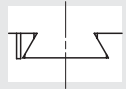

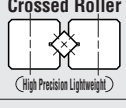


XY Stages—Guide—

Manual Stages

Printed in Red : NEW

Mechanism	Feed Type	Axis						Catalogue Page		
		1 Axis		2 Axis		3 Axes or more				
		X	Z	XY	XZ	XYZ	Others			
Linear Motion	Dovetail  <small>(Low Price Medium Precision)</small>	Rack & Pinion ※2 <small>(Sending Coarse Scale)</small>	Standard Knob	○	○	○	○	○	—	P.921~924, 928 P.929~933
		Coarse Fine Handles	○	—	—	—	—	—	—	
	Feed Screws ※2 <small>(Sending fine scale)</small>	Standard Knob	○	○	○	○	○	—	—	P.925~928 P.933
		Hexagonal Wrench Type	○	—	—	—	—	—	—	
	※1 Linear Balls  <small>(High Precision High Allowable Load Thin Type)</small>	Micrometer Heads	Standard Knob	○	○	○	○	○	—	P.935~944
			Coarse Fine Digital	○	—	—	—	—	—	
		Feed Screws <small>(More inexpensive than Micrometer)</small>	Feed Pitch 0.5	○	○	○	○	○	—	
	Feed Pitch 1.0	○	○	○	—	—	—	—		
		Feed Pitch 1.0	○	○	○	—	—	—	—	
	※1 Crossed Roller  <small>(High Precision Lightweight)</small>	Micrometer Heads	Standard Knob	○	○	○	○	○	—	P.945~951 P.959~960
			Feed Screws <small>(More inexpensive than Micrometer)</small>	Feed Pitch 0.5	○	○	○	—	—	
		Feed Pitch 1.0	○	○	○	—	—	—	—	
Gonio	Dovetail	Feed Screws	○	—	—	—	—	—	P.952~956	
	Cross Roller	Micrometer Heads	○	—	—	—	—	—		
Rotation	Lever, Micrometer Head	○	—	—	—	—	—	P.957, 958		
Others	Simple Adjustment <small>(Low Precision, Lower-Cost Alternative)</small>	Rack & Pinion	○	—	○	—	—	—	P.963, 964	
		Feed Screws	○	○	○	—	—	—		
	Miniature <small>(Small Type)</small>	Feed Screws	○	—	○	—	—	—	P.965	

※1 See Selectable Type on P.961 if you wish to change the grease or clamp type for Linear Ball, Crossed Roller.

※2 The dovetail stages on p.929~934 can be used together.

Automatic Stages

Printed in Red : NEW

Mechanism	Feed Type	Axis						Catalogue Page
		1 Axis		2 Axis		Multiple-shaft		
		X	Z	XY	XZ	XYZ	Others	
Linear Motion	Linear Balls	○	○	○	—	—	—	P.973~978
Rotation	Deep Groove Ball Bearings	○	—	—	—	—	—	

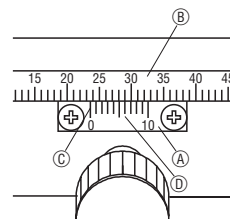
Surface Precision of Attachment Parts

The stage may not be able to fully function when the parallelism of attaching parts to the bottom or top of the stage is not accurate.

Dovetail Stages

Reading of Travel Distance

- For the reading of travel distance, Vernier gauge is used.
- How to read the vernier indication is as follows.
 - Read the value of Graduation (B) matched to the 0 position of (A) (Graduation (C)) in 1mm increment. (23 mm in this Case)
 - Read Graduation (D) of (A) where Graduation (A) and (B) are matched. The unit of Graduation (D) is 0.1 mm increment. (0.6 mm in this Case)
 - Summarize the indicated value of (1) and (2). (23.6 mm in this Case)

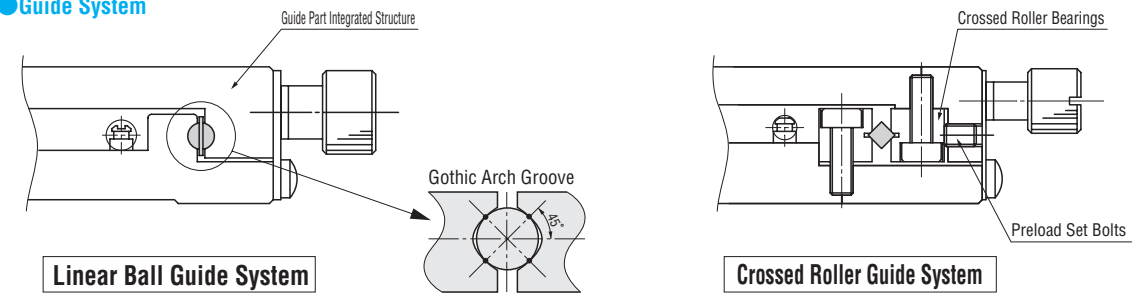


About Z-Axis Allowable Load

- As for the Dovetail groove system stage, when used in vertical position as Z-Axis and the load exceeding the friction of guide and rack & pinion is applied, there can be a problem that the stage slips down. (The stage usually begins to move by the load of 0.5kgf to 1.0kgf upon shipping.)
- Fix the stage with a clamp, once the position is set.
- When fixed, the slipping can be minimized at several μ m or less.

Linear Ball Stage, Crossed Roller Stage System (Common)

Guide System



Machined the gothic arch groove ball guide on both upper-and lower side of the body directly. As gothic arch groove has two arcs, there are four ball contact points, and high rigidity is achieved.

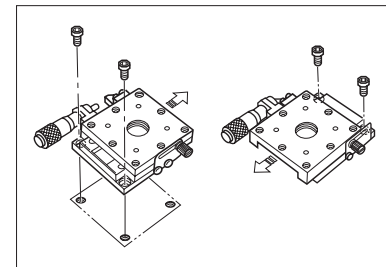
※In addition to 440C Stainless Steel, Electroless Nickel Plating (Silver), Black Type-Low Temperature Black Chrome Plating is added. (P.935~938).

How to attach

Slide the stage when attaching. See the following illustrations.

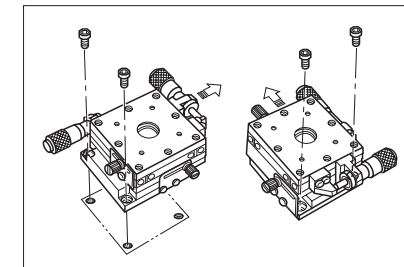
How to attach X-Axis

Slide the stage forward or backward to mount as shown below.



How to attach XY-Axis

Attach same as X-Axis stage.



Quality

The parallelism, straightness, pitching, yawing and XY cross degree are measured during assembly.

Straightness

The maximum deviation in the horizontal direction and the vertical direction from the standard is followed during assembly.

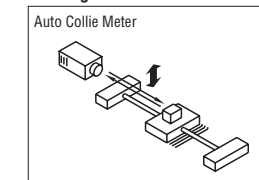
Pitching/Yawing

Measuring through the full stroke of the stage with the auto collie meter measuring pitch and raw of the stage, is followed during assembly.

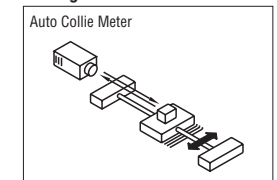
Pitching : While the stage moves, stage face declines up and down and move. (Indicated by the angle of θ_y)

Yawing : While the stage moves, stage face declines right and left and move. (Indicated by the angle of θ_z)

Pitching

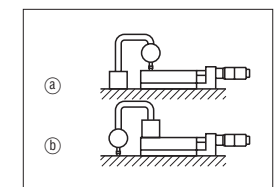


Yawing



Parallelism

① The parallelism of the upper surface to the lower surface is measured by using the test indicator (dial gauge) with the method shown on the right figure of (a), and ② the parallelism of the motions is measured by the same gauge with the method on the right figure of (b). The parallelism of 0.03mm or less is realized for ①, and for ②, the parallelism of 0.01mm or less is achieved against the full stroke for more than 90% of the products.



XY Cross Degree

The maximum value of the difference of the cross axis is specified as 0.01 mm or less per stroke of 13 mm as it becomes about 5 minutes or less regarding the combination of XY, although the XY cross degree is not specified in the specification table of each stage.