2.0	2.4	2.8	3.1	3.9	4.3	5.5	
smallest average OD in different planes									
Kea max [0.0001"]	Max	3.1	3.5	3.9	5.1	7.1	7.9	9.1	
Assembled bearing outer ring radial runout									
S <sub>D max</sub> [0.0001"]	Max								
Outer ring face runout									
Sea max [0.0001"]	Max								
Assembled bearing outer ring axial runout									
Δ <sub>CS</sub> Single Bearing [0.0001"]	Max	Identical to the $\Lambda_{\rm BS}$ of the inner ring of the same hearing							
Single outer ring width tolerance	Min								
Δ <sub>CS</sub> Bearing Pair [0.0001"]	Max	Identical to the Aps of the inner ring of the same bearing							
Outer ring pair width tolerance	Min	1							
V <sub>CS max</sub> [0.0001"]	Max Identical to the VBS of the inner ring of the same bearing								
Difference between largest and smallest width		J							