

Miniature Ball Bearing Guide Sets

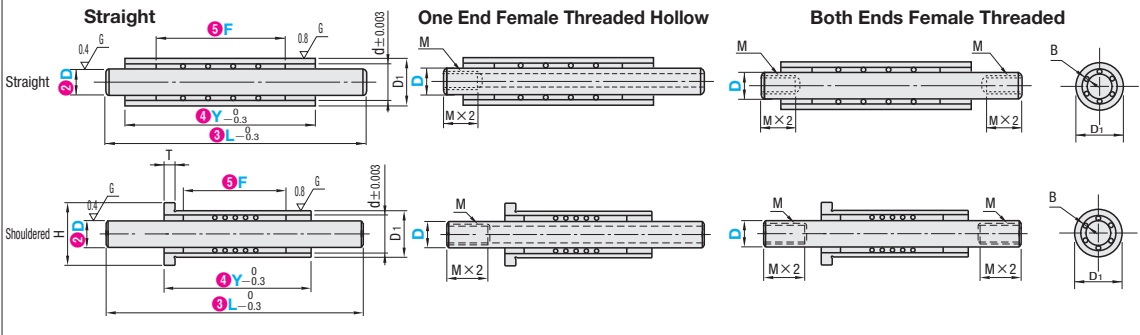
- Compact -

When ordering, select Part Number and Values from Selection Steps ①~⑤

Ordering Example: Part Number (①Type-②D) - ③L - ④Y - ⑤F
 Example: BYZ5 - 72 - 20 - 15

Bushing	Type			Material			Hardness	
	Straight	One End Tapped Hollow	Both Ends Tapped	Shaft Bushing	Ball Retainer	Ball	Shaft Bushing	Ball
Straight	BYZ	BYA	BYY	SUJ2	-	SUJ2	58HRC~	58HRC~
	SSBYZ	SSBYA	-	SUS440C Equivalent	C3604 Equivalent (RoHS Compliant)	SUS440C Equivalent	56HRC~	56HRC~
Shouldered	BYHZ	BYHA	BYHY	SUJ2	-	SUJ2	58HRC~	58HRC~
	SSBYHZ	SSBYHA	SSBYHY	SUS440C Equivalent	-	SUS440C Equivalent	56HRC~	56HRC~

① Basic load ratings are lower than Standard Type for shaft diameter D₈ or smaller. Refer to Basic Load Rating List below.
 ② Accuracy P.259



Part Number	①Type	②D	Shaft Dia. Tolerance	③L		④Y	⑤F	D ₁	O.D. Tolerance	T	H	d	M (Coarse)	B
				Straight One End Female Threaded Hollow	Both Ends Female Threaded									
BYZ	(2)	5	0	30-50	10 15 20	10 15 20	5	5	-0.006	2.5	7	3.2	-	0.6
BYA	(3)	6	0	40-70	10 20 30	10 15 20	6	6	-0.006	3	8	4.2	-	0.6
BYY	(4)	7	0	40-90	20 30 40	15 20 30	7	7	-0.006	3	9	5.2	-	0.6
SSBYZ	(5)	8	0	40-90	30 40 50	20 30 40	8	8	-0.006	4	10	6.2	M3	0.6
SSBYA	(6)	9	0	40-150	30 40 50	20 30 40	9	9	-0.011	4	11	7.2	M3	0.6
SSBYHY	(7)	10	0	40-150	30 40 50	20 30 40	10	10	-0.011	4	13	9.2	M4	1.0
SSBYHZ	(8)	11	0	40-150	30 40 50	20 30 40	11	11	-0.011	4	16	12	M5	1.0
SSBYHA	(9)	12	0	40-150	30 40 50	20 30 40	12	12	-0.011	4	18	14	M6	1.0

① Sizes in () are applicable to BYZ, BYH, SSBYZ and SSBYHZ only. ② When designing, it is recommended to position the bushing to prevent the ball slider from falling out therefrom.
 ③ Calculate the stroke as "(Y-F)×2." The stroke of bushing or shaft is twice as much as the travel distance of ball slider (Y-F).

Basic Load Rating List

D	F	Basic Load Rating Co (Static) N	D	F	Basic Load Rating Co (Static) N
2	10	15.0	6	15	43.2
	15	24.4		20	59.8
	20	33.7		30	83.1
3	10	16.3	8	15	59.0
	15	26.5		20	81.6
	20	36.7		30	113.4
4	10	21.1	10	20	147.7
	15	34.3		30	221.5
	20	47.5		40	307.7
5	10	26.1	12	20	187.4
	15	42.4		30	281.1
	20	58.7		40	390.5

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

- With Retaining Ring - Straight -

When ordering, select Part Number and Values from Selection Steps ①~③

Ordering Example: Part Number (①Type-②D) - ③L
 Example: BGZP5 - 72

Miniature Ball Bearing Guide Sets - With Retaining Ring -

Parts	Material	Hardness	Parts	Material	Hardness
Shaft Bushing	SUJ2	58HRC~	Ball Retainer	C3604	-
			Ball	SUJ2	58HRC~
			Retaining Ring	Spring Steel	44HRC~

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

Part Number	①Type	②D	Shaft Dia. Tolerance	③L	Y	F	D ₁	M (Coarse)	d	Maximum Stroke mm
BGSTZ BGSTA	5	5	0	40-90	17	6	10	M3	7	13
	6	6	-0.005	40-90	19	7	11	M3	8	15
	8	8	-0.005	40-150	25	8	13	M4	10	24
	10	10	-0.005	40-150	30	10	16	M5	12	30
	12	12	-0.005	40-150	32	11	18	M6	14	32

Shafts for Miniature Ball Bearing Guides - Straight -

Type	Material	Hardness	
Straight	BGZP	SUJ2	58HRC~
	SSBGZP	SUS440C Equivalent	56HRC~
Hollow Shaft	BGBP	SUJ2	58HRC~

Part Number	①Type	②D	Shaft Dia. Tolerance	③L	d
BGZP SSBGZP BGBP	2	2	0	30-50	-
	3	3	-0.005	40-70	-
	4	4	-0.005	40-90	2.5
	5	5	-0.005	40-90	3.3
	10	10	-0.005	40-150	4.2
	12	12	-0.005	40-150	5

① No D=2,3, and 4 for BGBP

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
- ③ Thickness Variations of Hollow Shaft

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

Deviation Value = A-B