

PATENT PENDING

IKO

Precision Positioning Table

TE



CAT-57178

IKO Clean Lubrication

C-Lube 
Friendly to Maintenance
Gentle to the Earth

Evolving **IKO** Precision Positioning Table

Light-Weight, High-Precision, and Fresh Single-Axis Table

Comes into the World.

IKO
Precision Positioning Table

TE

- *Light table made of high-strength aluminum alloy*
- *Assures high-precision positioning with precision-ground ball screws*
- *Built-in C-Lube for long-term maintenance-free service*
- *Excellent cost performance*

IKO Clean Lubrication
C-Lube
Friendly to Maintenance
Gentle to the Earth



TE86

Line up of seven models
86 mm wide, 46 mm high,
and 340 to 940 mm long

TE60

Line up of six models
60 mm wide, 33 mm high,
and 150 to 600 mm long

IKO Precision Positioning Table TE

IKO Precision Positioning Table TE is a light-weight compact positioning table featuring that its main components are made of high-strength aluminum alloy and the slide table is placed inside a U-shaped bed.

Its driving mechanism adopts a precision-ground ball screw to assure high reliability high-precision positioning.

A C-Lube lubrication part built in the linear motion rolling guide and the ball screw enables long-term maintenance-free operation. This can reduce your time-consuming for lubrication.

You can freely select ball screw leads, motor types, sensor installation, and other specifications so that you can build up optimum positioning tables fit for your need.

IKO Precision Positioning Table TE is fit for various types of equipment for machining, assembling, inspecting, and transferring parts ranging from equipment that requires high positioning accuracy to general transferring equipment.



Features of IKO Precision Positioning Table TE

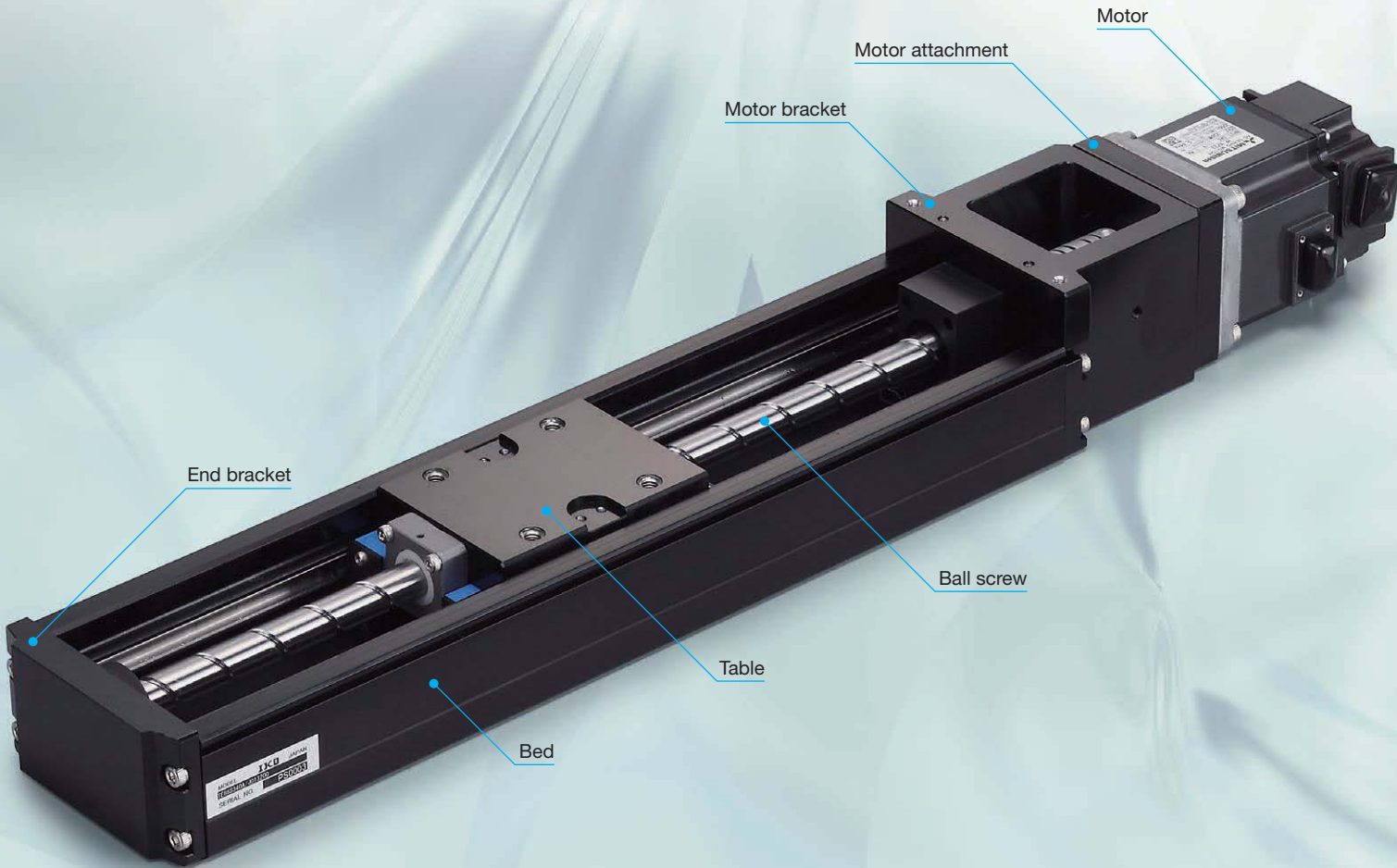
Light-Weight, Low-Cross Section, and Compact

Light-weight and compact positioning table using high-strength aluminum alloy for its main components.

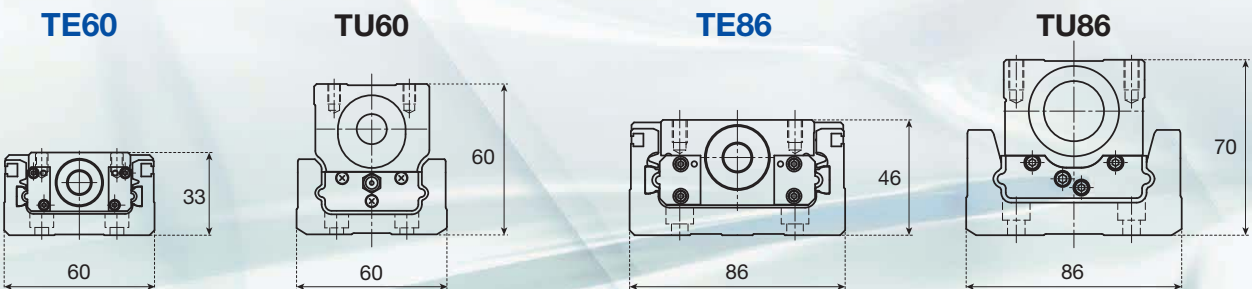
Low cross-section (33 mm high for TE60 and 46 mm high for TE86) due to optimum designing of linear guides and ball screws.

No sensor rail for mounting sensors, which contributes to space saving.

Structure of Precision Positioning Table TE



Comparison in sectional heights Between IKO Precision Positioning Tables TE and TU



Comparison in weights Between IKO Precision Positioning Tables TE and TU

Size	Type	Stroke length ⁽¹⁾ mm	Mass ⁽²⁾ kg	Mass/100mm kg
60	TE	300	1.3	0.43
	TU	290	3.3	1.14
86	TE	540	4.2	0.78
	TU	490	10.9	2.22

Notes: ⁽¹⁾ A value for TE indicates the length of bed and a value for TU indicates the length of track rail.

⁽²⁾ This value indicates the entire weight of a single standard table.

The mass of the motor is not included.

High positioning accuracy

Higher precision positioning by one rank due to a combination of **IKO** unique linear motion rolling guide technology and precision-ground ball screws.

Maintenance free

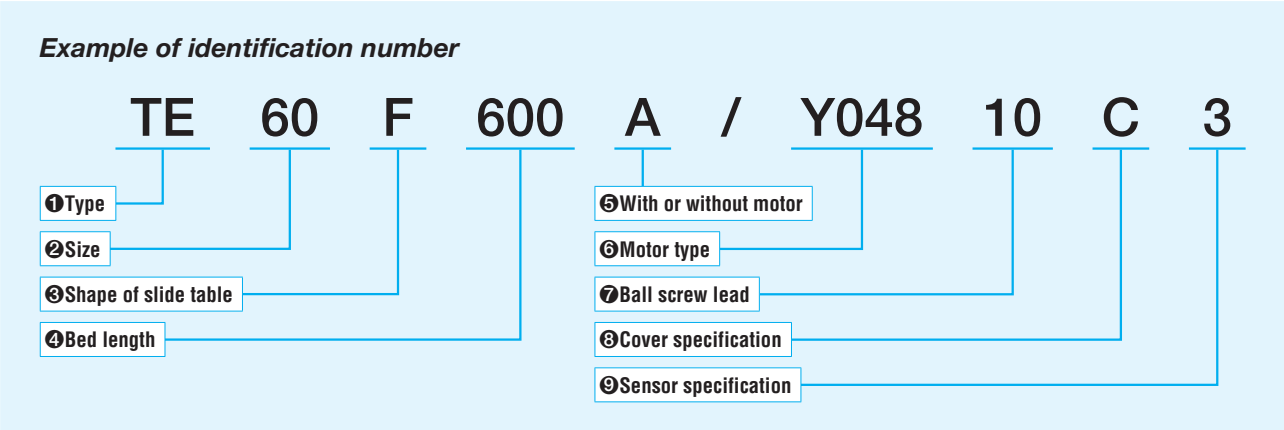
Long-term maintenance free operation due to **IKO** unique C-Lube lubrication part built in the linear motion rolling guide and the ball screw.

This can reduce labor time for lubrication and increase the reliability of the equipment.

Amazing low prices

Excellent cost performance thanks to adoption of less components and improvement in parts shapes.

Identification Number • Characteristics



①Type	TE : Precision positioning table TE
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②Size	60 : Bed width 60mm 86 : Bed width 86mm
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③Shape of slide table	S : Standard table F : Flange type standard table
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④Bed length	Select applicable bed length in Table 1
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Table 1 Bed length and stroke length									unit : mm
Type and size	Bed width	Bed length (stroke length)							
TE60	60	150 (50)	200 (100)	300 (200)	400 (300)	500 (400)	600 (500)	—	
TE86	86	340 (200)	440 (300)	540 (400)	640 (500)	740 (600)	840 (700)	940 (800)	

⑤With or without motor	No symbol : Without motor A : With motor
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When the motor is prepared by customer, specify "without motor" (no symbol).

⑥Motor type	Select motor shown in Table 2
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When "without motor" (no symbol) is selected in item ⑤, the motor attachment and coupling applicable to the specified motor will be mounted. Select "No symbol" when you need neither the motor attachment nor the coupling.

⑦Ball screw lead	5 : Lead 5mm (Applicable to TE60) 10 : Lead 10mm (Applicable to TE60 and 86) 20 : Lead 20mm (Applicable to TE86)
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⑧Cover specification	0 : Without cover C : With bridge cover (Applicable to TE···F)
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⑨Sensor specification	0 : Without sensor 2 : Two sensors (limit sensors) 3 : Three sensors (limit and pre-origin sensors) 4 : Four sensors (limit, pre-origin and origin sensors) 5 : Two sensors (limit sensors) are appended to the product. 6 : Three sensors (limit and pre-origin sensors) are appended to the product. 7 : Four sensors (limit, pre-origin, and origin sensors) are appended to the product.
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When 2, 3, or 4 sensors are selected, they are mounted on the sensor mounting groove along the side of the bed and two shielding plates are mounted on the slide table.

Identification Number • Characteristics

Table 2 Motor type

Type and size	Motor type	With or without brake	Motor code	Model number	Remark
TE60	AC servo motor	Without brake	Y028	SGMAH-01AAA21-E	Yaskawa Electric
			Y048	SGMJV-01A3A21	
			P002	MSMA012A1A	Panasonic
			P012	MSMD012S1A	
			J002	HC-KFS13	Mitsubishi Electric
			J012	HF-KP13	
		With brake	Y033	SGMAH-01AAA2C-E	Yaskawa Electric
			Y050	SGMJV-01A3A2C	
			P007	MSMA012A1B	Panasonic
			P017	MSMD012S1B	
			J007	HC-KFS13B	Mitsubishi Electric
			J017	HF-KP13B	
	Stepper motor	Without brake	V009	PK566AE	Oriental motor
		With brake	V010	PK566AEM	
TE86	AC servo motor	Without brake	Y029	SGMAH-02AAA21-E	Yaskawa Electric
			Y059	SGMJV-02A3A21	
			P003	MSMA022A1A	Panasonic
			P013	MSMD022S1A	
			J003	HC-KFS23	Mitsubishi Electric
			J013	HF-KP23	
		With brake	Y034	SGMAH-02AAA2C-E	Yaskawa Electric
			Y060	SGMJV-02A3A2C	
			P008	MSMA022A1B	Panasonic
			P018	MSMD022S1B	
			J008	HC-KFS23B	Mitsubishi Electric
			J018	HF-KP23B	
	Stepper motor	Without brake	V011	PK569AE	Oriental motor
		With brake	V012	PK569AEM	

Table 3 Accuracy

Type and size	Bed length	Stroke length	Repeatability	Positioning accuracy	Parallelism in table operation B	Backlash
TE60	150	50	±0.002	0.020	0.008	0.003
	200	100				
	300	200				
	400	300				
	500	400		0.010		
	600	500				
TE86	340	200	±0.002	0.020	0.008	0.003
	440	300			0.010	
	540	400		0.025		
	640	500			0.030	
	740	600		0.035		
	840	700				
	940	800			0.016	

Remark : The precision standard is evaluated according to the IKO inspection standards.

Characteristics

Table 4 Maximum speed

Type and size	Motor type	Bed length mm	Motor speed r/min	Maximum speed mm/s		
				Lead 5mm	Lead 10mm	Lead 20mm
TE60	AC servo motor	150	3000	250	500	—
		200				
		300				
		400				
		500				
	Stepper motor	600				
		150	1800	150	300	—
		200				
		300				
		400				
TE86	AC servo motor	500				
		600				
		340	3000	—	500	1000
		440				
		540				
		640				
	Stepper motor	740	2700	—	450	900
		840	2100	—	350	700
		940	1680	—	280	560
		340	1800	—	300	600
		440				
		540				
		640				
		740				
		840				
		940	1680	—	280	560

Remark : The values of the maximum speed are applicable when the standard motor is used. The actual maximum operation speed must be determined by examining the operating pattern for the motor used, load conditions, etc.

Table 5 Maximum loading mass

Type and size	Acceleration/ deceleration G	Maximum loading mass kg		
		Lead 5mm	Lead 10mm	Lead 20mm
TE60	0.5	30	30	—
TE86		—	40	30

Remark 1 : Values are those set when the standard motor is used.
2 : The maximum load mass is for a motor speed of 3000rpm.

Table 6 Load rating of Linear motion rolling guide

Type and size	Basic dynamic load rating C N	Basic static load rating C ₀ N	Static rated moment N · m		
			T ₀	T _x	T _y
TE60	12400	17100	354	151	151
TE86	26800	35900	1110	472	472

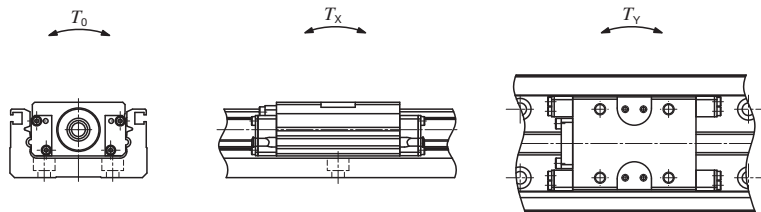


Table 7 Specification of ball screw

Size	Type of ball screw	Lead mm	Shaft dia. mm	Basic dynamic load rating C N	Basic static load rating C ₀ N
TE60	Ground screw	5	10	2730	4410
		10		1720	2745
TE86	Ground screw	10	12	2300	3920
		20		2300	3920

Table 8 Moment of inertia of sectional area

Size	Moment of inertia of sectional area mm ⁴		Barycentric point e mm
	I _x	I _y	
TE60	4.7 × 10 ⁴	3.2 × 10 ⁵	9.1
TE86	2.0 × 10 ⁵	1.3 × 10 ⁶	13.0

Table 9 Table inertia and starting torque

Model	Bed length mm	Table inertia $J_T \times 10^{-5} \text{kg} \cdot \text{m}^2$						Starting torque T_0 N · m
		Standard table			Flange type standard table			
		Lead 5mm	Lead 10mm	Lead 20mm	Lead 5mm	Lead 10mm	Lead 20mm	
TE60	150	0.13	0.17	—	0.14	0.20	—	0.03
	200	0.19	0.23	—	0.20	0.26	—	
	300	0.26	0.30	—	0.27	0.33	—	
	400	0.33	0.36	—	0.34	0.40	—	
	500	0.40	0.44	—	0.41	0.47	—	
	600	0.47	0.51	—	0.48	0.54	—	
TE86	340	—	0.73	1.19	—	0.81	1.50	0.05
	440	—	0.88	1.35	—	0.95	1.64	
	540	—	1.03	1.50	—	1.11	1.80	
	640	—	1.18	1.64	—	1.25	1.95	
	740	—	1.33	1.79	—	1.41	2.10	
	840	—	1.48	1.94	—	1.56	2.25	
	940	—	1.63	2.10	—	1.71	2.40	

Sensor specification

Table 10 Specifications of sensors

Type	Limit, pre-origin	Origin
Type	proximity sensor (NPN type ⁽¹⁾)	
Power supply voltage	DC12~24V ±10%	
Current consumption	10mA or less	
Output	Open collector • Max. current : 100mA • Applied voltage : DC 30V or less • Residual voltage : 1.0V or less at 100mA in-flow current 0.4V or less at 16mA in-flow current	
Output operation	When approaching : OFF	When approaching : ON
Operation indicator	LED (orange) (OFF when the sensor senses)	LED (orange) (ON when the sensor senses)
Circuit diagram		

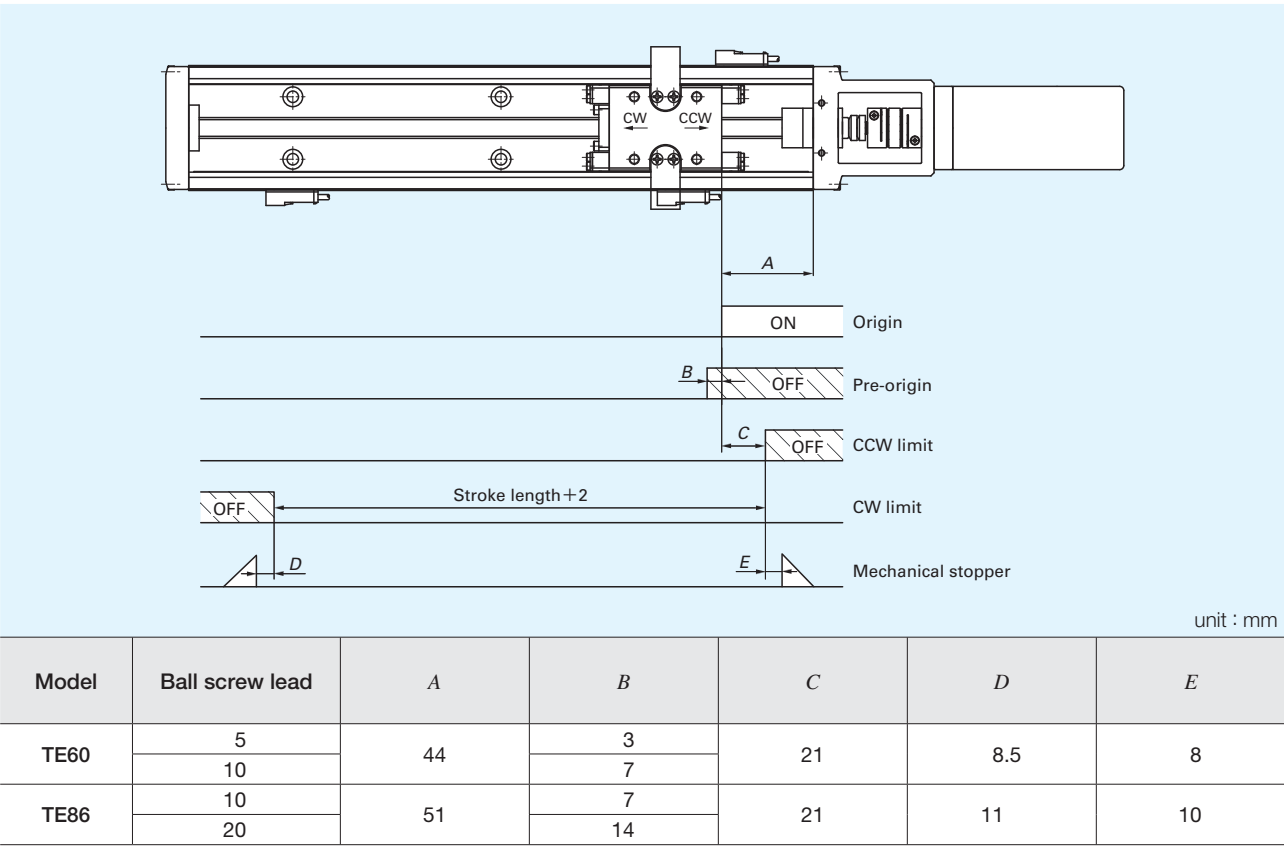
Note ⁽¹⁾ : If PNP type is required, please consult IKO.

Table 11 Specifications of connectors

Pin No.	Signal name	Sensor-side connector type	Opposite-side connector type ⁽¹⁾
1	Origin	Cap housing 172160-1	Plug housing 172168-1
2	Pre-origin		
3	CW limit		
4	CCW limit	Contactor 170365-1	Contactor 170363-1
5	Power input		
6	GND		

Note ⁽¹⁾ : Other side connector shall be prepared by customer.
Remark 1 : Manufactured by Tyco Electronics AMP Co., Ltd.
2 : The origin signal wire is not provided when an AC servo motor is used. Use the encoder origin signal output from the driver as the origin signal.

Table 12 Sensor timing chart



System configuration

Optimum electric equipment systems are available to Precision Positioning Table TE according to the types of motors. An example of system configuration is shown below. For ordering, use model number in Table 13.

■ AC servo motor

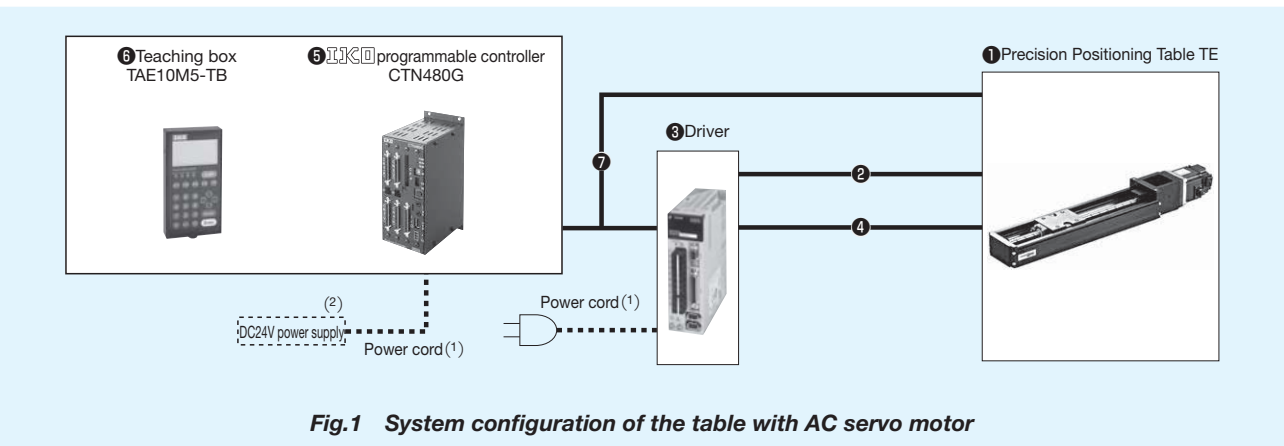


Fig.1 System configuration of the table with AC servo motor

Note ⁽¹⁾ : The power cable should be prepared by customer.
⁽²⁾ : The 24-VDC power supply should be prepared by customer.

Table 13 Electric equipment system of the table with a Yaskawa motor (made by Yaskawa Electric Corp.)

Name		Model number	
① Precision Positioning Table TE		TE60	
Motor without brake	Motor code	Y028	Y048
	② Motor cord	TAE20G2-AM□□ (TAE20G1-AM□□)	JZSP-CSM01-□□-E (JZSP-CSM21-□□-E)
Motor with brake ⁽¹⁾	Motor code	Y033	Y050
	② Motor cord	TAE20G4-AMB□□ (TAE20G3-AMB□□)	JZSP-CSM11-□□-E (JZSP-CSM31-□□-E)
③ Driver		SGDH-01AE-E	SGDV-R90A01A
④ Encoder cord		TAE20G6-EC□□ (TAE20G5-EC□□)	JZSP-CSP01-□□-E (JZSP-CSP21-□□-E)
Name		Model number	
① Precision Positioning Table TE		TE86	
Motor without brake	Motor code	Y029	Y059
	② Motor cord	TAE20G2-AM□□ (TAE20G1-AM□□)	JZSP-CSM02-□□-E (JZSP-CSM22-□□-E)
Motor with brake ⁽¹⁾	Motor code	Y034	Y060
	② Motor cord	TAE20G4-AMB□□ (TAE20G3-AMB□□)	JZSP-CSM12-□□-E (JZSP-CSM32-□□-E)
③ Driver		SGDH-02AE-E	SGDV-1R6A01A
④ Encoder cord		TAE20G6-EC□□ (TAE20G5-EC□□)	JZSP-CSP01-□□-E (JZSP-CSP21-□□-E)

Note ⁽¹⁾ : Motor with brake requires an additional unbraking power supply.
Remark 1 : The cord in () have high bending resistance.
2 : Specify the length (3m, 5m, 10m, or 20m) of the motor encoder cord by model number□□.
The length under 10m is also selected by two digits. (Example of 3m : TAE20G2-AM03.)

Table 14 Electric equipment system of the table with a Yaskawa motor (made by Yaskawa Electric Corp.) and a programmable controller CTN480G

Name	Model number
Motor code	Y028, Y029, Y033, Y034, Y048, Y050, Y059, Y060
⑤ Programmable controller	CTN480G
⑥ Teaching box	TAE10M5-TB
⑦ Pulse limit cord	TAE10M7-LD□□ (TAE10M8-LD□□)

Remark 1 : The cord in () have high bending resistance.
2 : The lengths of limit cord of pulse limit cord can be specified by increments of 1 m up to 20 m maximum in model number □□.
The length under 10m is also selected by two digits. (Example of 3m : TAE10M7-LD03)
3 : The length of pulse cord of pulse limit cord is 1.5m.

System configuration

Table 15 Electric equipment system of the table with a Panasonic motor (made by Panasonic Corp.)

Name		Model number	
①Precision Positioning Table TE		TE60	
Motor without brake	Motor code	P002	P012
	②Motor cord	TAE20G8-AM□□ (TAE20G7-AM□□)	MFMCA0□□0EED
Motor with brake ⁽¹⁾	Motor code	P007	P017
	②Motor cord	TAE20H0-AMB□□ (TAE20G9-AMB□□)	MFMCA0□□0EED
	Brake cord ⁽²⁾	—	MFMCB0□□0GET
③Driver		MSDA015A1A	MADDT1205
④Encoder cord		TAE20H2-EC□□ (TAE20H1-EC□□)	MFECA0□□0EAD
Name		Model number	
①Precision Positioning Table TE		TE86	
Motor without brake	Motor code	P003	P013
	②Motor cord	TAE20G8-AM□□ (TAE20G7-AM□□)	MFMCA0□□0EED
Motor with brake ⁽¹⁾	Motor code	P008	P018
	②Motor cord	TAE20H0-AMB□□ (TAE20G9-AMB□□)	MFMCA0□□0EED
	Brake cord ⁽²⁾	—	MFMCB0□□0GET
③Driver		MSDA023A1A	MADDT1207
④Encoder cord		TAE20H2-EC□□ (TAE20H1-EC□□)	MFECA0□□0EAD

Note ⁽¹⁾ : Motor with brake requires an additional unbraking power supply.
⁽²⁾ : An additional brake cord is required.
Remark 1 : The cord in () have high bending resistance.
2 : Specify the length (3m, 5m, 10m, or 20m) of the motor brake and the encoder cord by model number□□.
The length under 10m is also selected by two digits. (Example of 3m : TAE20G8-AM03)

Table 16 Electric equipment system of the table with a Panasonic motor (made by Panasonic Corp.) and a programmable controller CTN480G

Name		Model number	
Motor code		P002, P003, P007, P008	P012, P013, P017, P018
⑤Programmable controller		CTN480G	
⑥Teaching box		TAE10M5-TB	
⑦Pulse limit cord		TAE10M9-LD□□ (TAE10P0-LD□□)	TAE10V2-LD□□ (TAE10V3-LD□□)

Remark 1 : The cord in () have high bending resistance.
2 : The lengths of limit cord of pulse limit cord can be specified by increments of 1 m up to 20 m maximum in model number □□.
The length under 10m is also selected by two digits. (Example of 3m : TAE10M9-LD03)
3 : The length of pulse cord of pulse limit cord is 1.5m.

Table 17 Electric equipment system of the table with a Mitsubishi motor (made by Mitsubishi Electric Corp.)

Name		Model number	
①Precision Positioning Table TE		TE60	
Motor without brake	Motor code	J002	J012
	②Motor cord	TAE20H4-AM□□ (TAE20H3-AM□□)	MR-PWS1CBL□M-A1-L (MR-PWS1CBL□M-A1-H)
Motor with brake ⁽¹⁾	Motor code	J007	J017
	②Motor cord	TAE20H6-AMB□□ (TAE20H5-AMB□□)	MR-PWS1CBL□M-A1-L (MR-PWS1CBL□M-A1-H)
	Brake cord ⁽²⁾	—	MR-BKS1CBL□M-A1-L (MR-BKS1CBL□M-A1-H)
③Driver		MR-J2S-10A	MR-J3-10A
④Encoder cord		TAE20H8-EC□□ (TAE20H7-EC□□)	MR-J3ENCBL□M-A1-L (MR-J3ENCBL□M-A1-H)
Name		Model number	
①Precision Positioning Table TE		TE86	
Motor without brake	Motor code	J003	J013
	②Motor cord	TAE20H4-AM□□ (TAE20H3-AM□□)	MR-PWS1CBL□M-A1-L (MR-PWS1CBL□M-A1-H)
Motor with brake ⁽¹⁾	Motor code	J008	J018
	②Motor cord	TAE20H6-AMB□□ (TAE20H5-AMB□□)	MR-PWS1CBL□M-A1-L (MR-PWS1CBL□M-A1-H)
	Brake cord ⁽²⁾	—	MR-BKS1CBL□M-A1-L (MR-BKS1CBL□M-A1-H)
③Driver		MR-J2S-20A	MR-J3-20A
④Encoder cord		TAE20H8-EC□□ (TAE20H7-EC□□)	MR-J3ENCBL□M-A1-L (MR-J3ENCBL□M-A1-H)

Note ⁽¹⁾ : Motor with brake requires an additional unbraking power supply.
⁽²⁾ : An additional brake cord is required.
Remark 1 : The cord in () have high bending resistance.
2 : Specify the length (2m, 5m, or10m) of the motor brake and the encoder cord by model number□□ or □.
*In model number□□, the length under 10m is also selected by two digits. (Example of 2m : TAE20H4-AM02)
*In model number□, when the length under 10m is selected by one digit or two digits when the length is 10m.
(Example of 2m : MR-PWS1CBL2M-A1-L)

Table 18 Electric equipment system of the table with a Mitsubishi motor (made by Mitsubishi Electric Corp.) and a programmable controller CTN480G

Name		Model number	
Motor code		J002, J003, J007, J008	J012, J013, J017, J018
⑤Programmable controller		CTN480G	
⑥Teaching box		TAE10M5-TB	
⑦Pulse limit cord		TAE10P1-LD□□ (TAE10P2-LD□□)	TAE10V4-LD□□ (TAE10V5-LD□□)

Remark 1 : The cord in () have high bending resistance.
2 : The lengths of limit cord of pulse limit cord can be specified by increments of 1 m up to 20 m maximum in model number □□.
The length under 10m is also selected by two digits. (Example of 3m : TAE10P1-LD03)
3 : The length of pulse cord of pulse limit cord is 1.5m.

System configuration

Stepper motor

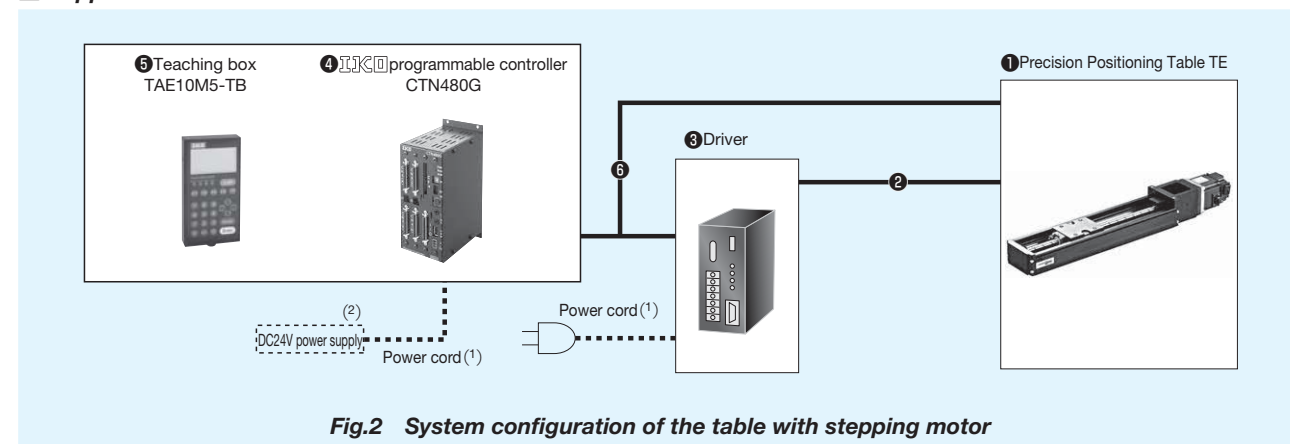


Fig.2 System configuration of the table with stepping motor

Note (1) : The power cable should be prepared by customer.

(2) : The 24-VDC power supply should be prepared by customer.

Table 19 Electric equipment system of the table with a Oriental motor (made by Oriental Motor Co., Ltd.)

Name	Model number	
① Precision Positioning Table TE	TE60	TE86
Motor without brake	Motor code V009	V011
② Motor cord	TAE20R8-SM□□ (TAE20R9-SN□□)	TAE20R8-SM□□ (TAE20R9-SN□□)
③ Driver	RKD514L-A	RKD514L-A
Motor with brake ⁽¹⁾	Motor code V010	V012
② Motor cord	TAE20S1-SMB□□ (TAE20S2-SNB□□)	TAE20S1-SMB□□ (TAE20S2-SNB□□)
③ Driver	RKD514LM-A	RKD514LM-A

Note (1) : Motor with brake requires an additional unbraking power supply.

Remark 1 : The cord in () have high bending resistance.

2 : The lengths of motor cord can be specified by increments of 1 m up to 10 m maximum in model number □□.
The length under 10m is also selected by two digits. (Example of 3m : TAE20R8-SM03)

Table 20 Electric equipment system of the table with a Oriental motor (made by Oriental Motor Co., Ltd.) and a programmable controller CTN480G

Name	Model number
Motor code	V009, V010, V011, V012
⑤ Programmable controller	CTN480G
⑥ Teaching box	TAE10M5-TB
⑦ Pulse limit cord	TAE10S3-LD□□ (TAE10S4-LD□□)

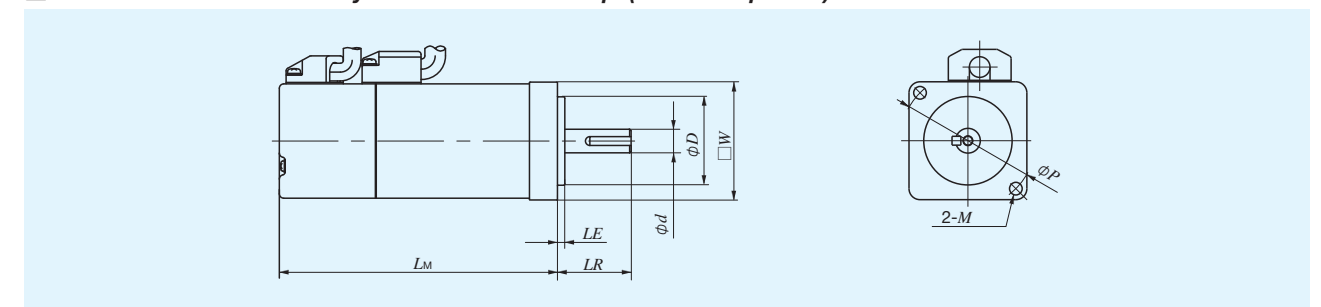
Remark 1 : The cord in () have high bending resistance.

2 : The lengths of limit cord of pulse limit cord can be specified by increments of 1 m up to 20 m maximum in model number □□.
The length under 10m is also selected by two digits. (Example of 3m : TAE10S3-LD03)

3 : The length of pulse cord of pulse limit cord is 1.5m.

Specifications of motor and driver

AC servo motor and driver by Yaskawa Electric Corp. (RoHS compatible)



Specifications of motor

Motor code	Model	Power voltage V	Rated voltage W	Rated torque N · m	Maximum momentary torque N · m	Rated number of revolution r/min	Motor inertia $J_M \times 10^{-4} \text{kg} \cdot \text{m}^2$	Encoder type	Mass kg
Y028	SGMAH-01AAA21-E	200	100	0.318	0.955	3000	0.0364	Incremental 13 bit (8192pulse/rev)	0.5
Y029	SGMAH-02AAA21-E		200	0.637	1.91		0.106		1.1
Y033	SGMAH-01AAA2C-E		100	0.318	0.955		0.0449		0.8
Y034	SGMAH-02AAA2C-E		200	0.637	1.91		0.164	20 bit Absolute or incremental (1048576pulse/rev)	1.6
Y048	SGMJV-01A3A21		100	0.318	1.11		0.0665		0.4
Y050	SGMJV-01A3A2C		100	0.318	1.11		0.0812		0.7
Y059	SGMJV-02A3A21	200	200	0.637	2.23		0.259		0.9
Y060	SGMJV-02A3A2C		200	0.637	2.23		0.323		1.5

Dimension of motor

unit : mm

Motor code	$\square W \times L_M$	LR	LE	d	D	P	M
Y028	40 × 94.5	25	2.5	8	30	46	φ 4.3
Y029	60 × 96.5	30	3	14	50	70	φ 5.5
Y033	40 × 135.0	25	2.5	8	30	46	φ 4.3
Y034	60 × 80	30	3	14	50	70	φ 5.5
Y048	40 × 82.5	25	2.5	8	30	46	φ 4.3
Y050	40 × 127.5	25	2.5	8	30	46	φ 4.3
Y059	60 × 80	30	3	14	50	70	φ 5.5
Y060	60 × 120	30	3	14	50	70	φ 5.5

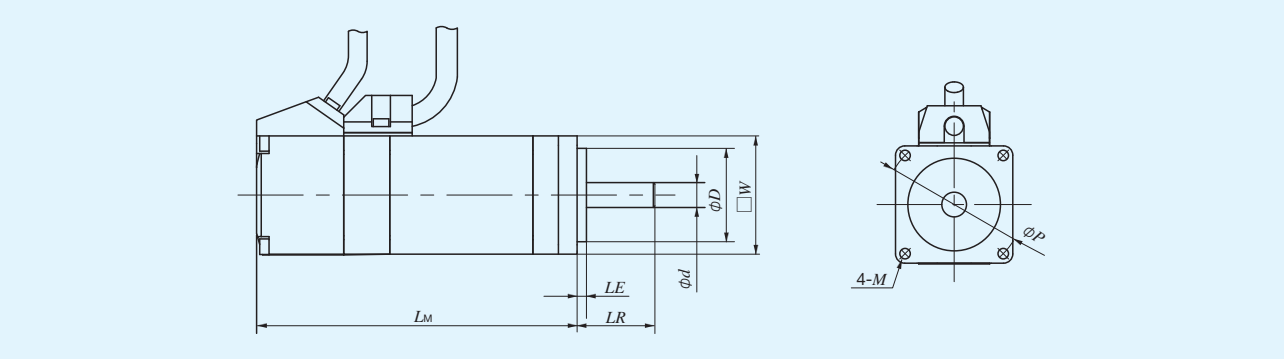
Specifications of driver

Item	Driver type	SGDH-01AE-E	SGDH-02AE-E	SGDV-R90A01A	SGDV-1R6A01A
Applicable motor code		Y028, Y033	Y029, Y034	Y048, Y050	Y059, Y060
Power supply voltage		200V	200V	200V	200V
Rated output of applicable motor		100W	200W	100W	200W
Feedback		Serial encoder			
Command input pulse		Selection one from symbol with pulse line, CCW or CW with pulse line, two phase pulse with 90-degree difference			
Type of command input pulse		Line driver or Open collector			
Maximum input pulses		Line driver : 500kpps Open collector : 200kpps		Line driver : 4Mpps Open collector : 200kpps	
Main circuit power supply voltage		Single phase AC200~230V -15~10% 50/60Hz		Triphase AC200~230V -15~10% 50/60Hz	
Control circuit supply voltage		Single phase AC200~230V -15~10% 50/60Hz			
Continuous output current Arms		0.91	2.1	0.91	1.6
Maximum output current Arms		2.8	6.5	2.9	5.8
Ambient temperature in operation		0~55℃			
Ambient temperature in storage		-20~85℃			
Ambient humidity (use and storage)		Less than 90% RH (No condensation)			
Mass kg		0.8	0.9	0.9	0.9

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

Specifications of motor and driver

AC servo motor and driver by Panasonic Corp. (RoHS compatible)



Specifications of motor

Motor code	Model	Power voltage V	Rated voltage W	Rated torque N · m	Maximum momentary torque N · m	Rated number of revolution r/min	Motor inertia × 10 ⁻⁴ kg · m ² J _M	Encoder type	Mass kg
P002	MSMA012A1A	200	100	0.32	0.95	3000	0.062	Incremental (10000pulse/rev)	0.56
P003	MSMA022A1A		200	0.64	1.91		0.17		1.0
P007	MSMA012A1B		100	0.32	0.95		0.066		0.76
P008	MSMA022A1B		200	0.64	1.91		0.20		1.4
P012	MSMD012S1A		100	0.32	0.95		0.051	17 bit Absolute or incremental (131072pulse/rev)	0.47
P013	MSMD022S1A		200	0.64	1.91		0.14		0.82
P017	MSMD012S1B		100	0.32	0.95		0.054		0.68
P018	MSMD022S1B		200	0.64	1.91		0.16		1.3

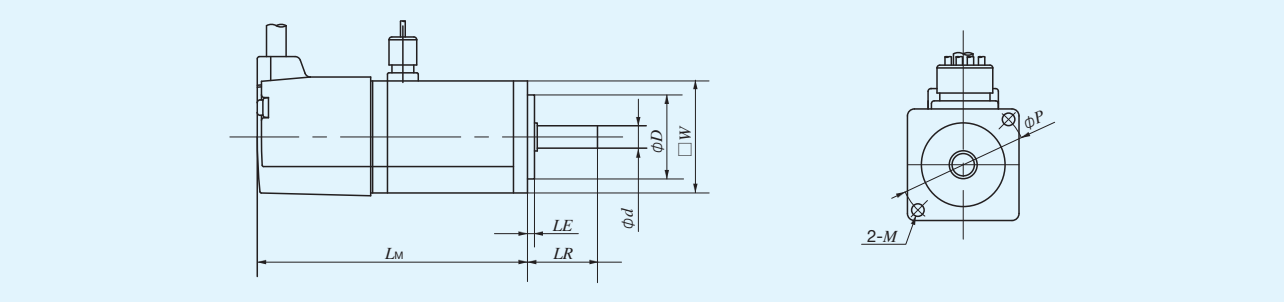
Dimension of motor

Motor code	□W×L _M	LR	LE	d	D	P	M
P002	38×103	25	3	8	30	45	φ3.4
P003	60× 94	30	3	11	50	70	φ4.5
P007	38×135	25	3	8	30	45	φ3.4
P008	60×127	30	3	11	50	70	φ4.5
P012	38× 92	25	3	8	30	45	φ3.4
P013	60× 79	30	3	11	50	70	φ4.5
P017	38×122	25	3	8	30	45	φ3.4
P018	60×115.5	30	3	11	50	70	φ4.5

Specifications of driver

Driver type Item	MSDA015A1A	MSDA023A1A	MADDT1205	MADDT1207
Applicable motor code	P002, P007	P003, P008	P012, P017	P013, P018
Power supply voltage	200V	200V	200V	200V
Rated output of applicable motor	100W	200W	100W	200W
Feedback	Incremental encoder		Serial encoder	
Command input pulse	Selection one from symbol with pulse line, CCW or CW with pulse line,two phase pulse with 90-degree difference			
Type of command input pulse	Line driver or Open collector			
Maximum input pulses	Line driver : 500kpps Open collector : 200kpps		Line driver : 2Mpps Open collector : 200kpps	
Main circuit power supply voltage	Single/Three phase AC200~230V -15~10% 50/60Hz		Single phase AC200~240V -15~10% 50/60Hz	
Control circuit supply voltage	Single phase AC200~230V -15~10% 50/60Hz		Single phase AC200~240V -15~10% 50/60Hz	
Rated output current	1.0	1.6	1.1	1.6
Maximum output current	4.3	6.9	4.7	6.9
Ambient temperature in operation	0~55℃ (No freezing)			
Ambient temperature in storage	-20~65℃ (No freezing)			
Ambient humidity (use and storage)	Less than 90% RH (No condensation)			
Mass kg	1.0	1.0	0.8	0.8

AC servo motor and driver by Mitsubishi Electric Corp. (RoHS compatible)



Specifications of motor

Motor code	Model	Power voltage V	Rated voltage W	Rated torque N · m	Maximum momentary torque N · m	Rated number of revolution r/min	Motor inertia × 10 ⁻⁴ kg · m ² J _M	Encoder type	Mass kg
J002	HC-KFS13	200	100	0.32	0.95	3000	0.084	17 bit Absolute or incremental (131072pulse/rev)	0.53
J003	HC-KFS23		200	0.64	1.9		0.420		0.99
J007	HC-KFS13B		100	0.32	0.95		0.087		0.89
J008	HC-KFS23B		200	0.64	1.9		0.470		1.6
J012	HF-KP13		100	0.32	0.95		0.088	18 bit Absolute or incremental (262144pulse/rev)	0.56
J013	HF-KP23		200	0.64	1.9		0.240		0.94
J017	HF-KP13B		100	0.32	0.95		0.090		0.86
J018	HF-KP23B		200	0.64	1.9		0.310		1.6

Dimension of motor

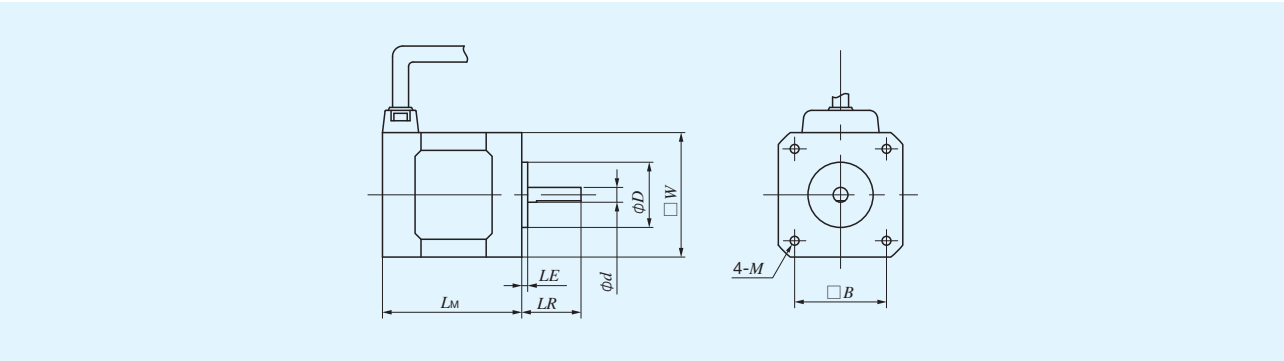
Motor code	□W×L _M	LR	LE	d	D	P	M
J002	40× 96.5	25	2.5	8	30	46	φ4.5
J003	60× 99.5	30	3	14	50	70	φ5.8
J007	40×124.5	25	2.5	8	30	46	φ4.5
J008	60×131.5	30	3	14	50	70	φ5.8
J012	40× 82.4	25	2.5	8	30	46	φ4.5
J013	60× 76.6	30	3	14	50	70	φ5.8
J017	40×123.5	25	2.5	8	30	46	φ4.5
J018	60×116.1	30	3	14	50	70	φ5.8

Specifications of driver

Driver type Item	MR-J2S-10A	MR-J2S-20A	MR-J3-10A	MR-J3-20A
Applicable motor code	J002, J007	J003, J008	J012, J017	J013, J018
Power supply voltage	200V	200V	200V	200V
Rated output of applicable motor	100W	200W	100W	200W
Feedback	Serial encoder			
Command input pulse	Selection one from symbol with pulse line, CCW or CW with pulse line, two phase pulse with 90-degree difference			
Type of command input pulse	Line driver or Open collector			
Maximum input pulses	Line driver : 500kpps Open collector : 200kpps		Line driver : 1Mpps Open collector : 200kpps	
Main circuit power supply voltage	Three phase AC200~230V −15~10% 50/60Hz or Single phase AC230V −15~10% 50/60Hz		Three phase AC200~230V −15~10% 50/60Hz or Single phase AC200~230V −15~10% 50/60Hz	
Control circuit supply voltage	Single phase AC200~230V −15~10% 50/60Hz			
Rated output current	0.71	1.1	0.8	1.4
Maximum output current	2.2	3.4	2.4	4.2
Ambient temperature in operation	0~55℃ (No freezing)			
Ambient temperature in storage	−20~65℃ (No freezing)			
Ambient humidity (use and storage)	Less than 90% RH (No condensation)			
Mass kg	0.7	0.7	0.8	0.8

Specifications of motor and driver

Stepper motor and driver by Oriental Motor Co., Ltd. (RoHS compatible)



Specifications of motor

Motor code	Model	Step angle	Maximum holding torque N · m	Current A-phase	Motor inertia $J_M \times 10^{-5} \text{kg} \cdot \text{m}^2$	Mass kg
V009	PK566AE	0.72	0.83	1.4	2.8	0.8
V010	PK566AEM		0.83		4.4	1.1
V011	PK569AE		1.66		5.6	1.3
V012	PK69AEM		1.66		7.2	1.6

Dimension of motor unit : mm

Motor code	$\square W \times L_M$	LR	LE	d	D	B	M
V009	60 × 59.5	24	1.5	8	36	50	$\phi 4.5$
V010	60 × 99.5						
V011	60 × 89						
V012	60 × 129						

Specifications of driver

Item	Driver type	RKD514L-A	RKD514LM-A
Applicable motor code		V009, V011	V010, V012
Exitation type		Micro step	
Command input pulse		Selection one from CW/CCW signal, Pulse/Rotational direction signal	
Type of command input pulse		Photo coupler input, input resistance 220Ω, Input current 10~20mA	
Main circuit power supply voltage		Single phase 100~115V ±15% 50/60Hz 4.5A	
Ambient temperature in operation		0~50℃ (No freezing)	
Ambient humidity in operation		Less than 85% RH (No condensation)	
Mass kg		0.85	0.85

Precautions on use

- ◆Precision Positioning Table TE is a precision device. Giving an excessive load or shock to it will lower the accuracy and damage its components. Take extreme care when handling it.
- ◆Make sure that there is no dust or harmful projection on the mating table mounting surface.
- ◆The flatness of the mounting base for Precision Positioning Table TE will affect the positioning accuracy. It must be less than 30 μm.
- ◆Grease is applied to Linear Motion Rolling Guides and ball screws incorporated in Precision Positioning Table TE. Do not admit dust or foreign matters into Precision Positioning Table. If foreign matters enter it, remove them and polluted grease completely, and then apply clean grease again.
- ◆Lubrication of Precision Positioning Table TE varies depending on the operating conditions. Generally, relubricate grease every 6 months. In the case of use involving long-distance reciprocating motion at all times, remove the old grease every 3 months, and then apply clean grease again.
- ◆Precision Positioning Table TE is worked, assembled, and adjusted with high accuracy. Do not disassemble or modify this product.

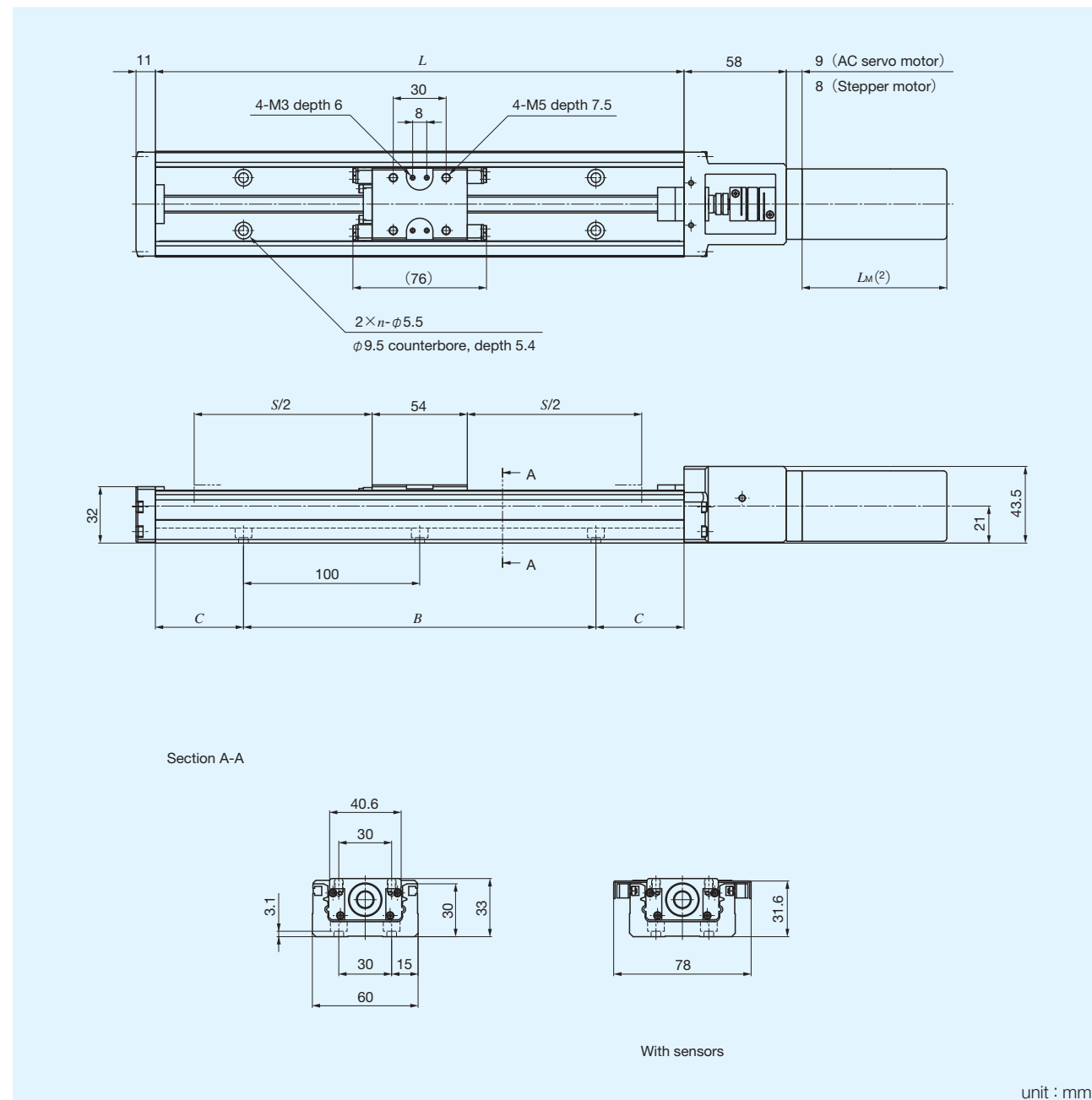
©The appearance, specifications and other details of the products are subject to change without prior for improvement.

Duration and scope of warranty

The period of warranty for the precision positioning table and related electrical devices is set at one year after delivery. If a failure occurs while the product is correctly being used and the failure is clearly attributable to its manufacture, the product will be repaired at no cost within the warranty period. A warranty here means the guarantee of the precision positioning table itself as a single unit. It shall be a fare-paying service if field service is required. When the trouble is not obviously judged by our product deficiency as a result of our investigation, the customer shall be responsible for the repair cost. Secondary damage that occurs on the product breakdown or use is out of our warranty. When disposing of the products, treat them as ordinary industrial waste.

IKO Precision Positioning Table TE

TE60S



Bed length <i>L</i>	Stroke length <i>S</i>	Bed mounting hole			Mass ⁽¹⁾ (Ref.) kg
		<i>B</i>	<i>C</i>	<i>n</i>	
150	50	100	25	2	0.9
200	100	100	50	2	1.0
300	200	200	50	3	1.3
400	300	300	50	4	1.6
500	400	400	50	5	1.9
600	500	500	50	6	2.2

Note ⁽¹⁾ : The mass of the motor is not included.

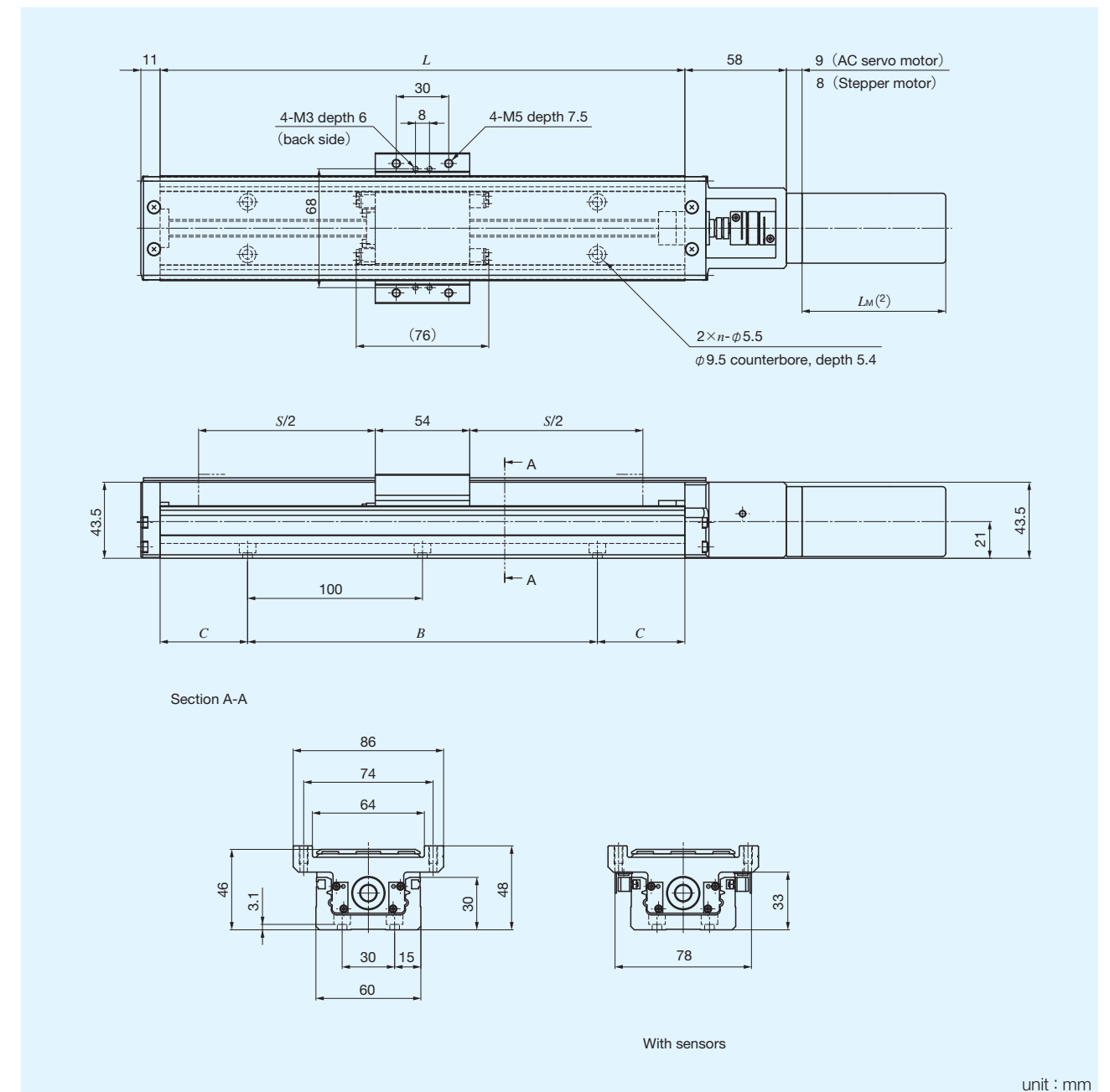
⁽²⁾ : See "Specifications of Motor and Driver"

Remark 1 : In motor code J002 or J007 is selected, some part of motor may protrude from the bottom line of table body.

2 : In motor code V009 or V010 is selected, motor and motor attachment protrude from the bottom line of table body.

IKO Precision Positioning Table TE

TE60F



Bed length <i>L</i>	Stroke length <i>S</i>	Bed mounting hole			Mass ⁽¹⁾ (Ref.) kg
		<i>B</i>	<i>C</i>	<i>n</i>	
150	50	100	25	2	1.1
200	100	100	50	2	1.2
300	200	200	50	3	1.5
400	300	300	50	4	1.9
500	400	400	50	5	2.2
600	500	500	50	6	2.5

Note ⁽¹⁾ : The mass of the motor is not included.

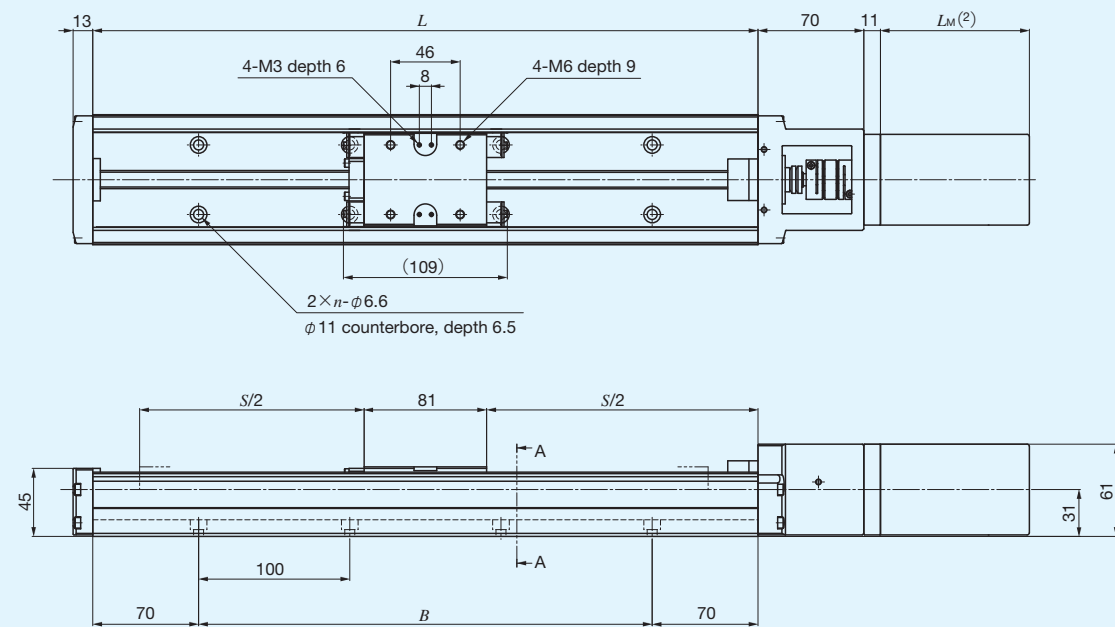
⁽²⁾ : See "Specifications of Motor and Driver"

Remark 1 : In motor code J002 or J007 is selected, some part of motor may protrude from the bottom line of table body.

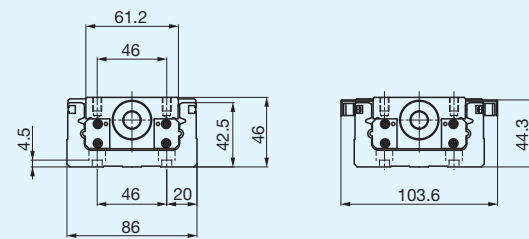
2 : In motor code V009 or V010 is selected, motor and motor attachment protrude from the bottom line of table body.

IKO Precision Positioning Table TE

TE86S



Section A-A



With sensors

unit : mm

Bed length	Stroke length	Bed mounting hole		Mass ⁽¹⁾ (Ref.)
<i>L</i>	<i>S</i>	<i>B</i>	<i>n</i>	kg
340	200	200	3	3.1
440	300	300	4	3.7
540	400	400	5	4.2
640	500	500	6	4.7
740	600	600	7	5.2
840	700	700	8	5.7
940	800	800	9	6.3

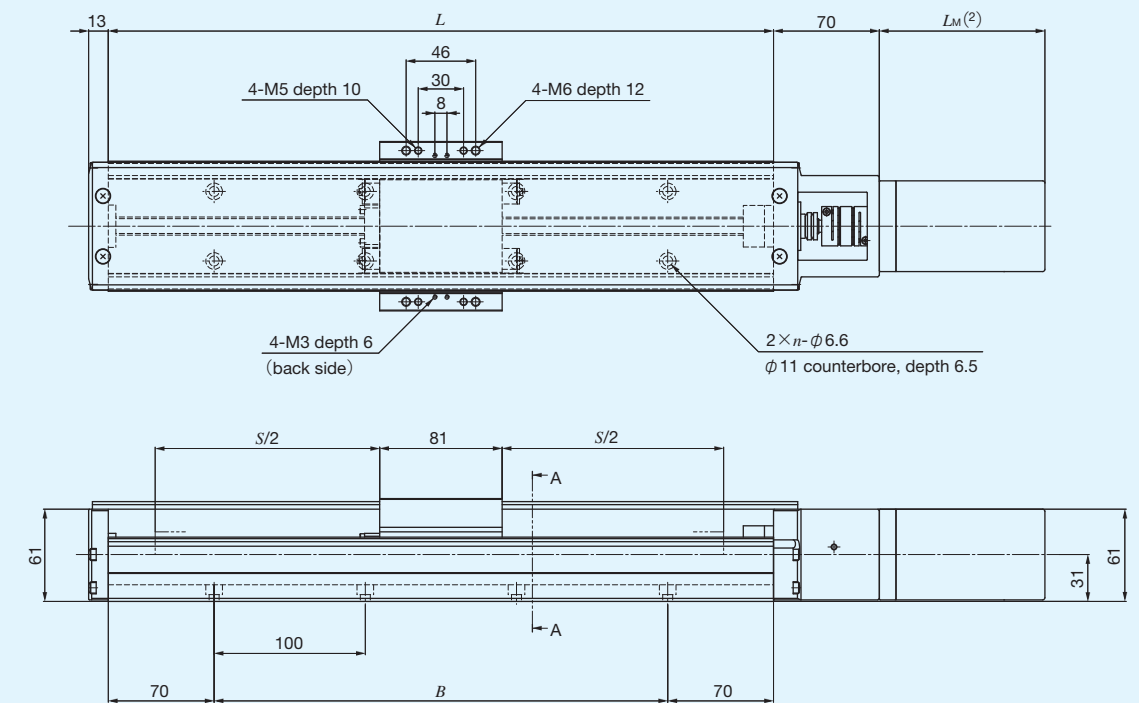
Note ⁽¹⁾ : The mass of the motor is not included.

⁽²⁾ : See "Specifications of Motor and Driver"

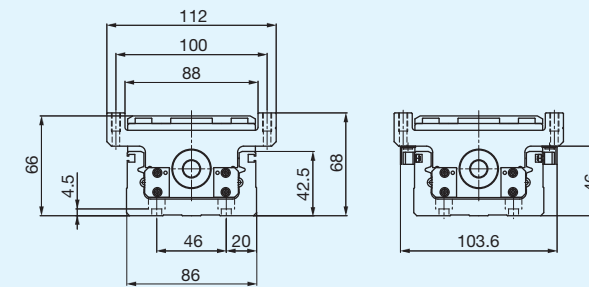
Remark : In motor code J003 or J008 is selected, some part of motor may protrude from the bottom line of table body.

IKO Precision Positioning Table TE

TE86F



Section A-A



With sensors

unit : mm

Bed length	Stroke length	Bed mounting hole		Mass ⁽¹⁾ (Ref.)
<i>L</i>	<i>S</i>	<i>B</i>	<i>n</i>	kg
340	200	200	3	3.7
440	300	300	4	4.3
540	400	400	5	4.9
640	500	500	6	5.5
740	600	600	7	6.1
840	700	700	8	6.7
940	800	800	9	7.2

Note ⁽¹⁾ : The mass of the motor is not included.

⁽²⁾ : See "Specifications of Motor and Driver"

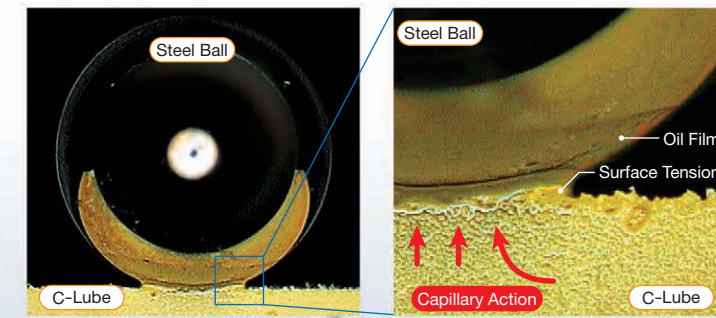
Remark : In motor code J003 or J008 is selected, some part of motor may protrude from the bottom line of table body.

Maintenance free for 20,000km or 5 years

IKO Maintenance Free & Interchangeable

CAT-5510

C-Lube Linear Way C-Lube Linear Roller Way



The Capillary system that IKO has developed is a new method of lubrication. The Lube-body is formed by sintering fine resin powder to act as reservoir and the open pores are impregnated with a large amount of lubrication oil. The capillary action deposits the appropriate amount of lubrication on the rolling elements to protect the raceways for long periods.

Interchangeable series is available.

C-Lube slide units can be supplied by themselves not with rails, and can be matched, replaced and added freely to the interchangeable track rail. This feature is useful in machine design, facilitating standardization of product specification and quick changes of specification.

Maintenance Free

Efficiency of lubrication is maintained for a long term allowing to reduce the cost of lubrication management and control.

Ecology

As C-Lube technology minimizes the amount of lubricant required that contributes to the global environment protection.

Compact

Unlike attached-on external lubrication parts, there is no increase in carriage length.
No loss of available stroke length when replacing standard units.

Smooth

Light and smooth running is achieved by the improvement of internal design. C-Lube is designed not to have direct contact with the track rail allowing very smooth operation.

Miniature type ML series



Compact ME series



High load capacity MH series



U-shaped track rail MUL series



Linear Roller Way MX series



World Network of IKO



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Recognizing that conservation of the global environment is the top-priority challenge for the world's population, IKO will conduct its activities with consideration of the environment as a corporate social responsibility, reduce its negative impact on the environment, and help foster a rich global environment.

ISO 9001 & 14001 Quality system registration certificate

