[Motorized] X-Axis, Linear Ball Slide

Spec.Change Printed in Purple

Features: Integrated Linear Ball Guide Stage with high precision and rigidity, yet economical. The carriage height is 20mm.

X-Axis Motorized Stage

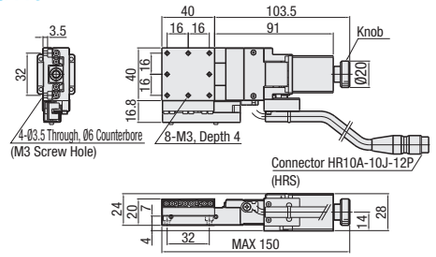
The products shown here is cover position R Type.

M Material: SUS440C Equivalent
S Surface Treatment: Electroless Nickel Plating
A Accessory: XMSG413/513/430/530: SCB3-8, 4 pcs.
XMSG615/715/650/750: SCB4-8, 4 pcs.

For Controllers, Handset Terminals, see P.1-2014-1~P.1-2014-2

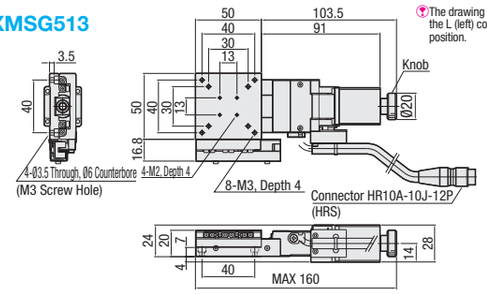
RoHS10

XMSG413

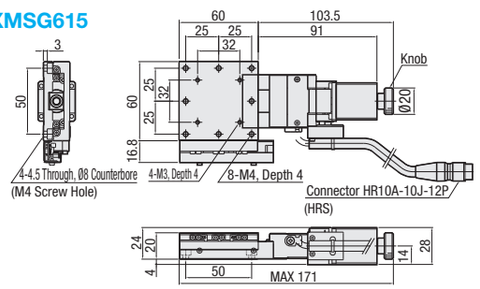


XMSG513

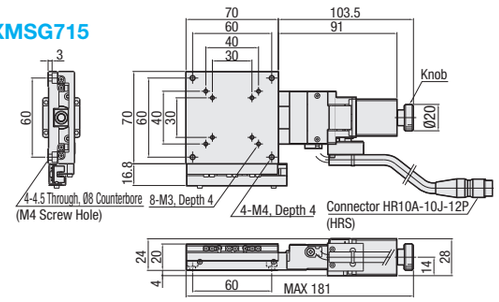
The drawing is for the L (left) cover position.



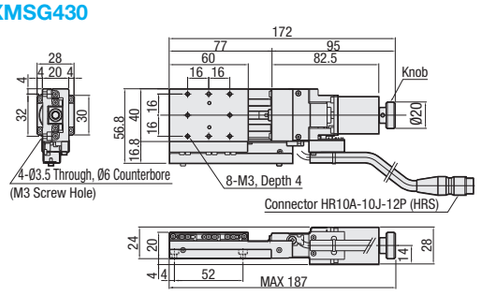
XMSG615



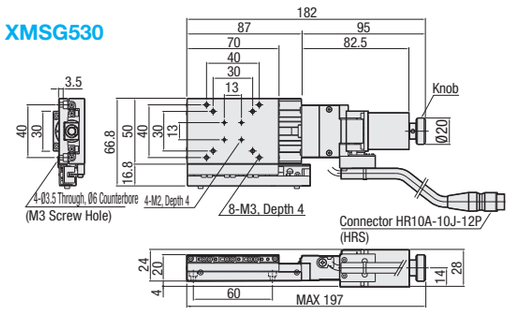
XMSG715



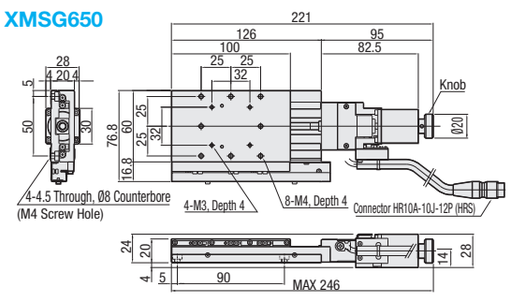
XMSG430



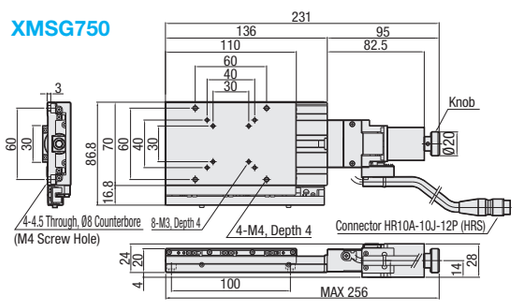
XMSG530



XMSG650



XMSG750



For CAD data, see the MISUMI website.

Part Number Type	No.	Sensor Cover Position	Sensor Logic	Sensor Voltage (V)	Motor	Cable	Mechanical Standards Stage Surface (mm)	Travel Distance (mm)	Weight*3 (kg)	Accuracy Standards Unidirectional Positioning Accuracy (for a single axis stage horizontally placed)	Moment Rigidity (*/N•cm) Pitching	Yawing	Rolling	Pitching	Yawing
XMSG	413	L (Standard) R (Reversed)	A (All N.C.) B (All N.O.) C (Limit Switches are N.C; Home Sensor is N.O.)	5*1 24*1	C (Standard) D (High Torque) E (High Resolution) MA*2 (With Electromagnetic Brake) PA*2 (α- Step) UA*2 (Servo Motor)	N (Cable not included (separately sold)) M*2 (For Motor with Electromagnetic Brake) P*2 (For α- Step) U*2 (For Servo Motor) For combination of motors and cables, see the table below.	40×40	13	0.5	6μm or Less	0.22	0.17	0.12	15'' or less	10'' or less
	513						50×50		0.6		0.14	0.1	0.06		
	615						60×60	15	0.7		0.08	0.07	0.03		
	715						70×70		0.9		0.03	0.03	0.01		
	430						40×60	30	0.6	12μm or Less	0.24	0.18	0.26	20'' or less	15'' or less
	530						50×70		0.8		0.12	0.13	0.1		
	650						60×100	50	1.1		0.05	0.05	0.05		
	750						70×110		1.2		0.03	0.03	0.03		

*1 24VDC sensors cannot be operated from the MSCTL102/112 controller. When selecting 5V for sensor voltage, applying over 5V voltage will cause breakage.
*2 For motor options MA and PA, the driver is included in the set. For motor option UA, the amp is included in the set. With motor option MA, only cable option M is selectable. With motor option PA, only cable option P is selectable. With motor option UA, only cable option U is selectable. In all three cases, cable option N (no cable) is not selectable.
*3 The value is for C Type of Motor.

Ordering Example: Part Number XMSG413 - Sensor LA5 - Motor C - Cable N

Days to Ship: Configure Online

Common Specifications

Feed Screw	Ball Screw Ø6, Lead 1
Guide	Linear Ball Guide
Resolution*1	2μm/Pulse (Full) 1μm/Pulse (Half)
Straightness	1μm or less (No.413~715) 2μm or less (No.430~750)
Positioning Repeatability	Within ±0.5μm
Load Capacity*2	98N
Lost Motion	1μm or less
Backlash	0.5μm or less
Parallelism	15μm or less

*1 Stage travel per one pulse.
*2 The load capacity when using Z-Axis (vertical) configuration declines to 49N.

Max. Speed

Motor	(mm/sec)	Motor	(mm/sec)
C	10	MA	15
D	25	PA	35
E	20	UA	50

Note that the speed and positioning time will vary depending on the usage conditions. The values shown here are MISUMI's reference values. Operation at these values is not guaranteed.

Motor/Cable Application Table

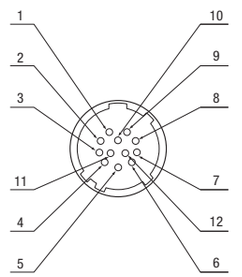
Motor	Cable
C,D,E	N (Not Provided)
MA	M
PA	P
UA	U

For the cable for C, F or G, see MSCB□ on P.1-2014-3

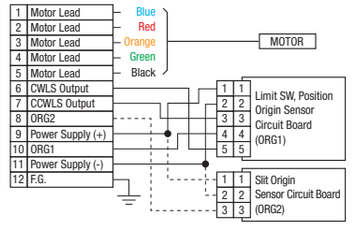
Electrical Specifications

Motor	Type	5-Phase Stepping Motor 0.75A/Phase (Oriental Motor Co., Ltd.)
	Step Angle	0.72°
Compatible Receptacle Connector		HR10A-10P-12S (Hirose Electric Co., LTD.)
Sensor	Current Consumption	100mA or less (25mA per Sensor)
	Control Output	NPN Open Collector Output DC5 ~ 24V, 16mA or less
		Residual Voltage 1V or less (when load current is 16mA)
	Output Logic	N.C ••• Light seen N.O ••• Light blocked <Internal Circuit> K: Emitter Cathode V: Receptor Supply+ A: Receptor Anode O: Output G: Receptor Supply-

Connector Pin Configuration

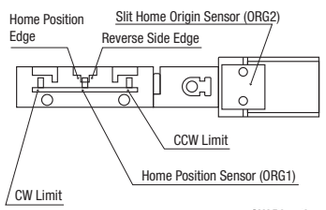


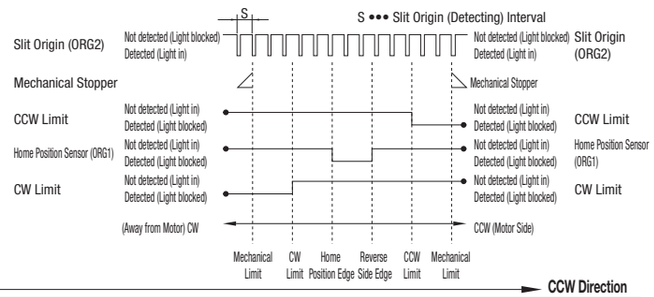
Connecting Diagram



* The dotted line connections are not functional when a standard cable is used.

Included Sensor Timing Chart (for A Sensor Logic)





CW Direction ◄ ► CCW Direction

Travel Distance	Reference Position	Mechanical Limit	CW Limit	Other Signal Edge	Home	CCW Limit	Mechanical Limit
13	Homing	8	7.5	2	0	6.5	7
15	Homing	9	8.5	2	0	7.5	8
30	Homing	16.5	16	2	0	15	15.5
50	Homing	26.5	26	2	0	25	25.5
Common		Slit Home Position (Detecting) Interval S=1					

• Homing Routine Above: When MSCTL102/112 controller is used and when the Homing Routine Type 3 (see below) is executed.
• The coordinates shown are design values. There may be approx. ±0.5mm misalignment on the physical dimensions.

(Unit: mm)

Recommended Homing Method

Type3	After detection is executed in the CCW direction, the process of detecting in the CCW direction is begun based on the ORG signal.
Type4	After detection is executed in the CW direction, the process of detecting in the CW direction is begun based on the ORG signal.
Type9	After Type 3 is executed, the process of detecting in the CCW direction is begun based on the TIMING signal.
Type10	After Type 4 is executed, the process of detecting in the CW direction is begun based on the TIMING signal.