

Miniature Ball Bearing Guides Sets / Shafts for Miniature Ball Bearing Guides

With Retaining Ring / Straight

Linear Bushings / Ball Spines

Miniature Ball Bearing Guide Sets – with Retaining Ring

RoHS10

Type	Parts	Material	Hardness
BGSTZ BGSTA	Shafts Bushing	52100 Bearing Steel	58 HRC min.
	Ball Retainer	JIS C3604 Equivalent	—
	Balls	52100 Bearing Steel	58 HRC min.
	Retaining Ring	Spring Steel	44 HRC min.

Retaining rings are assembled into BGSTZ, BGSTA to prevent ball retainer from falling out.

BGSTZ Shaft: Straight Type

BGSTA Shaft: One End Tapped Hollow

Type	Part Number		L 1 mm Increment	Y	F	D ₁ Outer Diameter Tolerance	M (Coarse) BGSTA	d	Maximum Stroke mm
	D	Shaft Diameter Tolerance							
BGSTZ BGSTA	5	0 -0.005	40-90	17	6	10	M3	7	13
	6			19	7	11	M3	8	15
	8		25	8	13	M4	10	24	
	10		30	10	16	M5	12	30	
	12		32	11	18	M6	14	32	

Accuracy Standards

(1) Overall Length Dimension Tolerance

L	30-120	121-150
Tolerance	±0.3	±0.5

(2) Circularity of Part D 0.004 or Less (Except Annealed Range)

Shafts for Miniature Ball Bearing Guides – Straight

RoHS10

Type	Material	Hardness	
Straight	BGZP	52100 Bearing Steel	58 HRC min.
	SSBGZP	440C Stainless Steel Equivalent	56 HRC min.
Hollow Shaft	BGBP	52100 Bearing Steel	58 HRC min.

Straight
BGZP
SSBGZP

Hollow Shaft
BGBP

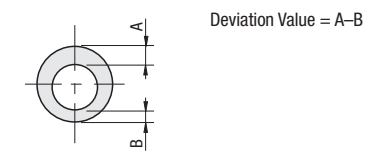
Type	Part Number		L 1mm Increment	d
	D	Shaft Diameter Tolerance		
BGZP SSBGZP BGBP	2	0 -0.005	30-50	—
	3		40-70	—
	4		40-90	2.5
	5			3.3
	6			4.2
	8		40-150	4.2
10	5			
12				

Accuracy Standards

(1) Circularity of Part D 0.004 or less

(2) Thickness Variations of Hollow Shaft

D	2-6	8-12
Thickness Variation	0.3 or less	0.4 or less



Part Number Example

Part Number	-	L
BGSTZ5	-	72
BGSTA5	-	72
BGZP5	-	72

Shafts for Miniature Ball Bearing Guides

One End Machined / Both Ends Machined

Linear Bushings / Ball Spines

Shafts for Miniature Ball Bearing Guides – One End Machined

RoHS10

Type	Material	Hardness	
One End Tapped	BGDP	52100 Bearing Steel	58 HRC min.
	SSBGDP	440C Stainless Steel Equivalent	56 HRC min.
One End Tapped Hollow	BGAP	52100 Bearing Steel	58 HRC min.
	SSBGAP	440C Stainless Steel Equivalent	56 HRC min.
One End Threaded	BGEP	52100 Bearing Steel	58 HRC min.

One End Tapped
BGDP
SSBGDP

One End Tapped Hollow Shaft
BGAP
SSBGAP

One End Threaded Type
BGEP

Type	Part Number		L 1 mm Increment	M (Coarse) BGAP, BGDP	d
	D	Shaft Dia. Tol.			
BGDP SSBGDP BGEP SSBGAP BGAP	5	0 -0.005	40-90	M3	2.5
	6			M3	2.5
	8		M4	3.3	
	10		M5	4.2	
	12		M6	5	

Accuracy Standards

Circularity of Part D 0.004 or Less (Except Annealed Range)

Shafts for Miniature Ball Bearing Guides – Both Ends Machined

RoHS10

Type	Material	Hardness	
Both Ends Tapped	BGFP	52100 Bearing Steel	58 HRC min.
	SSBGFP	440C Stainless Steel Equivalent	56 HRC min.
Both Ends Tapped Hollow	BGCP	52100 Bearing Steel	58 HRC min.
One End Threaded, One End Tapped	BGHP	52100 Bearing Steel	58 HRC min.

Both Ends Tapped Type
BGFP
SSBGFP

Both Ends Tapped Hollow Shaft
BGCP

One End Threaded, One End Tapped Type
BGHP

Type	Part Number		L							F	B	M (Coarse)	d
	D	Shaft Dia. Tolerance	40	50	60	70	80	90	100				
BGFP SSBGFP BGCP BGHP	5	0 -0.005	40	50	60	70	80	90	100	4	6	M3	2.5
	6											8	M4
	8		10	M5	4.2								
	10		12	M6	5								

Accuracy Standards

Circularity of Part D 0.004 or Less (Except Annealed Range)

Part Number Example

Part Number	-	L
BGAP	-	70
BGDP5	-	70
BGCP5	-	70