

# [High Precision] Linear Ball Guides

## X-Axis Selectable Feed Mechanism, *continued*

### Micrometer Head (XSG, XSGB) / Feed Screw (XSCG, XSBG, XSCGB) Ⓢ Standard Stages Similar Products (available for limited sizes only): XLBS P.2079

Part Number	Top View										Front View				Side View			Accessories (4 pcs.)			
	Type	A	(B)		Travel Distance (mm)		E	F	J	K	D	G	T	T <sub>1</sub>	P	Q	X	d <sub>1</sub>	d <sub>2</sub>	ℓ	Type M-L
XSG	25*	25	11		±3.2		7	9	6.8	15	9.3	7	12	3.7	6	8.5	20	2.5	4.2	2.5	SCB2-4
XSCG	40*	25 x 25	39.2		±6.5		12	18.5	11.3	26	13	8.9	16	4.5	10	10.5	40	3.5	6	3.5	SCB3-6
XSBG	50	40 x 40	98		±6.5		12	18.5	11.3	31	13	8.9	16	4.5	10	10.5	40	3.5	6	3.5	SCB3-6
(40≤A≤100)	60*	50 x 50	147		±6.5		12	18.5	11.3	36	13	8.9	16	4.5	10	10.5	40	3.5	6	3.5	SCB4-6
XSGB (* only)	70	60 x 60	196		±6.5		12	18.5	11.3	46.5	13	8.9	16	4.5	10	10.5	40	3.5	6	3.5	SCB4-6
XSGB (* only)	80*	70 x 70	225.4		±6.5		12	18.5	11.3	55	13	8.9	16	4.5	10	10.5	40	3.5	6	3.5	SCB4-6
XSGB (* only)	100	80 x 80	264.6		±6.5		12	18.5	11.3	67.5	13	8.9	16	4.5	10	10.5	40	3.5	6	3.5	SCB4-6
XSCGB (* only)	100	100 x 100	343		±12.5 <sup>(*)</sup>		17	22 <sup>(*)</sup>	11.3	55	18	10.8	20	6.5	14.5	70	4.5	8	5.3	SCB4-6	

(\*) Stroke for XSCG80/100, XSBG80/100, XSCGB80 is ±6.5 mm. (\*\*) For XSCG and XSCGB, the ends of Feed Screw knob are at 5 mm inside of the carriage edges.  
 (\*\*\*) When dimension A of Feed Screw Type XSCG and XSCGB is 80 or 100, F will be 20.

### Performance

Part Number	Stage Surface (mm)	Load Capacity (N)		Travel Accuracy				Moment Capacity (N·m)			Moment Rigidity (N/cm)			Parallelism	Weight (kg)		
		Horizontal	Vertical	Straightness	Motion Parallelism	Pitching	Yawing	Pitching	Yawing	Rolling	Pitching	Yawing	Rolling		Micrometer	Feed Screw	
XSG	25*	25 x 25	39.2	9.8	3 μm	10 μm	30"	25"	2.0	2.0	3.5	3.2	1.1	2.2	30 μm	0.07	0.09
XSCG	40*	40 x 40	98	49	1 μm	7 μm	25"	15"	5.0	5.0	5.0	0.42	0.35	0.21	15 μm	0.23	0.23
XSBG	50	50 x 50	147	49	1 μm	7 μm	25"	15"	6.8	6.8	6.0	0.15	0.14	0.09	15 μm	0.28	0.28
(40≤A≤100)	60*	60 x 60	196	49	1 μm	7 μm	25"	15"	10.0	10.0	9.0	0.08	0.08	0.05	15 μm	0.40	0.40
XSGB (* only)	70	70 x 70	225.4	49	1 μm	7 μm	25"	15"	13.8	13.8	12.9	0.06	0.05	0.03	15 μm	0.58	0.58
XSGB (* only)	80*	80 x 80	264.6	49	1 μm	7 μm	25"	15"	18.2	18.2	17.7	0.04	0.04	0.02	15 μm	0.90	0.84
XSCGB (* only)	100	100 x 100	343	49	3 μm	8 μm	25"	15"	31.8	31.8	30.7	0.02	0.02	0.01	20 μm	1.33	1.27

Ⓢ XSG, XSGB: Micrometer Head Resolution 10 μm/division (\*4) Straightness of XSGB and XSCGB40/60 is 3 μm.

### Digital Micrometer Heads (XSDG) / Coarse / Fine Micrometer Head (XSKG)

Part Number	Type	A	XSDG		Top View				Front View				Side View			Accessories (4 pcs.)			
			(B)	Travel Distance (mm)	(B)	Travel Distance (mm)	E	F	K	G	T	T <sub>1</sub>	Q	X	d <sub>1</sub>	d <sub>2</sub>	ℓ	Type M-L	
XSDG	40	40	121.5	±6.5	60	16	18.5	26	11.6	16	4.5	10.5	32	3.5	6	3.5	3.5	SCB3-6	
	50	50	116.5	±6.5	55	16	18.5	31	11.6	16	4.5	10.5	40	3.5	6	3.5	3.5	SCB3-6	
	60	60	111.5	±6.5	50	16	18.5	36	11.6	16	4.5	10.5	50	3.5	6	3.5	4	SCB4-6	
XSKG	70	70	112	±6.5	50.5	16	18.5	46.5	12.5	18	6	11.5	60	4.5	8	4.5	4.5	SCB4-6	
(40≤A≤80)	80	80	104	±12.5	49.5	16	18.5	17	25	55	11	20	6.5	14.5	70	4.5	8	5.3	SCB4-6
XSKG	100	100	89	±12.5	—	16	18.5	67.5	—	—	20	6.5	14.5	70	4.5	8	5.3	5.3	SCB4-6

### Performance

Part Number	Stage Surface (mm)	Load Capacity (N)		Travel Accuracy				Moment Capacity (N·m)			Moment Rigidity (N/cm)			Parallelism	Weight (kg)		
		Horizontal	Vertical	Straightness	Motion Parallelism	Pitching	Yawing	Pitching	Yawing	Rolling	Pitching	Yawing	Rolling		XSDG	XSKG	
XSDG	40	40 x 40	98	49	1 μm	7 μm	25"	15"	5.0	5.0	5.0	0.42	0.35	0.21	15 μm	0.43	0.30
	50	50 x 50	147	49	1 μm	7 μm	25"	15"	6.8	6.8	6.0	0.15	0.14	0.09	15 μm	0.48	0.35
	60	60 x 60	196	49	1 μm	7 μm	25"	15"	10.0	10.0	9.0	0.08	0.08	0.05	15 μm	0.60	0.47
XSKG	70	70 x 70	225.4	49	1 μm	7 μm	25"	15"	13.8	13.8	12.9	0.06	0.05	0.03	15 μm	0.78	0.65
(40≤A≤80)	80	80 x 80	264.6	49	1 μm	7 μm	25"	15"	18.2	18.2	17.7	0.04	0.04	0.02	15 μm	1.10	0.97
XSKG	100	100 x 100	343	49	3 μm	8 μm	25"	15"	31.8	31.8	30.7	0.02	0.02	0.01	20 μm	1.53	—

Ⓢ XSKG: Coarse / Fine Micrometer Head Coarse Resolution 10 μm, Fine Resolution 0.5 μm  
 XSDG: Digital Micrometer Head Resolution 1 μm  
 Ⓢ Knob Cover HDCVR13 (Sold Separately): Ø13 micrometer knob diameter can be increased by installing the cover. P.2035  
 Ⓢ Extension Cover HDEXT13 (Sold Separately): Ø13 Micrometer Head or Feed Screw knobs can be extended by installing the cover. P.2035

**Part Number Example**

**Part Number**  
XSG80

**Part Number Alterations**

**Part Number** - (CR · CZ · A...etc.)

XSG60 - MN  
 XSG50 - CR-P  
 XSCG40 - A

Alterations	Position of Micrometer and Feed Screw			Reinforced Clamp		No Micrometer Head
	Side Mount - Left/Right Reversed	Side Mount - Top/Bottom Reversed *	Center	Disc Clamp	Opposed Clamp	
Spec.						
Code	CR	CZ	A	H	P	MN

\*CZ: Attach Micrometer (or Feed Screw) on the upper table (Standard Type has them attached to the bottom plate).  
 Ⓢ For Micrometer Head or Feed Screw mounted in positions other than shown below, see "Specification Selectable Type". (P.2084)

### Ⓢ When using an X-Axis Stage in a vertical orientation.

(Not Good) The carriage may drop if mounted vertically with the Micrometer Head pointed down with XSG\_ (r -CR, -AR, -A selected). A load exceeding the spring pull force will cause the carriage to drop.

How to mount stages vertically without the carriage drop when Micrometer Head Position Alteration is selected.

Since the load is supported by the Micrometer when XSG\_ -CZ alteration is specified, the carriage does not drop.

Ⓢ However, do not apply a load exceeding the specified vertical load capacity.

# [High Precision] Linear Ball Guides Stages

## X-Axis Knobbed Opposed Clamp

Travel per Rotation	Small	Medium	Large
Stroke	Short	Medium	Long
Load Capacity	Light	Medium	Heavy

### X-Axis Knobbed Opposed Clamp

**RoHS 10**

Type	Main Body		Ball		Spring	Micrometer Head Bracket		Tip Holder
	Material	Surface Treatment	Material	Hardness	Material	Material	Surface Treatment	Material
XSGNT	440C Stainless Steel	Aluminum Alloy	440C Stainless Steel	58HRC~	304 Stainless Steel WPB	5052 Aluminum Alloy	Clear Anodize	303 Stainless Steel

**XSGNT25**  
Ⓢ Has different feed bracket configuration.

\*Bracket material will be different when A=25  
Ⓢ For the Micrometer head and Opposed Clamp material details, see Adjustment Screws ANKSS (P.1695).  
Ⓢ There is a hex socket (2.5mm hex, depth 2.5) on the end of the Opposed Clamp screw.

### Mounting Hole Dimensions of the Top Table

Part Number	Type	Top View						Front View				Side View						Accessories (4 pcs.)		
		A	(B)	E	F	J	K	L	D	G	T	T <sub>1</sub>	P	Q	X	d <sub>1</sub>	d <sub>2</sub>	ℓ	Type M-L	
XSGNT	25	30	7	12	6.8	15	84.5	9.3	6.7	12	3.7	6	8.5	20	2.5	4.2	2.5	3.5	SCB2-4	
	40	23.8	—	—	—	26	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	50	18.8	—	—	—	31	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	60	13.8	12	18.5	11.3	36	100.3	13	8.9	16	4.5	10	10.5	40	3.5	6	3.5	4	SCB3-6	
	70	14.3	—	—	—	46.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—

### Performance

Part Number	Type	Stage (mm)	Travel Distance (mm)	Load Capacity (N)		Travel Accuracy				Moment Capacity (N·m)			Moment Rigidity (N/cm)			Parallelism	Weight (kg)
				Horizontal	Vertical	Straightness	Parallelism	Pitching	Yawing	Pitching	Yawing	Rolling	Pitching	Yawing	Rolling		
XSGNT	25	25 x 25	±3.2	39.2	9.8	3 μm	10 μm	30"	25"	2.0	2.0	3.5	1.9	1.1	1.1	30 μm	0.07
	40	40 x 40	±6.5	98	49	1 μm	7 μm	25"	15"	5.0	5.0	5.0	0.42	0.35	0.21	15 μm	0.23
	50	50 x 50	±6.5	147	49	1 μm	7 μm	25"	15"	6.8	6.8	6.0	0.15	0.14	0.09	15 μm	0.28
	60	60 x 60	±6.5	196	49	1 μm	7 μm	25"	15"	10.0	10.0	9.0	0.08	0.08	0.05	15 μm	0.40
	70	70 x 70	±6.5	225.4	49	1 μm	7 μm	25"	15"	13.8	13.8	12.9	0.06	0.05	0.03	15 μm	0.58

Ⓢ Micrometer Head Resolution: 10 μm/division  
 Ⓢ Knob Cover HDCVR13 (Sold Separately): Ø13 Micrometer Head or Feed Screw knob can be increased in diameter to Ø30 by installing the cover.  
 Ⓢ Extension Cover HDEXT13 (Sold Separately): Ø13 Micrometer Head or Feed Screw knobs can be extended by installing the cover.

**Part Number Example**

**Part Number**  
XSGNT60