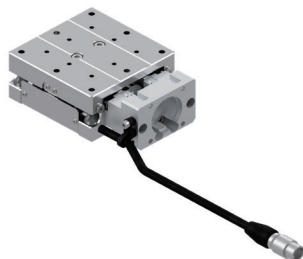


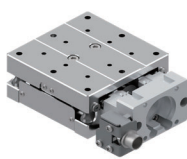
X-axis Linear Ball Guide: KXG06020V

RoHS

KXG06020TV-P28



KXG06020MV-P28



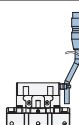
Accessory		P28	S38	S40
Motor bracket (installed on main body)		○		
Coupling (with screws)		○		
Mounting screw	For Motor	4of M2.5-6	4of M3-12	2of M4-12
	For Main Body	4of M4-10		
Sensor cable		○(HR10AP-S-SB-6-□)		
Cable tie		○	-	-

* Sensor cable: Select from 2m, 3m, 5m

KXG06020TV-P28-

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1 Connector specifications

T	Pig tail	
M	Panel mount	

2 Application Motor

Code	Specification
P28	□ 28 Stepping motor specification
S38	□ 38 Servo motor specification
S40	□ 40 Servo motor specifications

3 Cable option

Code	Specification
Blank	Sensor cable 2m One end loose wire
3	Sensor cable 3m One end loose wire
5	Sensor cable 5m One end loose wire

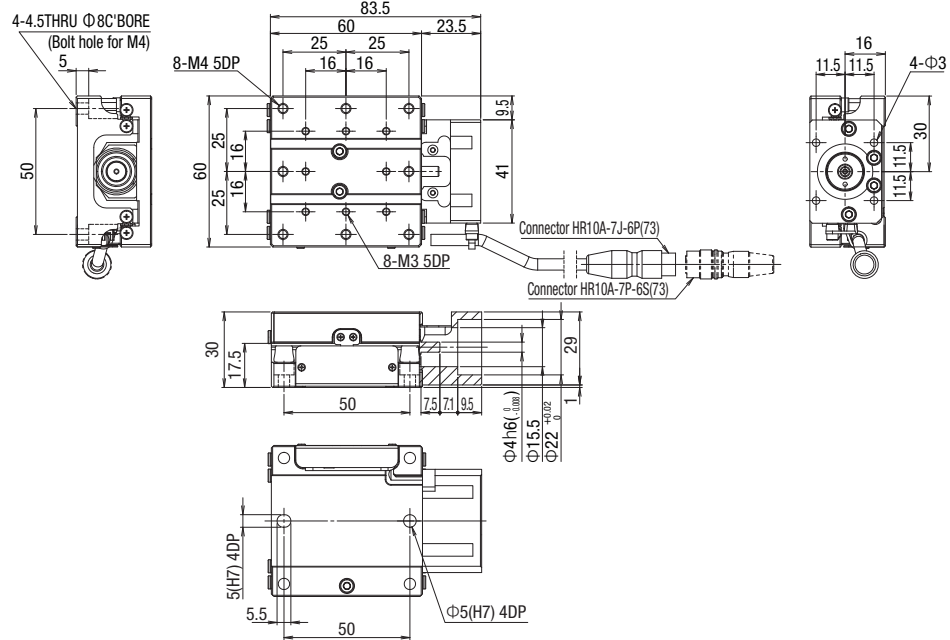
SPEC			
Model		KXG06020TV-P28	KXG06020MV-P28
Mechanical specification	Travel distance	20mm	
	Stage surface size	60×60mm	
	Connector type	Pigtail	Panel Mount
	Feed screw (Ball screw)	φ8 Lead 1	
	Guide	Linear Ball Guide	
	Main materials-Finishing	Special Steel—Electroless nickel plating	
Accuracy specification	Weight	0.60kg	
	Resolution/ Pulse	Full/Half	2μm/1μm
		Micro step	0.1μm (1/20 On resolution)
	MAX speed	20mm/sec	
	Uni-directional positioning accuracy	5μm	
	Repeatability positioning accuracy	±0.5μm	
	Load capacity	10kgf [98N]	
	Moment stiffness	Pitch 0.08/Yaw 0.05/Roll 0.05 ["/N • cm]	
	Lost motion	1μm	
	Backlash	1μm	
	Straightness	3μm	
	Parallelism	15μm	
Sensor	Motion parallelism	10μm	
	Pitching/Yawing	20"/15"	
	Limit sensor	Available	
	Origin sensor	Available	
	Slit origin sensor	—	

* SPEC is the value of the standard motor.

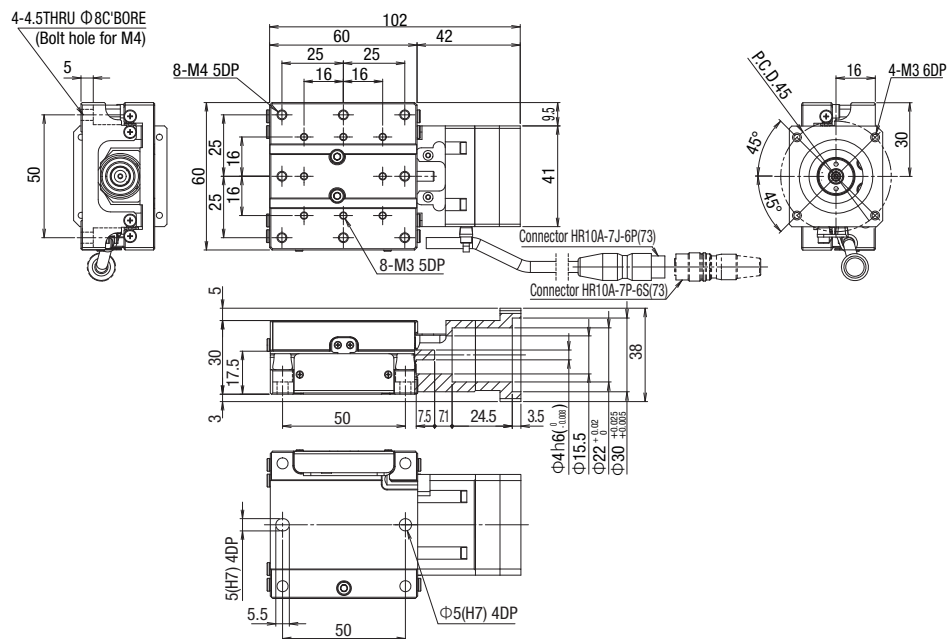
* When the applicable motor code [S38/S40] is selected, the weight is 0.64kg.

Dimensions

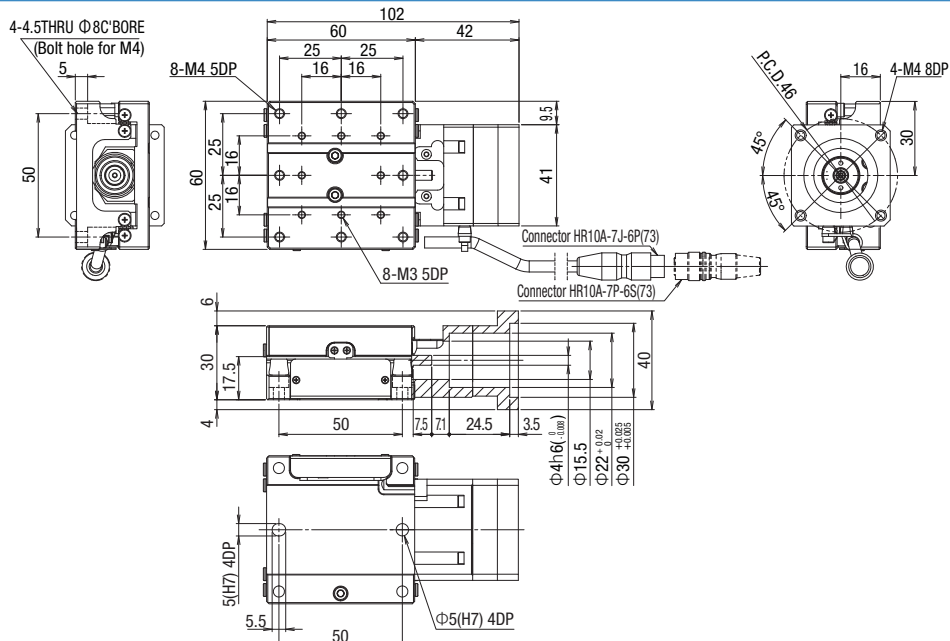
KXG06020TV-P28



KXG06020TV-S38



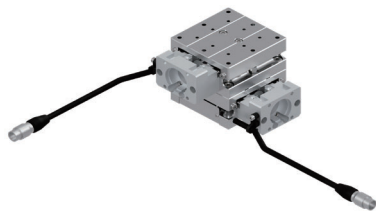
KXG06020TV-S40



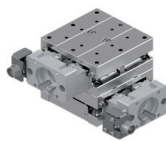
XY-axis Linear Ball Guide: KYG06020V

RoHS

KYG06020TV-P28



KYG06020MV-P28



Accessory		P28	S38	S40
Motor bracket (installed on main body)		○		
Coupling (with screws)		○		
Mounting screw	For Motor	8of M2.5-6	8of M3-12	4of M4-12
	For Main Body	4of M4-10		
Sensor cable		○(HR10AP-S-SB-6-□)		
Cable tie		○	-	-

* Sensor cable: Select from 2m, 3m, 5m

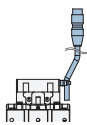
KYG06020TV-P28-□

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1 Connector specifications

T	Pig tail	
M	Panel mount	

2 Application Motor

Code	Specification
P28	□ 28 Stepping motor specification
S38	□ 38 Servo motor specification
S40	□ 40 Servo motor specifications

3 Cable option

Code	Specification
Blank	Sensor cable 2m One end loose wire
3	Sensor cable 3m One end loose wire
5	Sensor cable 5m One end loose wire

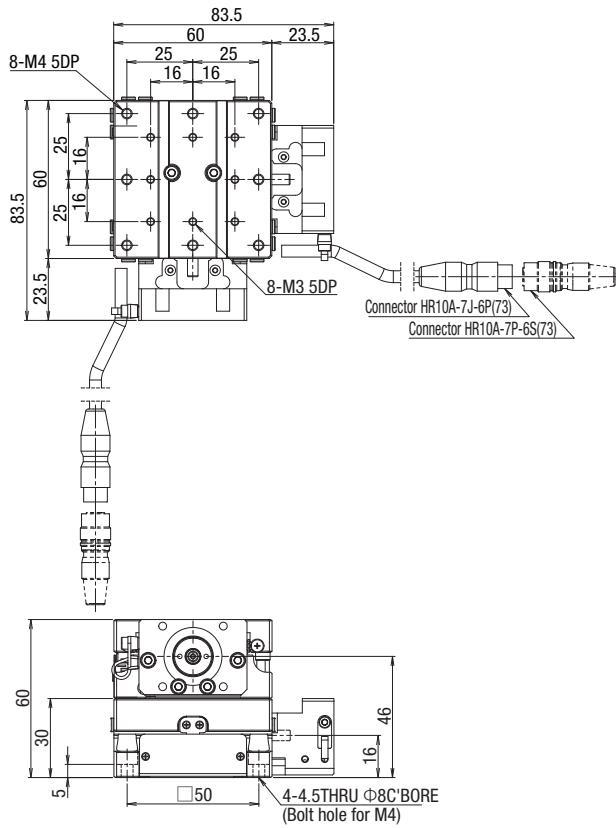
SPEC			
Model		KYG06020TV-P28	KYG06020MV-P28
Mechanical specification	Travel distance	20mm	
	Stage surface size	60×60mm	
	Connector type	Pigtail	Panel Mount
	Feed screw (Ball screw)	φ8 Lead 1	
	Guide	Linear Ball Guide	
Accuracy specification	Main materials-Finishing	Special Steel—Electroless nickel plating	
	Weight	1.20kg	
	Resolution/ Pulse	2μm/1μm	
Sensor	Full/Half Micro step	0.1μm(1/20 On resolution)	
	MAX speed	20mm/sec	
	Load capacity	9kgf【88.2N】	
	Squareness	10μm/Full stroke	
	Limit sensor	Available	
Single axis accuracy specification	Origin sensor	Available	
	Slit origin sensor	—	
	Uni-directional positioning accuracy	5μm	
	Repeatability positioning accuracy	±0.5μm	
	Lost motion	1μm	
	Backlash	1μm	
	Straightness	3μm	
	Pitching/Yawing	20"/15"	

* SPEC is the value of the standard motor.

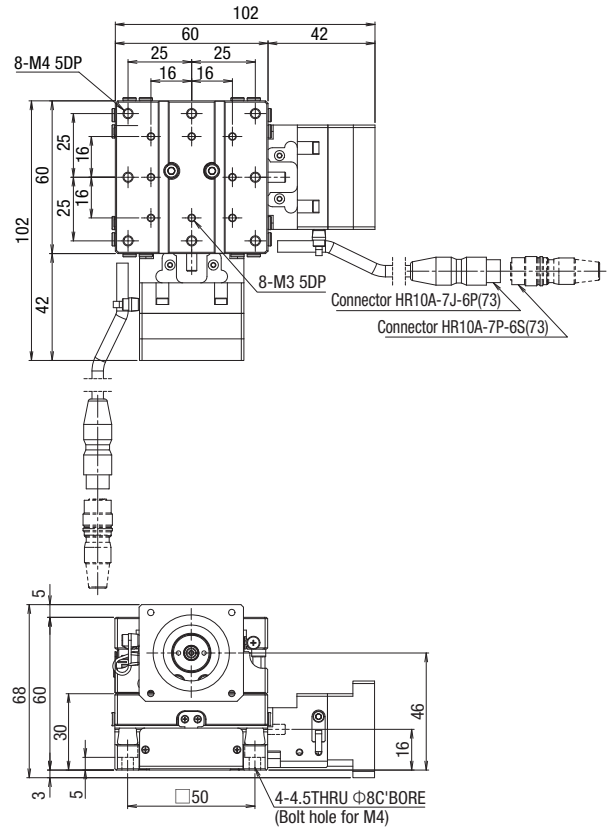
* When the applicable motor code [S38/S40] is selected, the weight is 1.28kg.

Dimensions

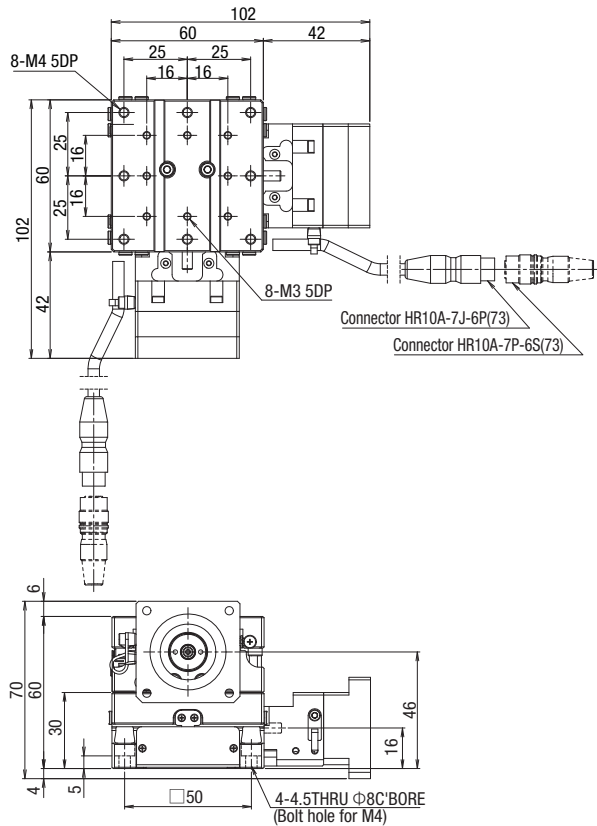
KYG06020TV-P28



KYG06020TV-S38



KYG06020TV-S40



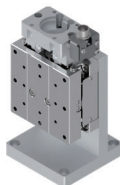
Z-axis Linear Ball Guide:KZG06020V

RoHS

KZG06020TV-P28



KZG06020MV-P28



Accessory		P28	S38	S40
Motor bracket (installed on main body)		○		
Coupling (with screws)		○		
Mounting screw	For Motor	4of M2.5-6	4of M3-12	2of M4-12
	For Main Body	4of M4-10		
Sensor cable		○(HR10AP-S-SB-6-□)		
Cable tie		○	-	-

* Sensor cable: Select from 2m, 3m, 5m

KZG06020TV-P28-□

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1 Connector specifications

T	Pig tail	
M	Panel mount	

2 Application Motor

Code	Specification
P28	□28 Stepping motor specification
S38	□38 Servo motor specification
S40	□40 Servo motor specifications

3 Cable option

Code	Specification
Blank	Sensor cable 2m One end loose wire
3	Sensor cable 3m One end loose wire
5	Sensor cable 5m One end loose wire

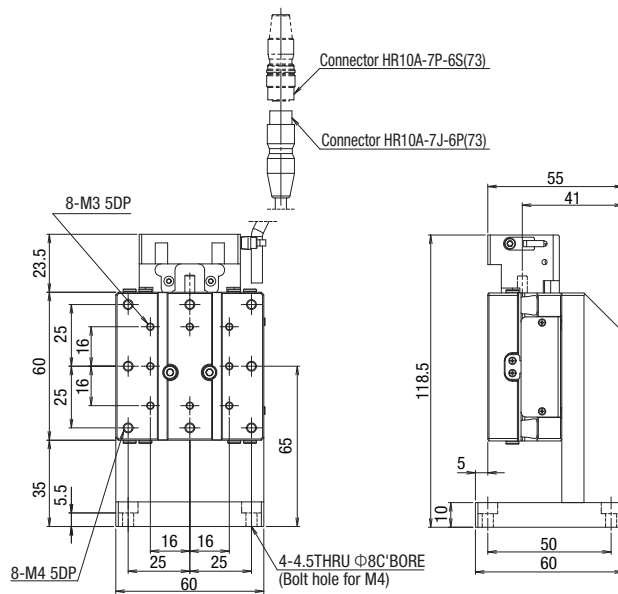
SPEC			
Model		KZG06020TV-P28	KZG06020MV-P28
Mechanical specification	Travel distance	20mm	
	Stage surface size	60×60mm	
	Connector type	Pigtail	Panel Mount
	Feed screw (Ball screw)	φ8 Lead 1	
	Guide	Linear Ball Guide	
Accuracy specification	Main materials-Finishing	Special Steel—Electroless nickel plating	
	Weight	0.96kg	
	Resolution/ Pulse	2μm/1μm	
	Full/Half Micro step	0.1μm(1/20 On resolution)	
	MAX speed	20mm/sec	
Sensor	Load capacity	3kgf [29.4N]	
	Perpendicularity	10μm/Full stroke	
	Limit sensor	Available	
	Origin sensor	Available	
	Slit origin sensor	—	
Single axis accuracy specification	Uni-directional positioning accuracy	5μm	
	Repeatability positioning accuracy	±0.5μm	
	Lost motion	1μm	
	Backlash	1μm	
	Straightness	3μm	
	Pitching/Yawing	20"/15"	

* SPEC is the value of the standard motor.

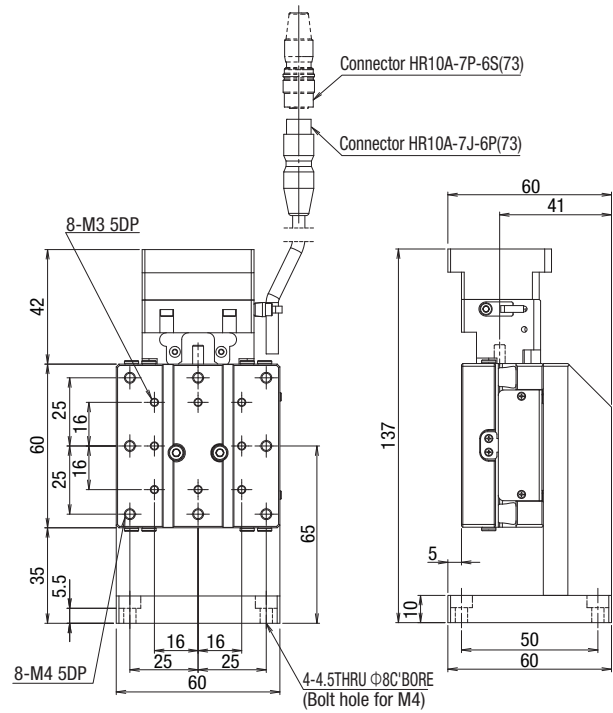
* When the applicable motor code [S38/S40] is selected, the weight is 1.00kg.

Dimensions

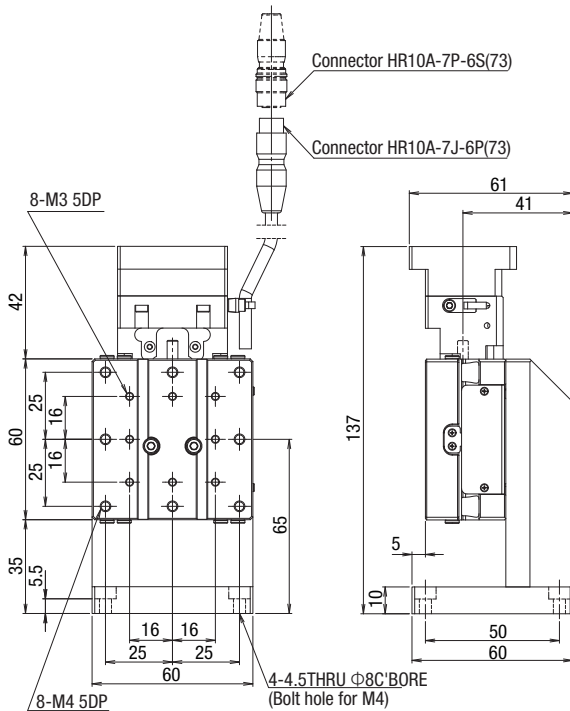
KZG06020TV-P28



KZG06020TV-S38



KZG06020TV-S40



KWG06020TV-P28



KWG06020MV-P28



Accessory		P28	S38	S40
Motor bracket (installed on main body)		○		
Coupling (with screws)		○		
Mounting screw	For Motor	12of M2.5-6	12of M3-12	6of M4-12
	For Main Body	4of M4-10		
Sensor cable		○(HR10AP-S-SB-6-□)		
Cable tie		○	-	-

* Sensor cable: Select from 2m, 3m, 5m

KWG06020TV-P28-□

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1 Connector specifications

T	Pig tail	
M	Panel mount	

2 Application Motor

Code	Specification
P28	□28 Stepping motor specification
S38	□38 Servo motor specification
S40	□40 Servo motor specifications

3 Cable option

Code	Specification
Blank	Sensor cable 2m One end loose wire
3	Sensor cable 3m One end loose wire
5	Sensor cable 5m One end loose wire

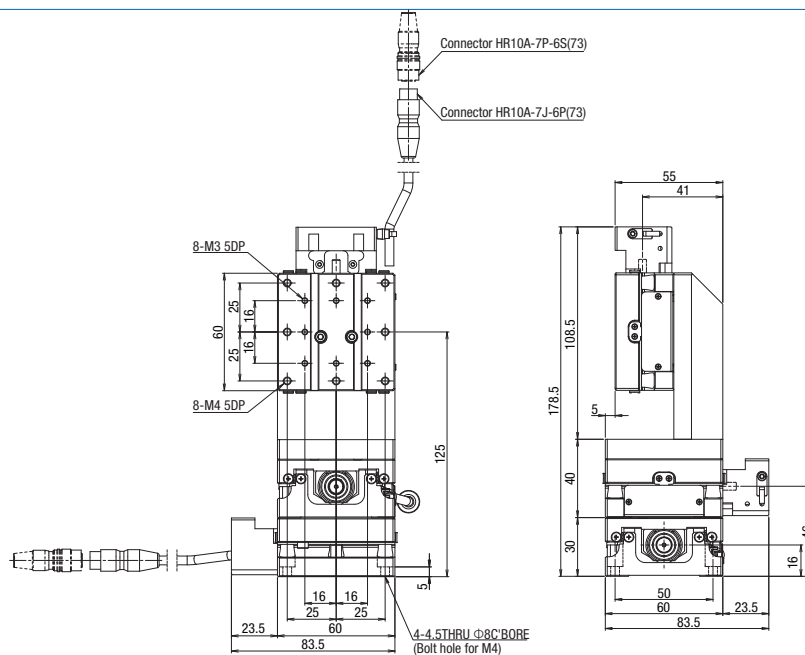
SPEC			
Model		KWG06020TV-P28	KWG06020MV-P28
Mechanical specification	Travel distance	20mm	
	Stage surface size	60×60mm	
	Connector type	Pigtail	Panel Mount
	Feed screw (Ball screw)	φ8 Lead 1	
	Guide	Linear Ball Guide	
Accuracy specification	Main materials-Finishing	Special Steel—Electroless nickel plating	
	Weight	2.16kg	
	Resolution/ Pulse	2μm/1μm	
	MAX speed	0.1μm(1/20 On resolution)	
	Load capacity	20mm/sec	
Sensor	Squareness	3kgf[29.4N]	
	Perpendicularity	10μm/Full stroke	
	Limit sensor	10μm/Full stroke	
	Origin sensor	Available	
	Slit origin sensor	Available	
Single axis accuracy specification	Uni-directional positioning accuracy	—	
	Repeatability positioning accuracy	5μm	
	Lost motion	±0.5μm	
	Backlash	1μm	
	Straightness	1μm	
	Pitching/Yawing	3μm	
		20°/15°	

* SPEC is the value of the standard motor.

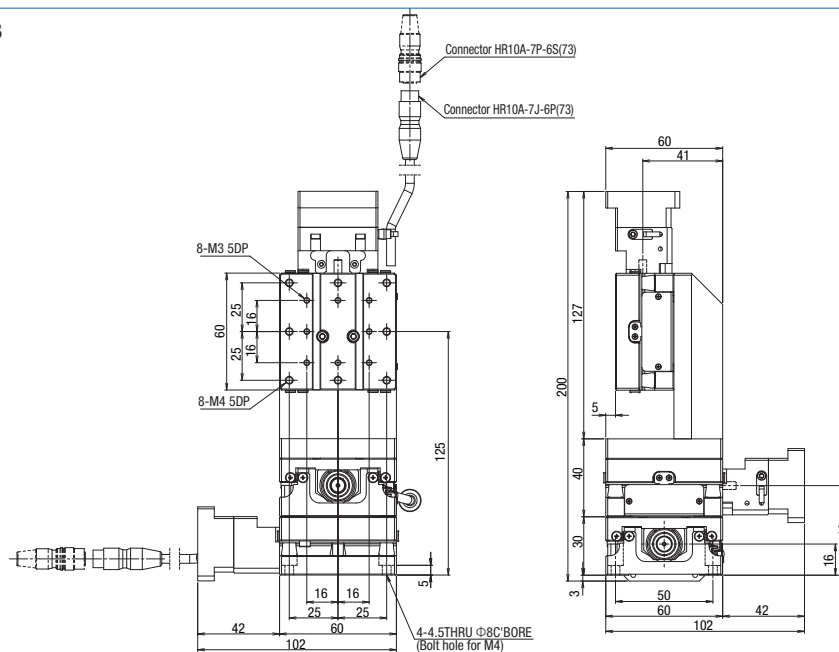
* When the applicable motor code [S38/S40] is selected, the weight is 2.28kg.

Dimensions

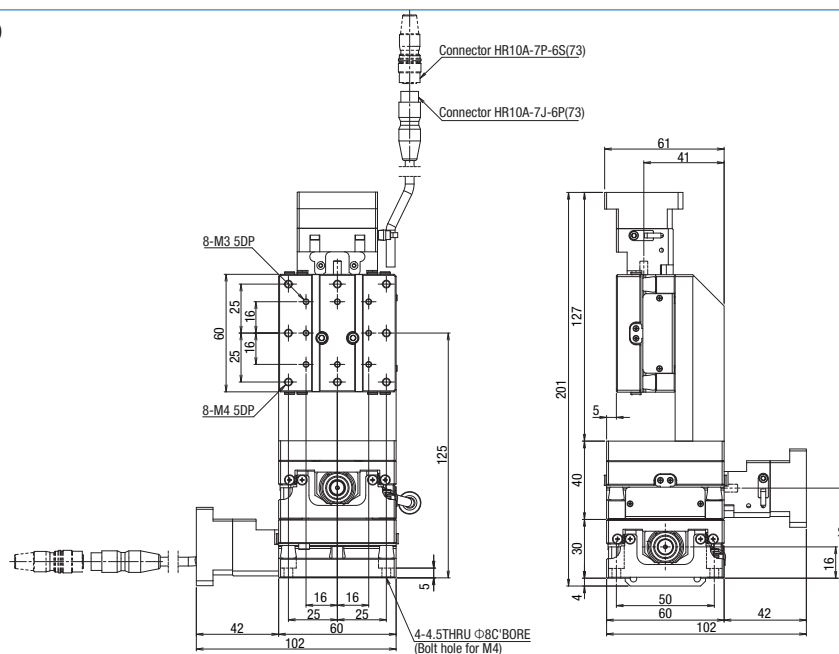
KWG06020TV-P28



KWG06020TV-S38



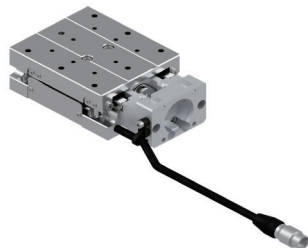
KWG06020TV-S40



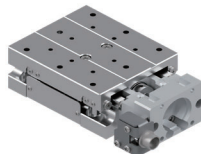
X-axis Linear Ball Guide: KXG06030V

RoHS

KXG06030TV-P28



KXG06030MV-P28



Accessory		P28	S38	S40
Motor bracket (installed on main body)		○		
Coupling (with screws)		○		
Mounting screw	For Motor	4of M2.5-6	4of M3-12	2of M4-12
	For Main Body	4of M4-10		
Sensor cable		○(HR10AP-S-SB-6-□)		
Cable tie		○	-	-

* Sensor cable: Select from 2m, 3m, 5m

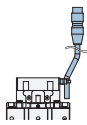
KXG06030TV-P28-□

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1 Connector specifications

T	Pig tail	
M	Panel mount	

2 Application Motor

Code	Specification
P28	□28 Stepping motor specification
S38	□38 Servo motor specification
S40	□40 Servo motor specifications

3 Cable option

Code	Specification
Blank	Sensor cable 2m One end loose wire
3	Sensor cable 3m One end loose wire
5	Sensor cable 5m One end loose wire

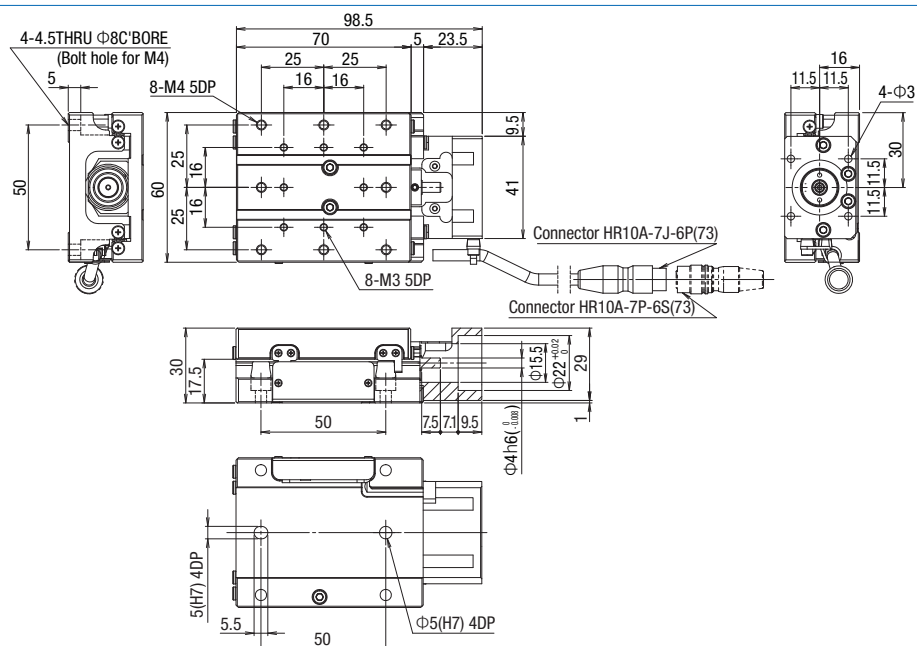
SPEC			
Model		KXG06030TV-P28	KXG06030MV-P28
Mechanical specification	Travel distance	30mm	
	Stage surface size	60×70mm	
	Connector type	Pigtail	Panel Mount
	Feed screw (Ball screw)	φ8 Lead 1	
	Guide	Linear Ball Guide	
Accuracy specification	Main materials-Finishing	Special Steel—Electroless nickel plating	
	Weight	0.70kg	
	Resolution/ Pulse	Full/Half	2μm/1μm
		Micro step	0.1μm(1/20 On resolution)
	MAX speed	20mm/sec	
	Uni-directional positioning accuracy	5μm	
	Repeatability positioning accuracy	±0.5μm	
	Load capacity	10kgf [98N]	
	Moment stiffness	Pitch 0.06/Yaw 0.05/Roll 0.05[°/N • cm]	
	Lost motion	1μm	
	Backlash	1μm	
	Straightness	3μm	
	Parallelism	15μm	
	Motion parallelism	10μm	
	Pitching/Yawing	20°/15°	
Sensor	Limit sensor	Available	
	Origin sensor	Available	
	Slit origin sensor	—	

* SPEC is the value of the standard motor.

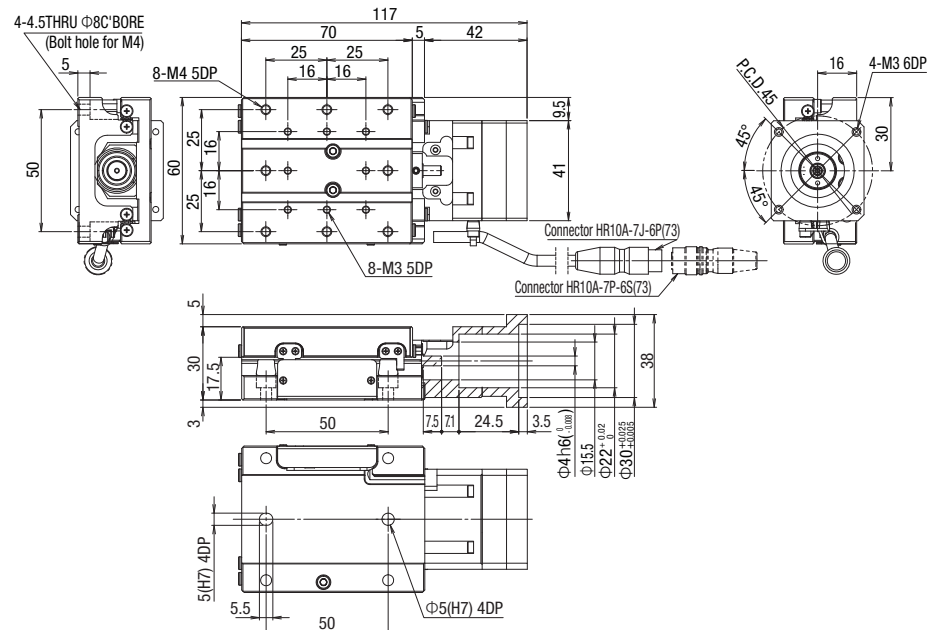
* When the applicable motor code [S38/S40] is selected, the weight is 0.74kg.

Dimensions

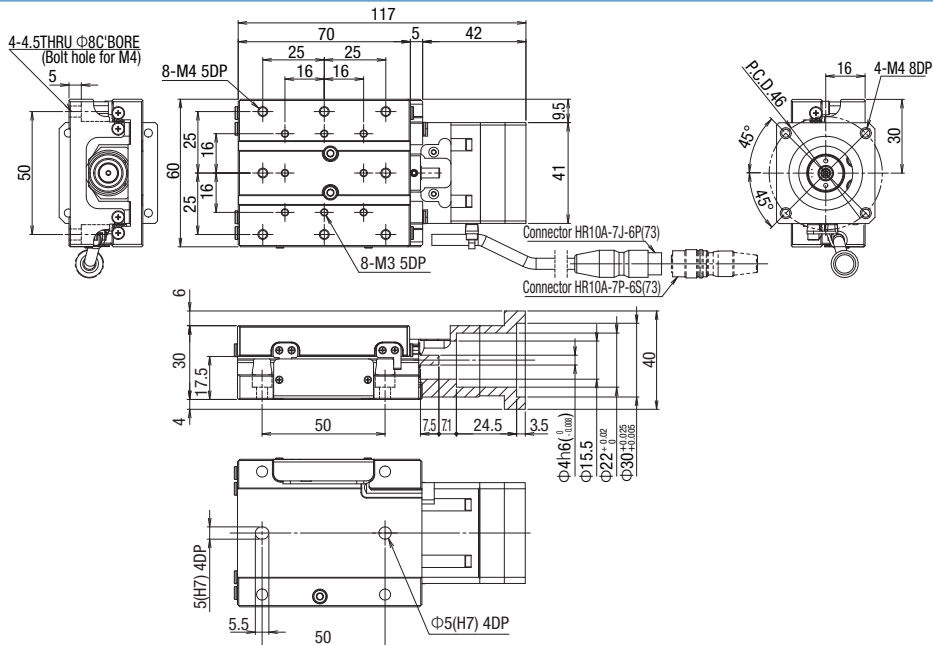
KXG06030TV-P28



KXG06030TV-S38



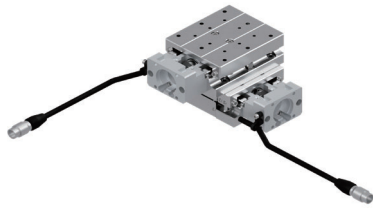
KXG06030TV-S40



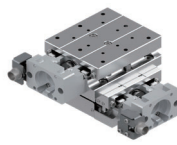
XY-axis Linear Ball Guide: KYG06030V

RoHS

KYG06030TV-P28



KYG06030MV-P28



Accessory		P28	S38	S40
Motor bracket (installed on main body)		○		
Coupling (with screws)		○		
Mounting screw	For Motor	8of M2.5-6	8of M3-12	4of M4-12
	For Main Body	4of M4-10		
Sensor cable		○(HR10AP-S-SB-6-□)		
Cable tie		○	-	-

* Sensor cable: Select from 2m, 3m, 5m

KYG06030TV-P28-□

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1 Connector specifications

T	Pig tail	
M	Panel mount	

2 Application Motor

Code	Specification
P28	□28 Stepping motor specification
S38	□38 Servo motor specification
S40	□40 Servo motor specifications

3 Cable option

Code	Specification
Blank	Sensor cable 2m One end loose wire
3	Sensor cable 3m One end loose wire
5	Sensor cable 5m One end loose wire

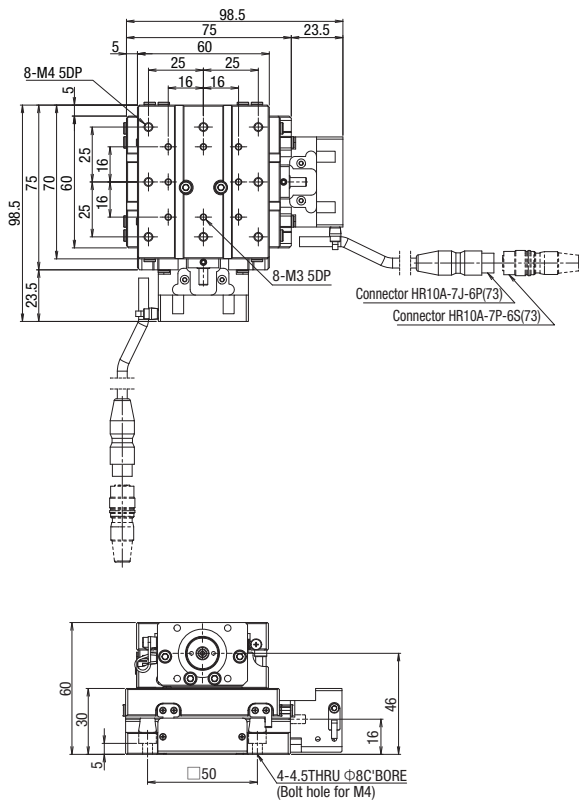
SPEC			
Model		KYG06030TV-P28	KYG06030MV-P28
Mechanical specification	Travel distance	30mm	
	Stage surface size	60×70mm	
	Connector type	Pigtail	Panel Mount
	Feed screw (Ball screw)	φ8 Lead 1	
	Guide	Linear Ball Guide	
Accuracy specification	Main materials-Finishing	Special Steel—Electroless nickel plating	
	Weight	1.40kg	
	Resolution/ Pulse	2μm/1μm	
	Full/Half Micro step	0.1μm(1/20 On resolution)	
	MAX speed	20mm/sec	
Sensor	Load capacity	9kgf【88.2N】	
	Squareness	15μm/Full stroke	
	Limit sensor	Available	
	Origin sensor	Available	
	Slit origin sensor	—	
Single axis accuracy specification	Uni-directional positioning accuracy	5μm	
	Repeatability positioning accuracy	±0.5μm	
	Lost motion	1μm	
	Backlash	1μm	
	Straightness	3μm	
	Pitching/Yawing	20"/15"	

* SPEC is the value of the standard motor.

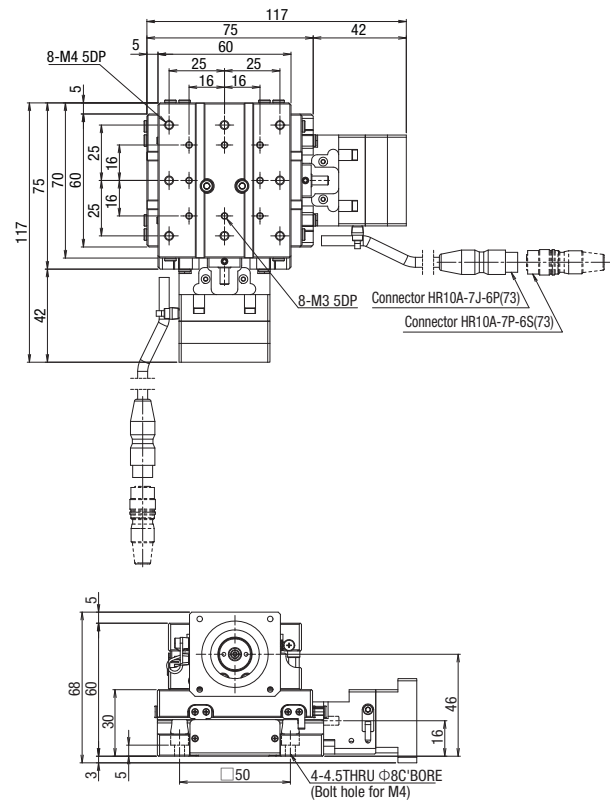
* When the applicable motor code [S38/S40] is selected, the weight is 1.48kg.

Dimensions

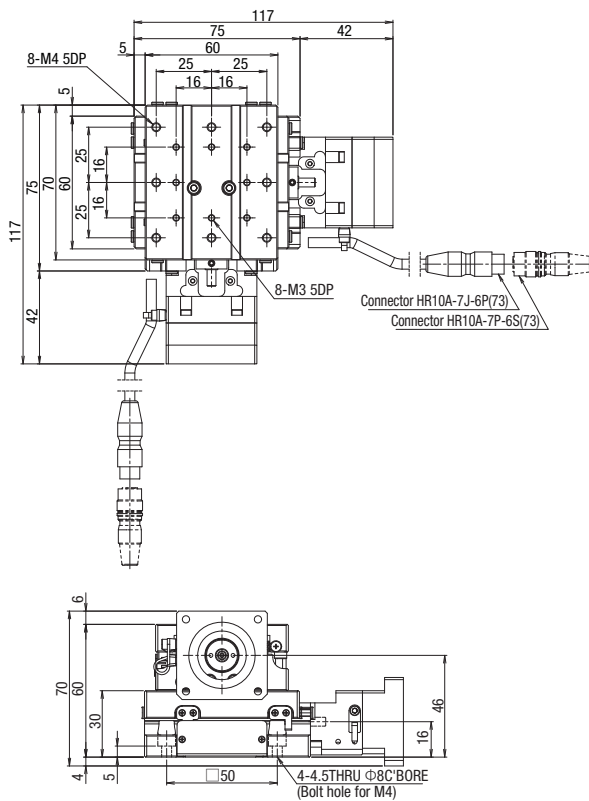
KYG06030TV-P28



KYG06030TV-S38



KYG06030TV-S40



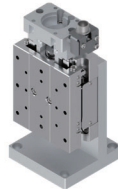
Z-axis Linear Ball Guide:KZG06030V

RoHS

KZG06030TV-P28



KZG06030MV-P28



Accessory		P28	S38	S40
Motor bracket (installed on main body)		○		
Coupling (with screws)		○		
Mounting screw	For Motor	4of M2.5-6	4of M3-12	2of M4-12
	For Main Body	4of M4-10		
Sensor cable		○(HR10AP-S-SB-6-□)		
Cable tie		○	-	-

* Sensor cable: Select from 2m, 3m, 5m

KZG06030TV-P28-□

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3

1 Connector specifications

T	Pig tail	
M	Panel mount	

2 Application Motor

Code	Specification
P28	□28 Stepping motor specification
S38	□38 Servo motor specification
S40	□40 Servo motor specifications

3 Cable option

Code	Specification
Blank	Sensor cable 2m One end loose wire
3	Sensor cable 3m One end loose wire
5	Sensor cable 5m One end loose wire

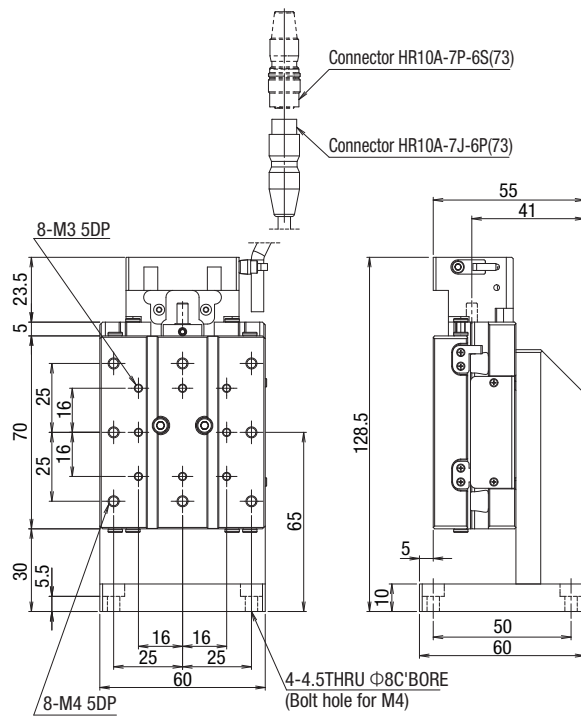
SPEC			
Model		KZG06030TV-P28	KZG06030MV-P28
Mechanical specification	Travel distance	30mm	
	Stage surface size	60×70mm	
	Connector type	Pigtail	Panel Mount
	Feed screw (Ball screw)	φ8 Lead 1	
	Guide	Linear Ball Guide	
Accuracy specification	Main materials-Finishing	Special Steel—Electroless nickel plating	
	Weight	1.06kg	
	分解能 (パルス)	Full/Half	2μm/1μm
		Micro step	0.1μm(1/20 On resolution)
	MAX speed	20mm/sec	
Sensor	Load capacity	3kgf [29.4N]	
	Perpendicularity	15μm/Full stroke	
	Limit sensor	Available	
	Origin sensor	Available	
	Slit origin sensor	—	
Single axis accuracy specification	Uni-directional positioning accuracy	5μm	
	Repeatability positioning accuracy	±0.5μm	
	Lost motion	1μm	
	Backlash	1μm	
	Straightness	3μm	
	Pitching/Yawing	20"/15"	

* SPEC is the value of the standard motor.

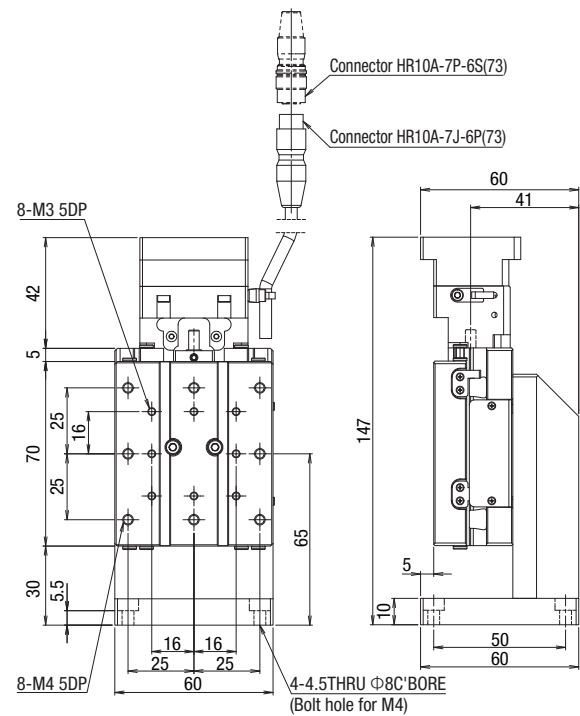
* When the applicable motor code [S38/S40] is selected, the weight is 1.10kg.

Dimensions

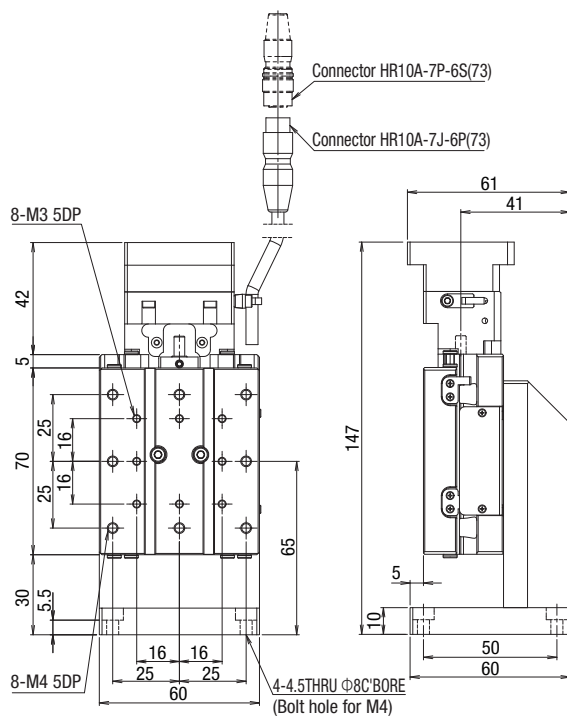
KZG06030TV-P28



KZG06030TV-S38



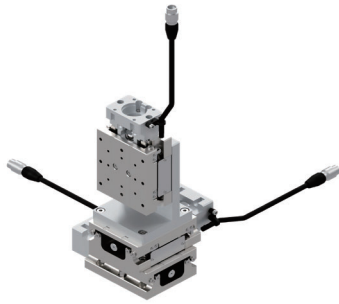
KZG06030TV-S40



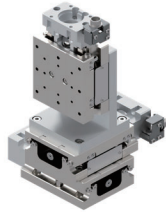
XYZ-axis Linear Ball Guide:KWG06030V

RoHS

KWG06030TV-P28



KWG06030MV-P28



Accessory		P28	S38	S40
Motor bracket (installed on main body)		○		
Coupling (with screws)		○		
Mounting screw	For Motor	12of M2.5-6	12of M3-12	6of M4-12
	For Main Body	4of M4-10		
Sensor cable		○(HR10AP-S-SB-6-□)		
Cable tie		○	-	-

* Sensor cable: Select from 2m, 3m, 5m

KWG06030TV-P28-□

1 Connector specifications

T	Pig tail	
M	Panel mount	

2 Application Motor

Code	Specification
P28	□28 Stepping motor specification
S38	□38 Servo motor specification
S40	□40 Servo motor specifications

3 Cable option

Code	Specification
Blank	Sensor cable 2m One end loose wire
3	Sensor cable 3m One end loose wire
5	Sensor cable 5m One end loose wire

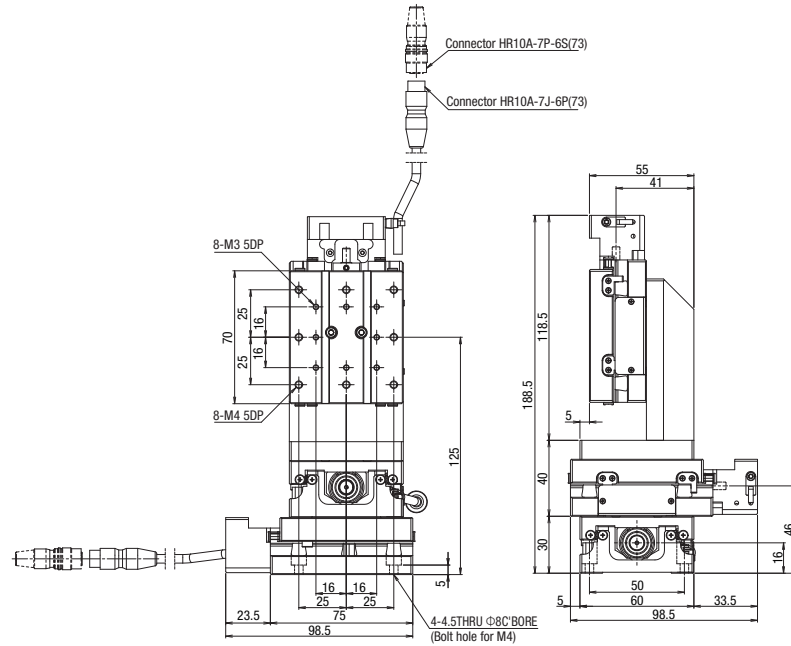
SPEC			
Model	KWG06030TV-P28		KWG06030MV-P28
Mechanical specification	Travel distance	30mm	
	Stage surface size	60×70mm	
	Connector type	Pigtail	Panel Mount
	Feed screw (Ball screw)	φ8 Lead 1	
	Guide	Linear Ball Guide	
Accuracy specification	Main materials-Finishing	Special Steel—Electroless nickel plating	
	Weight	2.46kg	
	Resolution/ Pulse	2μm/1μm	
	MAX speed	0.1μm(1/20 On resolution)	
	Load capacity	20mm/sec	
Sensor	Squareness	3kgf[29.4N]	
	Perpendicularity	15μm/Full stroke	
	Limit sensor	15μm/Full stroke	
	Origin sensor	Available	
	Slit origin sensor	Available	
Single axis accuracy specification	Uni-directional positioning accuracy	—	
	Repeatability positioning accuracy	5μm	
	Lost motion	±0.5μm	
	Backlash	1μm	
	Straightness	1μm	
	Pitching/Yawing	3μm	
		20"/15"	

* SPEC is the value of the standard motor.

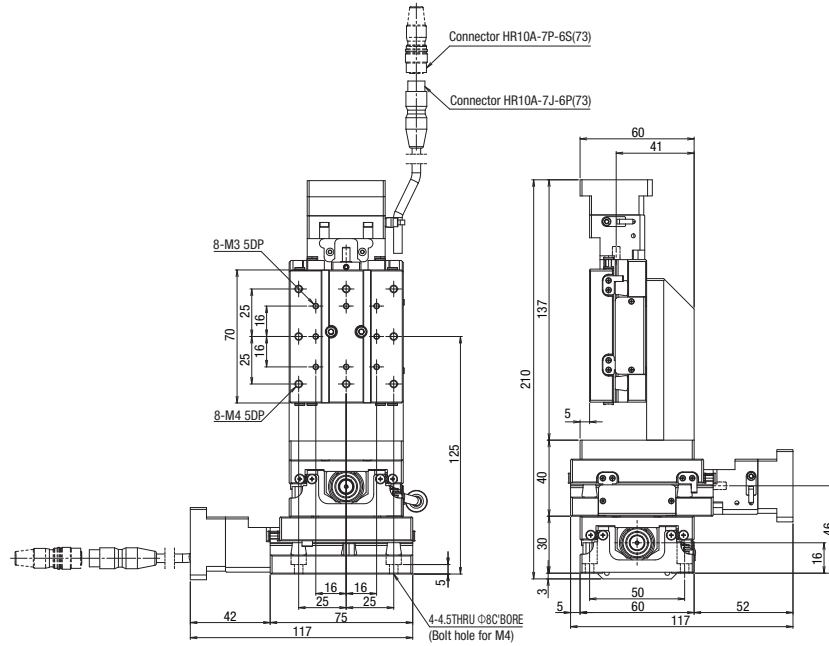
* When the applicable motor code [S38/S40] is selected, the weight is 2.58kg.

Dimensions

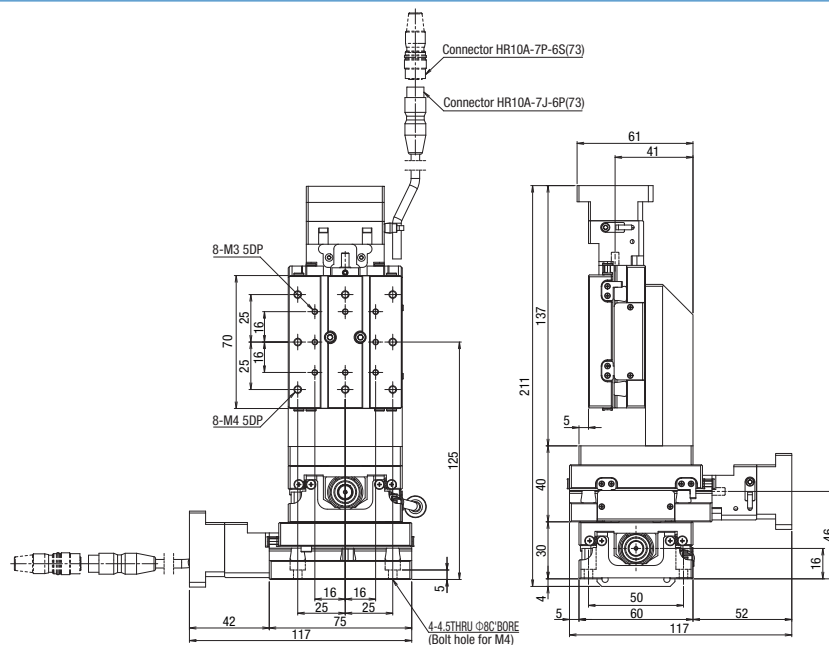
KWG06030TV-P28



KWG06030TV-S38



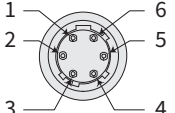
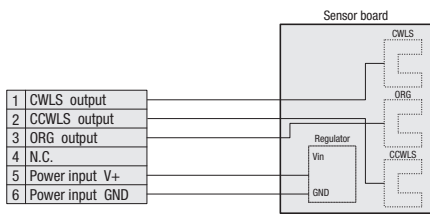
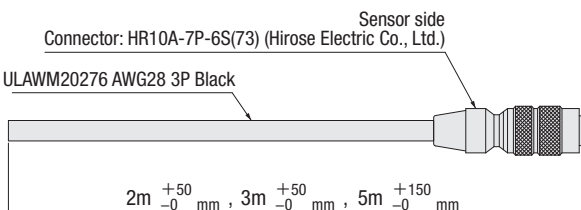
KWG06030TV-S40



Electrical specification

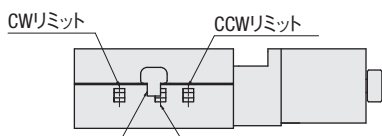
Applicable motor code		P28	S38	S40
Feature		For □28 Stepping motor	For □38 AC Servo motor	For □40 AC Servo motor
Model			KXG06020/KXG06030	
Connector	Pig tail		Sensor: HR10A-7J-6P(73) (Hirose Electric Co., Ltd.)	
	Panel mount		Sensor: HR10A-7R-6P(73) (Hirose Electric Co., Ltd.)	
	Receiving connector		Sensor: HR10A-7P-6S(73) (Hirose Electric Co., Ltd.)	
Sensor board	Limit sensor		Available	
	Origin sensor		Available	
	Slit origin sensor		—	
	Sensor		Photo microsensor EE-SX4320 (Omron Co., Ltd.)	
	Power-supply voltage		DC5~24V±5%	
	Current consumption		Total 60mA or less	
	Control output		NPN open collector output DC30V 10mA or less	
	Output logic		On detection (light shield condition): Output transistor OFF (Non-continuity)	

Pin allocation · Connection diagram

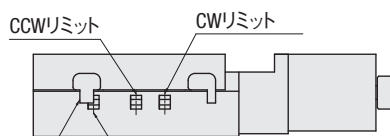
Motor code	KXG Series													
P28 • S38 • S40	Sensor	【Pin allocation】 Pigtail specification : Connector model : HR10A-7J-6P(73) (Hirose Electric Co., Ltd.) Panel mount specification : Connector model : HR10A-7R-6P(73) (Hirose Electric Co., Ltd.) 												
		【Connection diagram】 												
		【Cable model】 Model:HR10AP-S-SB-6-□ (□ is the length.) * Fixed Connector: HR10A-7P-6S(73) (Hirose Electric Co., Ltd.) ULAWM20276 AWG28 3P Black Sensor side  <table><tr><th>Pin</th><th>Signals</th></tr><tr><td>1</td><td>CWLS</td></tr><tr><td>2</td><td>CCWLS</td></tr><tr><td>3</td><td>ORG</td></tr><tr><td>4</td><td>NORG</td></tr><tr><td>5</td><td>V+</td></tr><tr><td>6</td><td>V-</td></tr></table> ※ The shields are connected with the connector shell.	Pin	Signals	1	CWLS	2	CCWLS	3	ORG	4	NORG	5	V+
Pin	Signals													
1	CWLS													
2	CCWLS													
3	ORG													
4	NORG													
5	V+													
6	V-													

Timing chart

KXG06020



KXG06030

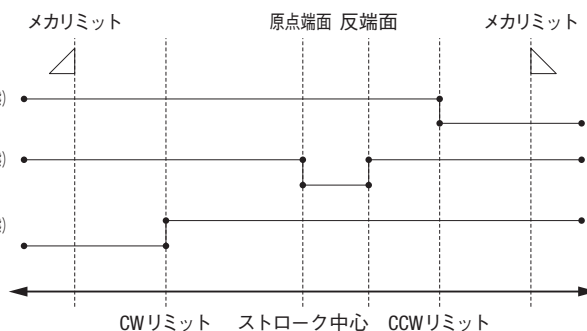


メカストップ

CCWリミット

原点センサ

CWリミット



Unit [mm]

Direction of CW

Direction of CCW

	Reference coordinate	Mechanical limit	CW Limit	The origin end face (Stroke center)	Opposite end face	CCW Limit	Mechanical limit
KXG06020T(M)	Return to origin	11.5	10.5	0	5	10.5	11.5
KXG06030T(M)	Return to origin	16.5	15.5	0	5	15.5	16.5

* Return to origin means that is performed return to origin type 4 using DS102/DS112 series.(DS102/DS112 are dedicated to 5-phase motors)

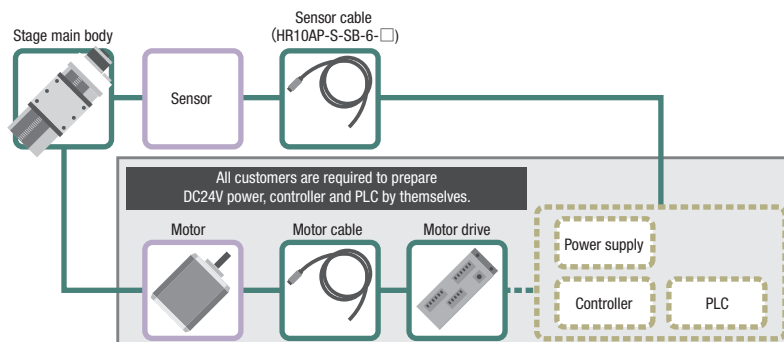
* The coordinate is a basis of design value. Dimension error may occur about plus or minus 0.5 mm.

Note: The timing chart shows only timing of sensor, it is not for output signal logic.

Refer to ON/OFF display of output transistor that shows on electrical specifications-sensor-output logic for output signal logic.

Applicable motor code

- P28** ☐ **28mm**
For Stepping motor
- S38** ☐ **38mm**
For AC servo motor
- S40** ☐ **40mm**
For AC servo motor



【Precautions for handling motorless products】

【important】

Unlike normal products, this is a motorless product with no drive source.

Please be sure to read and agree to the "Scope of Warranty" and "Precautions and Restrictions for Use" before purchasing.

◆ Warranty range

The following items are not covered by the warranty.

- Faults and troubles related to motor mounting adjustment
- Accuracy after motor assembly by customer

* Accuracy inspection is performed on the inspection motor to confirm that it is within the standard value.

◆ Precautions and restrictions on use

1. Specs: load capacity and maximum speed

Since it depends on the configuration of the main body of the motorized stage, please use it within the specifications of this product regardless of the performance of the motor. The distance between the limit sensor and the mechanical limit is short, and an overrun may cause collision with the mechanical limit. Please note that collisions with mechanical limits may adversely affect product accuracy and durability.

2. Torque limit

Using a high-torque motor may give a load that exceeds the product's allowable limit. If the motor torque exceeds $0.25 \text{ N} \cdot \text{m}$, please apply the torque limit.

3. Mounting the motor

Align the body, motor, and coupling before mounting.

Operation in a misalignment situation may lead to early product damage and deterioration. Please refer to the attached assembly procedure manual and adjust the assembly.

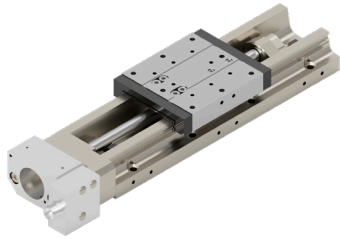
4. Fixing the connector

There are products that require the customer to fix the connector. Before fixing, the connector part and the main body are connected only by the lead wire, which may cause disconnection, so please handle with care.

X-axis Linear Ball Guide : KXG06020V/KXL06MV-N

RoHS

KXL06MV-N



*All image is for illustrative purposes only.

Accessory		P28	S38	S40
Motor bracket changed		installed on main body		
Motor plate		○	-	-
Coupling (with screws)		○		
Mounting screw	For Motor	4 of M2.5×6	4 of M3×12	2 of M4×12
	For Motor plate	2 of M4×8	-	-
	For Main Body	30~100mm	8 of M4×14	
		150mm	14 of M4×14	
		200mm	12 of M4×14	
		300mm	16 of M4×14	
Parallel pin		2 of Φ2x8	-	-
Sensor cable 2m One end loose		○(HR10AP-S-SB-6-□)		

Sensor cable: Select from 2m, 3m, 5m

Weight	P28	S38	S40
KXL06030MV-N	1.17kg	1.20kg	1.20kg
KXL06050MV-N	1.27kg	1.30kg	1.30kg
KXL06075MV-N	1.43kg	1.46kg	1.46kg
KXL06100MV-N	1.60kg	1.63kg	1.63kg
KXL06150MV-N	1.90kg	1.93kg	1.93kg
KXL06200MV-N	2.22kg	2.25kg	2.25kg
KXL06300MV-N	2.82kg	2.85kg	2.85kg

- *When selecting the 4 sensor option: Available
• Origin sensor option [1~6]+0.03kg,[7]+0.01kg

KXL06030MV-N- -P28 -

1 Travel distance

030	30mm
050	50mm
075	75mm
100	100mm
150	150mm
200	200mm
300	300mm

2 Connector specifications

M	Panel mount
---	-------------

3 Ball screw lead

1	Lead 1mm
2	Lead 2mm

※Lead 1mm is only available with strokes of 30mm, 50mm, and 75mm.

4 Application Motor

Code	Specification
P28	□28 Stepping motor specification
S38	□38 Servo motor specification
S40	□40 Servo motor specifications

6 Cable option

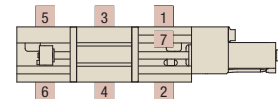
Code	Specification
Blank	Sensor cable 2m One end loose wire
3	Sensor cable 3m One end loose wire
5	Sensor cable 5m One end loose wire

5 Origin sensor option

Code	Specification
Blank	None
1	CCW right side
2	CCW left side
3	Center right side
4	Center left side
5	CW right side
6	CW left side
7	Built-in

*For details on the origin sensor option, please refer to PML-051~ onwards.

■ Origin sensor option installation position
(Please select one location)

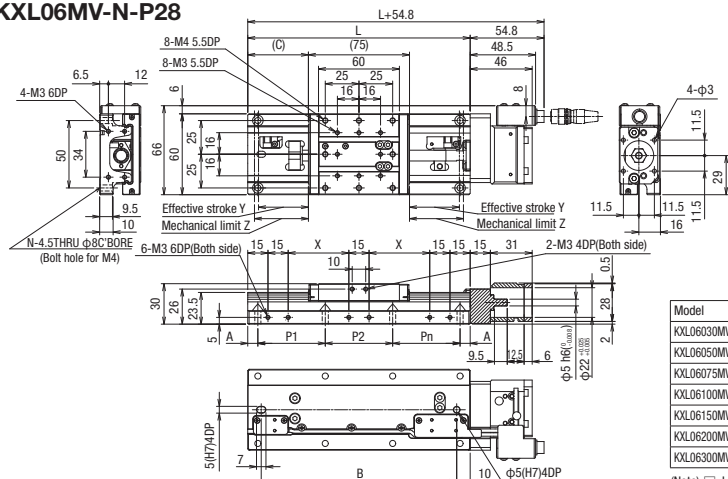


SPEC											
Model	KXL06030MV -N1-P28	KXL06030MV -N2-P28	KXL06050MV -N1-P28	KXL06050MV -N2-P28	KXL06075MV -N1-P28	KXL06075MV -N2-P28	KXL06100MV -N2-P28	KXL06150MV -N2-P28	KXL06200MV -N2-P28	KXL06300MV -N2-P28	
Mechanical specification	Travel distance	30mm		50mm		75mm		100mm	150mm	200mm	300mm
	Stage table size	60×60mm									
	Feed screw (Ball screw)	φ8 Lead 1	φ8 Lead 2	φ8 Lead 1	φ8 Lead 2	φ8 Lead 1	φ8 Lead 2	φ8 Lead 2			
	Guide	Linear Ball Guide									
	Main materials-Finishing	Stainless—Electroless nickel plating									
Weight	1.17kg		1.27kg		1.43kg		1.60kg	1.90kg	2.22kg	2.82kg	
Accuracy specification	Resolution (Pulse)	Full/Half	2μm/1μm	4μm/2μm	2μm/1μm	4μm/2μm	2μm/1μm	4μm/2μm	4μm/2μm		
		Micro step	0.1μm (1/20 On resolution)	0.2μm (1/20 On resolution)	0.1μm (1/20 On resolution)	0.2μm (1/20 On resolution)	0.1μm (1/20 On resolution)	0.2μm (1/20 On resolution)	0.2μm (1/20 On resolution)		
	MAX speed	30mm/sec	35mm/sec	30mm/sec	35mm/sec	30mm/sec	35mm/sec	45mm/sec			
	Uni-directional positioning accuracy	5μm				7μm		10μm	15μm	15μm	25μm
	Repeatability positioning accuracy	±0.5μm									
	Load capacity	12kgf【117.6N】									
	Moment stiffness	Pitch 0.05/yaw 0.05/roll 0.05 [°/N・cm]									
	Lost motion	1μm									
	Backlash	1μm									
	Straightness	3μm						5μm		7μm	
Parallelism	15μm										
Motion parallelism	10μm						10μm	15μm	20μm	25μm	
Pitching/Yawing	20°/15°						25°/20°		30°/20°	35°/20°	

* The SPEC varies depending on the motor.

Dimensions

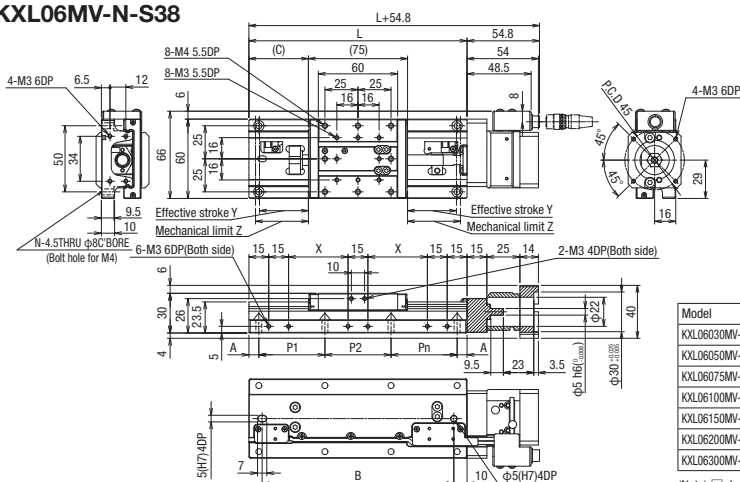
KXL06MV-N-P28



Model	L	N	A	B	C	P1	P2	P3	P4	PS	P6	P7	X	Y	Z
KOL06030MV-N1-P28	120	8	10	100	22.5	25	50	25	—	—	—	—	22.5	15	17.5
KOL06050MV-N1-P28	140	8	20	120	32.5	25	50	25	—	—	—	—	32.5	25	27.5
KOL06075MV-N1-P28	165	8	7.5	145	45	50	50	50	—	—	—	—	45	37.5	40
KOL06100MV-N2-P28	190	8	20	170	57.5	50	50	50	—	—	—	—	57.5	50	52.5
KOL06150MV-N2-P28	240	14	20	220	82.5	50	25	25	25	25	50	—	82.5	75	77.5
KOL06200MV-N2-P28	290	12	20	270	107.5	50	50	50	50	50	—	—	107.5	100	102.5
KOL06300MV-N2-P28	390	16	20	370	157.5	50	50	50	50	50	50	50	157.5	150	152.5

(Note) ☐: Lead selection [1 or 2]

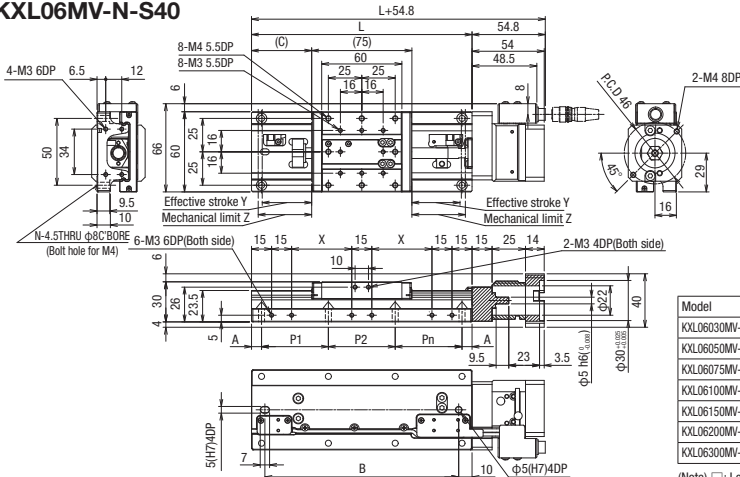
KXL06MV-N-S38



Model	L	N	A	B	C	P1	P2	P3	P4	PS	P6	P7	X	Y	Z
KOL0603M-N□-S38	120	8	10	100	22.5	25	50	25	—	—	—	—	22.5	15	17.5
KOL0605M-N□-S38	140	8	20	120	32.5	25	50	25	—	—	—	—	32.5	25	27.5
KOL0607M-N□-S38	165	8	7.5	145	45	50	50	50	—	—	—	—	45	37.5	40
KOL0610M-N2-S38	190	8	20	170	57.5	50	50	50	—	—	—	—	57.5	50	52.5
KOL0615M-N2-S38	240	14	20	220	82.5	50	25	25	25	25	50	—	82.5	75	77.5
KOL0620M-N2-S38	290	12	20	270	107.5	50	50	50	50	50	—	—	107.5	100	102.5
KOL0630M-N2-S38	390	16	20	370	157.5	50	50	50	50	50	50	50	157.5	150	152.5

(Note) ☐: Lead selection [1 or 2]

KXL06MV-N-S40



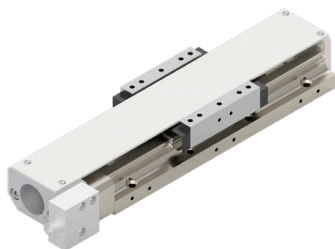
Model	L	N	A	B	C	P1	P2	P3	P4	PS	P6	P7	X	Y	Z
KOL06030M-N1-S40	120	8	10	100	22.5	25	50	25	—	—	—	—	22.5	15	17.5
KOL06050M-N1-S40	140	8	10	120	32.5	25	50	25	—	—	—	—	32.5	25	27.5
KOL06075M-N1-S40	165	8	7.5	145	45	50	50	50	—	—	—	—	45	37.5	40
KOL06100M-N2-S40	190	8	20	170	57.5	50	50	50	—	—	—	—	57.5	50	52.5
KOL06150M-N2-S40	240	14	20	220	82.5	50	25	25	25	25	50	—	82.5	75	77.5
KOL06200M-N2-S40	290	12	20	270	107.5	50	50	50	50	50	50	—	107.5	100	102.5
KOL06300M-N2-S40	390	16	20	370	157.5	50	50	50	50	50	50	50	157.5	150	152.5

(Note) ☐: Lead selection [1 or 2]

X-axis Linear Ball Guide : KXL06020V/KXL06MV-C

RoHS

KXL06MV-C



*All image is for illustrative purposes only.

Accessory		P28	S38	S40
Motor bracket		installed on main body		
Motor plate		○	-	-
Coupling (with screws)		○		
Mounting screw	For Motor	4 of M2.5×6	4 of M3×12	2 of M4×12
	For Motor plate	2 of M4×8	-	-
	For Main Body	30~100mm	8 of M4×14	
		150mm	14 of M4×14	
		200mm	12 of M4×14	
		300mm	16 of M4×14	
Parallel pin		2 of Φ2x8	-	-
Sensor cable 2m One end loose		○(HR10AP-S-SB-6-□)		

Sensor cable: Select from 2m, 3m, 5m

Weight	P28	S38	S40
KXL06030MV-C	1.23kg	1.26kg	1.26kg
KXL06050MV-C	1.33kg	1.36kg	1.36kg
KXL06075MV-C	1.49kg	1.52kg	1.52kg
KXL06100MV-C	1.66kg	1.69kg	1.69kg
KXL06150MV-C	1.96kg	1.99kg	1.99kg
KXL06200MV-C	2.28kg	2.31kg	2.31kg
KXL06300MV-C	2.92kg	2.95kg	2.95kg

※When selecting the 4 sensor option: Available

※Origin sensor option[1~6]+0.03kg,[7]+0.01kg.

KXL06030MV-C

1

2

3

4

5

6

-P28

3

4

5

6

1 Travel distance

030	30mm
050	50mm
075	75mm
100	100mm
150	150mm
200	200mm
300	300mm

2 Connector specifications

M	Panel mount	
---	-------------	--

3 Ball screw lead

1	Lead 1mm
2	Lead 2mm

*Lead 1mm is only available with strokes of 30mm, 50mm, and 75mm.

4 Application Motor

Code	Specification
P28	□28 Stepping motor specification
S38	□38 Servo motor specification
S40	□40 Servo motor specifications

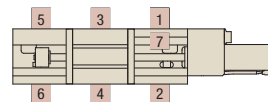
6 Cable option

Code	Specification
Blank	Sensor cable 2m One end loose wire
3	Sensor cable 3m One end loose wire
5	Sensor cable 5m One end loose wire

5 Origin sensor option

Code	Specification
Blank	None
1	CCW right side
2	CCW left side
3	Center right side
4	Center left side
5	CW right side
6	CW left side
7	Built-in

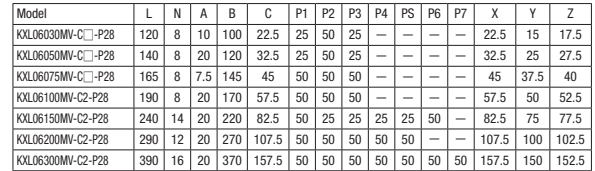
*For details on the origin sensor option, please refer to P.M.L-051~ onwards.

■ Origin sensor option installation position
(Please select one location)

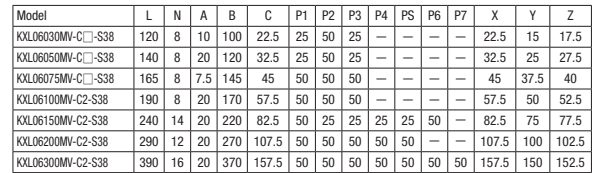
SPEC											
Model	KXL06030MV -C1-P28	KXL06030MV -C2-P28	KXL06050MV -C1-P28	KXL06050MV -C2-P28	KXL06075MV -C1-P28	KXL06075MV -C2-P28	KXL06100MV -C2-P28	KXL06150MV -C2-P28	KXL06200MV -C2-P28	KXL06300MV -C2-P28	
Mechanical specification	Travel distance	30mm		50mm		75mm		100mm	150mm	200mm	300mm
	Stage table size	60×60mm									
	Feed screw (Ball screw)	φ8 Lead 1	φ8 Lead 2	φ8 Lead 1	φ8 Lead 2	φ8 Lead 1	φ8 Lead 2	φ8 Lead 2			
	Guide	Linear Ball Guide									
	Main materials-Finishing	Stainless—Electroless nickel plating									
Weight	1.23kg		1.33kg		1.49kg		1.66kg	1.96kg	2.28kg	2.92kg	
Accuracy specification	Resolution (Pulse)	Full/Half Micro Step	2μm/1μm 0.1μm (1/20 On resolution)	4μm/2μm 0.2μm (1/20 On resolution)	2μm/1μm 0.1μm (1/20 On resolution)	4μm/2μm 0.2μm (1/20 On resolution)	2μm/1μm 0.1μm (1/20 On resolution)	4μm/2μm 0.2μm (1/20 On resolution)	4μm/2μm 0.2μm (1/20 On resolution)		
	MAX speed	30mm/sec		35mm/sec	30mm/sec	35mm/sec	30mm/sec	35mm/sec	45mm/sec		
	Uni-directional positioning accuracy	5μm				7μm		10μm	15μm	15μm	25μm
	Repeatability positioning accuracy	±0.5μm									
	Load capacity	12kgf【117.6N】									
	Moment stiffness	Pitch 0.05/yaw 0.05/roll 0.05 [°/N・cm]									
	Lost motion	1μm									
	Backlash	1μm									
	Straightness	3μm						5μm		7μm	
	Parallelism	15μm									
	Motion parallelism	10μm						10μm	15μm	20μm	25μm
Pitching/Yawing	20°/15°						25°/20°		30°/20°	35°/20°	

* The SPEC varies depending on the motor.

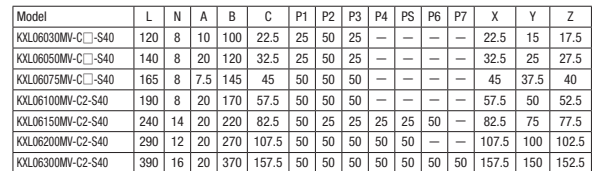
KXL06MV-C-P28



KXL06MV-C-S38



KXL06MV-C-S40

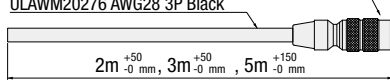
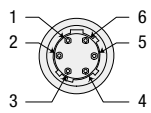
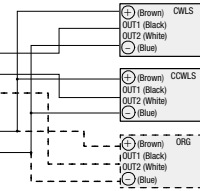


(Note) ☐: Lead selection [1 or 2]

Specification

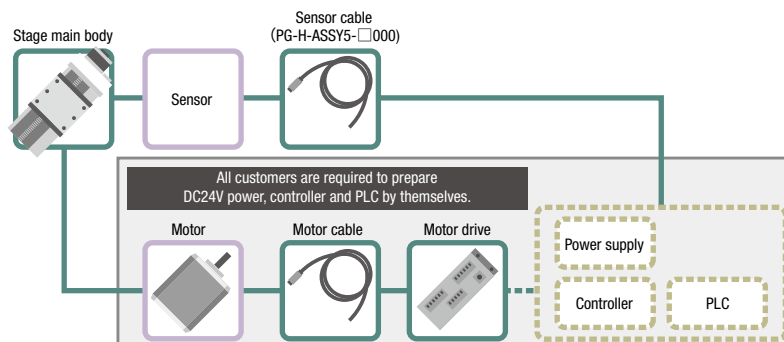
Motor code		P28	S38	S40
Feature		For ☐ 28mm Stepping motor	For ☐ 38mm AC Servo motor	For ☐ 40mm AC Servo motor
Model		KXL06030MV/KXL06050MV/KXL06075MV/KXL06100MV/KXL06150MV/KXL06200MV/KXL06300MV		
Connector	Panel mount	Sensor: HR10A-7R-6P(73) (Hirose Electric Co., Ltd.)		
	Receiving connector	Sensor: HR10A-7P-6S(73) (Hirose Electric Co., Ltd.)		
Sensor board	Limit sensor	Available		
	Origin sensor	— *Can be installed with origin sensor option		
	Slit origin sensor	—		
	Sensor	Micro Photoelectric Sensor PM-L25 (Panasonic Industrru co., Ltd.)		
	Power-supply voltage	DC5~24V±10%		
	Current consumption	Total 45mA or less (15mA or less per 1 sensor)		
	Control output	NPN open collector output DC30V 50mA or less Residual voltage 2V or less when the load current is 50mA Residual voltage 1V or less when the load current is 16mA		
	Output logic	On detection (light shield condition): Output transistor OFF (Non-continuity)		

Pin allocation • Connection diagram

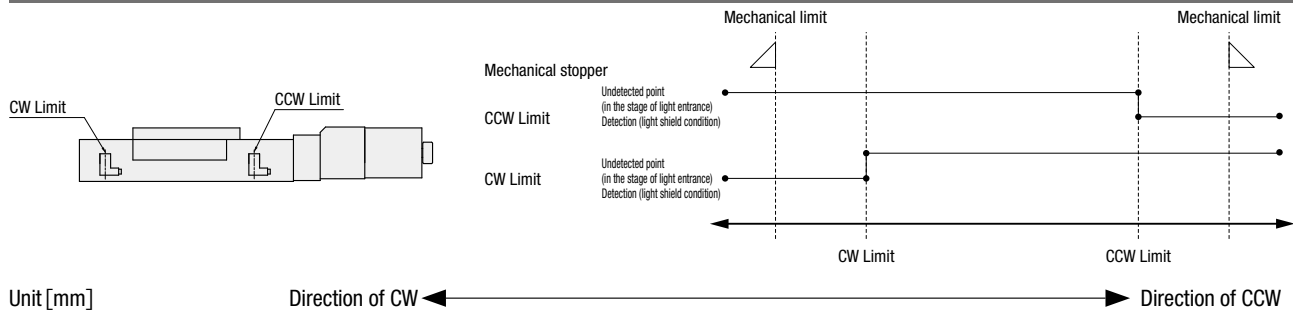
Motor code		KXL Series															
P28 • S38 • S40	Sensor	【 Receiver cable 】 Model: HR10AP-S-SB-6-□ (□ is the length.) * Fixed Sensor side Connector (Female): HR10A-7P-6S (73) (HRS) ULAWM20276 AWG28 3P Black 	【 Connection diagram(Sensor) 】 Connector:HR10A-7R-6P(73) (Hirose Electric Co., Ltd.)  														
		<table><tr><th>Pin</th><th>Signals</th></tr><tr><td>1</td><td>CWLS</td></tr><tr><td>2</td><td>CCWLS</td></tr><tr><td>3</td><td>ORG</td></tr><tr><td>4</td><td>NORG</td></tr><tr><td>5</td><td>V+</td></tr><tr><td>6</td><td>V-</td></tr></table> 	Pin	Signals	1	CWLS	2	CCWLS	3	ORG	4	NORG	5	V+	6	V-	
		Pin	Signals														
		1	CWLS														
		2	CCWLS														
3	ORG																
4	NORG																
5	V+																
6	V-																

Applicable motor code

- P28** ☐ 28mm
For Stepping motor
- S38** ☐ 38mm
For AC servo motor
- S40** ☐ 40mm
For AC servo motor



Timing chart



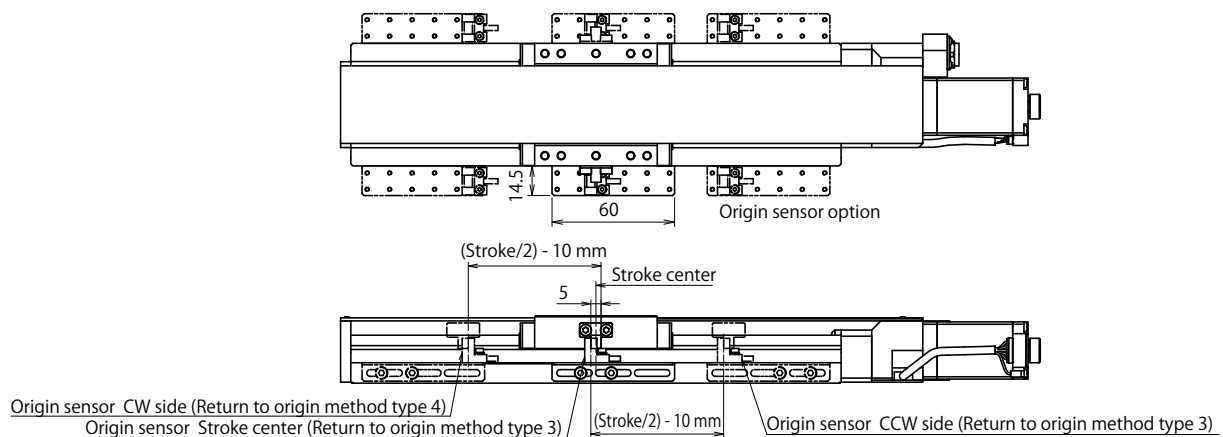
	Reference coordinate	Mechanical limit	CW Limit	CCW Limit	Mechanical limit
KXL06030MV	Storke center	17.5	15.5	15.5	17.5
KXL06050MV	Storke center	27.5	25.5	25.5	27.5
KXL06075MV	Storke center	40	38	38	40
KXL06100MV	Storke center	52.5	50.5	50.5	52.5
KXL06150MV	Storke center	77.5	75.5	75.5	77.5
KXL06200MV	Storke center	102.5	100.5	100.5	102.5
KXL06300MV	Storke center	152.5	150.5	150.5	152.5

* The coordinate is a basis of design value. Dimension error may occur about plus or minus 0.5 mm.

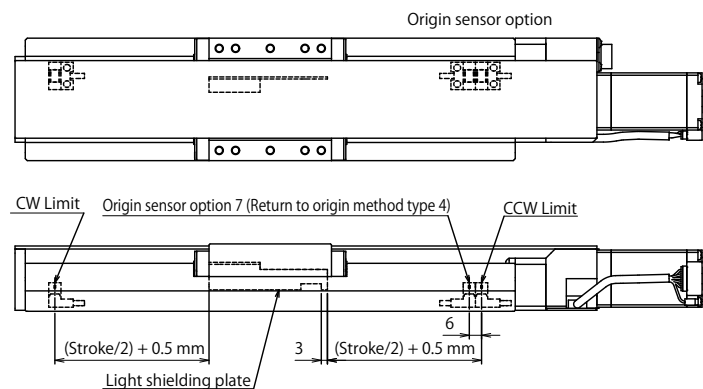
Note: The timing chart shows only timing of sensor, it is not for output signal logic.

Refer to ON/OFF display of output transistor that shows on electrical specifications-sensor-output logic for output signal logic.

Sensor option dimensions (Origin sensor option 1~6)



Sensor option dimensions (Origin sensor option 7)



Electrical Specification:KXL06MV

• Origin sensor option 1~2

Unit [mm]	Direction of CW ◀						▶ Direction of CCW	
	Reference coordinate	Mechanical limit	CW Limit	Storke center	Opposite end face to origin	The origin end face	CCW Limit	Mechanical limit
KXL06030MV	Return to origin	22.5	20.5	5	5	0	10.5	12.5
KXL06050MV	Return to origin	42.5	40.5	15	5	0	10.5	12.5
KXL06075MV	Return to origin	67.5	65.5	27.5	5	0	10.5	12.5
KXL06100MV	Return to origin	92.5	90.5	40	5	0	10.5	12.5
KXL06150MV	Return to origin	142.5	140.5	65	5	0	10.5	12.5
KXL06200MV	Return to origin	192.5	190.5	90	5	0	10.5	12.5
KXL06300MV	Return to origin	292.5	290.5	140	5	0	10.5	12.5

* Return to origin means that is performed return to origin type 3 using DS102/DS112 series.

* The coordinate is a basis of design value. Dimension error may occur about plus or minus 0.5 mm.

• Origin sensor option 3~4

Unit [mm]	Direction of CW ◀					▶ Direction of CCW		
	Reference coordinate	Mechanical limit	CW Limit	Opposite end face to origin	The origin end face Storke center	CCW Limit	Mechanical limit	
KXL06030MV	Return to origin	17.5	15.5	5	0	15.5	17.5	
KXL06050MV	Return to origin	27.5	25.5	5	0	25.5	27.5	
KXL06075MV	Return to origin	40	38	5	0	38	40	
KXL06100MV	Return to origin	52.5	50.5	5	0	50.5	52.5	
KXL06150MV	Return to origin	77.5	75.5	5	0	75.5	77.5	
KXL06200MV	Return to origin	102.5	100.5	5	0	100.5	102.5	
KXL06300MV	Return to origin	152.5	150.5	5	0	150.5	152.5	

* Return to origin means that is performed return to origin type 3 using DS102/DS112 series.

* The coordinate is a basis of design value. Dimension error may occur about plus or minus 0.5 mm.

• Origin sensor option 5~6

Unit [mm]	Direction of CW ◀						▶ Direction of CCW	
	Reference coordinate	Mechanical limit	CW Limit	The origin end face	Opposite end face to origin	Storke center	CCW Limit	Mechanical limit
KXL06030MV	Return to origin	12.5	10.5	0	5	5	20.5	22.5
KXL06050MV	Return to origin	12.5	10.5	0	5	15	40.5	42.5
KXL06075MV	Return to origin	12.5	10.5	0	5	27.5	65.5	67.5
KXL06100MV	Return to origin	12.5	10.5	0	5	40	90.5	92.5
KXL06150MV	Return to origin	12.5	10.5	0	5	65	140.5	142.5
KXL06200MV	Return to origin	12.5	10.5	0	5	90	190.5	192.5
KXL06300MV	Return to origin	12.5	10.5	0	5	140	290.5	292.5

* Return to origin means that is performed return to origin type 4 using DS102/DS112 series.

* The coordinate is a basis of design value. Dimension error may occur about plus or minus 0.5 mm.

• Origin sensor option 7

Unit [mm]	Direction of CW ◀						▶ Direction of CCW	
	Reference coordinate	Mechanical limit	CW Limit	Storke center	The origin end face	Opposite end face to origin	CCW Limit	Mechanical limit
KXL06030MV	Return to origin	27	25	9.5	0	3	6	8
KXL06050MV	Return to origin	47	45	19.5	0	3	6	8
KXL06075MV	Return to origin	72	70	32	0	3	6	8
KXL06100MV	Return to origin	97	95	44.5	0	3	6	8
KXL06150MV	Return to origin	147	145	69.5	0	3	6	8
KXL06200MV	Return to origin	197	195	94.5	0	3	6	8
KXL06300MV	Return to origin	297	295	144.5	0	3	6	8

* Return to origin means that is performed return to origin type 4 using DS102/DS112 series.

* The coordinate is a basis of design value. Dimension error may occur about plus or minus 0.5 mm.

【Precautions for handling motorless products】**【important】**

Unlike normal products, this is a motorless product with no drive source.

Please be sure to read and agree to the "Scope of Warranty" and "Precautions and Restrictions for Use" before purchasing.

◆ Warranty range

The following items are not covered by the warranty.

- Faults and troubles related to motor mounting adjustment
- Accuracy after motor assembly by customer

* Accuracy inspection is performed on the inspection motor to confirm that it is within the standard value.

◆ Precautions and restrictions on use**1. Specs: load capacity and maximum speed**

Since it depends on the configuration of the main body of the motorized stage, please use it within the specifications of this product regardless of the performance of the motor. The distance between the limit sensor and the mechanical limit is short, and an overrun may cause collision with the mechanical limit. Please note that collisions with mechanical limits may adversely affect product accuracy and durability.

2. Torque limit

Using a high-torque motor may give a load that exceeds the product's allowable limit. If the motor torque exceeds 0.25 N · m, please apply the torque limit.

3. Mounting the motor

Align the body, motor, and coupling before mounting.

Operation in a misalignment situation may lead to early product damage and deterioration. Please refer to the attached assembly procedure manual and adjust the assembly.

4. Fixing the connector

There are products that require the customer to fix the connector. Before fixing, the connector part and the main body are connected only by the lead wire, which may cause disconnection, so please handle with care.

PG413V-L-P28



PG413V-L-S38



PG413V-L-S40



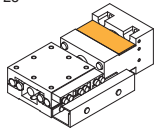
*All image is for illustrative purposes only.

Accessory	P28	S38	S40
Motor bracket	Installed on main body		
Coupling (screws included)	○		
Coupling cover (screws included)	○		
Mounting screw	For Motor	4 of M2.5×10	4 of M3×12
	For Main Body	4 of M3×8 (PG413、PG513)	2 of M4×12
Sensor cable:	○(PG-H-ASSY5-□000)		
Cable tie	-		

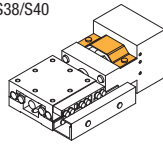
*Sensor cable: Choose from 2m, 3m, or 5m

■ Accessories: Coupling cover

For P28



For S38/S40



*The illustration is for illustrative

Weight	P28	S38	S40
PG413	0.37kg	0.41kg	0.42kg
PG513	0.48kg	0.52kg	0.53kg
PG615	0.6kg	0.64kg	0.65kg
PG715	0.73kg	0.77kg	0.78kg

PG 413 V - L A - P28

1

2

3

4

5

1 Stage table size/Travel distance

Code	size	Travel distance
413	□40mm	13mm
513	□50mm	
615	□60mm	15mm
715	□70mm	

2 Sensor cover location

L	L position
R	Opposite hand

3 Sensor logic

A	All N.C.
B	All N.O.
C	Limit : N.C.ORG1 is N.O.

4 Application Motor

Code	Specification
P28	□28 Stepping motor specification
S38	□38 Servo motor specification
S40	□40 Servo motor specifications

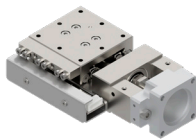
5 Cable option

Code	Specification
Blank	Sensor cable 2m One end loose wire
3	Sensor cable 3m One end loose wire
5	Sensor cable 5m One end loose wire

SPEC				
Model	PG413V-LA-P28	PG513V-LA-P28	PG615V-LA-P28	PG715V-LA-P28
(Opposite hand)	PG413V-RA-P28	PG513V-RA-P28	PG615V-RA-P28	PG715V-RA-P28
Mechanical specification	Travel distance 13mm		15mm	
	Stage table size 40×40mm		60×60mm	
	Feed screw (Ball screw)		φ6 Lead 1	
	Guide		Linear Ball Guide	
	Main material— Surface finishing		Stainless—Electroless nickel plating	
Accuracy specification	Weight	0.37kg	0.48kg	0.60kg
	Resolution/Pulse	2μm(Full)/1μm(Half)		
	MAX speed	10mm/sec		
	Uni-directional positioning accuracy	6μm		
	Repeatability positioning accuracy	±0.5μm		
	Load capacity	10kgf [98N]		
	Moment stiffness	Pitch 0.22/yaw 0.17/roll 0.12 ["/N • cm]	Pitch 0.14/yaw 0.10/roll 0.06 ["/N • cm]	Pitch 0.08/yaw 0.07/roll 0.03 ["/N • cm]
	Lost motion	1μm		
	Backlash	0.5μm		
	Straightness	1μm		
Sensor	Parallelism	15μm		
	Motion parallelism	5μm		
	Pitching/Yawing	15"/10"		
Sensor	Limit sensor	Available		
	Origin sensor (ORG1)	Available		
	Slit origin sensor(ORG2)	—		

※ is the standard motor value.

PG413V-L-P28



PG413V-L-S38



PG413V-L-S40



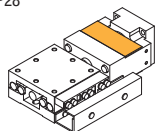
*All image is for illustrative purposes only.

Accessory		P28	S38	S40
Motor bracket		Installed on main body		
Coupling (screws included)		○		
Coupling cover (screws included)		○		
Mounting screw	For Motor	4 of M2.5×10	4 of M3×12	2 of M4×12
	For Main Body	4 of M3×8 (PG413、PG513) 4 of M4×8 (PG615、PG715)		
Sensor cable:		○(PG-H-ASSY5-□000)		
Cable tie		-		

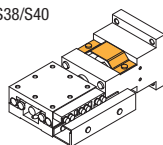
*Sensor cable: Choose from 2m, 3m, or 5m

■ Accessories: Coupling cover

For P28



For S38/S40



*The illustration is for illustrative

Weight	P28	S38	S40
PG413	0.36kg	0.39kg	0.39kg
PG513	0.47kg	0.50kg	0.50kg
PG615	0.59kg	0.62kg	0.62kg
PG715	0.72kg	0.75kg	0.75kg

PG 413 V - L A - P28

1

2

3

4

5

Positioning pin P. 1-207 ~

1 Stage table size/Travel distance

Code	size	Travel distance
413	□40mm	13mm
513	□50mm	
615	□60mm	15mm
715	□70mm	

2 Sensor cover location

L	L position
R	Opposite hand

3 Sensor logic

A	All N.C.
B	All N.O.
C	Limit : N.C.ORG1 is N.O.

4 Application Motor

Code	Specification
P28	□28 Stepping motor specification
S38	□38 Servo motor specification
S40	□40 Servo motor specifications

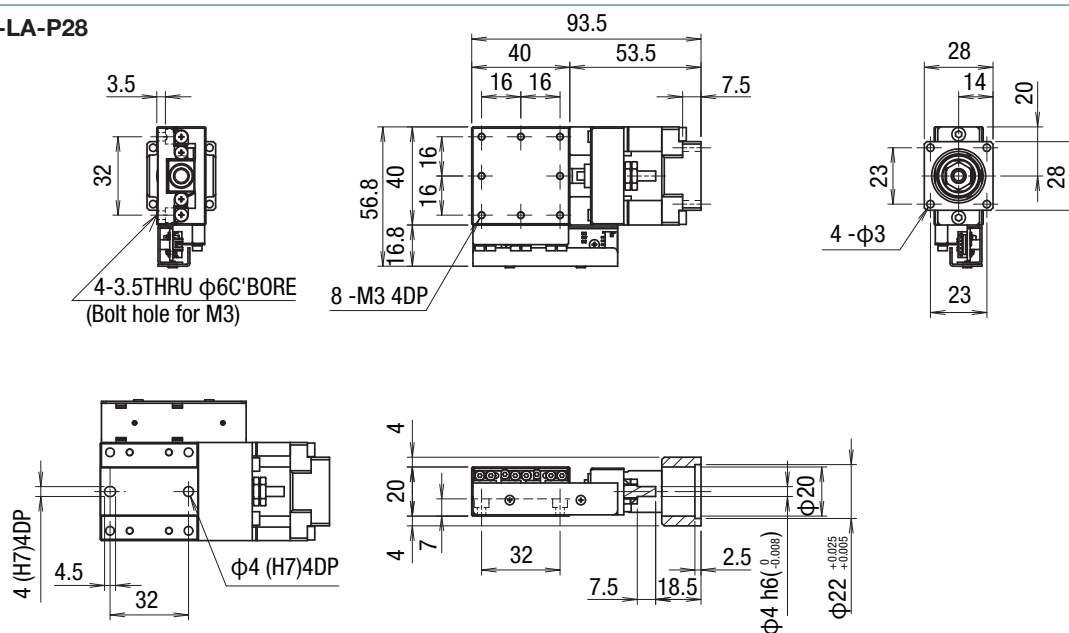
5 Cable option

Code	Specification
Blank	Sensor cable 2m One end loose wire
3	Sensor cable 3m One end loose wire
5	Sensor cable 5m One end loose wire

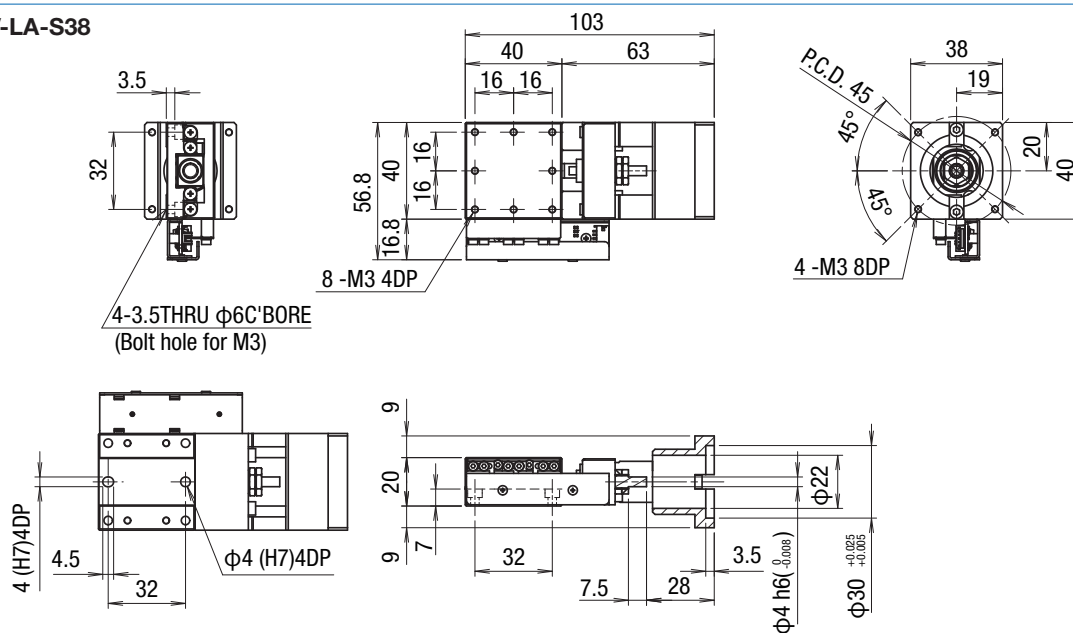
SPEC				
Model	PG413V-LA-P28	PG513V-LA-P28	PG615V-LA-P28	PG715V-LA-P28
(Opposite hand)	PG413V-RA-P28	PG513V-RA-P28	PG615V-RA-P28	PG715V-RA-P28
Mechanical specification	Travel distance 13mm		15mm	
	Stage table size 40×40mm		60×60mm	
	Feed screw (Ball screw)		φ6 Lead 1	
	Guide		Linear Ball Guide	
	Main material— Surface finishing		Stainless—Electroless nickel plating	
Accuracy specification	Weight	0.36kg	0.47kg	0.59kg
	Resolution/Pulse	2μm(Full)/1μm(Half)		
	MAX speed	10mm/sec		
	Uni-directional positioning accuracy	6μm		
	Repeatability positioning accuracy	±0.5μm		
	Load capacity	10kgf【98N】		
	Moment stiffness	Pitch 0.22/yaw 0.17/ roll 0.12 ["/N · cm]	Pitch 0.14/yaw 0.10/ roll 0.06 ["/N · cm]	Pitch 0.08/yaw 0.07/ roll 0.03 ["/N · cm]
	Lost motion	1μm		
	Backlash	0.5μm		
	Straightness	1μm		
Sensor	Parallelism	15μm		
	Motion parallelism	5μm		
	Pitching/Yawing	15"/10"		
Sensor	Limit sensor	Available		
	Origin sensor (ORG1)	Available		
	Slit origin sensor(ORG2)	—		

※ is the standard motor value.

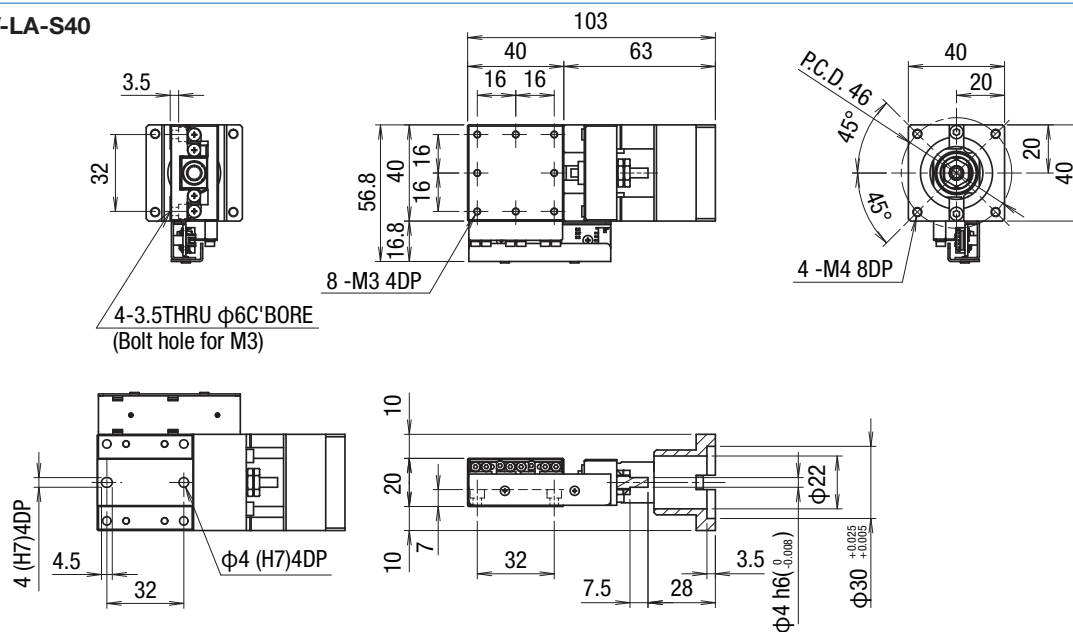
PG413V-LA-P28



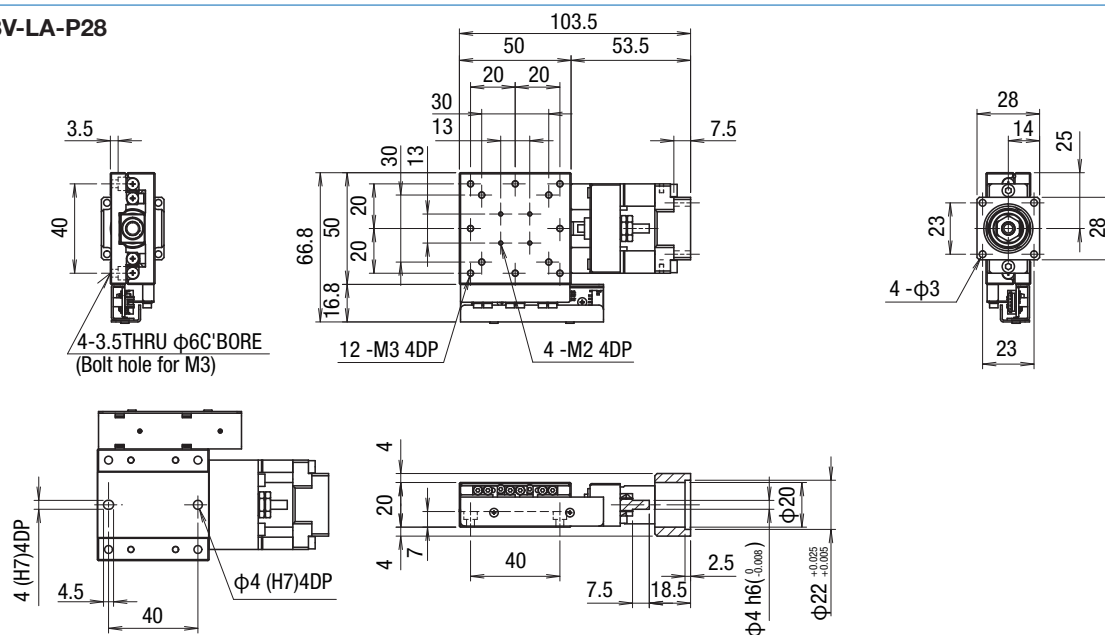
PG413V-LA-S38



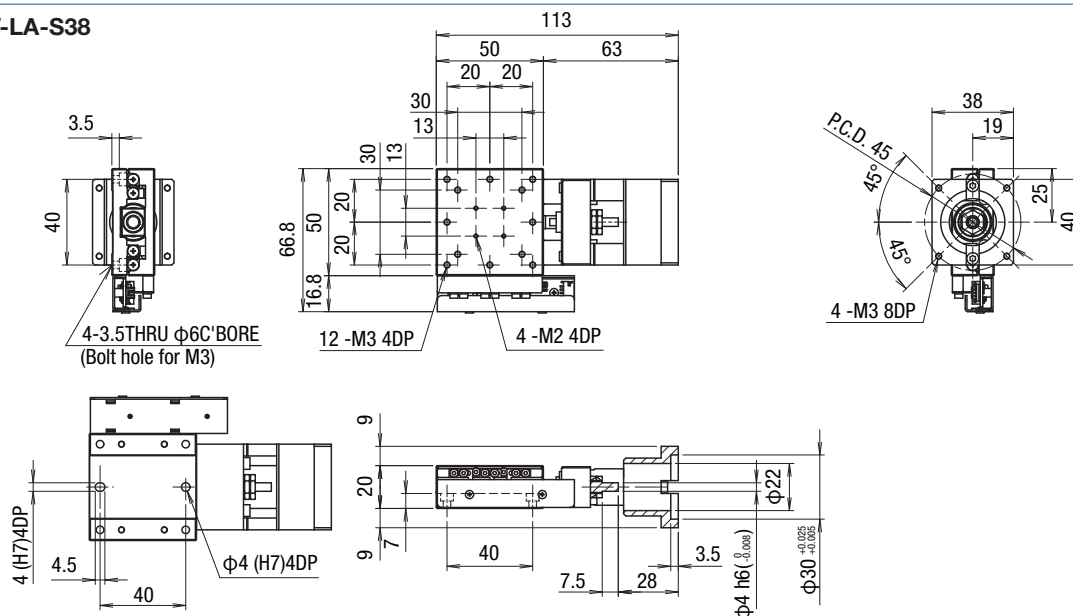
PG413V-LA-S40



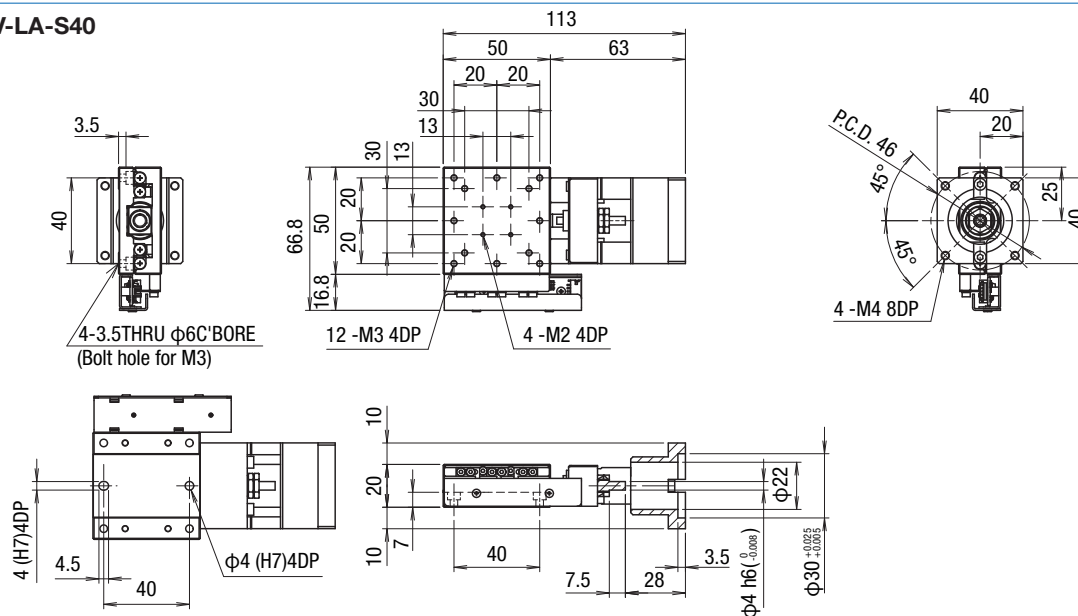
PG513V-LA-P28



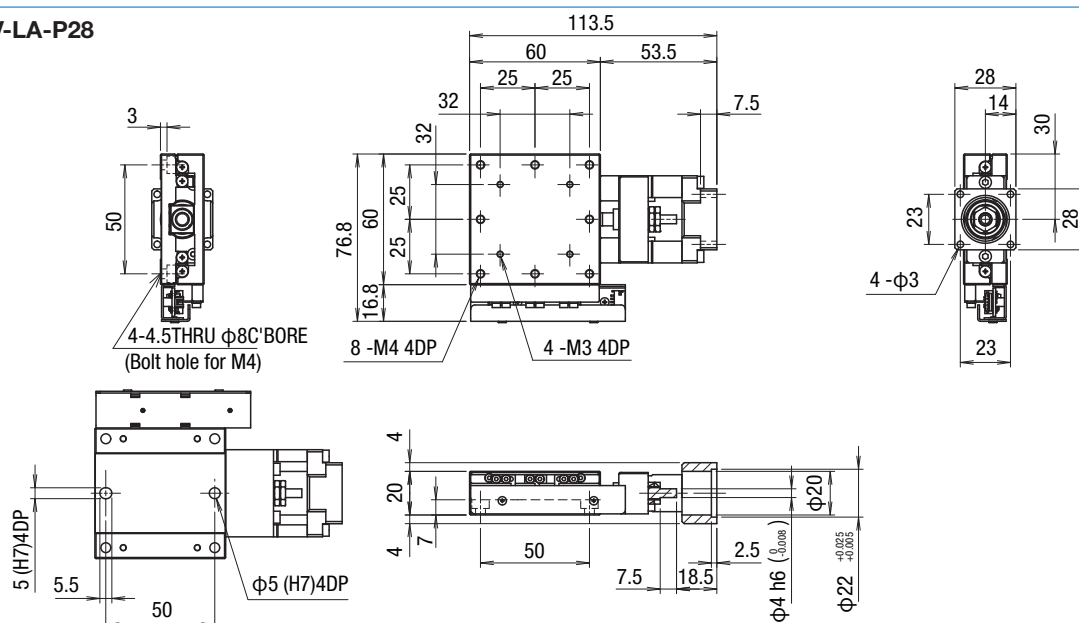
PG513V-LA-S38



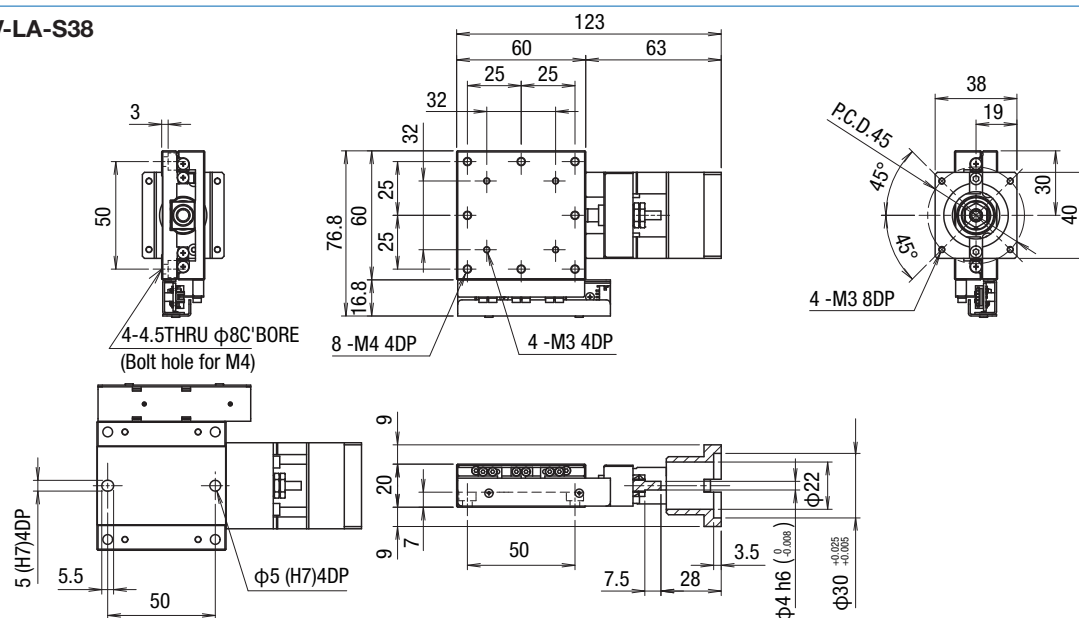
PG513V-LA-S40



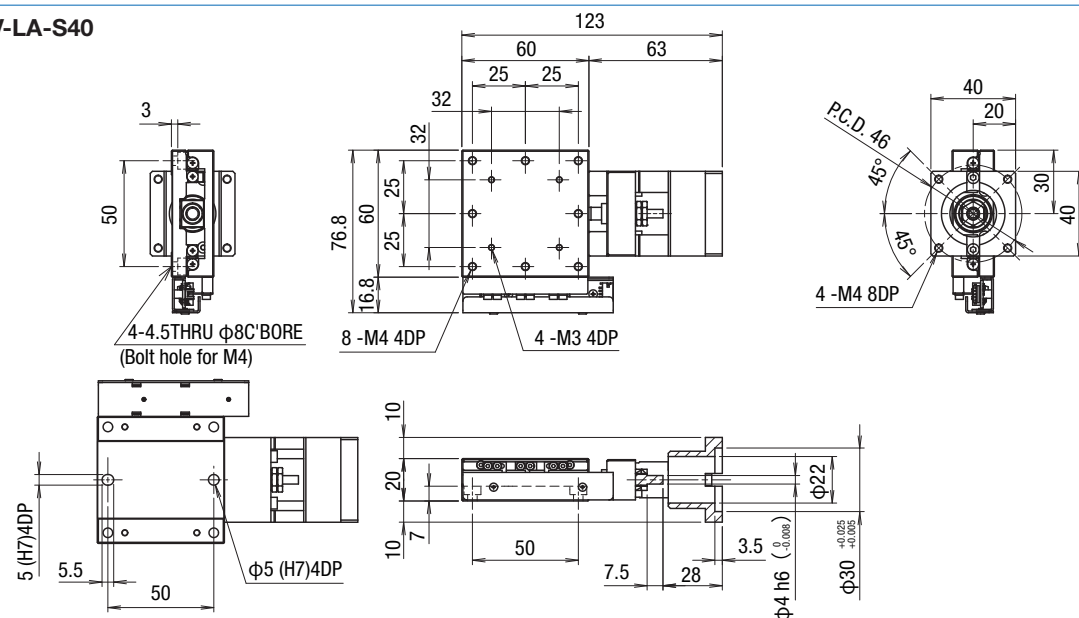
PG615V-LA-P28



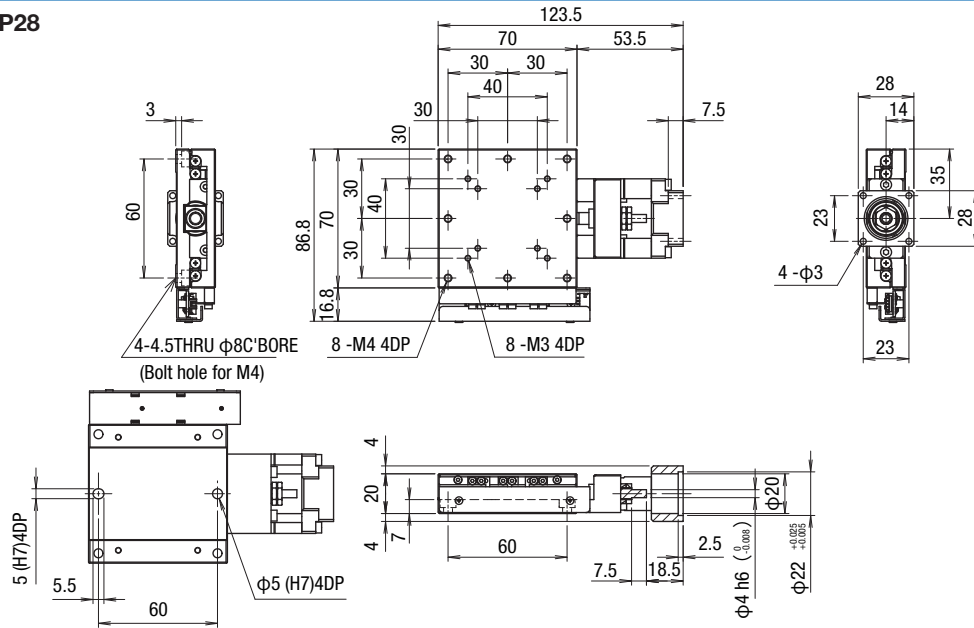
PG615V-LA-S38



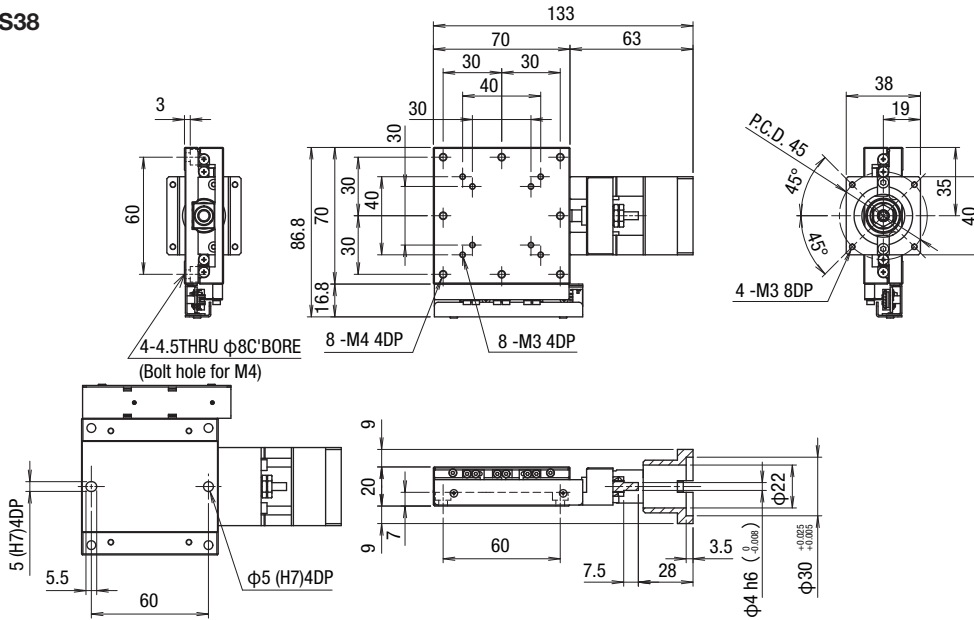
PG615V-LA-S40



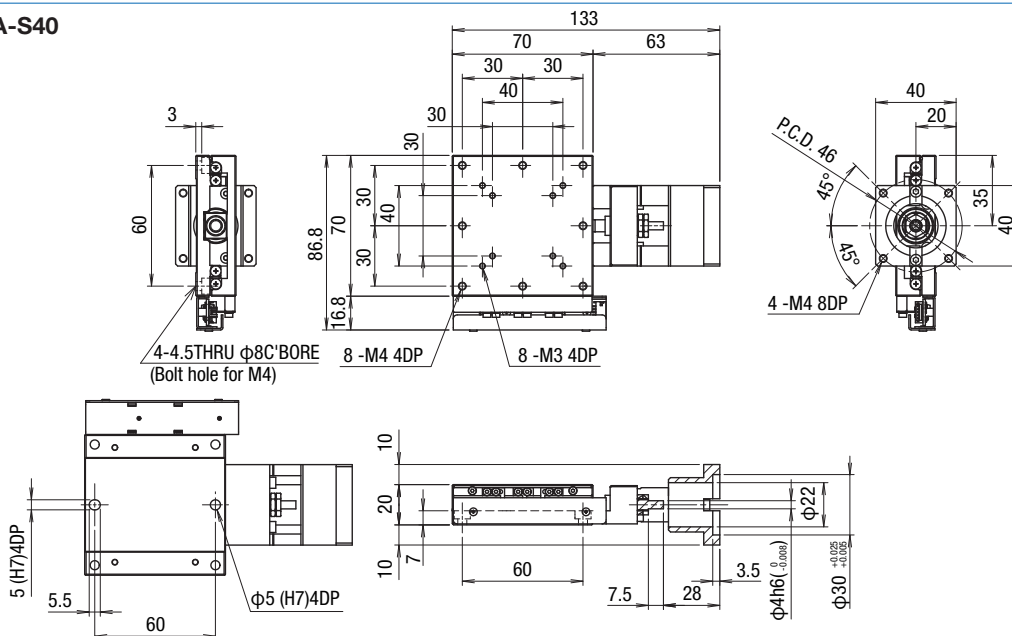
PG715V-LA-P28



PG715V-LA-S38



PG715V-LA-S40



X-axis Linear Ball Guide:PG430V/PG513/PG615/PG715

RoHS

New

PG430V-L-P28



PG430V-L-S38



PG430V-L-S40



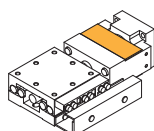
*All image is for illustrative purposes only.

Accessory		P28	S38	S40
Motor bracket		Installed on main body		
Coupling (with screws)		○		
Coupling cover (with screws)		○		
Mounting screw	For Motor	4 of M2.5×10	4 of M3×12	2 of M4×12
	For Main Body	4 of M3×8 (PG430、PG530) 4 of M4×8 (PG650、PG750)		
Sensor cable 2m		○(PG-H-ASSY5-□000)		
Cable tie		-		

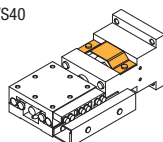
Sensor cable: Select from 2m, 3m, 5m

■ Accessories: Coupling cover

P28



S38/S40



*The illustration is for illustrative purposes only.

Weight	P28	S38	S40
PG430	0.50kg	0.53kg	0.53kg
PG530	0.63kg	0.66kg	0.66kg
PG650	0.95kg	0.98kg	0.98kg
PG750	1.12kg	1.15kg	1.15kg

PG430 V - L A - P28

Positioning pin P. 1-207 ~

1 Stage table size/Travel distance

Code	size	Travel distance
430	40×60mm	30mm
530	50×70mm	
650	60×100mm	50mm
750	70×110mm	

2 Sensor cover location

L	L position
R	Opposite hand

3 Sensor logic

A	All N.C.
B	All N.O.
C	The limit is N.C.

4 Application Motor

Code	Specification
P28	□28 Stepping motor specification
S38	□38 Servo motor specification
S40	□40 Servo motor specifications

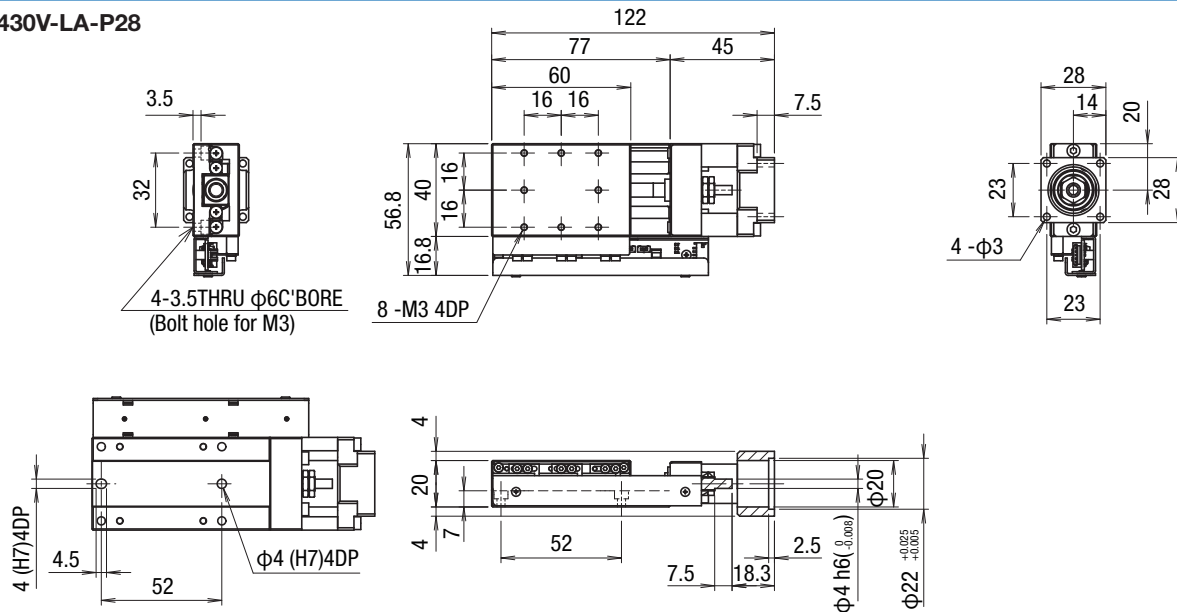
5 Cable option

Code	Specification
Blank	Sensor cable 2m One end loose wire
3	Sensor cable 3m One end loose wire
5	Sensor cable 5m One end loose wire

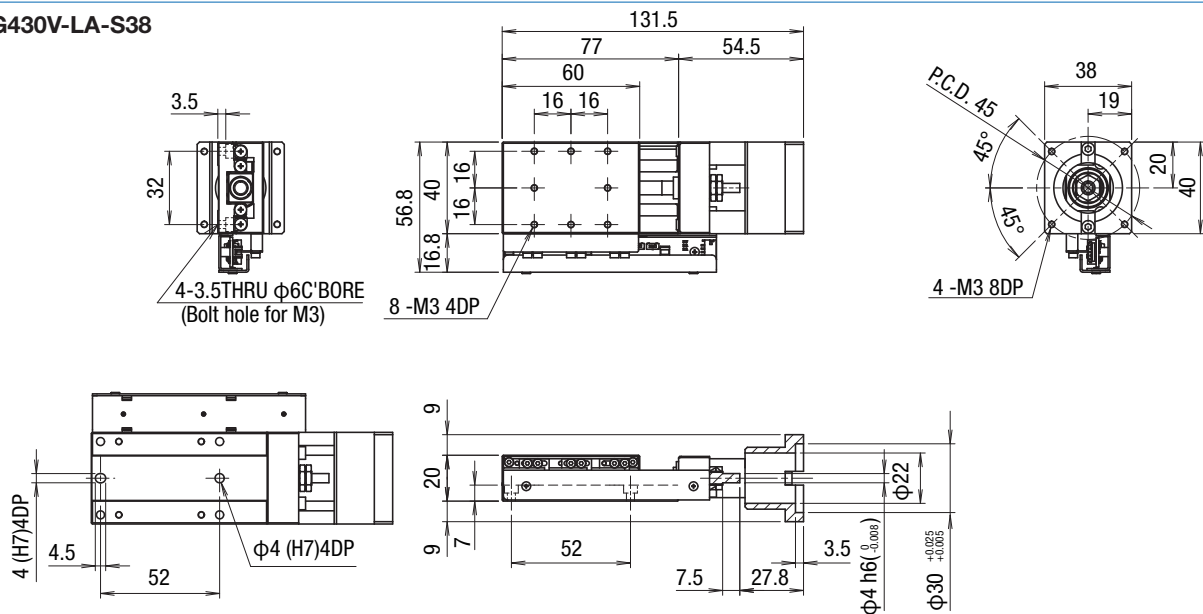
SPEC				
Model	PG430V-LA-P28	PG530V-LA-P28	PG650V-LA-P28	PG750V-LA-P28
(Opposite hand)	PG430V-RA-P28	PG530V-RA-P28	PG650V-RA-P28	PG750V-RA-P28
Mechanical specification	Travel distance		30mm	
	Stage table size		50mm	
	Feed screw (Ball screw)		φ6 Lead 1	
	Guide		Linear Ball Guide	
	Main material— Surface finishing		Stainless—Electroless nickel plating	
Accuracy specification	Weight	0.50kg	0.63kg	0.95kg
	Resolution/Pulse	2μm(Full)/1μm(Half)		
	MAX speed	10mm/sec		
	Uni-directional positioning accuracy	12μm		
	Repeatability positioning accuracy	±0.5μm		
	Load capacity	10kgf【98N】		
	Moment stiffness	Pitch 0.24/yaw 0.18/ roll 0.26【"/N・cm】	Pitch 0.12/yaw 0.13/ roll 0.1【"/N・cm】	Pitch 0.05/yaw 0.05/ roll 0.05【"/N・cm】
	Lost motion	1μm		
	Backlash	0.5μm		
	Straightness	2μm		
Sensor	Parallelism	15μm		
	Motion parallelism	10μm		
	Pitching/Yawing	20"/15"		
	Limit sensor	Available		
Origin sensor (ORG1)		Available		
Slit origin sensor(ORG2)		—		

* is the value of the standard motor.

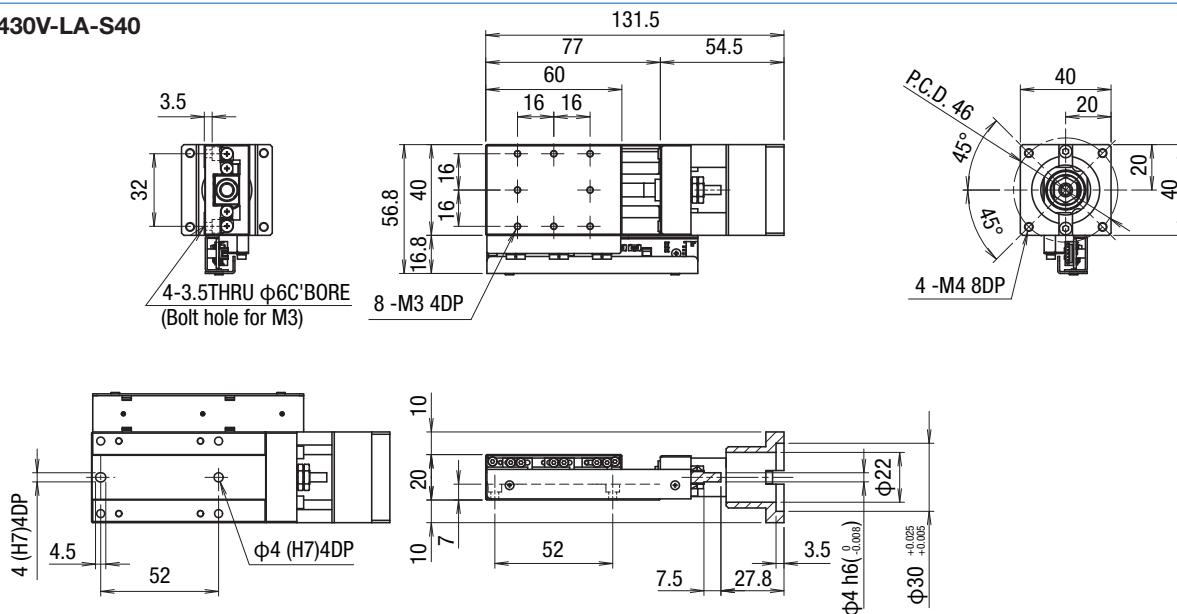
PG430V-LA-P28



PG430V-LA-S38



PG430V-LA-S40



Technical drawing of the A-P28 actuator, showing multiple views with dimensions and labels:

- Top View:** Shows the overall dimensions: 132 (total width), 87 (width to center of mounting holes), 45 (width to right edge), 70 (width between mounting holes), 20 (hole spacing), 30 (hole diameter), 13 (hole offset), 66.8 (total height), 50 (height to center of mounting holes), 20 (height to top edge), 16.8 (height to bottom edge), 3.5 (flange thickness), 40 (flange diameter), 4 - 3.5 THRU $\phi 6C$ BORE (Bolt hole for M3), 12 - M3 4DP, 4 - M2 4DP, 7.5 (right flange thickness), 28 (right flange diameter), 14 (right flange width), 25 (right flange height), 28 (right flange outer diameter), 23 (right flange inner diameter), 4 - $\phi 3$.
- Front View:** Shows the side profile with dimensions: 4 (H7) 4DP, 4.5 (flange thickness), 60 (flange diameter), $\phi 4$ (H7) 4DP, 4 (H7) 4DP, 20 (flange height), 7 (flange width), 60 (flange diameter), 7.5 (right flange thickness), 18.3 (right flange diameter), 2.5 (right flange width), $\phi 4$ h6 ($\frac{0.008}{0.008}$), $\phi 22$ $\begin{smallmatrix} -0.085 \\ +0.005 \end{smallmatrix}$.
- Side View:** Shows the side profile with dimensions: 4 (H7) 4DP, 4.5 (flange thickness), 60 (flange diameter), $\phi 4$ (H7) 4DP, 4 (H7) 4DP, 20 (flange height), 7 (flange width), 60 (flange diameter), 7.5 (right flange thickness), 18.3 (right flange diameter), 2.5 (right flange width), $\phi 4$ h6 ($\frac{0.008}{0.008}$), $\phi 22$ $\begin{smallmatrix} -0.085 \\ +0.005 \end{smallmatrix}$.

A-S38

Technical drawing of the A-S38 valve assembly, showing front, top, and side views with dimensions and callouts.

Front View (Top Left): Shows a 40mm wide valve body with a 3.5mm thick flange. Callout: 4-3.5THRU $\phi 6C'$ BORE (Bolt hole for M3).

Top View (Top Center): Shows a 141.5mm wide valve body with a 54.5mm wide end. Dimensions include 87mm, 70mm, 30mm, 20mm, 13mm, 30mm, 13mm, 66.8mm, 50mm, 20mm, 16.8mm, 12-M3 4DP, and 4-M2 4DP.

Top View (Top Right): Shows a 38mm wide valve body with a 19mm wide end. Dimensions include 45°, 45°, 25mm, 40mm, 4-M3 8DP, and P.C.D.45.

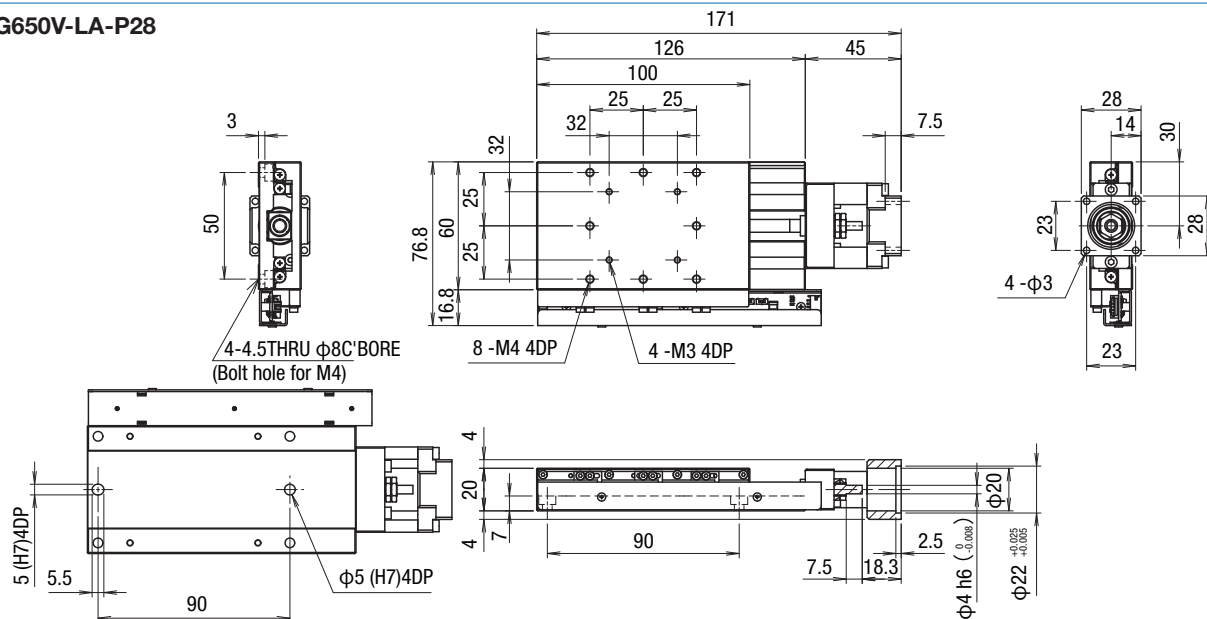
Side View (Bottom Left): Shows a 60mm wide valve body with a 4.5mm thick flange. Callout: $\phi 4$ (H7) 4DP.

Side View (Bottom Center): Shows a 60mm wide valve body with a 7.5mm thick flange. Dimensions include 9mm, 20mm, 7mm, 60mm, 27.8mm, 3.5mm, $\phi 22$, $\phi 30$, and $\phi 4$ H6 ($\frac{0}{-0.008}$).

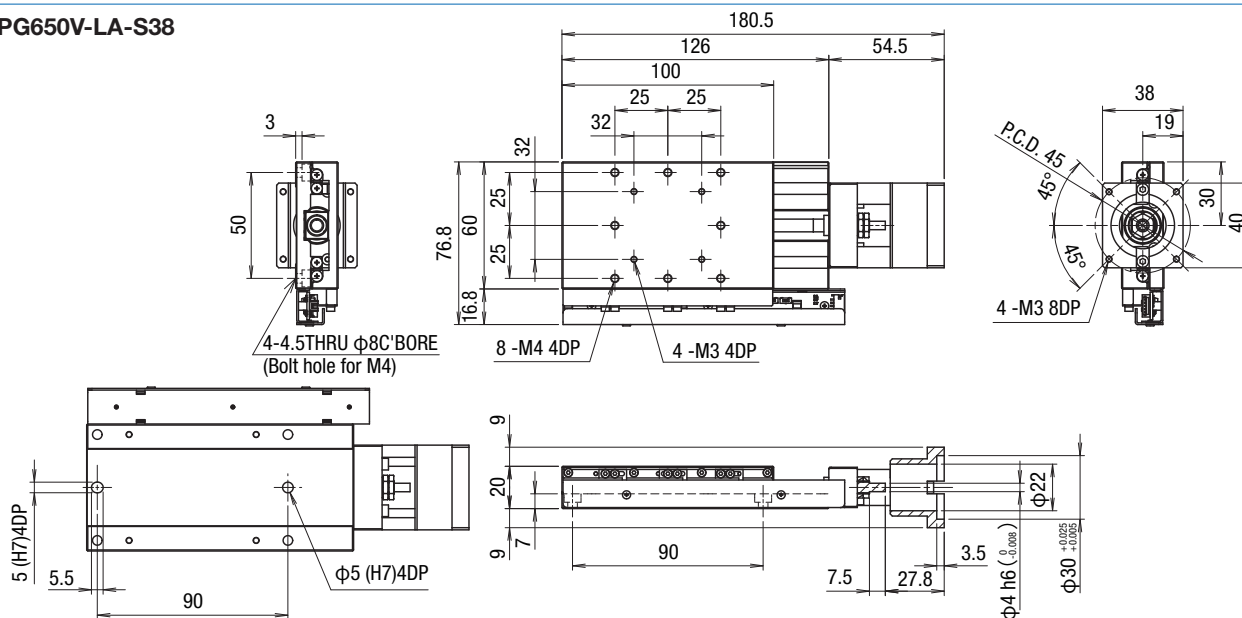
Technical drawing of the A-S40 valve assembly, showing multiple views and dimensions:

- Top View (Left):** Shows a 40mm wide valve body with a 3.5mm wide port. Label: 4-3.5THRU $\phi 6C'$ BORE (Bolt hole for M3).
- Front View (Center):** Shows the main valve body with dimensions: 141.5mm total width, 87mm body width, 54.5mm port width, 70mm body length, 20mm and 30mm spacing, 13mm and 30mm body thickness, 66.8mm total height, 16.8mm base height, 50mm body height, 20mm and 20mm spacing, 12-M3 4DP (12 mounting holes), and 4-M2 4DP (4 mounting holes).
- Side View (Right):** Shows the valve body with dimensions: 40mm width, 20mm spacing, 25mm body height, 40mm total height, 45° and 45° angles, and 4-M4 8DP (4 mounting holes).
- Bottom View (Left):** Shows the valve body with dimensions: 4-M7 4DP (4 mounting holes), 4.5mm spacing, 60mm body length, and $\phi 4$ (H7) 4DP (4 mounting holes).
- Side View (Right):** Shows the valve body with dimensions: 10mm, 20mm, 7mm, 60mm, 7.5mm, 27.8mm, 3.5mm, $\phi 22$, $\phi 4$ h6 ($\frac{0}{-0.008}$), and $\phi 30$ $\frac{+0.003}{0}$.

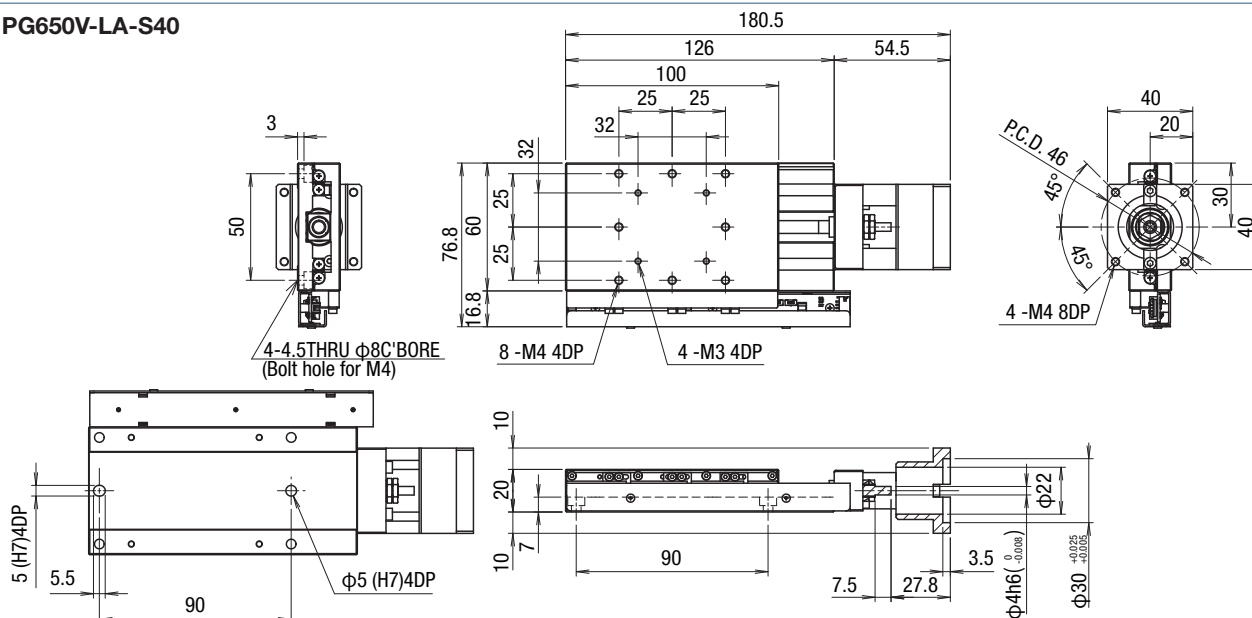
PG650V-LA-P28



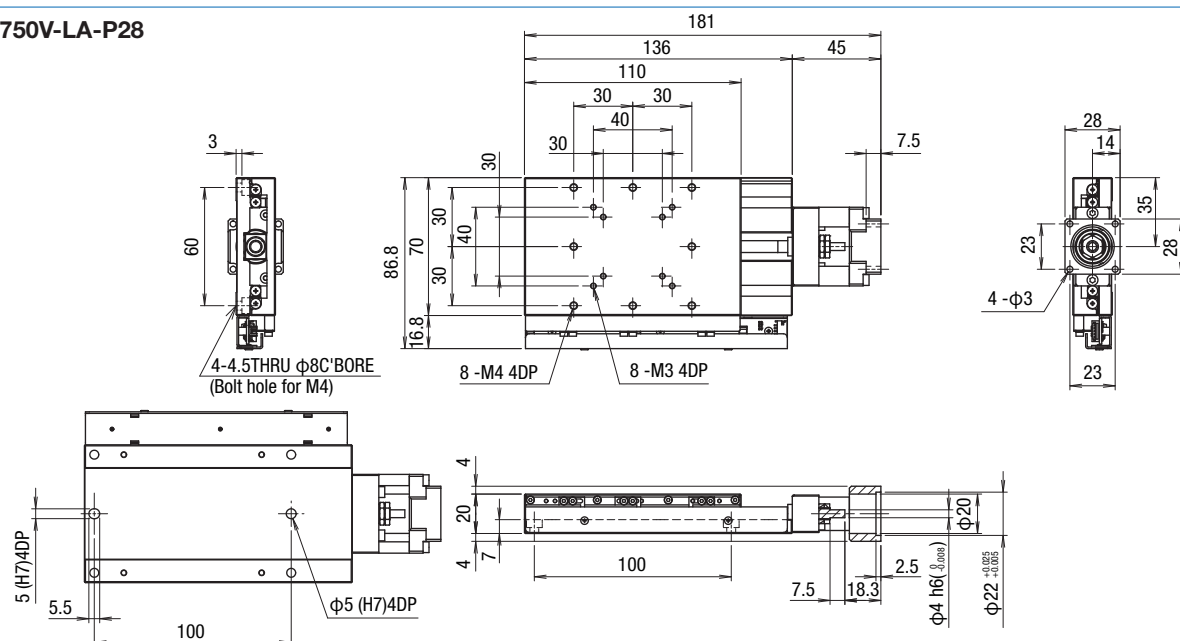
PG650V-LA-S38



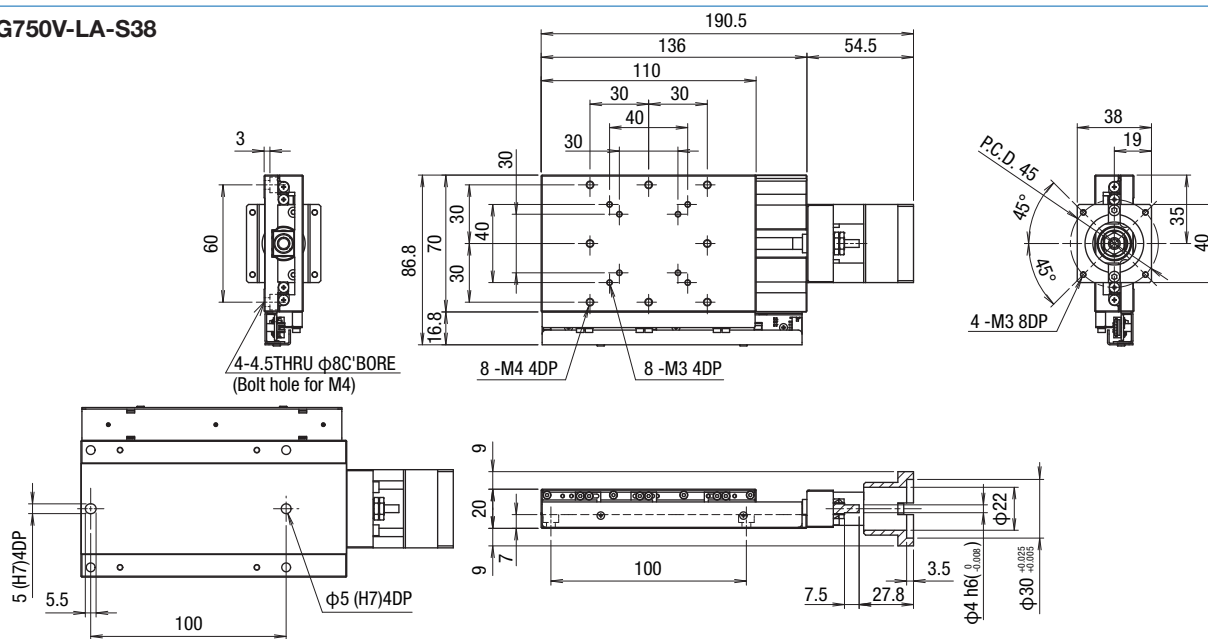
PG650V-LA-S40



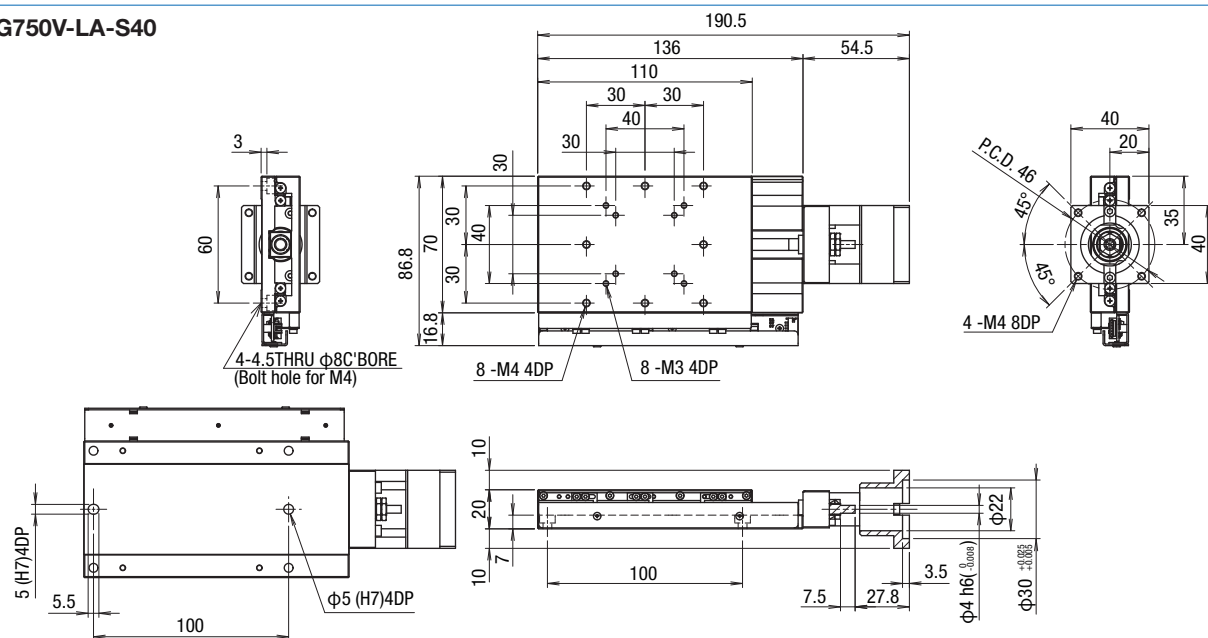
PG750V-LA-P28



PG750V-LA-S38



PG750V-LA-S40



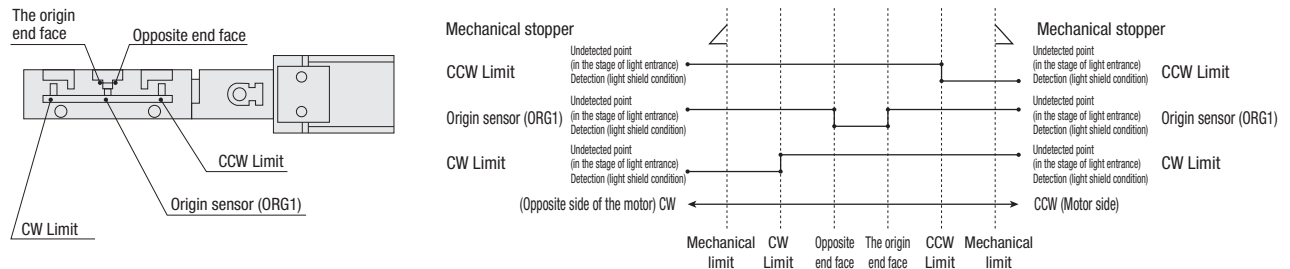
Specification

Motor code		P28	S38	S40
Feature		For □28mm Stepping motor	For □38mm AC Servo motor	For □40mm AC Servo motor
Model		PG413/PG513/PG615/PG715/PG430/PG530/PG650/PG750		
Connector	Model	Sensor		
	Receiving connector	sensor : ZHR-5 (JST)		
Sensor board	Limit sensor	Available		
	Origin sensor	Available		
	Slit origin sensor	—		
	Sensor	Photo microsensor EE-SX4320 (Omron Co., Ltd.)		
	Power-supply voltage	DC5~24V±5%		
	Current consumption	Total 60mA or less		
	Control output	NPN open collector output DC30V 10mA or less		
	Output logic	Sensor logic option A	On detection : Output transistor OFF (Non-continuity)	
		Sensor logic option B	On detection : Output transistor ON (Continuity)	
		Sensor logic option C	When limit is detected : Output transistor OFF (Non-continuity) When returning to origin : Output transistor ON (Continuity)	

Pin allocation • Connection diagram

Motor code	PG Series	
P28 • S38 • S40	Sensor	Power input (+) Brown Power input (-) Blue CCWLS output Black ORG1 output Yellow CWLS output White 1 1 2 2 3 3 4 4 5 5 Limit sensor, Origin sensor substrate (ORG1)

Timing chart



Unit [mm]		Direction of CW ←				→ Direction of CCW	
	Reference coordinate	Mechanical limit	CW Limit	Opposite end face	Origin	CCW Limit	Mechanical limit
PG413, PG513	Return to origin	7.5	7	2	0	7	7.5
PG615•PG715	Return to origin	8.5	8	2	0	8	8.5
PG430•PG530	Return to origin	16	15.5	2	0	15.5	16
PG650•PG750	Return to origin	26	25.5	2	0	25.5	26

* Return to origin means that is performed return to origin type 3 using DS102/DS112 series.(DS102/DS112 are dedicated to 5-phase motors)

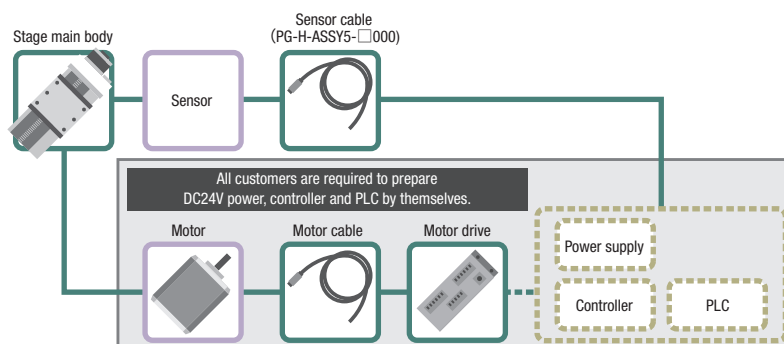
* The coordinate is a basis of design value. Dimension error may occur about plus or minus 0.5 mm.

Note: The timing chart shows only timing of sensor, it is not for output signal logic.

Refer to ON/OFF display of output transistor that shows on electrical specifications-sensor-output logic for output signal logic.

Applicable motor code

P28	☐ 28mm For Stepping motor
S38	☐ 38mm For AC servo motor
S40	☐ 40mm For AC servo motor



【Precautions for handling motorless products】

【important】

Unlike normal products, this is a motorless product with no drive source.

Please be sure to read and agree to the "Scope of Warranty" and "Precautions and Restrictions for Use" before purchasing.

◆ Warranty range

The following items are not covered by the warranty.

- Faults and troubles related to motor mounting adjustment
- Accuracy after motor assembly by customer

* Accuracy inspection is performed on the inspection motor to confirm that it is within the standard value.

◆ Precautions and restrictions on use

1. Specs: load capacity and maximum speed

Since it depends on the configuration of the main body of the motorized stage, please use it within the specifications of this product regardless of the performance of the motor. The distance between the limit sensor and the mechanical limit is short, and an overrun may cause collision with the mechanical limit. Please note that collisions with mechanical limits may adversely affect product accuracy and durability.

2. Torque limit

Using a high-torque motor may give a load that exceeds the product's allowable limit. If the motor torque exceeds [P28]0.25N · m, [S38 · S40]1.0N · m, please apply the torque limit.

3. Mounting the motor

Align the body, motor, and coupling before mounting.

Operation in a misalignment situation may lead to early product damage and deterioration. Please refer to the attached assembly procedure manual and adjust the assembly.

4. Fixing the connector

There are products that require the customer to fix the connector. Before fixing, the connector part and the main body are connected only by the lead wire, which may cause disconnection, so please handle with care.

X-axis Cross Roller Guide :KXC04015V



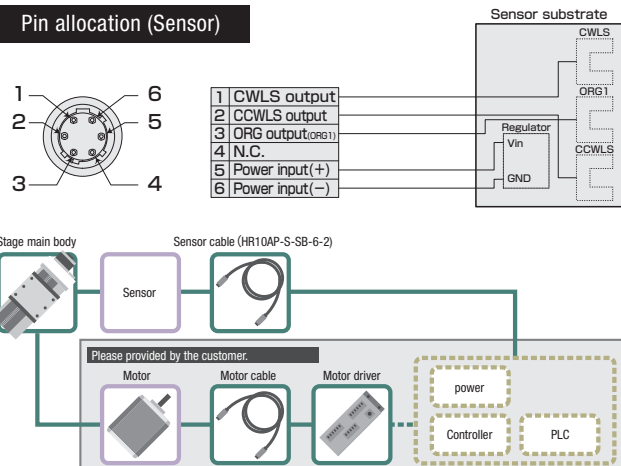
accessories			P28	S38	S40
■ Motor bracket (installed on main body)			○		
■ Coupling (with screws)			○		
■ Screws	For Motor	KXC04015V	2 of M2.5-6	4 of M3-12	2 of M4-12
		KXC06020V	2 of M2.5-5		
	For Main Body	KXC04015V	4 of M3-16		
		KXC06020V	4 of M4-16		
■ Sensor cable (2m One end loose)			○(HR10AP-S-SB-6-2)		
■ Hex wrench (for motor mounting)			○	-	-

Model **KXC04015V** - **P28** Option code

1 Application Motor

Code	Specifi cation
P28	☐ 28 Steppingmotor
S38	☐ 38 Servo motor
S40	☐ 40 Servo motor

Pin allocation (Sensor)



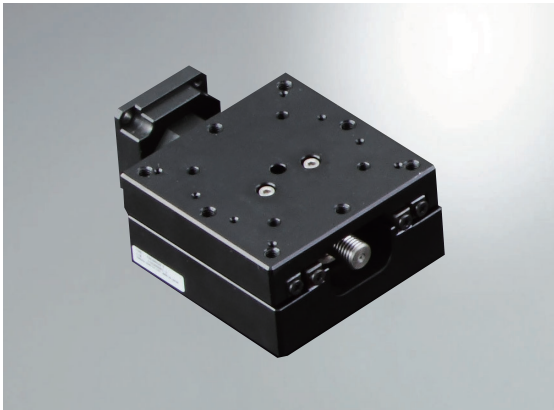
S P E C				
Model		KXC04015V-P28	KXC04015V-S38	KXC04015V-S40
Mechanical specification	Travel length		15mm	
	Table size		40×40mm	
	Feed screw (Ball screw)		φ6 lead 1	
	Guide		Crossed roller guide	
	Main materials-Finishing		Aluminum—Black almite finishing	
Accuracy specification	Resolution (Pulse)	Full/Half Microstep	2μm/1μm	
			0.1μm (1/20 on resolution)	
	MAX speed		10mm/sec	
	Uni-directional positioning accuracy		10μm	
	Repeatability positioning accuracy		±0.2μm	
	Load capacity		5.0kgf【49N】	
	Moment stiffness		Pitch 0.33/yaw 0.44/roll 0.37 [°/N・cm]	
	Lost motion		1μm	
	Backlash		0.5μm	
	Straightness		3μm	
	Parallelism		30μm	
	Motion parallelism		10μm	
	Pitching/Yawing		25"/20"	

SENSOR

Limit sensor	Installed
Origin sensor	Installed
Slit origin sensor	—
Model	Photo microsensor EE-SX4320 (Omron Co., Ltd.)
Power voltage	DC5~24V ±10%
Consumption current	Total 60mA or less
Control output	NPN open collector output DC5~24V 8mA or less Residual voltage 0.3V or less when the load current is 2mA
Output logic	On detection (light shield condition): Output transistor OFF (Non-continuity)

※SPEC is reference for the standard model

X-axis Cross Roller Guide:KXC06020V



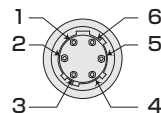
accessories			P28	S38	S40
■ Motor bracket (installed on main body)			○		
■ Coupling (with screws)			○		
■ Screws	For Motor	KXC04015V	2 of M2.5-6	4 of M3-12	2 of M4-12
		KXC06020V	2 of M2.5-5		
	For Main Body	KXC04015V	4 of M3-16		
		KXC06020V	4 of M4-16		
■ Sensor cable(2m One end loose)			○(HR10AP-S-SB-6-2)		
■ Hex wrench (for motor mounting)			○	-	-

Model **KXC06020V** - **P28** Option code

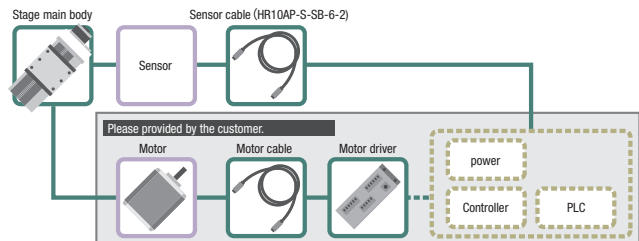
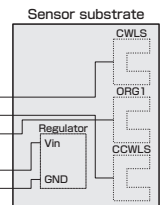
1 Application Motor

Code	Specification
P28	☐ 28 Steppingmotor
S38	☐ 38 Servo motor
S40	☐ 40 Servo motor

Pin allocation (Sensor)



1	CWLS output
2	CCWLS output
3	ORG output(ORG1)
4	N.C.
5	Power input(+)
6	Power input(-)

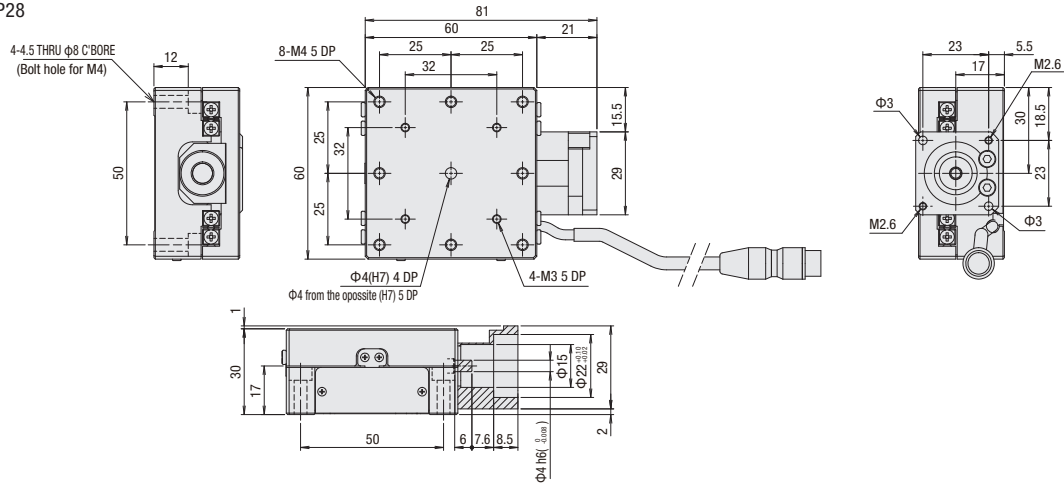


S P E C				
Model		KXC06020V-P28	KXC06020V-S38	KXC06020V-S40
Mechanical specification	Travel length		20mm	
	Table size		60×60mm	
	Feed screw (Ball screw)		φ8 lead 1	
	Guide		Crossed roller guide	
	Main materials-Finishing		Aluminum — Black almite finishing	
Accuracy specification	Resolution (Pulse)	Full/Half	2μm/1μm	
		Microstep	0.1μm (1/20 on resolution)	
	MAX speed		20mm/sec	
	Uni-directional positioning accuracy		5μm	
	Repeatability positioning accuracy		±0.2μm	
	Load capacity		5.0kgf【49N】	
	Moment stiffness		Pitch 0.15/yaw 0.12/roll 0.07 [°/N • cm]	
	Lost motion		1μm	
	Backlash		0.5μm	
	Straightness		3μm	
	Parallelism		30μm	
	Motion parallelism		10μm	
	Pitching/Yawing		20°/15°	

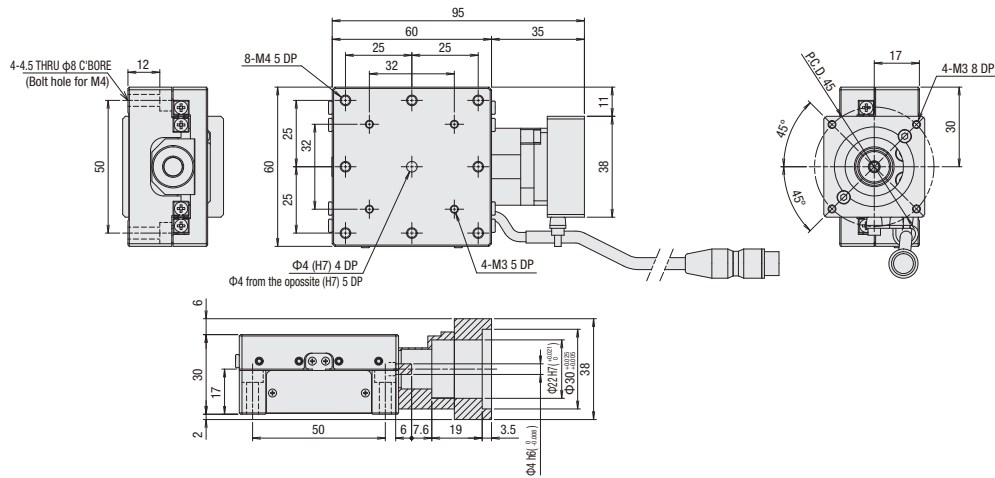
SENSOR	
Limit sensor	Installed
Origin sensor	Installed
Slit origin sensor	—
Model	Photo microsensor EE-SX4320 (Omron Co., Ltd.)
Power voltage	DC5~24V ±10%
Consumption current	Total 60mA or less
Control output	NPN open collector output DC5~24V 8mA or less Residual voltage 0.3V or less when the load current is 2mA
Output logic	On detection (light shield condition): Output transistor OFF (Non-continuity)

※SPEC is reference for the standard model

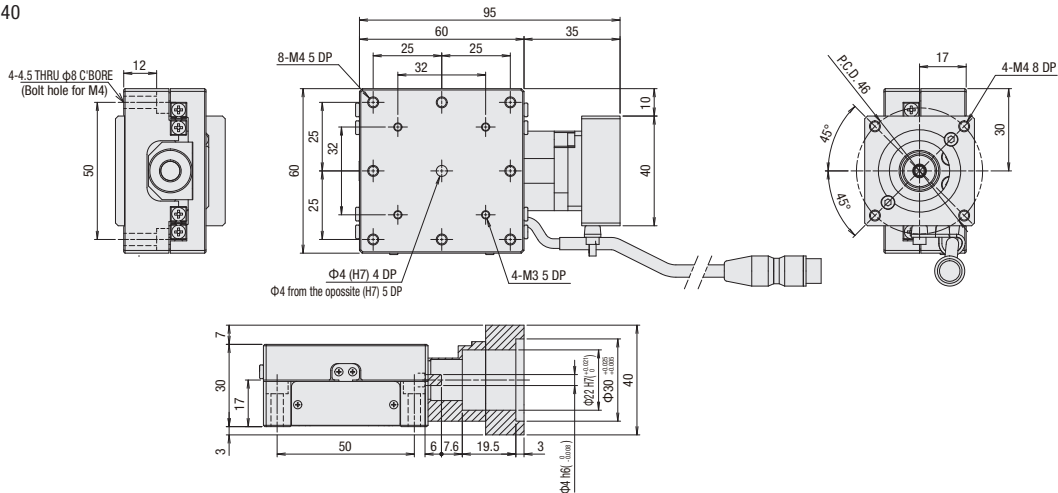
KXC06020V-P28



KXC06020V-S38



KXC06020V-S40



[In order to avoid damaging the motor-less product, please take the following precautions when handling them.]

◆Guarantee range

In difference to a conventional product, the guarantee range of the motor-less product will be limited due to no driving source, and notice the following attentions.

- Defect or trouble, according to motor mounting adjustment is not covered under the warranty.
- The accuracy assumes a motor test result for our inspection a guarantee level, and the accuracy after the motor mounting by the customer should be the guarantee outside.

◆Precautions and restricts on using

1.As load capacity and maximum speed depend on configuration of stage main body, please refrain from the use exceed the spec.

As distance is short between limit sensor and mechanical limit, collision with mechanical limit will incur due to over-run.

Please make sure the frequent repetition collision, it may adversely affect stage accuracy and rigidity.

2.The use with the high torque motor may give load more than the stage permission.

Please use for under 0.25N · m product or under the torque limit.

3. Very careful centering is required especially when a main body, motor and coupling is applied.

The operation that not enough centering may cause the damage or deterioration of the product early.

Please see the attached operating and assembly sheet for mounting adjustment.

4. Some products may need fixing part of the connector on your side.

Disconnection may occur before fixation due to a connector and the main body is connected only with lead. Please handle with care.

◆At the time of purchase

When placing an order, please be sure the above-mentioned, and on the premise of agreeing with guarantee coverage and attention / limitation items.

Horizontal Z-axis Cross Roller Guide :KHC06004V



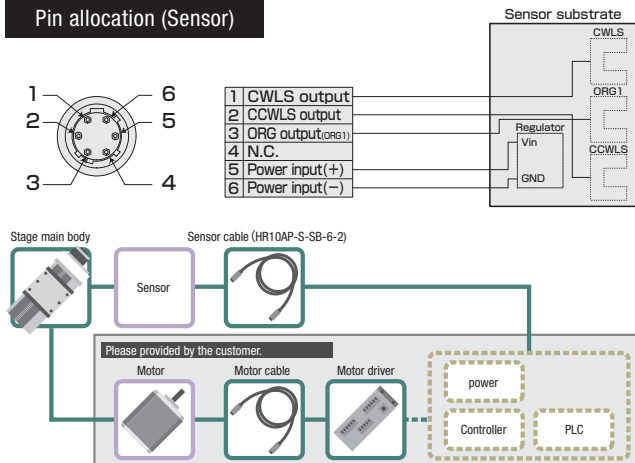
accessories		P28	S38	S40
■ Motor bracket (installed on main body)			○	
■ Coupling (with screws)			○	
■ Screws	For Motor	4 of M2.5-6	4 of M3-12	2 of M4-12
	For Main Body	4 of M4-12		
■ Sensor cable (2m One end loose)		○(HR10AP-S-SB-6-2)		
■ Hex wrench (for motor mounting)		○	-	-

Model **KHC06004V** - **P28** Option code

1 Application Motor

Code	Specifi cation
P28	☐ 28 Steppingmotor
S38	☐ 38 Servo motor
S40	☐ 40 Servo motor

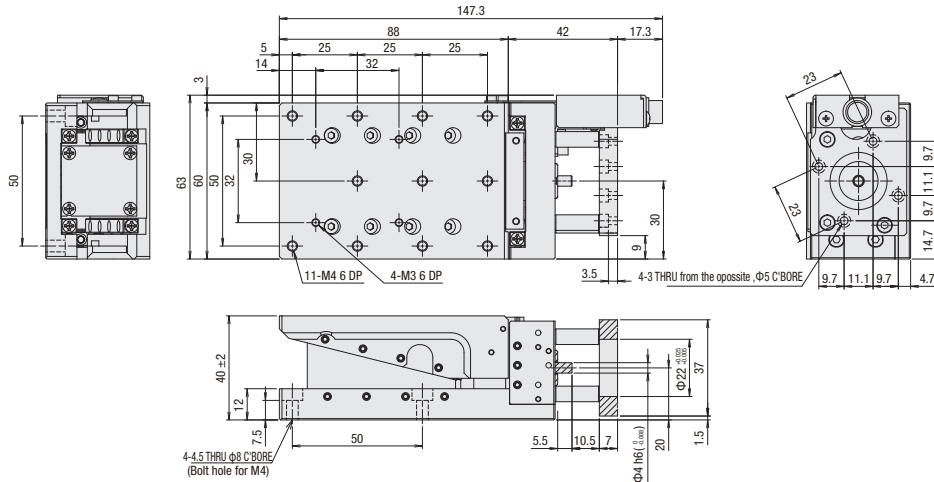
Pin allocation (Sensor)



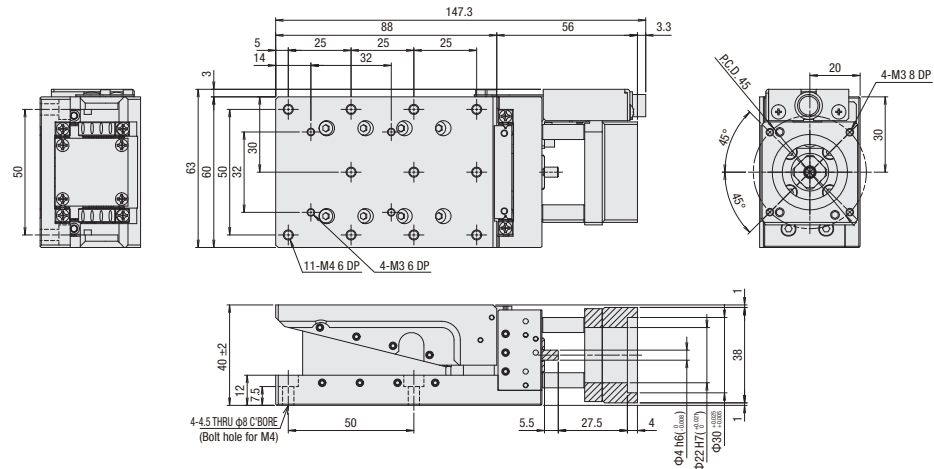
S P E C			
Model	KHC06004V-P28	KHC06004V-S38	KHC06004V-S40
Mechanical specification	Travel length	4mm	
	Table size	60×60mm	
	Feed screw	Ball screw φ8 lead 1	
	Guide	Wedge type Crossed roller guide	
Accuracy specification	Main materials-Finishing	Aluminum—Black almite finishing	
	Resolution (Pulse)	0.5μm (Full) / 0.25μm (Half)	
	MAX speed	2.5mm/sec	
	Uni-directional positioning accuracy	7μm	
	Repeatability positioning accuracy	±0.5μm	
	Load capacity	7kgf [68.6N]	
	Moment stiffness	Pitch 0.2/yaw 0.04/roll 0.14 ["/N • cm]	
	Lost motion	1μm	
	Parallelism	50μm	

SENSOR	
Limit sensor	Installed
Origin sensor	Installed
Slit origin sensor	—
Model	Photo microsensor EE-SX4320 (Omron Co., Ltd.)
Power voltage	DC5~24V ±10%
Consumption current	Total 60mA or less
Control output	NPN open collector output DC5~24V 8mA or less Residual voltage 0.3V or less when the load current is 2mA
Output logic	On detection (light shield condition): Output transistor OFF (Non-continuity)

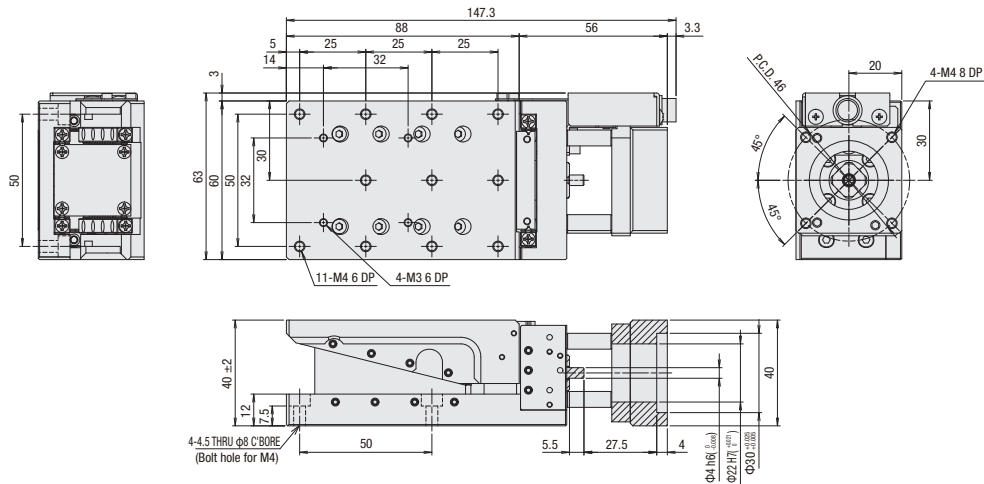
KHC06004V-P28



KHC06004V-S38



KHC06004V-S40



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Please use for under 0.25N · m product or under the torque limit.

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