

**Electric Actuator
ETS Series**



ACTUATOR FOR ELECTRIC MOTORS ETS SERIES

**Motorless type
Ball screw driven**

**Extensive line up
Installation of familiar
motor is available.**



Ball
screw
driven

ETS Series

Variety of line-up suitable for use application

Max. load capacity : up to 150 kg Max. stroke : up to 1500 mm Max. speed : up to 2000 mm/s

Selectable from 8 sizes

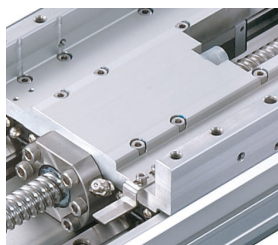


High rigidity body_(ETS-12 or more size)

High rigidity by using parallel guide
Low installation height oval type

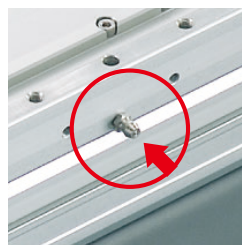


Wide range of screw leads!



Suitable lead selection
according to speed and
load capacity
(2 mm, 5 mm, 10 mm, 16 mm,
20 mm, 25 mm, 40 mm)

Easy Maintenance!



Direct lubrication to
guide and ball screw
through grease oil filler
Easy maintenance
and long life-span

* Option

Installation of familiar motor is available

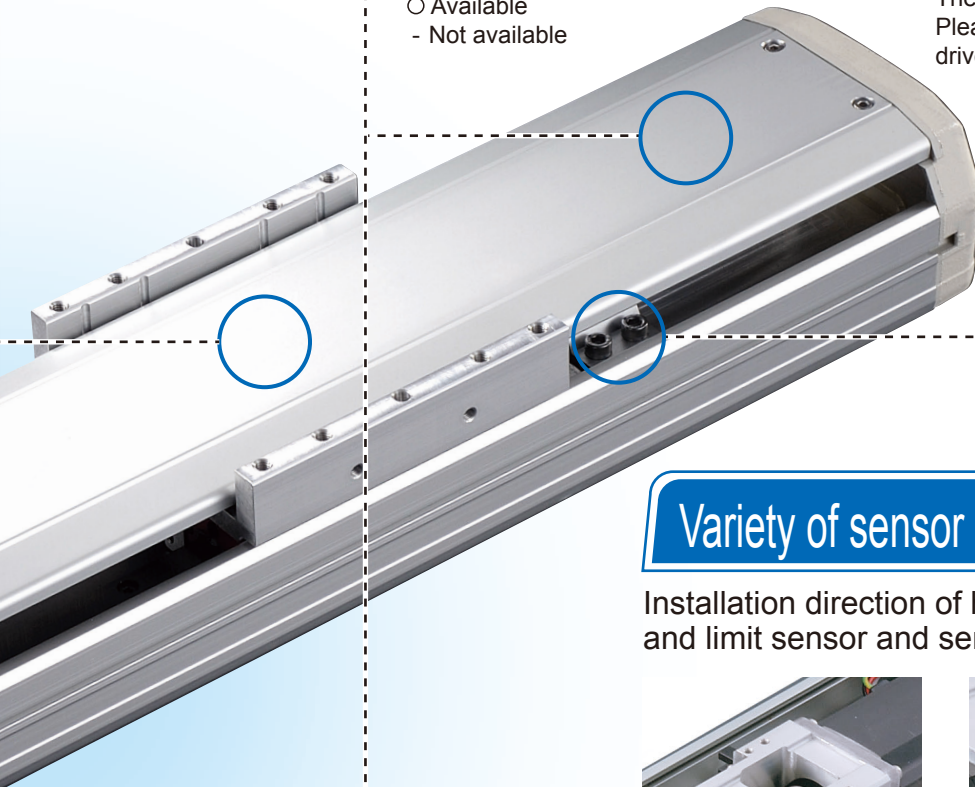
Availability list for motor manufacturer and field network

	General-purpose	SSCNET	CC-Link	MECHATRO LINK-II	MECHATRO LINK-III	Device Net	Ether CAT
Mitsubishi Electric Corporation	○	○	○	-	-	-	-
Delta Electronics, Inc.	○	-	-	-	-	-	○
SANYO DENKI CO.,LTD.	○	-	-	-	-	-	○
YASKAWA ELECTRIC CORPORATION	○	-	-	○	○	○	-
KEYENCE CORPORATION	○	-	-	○	-	-	-
Panasonic Corporation	○	-	-	-	-	-	-
OMRON Corporation	○	-	-	○	-	-	○

○ Available
- Not available

The motor is not installed with this product.
Please obtain and install and adjust the motor and driver by yourself.

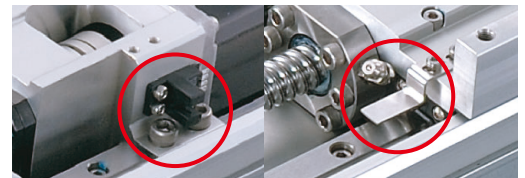
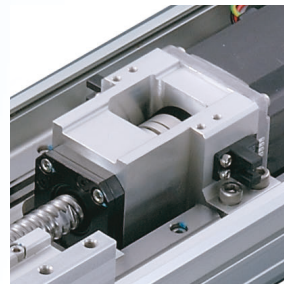
* Refer to table 3 on page 4 for the details.



Variety of sensor installation method!

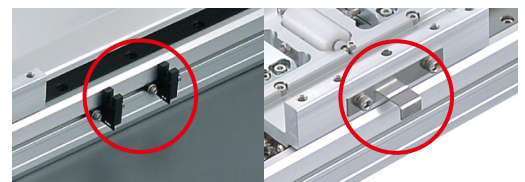
Installation direction of home position sensor and limit sensor and sensor dog selectable

* Option



Inside sensor

Inside sensor dog

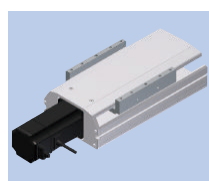
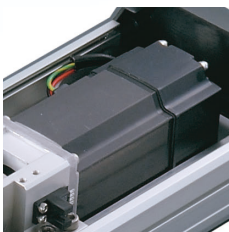


Outside sensor

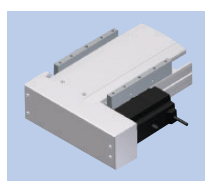
Outside sensor dog

Selectable motor installation direction

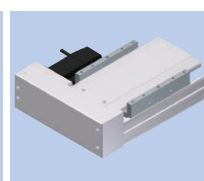
Several brackets available. Manufacturer and installation direction selectable. * Option



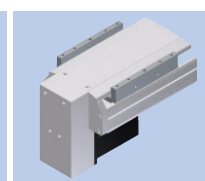
Outside direct



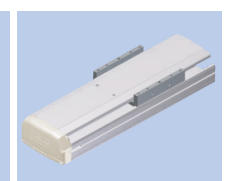
Left turn-up



Right turn-up



Below turn-up



Built-in

The motor is not installed with this product. Please obtain and install and adjust the motor and driver by yourself.

Selection guide

Type	Model no.	Applicable motor volume (W)	Body depth (mm)	Ballscrew precision grade: C7		Repeatability (mm)	Max. load capacity (kg)	
				Outer diameter (mm)	Screw lead (mm)		Horizontal	Vertical
Slider type	ETS-05	100	51	12	2	±0.02	10	7
					5		10	3
					10		5	1.5
	ETS-06	100	65	12	2		30	15
					5		30	10
					10		15	5
	ETS-10	100	102	16	5		50	12
					10		30	8
					16		22	5
					20		18	3
	ETS-12	100	102	16	5		50	12
					10		30	8
					16		22	5
					20		18	3
	ETS-13	200	135	16	5		70	17
					10		47	12
					16		30	6
					20		24	4
	ETS-14	200	135	16	5		95	27
					10		75	18
					16		44	7
		400	135	16	20		35	6
					5		110	33
					10		88	22
ETS-17	400	170	20	16	48	10		
				20	40	8		
	750	170	20	40	120	40		
				5	110	30		
ETS-22	750	220	25	5	75	14		
				10	35	7		
				20	120	50		
	20	220	40	5	120	40		
				10	83	25		
				25	50	10		
ETS-22	750	220	25	5	150	55		
				10	150	45		
				25	120	20		
				40	60	10		

Stroke(mm) and Max. speed(mm/s)*1

100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500 mm
			100							90	80	70	60															
			250							225	200	175	150															
			500							450	400	350	300															
			100							90	80	70	60															
			250							225	200	175	150															
			500							450	400	350	300															
			250											225	200	175	150	125										
			500											450	400	350	300	250										
			800											720	640	560	480	400										
			1000											900	800	700	600	500										
			250											225	200	175	150	125										
			500											450	400	350	300	250										
			800											720	640	560	480	400										
			1000											900	800	700	600	500										
			250											225	200	175	150	125										
			500											450	400	350	300	250										
			800											720	640	560	480	400										
			1000											900	800	700	600	500										
			250											225	200	175	150	125										
			500											450	400	350	300	250										
			800											720	640	560	480	400										
			1000											900	800	700	600	500										
			250											225	200	175	150	125										
			500											450	400	350	300	250										
			800											720	640	560	480	400										
			1000											900	800	700	600	500										
			250											225	200	175	150	125										
			500											450	400	350	300	250										
			800											720	640	560	480	400										
			1000											900	800	700	600	500										
			250											225	200	175	150	125										
			500											450	400	350	300	250										
			800											720	640	560	480	400										
			1000											900	800	700	600	500										
			250											225	200	175	150	125										
			500											450	400	350	300	250										
			800											720	640	560	480	400										
			1000											900	800	700	600	500										
			250											225	200	175	150	125	100									
			500											450	400	350	300	250	200									
			1250											1125	1000	875	750	625	500									
			2000											1800	1600	1400	1200	1000	800	600								

*1 Max. speed is estimated valve at 3,000rpm of installed motor.
Max. speed has limitation by stroke. Do not operate faster than limited speed.



Electric driven actuator slider type

ETS Series

• Applicable motor size: 100W-200W-400W-750W



Specifications

[Applicable motor size:100W]

Descriptions		Model														
		ETS-05			ETS-06			ETS-10				ETS-12				
Ballscrew diameter	mm	12			12			16				16				
Ballscrew precision grade		C7														
Screw lead	mm	2	5	10	2	5	10	5	10	16	20	5	10	16	20	
Repeatability	mm	±0.02														
Max. load capacity *1	Horizontal	kg	10	10	5	30	30	15	50	30	22	18	50	30	22	18
	Vertical	kg	7	3	1.5	15	10	5	12	8	5	3	12	8	5	3
Max. speed *1	mm/s	100	250	500	100	250	500	250	500	800	1000	250	500	800	1000	
Stroke length *2	mm	100 to 800			100 to 800			100 to 1050				100 to 1050				
Thrust	N	854	341	170	854	341	170	341	170	106	85	341	170	106	85	

*1: Value at the time of acceleration/deceleration at 0.2 sec.

*2: The stroke pitch is 50.

[Applicable motor size:200W]

Descriptions		Model								
		ETS-13				ETS-14				
Ballscrew diameter	mm	16				16				
Ballscrew precision grade		C7								
Screw lead	mm	5	10	16	20	5	10	16	20	
Repeatability	mm	±0.02								
Max. load capacity *1	Horizontal	kg	70	47	30	24	95	75	44	35
	Vertical	kg	17	12	6	4	27	18	7	6
Max. speed *1	mm/s	250	500	800	1000	250	500	800	1000	
Stroke length *2	mm	100 to 1050				100 to 1050				
Thrust	N	683	341	213	174	683	341	213	174	

*1: Value at the time of acceleration/deceleration at 0.2 sec.

*2: The stroke pitch is 50.

CAUTION:

This product does not have motor. Please obtain and install and adjust the motor and driver by yourself.

Max.speed is estimated valve at 3,000rpm of installed motor.

Thrust force and max. load capacity is estimated value at the rated torque of installed motor.

[Applicable motor size:400W]

Descriptions		Model								
		ETS-14				ETS-17				
Ballscrew diameter	mm	16				20				
Ballscrew precision grade		C7								
Screw lead	mm	5	10	16	20	5	10	20	40	
Repeatability	mm	±0.02								
Max. load capacity *1	Horizontal	kg	110	88	48	40	120	110	75	35
	Vertical	kg	33	22	10	8	40	30	14	7
Max. speed *1	mm/s	250	500	800	1000	250	500	1000	2000	
Stroke length *2	mm	100 to 1050				100 to 1250				
Thrust	N	1388	694	433	347	1388	694	347	174	

*1: Value at the time of acceleration/deceleration at 0.2 sec.

*2: The stroke pitch is 50.

[Applicable motor size:750W]

Descriptions		Model								
		ETS-17				ETS-22				
Ballscrew diameter	mm	20				25	20			
Ballscrew precision grade		C7								
Screw lead	mm	5	10	20	40	5	10	25	40	
Repeatability	mm	±0.02								
Max. load capacity *1	Horizontal	kg	120	120	83	50	150	150	120	60
	Vertical	kg	50	40	25	10	55	45	20	10
Max. speed *1	mm/s	250	500	1000	2000	250	500	1250	2000	
Stroke length *2	mm	100 to 1250				100 to 1500				
Thrust	N	2100	1050	525	260	2100	1050	420	260	

*1: Value at the time of acceleration/deceleration at 0.2 sec.

*2: The stroke pitch is 50.

CAUTION:

The motor is not installed with this product. Please obtain and install and adjust the motor and driver by yourself.

Max.speed is estimated valve at 3,000rpm of installed motor.

Thrust force and max. load capacity is estimated value at the rated torque of installed motor.

How to order

ETS - 06 - 05 040 - E M 1 B C B D

Model No.

A Body size

B Screw lead

C Stroke length

D How to install the motor

E Motor mounting specs.

F Motor size

G Brake

H Origin sensor

I Limit Sensor

J Optional

<Example of model number>

ETS-06-05040-EM1BCBD

- A** Body size: width 65×height 56mm
- B** Screw lead: 5mm
- C** Stroke length: 400mm
- D** Motor installation method: external direct installation
- E** Motor mounting specification: Mitsubishi
- F** Motor size: 100W
- G** Brakes: equipped
- H** Home position sensor: outside the motor-side
- I** Limit-sensor: outside
- J** Optional: No grease nipple

*If the motor mounting direction is other than the "B (built-in type)", the actuator will have no brakes. In **G** select N (no brakes) in any case.

E Motor mounting specs. (refer to table 3 on the next page.)

Maker	100W	200W	400W	750W
Mitsubishi Electric Corporation	M	M	M	M
Delta Electronics, Inc.	M	M	M	M
SANYO DENKI CO.,LTD.	M	M	M	M
YASKAWA ELECTRIC CORPORATION	Y	Y	Y	Y
KEYENCE CORPORATION	Y	Y	Y	Y
Panasonic Corporation	P	P	P	P
OMRON Corporation	M	P	P	P

Symbol	Descriptions
A Body size (mm)	
05	width 51 × height 54
06	width 65 × height 56
10	width 102 × height 66
12	width 102 × height 70
13	width 135 × height 78
14	width 135 × height 78
17	width 170 × height 97
22	width 220 × height 122

B Screw lead (refer to the following page table 1.)	
02	2mm
05	5mm
10	10mm
16	16mm
20	20mm
25	25mm
40	40mm

C Stroke length (refer to the following page table 1.)	
010	From 100mm to 1500mm
upto 150	(50mm pitch) Indication is 1/10.

D How to install the motor (refer to the following page table 2.)	
E	External direct mounting
D	Bottom up mounting
R	Right side up mounting
L	Left side up mounting
B	Built-in type*

E Motor mounting specs.	
M	Select motor mounting specifications
Y	from the table below.
P	

F Motor size (refer to the following page table 2.)	
1	100W
2	200W
4	400W
8	750W

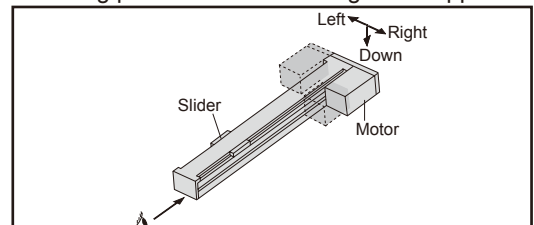
G Brake	
N	No brakes
B	With brakes*

H Origin sensor (1 pc.) (refer to the following page table 4.)	
N	No sensor
A	Internal Motor-side
B	Internal opposite Motor-side
C	External Motor-side (attached shipment)
D	External opposite Motor-side (attached shipment)

I Limit sensor (2) (refer to the following page table 4.)	
N	No sensor
A	Internal
B	External (attached shipment)

J Grease nipple (refer to the following page table 5.)	
N	Body mounting direction Standard/ No grease nipples
D	Body mounting direction Down/No grease nipples
R	Grease nipple Right-side
L	Grease nipple Left-side

Mounting position of motor and grease nipple



"○" Available, "-" Not available

Table 1 Screw lead and stroke **B** **C**

Model	B Screw lead (mm)							C mm stroke (mm) (50mm pitch)
	02	05	10	16	20	25	40	
ETS-05	○	○	○	-	-	-	-	100-800
ETS-06	○	○	○	-	-	-	-	100-800
ETS-10	-	○	○	○	○	-	-	100-1050
ETS-12	-	○	○	○	○	-	-	100-1050
ETS-13	-	○	○	○	○	-	-	100-1050
ETS-14	-	○	○	○	○	-	-	100-1050
ETS-17	-	○	○	-	○	-	○	100-1250
ETS-22	-	○	○	-	-	○	○	100-1500

Table 2 Motor mounting type and motor size **D** **F**

Model	D Motor mounting type					F Motor size			
	External direct mount	Bottom Turn up	Right way Turn up	Left way Turn up	Built-in	100W	200W	400W	750W
ETS-05	○	○	○	○	-	○	-	-	-
ETS-06	○	○	○	○	-	○	-	-	-
ETS-10	○	○	○	○	○	○	-	-	-
ETS-12	○	○	○	○	○	○	-	-	-
ETS-13	○	○	○	○	○*2	-	○	-	-
ETS-14	○	○	○	○	○	-	○	○	-
ETS-17	○	○	○	○	○*1	-	-	○	○*1
ETS-22	○	○	○	○	○	-	-	-	○

*1:750W type is not available for built-in. *2:Consult with CKD when using motors manufactured by Omron Corporation.

Table 3 Motor mounting specs., Recommended motor model No., and Rated output **E**

E maker	Motor (without brake)	Motor (with brake)	Rated output	E maker	Motor (without brake)	Motor (with brake)	Rated output
Mitsubishi Electric Corporation	HF-KP13	HF-KP13B	100W	KEYENCE CORPORATION	SV-M010**	SV-B010**	100W
	HF-KP23	HF-KP23B	200W		SV-M020**	SV-B020**	200W
	HF-KP43	HF-KP43B	400W		SV-M040**	SV-B040**	400W
	HF-KP73	HF-KP73B	750W		SV-M075**	SV-B075**	750W
*1 Delta Electronics, Inc.	ECMA-C10401ES	ECMA-C10401FS	100W	Panasonic Corporation	MSMD012G1A	MSMD012G1B	100W
	ECMA-C10602ES	ECMA-C10602FS	200W		MSMD022G1A	MSMD022G1B	200W
	ECMA-C10604ES	ECMA-C10604FS	400W		MSMD042G1A	MSMD042G1B	400W
	ECMA-C10807ES	ECMA-C10807FS	750W		MSMD082G1A	MSMD082G1B	750W
SANYO DENKI CO.,LTD.	R2AA04010FX	R2AA04010FC	100W	OMRON Corporation	R88M-K10030H	R88M-K10030H-B	100W
	R2AA06020FX	R2AA06020FC	200W		R88M-K20030*	R88M-K20030*-B	200W
	R2AA06040HX	R2AA06040HC	400W		R88M-K40030*	R88M-K40030*-B	400W
	-	-	750W		R88M-K75030H	R88M-K75030H-B	750W
YASKAWA ELECTRIC CORPORATION	SGMJV-01ADA21	SGMJV-01ADA2C	100W	*1:Servo motor ECMA series (brake mounting) manufactured by Delta Electronics, Inc. is not available for built-in.			
	SGMJV-02ADA21	SGMJV-02ADA2C	200W	*2:Consult with CKD for mounting motors with model No. not listed in recommendation list above or motors manufactured by other manufacturers.			
	SGMJV-04ADA21	SGMJV-04ADA2C	400W				
	SGMJV-08ADA21	SGMJV-08ADA2C	750W				

Table 4 Home position sensor and limit sensor **H** **I**

Model	H Home position sensor (1 pc.)					I Limit sensor (2 pc.)		
	Without *1	Internal		External		Without *1	Internal	External
		Motor side	Opposite Motor side	Motor side	Opposite Motor side			
ETS-05	○	-	-	○	○	○	-	○
ETS-06	○	-	-	○	○	○	-	○
ETS-10	○	○	○*2	○	○	○	○*2	○
ETS-12	○	○*3	○	○	○	○	○*3	○
ETS-13	○	○	○	○	○	○	○	○
ETS-14	○	○	○	○	○	○	○	○
ETS-17	○	○	○	○	○	○	○	○
ETS-22	○	○	○	○	○	○	○	○

*1:Home position sensor and limit sensor are a set. Either is Nil, select Nil for the other.

Example: Set of home sensor Nil and limit sensor Installed (internal / external) is not available.

*2:ETS-10 is not available for the combination of home sensor B (internal, opposite side of motor) and limit sensor Installed (internal / external).

Example: ETS-10-*BA*not available as model number

*3:When the mounting direction of ETS-12 is R (mounting clockwise) or L (mounting counter-clockwise), the combination of home sensor A (internal, motor side) and limit sensor A (internal) is not available.

Example: ETS-12-*R/L*AA*not available as model number

*4:In case of mounting inside of sensor, users cannot adjust the position. (shipped pre-assembled)

Before using the product, make sure that the product suits your needs. It is recommended to use the external sensor for locating the home position with an encoder. In case of mounting outside of sensor, users can adjust the position. (shipped pre-assembled)

Table 5 Motor mounting methods and options **J**

Model	J Options		
	Built-in/External direct mount Bottom side up	Right side up	Left side up
ETS-05	N only (Body mounting direction: Standard (Lower side only))		
ETS-06	N: Body mounting direction: Standard (Upper side φ4.5 counterbore), D: Body mounting direction: M5 from lower side bottom		
ETS-10 to 22	N/R/L	N/L	N/R

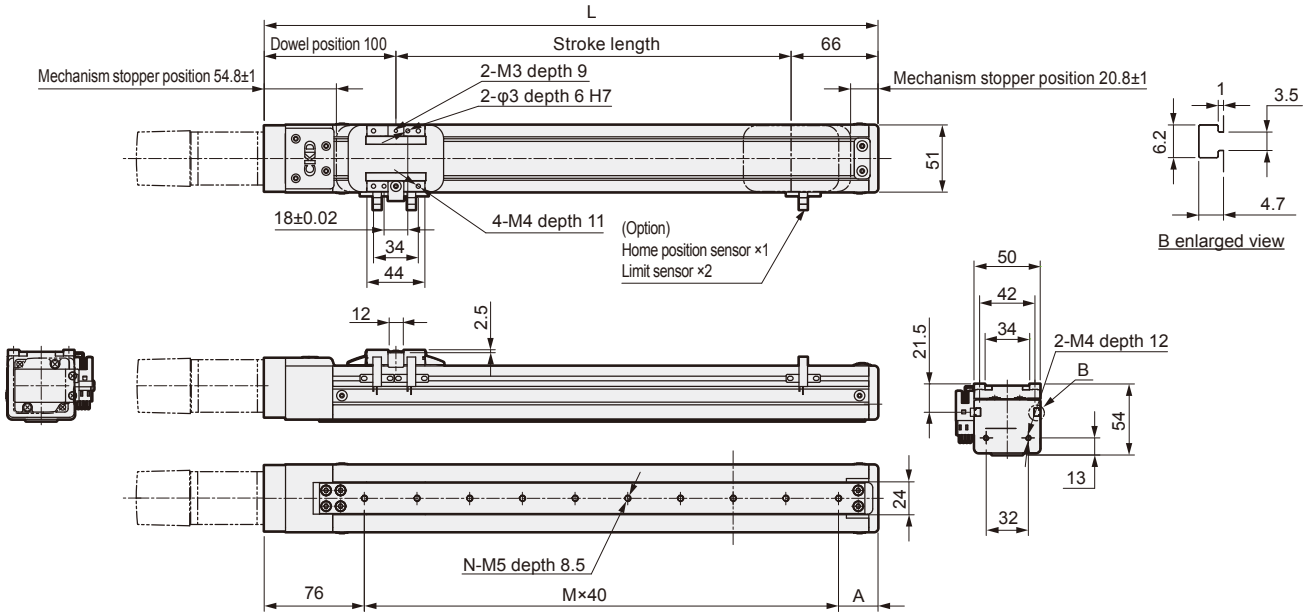
*1:Grease nipples cannot be mounted on ETS-05 or 06.

*2:Body mounting direction instructions for ETS-06. Select N (mounting direction standard) or D (mounting direction down).

*3:Grease nipple mounting options for ETS-10 to 22. Select N (without), R (right), or L (left).

Dimensions (ETS-05)

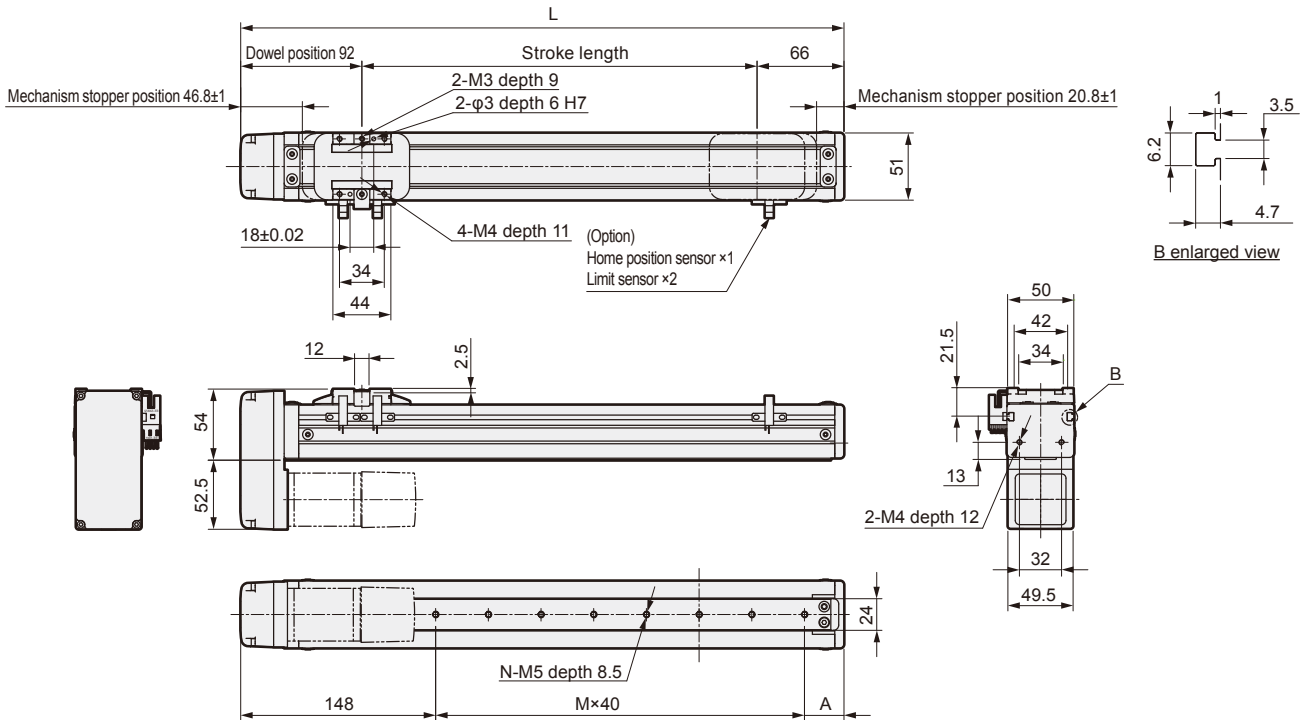
• ETS-05-**-E (how to install the motor: external direct installation)



Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	266	316	366	416	466	516	566	616	666	716	766	816	866	916	966
A	30	40	50	60	30	40	50	60	30	40	50	60	30	40	50
M	4	5	6	7	9	10	11	12	14	15	16	17	19	20	21
N	5	6	7	8	10	11	12	13	15	16	17	18	20	21	22
Weight (kg)	1.6	1.7	1.8	1.9	2.1	2.2	2.2	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1

Note: Refer to page 9 for dimensions of motor mounting part.

• ETS-05-**-D (Motor installation method: bottom-side up installation)

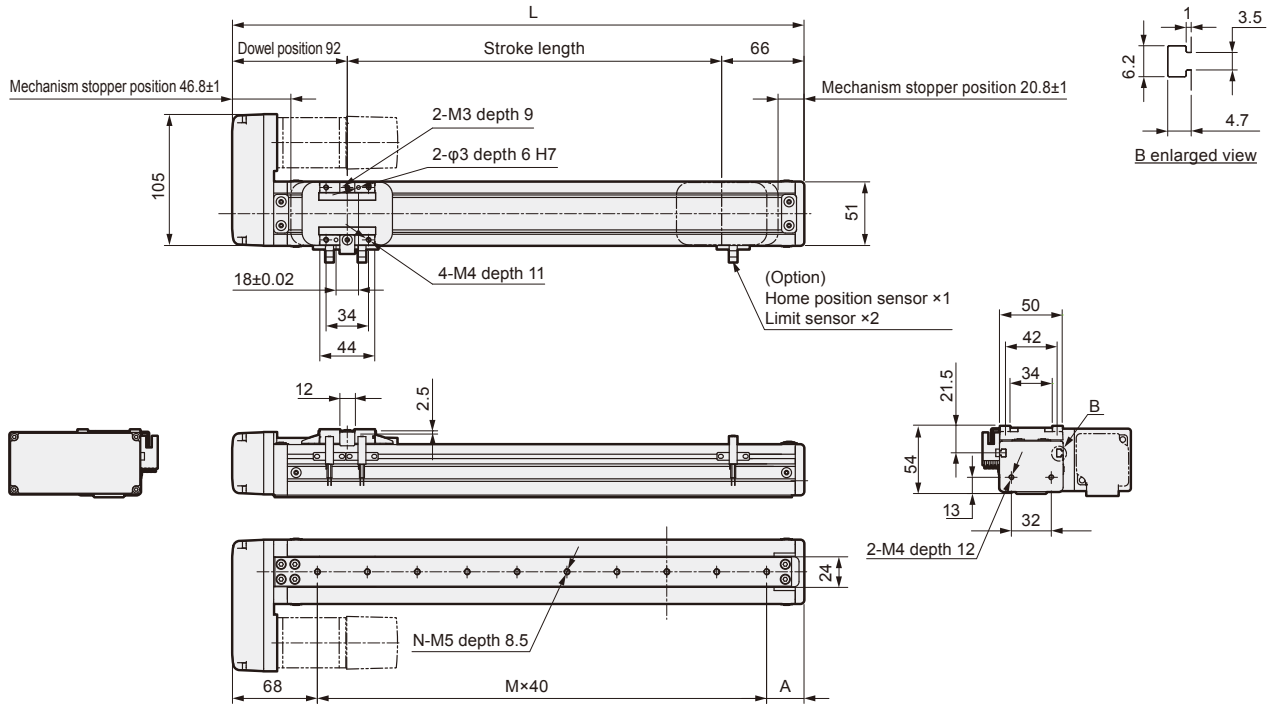


Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	258	308	358	408	458	508	558	608	658	708	758	808	858	908	958
A	30	40	50	60	30	40	50	60	30	40	50	60	30	40	50
M	2	3	4	5	7	8	9	10	12	13	14	15	17	18	19
N	3	4	5	6	8	9	10	11	13	14	15	16	18	19	20
Weight (kg)	1.8	1.9	2.0	2.1	2.3	2.4	2.4	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3

Note: Refer to page 9 for dimensions of motor mounting part.

Dimensions (ETS-05)

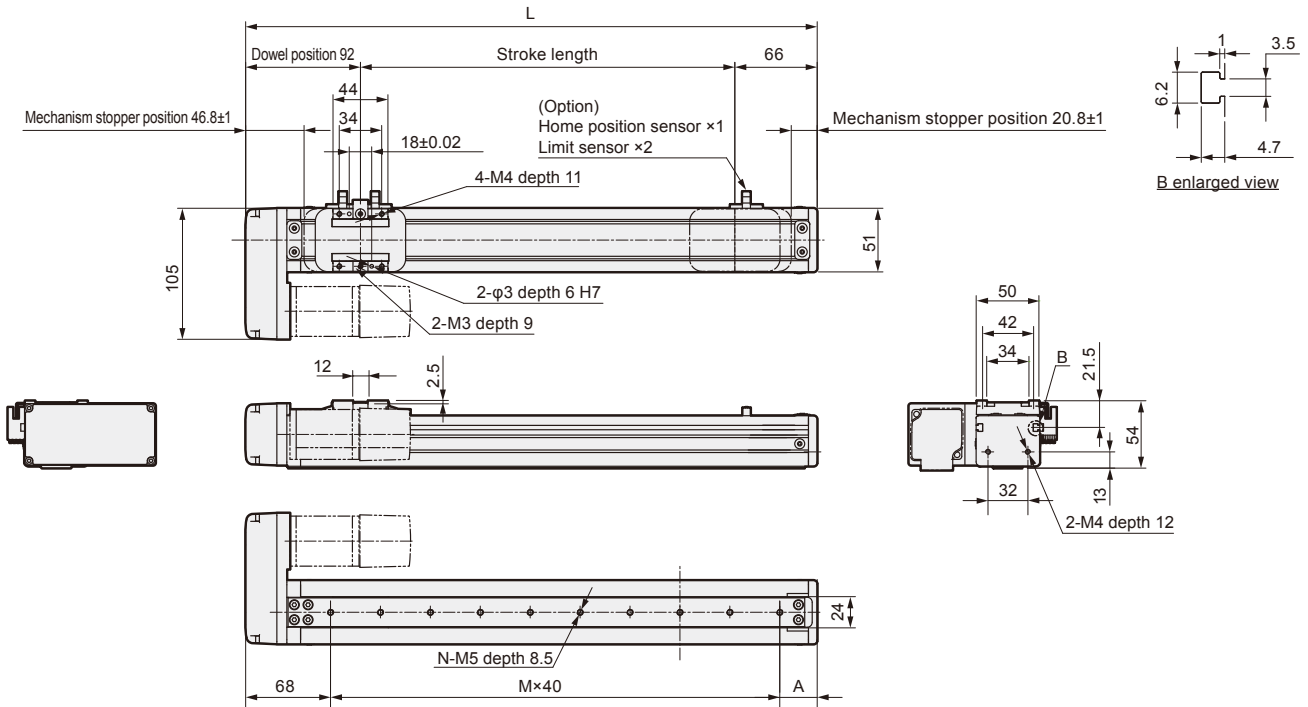
● ETS-05-**-R(Motor installation method: right side turn up installation)



Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	258	308	358	408	458	508	558	608	658	708	758	808	858	908	958
A	30	40	50	60	30	40	50	60	30	40	50	60	30	40	50
M	4	5	6	7	9	10	11	12	14	15	16	17	19	20	21
N	5	6	7	8	10	11	12	13	15	16	17	18	20	21	22
Weight (kg)	1.8	1.9	2.0	2.1	2.3	2.4	2.4	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3

Note: Refer to page 9 for dimensions of motor mounting part.

● ETS-05-**-L(Motor installation method: Left side turn up installation)

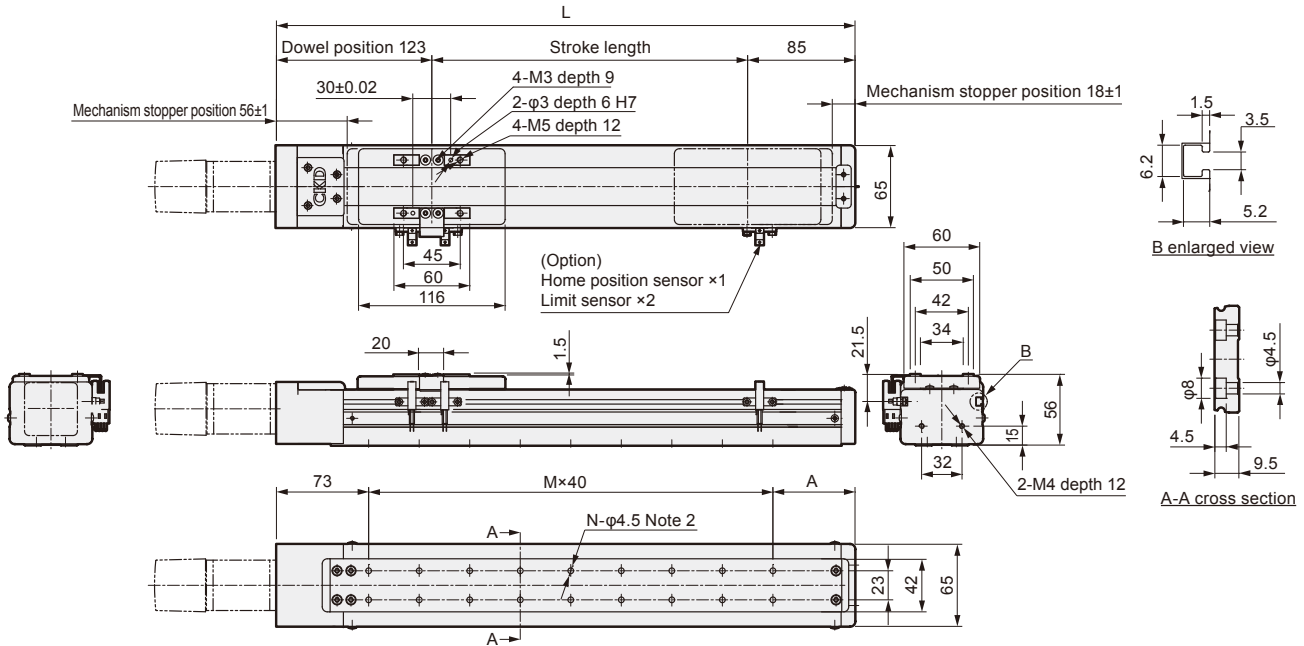


Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	258	308	358	408	458	508	558	608	658	708	758	808	858	908	958
A	30	40	50	60	30	40	50	60	30	40	50	60	30	40	50
M	4	5	6	7	9	10	11	12	14	15	16	17	19	20	21
N	5	6	7	8	10	11	12	13	15	16	17	18	20	21	22
Weight (kg)	1.8	1.9	2.0	2.1	2.3	2.4	2.4	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3

Note: Refer to page 9 for dimensions of motor mounting part.

Dimensions (ETS-06)

• ETS-06-**-E (Motor installation method: external direct installation)

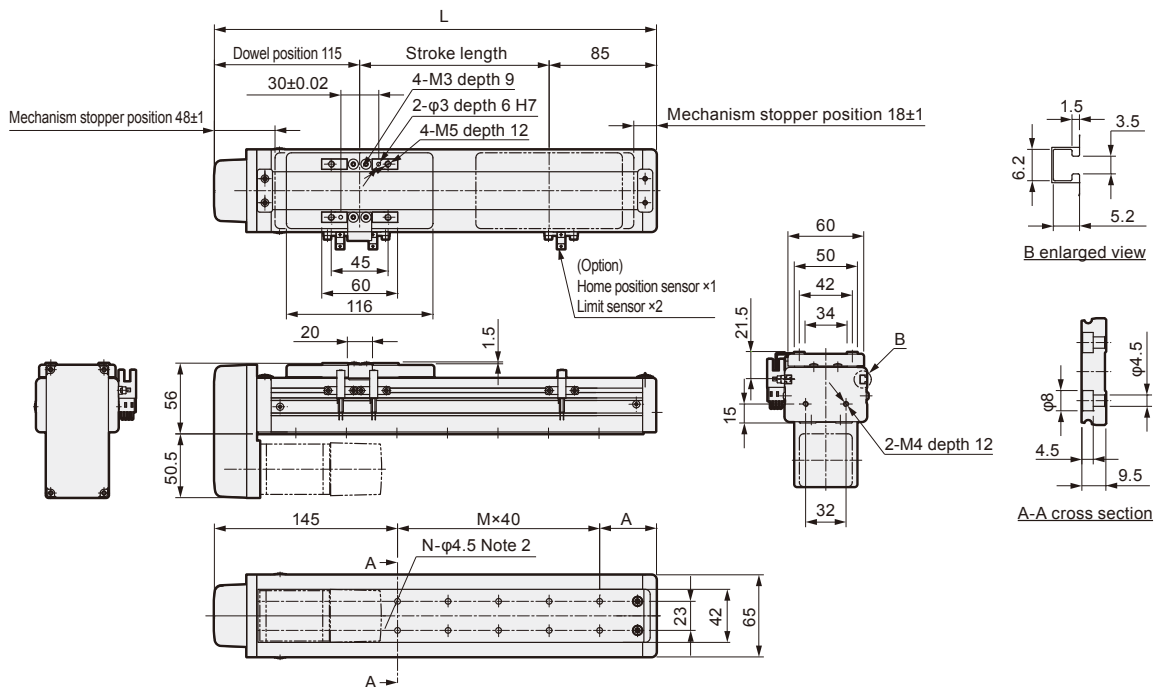


Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	308	358	408	458	508	558	608	658	708	758	808	858	908	958	1008
A	35	45	55	65	35	45	55	65	35	45	55	65	35	45	55
M	5	6	7	8	10	11	12	13	15	16	17	18	20	21	22
N	12	14	16	18	22	24	26	28	32	34	36	38	42	44	46
Weight (kg)	2.1	2.2	2.4	2.6	2.8	3.0	3.1	3.3	3.5	3.7	3.8	4.0	4.2	4.4	4.5

Note 1: Refer to page 10 for dimensions of motor mounting part.

Note 2: N-M5 if \bullet option is D.

• ETS-06-**-D (Motor installation method: bottom-side up installation)



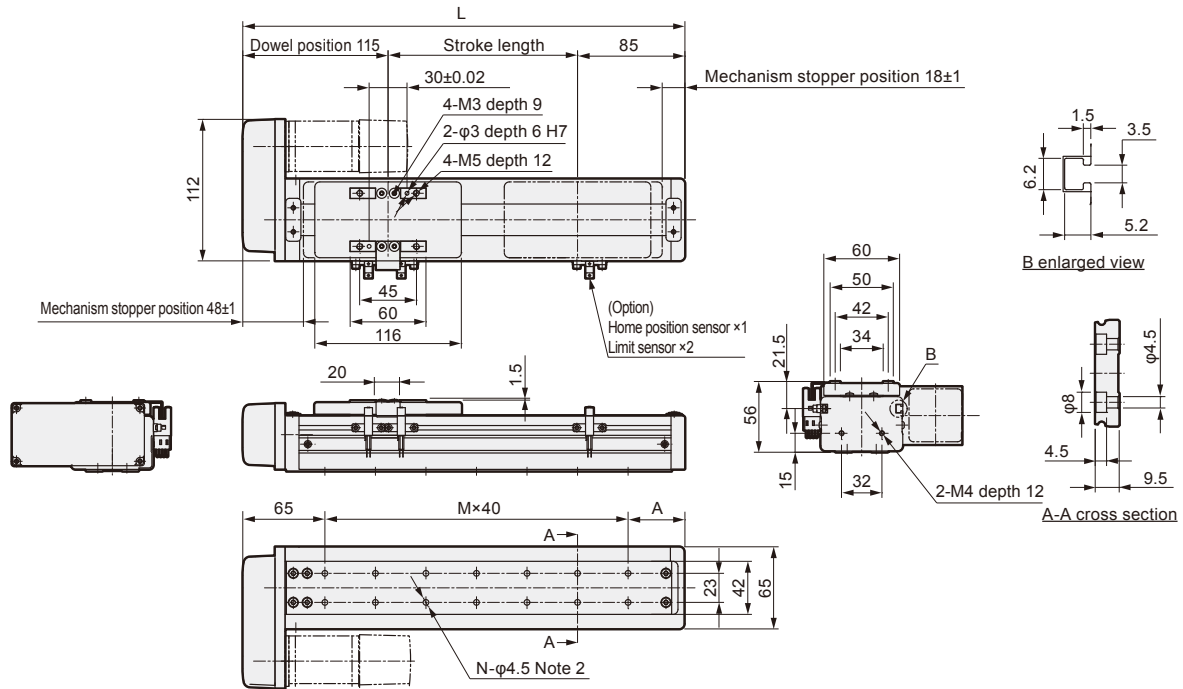
Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
A	35	45	55	65	35	45	55	65	35	45	55	65	35	45	55
M	3	4	5	6	8	9	10	11	13	14	15	16	18	19	20
N	8	10	12	14	18	20	22	24	28	30	32	34	38	40	42
Weight (kg)	2.3	2.4	2.6	2.8	3.0	3.2	3.3	3.5	3.7	3.9	4.0	4.2	4.4	4.6	4.7

Note 1: Refer to page 10 for dimensions of motor mounting part.

Note 2: N-M5 if \bullet option is D.

Dimensions (ETS-06)

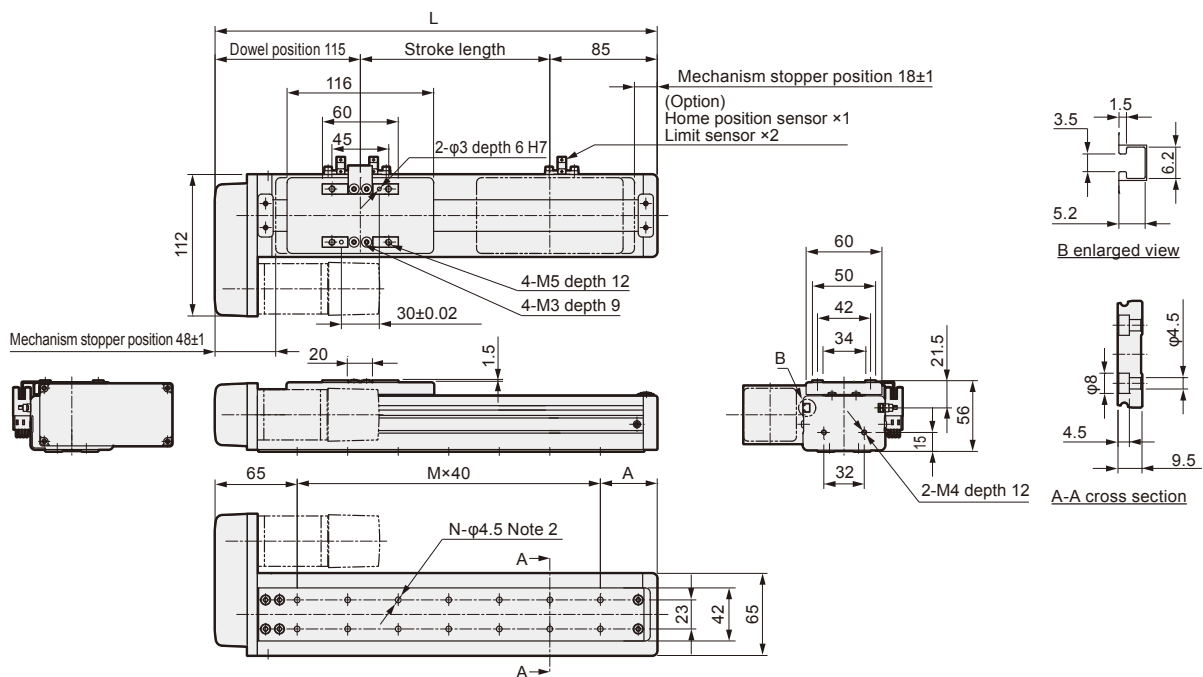
• ETS-06-**-R(Motor installation method: right side turn up installation)



Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
A	35	45	55	65	35	45	55	65	35	45	55	65	35	45	55
M	5	6	7	8	10	11	12	13	15	16	17	18	20	21	22
N	12	14	16	18	22	24	26	28	32	34	36	38	42	44	46
Weight (kg)	2.3	2.4	2.6	2.8	3.0	3.2	3.3	3.5	3.7	3.9	4.0	4.2	4.4	4.6	4.7

Note 1: Refer to page 10 for dimensions of motor mounting part.
 Note 2: N-M5 if option is D.

• ETS-06-**-L(motor installation method: left side turn up installation)

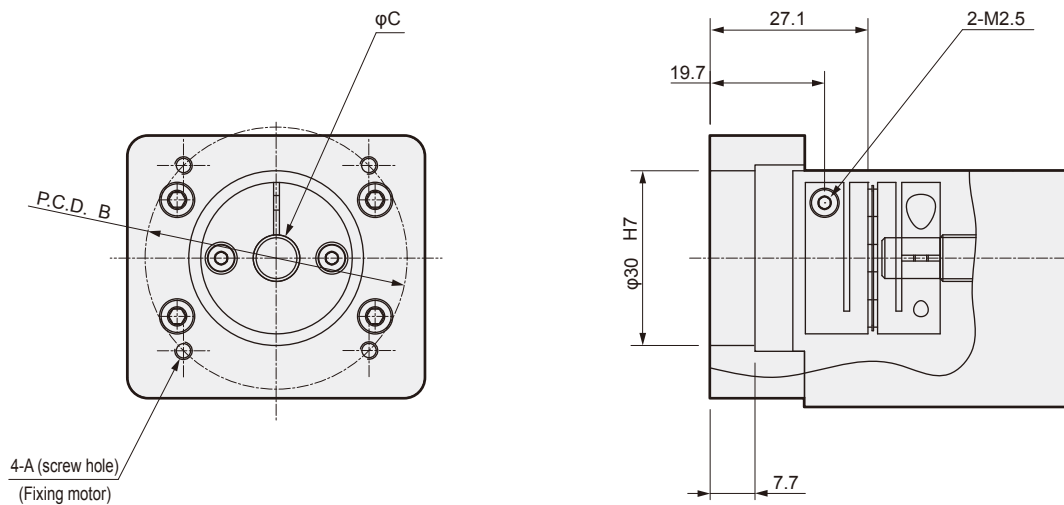


Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
A	35	45	55	65	35	45	55	65	35	45	55	65	35	45	55
M	5	6	7	8	10	11	12	13	15	16	17	18	20	21	22
N	12	14	16	18	22	24	26	28	32	34	36	38	42	44	46
Weight (kg)	2.3	2.4	2.6	2.8	3.0	3.2	3.3	3.5	3.7	3.9	4.0	4.2	4.4	4.6	4.7

Note 1: Refer to page 10 for dimensions of motor mounting part.
 Note 2: N-M5 if option is D.

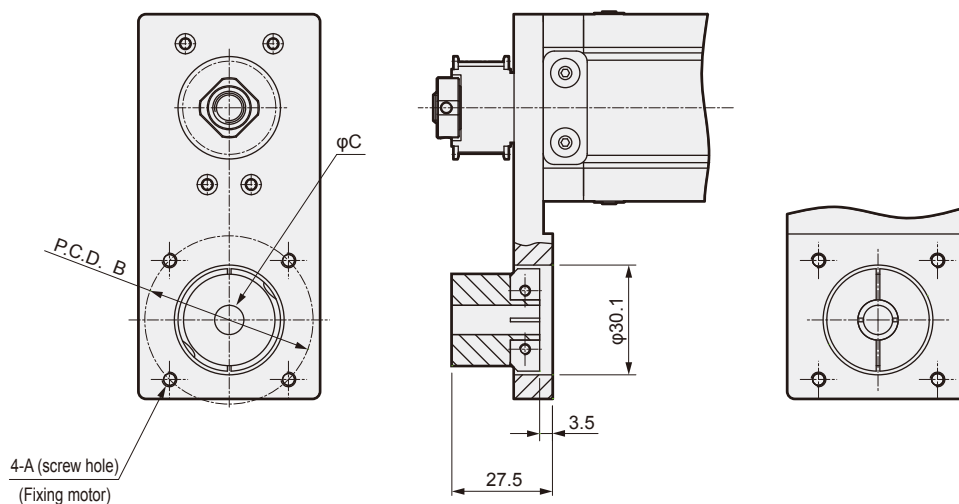
Motor mounting part Dimensions (ETS-05)

• ETS-05-E



ETS-05-E					
Mounting motor specification		A	B	C	Motor screw
M	100W	M4	φ46	φ8	4-M4×L12
Y	100W	M4	φ46	φ8	4-M4×L12
P	100W	M3	φ45	φ8	4-M3×L12

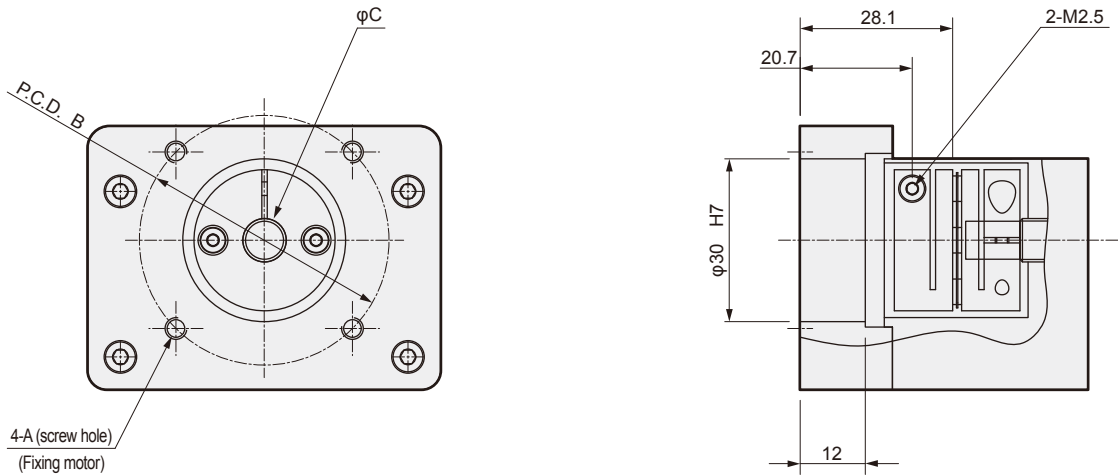
• ETS-05-L/R/D



ETS-05-L/R/D					
Mounting motor specification		A	B	C	Motor screw
M	100W	M4	φ46	φ8	4-M4×L12
Y	100W	M4	φ46	φ8	4-M4×L12
P	100W	M3	φ45	φ8	4-M3×L12

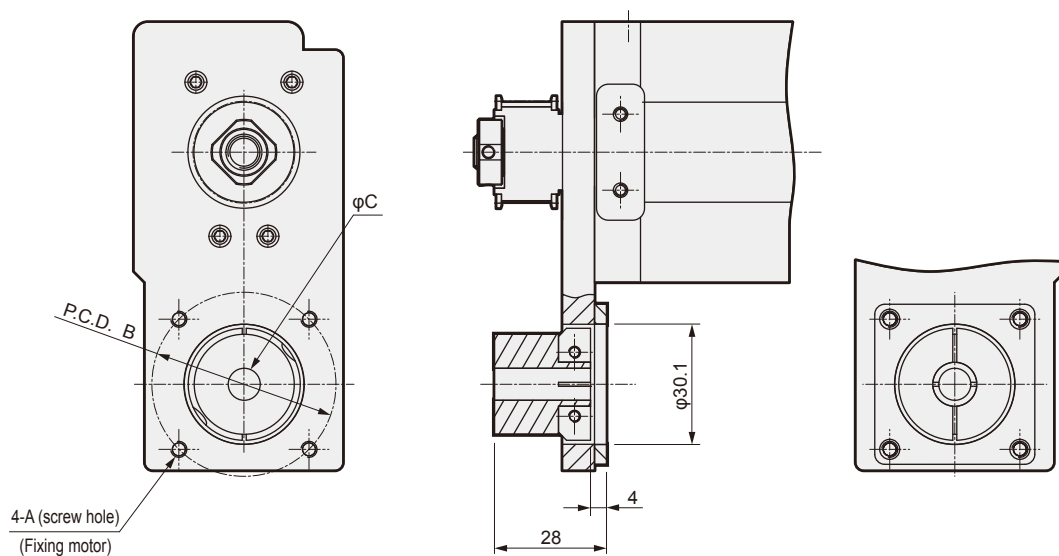
Motor mounting part Dimensions (ETS-06)

• ETS-06-E



ETS-06-E					
Mounting motor specification		A	B	C	Motor screw
M	100W	M4	φ46	φ8	4-M4×L12
Y	100W	M4	φ46	φ8	4-M4×L12
P	100W	M3	φ45	φ8	4-M3×L12

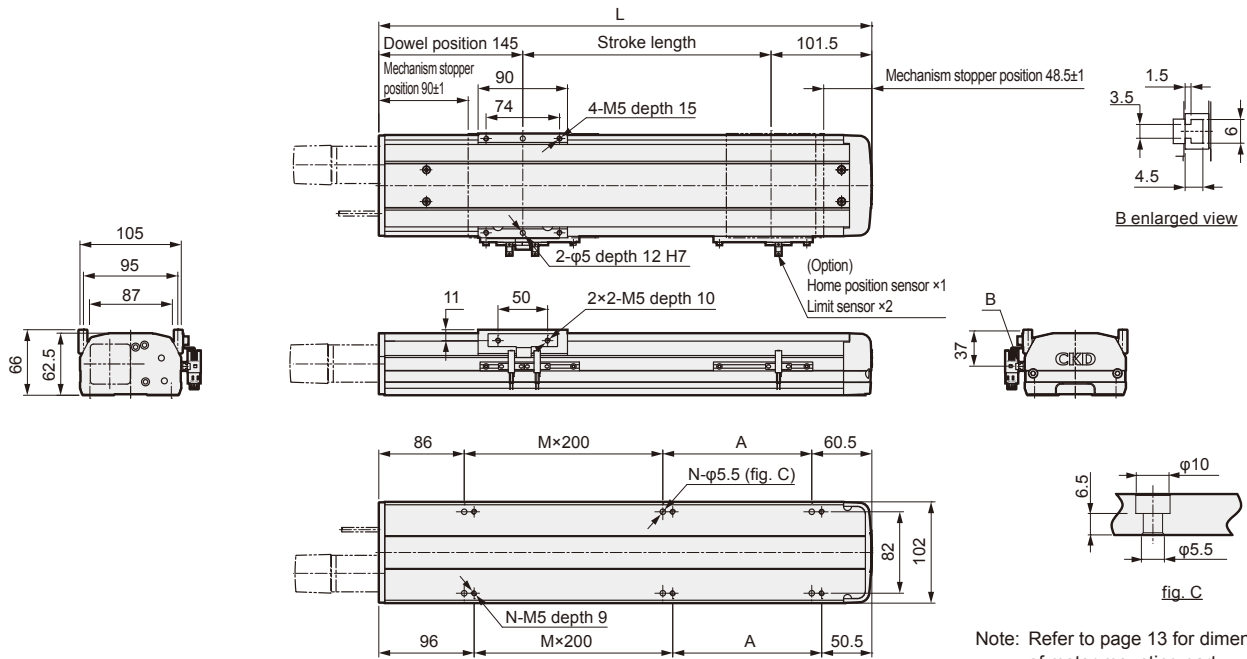
• ETS-06-L/R/D



ETS-06-L/R/D					
Mounting motor specification		A	B	C	Motor screw
M	100W	M4	φ46	φ8	4-M4×L12
Y	100W	M4	φ46	φ8	4-M4×L12
P	100W	M3	φ45	φ8	4-M3×L12

Dimensions (ETS-10)

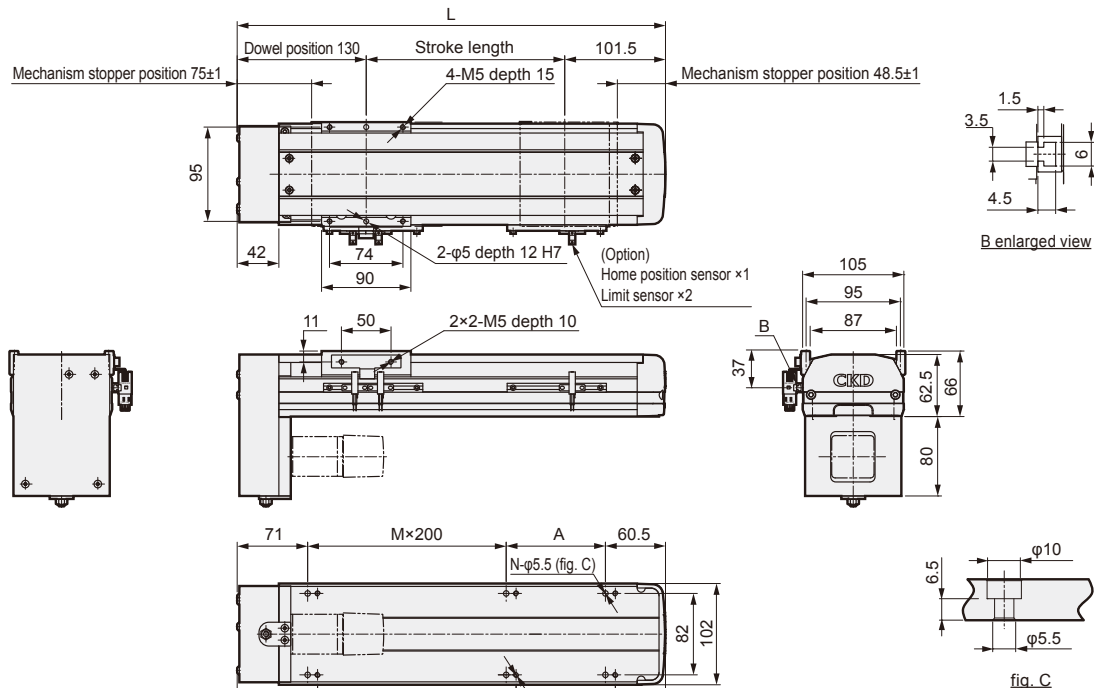
• ETS-10-**-E (Motor installation method: external direct installation)



Note: Refer to page 13 for dimensions of motor mounting part.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	346.5	396.5	446.5	496.5	546.5	596.5	646.5	696.5	746.5	796.5	846.5	896.5	946.5	996.5	1046.5	1096.5	1146.5	1196.5	1246.5	1296.5
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
Weight (kg)	4.9	5.2	5.6	6.0	6.4	6.8	7.2	7.6	7.9	8.3	8.7	9.1	9.5	9.9	10.3	10.6	11.0	11.4	11.8	12.2

• ETS-10-**-D (Motor installation method: bottom-side up installation)

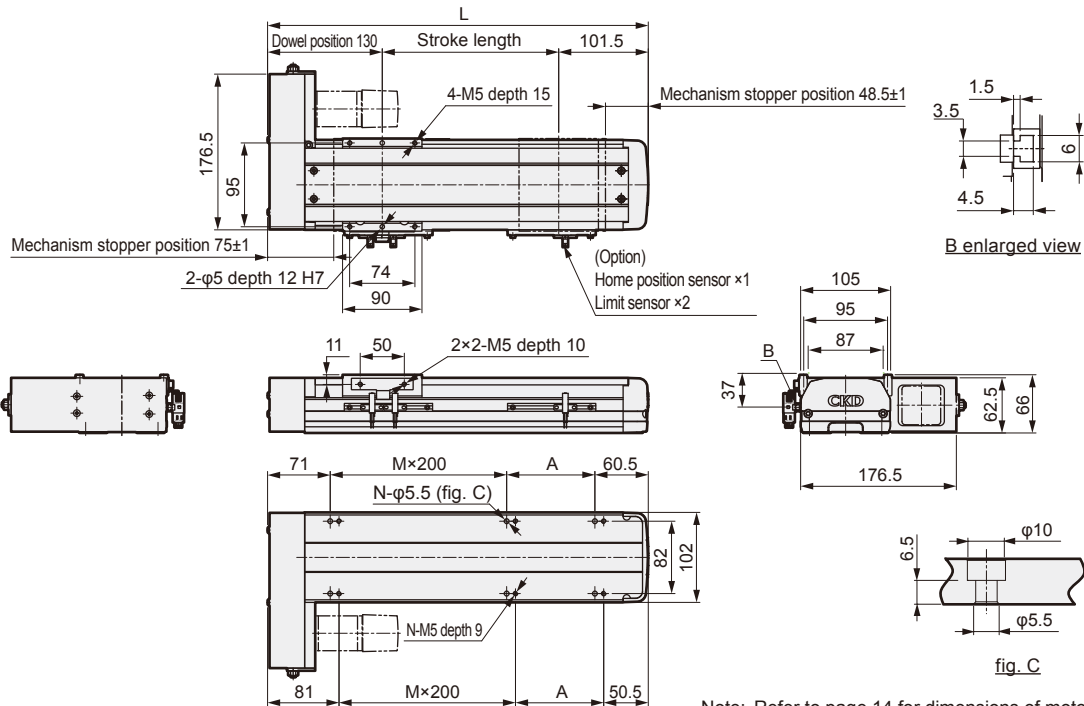


Note: Refer to page 14 for dimensions of motor mounting part.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	331.5	381.5	431.5	481.5	531.5	581.5	631.5	681.5	731.5	781.5	831.5	881.5	931.5	981.5	1031.5	1081.5	1131.5	1181.5	1231.5	1281.5
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
Weight (kg)	5.7	6.0	6.4	6.6	7.0	7.6	8.0	8.4	8.7	9.1	9.5	9.9	10.3	10.7	11.1	11.4	11.8	12.2	12.6	13.0

Dimensions (ETS-10)

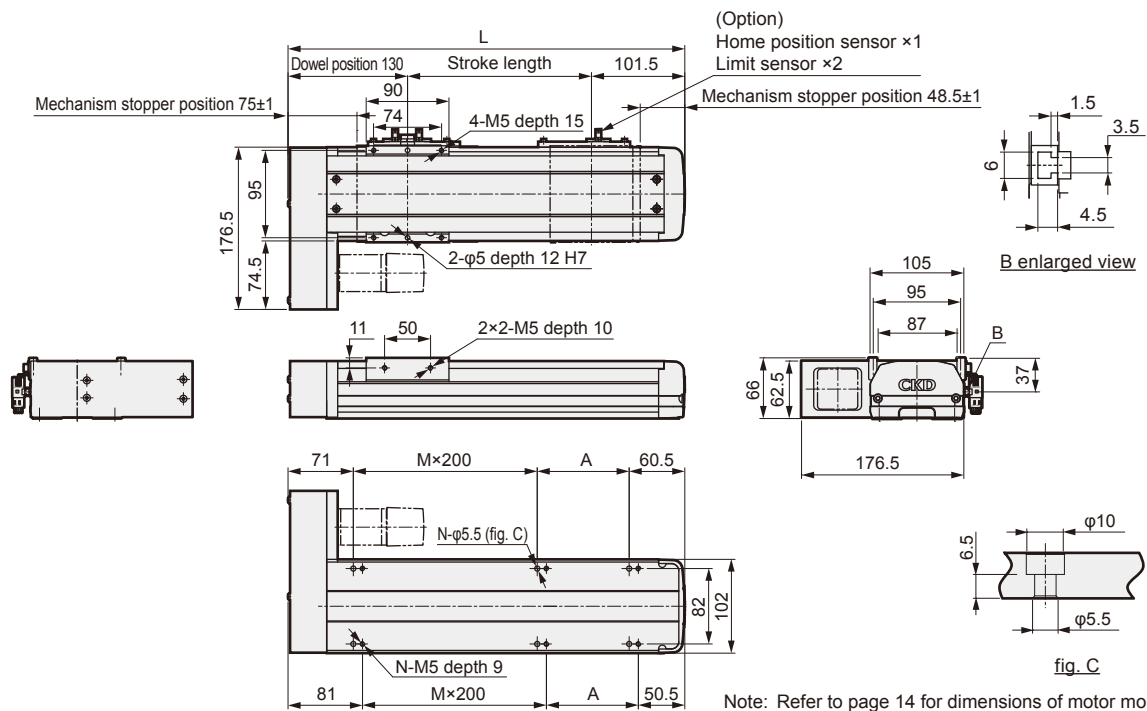
● ETS-10-**-R(Motor installation method: right side turn up installation)



Note: Refer to page 14 for dimensions of motor mounting part.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	331.5	381.5	431.5	481.5	531.5	581.5	631.5	681.5	731.5	781.5	831.5	881.5	931.5	981.5	1031.5	1081.5	1131.5	1181.5	1231.5	1281.5
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
Weight (kg)	5.5	5.8	6.2	6.6	7.0	7.4	7.8	8.2	8.5	8.9	9.3	9.7	10.1	10.5	10.9	11.2	11.6	12.0	12.4	12.8

● ETS-10-**-L(Motor installation method: left side turn up installation)

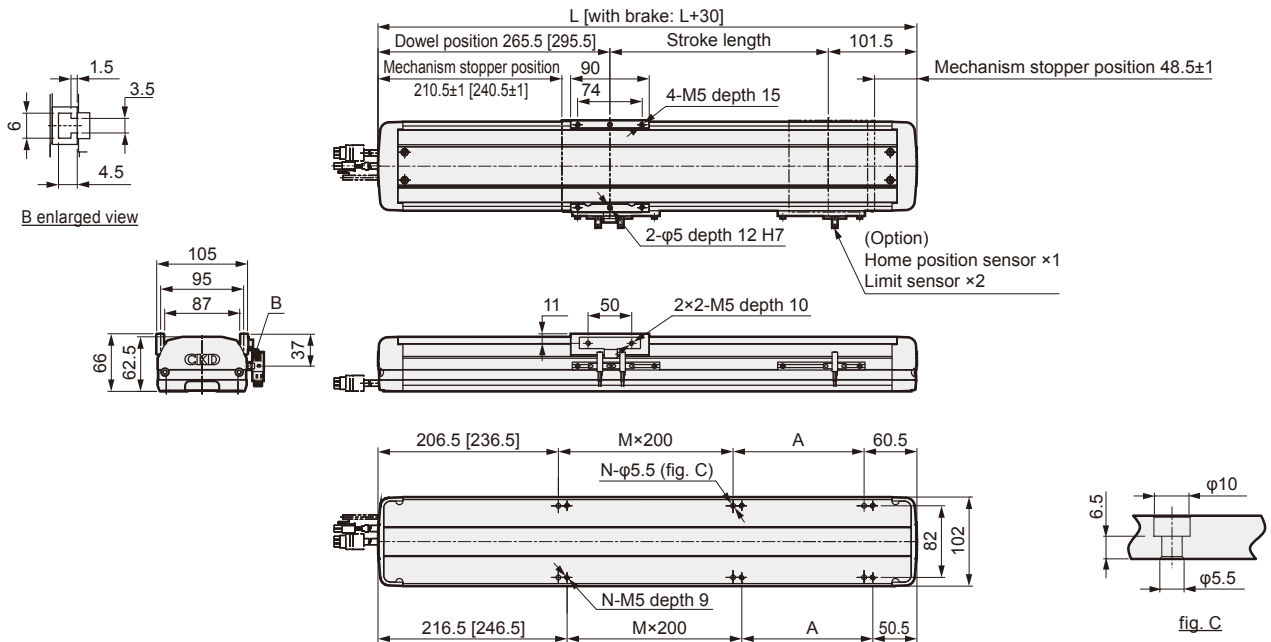


Note: Refer to page 14 for dimensions of motor mounting part.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	331.5	381.5	431.5	481.5	531.5	581.5	631.5	681.5	731.5	781.5	831.5	881.5	931.5	981.5	1031.5	1081.5	1131.5	1181.5	1231.5	1281.5
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
Weight (kg)	5.5	5.8	6.2	6.6	7.0	7.4	7.8	8.2	8.5	8.9	9.3	9.7	10.1	10.5	10.9	11.2	11.6	12.0	12.4	12.8

Dimensions (ETS-10)

• ETS-10-**-B (Motor installation method: built-in)

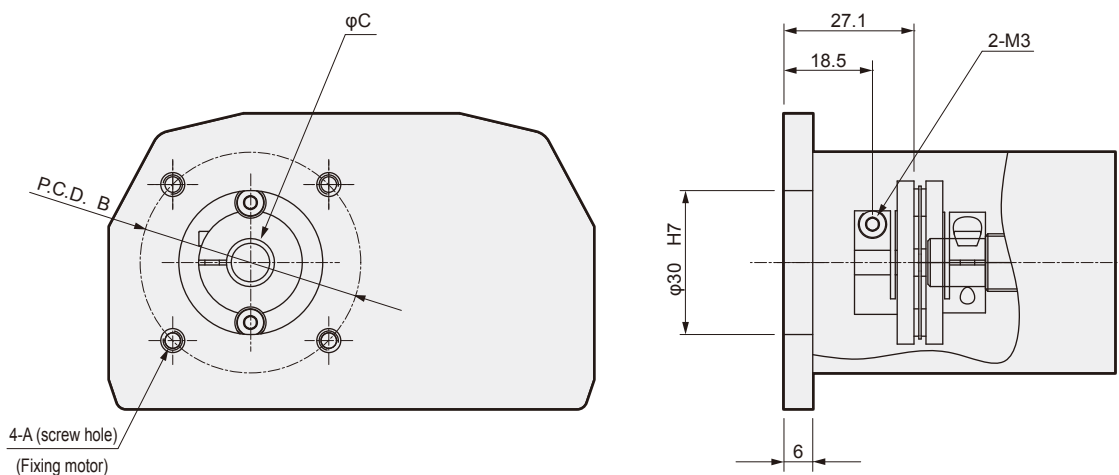


Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	
L	467	517	567	617	667	717	767	817	867	917	967	1017	1067	1117	1167	1217	1267	1317	1367	1417	
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	
Weight (kg)	Without brake	6.7	7.4	8.1	8.8	9.5	10.2	10.9	11.6	12.4	13.1	13.8	14.5	15.2	15.9	16.6	17.4	18.1	18.8	19.5	20.2
	With brake	7.1	7.8	8.5	9.2	9.9	10.6	11.4	12.1	12.8	13.5	14.2	14.9	15.6	16.4	17.1	17.8	18.5	19.2	19.9	20.6

Note 1: Value in [] indicates brake mounting dimensions. Note 2: Refer to page 14 for dimensions of motor mounting part.

Motor mounting part Dimensions

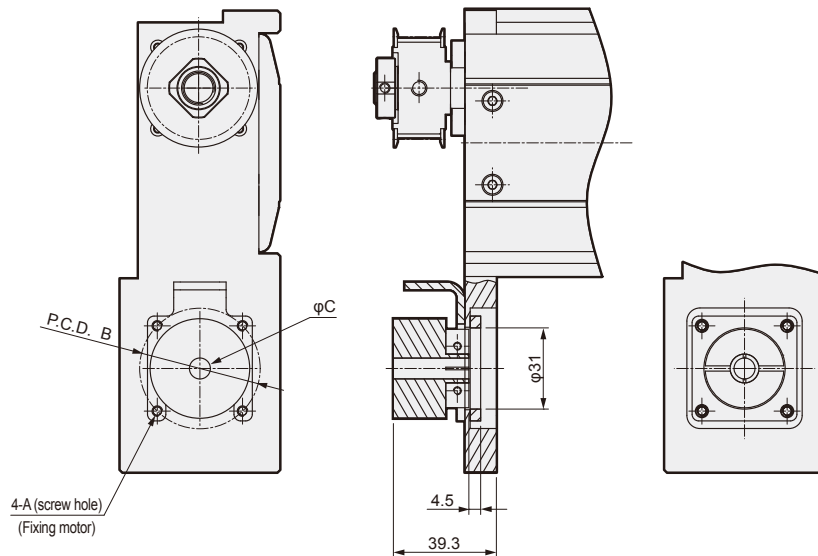
• ETS-10-E



ETS-10-E					
Mounting motor specification		A	B	C	Motor screw
M	100W	M4	φ46	φ8	4-M4×L10
Y	100W	M4	φ46	φ8	4-M4×L10
P	100W	M3	φ45	φ8	4-M3×L10

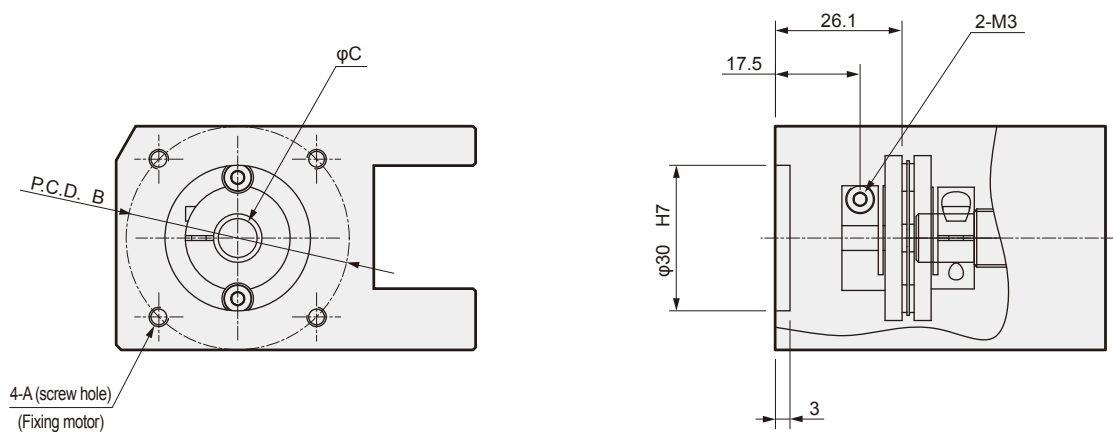
Motor mounting part Dimensions

● ETS-10-L/R/D



ETS-10-L/R/D					
Mounting motor specification		A	B	C	Motor screw
M	100W	M4	φ46	φ8	4-M4×L10
Y	100W	M4	φ46	φ8	4-M4×L10
P	100W	M3	φ45	φ8	4-M3×L10

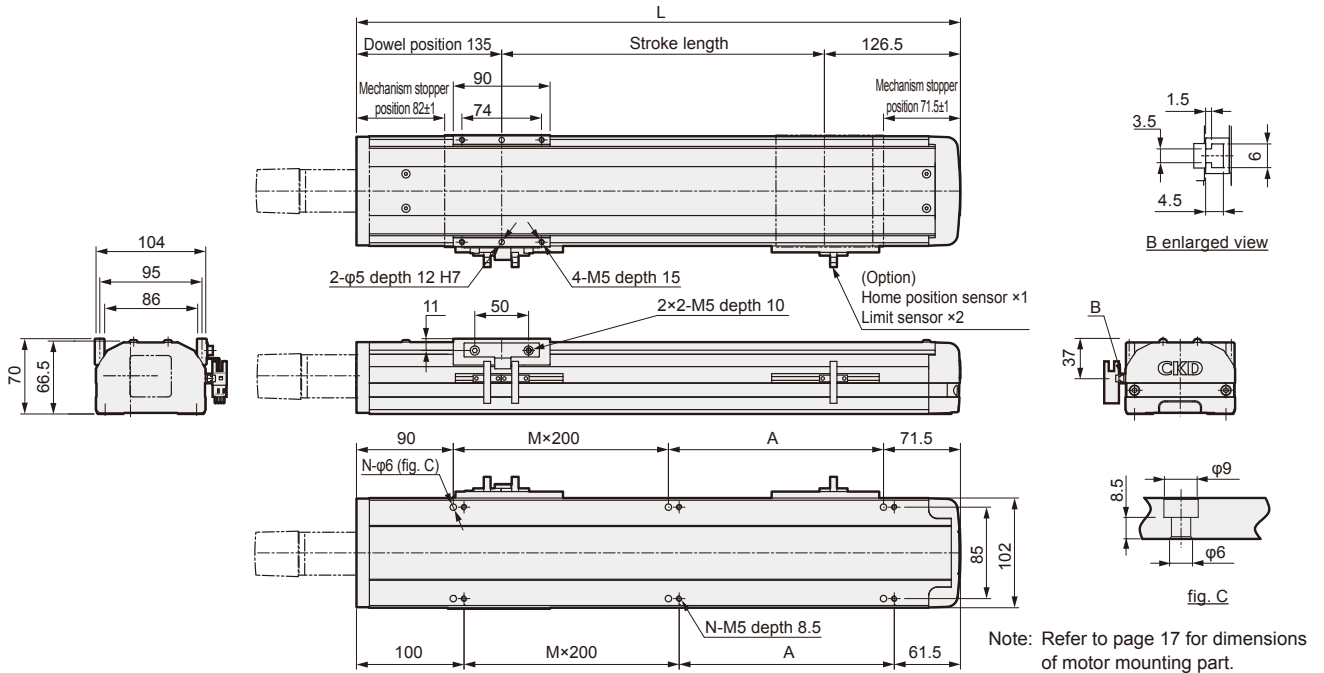
● ETS-10-B



ETS-10-B					
Mounting motor specification		A	B	C	Motor screw
M	100W	M4	φ46	φ8	4-M4×L10
Y	100W	M4	φ46	φ8	4-M4×L10
P	100W	M3	φ45	φ8	4-M3×L10

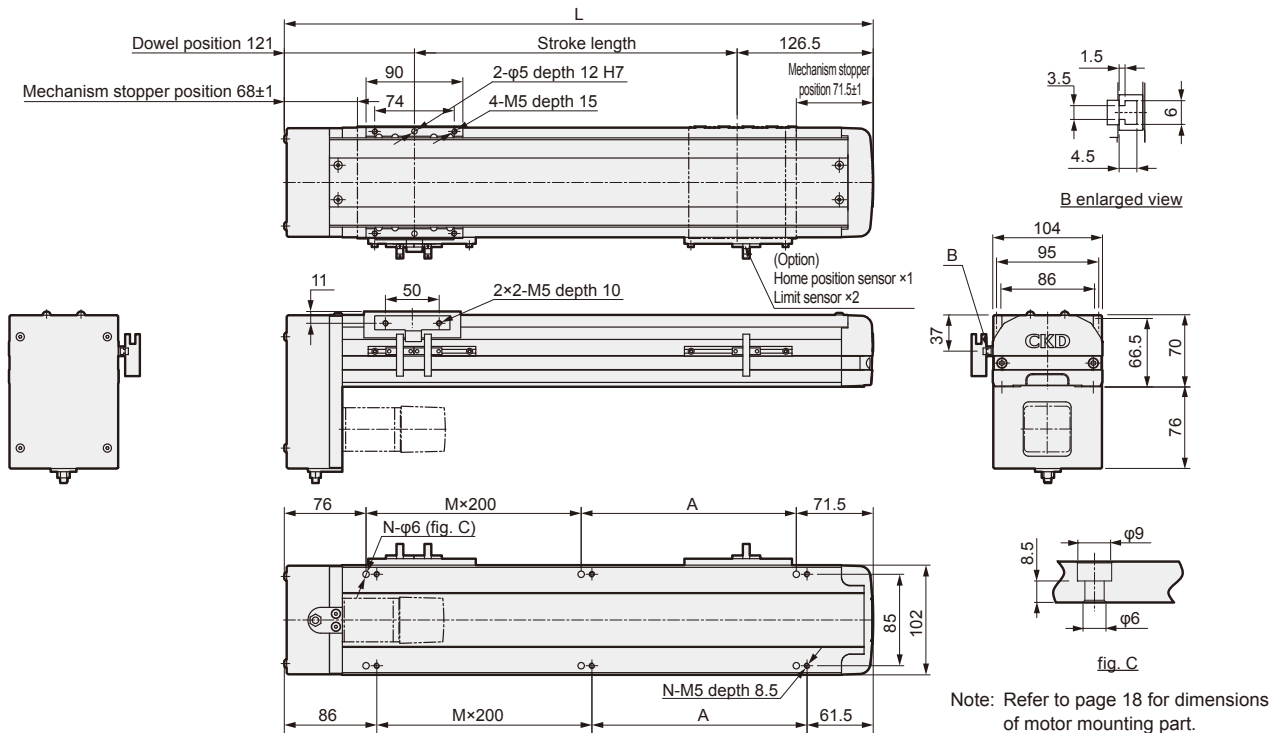
Dimensions (ETS-12)

• ETS-12-**-E (Motor installation method: external direct installation)



Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	361.5	411.5	461.5	511.5	561.5	611.5	661.5	711.5	761.5	811.5	861.5	911.5	961.5	1011.5	1061.5	1111.5	1161.5	1211.5	1261.5	1311.5
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
Weight (kg)	6.0	6.4	6.8	7.2	7.6	8.0	8.4	8.8	9.1	9.5	9.9	10.3	10.7	11.1	11.5	11.8	12.2	12.6	13.0	13.4

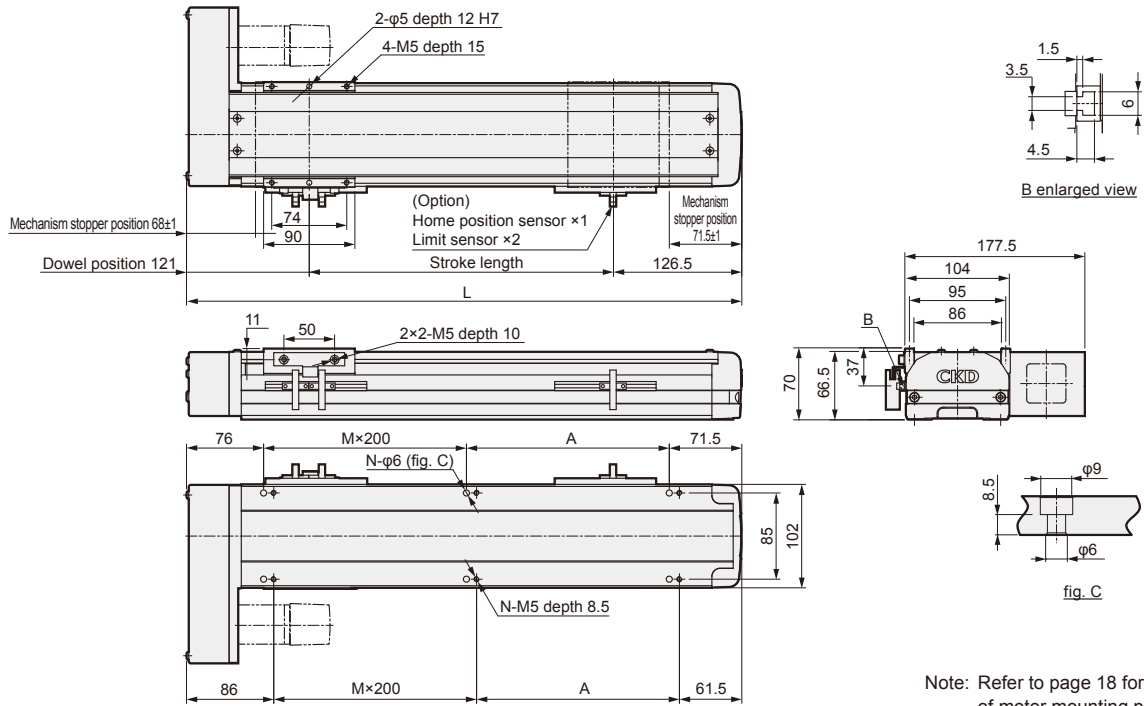
• ETS-12-**-D (Motor installation method: bottom-side up installation)



Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	347.5	397.5	447.5	497.3	547.5	597.5	647.5	697.5	747.5	797.5	847.5	897.5	947.5	997.5	1047.5	1097.5	1147.5	1197.5	1247.5	1297.5
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
Weight (kg)	6.8	7.2	7.6	7.8	8.2	8.8	9.2	9.6	9.9	10.3	10.7	11.1	11.5	11.9	12.3	12.6	13.0	13.4	13.8	14.2

Dimensions (ETS-12)

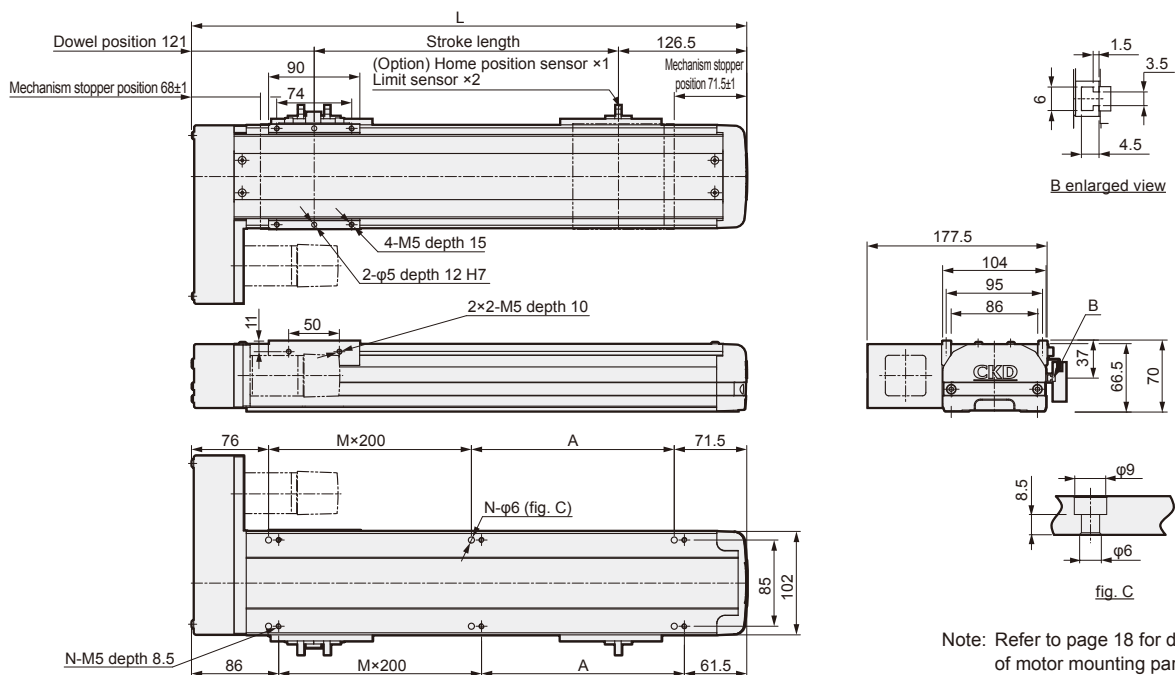
• ETS-12-**-R(Motor installation method: right side turn up installation)



Note: Refer to page 18 for dimensions of motor mounting part.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	347.5	397.5	447.5	497.5	547.5	597.5	647.5	697.5	747.5	797.5	847.5	897.5	947.5	997.5	1047.5	1097.5	1147.5	1197.5	1247.5	1297.5
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
Weight (kg)	6.6	7.0	7.4	7.8	8.2	8.6	9.0	9.4	9.7	10.1	10.5	10.9	11.3	11.7	12.1	12.4	12.8	13.2	13.6	14.0

• ETS-12-**-L(Motor installation method: left side turn up installation)

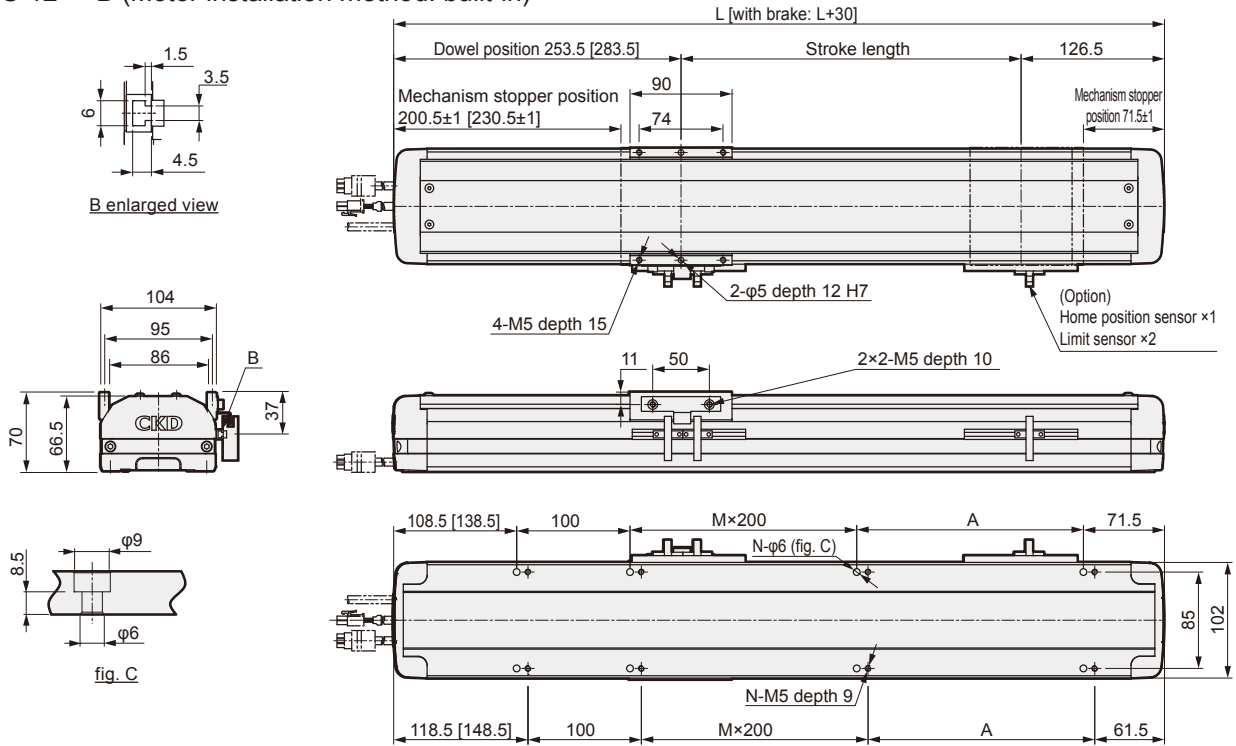


Note: Refer to page 18 for dimensions of motor mounting part.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	347.5	397.5	447.5	497.5	547.5	597.5	647.5	697.5	747.5	797.5	847.5	897.5	947.5	997.5	1047.5	1097.5	1147.5	1197.5	1247.5	1297.5
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
Weight (kg)	6.6	7.0	7.4	7.8	8.2	8.6	9.0	9.4	9.7	10.1	10.5	10.9	11.3	11.7	12.1	12.4	12.8	13.2	13.6	14.0

Dimensions (ETS-12)

• ETS-12-**-B (Motor installation method: built-in)

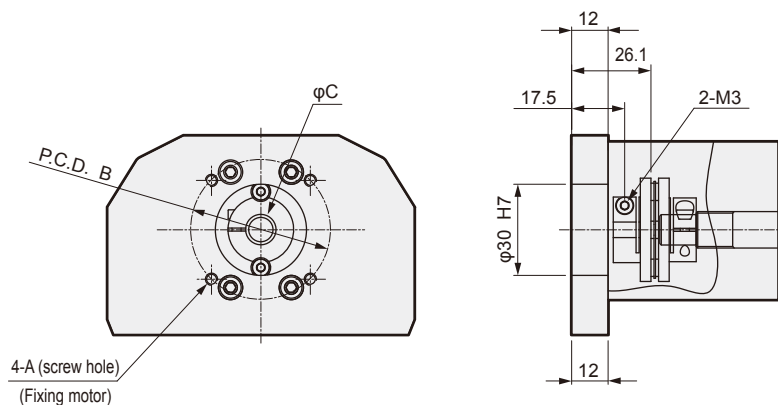


Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	
L	480	530	580	630	680	730	780	830	880	930	980	1030	1080	1130	1180	1230	1280	1330	1380	1430	
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	
N	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	
Weight (kg)	Without brake	8.0	8.9	9.7	10.5	11.4	12.2	13.0	13.9	14.7	15.5	16.4	17.2	18.0	18.9	19.7	20.6	21.4	22.2	23.1	23.9
	With brake	8.5	9.4	10.2	11.0	11.9	12.7	13.5	14.4	15.2	16.0	16.9	17.7	18.5	19.4	20.2	21.1	21.9	22.7	23.6	24.4

Note 1: Value in [] indicates brake mounting dimensions. Note 2: Refer to page 18 for dimensions of motor mounting part.

Motor mounting part Dimensions

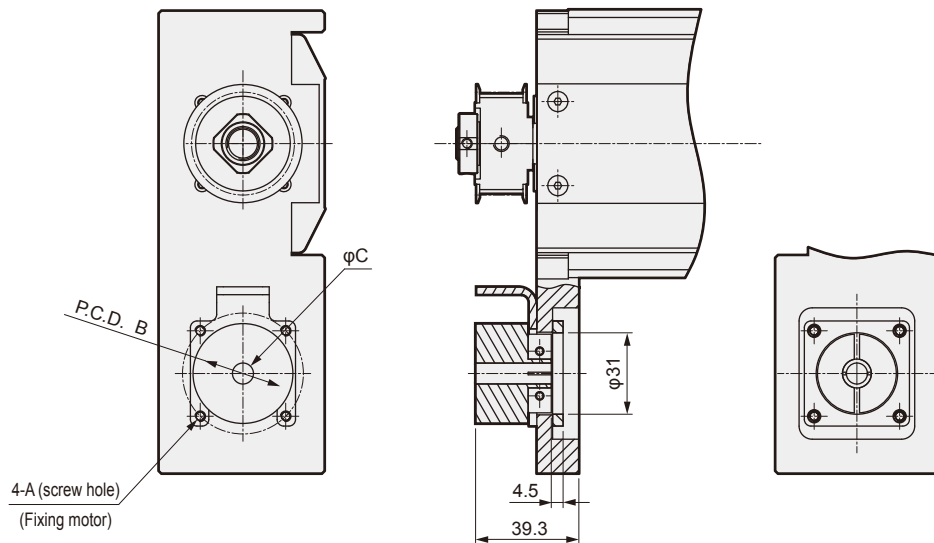
• ETS-12-E



ETS-12-E					
Mounting motor specification		A	B	C	Motor screw
M	100W	M4	φ46	φ8	4-M4×L16
Y	100W	M4	φ46	φ8	4-M4×L16
P	100W	M3	φ45	φ8	4-M3×L16

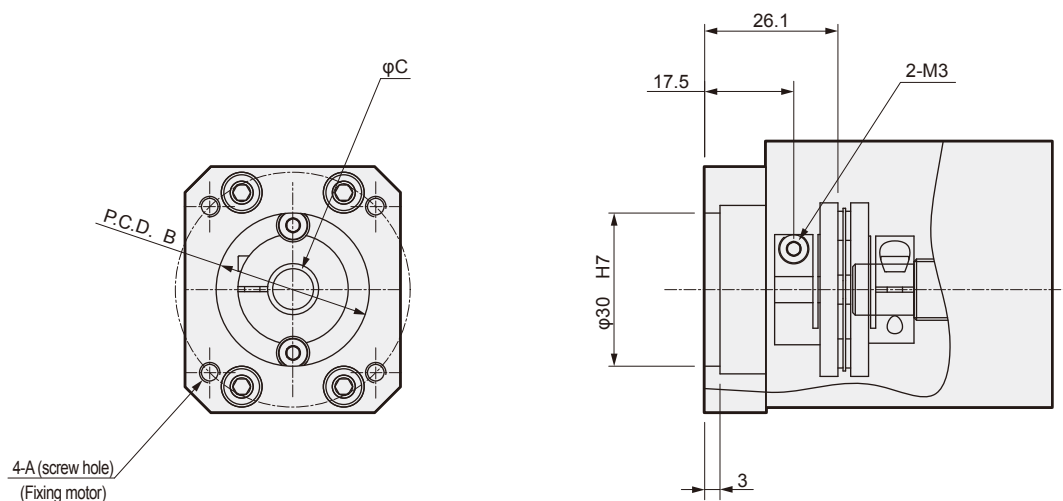
Motor mounting part Dimensions

• ETS-12-L/R/D



ETS-12-L/R/D					
Mounting motor specification		A	B	C	Motor screw
M	100W	M4	φ46	φ8	4-M4×L16
Y	100W	M4	φ46	φ8	4-M4×L16
P	100W	M3	φ45	φ8	4-M3×L16

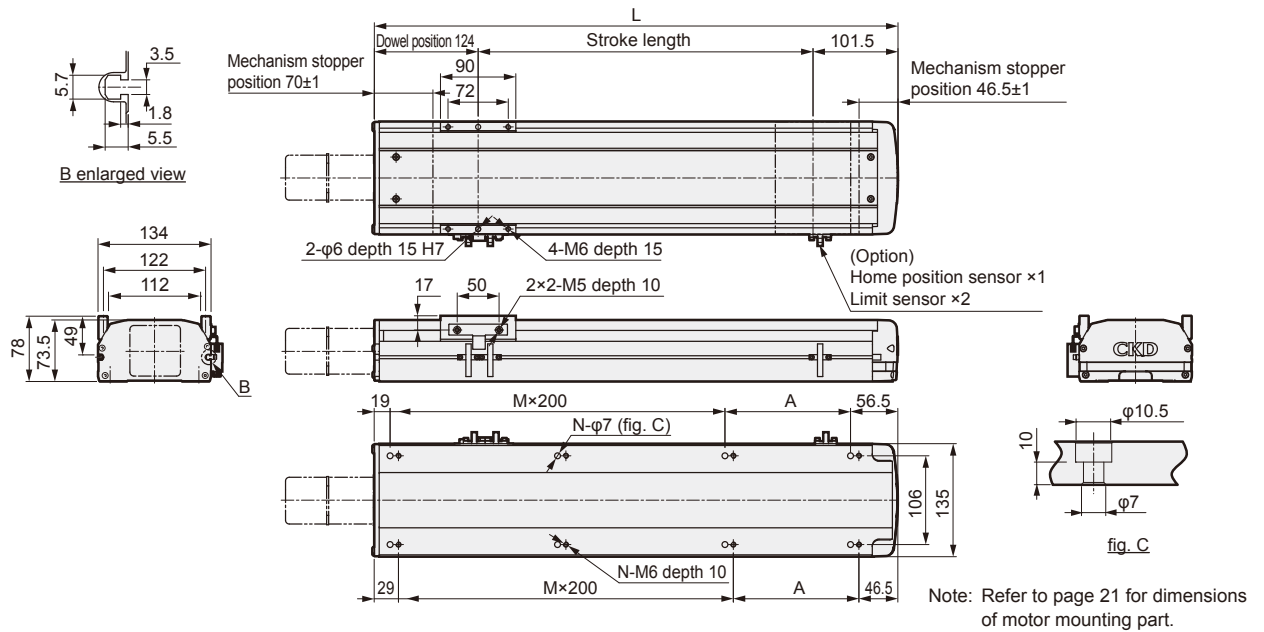
• ETS-12-B



ETS-12-B					
Mounting motor specification		A	B	C	Motor screw
M	100W	M4	φ46	φ8	4-M4×L16
Y	100W	M4	φ46	φ8	4-M4×L16
P	100W	M3	φ45	φ8	4-M3×L16

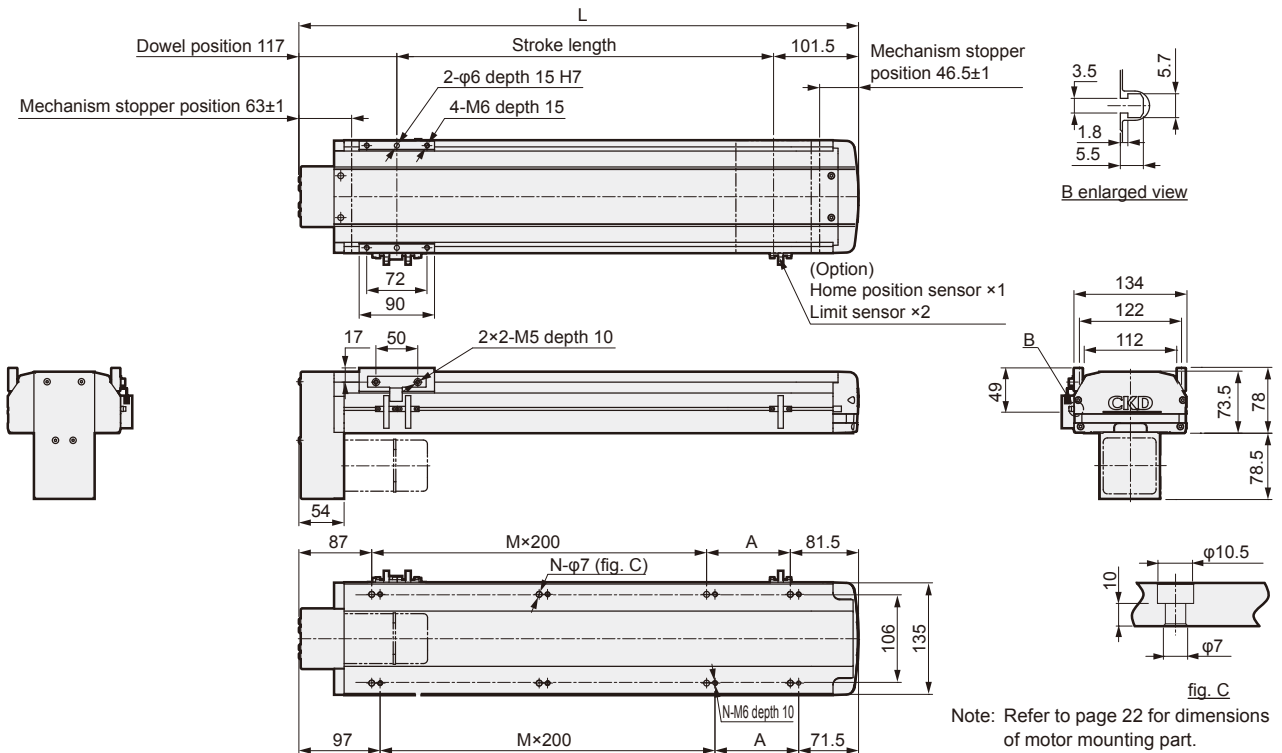
Dimensions (ETS-13)

• ETS-13-**-E (Motor installation method: external direct installation)



Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	325.5	375.5	425.5	475.5	525.5	575.5	625.5	675.5	725.5	775.5	825.5	875.5	925.5	975.5	1025.5	1075.5	1125.5	1175.5	1225.5	1275.5
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14
Weight (kg)	6.5	6.9	7.4	7.9	8.4	8.9	9.3	9.9	10.3	10.9	11.3	11.8	12.3	12.8	13.3	13.8	14.3	14.8	15.2	15.8

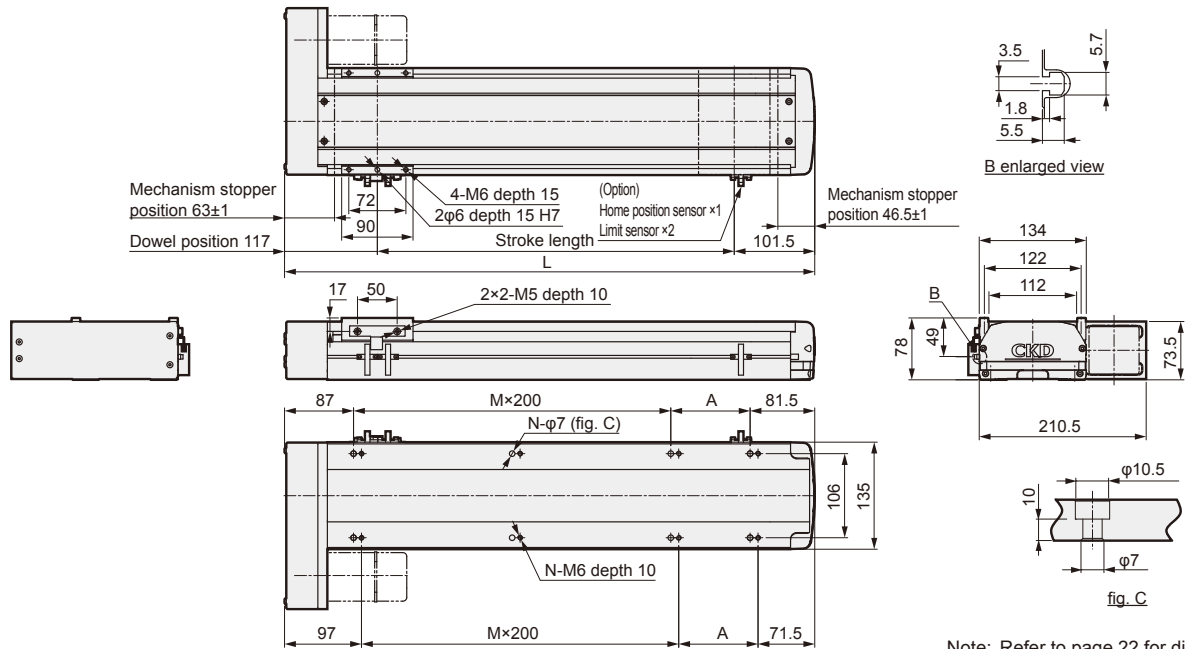
• ETS-13-**-D (Motor installation: bottom-side up installation)



Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	318.5	368.5	418.5	468.5	518.5	568.5	618.5	668.5	718.5	768.5	818.5	868.5	918.5	968.5	1018.5	1068.5	1118.5	1168.5	1218.5	1268.5
A	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	4	5
N	4	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14
Weight (kg)	7.3	7.7	8.2	8.7	9.2	9.7	10.1	10.7	11.1	11.7	12.1	12.6	13.1	13.6	14.1	14.6	15.1	15.6	16.0	16.6

Dimensions (ETS-13)

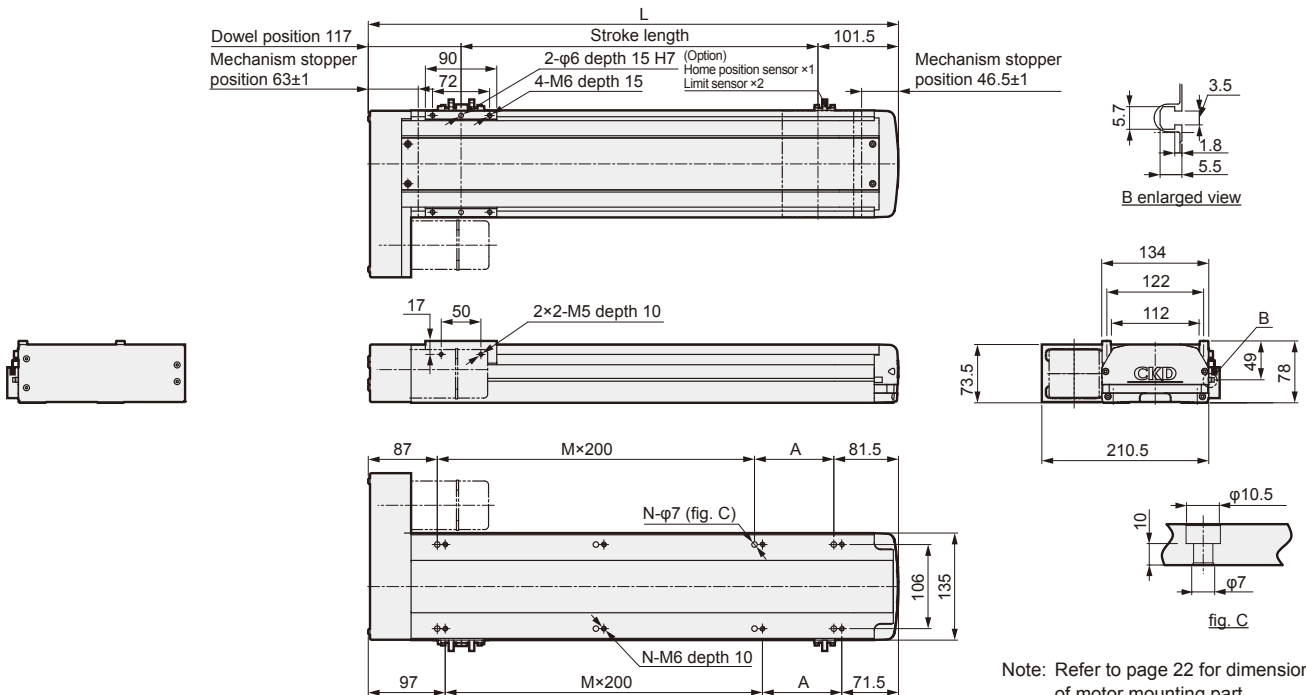
• ETS-13-**-R(Motor installation method: right side turn up installation)



Note: Refer to page 22 for dimensions of motor mounting part.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	318.5	368.5	418.5	468.5	518.5	568.5	618.5	668.5	718.5	768.5	818.5	868.5	918.5	968.5	1018.5	1068.5	1118.5	1168.5	1218.5	1268.5
A	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5
N	4	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14
Weight (kg)	7.3	7.7	8.2	8.7	9.2	9.7	10.1	10.7	11.1	11.7	12.1	12.6	13.1	13.6	14.1	14.6	15.1	15.6	16.0	16.6

• ETS-13-**-L(Motor installation method: left side turn up installation)

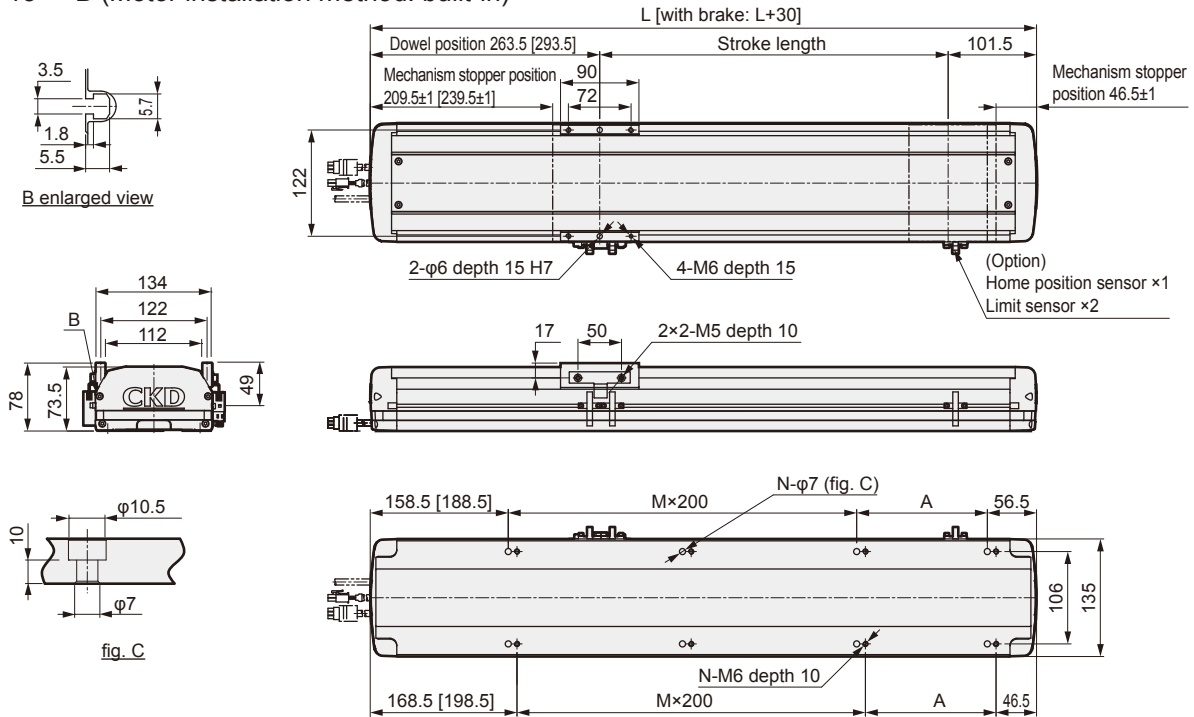


Note: Refer to page 22 for dimensions of motor mounting part.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	318.5	368.5	418.5	468.5	518.5	568.5	618.5	668.5	718.5	768.5	818.5	868.5	918.5	968.5	1018.5	1068.5	1118.5	1168.5	1218.5	1268.5
A	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5
N	4	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14
Weight (kg)	7.3	7.7	8.2	8.7	9.2	9.7	10.1	10.7	11.1	11.7	12.1	12.6	13.1	13.6	14.1	14.6	15.1	15.6	16.0	16.6

Dimensions (ETS-13)

• ETS-13-**-B (Motor installation method: built-in)

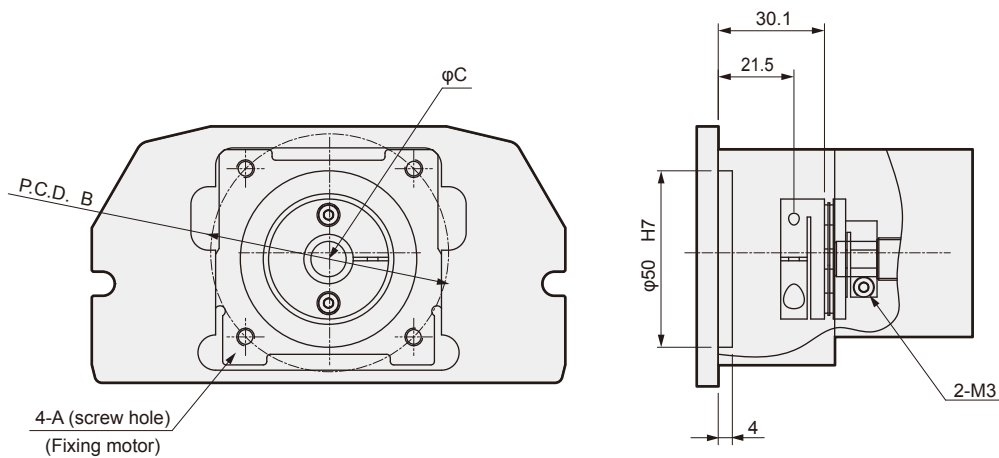


Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	
L	465	515	565	615	665	715	765	815	865	915	965	1015	1065	1115	1165	1215	1265	1315	1365	1415	
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	
M	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	
Weight (kg)	Without brake	9.2	10.2	11.2	12.2	13.2	14.2	15.2	16.2	17.2	18.2	19.2	20.1	21.1	22.1	23.1	24.1	25.1	26.1	27.1	28.1
	With brake	9.8	10.8	11.8	12.8	13.8	14.8	15.8	16.8	17.8	18.8	19.7	20.7	21.7	22.7	23.7	24.7	25.7	26.7	27.7	28.7

Note 1: Value in [] indicates brake mounting dimensions. Note 2: Refer to page 22 for dimensions of motor mounting part.

Motor mounting part Dimensions

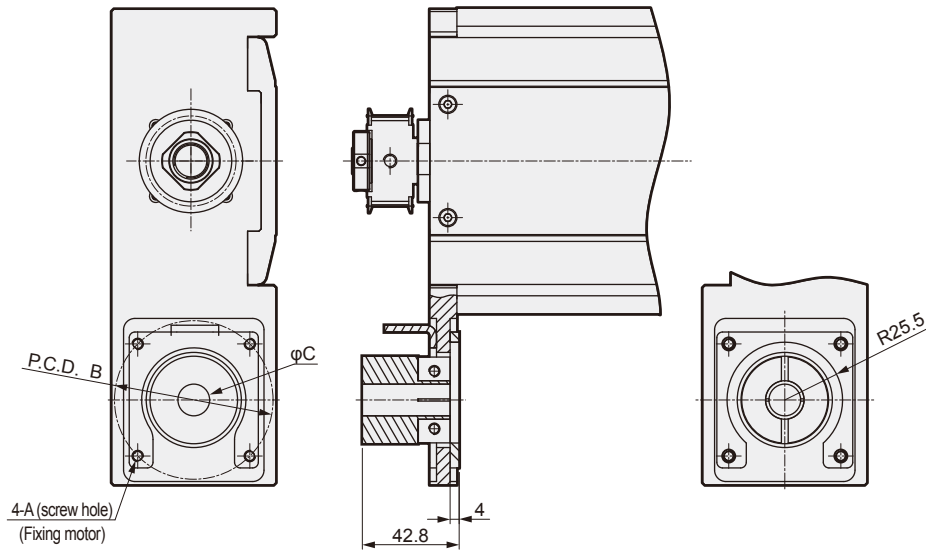
• ETS-13-E



ETS-13-E					
Mounting motor specification		A	B	C	Motor screw
M	200W	M5	φ70	φ14	4-M5×L18
Y	200W	M5	φ70	φ14	4-M5×L18
P	200W	M4	φ70	φ11	4-M4×L18

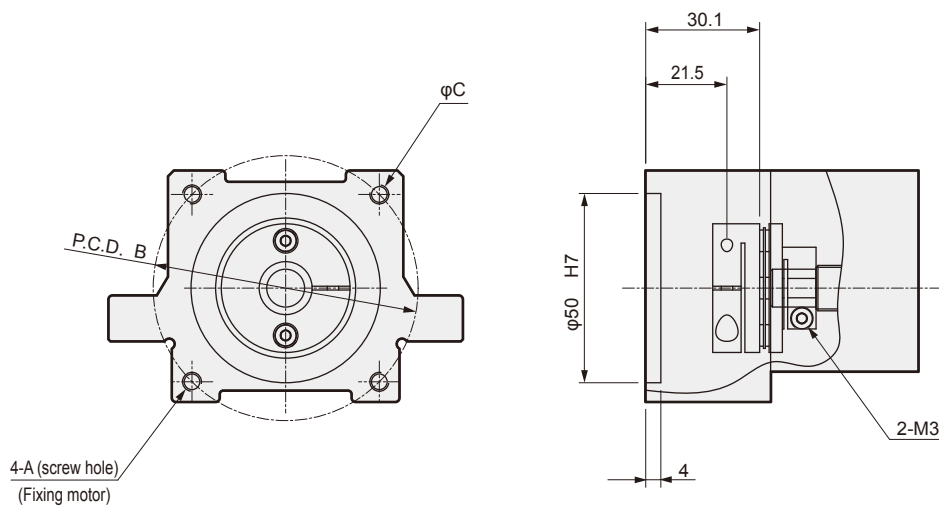
Motor mounting part Dimensions

• ETS-13-L/R/D



ETS-13-L/R/D					
Mounting motor specification		A	B	C	Motor screw
M	200W	M5	φ70	φ14	4-M5×L18
Y	200W	M5	φ70	φ14	4-M5×L18
P	200W	M4	φ70	φ11	4-M4×L18

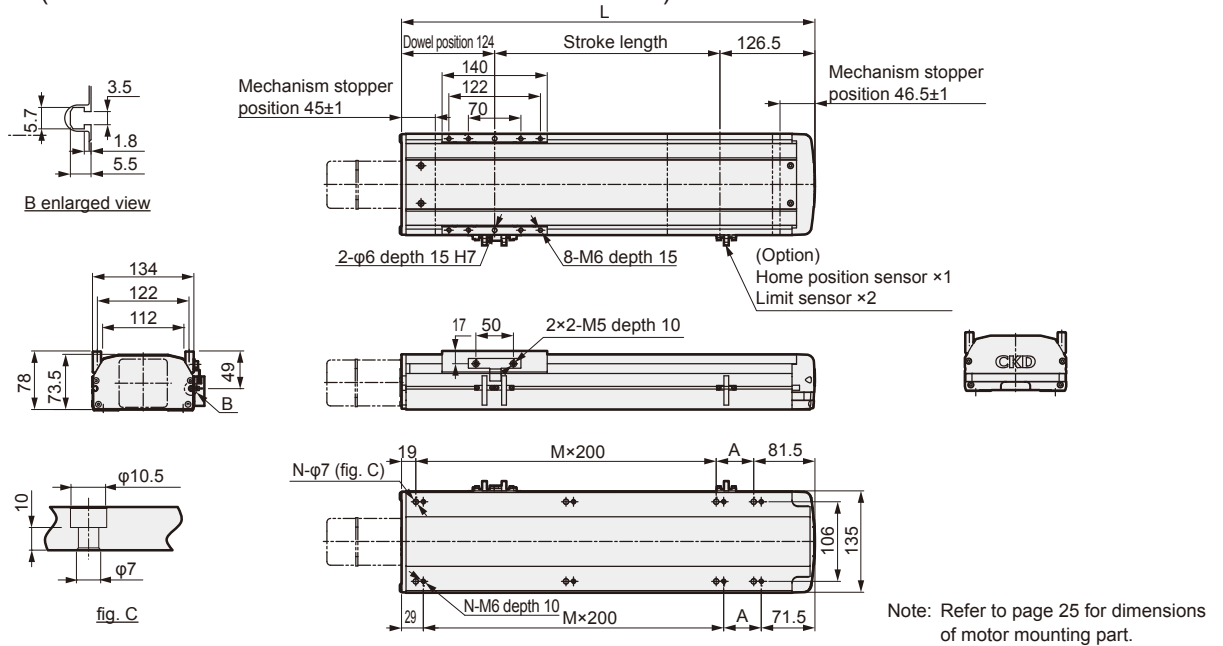
• ETS-13-B



ETS-13-B					
Mounting motor specification		A	B	C	Motor screw
M	200W	M5	φ70	φ14	4-M5×L18
Y	200W	M5	φ70	φ14	4-M5×L18
P	200W	M4	φ70	φ11	4-M4×L18

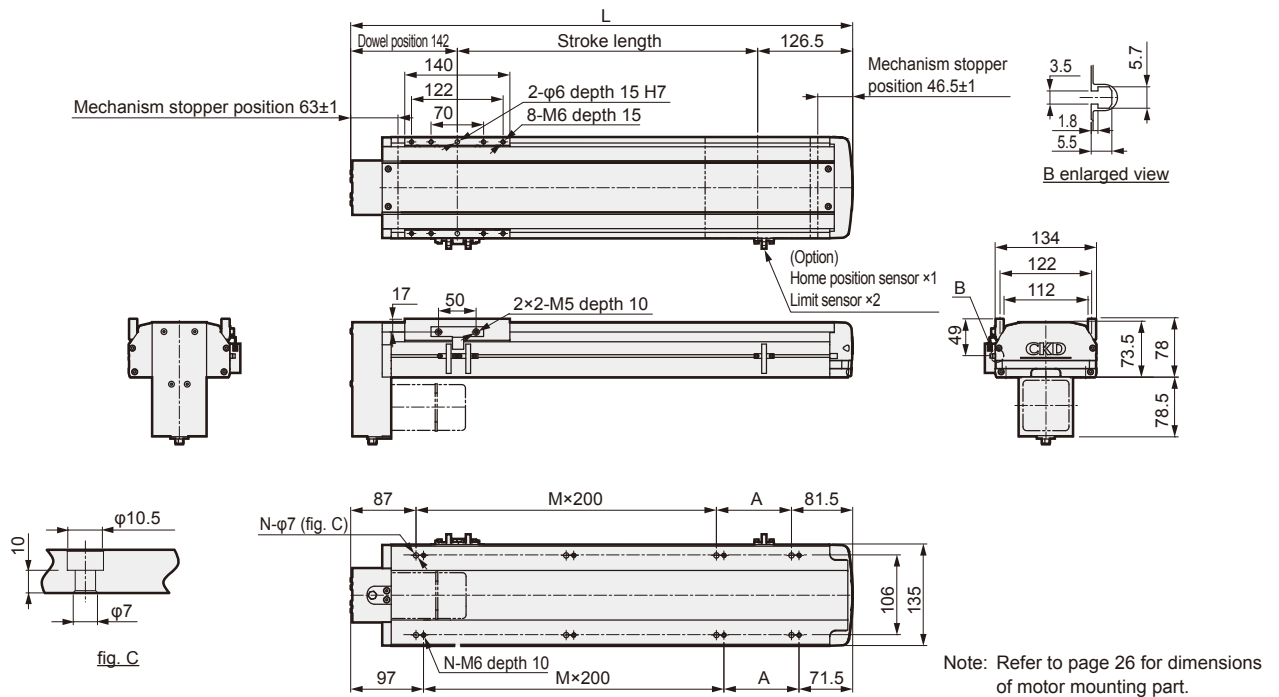
Dimensions (ETS-14)

• ETS-14-**-E (Motor installation method: external direct installation)



Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	350.5	400.5	450.5	500.5	550.5	600.5	650.5	700.5	750.5	800.5	850.5	900.5	950.5	1000.5	1050.5	1100.5	1150.5	1200.5	1250.5	1300.5
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14
Weight (kg)	6.7	7.1	7.6	8.1	8.6	9.1	9.5	10.1	10.5	11.1	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	15.4	16.0

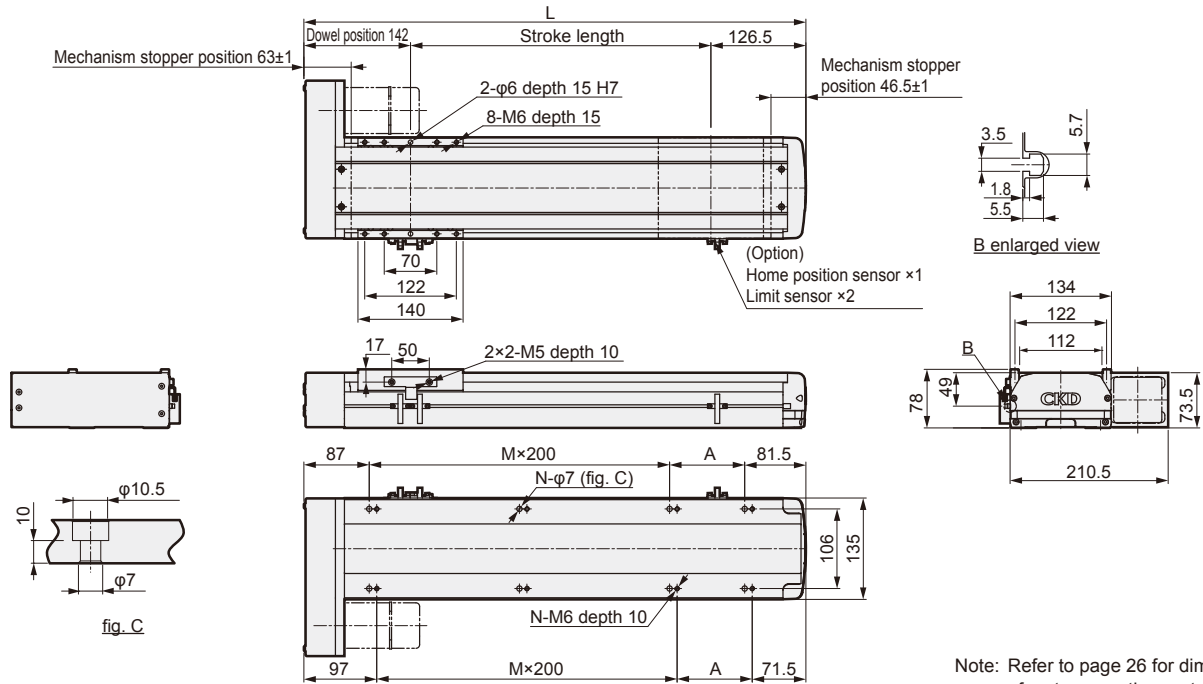
• ETS-14-**-D (Motor installation method: bottom-side up installation)



Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	368.5	418.5	468.5	518.5	568.5	618.5	668.5	718.5	768.5	818.5	868.5	918.5	968.5	1018.5	1068.5	1118.5	1168.5	1218.5	1268.5	1318.5
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
Weight (kg)	7.5	7.9	8.4	8.9	9.4	9.9	10.3	10.9	11.3	11.9	12.3	12.8	13.3	13.8	14.3	14.8	15.3	15.8	16.2	16.8

Dimensions (ETS-14)

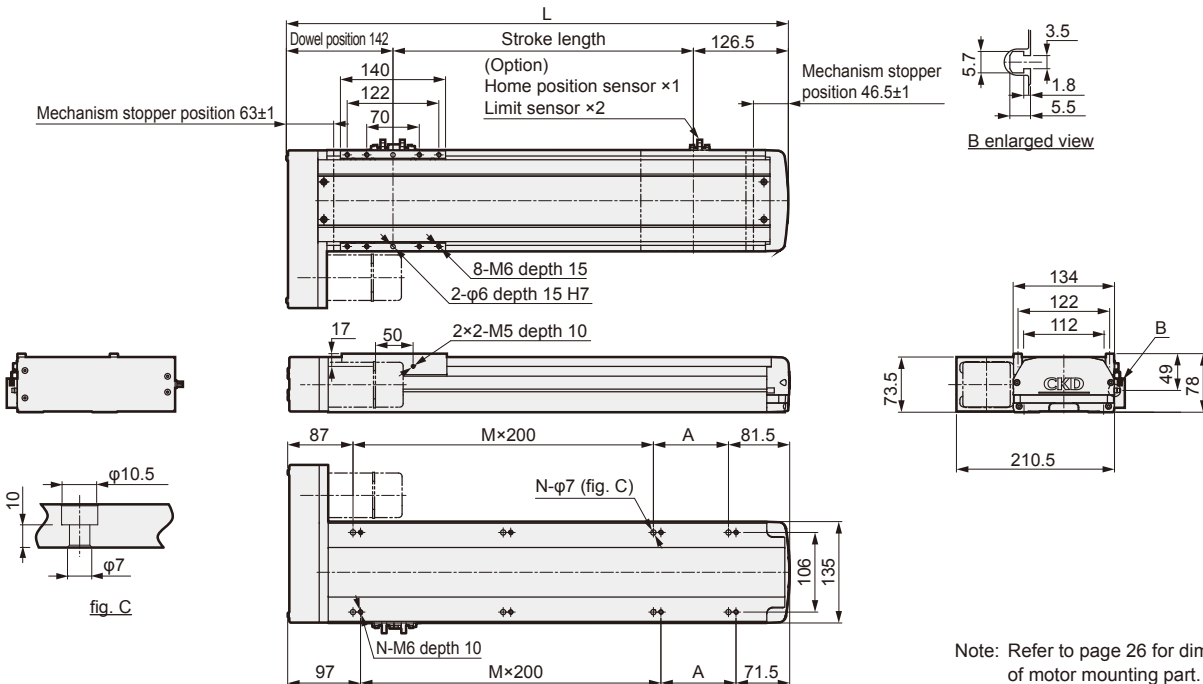
• ETS-14-**-R(Motor installation method: right side turn up installation)



Note: Refer to page 26 for dimensions of motor mounting part.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	368.5	418.5	468.5	518.5	568.5	618.5	668.5	718.5	768.5	818.5	868.5	918.5	968.5	1018.5	1068.5	1118.5	1168.5	1218.5	1268.5	1318.5
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
Weight (kg)	7.5	7.9	8.4	8.9	9.4	9.9	10.3	10.9	11.3	11.9	12.3	12.8	13.3	13.8	14.3	14.8	15.3	15.8	16.2	16.8

• ETS-14-**-L(Motor installation method: left side turn up installation)

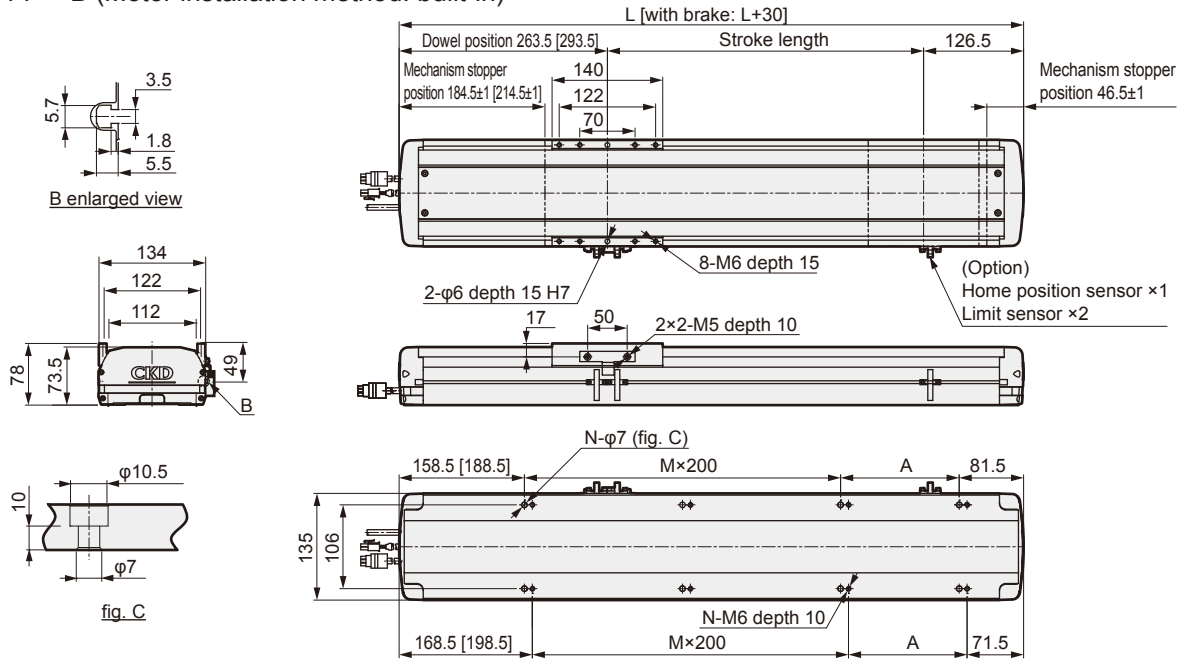


Note: Refer to page 26 for dimensions of motor mounting part.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
L	368.5	418.5	468.5	518.5	568.5	618.5	668.5	718.5	768.5	818.5	868.5	918.5	968.5	1018.5	1068.5	1118.5	1168.5	1218.5	1268.5	1318.5
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14
Weight (kg)	7.5	7.9	8.4	8.9	9.4	9.9	10.3	10.9	11.3	11.9	12.3	12.8	13.3	13.8	14.3	14.8	15.3	15.8	16.2	16.8

Dimensions (ETS-14)

• ETS-14-**-B (Motor installation method: built-in)

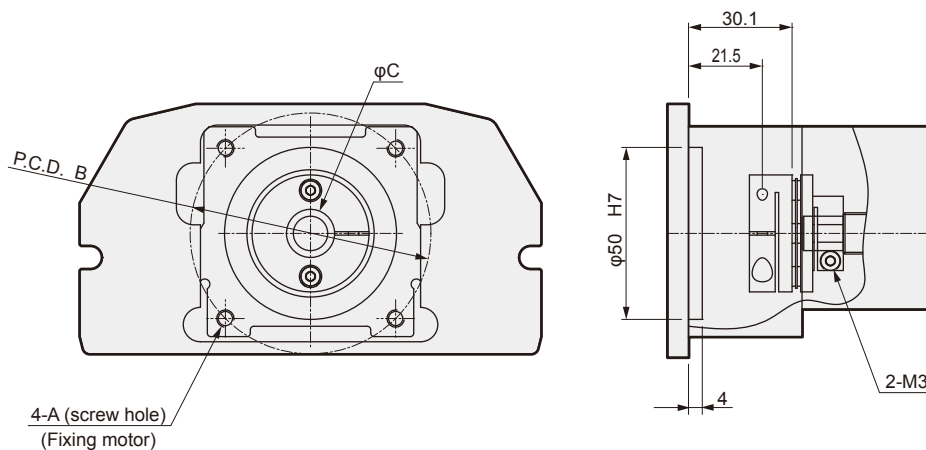


Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	
L	490	540	590	640	690	740	790	840	890	940	990	1040	1090	1140	1190	1240	1290	1340	1390	1440	
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	
M	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	
Weight (kg)	Without brake	9.3	10.3	11.2	12.2	13.1	14.1	15.0	16.0	16.9	17.9	18.8	19.8	20.7	21.7	22.6	23.6	24.5	25.5	26.4	27.4
	With brake	9.9	10.8	11.8	12.7	13.7	14.6	15.6	16.5	17.5	18.4	19.4	20.3	21.3	22.2	23.2	24.1	25.1	26.0	27.0	27.9

Note 1: Value in [] indicates brake mounting dimensions. Note 2: Refer to page 26 for dimensions of motor mounting part.

Motor mounting part Dimensions

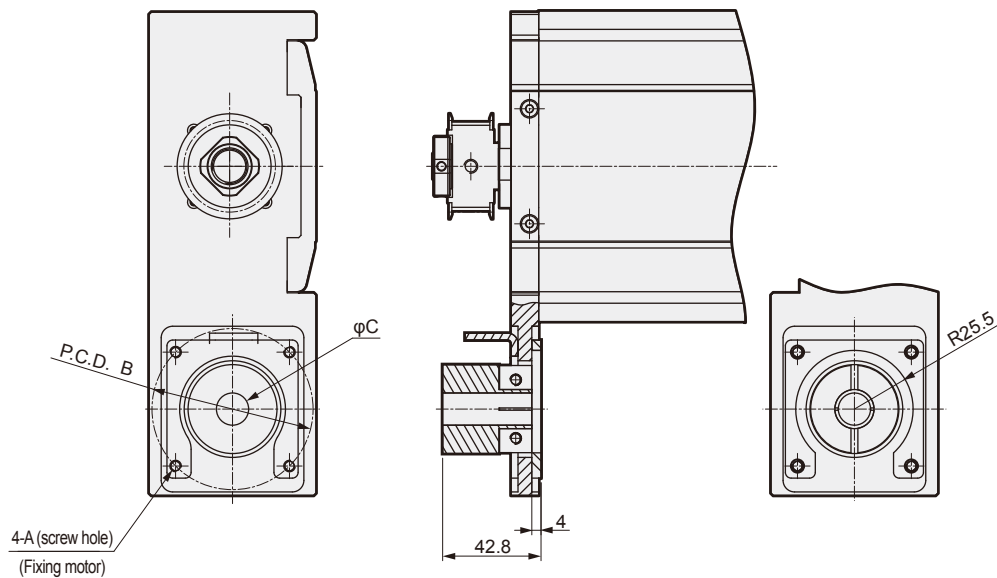
• ETS-14-E



ETS-14-E					
Mounting motor specification		A	B	C	Motor screw
M	200W/400W	M5	φ70	φ14	4-M5×L18
Y	200W/400W	M5	φ70	φ14	4-M5×L18
P	200W/400W	M4	φ70	φ11/φ14	4-M4×L18

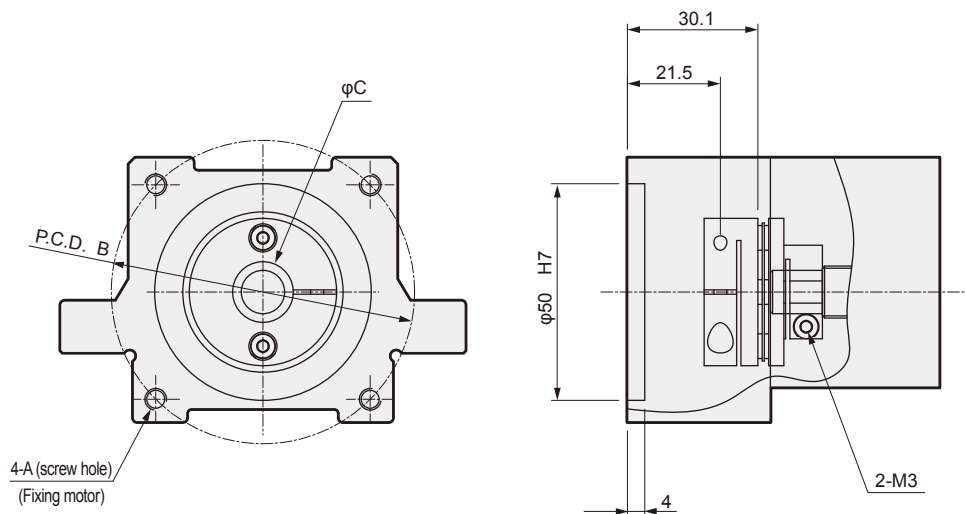
Motor mounting part Dimensions

● ETS-14-L/R/D



ETS-14-L/R/D					
Mounting motor specification		A	B	C	Motor screw
M	200W/400W	M5	φ70	φ14	4-M5×L18
Y	200W/400W	M5	φ70	φ14	4-M5×L18
P	200W/400W	M4	φ70	φ11/φ14	4-M4×L18

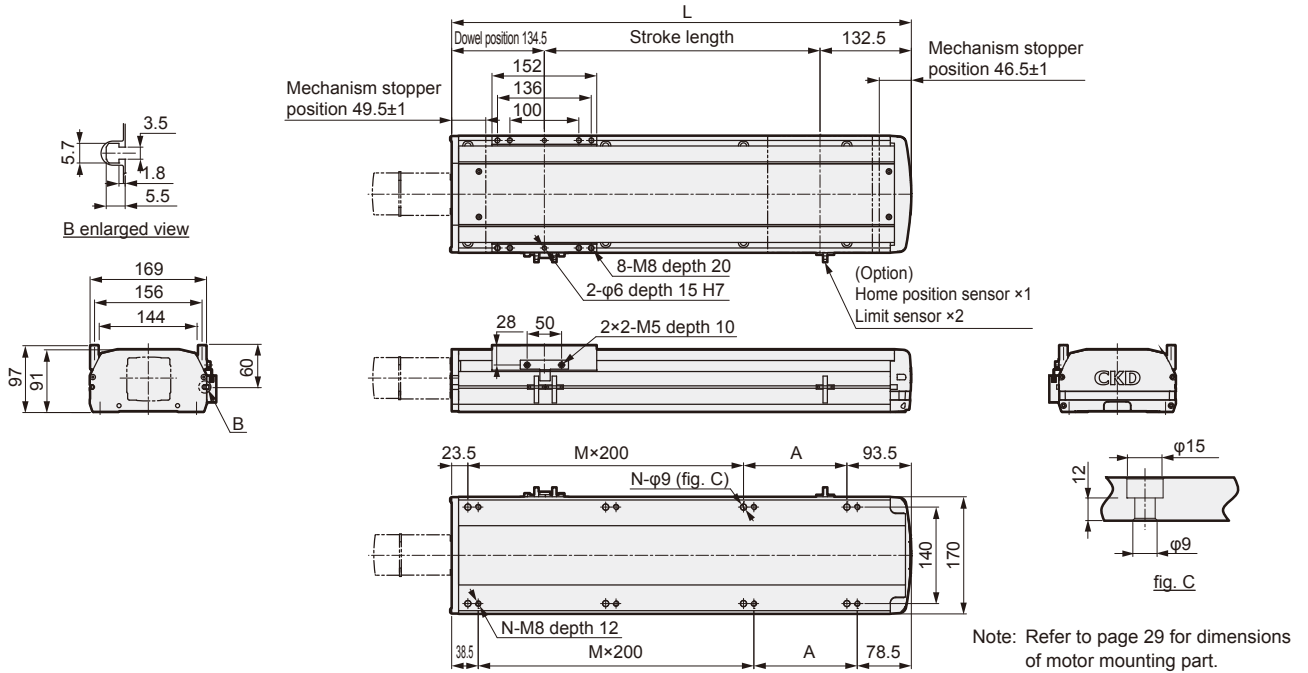
● ETS-14-B



ETS-14-B					
Mounting motor specification		A	B	C	Motor screw
M	200W/400W	M5	φ70	φ14	4-M5×L18
Y	200W/400W	M5	φ70	φ14	4-M5×L18
P	200W/400W	M4	φ70	φ11/φ14	4-M4×L18

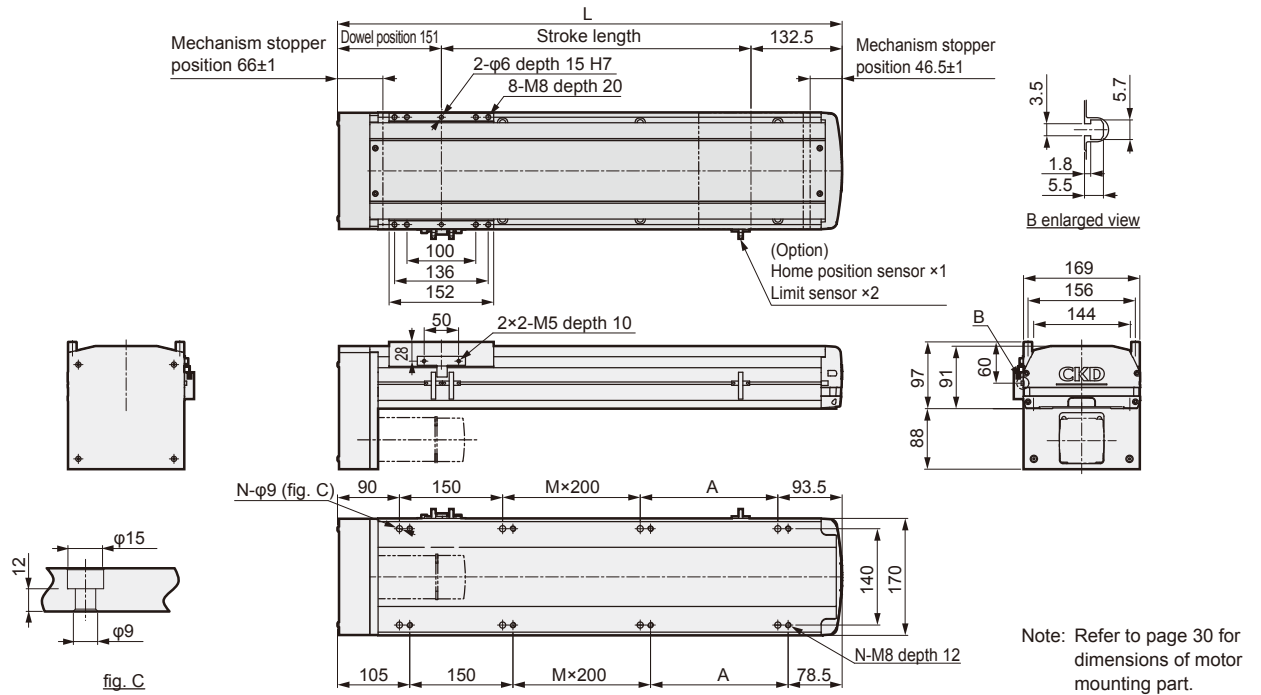
Dimensions (ETS-17)

• ETS-17-**-E (Motor installation method: external direct installation)



Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
L	367	417	467	517	567	617	667	717	767	817	867	917	967	1017	1067	1117	1167	1217	1267	1317	1367	1417	1467	1517
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	1	1	1	1	2	2	2	2	3	3	3	4	4	4	4	4	5	5	5	5	6	6	6	6
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16
Weight (kg)	10.3	11.1	11.9	12.7	13.4	14.2	15.0	15.8	16.5	17.3	18.1	18.9	19.6	20.4	21.2	22.0	22.7	23.5	24.3	25.1	25.9	26.7	27.5	28.3

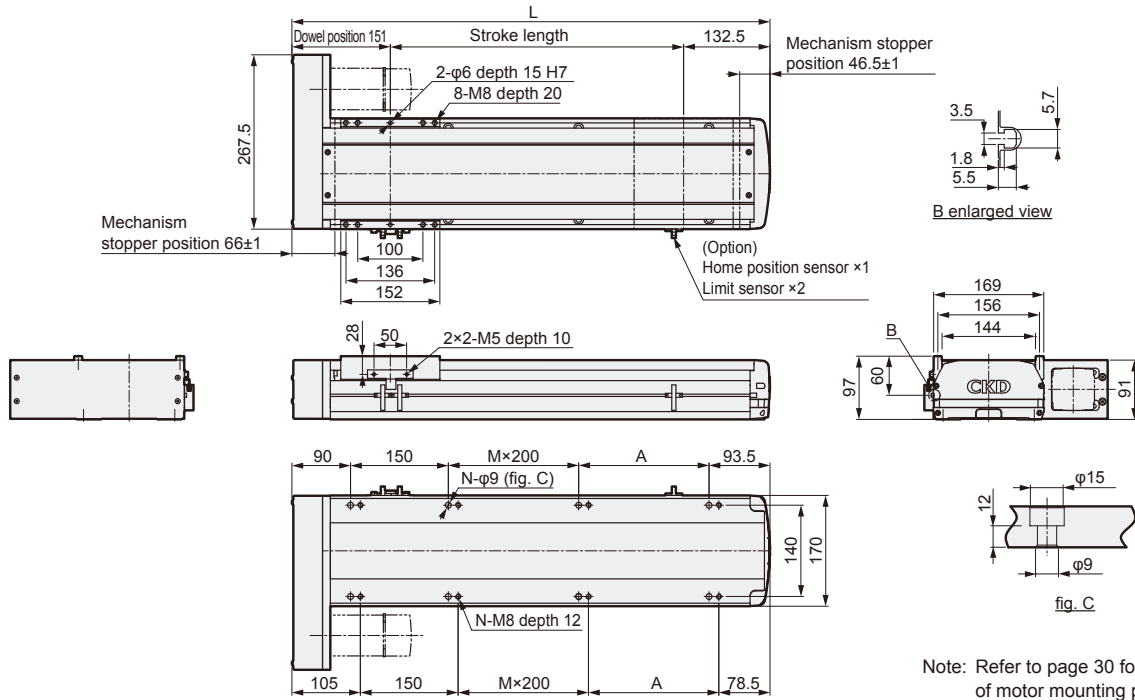
• ETS-17-**-D (Motor installation method: bottom-side up installation)



Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
L	383.5	433.5	483.5	533.5	583.5	633.5	683.5	733.5	783.5	833.5	883.5	933.5	983.5	1033.5	1083.5	1133.5	1183.5	1233.5	1283.5	1333.5	1383.5	1433.5	1483.5	1533.5
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	0	0	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16
Weight (kg)	11.9	12.7	13.5	14.3	15.0	15.8	16.6	17.4	18.1	18.9	19.7	20.5	21.2	22.0	22.8	23.6	24.3	25.1	25.9	26.7	27.5	28.3	29.1	29.9

Dimensions (ETS-17)

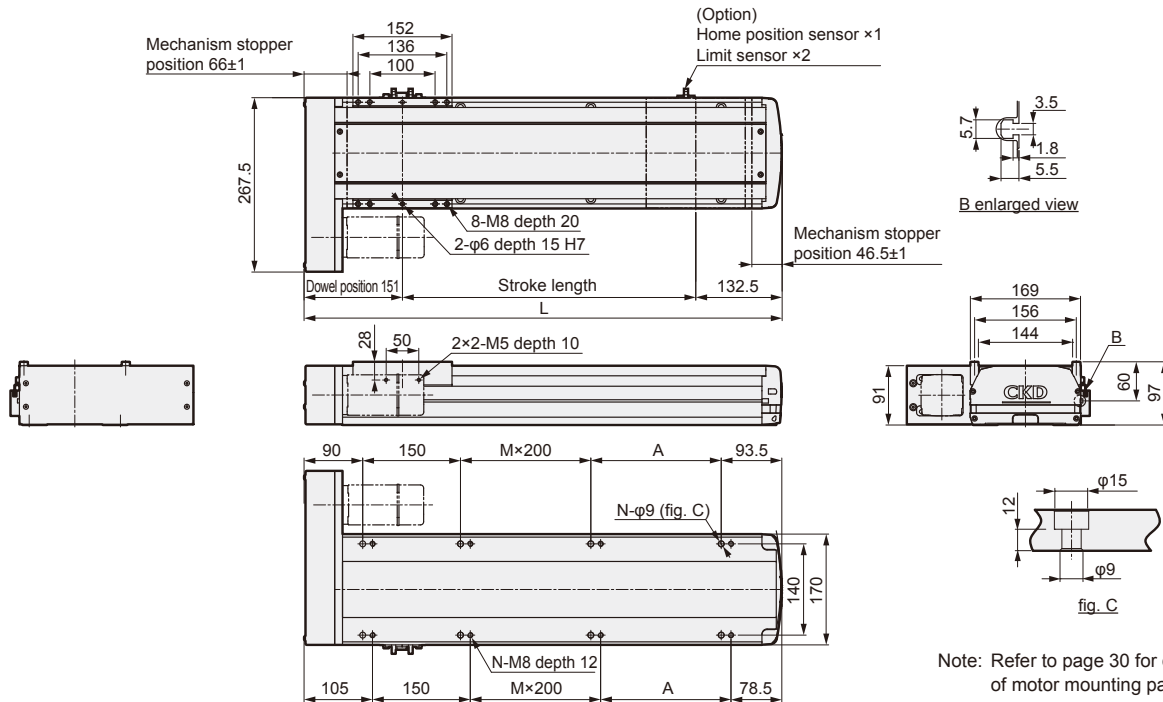
● ETS-17-**-R(Motor installation method: right side turn up installation)



Note: Refer to page 30 for dimensions of motor mounting part.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
L	383.5	433.5	483.5	533.5	583.5	633.5	683.5	733.5	783.5	833.5	883.5	933.5	983.5	1033.5	1083.5	1133.5	1183.5	1233.5	1283.5	1333.5	1383.5	1433.5	1483.5	1533.5
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	0	0	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16
Weight (kg)	11.6	12.4	13.2	14.0	14.7	15.5	16.3	17.1	17.8	18.6	19.4	20.2	20.9	21.7	22.5	23.3	24.0	24.8	25.6	26.4	27.2	28.0	28.8	29.6

● ETS-17-**-L(Motor installation method: left side turn up installation)



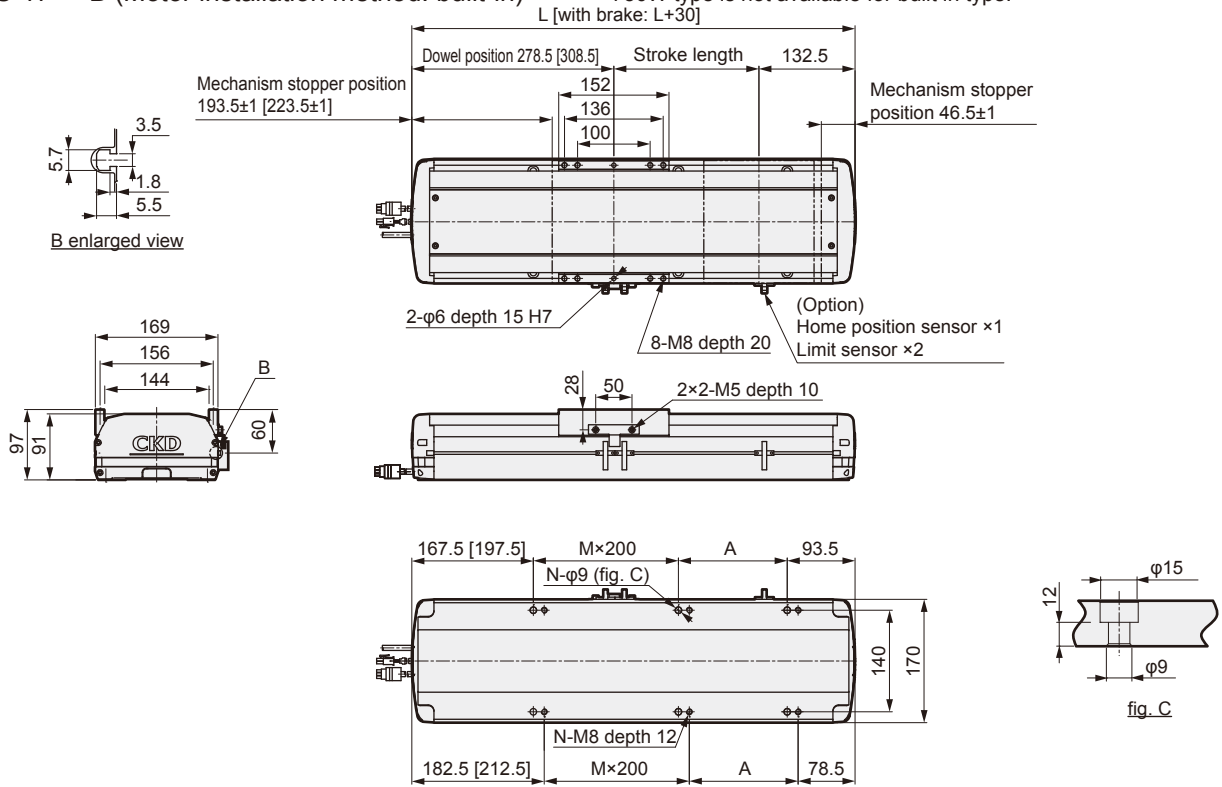
Note: Refer to page 30 for dimensions of motor mounting part.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250
L	383.5	433.5	483.5	533.5	583.5	633.5	683.5	733.5	783.5	833.5	883.5	933.5	983.5	1033.5	1083.5	1133.5	1183.5	1233.5	1283.5	1333.5	1383.5	1433.5	1483.5	1533.5
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	0	0	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16
Weight (kg)	11.6	12.4	13.2	14.0	14.7	15.5	16.3	17.1	17.8	18.6	19.4	20.2	20.9	21.7	22.5	23.3	24.0	24.8	25.6	26.4	27.2	28.0	28.8	29.6

Dimensions (ETS-17)

● ETS-17-**-B (Motor installation method: built-in)

*750W type is not available for built in type.



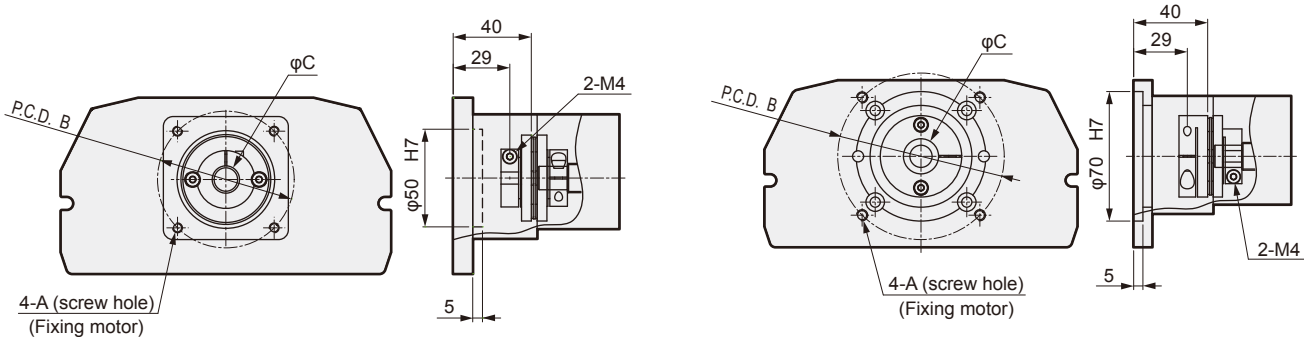
Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	
L	511	561	611	661	711	761	811	861	911	961	1011	1061	1111	1161	1211	1261	1311	1361	1411	1461	1511	1561	1611	1661	
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	
M	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	
Weight (kg)	Without brake	14.3	15.7	17.1	18.6	20.0	21.4	22.8	24.2	25.6	27.0	28.4	29.8	31.2	32.6	34.0	35.4	36.8	38.2	39.6	41.0	42.4	43.8	45.2	46.6
	With brake	15.2	16.6	18.0	19.4	20.8	22.2	23.6	25.0	26.4	27.8	29.2	30.6	32.0	33.4	34.8	36.2	37.6	39.0	40.4	41.8	43.2	44.7	46.1	47.5

Note 1: Value in [] indicates brake mounting dimensions. Note 2: Refer to page 30 for dimensions of motor mounting part.

Motor mounting part Dimensions

● ETS-17-400W-E

● ETS-17-750W-E

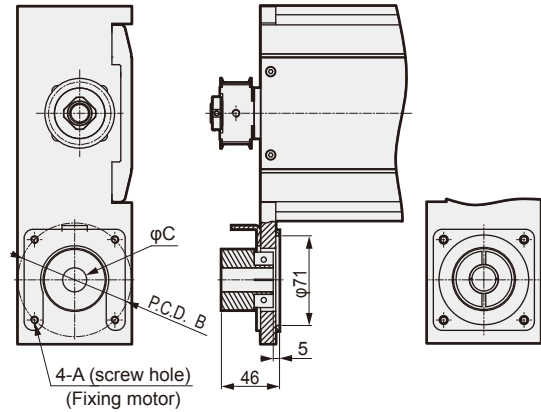
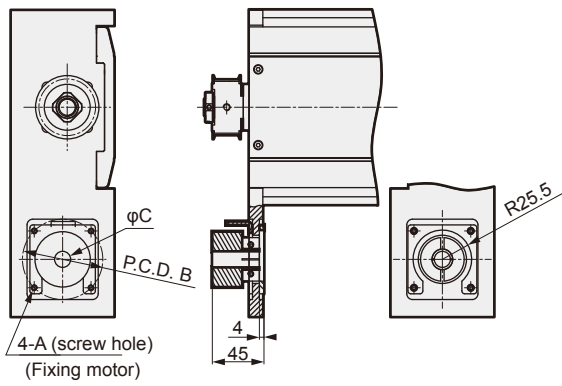


ETS-17-E				
Mounting motor specification	A	B	C	Motor screw
M 400W/750W	M5/M6	φ70/φ90	φ14/φ19	4-M5×L18/4-M6×L16
Y 400W/750W	M5/M6	φ70/φ90	φ14/φ19	4-M5×L18/4-M6×L16
P 400W/750W	M4/M5	φ70/φ90	φ14/φ19	4-M4×L18/4-M5×L16

Motor mounting part Dimensions

• ETS-17-400W-L/R/D

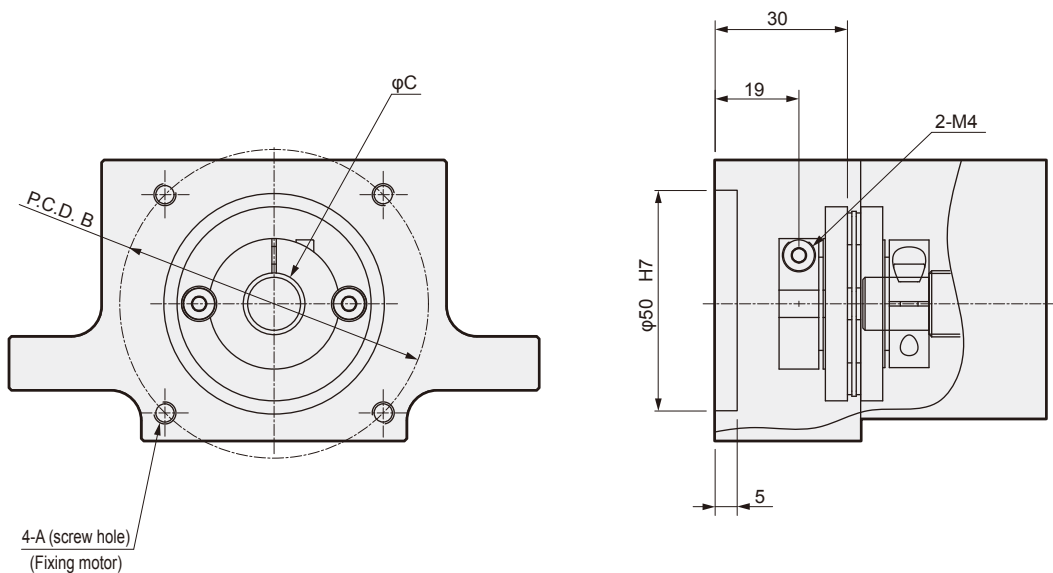
• ETS-17-750W-L/R/D



ETS-17-L/R/D					
Mounting motor specification		A	B	C	Motor screw
M	400W/750W	M5/M6	φ70/φ90	φ14/φ19	4-M5×L18/4-M6×L24
Y	400W/750W	M5/M6	φ70/φ90	φ14/φ19	4-M5×L18/4-M6×L24
P	400W/750W	M4/M5	φ70/φ90	φ14/φ19	4-M4×L18/4-M5×L24

• ETS-17-400W-B

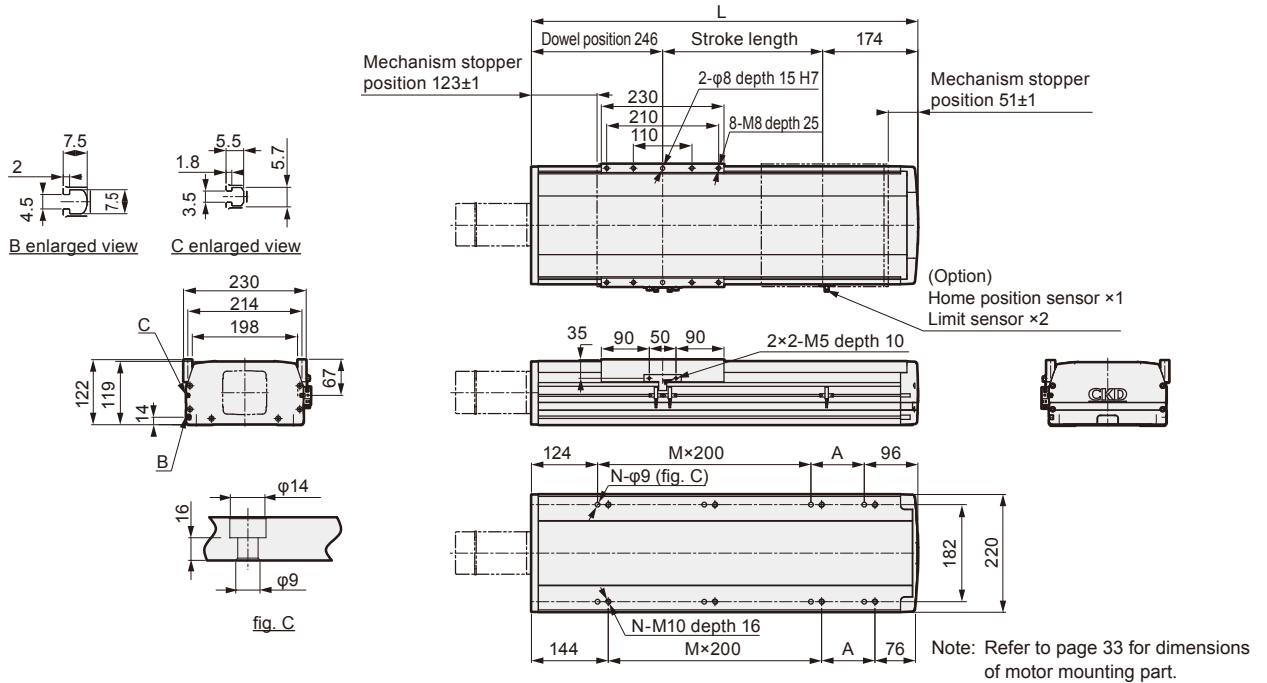
*750W type is not available for built in type.



ETS-17-B					
Mounting motor specification		A	B	C	Motor screw
M	400W	M5	φ70	φ14	4-M5×L18
Y	400W	M5	φ70	φ14	4-M5×L18
P	400W	M4	φ70	φ14	4-M4×L18

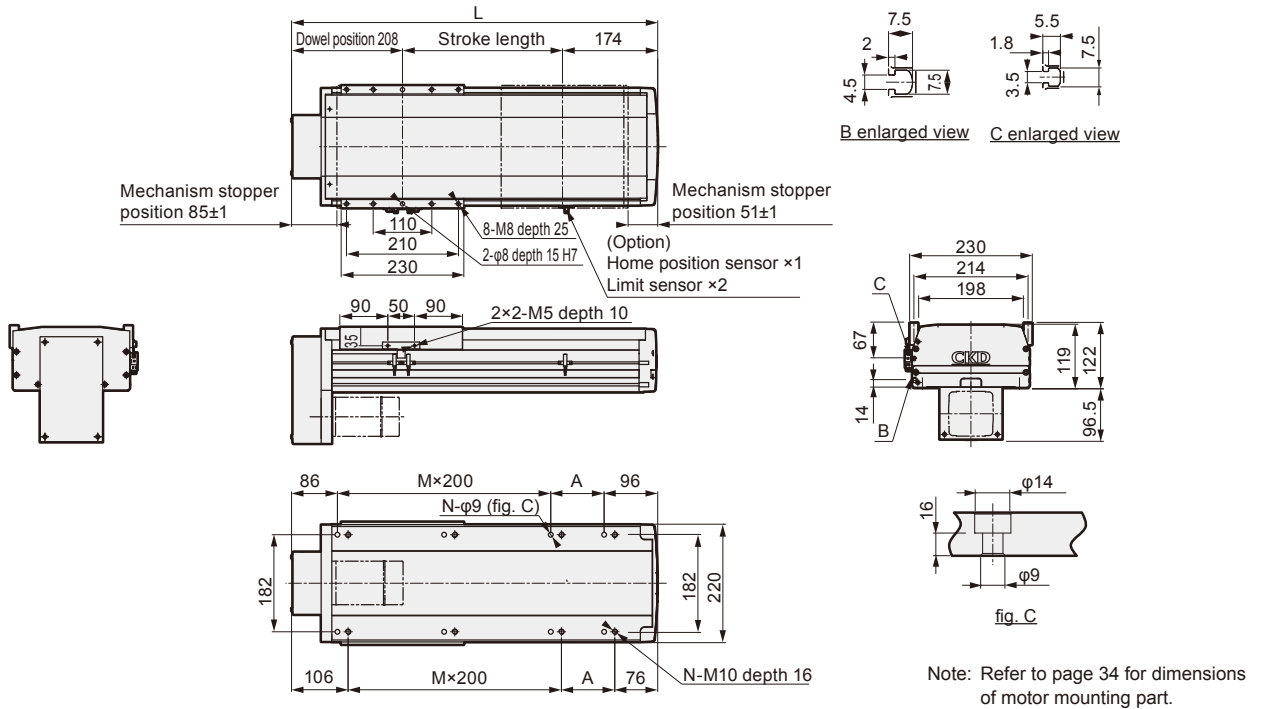
Dimensions (ETS-22)

• ETS-22-**-E (Motor installation method: external direct installation)



Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500
L	520	570	620	670	720	770	820	870	920	970	1020	1070	1120	1170	1220	1270	1320	1370	1420	1470	1520	1570	1620	1670	1720	1770	1820	1870	1920
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8
N	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20
Weight (kg)	21.2	22.4	23.7	24.9	26.1	27.3	28.5	29.8	31.0	32.2	33.4	34.6	35.9	37.1	38.3	39.5	40.7	42	43.2	44.4	45.6	46.8	48.1	49.3	50.5	51.7	52.9	54.1	55.3

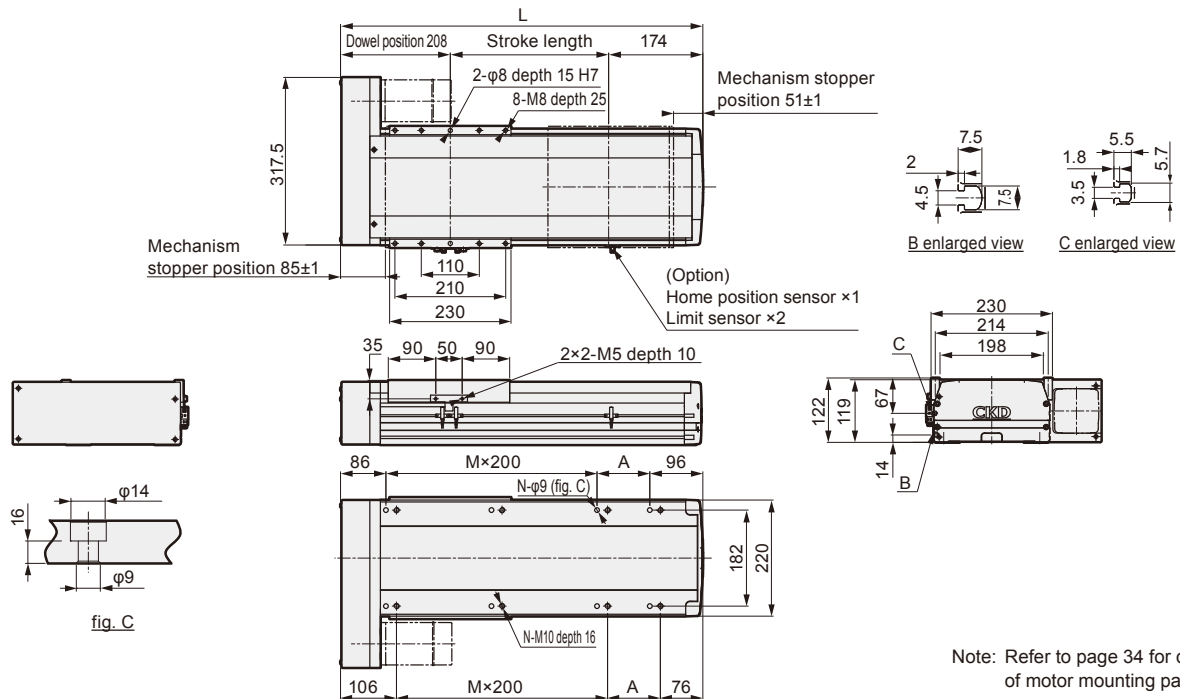
• ETS-22-**-D (Motor installation method: bottom-side up installation)



Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500
L	482	532	582	632	682	732	782	832	882	932	982	1032	1082	1132	1182	1232	1282	1332	1382	1432	1482	1532	1582	1632	1682	1732	1782	1832	1882
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8
N	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20
Weight (kg)	23.6	24.8	26.1	27.3	28.5	29.7	30.9	32.2	33.4	34.6	35.8	37.0	38.3	39.5	40.7	41.9	43.1	44.4	45.6	46.8	48.0	49.2	50.5	51.7	52.9	54.1	55.3	56.5	57.7

Dimensions (ETS-22)

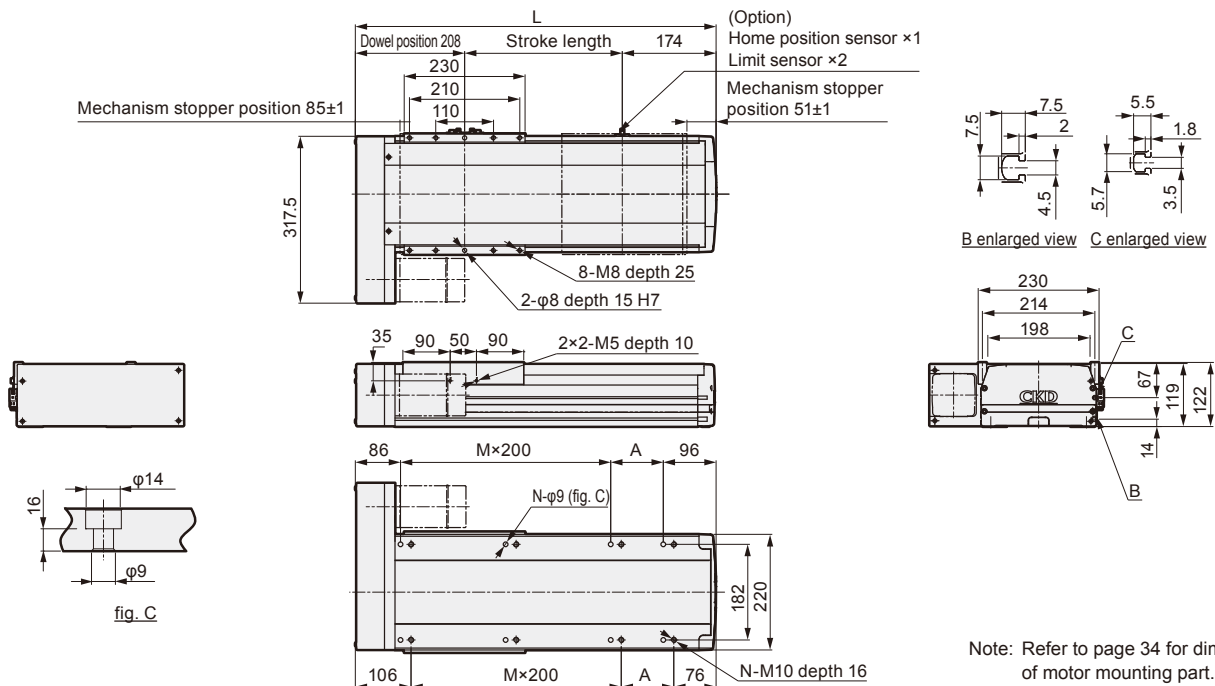
• ETS-22-**-R(Motor installation method: right side turn up installation)



Note: Refer to page 34 for dimensions of motor mounting part.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	
L	482	532	582	632	682	732	782	832	882	932	982	1032	1082	1132	1182	1232	1282	1332	1382	1432	1482	1532	1582	1632	1682	1732	1782	1832	1882	
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	
M	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8	
N	6	6	6	8	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20
Weight (kg)	23.7	24.9	26.2	27.4	28.6	29.8	31.0	32.3	33.5	34.7	35.9	37.1	38.4	39.6	40.8	42.0	43.2	44.5	45.7	46.9	48.1	49.3	50.6	51.8	53.0	54.2	55.4	56.6	57.8	

• ETS-22-**-L(Motor installation: left side turn up installation)

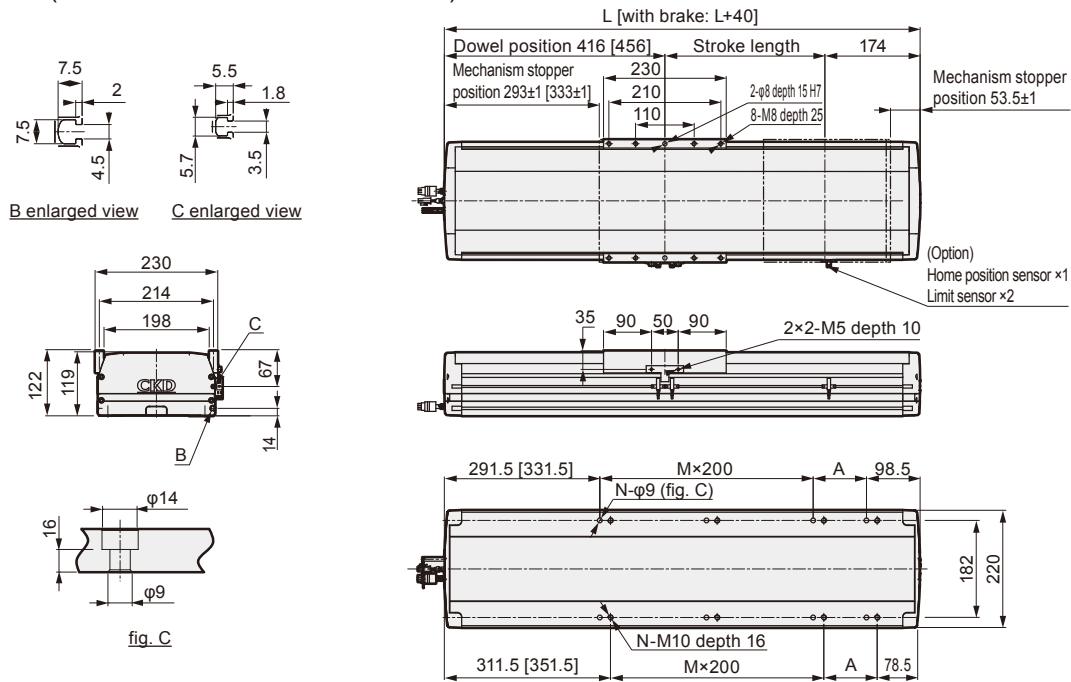


Note: Refer to page 34 for dimensions of motor mounting part.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500
L	482	532	582	632	682	732	782	832	882	932	982	1032	1082	1132	1182	1232	1282	1332	1382	1432	1482	1532	1582	1632	1682	1732	1782	1832	1882
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8
N	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20
Weight (kg)	23.7	24.9	26.2	27.4	28.6	29.8	31.0	32.3	33.5	34.7	35.9	37.1	38.4	39.6	40.8	42.0	43.2	44.5	45.7	46.9	48.1	49.3	50.6	51.8	53.0	54.2	55.4	56.6	57.8

Dimensions (ETS-22)

• ETS-22-**-B (Motor installation method: built-in)

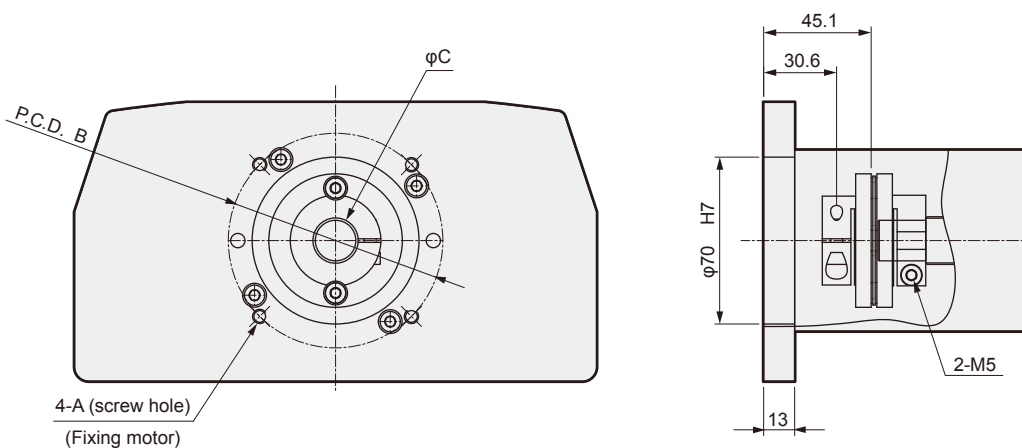


Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	
L	690	740	790	840	890	940	990	1040	1090	1140	1190	1240	1290	1340	1390	1440	1490	1540	1590	1640	1690	1740	1790	1840	1890	1940	1990	2040	2090	
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	
M	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8	
N	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	
Weight (kg)	Without brake	28.1	30.2	32.2	34.2	36.3	38.3	40.4	42.4	44.4	46.5	48.5	50.6	52.6	54.6	56.7	58.7	60.7	62.8	64.8	66.9	68.9	70.9	73.0	75.0	77.1	79.1	81.1	83.2	85.2
	With brake	29.4	31.4	33.4	35.5	37.5	39.5	41.6	43.6	45.7	47.7	49.7	51.8	53.8	55.9	57.9	59.9	62.0	64.0	66.0	68.1	70.1	72.2	74.2	76.2	78.3	80.3	82.4	84.4	86.4

Note 1: Value in [] indicates brake mounting dimensions. Note 2: Refer to page 34 for dimensions of motor mounting part.

Motor mounting part Dimensions

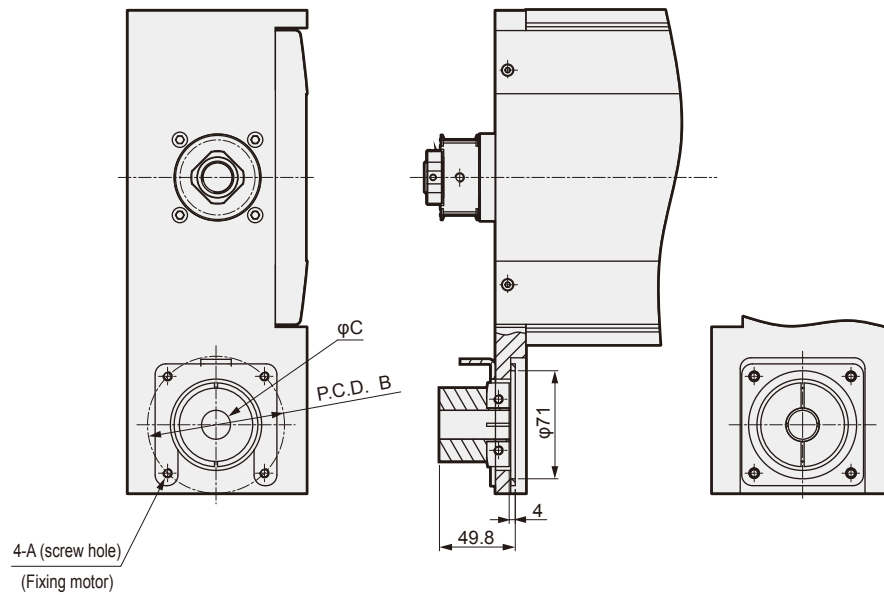
• ETS-22-E



ETS-22-E					
Mounting motor specification		A	B	C	Motor screw
M	750W	M6	$\phi 90$	$\phi 19$	4-M6 \times L16
Y	750W	M6	$\phi 90$	$\phi 19$	4-M6 \times L16
P	750W	M5	$\phi 90$	$\phi 19$	4-M5 \times L16

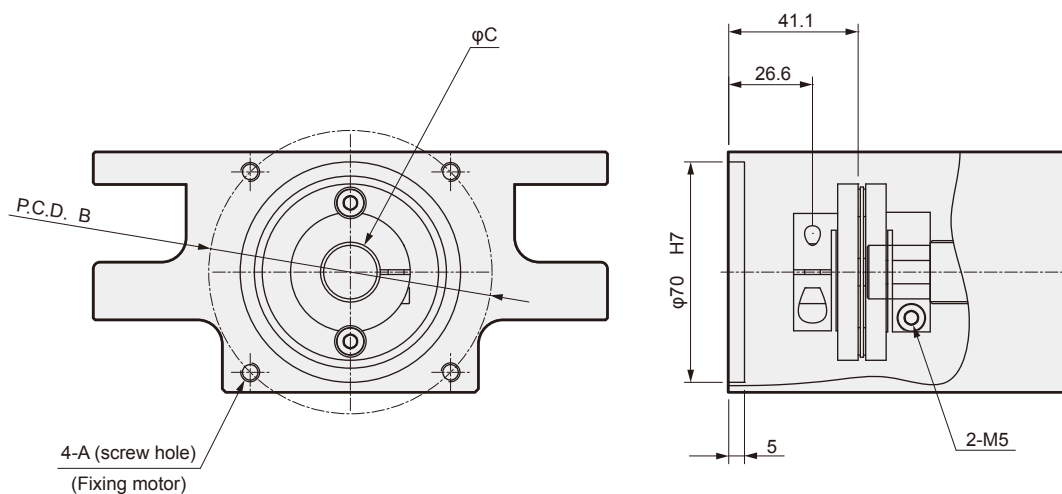
Motor mounting part Dimensions

• ETS-22-L/R/D



ETS-22-L/R/D					
Mounting motor specification		A	B	C	Motor screw
M	750W	M6	φ90	φ19	4-M6×L16
Y	750W	M6	φ90	φ19	4-M6×L16
P	750W	M5	φ90	φ19	4-M5×L16

• ETS-22-B



ETS-22-B					
Mounting motor specification		A	B	C	Motor screw
M	750W	M6	φ90	φ19	4-M6×L16
Y	750W	M6	φ90	φ19	4-M6×L16
P	750W	M5	φ90	φ19	4-M5×L16

Selection guide

STEP-1 Load capacity confirmation

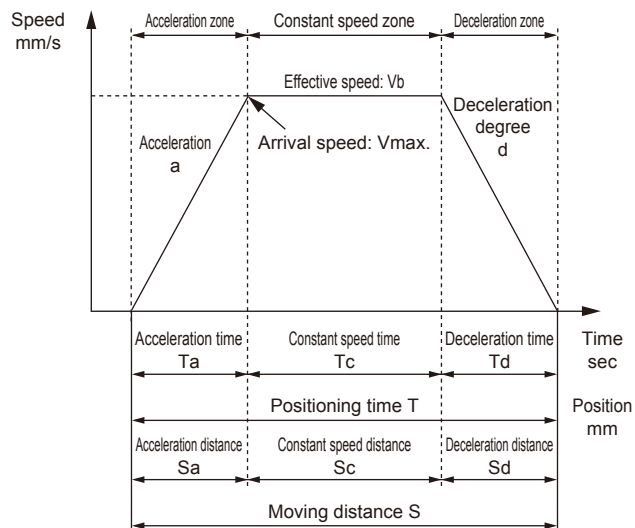
Load capacity will change according to installation orientation and transferring speed.

Select size and screw lead, referring to selection table (intro pages 1, 2) and specification table for each model (pages 1, 2).

STEP-2 Tact time confirmation

Calculate and confirm that tact time matches requirements by the following example.

Select rotation speed and rotation acceleration and deceleration speed by specification tables of each model (page 1 and 2)



	Descriptions	Symbol	Unit	Remarks
Set value	Setting speed	V	mm/s	
	Setting acceleration	a	mm/s ²	
	Setting deceleration degree	d	mm/s ²	
	Moving distance	S	mm	
Calculated value	Arrival speed	Vmax.	mm/s	$= (2 \times a \times d \times S / (a + d))^{1/2}$
	Effective speed	Vb	mm/s	V and Vmax. smaller one
	Acceleration hour	Ta	s	$= Vb/a < 0.2 \text{ sec. or more} >$
	Deceleration hour	Td	s	$= Vb/d < 0.2 \text{ sec. or more} >$
	Constant speed hour	Tc	s	$= Sc/Vb$
	Acceleration distance	Sa	mm	$= (a \times Ta^2)/2$
	Deceleration distance	Sd	mm	$= (d \times Td^2)/2$
	Constant speed distance	Sc	mm	$= S - (Sa + Sd)$
Positioning time	T	s	$= Ta + Tc + Td$	

- Do not use by speeds higher than specifications.
- Acceleration and deceleration setting by acceleration time and deceleration time changes depending on the set speed and the stroke length.
- The velocity curve may be unattainable (unreachable due to set speed) by acceleration and deceleration speeds. Compare by using Vmax and set speed. Make a comparison of by the Vmax. [con and] the set speed.
- Please use at more than 0.2 sec of acceleration/deceleration.

STEP-3 Allowable moment confirmation

Confirm that actual moment is less than allowable moment and overhang amount

Allowable moment confirmation when in operation.

Confirm that actual moment is less than allowable moment (satisfies the following formula)

$$M_T = \frac{W}{W_{max}} + \frac{MR_1 + MR_2}{MR_{max}} + \frac{MP_1 + MP_2 + MP_3}{MP_{max}} + \frac{MY_1 + MY_2 + MY_3}{MY_{max}} < 1$$

MT: combination of moment (must be less than 1)

W: vertical weighting

MR: rolling moment

MP: pitching moment

MY: yawing moment

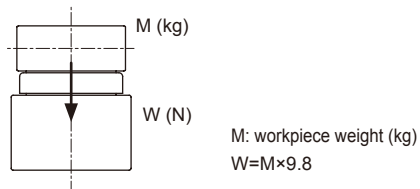
* Take all moments into consideration depending on the operating moment load.

Wmax: allowable load

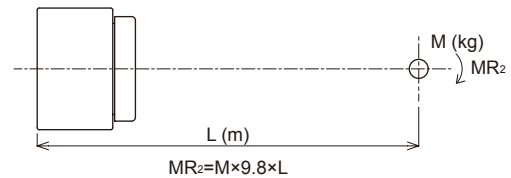
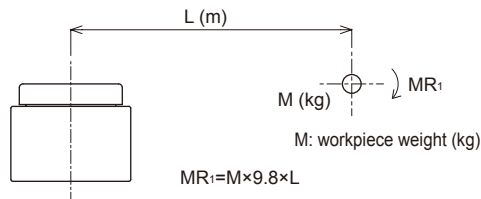
MRmax, MPmax, MYmax: Refer page 35 to 38 for dynamic allowable moment.

"L" on page 36 should be less than allowable amount A, B, and C on pages from 37 to 40.

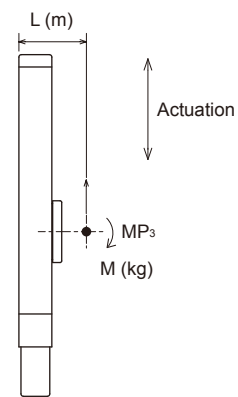
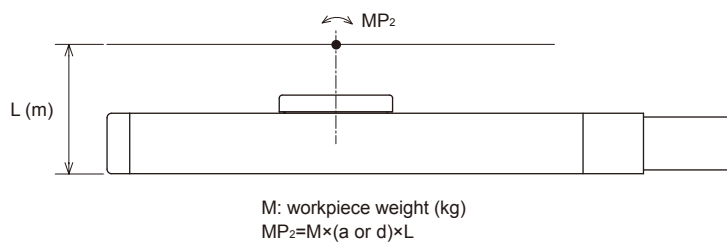
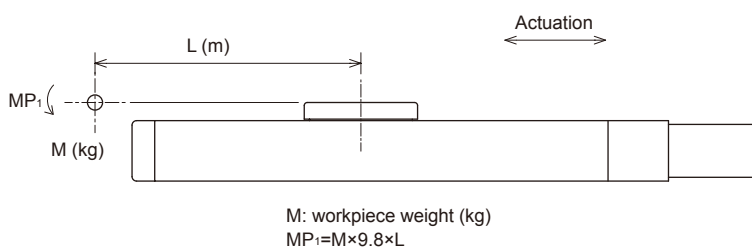
• Vertical load W (N)



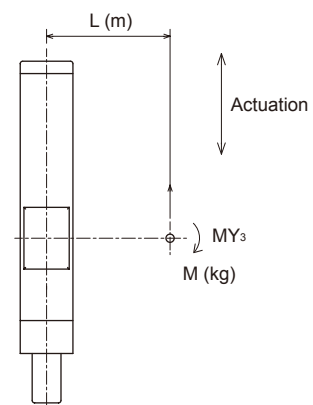
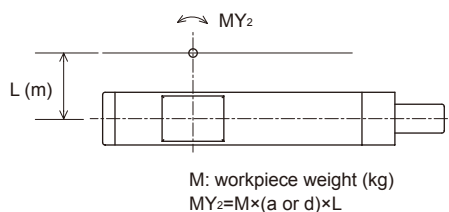
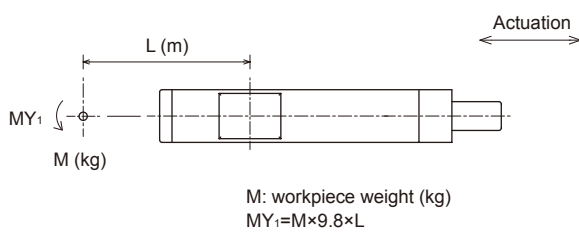
• Rolling moment MR(N·m)



• Pitching moment MP(N·m)



• Yawing moment MY(N·m)



Body height
(from the actuator bottom to the upper surface of the slider)

ETS-05	ETS-06	ETS-10	ETS-12
54	56	66	70
ETS-13	ETS-14	ETS-17	ETS-22
78	78	97	122

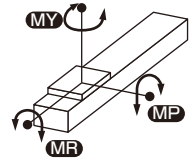
* Select with using larger value of a and d.

[Dynamic allowable moment and allowable overhang amount]

Applicable motor size: 100W

[Dynamic load capacity and allowable moment]

	Dynamic load capacity	Dynamic allowable moment		
	Wmax (N)	MRmax (N·m)	MPmax (N·m)	MYmax (N·m)
ETS-05	551	6.8	2.8	2.8
ETS-06	1209	24.8	8.9	8.9
ETS-10	2651	24.8	24.1	24.1
ETS-12	1660	53.1	42.3	42.3



[Allowable overhang amount]

ETS-05

Mounting orientation	Lead	Load kg	Overhang mm		
			A	B	C
Horizontal 	2	5	750	45	105
		10	350	20	47
	5	4	480	45	105
		7	300	25	55
	10	3	300	55	110
		5	180	30	65
Side surface 	2	5	105	45	750
		10	47	20	350
	5	4	100	45	450
		7	55	23	240
	10	3	110	55	400
		5	60	30	230
Vertical 	2	3	80	-	80
		7	35	-	35
	5	3	65	-	65
		10	1.5	120	-

ETS-10

Mounting orientation	Lead	Load kg	Overhang mm		
			A	B	C
Horizontal 	5	30	560	50	50
		50	310	27	27
	10	15	440	90	90
		25	250	50	50
	16	30	200	40	40
		5	950	270	230
		10	480	130	110
		22	200	55	45
	20	5	750	250	200
		10	370	120	95
		15	240	80	60
		10	160	160	1400
Side surface 	5	20	75	75	650
		30	45	45	400
		10	130	140	690
	10	20	60	65	330
		30	40	40	210
		5	230	250	750
	16	10	110	120	370
		22	45	50	160
		5	220	250	650
	20	10	105	120	320
		15	65	75	210
		5	310	-	310
Vertical 	5	10	155	-	155
		12	130	-	130
		4	360	-	360
	10	6	240	-	240
		8	180	-	180
	16	1	1050	-	1050
2		525	-	525	
20	5	210	-	210	
		1	850	-	850
	2	425	-	425	
		3	283	-	283

ETS-06

Mounting orientation	Lead	Load kg	Overhang mm		
			A	B	C
Horizontal 	2	10	400	65	150
		30	150	15	40
	5	10	520	50	110
		30	130	10	25
	10	3	800	145	330
		8	280	50	120
15	140	23	55		
	Side surface 	2	15	110	42
30			45	15	180
5		5	240	95	1150
		10	115	50	540
10		30	25	10	140
		3	320	150	700
8	110	50	250		
	15	50	25	120	
Vertical 	2	5	160	-	160
		15	53	-	53
	5	2	300	-	300
		4	150	-	150
	10	10	60	-	60
		1	410	-	410
2	205	-	205		
	5	82	-	82	

ETS-12

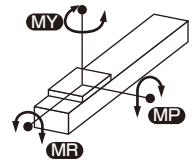
Mounting orientation	Lead	Load kg	Overhang mm		
			A	B	C
Horizontal 	5	30	900	70	80
		50	420	30	40
	10	15	900	150	160
		25	490	80	85
	16	30	400	60	70
		5	1700	430	450
		10	800	200	220
		22	330	80	85
	20	5	1200	420	400
		10	580	200	190
		15	370	120	120
		10	330	270	2200
Side surface 	5	20	145	120	1000
		30	90	70	600
		10	260	240	850
	10	20	115	110	520
		30	70	60	300
		5	450	450	1300
	16	10	210	210	600
		22	80	80	240
		5	410	410	1200
	20	10	190	195	600
		15	120	120	390
		5	600	-	600
Vertical 	5	10	300	-	300
		12	250	-	250
		4	650	-	650
	10	6	430	-	430
		8	320	-	320
	16	1	1050	-	1050
2		525	-	525	
20	5	210	-	210	
		1	850	-	850
	2	425	-	425	
		3	650	-	700

Note: In case using in hanging style, select as 1/3 for allowable load, dynamic allowable moment, overhang amount. Overhang amount to the center of load should be within each of A, B, and C directions.

[Dynamic allowable moment and allowable overhang amount] Applicable motor size: 200W

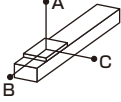
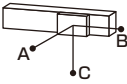
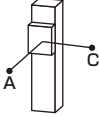
[Dynamic load capacity and allowable moment]

	Dynamic load capacity	Dynamic allowable moment		
	Wmax (N)	MRmax (N·m)	MPmax (N·m)	MYmax (N·m)
ETS-13	4822	191.7	45.1	45.1
ETS-14	6567	261.0	262.7	262.7

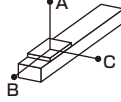
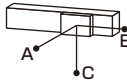
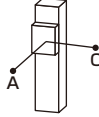


[Allowable overhang amount]

ETS-13

Mounting orientation	Lead	Load kg	Overhang mm		
			A	B	C
Horizontal 	5	40	800	65	230
		55	560	45	160
		70	430	34	120
	10	25	600	100	280
		35	420	70	195
		47	300	50	145
	16	10	900	230	520
		20	440	115	250
		30	280	75	170
	20	5	1200	430	850
		15	400	140	270
		24	250	85	160
Side surface 	5	40	240	70	850
		55	170	50	600
		70	125	35	450
	10	25	300	100	620
		35	210	70	420
		47	150	50	300
	16	10	530	230	900
		20	250	110	430
		30	170	70	280
	20	5	900	450	1300
		15	290	150	420
		24	170	90	260
Vertical 	5	5	600	-	600
		10	300	-	300
		12	250	-	250
	10	4	650	-	650
		6	430	-	430
		8	320	-	320
	16	1	1350	-	1350
		2	900	-	900
		6	350	-	350
	20	1	1050	-	1050
		2	900	-	900
		4	550	-	550

ETS-14 (200W)

Mounting orientation	Lead	Load kg	Overhang mm		
			A	B	C
Horizontal 	5	60	2300	250	240
		80	1600	180	170
		95	1150	145	140
	10	30	2000	500	450
		50	1400	280	250
		75	1000	170	160
	16	10	2200	1200	1000
		20	1600	600	500
		44	800	260	220
	20	10	2300	1200	1000
		20	1400	600	500
		35	1000	330	290
Side surface 	5	60	240	250	1600
		80	170	180	1200
		95	140	145	1050
	10	30	420	460	1500
		50	240	250	1000
		75	150	160	700
	16	10	1050	1200	2650
		20	500	620	1450
		44	230	270	800
	20	10	1000	1200	1900
		20	500	600	1000
		35	270	300	600
Vertical 	5	20	755	-	755
		25	605	-	605
		27	560	-	560
	10	10	1350	-	1350
		15	900	-	900
		18	750	-	750
	16	2	2400	-	2400
		4	1700	-	1700
		7	1300	-	1300
	20	6	1700	-	1700
		-	-	-	-
		-	-	-	-

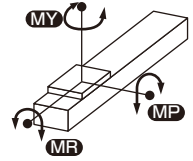
Note: In case using in hanging style, select as 1/3 for allowable load, dynamic allowable moment, overhang amount.
Overhang amount to the center of load should be within each of A, B, and C directions.

[Dynamic allowable moment and allowable overhang amount]

Applicable motor size: 400W

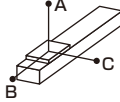
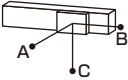
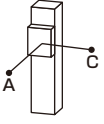
[Dynamic load capacity and allowable moment]

	Dynamic load capacity	Dynamic allowable moment		
	Wmax (N)	MRmax (N·m)	MPmax (N·m)	MYmax (N·m)
ETS-14	6567	261.0	262.7	262.7
ETS-17	10102	520.3	424.3	424.3

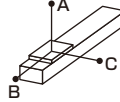
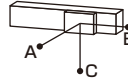
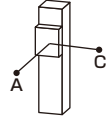


[Allowable dynamic overhang amount]

ETS-14 (400W)

Mounting orientation	Lead	Load kg	Overhang mm		
			A	B	C
Horizontal 	5	60	2300	250	240
		80	1600	180	170
		110	1150	120	115
	10	30	2000	500	450
		50	1400	280	250
		88	700	140	125
	16	10	2200	1200	1000
		20	1600	600	500
		48	900	260	220
	20	10	2300	1200	1000
		20	1400	600	500
		40	850	280	230
Side surface 	5	60	240	250	1600
		80	170	180	1200
		110	115	120	1050
	10	30	420	460	1500
		50	240	250	1000
		88	120	130	700
	16	10	1050	1200	2650
		20	500	620	1450
		48	200	230	800
	20	10	1000	1200	1900
		20	500	600	1000
		40	230	290	600
Vertical 	5	20	755	-	755
		25	605	-	605
		33	455	-	455
	10	10	1350	-	1350
		15	900	-	900
		22	650	-	650
	16	2	2400	-	2400
		4	1700	-	1700
		10	1000	-	1000
	20	4	1800	-	1800
		6	1200	-	1200
		8	900	-	900

ETS-17 (400W)

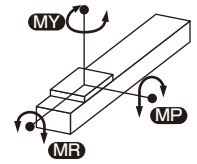
Mounting orientation	Lead	Load kg	Overhang mm		
			A	B	C
Horizontal 	5	60	2950	400	475
		100	2000	220	265
		110	1850	200	240
	10	60	1600	350	400
		75	1350	270	320
		90	1050	220	230
	20	30	1850	650	650
		50	1100	380	380
		75	700	240	240
	40	10	1700	1150	900
		20	850	550	430
		35	450	300	240
Side surface 	5	60	500	420	2450
		100	280	240	1600
		110	250	215	1400
	10	60	420	380	1950
		75	330	300	1500
		90	270	240	1200
	20	30	650	650	1600
		50	375	380	900
		75	245	240	600
	40	10	900	1100	1750
		20	450	550	850
		35	240	300	470
Vertical 	5	20	1400	-	1400
		30	950	-	950
		40	700	-	700
	10	15	1700	-	1700
		25	1000	-	1000
		30	850	-	850
	20	5	2000	-	2000
		10	1800	-	1800
		14	1400	-	1400
	40	7	650	-	650
		-	-	-	-
		-	-	-	-

Note: In case using in hanging style, select as 1/3 for allowable load, dynamic allowable moment, overhang amount.
Overhang amount to the center of load should be within each of A, B, and C directions.

[Dynamic allowable moment and allowable overhang amount] Applicable motor size: 750W

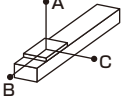
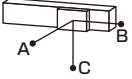
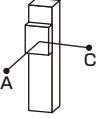
[Dynamic load capacity and allowable moment]

	Dynamic load capacity	Dynamic allowable moment		
	Wmax (N)	MRmax (N·m)	MPmax (N·m)	MYmax (N·m)
ETS-17	10102	520.3	424.3	424.3
ETS-22	14174	999.3	1098.5	1098.5

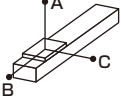
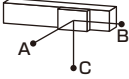
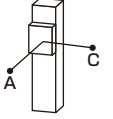


[Allowable overhang amount]

ETS-17 (750W)

Mounting orientation	Lead	Load kg	Overhang mm		
			A	B	C
Horizontal 	5	60	3300	410	470
		100	2000	230	260
		120	1700	180	210
	10	60	2300	400	440
		75	1850	310	350
		95	1450	230	270
	20	30	2000	650	620
		50	1150	370	370
		83	650	210	210
	40	10	1650	1150	850
		20	530	350	270
		50	300	190	150
Side surface 	5	60	500	430	2700
		100	280	240	1650
		120	230	200	1350
	10	60	420	380	2300
		75	330	300	1800
		95	250	230	1400
	20	30	640	650	1700
		50	370	380	1000
		83	210	210	560
	40	10	900	1150	1700
		20	280	350	550
		50	160	195	310
Vertical 	5	20	1500	-	1500
		30	1000	-	1000
		50	600	-	600
	10	15	1700	-	1700
		25	1000	-	1000
		40	620	-	620
	20	5	2200	-	2200
		10	1900	-	1900
		25	730	-	730
	40	12	700	-	700
		-	-	-	-
		-	-	-	-

ETS-22

Mounting orientation	Lead	Load kg	Overhang mm		
			A	B	C
Horizontal 	5	60	3600	650	650
		100	2800	350	340
		150	2300	260	230
	10	60	2850	960	810
		100	2000	570	460
		150	1450	340	310
	25	50	2000	850	610
		80	1200	500	360
		120	770	300	220
	40	10	4200	2850	1850
		30	1400	900	600
		60	650	420	270
Side surface 	5	60	940	1100	3850
		100	540	620	2450
		150	340	400	2150
	10	60	800	980	3700
		100	460	540	2200
		150	280	350	1450
	25	50	600	790	1950
		80	360	480	1200
		120	220	290	750
	40	10	1950	2900	3500
		30	620	950	1400
		60	290	430	650
Vertical 	5	30	2400	-	2400
		50	1450	-	1450
		70	1050	-	1050
	10	20	3000	-	3000
		30	2000	-	2000
		45	1350	-	1350
	25	15	2600	-	2600
		20	1950	-	1950
		25	1550	-	1550
	40	5	2600	-	2600
		10	1950	-	1950
		-	-	-	-

Note: In case using in hanging style, select as 1/3 for allowable load, dynamic allowable moment, overhang amount.
Overhang amount to the center of load should be within each of A, B, and C directions.

List of attachment products

Basic type

Motor mounting screw (motor mounting direction common)

Model No.	Mounting motor	Motor size	Thread size	Attached quantity
ETS-05	M	100W	M4	2
ETS-06	Y		M4	2
ETS-10	P		M3	4
ETS-12				
ETS-13	M	200W 400W	M5	4
ETS-14	Y		M5	4
	P		M4	4
ETS-17	M	400W	M5	4
	Y		M5	4
	P		M4	4
	M	750W	M6	4
	Y		M6	4
	P		M5	4
ETS-22	M	750W	M6	4
	Y		M6	4
	P		M5	4

Motor mounting direction is different

Model No.	Attachment product name	Attached quantity
E (External direct installation) B (Built-in)	Coupling (assembly shipment)	1 pc.
R (Right-side up installation) L (Left-side up installation)	Pulley	1 pc.
D (Bottom-side up installation)	Belt	1 programs

*1 When at time of home position, limit sensor selection

Sensor installation direction	Shipment style	Quantity
Internal sensor	Shipped assembled at fixed position.	3 pc.*2
External sensor	Shipped attached *3	

*1 How home position sensor and limit sensor are shipped depends on inside/outside mounting.

*2 If "without" is selected for either the home position sensor or limit sensor, the other will automatically become "without". Also, the center dog will become "without" too.

*3 Sensor mounting screws will be attached too.

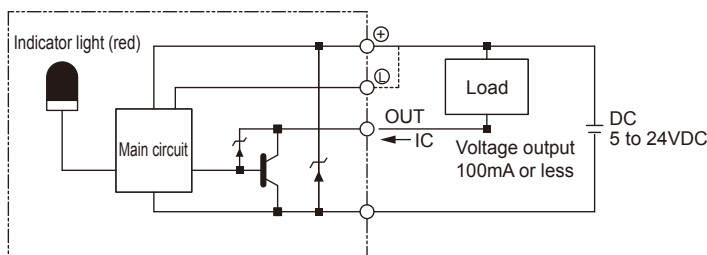
Home position sensor, limit sensor

	Maker	Type
Outside installation sensor	OMRON	EE-SX672
Inside installation sensor	OMRON	EE-SX674

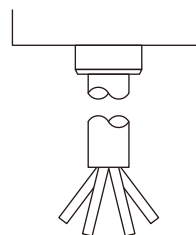
Performance

Descriptions	Specifications
Hysteresis	0.025mm or less
light wave (peak emission range)	GaAs red out LED (940nm)
Indicator light	lighting when light enters (red) (Lighting when light shuts for A type and R type)
Power voltage	5 to 24VDC±10% ripple(p-p) less than 10%
Current consumption	35mA or less (NPN type)
Control output	NPN type:NPN open collector output 5 to 24VDC less than 100mA Current when off less than 0.5mA residual voltage less than 0.8V (load current less than 40mA)
Ambient illuminance	acceptance surface luminance fluorescent: less than 1,000lx
Ambient temperature	When operates: -25 to +55°C When storages: -30 to +80°C(No freezing)
Ambient humidity	When operates: 5 to 85%RH When storages: 5 to 95%RH(No freezing)
Degree of protection	IP50IEC60529 standards
Code length	1m (connector (EE-10101M) with code)

Output circuit



Wiring diagram



Terminal arrangement

Brown	5 to 24VDC
Pink	L
Blue	0V
Black	OUTPUT



Safety precautions

Always read this section before starting use.

When designing and manufacturing devices using electric actuator, the manufacturer has an obligation to manufacture a safe device, and to check that the safety of the device's mechanical mechanism and the system operated by the electrical control that controls the device is secured.

It is important to select, use, handle, and maintain the product appropriately to ensure that the CKD product is used safely.

Observe warnings and precautions to ensure device safety.

Check that device safety is ensured, and manufacture a safe device.

WARNING

- 1** This product is designed and manufactured as a general industrial machine part.
It must be handled by an operator having sufficient knowledge and experience in handling.
- 2** Use within the product's specification range.
This product must be used within its stated specifications. Do not attempt to modify or additionally machine the product. This product is intended for use as a general-purpose industrial device or part. It is not intended for use outdoors or for use under the following conditions or environment.
(Note that this product can be used when CKD is consulted prior to use and the customer consents to CKD product specifications. The customer must provide safety measures to avoid risks in the event of problems.)
 - ①** Use for special applications including nuclear energy, railway, aircraft, marine vessel, vehicle, medical equipment, equipment, or applications coming into contact with beverage or food, amusement equipment, emergency shutoff circuits, press machine, brake circuits, or for safeguard.
 - ②** Use for applications where life or assets could be adversely affected, and special safety measures are required.
- 3** Observe corporate standards and regulations, etc., related to the safety of device design.
- 4** Do not remove devices until safety is confirmed.
 - ①** Inspect and service the machine and devices after securing the safety of all the systems related to this product.
 - ②** Exercise caution as high temperature and charged parts can be present even when operation is stopped.
 - ③** Before starting device inspection or maintenance, turn off device power and other power to related devices. During the maintenance, please be careful for electric shock.
- 5** Observe warnings and cautions in the instruction manual of each product.
 - ①** Unexpected movement may occur during teaching operation or test operation, so keep hands, etc., away from the actuator. When conducting operation with the shaft not visible, be sure before starting operation that safety is ensured even if the actuator moves.
- 6** To prevent electric shock, observe warnings and cautions.
 - ①** Do not touch the heat sink, cement resistor and motor installed in the controller.
Failure to do so may cause burn because these parts are hot. Take sufficient time before conducting inspection and other operations. Even immediately after the power is turned off, a high voltage is applied until the electric charge accumulated in the internal capacitor is discharged. Wait three minutes or so after turning the power off before touching these parts.
 - ②** Turn off the controller power source before conducting maintenance or inspection.
Electric shocks from high voltage may occur.
 - ③** Do not connect or disconnect connectors while power is on. Misoperation, faults, or electrical shock may occur.
- 7** Set up the overcurrent protection device.
In carrying out wiring to the controller, install over-current protective devices (such as wiring breaker and circuit protector) to the primary power supply for power (terminal block number L1, L2 and L3) and control (connector number CN3-24VDC) in accordance with "JIS B 9960-1:2008 Safety of machinery - Electrical equipment of machines - Part 1: General requirements".
(Excerpt from JIS B9960-1 7.2.1 General Requirements)
Overcurrent protection shall be provided where the current in a machine circuit can exceed either the rating of any component or the allowable current-carrying capacity of the conductors, whichever is the lesser value. The ratings or settings to be selected are specified in 7.2.10.
- 8** Observe the following cautions to prevent accidents.
■ The safety cautions are ranked as "DANGER", "WARNING" and "CAUTION" in this section.

⚠ DANGER: When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries, or when there is a high degree of emergency to a warning.

⚠ WARNING: When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries.

⚠ CAUTION: When a dangerous situation may occur if handling is mistaken leading to minor injuries or physical damage.

Note that some items described as "CAUTION" may lead to serious results depending on the situation.
In any case, important information that must be observed is explained.

Notes for ordering

1 Warranty period

"Warranty Period" of this product is one (1) year from the first delivery to the place you specified.

2 Scope of warranty

In case of a fault which is proved to be the responsibility of the CKD during the above warranty period, we shall offer a replacement part or a spare part of this product free of charge or repair the part in our plant free of charge.

Note that the following faults are excluded from the warranty:

- ① Operation under the conditions or in the environment derailing from those specified in the product specifications.
- ② Failure caused by lack of attention or erroneous control.
- ③ Failure caused by other than the delivered product.
- ④ Failure caused by operation derailing from the purposes for which the product is designed.
- ⑤ Failure caused by modification in the structure, performance, specification or other features made by other than us after delivery, or failure caused by repairs done by other than our designated contractor.
- ⑥ Loss in our product assembled to your machine or equipment, which would be avoided if your machine or equipment were provided with general functions, structures or other features common in the industry.
- ⑦ Failure caused by reason that is unforeseeable with technology put into practical use at the time of delivery.
- ⑧ Failure caused by fire, earthquake, flood, lightning, or other acts of God, earth shock, pollution, salt hazard, gas intoxication, excessive voltage, or other external causes.

The warranty mentioned here covers the discrete delivered product. Only the scope of warranty shall not cover losses induced by the failure of the delivered product.

3 Warranty for exported products

- (1) Products returned to the CKD factory or to a company or factory designated by CKD shall be repaired. Work and cost necessary for transportation shall not be compensated for.
- (2) The repaired product shall be returned to a designated place in Japan with domestic packaging specifications. This warranty specifies basic conditions. If warranty details in individual specification drawings or specifications differ from these warranty conditions, specification drawings or specifications shall take priority.

4 Compatibility confirmation

In no event shall CKD be liable for merchantability or fitness for a particular purpose, notwithstanding any disclosure to CKD of the use to which the product is to be put.

5 Scope of service

Technician dispatch service expense is not included in the price of delivered products. We shall receive the expense separately in the following cases:

- (1) Installation adjustment instruction and presence in test operation
- (2) Maintenance, adjustment and repair
- (3) Technical guidance and technical training (operation, program, wiring method, safety education, etc.)



Safety precautions

Always read this section before starting use.

Individual precautions : Electric driven actuator ETS Series

Design & Selection

Danger

- Do not operate the product in flammable or explosive atmospheres.
Doing so may create the risk of ignition and explosion.
- Keep the actuator away from drops of water or oil.
Failure to do so may result in a fire or faulty operation.
- Make sure to hold and lock (including work pieces) when installing the product.
The operator could be injured due to falling or abnormal operation of the product.

Warning

- Use the product within the product-specific specification range.
- Install a protection cover in case of possible danger to the operator.
 - If the electric actuator's movable parts may pose danger to the operator, be sure that the actuator has a structure preventing the operator from entering its operation range or touching the movable parts directly.
 - Do not get close to the robot if you wear a medical device such as a pacemaker. Strong magnets used in the robot may cause misoperation of the pacemaker and other devices.
- Take the operation status during emergency stop into consideration.
 - In case the safety device stops the machine due to emergency stop, power outage or other system errors, the electric actuator must be designed so that its movement causes no damage to the operator and equipment.
- Install the actuator inside and keep away from humid places.
Electrical leakage or fire may occur in places where rainwater drips or is humid (under the conditions its humidity is more than 85% and condensation occurs). Drop of oil and oil mist should also be prohibited.
 - Failure to do so may result in damage or faulty operation.
- Use and store the product under the correct use/storage temperature in atmospheres without condensation.
(storage ambient temperature: -10°C to 50°C, storage ambient humidity: 35% to 80%, operating ambient temperature: 0°C to 40°C, operating ambient humidity: 35% to 80%)
Failure to do so may result in shorter life or abnormal stop of the actuator. Please ventilate if the heat is confined.

- To prevent failure, explosion, or ignition, install the product away from direct sun, dust, flammable items, corrosive gas, explosive gas, and flammable gas. Consideration has not been taken regarding chemical resistance for this product.
Failure to do so may result in the cause of break, explosion or ignition.
- Do not use and store the actuator in places with strong electromagnetic waves, ultraviolet rays and radiation.
Doing so may cause malfunction or failure.
- Take possibility of power source failure into consideration.
 - In case of a failure in the power source, take countermeasures without causing trouble or damage to the operator or equipment.
- Consider the operation status if the machine is reactivated after emergency stop or abnormal stop.
 - The machine must be designed so that reactivation causes no damage to the operator or equipment.
If the electric actuator must be reset to the start position, be sure to provide the machine with a safe control device.
Consider the possibility of the failure of the mounted motor.
Take preventive measures not to damage human bodies and equipments, in case of failure of the power source.
- Do not use the actuator under shock or vibration conditions.
- Do not apply load exceeding the allowance specified in the selection document to the actuator.

Caution

- Do not hit the trolley table against the stroke end.
- Specify the maintenance conditions in the equipment instruction manual.
 - Product functions may be deteriorated significantly due to usage, service conditions or maintenance. This may result in failure to ensure safety. Conducting maintenance with accuracy allows the product to fully exert its functions.
- Read through the instruction manual to perform installation and adjustment properly.
- The product is manufactured in conformity with the related standards. Never attempt to modify the product.
- Read user instructions for motor and control attached to the product. Then wire/design with attention paid to safety.
- The suitability of our products with systems, machines, equipment that you are going to use with must be checked and determined at your own risk.

Installation & Adjustment

Danger

- Do not enter the operating range of the actuator when the product is ready to operate. The product may move suddenly and injure.

Warning

- Overturn, vibration, and shock should be avoided during transportation due to the integrated precision components.
Parts could damage.
- In case of locating temporarily, place the actuator in a horizontal position.
- Do not climb on top of the package, or place any object.
- Set ambient temperature -10° to 50° and ambient humidity 35 to 80% when transporting without condensation or freezing.
If not, failure may occur.
- Attachment to incombustible items is necessary. Direct attachment to flammable items or near the items could cause a fire.
There is a risk of burns.
- Do not climb on top of the product, use it as a footstool or, place any object.
That could be the causes of accidents by falling, turnover of the product, injury from falling, damage to the product, or operation errors caused by the damage.
- Even if there is a power failure, take countermeasures so as to cause no damage to human body, or to machines.
Unexpected accident may happen.
- If any abnormality is found, stop using immediately and contact our sales office nearest you.

Caution

- Installing the actuator in places under large vibration or impact conditions may lead to malfunction.
Malfunction could occur.

- Do not operate the moving part of the product or decelerate rapidly by an external force.
There is a possibility to damage or malfunction by the regenerative current.
- During home return, do not hit the mechanical stopper etc. other than the pressing operation.
Damaged feed screw may cause malfunction.
- Durability can be changed by transport load or environment. Sufficient setting for transport load etc. is required. In addition, use without shock applying to the moving part.
- Do not operate on the slider and give it an excessive moment.
The product can be damaged or malfunction.
- Flatness of the mounting surface should be 0.05 mm / 200 mm or less.
- Do not give twist or bending force to the product.
- Flatness of the side of a work piece attaching to the slider should be less than 0.02mm. Do not give twist or bending force to it. The product can be damaged or malfunction.
- For tightening screws to mount the body, apply an appropriate torque described in table below.

Thread size	Tightening torque (N*m)
M3	0.7
M4	1.5
M5	3
M6	5.2
M8	12.5
M10	24.5

During Use & Maintenance

Danger

- Working with wet hands may cause an electric shock.

Caution

- Conduct a regular check 2 to 3 times in a year to make sure to work properly.
- Grease lubrication interval is usually 100km. However, it varies depending on the use conditions. It is

recommended to determine the lubrication interval by the initial inspection.
See the instruction manual for details.

- When performing maintenance, inspection, repair, stop the power supply to the product before. Call attention to the others around you not to turn the power on, or operate carelessly by a third party.
- In case of disposing the product, follow the law of waste disposal and public cleaning outsource to professional waste disposal service.

ETS model No. selection check sheet → To: CKD (PIC)

Please send your nearest dealer with filling the sheet. We will answer the result of model No. selection.

Customer:

Your company name		Section	
Name		e-Mail	
Tel		Fax	

Selecting conditions:

Desired model No.	ETS-			
Basic specification	Max. stroke length:	mm	ball screw lead:	mm
Actuation conditions	Movement stroke length:	mm	movement time:	sec.
	Set speed:	mm/s		
	Set acceleration/deceleration speed:	mm/s ²	(set acceleration/deceleration speed:	sec.)
	Precision of measurement in the partial different conditions:	±	mm	
Load conditions	Mounting orientation: Horizontal (upward) / horizontal (side) / vertical / others			
	Load weight:	kg		
	Overhang amount (distance from the center of slider to center of the load): A direction mm, B direction mm, C direction mm			
	Pushing load: Without/With (N) Actuated/Stopped Power direction toward the center of slider ()			
Working environment	Environment temperature:	°C	environment humidity:	%
	Atmosphere:			
Using motor	Manufacturer:	, Model No.:		
	Motor capacity:	W		
Special notes				

Related products

Electric actuator Type without motor

Catalog No. CC-1216A, CC-1217A, CC-1257A

■ Belt drive (ETV Series)

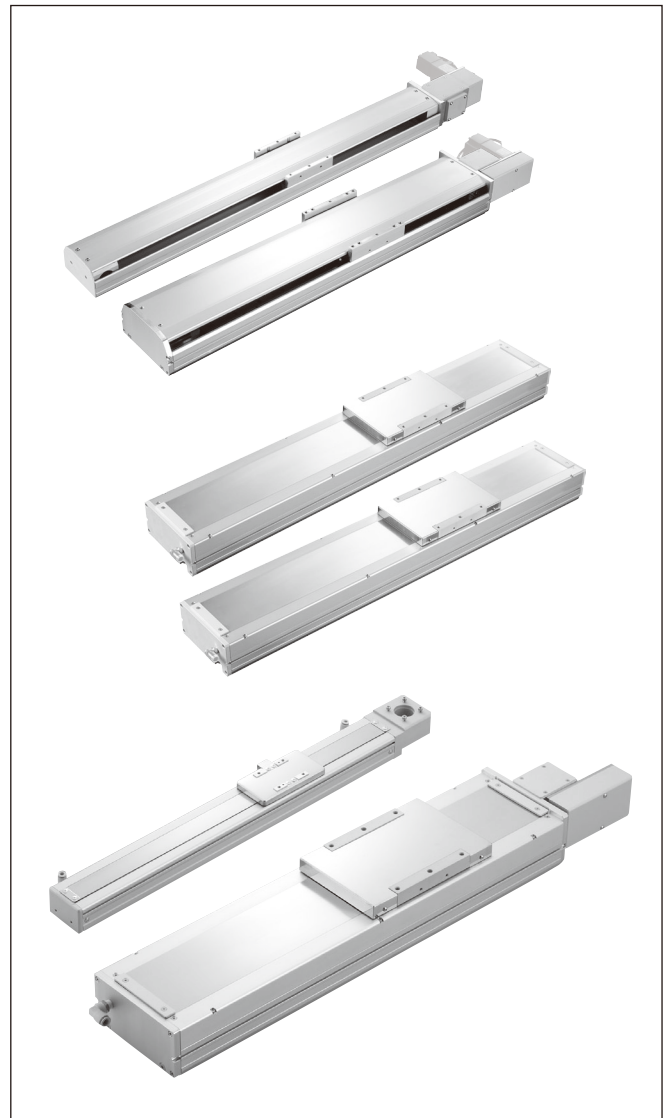
- Belt drive type based on the ETS series.
- Stroke can be selected from 100 to 3500 mm (50 mm pitch). In addition, long stroke and high speed are achieved with a maximum speed of 2000 mm/s.
- Motor size: 6 types, Motor mounting direction: 6 types
- Mount a motor you're familiar with

■ Ball screw drive / low-dust specification (ECS Series)

- Dust generation is minimized with a full cover structure and suction port, based on the ETS series.
- Motor size: 7 types, Lead: 7 types, Motor mounting direction: 5 types
- Mount a motor you're familiar with
- Mounting specifications of the home position sensor and limit sensor can be selected
- Stroke can be selected from 100 to 1500 mm (50 mm pitch)
- Supports a wide range of usage with maximum load capacity of 150 kg and maximum speed of 2000 mm/s

■ Belt drive (ECV Series)

- Dust generation is minimized with a full cover structure and suction port, based on the ETV series.
- Motor size: 6 types, Motor mounting direction: 6 types
- Mount a motor you're familiar with



Electric shuttle mover ESM Series

Catalog No. CC-1259A

■ 3D transport system with 1 motor

- 2D transport is possible with 1 motor, allowing space to be utilized efficiently
- Up to 20 m long stroke high-speed transport is possible, which could not be done with a single-axis electric actuator
- Multiple point positioning, soft start, and soft stop are freely possible
- Mount a servo motor you're familiar with



Absodex High Precision Type AX7000X Series

- **High resolution**
 Equipped with a high resolution encoder (4, 194, 304 pulses/rotation) with resolution approximately 8 times that of conventional models. Repeatability of ± 2 sec is achieved.
- **High responsivity**
 Responsivity and stability at a constant speed are greatly improved, as well as high-precision positioning accuracy.
- **Flexible positioning possible**
 Equipped with a "flexible programming function" to easily realize complex actions and the "industry's largest number of I/O signals" useful for communication with higher-level devices.
- **PC software AX Tools, easier to use**
 Equipped with the industry's first AI (Artificial Intelligence) adjustment function.
 Even a beginner can make adjustments like an expert, allowing faster system setup.

Catalog No. CC-1238A



Direct actuator compact type AX6000M Series

- **Space saving**
 In addition to industry min. external dimensions, for the concentric shape (the fixed axis and the rotation axis is the same), compact machine design that saves a waste of space is possible.
- **Flexible**
 Operation can be realized as imagined because it has abundant program creation functions.
 Furthermore, it corresponds to simple operation setting such as automatic creation point specified program.
- **High reliable and maintenance free**
 Because of the direct-drive system(gearless), there is no need to worry about gear damage or accuracy changes through wear of the gear unit.

Catalog No. CC-1148A



Recipient of 11th Cho Monodzukuri
 Innovative Parts and Components Incentive Award

Electric actuator ERL2/ESD2 Series

- **Positioning point number**
 Added "63 points positioning", which has broader utilities to usual "7 points positioning"
- **Easy setting tool**
 As well as teaching pendant (ETP2), added easy computer setting software (E-Tools)
- **Perfect compatibility**
 "Perfect compatibility" which allows all combinations between actuators and controllers

Catalog No. CC-1219A



Direct actuator quick response type AX1000T, AX2000T, AX4000T Series

■ Ample actuators

12 types of actuator are available, from 6 - 1000 N•m.

■ 5 types of interface options

5 types of interface for driver are available; parallel I/O, (NPN, PNP), CC-Link, DeviceNet, PROFIBUS-DP.

Catalog No. CC-995A



Electric actuator KBZ Series

■ High tact time

Max. operation speed of 800mm/s possible

■ Servo motor

Servo motor for a compact axis. Allow to high-speed operation, quick acceleration and deceleration, and high load capacity.

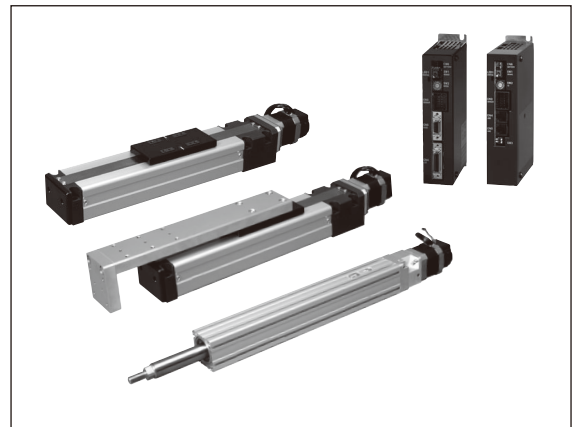
■ Absolute specifications

No need for return-home routine.

■ Compact controller

Drastic downsizing.

Catalog No. CC-1102A



Electric actuator ESSD/ELCR Series

■ Space saving

Wiring and installation space for the controller is no longer required.

■ Design pneumatically

Shaped, used, operated like pneumatic cylinder.

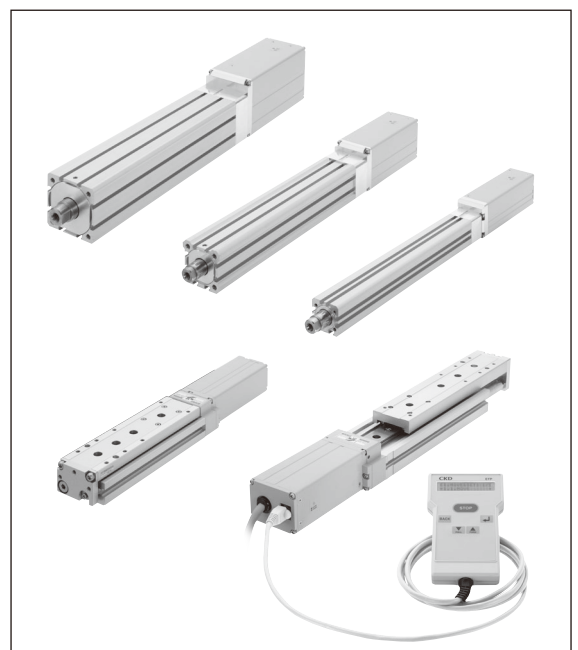
■ Flexible motion control

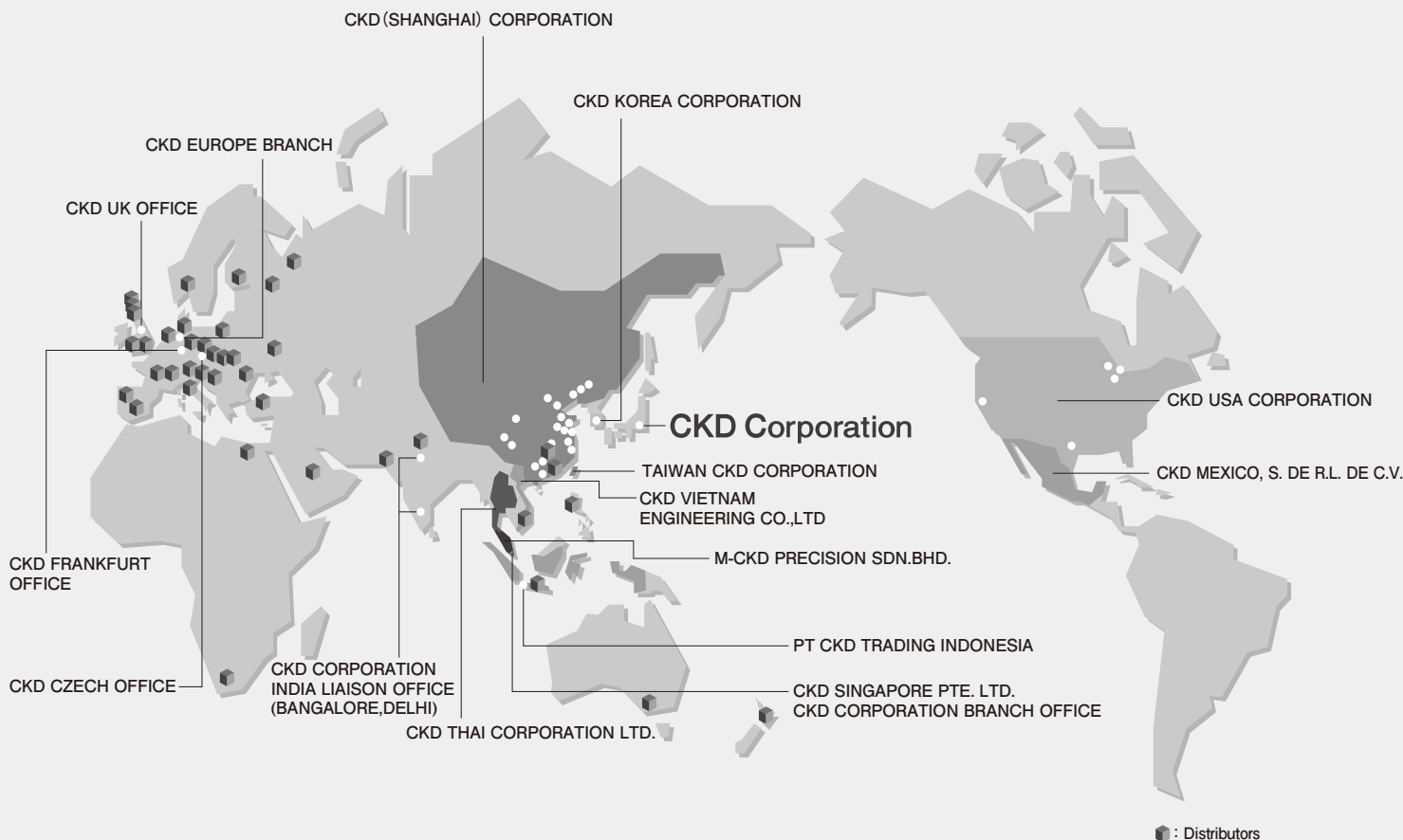
Three control modes (solenoid valve mode, 7 position mode and pitch feeding mode) available.

■ Easy teaching

Easy setting with 5 buttons. Direct configuration is available.

Catalog No. CC-1002A





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