[High Precision] Motorized X-Axis - Linear Ball, CAVE-X POSITIONER

Stroke 30~75

Spec.Change Printed in Purple

Features: Have high rigidity and compactness in width. Support 30~75mm of travel distance.

For CAD data, see the MISUMI website.

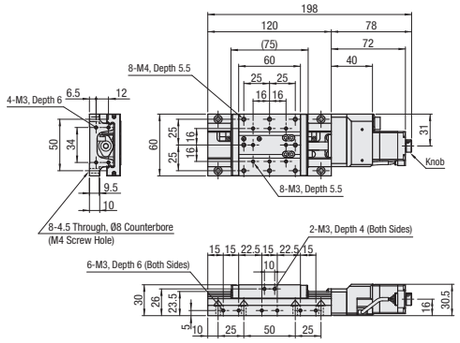
XCVL (w/o Cover)

XCVLC (with Cover)

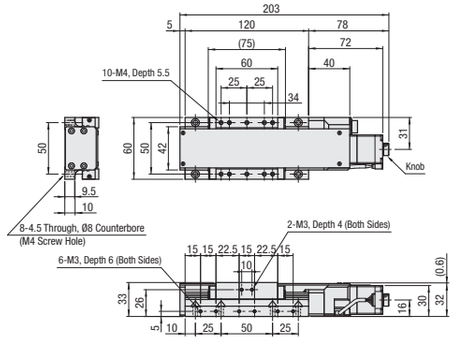
M Material: 440C Stainless Steel Equivalent
S Surface Treatment: Electroless Nickel Plating
A Accessory: SUS Hex Socket Screw M4-14 (8 pcs.)

RoHS10

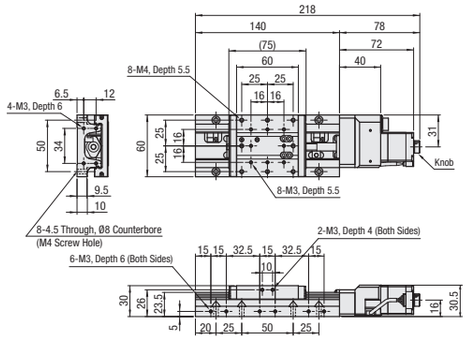
XCVL630



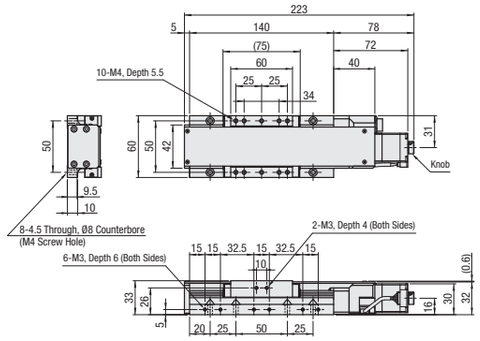
XCVLC630



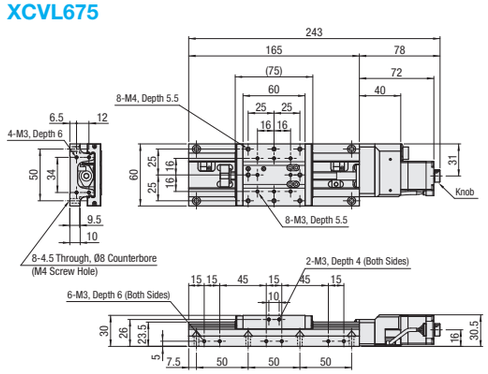
XCVL650



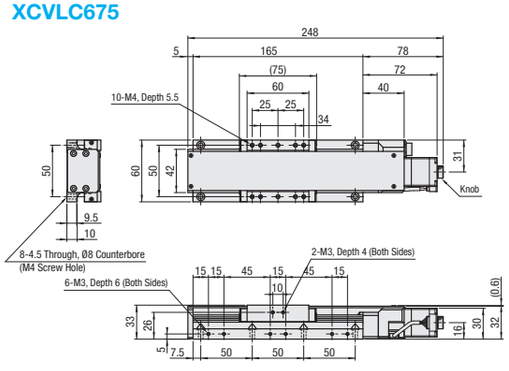
XCVLC650



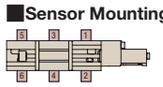
XCVL675



XCVLC675



Sensor Mounting Position



The above diagrams are for stages incorporating Motor C. For detailed dimensions about stages incorporating Motor F, G, MA, PA or U, see the relevant CAD data.

Part Number	Lead	Sensor	Motor	Cable	Mechanical Standards: Stage Surface (mm)	Mechanical Standards: Travel Distance (mm)	Mechanical Standards: Weight *2 (kg)	Accuracy Standards: Unidirectional Positioning Accuracy	Accuracy Standards: Moment Rigidity (″/N·cm): Pitching	Moment Rigidity (″/N·cm): Yawing	Moment Rigidity (″/N·cm): Rolling	Accuracy Standards: Pitching	Accuracy Standards: Yawing
XCVL630 (w/o Cover) XCVLC630 (with Cover)	1 (Lead 1mm) 2 (Lead 2mm)	N (W/o Sensor) 1 (CCW Right) 2 (CCW Left) 3 (Right-center) 4 (Left-center) 5 (CW Right) 6 (CW Left)	C (Standard) F (High Torque) G (High Resolution) MA (With Electromagnetic Brake) PA (α-Step) U (Servo Motor, Amplifier)	N (Cable not included (separately sold)) M (For Motor with Electromagnetic Brake) P (For α-Step) U (For Servo Motor) For combination of motors and cables, see the table below.	60×60	30 (Lead 1mm only)	1.28(1.34*1)	5μm	0.05	0.05	0.05	20″	15″
XCVL650 (w/o Cover) XCVLC650 (with Cover)						50	1.40(1.44*1)	5μm					
XCVL675 (w/o Cover) XCVLC675 (with Cover)						75	1.54(1.60*1)	7μm					

*1. When the "With Cover" option is selected. When the Motor Option M or P is selected, the driver is included with as the Set. When the Option U is selected, the Amplifier is included with. The cable is available for Option MA, PA, U and is unavailable for Option N.
*2. The values are for standard motors (C). For details, see P.1-1735-15

Ordering Example

Part Number	-	Lead	-	Sensor	-	Motor	-	Cable
XCVL630	-	1	-	N	-	C	-	N

Days to Ship

Configure Online

Motor/Cable Application Table

The available cable differs depending on the type of motor.

Motor/Cable Application Table: Motor	Cable
C,F,G	N (Not Provided)
MA	M
PA	P
U	U

For the cable for C, F or G, see MSCB_ on P.1-1735-95
For the cable for F or G, see

Max. Speed

Motor	(mm/sec)
C	30
F	35
G	25
MA	25
PA	40
U	50

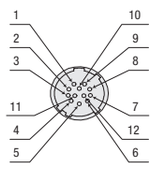
Note that the speed and positioning time will vary depending on the usage conditions. The values shown here are MISUMI's reference values. Operation at these values is not guaranteed.

Common Specifications

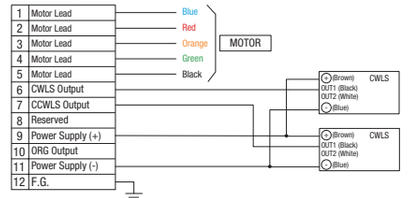
Feed Screw		Ball Screw Ø8, Lead 1	Ball Screw Ø8, Lead 2
Guide		Linear Ball Guide	
Resolution	Full	2μm	4μm
	Half	1μm	2μm
	Fine (At 1/20)	0.1μm	0.2μm
Max. Speed		30mm/sec	35mm/sec
Positioning repeatability		±0.5μm	
Load Capacity		117.6N	
Lost Motion		1μm	
Backlash		1μm	
Straightness		3μm	
Parallelism		15μm	
Motion Parallelism		10μm	

: The values are for standard motors (C).
For details, see P.1-1735-15

Connector Pin Configuration



Wiring Diagram



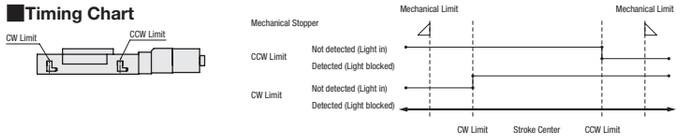
The above is the connector pin configuration / wiring diagram for C, F, G. For connector pin configuration / wiring for other types of motor, see P.1-1735-16

Electrical Specifications

Motor Option		C Standard	F High Torque	G High Resolution	MA With Electromagnetic Brake	PA Tuningless	U High Speed
Motor	Type	5-Phase Stepping Motor 0.75A/Phase (Oriental Motor Co., Ltd.)				α- Step Motor	AC Servo Motor
	Step Angle	0.72°	0.72°	0.36°	0.72°	0.36° (When set to 1000 P/R)	18-bit Encoder (262144P/R)
Connector	Applicable Receptacle Connector	HR10A-10P-12S (73) (Hirose Electric Co., LTD.)			5559-06R-210 (Molex Japan LLC)	43020-1000 (Molex Japan LLC)	Motor Cable JN4FT04SJ1-R (Japan Aviation Electronics Industry, Ltd.) Encoder 1674320-1 (Tyco Electronics Japan G.K.)
Sensor	Limit Sensor	Provided					
	Home Sensor	Not Provided by standard (Photomicrosensor PM-L25 (Panasonic Industrial Devices SUNX Co., Ltd.) is available as the option.)					
	Near Home Sensor	-					
	Power Supply Voltage	DC5~24V ±10%					
	Current Consumption	45mA or less (15mA or less per sensor)					
	Control Output	NPN Open Collector Output DC30V, 50mA or less Residual Voltage 2V or less (when load current is 50mA) Residual Voltage 1V or less (when load current is 16mA)					
	Output Logic	Detecting (Dark): Output Transistor OFF (Non-Conducting)					

For Electrical Specifications other than described above, see P.1-1735-15
Sensors with Part Number PM-□24 are to be discontinued and replaced by next-generation products with Part Number PM-□25 from April 2017.

Timing Chart



(Unit: mm) CW Direction ◄ ► CCW Direction

	Reference Position	Mechanical Limit	CW Limit	CCW Limit	Mechanical Limit
XCVL630	Stroke Center	17.5	15.5	15.5	17.5
XCVL650	Stroke Center	27.5	25.5	25.5	27.5
XCVL675	Stroke Center	40	37.5	37.5	40

• The coordinates shown are design values. There may be approx. ±0.5mm misalignment on the physical dimensions.

Recommended Homing Method

Type5	After detection is executed in the CCW direction, the process of detecting in the CW direction is begun based on the CCWLS signal.
Type6	After detection is executed in the CW direction, the process of detecting in the CCW direction is begun based on the CWLS signal.
Type11	After Type 5 is executed, the process of detecting in the CCW direction is begun based on the TIMING signal.
Type12	After Type 6 is executed, the process of detecting in the CW direction is begun based on the TIMING signal.