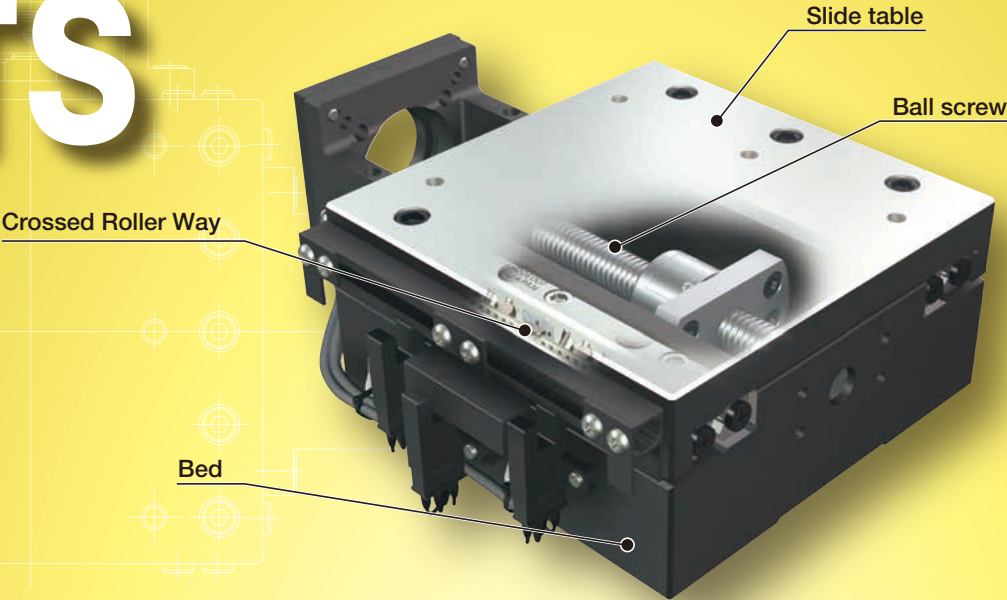
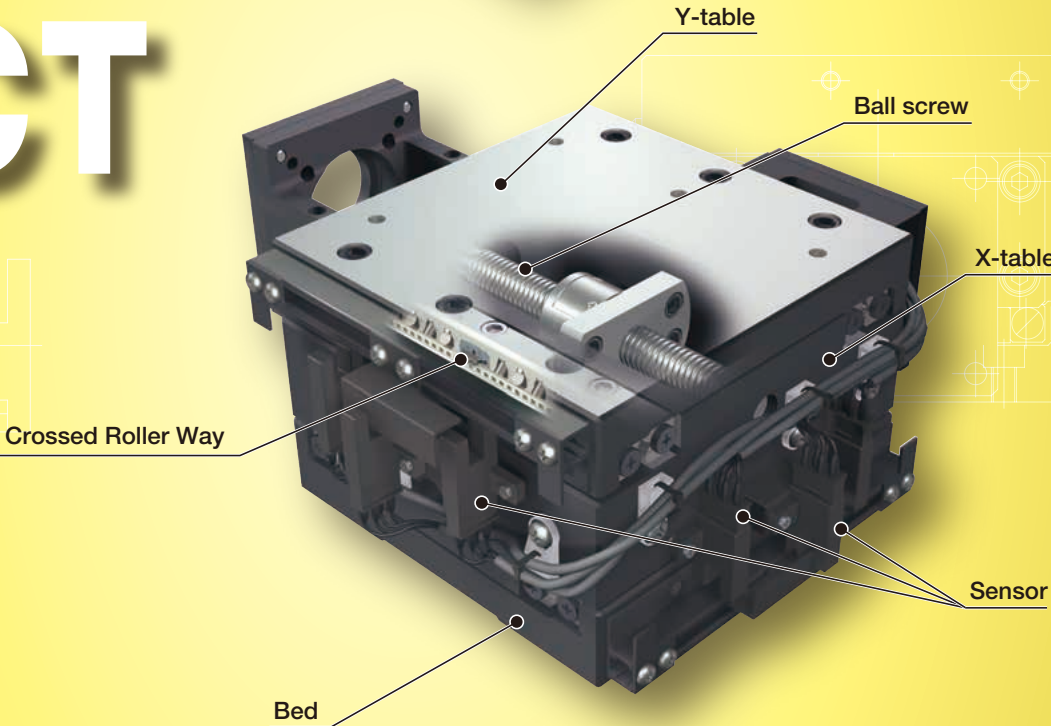


TS



CT



Major product specifications

Driving method	Precision ball screw
Linear motion rolling guide	Crossed Roller Way
Built-in lubrication part	No built-in
Material of table and bed	Cast iron
Sensor	Select by identification number

Accuracy

Positioning repeatability	$\pm 0.002 \sim 0.003$
Positioning accuracy	$0.005 \sim 0.025$
Lost motion	-
Parallelism in table motion A	$0.005 \sim 0.012$
Parallelism in table motion B	$0.015 \sim 0.030$
Attitude accuracy	-
Straightness	-
Backlash	-

unit: mm

TS/CT

Points

● High precision and compact positioning table

High precision and compact positioning table incorporating Crossed Roller Way into high rigidity and vibration damping performance cast iron slide tables and beds.

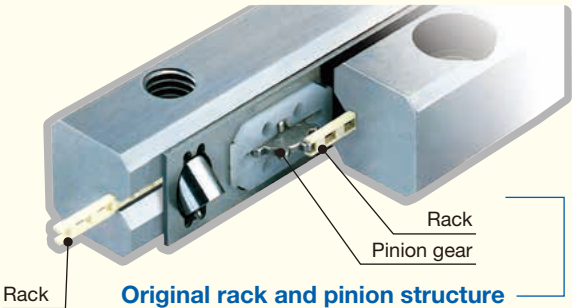
● Safety design with retainer creep proof function

Adoption of Anti-Creep Cage Crossed Roller Way that does not cause retainer creep in the linear motion rolling guide allows you to safely use the table even in vertical axis use and high acceleration / deceleration operation. (TS55/55 and CT55/55 are not included.)

● Optimal for works directly conducted on the table upper surface

Adoption of large precisely polished table allows you to use the entire table upper surface as work space.

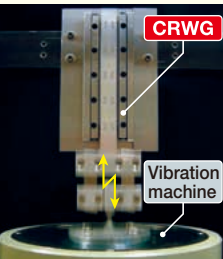
Structure and features of Anti-Creep Cage Crossed Roller Way



No retainer creep even under high-tact operation in vertical axis !

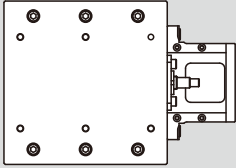
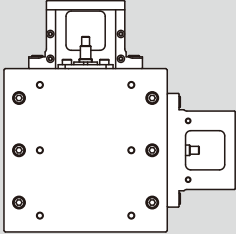
(Durability test) Test conditions

Model number	CRWG 3	
Test method	Vibration test machine	
Operating conditions	Posture	Vertical
	Maximum speed	827 mm/s
	Acceleration	15 G
	Cycle	31 Hz
	Stroke	8 mm
Mass of moving table		330 g
Number of strokes	100 million strokes	



(Result) No retainer creep nor material damage in any component is found.

Variation

Shape	Model	Table width (mm)	Table length (mm)					
			55	75	125	220	310	350
Single-axis specification 	TS	55	☆	—	—	—	—	—
		75	—	☆	—	—	—	—
		125	—	—	☆	☆	—	—
		220	—	—	—	☆	☆	—
		260	—	—	—	—	—	☆
Two-axis specification 	CT	55	☆	—	—	—	—	—
		75	—	☆	—	—	—	—
		125	—	—	☆	—	—	—
		220	—	—	—	☆	—	—
		260	—	—	—	—	—	☆
		350	—	—	—	—	—	☆

☆ uses Anti-Creep Cage Crossed Roller Way.

1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

Identification Number

Example of an Identification Number

12345

CT125 / 125 / AT6025SC

1

Model

Page II -205

2

Dimension of slide table

Page II -205

3

Designation of motor attachment

Page II -205

4

Ball screw lead

Page II -206

5

Special specification

Page II -206

Identification Number and Specification

1

Model

TS : Precision Positioning Table TS (single-axis specification)
CT : Precision Positioning Table CT (two-axis specification)

2

Dimension of slide table

Select a dimension for slide table from the list of Table 1.

Width and length of slide table are indicated in mm. For CT (two-axis specification), width and length of Y-table are indicated.

Table 1 Models of linear motion rolling guide/slide table dimension and stroke length

unit: mm			
Model	Linear motion rolling guide	Width/length	Stroke length
TS	Crossed Roller Way	55/ 55	15
	Anti-Creep Cage Crossed Roller Way	75/ 75	25
		125/125	50
		125/220	120
		220/220	120
		220/310	180
CT	Crossed Roller Way	55/ 55	X-axis: 15, Y-axis: 15
	Anti-Creep Cage Crossed Roller Way	75/ 75	X-axis: 25, Y-axis: 25
		125/125	X-axis: 50, Y-axis: 50
		220/220	X-axis: 120, Y-axis: 120
		260/350	X-axis: 150, Y-axis: 250
		350/350	X-axis: 250, Y-axis: 250

3

Designation of motor attachment

As for a motor attachment, select it from the list of Table 2.

· Motor should be prepared by customer.
· Please specify motor attachment applicable to motor for use.
· A coupling shown in Table 3 is mounted on the main body before shipment. However, the final position adjustment should be made by customer since it is only temporarily fixed.

Table 2 Application of motor attachment

Motor to be used					Flange size mm	Motor attachment			
Type	Manufacturer	Series	Model	Rated output W		TS55/55 TS75/75 CT55/55 CT75/75	TS125/125 TS125/220 TS220/220 CT125/125 CT220/220	TS220/310	TS260/350 CT260/350 CT350/350
AC servomotor	YASKAWA ELECTRIC CORPORATION	Σ - V	SGMJV-01A	100	□40	—	AT602	AT604	—
			SGMAV-01A			—	AT602	AT604	—
			SGMJV-02A	200	□60	—	—	—	AT606
			SGMAV-02A			—	—	—	AT606
	Mitsubishi Electric Corporation	J3, J4	HF-MP13, HG-MR13	100	□40	—	AT602	AT604	—
			HF-KP13, HG-KR13			—	AT602	AT604	—
			HF-MP23, HG-MR23	200	□60	—	—	—	AT606
			HF-KP23, HG-KR23			—	—	—	AT606
	Panasonic Corporation	MINAS A5	MSMD01	100	□38	—	AT603	AT605	—
			MSME01			—	AT603	AT605	—
			MSMD02	200	□60	—	—	—	AT607
			MSME02			—	—	—	AT607
Hitachi Industrial Equipment Systems Co., Ltd.	AD	ADMA-01L	100	□40	—	AT602	AT604	—	
		ADMA-02L	200	□60	—	—	—	AT606	
Stepper Motor	ORIENTAL MOTOR Co., Ltd.	PX	PX535MH		□38	AT601	—	—	—
		RK · CRK	RK56 · CRK56 ⁽¹⁾		□60	—	AT608	AT609	—
			RK59		□85	—	—	—	AT610

Note ⁽¹⁾ Applicable to the outer diameter φ8 of motor output shaft.
Remark: For detailed motor specifications, please see respective motor manufacturer's catalog.

Table 3 Coupling models

Motor attachment	Coupling models	Manufacturer	Coupling inertia J_c $\times 10^{-5} \text{kg} \cdot \text{m}^2$
AT601	MWSS-12- 5× 5	Nabeya Bi-tech Kaisha	0.018
AT602	MSTS-25C- 8× 8	Nabeya Bi-tech Kaisha	0.71
AT603	MSTS-25C- 8× 8	Nabeya Bi-tech Kaisha	0.71
AT604	MSTS-25C- 6× 8	Nabeya Bi-tech Kaisha	0.71
AT605	MSTS-25C- 6× 8	Nabeya Bi-tech Kaisha	0.71
AT606	MSTS-32C-12×14	Nabeya Bi-tech Kaisha	2.7
AT607	MSTS-32C-11×12	Nabeya Bi-tech Kaisha	2.7
AT608	MSTS-19C- 6× 8	Nabeya Bi-tech Kaisha	0.277
AT609	MSTS-25C- 6× 8	Nabeya Bi-tech Kaisha	0.71
AT610	MSTS-32C-12×14	Nabeya Bi-tech Kaisha	2.7

Remark: For detailed coupling specifications, please see respective manufacturer's catalogs.

4

Ball screw lead

1: Lead 1mm (applicable to 55/55, 75/75, and 125/125)
2: Lead 2mm (not applicable to 55/55 or 75/75)
5: Lead 5mm (not applicable to 55/55 or 75/75)

5

Special specification

No symbol: Standard specification
AL : Aluminum alloy made table (not applicable to 55/55 or 75/75)
BE : Option base (applicable to 55/55)
LR : Black chrome surface treatment
SC : Table with sensor

Aluminum alloy made table : Specification in which the slide table, bed, and motor bracket are made of cast aluminum alloy. The accuracy is different from that of the standard specification.

Option base : Base plate is available for attaching the main body downward. For detailed information, please see the dimension table.

Black chrome surface treatment : A black permeable film is formed on the surface to improve corrosion resistance. This treatment is performed on the surfaces of slide table, bed, and motor bracket. For the reference surfaces of respective parts, surface treatment is excluded.

Table with sensors : A set of limit sensor, pre-origin sensor, and origin sensor is attached. However, when selecting an AC servomotor attachment, an origin sensor is not provided. Please use the C-phase or Z-phase of the encoder.

Remark: When using multiple special specifications for combination, please indicate by arranging supplemental codes in alphabetical order.

Specifications

Table 4 Accuracy unit: mm

Identification number		Positioning repeatability	Positioning accuracy	Parallelism in table motion A	Parallelism in table motion B	Squareness of XY motion ⁽¹⁾
Single-axis specification	Two-axis specification					
TS 55/ 55	—	±0.002 (±0.003)	0.005	0.005 (0.008)	0.015 (0.022)	0.005
—	CT 55/ 55		0.010			
TS 75/ 75	CT 75/ 75		0.005 (0.008)			
TS125/125	CT125/125		0.008 (0.012)			
TS125/220	—					
TS220/220	CT220/220		0.015 (0.025)	0.008 (0.012)	0.020 (0.030)	0.008
TS220/310	—					
TS260/350	CT260/350					
—	CT350/350					

Note ⁽¹⁾ Applied to tables with two-axis specification.
Remark: The values in () represent those in the aluminum alloy made table (special specification AL), different from values given in the standard specification table.

Table 5 Maximum speed

Motor type	Maximum speed mm/s		
	Lead 1mm	Lead 2mm	Lead 5mm
AC servomotor	50	100	250
Stepper motor	30	60	150

Remark: To measure the practical maximum speed, it is required to consider operation patterns based on the motor to be used and load conditions.

Table 6.1 Maximum carrying mass of TS

Model and size	Ball screw lead mm	Maximum carrying mass kg	
		Horizontal	Vertical
TS 55/ 55	1	4.3	2.2
TS 75/ 75	1	21	1.5
TS125/125	1	72	2.3
	2	72	11
	5	72	29
TS125/220	2	115	9
	5	115	28
TS220/220	2	169	3.9
	5	169	24
TS220/310	2	256	—
	5	216	19
TS260/350	2	310	—
	5	310	18

Remark: Not operable when the maximum carrying mass is "-".

Table 6.2 Maximum carrying mass of CT

Model and size	Ball screw lead mm	Maximum carrying mass kg	
		Horizontal	Vertical ⁽¹⁾
CT 55/ 55	1	4.3	2.2
CT 75/ 75	1	21	1.3
CT125/125	1	72	2.3
	2	72	11
	5	72	29
CT220/220	2	169	3.9
	5	169	24
CT260/350	2	225	—
	5	225	18
CT350/350	2	286	—
	5	310	14

Note ⁽¹⁾ When the Y-axis moves vertically.
Remark: Not operable when the maximum carrying mass is "-".

Table 7 Specifications of ball screw unit: mm

Model and size		Ball screw lead	Axis name	Shaft dia.	Overall length
Single-axis specification	TS 55/ 55	1	—	6	68
	TS 75/ 75	1	—	6	89
	TS125/125	1	—	12	148
		2	—	12	148
		5	—	14	148
	TS125/220	2	—	12	269
		5	—	14	269
	TS220/220	2	—	14	269
		5	—	14	269
	TS220/310	2	—	14	389
		5	—	14	389
	TS260/350	2	—	20	435
		5	—	20	435
Two-axis specification	CT 55/ 55	1	X-axis, Y-axis	6	68
	CT 75/ 75	1	X-axis, Y-axis	6	89
	CT125/125	1	X-axis, Y-axis	12	148
		2	X-axis, Y-axis	12	148
		5	X-axis, Y-axis	14	148
	CT220/220	2	X-axis, Y-axis	14	269
		5	X-axis, Y-axis	14	269
	CT260/350	2	X-axis	20	330
			Y-axis	20	435
		5	X-axis	20	330
			Y-axis	20	435
	CT350/350	2	X-axis, Y-axis	20	435
		5	X-axis, Y-axis	20	435

Table 8 Table inertia and starting torque

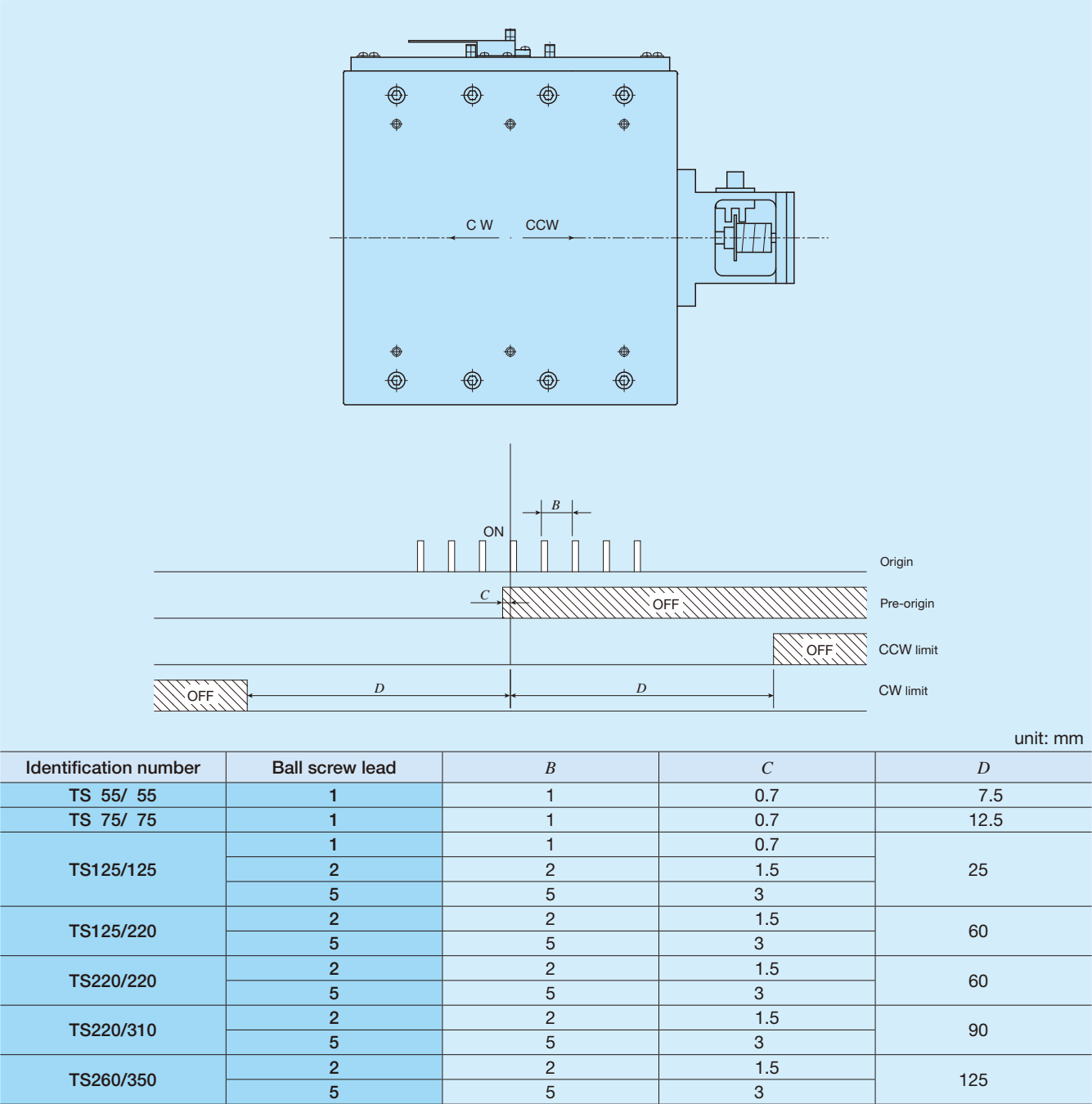
Identification number		Table inertia J_t ×10 ⁻⁵ kg·m ²			Starting torque T_s N·m
		Lead 1mm	Lead 2mm	Lead 5mm	
Single-axis specification	TS 55/ 55	0.01	—	—	0.03
	TS 75/ 75	0.01	—	—	0.03
	TS125/125	0.20	0.23	0.55	0.07
	TS125/220	—	0.40	0.95	0.07
	TS220/220	—	0.73	1.1	0.09
	TS220/310	—	1.3	2.1	0.09
	TS260/350	—	3.8	5.6	0.12
Two-axis specification	CT 55/ 55	X-axis	0.01	—	0.03
		Y-axis	0.01	—	
	CT 75/ 75	X-axis	0.01	—	0.07
		Y-axis	0.01	—	
	CT125/125	X-axis	0.20	0.28	0.07
		Y-axis	0.20	0.23	
	CT220/220	X-axis	—	0.85	0.09
		Y-axis	—	0.73	
	CT260/350	X-axis	—	4.6	0.12
		Y-axis	—	3.8	
	CT350/350	X-axis	—	4.9	0.12
		Y-axis	—	4.6	

Mounting

For the processing accuracy of the Precision Positioning Table mounting surface and the tightening torque of the fixing screws, see page III-29.

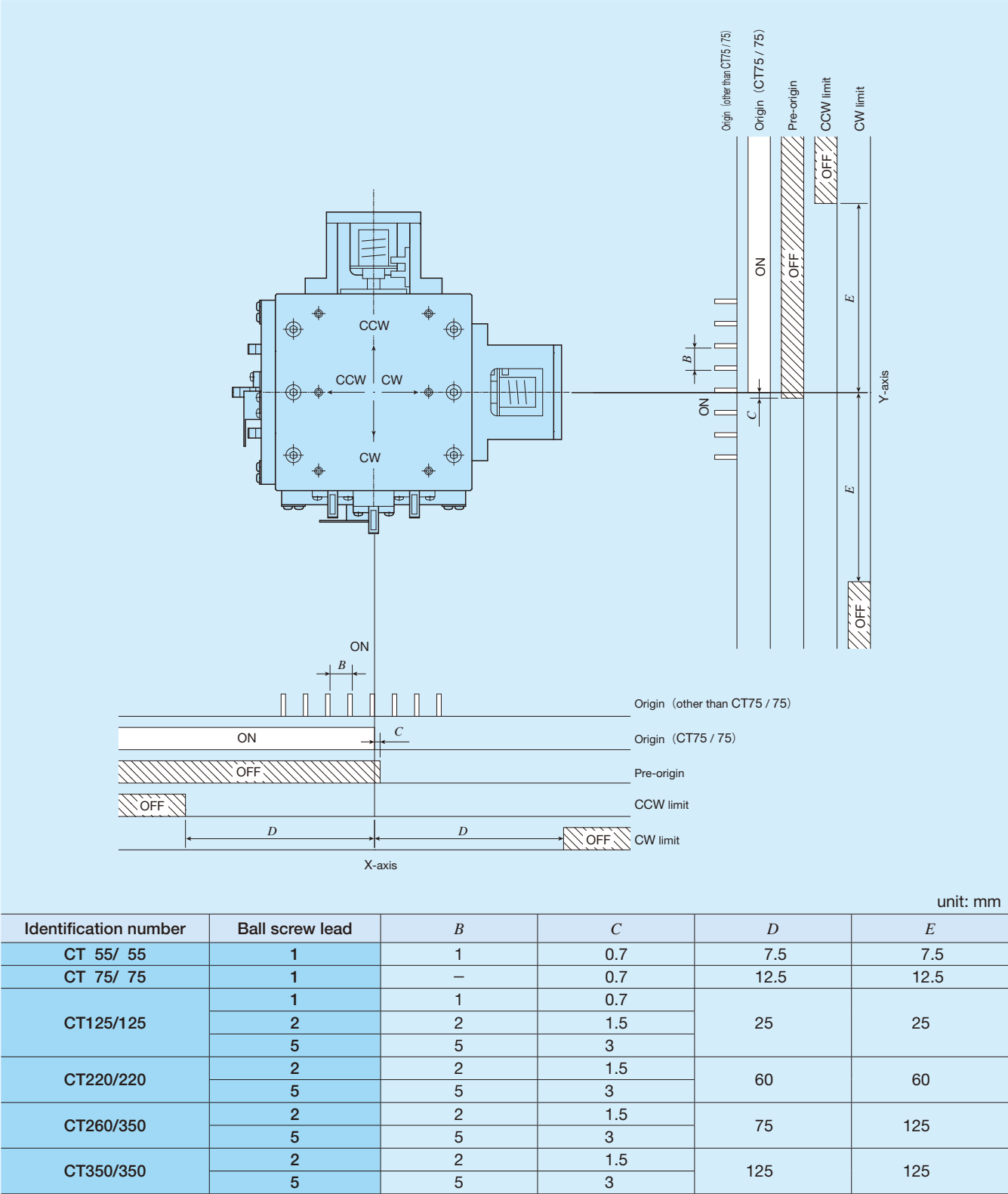
Sensor Specification

Table 9.1 Sensor timing chart for TS (single-axis specification)



Remarks 1. Mounting a sensor is specified using the corresponding identification number.
2. For the specifications of respective sensors, please see the section of sensor specification in General Explanation.
3. When selecting an AC servomotor attachment, an origin sensor is not provided. Please use the C-phase or Z-phase of the encoder.
4. Positions for mounting sensors vary depending on the identification numbers. For detailed information, please see the dimension tables of respective identification numbers.

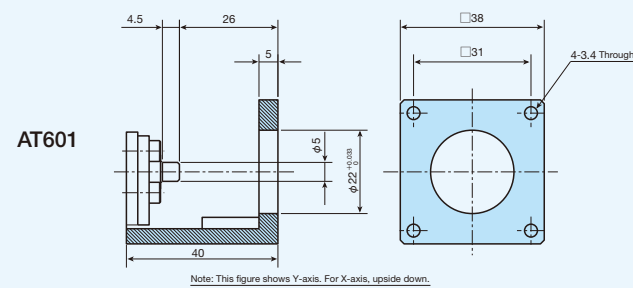
Table 9.2 Sensor timing chart for CT (two-axis specification)



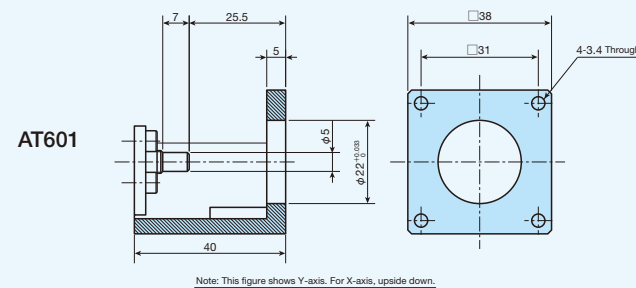
Remarks 1. Mounting a sensor is specified using the corresponding identification number.
2. For the specifications of respective sensors, please see the section of sensor specification in General Explanation.
3. When selecting an AC servomotor attachment, an origin sensor is not provided. Please use the C-phase or Z-phase of the encoder.
4. Positions for mounting sensors vary depending on the identification numbers. For detailed information, please see the dimension tables of respective identification numbers.

Dimensions of Motor Attachment

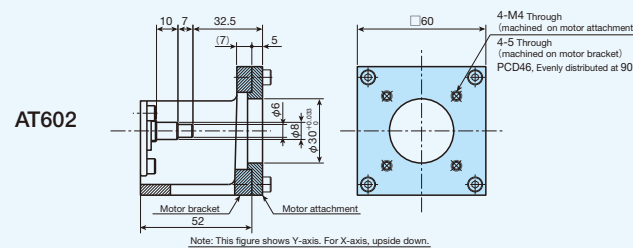
TS55/55, CT55/55



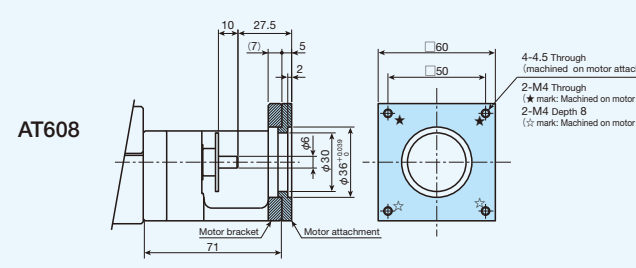
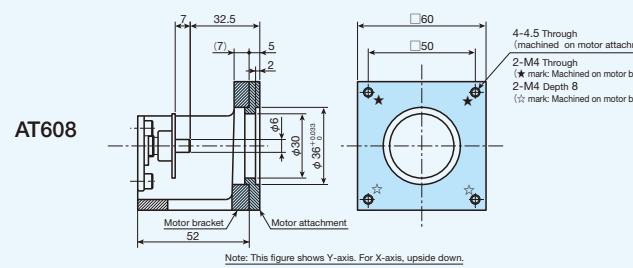
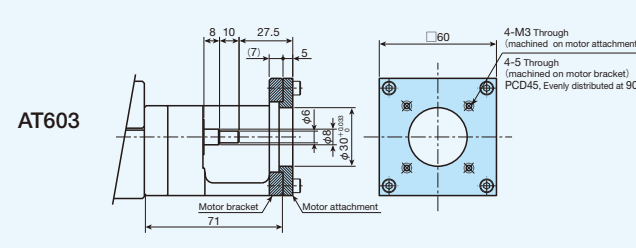
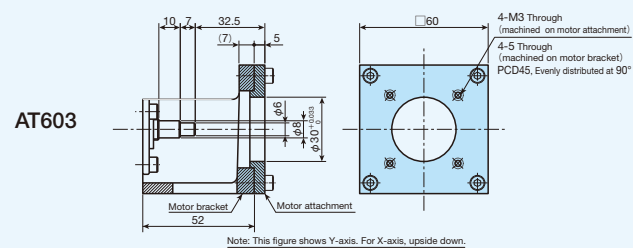
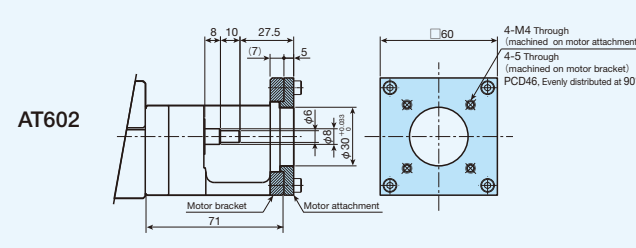
TS75/75, CT75/75



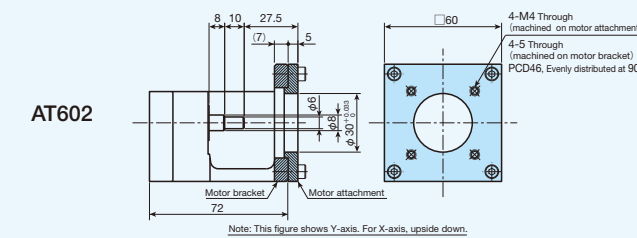
TS125/125, CT125/125



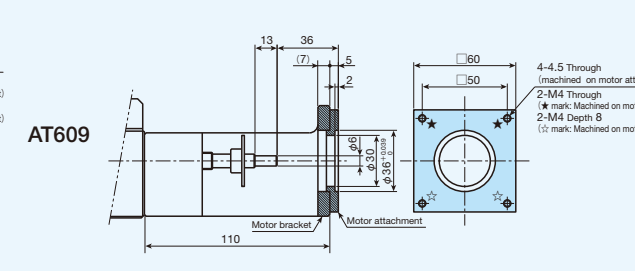
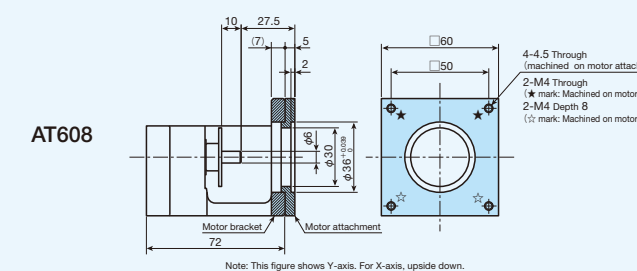
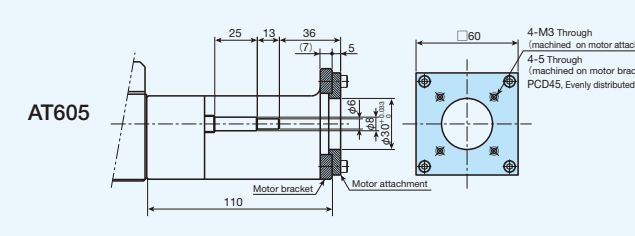
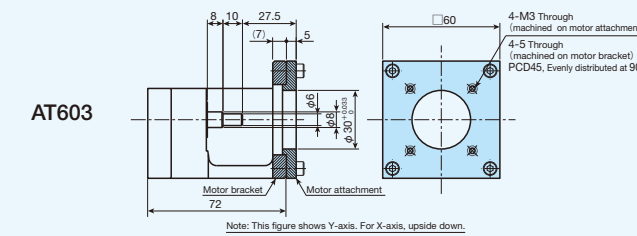
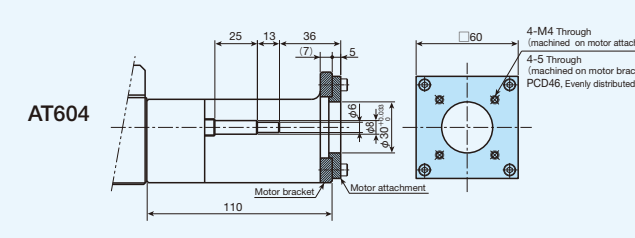
TS125/220



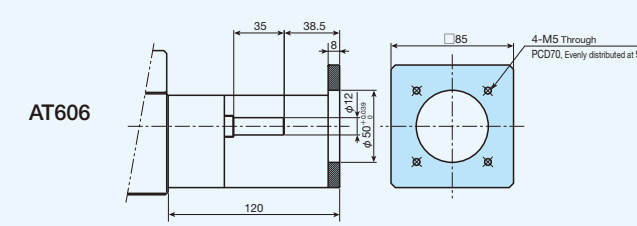
TS220/220, CT220/220



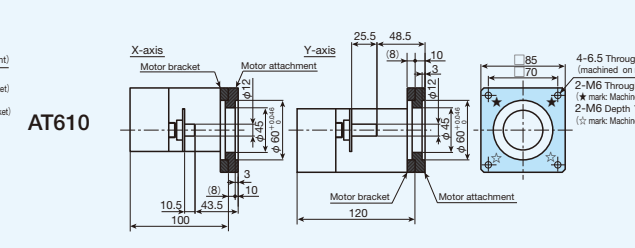
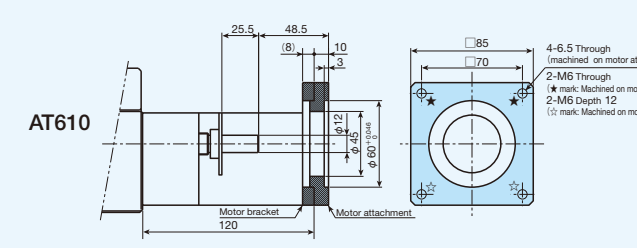
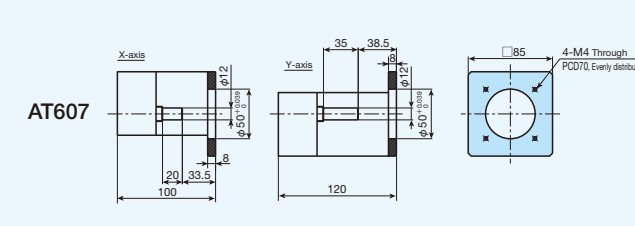
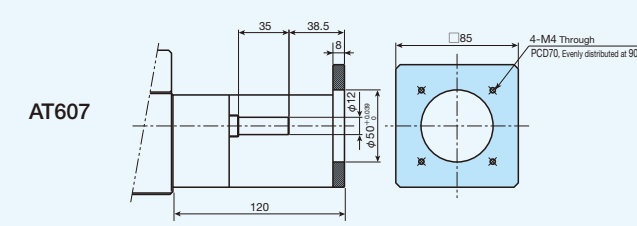
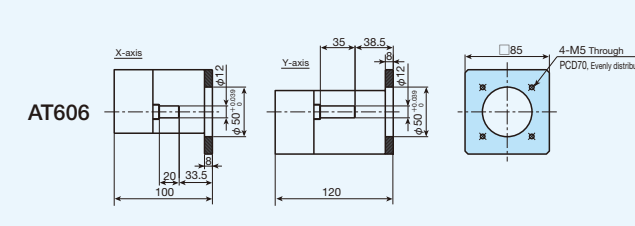
TS220/310



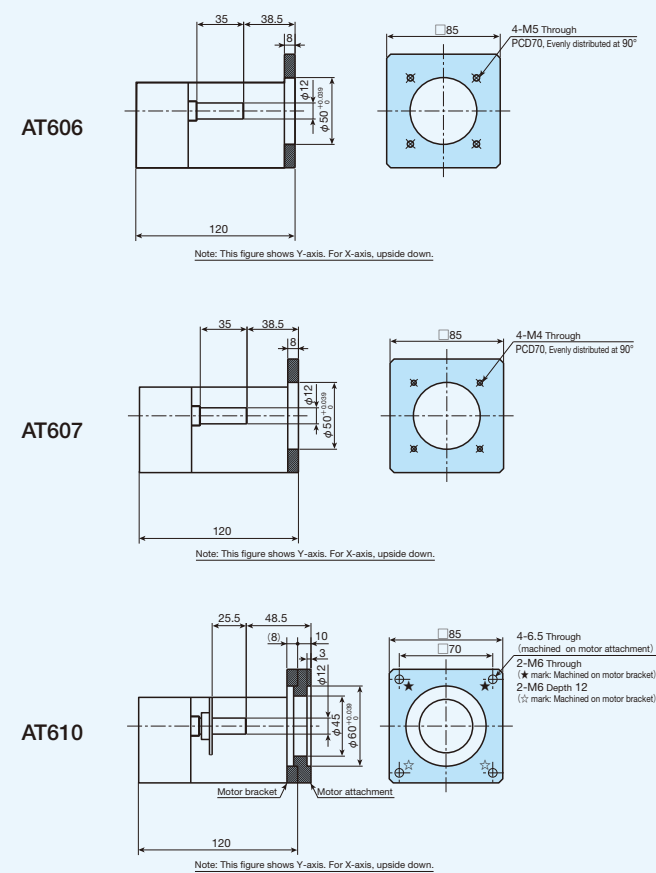
TS260/350



CT260/350

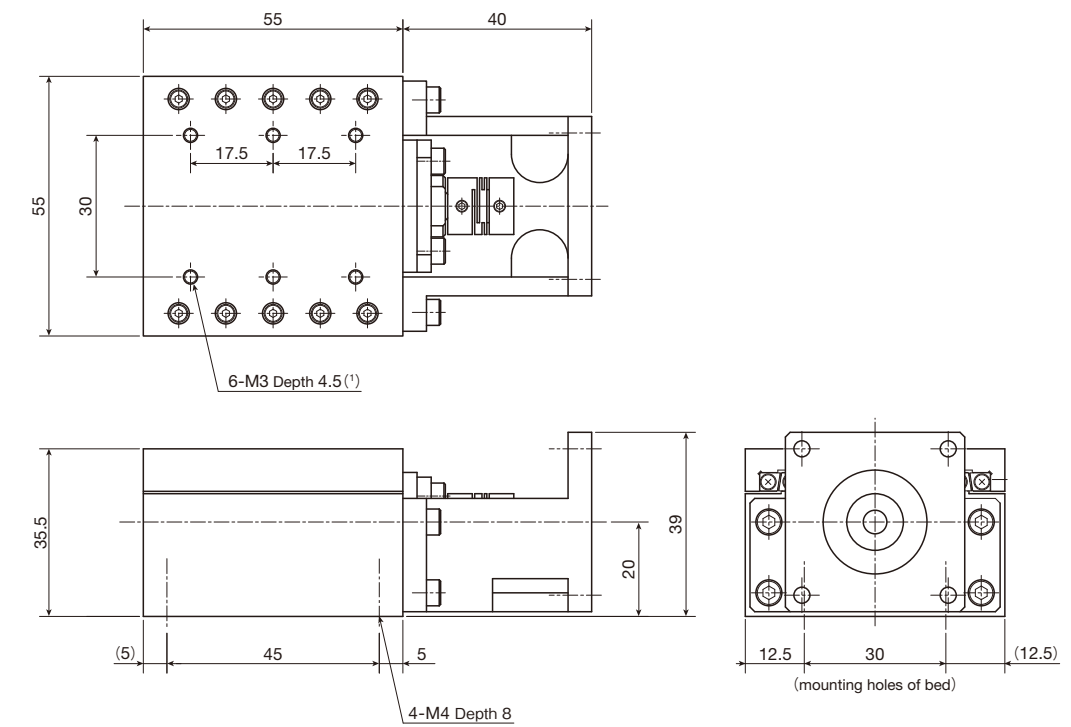


CT350/350

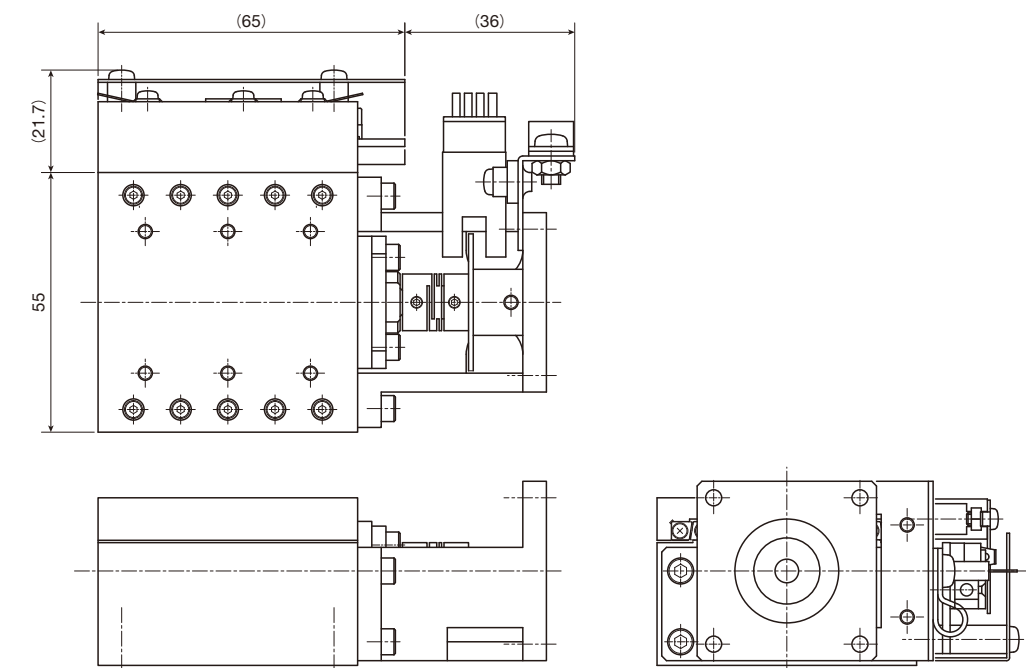


TS55/55

● Specification without sensor



● Specification with sensor



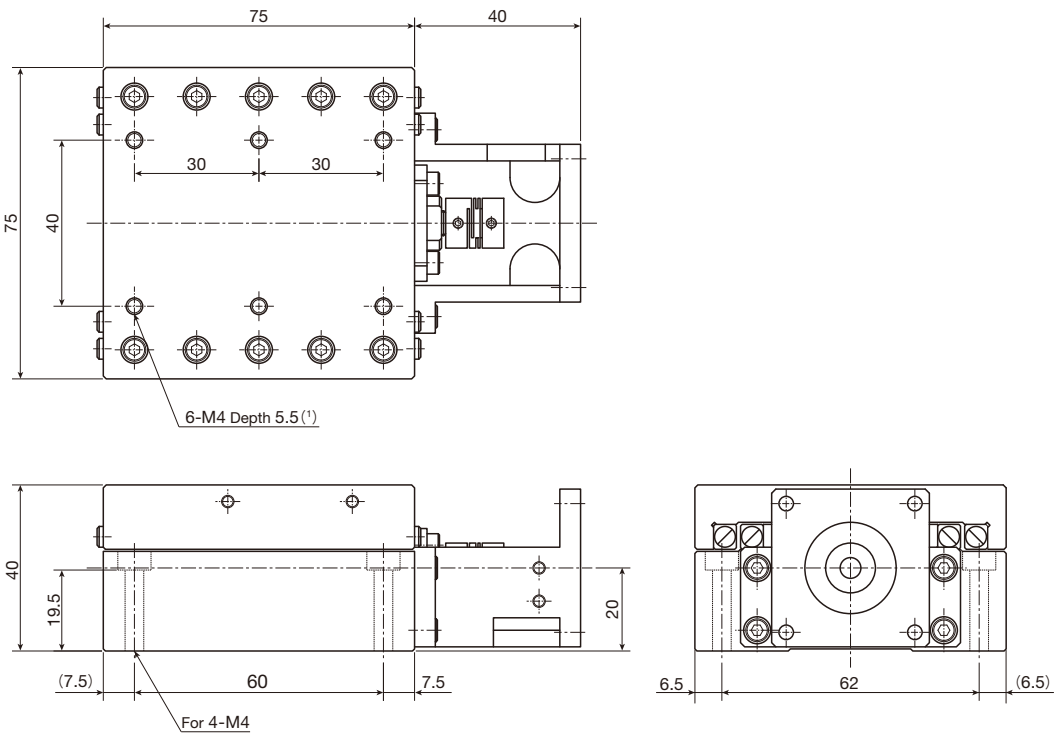
Stroke length: 15mm
Reference mass⁽²⁾: 0.8kg

Notes (1) Too deep insertion depth of the mounting bolt may affect the running performance of the slide table, so never insert a bolt longer than the depth of the through hole.

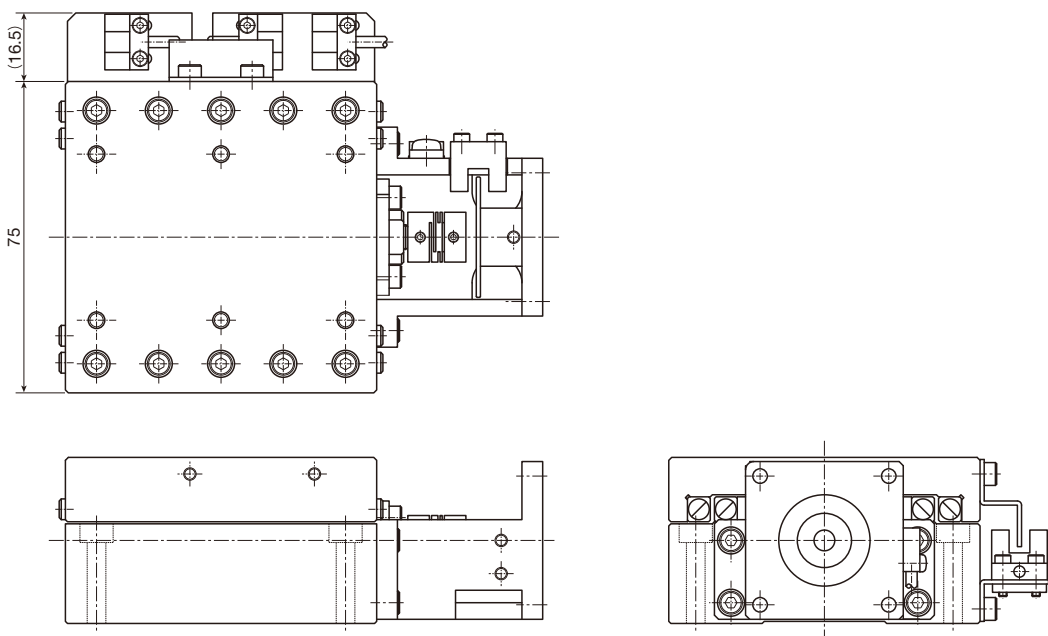
(2) Mass of the sensor is not included.

TS75/75

● Specification without sensor



● Specification with sensor

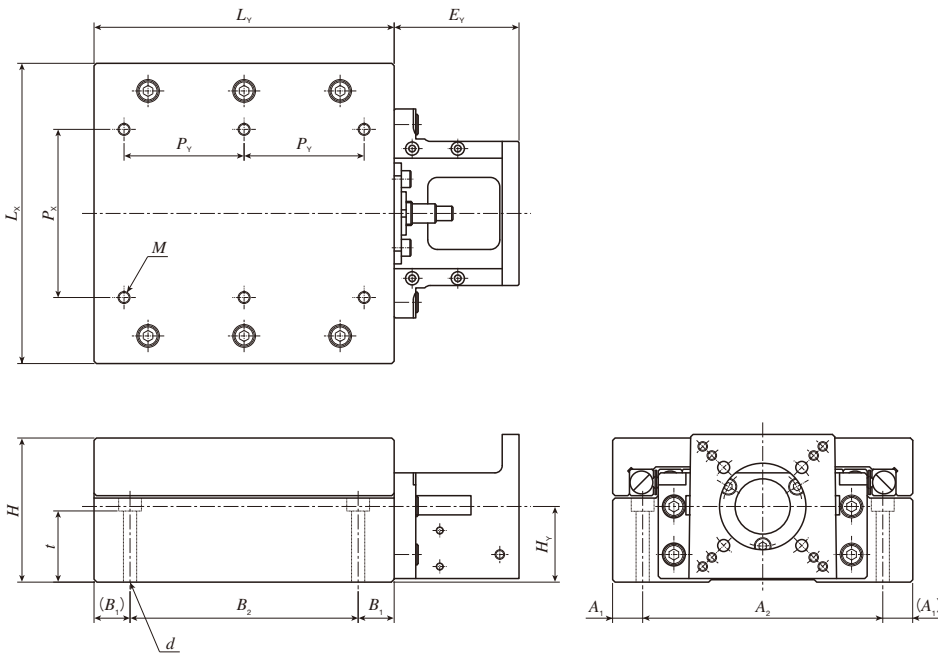


Stroke length: 25mm
Reference mass⁽²⁾: 1.6kg

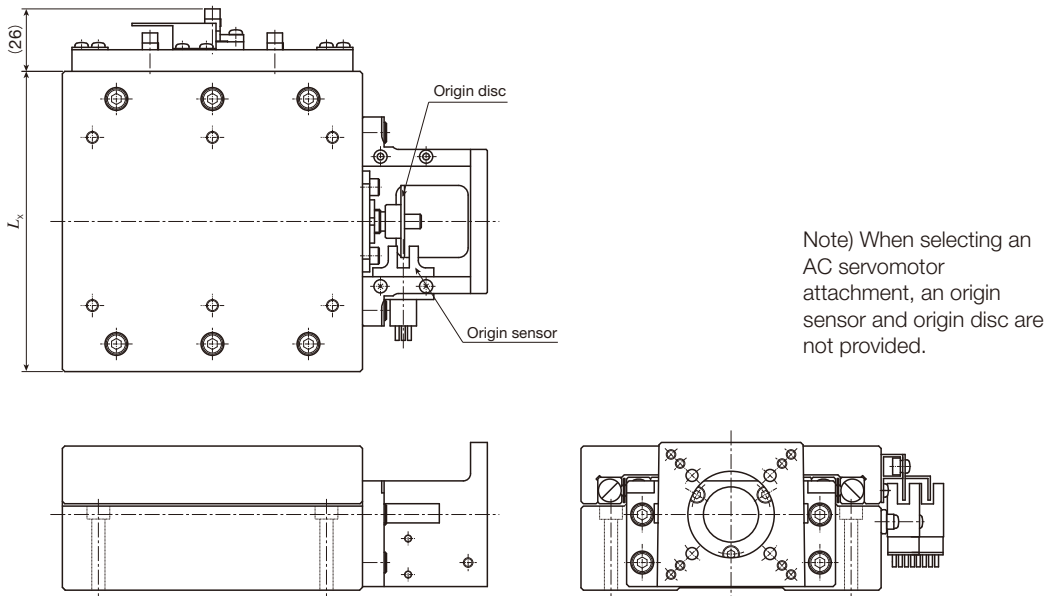
Notes ⁽¹⁾ Too deep insertion depth of the mounting bolt may affect the running performance of the slide table, so never insert a bolt longer than the depth of the through hole.
⁽²⁾ Mass of the sensor is not included.

TS125/125, TS220/220

● Specification without sensor



● Specification with sensor



unit: mm

Identification number	Dimensions of table			Stroke length	E_y	Height of shaft center H_y
	L_x	L_y	H			
TS125/125 ⁽¹⁾	125	125	60	50	52	31.5
TS220/220	220	220	65	120	72	33.5

Identification number	Mounting bolt			Bed mounting-related dimensions						Reference mass ⁽²⁾ kg
	$M^{(3)}$	P_x	P_y	d	t	A_1	A_2	B_1	B_2	
TS125/125 ⁽¹⁾	6-M5 depth 10	70	50	For 4-M5	29.6	12.5	100	15	95	7.5
TS220/220	6-M6 depth 12	150	75	For 4-M6	27.5	20	180	20	180	16.0

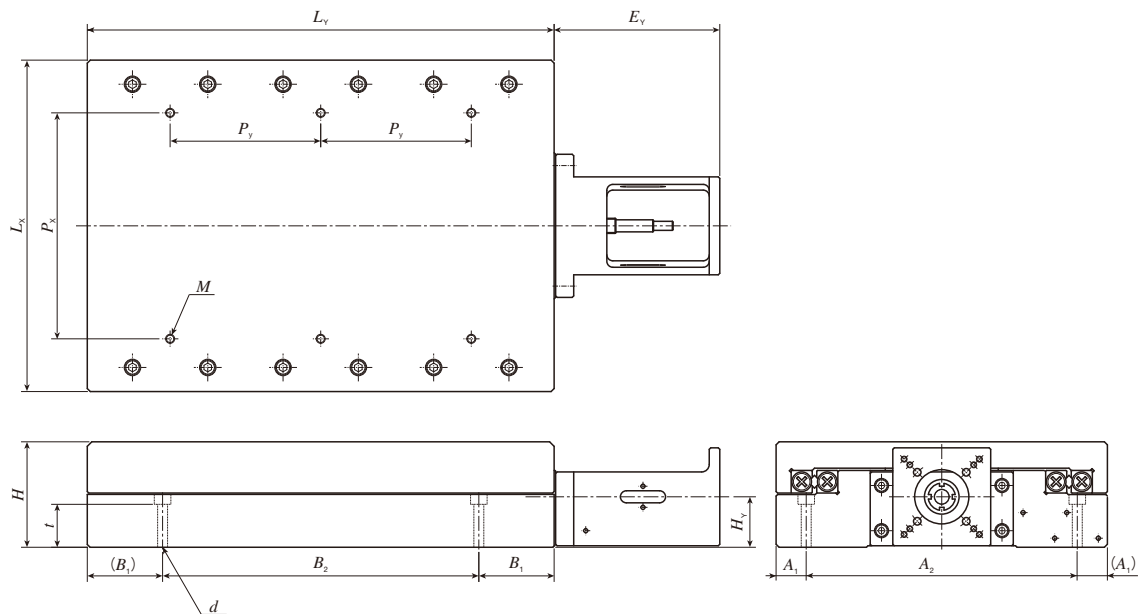
Notes ⁽¹⁾ The motor bracket is positioned 1.5mm higher than the upper surface of the table.
⁽²⁾ Mass of the sensor is not included.
⁽³⁾ Too deep insertion depth of the mounting bolt may affect the running performance of the slide table, so never insert a bolt longer than the depth of the through hole.

1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

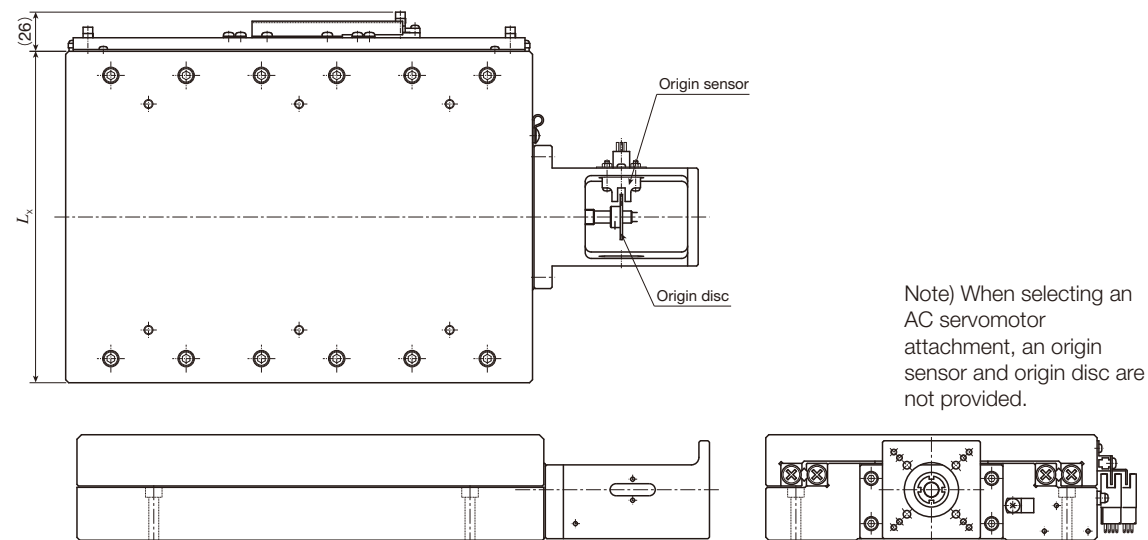
IK Precision Positioning Table TS / CT

TS125/220, TS220/310, TS260/350

● Specification without sensor



● Specification with sensor



unit: mm

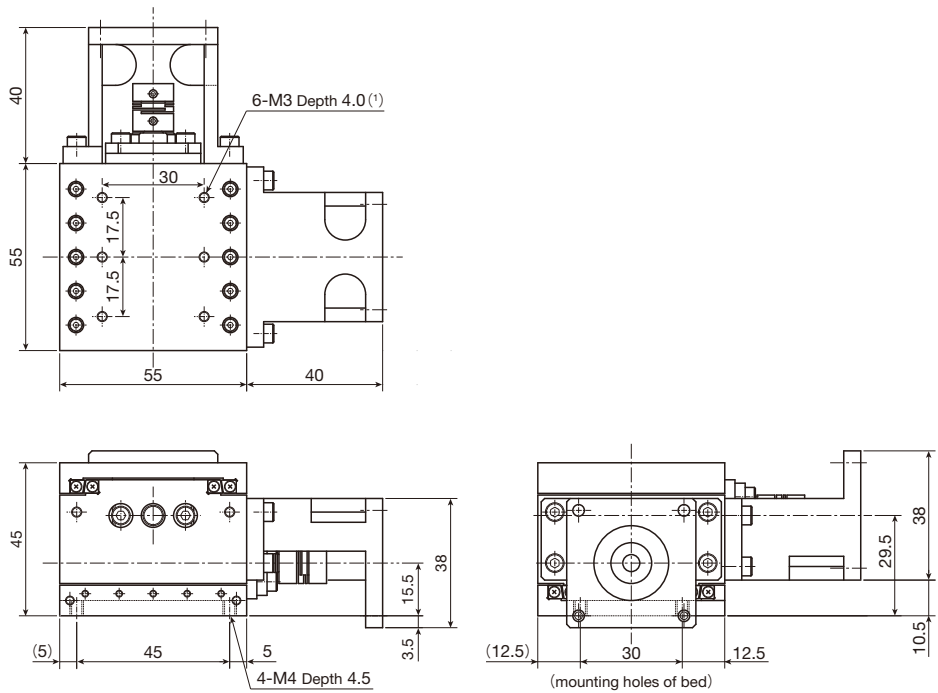
Identification number	Dimensions of table			Stroke length	E_y	Height of shaft center H_y
	L_x	L_y	H			
TS125/220 ⁽¹⁾	125	220	60	120	71	31.5
TS220/310	220	310	70	180	110	33.5
TS260/350	260	350	100	250	120	47.5

Identification number	Mounting bolt			Bed mounting-related dimensions						Reference mass ⁽²⁾ kg
	$M^{(3)}$	P_x	P_y	d	t	A_1	A_2	B_1	B_2	
TS125/220 ⁽¹⁾	6-M5 depth 10	70	75	For 4-M5	29.6	12.5	100	20	180	11
TS220/310	6-M6 depth 12	150	100	For 4-M6	28.5	20	180	50	210	27
TS260/350	6-M6 depth 12	150	125	For 4-M8	45.4	22.5	215	50	250	48

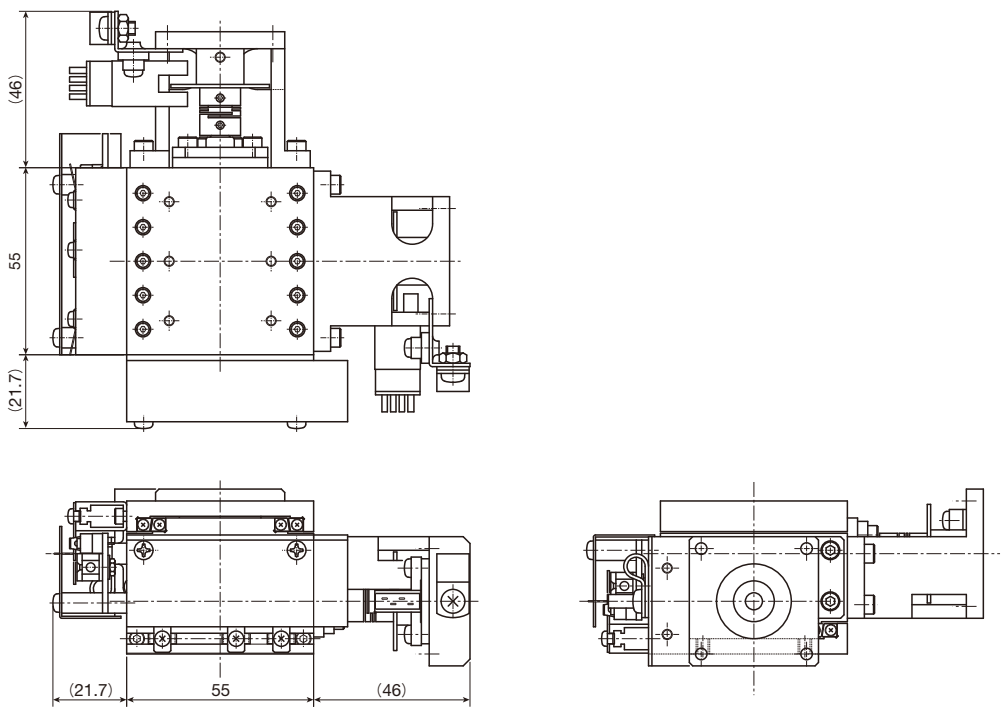
Notes ⁽¹⁾ The motor bracket is positioned 1.5mm higher than the upper surface of the table.
⁽²⁾ Mass of the sensor is not included.
⁽³⁾ Too deep insertion depth of the mounting bolt may affect the running performance of the slide table, so never insert a bolt longer than the depth of the through hole.

CT55/55

● Specification without sensor



● Specification with sensor

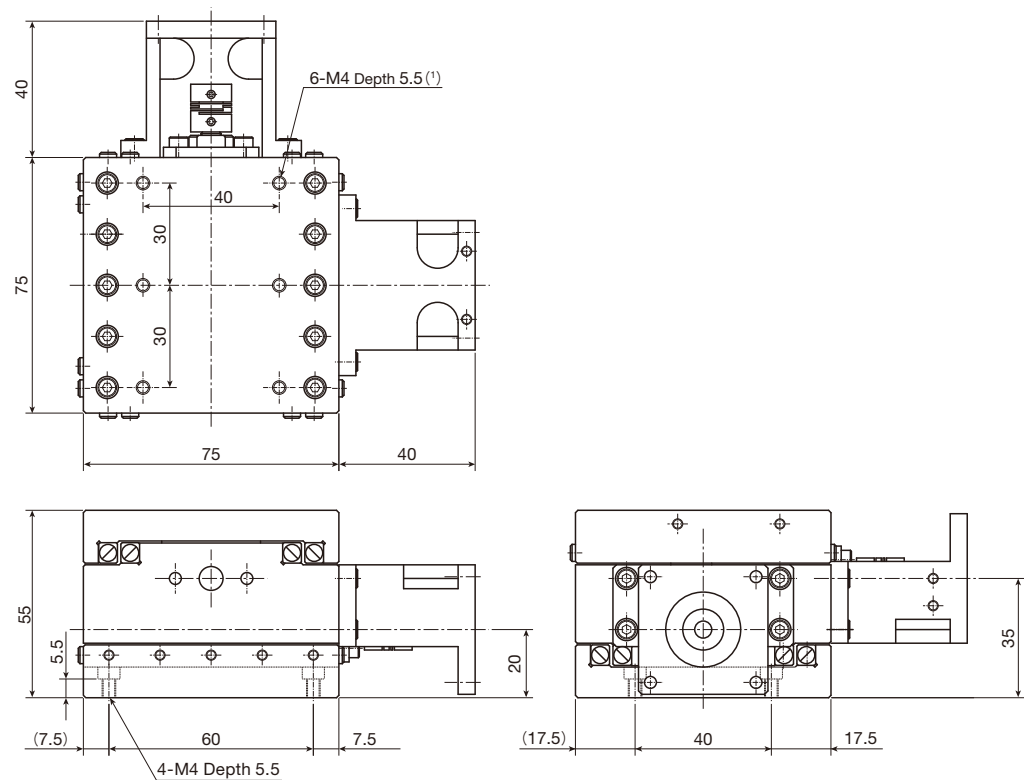


X- and Y-axis stroke length: 15mm
Reference mass⁽²⁾: 1.7kg

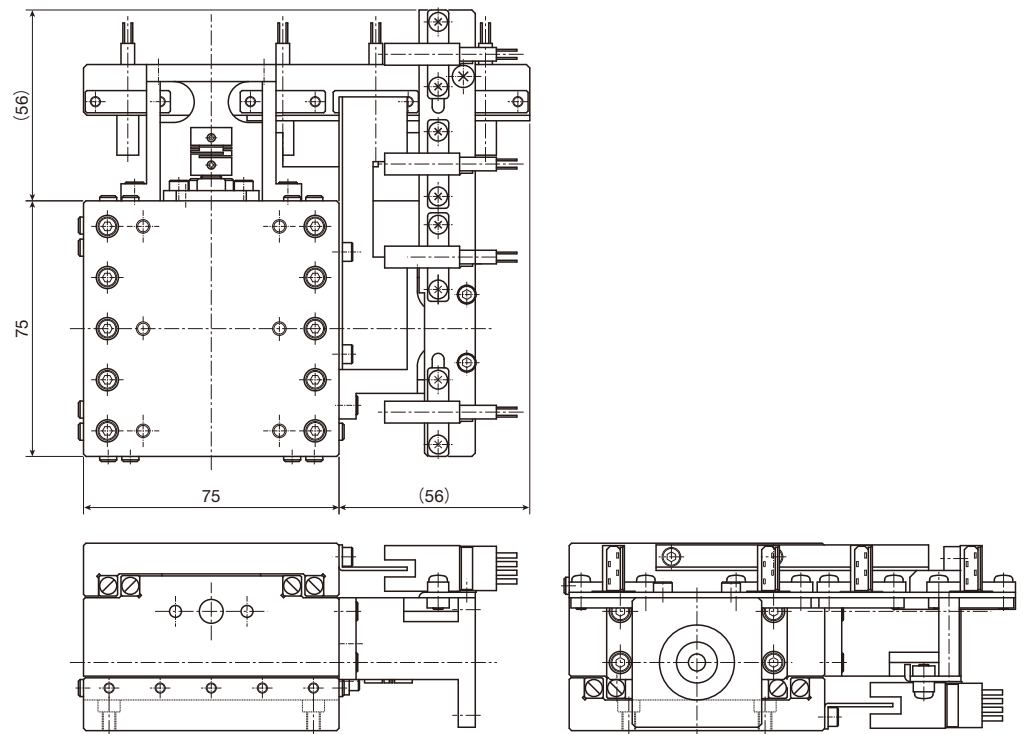
Notes ⁽¹⁾ Too deep insertion depth of the mounting bolt may affect the running performance of the slide table, so never insert a bolt longer than the depth of the through hole.
⁽²⁾ Mass of the sensor is not included.

CT75/75

● **Specification without sensor**



● **Specification with sensor**

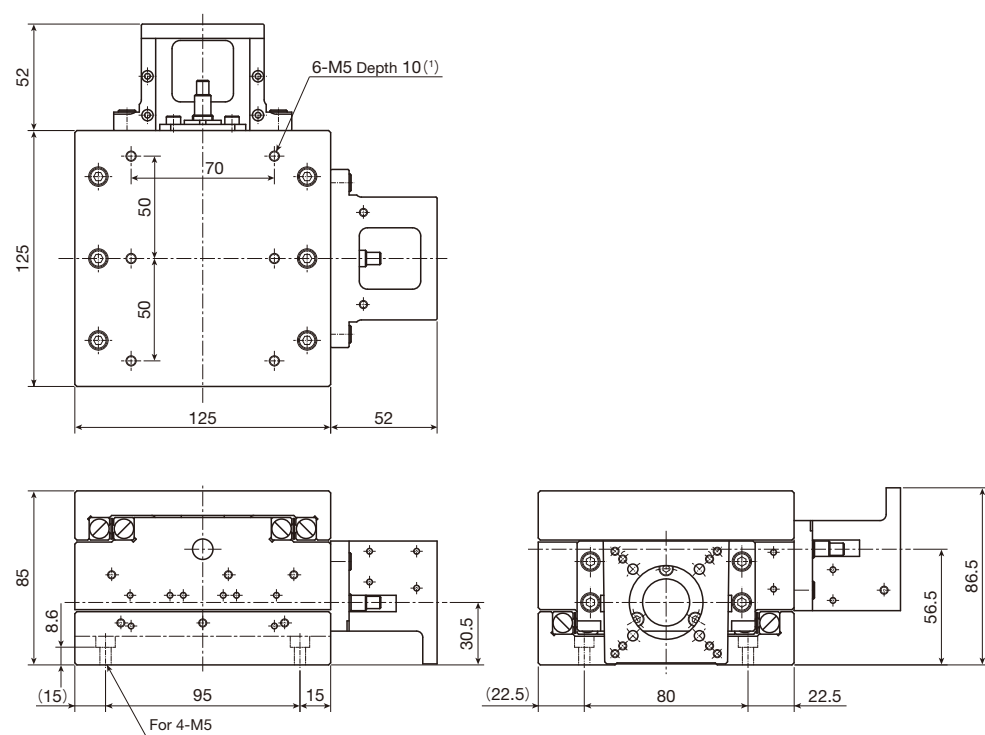


X- and Y-axis stroke length: 25mm
Reference mass⁽²⁾: 2.0kg

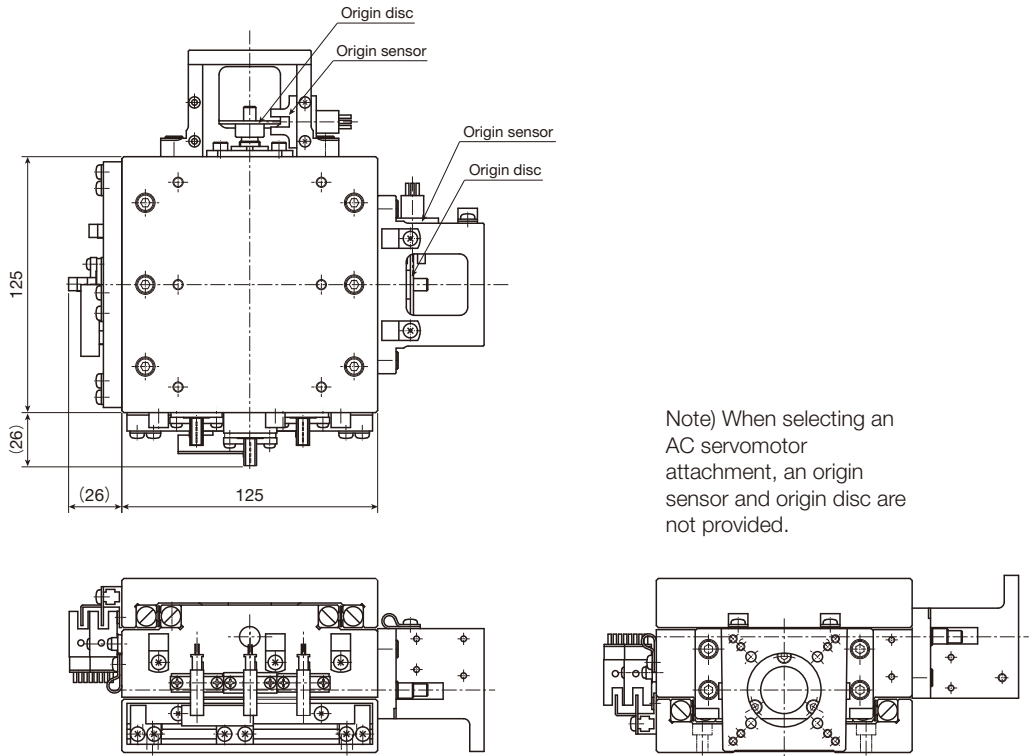
Notes (1) Too deep insertion depth of the mounting bolt may affect the running performance of the slide table, so never insert a bolt longer than the depth of the through hole.
(2) Mass of the sensor is not included.

CT125/125

● **Specification without sensor**



● **Specification with sensor**



Note) When selecting an AC servomotor attachment, an origin sensor and origin disc are not provided.

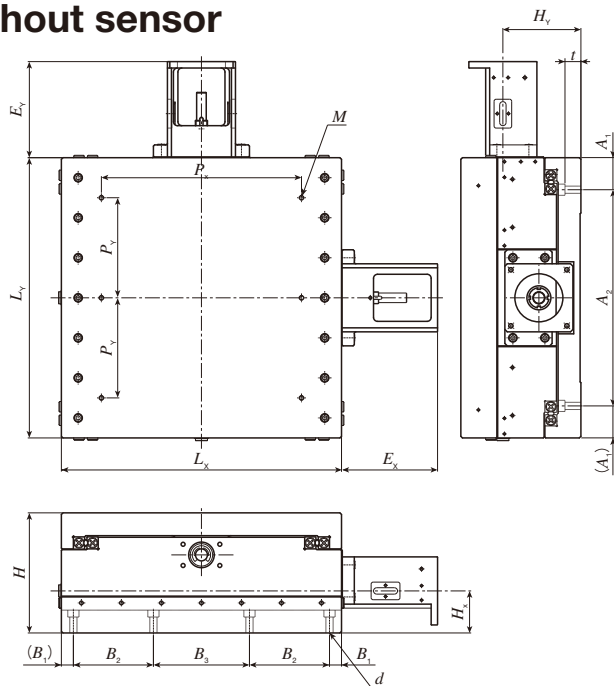
X- and Y-axis stroke length: 50mm
Reference mass⁽²⁾: 1.7kg

Notes (1) Too deep insertion depth of the mounting bolt may affect the running performance of the slide table, so never insert a bolt longer than the depth of the through hole.
(2) Mass of the sensor is not included.

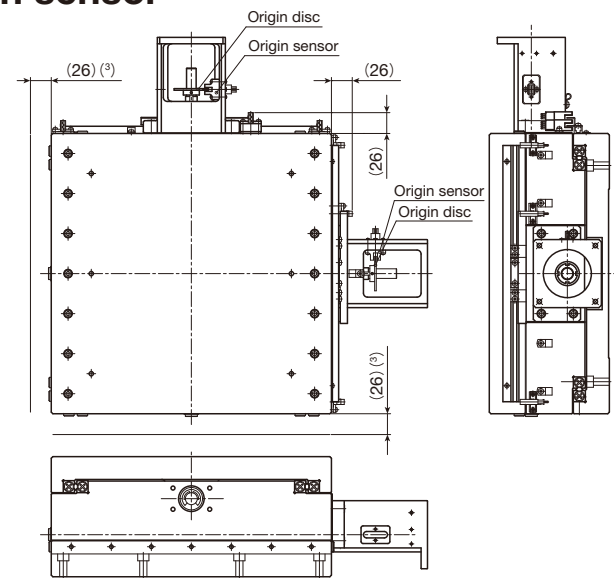
IK Precision Positioning Table TS / CT

CT220/220, CT260/350, CT350/350

Specification without sensor



Specification with sensor



Note) When selecting an AC servomotor attachment, an origin sensor and origin disc are not provided.

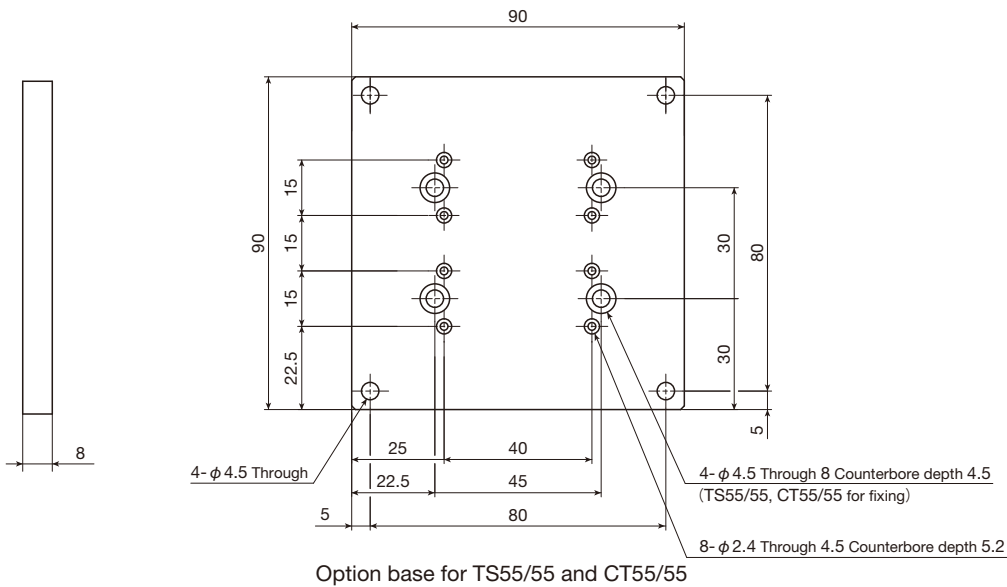
unit: mm

Identification number	Dimensions of table			Stroke length		E_x	E_y	Height of shaft center	
	L_x	L_y	H	X-axis	Y-axis			H_x	H_y
CT220/220	220	220	100	120	120	72	72	31.5	68.5
CT260/350	260	350	150	150	250	100	120	52.5	97.5
CT350/350	350	350	150	250	250	120	120	52.5	97.5

Identification number	Mounting bolt			Bed mounting-related dimensions							Reference mass ⁽²⁾ kg
	$M^{(1)}$	P_x	P_y	d	t	A_1	A_2	B_1	B_2	B_3	
CT220/220	6-M6 depth 12	150	75	For 8-M6	7.5	30	160	15	40	110	20
CT260/350	6-M6 depth 12	150	125	For 8-M8	20	40	270	15	55	120	66
CT350/350	6-M6 depth 12	250	125	For 8-M8	20	40	270	15	100	120	77

Notes ⁽¹⁾ Too deep insertion depth of the mounting bolt may affect the running performance of the slide table, so never insert a bolt longer than the depth of the through hole.
⁽²⁾ Mass of the sensor is not included.
⁽³⁾ Applicable to CT220/220. This shows the dimension when the sensor is attached.

Option base dimensions for TS55/55 and CT55/55



TS / CT