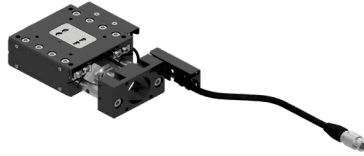


Goniometer Stage Ball screw □60:KGB06V

RoHS

KGB06050MV-LP28

KGB06050TV-LP28



* All image is for illustrative purposes only.

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

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

Weight	P28	S38	S40
KGB06*V	0.41kg	0.44kg	0.44kg

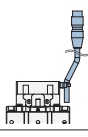

KGB06050TV-LP28-□

1 2 3 4 5



1 Height of center rotation(W.D.)

050	50mm
075	75mm
100	100mm
125	125mm

2 Connector Type

T	Pigtail	
M	Panel mount	

3 Sensor cover location

L	L position	
R	Opposite hand	

4 Applicable Motor

Code	Specification
P28	<input type="checkbox"/> 28 Stepping motor specification
S38	<input type="checkbox"/> 38 Servo motor specification
S40	<input type="checkbox"/> 40 Servo motor specification

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

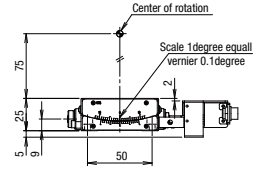
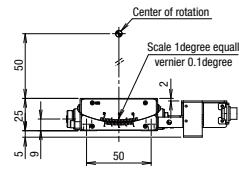
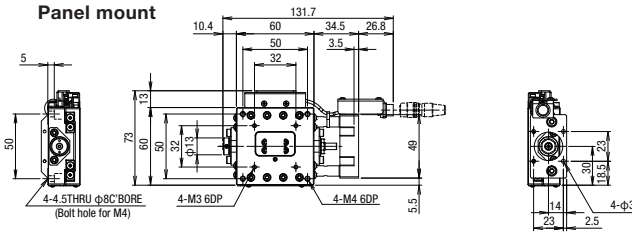
Model	KGB06050□V-LP28	KGB06075□V-LP28	KGB06100□V-LP28	KGB06125□V-LP28	
Opposite hand	KGB06050□V-RP28	KGB06075□V-RP28	KGB06100□V-RP28	KGB06125□V-RP28	
Mechanical specification	Travel distance	±8.5°	±5.5°	±5°	±4°
	Stage surface size	60×60mm			
	Travel mechanism (Reduction ratio)	Ball screw φ6 Lead 1			
	Guide	Cross roller guide			
	Main material—Surface finishing	Aluminum—Black alumite processing			
Dimensional tolerance	Weight	0.41kg			
	Hight of stage	25± 0.2mm			
	Height of center rotation	50± 0.2mm	75± 0.2mm	100± 0.2mm	125± 0.2mm
	Center of rotation precision	0.01mm			
	Resolution(Pulse) Full	≒0.0021°	≒0.0014°	≒0.0011°	≒0.0009°
Accuracy specification	MAX speed	31.4°/sec[15kHz]	21.5°/sec [15kHz]	16.4°/sec [15kHz]	13.2°/sec [15kHz]
	Repeatability positioning accuracy	±0.001°			
	Load capacity	5kgf [49N]			
	Moment stiffness	Pitch 0.30/yaw 0.10/roll 0.11 ["/N · cm]			
	Lost motion	0.03°			
Sensor	Limit sensor	Available			
	Origin sensor	Available			
	Slit origin sensor	—			

※ * SPEC is the value of the standard motor.

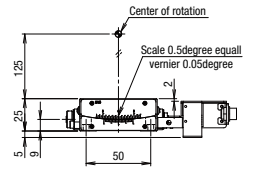
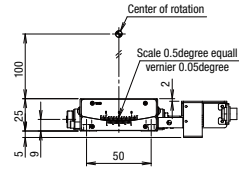
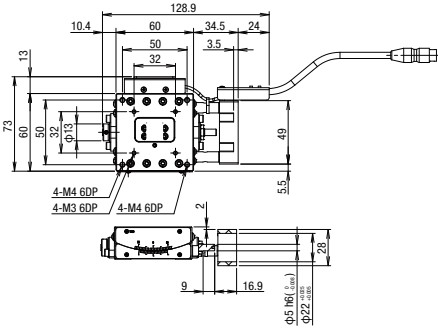
Dimensions

KGB06-**-LP28 Series

Panel mount

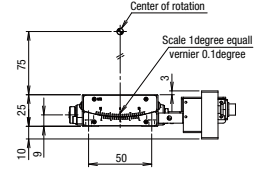
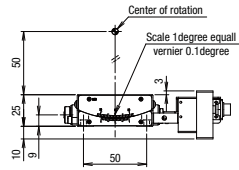
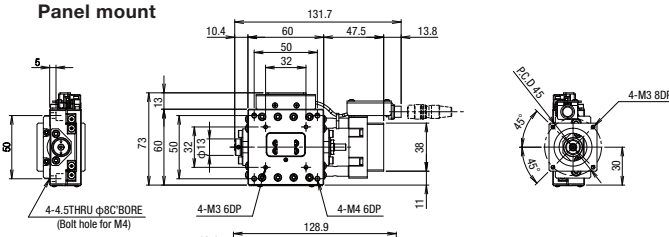


Pigtail

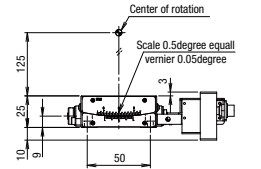
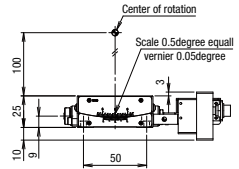
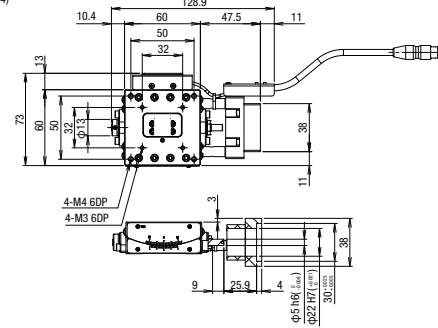


KGB06-**-LS38 Series

Panel mount

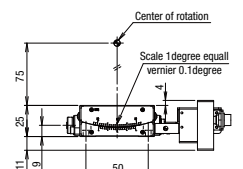
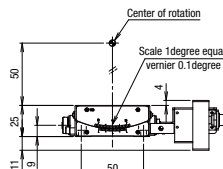
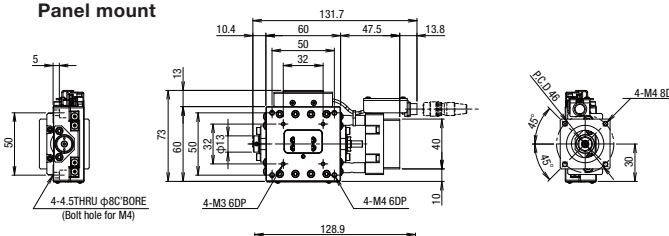


Pigtail

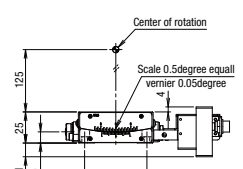
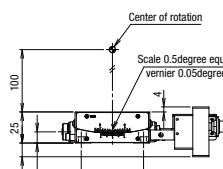
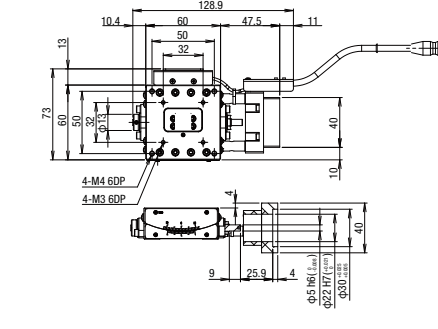


KGB06-**-LS40 Series

Panel mount



Pigtail



Motorless

X

XY

Z

Horizontal Z

XYZ

Goniometer

Rotary

Ball Screw

Worm Gear

□40

□60

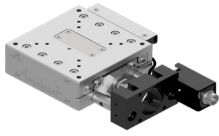
□70

ML
046

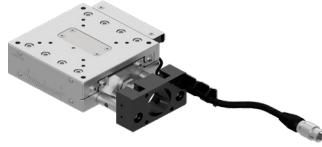
Goniometer Stage Ball screw □70:KGB07V

RoHS

KGB07070MV-LP28



KGB07070TV-LP28



* All image is for illustrative purposes only.

Accessory	P28	S38	S40
Motor bracket	Installed on main body		
Coupling (screws included)	○		
Mounting screw	For Motor	2 of M2.5×6	4 of M3×12
	For Main Body	4 of M4×8	
Sensor cable	○(HR10AP-S-SB-6-□) *		
Cable tie	○	—	—

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

Weight	P28	S38	S40
KGB07*V	0.56kg	0.59kg	0.59kg

Motorless

X

XY

Z

Horizontal

Z

XYZ

Goniometer

Rotary

KGB07070TV-LP28-□

1 2 3 4 5

1 Height of center rotation(W.D.)

070	70mm
096	96mm
122	122mm

2 Sensor logic

Code	CWLS	ORG	CCWLS
A	N.C.	N.C.	N.C.
B	N.O.	N.O.	N.O.
C	N.C.	N.O.	N.C.

3 Connector Type

T	Pigtail	
M	Panel mount	

4 Sensor cover location

L	L position	
R	Opposite hand	

5 Applicable Motor

Code	Specification
P28	<input type="checkbox"/> 28 Stepping motor specification
S38	<input type="checkbox"/> 38 Servo motor specification
S40	<input type="checkbox"/> 40 Servo motor specification

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

Ball Screw

Worm Gear

□40

□60

□70

SPEC

Model	KGB07070A□V-LP28	KGB07096A□V-LP28	KGB07122A□V-LP28
Opposite hand	KGB07070A□V-RP28	KGB07096A□V-RP28	KGB07122A□V-RP28
Mechanical specification	Travel distance	±5°	±4°
	Stage surface size	70×70mm	
	Travel mechanism (Reduction ratio)	Ball screw φ6 Lead 1	
	Guide	Cross roller guide	
	Main material—Surface finishing	Aluminum—White alumite processing	
	Weight	0.56kg	
Dimensional tolerance	Height of stage	26± 0.2mm	
	Height of center rotation	70± 0.2mm	96± 0.2mm
	Center of rotation precision	0.01mm	
Accuracy specification	Resolution (Pulse) Full	≒0.0015°	≒0.0011°
	MAX speed	22.6°/sec [15kHz]	16.9°/sec [15kHz]
	Repeatability positioning accuracy	±0.003°	
	Load capacity	5.0kgf [49N]	
	Moment stiffness	Pitch 0.28/yaw 0.06/roll 0.06["N · cm]	
	Lost motion	0.03°	
Sensor	Limit sensor	Available	
	Origin sensor	Available	
	Slit origin sensor	—	

* SPEC is the value of the standard motor.

Motorless Specification

Electrical specification: KGB06V / KGB07V

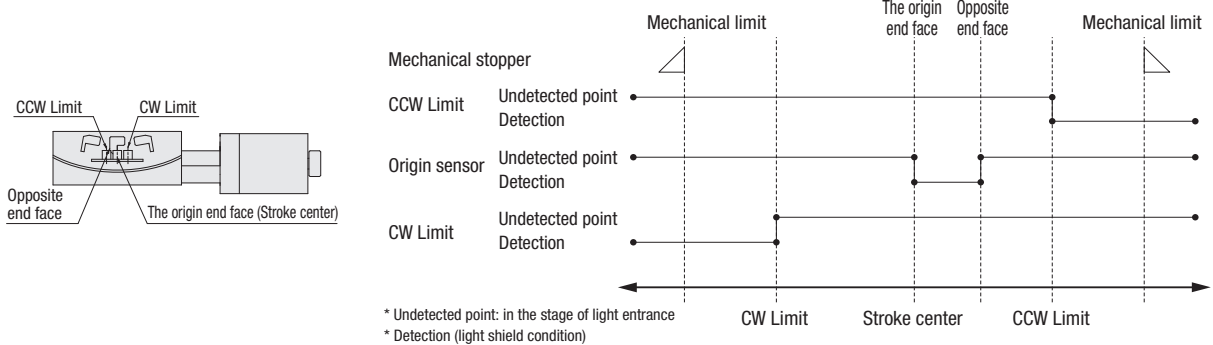
Electrical specification

Motor code		P28	S38	S40
Feature		For □28mm Stepping motor	For □38mm AC Servo motor	For □40mm AC Servo motor
Model		KGB06V/KGB07V		
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	KGB06V	On detection (light shield condition): Output transistor OFF (Non-continuity)	
Sensor logic option A			On detection : Output transistor OFF (Non-continuity)	
Sensor logic option B			On detection : Output transistor ON (Continuity)	
KGB07V	When limit is detected: Output transistor OFF (Non-continuity)		When returning to origin: Output transistor ON (Continuity)	
	Sensor logic option C	When returning to origin: Output transistor ON (Continuity)		

Pin allocation · Connection diagram

Motor code	KGB Series	
P28 · S38 · S40	<p>【KGB06】 Pig tail Connector specifications : HR10A-7J-6P(73)(HRS) Panel mount specification Connector model : HR10A-7R-6P(73) (HRS)</p>	<p>【KGB07】 Pig tail Connector specifications : HR10A-7J-6P(73)(HRS) Panel mount specification Connector model : HR10A-7R-6P(73) (HRS)</p>
	<p>【 Receiver cable 】 Model: HR10AP-S-SB-6-□ (□ is the length.) * Fixed Connector: HR10A-7P-6S(73) (Hirose Electric Co., Ltd.)</p>	
	<p>※The shields are connected with the connector shell.</p>	

Timing chart



Unit [deg.]	Direction of CW		Direction of CCW			
	Reference coordinate	CW Limit	The origin end face Stroke center	Opposite end face	CCW Limit	
□40	KGB06050	Return to origin	8.7	0	2.5	8.7
□60	KGB06075	Return to origin	5.7	0	1.8	5.7
	KGB06100	Return to origin	5.2	0	1.4	5.2
	KGB06125	Return to origin	4.2	0	1.1	4.2
	KGB07070	Return to origin	5.3	0	2.1	5.3
□70	KGB07096	Return to origin	4.2	0	1.5	4.2
	KGB07122	Return to origin	3.2	0	1.3	3.2

* 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.

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.

Motorless

X

XY

Z

Horizontal

Z

XYZ

Goniometer

Rotary

Ball
Screw

Worm
Gear

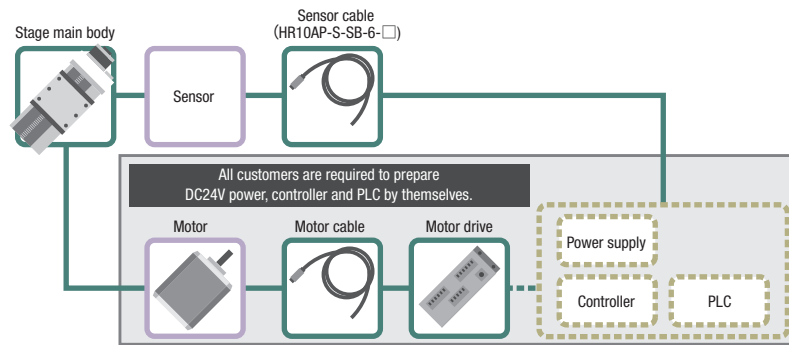
□40

□60

□70

Applicable motor code

P28	<input type="checkbox"/> 28mm For Stepping motor
S38	<input type="checkbox"/> 38mm For AC servo motor
S40	<input type="checkbox"/> 40mm For AC servo motor

**[IMPORTANT]**

Unlike standard products, this is a motorless product without a drive source. Please read and agree to the "Scope of Warranty" and "Precautions and Restrictions for Use" before purchase.

● Scope of Warranty

The following are not covered by the warranty.

- Defects or troubles related to motor installation and adjustment.
- Accuracy after the motor has been assembled by the customer.

Note: Accuracy tests have been performed using a test motor to confirm that all specifications are met.

● Precautions and Restrictions**1. Specifications: Load Capacity and Maximum Speed**

- Use within the product's rated specifications, regardless of motor performance.
- Be aware that the short distance between the limit sensor and mechanical limit increases the risk of collision during overrun.
- Collisions with mechanical limits can damage accuracy and durability.

2. Torque Limits

Using high-torque motors may apply loads exceeding the product's tolerance. If the motor torque exceeds the values below, please apply a torque limit.

- KGB Series: 0.25 N·m

3. Motor Installation

- Perform centering (alignment) for the stage body, motor, and coupling during installation.
- Misalignment may cause product damage or premature failure.
- Refer to the assembly manual for installation and adjustment procedures.

4. Securing the Connector

- On some products, the connector must be secured by the customer.
- Before securing, the connector is connected to the body only by lead wires.
- Handle with care to prevent wire breakage.

Motorless

X

XY

Z

Horizontal
Z

XYZ

Goniometer

Rotary

Ball
ScrewWorm
Gear 40 60 70**ML**
050

Motorless Specification

Goniometer Stage □40:KGW04V (1-axis)

RoHS

KGW04040TV-LP28

KGW04040TV-RP28



* All image is for illustrative purposes only.

Accessory	P28	S38	S40
Motor bracket	Installed on main body		
Coupling (screws included)	○		
Mounting screw	For Motor	4 of M3×12	2 of M4×12
	For Main Body	4 of M3×6	
Sensor cable	○(HR10AP-S-SB-6-□) *		
Cable tie	○	—	—

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

Weight	P28	S38	S40
KGW04*TV (Pigtail)	0.28kg	0.32kg	0.32kg
KGW04*MV (Panel mount)	0.27kg	0.31kg	0.31kg

KGW04040TV-LP28-□

1 2 3 4 5

1 Height of center rotation(W.D.)

040	40mm
060	60mm

2 Connector Type

T	Pigtail	
M	Panel mount	

3 Sensor cover location

L	L position	
R	Opposite hand	

4 Applicable Motor

Code	Specification
P28	<input type="checkbox"/> 28 Stepping motor specification
S38	<input type="checkbox"/> 38 Servo motor specification
S40	<input type="checkbox"/> 40 Servo motor specification

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	KGW04040TV-LP28	KGW04060TV-LP28	KGW04040MV-LP28	KGW04060MV-LP28
(Opposite hand)	KGW04040TV-RP28	KGW04060TV-RP28	KGW04040MV-RP28	KGW04060MV-RP28
Mechanical specification	Travel distance	±8°	±6°	±8°
	Stage surface size	40×40mm		
	Connector type	Pigtail		Panel Mount
	Travel mechanism (Reduction ratio)	Worm gear(1/240)		
	Guide	Cross Roller Guide		
Dimensional tolerance	Main materials-Finishing	Aluminum - Black alumite finishing, Phosphor bronze - Black paint		
	Weight	0.28kg		0.27kg
	Height of stage	20±0.2mm		
Accuracy specification	Height of center rotation	40±0.2mm	60±0.2mm	40±0.2mm
	Runout accuracy of center rotation	0.01mm		
	Resolution/Pulse	0.003°(Full)		
	MAX speed	15°/sec[5kHz]		
Sensor	Repeatability positioning accuracy	±0.005°		
	Load capacity	3kgf [29.4N]		
	Moment stiffness	Pitch 1.30/Yaw 1.16/Roll 0.27 ["/N · cm]		
	Lost motion	0.01°		
	Limit sensor	Available		
Origin sensor	Available			
Slit origin sensor	—			

* SPEC is the value of the standard motor.

Motorless

X

XY

Z

Horizontal Z

XYZ

Goniometer

Rotary

Ball Screw

Worm Gear

□40

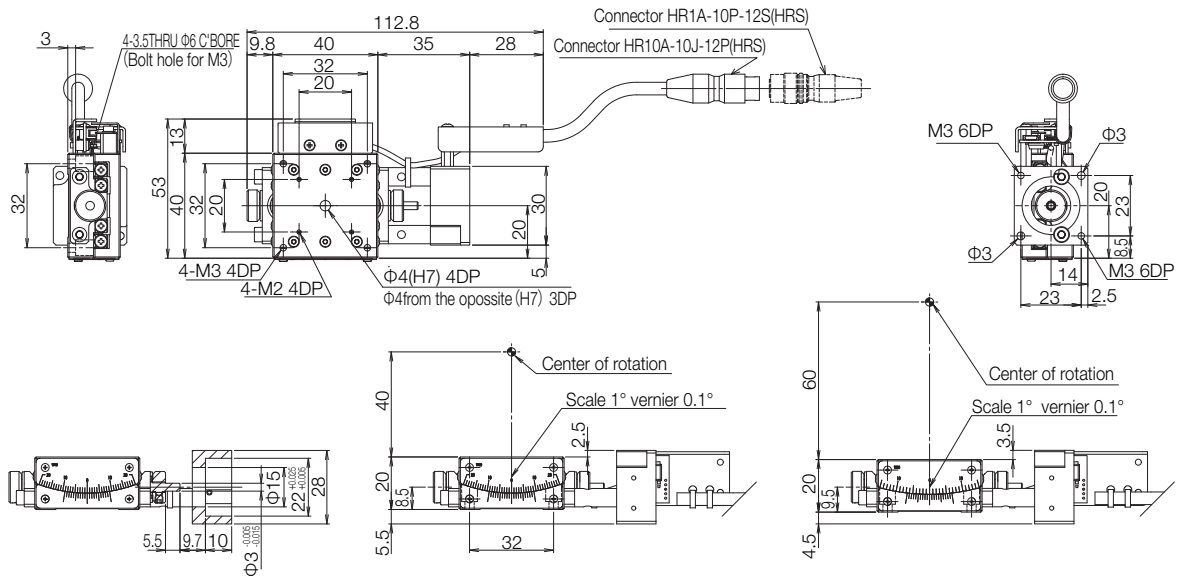
□60

□70

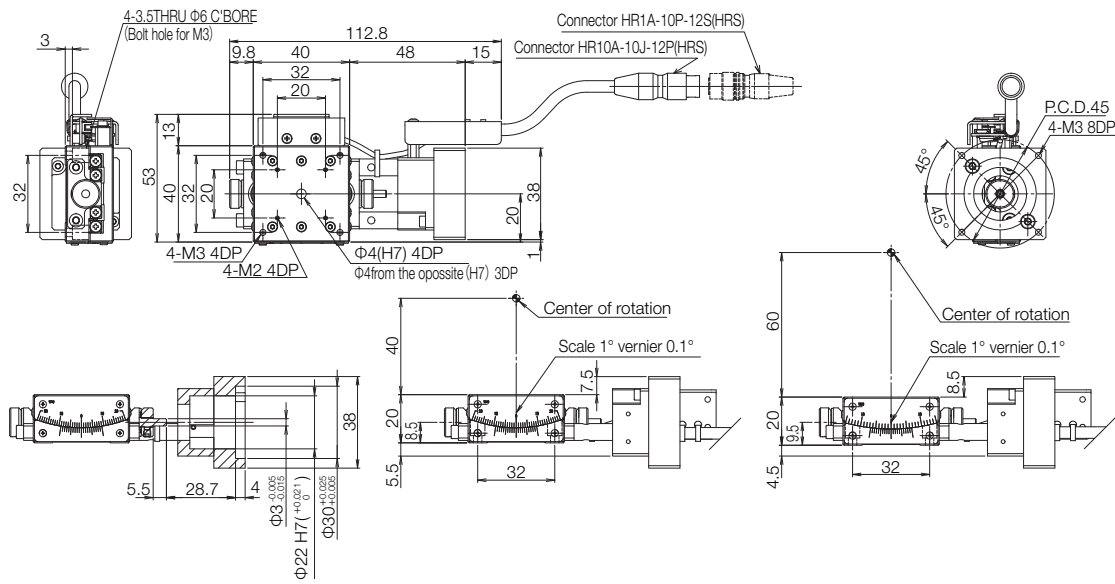
ML
051

Dimensions

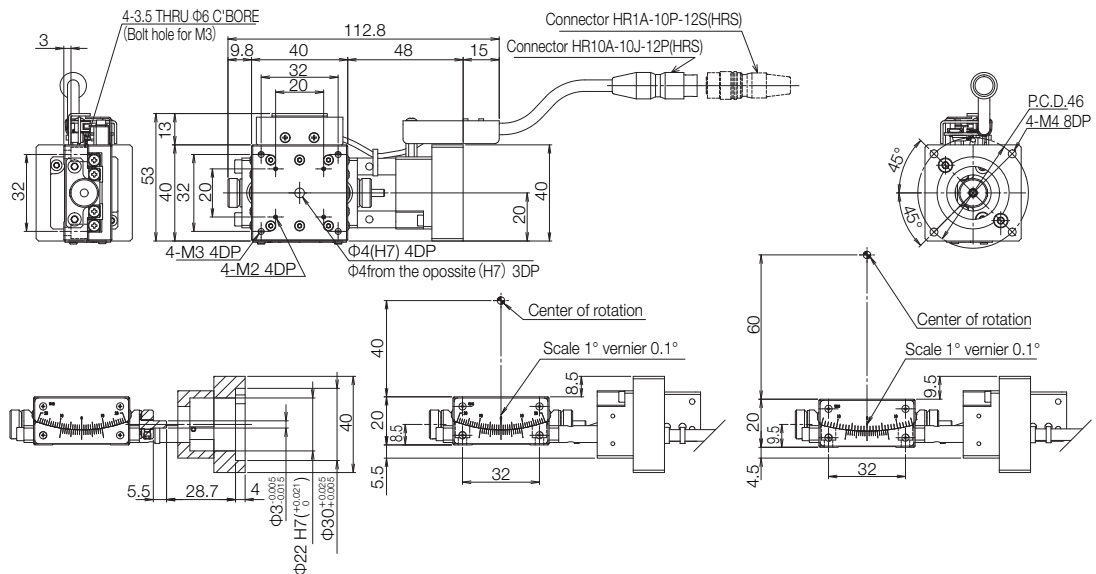
KGW04*TV-LP28 Series



KG04*TV-LS38 Series



KGW04*-LS40 Series



Motorless

X

XY

Z

Horizontal Z

XYZ

Goniometer

Rotary

Ball Screw

Worm Gear

40

60

70

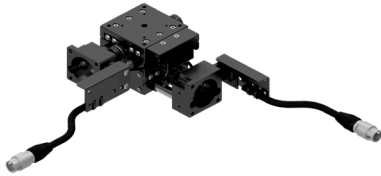
ML
052

Motorless Specification

Goniometer Stage □40:KAW04V (2-axis)

RoHS

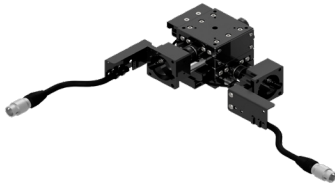
KAW04040TV-LP28



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

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

KAW04040TV-RP28



Weight	P28	S38	S40
KAW04*TV (Pigtail)	0.56kg	0.64kg	0.64kg
KAW04*MV (Panel mount)	0.54kg	0.62kg	0.62kg

* All image is for illustrative purposes only.

KAW04040TV-LP28-□

1 Height of center rotation(W.D.)

040	40mm
-----	------

2 Connector Type

T	Pigtail	
M	Panel mount	

3 Sensor cover location

L	L position
R	Opposite hand

4 Applicable Motor

Code	Specification
P28	<input type="checkbox"/> 28 Stepping motor specification
S38	<input type="checkbox"/> 38 Servo motor specification
S40	<input type="checkbox"/> 40 Servo motor specification

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	KAW04040TV-LP28	KAW04040MV-LP28		
(Opposite hand)	KAW04040TV-RP28	KAW04040MV-RP28		
Mechanical specification	Travel distance Upper/Lower axis	±8°±6°		
	Stage surface size	40×40mm		
	Connector type	Pigtail	Panel Mount	
	Travel mechanism (Reduction ratio)	Worm gear(1/240)		
	Guide	Cross Roller Guide		
	Main materials-Finishing	Aluminum - Black alumite finishing, Phosphor bronze - Black paint		
Dimensional tolerance	Weight	0.56kg	0.54kg	
	Height of stage	40±0.4mm		
	Height of center rotation	40±0.4mm		
	Runout accuracy of center rotation	—		
	Accuracy specification	Resolution/Pulse	0.003°(Full)	
		MAX speed	Upper	15°/sec[5kHz]
Lower			15°/sec[5kHz]	
Repeatability positioning accuracy		±0.005°		
Load capacity		2.5kgf [24.5N]		
Moment stiffness		Pitch 1.57/Yaw 2.32/Roll 1.57["/N · cm]		
Sensor	Lost motion	0.01°		
	Limit sensor	Available		
	Origin sensor	Available		
	Slit origin sensor	—		

* SPEC is the value of the standard motor.

Motorless

X

XY

Z

Horizontal Z

XYZ

Goniometer

Rotary

Ball Screw

Worm Gear

□40

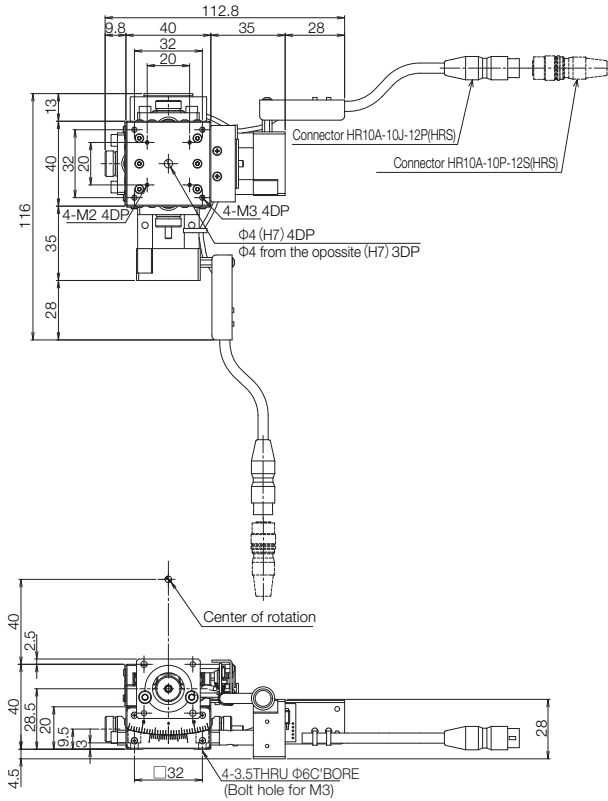
□60

□70

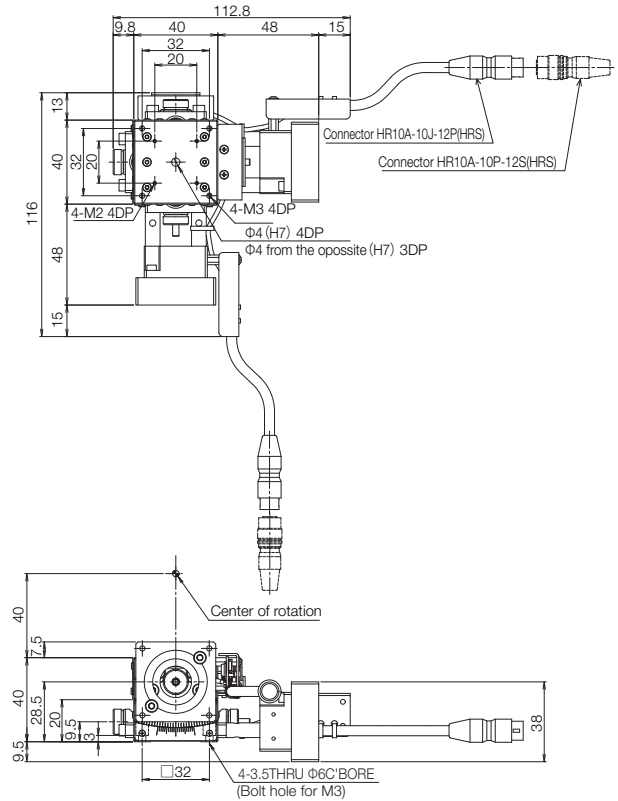
ML
053

Dimensions

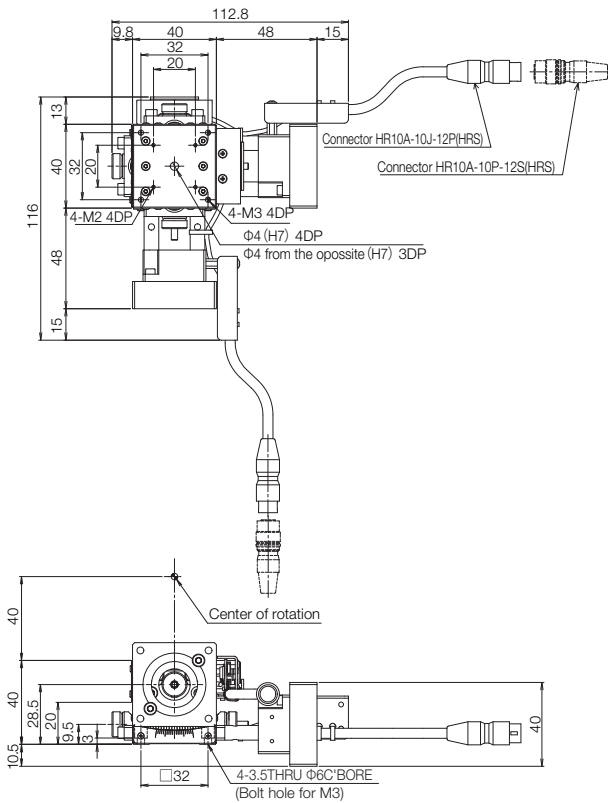
KAW04040TV-LP28



KAW04040TV-LS38



KAW04040TV-LS40



Motorless

X

XY

Z

Horizontal Z

XYZ

Goniometer

Rotary

Ball Screw

Worm Gear

40

60

70

ML
054

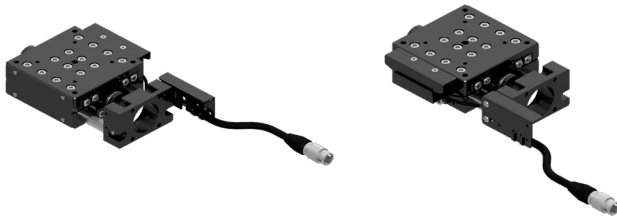
Motorless Specification

Goniometer Stage □60:KGW06V (1-axis)

RoHS

KGW06050TV-LP28

KGW06050TV-RP28



* All image is for illustrative purposes only.

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

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

Weight	P28	S38	S40
KGW06*TV (Pigtail)	0.40kg	0.44kg	0.44kg
KGW06*MV (Panel mount)	0.39kg	0.43kg	0.43kg

KGW06050TV-LP28-□

1 2 3 4 5

1 Height of center rotation(W.D.)

050	50mm
075	75mm
100	100mm
125	125mm

2 Connector Type

T	Pigtail	
M	Panel mount	

3 Sensor cover location

L	L position	
R	Opposite hand	

4 Applicable Motor

Code	Specification
P28	<input type="checkbox"/> 28 Stepping motor specification
S38	<input type="checkbox"/> 38 Servo motor specification
S40	<input type="checkbox"/> 40 Servo motor specification

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	KGW06050TV-LP28	KGW06075TV-LP28	KGW06100TV-LP28	KGW06125TV-LP28	KGW06050MV-LP28	KGW06075MV-LP28	KGW06100MV-LP28	KGW06125MV-LP28
(Opposite hand)	KGW06050TV-RP28	KGW06075TV-RP28	KGW06100TV-RP28	KGW06125TV-RP28	KGW06050MV-RP28	KGW06075MV-RP28	KGW06100MV-RP28	KGW06125MV-RP28
Travel distance	±10°	±8°	±6°	±5°	±10°	±8°	±6°	±5°
Stage surface size	60×60mm				60×60mm			
Connector type	Pigtail				Panel Mount			
Travel mechanism (Reduction ratio)	Worm gear (1/160)	Worm gear (1/225)	Worm gear (1/292)	Worm gear (1/360)	Worm gear (1/160)	Worm gear (1/225)	Worm gear (1/292)	Worm gear (1/360)
Guide	Cross Roller Guide				Cross Roller Guide			
Main materials -Finishing	Aluminum - Black alumite finishing				Aluminum - Black alumite finishing			
Weight	0.4kg				0.39kg			
Hight of stage	25±0.2mm				25±0.2mm			
Height of center rotation	50±0.2mm	75±0.2mm	100±0.2mm	125±0.2mm	50±0.2mm	75±0.2mm	100±0.2mm	125±0.2mm
Runout accuracy of center rotation	0.01mm				0.01mm			
Resolution/Pulse	0.0045°(Full)	0.0032°(Full)	0.002466°(Full)	0.002°(Full)	0.0045°(Full)	0.0032°(Full)	0.002466°(Full)	0.002°(Full)
MAX speed	22.5°/sec[5kHz]	16°/sec[5kHz]	12.5°/sec[5kHz]	10°/sec[5kHz]	22.5°/sec[5kHz]	16°/sec[5kHz]	12.5°/sec[5kHz]	10°/sec[5kHz]
Repeatability positioning accuracy	±0.003°				±0.003°			
Load capacity	5kgf [49N]				5kgf [49N]			
Moment stiffness	Pitch 0.30/Yaw 0.10/Roll 0.11["/N · cm]				Pitch 0.30/Yaw 0.10/Roll 0.11["/N · cm]			
Lost motion	0.01°				0.01°			
Limit sensor	Available				Available			
Origin sensor	Available				Available			
Slit origin sensor	-				-			

* SPEC is the value of the standard motor.

Motorless

X

XY

Z

Horizontal

Z

XYZ

Goniometer

Rotary

Ball Screw

Worm Gear

□40

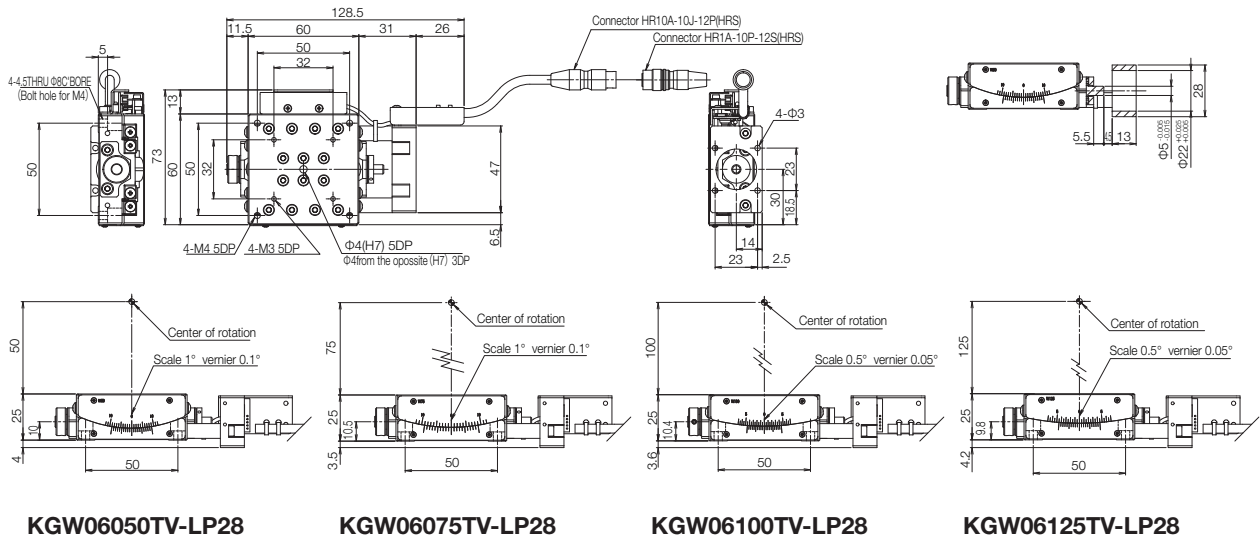
□60

□70

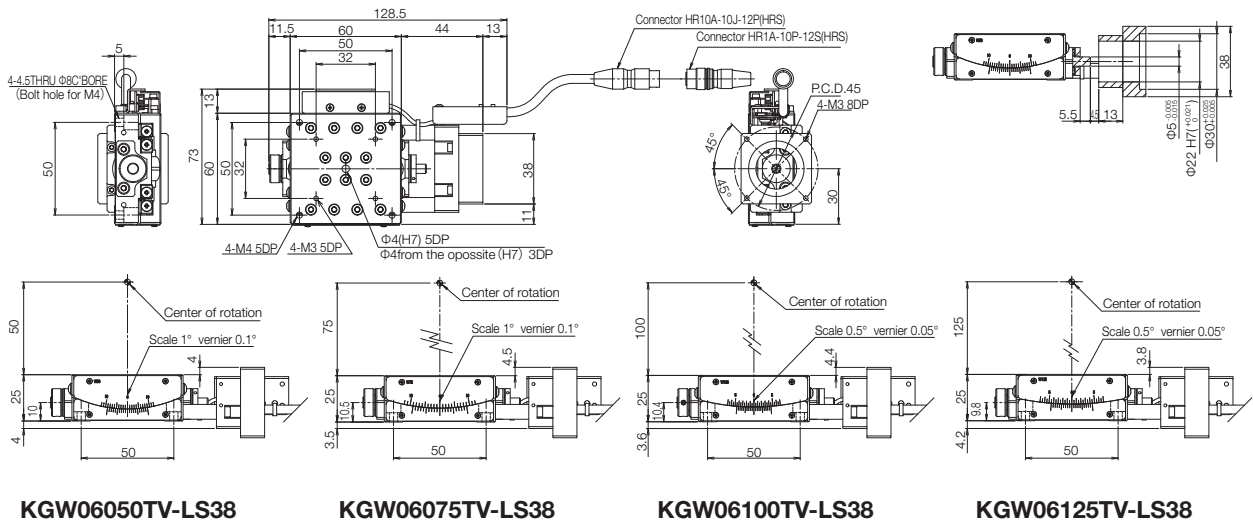
ML
055

Dimensions

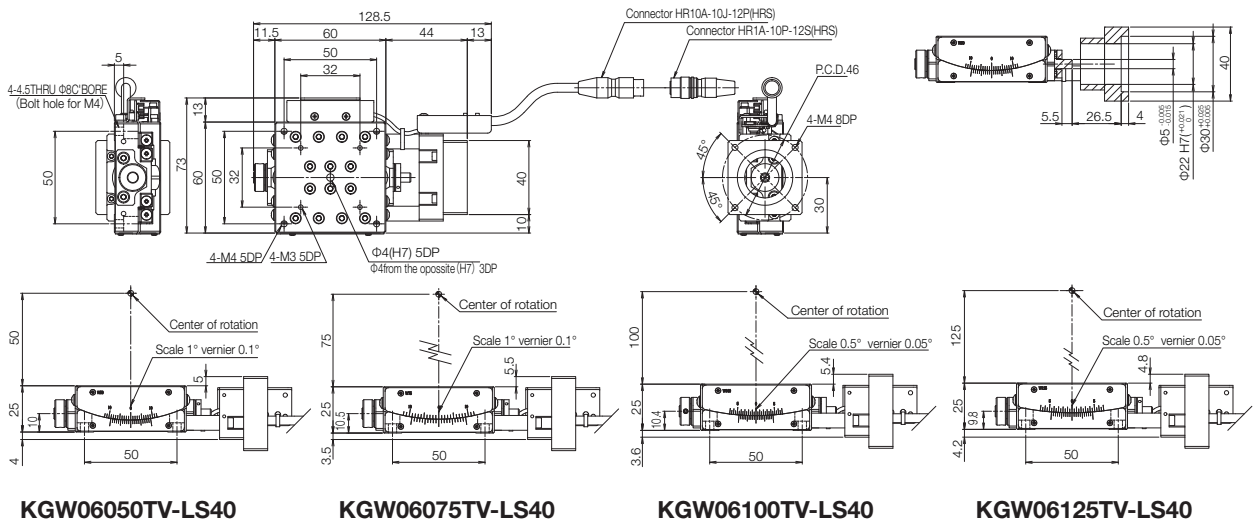
KGW06*TV-LP28 Series



KG06*TV-LS38 Series



KGW06*-LS40 Series



Motorless

X

XY

Z

Horizontal Z

XYZ

Goniometer

Rotary

Ball Screw

Worm Gear

□40

□60

□70

ML
056

ゴニオステージ□60:KAW06V (2軸)

RoHS

KAW06050TV-LP28

KAW06050TV-RP28



* All image is for illustrative purposes only.

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

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

Weight	P28	S38	S40
KAW06*TV (Pigtail)	0.80kg	0.88kg	0.88kg
KAW06*MV (Panel mount)	0.78kg	0.86kg	0.86kg

KAW06050TV-LP28-□

1 2 3 4 5

1 Height of center rotation(W.D.)

050	50mm
075	75mm
100	100mm

2 Connector Type

T	Pigtail	
M	Panel mount	

3 Sensor cover location

L	L position
R	Opposite hand

4 Applicable Motor

Code	Specification
P28	<input type="checkbox"/> 28 Stepping motor specification
S38	<input type="checkbox"/> 38 Servo motor specification
S40	<input type="checkbox"/> 40 Servo motor specification

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	KAW06050TV-LP28	KAW06075TV-LP28	KAW06100TV-LP28	KAW06050MV-LP28	KAW06075MV-LP28	KAW06100MV-LP28		
(Opposite hand)	KAW06050TV-RP28	KAW06075TV-RP28	KAW06100TV-RP28	KAW06050MV-RP28	KAW06075MV-RP28	KAW06100MV-RP28		
Mechanical specification	Travel distance Upper/Lower axis	±10°/±8°	±8°/±6°	±6°/±5°	±10°/±8°	±8°/±6°	±6°/±5°	
	Stage surface size	60×60mm			60×60mm			
Mechanical specification	Connector type	Pigtail			Panel Mount			
	Travel mechanism (Reduction ratio)	Upper	Worm gear(1/160)	Worm gear(1/225)	Worm gear(1/292)	Worm gear(1/160)	Worm gear(1/225)	Worm gear(1/292)
		Lower	Worm gear(1/225)	Worm gear(1/292)	Worm gear(1/360)	Worm gear(1/225)	Worm gear(1/292)	Worm gear(1/360)
	Guide	Cross Roller Guide			Cross Roller Guide			
Main materials-Finishing	Aluminum - Black alumite finishing			Aluminum - Black alumite finishing				
Weight	0.80kg			0.78kg				
Dimensional tolerance	Height of stage	50±0.4mm			50±0.4mm			
	Height of center rotation	50±0.4mm	75±0.4mm	100±0.4mm	50±0.4mm	75±0.4mm	100±0.4mm	
	Runout accuracy of center rotation	-			-			
Accuracy specification	Resolution/Pulse	Upper	0.0045°(Full)	0.0032°(Full)	0.002466°(Full)	0.0045°(Full)	0.0032°(Full)	0.002466°(Full)
		Lower	0.0032°(Full)	0.002466°(Full)	0.002°(Full)	0.0032°(Full)	0.002466°(Full)	0.002°(Full)
	MAX speed [5kHz]	Upper	22.5°/sec	16°/sec	12.5°/sec	22.5°/sec	16°/sec	12.5°/sec
		Lower	16°/sec	12.5°/sec	10°/sec	16°/sec	12.5°/sec	10°/sec
	Repeatability positioning accuracy	±0.003°			±0.003°			
	Load capacity	4.5kgf [44.1N]			4.5kgf [44.1N]			
Moment stiffness	Pitch 0.41/Yaw 0.20/Roll 0.41[°/N · cm]			Pitch 0.41/Yaw 0.20/Roll 0.41[°/N · cm]				
Sensor	Lost motion	0.01°			0.01°			
	Limit sensor	Available			Available			
	Origin sensor	Available			Available			
	Slit origin sensor	-			-			

* SPEC is the value of the standard motor.

Motorless

X

XY

Z

Horizontal Z

XYZ

Goniometer

Rotary

Ball Screw

Worm Gear

□40

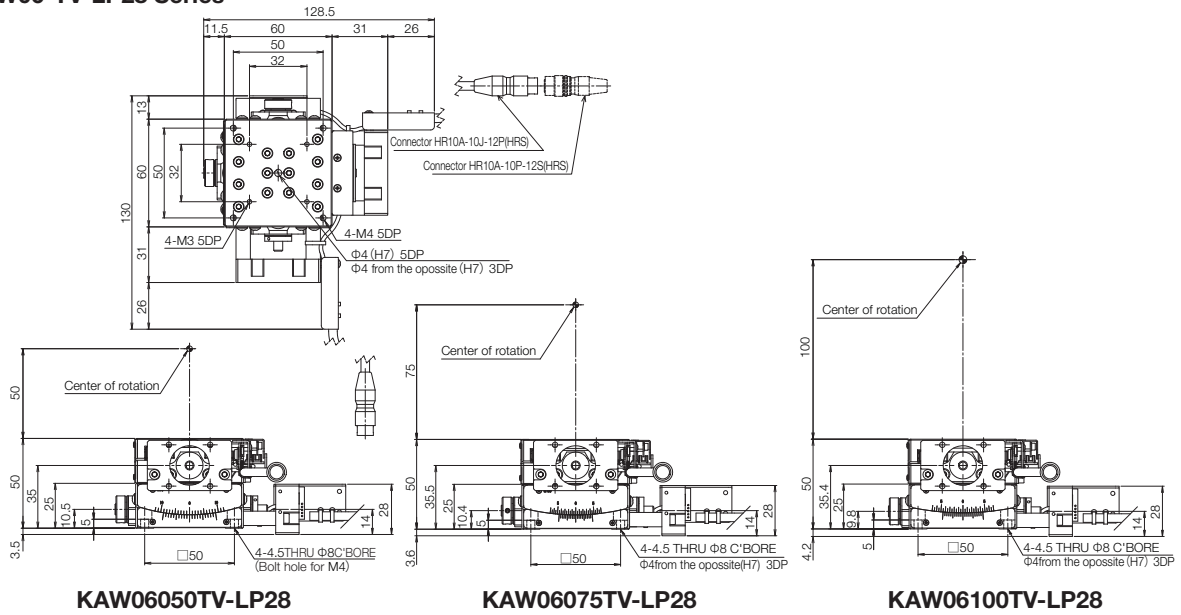
□60

□70

ML 057

Dimensions

KAW06*TV-LP28 Series

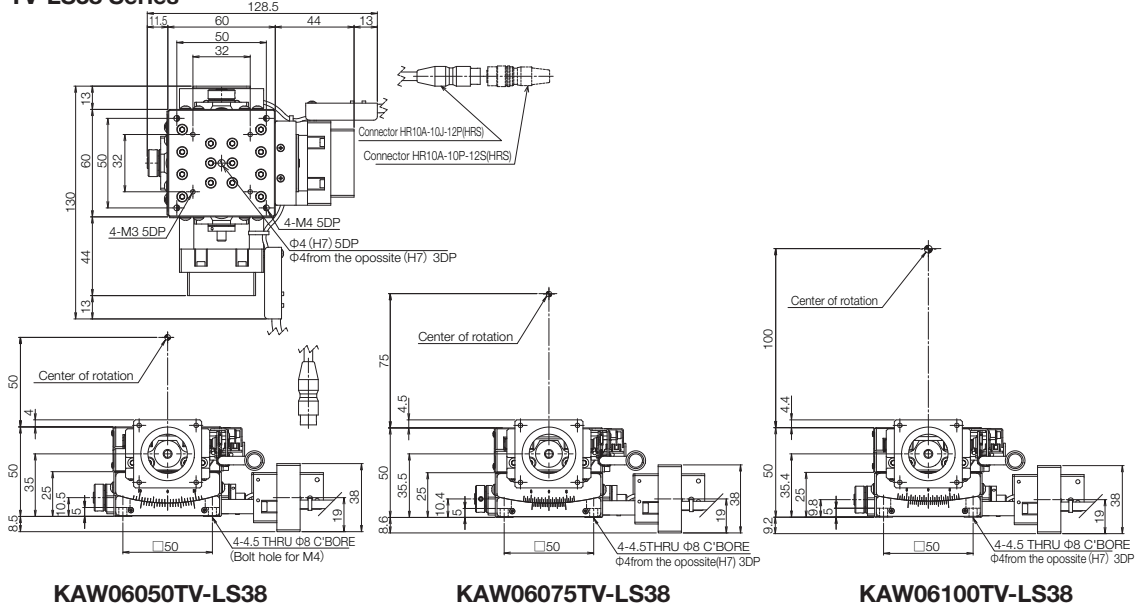


KAW06050TV-LP28

KAW06075TV-LP28

KAW06100TV-LP28

KA06*TV-LS38 Series

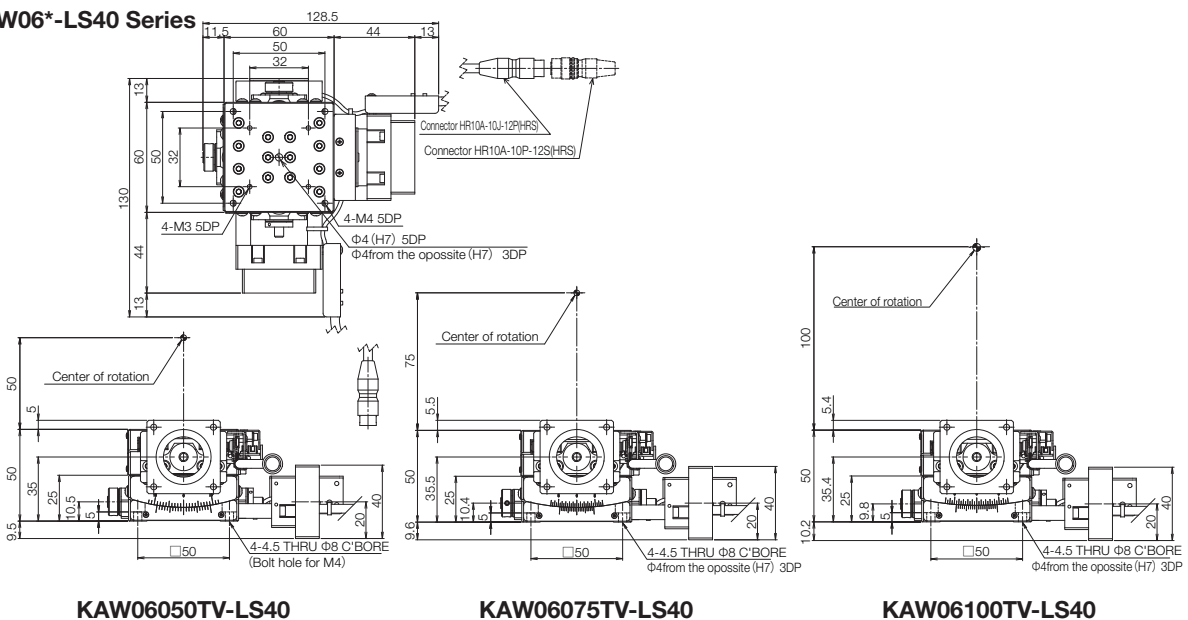


KAW06050TV-LS38

KAW06075TV-LS38

KAW06100TV-LS38

KAW06*-LS40 Series



KAW06050TV-LS40

KAW06075TV-LS40

KAW06100TV-LS40

Motorless

X

XY

Z

Horizontal
Z

XYZ

Goniometer

Rotary

Ball
Screw

Worm
Gear

□40

□60

□70

ML
058

Motorless Specification

Electrical Specification: KGW04V/KGW06V

Motorless

Electrical specification

Applicable motor code		P28	S38	S40
Feature		For □28 Stepping motor	For □38 AC Servo motor	For □40 AC Servo motor
Model		KGW04/KGW06		
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

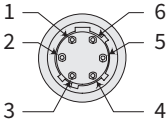
P28
•
S38
•
S40

Sensor

KGW Series

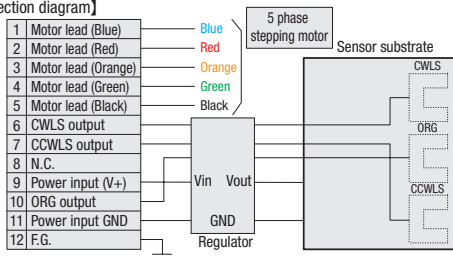
[Pin allocation]

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]

1	Motor lead (Blue)	Blue
2	Motor lead (Red)	Red
3	Motor lead (Orange)	Orange
4	Motor lead (Green)	Green
5	Motor lead (Black)	Black
6	CWLS output	
7	CCWLS output	
8	N.C.	
9	Power input (V+)	
10	ORG output	
11	Power input GND	
12	F.G.	

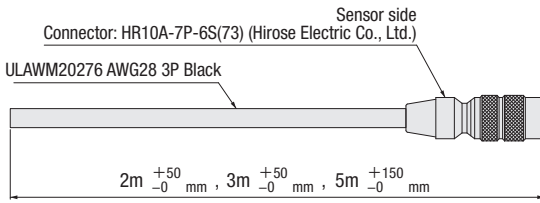


[Cable model]

Model: HR10AP-S-SB-6-□ (□ is the length.)
* Fixed

Connector: HR10A-7P-6S(73) (Hirose Electric Co., Ltd.)

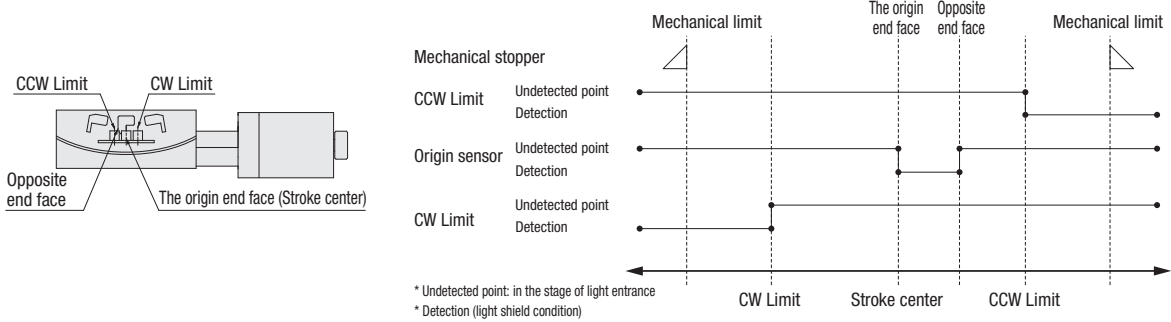
ULAWM20276 AWG28 3P Black



Pin	Signals
1	CWLS
2	CCWLS
3	ORG
4	NORG
5	V+
6	V-

※The shields are connected with the connector shell.

Timing chart



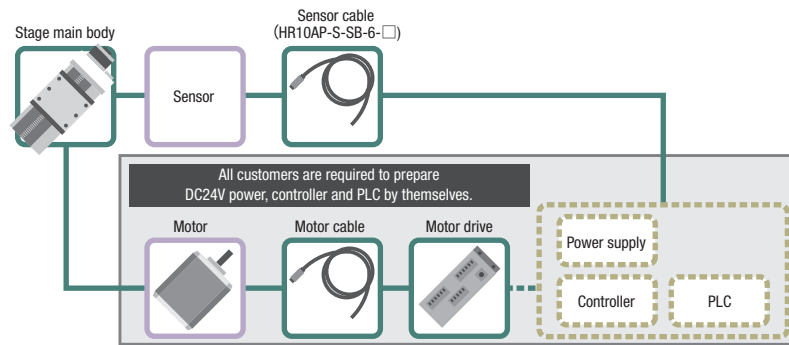
Unit [deg.]	Reference coordinate	CW Limit	The origin end face (Stroke center)	Opposite end face	CCW Limit
□40	Return to origin	8.5	0	2.5	8.5
□60	Return to origin	6.5	0	2.1	6.5
□70	Return to origin	10.5	0	2.5	10.5
□60	Return to origin	8.3	0	1.8	8.3
□60	Return to origin	6.3	0	1.4	6.3
□70	Return to origin	5.2	0	1.1	5.2

* 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 deg.

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	<input type="checkbox"/> 28mm For Stepping motor
S38	<input type="checkbox"/> 38mm For AC servo motor
S40	<input type="checkbox"/> 40mm For AC servo motor

**[IMPORTANT]**

Unlike standard products, this is a motorless product without a drive source. Please read and agree to the "Scope of Warranty" and "Precautions and Restrictions for Use" before purchase.

● Scope of Warranty

The following are not covered by the warranty.

- Defects or troubles related to motor installation and adjustment.
- Accuracy after the motor has been assembled by the customer.

Note: Accuracy tests have been performed using a test motor to confirm that all specifications are met.

● Precautions and Restrictions**1. Specifications: Load Capacity and Maximum Speed**

- Use within the product's rated specifications, regardless of motor performance.
- Be aware that the short distance between the limit sensor and mechanical limit increases the risk of collision during overrun.
- Collisions with mechanical limits can damage accuracy and durability.

2. Torque Limits

Using high-torque motors may apply loads exceeding the product's tolerance. If the motor torque exceeds the values below, please apply a torque limit.

- KGW Series: 0.25 N·m

3. Motor Installation

- Perform centering (alignment) for the stage body, motor, and coupling during installation.
- Misalignment may cause product damage or premature failure.
- Refer to the assembly manual for installation and adjustment procedures.

4. Securing the Connector

- On some products, the connector must be secured by the customer.
- Before securing, the connector is connected to the body only by lead wires.
- Handle with care to prevent wire breakage.

Motorless

X

XY

Z

Horizontal
Z

XYZ

Goniometer

Rotary

Ball
ScrewWorm
Gear 40 60 70**ML**
060