[High Precision] Dovetail, Rack & Pinion Stages

X-Axis Long Stroke
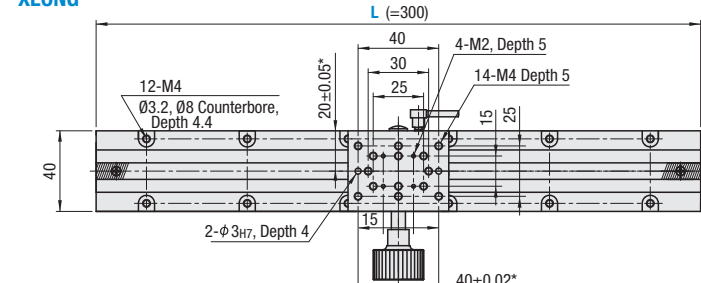
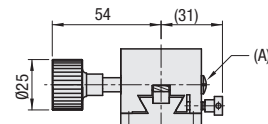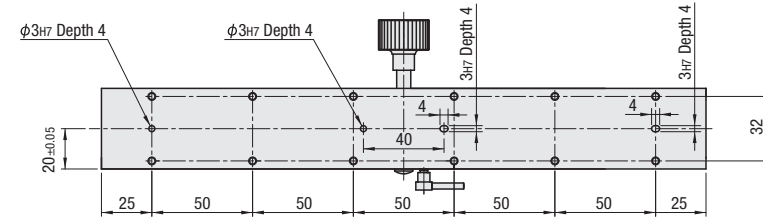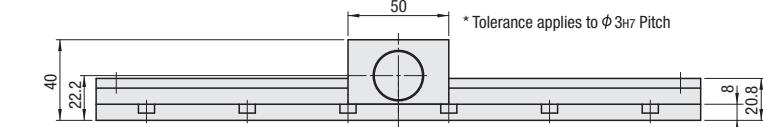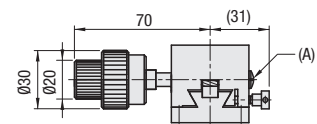| Travel per Rotation	Small	Medium	Large
Stroke	Short	Medium	Long
Load Capacity	Light	Medium	Heavy

X-Axis Long Stroke

XLONG

L (=300)
40
4-M2, Depth 5
30
14-M4 Depth 5
25
20±0.05*
12-M4
Ø3.2, Ø8 Counterbore, Depth 4.4
40
2-φ3H7, Depth 4
15
* Tolerance applies to φ3H7 Pitch
50
40±0.02*

φ3H7 Depth 4
3H7 Depth 4
20±0.05
40
4
32
25 50 50 50 50 50 25
40 22.2
8 20.8

Standard Knob

54 (31)
Ø25
(A)

Coarse / Fine Knob

70 (31)
Ø30 Ø20
(A)

❗ Use M3 screws for mounting from top; M4 screws for mounting from bottom.

❗ By turning the preload adjustment screw (A) clockwise with a flathead screw driver, the stage slides slowly. By turning counterclockwise, the stage slides quickly and smoothly.

❗ Dowel holes on top and bottom plates can be used to secure locating repeatability.

⊗ Do not remove blocks from bottom plate, as blocks are preloaded and ground fit for precision, and shipped after inspection.

Application Example

Pointer Label
Scaled Label*

Material: Aluminum Alloy
Surface Treatment: Black Anodize
Accessories: Scaled Label (PET)
Index Label (PET)

*Adhesive vernier scale label included can be placed at desired position in accordance with a required adjustment range.
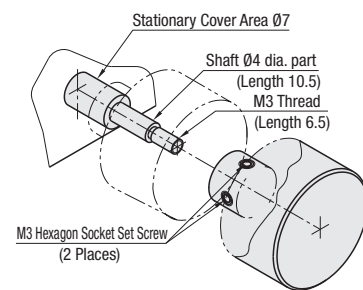
Part Number		Block		Travel Distance (mm)	Travel Per Knob Rotation (mm)		Load Capacity (N)			Weight (kg)
Type	L-No.	Handle	Qty.		Coarse	Fine	Horizontal	Vertical	Straightness	
XLONG	300	Standard Knob	1	±140	18	—	49	24.5	150 µm	0.63
	300-2		2							0.81
	300-3		3							0.99
	300-SB	Coarse/Fine Feeds Knob	1			2.3				0.70
	300-2SB		2							0.95
	300-3SB		3							1.20

❗ Resolution: 1 mm/division

Application Example

Assembly of Standard Knob

Stationary Cover Area Ø7
Shaft Ø4 dia. part (Length 10.5)
M3 Thread (Length 6.5)
M3 Hexagon Socket Set Screw (2 Places)

Part Number Example

Part Number
XLONG300
XLONG300-2SB

❗ XLONG300 Standard Knob Type has an M3 set screw for the knob.

MiSUMi

There's more on the web: **misumiusa.com**

[High Precision] Dovetail, Rack & Pinion Stages

X-Axis Long Stroke Blocks Combination

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

X-Axis Long Stroke Blocks Combination

XLARGE L

R

Block Type (Select from below) (A, B, C, D, E)
30
Nx2-4.5 Through, 7.5 Counterbore
40
N-M4 Depth 9
f Px(N-1) f
P
L
7.5 16 16
4 16 16
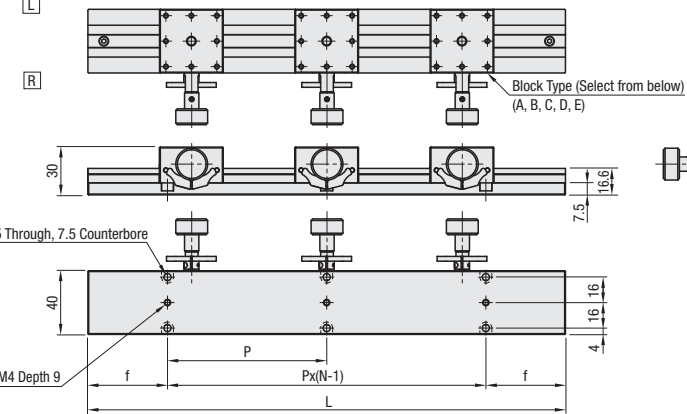
❗ The drawing is a XLARGE3-B-B-B

Material: Aluminum Alloy
Surface Treatment: Black Anodize
Accessories: Scaled Label (PET) Index Label (PET)

❗ *Adhesive vernier scale label can be placed at desired position in accordance with a required adjustment range.

Block Type	Directions	Standard Knob (Left)	Standard Knob (Right)	Coarse / Fine Feed Knob Left	Coarse / Fine Feed Knob (Right)
		A	**B**	**C**	**D**
Shape	L↑ ↓R				

❗ Dimension of * part will vary ±0.3mm due to its structure.

Rail

Part Number		L	Block (1)	Block (2)	Block (3)	Travel Distance*1 (mm)	Horizontal Load Capacity (N)	f	P	N	Weight*3 (kg)	Accessories	
Type	No.											Type M-L	Quantity
XLARGE	1	100	A	A	A	60	29.4	12.5	75*2	2	0.15	CBM4-8	4
	2	200	B	B	B	160		25	150	2	0.29		4
	3	300	C	C	C	260		50	100	3	0.43		6
	4	400	D	D	D	360		50	100	4	0.57		8

❗ When L (Rail Length) = 100, only one block can be selected.
❗ When L (Rail Length) = 200, two blocks can be selected.
❗ Travel distance of *1 is the value obtained with one block. Every block added shortens the travel distance by 40 mm.
❗ *2 M4 (backside) is P=100
❗ *3 Weight of the rail itself. Unit weight should be calculated by adding the weight of the selected number of blocks.

Application Example

Block Connecting Method

Connected Blocks
Attached Hook
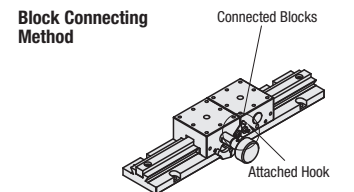
Block

Block Type		Weight (kg)
A	Standard Handle (Left)	0.12
B	Standard Handle (Right)	0.12
C	Coarse Feed Handle (Left)	0.17
D	Coarse Feed Handle (Right)	0.17

Part Number Example

Part Number	-	Block (1)	-	Block (2)	-	T Block (3)
XLARGE2	-	A	-	A		
XLARGE3	-	A	-	E	-	C
XLARGE4	-	E	-	B	-	C