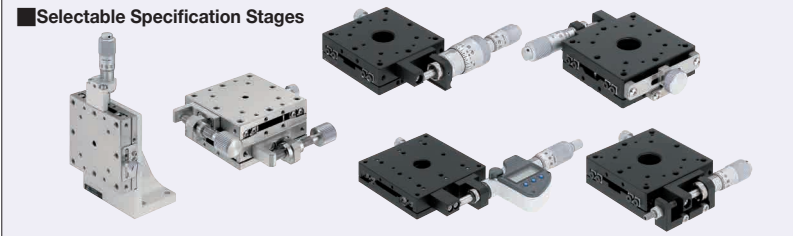


[High Precision] X / XY / Z-Axis Stages - Selectable

■ **Features:** Various X, XY, and Z-Axis Linear Ball Slide / Cross Roller Stages (P.1918, P.1921, P.1946, P.1966, respectively) that can be customer specified on ① feed mechanism mount position, ② feed type, ③ clamp type, and ④ grease type.

■ Selectable Specification Stages



Part Number			Stage Used
Type	Axis	Guide	
FS	X	R	XSG (P.1921)
		C	XPG (P.1918)
	XY	R	XYSG (P.1946)
	Z	R	ZSG (P.1966)

* Refer to the stage with the same size as the table.
Guide Type R: Linear Ball Slide
C: Cross Roller Slide

Stage				① Feed Position		② Feeding Method				③ Clamp Type		④ Grease	
Axis	Type	Size	Unit Price	Center/Side	Micrometer Head (Stroke: mm)	Price	Feed Screw (Pitch/Stroke: mm)	Price	Selection	Price	Selection	Price	
X-Axis	FSXR (Linear Ball)	25		(Center): A, AR (Side): AZ, AZR C, CR CZ, CZR	N (Standard ±3.2)	N: M: D:	F (Hex Socket 0.5/±3.2) B (Feed Screw 0.5/±3.2)	F, B, J:	S (Standard)	S: H: P:	G (Standard) R (Clean Env. Compatible) ¹	G: R:	
		40			N (Standard ±6.5)				S (Standard)				
		50			M (Coarse Fine Feed ±6.5)				H (Disc)				
		60					P (Opposed) Applicable only when C and CR, and the feed type is N or F.						
		70											
	80			N (Standard ±12.5) M (Coarse Fine Feed ±6.5) D (Digital Micrometer ±12.5) *1. Only applicable to feed position A, AR and C.		S (Standard) H (Disc)							
	FSXC (Cross Roller)	25		(Center): A, AR (Side): AZ C, CR CZ	N (Standard ±3.2)	N: M:	B (Feed Screw 0.5/±3.2)	B:	S (Standard)	S:	G (Standard)	G: R:	
		40			N (Standard ±6.5)								
		60			M (Coarse Fine Feed ±6.5)								
		80			N (Standard ±12.5) M (Coarse Fine Feed ±6.5)								
XY-Axis	FSXYR (Linear Ball)	25		(Center): A, AR (Side): C, CR	N (Standard ±3.2)	N: M: D:	F (Hex Socket 0.5/±3.2) B (Feed Screw 0.5/±3.2)	F, B, J:	S (Standard)	S: H: P:	G (Standard) R (Clean Env. Compatible) ¹	G: R:	
		40			N (Standard ±6.5)				S (Standard)				
		50			M (Coarse Fine Feed ±6.5)				H (Disc) Only applicable to C, CR.				
		60					P (Opposed) Applicable only when C and CR, and the feed type is N or F.						
		70											
	80			N (Standard ±12.5) M (Coarse Fine Feed ±6.5) D (Digital Micrometer ±12.5) *1. Only applicable to feed position A and AR.		S (Standard) H (Disc) Only applicable to C, CR.							
	Z-Axis	FSZR (Linear Ball)	25		(Center): AZ, AZR (Side): C, CR CZ, CZR	N (Standard ±3.2)	N: M:	F (Hex Socket 0.5/±3.2) B (Feed Screw 0.5/±3.2)	F, B, J:	S (Standard)	S: H: P:	G (Standard) R (Clean Env. Compatible) ¹	G: R:
40				N (Standard ±6.5)				S (Standard)					
50				M (Coarse Fine Feed ±6.5) Not applicable to C, CR.				H (Disc)					
60						P (Opposed) Applicable only when C and CR, and the feed type is N or F.							
70													
80				N (Standard ±12.5) M (Coarse Fine Feed ±6.5) Not applicable to C, CR.				S (Standard) H (Disc)					

*1. Only clamp position will be changed for Digital Micrometer A and AR. *2. When feed type M (coarse/fine feeds) or D (digital micrometer) is selected, grease R (clean env. compatible) is not applicable. *3. Combination with M, B is not available for cross roller stages AZ and CZ. Combination with B is not available for cross roller stages with Table Size 80.

Ordering Example	Part Number	-	① Feed Position	-	② Feeding Method	-	③ Clamp Type	-	④ Grease
	FSXYR40	-	C	-	F	-	S	-	R

- ☑ Knob Cover HDCVR13 (Sold Separately): Ø13 micrometer knob diameter can be increased by installing the cover. P.2004
☑ Extension Cover HDEXT13 (Sold Separately): Feed knob of Ø13 micrometer head and feed screw can be extended. P.2004

☑ One Point:

Differences of using X-Axis Stages (XSG P.1921 and XPG P.1918) vertically versus the true Z-Axis Stages (ZSG P.1966 and ZPG P.1968).
The true Z-Axis stages are designed and constructed with considerations given to the micrometer head/feed screw drive directions and the spring force direction to prevent the stage surfaces from falling due to the loads, (Center drive is the standard.)

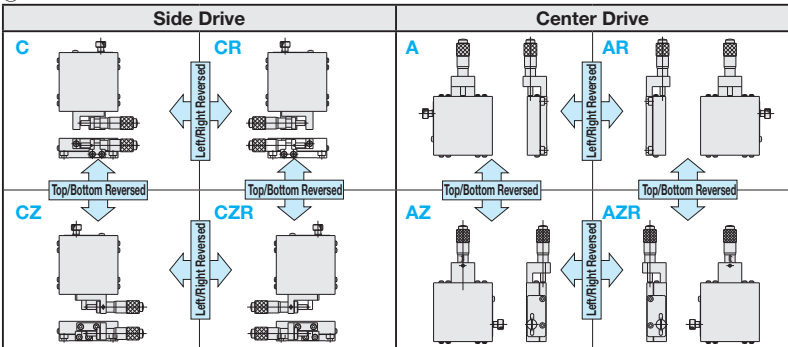
Notes on Vertical Uses of X-Axis Stage

The carriage may drop if mounted vertically with the micrometer head tip pointed down with XSG □ □ (or -CR / -A selected). (The carriage does not drop when mounted with the micrometer head tip pointing up.)

NG		OK			
Standard, CR, A		CZ	Standard	CR	A
A load exceeding the spring pull force will cause the carriage to drop.		CZ: The carriage does not drop since the micrometer head tip pushes the bracket on the bottom plate. Standard, CR, A: The stage does not move down when the micrometer head is mounted pointing up.			

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

① Feed Position



② Feeding Method

N (Standard Micrometer Head)

Table Size 25 (Stroke ±3.2mm, Min. Reading 0.01mm)

Table Size 40~70 (Stroke ±6.5mm, Min. Reading 0.01mm)

Table Size 80 (Stroke ±12.5mm, Min. Reading 0.01mm)

F (Hex Socket Screw Pitch 0.5)

Table Size 25 (M3xP0.5, Stroke ±3.2mm)

Table Size 40~80 (M6xP0.5, Stroke ±6.5mm)

☑ The screw shaft can be locked with a set screw on the bushing.

B (Feed Screw Pitch 0.5)

J (Feed Screw Pitch 1.0)

Table Size 25 (B M3xP0.5, Stroke ±3.2mm)

Table Size 40~80 (B M6xP0.5, Stroke ±6.5mm)
(J M6xP1.0, Stroke ±6.5mm)

M (Coarse/Fine Micrometer Head)

Table Size 40~80
(Stroke: Coarse Feed: ±6.5mm, Fine Feed: 0.2mm
Min. Reading: Coarse Feed: 10µm, Fine Feed: 0.5µm)

D (Digital Micrometer Head)

Table Size 80
(Stroke: 0~25mm
Min. Reading 0.01mm, Digital Readout 0.001mm)

☑ Ratchet function is not available.

③ Clamp Type

S (Standard)

The stage side surface is held with a clamp plate by tightening the clamp screw.

H (Disc Clamp)

Guide Method	A	J1	P1
Linear	40, 50, 60, 70	15.8	10
Ball	80	14.8	15

A disc clamping method that does not apply loads on the stage surface. Better position holding performance than the standard clamping method.

P (Opposed Clamp)

The side drive micrometer head is opposed by a screw (M4x25, pitch 0.5). Improves vibration resistance and has secure position holding performance.

④ Grease

Item	Condition	Unit	Measurement Method	G (Standard)		
				Guide Mechanism Surface	Drive Component	(Clean Env. Compatible)
				Lithium Soap-based	Urea-based	Lithium Soap-based
				Mineral Oil	Mineral Oil (Mixture)	Fine Synthetic Oil
Grease Performance	Thickener	-	-	-	-	-
	Base Oil	-	-	-	-	-
	Base Oil Kinetic Viscosity	40°C	mm²/s	JIS K2220 5.19	131	100
		100°C			12.2	-
	Miscible Consistency	-	-	JIS K2220 7	283	315
	Dropping Point	-	°C	JIS K2220 8	181°C	220°C
	Evaporation Amount	-	wt%	-	0.24	0.7
	Oil Separation	100°Cx24hr	wt%	JIS K2220 5.7	2.8	0.0
	Low Temperature Torque	(Starting) (Rotation)	N · m	JIS K2220 514	-	0.22 0.06
	Operating Temperature	In Air	°C	-	-25~120°C	-15~150°C

* The guide mechanism grease for the Linear Ball Guide Stages are R (clean environment compatible) by default.
The only change applicable when the R (clean environment compatible) alteration is specified is the grease for other drive components.

[Grease Change Locations]

- Guide Mechanism Surfaces (Slide Surfaces, Slide Contacts, Guides)
- Drive Components (Micrometer Heads, Feed Screws)