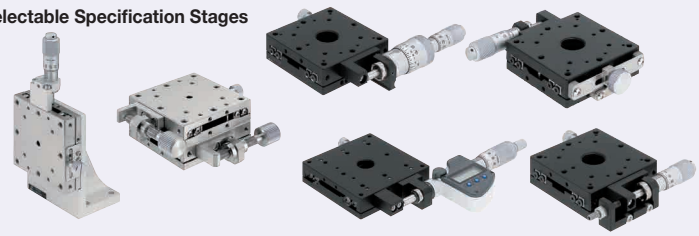
[High Precision] X / XY / Z-Axis Stages - Selectable

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				①Feed Position	②Feeding Method				③Clamp Type		④Grease	
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 : AZ, AZR (Side) : 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)*2	G: R:
		40			N (Standard ±6.5) M (Coarse Fine Feed ±6.5)		F (Hex Socket 0.5/±6.5) B (Feed Screw 0.5/±6.5) J (Feed Screw 1.0/±6.5)		S (Standard) H (Disc) P (Opposed) Applicable only when C and CR, and the feed type is N or F.			
		50										
		60										
		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 : AZ (Side) : C, CR : CZ *3	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) M (Coarse Fine Feed ±6.5)							
		60										
		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)*2	G: R:
		40			N (Standard ±6.5) M (Coarse Fine Feed ±6.5)		F (Hex Socket 0.5/±6.5) B (Feed Screw 0.5/±6.5) J (Feed Screw 1.0/±6.5)		S (Standard) H (Disc) Only applicable to C, CR. P (Opposed) Applicable only when C and CR, and the feed type is N or F.			
		50										
		60										
		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 Feeding direction of C, CR is upward, that of the others is downwards.	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)*2	G: R:
		40			N (Standard ±6.5) M (Coarse Fine Feed ±6.5) Not applicable to C, CR.		F (Hex Socket 0.5/±6.5) B (Feed Screw 0.5/±6.5) J (Feed Screw 1.0/±6.5)		S (Standard) H (Disc) P (Opposed) Applicable only when C and CR, and the feed type is N or F.			
		50										
		60										
		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	-	①Feed Position	-	②Feeding Method	-	③Clamp Type	-	④Grease
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

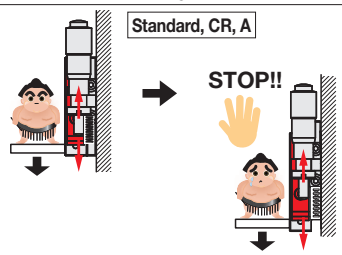
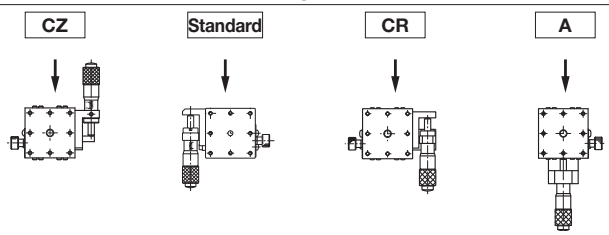
One Point:

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.)

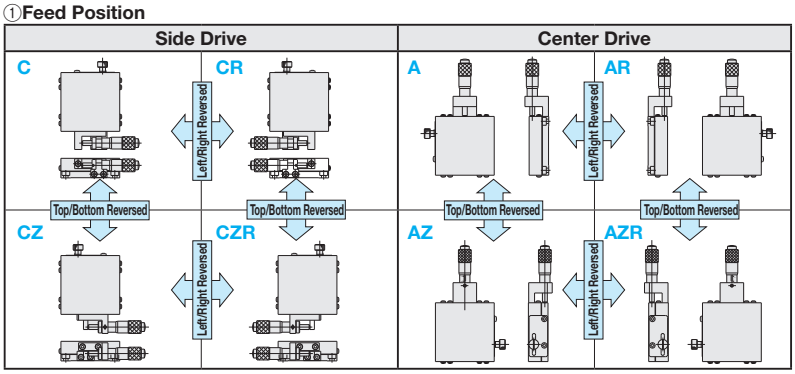
Notes on Vertical Uses of X-Axis Stage

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
	
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.

①Feed Position



②Feeding Method

N (Standard Micrometer Head)

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

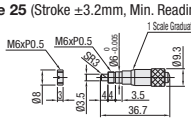


Table Size 40~70 (Stroke ±6.5mm, Min. Reading 0.01mm)

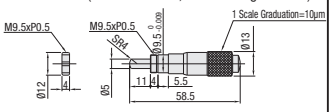
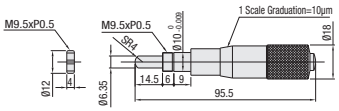


Table Size 80 (Stroke ±12.5mm, Min. Reading 0.01mm)



F (Hex Socket Screw Pitch 0.5)

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

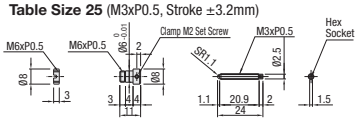
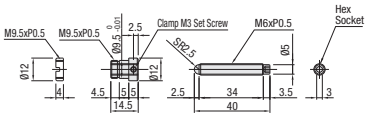


Table Size 40~80 (M6xP0.5, Stroke ±6.5mm)



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)

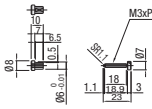
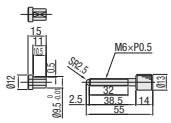


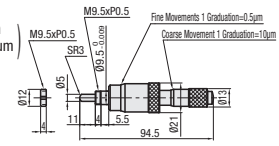
Table Size 40~80 (B M6xP0.5, Stroke ±6.5mm)
(J M6xP1.0, Stroke ±6.5mm)



M (Coarse/Fine Micrometer Head)

Table Size 40~80

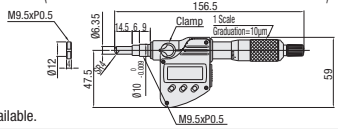
Stroke: Coarse Feed: ±6.5mm, Fine Feed: 0.2mm
Min. Reading: Coarse Feed: 10μm, Fine Feed: 0.5μm



D (Digital Micrometer Head)

Table Size 80

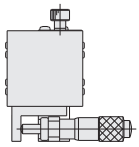
Stroke: 0~25mm
Min. Reading 0.01mm, Digital Readout 0.001mm



Ratchet function is not available.

③Clamp Type

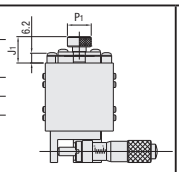
S (Standard)



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

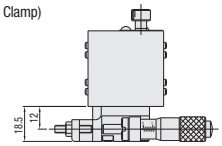
H (Disc Clamp)

Guide Method	A	J1	P1
Linear Ball	40, 50, 60, 70	15.8	10
	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.

④Grease

Item		Condition		Unit	Measurement Method	G (Standard) Guide Mechanism Surface	G (Standard) Drive Component	R (Clean Env. Compatible)
Grease Performance	Thickener	-		-	-	Lithium Soap-based	Urea-based	Lithium Soap-based
	Base Oil	-		-	-	Mineral Oil	Mineral Oil (Mixture)	Fine Synthetic 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	275	315
	Dropping Point	-		°C	JIS K2220 8	181°C	280°C	220°C
	Evaporation Amount	-		wt%	-	0.24	0.26	0.7
	Oil Separation	100°Cx24hr		wt%	JIS K2220 5.7	2.8	0.0	2.6
	Low Temperature Torque	(Starting)	-30°C	N・m	JIS K2220 514	-	-	0.22
		(Rotation)				-	-	0.06
	Operating Temperature	In Air		°C	-	-25~120°C	-15~150°C	-40~120°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)