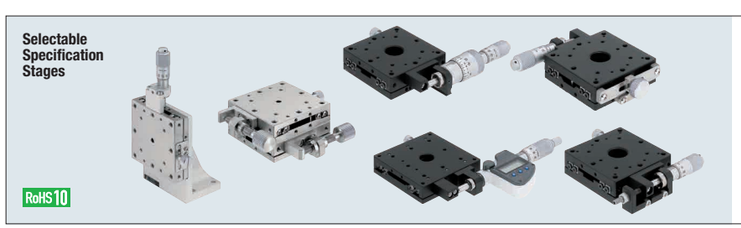
[High Precision] X, XY & Z-Axis Stages

Selectable Specification Stages



Part Number			Stage Used
Type	Shaft	Guides	
FS	X	R	XSG (P.2037)
		C	XPG (P.2041)
	XY	R	XYSG (P.2052)
	Z	R	ZSG (P.2067)

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

Slide Stage			(1) Feed Position	(2) Feeding Method		(3) Clamp Type	(4) Grease
Axis	Type	Size	Center / Side	Micrometer Head (Stroke: mm)	Feed Screw (Pitch / Stroke: mm)	Selection	Selection
X	FSXR (Linear Ball)	25	(Center): A AR (Center): AZ AZR (Side): C CR (Side): CZ CZR	N (Standard ±3.2)	F (Hexagon Socket 0.5/±3.2) B (Feed Screw 0.5/±3.2)	S (Standard)	G (Standard) R (Clean Env. Compatible)*2
		40		N (Standard ±6.5) M (Coarse Fine Feed ±6.5)	F (Hexagon 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		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)	
		80					
	FSXC (Cross Roller)	25	(Center): A AR (Center): AZ (Side): C CR (Side): CZ	N (Standard ±3.2)	F (Hexagon Socket 0.5/±3.2) B (Feed Screw 0.5/±3.2)	S (Standard)	G (Standard) R (Clean Env. Compatible)*2
		40		N (Standard ±6.5) M (Coarse Fine Feed ±6.5)	F (Hexagon 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.	
		60					
		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)	
XY	FSXYR (Linear Ball)	25	(Center): A AR (Side): C CR	N (Standard ±3.2)	F (Hexagon Socket 0.5/±3.2) B (Feed Screw 0.5/±3.2)	S (Standard)	G (Standard) R (Clean Env. Compatible)*2
		40		N (Standard ±6.5) M (Coarse Fine Feed ±6.5)	F (Hexagon Socket 0.5/±6.5) B (Feed Screw 0.5/±6.5) J (Feed Screw 1.0/±6.5)	S (Standard) H (Disk) C, CR only P (Opposed) Applicable only when C and CR, and the feed type is N or F.	
		50					
		60					
		70		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) Only applicable to C, CR.	
		80					
Z	FSZR (Linear Ball)	25	(Center): AZ AZR (Side): C CR (Side):C Z CZR Feeding direction of C, CR is upward; that of the others is downwards.	N (Standard ±3.2)	F (Hexagon Socket 0.5/±3.2) B (Feed Screw 0.5/±3.2)	S (Standard)	G (Standard) R (Clean Env. Compatible)*2
		40		N (Standard ±6.5) M (Coarse/Fine Feeds ±6.5) Not applicable to C, CR.	F (Hexagon 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		N (Standard ±12.5) M (Coarse/Fine Feeds ±6.5) Not applicable to C, CR.		S (Standard) H (Disc)	
		80					

*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.

Part Number Example

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

Knob Cover HDCVR13 (Sold Separately): increases diameter of Ø 13 mm knob. **P.2035**

Extension Cover HDEXT13 (Sold Separately): extends Ø 13 mm head or feed screw knobs. **P.2035**

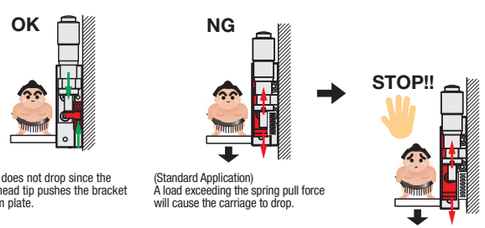
(Ex.) FSXYR40-C-F-S-R

Differences of using X-Axis stages (XSG P.2037 and XPG P.2041) vertically versus the true Z-Axis stages (ZSG P.2067 and ZPG P.2068)

The true Z-Axis stages are designed and constructed with considerations 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)

Cautions on vertical uses of X axis stages.

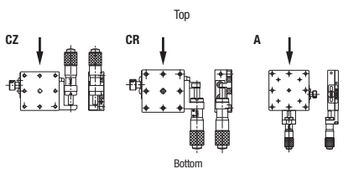
(NG) The stage surface may fall if XSG__ (or -CR, -A options) mounted with the micrometer tip end down. (A load exceeding the spring pull force will cause the carriage to drop.)



(CZ)
The carriage does not drop since the micrometer head tip pushes the bracket on the bottom plate.

(Standard Application)
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.



(OK) By applying ZSG__-CU as an alteration, the micrometer supports the load and the stage surface does not fall.

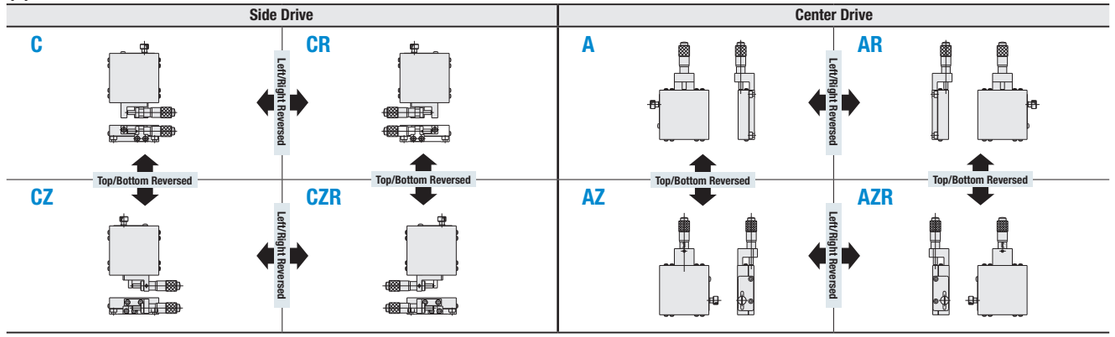
However, do not apply a load exceeding the specified vertical load capacity.

MiSUMi

[High Precision] X, XY & Z-Axis Stages

Selectable Specification Stages, *continued*

(1) Feed Position



(2) Feed Type

N (Standard Micrometer Head)

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

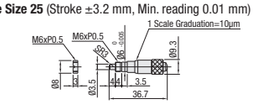


Table Size 40–70 (Stroke ±6.5 mm, Min. reading 0.01 mm)

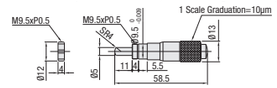
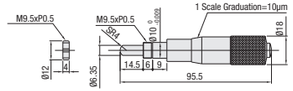


Table Size 80 (Stroke ±12.5 mm, Min. reading 0.01 mm)



F (Hexagon Socket Screw Pitch 0.5 Type)

Table Size 25 (M3 x P0.5, Stroke ±3.2 mm)

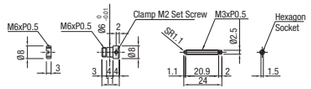
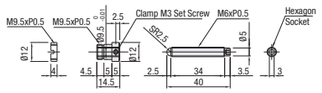


Table Size 40–80 (M6 x P0.5, Stroke ±6.5 mm)



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 M3 x P0.5, Stroke ±3.2 mm)

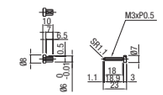
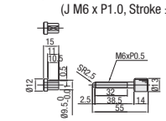


Table Size 40–80 (B M6 x P0.5, Stroke ±6.5 mm)
(J M6 x P1.0, Stroke ±6.5 mm)

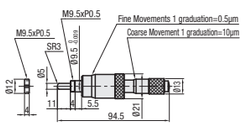


M (Coarse Fine Micrometer Head)

Table Size 40–80

Stroke...Coarse Feed: ±6.5 mm,
Fine Feed: 0.2 mm

Min. reading ...Coarse Feed: 10 µm,
Fine Feed: 0.5 µm

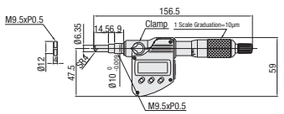


D (Digital Micrometer Head)

Table Size 80

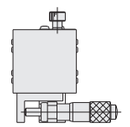
Stroke ... 0–25 mm

Min. reading 0.01 mm,
Digital Readout 0.001 mm



(3) Clamp Type

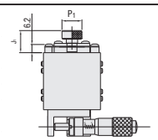
S (Standard)



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

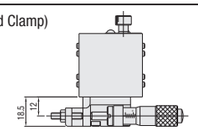
H (Disc Clamp)

Guides	A	J_1	P_1
Linear Balls	40 , 50 , 60 , 70	15.8	10
	80	14.8	15
Cross Roller	40 , 60	14.8	15



A disc clamping mechanism that does not apply any load on the carriage plate. Holds the carriage in position better than the Standard Clamp.

P (Opposed Clamp)



The side drive Micrometer Head is opposed by a screw (M4 x 25, pitch 0.5). Improves vibration resistance and has secure position holding performance.

(4) Grease

Item		Conditions		Unit	Measurement Method	G (Standard) Guide Mechanism Surfaces	G (Standard) Drive Components	R (Clean Env. Compatible)
Grease Performance	Thickener	—		—	—	Lithium Soap	Urea	Lithium Soap
	Base Oil	—		—	—	Mineral Oil	Mineral Oil (Mixture)	Ether Synthetic Oil
	Base Oil Kinetic Viscosity	40°C		mm^2/s	JIS K2220 5.19	130	—	100
		100°C				12.2	—	—
	Miscible Consistency	—		—	JIS K2220 7	275	275	315
	Dropping Point	—		°C	JIS K2220 8	185°C	280°C	220
	Evaporation Amount	—		wt%	—	0.24	0.26	0.7
	Oil Separation	100°C x 24 hr		wt%	JIS K2220 5.7	2.8	—	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)