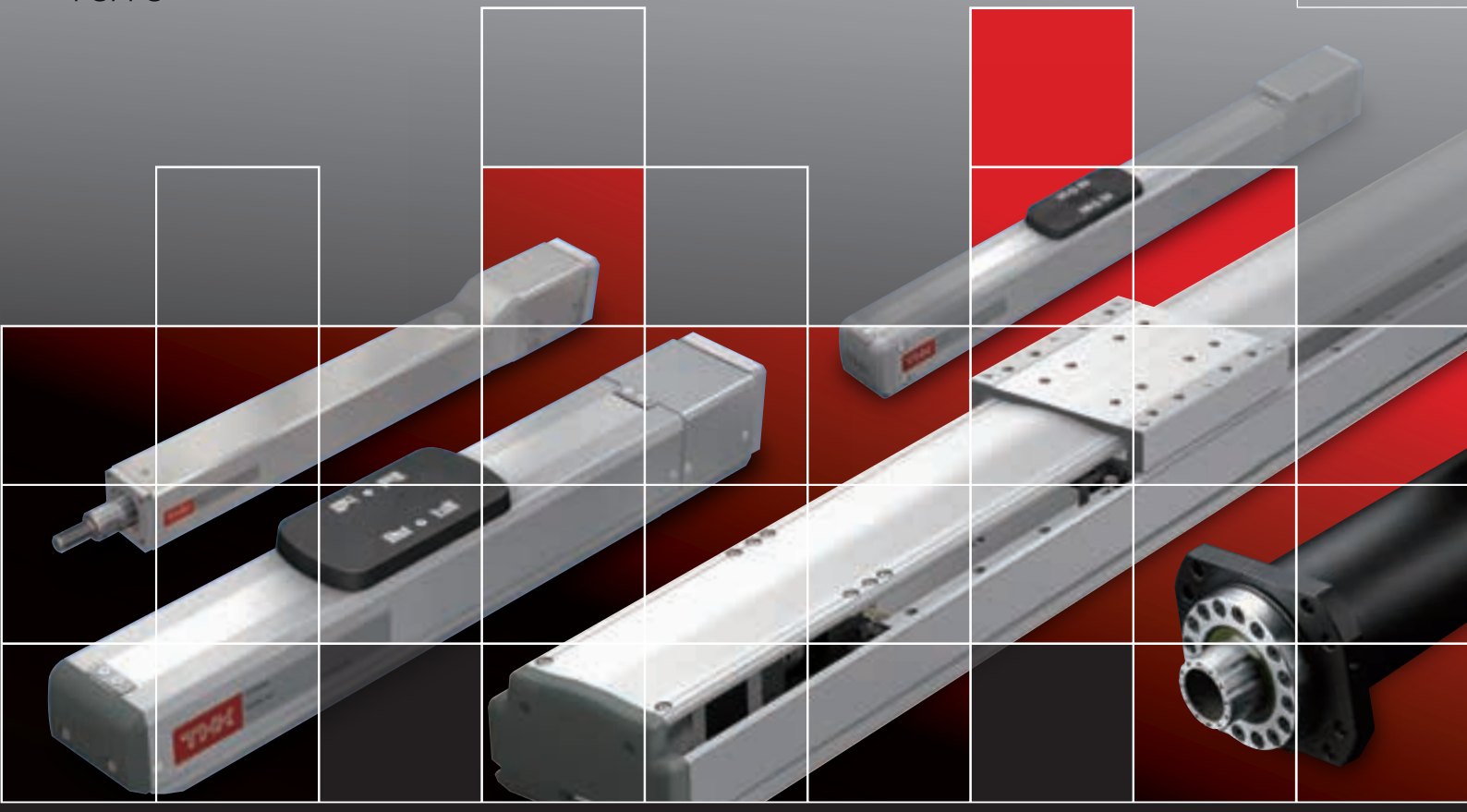
ACTUATOR UNITS

Mechanism only

Contents

ENGLISH



CATALOG No. 670-1E

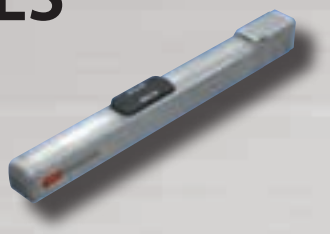
THK CO., LTD.
TOKYO, JAPAN

For details, visit THK at www.thk.com
*Product information is updated regularly on the THK website.

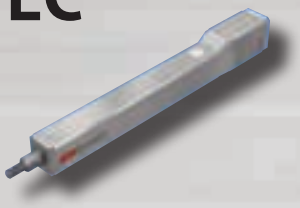
PRODUCT LINE UP

Economy series

ES



EC



Reasonably Priced

▶▶▶ Chapter 1

Compact series

KRF

High Rigidity

▶▶▶ Chapter 2

Universal series

US

Long Stroke

USW

Heavy Object Transport

▶▶▶ Chapter 3

Press series

PCT

Press Treated

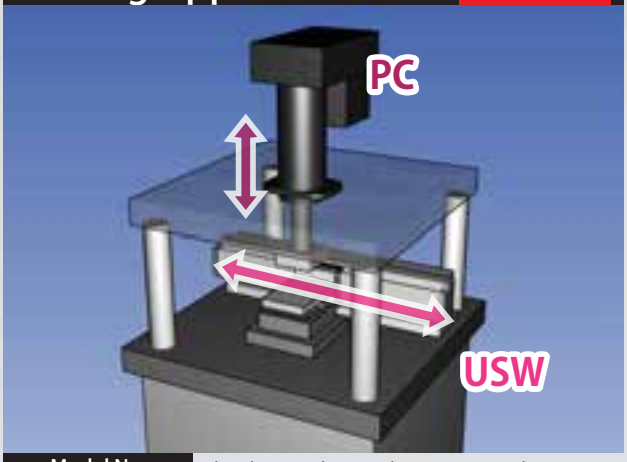
PC

▶▶▶ Chapter 4

Bottle Cap Tightening Equipment — ASSEMBLY

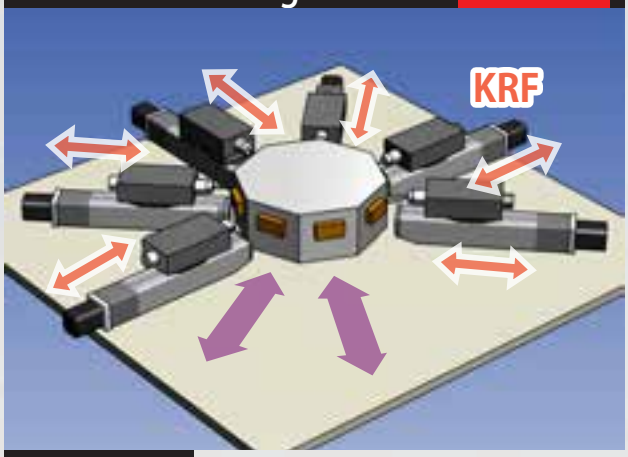
Model No.	
ES	ES is used for the cap supply unit. Eliminates variation due to differences between individuals and achieves further labor savings.

Cutting Apparatus — PROCESSING



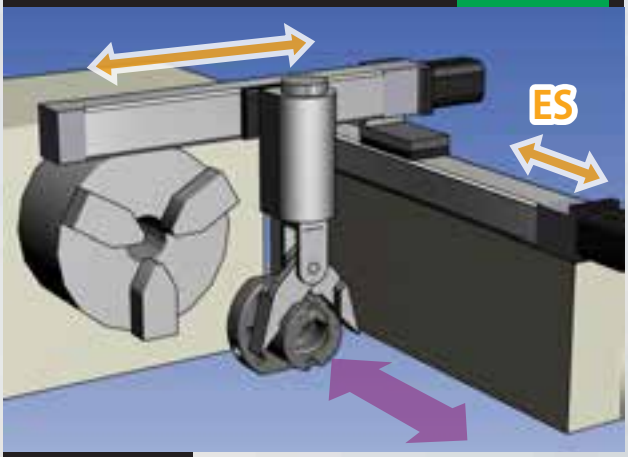
Model No.	
PC USW	The cleavage by punching using an electric press PC. By you are using a PC short overall length, the height of the equipment will be lower.

Multi-axis Drilling Machine — PROCESSING



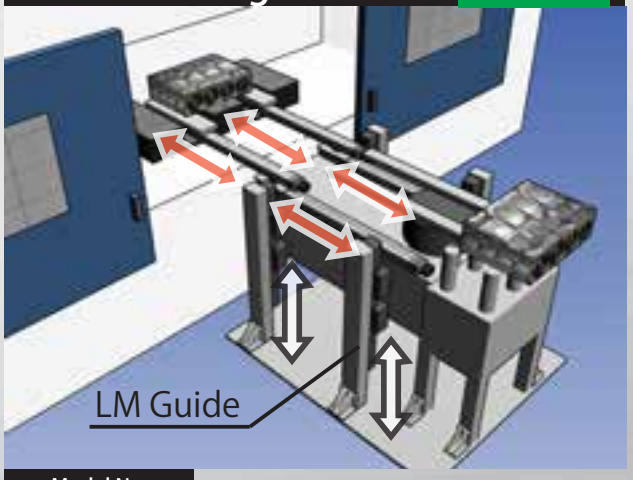
Model No.	
KRF	KRF is used for the multi-axis drilling machine. A smaller apparatus footprint is achieved with high rigidity and a compact design

Loader for Automatic Lathe — TRANSPORT



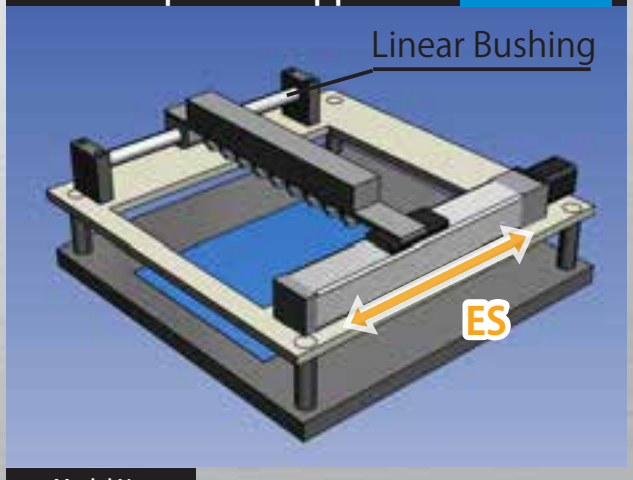
Model No.	
ES	ES is used as the loader for supplying work to the automatic lathe. Low cost device configuration is possible.

Palette Changer — TRANSPORT



Model No.	
KRF LM Guide	KRF is used in the changer unit in a two-tiered configuration. Unit is more compact and features higher rigidity than conventional articulated robots.

Visual Inspection Apparatus — TESTING



Model No.		
ES	Linear Bushing	ES is used for the visual inspection apparatus equipped with a CCD camera. Low costs can be achieved by combining the apparatus with a Linear Bushing.

Economy series

Model: **ES** Slider Type

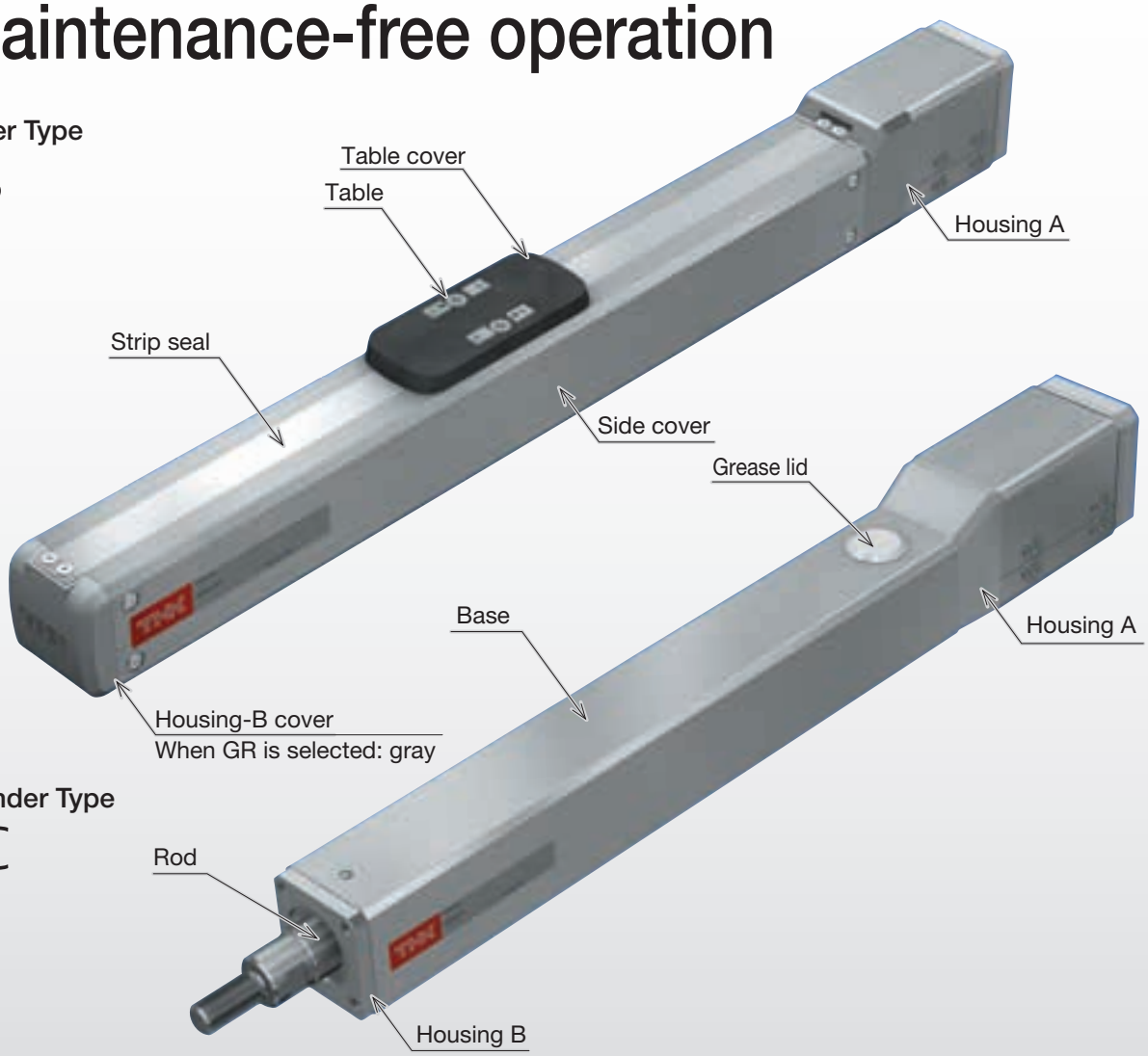
EC Cylinder Type

Chapter 1

Electrical Actuator
Economy series
ES/EC

Reasonably priced, Long-term maintenance-free operation

Slider Type
ES



Cylinder Type
EC

Features

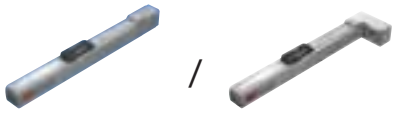
Compact and reliable
By incorporating an LM Guide within its rectilinear guide, the ES provides both compactness and reliability.

Reasonably priced
The use of LM Guides reduces the number of components required, making the ES available at a reasonable cost.

Long-term maintenance-free operation
The ES incorporates the model SRS LM Guide, equipped with ball retainers, as well as Lubricator QZ, for optimal ball-screw lubrication. The combined effect provides for long-term maintenance-free operation.

Predictable service life
The service life of the LM Guide and ball screw can be calculated based on usage conditions.
Contact THK for details.

Model Configuration



ES/EC (without motor)

Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Option
ES4R –	06 –	0150	B	– 0	– A	– MR–GR
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) Model
- ES3
- ES4
- ES5
- ES6
- ES3R
- ES4R
- ES5R
- ES6R
- EC3
- EC4
- EC3R
- EC4R
- EC3H
- EC4H

R represents motor wrap, and H represents with linear bush.

(2) Ball screw lead
- 06: 6mm
- 12: 12mm

For ES3, ES3R, EC3, EC3R and EC3H, only ball screw lead 6 is applicable.

(3) Stroke
- 0050: 50mm
- 0100: 100mm
- 0150: 150mm
- 0200: 200mm
- 0250: 250mm
- 0300: 300mm
- 0350: 350mm
- 0400: 400mm
- 0450: 450mm
- 0500: 500mm
- 0550: 550mm
- 0600: 600mm

Maximum stroke differs depending on models.
ES3: 300mm
ES4: 400mm
ES5: 500mm
ES6: 600mm
EC3: 200mm
EC4: 300mm

(4) Design symbol
- B

(5) With/without motor
- 0: Without motor
- 1: With motor (Prepared by THK)

When 0 is selected, a coupling is not provided for motor direct coupled specification. Timing pulley and timing belt are provided for motor wrap configuration. When 1 is selected, THK will prepare a motor and install it.

(6) Intermediate flange
- N: None
- A
- B
- C

(7) Option
- No symbol: Red cover
- MR: Motor right-turn folded *1
- ML: Motor left-turn folded *1
- GR: Change the cover color to gray
- SB: With slider base *2
- CB: With cylinder base *3
- FL: With flange *3 *4
- LB: With link ball *3 *4
- $\square_1\square_2$: Sensor *2

Specify the option symbol by writing in the order of description from left adding "–".

*1 This is valid only when selecting ES□R or EC□R for model (1).
*2 This is valid only when selecting ES for model (1).
*3 This is valid only when selecting EC for model (1).
*4 If you select EC□H for model (1), FL and LB cannot be selected.

Change the cover color to gray
You can change the color of ES housing cover to gray.

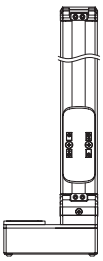
No symbol: red

When GR is selected: gray

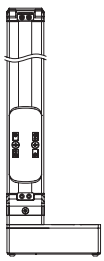
If the GR is not included in the model configuration, cover will be red.

Folded direction

Slider type ES

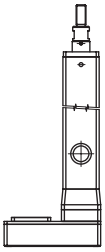


Option symbol ML: Left-turn folded

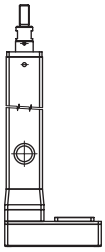


Option symbol MR: Right-turn folded

Cylinder type EC



Option symbol ML: Left-turn folded



Option symbol MR: Right-turn folded

Pages for detailed description

(6) Intermediate flange		P. 1-035
(7) Options	GR: Change the cover color to gray	P. 1-035
	SB: With slider base	P. 1-036
	CB: With cylinder base	P. 1-040
	FL: With flange	P. 1-040
	LB: With link ball	P. 1-040
	$\square_1\square_2$: Sensor	P. 1-038

Series List

Model	Ball screw lead [mm]	Stroke [mm]	Rated speed *1 [mm/s]	The reference motor		Maximum load capacity *2 [kg]	
				Stepper motor	Servo motor [W]	Horizontal	Vertical
ES3	6	50 to 300	—	□28	—	1	0.5
ES4	6	50 to 400	—	□35	—	to 9	to 4
	12					to 7.5	to 1.5
ES5	6	50 to 500	300	—	50	10	5
	12		600			6	2
ES6	6	50 to 600	300	—	50	10	5
	12		600			6	2
ES3R	6	50 to 300	—	□28	—	1	to 0.5
ES4R	6	50 to 400	—	□35	—	4	to 1.5
	12					2	1
ES5R	6	50 to 500	300	—	50	8	2
	12		600			6	1
ES6R	6	50 to 600	300	—	50	8	2
	12		600			6	1
EC3	6	50 to 200	—	□35	—	15	6
EC4	6	50 to 300	300	—	50	14	6
	12		600			7	3
EC3R	6	50 to 200	—	□35	—	15	3
EC4R	6	50 to 300	300	—	50	14	6
	12		600			7	3
EC3H	6	50 to 200	—	□35	—	15	6
EC4H	6	50 to 300	300	—	50	14	6
	12		600			7	3

*1 Based on rated motor speed (3,000min^{-1}).
*2 Load mass represents values with THK control devices used. Determine load mass according to specifications of the motor you actually use. For selecting a motor, see Reference Materials for Selecting on page 1-041 and 1-042.
*3 Maximum speed is dependent on motor speed of 3,000min^{-1} and, if applicable, permissible rotation speed of ball screw.

	Maximum speed for each stroke *3 [mm/s]											
	Stroke [mm]											
	50	100	150	200	250	300	350	400	450	500	550	600
	300											
	300											
	600											
	300											
	600											
	300										270	230
	600										540	460
	300											
	300											
	600											
	300											
	600											
	300										270	230
	600										540	460
	300			250								
	300				230	170						
	600				460	340						
	300			250								
	300				230	170						
	600				460	340						
	300			250								
	300				230	170						
	600				460	340						

ES3 Slider type Directly coupled without motor

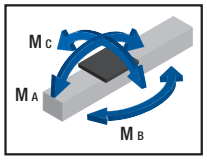
Model Configuration

Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Option
ES3 –	06 –	0150	B	– 0	– A	– GR–SB
ES3	06: 6mm	0050: 50mm	B	0: Without motor	A	No symbol: Red cover
		to		1: With motor	B	GR: Change the cover color to gray
		0300: 300mm				SB: With slider base
						$\square_1\square_2$: Sensor

Basic Specifications

LM Guide (SRS9)	Basic dynamic load rating C [N]		2690
	Basic static load rating C_0 [N]		2310
	Radial clearance [μm]		–2 to +2
Ball screw portion	Shaft diameter [mm]		ϕ6
	Lead [mm]		6
	Basic dynamic load rating Ca [N]		1400
	Basic static load rating C_{0a} [N]		2440
	Root diameter [mm]		ϕ5.1
	Ball center-to-center diameter [mm]		ϕ6.3
Bearing portion (fixed side)	Axial direction	Basic dynamic load rating Ca [N]	6550
		Static permissible load P_{0a} [N]	2310
Permissible rotational speed [min^{-1}]			3000
Starting torque [N·mm]			8
Positioning repeatability [mm] *2			±0.020
Lost motion [mm] *2			0.1
Maximum input torque [N·m]			0.065

Static Permissible Moment *1

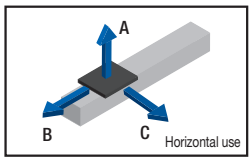


[N·m]

M_A	6.0
M_B	7.5
M_C	5.9

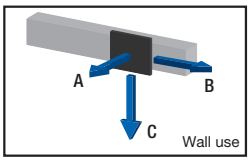
*1 Maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.
*2 When the appropriate motor is used.

Reference Permissible Overhang Length *1 *2



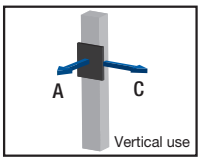
Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	0.5	200	200	200
	1	200	160	200



Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	0.5	200	200	200
	1	170	150	200

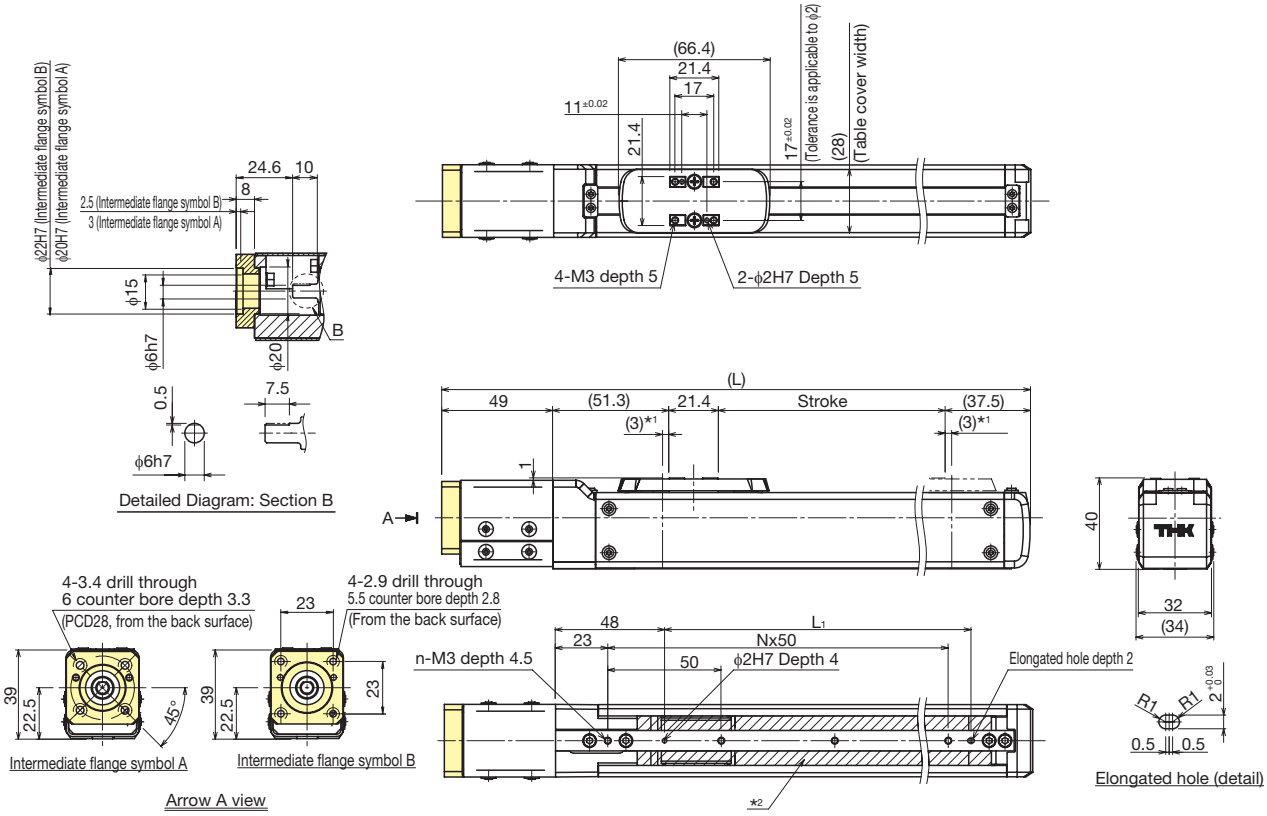


Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
6	0.3	200	200
	0.5	200	200

*1 Distance from the center of the top face of the table to the load center of gravity under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal or vertical, 150mm stroke.
*2 Value when THK control device is used. Actual load mass should be determined based on the specifications of the motor used. See "Reference Materials for Selecting ES" in P.1-041.

Dimensions

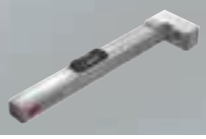


*1 This is a stroke between mechanical stoppers.
*2 ▨ indicates an opening.

Stroke [mm] (Stroke between mechanical stoppers)		50 (56)	100 (106)	150 (156)	200 (206)	250 (256)	300 (306)
Maximum speed *1 *2 [mm/s]	Ball screw lead: 6mm	300					
Dimensions [mm]	L	209.2	259.2	309.2	359.2	409.2	459.2
	L_1	85	135	185	235	285	335
Mounting pitch count	N	2	3	4	5	6	7
Mounting hole count	n	3	4	5	6	7	8
Weight [kg]		0.65	0.7	0.8	0.85	0.9	0.95

*1 Load capacity and maximum speed vary depending on the motor used.
*2 Dependent on the permissible rotational speed of the ball screw.

ES3R Slider type Motor wrap



Model Configuration

Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Option
ES3R –	06 –	0150	B	– 0	– A	– MR–GR
ES3R	06: 6mm	0050: 50mm	B	0: Without motor	A	MR: Motor right-turn folded
		to		1: With motor		ML: Motor left-turn folded
		0300: 300mm				GR: Change the cover color to gray
						SB: With slider base
						□1□2: Sensor

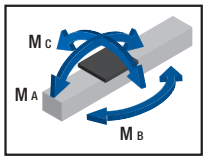
Note: If the GR is not included in the model configuration, cover will be red.

Basic Specifications

LM Guide (SRS9)	Basic dynamic load rating C [N]		2690
	Basic static load rating C0 [N]		2310
	Radial clearance [μm]		–2 to +2
Ball screw portion	Shaft diameter [mm]		ϕ6
	Lead [mm]		6
	Basic dynamic load rating Ca [N]		1400
	Basic static load rating C0a [N]		2440
	Root diameter [mm]		ϕ5.1
	Ball center-to-center diameter [mm]		ϕ6.3
Bearing portion (fixed side)	Axial direction	Basic dynamic load rating Ca [N]	6550
		Static permissible load P0a [N]	2310
Permissible rotational speed [min^{-1}]			3000
Starting torque *1 [N·mm]			8
Positioning repeatability [mm] *3			±0.020
Lost motion [mm] *3			0.1
Maximum input torque [N·m]			0.065

*1 Pulley and timing belt not included.
*2 Maximum permissible moment when unit is stationary. Moment standards: MA and MC: top of table; MB: center of table.
*3 When the appropriate motor is used.

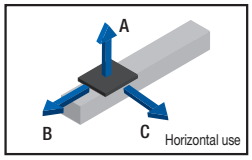
Static Permissible Moment *2



[N·m]

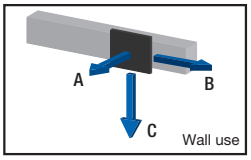
MA	6.0
MB	7.5
MC	5.9

Reference Permissible Overhang Length *1 *2



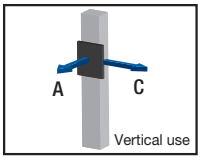
Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	0.5	200	200	200
	1	200	160	200



Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	0.5	200	200	200
	1	170	150	200

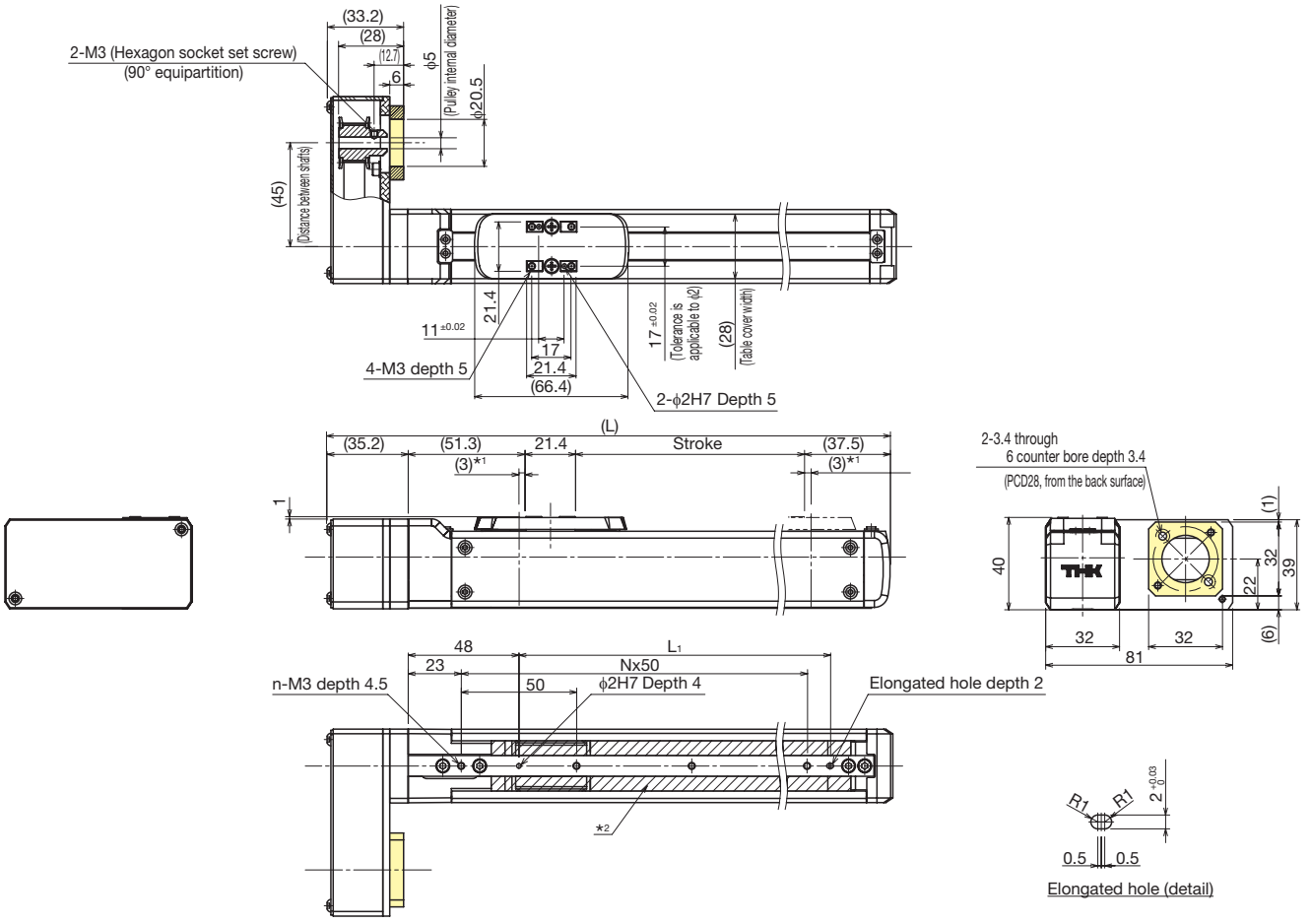


Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
6	0.3	200	200
	0.5	200	200

*1 Distance from the center of the top face of the table to the load center of gravity under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal or vertical, 150mm stroke.
*2 Value when THK control device is used. Actual load mass should be determined based on the specifications of the motor used. See "Reference Materials for Selecting ES" in P.1-041.

Dimensions

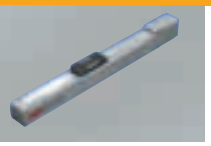


*1 This is a stroke between mechanical stoppers.
*2 ▨ indicates an opening.

Stroke [mm] (Stroke between mechanical stoppers)		50 (56)	100 (106)	150 (156)	200 (206)	250 (256)	300 (306)
Maximum speed *1*2 [mm/s]	Ball screw lead: 6mm	300					
Dimensions [mm]	L	195.4	245.4	295.4	345.4	395.4	445.4
	L_1	85	135	185	235	285	335
Mounting pitch count	N	2	3	4	5	6	7
Mounting hole count	n	3	4	5	6	7	8
Weight [kg]		0.65	0.7	0.8	0.85	0.9	0.95

*1 Load capacity and maximum speed vary depending on the motor used.
*2 Dependent on the permissible rotational speed of the ball screw.

ES4 Slider type Directly coupled without motor



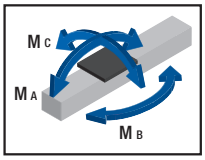
Model Configuration

Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Option
ES4 –	06 –	0150 –	B –	0 –	A –	GR–SB
ES4	06: 6mm 12: 12mm	0050: 50mm to 0400: 400mm	B	0: Without motor 1: With motor	A B	No symbol: Red cover GR: Change the cover color to gray SB: With slider base $\square_1\square_2$: Sensor

Basic Specifications

LM Guide (SRS9W)	Basic dynamic load rating C [N]		3290	
	Basic static load rating C_0 [N]		3340	
	Radial clearance [μm]		−2 to +2	
Ball screw portion	Shaft diameter [mm]		ϕ8	
	Lead [mm]		6	12
	Basic dynamic load rating Ca [N]		1770	920
	Basic static load rating C_{0a} [N]		3040	1600
	Root diameter [mm]		ϕ6.8	
	Ball center-to-center diameter [mm]		ϕ8.4	
Bearing portion (fixed side)	Axial direction	Basic dynamic load rating Ca [N]	8000	
		Static permissible load P_{0a} [N]	3240	
Permissible rotational speed [min^{-1}]			3000	
Starting torque [N·mm]			12	21
Positioning repeatability [mm] *2			±0.020	
Lost motion [mm] *2			0.1	
Maximum input torque [N·m]			0.16	

Static Permissible Moment *1

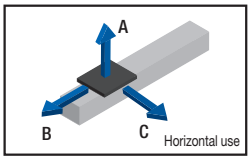


[N·m]

M_A	9.3
M_B	13.5
M_C	17.7

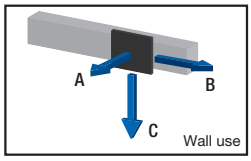
*1 Maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.
*2 When the appropriate motor is used.

Reference Permissible Overhang Length *1 *2



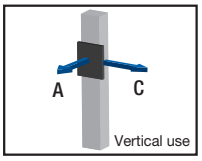
Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	4.5	300	50	100
	9	160	20	40
12	3.8	260	60	100
	7.5	110	20	40



Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	4.5	60	30	300
	9	10	5	70
12	3.8	70	40	220
	7.5	10	10	50

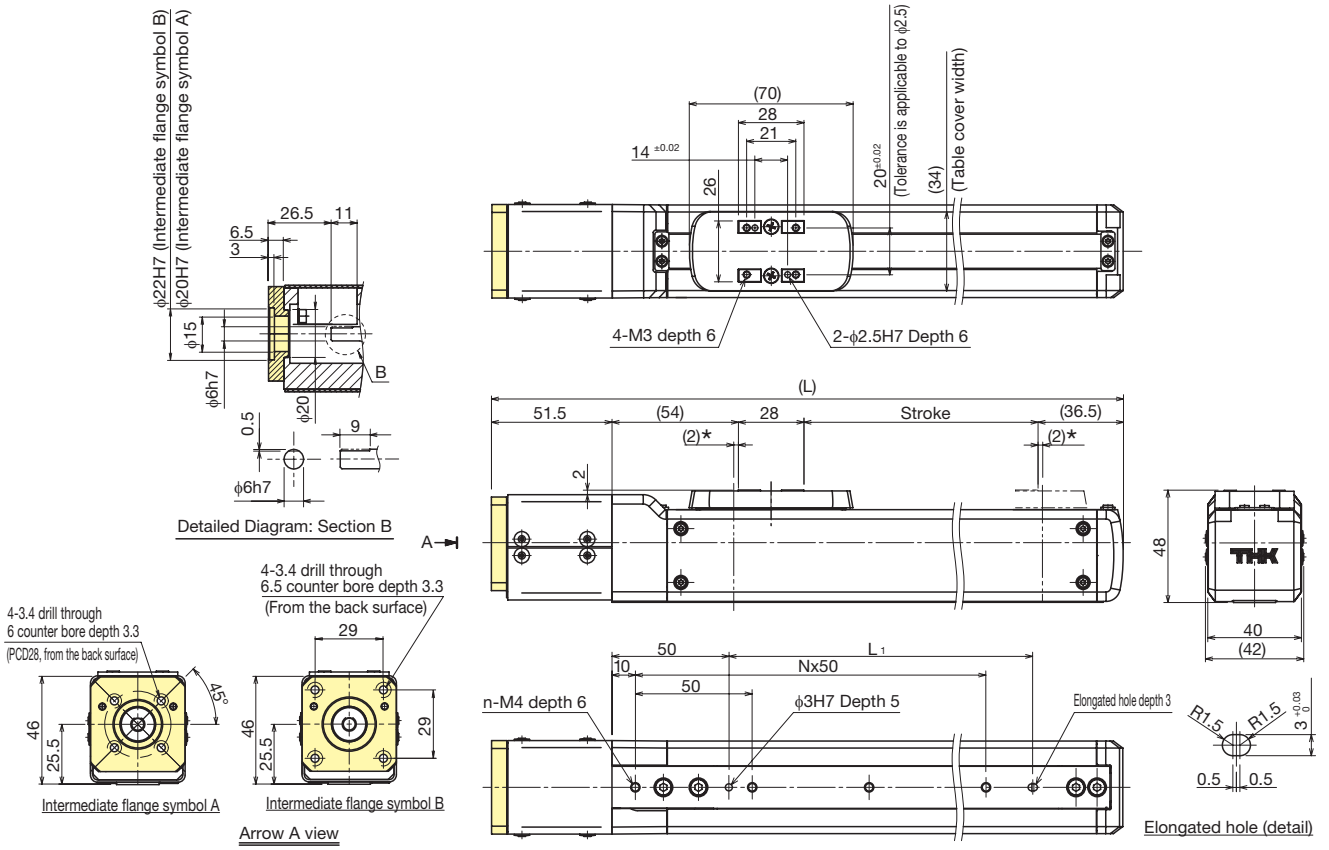


Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
6	2	100	110
	4	30	40
12	0.8	260	300
	1.5	130	150

*1 Distance from the center of the top face of the table to the load center of gravity under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal or vertical, 150mm stroke.
*2 Value when THK control device is used. Actual load mass should be determined based on the specifications of the motor used. See "Reference Materials for Selecting ES" in P.1-041.

Dimensions



* This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)		50 (54)	100 (104)	150 (154)	200 (204)	250 (254)	300 (304)	350 (354)	400 (404)
Maximum speed *1 *2 [mm/s]	Ball screw lead: 6mm	300							
	Ball screw lead: 12mm	600							
Dimensions [mm]	L	220	270	320	370	420	470	520	570
	L_1	80	130	180	230	280	330	380	430
Mounting pitch count	N	2	3	4	5	6	7	8	9
Mounting hole count	n	3	4	5	6	7	8	9	10
Weight [kg]		1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9

*1 Load capacity and maximum speed vary depending on the motor used.
*2 Dependent on the permissible rotational speed of the ball screw.

ES4R Slider type Motor wrap

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Option
ES4R –	06 –	0150	B –	0 –	A –	MR–GR
ES4R	06: 6mm 12: 12mm	0050: 50mm to 0400: 400mm	B	0: Without motor 1: With motor	A	MR: Motor right-turn folded ML: Motor left-turn folded GR: Change the cover color to gray SB: With slider base $\square_1\square_2$: Sensor

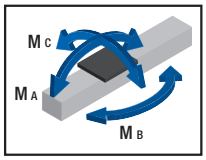
Note: If the GR is not included in the model configuration, cover will be red.

Basic Specifications

LM Guide (SRS9W)	Basic dynamic load rating C [N]		3290	
	Basic static load rating C_0 [N]		3340	
	Radial clearance [μm]		–2 to +2	
Ball screw portion	Shaft diameter [mm]		ϕ8	
	Lead [mm]		6	12
	Basic dynamic load rating Ca [N]		1770	920
	Basic static load rating C_{0a} [N]		3040	1600
	Root diameter [mm]		ϕ6.8	
	Ball center-to-center diameter [mm]		ϕ8.4	
Bearing portion (fixed side)	Axial direction	Basic dynamic load rating Ca [N]	8000	
		Static permissible load P_{0a} [N]	3240	
Permissible rotational speed [min^{-1}]			3000	
Starting torque *1 [N·mm]			12	21
Positioning repeatability [mm] *3			±0.020	
Lost motion [mm] *3			0.1	
Maximum input torque [N·m]			0.16	

*1 Pulley and timing belt not included.
*2 Maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.
*3 When the appropriate motor is used.

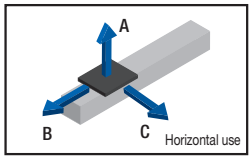
Static Permissible Moment *2



[N·m]

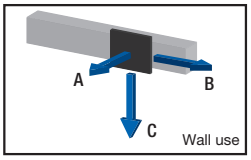
M_A	9.3
M_B	13.5
M_C	17.7

Reference Permissible Overhang Length *1 *2



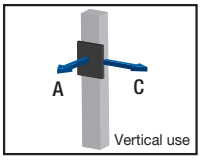
Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	2	300	120	240
	4	300	50	110
12	1	300	240	300
	2	300	120	200



Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	2	210	110	300
	4	80	40	300
12	1	300	260	300
	2	170	110	300

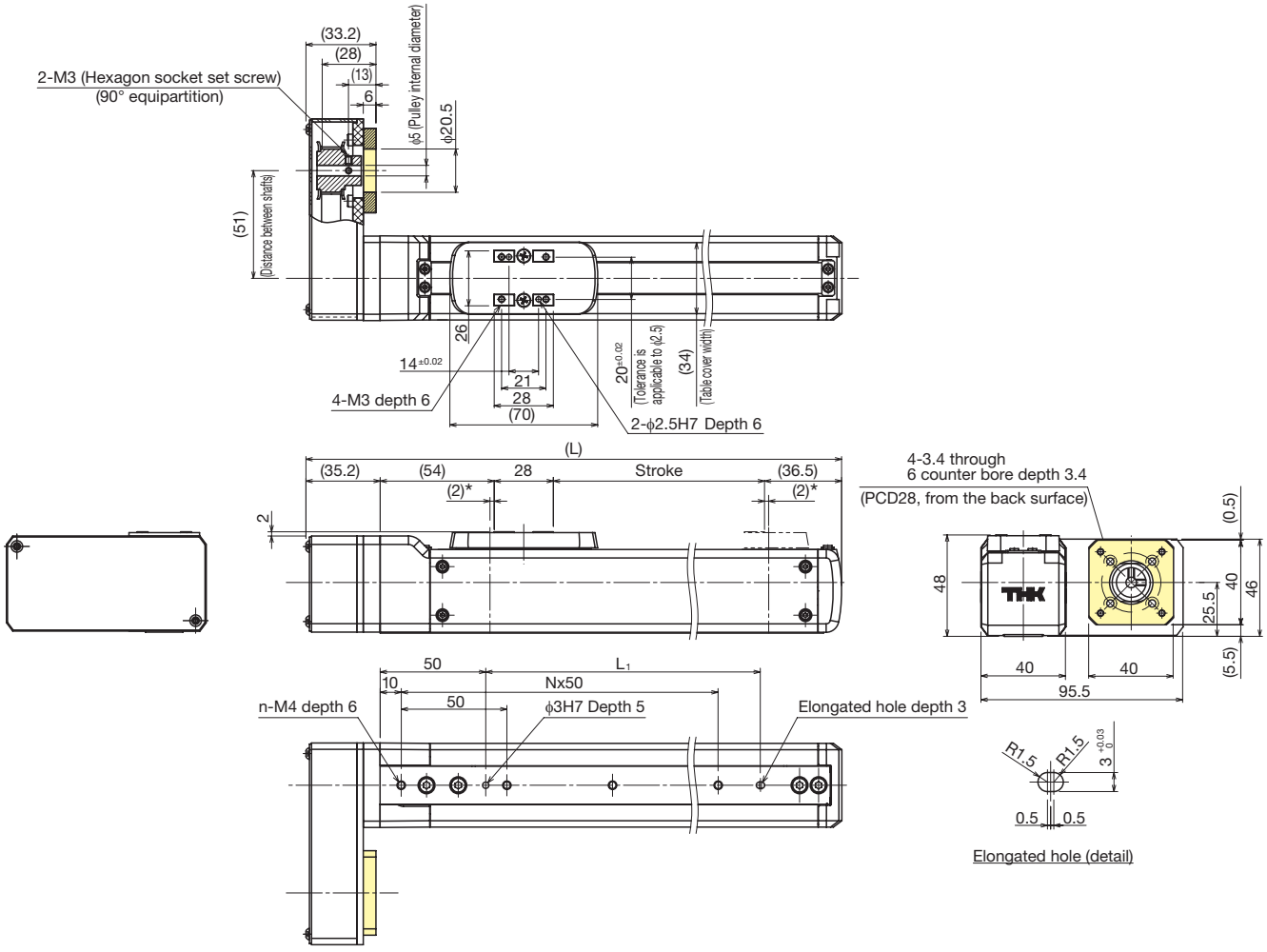


Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
6	0.8	280	300
	1.5	140	160
12	0.5	300	300
	1	210	240

*1 Distance from the center of the top face of the table to the load center of gravity under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal or vertical, 150mm stroke.
*2 Value when THK control device is used. Actual load mass should be determined based on the specifications of the motor used. See "Reference Materials for Selecting ES" in P.1-041.

Dimensions



* This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)		50 (54)	100 (104)	150 (154)	200 (204)	250 (254)	300 (304)	350 (354)	400 (404)
Maximum speed *1 *2 [mm/s]	Ball screw lead: 6mm	300							
	Ball screw lead: 12mm	600							
Dimensions [mm]	L	203.7	253.7	303.7	353.7	403.7	453.7	503.7	553.7
	L_1	80	130	180	230	280	330	380	430
Mounting pitch count	N	2	3	4	5	6	7	8	9
Mounting hole count	n	3	4	5	6	7	8	9	10
Weight [kg]		1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9

*1 Load capacity and maximum speed vary depending on the motor used.
*2 Dependent on the permissible rotational speed of the ball screw.

ES5 Slider type Directly coupled without motor

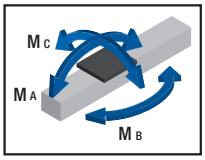
Model Configuration

Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Option
ES5 –	06 –	0150 –	B –	0 –	B –	GR–SB
ES5	06: 6mm	0050: 50mm	B	0: Without motor	N	No symbol: Red cover
	12: 12mm	to		1: With motor	B	GR: Change the cover color to gray
		0500: 500mm			C	SB: With slider base
						$\square_1\square_2$: Sensor

Basic Specifications

LM Guide (SRS12W)	Basic dynamic load rating C [N]		5480	
	Basic static load rating C_0 [N]		5300	
	Radial clearance [μm]		–3 to +3	
Ball screw portion	Shaft diameter [mm]		ϕ8	
	Lead [mm]		6	12
	Basic dynamic load rating Ca [N]		1770	920
	Basic static load rating C_{0a} [N]		3040	1600
	Root diameter [mm]		ϕ6.8	
	Ball center-to-center diameter [mm]		ϕ8.4	
Bearing portion (fixed side)	Axial direction	Basic dynamic load rating Ca [N]	8000	
		Static permissible load P_{0a} [N]	3240	
Permissible rotational speed [min^{-1}]			3000	
Starting torque [N·mm]			14	27
Positioning repeatability [mm] *2			±0.020	
Lost motion [mm] *2			0.1	
Maximum input torque [N·m]			0.35	

Static Permissible Moment *1

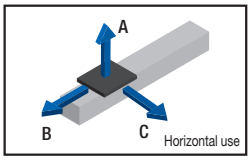


[N·m]

M_A	10.5
M_B	22
M_C	22.1

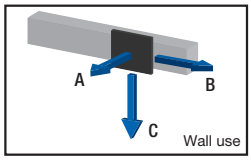
*1 Maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.
*2 When the appropriate motor is used.

Reference Permissible Overhang Length *1 *2



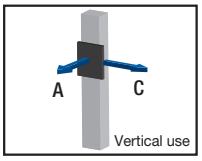
Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	5	400	90	200
	10	270	40	90
12	3	400	160	280
	6	320	70	130



Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	5	160	70	400
	10	50	20	220
12	3	260	130	400
	6	100	50	250

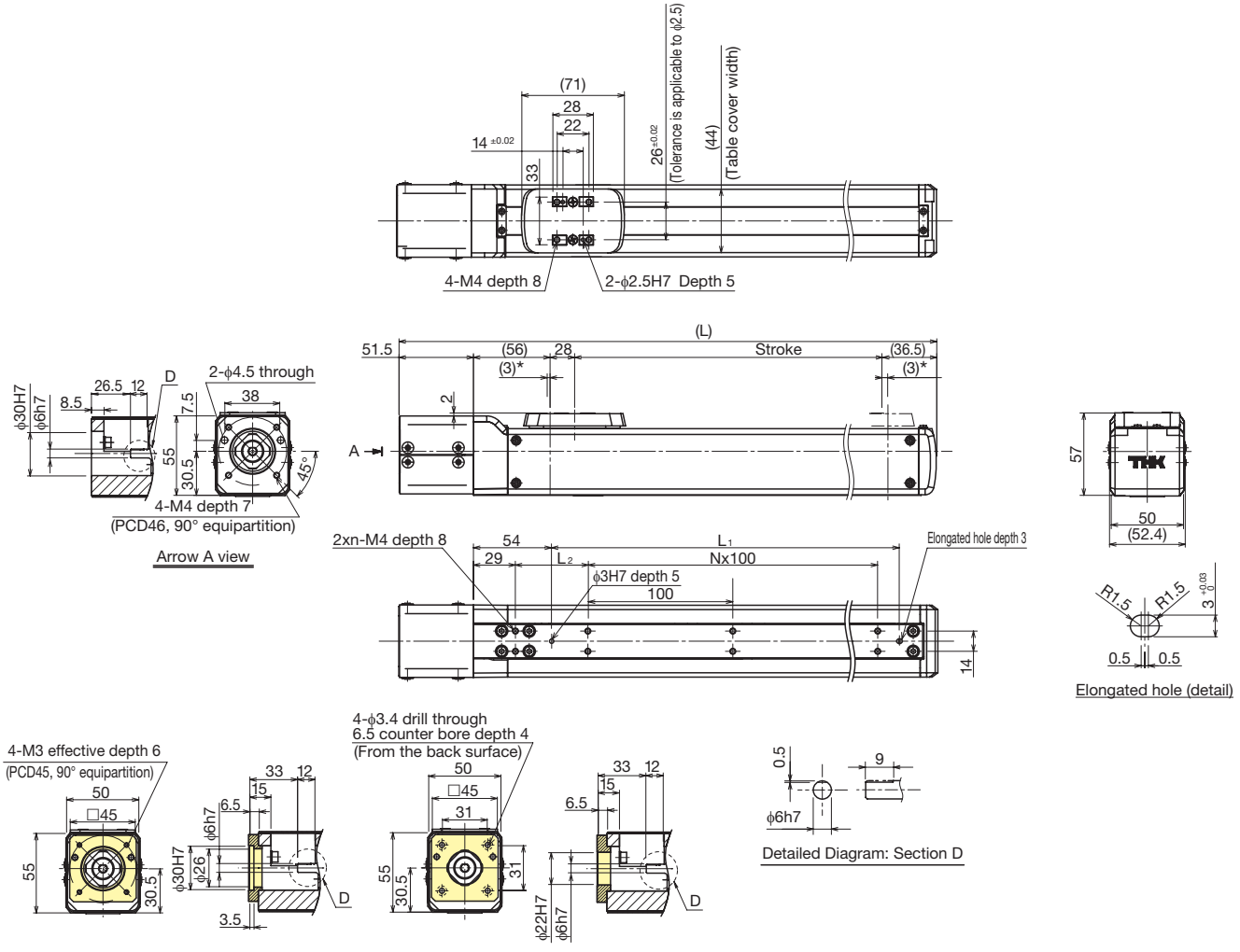


Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
6	2.5	160	160
	5	70	70
12	1	400	400
	2	200	200

*1 Distance from the center of the top face of the table to the load center of gravity under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal or vertical, 150mm stroke.
*2 Value when THK control device is used. Actual load mass should be determined based on the specifications of the motor used. See "Reference Materials for Selecting ES" in P.1-041.

Dimensions



* This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)		50 (56)	100 (106)	150 (156)	200 (206)	250 (256)	300 (306)	350 (356)	400 (406)	450 (456)	500 (506)
Maximum speed *1 *2 [mm/s]	Ball screw lead: 6mm	300									
	Ball screw lead: 12mm	600									
Dimensions [mm]	L	222	272	322	372	422	472	522	572	622	672
	L_1	90	140	190	240	290	340	390	440	490	540
	L_2	100	50	100	50	100	50	100	50	100	50
Mounting pitch count	N	0	1	1	2	2	3	3	4	4	5
Mounting hole count	n	2	3	3	4	4	5	5	6	6	7
Weight [kg]		1.5	1.7	1.8	1.9	2.0	2.2	2.4	2.5	2.6	2.8

*1 Load capacity and maximum speed vary depending on the motor used.
*2 Dependent on the permissible rotational speed of the ball screw.

ES5R Slider type Motor wrap

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Option
ES5R –	06 –	0150 –	B –	0 –	A –	MR–GR
ES5R	06: 6mm 12: 12mm	0050: 50mm to 0500: 500mm	B	0: Without motor 1: With motor	A	MR: Motor right-turn folded ML: Motor left-turn folded GR: Change the cover color to gray SB: With slider base $\square_1\square_2$: Sensor

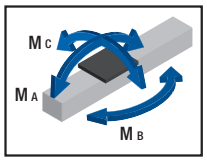
Note: If the GR is not included in the model configuration, cover will be red.

Basic Specifications

LM Guide (SRS12W)	Basic dynamic load rating C [N]		5480	
	Basic static load rating C_0 [N]		5300	
	Radial clearance [μm]		–3 to +3	
Ball screw portion	Shaft diameter [mm]		ϕ8	
	Lead [mm]		6	12
	Basic dynamic load rating Ca [N]		1770	920
	Basic static load rating C_{0a} [N]		3040	1600
	Root diameter [mm]		ϕ6.8	
	Ball center-to-center diameter [mm]		ϕ8.4	
Bearing portion (fixed side)	Axial direction	Basic dynamic load rating Ca [N]	8000	
		Static permissible load P_{0a} [N]	3240	
Permissible rotational speed [min^{-1}]			3000	
Starting torque *1 [N·mm]			14	27
Positioning repeatability [mm] *3			±0.020	
Lost motion [mm] *3			0.1	
Maximum input torque [N·m]			0.35	

*1 Pulley and timing belt not included.
*2 Maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.
*3 When the appropriate motor is used.

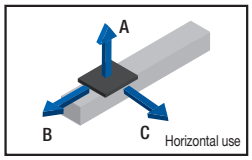
Static Permissible Moment *2



[N·m]

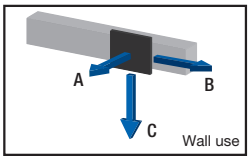
M_A	10.5
M_B	22
M_C	22.1

Reference Permissible Overhang Length *1 *2



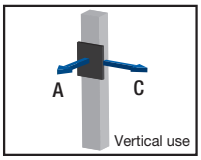
Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	4	400	110	260
	8	340	50	120
12	3	400	160	280
	6	320	70	130



Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	4	220	90	400
	8	80	30	320
12	3	260	130	400
	6	100	50	250

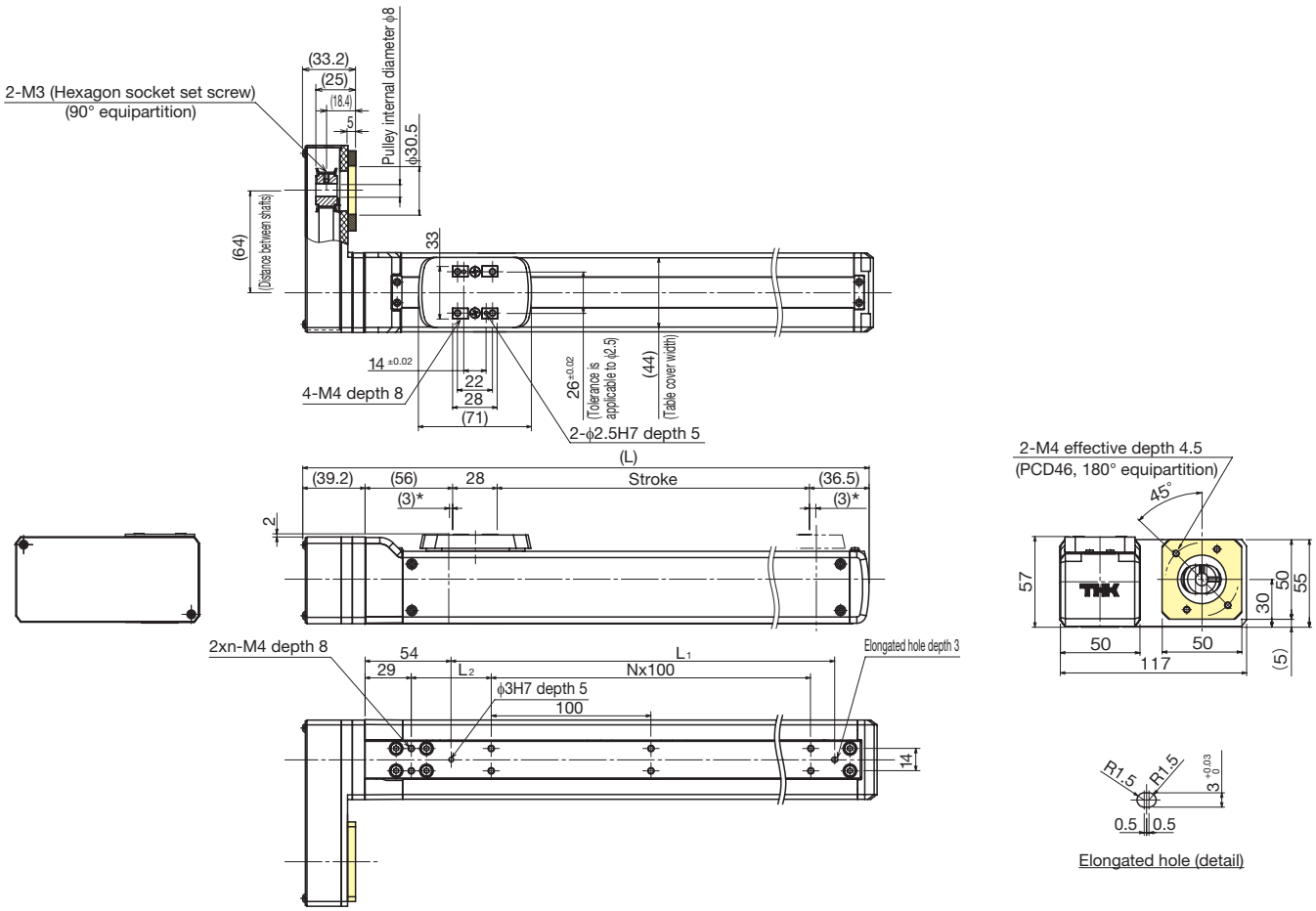


Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
6	1	400	400
	2	210	210
12	0.5	400	400
	1	400	400

*1 Distance from the center of the top face of the table to the load center of gravity under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal or vertical, 150mm stroke.
*2 Value when THK control device is used. Actual load mass should be determined based on the specifications of the motor used. See "Reference Materials for Selecting ES" in P.1-041.

Dimensions



* This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)		50 (56)	100 (106)	150 (156)	200 (206)	250 (256)	300 (306)	350 (356)	400 (406)	450 (456)	500 (506)
Maximum speed *1 *2 [mm/s]	Ball screw lead: 6mm	300									
	Ball screw lead: 12mm	600									
Dimensions [mm]	L	209.7	259.7	309.7	359.7	409.7	459.7	509.7	559.7	609.7	659.7
	L_1	90	140	190	240	290	340	390	440	490	540
	L_2	100	50	100	50	100	50	100	50	100	50
Mounting pitch count	N	0	1	1	2	2	3	3	4	4	5
Mounting hole count	n	2	3	3	4	4	5	5	6	6	7
Weight [kg]		1.5	1.7	1.8	1.9	2.0	2.2	2.3	2.5	2.6	2.8

*1 Load capacity and maximum speed vary depending on the motor used.
*2 Dependent on the permissible rotational speed of the ball screw.

ES6 Slider type Directly coupled without motor

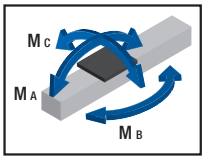
Model Configuration

Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Option
ES6 –	06 –	0150	B	– 0	– A	– GR–SB
ES6	06: 6mm	0050: 50mm	B	0: Without motor	N	No symbol: Red cover
	12: 12mm	to		1: With motor	B	GR: Change the cover color to gray
		0600: 600mm			C	SB: With slider base
						$\square_1\square_2$: Sensor

Basic Specifications

LM Guide (SRS12W)	Basic dynamic load rating C [N]		5480	
	Basic static load rating C_0 [N]		5300	
	Radial clearance [μm]		−3 to +3	
Ball screw portion	Shaft diameter [mm]		ϕ8	
	Lead [mm]		6	12
	Basic dynamic load rating Ca [N]		1770	920
	Basic static load rating C_{0a} [N]		3040	1600
	Root diameter [mm]		ϕ6.8	
	Ball center-to-center diameter [mm]		ϕ8.4	
Bearing portion (fixed side)	Axial direction	Basic dynamic load rating Ca [N]	8000	
		Static permissible load P_{0a} [N]	3240	
Permissible rotational speed [min^{-1}]			3000	
Starting torque [N·mm]			15	29
Positioning repeatability [mm] *2			±0.020	
Lost motion [mm] *2			0.1	
Maximum input torque [N·m]			0.35	

Static Permissible Moment *1

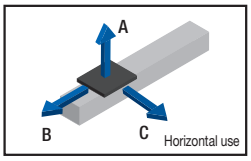


[N·m]

M_A	10.5
M_B	22
M_C	22.1

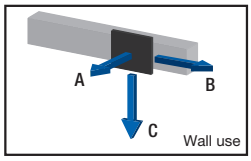
*1 Maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.
*2 When the appropriate motor is used.

Reference Permissible Overhang Length *1 *2



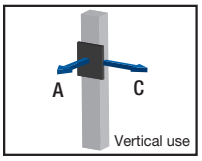
Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	5	500	90	200
	10	260	40	90
12	3	500	160	280
	6	320	70	130



Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	5	160	70	500
	10	40	20	210
12	3	250	130	500
	6	90	50	240

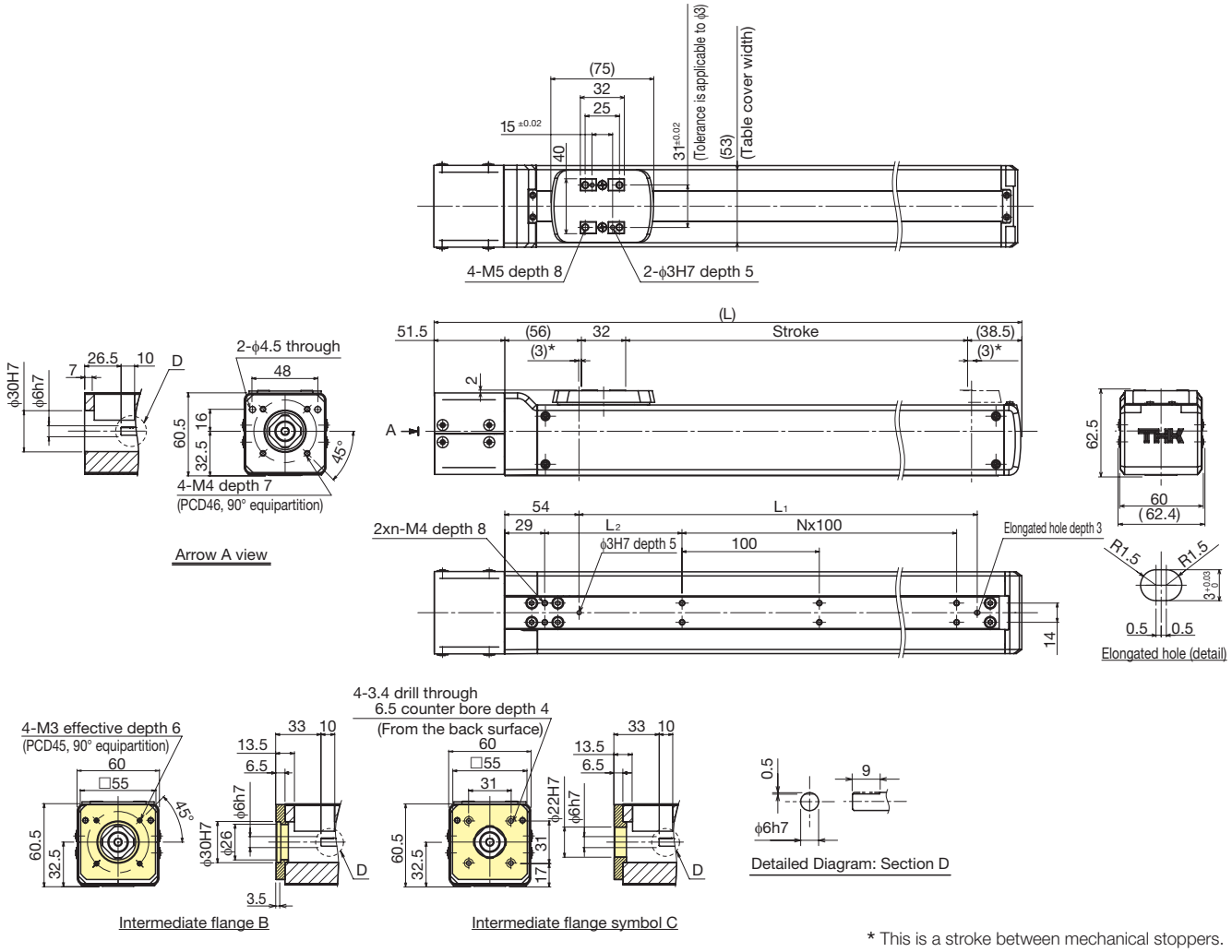


Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
6	2.5	160	160
	5	60	60
12	1	420	420
	2	190	190

*1 Distance from the center of the top face of the table to the load center of gravity under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal or vertical, 150mm stroke.
*2 Value when THK control device is used. Actual load mass should be determined based on the specifications of the motor used. See "Reference Materials for Selecting ES" in P.1-041.

Dimensions



* This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)		50 (56)	100 (106)	150 (156)	200 (206)	250 (256)	300 (306)	350 (356)	400 (406)	450 (456)	500 (506)	550 (556)	600 (606)
Maximum speed *1 *2 [mm/s]	Ball screw lead: 6mm	300										270	230
	Ball screw lead: 12mm	600										540	460
Dimensions [mm]	L	228	278	328	378	428	478	528	578	628	678	728	778
	L_1	90	140	190	240	290	340	390	440	490	540	590	640
	L_2	100	50	100	50	100	50	100	50	100	50	100	50
Mounting pitch count	N	0	1	1	2	2	3	3	4	4	5	5	6
Mounting hole count	n	2	3	3	4	4	5	5	6	6	7	7	8
Weight [kg]		1.9	2.0	2.2	2.3	2.5	2.6	2.7	2.9	3.0	3.2	3.3	3.5

*1 Load capacity and maximum speed vary depending on the motor used.
*2 Dependent on the permissible rotational speed of the ball screw.

ES6R Slider type Motor wrap

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Option
ES6R –	06 –	0150	B	– 0	– A	– MR–GR
ES6R	06: 6mm 12: 12mm	0050: 50mm to 0600: 600mm	B	0: Without motor 1: With motor	A	MR: Motor right-turn folded ML: Motor left-turn folded GR: Change the cover color to gray SB: With slider base □1□2: Sensor

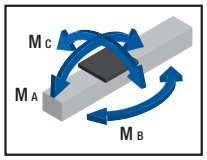
Note: If the GR is not included in the model configuration, cover will be red.

Basic Specifications

LM Guide (SRS12W)	Basic dynamic load rating C [N]		5480	
	Basic static load rating C0 [N]		5300	
	Radial clearance [μm]		–3 to +3	
Ball screw portion	Shaft diameter [mm]		ϕ8	
	Lead [mm]		6	12
	Basic dynamic load rating Ca [N]		1770	920
	Basic static load rating C0a [N]		3040	1600
	Root diameter [mm]		ϕ6.8	
	Ball center-to-center diameter [mm]		ϕ8.4	
Bearing portion (fixed side)	Axial direction	Basic dynamic load rating Ca [N]	8000	
		Static permissible load P0a [N]	3240	
Permissible rotational speed [min⁻¹]			3000	
Starting torque *1 [N·mm]			15	29
Positioning repeatability [mm] *3			±0.020	
Lost motion [mm] *3			0.1	
Maximum input torque [N·m]			0.35	

*1 Pulley and timing belt not included.
*2 Maximum permissible moment when unit is stationary. Moment standards: MA and MC: top of table; MB: center of table.
*3 When the appropriate motor is used.

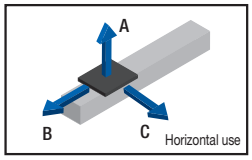
Static Permissible Moment *2



[N·m]

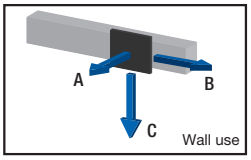
MA	10.5
MB	22
MC	22.1

Reference Permissible Overhang Length *1 *2



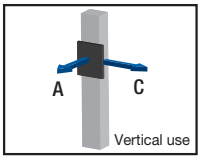
Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	4	500	110	260
	8	340	50	120
12	3	500	160	280
	6	320	70	130



Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	4	210	90	500
	8	70	30	300
12	3	250	130	500
	6	90	50	240

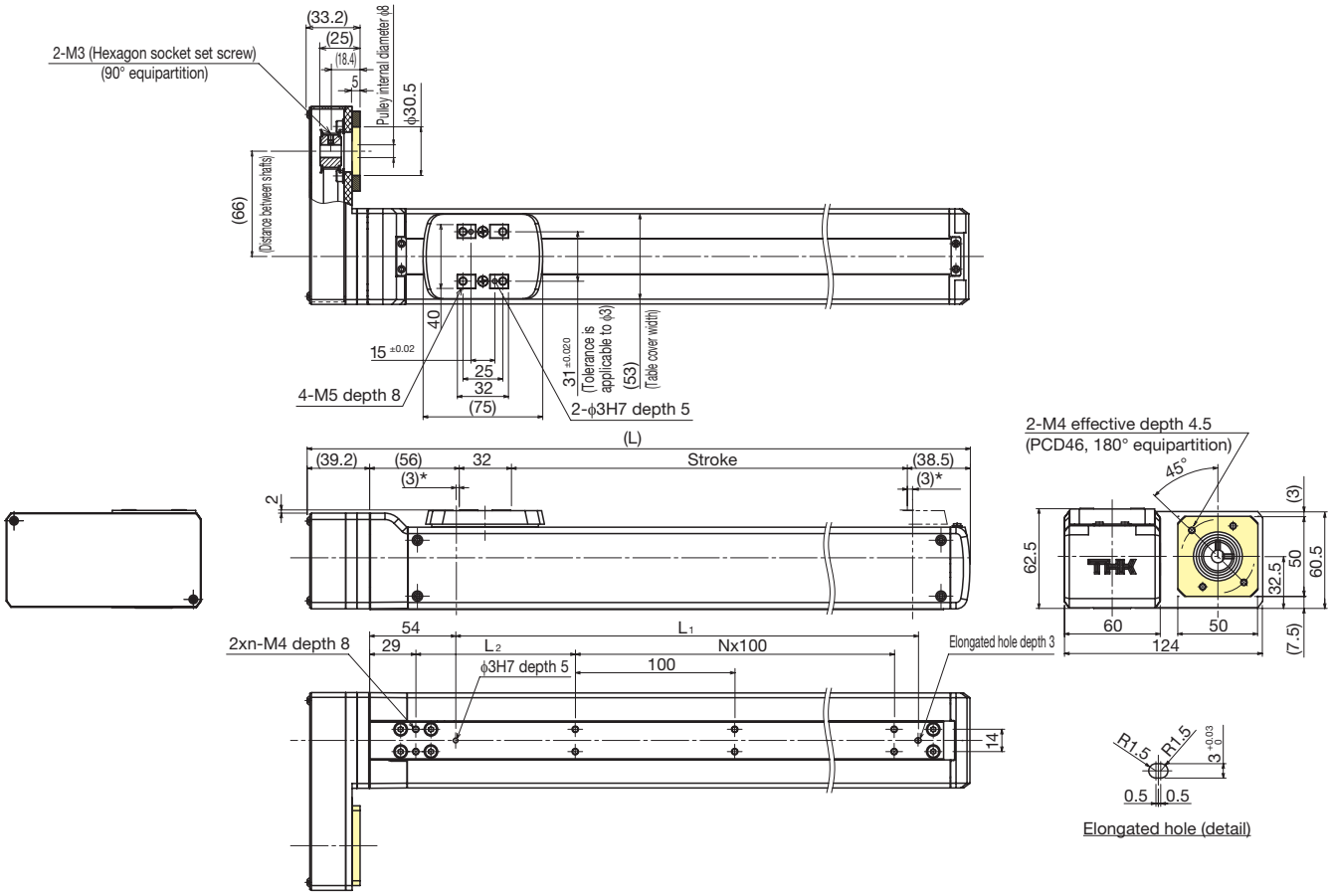


Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
6	1	450	450
	2	210	210
12	0.5	500	500
	1	420	420

*1 Distance from the center of the top face of the table to the load center of gravity under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal or vertical, 150mm stroke.
*2 Value when THK control device is used. Actual load mass should be determined based on the specifications of the motor used. See "Reference Materials for Selecting ES" in P.1-041.

Dimensions

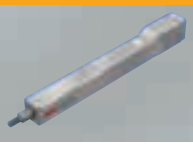


* This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)		50 (56)	100 (106)	150 (156)	200 (206)	250 (256)	300 (306)	350 (356)	400 (406)	450 (456)	500 (506)	550 (556)	600 (606)
Maximum speed *1 *2 [mm/s]	Ball screw lead: 6mm	300										270	230
	Ball screw lead: 12mm	600										540	460
Dimensions [mm]	L	215.7	265.7	315.7	365.7	415.7	465.7	515.7	565.7	615.7	665.7	715.7	765.7
	L_1	90	140	190	240	290	340	390	440	490	540	590	640
	L_2	100	50	100	50	100	50	100	50	100	50	100	50
Mounting pitch count	N	0	1	1	2	2	3	3	4	4	5	5	6
Mounting hole count	n	2	3	3	4	4	5	5	6	6	7	7	8
Weight [kg]		1.9	2.0	2.1	2.2	2.4	2.6	2.7	2.8	3.0	3.1	3.3	3.4

*1 Load capacity and maximum speed vary depending on the motor used.
*2 Dependent on the permissible rotational speed of the ball screw.

EC3 Cylinder type Directly coupled without motor



Model Configuration

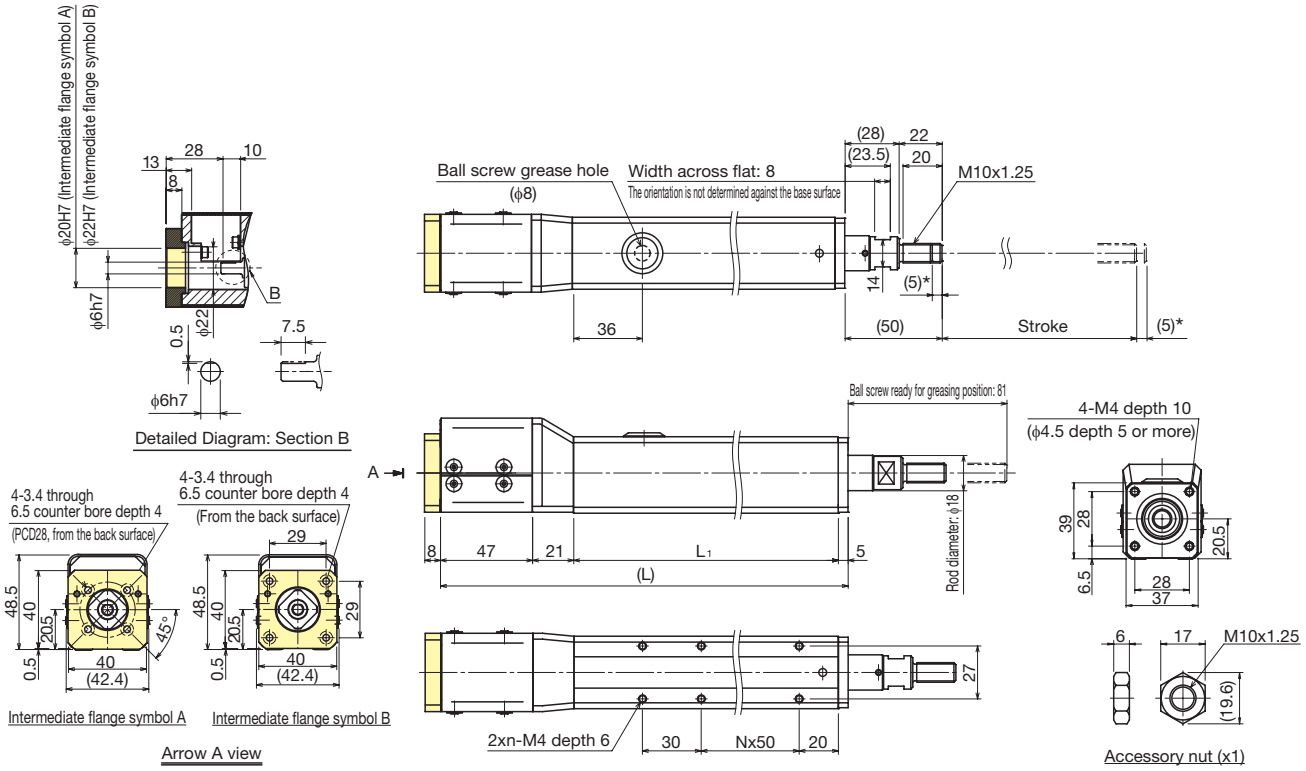
Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Option
EC3	– 06	– 0150	B	– 0	– A	– FL–LB
EC3	06: 6mm	0050: 50mm to 0200: 200mm	B	0: Without motor 1: With motor	A B	No symbol: None CB: With cylinder base FL: With flange LB: With link ball

Basic Specifications

Ball screw portion	Shaft diameter [mm]		ϕ6
	Lead [mm]		6
	Basic dynamic load rating Ca [N]		1400
	Basic static load rating C0a [N]		2440
	Root diameter [mm]		ϕ5.1
	Ball center-to-center diameter [mm]		ϕ6.3
Bearing portion (fixed side)	Axial direction	Basic dynamic load rating Ca [N]	6550
		Static permissible load P0a [N]	2310
Permissible rotational speed [min^{-1}]			3000
Starting torque [N·mm]			14
Positioning repeatability [mm] *			±0.020
Lost motion [mm] *			0.1
Maximum input torque [N·m]			0.16

* When appropriate motor is used.
Note: With EC, only an axial load is permissible; do not apply any other type of load to the rod using an LM Guide.
Take into account the sliding resistance of LM Guide when making selection.

Dimensions



* This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)
Maximum speed *1 *2 [mm/s]	Ball screw lead: 6mm	300			250
Dimensions [mm]	L	208	258	308	358
	L_1	135	185	235	285
Mounting pitch count	N	1	2	3	4
Mounting hole count	n	3	4	5	6
Weight [kg]		1.0	1.2	1.4	1.6

*1 Load capacity and maximum speed vary depending on the motor used.
*2 Dependent on the permissible rotational speed of the ball screw.

EC3R Cylinder type Motor wrap

Model Configuration

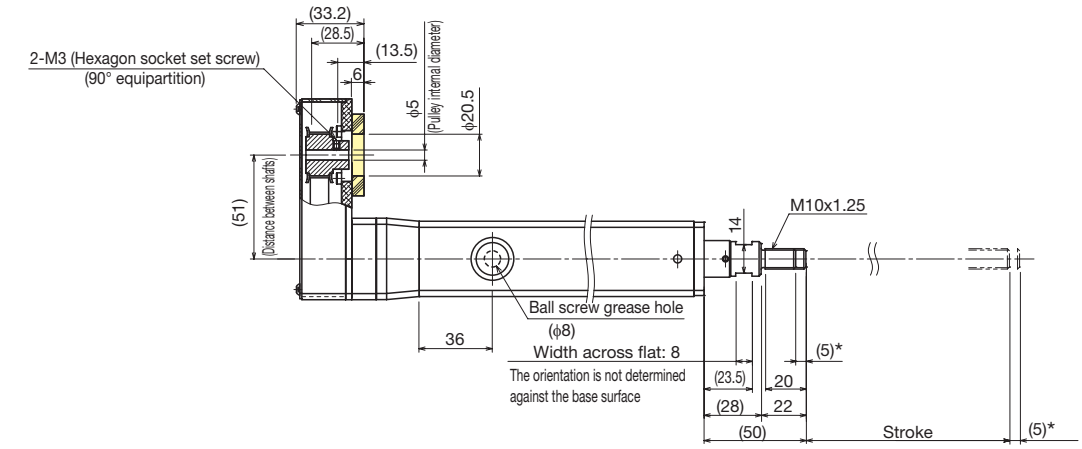
Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Option
EC3R –	06 –	0150	B	– 0	– A	– MR–FL–LB
EC3R	06: 6mm	0050: 50mm to 0200: 200mm	B	0: Without motor 1: With motor	A	MR: Motor right-turn folded ML: Motor left-turn folded CB: With cylinder base FL: With flange LB: With link ball

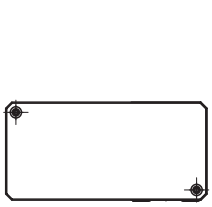
Basic Specifications

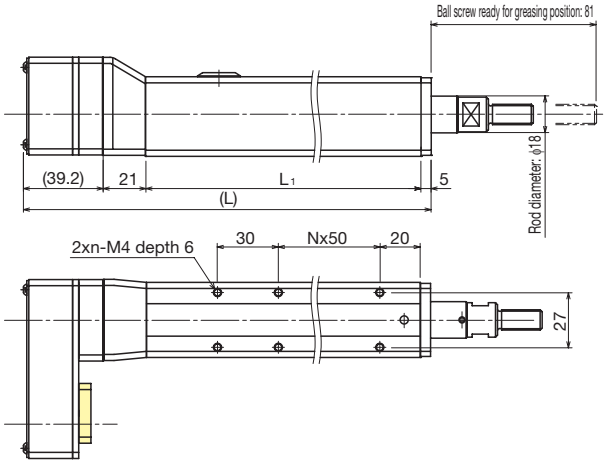
Ball screw portion	Shaft diameter [mm]		ϕ6
	Lead [mm]		6
	Basic dynamic load rating Ca [N]		1400
	Basic static load rating C0a [N]		2440
	Root diameter [mm]		ϕ5.1
	Ball center-to-center diameter [mm]		ϕ6.3
Bearing portion (fixed side)	Axial direction	Basic dynamic load rating Ca [N]	6550
		Static permissible load P0a [N]	2310
Permissible rotational speed [min^{-1}]			3000
Starting torque *1 [N·mm]			14
Positioning repeatability [mm] *2			±0.020
Lost motion [mm] *2			0.1
Maximum input torque [N·m]			0.16

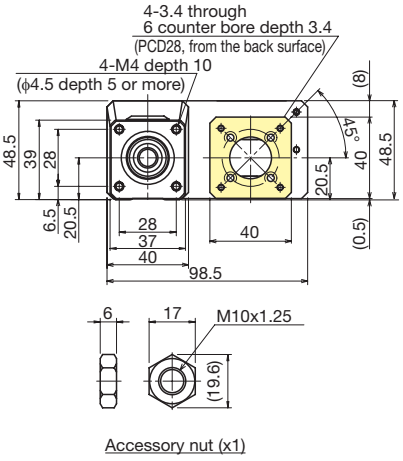
*1 Pulley and timing belt not included.
*2 When appropriate motor is used.
Note: With EC, only an axial load is permissible; do not apply any other type of load to the rod using an LM Guide.
Take into account the sliding resistance of LM Guide when making selection.

Dimensions









* This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)
Maximum speed *1 *2 [mm/s]	Ball screw lead: 6mm	300			250
Dimensions [mm]	L	200.2	250.2	300.2	350.2
	L_1	135	185	235	285
Mounting pitch count	N	1	2	3	4
Mounting hole count	n	3	4	5	6
Weight [kg]		1.0	1.2	1.4	1.6

*1 Load capacity and maximum speed vary depending on the motor used.
*2 Dependent on the permissible rotational speed of the ball screw.

EC3H Cylinder type Directly coupled without motor/with linear bush

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Option
EC3H –	06 –	0150	B	– 0	– A	– CB
EC3H	06: 6mm	0050: 50mm to 0200: 200mm	B	0: Without motor 1: With motor	A B	No symbol: None CB: With cylinder base

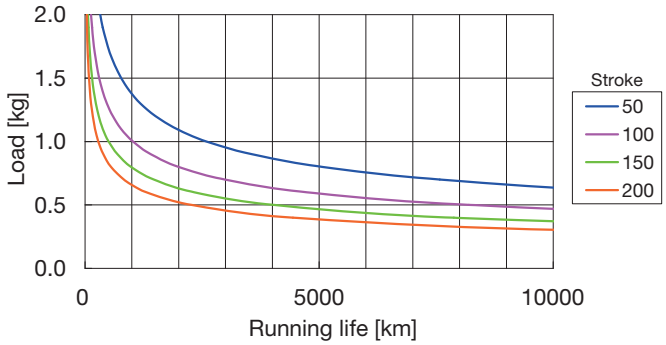
Basic Specifications

Ball screw portion	Shaft diameter [mm]		ϕ6
	Lead [mm]		6
	Basic dynamic load rating Ca [N]		1400
	Basic static load rating C0 [N]		2440
	Root diameter [mm]		ϕ5.1
	Ball center-to-center diameter [mm]		ϕ6.3
Bearing portion (fixed side)	Axial direction	Basic dynamic load rating Ca [N]	6550
		Static permissible load P0a [N]	2310
Linear bush unit (LMK8LUU)	Basic dynamic load rating C [N]		265
	Basic static load rating C0 [N]		402
Permissible rotational speed [min^{-1}]			3000
Starting torque [N·mm]			18
Positioning repeatability [mm] *			±0.020
Lost motion [mm] *			0.1
Maximum input torque [N·m]			0.16

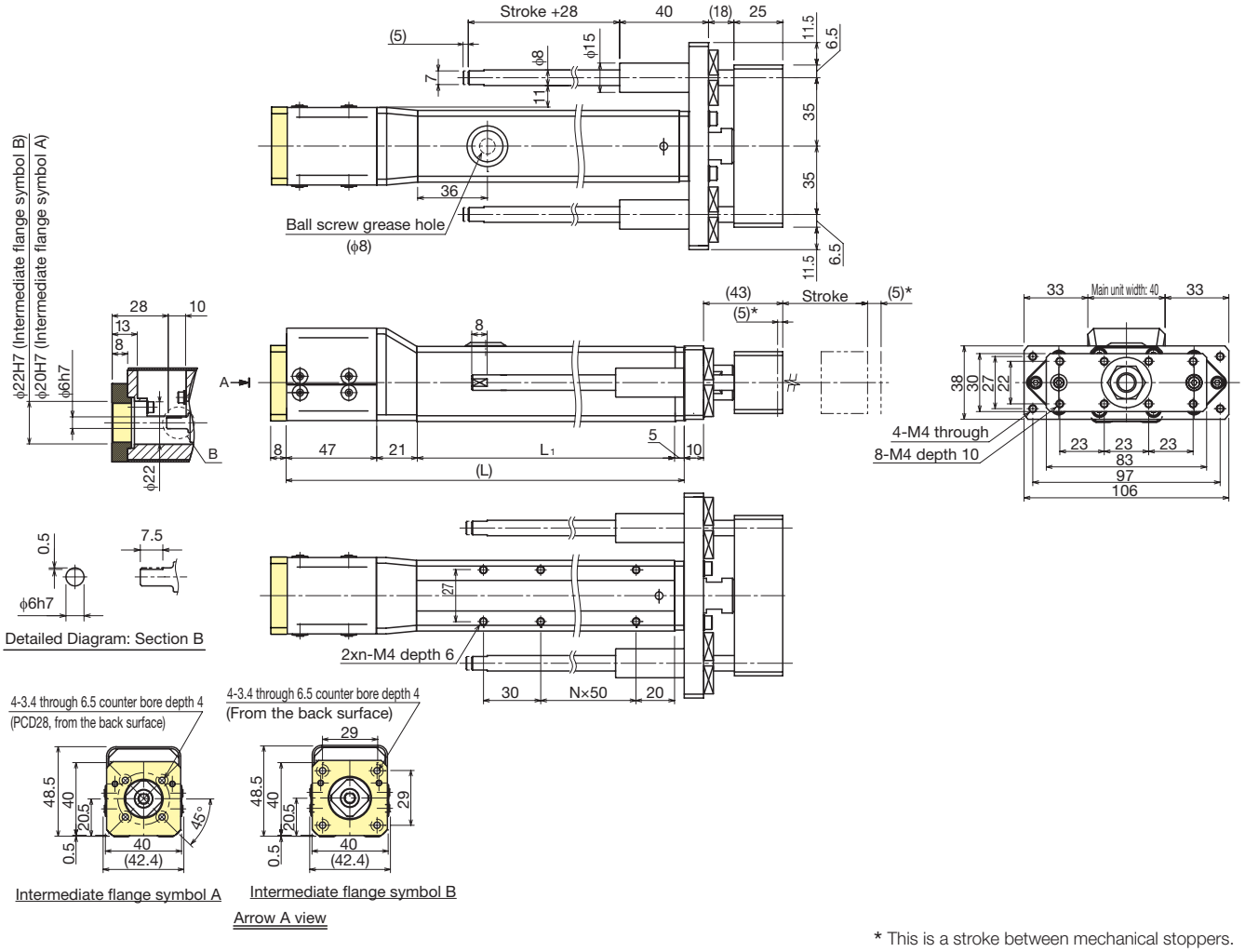
* When appropriate motor is used.
Note: With EC, only an axial load is permissible; do not apply any other type of load to the rod using an LM Guide.
Take into account the sliding resistance of LM Guide when making selection.

Reference Load and Running Life

Running life varies when a load is applied to the end without using an LM guide, as shown below.



Dimensions



* This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)
Maximum speed *1 *2 [mm/s]	Ball screw lead: 6mm	300			250
Dimensions [mm]	L	208	258	308	358
	L_1	135	185	235	285
Mounting pitch count	N	1	2	3	4
Mounting hole count	n	3	4	5	6
Weight [kg]		1.3	1.5	1.8	2.0

*1 Load capacity and maximum speed vary depending on the motor used.
*2 Dependent on the permissible rotational speed of the ball screw.

EC4 Cylinder type Directly coupled without motor

Model Configuration

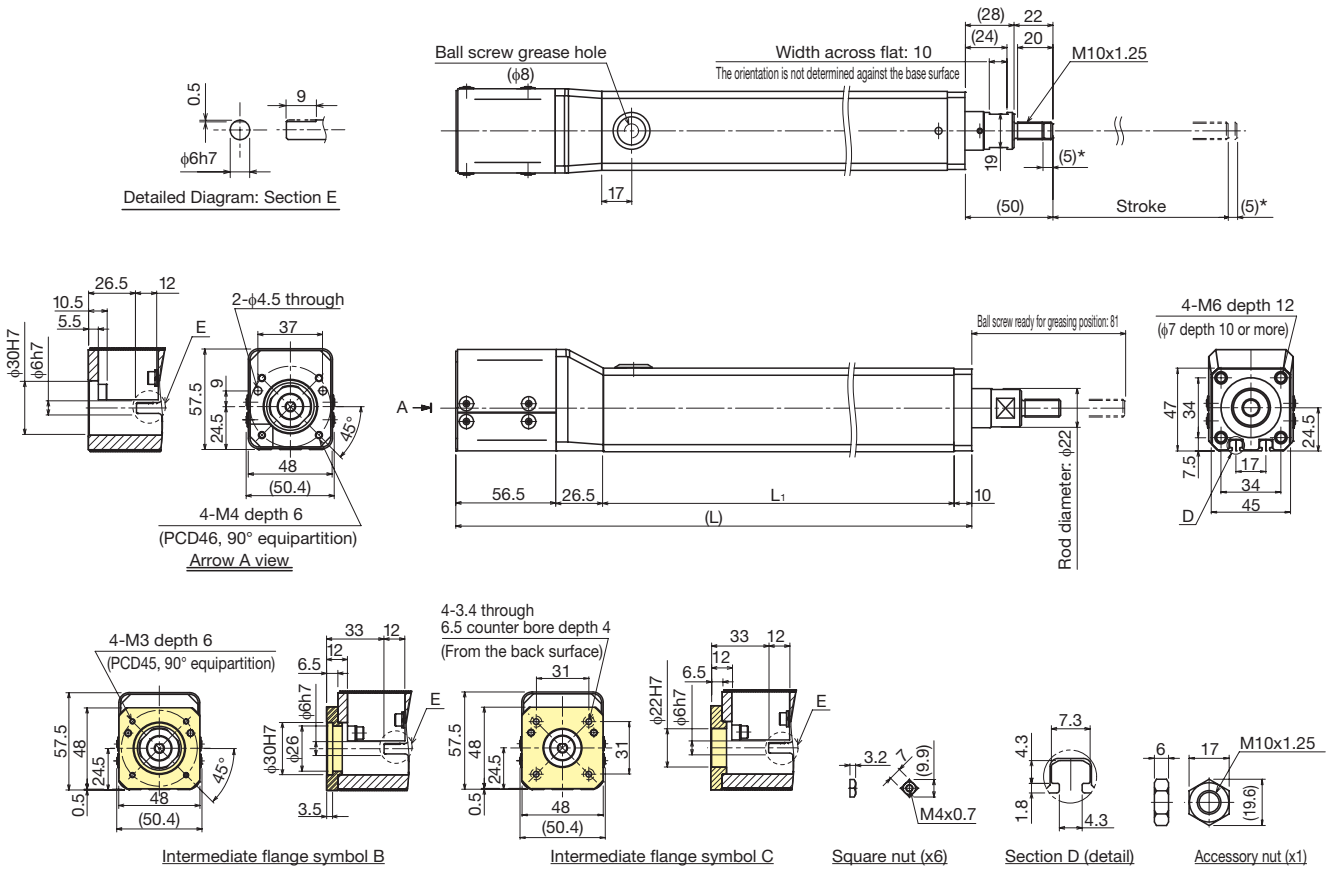
Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Option
EC4	– 06	– 0150	B	– 0	– B	– FL–LB
EC4	06: 6mm	0050: 50mm	B	0: Without motor	N	No symbol: None
	12: 12mm	to		1: With motor	B	CB: With cylinder base
		0300: 300mm			C	FL: With flange
						LB: With link ball

Basic Specifications

Ball screw portion	Shaft diameter [mm]		ϕ8	
	Lead [mm]		6	12
	Basic dynamic load rating Ca [N]		1770	920
	Basic static load rating C0a [N]		3040	1600
	Root diameter [mm]		ϕ6.8	
	Ball center-to-center diameter [mm]		ϕ8.4	
Bearing portion (fixed side)	Axial direction	Basic dynamic load rating Ca [N]	8000	
		Static permissible load P0a [N]	3240	
Permissible rotational speed [min^{-1}]			3000	
Starting torque [N·mm]			22	42
Positioning repeatability [mm] *			±0.020	
Lost motion [mm] *			0.1	
Maximum input torque [N·m]			0.35	

* When appropriate motor is used.
Note: With EC, only an axial load is permissible; do not apply any other type of load to the rod using an LM Guide.
Take into account the sliding resistance of LM Guide when making selection.

Dimensions



* This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)	250 (260)	300 (310)
Maximum speed *1 *2 [mm/s]	Ball screw lead: 6mm	300				230	170
	Ball screw lead: 12mm	600				460	340
Dimensions [mm]	L	240	290	340	390	440	490
	L_1*3	147	197	247	297	347	397
Weight [kg]		1.6	1.9	2.2	2.6	2.9	3.2

*1 Load capacity and maximum speed vary depending on the motor used.
*2 Dependent on the permissible rotational speed of the ball screw.
*3 T slot milling in the range of L_1.

EC4R Cylinder type Motor wrap

Model Configuration

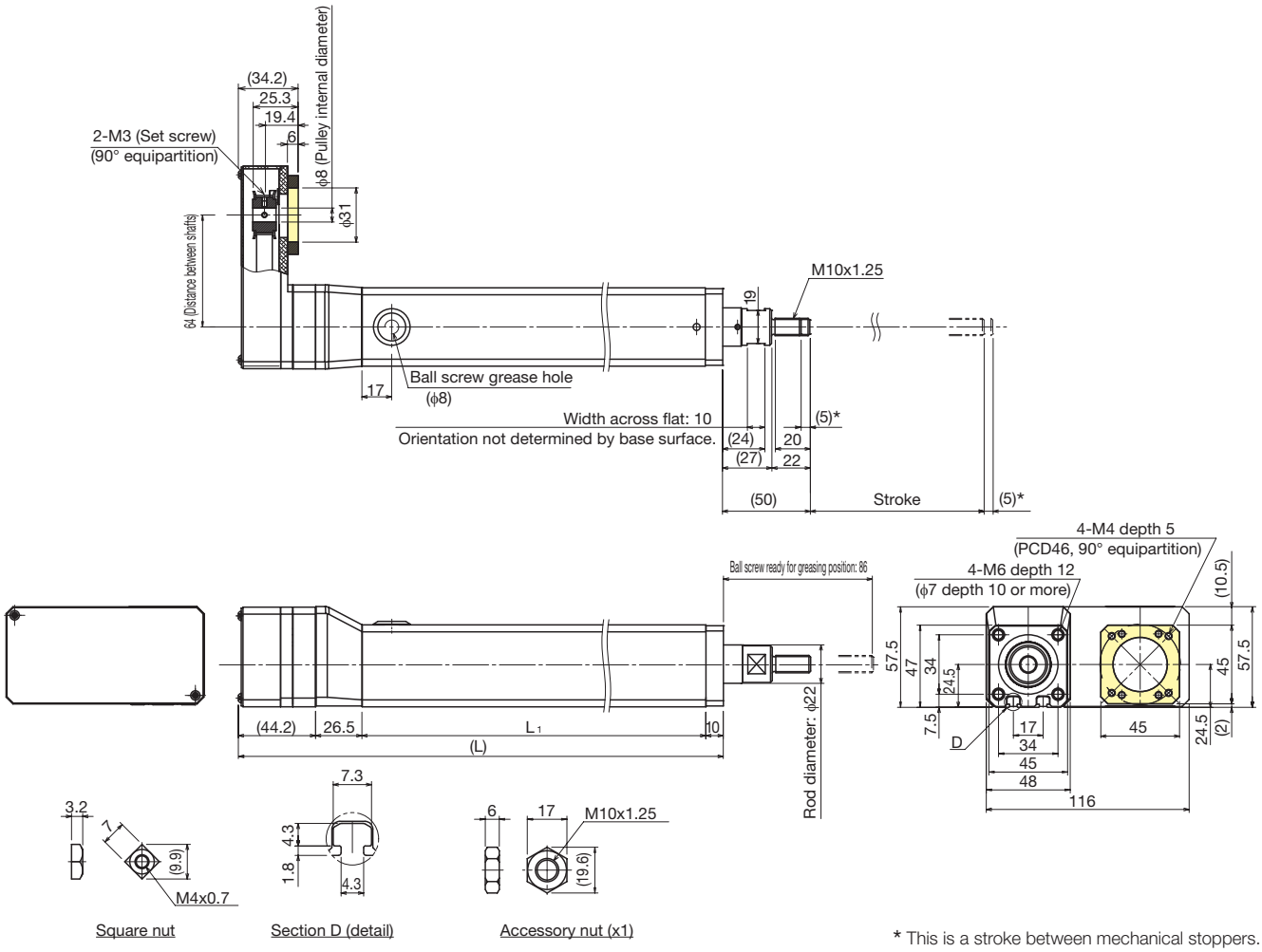
Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Option
EC4R –	06 –	0150	B	– 0	– A	– MR–FL–LB
EC4R	06: 6mm 12: 12mm	0050: 50mm to 0300: 300mm	B	0: Without motor 1: With motor	A	MR: Motor right-turn folded ML: Motor left-turn folded CB: With cylinder base FL: With flange LB: With link ball

Basic Specifications

Ball screw portion	Shaft diameter [mm]		ϕ8	
	Lead [mm]		6	12
	Basic dynamic load rating Ca [N]		1770	920
	Basic static load rating C0 [N]		3040	1600
	Root diameter [mm]		ϕ6.8	
	Ball center-to-center diameter [mm]		ϕ8.4	
Bearing portion (fixed side)	Axial direction	Basic dynamic load rating Ca [N]	8000	
		Static permissible load P0a [N]	3240	
Permissible rotational speed [min^{-1}]			3000	
Starting torque *1 [N·mm]			22	42
Positioning repeatability [mm] *2			±0.020	
Lost motion [mm] *2			0.1	
Maximum input torque [N·m]			0.35	

*1 Pulley and timing belt not included.
*2 When appropriate motor is used.
Note: With EC, only an axial load is permissible; do not apply any other type of load to the rod using an LM Guide.
Take into account the sliding resistance of LM Guide when making selection.

Dimensions



Square nut | Section D (detail) | Accessory nut (x1)

* This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)	250 (260)	300 (310)
Maximum speed *1 *2 [mm/s]	Ball screw lead: 6mm	300				230	170
	Ball screw lead: 12mm	600				460	340
Dimensions [mm]	L	227.7	277.7	327.7	377.7	427.7	477.7
	L_1 *3	147	197	247	297	347	397
Weight [kg]		1.6	1.9	2.3	2.6	2.9	3.2

*1 Load capacity and maximum speed vary depending on the motor used.
*2 Dependent on the permissible rotational speed of the ball screw.
*3 T slot milling in the range of L_1.

EC4H Cylinder type Directly coupled without motor/with linear bush

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Option
EC4H –	06 –	0150	B	– 0	– B	– CB
EC4H	06: 6mm	0050: 50mm	B	0: Without motor	N	No symbol: None
	12: 12mm	to		1: With motor	B	CB: With cylinder base
		0300: 300mm			C	

Basic Specifications

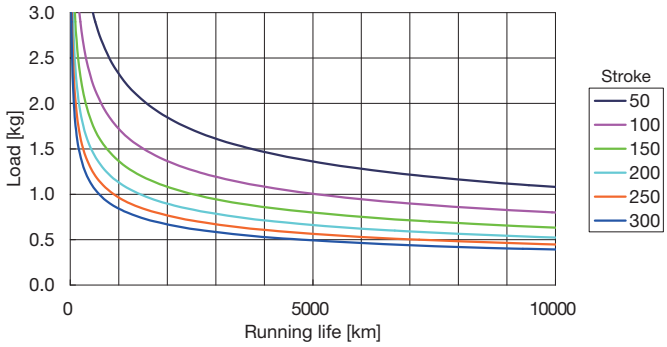
Ball screw portion	Shaft diameter [mm]		ϕ8	
	Lead [mm]		6	12
	Basic dynamic load rating Ca [N]		1770	920
	Basic static load rating C0a [N]		3040	1600
	Root diameter [mm]		ϕ6.8	
	Ball center-to-center diameter [mm]		ϕ8.4	
Bearing portion (fixed side)	Axial direction	Basic dynamic load rating Ca [N]	8000	
		Static permissible load P0a [N]	3240	
Linear bush unit (LMK10LUU)	Basic dynamic load rating C [N]		373	
	Basic static load rating C0 [N]		549	
Permissible rotational speed [min^{-1}]			3000	
Starting torque [N·mm]			28	55
Positioning repeatability [mm]*			±0.020	
Lost motion [mm]*			0.1	
Maximum input torque [N·m]*			0.35	

* When appropriate motor is used.

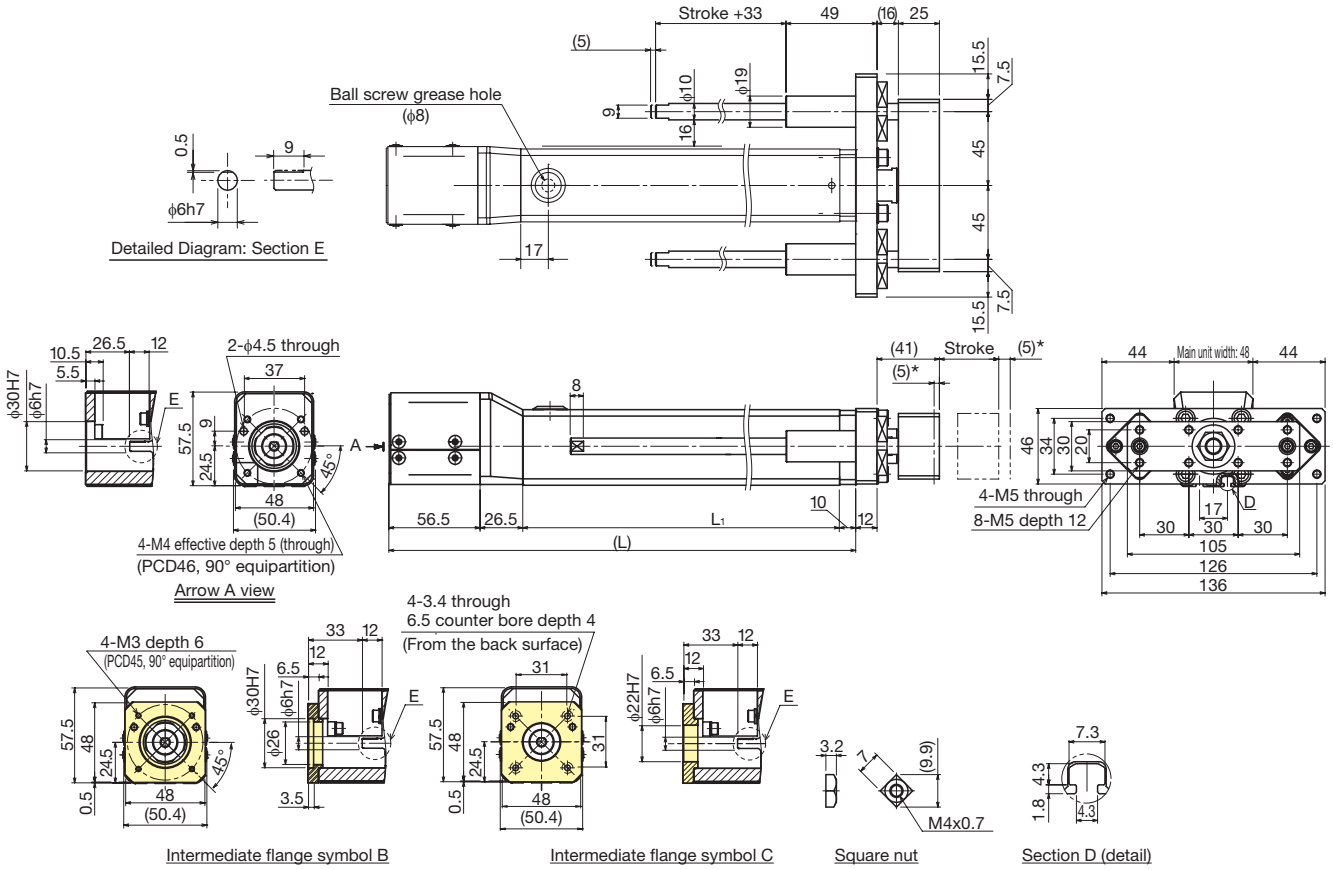
Note: With EC, only an axial load is permissible; do not apply any other type of load to the rod using an LM Guide.
Take into account the sliding resistance of LM Guide when making selection.

Reference Load and Running Life

Running life varies when a load is applied to the end without using an LM guide, as shown below.



Dimensions



* This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)	250 (260)	300 (310)
Maximum speed *1 *2 [mm/s]	Ball screw lead: 6mm	300				230	170
	Ball screw lead: 12mm	600				460	340
Dimensions [mm]	L	240	290	340	390	440	490
	L_1 *3	147	197	247	297	347	397
Weight *3 [kg]		2.2	2.5	2.9	3.3	3.6	4.0

*1 Load capacity and maximum speed vary depending on the motor used.
*2 Dependent on the permissible rotational speed of the ball screw.
*3 T slot milling in the range of L_1.

ES/EC Intermediate Flange

Several types of intermediate flanges for mounting motors are available. Specify an intermediate flange that matches the motor used.

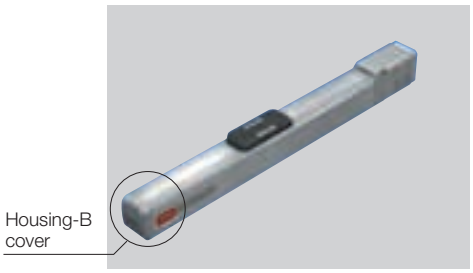
Motor type			Motor rated output	Flange angle	Intermediate flange model											
					ES3		ES4		ES5		ES6		EC3		EC4	
					Direct coupling	Motor Wrap	Direct coupling	Motor Wrap	Direct coupling	Motor Wrap	Direct coupling	Motor Wrap	Direct coupling	Motor Wrap	Direct coupling	Motor Wrap
Yaskawa Electric Corporation	Σ-Vmini	SGMMV-A2	20W	□25	A	A	–	–	–	–	–	–	–	–	–	–
		SGMMV-A3	30W		–	–	A	A	–	–	–	–	A	A	–	–
	Σ-V	SGMJV-A5	50W	□40	–	–	–	–	N	A	N	A	–	–	N	A
		SGMAV-A5			–	–	–	–	N	A	N	A	–	–	N	A
Mitsubishi Electric Corporation	J3	HG-AK0236	20W	□25	A	A	–	–	–	–	–	–	–	–	–	–
		HG-AK0336	30W		–	–	A	A	–	–	–	–	A	A	–	–
		HF-KP053	50W	□40	–	–	–	–	N	A	N	A	–	–	N	A
		HF-MP053			–	–	–	–	N	A	N	A	–	–	N	A
	J4	HG-KR053			–	–	–	–	N	A	N	A	–	–	N	A
		HG-MR053			–	–	–	–	N	A	N	A	–	–	N	A
	JN	HF-KN053			–	–	–	–	N	A	N	A	–	–	N	A
Panasonic Corporation	A5	MSME 5A		□38	–	–	–	–	B	–	B	–	–	–	B	–
OMRON Corporation	G5	R88M-K05030		□40	–	–	–	–	N	–	N	–	–	–	N	–
Oriental Motor Co. Ltd.	α step	ARM24*		□28	B	–	–	–	–	–	–	–	–	–	–	–
		ARLM46*		□42	–	–	–	–	C	–	C	–	–	–	C	–
		ARM46*			–	–	–	–	C	–	C	–	–	–	C	–
	5 phase	PK523*		□28	B	–	–	–	–	–	–	–	–	–	–	–
		RK54*		□42	–	–	–	–	C	–	C	–	–	–	C	–
	2 phase	PK23*		□35	–	–	B	–	–	–	–	–	B	–	–	–

* For motor wrap type, a set screw connects pulley and motor output shaft. Select a D-cut motor output shaft.
Under "Intermediate flange model," "N" indicates that there is no intermediate flange.
Mitsubishi model HF-KN053 does not support D-cut shafts; consult the manufacturer for further details.

Common options for ES

GR: Change the cover color to gray

As an option for ES and EC, the cover color can be changed from red to gray.



No symbol: red cover

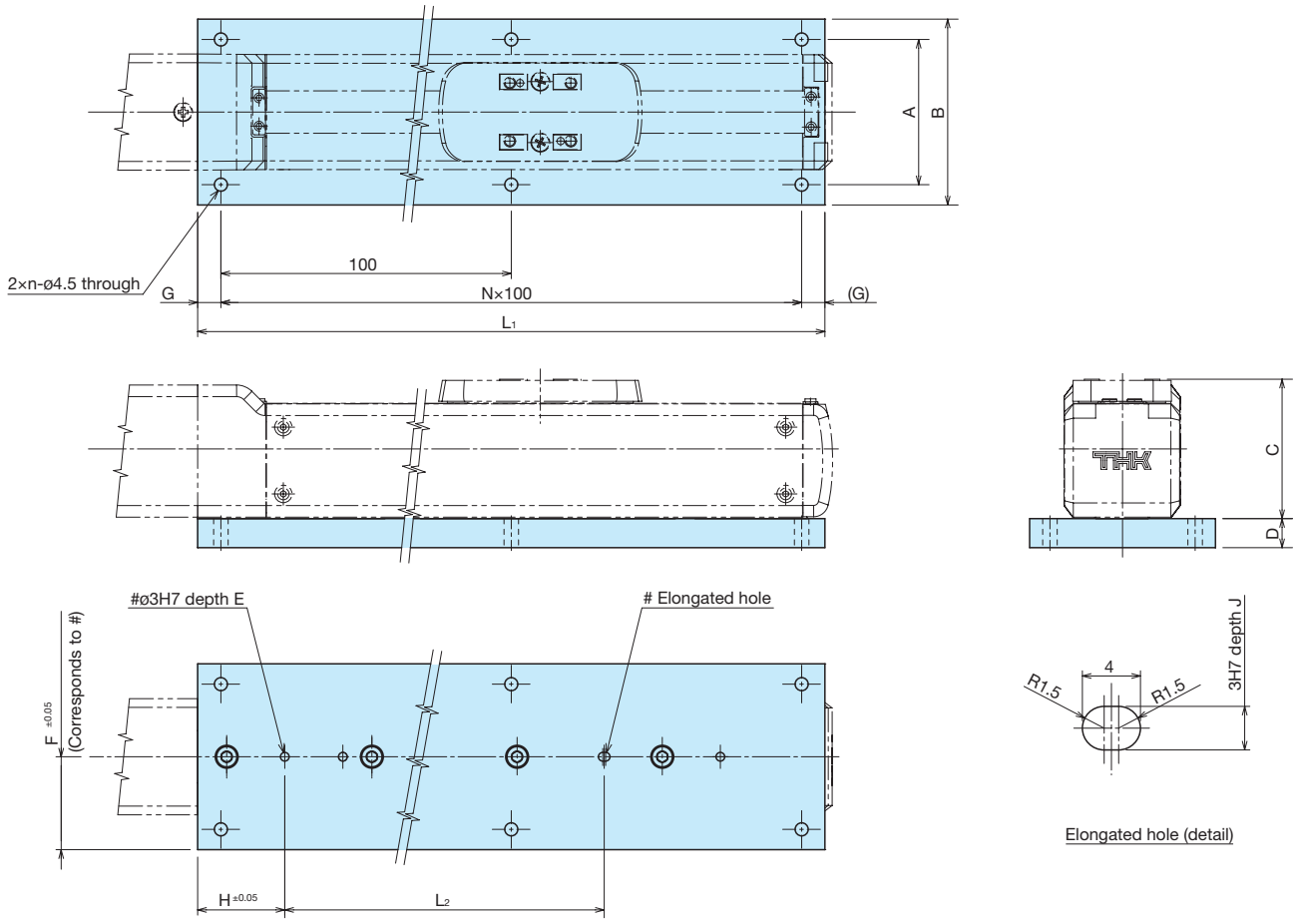
When GR is selected: gray cover

If the GR is not included in the model configuration, cover will be red.

ES Option

SB: Slider base (direct coupled specification)

THK provides a slider base for installing the ES main unit from the top face.
(Included with unit)



Unit: mm

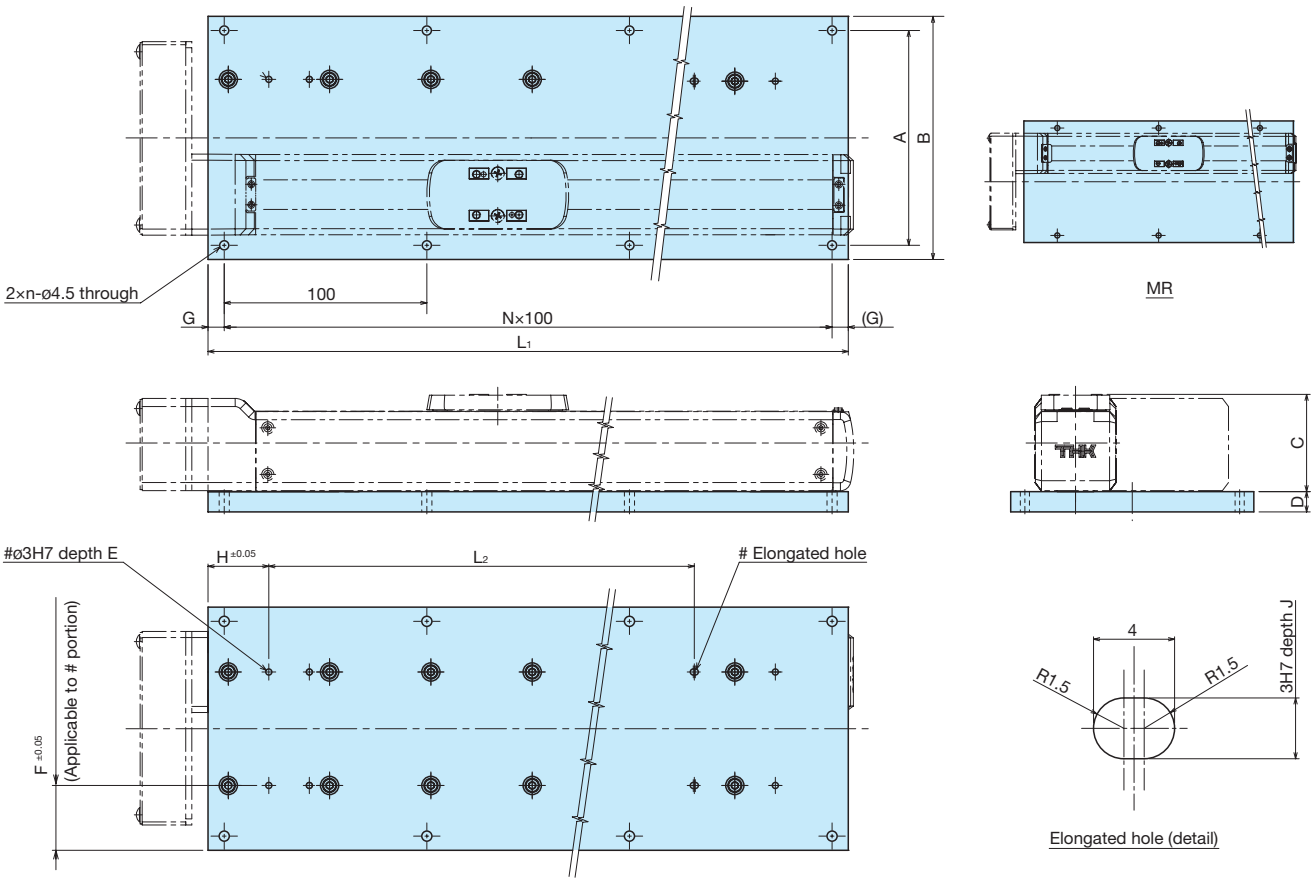
Model	A	B	C	D	E	F	H	J
ES3	42	56	40	8	8	28	40	8
ES4	50	64	48	10	10	32	30	10
ES5	70	84	57	10	10	42	45	10
ES6	70	84	62.5	10	10	42	45	10

Stroke		50	100	150	200	250	300	350	400	450	500	550	600
ES3	L_1[mm]	156	206	256	306	356	406	–	–	–	–	–	–
	L_2[mm]	70	120	170	220	270	320	–	–	–	–	–	–
	n	2	2	3	3	4	4	–	–	–	–	–	–
	N	1	1	2	2	3	3	–	–	–	–	–	–
	G[mm]	28	53	28	53	28	53	–	–	–	–	–	–
ES4	L_1[mm]	166	216	266	316	366	416	466	516	–	–	–	–
	L_2[mm]	60	110	160	210	260	310	360	410	–	–	–	–
	n	2	3	3	4	4	5	5	6	–	–	–	–
	N	1	2	2	3	3	4	4	5	–	–	–	–
	G[mm]	33	8	33	8	33	8	33	8	–	–	–	–
ES5	L_1[mm]	174	224	274	324	374	424	474	524	574	624	–	–
	L_2[mm]	70	120	170	220	270	320	370	420	470	520	–	–
	n	2	3	3	4	4	5	5	6	6	7	–	–
	N	1	2	2	3	3	4	4	5	5	6	–	–
	G[mm]	37	12	37	12	37	12	37	12	37	12	–	–
ES6	L_1[mm]	174	224	274	324	374	424	474	524	574	624	674	724
	L_2[mm]	70	120	170	220	270	320	370	420	470	520	570	620
	n	2	3	3	4	4	5	5	6	6	7	7	8
	N	1	2	2	3	3	4	4	5	5	6	6	7
	G[mm]	37	12	37	12	37	12	37	12	37	12	37	12

ES Option

SB: Slider base (motor wrap type)

THK provides a slider base for installing the ES main unit from the top face.
(Included with unit)



Unit: mm

Model	A	B	C	D	E	F		H	J
						MR	ML		
ES3	92	106	40	8	8	28	78	40	8
ES4	106	120	48	10	10	32	88	30	10
ES5	136	150	57	10	10	42	108	45	10
ES6	136	150	62.5	10	10	42	108	45	10

Stroke		50	100	150	200	250	300	350	400	450	500	550	600
ES3	L1[mm]	156	206	256	306	356	406	–	–	–	–	–	–
	L2[mm]	70	120	170	220	270	320	–	–	–	–	–	–
	n	2	2	3	3	4	4	–	–	–	–	–	–
	N	1	1	2	2	3	3	–	–	–	–	–	–
	G[mm]	28	53	28	53	28	53	–	–	–	–	–	–
ES4	L1[mm]	166	216	266	316	366	416	466	516	–	–	–	–
	L2[mm]	60	110	160	210	260	310	360	410	–	–	–	–
	n	2	3	3	4	4	5	5	6	–	–	–	–
	N	1	2	2	3	3	4	4	5	–	–	–	–
	G[mm]	33	8	33	8	33	8	33	8	–	–	–	–
ES5	L1[mm]	174	224	274	324	374	424	474	524	574	624	–	–
	L2[mm]	70	120	170	220	270	320	370	420	470	520	–	–
	n	2	3	3	4	4	5	5	6	6	7	–	–
	N	1	2	2	3	3	4	4	5	5	6	–	–
	G[mm]	37	12	37	12	37	12	37	12	37	12	–	–
ES6	L1[mm]	174	224	274	324	374	424	474	524	574	624	674	724
	L2[mm]	70	120	170	220	270	320	370	420	470	520	570	620
	n	2	3	3	4	4	5	5	6	6	7	7	8
	N	1	2	2	3	3	4	4	5	5	6	6	7
	G[mm]	37	12	37	12	37	12	37	12	37	12	37	12

□1□2: Sensors

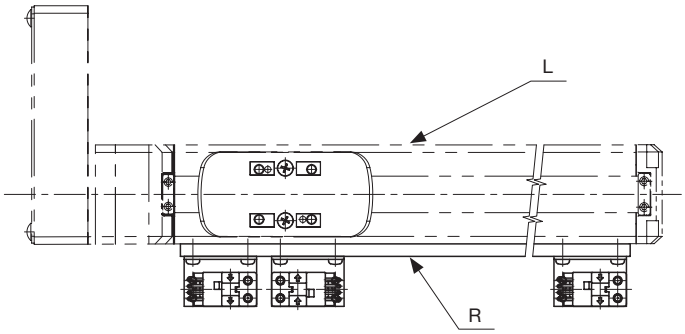
ES units can be equipped with optional proximity sensors and photo sensors. Sensor-equipped models also feature a dedicated sensor rail. The following precautions apply to sensor-equipped ES units.

1. The customer should provide a sensor target; a sensor target cannot be installed onto the actuator main unit.
2. When ordered, the sensor is included with the unit.
3. When motor wrap is selected, a sensor cannot be mounted on the same side as the folded direction of the motor.
4. When an optional sensor is used, the home position may differ from that indicated in this brochure.
5. When proximity sensors are placed too close to each other, they may not work properly. For closely grouped proximity sensors, the customer must provide sensors with variant frequencies (consult the respective manufacturer for sensor specifications).

Description	Type	Accessory	Symbol	
			□1	□2
With sensor rail	–	–	L/R	1
Photo Sensor * [3 units]	EE-SX674 (OMRON Corporation)	Mounting screw, nuts, sensor rail (x1), mounting plates (x3), connectors (EE-1001, x3)	L/R	6
Sensor N.O. contact [x1] N.C. contact points [x2]	GX-F12A (Panasonic Industrial Devices SUNX Co., Ltd.) GX-F12B (Panasonic Industrial Devices SUNX Co., Ltd.)	Mounting screws, nuts, sensor rail	L/R	J
Sensor N.O. contact [x1] (PNP output) N.C. contact points [x2] (PNP output)	GX-F12A-P (Panasonic Industrial Devices SUNX Co., Ltd.) GX-F12B-P (Panasonic Industrial Devices SUNX Co., Ltd.)	Mounting screws, nuts, sensor rail	L/R	M

N.O. contact: Normally open contact point
N.C. contact: Normally closed contact point
The photo sensors can be switched between ON when lit and ON when unlit.

Example: When a photo sensor is selected with motor wrap



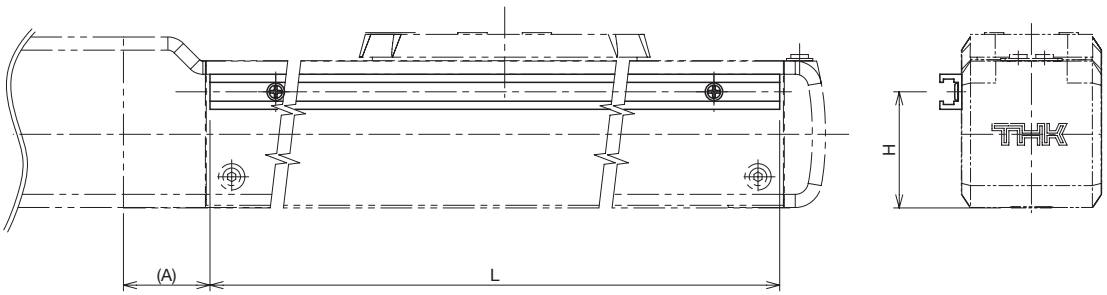
Sensor symbols

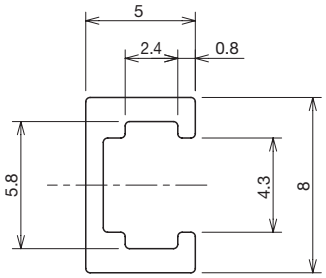
Symbol	
□1	□2
R	6

□1 represents the mounting position for sensor rail and sensor.
□2 represents the type of sensors.
□1 on the same side as the folded direction of the motor cannot be selected.
L cannot be selected.

□1□2: Sensor

Symbol 1: Sensor rail



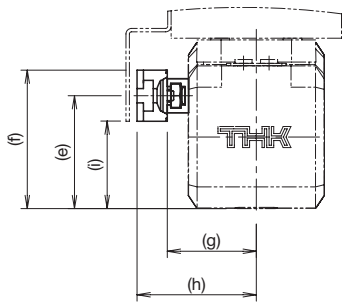


Sensor rail (detail)

Unit: mm

Model	H	A	L
ES3	26.5	19.8	Stroke+80
ES4	31.5	26	
ES5	38.1	27	
ES6	43.6	29	

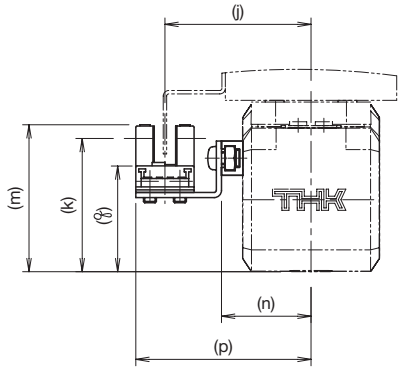
Symbols J, M: Proximity sensor GX-F12∗ (Panasonic Industrial Devices SUNX Co., Ltd.)



Unit: mm

Model	e	f	g	h	i
ES3	26.5	32.5	20.9	28	20.5
ES4	31.5	37.5	24.8	31.9	25.5
ES5	38.1	44.1	29.8	36.9	32.1
ES6	43.6	49.6	34.8	41.9	37.6

Symbol 6: Photo sensor EE-SX674 (OMRON Corporation)



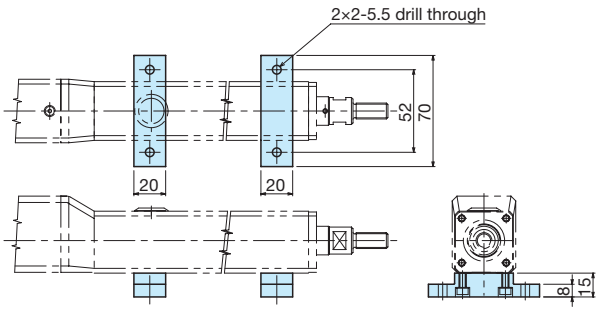
Unit: mm

Model	j	k	m	n	p	ℓ
ES3	31.4	28.6	31.8	20.9	38.4	22.2
ES4	35.3	33.6	36.8	24.8	42.3	27.2
ES5	40.3	40.2	43.4	29.8	47.3	33.8
ES6	45.3	45.7	48.9	34.8	52.3	39.3

EC Option

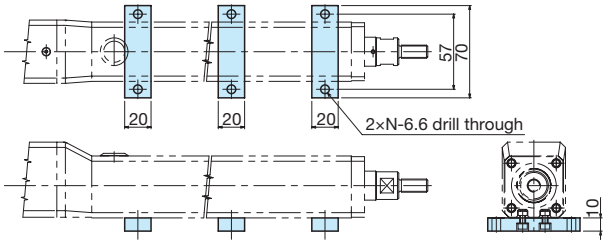
CB: Cylinder Base

EC3



(Included with unit)

EC4

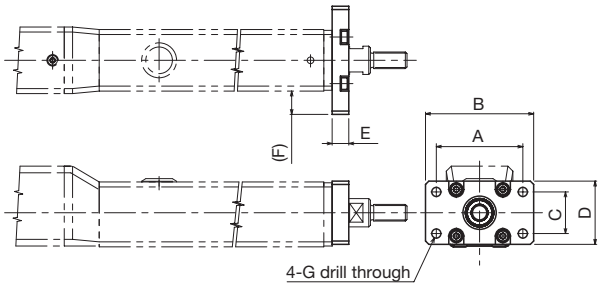


Stroke	50	100	150	200	250	300
N	2	2	2	2	3	3

(Included with unit)

FL: Flange

EC3/4, EC3R/4R

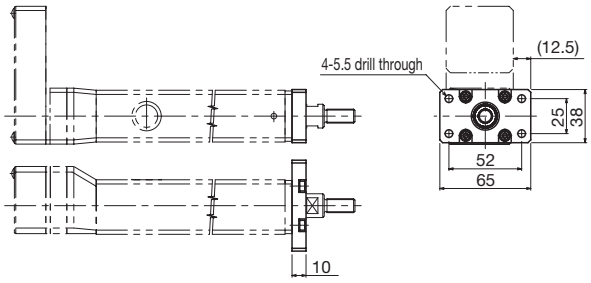


Unit: mm

Model	A	B	C	D	E	F	G
EC3/EC3R	52	65	25	38	10	14	5.5
EC4/EC4R	60	75	34	46	12	15	6.6

(Included with unit)

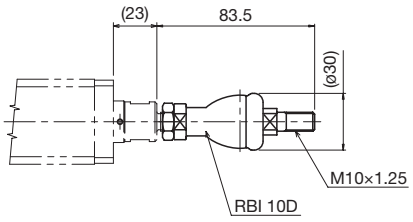
EC3R (When ST=50)



(Included with unit)

LB: Link Ball

EC3/4



(Included with unit)

ES Motor Selection

See the table below to select a motor to be installed to ES. For details on how to select a motor and motor specifications, contact the manufacturer.

Actuator		Ball Screw			
Model	Stroke *1 [mm]	Lead [mm]	Shaft diameter [mm]	Shaft length [mm]	Outer diameter of shaft end [mm]
ES3	50	6	ϕ6	182	ϕ6h7
	300			432	
ES4	50	6	ϕ8	191	ϕ6h7
	400			541	
	50	12	ϕ8	191	ϕ6h7
	400			541	
ES5	50	6	ϕ8	191	ϕ6h7
	500			641	
	50	12	ϕ8	191	ϕ6h7
	500			641	
ES6	50	6	ϕ8	198	ϕ6h7
	600			748	
	50	12	ϕ8	198	ϕ6h7
	600			748	

*1 For strokes, see the corresponding specification tables.

Recommended Coupling		
Actuator model	Model	Inertial moment [kg · cm^2]
ES3	SFC–005DA2 (Miki Pulley Co., LTD.)	0.0036
	XBW–15C2 (Nabeya Bi-tech Kaisha)	0.0022
ES4	SFC–010DA2 (Miki Pulley Co., LTD.)	0.0079
	XBW–19C2 (Nabeya Bi-tech Kaisha)	0.0067
ES5	SFC–020DA2 (Miki Pulley Co., LTD.)	0.034
	XBW–25C2 (Nabeya Bi-tech Kaisha)	0.023
ES6	SFC–020DA2 (Miki Pulley Co., LTD.)	0.034
	XBW–25C2 (Nabeya Bi-tech Kaisha)	0.023

Actuator model	Weight of moving element [kg]	Sliding resistance [N]
ES3	0.17	3
ES4	0.18	4.8
ES5	0.23	6.5
ES6	0.34	6.6

Permissible input torque		
Actuator model	Direct motor coupling [N · m]	Motor wrap [N · m]
ES3	0.065	0.065
ES4	0.16	0.16
ES5	0.35	0.35
ES6	0.35	0.35

Timing pulley (The sum of two.)	
Actuator model	Inertial moment [kg · cm^2]
ES3	0.0060
ES4	0.0202
ES5	0.0182
ES6	0.0182

EC Motor Selection

See the table below to select a motor to be installed to EC. For details on how to select a motor and motor specifications, contact the manufacturer.

Actuator		Ball Screw			
Model	Stroke *1 [mm]	Lead [mm]	Shaft diameter [mm]	Shaft length [mm]	Outer diameter of shaft end [mm]
EC3	50	6	ϕ6	159	ϕ6h7
	200			309	
EC4	50	6	ϕ8	175	ϕ6h7
	300			425	
	50	12	ϕ8	175	ϕ6h7
	300			425	

*1 For strokes, see the corresponding specification tables.

Recommended Coupling		
Actuator model	Model	Inertial moment [kg · cm^2]
EC3	SFC–010DA2 (Miki Pulley Co., LTD.)	0.0079
	XBW–19C2 (Nabeya Bi-tech Kaisha)	0.0067
EC4	SFC–020DA2 (Miki Pulley Co., LTD.)	0.034
	XBW–25C2 (Nabeya Bi-tech Kaisha)	0.023

Actuator model	Weight of moving element [kg]						Sliding resistance [N]
Stroke [mm]	50	100	150	200	250	300	
EC3*	0.53	0.63	0.73	0.83	–	–	7.5
EC4*	0.86	1.02	1.17	1.33	1.48	1.63	10

* Values with a Linear Bushing attached.

Permissible input torque		
Actuator model	Direct motor coupling [N · m]	Motor wrap [N · m]
EC3	0.16	0.16
EC4	0.35	0.35

Timing pulley (The sum of two.)	
Actuator model	Inertial moment [kg · cm^2]
EC3	0.0195
EC4	0.0182

Precautions on Use

Application

- This product cannot be applied to any equipment or system that may be used under a life-threatening condition.
- When you consider using this product for special applications such as equipment/system for mobile vehicles, medical uses, aerospace, atomic energy and power plants, make sure to contact THK for applicability beforehand.

Safety Precautions

- Before operation, please read thoroughly and obey "Manipulating industrial robots – Safety" (JIS B8433) and "Ordinance on Industrial Safety and Health" (Ministry of Health, Labor and Welfare).
- Read the manual carefully, understand the contents well, and strictly observe the safety precautions.
- Before performing installation, adjustment, checking, or services regarding the main actuator unit, controller and the relevant connected equipment, make sure to remove all power plugs from the outlet and apply locking or safety plugs so that nobody else can turn on the power. Also display a signboard showing that the work is ongoing at a prominent place.
- Do not touch the moving part of the actuator while it is energized. In addition, do not enter the operating area of the actuator while the product is operating or in the ready state.
- If two or more people are involved in the operation, confirm the procedures such as a sequence, signs and anomalies in advance, and appoint another person for monitoring the operation.
- Do not unnecessarily disassemble this product. Doing so may allow foreign materials to enter or deterioration of precision. Also this will cause the risk of electric shock from the controller.
- Take care not to drop or strike this product. Doing so may cause injury or damage the unit. If the product is dropped or impacted, functionality may be reduced even if there is no surface damage.
- Operation of the actuator over the permissible rotational speed may cause damage or an accident. Please keep the rotational speed within THK specifications.
- Prevent foreign material, such as dust or cutting chips, from entering the product. This could cause damage to ball recirculation components and loss of functionality.
- When planning to use the product in an environment where a coolant could penetrate the unit, contact THK.
- When there is any risk that the slider may collide with the stoppers attached to both ends of operable range, install some shock absorbing mechanism such as a shock absorber. The stoppers are not designed to absorb the impact generated by the collision of the slider. When the slider collides with a stopper during operation, it may cause damage or an accident.

Environment

- An indoor location and ambient temperatures from 0 to 40°C, and humidity of 80%RH or below (no freezing or condensation).

Wrong environment can cause failures of the actuator and driver. The best place to use the product is as follows:

- A place free from corrosive gas and flammable gas.
- A place where vibration or impact is not transmitted to the unit.
- A place free from electrically conductive powder (such as iron powder), dust, oil mist, cutting fluid, moisture, salt, and organic solvent.
- A place free from direct sunlight and radiant heat.
- A place free from strong electric and magnetic fields.
- A place that is easily accessible for service and cleaning purposes.
- When using the product in locations exposed to constant vibrations or in special environments such as vacuum or abnormally high or low temperatures, contact THK in advance.

Mounting Surface

- The surface should be the plane that has the precision of machining or the equivalent of that. Some products specify the required flatness.
  When you wish to use the product with QZ in a position other than horizontal (such as wall mount and vertical posture), contact THK.

Lubrication

- In order to effectively use the actuator, lubrication is required. Insufficient lubrication may increase abrasion on the rolling part and cause early failure.
- Do not use a mix of lubricants with different physical properties. Note that encapsulated lubricant types vary depending on products.
- Please contact THK if using special lubricants.
- THK recommend the greasing interval to be approximately every 100km. However, it may vary depending on the usage conditions, so THK recommends determining a greasing interval during the initial inspection.
- If the product is to used in location exposed to vibrations or in special environment such as vacuum, or abnormally high or low temperatures, or in a clean room, normal lubricants may not be used. Contact THK for details.
- When adopting oil lubrication method, contact THK.

Storage

- When storing this actuator, enclose it in a package designated by THK and store it in a horizontal position away from abnormally high or low temperatures and high humidity.

Instruction Manual

- Instruction Manuals can be downloaded from the website (a login process may be required).
  THK Technical Support site https: //tech.thk.com/
  "Economy series ES/EC Instruction Manual"
  and other contents including CAD data and PC software (D-STEP) can also be downloaded.

Compact series

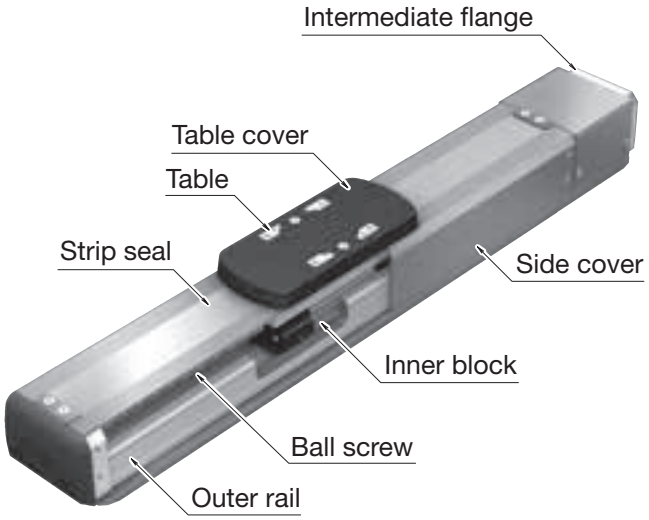
Model: KRF

Chapter 2

Compact Series

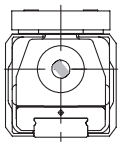
KRF

High rigidity fully enclosed actuator



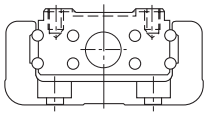
KRF

ES



Full-cover structure

KR/SKR



Equivalent load for four directions, with high rigidity

√ Outer rail of KR/SKR with proven history adopted
√ Single axis actuator with high moment rigidity

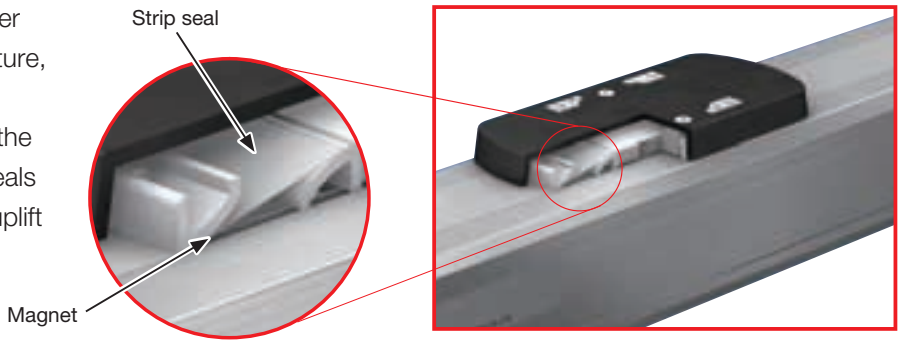
Supported size (guideline)

KR/SKR	15	20	26	33
KRF	3	4	5	6

Features

1 Fully enclosed design

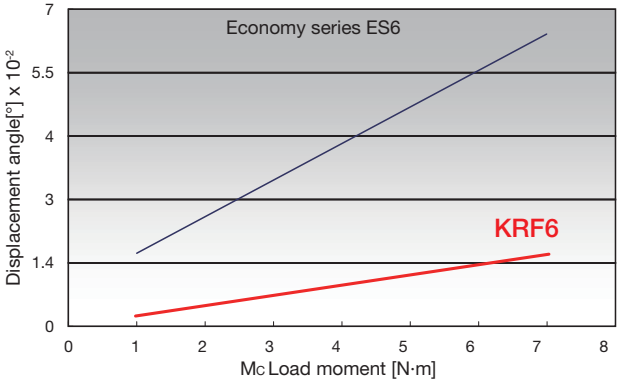
Strip seals on the side cover and upper surface provide a fully enclosed structure, preventing damage that might arise from penetration by foreign matter in the surrounding environment. The strip seals adhere magnetically, which reduces uplift and prevents gaps.



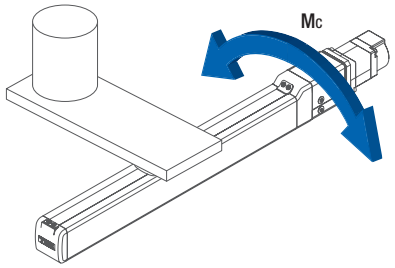
Magnetic attraction method
The magnet built in the side cover attracts the strip seal and prevents it from lifting, reducing the development of gap.

2 High rigidity

The KRF series employs an outer rail with a U-shaped cross section, enabling it to accommodate a sizable moment load. The actuator body's high rigidity allows for a compact, space-saving design.



Load moment



Layout example of cantilever configuration

Model Configuration

KRF (type without motor)

In the case of actuator main unit only, or when the motor specified by the customer is installed

Model	Ball screw lead	Stroke	With/without motor	Intermediate flange	Option
KRF4 -	06 -	0150 -	0 -	AQ -	GR-SB-R6
(1)	(2)	(3)	(4)	(5)	(6)
KRF3	06: 6mm	0050: 50mm	0: Without motor	A0	No symbol: Red cover
KRF4	10: 10mm	0100: 100mm	1: With motor *	AN	GR: Gray cover
KRF5		0150: 150mm		AQ	SB: Slider base
KRF6		0200: 200mm		AM	□1□2: Sensor
		0250: 250mm		AP	
		0300: 300mm		AS	
		0350: 350mm		AR	
		0400: 400mm		AU	
		0450: 450mm		AT	
		0500: 500mm			
		0550: 550mm			
		0600: 600mm			
		0650: 650mm			
		0700: 700mm			
		0750: 750mm			
		0800: 800mm			

KRF3 and 4 only have ball screw lead of 6mm.

When selecting "0", a coupling is not provided. When selecting "1", the specified motor will be installed.

*Specify the motor cable orientation separately.

Specify the optional symbol by writing in the order of description from left adding "-".

Maximum stroke differs depending on models.
KRF3: 150mm
KRF4: 150mm
KRF5: 550mm
KRF6: 800mm

Change the cover color to gray
You can change the color of KRF housing cover to gray.

No symbol: red

When GR is selected: gray

If the GR is not included in the model configuration, cover will be red.

Sample model configuration

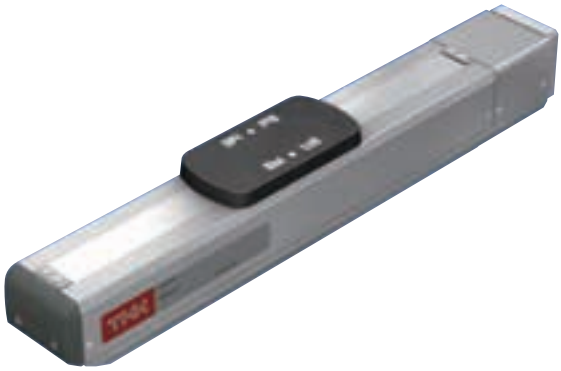
Main unit only (without motor type)	KRF3-06-0150-0-AM-GR-L1
Main unit only (when the motor specified by the customer is installed)	KRF5-10-0500-1-AQ-GR-L6

Pages for detailed description

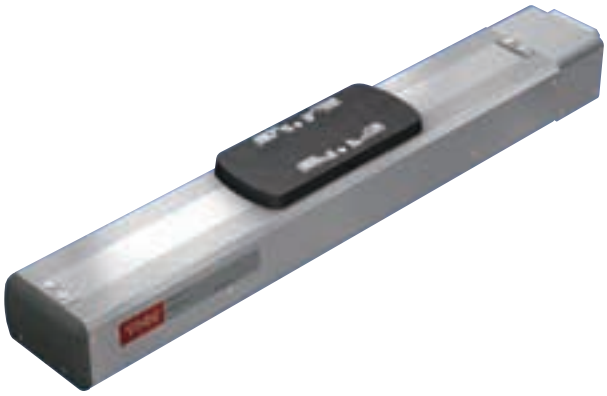
(5) Intermediate flange	→ P.2-018
(6) Option	SB: With slider base → P.2-015
	□1□2: Sensor → P.2-016
	GR: Change the cover color to gray → P.2-017

Series Specifications

[KRF3, 4, 5]



[KRF6]



Model	Ball screw lead [mm]	Stroke [mm]	Motor capacity		Maximum load capacity *1 [kg]					
			Stepper motor	Servo motor [W]	Horizontal	Wall mount	Vertical	50	100	150
KRF3	6	50 to 150	□28	-	3	3	1.5	300		
KRF4	6	50 to 150	-	30	6	5.5	4	300		
KRF5	6	50 to 550	-	50	19	14	6	300		
	10				15	12.5	3.5	500		
KRF6	6	50 to 800	-	100	35	24	10	300		
	10				30	22	5	500		

*1 The maximum load capacity indicates the capacity at the rated speed under 0.5 G for horizontal and wall mount and 0.3 G for vertical.
*2 The maximum speed indicates the speed at the revolution of the motor (3,000 min^{-1}) or the speed restricted by the permissible revolution of the ball screw.

	Maximum speed at each stroke *2 [mm]												
	Stroke [mm]												
	200	250	300	350	400	450	500	550	600	650	700	750	800
	300							250					
	500							400					
	300							275	250	200	175	150	150
	500							450	400	350	300	275	250

KRF3 without motor

Model Configuration

Model		Ball screw lead		Stroke		With/without motor		Intermediate flange		Option
KRF3	-	06	-	0150	-	0	-	AN	-	GR-SB-R6

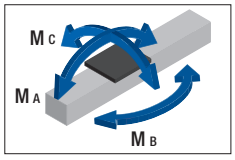
KRF3	06: 6mm	0050: 50mm 0100: 100mm 0150: 150mm	0: Without motor 1: With motor	A0 AN AM AS	No symbol: Red cover GR: Gray cover SB: Slider base □1□2: Sensor

Basic Specifications

LM guide portion	Basic dynamic load rating C [N]		1930
	Basic Static Load Rating C_0 [N]		3450
Ball screw portion	Basic dynamic load rating Ca [N]		220
	Basic Static Load Rating C_{0a} [N]		410
	Screw shaft diameter [mm]		ϕ5
	Ball screw lead [mm]		6
Bearing portion (Fixed side)	Axial direction	Basic dynamic load rating Ca [N]	590
		Static Permissible Load P_0a [N]	290
Permissible rotational speed [min^{-1}]			3000
Starting torque *1 [N·m]			0.006
Positioning repeatability *2 [mm]			±0.020
Lost motion *2 [mm]			0.1
Permissible input torque [N·m]			0.154
Static permissible moment *3 [N·m]			MA:12.1 MB:12.1 MC:29.8

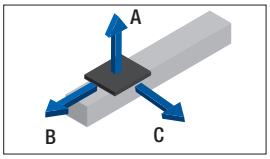
*1 The starting torque represents values when the standard grease is filled.
*2 These represent values when measured using a motor provided by THK.
*3 Moment standards for MA and MC are the top face of the table, and that for MB is the center of the table.

Static permissible moment

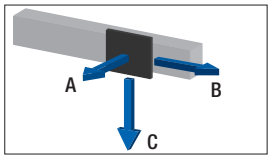


Reference Permissible Overhang Length*

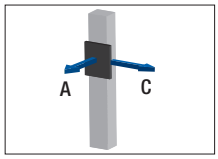
Horizontal use



Wall use



Vertical use



Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	1.5	290	50	150
	3	130	20	60

Wall mount [mm]

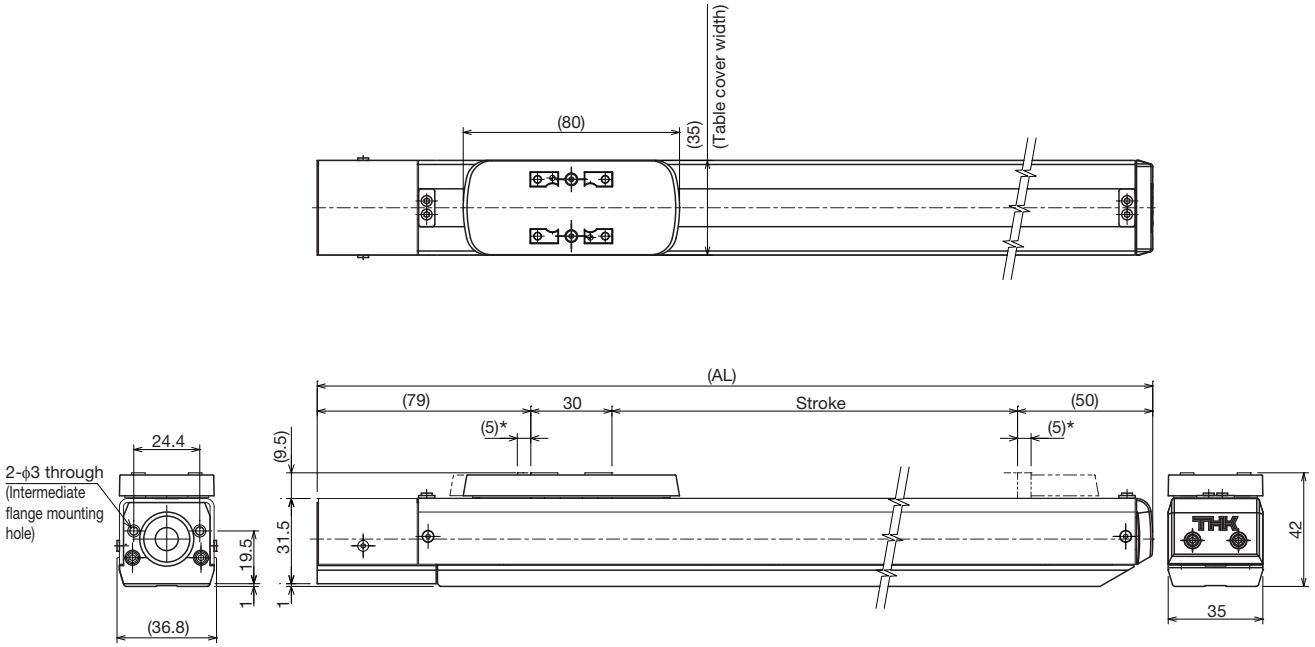
Ball screw lead [mm]	Load mass [kg]	A	B	C
6	1.5	120	40	310
	3	40	10	100

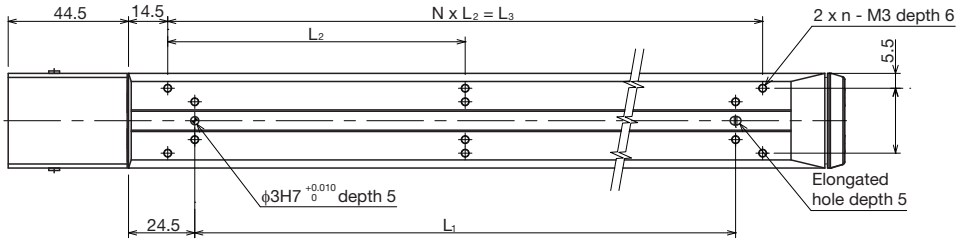
Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
6	0.5	110	110
	1.5	40	40

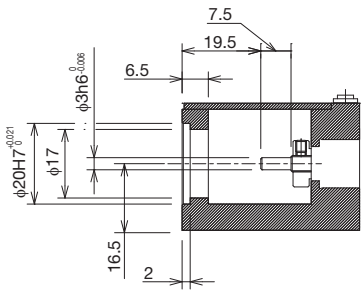
* This value is the overhang length whose running life is 10,000 km for horizontal and wall mount, and 5,000 km for vertical direction.

Dimensions

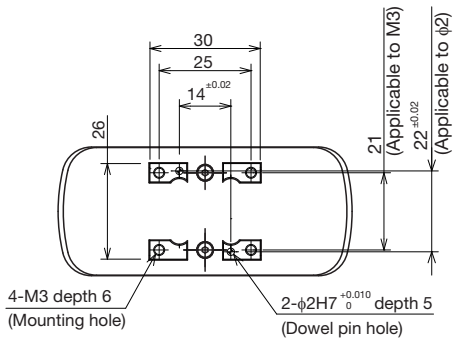




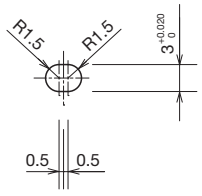
* This is a stoke between mechanical stoppers.



Detailed drawing of motor mounting part



Detailed Diagram: Table



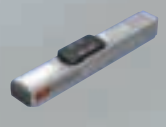
Detailed Diagram: Elongated Hole

Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)
Maximum speed *1, *2 [mm/s]	Ball screw lead: 6mm	300		
Dimensions [mm]	AL	209	259	309
	L1	100	150	200
	L2	120	85	110
	L3	120	170	220
Mounting pitch count	N	1	2	2
Mounting hole count	n	2	3	3
Weight [kg]		0.6	0.7	0.8

*1 The maximum speed varies depending on the motor used.

*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.

KRF4 without motor



Model Configuration

Model		Ball screw lead		Stroke		With/without motor		Intermediate flange		Option
KRF4	-	06	-	0150	-	0	-	AN	-	GR-SB-R6

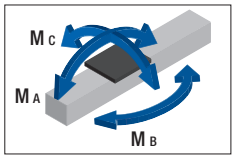
Model	Ball screw lead	Stroke	With/without motor	Intermediate flange	Option
KRF4	06: 6mm	0050: 50mm	0: Without motor	A0	No symbol: Red cover
		0100: 100mm	1: With motor	AN	GR: Gray cover
		0150: 150mm		AQ	SB: Slider base
				AM	□1 □2: Sensor
				AP	
				AS	
				AR	

Basic Specifications

LM guide portion	Basic dynamic load rating C [N]		3590
	Basic Static Load Rating C_0 [N]		6300
Ball screw portion	Basic dynamic load rating Ca [N]		860
	Basic Static Load Rating C_{0a} [N]		1450
	Screw shaft diameter [mm]		ϕ6
	Ball screw lead [mm]		6
Bearing portion (Fixed side)	Axial direction	Basic dynamic load rating Ca [N]	1150
		Static Permissible Load P_{0a} [N]	735
Permissible rotational speed [min^{-1}]			3000
Starting torque *1 [N·m]			0.008
Positioning repeatability *2 [mm]			±0.020
Lost motion *2 [mm]			0.1
Permissible input torque [N·m]			0.355
Static permissible moment *3 [N·m]			M_A: 31 M_B: 21.2 M_C: 41.7

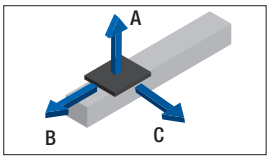
*1 The starting torque represents values when the standard grease is filled.
*2 These represent values when measured using a motor provided by THK.
*3 Moment standards for M_A and M_C are the top face of the table, and that for M_B is the center of the table.

Static permissible moment

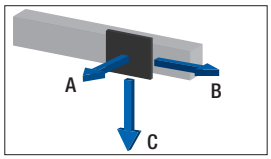


Reference Permissible Overhang Length*

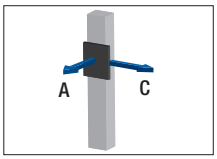
Horizontal use



Wall use



Vertical use



Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	3	250	60	160
	6	110	20	60

Wall mount [mm]

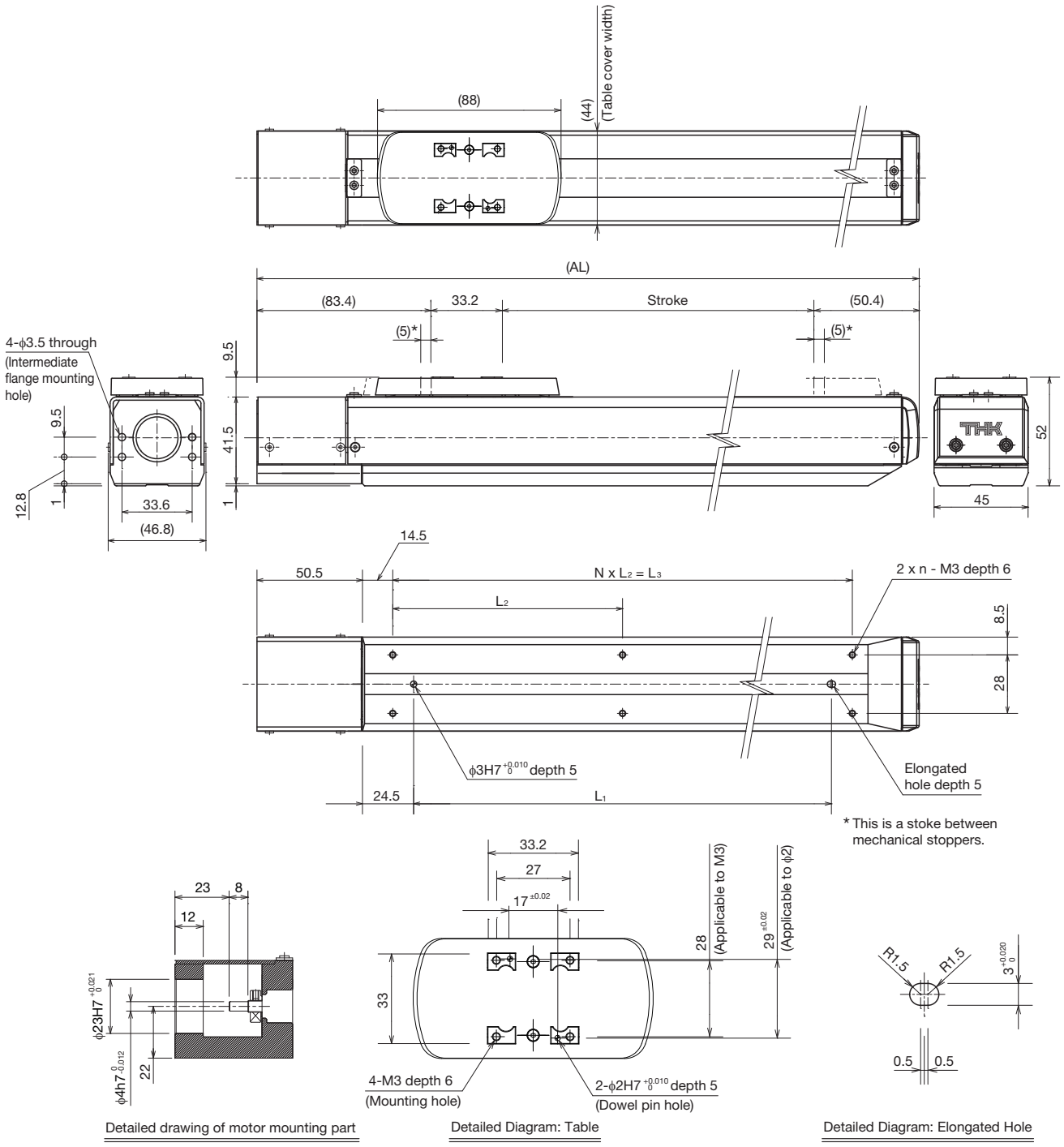
Ball screw lead [mm]	Load mass [kg]	A	B	C
6	2.5	140	60	280
	5.5	50	20	100

Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
6	2	100	100
	4	30	30

* This value is the overhang length whose running life is 10,000 km for horizontal and wall mount, and 5,000 km for vertical direction.

Dimensions



Detailed drawing of motor mounting part

Detailed Diagram: Table

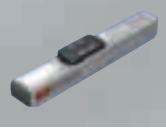
Detailed Diagram: Elongated Hole

Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)
Maximum speed *1, *2 [mm/s]	Ball screw lead: 6mm	300		
Dimensions [mm]	AL	217	267	317
	L1	100	150	200
	L2	120	85	110
	L3	120	170	220
Mounting pitch count	N	1	2	2
Mounting hole count	n	2	3	3
Weight [kg]		1.1	1.3	1.5

*1 The maximum speed varies depending on the motor used.

*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.

KRF5 without motor



Model Configuration

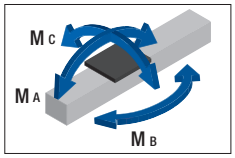
Model		Ball screw lead		Stroke		With/without motor		Intermediate flange		Option
KRF5	-	06	-	0150	-	0	-	AN	-	GR-SB-R6
KRF5		06: 6mm 10: 10mm		0050: 50mm to 0550: 550mm		0: Without motor 1: With motor		A0 AN AQ AM AP AS AR		No symbol: Red cover GR: Gray cover SB: Slider base □1 □2: Sensor

Basic Specifications

LM guide portion	Basic dynamic load rating C [N]		7240	
	Basic Static Load Rating C_0 [N]		12150	
Ball screw portion	Basic dynamic load rating Ca [N]		1950	1120
	Basic Static Load Rating C_{0a} [N]		3510	1740
	Screw shaft diameter [mm]		ϕ8	
	Ball screw lead [mm]		6	10
Bearing portion (Fixed side)	Axial direction	Basic dynamic load rating Ca [N]	2050	
		Static Permissible Load P_{0a} [N]	1830	
Permissible rotational speed [min^{-1}]			3000	
Starting torque *1 [N·m]			0.01	0.012
Positioning repeatability *2 [mm]			±0.020	
Lost motion *2 [mm]			0.1	
Permissible input torque [N·m]			0.671	
Static permissible moment *3 [N·m]			M_A: 84 M_B: 48.4 M_C: 88.7	

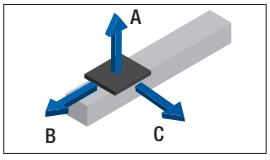
*1 The starting torque represents values when the standard grease is filled.
*2 These represent values when measured using a motor provided by THK.
*3 Moment standards for M_A and M_C are the top face of the table, and that for M_B is the center of the table.

Static permissible moment

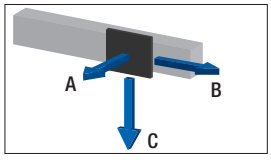


Reference Permissible Overhang Length*

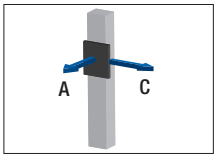
Horizontal use



Wall use



Vertical use



Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	9.5	350	50	150
	19	150	20	60
10	7.5	310	70	180
	15	130	20	60

Wall mount [mm]

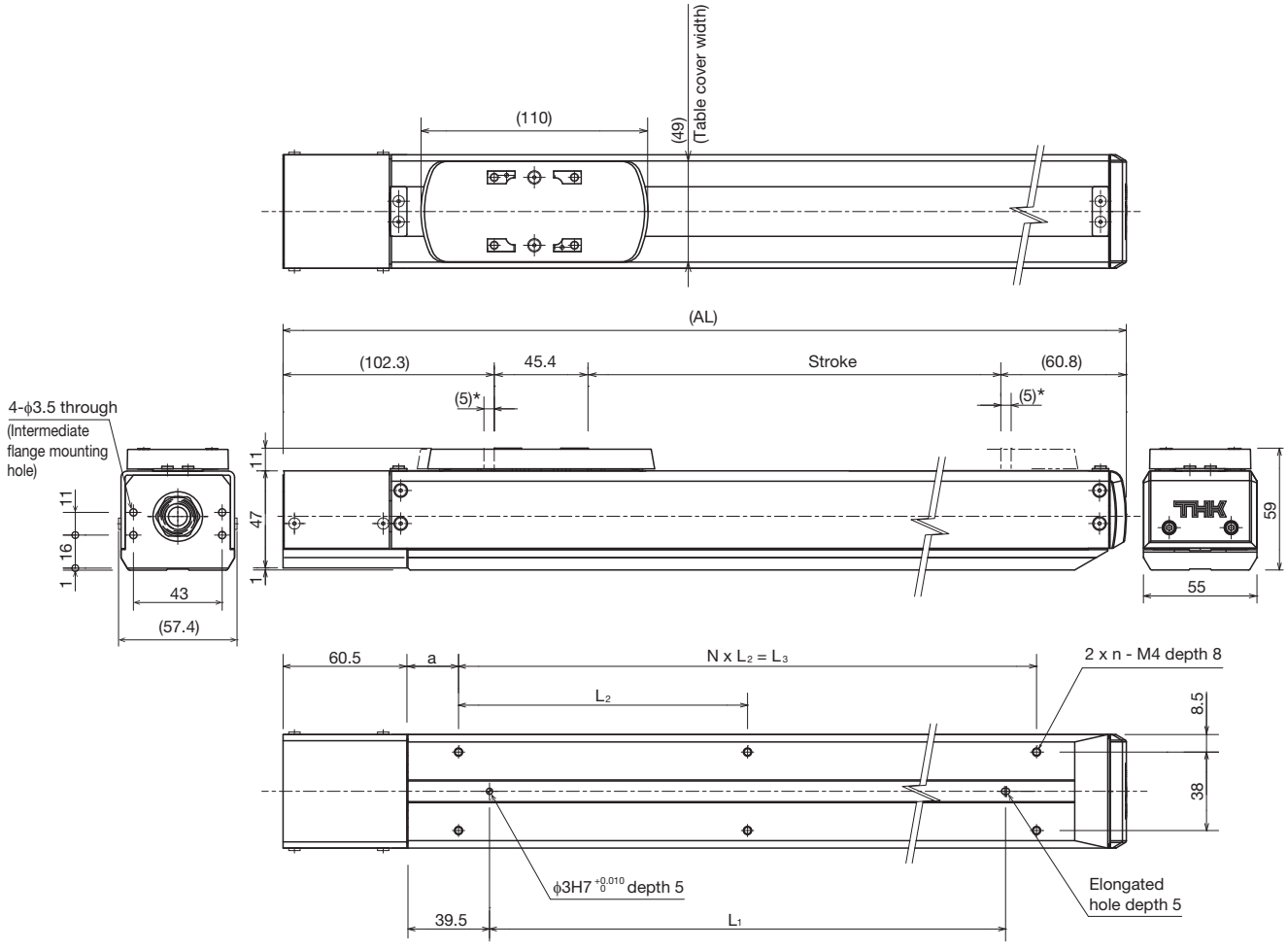
Ball screw lead [mm]	Load mass [kg]	A	B	C
6	7	180	60	500
	14	60	20	130
10	6	170	70	390
	12.5	60	20	120

Vertical mount [mm]

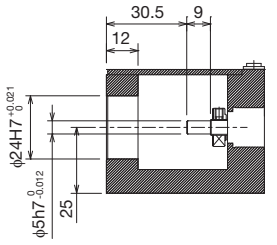
Ball screw lead [mm]	Load mass [kg]	A	C
6	3	210	210
	6	90	90
10	1.5	390	390
	3.5	180	180

* This value is the overhang length whose running life is 10,000 km for horizontal and wall mount, and 5,000 km for vertical direction.

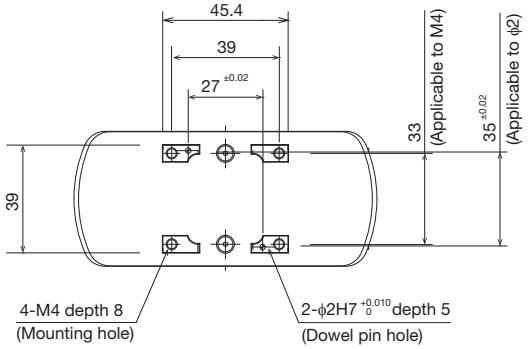
Dimensions



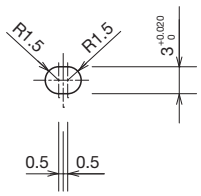
* This is a stoke between mechanical stoppers.



Detailed drawing of motor mounting part



Detailed Diagram: Table



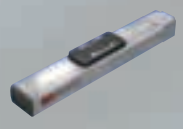
Detailed Diagram: Elongated Hole

Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)	250 (260)	300 (310)	350 (360)	400 (410)	450 (460)	500 (510)	550 (560)
Maximum speed *1, *2 [mm/s]	Ball screw lead: 6mm	300										250
	Ball screw lead: 10mm	500										400
Dimensions [mm]	AL	259	309	359	409	459	509	559	609	659	709	759
	L1	100	150	200	250	300	350	400	450	500	550	600
	L2	140	100	120	140	115	130	110	120	135	120	130
	L3	140	200	240	280	345	390	440	480	540	600	650
	a	19.5	14.5	19.5	24.5	17	19.5	19.5	24.5	19.5	14.5	14.5
Mounting pitch count	N	1	2	2	2	3	3	4	4	4	5	5
Mounting hole count	n	2	3	3	3	4	4	5	5	5	6	6
Weight [kg]		2.0	2.4	2.7	3.0	3.3	3.6	3.9	4.2	4.5	4.8	5.1

*1 The maximum speed varies depending on the motor used.

*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.

KRF6 without motor



Model Configuration

Model	Ball screw lead	Stroke	With/without motor	Intermediate flange	Option
KRF6 -	06 -	0150 -	0 -	AQ -	GR-SB-R6

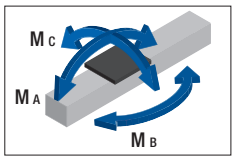
Model	Ball screw lead	Stroke	With/without motor	Intermediate flange	Option
KRF6	06: 6mm 10: 10mm	0050: 50mm to 0800: 800mm	0: Without motor 1: With motor	A0 AQ AP AR AU AT	No symbol: Red cover GR: Gray cover SB: Slider base □1 □2: Sensor

Basic Specifications

LM guide portion	Basic dynamic load rating C [N]		11600	
	Basic Static Load Rating C0 [N]		20200	
Ball screw portion	Basic dynamic load rating Ca [N]		2840	1760
	Basic Static Load Rating C0a [N]		4900	2840
	Screw shaft diameter [mm]		ϕ10	
	Ball screw lead [mm]		6	10
Bearing portion (Fixed side)	Axial direction	Basic dynamic load rating Ca [N]	2930	
		Static Permissible Load P0a [N]	2150	
Permissible rotational speed [min-1]			3000	
Starting torque *1 [N·m]			0.014	0.02
Positioning repeatability *2 [mm]			±0.020	
Lost motion *2 [mm]			0.1	
Permissible input torque [N·m]			1.035	
Static permissible moment *3 [N·m]			MA: 166 MB: 103.8 MC: 172.7	

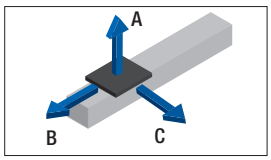
*1 The starting torque represents values when the standard grease is filled.
*2 These represent values when measured using a motor provided by THK.
*3 Moment standards for MA and MC are the top face of the table, and that for MB is the center of the table.

Static permissible moment

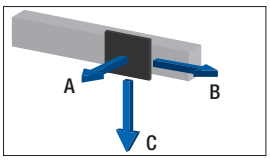


Reference Permissible Overhang Length*

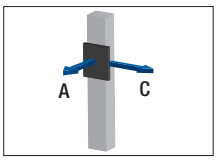
Horizontal use



Wall use



Vertical use



Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	17.5	390	50	160
	35	170	10	60
10	15	320	60	170
	30	130	10	50

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	12	200	70	600
	24	70	20	140
10	11	200	80	460
	22	70	30	120

Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
6	5	240	240
	10	100	100
10	2.5	510	510
	5	230	230

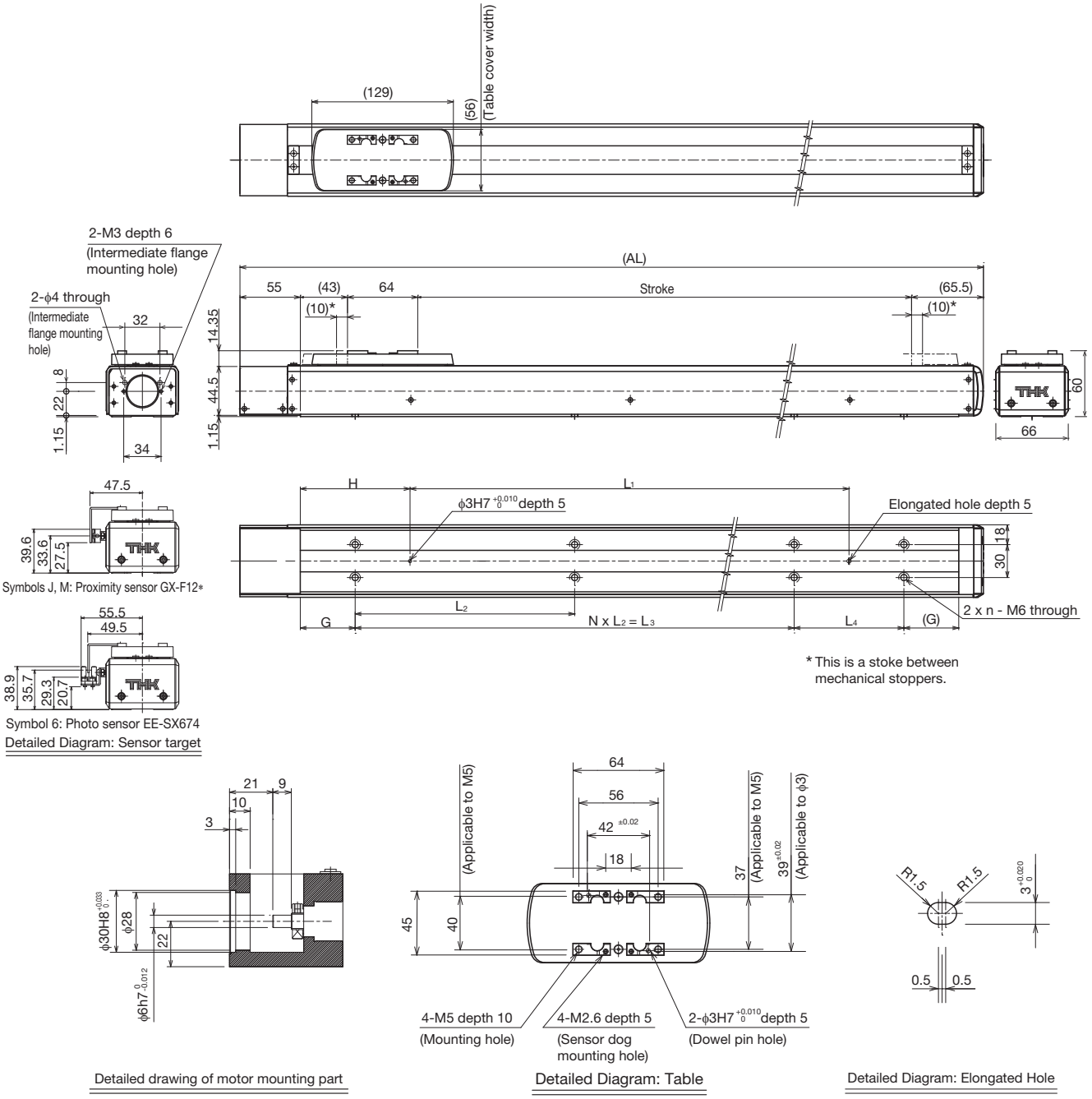
* This value is the overhang length whose running life is 10,000 km for horizontal and wall mount, and 5,000 km for vertical direction.

Dimensions

Stroke [mm] (Stroke between mechanical stoppers)		50 (70)	100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)
Maximum speed *1,*2 [mm/s]	Ball screw lead: 6mm	300							
	Ball screw lead: 10mm	500							
Dimensions [mm]	AL	277.5	327.5	377.5	427.5	477.5	527.5	577.5	627.5
	L1	100	150	200	200	250	250	300	350
	L2	100	200	200	200	200	200	200	200
	L3	100	200	200	200	200	400	400	400
	L4	-	-	-	-	100	-	-	-
	G	50	25	50	75	50	25	50	75
	H	50	50	50	75	75	100	100	100
Mounting pitch count	N	1	1	1	1	1	2	2	2
Mounting hole count	n	2	2	2	2	3	3	3	3
Weight [kg]		2.7	3.1	3.5	3.9	4.3	4.8	5.2	5.6

*1 The maximum speed varies depending on the motor used.
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.

Dimensions



Stroke [mm] (Stroke between mechanical stoppers)		450 (470)	500 (520)	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)
Maximum speed *1,*2 [mm/s]	Ball screw lead: 6mm	300		275	250	200	175	150	150
	Ball screw lead: 10mm	500		450	400	350	300	275	250
Dimensions [mm]	AL	677.5	727.5	777.5	827.5	877.5	927.5	977.5	1027.5
	L1	400	450	500	550	600	650	700	750
	L2	200	200	200	200	200	200	200	200
	L3	400	600	600	600	600	800	800	800
	L4	100	-	-	-	100	-	-	-
	G	50	25	50	75	50	25	50	75
	H	100	100	100	100	100	100	100	100
Mounting pitch count	N	2	3	3	3	3	4	4	4
Mounting hole count	n	4	4	4	4	5	5	5	5
Weight [kg]		6.0	6.4	6.8	7.2	7.6	8.0	8.4	8.8

*1 The maximum speed varies depending on the motor used.

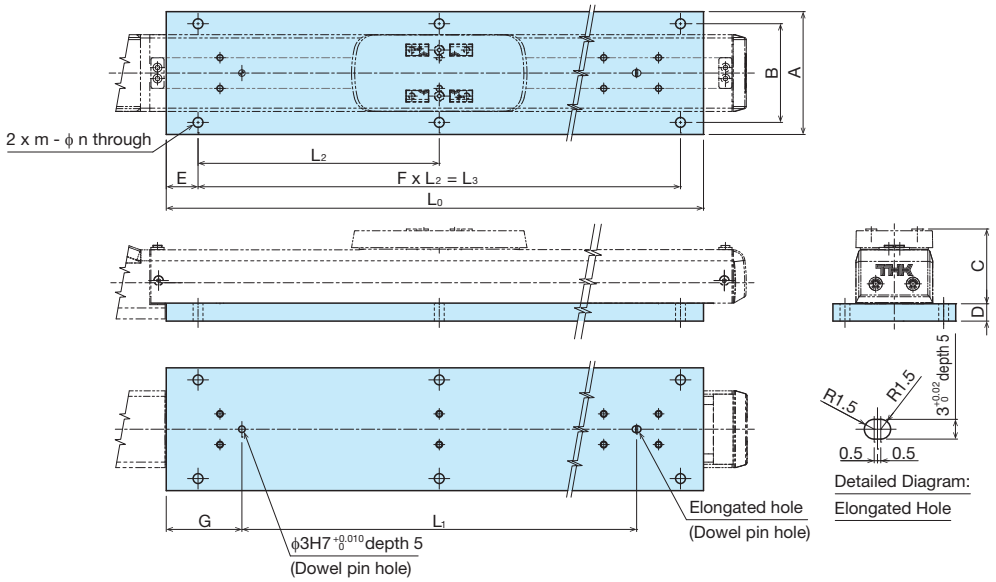
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.

Options

SB: Slider base

THK provides slider bases for installing the KRF main unit from the top face.

* The product is shipped with this optional assembled.



Unit: mm

Model	A	B	C	D
KRF3	56	45	34.1	7.9
KRF4	70	55	42.1	9.9
KRF5	80	65	49.1	9.9
KRF6	90	78	60	10

Note) When the slider base is mounted on KRF6, the height of KRF6 will be 10mm higher than the standard product due to the thickness of slider base.

		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
KRF3	L_0[mm]	145	195	245	-	-	-	-	-	-	-	-	-	-	-	-	-
	L_1[mm]	100	150	200	-	-	-	-	-	-	-	-	-	-	-	-	-
	L_2[mm]	120	85	110	-	-	-	-	-	-	-	-	-	-	-	-	-
	L_3[mm]	120	170	220	-	-	-	-	-	-	-	-	-	-	-	-	-
	E[mm]	14.5			-	-	-	-	-	-	-	-	-	-	-	-	-
	F	1	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
	G[mm]	24.5			-	-	-	-	-	-	-	-	-	-	-	-	-
	m	2	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
	n	4.5			-	-	-	-	-	-	-	-	-	-	-	-	-
KRF4	L_0[mm]	142	192	242	-	-	-	-	-	-	-	-	-	-	-	-	-
	L_1[mm]	100	150	200	-	-	-	-	-	-	-	-	-	-	-	-	-
	L_2[mm]	120	85	110	-	-	-	-	-	-	-	-	-	-	-	-	-
	L_3[mm]	120	170	220	-	-	-	-	-	-	-	-	-	-	-	-	-
	E[mm]	14.5			-	-	-	-	-	-	-	-	-	-	-	-	-
	F	1	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
	G[mm]	24.5			-	-	-	-	-	-	-	-	-	-	-	-	-
	m	2	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
	n	4.5			-	-	-	-	-	-	-	-	-	-	-	-	-
KRF5	L_0[mm]	180	230	280	330	380	430	480	530	580	630	680	-	-	-	-	-
	L_1[mm]	100	150	200	250	300	350	400	450	500	550	600	-	-	-	-	-
	L_2[mm]	140	100	120	140	115	130	110	120	135	120	130	-	-	-	-	-
	L_3[mm]	140	200	240	280	345	390	440	480	540	600	650	-	-	-	-	-
	E[mm]	19.5	15	19.5	24.5	17	19.5	19.5	24.5	19.5	14.5	14.5	-	-	-	-	-
	F	1	2	2	2	3	3	4	4	4	5	5	-	-	-	-	-
	G[mm]	39.5											-	-	-	-	-
	m	2	3	3	3	4	4	5	5	5	6	6	-	-	-	-	-
	n	4.5											-	-	-	-	-
KRF6	L_0[mm]	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950
	L_1[mm]	100	150	200	200	250	250	300	350	400	450	500	550	600	650	700	750
	L_2[mm]	100	200	130	150	170	140	150	160	170	140	160	170	180	150	170	180
	L_3[mm]	100	200	260	300	340	420	450	480	510	560	640	680	720	750	850	900
	E[mm]	50	25	20	25	30	15	25	35	45	45	30	35	40	50	25	25
	F	1	1	2	2	2	3	3	3	3	4	4	4	4	5	5	5
	G[mm]	50	50	50	75	75	100	100	100	100	100	100	100	100	100	100	100
	m	2	2	3	3	3	4	4	4	4	5	5	5	5	6	6	6
	n	5.5															

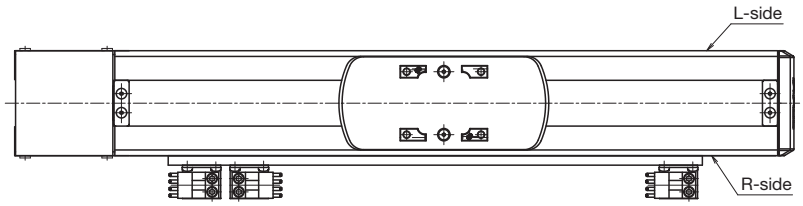
□1 □2: Sensors

Optional proximity sensors and photo sensors are available for KRF. Models equipped with a sensor are also provided with a dedicated sensor rail. Please use the sensor with the following precautions (Notes 1 to 6) in mind.

Note 1) The customer should provide a sensor target since it cannot be installed onto the actuator main unit. (Excluding KRF6)
Note 2) Sensor target for KRF6 to be shipped loose.
Note 3) Sensor rails are pre-mounted, and sensors are provided with the product.
Note 4) When optional sensor is used, note the home position may differ from the position indicated by the dimension in this catalog, in considering using them.
Note 5) Proximity sensors placed too close to each other may not work properly. In such a case, the customer should provide a different frequency type of sensor.
(For specifications, contact each manufacturer.)
Note 6) Mount the sensor/sensor rail on both sides if the stroke is not more than 100 mm.

Description	Model	Accessory	Symbol	
			□1	□2
With sensor rail	-	-	L/R	1
Photo sensor * [3 units]	EE-SX674 (OMRON Corporation)	Mounting screw, nuts, sensor rail (x 1 or 2), mounting plates (x 3), connectors (EE-1001, x 3)	L/R	6
Sensor N.O. contact [x 1] N.C. contact [x 2]	GX-F12A (Panasonic Industrial Devices SUNX Co., Ltd.) GX-F12B (Panasonic Industrial Devices SUNX Co., Ltd.)	Mounting screw, nuts, sensor rail (x 1 or 2)	L/R	J
Sensor N.O. contact [x 1] (PNP output) N.C. contact [x 2] (PNP output)	GX-F12A-P (Panasonic Industrial Devices SUNX Co., Ltd.) GX-F12B-P (Panasonic Industrial Devices SUNX Co., Ltd.)	Mounting screw, nuts, sensor rail (x 1 or 2)	L/R	M

N.O. contact: Normally open contact point
N.C. contact: Normally closed contact point
Sensors marked with a symbol "M", if combined with our controller, cannot be used as a home position sensor.
* The photo sensors can be switched between ON when lit and ON when unlit.

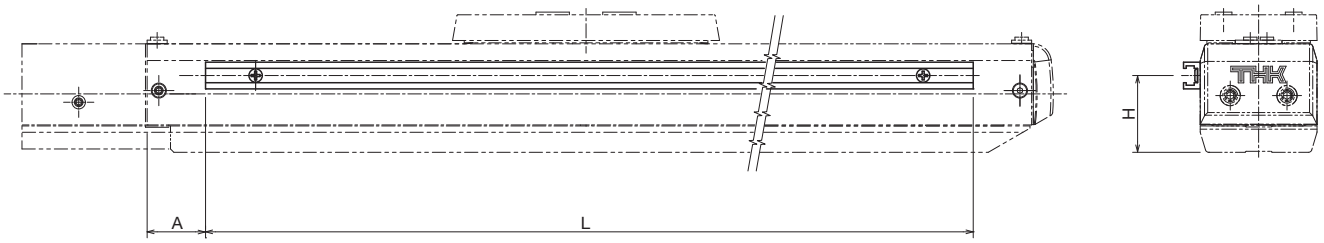


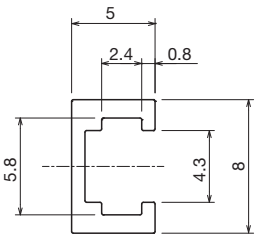
Optional: Sensor symbol

Symbol	
□1	□2
R	6

* Symbol □1 represents the mounting position for sensor rail and sensor. No symbol is given for the case of stroke 100mm or shorter.
Symbol □2 represents the types of sensors.

Symbol 1: Sensor rail

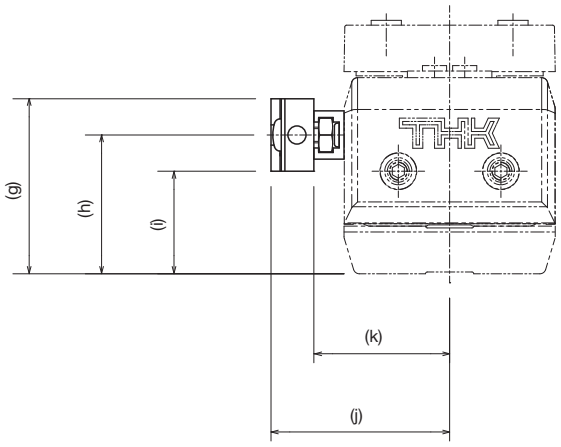




Unit: mm

Model	H	A	L
KRF3	23	17.5	Stroke +80
KRF4	32.5	17.5	
KRF5	37.5	34	
KRF6	33.7	47	

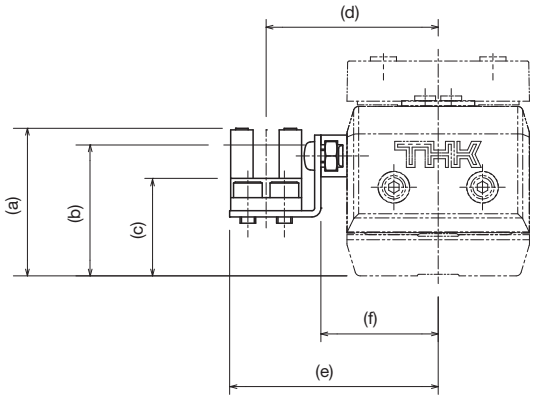
Symbols J, M: Proximity sensor GX-F12∗ (Panasonic Industrial Devices SUNX Co., Ltd.)



Unit: mm

Model	g	h	i	j	k
KRF3	29	23	17	29.6	22.5
KRF4	38.5	32.5	26.5	34.6	27.5
KRF5	43.5	37.5	31.5	39.6	32.5
KRF6	39.6	33.6	27.6	45.1	38

Symbol 6: Photo sensor EE-SX674 (OMRON Corporation)

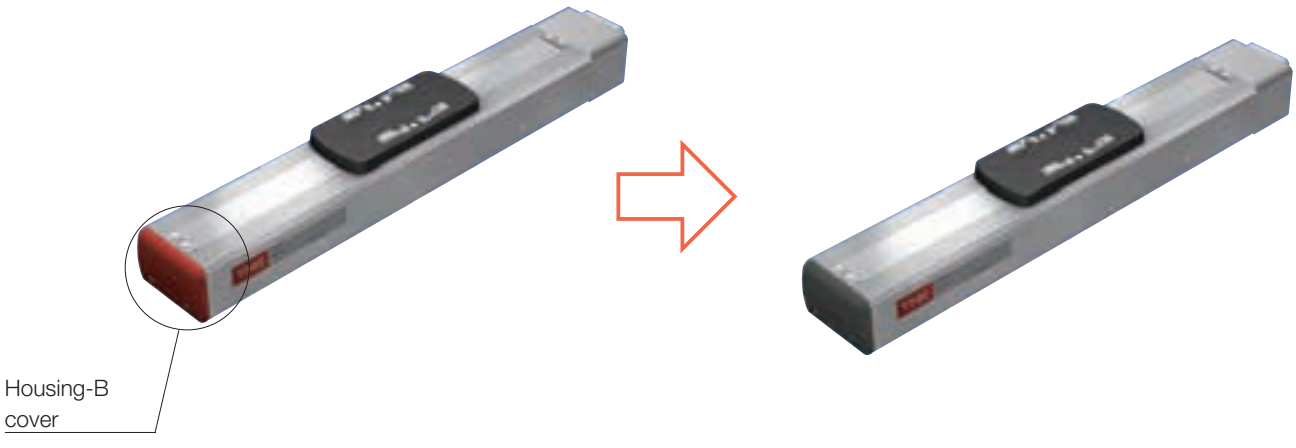


Unit: mm

Model	a	b	c	d	e	f
KRF3	28.3	25.1	18.7	33	40	22.5
KRF4	37.8	34.6	28.2	38	45	27.5
KRF5	42.8	39.6	33.2	43	50	32.5
KRF6	38.9	35.7	29.3	48.5	55.5	38

GR: Change the cover color to gray

As an option for KRF, the cover color can be changed from red to gray.



No symbol: red

When GR is selected: gray

If the GR is not included in the model configuration, cover will be red.

Intermediate flange

Several types of intermediate flanges for mounting motors are available.
If choosing "0" or "1" as with/without motor for model of type without motor, specify an intermediate flange that matches the motor used.

Table: Table of Motors Used and Corresponding Intermediate Flanges

Motor type					Rated output	Flange angle	KRF3	KRF4	KRF5	KRF6
AC servo motor	Yaskawa Electric Corporation	Σ-Vmini		SGMMV-A1	10W	□25	AN	AN	AN	-
				SGMMV-A2	20W		AN	AN	AN	-
				SGMMV-A3	30W		-	AN	AN	-
		Σ-V		SGMJV-A5	50W	□40	-	AQ	AQ	AQ
				SGMAV-A5			-	AQ	AQ	AQ
				SGMJV-01	100W		-	-	-	AQ
				SGMAV-01			-	-	-	AQ
	Mitsubishi Electric Corporation	J2-Jr		HC-AQ013	10W	□28	AM	AM	AM	-
				HC-AQ023	20W		AM	AM	AM	-
				HC-AQ033	30W		-	AM	AM	-
		J3		HG-AK0136	10W	□25	AN	AN	AN	-
				HG-AK0236	20W		AN	AN	AN	-
				HG-AK0336	30W		-	AN	AN	-
				HF-MP053	50W	□40	-	AQ	AQ	AQ
				HF-KP053			-	AQ	AQ	AQ
				HF-MP13	100W		-	-	-	AQ
				HF-KP13			-	-	-	AQ
		J4		HG-MR053	50W	□40	-	AQ	AQ	AQ
				HG-KR053			-	AQ	AQ	AQ
				HG-MR13	100W		-	-	-	AQ
				HG-KR13			-	-	-	AQ
	Tamagawa Seiki Co., Ltd.	TBL-iⅡ		TS4602	50W	□40	-	AQ	AQ	AQ
				TS4603	100W		-	-	-	AQ
	Panasonic Corporation	MINAS A5		MSMD5A	50W	□38	-	AP	AP	AP
				MSMD01	100W		-	-	-	AP
				MSME5A	50W		-	AP	AP	AP
				MSME01	100W		-	-	-	AP
		MINAS A4		MSMD5A	50W	□38	-	AP	AP	AP
				MSMD01	100W		-	-	-	AP
	Sanyo Denki Co., Ltd.	SANMOTION R		R2AA04003	30W	□40	-	AQ	AQ	AQ
				R2AA04005	50W		-	AQ	AQ	AQ
				R2AA04010	100W		-	-	-	AQ
	OMRON Corporation	OMNUC G5		R88M-K05030	50W	□40	-	AQ	AQ	AQ
				R88M-K10030	100W		-	-	-	AQ
	Fanuc Corporation	β is series		βis0.2/5000	50W	□40	-	AQ	AQ	AQ
				β is 0.3/5000	100W		-	-	-	AQ
	Keyence Corporation	SV		SV-M05	50W	□40	-	AQ	AQ	AQ
				SV-M10	100W		-	-	-	AQ
		MV		MV-M05	50W	□40	-	AQ	AQ	AQ
				MV-M10	100W		-	-	-	AQ
Stepper motor	Oriental Motor Co. Ltd.	α step		ASC3*		□28	AS	-	-	-
				AS46, ASC46, AR46, ARL46		□42	-	AR	AR	-
				AS6*, ASC66, AR6*, ARL6*		□60	-	-	-	AU
		5-phase	CSK Ⅱ	CSK52*		□28	AS	AS	AS	-
				CSK54*		□42	-	AR	AR	AR
				CSK56*		□60	-	-	-	AU
			RK	RK54*		□42	-	AR	AR	-
				RK56*		□60	-	-	-	AU
		2-phase	UMK	UMK24*		□42	-	AR	AR	-
				UMK26*		□56.4	-	-	-	AT
			CSK	CSK24*		□42	-	AR	AR	-
				CSK26*		□56.4	-	-	-	AT

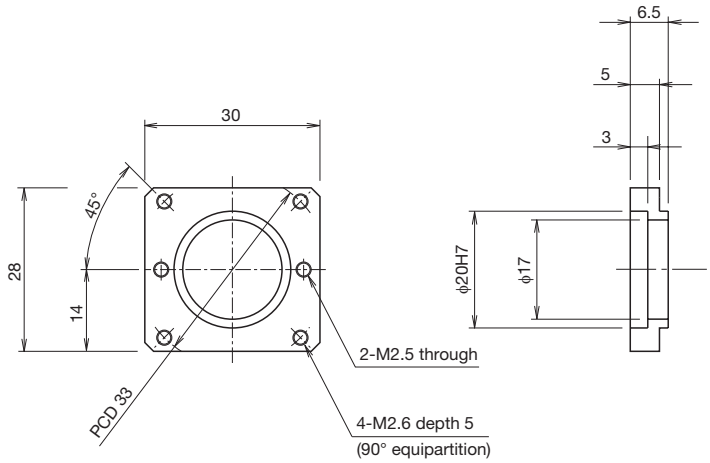
Note 1) The symbols in the table indicate the housing A and intermediate flange.
Note 2) For motor coupling, contact THK.
Note 3) If the motor's maximum torque mounted on KRF3 exceeds the permissible input torque (refer to P.2-007, 2-009, 2-011, 2-013), take safety measures, such as torque restrictions.

For KRF3

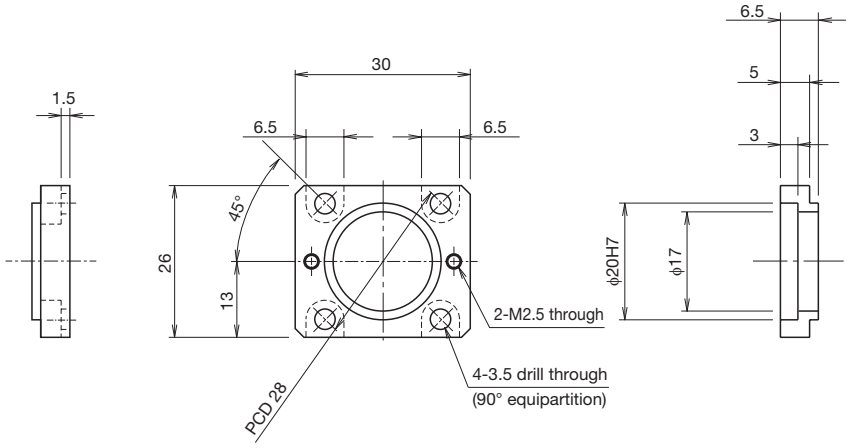
KRF*	··· Actuator model
●◇	··· ●: Housing A ◇: Intermediate flange

Intermediate flange

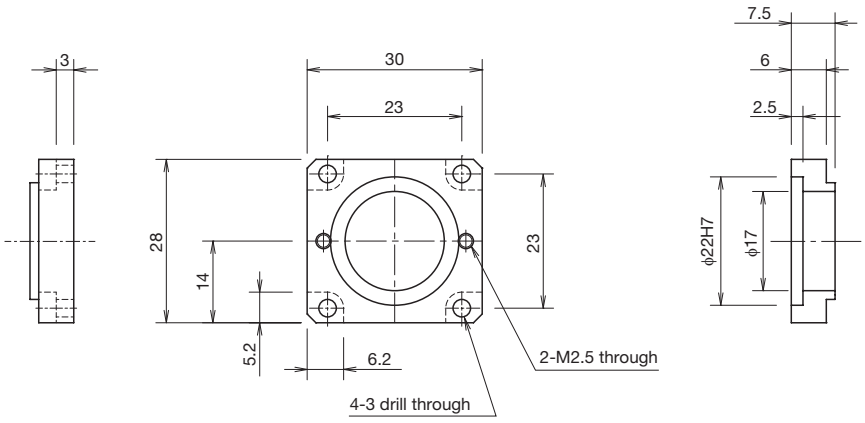
KRF3
AM



KRF3
AN



KRF3
AS



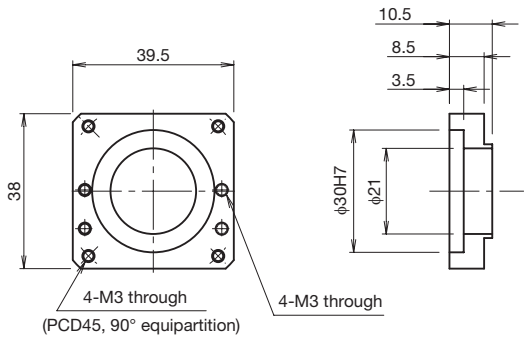
Note) For dimension of A0, see P.2-008.

For KRF4

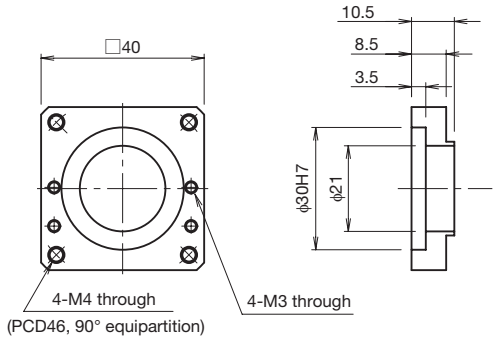
KRF*	··· Actuator model
●◇	··· ●: Housing A ◇: Intermediate flange

Intermediate flange

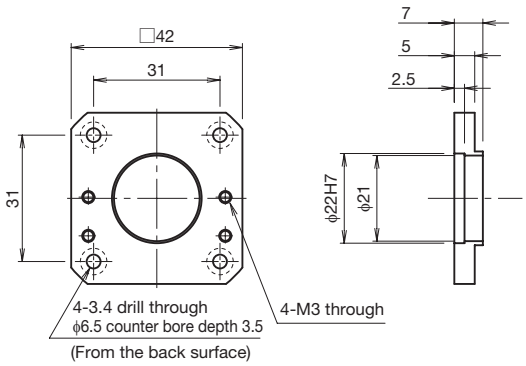
KRF4
AP



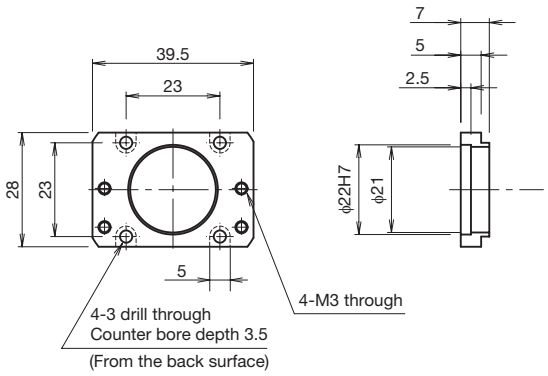
KRF4
AQ



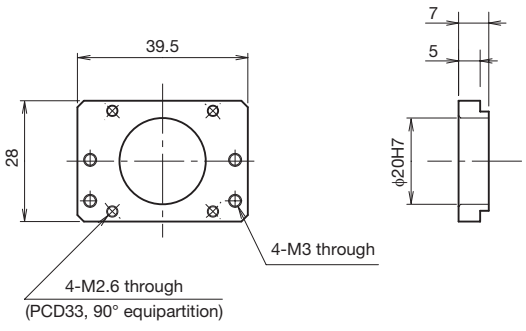
KRF4
AR



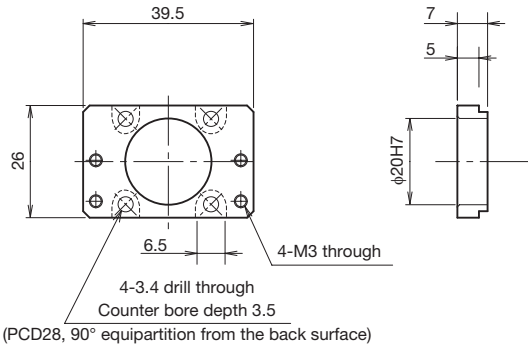
KRF4
AS



KRF4
AM



KRF4
AN



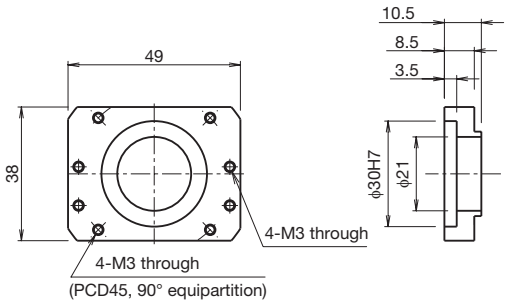
Note) For dimension of A0, see P.2-010.

For KRF5

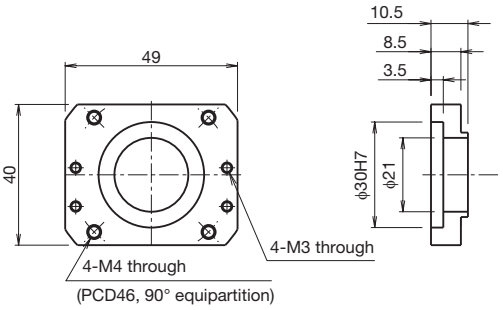
KRF*	··· Actuator model
●◇	··· ●: Housing A ◇: Intermediate flange

Intermediate flange

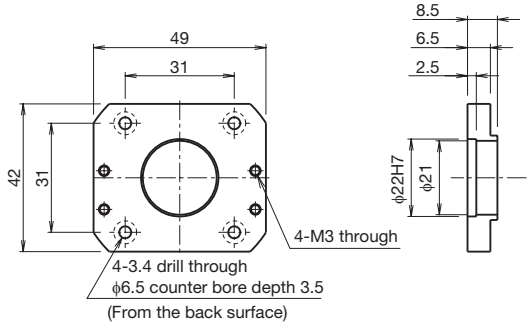
KRF5 AP



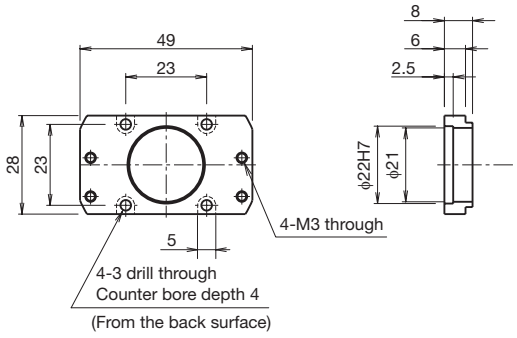
KRF5 AQ



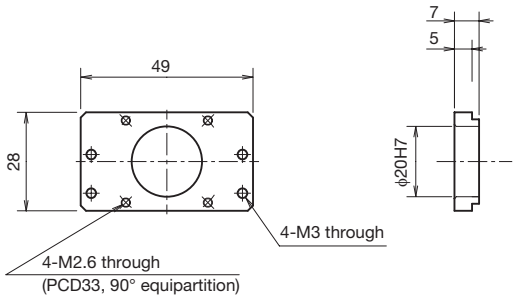
KRF5 AR



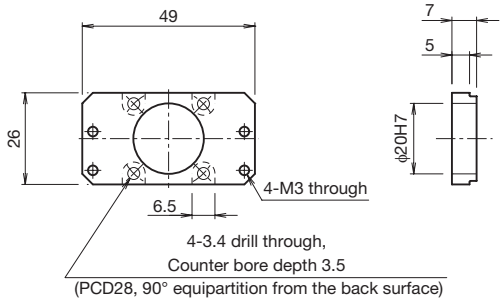
KRF5 AS



KRF5 AM



KRF5 AN



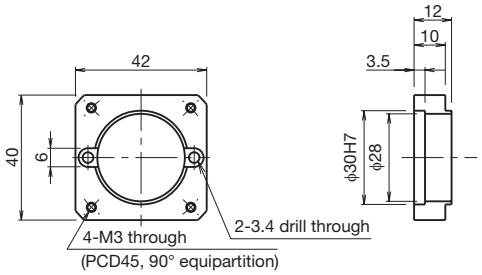
Note) For dimension of A0, see P.2-012.

For KRF6

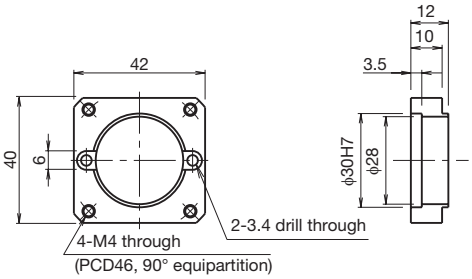
KRF*	··· Actuator model
●◇	··· ●: Housing A ◇: Intermediate flange

Intermediate flange

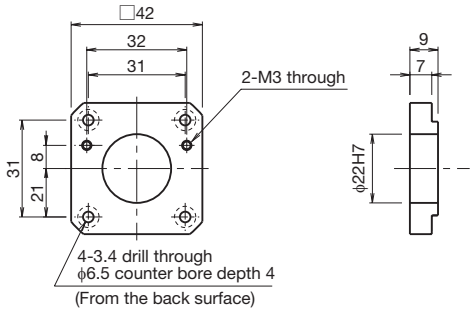
KRF6
AP



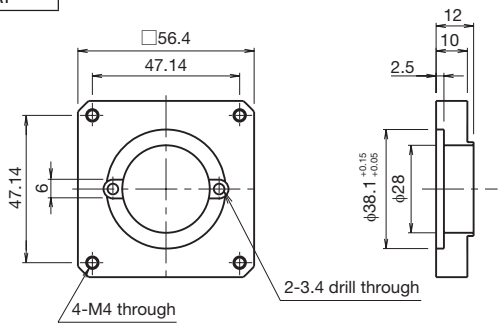
KRF6
AQ



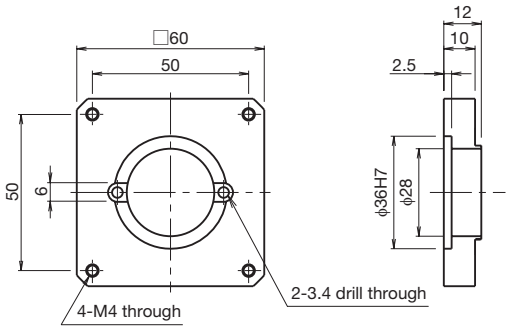
KRF6
AR



KRF6
AT



KRF6
AU



Note) For dimension of A0, see P.2-014.

Precautions on Use

Operation

- Do not unnecessarily disassemble the actuator or control device. Doing so may allow foreign objects to enter or reduce functionality.
- Do not drop or knock the actuator or control device. Doing so may cause injury or damage the unit. If the product is dropped or impacted, functionality may be reduced even if there is no surface damage.

Environment

Wrong environment can cause failures of the actuator and control devices. The best place to use the product is as follows:

- Actuator: A place with an ambient temperature from 0 to 40°C and humidity of 80% RH or lower that will not expose the product to freezing or condensation.
- A place free from corrosive gas and flammable gas.
- A place free from electrically conductive powder (such as iron powder), dust, oil mist, cutting fluid, moisture, salt, and organic solvent.
- A place free from direct sunlight and radiant heat.
- A place free from strong electric and magnetic fields.
- A place where vibration or impact is not transmitted to the unit.
- A place that is easily accessible for service and cleaning purposes.

Safety Precautions

- When the actuator is in motion or about to be in motion, do not touch any moving parts. Do not go near the actuator when it is in motion.
- Before performing installation, adjustment, checking, or services regarding and the connected peripherals, ensure that all power is disconnected. In addition, take countermeasures to prevent anyone other than the operator from turning on the power.
- If two or more people are involved in the operation, confirm the procedures such as sequences, signs, and abnormalities in advance, and appoint another person for monitoring the operation.
- Before operation, please read thoroughly and obey "Manipulating industrial robots - Safety" (JIS B8433) and "Ordinance on Industrial Safety and Health" (Ministry of Health, Labor and Welfare).
- Operation of the actuator over the torque limit value leads to damage of parts or injury. Please keep the torque limit settings of parameters within THK specifications.
- Although a stopper is installed inside the product, it is intended to limit the stroke and therefore may be damaged in case of a hard collision.

Lubrication

- Thoroughly remove anti-rust oil and feed lubricant before using the product.
- In order to effectively use the actuator, lubrication is required. Insufficient lubrication may increase abrasion on the rolling part and shorten service life.
- Do not use a mix of lubricants with different physical properties.
- Please contact THK if using special lubricants.
- When adopting oil lubrication, contact THK for details.
- The greasing interval may vary depending on the usage conditions, so THK recommends determining a greasing interval during the initial inspection.

Storage

- When storing the actuator, enclose it in a package designated by THK and store it in a horizontal orientation while avoiding high temperature, low temperature and high humidity.

Universal series

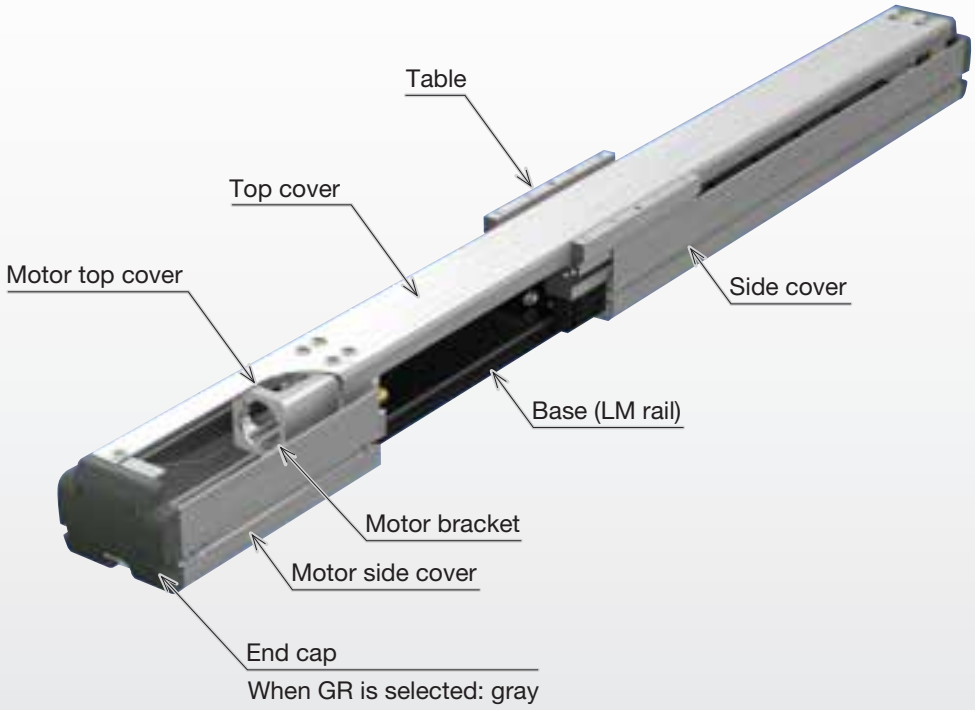
Model: US/USW

Chapter 3

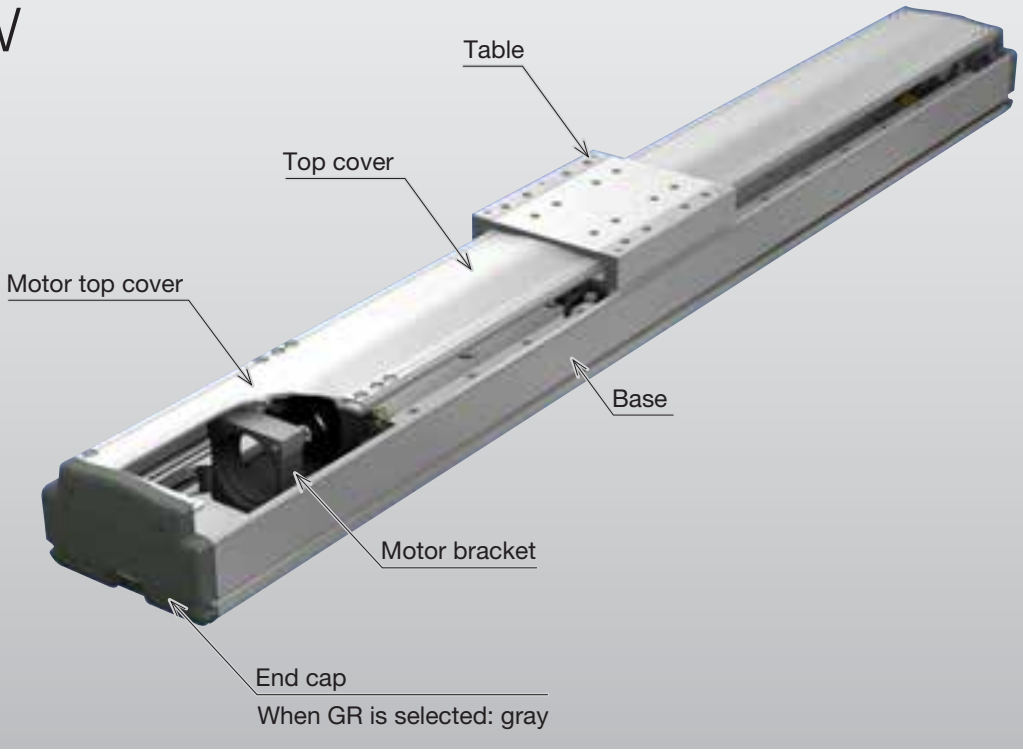
Electrical Actuator
Universal Series
US/USW

High Speed, High Load Capacity, Long Service Life

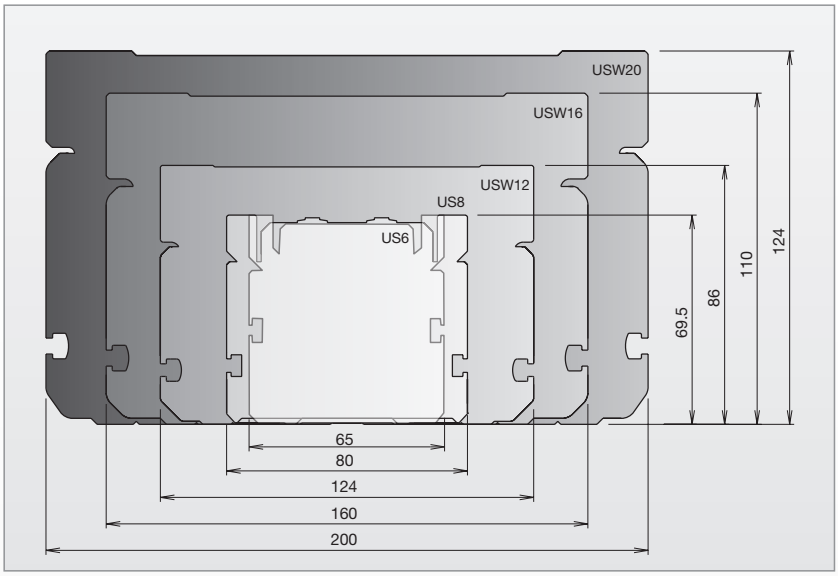
US



USW



Size range by model



Features

Long service life

Most US models have a running life of 20,000km with the maximum load capacity applied (10,000km for US6 and 8), which is the highest level of service life in the industry. LM Guide and ball screw running life can also be calculated based on usage conditions.

Long-term maintenance-free operation

Thanks to the use of Caged Ball LM Guide model SRS (US6), SHW (US8) and model SHS (USW12, 16, and 20) in a rectilinear guide, and Lubricator QZ, which supplies just the right amount of lubricant in the ball screw, this series provides long-term maintenance-free operation.

High speed

Most units in this series (US8 to USW20) accommodate twice as many types of leads for each ball screw shaft diameter. This reduces processing time and enables the device to operate at high speeds.

Smart structure

In most units the standard sensor is incorporated into the actuator, making the actuator highly compact (this does not apply to the US6). For other sensor options, the sensor is installed on the outside of the unit. US8: 1 sensor (home position); USW12, 16, and 20: 3 sensors (home position and ends).

Easy assembly

For the standard unit, both table and base have dowel pin holes, and the base has elongated holes. These facilitate installation and assembly, enabling the unit to be mounted easily. Either top face mounting or lower face mounting can be selected for the base (this applies to USW12, 16, and 20 only).

Versatile lineup

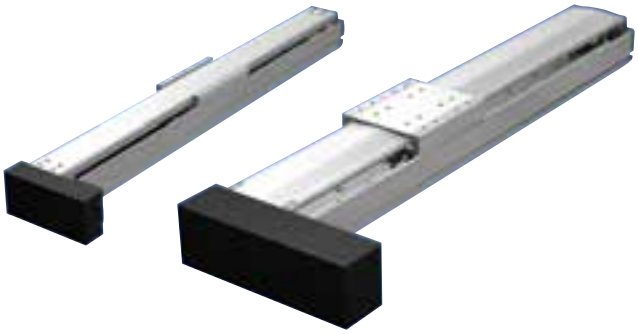
These units accommodate stroke lengths, specified in 50mm increments, ranging from 100mm to 1,700mm. Many types of ball screw leads are provided as well, enabling customers to select a unit ideally suited to their needs.

Types and Models

Direct motor coupling type

Ball screw and motor are connected using a coupling.

Motor wrap type



Motor can be folded laterally to reduce the axial dimension.

Model	Ball screw lead [mm]	Stroke [mm]	Motor rated output [W]	100	200	300	400	500	600
US6T	6	100 to 900	50			360			310
	12					720			630
	6		100			360			310
	12					720			630
US8T	5	100 to 1100	100			300			
	10					600			
	20					1200			
	30					1800			
	10		150			600			
	20					1200			
	30					1800			
USW12T	5	100 to 1100	200			300			280
	10					600			540
	20					1200			1080
	30					1800			1620
USW16T	10	100 to 1500	400			550			
	20					1100			
	40					2200			
USW20T	20	200 to 1700	750			1100			
	40					2200			

*1 The maximum speed is the value restricted by the motor rotational speed (US6 to USW12: at 3,600 min^{-1}, USW16 to USW20: 3,300 min^{-1}), or by the permissible rotational speed of the ball screw.

Maximum speed [mm/s] *1 for each stroke [mm]																							Described on
Stroke [mm]																							
700		800		900		1000		1100		1200		1300		1400		1500		1600		1700			
270	240	210	190	170																			Page 3-009
550	480	420	380	340																			
270	240	210	190	170																			
550	480	420	380	340																			
270	240	210	190	170	150	140	130	120															Page 3-017
540	480	420	380	340	310	280	250	230															
1090	960	850	760	680	610	560	510	470															
1600	1410	1250	1120	1000	910	820	750	690															
540	480	420	380	340	310	280	250	230															
1090	960	850	760	680	610	560	510	470															
1600	1410	1250	1120	1000	910	820	750	690															
250	220	190	170	160	140	130	120	110															Page 3-025
470	420	370	340	300	270	250	230	210															
950	840	750	680	610	550	500	460	420															
1430	1270	1130	1020	920	830	760	700	640															
550		500	450	410	370	330	310	280	260	240	220	210	190	180	170	160							Page 3-033
1100		1070	960	870	790	720	660	600	560	510	480	440	410	390	360	340							
2200		2150	1930	1750	1580	1440	1320	1210	1120	1030	960	890	830	770	730	680							
1100		1040	930	840	770	700	640	590	540	500	470	430	400	380	350	330	310	290	280	260			Page 3-041
2200		2080	1870	1690	1540	1400	1290	1180	1090	1010	940	870	810	760	710	670	630	590	560	530			

Model Configuration

Model	Ball screw lead	Stroke	With/without motor	Sensor	Sensor mounting position	Base mounting method
USW12RT –	05 –	0150 –	0 –	6 –	SR –	C
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) Model

- US6T
- US8T
- USW12T
- USW16T
- USW20T
- US6RT
- US8RT
- USW12RT
- USW16RT
- USW20RT

R represents motor wrap.

(2) Ball screw lead

- 05: 5mm
- 06: 6mm
- 10: 10mm
- 12: 12mm
- 20: 20mm
- 30: 30mm
- 40: 40mm

Ball screw leads you can select differ depending on models.
US6: 06, 12
US8: 05, 10, 20, 30
USW12: 05, 10, 20, 30
USW16: 10, 20, 40
USW20: 20, 40
For US8 with 150W motor capacity, you cannot select the ball screw lead 05.

(3) Stroke

- 0100: 100mm
- 0150: 150mm
- 0200: 200mm
- to
- 1700: 1700mm

US6: 0100 - 0900
US8: 0100 - 1100
USW12: 0100 - 1100
USW16: 0100 - 1500
USW20: 0200 - 1700

For US6, the maximum stroke for horizontal and vertical types is 900mm; for wall mount type, 800mm.

(4) With/without motor

- 0: Without motor
- 0B: Without motor (With brake)
- 1: With motor (Prepared by THK)
- 1B: With motor (Prepared by THK, with brake)

When 0 or 0B is selected:
Direct motor coupling type: A coupling is not provided.
Motor wrap type: Timing pulley and timing belt are provided.

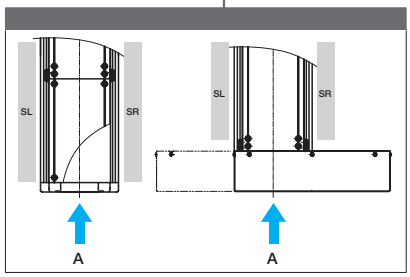
When 1 or 1B is selected:
Direct motor coupling type: Mounted parts: motor, coupling, power cable, encoder cable, electromagnetic brake cable.
Motor wrap type: Mounted parts: motor, timing belt, timing pulley
Accessories: power cable, encoder cable, electromagnetic brake cable.
The customer selects the desired motor, coupling, and cables. Recommended coupling is available; see the "Recommended Coupling" section.

(5) Sensor

- P
- Q
- N
- 6
- E
- J
- M

(6) Sensor mounting position

- No symbol: When selecting P, Q, or N
- SR: On right side as seen from side A
- SL: On left side as seen from side A



(7) Base mounting method

- T: From underside of base (tapped holes)
- C: From top of base (counter-bore holes)

For US6 and US8, you only can select "C".

Pages for detailed description

(5) Sensors	P. 3-049
(8) Motor bracket	P. 3-050

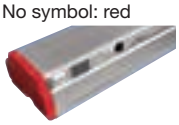
	Motor bracket	Option
–	A	– MR–GR
	(8)	(9)

Motor bracket (8)
A
B
C

Option (9)
No symbol: Red end cap
MR: Motor right-turn folded
ML: Motor left-turn folded
GR: Change the end cap color to gray
HG: Hanging jig

If you select motor wrap for model (1), select either MR or ML.
Changing end cap color:
You can change the color of an end cap to gray. However, for motor wrap, this change is only applied to an end cap on the reverse motor side.

No symbol: red

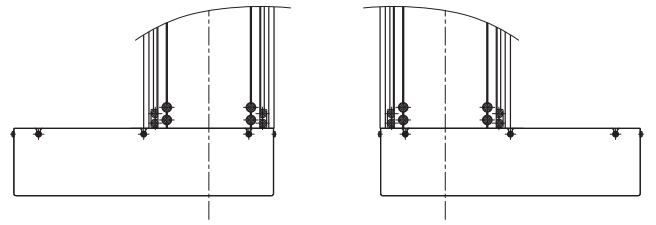


When GR is selected: gray

You can select a hanging jig only when selecting USW12, USW16 or USW20.

If the GR is not included in the model configuration, and cap will be red.

Folded direction



Option symbol ML: Left-turn return

Option symbol MR: Right-turn return

US6T Direct motor coupling

Model Configuration

Model	Ball screw lead	Stroke	With/without motor	Sensor	Sensor mounting position	Base mounting method	
US6T	– 06	– 0150	– 0	– 6	– SR	– C	–

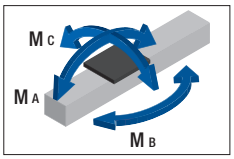
US6T	06: 6mm 12: 12mm	0100: 100mm to 0900: 900mm	0 0B 1 1B	N 6 E J M	No symbol: When selecting N SR SL	C: From top of base (counter-base holes)

Note: For US6, the maximum stroke for horizontal and vertical types is 900mm; for a wall mount type, 800mm.

Reference Basic Specifications

Motor rated output [W]				50		100	
Ball screw lead [mm]				6	12	6	12
Rated speed *1 [mm/s]				300	600	300	600
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal	0.3G	30	15	70	30
		Vertical	0.3G	7	3	14	7
Rated thrust *3 [N]				134	67	268	134
Maximum thrust *4 [N]				402	201	795	398
Electromagnetic brake retention [N]				134	67	268	134
Running life *5 [km]				10,000			
Static permissible moment *6 [N·m]				M_A: 123, M_B: 290, M_C: 138			
Positioning repeatability [mm]				±0.020			
Backlash [mm]				0.05			

Static permissible moment

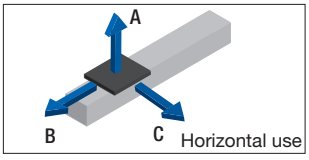


*1 At rated motor speed (3,000 min^{-1}).
*2 Load capacity and maximum speed are dependent on usage conditions.
*3 At rated motor torque.
*4 Dependent on maximum motor torque and permissible load.
*5 Conditions:
Stroke: 100mm
Acceleration and deceleration rate: 0.3G
Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate
Applied load: maximum load capacity
Center of gravity: center of top surface of table.
*6 Maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

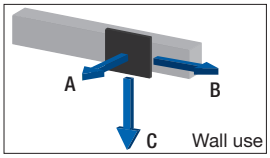
Motor bracket		Option
A	–	GR

A	No symbol: Red end cap GR: Gray end cap

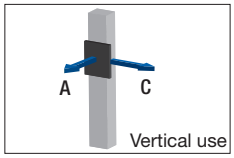
Reference Permissible Overhang Length*



Horizontal use



Wall use



Vertical use

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	17	730	210	230
	35	350	100	110
	70	170	40	40
12	7	1110	470	420
	15	630	240	210
	30	330	110	100

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	7	460	410	1640
	15	210	180	940
	30	70	60	440
12	7	410	410	1000
	15	190	180	520
	30	60	60	220

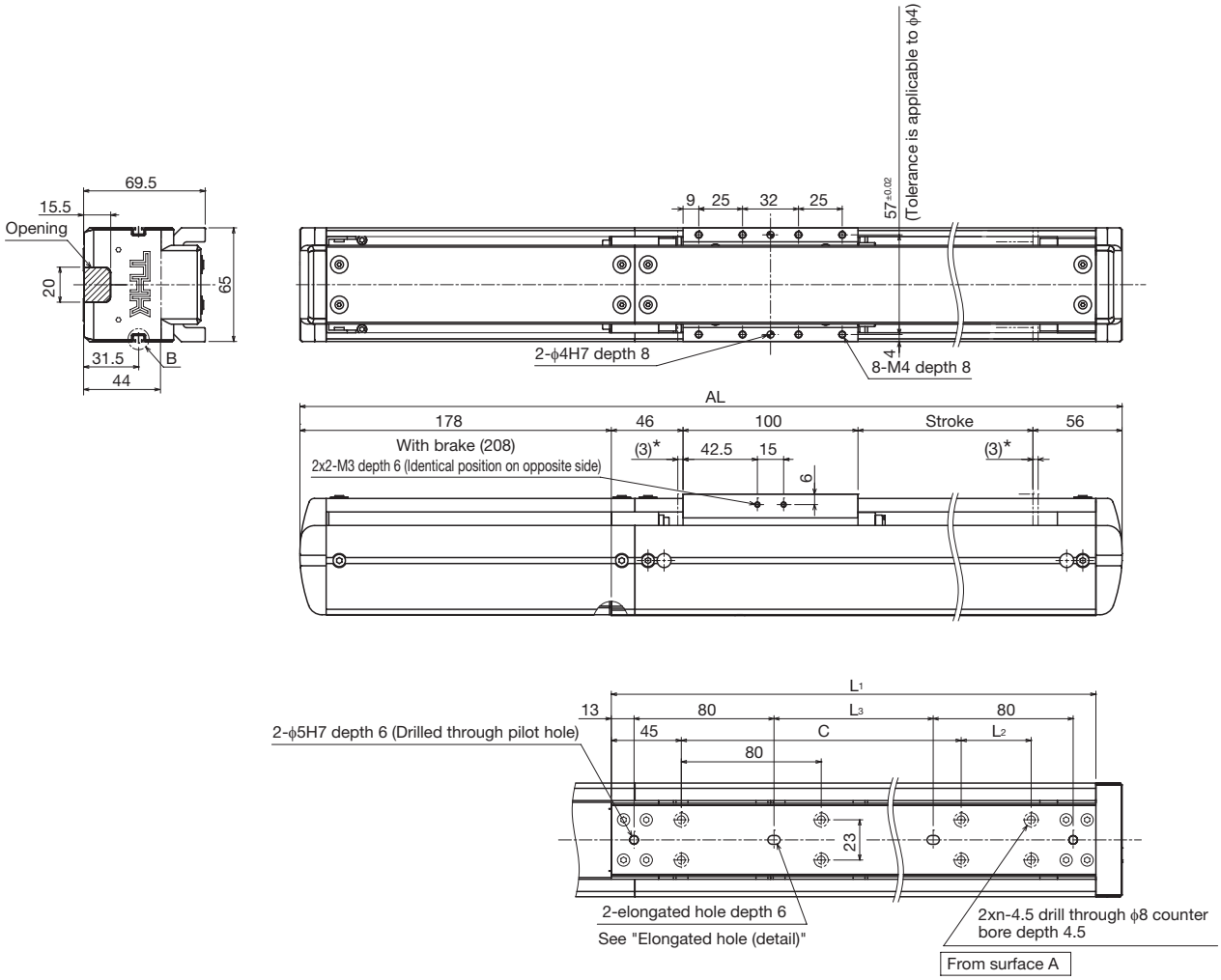
Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
6	1	1550	1540
	7	450	440
	14	220	220
12	1	1440	1430
	4	630	620
	7	400	400

* Dependent on running life of LM guide (10,000km) and on static permissible moment.
Conditions for calculation of the values above:
Stroke: 100mm
Acceleration and deceleration rate: 0.3G
Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate
Applied load: maximum load capacity.
A, B, and C represent distances measured from the center of the top surface of the table.

US6T Direct motor coupling

Dimensions

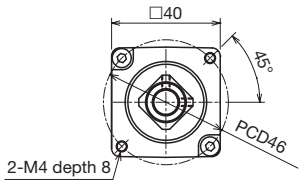


* This is a stroke between mechanical stoppers.

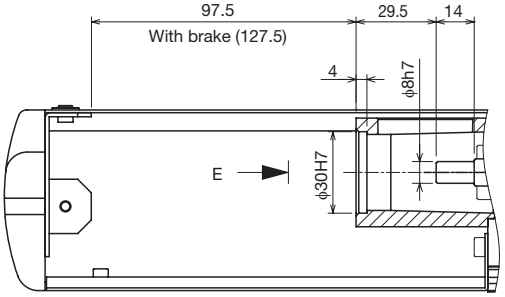
Stroke [mm] (Stroke between mechanical stoppers)		100 (106)	150 (156)	200 (206)	250 (256)	300 (306)	350 (356)	400 (406)
Maximum speed *1 *2 [mm/s]	Ball screw lead: 6mm	360						
	Ball screw lead: 12mm	720						
Dimensions [mm]	AL*3	480 (510)	530 (560)	580 (610)	630 (660)	680 (710)	730 (760)	780 (810)
	L_1	287	337	387	437	487	537	587
	L_2	40	-	40	40	-	40	-
	L_3	101	151	201	251	301	351	401
	C	160	240	240	320	400	400	480
Mounting hole count	n	4	4	5	6	6	7	7
Weight [kg]		3.0	3.2	3.4	3.6	3.8	4.1	4.3

*1 Load capacity and maximum speed vary.
*2 Dependent on permissible rotational speed of ball screw.
*3 Values when a brake is installed are shown in parentheses.

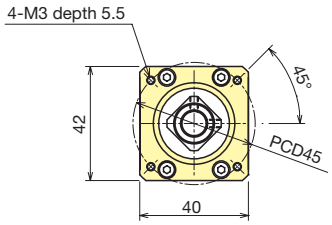
Detail



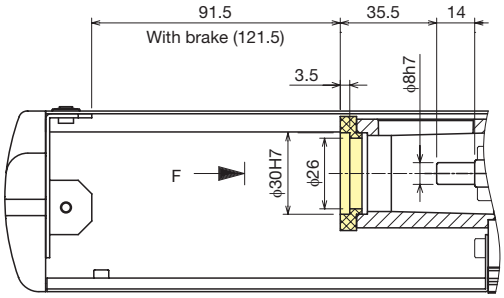
Arrow E view



Motor bracket (detail) (symbol: A)

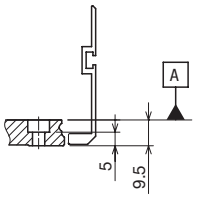


Arrow F view

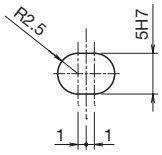


Motor bracket (detail) (symbol: B)

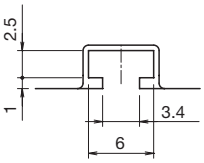
See page 3-050, "Motor Brackets," for a list of applicable motors.



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	450 (456)	500 (506)	550 (556)	600 (606)	650 (656)	700 (706)	750 (756)	800 (806)	850 (856)	900 (906)
	360				310	270	240	210	190	170
	720				630	550	480	420	380	340
	830 (860)	880 (910)	930 (960)	980 (1010)	1030 (1060)	1080 (1110)	1130 (1160)	1180 (1210)	1230 (1260)	1280 (1310)
	637	687	737	787	837	887	937	987	1037	1087
	-	40	-	40	40	-	40	-	-	40
	451	501	551	601	651	701	751	801	851	901
	560	560	640	640	720	800	800	880	960	960
	8	9	9	10	11	11	12	12	13	14
	4.5	4.7	4.9	5.1	5.3	5.5	5.7	5.9	6.2	6.4

US6RT Motor wrap

Model Configuration

Model	Ball screw lead	Stroke	With/without motor	Sensor	Sensor mounting position	Base mounting method	
US6RT	– 06	– 0150	– 0	– 6	– SL	– C	–

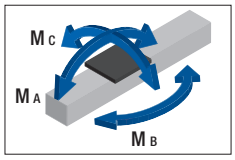
US6RT	06: 6mm 12: 12mm	0100: 100mm to 0900: 900mm	0 0B 1 1B	N 6 E J M	No symbol: When selecting N SR SL	C: From top of base (counter-base holes)

Note: For US6, the maximum stroke for horizontal and vertical types is 900mm; for a wall mount type, 800mm.

Reference Basic Specifications

Motor rated output [W]				50		100	
Ball screw lead [mm]				6	12	6	12
Rated speed *1 [mm/s]				300	600	300	600
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal	0.3G	30	15	70	30
		Vertical	0.3G	7	3	14	7
Rated thrust *3 [N]				134	67	268	134
Maximum thrust *4 [N]				402	201	795	398
Electromagnetic brake retention [N]				134	67	268	134
Running life *5 [km]				10,000			
Static permissible moment *6 [N·m]				M_A: 123, M_B: 290, M_C: 138			
Positioning repeatability [mm]				±0.020			
Backlash [mm]				0.05			

Static permissible moment



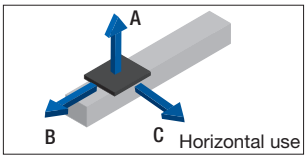
*1 At rated motor speed (3,000 min^{-1}).
*2 Load capacity and maximum speed are dependent on usage conditions.
*3 At rated motor torque.
*4 Dependent on maximum motor torque and permissible load.
*5 Conditions:
Stroke: 100mm
Acceleration and deceleration rate: 0.3G
Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate
Applied load: maximum load capacity
Center of gravity: center of top surface of table.
*6 Maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

Motor bracket		Option
A	–	MR–GR

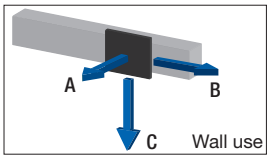
A	MR: Motor right-turn folded
B	ML: Motor left-turn folded
	GR: Gray end cap

Note: If the GR is not included in the model configuration, cover will be red.

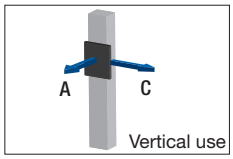
Reference Permissible Overhang Length*



Horizontal use



Wall use



Vertical use

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	17	730	210	230
	35	350	100	110
	70	170	40	40
12	7	1110	470	420
	15	630	240	210
	30	330	110	100

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	7	460	410	1640
	15	210	180	940
	30	70	60	440
12	7	410	410	1000
	15	190	180	520
	30	60	60	220

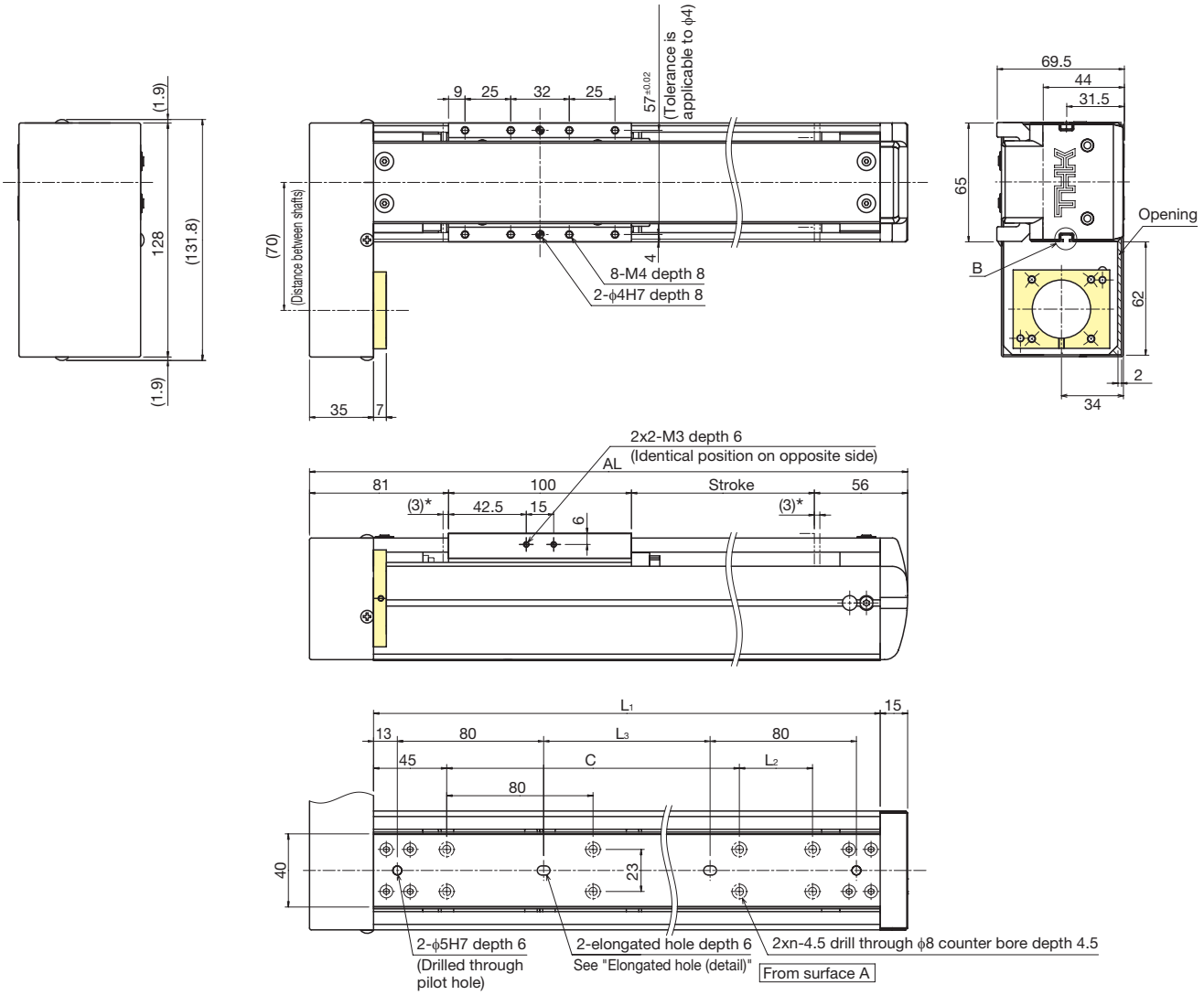
Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
6	1	1550	1540
	7	450	440
	14	220	220
12	1	1440	1430
	4	630	620
	7	400	400

* Dependent on running life of LM guide (10,000km) and on static permissible moment.
Conditions for calculation of the values above:
Stroke: 100mm
Acceleration and deceleration rate: 0.3G
Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate
Applied load: maximum load capacity.
A, B, and C represent distances measured from the center of the top surface of the table.

US6RT Motor wrap

Dimensions

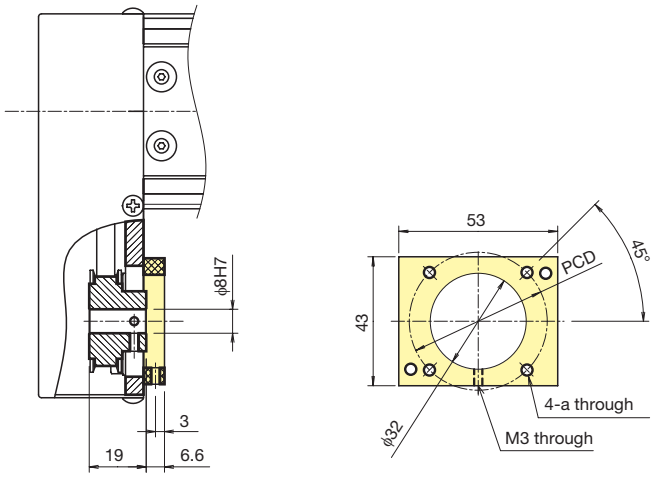


* This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)		100 (106)	150 (156)	200 (206)	250 (256)	300 (306)	350 (356)	400 (406)	
Maximum speed *1 *2 [mm/s]	Ball screw lead: 6mm	360							
	Ball screw lead: 12mm	720							
Dimensions [mm]	AL	337	387	437	487	537	587	637	
	L_1	287	337	387	437	487	537	587	
	L_2	40	-	40	40	-	40	-	
	L_3	101	151	201	251	301	351	401	
	C	160	240	240	320	400	400	480	
Mounting hole count	n	4	4	5	6	6	7	7	
Weight [kg]		3.0	3.2	3.4	3.6	3.8	4.0	4.2	

*1 Load capacity and maximum speed vary.
*2 Dependent on permissible rotational speed of ball screw.

Detail

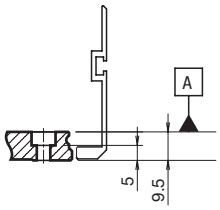


Motor bracket (detail) (symbol: A, B)

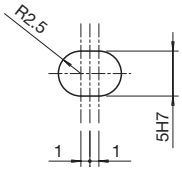
■Motor bracket specifications [mm]

Symbol	a	PCD
A	M4	46
B	M3	45

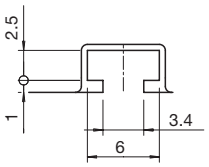
See page 3-050, "Motor Brackets," for a list of applicable motors.



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	450 (456)	500 (506)	550 (556)	600 (606)	650 (656)	700 (706)	750 (756)	800 (806)	850 (856)	900 (906)
360					320	270	240	210	190	170
720					640	550	480	430	380	340
	687	737	787	837	887	937	987	1037	1087	1137
	637	687	737	787	837	887	937	987	1037	1087
	-	40	-	40	40	-	40	-	-	40
	451	501	551	601	651	701	751	801	851	901
	560	560	640	640	720	800	800	880	960	960
	8	9	9	10	11	11	12	12	13	14
	4.4	4.7	4.9	5.1	5.3	5.5	5.7	5.9	6.1	6.3

US8T Direct motor coupling

Model Configuration

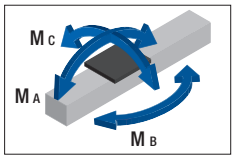
Model	Ball screw lead	Stroke	With/without motor	Sensor	Sensor mounting position	Base mounting method	
US8T	– 05	– 0150	– 0	– 6	– SR	– C	–

US8T	05: 5mm	0100: 100mm	0	P	No symbol: When selecting P, Q, or N	C: From top of base (counter-base holes)
	10: 10mm	to	0B	Q	SR	
	20: 20mm	1100: 1100mm	1	N	SL	
	30: 30mm		1B	6		
				E		
				J		
				M		

Reference Basic Specifications

Motor rated output [W]				100				150		
Ball screw lead [mm]				5	10	20	30	10	20	30
Rated speed *1 [mm/s]				250	500	1000	1500	500	1000	1500
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal	0.3G	80	40	20	8	60	30	12
		Vertical	0.3G	16*3	8	4	2	12	6	3
Rated thrust *4 [N]				322	161	80	54	240	120	80
Maximum thrust *5 [N]				955	478	239	159	719	359	240
Electromagnetic brake retention [N]				322	161	80	54	161	80	54
Running life *6 [km]				10,000						
Static permissible moment *7 [N·m]				M_A: 287, M_B: 235, M_C: 226						
Positioning repeatability [mm]				±0.020						
Backlash [mm]				0.05						

Static permissible moment

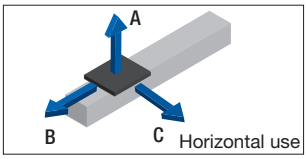


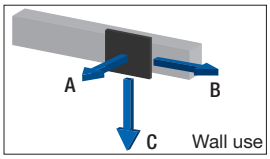
*1 At rated motor speed (3,000 min^{-1}).
*2 Load capacity and maximum speed are dependent on usage conditions.
*3 When acceleration and deceleration rate is 0.2G.
*4 At rated motor torque.
*5 Dependent on maximum motor torque and permissible load.
*6 Conditions:
Stroke: 100mm
Acceleration and deceleration rate: 0.3G (ball screw lead 5mm, 0.2G vertical only)
Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate
Applied load: maximum load capacity
Center of gravity: center of top surface of table.
*7 Maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

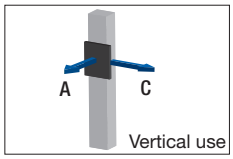
Motor bracket		Option
A	–	GR

A	No symbol: Red end cap
B	GR: Gray end cap

Reference Permissible Overhang Length*







Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
5	20	1610	370	340
	40	970	190	170
	80	520	80	70
10	20	1190	370	310
	40	680	190	150
	60	340	120	100
20	10	1860	660	560
	20	1190	370	310
	30	870	190	210
30	4	2000	1220	1070
	8	2000	780	670
	12	1670	570	490

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
5	20	280	310	1410
	40	120	120	750
	80	20	20	250
10	20	280	310	1010
	40	120	120	510
	60	50	60	290
20	10	550	590	1690
	20	280	310	1010
	30	170	190	700
30	4	1080	1150	2000
	8	660	710	1940
	12	470	510	1490

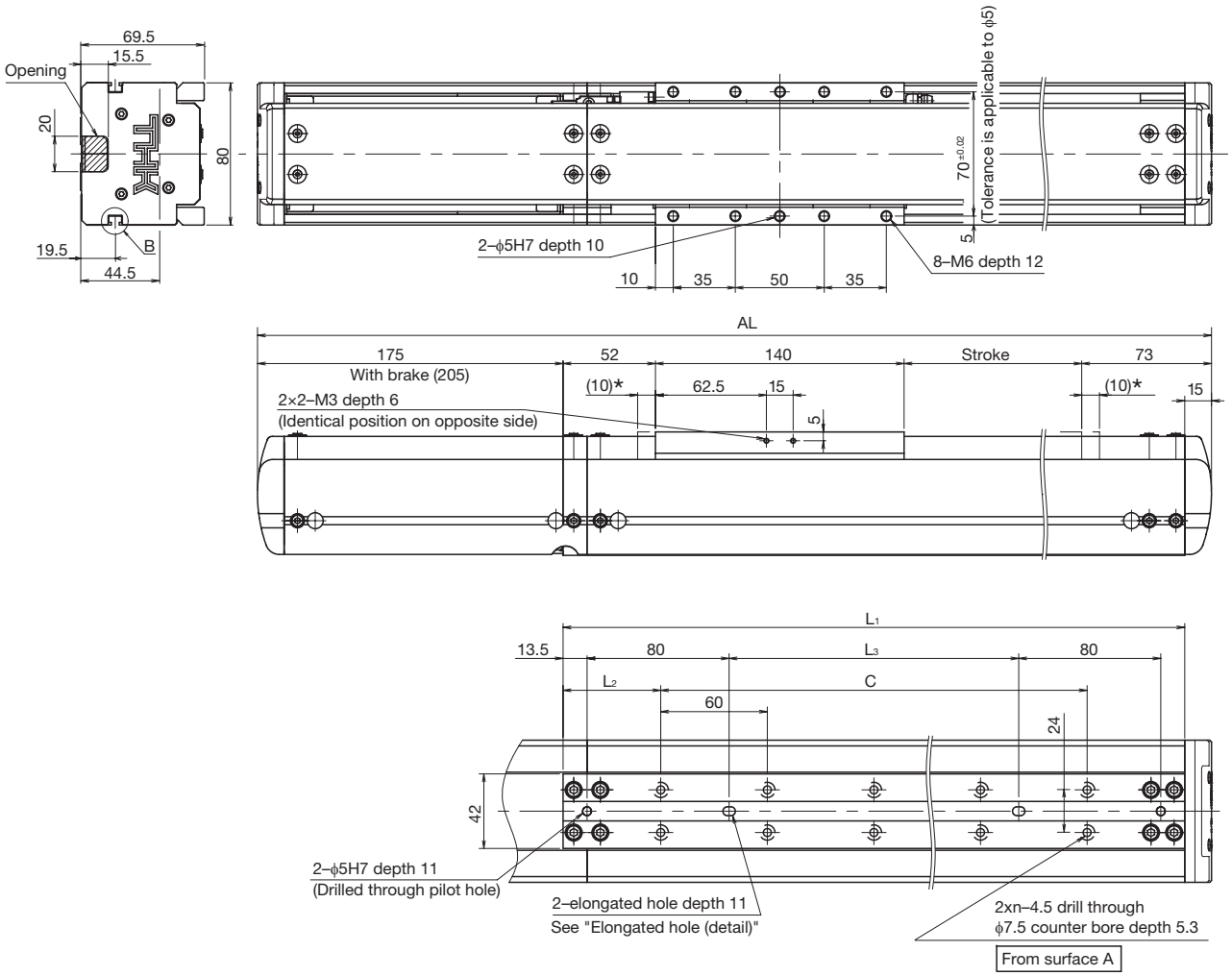
Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
5	4	1190	1180
	8	760	750
	16	440	430
10	4	1150	1140
	8	720	720
	12	530	520
20	2	1690	1680
	4	1150	1140
	6	890	880
30	1	2000	2000
	2	1690	1680
	3	1360	1350

*Dependent on running life of LM guide (10,000km) and on static permissible moment.
Conditions for calculation of the values above:
Stroke: 100mm
Acceleration and deceleration rate: 0.3G
Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate
Applied load: maximum load capacity.
A, B, and C represent distances measured from the center of the top surface of the table.

US8T Direct motor coupling

Dimensions

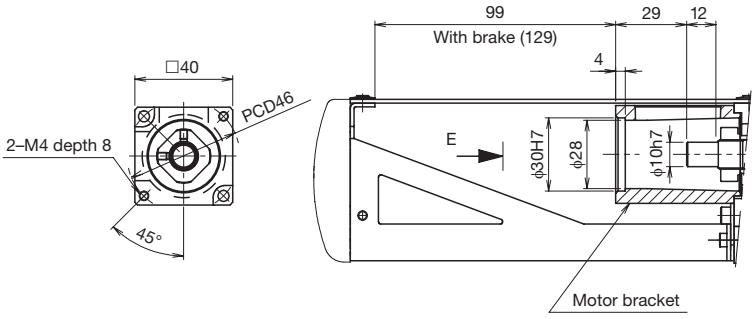


* This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)			100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)
Maximum speed *1 *2 [mm/s]	Ball screw lead	5mm	300								
		10mm	600								
		20mm	1200								
		30mm	1800								
Dimensions [mm]	AL*3		540 (570)	590 (620)	640 (670)	690 (720)	740 (770)	790 (820)	840 (870)	890 (920)	940 (970)
	L_1		350	400	450	500	550	600	650	700	750
	L_2		55	50	45	40	35	60	55	50	45
	L_3		163	213	263	313	363	413	463	513	563
	C		240	300	360	420	480	480	540	600	660
Mounting hole count	n		5	6	7	8	9	9	10	11	12
Weight [kg]			5.6	5.8	6.1	6.4	6.7	7	7.3	7.6	7.8

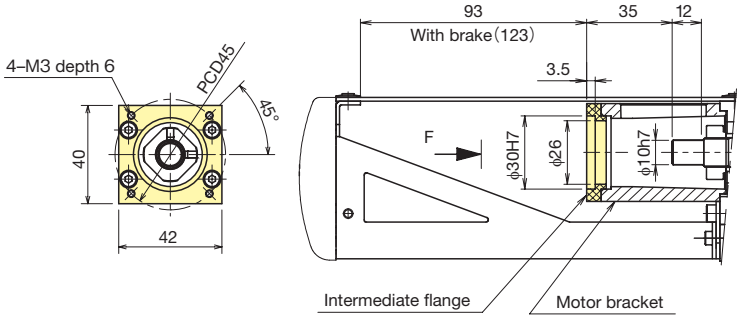
*1 Load capacity and maximum speed vary.
*2 Dependent on permissible rotational speed of ball screw.
*3 Values when a brake is installed are shown in parentheses.

Detail



Arrow E view

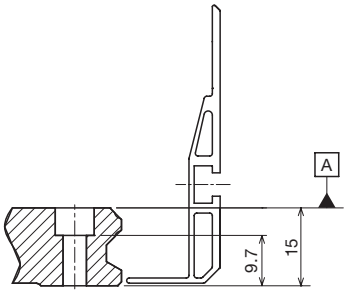
Motor bracket (detail) (symbol: A)



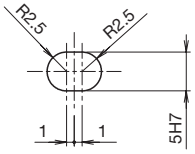
Arrow F view

Motor bracket (detail) (symbol: B)

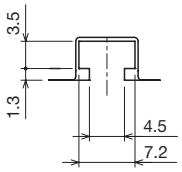
See page 3-050, "Motor Brackets," for a list of applicable motors.



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)
		300		270	240	210	190	170	150	140	130	120
		600		540	480	420	380	340	310	280	250	230
		1200		1090	960	850	760	680	610	560	510	470
		1800		1600	1410	1250	1120	1000	910	820	750	690
	990 (1020)	1040 (1070)	1090 (1120)	1140 (1170)	1190 (1220)	1240 (1270)	1290 (1320)	1340 (1370)	1390 (1420)	1440 (1470)	1490 (1520)	1540 (1570)
	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350
	40	35	60	55	50	45	40	35	60	55	50	45
	613	663	713	763	813	863	913	963	1013	1063	1113	1163
	720	780	780	840	900	960	1020	1080	1080	1140	1200	1260
	13	14	14	15	16	17	18	19	19	20	21	22
	8.1	8.4	8.6	8.9	9.1	9.4	9.6	9.9	10.2	10.4	10.7	10.9

US8RT Motor wrap

Model Configuration

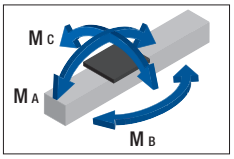
Model	Ball screw lead	Stroke	With/without motor	Sensor	Sensor mounting position	Base mounting method	
US8RT	– 05	– 0150	– 0	– 6	– SL	– C	–

US8RT	05: 5mm	0100: 100mm	0	P	No symbol: When selecting P, Q, or N	C: From top of base (counter-base holes)
	10: 10mm	to	0B	Q	SR	
	20: 20mm	1100: 1100mm	1	N	SL	
	30: 30mm		1B	6		
				E		
				J		
				M		

Reference Basic Specifications

Motor rated output [W]				100				150		
Ball screw lead [mm]				5	10	20	30	10	20	30
Rated speed *1 [mm/s]				250	500	1000	1500	500	1000	1500
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal	0.3G	80	40	20	8	60	30	12
		Vertical	0.3G	16*3	8	4	2	12	6	3
Rated thrust *4 [N]				322	161	80	54	240	120	80
Maximum thrust *5 [N]				955	478	239	159	719	359	240
Electromagnetic brake retention [N]				322	161	80	54	161	80	54
Running life *6 [km]				10,000						
Static permissible moment *7 [N·m]				M_A: 287, M_B: 235, M_C: 226						
Positioning repeatability [mm]				±0.020						
Backlash [mm]				0.05						

Static permissible moment



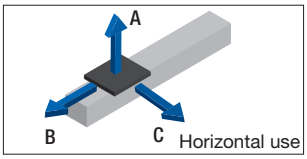
*1 At rated motor speed (3,000 min^{-1}).
*2 Load capacity and maximum speed are dependent on usage conditions.
*3 When acceleration and deceleration rate is 0.2G.
*4 At rated motor torque.
*5 Dependent on maximum motor torque and permissible load.
*6 Conditions:
Stroke: 100mm
Acceleration and deceleration rate: 0.3G (ball screw lead 5mm, 0.2G vertical only)
Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate
Applied load: maximum load capacity
Center of gravity: center of top surface of table.
*7 Maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

Motor bracket		Option
A	–	MR–GR

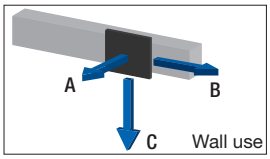
A	MR: Motor right-turn folded
B	ML: Motor left-turn folded
	GR: Gray end cap

Note: If the GR is not included in the model configuration, cover will be red.

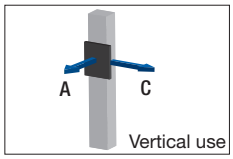
Reference Permissible Overhang Length*



Horizontal use



Wall use



Vertical use

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
5	20	1610	370	340
	40	970	190	170
	80	520	80	70
10	20	1190	370	310
	40	680	190	150
	60	340	120	100
20	10	1860	660	560
	20	1190	370	310
	30	870	190	210
30	4	2000	1220	1070
	8	2000	780	670
	12	1670	570	490

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
5	20	280	310	1410
	40	120	120	750
	80	20	20	250
10	20	280	310	1010
	40	120	120	510
	60	50	60	290
20	10	550	590	1690
	20	280	310	1010
	30	170	190	700
30	4	1080	1150	2000
	8	660	710	1940
	12	470	510	1490

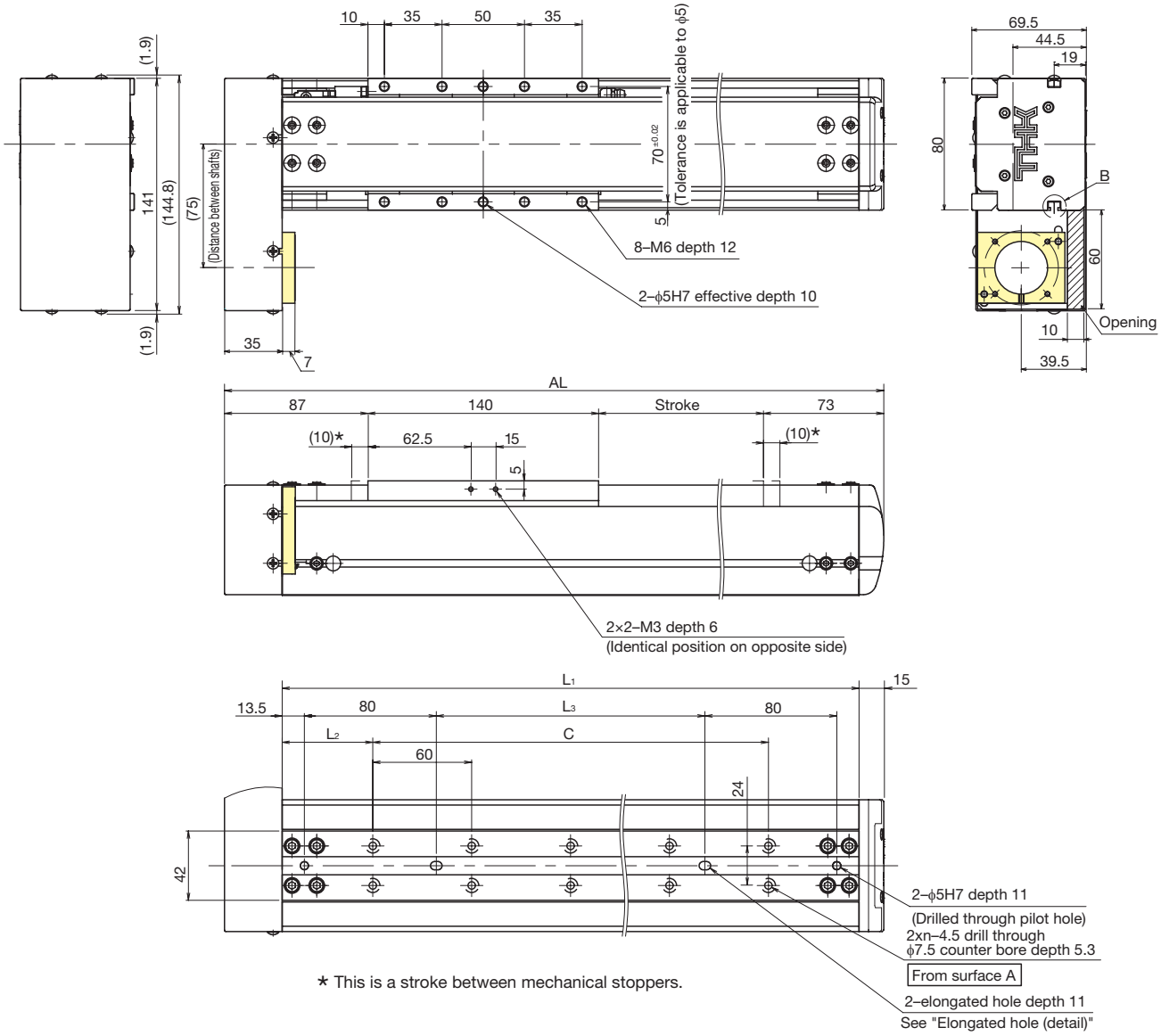
Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
5	4	1190	1180
	8	760	750
	16	440	430
10	4	1150	1140
	8	720	720
	12	530	520
20	2	1690	1680
	4	1150	1140
	6	890	880
30	1	2000	2000
	2	1690	1680
	3	1360	1350

*Dependent on running life of LM guide (10,000km) and on static permissible moment.
Conditions for calculation of the values above:
Stroke: 100mm
Acceleration and deceleration rate: 0.3G
Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate
Applied load: maximum load capacity.
A, B, and C represent distances measured from the center of the top surface of the table.

US8RT Motor wrap

Dimensions

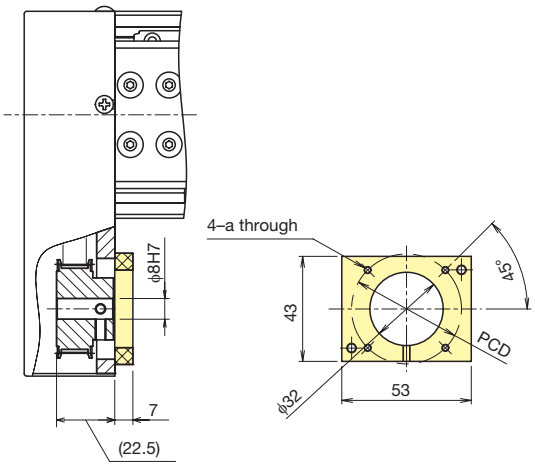


* This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)			100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)
Maximum speed *1 *2 [mm/s]	Ball screw lead	5mm	300								
		10mm	600								
		20mm	1200								
		30mm	1800								
Dimensions [mm]	AL		400	450	500	550	600	650	700	750	800
	L_1		350	400	450	500	550	600	650	700	750
	L_2		55	50	45	40	35	60	55	50	45
	L_3		163	213	263	313	363	413	463	513	563
	C		240	300	360	420	480	480	540	600	660
Mounting hole count	n		5	6	7	8	9	9	10	11	12
Weight [kg]			5.8	6	6.3	6.6	6.9	7.2	7.5	7.7	8

*1 Load capacity and maximum speed vary.
*2 Dependent on permissible rotational speed of ball screw.

Detail

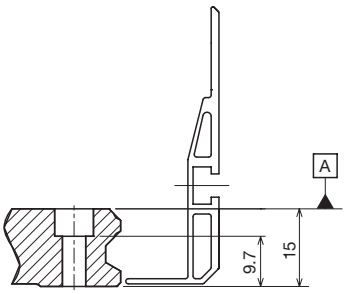


Motor bracket (detail) (symbol: A, B)

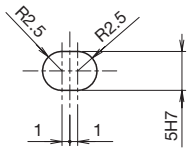
■Motor bracket specifications [mm]

Symbol	a	PCD
A	M4	46
B	M3	45

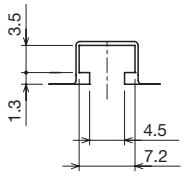
See page 3-050, "Motor Brackets," for a list of applicable motors.



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)
		300		270	240	210	190	170	150	140	130	120
		600		540	480	420	380	340	310	280	250	230
		1200		1090	960	850	760	680	610	560	510	470
		1800		1600	1410	1250	1120	1000	910	820	750	690
	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400
	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350
	40	35	60	55	50	45	40	35	60	55	50	45
	613	663	713	763	813	863	913	963	1013	1063	1113	1163
	720	780	780	840	900	960	1020	1080	1080	1140	1200	1260
	13	14	14	15	16	17	18	19	19	20	21	22
	8.3	8.6	8.8	9.1	9.3	9.6	9.8	10.1	10.4	10.6	10.9	11.1

USW12T Motor coupling

Model Configuration

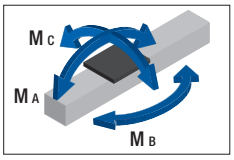
Model	Ball screw lead	Stroke	With/without motor	Sensor	Sensor mounting position	Base mounting method	
USW12T	– 05	– 0150	– 0	– 6	– SL	– C	–

USW12T	05: 5mm	0100: 100mm	0	P	No symbol: When selecting P, Q, or N	T: From underside of base (tapped holes)
	10: 10mm	to	0B	Q	SR	C: From top of base (counter-bore holes)
	20: 20mm	1100: 1100mm	1	N	SL	
	30: 30mm		1B	6		
				E		
				J		
				M		

Reference Basic Specifications

Motor rated output [W]				200			
Ball screw lead [mm]				5	10	20	30
Rated speed *1 [mm/s]				250	500	1000	1500
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal	0.3G	100	80	40	25
		Vertical	0.3G	30	20	8	5
Rated thrust *3 [N]				643	322	161	107
Maximum thrust *4 [N]				1910	965	482	322
Electromagnetic brake retention [N]				1277	638	319	213
Running life *5 *6 [km]				20,000 (10,000)			
Static permissible moment *7 [N·m]				M_A: 671, M_B: 396, M_C: 710			
Positioning repeatability [mm]				±0.020			
Backlash [mm]				0.05			

Static permissible moment

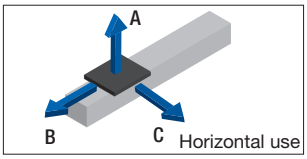


*1 At rated motor speed (3,000 min^{-1}).
*2 Load capacity and maximum speed are dependent on usage conditions.
*3 At rated motor torque.
*4 Dependent on maximum motor torque and permissible load.
*5 Conditions:
Stroke: 100mm
Acceleration and deceleration rate: 0.3G
Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate
Applied load: maximum load capacity
Center of gravity: center of top surface of table.
*6 Dependant on running life of LM Guide. (10,000km with ball screw lead 5mm in vertical use.)
*7 Maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

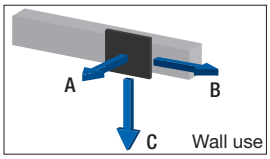
Motor bracket		Option
A	–	GR

A	No symbol: Red end cap
B	GR: Gray end cap
	HG: Hanging jig

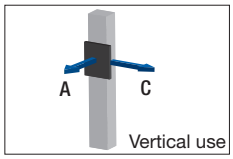
Reference Permissible Overhang Length*



Horizontal use



Wall use



Vertical use

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
5	30	1870	450	570
	60	1120	230	290
	100	710	130	170
10	20	1790	630	710
	40	1090	340	390
	80	580	160	190
20	10	2000	1060	1170
	20	1790	630	710
	40	1090	340	370
30	5	2000	1620	1770
	15	2000	790	880
	25	1540	520	590

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
5	30	530	420	1800
	60	260	200	1030
	100	130	90	600
10	20	710	600	1750
	40	370	310	1020
	80	160	130	500
20	10	1180	1030	2000
	20	710	600	1750
	40	370	310	1050
30	5	1800	1600	2000
	15	890	770	2000
	25	580	500	1490

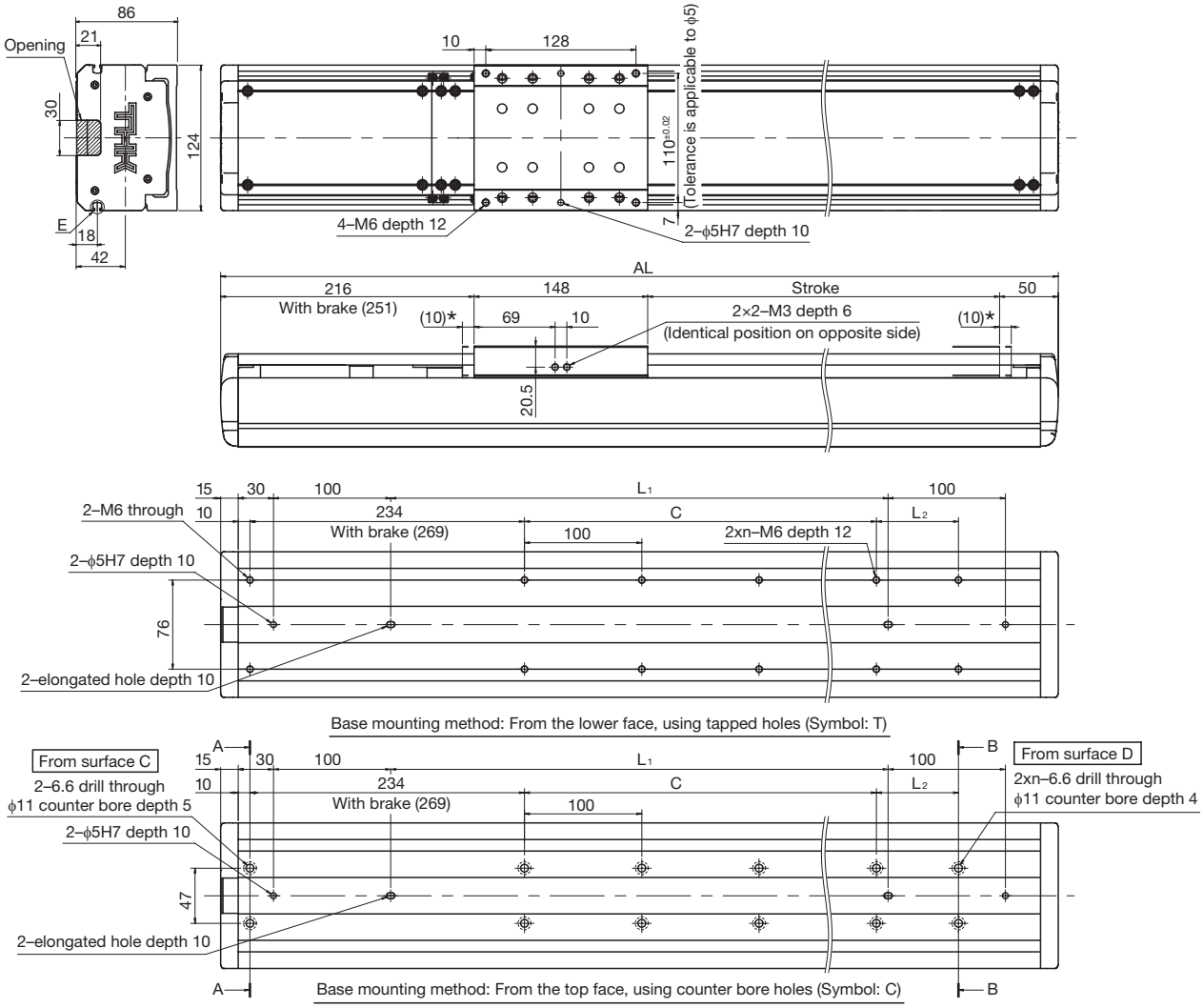
Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
5	10	1020	1050
	20	600	620
	30	420	430
10	5	1520	1550
	10	980	1000
	20	570	590
20	2	2000	2000
	4	1720	1760
	8	1140	1170
30	1	2000	2000
	3	2000	2000
	5	1520	1550

*Dependent on running life of LM guide (20,000km) and on static permissible moment.
Conditions for calculation of the values above:
Stroke: 100mm
Acceleration and deceleration rate: 0.3G
Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate
Applied load: maximum load capacity.
A, B, and C represent distances measured from the center of the top surface of the table.

USW12T Motor coupling

Dimensions

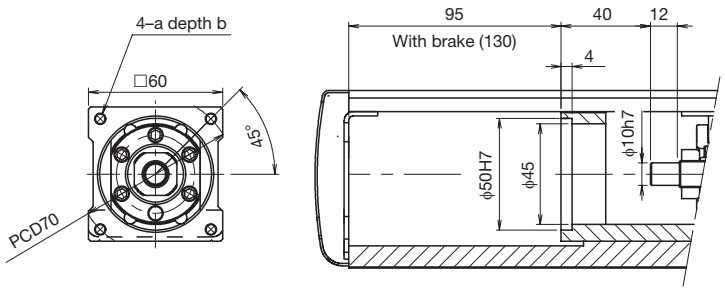


* This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)			100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)
Maximum speed *1 *2 [mm/s]	Ball screw lead	5mm	300								
		10mm	600								
		20mm	1200								
		30mm	1800								
Dimensions [mm]	AL*3		514 (549)	564 (599)	614 (649)	664 (699)	714 (749)	764 (799)	814 (849)	864 (899)	914 (949)
	L_1*3		224 (259)	274 (309)	324 (359)	374 (409)	424 (459)	474 (509)	524 (559)	574 (609)	624 (659)
	L_2		70	20	70	20	70	20	70	20	70
	C		100	200	200	300	300	400	400	500	500
Mounting hole count	n		3	4	4	5	5	6	6	7	7
Weight [kg]			6.6	7.2	7.8	8.4	9	9.6	10.2	10.8	11.3

*1 Load capacity and maximum speed vary.
*2 Dependent on permissible rotational speed of ball screw.
*3 Values when a brake is installed are shown in parentheses.

Detail

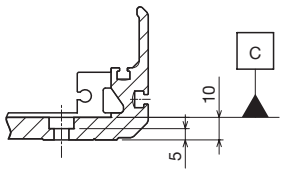


Motor bracket (detail) (symbol: A, B)

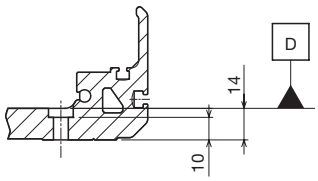
■Motor bracket specifications [mm]

Symbol	a	b
A	M5	10
B	M4	8

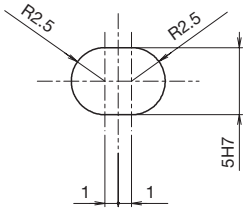
See page 3-050, "Motor Brackets," for a list of applicable motors.



A-A (cross section)

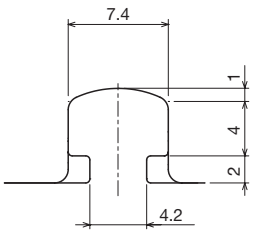


B-B (cross section)



Elongated hole (detail)

Counter-bore hole in base (detail)



Section E (detail)

	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)
300			280	250	220	190	170	160	140	130	120	110
600			540	470	420	370	340	300	270	250	230	210
1200			1080	950	840	750	680	610	550	500	460	420
1800			1620	1430	1270	1130	1020	920	830	760	700	640
	964 (999)	1014 (1049)	1064 (1099)	1114 (1149)	1164 (1199)	1214 (1249)	1264 (1299)	1314 (1349)	1364 (1399)	1414 (1449)	1464 (1499)	1514 (1549)
	674 (709)	724 (759)	774 (809)	824 (859)	874 (909)	924 (959)	974 (1009)	1024 (1059)	1074 (1109)	1124 (1159)	1174 (1209)	1224 (1259)
	20	70	20	70	20	70	20	70	20	70	20	70
	600	600	700	700	800	800	900	900	1000	1000	1100	1100
	8	8	9	9	10	10	11	11	12	12	13	13
	12	12.5	13.2	13.7	14.4	14.9	15.6	16.2	16.8	17.4	18	18.6

USW12RT Motor wrap

Model Configuration

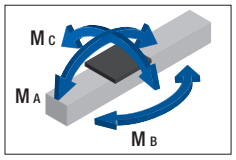
Model	Ball screw lead	Stroke	With/without motor	Sensor	Sensor mounting position	Base mounting method	
USW12RT –	05	– 0150	– 0	– 6	– SL	– C	–

USW12RT	05: 5mm	0100: 100mm	0	P	No symbol: When selecting P, Q, or N	T: From underside of base (tapped holes)
	10: 10mm	to	0B	Q	SR	C: From top of base (counter-bore holes)
	20: 20mm	1100: 1100mm	1	N	SL	
	30: 30mm		1B	6		
				E		
				J		
				M		

Reference Basic Specifications

Motor rated output [W]				200			
Ball screw lead [mm]				5	10	20	30
Rated speed *1 [mm/s]				250	500	1000	1500
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal	0.3G	100	80	40	25
		Vertical	0.3G	30	20	8	5
Rated thrust *3 [N]				643	322	161	107
Maximum thrust *4 [N]				1910	965	482	322
Electromagnetic brake retention [N]				1277	638	319	213
Running life *5 *6 [km]				20,000 (10,000)			
Static permissible moment *7 [N·m]				M_A: 671, M_B: 396, M_C: 710			
Positioning repeatability [mm]				±0.020			
Backlash [mm]				0.05			

Static permissible moment



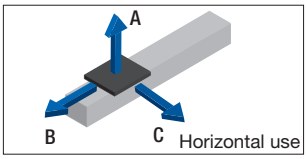
*1 At rated motor speed (3,000 min^{-1}).
*2 Load capacity and maximum speed are dependent on usage conditions.
*3 At rated motor torque.
*4 Dependent on maximum motor torque and permissible load.
*5 Conditions:
Stroke: 100mm
Acceleration and deceleration rate: 0.3G
Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate
Applied load: maximum load capacity
Center of gravity: center of top surface of table.
*6 Dependant on running life of LM Guide. (10,000km with ball screw lead 5mm in vertical use.)
*7 Maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

Motor bracket		Option
A	–	MR–GR

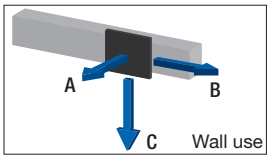
A	MR: Motor right-turn folded
B	ML: Motor left-turn folded
C	GR: Gray end cap
	HG: Hanging jig

Note: If the GR is not included in the model configuration, cover will be red.

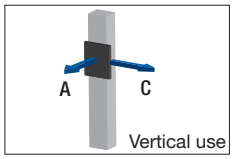
Reference Permissible Overhang Length*



Horizontal use



Wall use



Vertical use

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
5	30	1870	450	570
	60	1120	230	290
	100	710	130	170
10	20	1790	630	710
	40	1090	340	390
	80	580	160	190
20	10	2000	1060	1170
	20	1790	630	710
	40	1090	340	390
30	5	2000	1620	1770
	15	2000	790	880
	25	1540	520	590

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
5	30	530	420	1800
	60	260	200	1030
	100	130	90	600
10	20	710	600	1750
	40	370	310	1020
	80	160	130	500
20	10	1180	1030	2000
	20	710	600	1750
	40	370	310	1020
30	5	1800	1600	2000
	15	890	770	2000
	25	580	500	1490

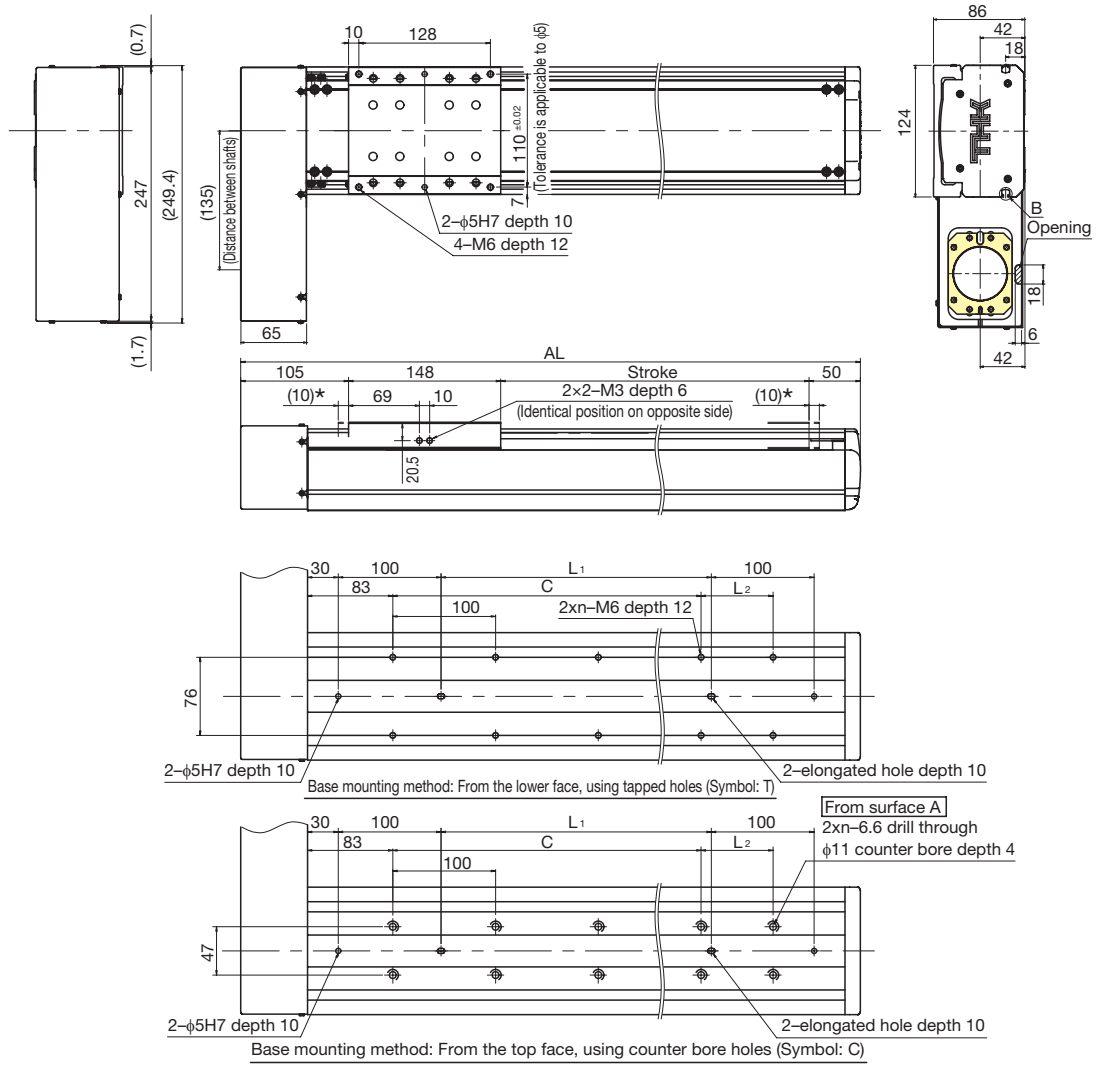
Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
5	10	1020	1050
	20	600	620
	30	420	430
10	5	1520	1550
	10	980	1000
	20	570	590
20	2	2000	2000
	4	1720	1760
	8	1140	1170
30	1	2000	2000
	3	2000	2000
	5	1520	1550

*Dependent on running life of LM guide (20,000km) and on static permissible moment.
Conditions for calculation of the values above:
Stroke: 100mm
Acceleration and deceleration rate: 0.3G
Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate
Applied load: maximum load capacity.
A, B, and C represent distances measured from the center of the top surface of the table.

USW12RT Motor wrap

Dimensions

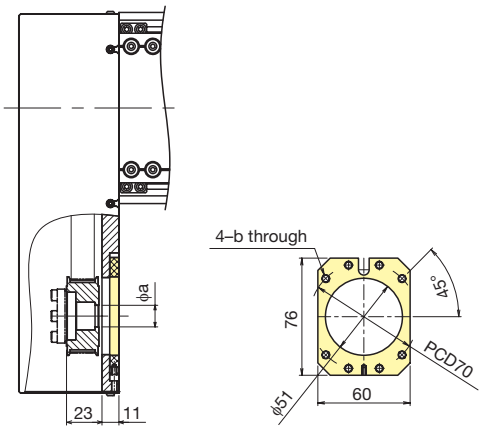


* This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)			100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)
Maximum speed *1 *2 [mm/s]	Ball screw lead	5mm	300								
		10mm	600								
		20mm	1200								
		30mm	1800								
Dimensions [mm]	AL		403	453	503	553	603	653	703	753	803
	L_1		63	113	163	213	263	313	363	413	463
	L_2		70	20	70	20	70	20	70	20	70
	C		100	200	200	300	300	400	400	500	500
Mounting hole count	n		3	4	4	5	5	6	6	7	7
Weight [kg]			8	8.6	9.2	9.8	10.4	11	11.6	12.2	12.8

*1 Load capacity and maximum speed vary.
*2 Dependent on permissible rotational speed of ball screw.

Detail

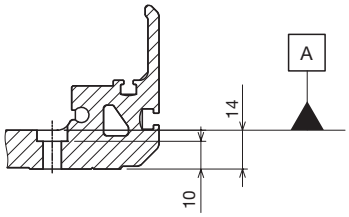


Motor bracket (detail) (symbol: A, B, C)

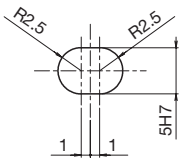
■Motor bracket specifications [mm]

Symbol	a	b
A	14H7	M5
B	14H7	M4
C	11H7	M4

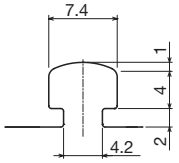
See page 3-050, "Motor Brackets," for a list of applicable motors.



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)
300			280	250	220	190	170	160	140	130	120	110
600			540	470	420	370	340	300	270	250	230	210
1200			1080	950	840	750	680	610	550	500	460	420
1800			1620	1430	1270	1130	1020	920	830	760	700	640
	853	903	953	1003	1053	1103	1153	1203	1253	1303	1353	1403
	513	563	613	663	713	763	813	863	913	963	1012	1063
	20	70	20	70	20	70	20	70	20	70	20	70
	600	600	700	700	800	800	900	900	1000	1000	1100	1100
	8	8	9	9	10	10	11	11	12	12	13	13
	13.4	14	14.6	15.2	15.8	16.4	17	17.6	18.2	18.8	19.4	20

USW16T Motor coupling

Model Configuration

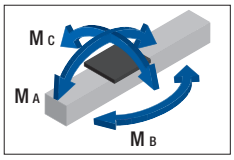
Model	Ball screw lead	Stroke	With/without motor	Sensor	Sensor mounting position	Base mounting method	
USW16T	– 10	– 0150	– 0	– 6	– SR	– C	–

USW16T	10: 10mm 20: 20mm 40: 40mm	0100: 100mm to 1500: 1500mm	0 0B 1 1B	P Q N 6 E J M	No symbol: When selecting P, Q, or N SR SL	T: From underside of base (tapped holes) C: From top of base (counter-bore holes)

Reference Basic Specifications

Motor rated output [W]				400		
Ball screw lead [mm]				10	20	40
Rated speed *1 [mm/s]				500	1000	2000
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal	0.3G	120	80	40
		Vertical	0.3G	35	15	9
Rated thrust *3 [N]				653	326	163
Maximum thrust *4 [N]				1910	965	482
Electromagnetic brake retention [N]				638	319	160
Running life *5 [km]				20,000		
Static permissible moment *6 [N·m]				M_A: 1484, M_B: 939, M_C: 1667		
Positioning repeatability [mm]				±0.020		
Backlash [mm]				0.05		

Static permissible moment

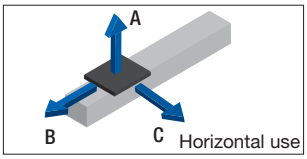


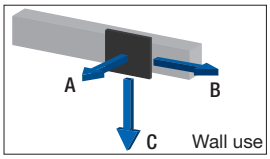
*1 At rated motor speed (3,000 min^{-1}).
*2 Load capacity and maximum speed are dependent on usage conditions.
*3 At rated motor torque.
*4 Dependent on maximum motor torque and permissible load.
*5 Conditions:
Stroke: 100mm
Acceleration and deceleration rate: 0.3G
Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate
Applied load: maximum load capacity
Center of gravity: center of top surface of table.
*6 Maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

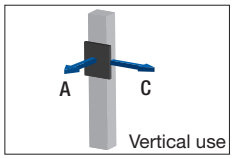
Motor bracket		Option
A	–	GR

A	No symbol: Red end cap
B	GR: Gray end cap
	HG: Hanging jig

Reference Permissible Overhang Length*







Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	40	2590	950	820
	80	1590	520	440
	120	1130	340	290
20	20	3000	1560	1380
	40	2590	950	820
	80	1590	520	440
40	10	3000	2360	2100
	20	3000	1560	1380
	40	2590	950	820

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	40	760	900	2480
	80	380	460	1450
	120	230	280	970
20	20	1300	1520	3000
	40	760	900	2480
	80	380	460	1450
40	10	2020	2320	3000
	20	1300	1520	3000
	40	760	900	2480

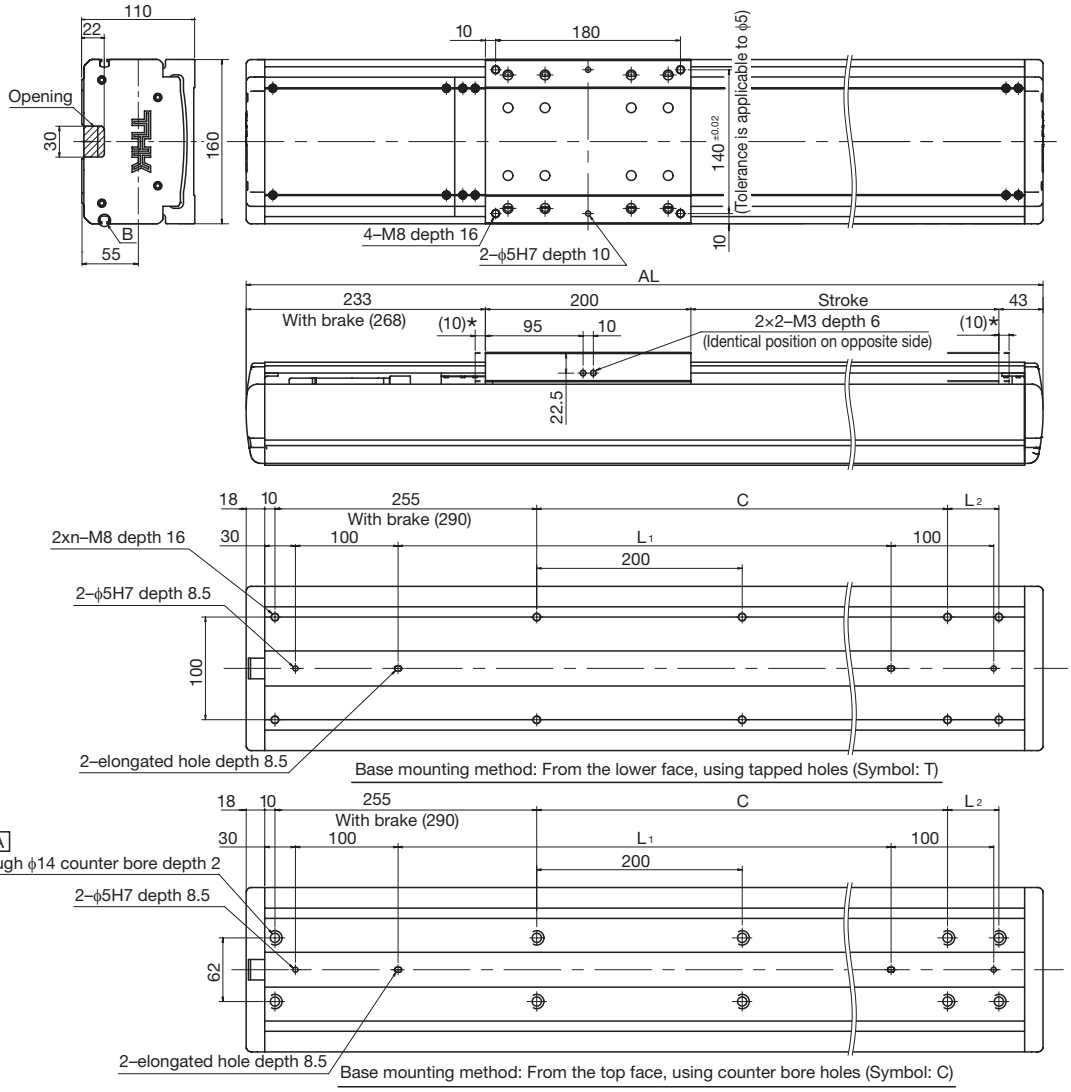
Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
10	10	2220	2270
	20	1460	1500
	35	970	1000
20	5	3000	3000
	10	2220	2270
	15	1750	1800
40	3	3000	3000
	6	2890	2960
	9	2350	2410

*Dependent on running life of LM guide (20,000km) and on static permissible moment.
Conditions for calculation of the values above:
Stroke: 100mm
Acceleration and deceleration rate: 0.3G
Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate
Applied load: maximum load capacity.
A, B, and C represent distances measured from the center of the top surface of the table.

USW16T Motor coupling

Dimensions

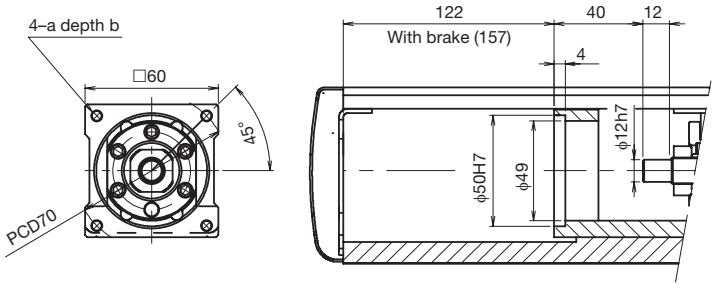


* This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)			100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)	550 (570)	600 (620)	650 (670)
Maximum speed *1 *2 [mm/s]	Ball screw lead	10mm	550											
		20mm	1100											
		40mm	2200											
Dimensions [mm]	AL*3		576 (611)	626 (661)	676 (711)	726 (761)	776 (811)	826 (861)	876 (911)	926 (961)	976 (1011)	1026 (1061)	1076 (1111)	1126 (1161)
	L_1*3		280 (315)	330 (365)	380 (415)	430 (465)	480 (515)	530 (565)	580 (615)	630 (665)	680 (715)	730 (765)	780 (815)	830 (865)
	L_2		50	100	150	–	50	100	150	–	50	100	150	–
	C		200	200	200	400	400	400	400	600	600	600	600	800
Mounting hole count	n		4	4	4	4	5	5	5	5	6	6	6	6
Weight [kg]			13.1	14.1	15.1	16.1	17.1	18.1	19.1	20.1	21.1	22.1	23.1	24.1

*1 Load capacity and maximum speed vary.
*2 Dependent on permissible rotational speed of ball screw.
*3 Values when a brake is installed are shown in parentheses.

Detail

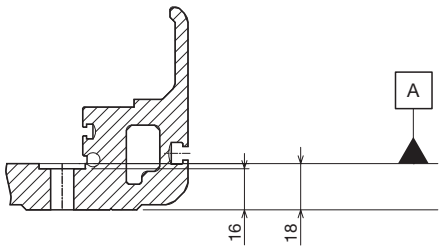


Motor bracket (detail) (symbol: A, B)

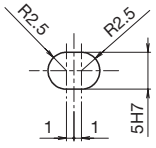
■Motor bracket specifications [mm]

Symbol	a	b
A	M5	10
B	M4	8

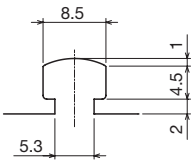
See page 3-050, "Motor Brackets," for a list of applicable motors.



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	700 (720)	750 (770)	800 (820)	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)	1150 (1170)	1200 (1220)	1250 (1270)	1300 (1320)	1350 (1370)	1400 (1420)	1450 (1470)	1500 (1520)
	550		500	450	410	370	330	310	280	260	240	220	210	190	180	170	160
	1100		1070	960	870	790	720	660	600	560	510	480	440	410	390	360	340
	2200		2150	1930	1750	1580	1440	1320	1210	1120	1030	960	890	830	770	730	680
	1176 (1211)	1226 (1261)	1276 (1311)	1326 (1361)	1376 (1411)	1426 (1461)	1476 (1511)	1526 (1561)	1576 (1611)	1626 (1661)	1676 (1711)	1726 (1761)	1776 (1811)	1826 (1861)	1876 (1911)	1926 (1961)	1976 (2011)
	880 (915)	930 (965)	980 (1015)	1030 (1065)	1080 (1115)	1130 (1165)	1180 (1215)	1230 (1265)	1280 (1315)	1330 (1365)	1380 (1415)	1430 (1465)	1480 (1515)	1530 (1565)	1580 (1615)	1630 (1665)	1680 (1715)
	50	100	150	–	50	100	150	–	50	100	150	–	50	100	150	–	50
	800	800	800	1000	1000	1000	1000	1200	1200	1200	1200	1400	1400	1400	1400	1600	1600
	7	7	7	7	8	8	8	8	9	9	9	9	10	10	10	10	11
	25.1	26.1	27.1	28.1	29.1	30.1	31.1	32.1	33.1	34.1	35.1	36.1	37.1	38.1	39.1	40.1	41.1

USW16RT Motor wrap

Model Configuration

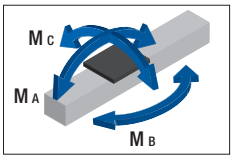
Model	Ball screw lead	Stroke	With/without motor	Sensor	Sensor mounting position	Base mounting method	
USW16RT –	10 –	0150 –	0 –	6 –	SL –	C –	

USW16RT	10: 10mm 20: 20mm 40: 40mm	0100: 100mm to 1500: 1500mm	0 0B 1 1B	P Q N 6 E J M	No symbol: When selecting P, Q, or N SR SL	T: From underside of base (tapped holes) C: From top of base (counter-bore holes)

Reference Basic Specifications

Motor rated output [W]				400		
Ball screw lead [mm]				10	20	40
Rated speed *1 [mm/s]				500	1000	2000
Maximum load capacity*2 [kg]	Acceleration and deceleration rate	Horizontal	0.3G	120	80	40
		Vertical	0.3G	35	15	9
Rated thrust *3 [N]				653	326	163
Maximum thrust *4 [N]				1910	965	482
Electromagnetic brake retention [N]				638	319	160
Running life *5 [km]				20,000		
Static permissible moment *6 [N·m]				M_A: 1484, M_B: 939, M_C: 1667		
Positioning repeatability [mm]				±0.020		
Backlash [mm]				0.05		

Static permissible moment



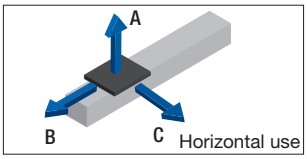
*1 At rated motor speed (3,000 min^{-1}).
*2 Load capacity and maximum speed are dependent on usage conditions.
*3 At rated motor torque.
*4 Dependent on maximum motor torque and permissible load.
*5 Conditions:
Stroke: 100mm
Acceleration and deceleration rate: 0.3G
Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate
Applied load: maximum load capacity
Center of gravity: center of top surface of table.
*6 Maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

Motor bracket		Option
A	–	MR–GR

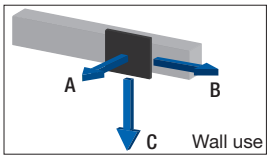
A	MR: Motor right-turn folded
B	ML: Motor left-turn folded
	GR: Gray end cap
	HG: Hanging jig

Note: If the GR is not included in the model configuration, cover will be red.

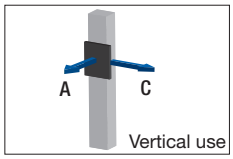
Reference Permissible Overhang Length*



Horizontal use



Wall use



Vertical use

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	40	2590	950	820
	80	1590	520	440
	120	1130	340	290
20	20	3000	1560	1380
	40	2590	950	820
	80	1590	520	440
40	10	3000	2360	2100
	20	3000	1560	1380
	40	2590	950	820

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	40	760	900	2480
	80	380	460	1450
	120	230	280	970
20	20	1300	1520	3000
	40	760	900	2480
	80	380	460	1450
40	10	2020	2320	3000
	20	1300	1520	3000
	40	760	900	2480

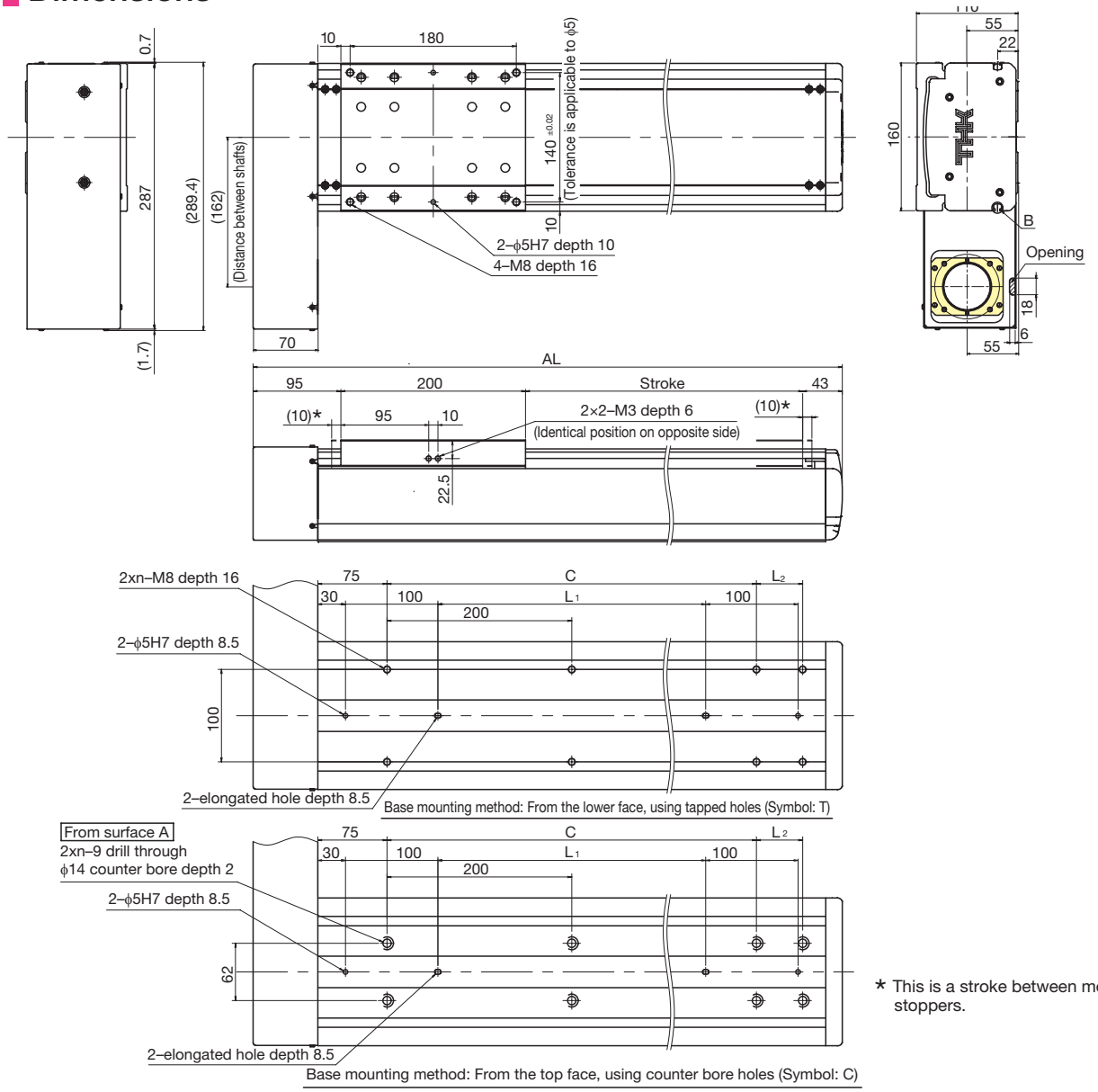
Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
10	10	2220	2270
	20	1460	1500
	35	970	1000
20	5	3000	3000
	10	2220	2270
	15	1750	1800
40	3	3000	3000
	6	2890	2960
	9	2350	2410

*Dependent on running life of LM guide (20,000km) and on static permissible moment.
Conditions for calculation of the values above:
Stroke: 100mm
Acceleration and deceleration rate: 0.3G
Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate
Applied load: maximum load capacity.
A, B, and C represent distances measured from the center of the top surface of the table.

USW16RT Motor wrap

Dimensions

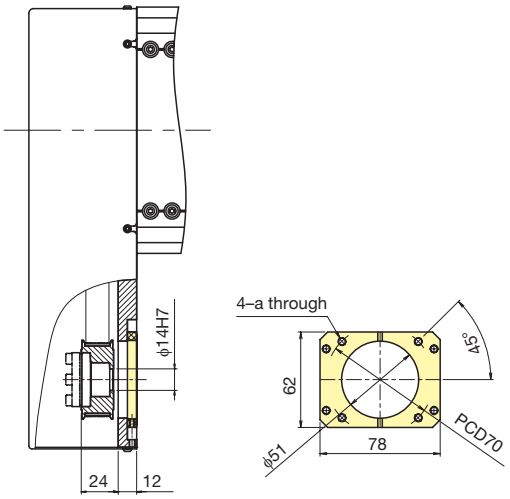


* This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)			100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)	550 (570)	600 (620)	650 (670)
Maximum speed *1 *2 [mm/s]	Ball screw lead	10mm	550											
		20mm	1100											
		40mm	2200											
Dimensions [mm]	AL		438	488	538	588	638	688	738	788	838	888	938	988
	L_1		90	140	190	240	290	340	390	440	490	540	590	640
	L_2		50	100	150	–	50	100	150	–	50	100	150	–
	C		200	200	200	400	400	400	400	600	600	600	600	800
Mounting hole count	n		3	3	3	3	4	4	4	4	5	5	5	5
Weight [kg]			13.4	14.4	15.4	16.4	17.4	18.4	19.4	20.4	21.4	22.4	23.4	24.4

*1 Load capacity and maximum speed vary.
*2 Dependent on permissible rotational speed of ball screw.

Detail

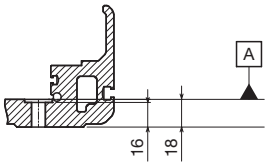


Motor bracket (detail) (symbol: A, B)

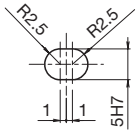
■Motor bracket specifications

Symbol	a
A	M5
B	M4

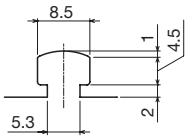
See page 3-050, "Motor Brackets," for a list of applicable motors.



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	700 (720)	750 (770)	800 (820)	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)	1150 (1170)	1200 (1220)	1250 (1270)	1300 (1320)	1350 (1370)	1400 (1420)	1450 (1470)	1500 (1520)
	550		500	450	410	370	330	310	280	260	240	220	210	190	180	170	160
	1100		1070	960	870	790	720	660	600	560	510	480	440	410	390	360	340
	2200		2150	1930	1750	1580	1440	1320	1210	1120	1030	960	890	830	770	730	680
	1038	1088	1138	1188	1238	1288	1338	1388	1438	1488	1538	1588	1638	1688	1738	1788	1838
	690	740	790	840	890	940	990	1040	1090	1140	1190	1240	1290	1340	1390	1440	1490
	50	100	150	–	50	100	150	–	50	100	150	–	50	100	150	–	50
	800	800	800	1000	1000	1000	1000	1200	1200	1200	1200	1400	1400	1400	1400	1600	1600
	6	6	6	6	7	7	7	7	8	8	8	8	9	9	9	9	10
	25.4	26.4	27.4	28.4	29.4	30.4	31.4	32.4	33.4	34.4	35.4	36.4	37.4	38.4	39.4	40.4	41.4

USW20T Motor coupling

Model Configuration

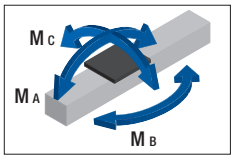
Model	Ball screw lead	Stroke	With/without motor	Sensor	Sensor mounting position	Base mounting method	
USW20T –	20 –	0300 –	0 –	N –	SR –	C –	

USW20T	20: 20mm 40: 40mm	0200: 200mm to 1700: 1700mm	0 0B 1 1B	P Q N 6 E J M	No symbol: When selecting P, Q, or N SR SL	T: From underside of base (tapped holes) C: From top of base (counter-bore holes)

Reference Basic Specifications

Motor rated output [W]				750	
Ball screw lead [mm]				20	40
Rated speed *1 [mm/s]				1000	2000
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal	0.3G	130	70
		Vertical	0.3G	45	20
Rated thrust *3 [N]				603	302
Maximum thrust *4 [N]				1810	905
Electromagnetic brake retention [N]				603	302
Running life *5 [km]				20,000	
Static permissible moment *6 [N·m]				M_A: 1827, M_B: 1175, M_C: 2112	
Positioning repeatability [mm]				±0.020	
Backlash [mm]				0.05	

Static permissible moment



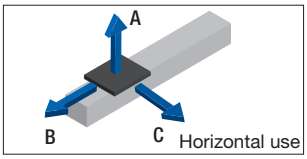
*1 At rated motor speed (3,000 min^{-1}).
*2 Load capacity and maximum speed are dependent on usage conditions.
*3 At rated motor torque.
*4 Dependent on maximum motor torque and permissible load.
*5 Conditions:
Stroke: 200mm
Acceleration and deceleration rate: 0.3G
Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate
Applied load: maximum load capacity
Center of gravity: center of top surface of table.
*6 Maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

Motor bracket		Option
A	–	GR

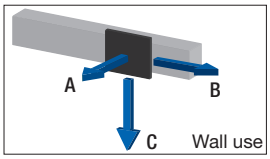
A	No symbol: Red end cap
B	GR: Gray end cap
	HG: Hanging jig

Note: If the GR is not included in the model configuration, cover will be red.

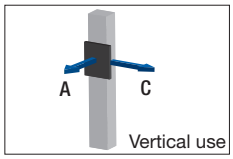
Reference Permissible Overhang Length*



Horizontal use



Wall use



Vertical use

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
20	40	2640	950	1260
	80	1640	530	720
	130	1100	320	450
40	25	3000	1340	1750
	50	2290	790	1070
	70	1810	590	810

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
20	40	1180	920	2630
	80	650	490	1590
	130	390	290	1030
40	25	1660	1320	3000
	50	990	770	2270
	70	740	560	1770

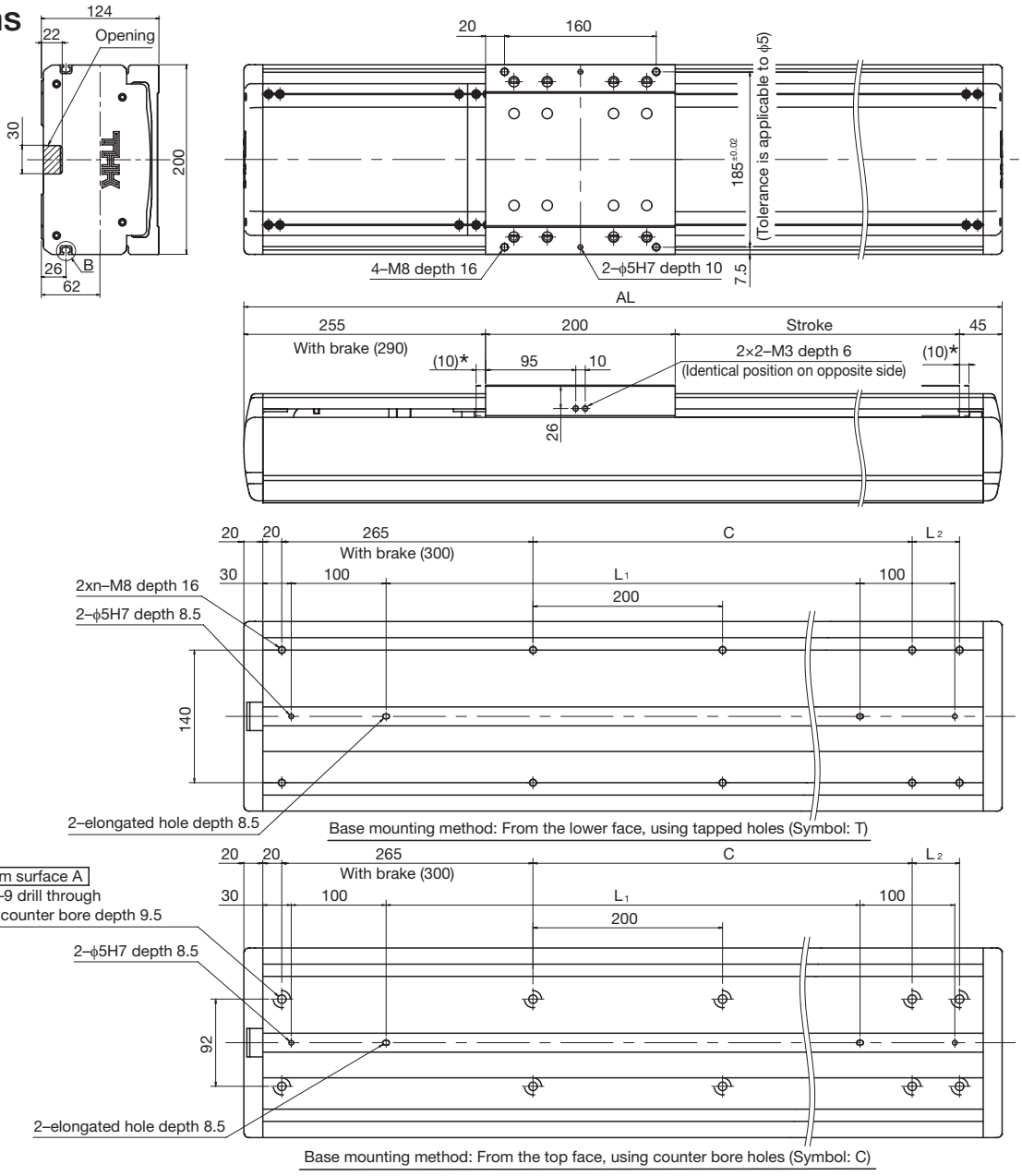
Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
20	15	1700	1770
	30	1060	1100
	45	770	800
40	5	3000	3000
	10	2160	2240
	20	1410	1470

*Dependent on running life of LM guide (20,000km) and on static permissible moment.
Conditions for calculation of the values above:
Stroke: 200mm
Acceleration and deceleration rate: 0.3G
Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate
Applied load: maximum load capacity.
A, B, and C represent distances measured from the center of the top surface of the table.

USW20T Motor coupling

Dimensions

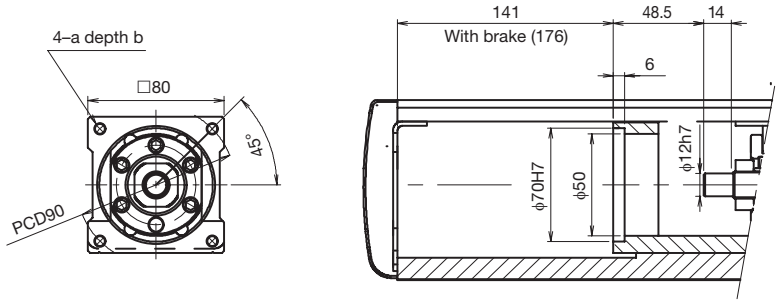


* This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)			200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)
Maximum speed *1 *2 [mm/s]	Ball screw lead	20mm	1100												1040
		40mm	2200												2080
Dimensions [mm]	AL*3		700 (735)	750 (785)	800 (835)	850 (885)	900 (935)	950 (985)	1000 (1035)	1050 (1085)	1100 (1135)	1150 (1185)	1200 (1235)	1250 (1285)	1300 (1335)
	L_1*3		400 (435)	450 (485)	500 (535)	550 (585)	600 (635)	650 (685)	700 (735)	750 (785)	800 (835)	850 (885)	900 (935)	950 (985)	1000 (1035)
	L_2		150	–	50	100	150	–	50	100	150	–	50	100	150
	C		200	400	400	400	400	600	600	600	600	800	800	800	800
Mounting hole count	n		4	4	5	5	5	5	6	6	6	6	7	7	7
Weight [kg]	Without motor		22.6	23.9	25.3	26.7	28.1	29.6	30.9	32.3	33.7	35.1	36.6	37.9	39.3

*1 Load capacity and maximum speed vary.
*2 Dependent on permissible rotational speed of ball screw.
*3 Values when a brake is installed are shown in parentheses.

Detail

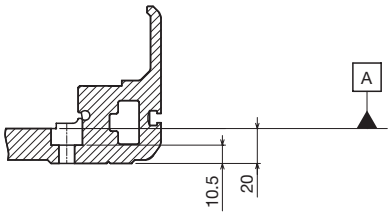


Motor bracket (detail) (symbol: A, B)

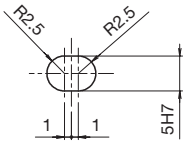
■Motor bracket specifications [mm]

Symbol	a	b
A	M6	12
B	M5	10

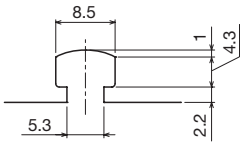
See page 3-050, "Motor Brackets," for a list of applicable motors.



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)	1150 (1170)	1200 (1220)	1250 (1270)	1300 (1320)	1350 (1370)	1400 (1420)	1450 (1470)	1500 (1520)	1550 (1570)	1600 (1620)	1650 (1670)	1700 (1720)
	930	840	770	700	640	590	540	500	470	430	400	380	350	330	310	290	280	260
	1870	1690	1540	1400	1290	1180	1090	1010	940	870	810	760	710	670	630	590	560	530
	1350 (1385)	1400 (1435)	1450 (1485)	1500 (1535)	1550 (1585)	1600 (1635)	1650 (1685)	1700 (1735)	1750 (1785)	1800 (1835)	1850 (1885)	1900 (1935)	1950 (1985)	2000 (2035)	2050 (2085)	2100 (2135)	2150 (2185)	2200 (2235)
	1050 (1085)	1100 (1135)	1150 (1185)	1200 (1235)	1250 (1285)	1300 (1335)	1350 (1385)	1400 (1435)	1450 (1485)	1500 (1535)	1550 (1585)	1600 (1635)	1650 (1685)	1700 (1735)	1750 (1785)	1800 (1835)	1850 (1885)	1900 (1935)
	–	50	100	150	–	50	100	150	–	50	100	150	–	50	100	150	–	50
	1000	1000	1000	1000	1200	1200	1200	1200	1400	1400	1400	1400	1600	1600	1600	1600	1800	1800
	7	8	8	8	8	9	9	9	9	10	10	10	10	11	11	11	11	12
	40.7	42.1	43.3	44.9	46.3	47.7	49.1	50.6	51.9	53.3	54.7	56.1	57.6	58.9	60.3	61.7	63.1	64.6

USW20RT Motor wrap

Model Configuration

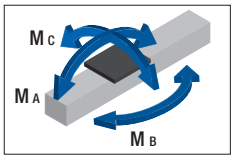
Model	Ball screw lead	Stroke	With/without motor	Sensor	Sensor mounting position	Base mounting method	
USW20RT	– 20	– 0300	– 0	– N	– SL	– C	–

USW20RT	20: 20mm 40: 40mm	0200: 200mm to 1700: 1700mm	0 0B 1 1B	P Q N 6 E J M	No symbol: When selecting P, Q, or N SR SL	T: From underside of base (tapped holes) C: From top of base (counter-bore holes)

Reference Basic Specifications

Motor rated output [W]				750	
Ball screw lead [mm]				20	40
Rated speed *1 [mm/s]				1000	2000
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal	0.3G	130	70
		Vertical	0.3G	45	20
Rated thrust *3 [N]				603	302
Maximum thrust *4 [N]				1810	905
Electromagnetic brake retention [N]				603	302
Running life *5 [km]				20,000	
Static permissible moment *6 [N·m]				M_A: 1827, M_B: 1175, M_C: 2112	
Positioning repeatability [mm]				±0.020	
Backlash [mm]				0.05	

Static permissible moment



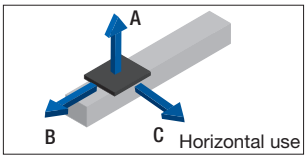
*1 At rated motor speed (3,000 min^{-1}).
*2 Load capacity and maximum speed are dependent on usage conditions.
*3 At rated motor torque.
*4 Dependent on maximum motor torque and permissible load.
*5 Conditions:
Stroke: 200mm
Acceleration and deceleration rate: 0.3G
Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate
Applied load: maximum load capacity
Center of gravity: center of top surface of table.
*6 Maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

Motor bracket		Option
A	–	MR–GR

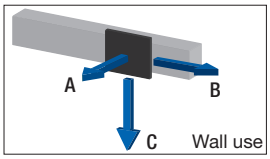
A	MR: Motor right-turn folded
B	ML: Motor left-turn folded
	GR: Gray end cap
	HG: Hanging jig

Note: If the GR is not included in the model configuration, cover will be red.

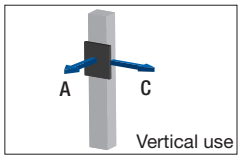
Reference Permissible Overhang Length*



Horizontal use



Wall use



Vertical use

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
20	40	2640	950	1260
	80	1640	530	720
	130	1100	320	450
40	25	3000	1340	1750
	50	2290	790	1070
	70	1810	590	810

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
20	40	1180	920	2630
	80	650	490	1590
	130	390	290	1030
40	25	1660	1320	3000
	50	990	770	2270
	70	740	560	1770

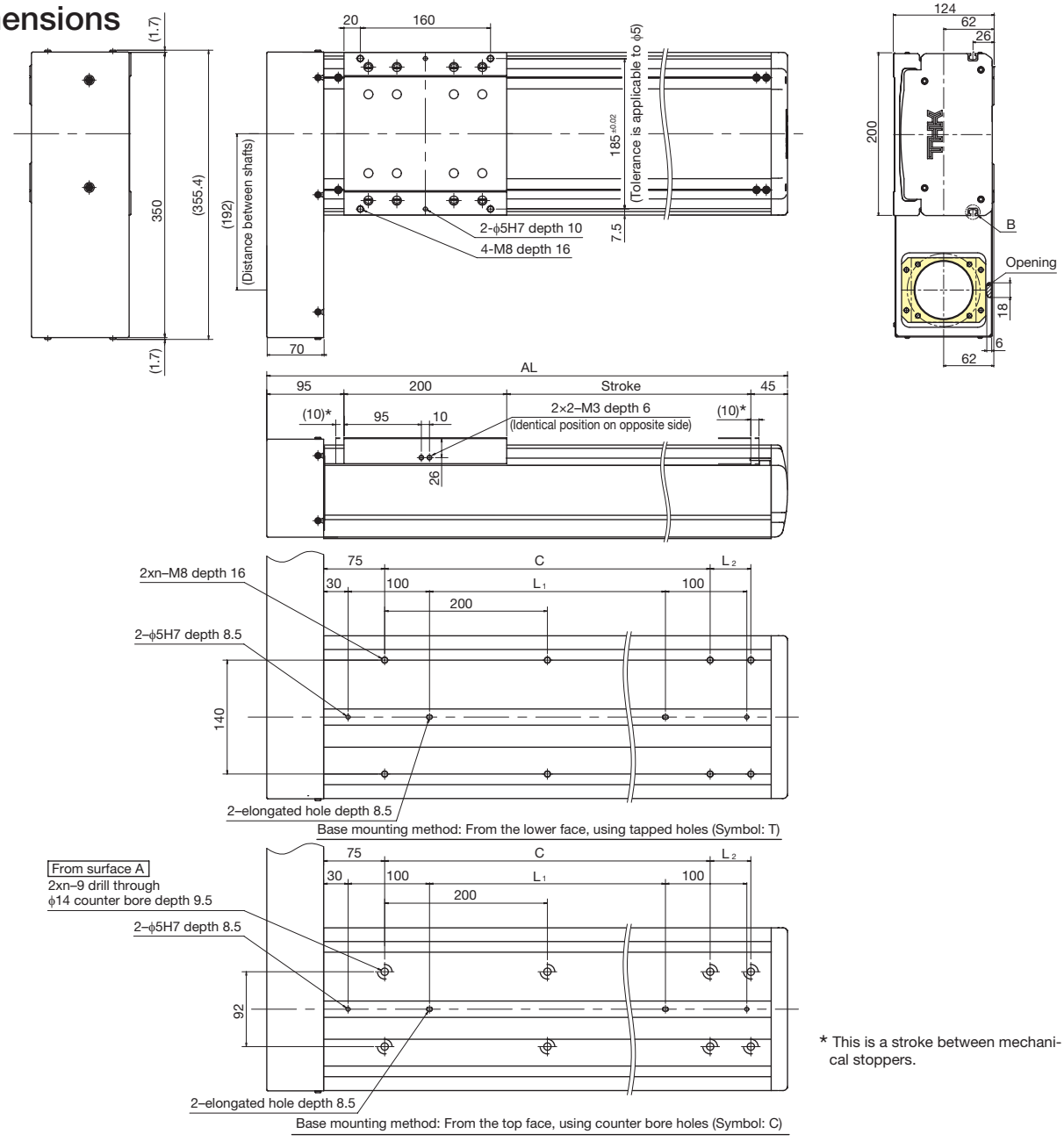
Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
20	15	1700	1770
	30	1060	1100
	45	770	800
40	5	3000	3000
	10	2160	2240
	20	1410	1470

*Dependent on running life of LM guide (20,000km) and on static permissible moment.
Conditions for calculation of the values above:
Stroke: 200mm
Acceleration and deceleration rate: 0.3G
Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate
Applied load: maximum load capacity.
A, B, and C represent distances measured from the center of the top surface of the table.

USW20RT Motor wrap

Dimensions

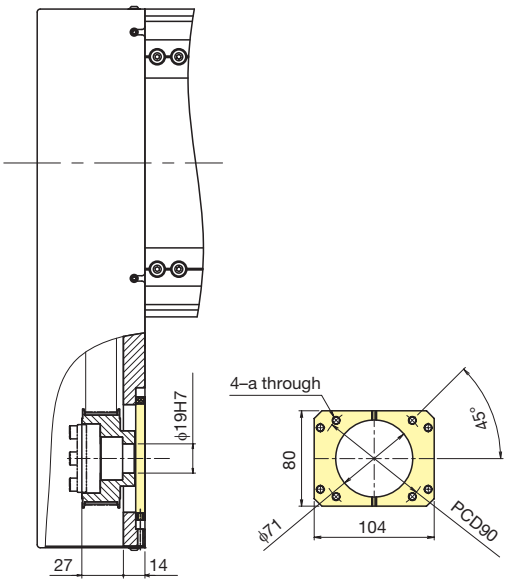


* This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)			200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)
Maximum speed *1 *2 [mm/s]	Ball screw lead	20mm	1100												1040
		40mm	2200												2080
Dimensions [mm]	AL		540	590	640	690	740	790	840	890	940	990	1040	1090	1140
	L_1		190	240	290	340	390	440	490	540	590	640	690	740	790
	L_2		150	–	50	100	150	–	50	100	150	–	50	100	150
	C		200	400	400	400	400	600	600	600	600	800	800	800	800
Mounting hole count	n		3	3	4	4	4	4	5	5	5	5	6	6	6
Weight [kg]			24.8	26.1	27.4	28.8	30.2	31.6	32.9	34.2	35.6	36.9	38.3	39.6	41

*1 Load capacity and maximum speed vary.
*2 Dependent on permissible rotational speed of ball screw.

Detail

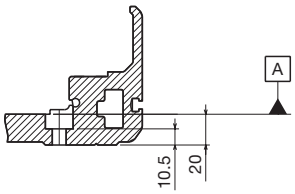


Motor bracket (detail)

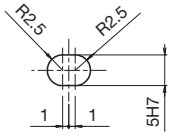
■Motor bracket specifications

Symbol	a
A	M6
B	M5

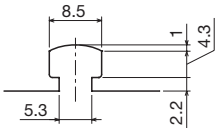
See page 3-050, "Motor Brackets," for a list of applicable motors.



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)	1150 (1170)	1200 (1220)	1250 (1270)	1300 (1320)	1350 (1370)	1400 (1420)	1450 (1470)	1500 (1520)	1550 (1570)	1600 (1620)	1650 (1670)	1700 (1720)
	930	840	770	700	640	590	540	500	470	430	400	380	350	330	310	290	280	260
	1870	1690	1540	1400	1290	1180	1090	1010	940	870	810	760	710	670	630	590	560	530
	1190	1240	1290	1340	1390	1440	1490	1540	1590	1640	1690	1740	1790	1840	1890	1940	1990	2040
	840	890	940	990	1040	1090	1140	1190	1240	1290	1340	1390	1440	1490	1540	1590	1640	1690
	–	50	100	150	–	50	100	150	–	50	100	150	–	50	100	150	–	50
	1000	1000	1000	1000	1200	1200	1200	1200	1400	1400	1400	1400	1600	1600	1600	1600	1800	1800
	6	7	7	7	7	8	8	8	8	9	9	9	9	10	10	10	10	11
	42.3	43.7	45.1	46.4	47.7	49.1	50.4	51.8	53.1	54.4	55.9	57.2	58.6	59.9	61.2	62.6	63.9	65.3

Sensors

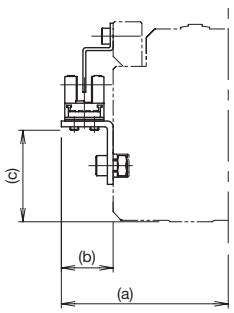
Various types of sensors can be mounted using a T slot on the side surface of the base. Select a sensor by specifying the appropriate option symbol. The standard sensor is mounted inside the actuator.

Description	Type	Symbol
Standard US8 [x 1], USW12/16/20 [x 3] (Home position on motor side)	US8: APM-D3A1 (Azbil Corp.) USW12/16/20: EE-SX674 (Omron Corp.)	P
Standard US8 [x 1], USW12/16/20 [x 3] (Home position opposite motor side)	US8: APM-D3A1 (Azbil Corp.) USW12/16/20: EE-SX674 (Omron Corp.)	Q
None	–	N
Photo sensor * [x 3], Connector [x 3]	EE-SX674 (Omron Corp.), EE-1001 (Omron Corp.)	6
Sensor N.O. contact [x 1] N.C. contact [x 2]	APM-D3A1 (Azbil Corp.) APM-D3B1 (Azbil Corp.)	E
Sensor N.O. contact [x 1] N.C. contact [x 2]	GX-F12A (Panasonic Industrial Devices SUNX Co., Ltd.) GX-F12B (Panasonic Industrial Devices SUNX Co., Ltd.)	J
Sensor N.O. contact [x 1] (PNP output) N.C. contact [x 2] (PNP output)	GX-F12A-P (Panasonic Industrial Devices SUNX Co., Ltd.) GX-F12B-P (Panasonic Industrial Devices SUNX Co., Ltd.)	M

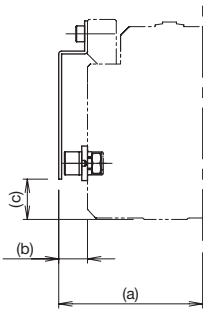
N.O. contact: Normally open contact point
N.C. contact: Normally closed contact point
* The photo sensors can be switched between ON when lit and ON when unlit.
Notes:
1. The standard sensor for US8 is APM-D3A1 (Azbil Corp.); the standard sensor for USW12/16/20 is EE-SX674 (Omron Corp.).
2. Non-standard sensors (symbol: 6-M) are mounted outside the cover.
3. When motor wrap is selected, a sensor cannot be mounted on the same side as the folded direction of the motor.
4. For closely grouped proximity sensors, the customer must provide sensors with variant frequencies (consult the respective manufacturer for sensor specifications).
5. The unit is shipped with sensors, mounting screws, detecting plates, and connectors mounted.
6. The standard sensor will not be mounted if a different sensor option is selected.

Sensor-mounting positions: dimensions

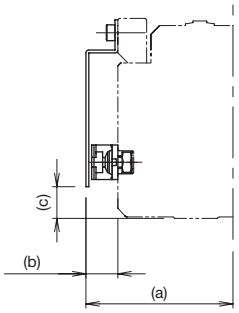
■US6/8



Symbol 6: EE-SX674 (Omron Corp.)

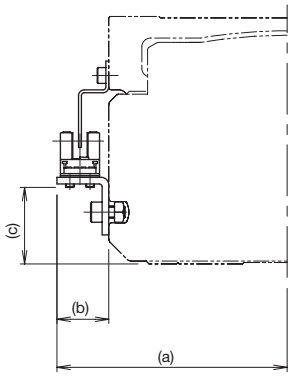


Symbol E: APM-D3** (Azbil Corp.)

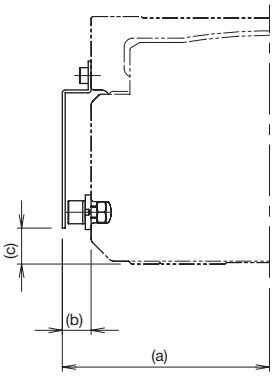


Symbol J, M: GX-F12*
(Panasonic Industrial Devices SUNX Co., Ltd.)

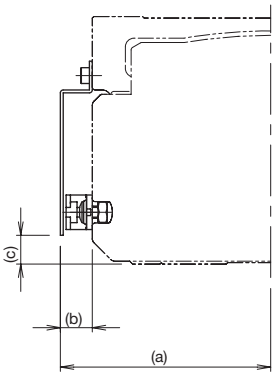
■USW12/16/20



Symbol 6: EE-SX674 (Omron Corp.)



Symbol E: APM-D3** (Azbil Corp.)



Symbol J, M: GX-F12*
(Panasonic Industrial Devices SUNX Co., Ltd.)

[mm]

Model	a	b	c
US6	50.5	18	36.6
US8	58	18	31.8
USW12	80	18	26.6
USW16	98	18	30.6
USW20	118	18	34.6

[mm]

Model	a	b	c
US6	43.5	11	26
US8	50	10	14
USW12	72	10	12.5
USW16	91	11	25.5
USW20	111	11	31

[mm]

Model	a	b	c
US6	44.5	12	23
US8	51.1	11.1	11
USW12	73	11	10
USW16	92	12	29
USW20	112	12	33

Motor Bracket

Several types of motor brackets for mounting motors are available. Specify a motor bracket that matches the motor used.

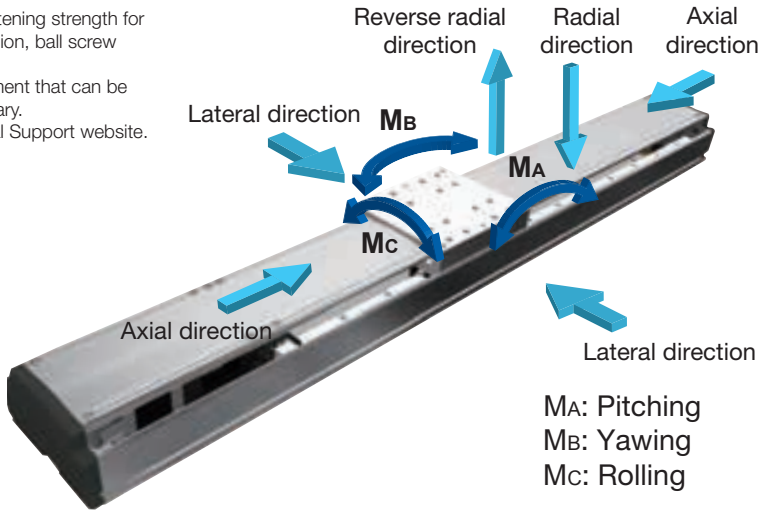
Motor						US6		US8		USW12		USW16		USW20	
	Manufacturer	Series	Type	Rated output	Flange angle	Direct motor coupling	Motor wrap	Direct motor coupling	Motor wrap	Direct motor coupling	Motor wrap	Direct motor coupling	Motor wrap	Direct motor coupling	Motor wrap
AC servo motor	Yaskawa Electric Corporation	Σ-V	SGMAV–A5	50W	□40	A	A	–	–	–	–	–	–	–	–
			SGMJV–A5												
			SGMAV–01	100W	□40			A	A						
			SGMJV–01												
			SGMAV–C2	150W	□40	–	–								
			SGMJV–C2												
			SGMAV–02	200W	□60	–	–	–	–	A	A				
			SGMJV–02												
			SGMAV–04	400W	□60					–	–	A	A		
			SGMJV–04												
			SGMAV–08	750W	□80							–	–	A	A
			SGMJV–08												
	Mitsubishi Electric Corporation	J4	HG–KR053	50W	□40	A	A	–	–	–	–	–	–	–	–
			HG–KR13	100W	□40			A	A						
			HG–KR23	200W	□60	–	–	–	–	A	A				
			HG–KR43	400W	□60					–	–	A	A		
			HG–KR73	750W	□80							–	–	A	A
		J3	HF–KP053	50W	□40	A	A	–	–	–	–	–	–	–	–
			HF–KP13	100W	□40			A	A						
			HF–KP23	200W	□60	–	–	–	–	A	A				
			HF–KP43	400W	□60					–	–	A	A		
			HF–KP73	750W	□80							–	–	A	A
	Panasonic Corporation	A5	MSMD5A	50W	□38	B	B	–	–	–	–	–	–	–	–
			MSME5A												
			MSMD01	100W	□38			B	B						
			MSME01												
			MSMD02	200W	□60	–	–	–	–	B	C	–	–	–	–
			MSME02								B				
			MSMD04	400W	□60					–	–	B	B		
			MSME04												
			MSMD08	750W	□80							–	–	B	B
			MSME08												
		A4	MSMD5A	50W	□38	B	B	–	–	–	–	–	–	–	–
			MSMD01	100W	□38			B	B						
			MSMD02	200W	□60	–	–	–	–	B	C	–	–	–	–
			MSMD04	400W	□60					–	–	B	B		
			MSMD08	750W	□80							–	–	B	B
	Tamagawa Seiki Co., Ltd.	TBL–II	TS4602	50W	□40	A	A	–	–	–	–	–	–	–	–
			TS4603	100W				A	A						
			TS4604	150W		–	–								
			TS4607	200W	□60	–	–	–	–	A	A	–	–	–	–
			TS4609	400W						–	–	A	A		
			TS4614	750W	□80							–	–	A	A

Notes:
1. Consult THK before installing a motor other than those listed above.
2. For US6 and 8 with motor wrap type, use a two-surface D-cut motor output shaft. Note that Mitsubishi motors support only one-surface D-cut output shafts; consult the manufacturer for further details.
3. For USW12, 16, and 20 with motor wrap type, use a straight motor output shaft.

Static Permissible Load and Static Permissible Moment

Model		US6	US8	USW12	USW16	USW20
Static permissible load *1 [N]	Radial direction	17100	45400	96800	153600	209600
	Reverse radial direction	17100	45400	10764	17485	17485
	Lateral direction	3659	7520	4369	7357	7357
	Axial direction	949	2099 (100W, direct motor coupling)	1936	2145	2727
			2686 (100W, motor wrap)			
			1049 (150W, direct motor coupling)			
			1345 (150W, motor wrap)			
Static permissible moment *2 [N·m]	M_A	123	287	671	1484	1827
	M_B	290	235	396	939	1175
	M_C	138	226	710	1667	2112

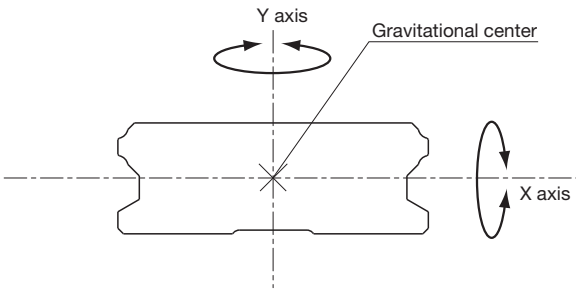
*1 The static permissible load is determined by the tightening strength for bolts and the static load ratings of the LM guide portion, ball screw portion, and support bearing.
*2 The static permissible moment is the maximum moment that can be applied in each direction while the product is stationary.
For details on the nominal life, visit the THK Technical Support website.



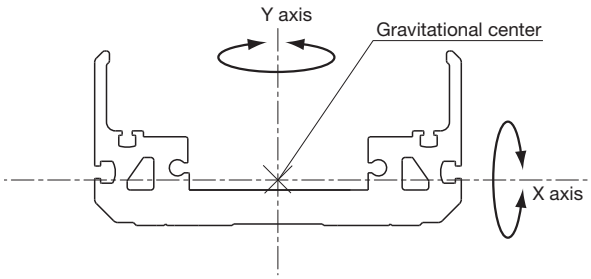
MA: Pitching
MB: Yawing
MC: Rolling

Geometrical Moment of Inertia

■US6/8



■USW12/16/20



Model	Ix [mm⁴]	Iy [mm⁴]	Weight [kg/m]
US6	2.80×10^3	5.20×10^4	2.97
US8	1.11×10^4	7.74×10^4	4.61
USW12	4.07×10^5	4.62×10^6	6.67
USW16	1.27×10^6	1.22×10^7	11.55
USW20	2.19×10^6	2.67×10^7	16.06

Lubrication

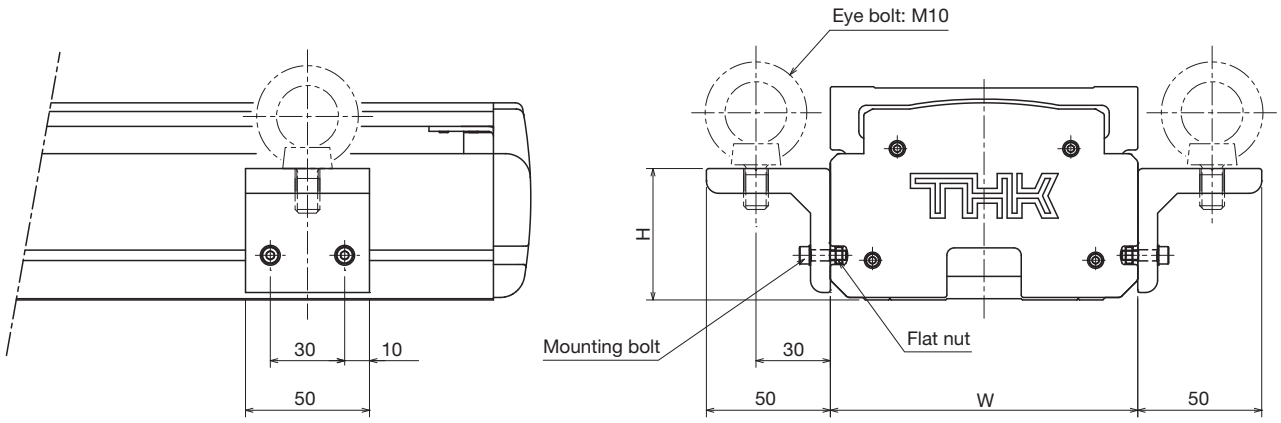
Model	Standard grease	Grease nipple used	
		LM Guide	Ball screw
US6	THK AFA Grease	PB107	–
US8	THK AFA Grease	A–M6F	C–MT6×1
USW12	THK AFB-LF Grease	PB1021B	A–M6F
USW16		A–M6F	A–M6F
USW20		A–M6F	A–M6F

Recommended Coupling

The recommended couplings for the US universal series are shown below.

Actuator model	Standard coupling			Recommended coupling (1)			Recommended coupling (2)		
	Model	Manufacturer	Inertial moment [kg·cm²]	Model	Manufacturer	Inertial moment [kg·cm²]	Model	Manufacturer	Inertial moment [kg·cm²]
US6	NES20W–N8C×N8C	TSUBAKI EMERSON CO.	0.034	SFC–020DA2_C	Miki Pulley Co., LTD.	0.034	XBW–25C2	Nabeya Bi-tech Kaisha	0.023
US8	NES20W–N8C×N10C	TSUBAKI EMERSON CO.	0.034	SFC–020DA2_C		0.034	XBW–25C2		0.023
USW12	SDWA31C–10×14	SUN GIL	0.075	SFC–030DA2_C		0.116	XBW–34C2		0.090
USW16	SDWA31C–12×14	SUN GIL	0.075	SFC–035DA2_C		0.271	XBW–34C2		0.090
USW20	SDWC47C–12×19	SUN GIL	0.550	SFC–040DA2_B		0.430	XBW–39C2		0.210

Hanging Jig



[mm]

Model	W	H
USW12	124	53
USW16	160	52
USW20	200	56

Notes:
1. THK recommends using hanging jigs when the weight of the main actuator unit exceeds 20kg.
2. Hanging jigs are suitable for use with models USW12/16/20.
3. When the unit is shipped with hanging jigs mounted to the actuator, the customer must provide four M10 eyebolts (JIS B 1169 equivalent).
4. When a 6, E, J, or M sensor option has been selected and the unit is shipped with hanging jigs mounted to the actuator, the sensor should be mounted at the end of the base on the motor side.
5. Hanging jigs can be ordered a separate item: Model USW _ _ -HANG (4 hanging jigs and 4 flat nuts). The customer must provide eight mounting bolts and four eyebolts.

Model	Recommended mounting bolt
USW12	Hexagonal-socket-head type bolt, M4-15L
USW16	Hexagonal-socket-head type bolt, M5-15L
USW20	Hexagonal-socket-head type bolt, M5-15L

Motor Selection

Consult the table below when selecting a motor for use with a US actuator. For motor specifications and guidance on selecting a motor, contact the motor manufacturer.

Actuator		Ball screw				
Model	Stroke *1 [mm]	Lead [mm]	Model	Shaft diameter [mm]	Shaft length *2 [mm]	Outer diameter of shaft end [mm]
US6	100	06	WHF1206–3.2	12	315 (328)	ϕ8h7
	900				1115 (1128)	
	100	12	WHF1212–1.45	12	315 (328)	ϕ8h7
	900				1115 (1128)	
US8	100	05	DK1605–3	16	378.5 (384.5)	ϕ10h7
	1100				1378.5 (1384.5)	
	100	10	BLK1510–5.6	15	378.5 (384.5)	ϕ10h7
	1100				1378.5 (1384.5)	
	100	20	WTF1520–3	15	378.5 (384.5)	ϕ10h7
	1100				1378.5 (1384.5)	
	100	30	WTF1530–2	15	378.5 (384.5)	ϕ10h7
	1100				1378.5 (1384.5)	
USW12	100	05	DK1605–3	16	358 (394)	ϕ10h7
	1100				1358 (1394)	
	100	10	BLK1510–5.6	15	358 (394)	ϕ10h7
	1100				1358 (1394)	
	100	20	WTF1520–3	15	358 (394)	ϕ10h7
	1100				1358 (1394)	
	100	30	WTF1530–2	15	358 (394)	ϕ10h7
	1100				1358 (1394)	
USW16	100	10	SBN2010XS–2.5	20	387 (424)	ϕ12h7
	1500				1787 (1824)	
	100	20	BLK2020–3.6	20	387 (424)	ϕ12h7
	1500				1787 (1824)	
	100	40	WTF2040–2	20	387 (424)	ϕ12h7
	1500				1787 (1824)	
USW20	200	20	BLK2020–3.6	20	478 (526)	ϕ12h7
	1700				1978 (2026)	
	200	40	WTF2040–2	20	478 (526)	ϕ12h7
	1700				1978 (2026)	

*1 For further information on stroke, see the specifications for each model.
*2 Ball screw shaft length. Shaft lengths for motor wrap type are shown in parentheses.

Actuator model	LM Guide model	Weight of moving element [kg]	Sliding resistance [N]
US6	SRS15W	1.0	10.0
US8	SHW27CR	2.0	23.0
USW12	SHS15V	2.5	27.4
USW16	SHS20V	4.7	40.1
USW20	SHS25V	6.0	54.2

Permissible input torque		
Actuator model	Direct motor coupling [N·m]	Motor wrap [N·m]
US6	1.67	1.23
US8	1.67	2.14
USW12	1.69	1.69
USW16	3.75	3.75
USW20	4.77	4.77

Coupling	
Actuator model	Inertial moment [kg·cm^2]
US6	0.034
US8	0.034
USW12	0.075
USW16	0.075
USW20	0.550

Timing pulley	
Actuator model	Inertial moment [kg·cm^2]
US6RT	0.06
US8RT	0.20
USW12RT	0.66
USW16RT	0.68
USW20RT	1.30

For further details on timing pulleys, contact THK.

Precautions on Use

● Application

· This product cannot be applied to any equipment or system that may be used under a life-threatening condition.
· When you consider using this product for special applications such as equipment/system for mobile vehicles, medical uses, aerospace, atomic energy and power plants, make sure to contact THK for applicability beforehand.

● Safety Precautions

· Before operation, please read thoroughly and obey "Manipulating industrial robots – Safety" (JIS B8433) and "Ordinance on Industrial Safety and Health" (Ministry of Health, Labor and Welfare).
· Read the manual carefully, understand the contents well, and strictly observe the safety precautions.
· Before performing installation, adjustment, checking, or services regarding the main actuator unit, controller and the relevant connected equipment, make sure to remove all power plugs from the outlet and apply locking or safety plugs so that nobody else can turn on the power.
Also display a signboard showing that the work is ongoing at a prominent place.
· Do not touch the moving part of the actuator while it is energized. In addition, do not enter the operating area of the actuator while the product is operating or in the ready state.
· If two or more people are involved in the operation, confirm the procedures such as a sequence, signs and anomalies in advance, and appoint another person for monitoring the operation.
· Do not unnecessarily disassemble this product. Doing so may allow foreign materials to enter or deterioration of precision. Also this will cause the risk of electric shock from the controller.
· Take care not to drop or strike this product. Doing so may cause injury or damage the unit. If the product is dropped or impacted, functionality may be reduced even if there is no surface damage.
· Operation of the actuator over the permissible rotational speed may cause damage or an accident. Please keep the rotational speed within THK specifications.
· Prevent foreign material, such as dust or cutting chips, from entering the product. This could cause damage to ball recirculation components and loss of functionality.
· When planning to use the product in an environment where a coolant could penetrate the unit, contact THK.
· When there is any risk that the slider may collide with the stoppers attached to both ends of operable range, install some shock absorbing mechanism such as a shock absorber. The stoppers are not designed to absorb the impact generated by the collision of the slider. When the slider collides with a stopper during operation, it may cause damage or an accident.

● Environment

· An indoor location and ambient temperatures from 0 to 40°C, and humidity of 80%RH or below (no freezing or condensation).

Wrong environment can cause failures of the actuator and driver. The best place to use the product is as follows:
· A place free from corrosive gas and flammable gas.
· A place where vibration or impact is not transmitted to the unit.
· A place free from electrically conductive powder (such as iron powder), dust, oil mist, cutting fluid, moisture, salt, and organic solvent.
· A place free from direct sunlight and radiant heat.
· A place free from strong electric and magnetic fields.
· A place that is easily accessible for service and cleaning purposes.
· When using the product in locations exposed to constant vibrations or in special environments such as vacuum or abnormally high or low temperatures, contact THK in advance.

● Mounting Surface

· The surface should be the plane that has the precision of machining or the equivalent of that. Some products specify the required flatness.
When you wish to use the product with QZ in a position other than horizontal (such as wall mount and vertical posture), contact THK.

● Lubrication

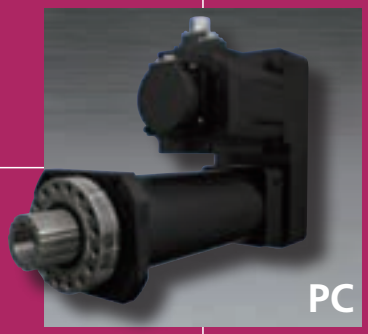
- In order to effectively use the actuator, lubrication is required. Insufficient lubrication may increase abrasion on the rolling part and cause early failure.
- Do not use a mix of lubricants with different physical properties. Note that encapsulated lubricant types vary depending on products.
- Please contact THK if using special lubricants.
- THK recommend the greasing interval to be approximately every 100km. However, it may vary depending on the usage conditions, so THK recommends determining a greasing interval during the initial inspection.
- If the product is to used in location exposed to vibrations or in special environment such as vacuum, or abnormally high or low temperatures, or in a clean room, normal lubricants may not be used. Contact THK for details.
- When adopting oil lubrication method, contact THK.

● Storage

- When storing this actuator, enclose it in a package designated by THK and store it in a horizontal position away from abnormally high or low temperatures and high humidity.

Press series

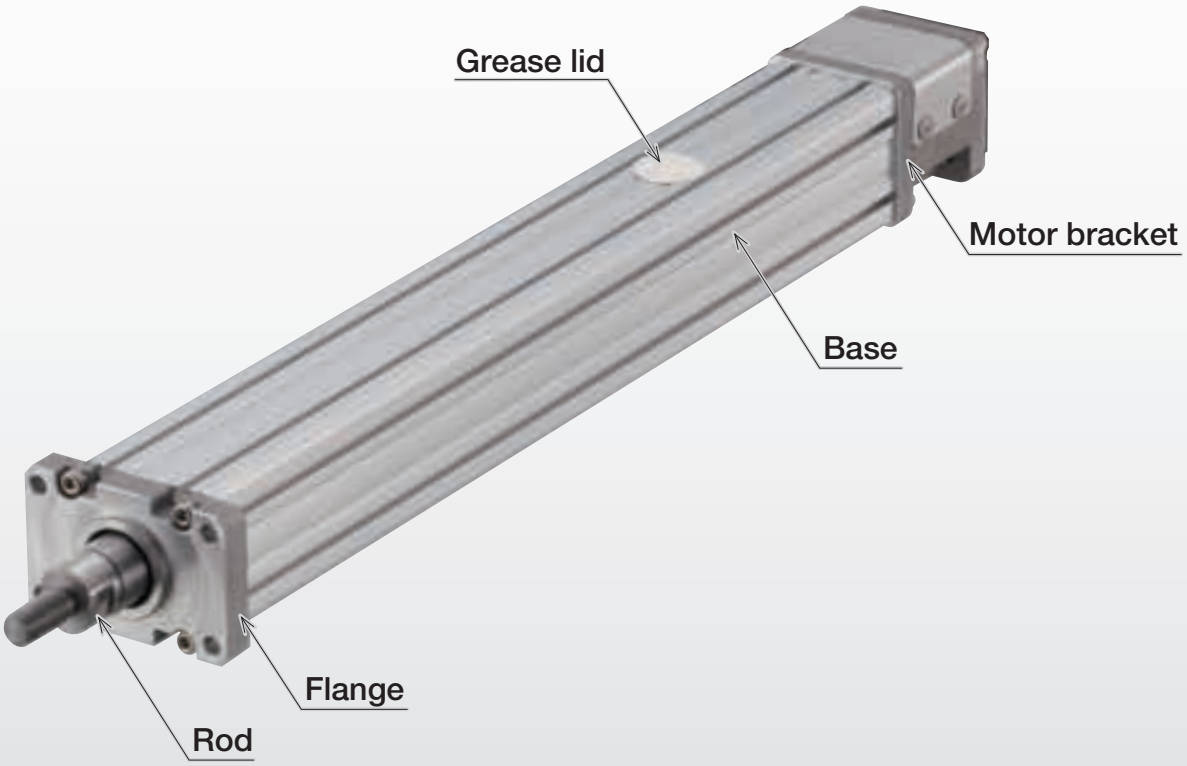
Model: PCT/PC



Chapter 4

Electrical Actuator
Press Series
PCT

Cylinder-type Actuator with Ball Screw



Features

Press actuator

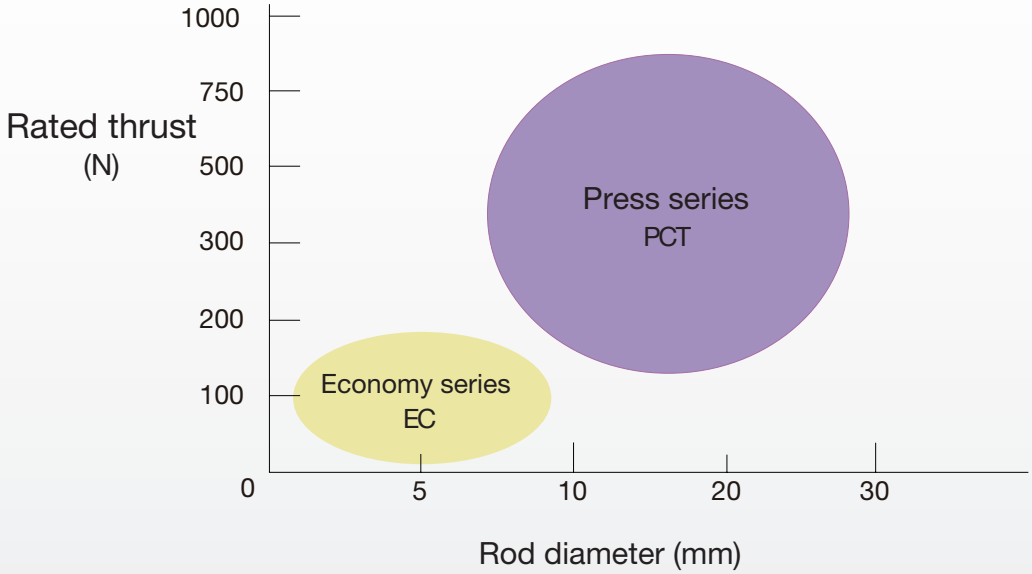
This actuator is offers superior axial load rigidity and thus available for use in a small press fitting and caulking machine.

Motorized

A motorized mechanism is employed instead of an air cylinder, reducing process time, increasing accuracy, and providing multi-point positioning, for improved productivity.

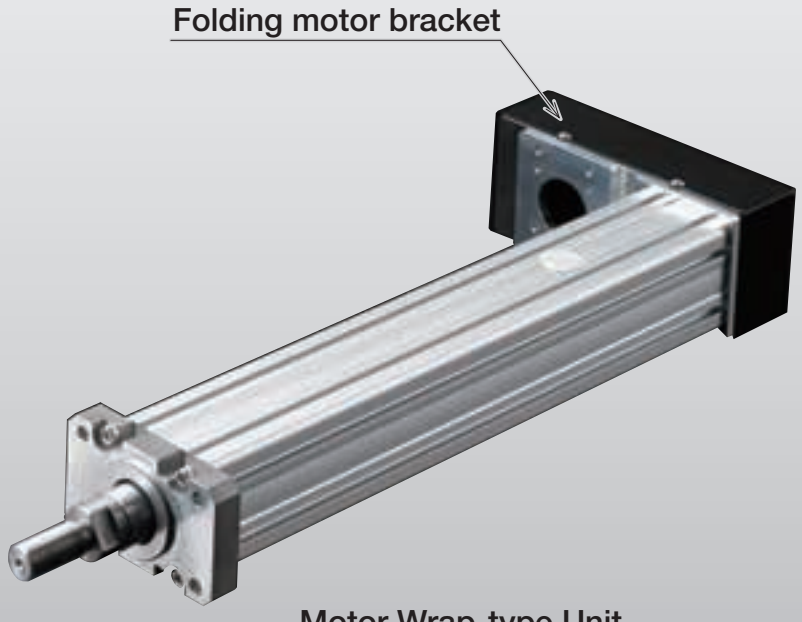
Many possible variations

A combination of ball screw lead and motor capacity allows you to select products suited to your needs from five types of variations with rated thrusts ranging from about 100 to 800N.



Flexible device design

PCT can support any installation direction through the use of a flange or T slot on the main unit.
Motor installation is also possible by direct coupling or return.
(When a radial load and moment load are applied to the rod, a guide must be installed separately.)



Motor Wrap-type Unit

PCT Model Configuration without Motor

Model	Lead, reduction ratio	Stroke	Option	With/without motor	Motor bracket
PCT20R	06N	0200	R	0	A
(1)	(2)	(3)	(4)	(5)	(6)
PCT20	04N	0050: 50mm	N: Direct coupling	0: Without motor	A1
PCT25	06N	0100: 100mm	D: Down		A2
PCT20R		0150: 150mm	L: Left		K1
PCT25R		0200: 200mm	R: Right		K2
		0250: 250mm			B1
		0300: 300mm			B2

R for PCT represents motor return.

For PCT, folded motor configuration is limited to reduction ratio 1/1.
Select from the "Combinations" table below.

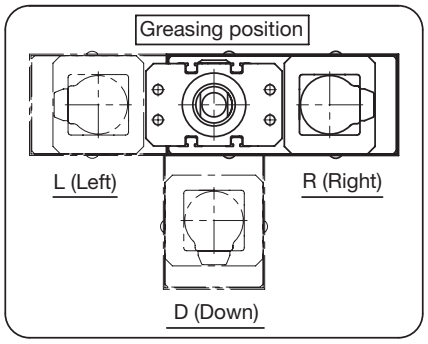
Specify N for direct motor coupling and select folded direction from the figure below for motor return.

Select a bracket from the table on page 4-010 to match the motor selected.

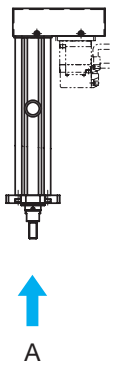
Combinations

Model (1)	Lead, reduction ratio (2)	Stroke (3)
PCT20 PCT20R	06N	0050 to 0200
PCT25 PCT25R	06N or 04N	0050 to 0300

Option: Motor return



(Seen from side A)

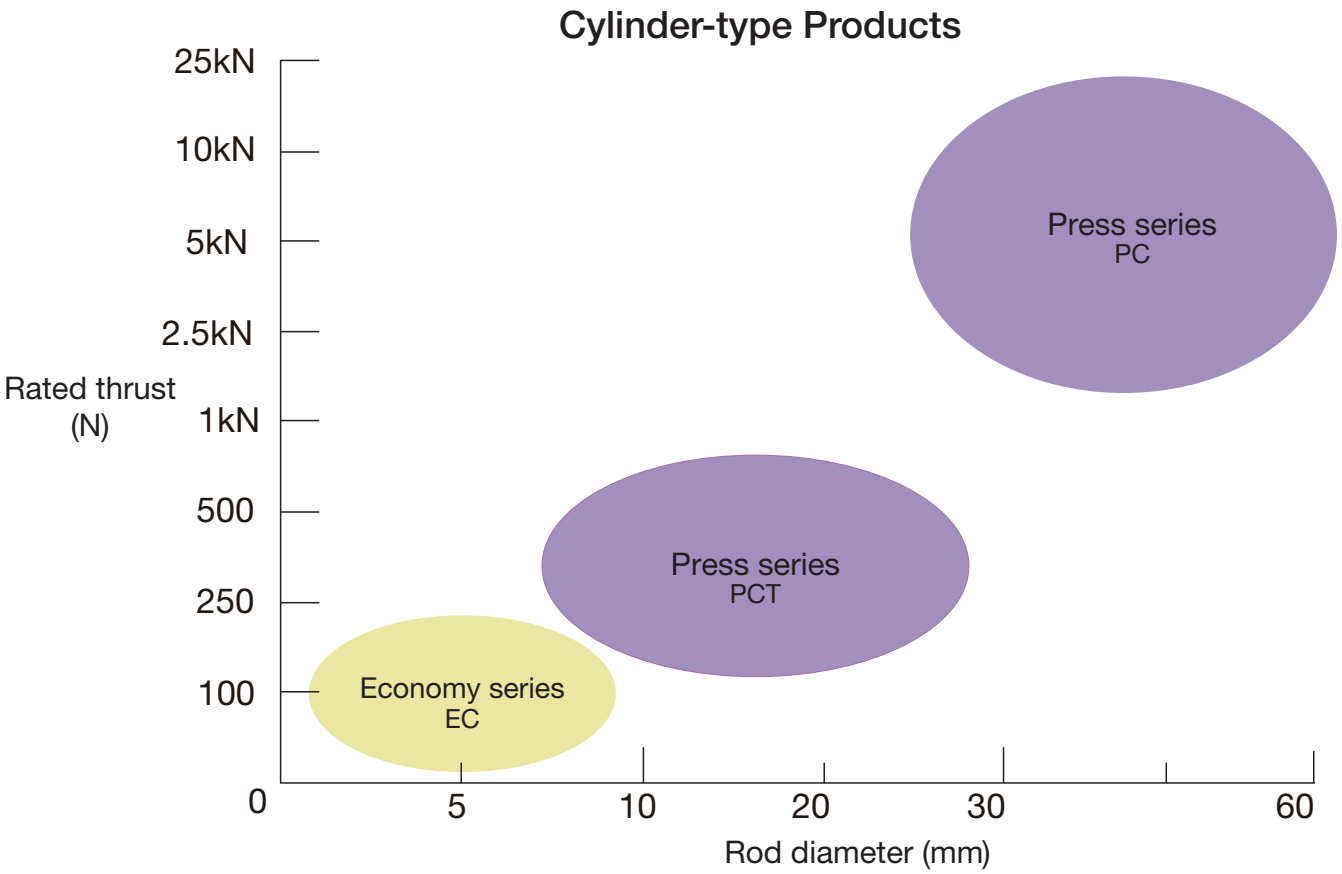


Motor brackets

Motor model		Model	PCT20 (50W)	PCT25 (100W)	PCT25 (200W)	PCT25 Stepper motor
Yaskawa Electric Corporation	Σ-V	SGMJV	A1		A2	-
		SGMAV				
Mitsubishi Electric Corporation	J4	HG-KR				
		HG-MR				
Omron Corporation	G5	R88M-K			K2	
Panasonic Corporation	A5	MSME	K1			
Oriental Motor Co. Ltd.	α step	□60	-	-	-	B1
	5 phase					
	2 phase	□56.4	-	-	-	B2

1. Consult THK before installing a motor other than those listed above.
2. Motor-wrap units incorporate set screws to connect the pulley and motor output shaft. Use a D-cut motor output shaft.

Specifications



PCT

Model	Motor rated output [W]	Rated thrust [N]	Maximum speed [mm/s]	Maximum stroke [mm]	Generated thrust [N]
PCT20-06N	50	133	300	200	130 / 402
PCT20R-06N					
PCT25-06N	100	266		300	260 / 796
PCT25R-06N					
PCT25-04N		400	200		400 / 1194
PCT25R-04N					
PCT25-06N	200	536	300		500 / 1600
PCT25R-06N					
PCT25-04N		804	200		800 / 2400
PCT25R-04N					

Generated thrust [N]: 0 100 250 500 1000 1500 2500 5000

Rated thrust
Instantaneous maximum thrust

Note: Contact THK before attempting a pressing operation with generated thrust above the rated thrust and below the instantaneous maximum thrust.

PC

Model	Motor rated output [kW]	Rated thrust [kN]	Maximum speed [mm/s]	Maximum stroke [mm]	Generated thrust [kN]
PC30-06A	0.4	1.6	210	250	1.6 / 3.3
PC40-06B	0.75	3.2	200		3.2 / 6.4
PC40H-08C	1(0.85)	5.6	150(112.5)		5.6 / 11.2
PC50-06D	1.5(1.3)	8.4	150(112.5)		8.4 / 16.8
PC60-10E	2(1.8)	10.9	150(112.5)		10.9 / 21.8
PC60H-10F	3.5(2.9)	17.8	160(125)		17.8 / 35.6

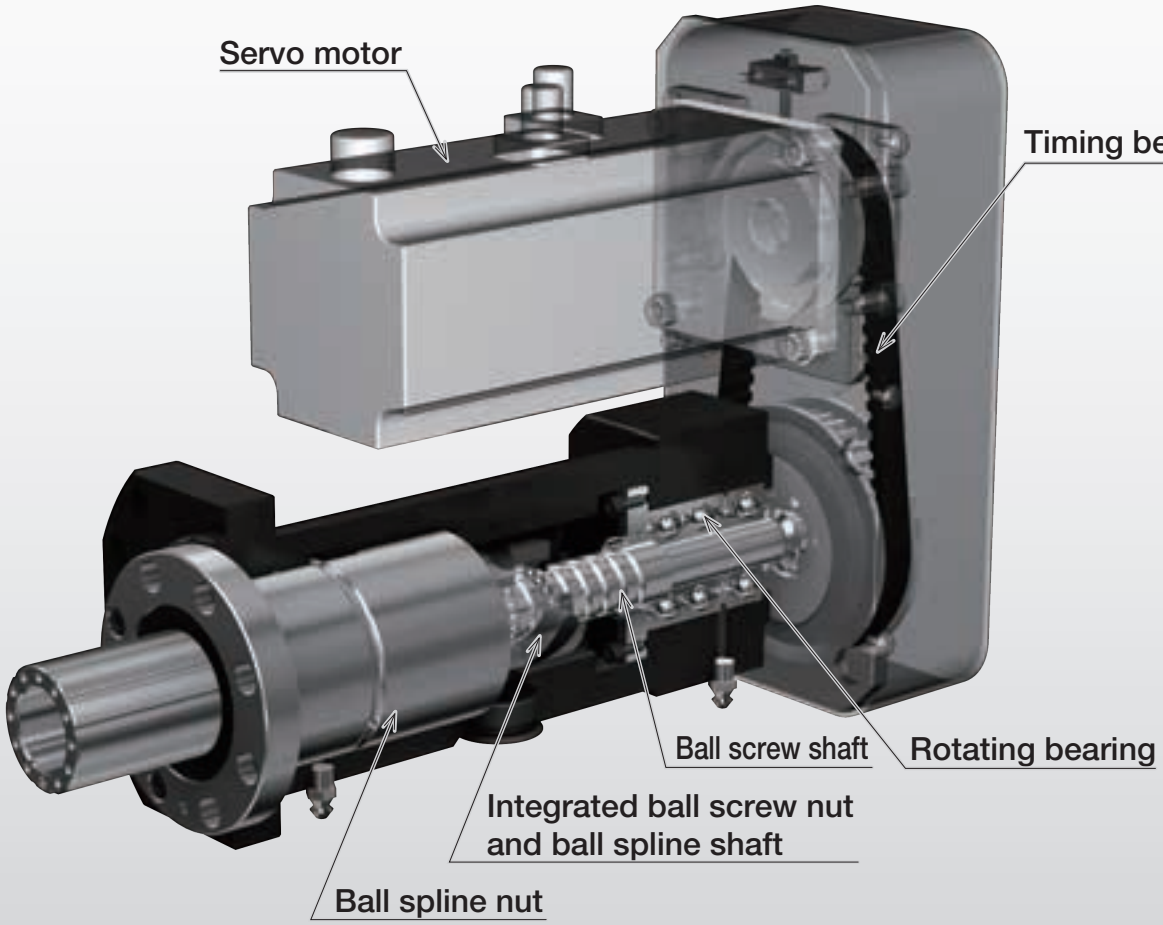
Generated thrust [kN]: 0 1 2 3 7.5 10 15 20 30 40

Rated thrust
Instantaneous maximum thrust

Note: Contact THK before attempting a pressing operation with generated thrust above the rated thrust and below the instantaneous maximum thrust.
Values with Yaskawa motor are shown in parentheses.

Electrical Actuator
Press Series
PC

Compact, High-precision, High-rigidity Servo Press Actuator

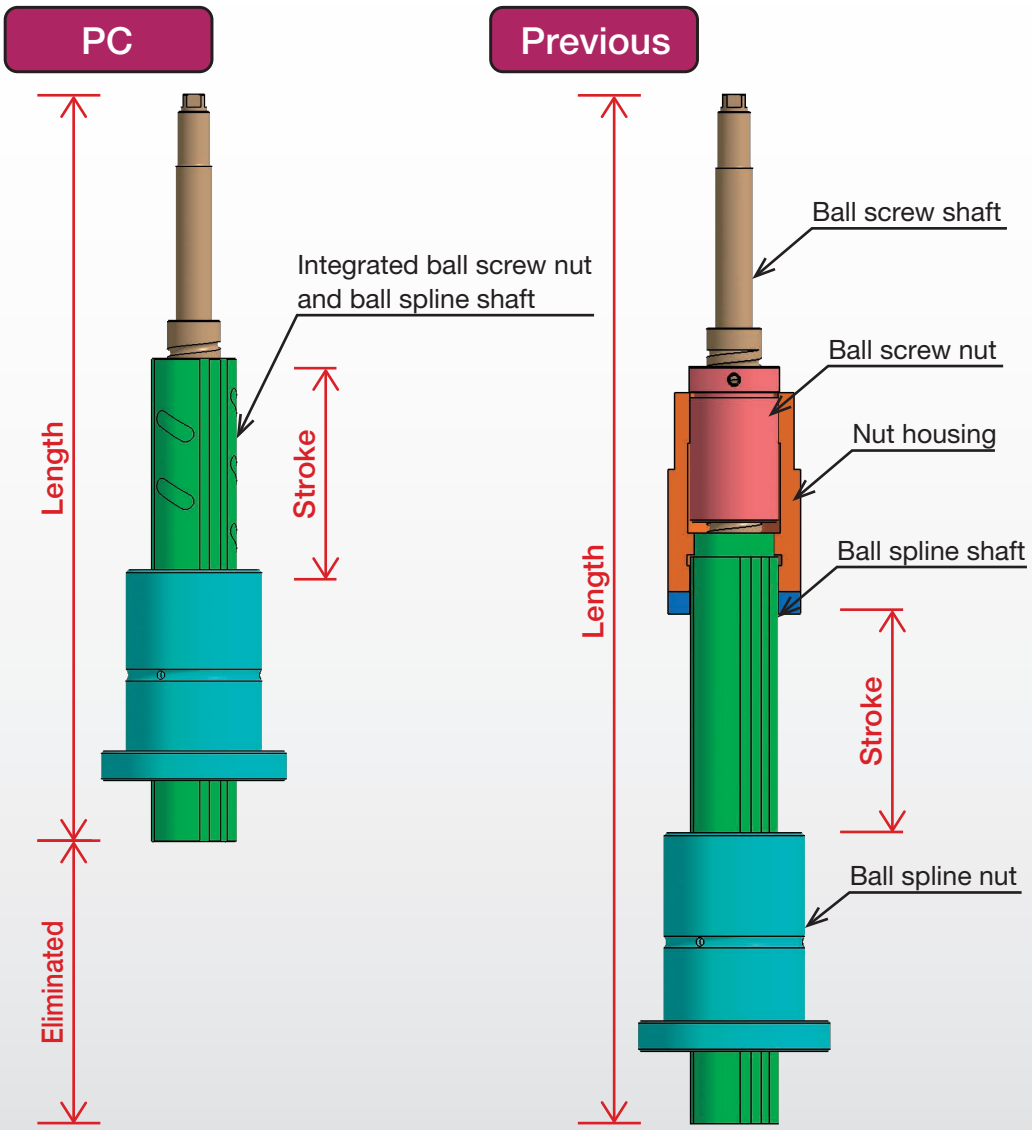


A servo press actuator with a new structure incorporating a precision ball screw nut and ball spline shaft, providing a compact unit that delivers high thrust.

Features

Compact structure

The new integrated structure, incorporating a precision ball screw nut and ball spline shaft, significantly reduces the product length, making the unit much more compact.



30% less length (when stroke is 50mm)
(Compared to our previous product)

Designed to withstand compressive loads

The bearing arrangement provides high resistance against compressive loads.

High load capacity

The ball screw shaft diameter and loaded circuitry have been maximized to enable high load capacity.

High rigidity

The Ball Spline Model LF enables smooth movement without clearance, providing a guide with high rigidity.

High feed precision

The feed mechanism employs a precision ball screw, providing superior feed precision.

PC Model Configuration with Motor and Driver

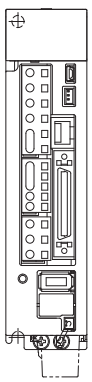
Model	Lead, reduction ratio	Stroke	Greasing position	Applicable motor (control device)	Motor cable orientation
PC30 -	06A -	0050 -	D -	M040BM -	U
(1)	(2)	(3)	(4)	(5)	(6)
PC30	06A	0050: 50mm	D: Down	M040M	U: Up
PC40	06B	0100: 100mm	L: Left	M040BM (with brake)	L: Left
PC40H	08C	0150: 150mm	R: Right	M040Y	R: Right
PC50	06D	0200: 200mm		M040BY (with brake)	
PC60	10E	0250: 250mm		M075M	
PC60H	10F			M075BM (with brake)	
				M075Y	
				M075BY (with brake)	
				M085Y	
				M085BY (with brake)	
				M100M	
				M100BM (with brake)	
				M130Y	
				M130BY (with brake)	
				M150M	
				M150BM (with brake)	
				M180Y	
				M180BY (with brake)	
				M200M	
				M200BM (with brake)	
				M290Y	
				M290BY (with brake)	
				M350M	
				M350BM (with brake)	

Select from the "Applicable motor (control device)" table on page 4-010.

"M" or "Y" at the end of the symbol represents the motor manufacturer.
M: Mitsubishi Electric Corporation
Y : Yaskawa Electric Corporation

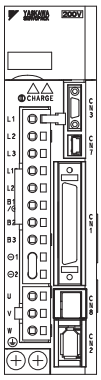
A driver and cables (5m each) are shipped with the PC main unit. To obtain a network-supported servo amp/servo pack, contact THK.

Accessories (included with main unit)

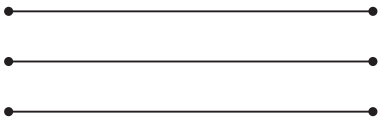


Servo amp

or



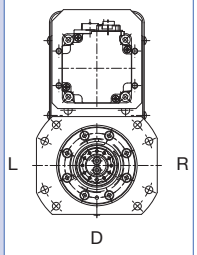
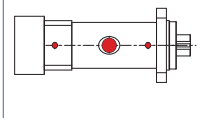
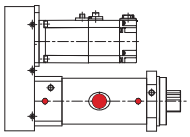
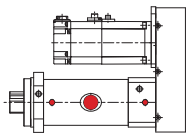
Servo pack



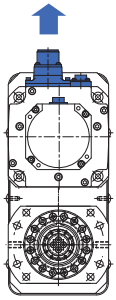
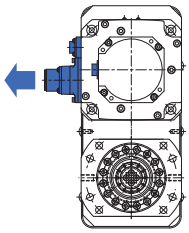
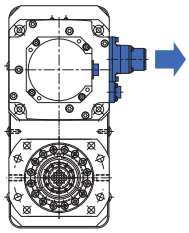
Cables (5m each)
Motor power cable, encoder cable, brake cable, motor power/brake cable

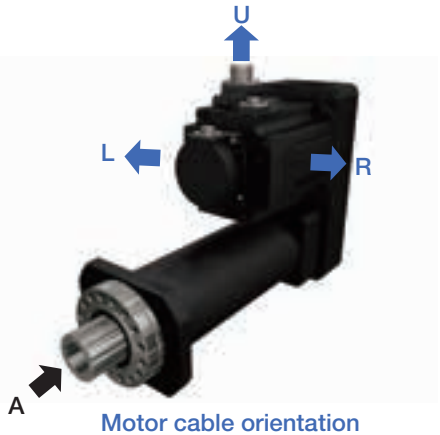
PC main unit

Greasing position

Greasing position	Down	Left	Right
Symbol	D	L	R
Greasing position (Seen from rod side)				

Motor cable orientation

Motor cable orientation	Up	Left	Right
Symbol	U	L	R
Motor cable orientation (Seen from side A)			



Motor cable orientation

Applicable motor (control device)

Model, lead, reduction ratio	Symbol	Servo motor	Servo amp/servo pack	Encoder cable (5m)	Motor cable (5m)	Brake cable (5m)
PC30-06A	M040M	HF-KP43	MR-J3-40A	MR-J3ENCBL5M-A1-L	MR-PWS1CBL5M-A1-L	-
	M040BM	HF-KP43B				MR-BKS1CBL5M-A1-L
	M040Y	SGMJV-04ADA21	SGDV-2R8A01A	JZSP-CSP01-05-E	JZSP-CSM02-05-E	-
	M040BY	SGMJV-04ADA2C			JZSP-CSM12-05-E*1	
PC40-06B	M075M	HF-KP73	MR-J3-70A	MR-J3ENCBL5M-A1-L	MR-PWS1CBL5M-A1-L	-
	M075BM	HF-KP73B				MR-BKS1CBL5M-A1-L
	M075Y	SGMJV-08ADA21	SGDV-5R5A01A	JZSP-CSP01-05-E	JZSP-CSM03-05-E	-
	M075BY	SGMJV-08ADA2C			JZSP-CSM13-05-E*1	
PC40H-08C	M100M	HF-SP102	MR-J3-100A	MR-J3ENSCBL5M-L	SVPM-J3HF3-A-5*2	-
	M100BM	HF-SP102B				SVPM-J3HF2B-A-5*2
	M085Y	SGMGV-09ADA21	SGDV-7R6A01A	JZSP-CVP01-05-E	JZSP-UVA101-05-E*3	-
	M085BY	SGMGV-09ADA2C			JZSP-UVA131-05-E*4	
PC50-06D	M150M	HF-SP152	MR-J3-200AN	MR-J3ENSCBL5M-L	SVPM-J3HF3-A-5*2	-
	M150BM	HF-SP152B				SVPM-J3HF2B-A-5*2
	M130Y	SGMGV-13ADA21	SGDV-120A01A	JZSP-CVP01-05-E	JZSP-UVA101-05-E*3	-
	M130BY	SGMGV-13ADA2C			JZSP-UVA131-05-E*4	
PC60-10E	M200M	HF-SP202	MR-J3-200AN	MR-J3ENSCBL5M-L	SVPM-J3HF5-A-5*2	-
	M200BM	HF-SP202B				SVPM-J3HF2B-A-5*2
	M180Y	SGMGV-20ADA21	SGDV-180A01A	JZSP-CVP01-05-E	JZSP-UVA301-05-E*3	-
	M180BY	SGMGV-20ADA2C			JZSP-UVA331-05-E*4	
PC60H-10F	M350M	HF-SP352	MR-J3-350A	MR-J3ENSCBL5M-L	SVPM-J3HF6-A-5*2	-
	M350BM	HF-SP352B				SVPM-J3HF2B-A-5*2
	M290Y	SGMGV-30ADA21	SGDV-330A01A	JZSP-CVP01-05-E	JZSP-UVA701-05-E*3	-
	M290BY	SGMGV-30ADA2C			JZSP-UVA731-05-E*4	

*1 Motor power cable and brake cable are integrated.
*2 Manufactured by Misumi Corporation.
*3 Manufactured by Yaskawa Controls Co., Ltd.
*4 Motor power cable and brake cable manufactured by Yaskawa Controls Co., Ltd.
For servo motor, servo amp/servo pack, and cable specifications, consult the relevant manufacturer's catalog.

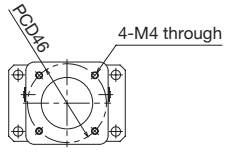
PCT20

Press series
Rod diameter: 20mm

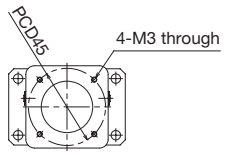
Specifications

Motor capacity (Rated output) [W]			50
Ball screw portion	Shaft diameter [mm]		8
	Lead [mm]		6
	Basic dynamic load rating Ca [N]		1950
	Basic static load rating Coa [N]		3510
	Root diameter [mm]		6.872
	Ball center-to-center diameter [mm]		8.4
Bearing portion (For fixed side)	Axial direction	Basic dynamic load rating Ca [N]	8000
		Static permissible load Poa [N]	3240
Positioning repeatability [mm]			±0.010
Lost motion [mm]			0.1
Rod non-rotational accuracy [°]			±1
Starting torque [N·cm]			1.6
Maximum input torque [N·m]			0.48

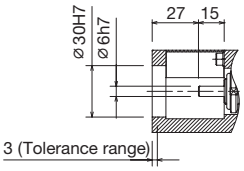
Motor bracket



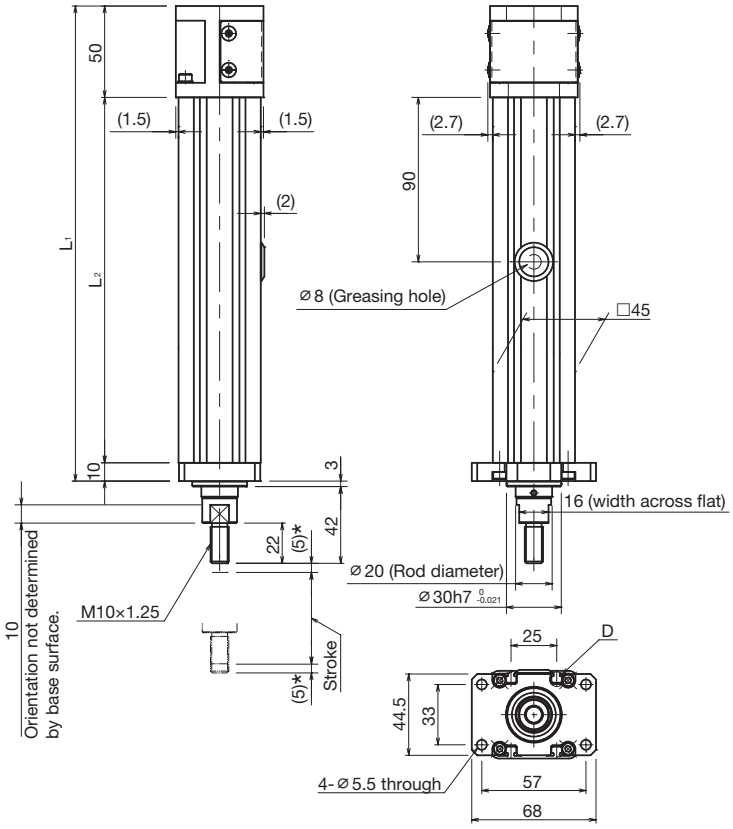
Symbol: A1

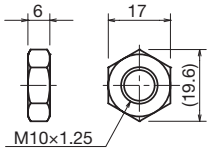


Symbol: K1

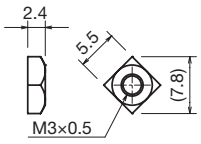


Dimensions

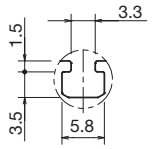




Hexagonal Nut (×1)



Square Nut (×8)



Section D (detail)

*This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)
Maximum speed *1 [mm/s]	Ball screw lead: 6mm	300			230
Dimensions [mm]	L_1	260	310	360	410
	L_2	200	250	300	350
Weight [kg]		1.4	1.6	1.8	2.1

*1 Dependent on permissible rotational speed of the ball screw.

PCT20R

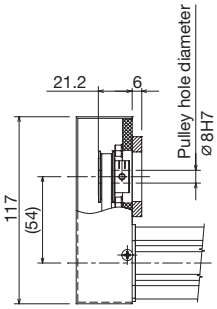
Press series
Rod diameter: 20mm

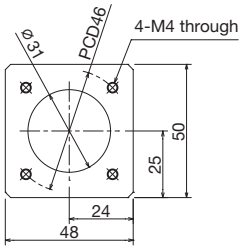
Specifications

Motor capacity (Rated output) [W]			50
Ball screw portion	Shaft diameter [mm]		8
	Lead [mm]		6
	Basic dynamic load rating Ca [N]		1950
	Basic static load rating Coa [N]		3510
	Root diameter [mm]		6.872
	Ball center-to-center diameter [mm]		8.4
Bearing portion (For fixed side)	Axial direction	Basic dynamic load rating Ca [N]	8000
		Static permissible load Poa [N]	3240
Positioning repeatability [mm]			±0.010
Lost motion [mm]			0.1
Rod non-rotational accuracy [°]			±1
Starting torque *1 [N·cm]			1.6
Maximum input torque [N·m]			0.48

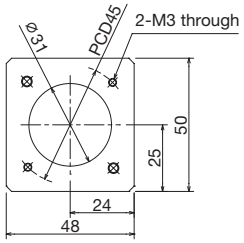
*1 Pulley and timing belt are not included.

Motor bracket



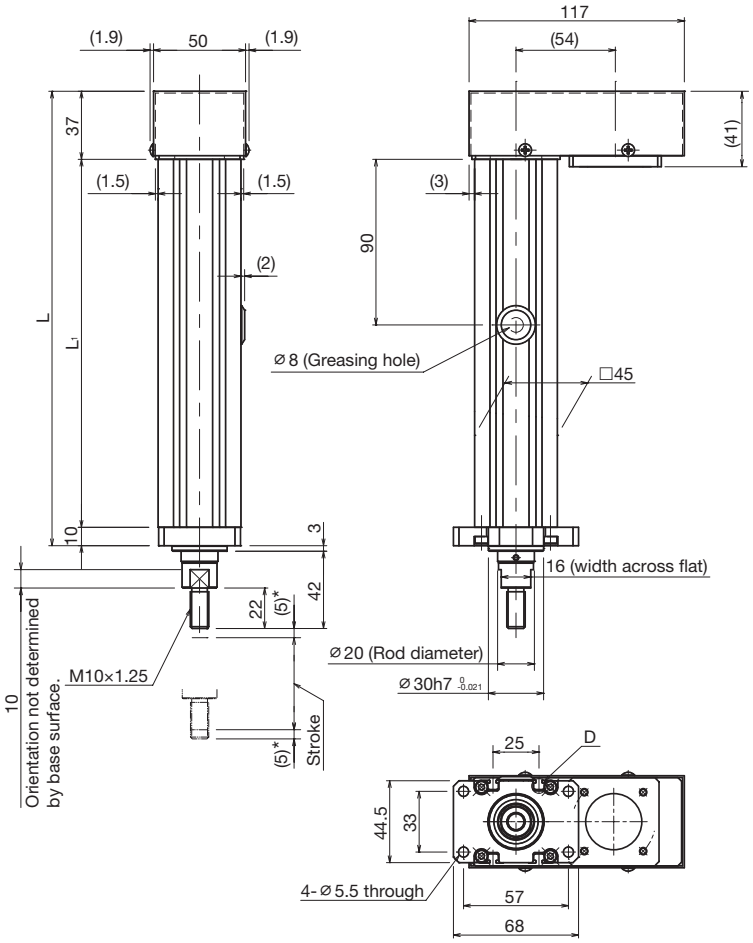


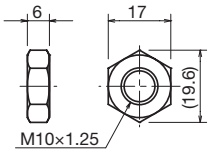
Symbol: A1



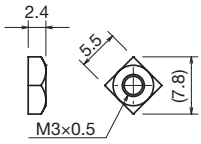
Symbol: K1

Dimensions

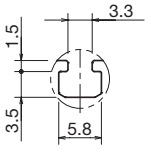




Hexagonal Nut (×1)



Square Nut (×8)



Section D (detail)

*This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)
Maximum speed *1 [mm/s]	Ball screw lead: 6mm	300			230
Dimensions [mm]	L	247	297	347	397
	L_1	200	250	300	350
Weight [kg]		1.6	1.8	2.0	2.2

*1 Dependent on permissible rotational speed of the ball screw.

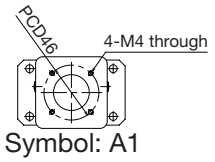
PCT25

Press series
Rod diameter: 25mm

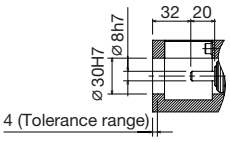
Specifications

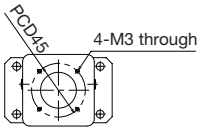
Motor capacity (Rated output) [W]			100	
Ball screw portion	Shaft diameter [mm]		12	14
	Lead [mm]		6	4
	Basic dynamic load rating Ca [N]		4910	5500
	Basic static load rating Coa [N]		9600	11500
	Root diameter [mm]		9.872	11.5
	Ball center-to-center diameter [mm]		12.65	14.4
Bearing portion (For fixed side)	Axial direction	Basic dynamic load rating Ca [N]	13800	
		Static permissible load Poa [N]	5850	
Positioning repeatability [mm]			±0.010	
Lost motion [mm]			0.1	
Rod non-rotational accuracy [°]			±1	
Starting torque [N·cm]			3.2	2.8
Maximum input torque [N·m]			1.91	

Motor bracket

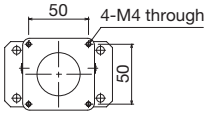


Symbol: A1

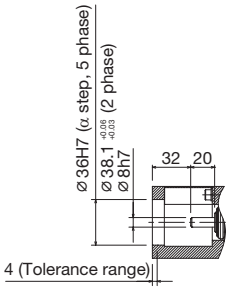


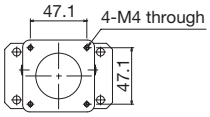


Symbol: K1



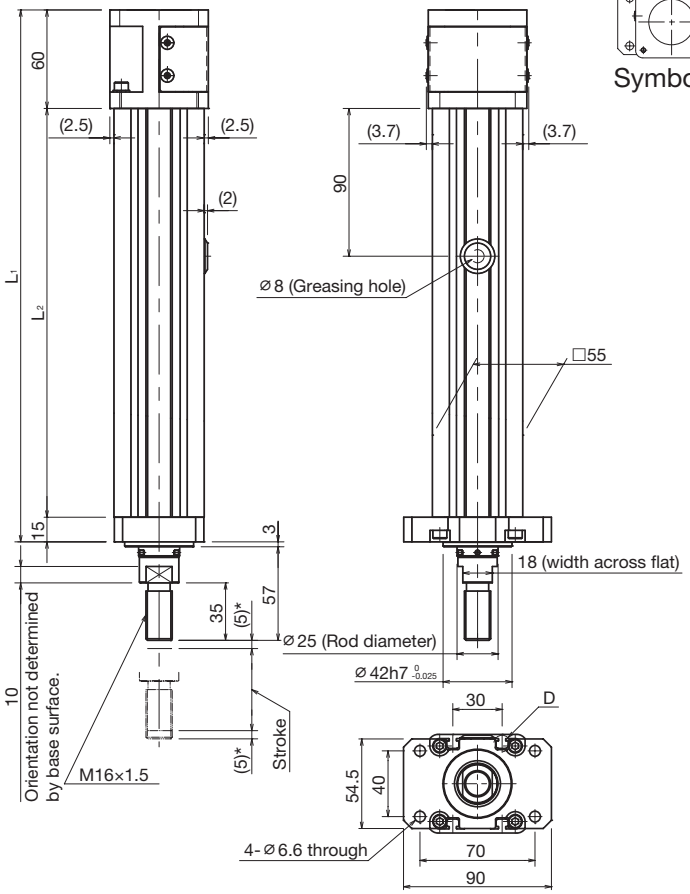
Symbol: B1

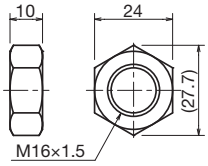




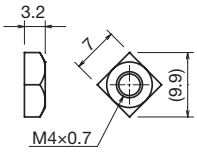
Symbol: B2

Dimensions

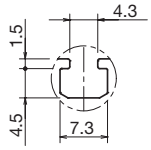




Hexagonal Nut (×1)



Square Nut (×8)



Section D (detail)

*This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)	250 (260)	300 (310)
Maximum speed *1 [mm/s]	Ball screw lead: 6mm	300			260	200	160
	Ball screw lead: 4mm	200				160	130
Dimensions [mm]	L_1	324	374	424	474	524	574
	L_2	249	299	349	399	449	499
Weight [kg]		2.8	3.2	3.5	3.8	4.2	4.5

*1 Dependent on permissible rotational speed of the ball screw.

PCT25R

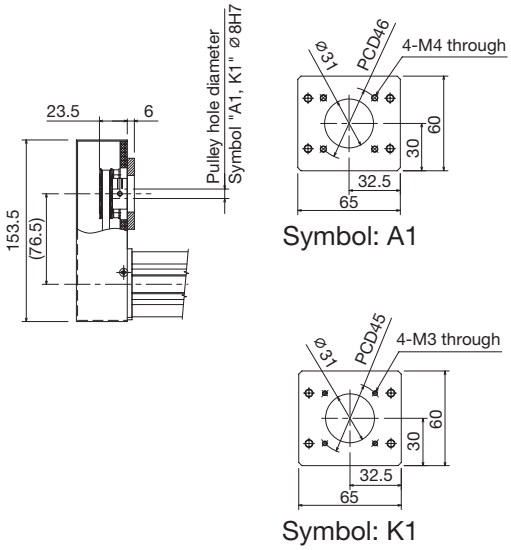
Press series
Rod diameter: 25mm

Specifications

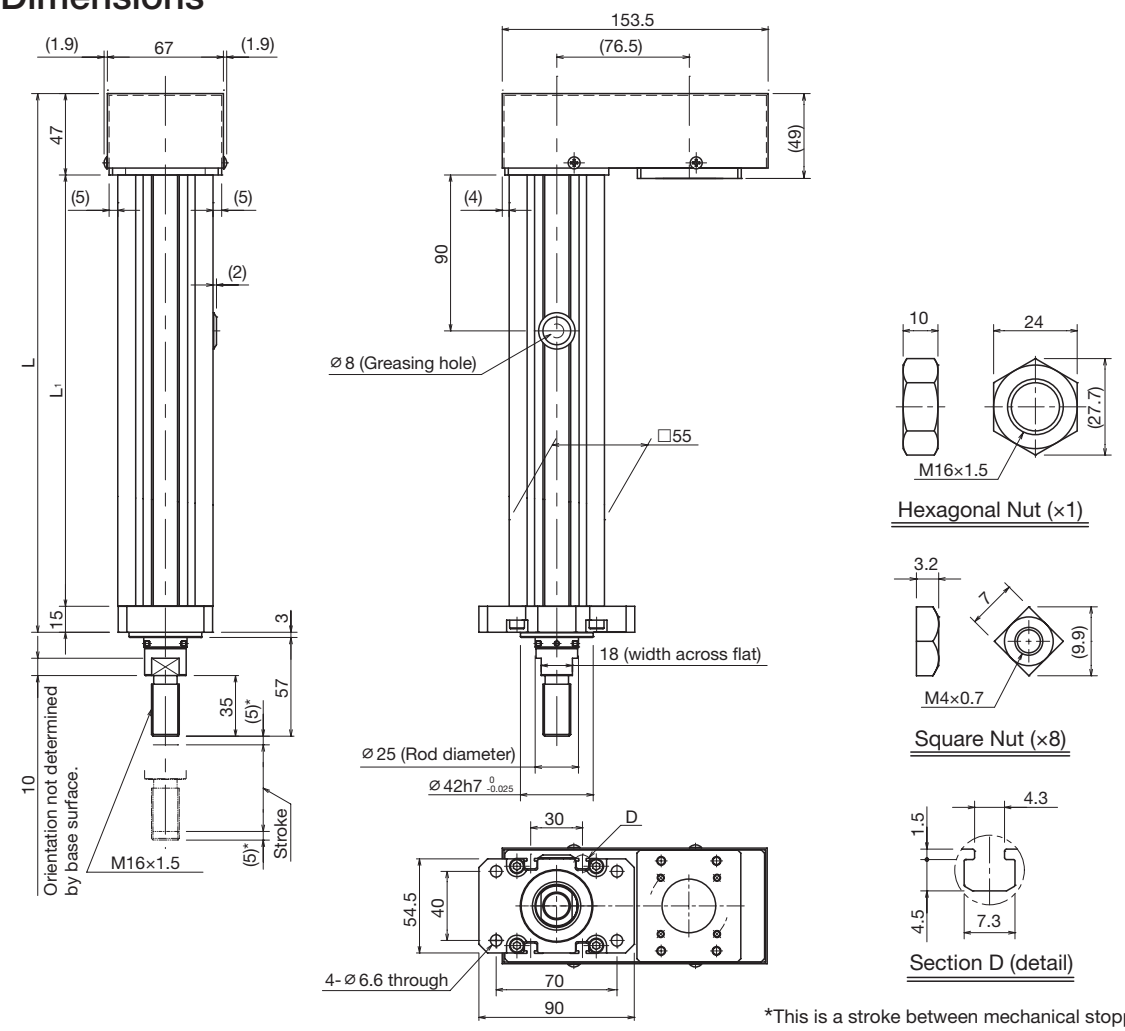
Motor capacity (Rated output) [W]			100	
Ball screw portion	Shaft diameter [mm]		12	14
	Lead [mm]		6	4
	Basic dynamic load rating Ca [N]		4910	5500
	Basic static load rating Coa [N]		9600	11500
	Root diameter [mm]		9.872	11.5
	Ball center-to-center diameter [mm]		12.65	14.4
Bearing portion (For fixed side)	Axial direction	Basic dynamic load rating Ca [N]	13800	
		Static permissible load Poa [N]	5850	
Positioning repeatability [mm]			±0.010	
Lost motion [mm]			0.1	
Rod non-rotational accuracy [°]			±1	
Starting torque *1 [N·cm]			3.2	2.8
Maximum input torque [N·m]			0.95	

*1 Pulley and timing belt are not included.

Motor bracket



Dimensions



*This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)	250 (260)	300 (310)
Maximum speed *1 [mm/s]	Ball screw lead: 6mm	300			260	200	160
	Ball screw lead: 4mm	200				160	130
Dimensions [mm]	L	311	361	411	461	511	561
	L_1	249	299	349	399	449	499
Weight [kg]		3.1	3.4	3.8	4.1	4.4	4.7

*1 Dependent on permissible rotational speed of the ball screw.

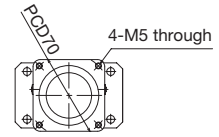
PCT25

Press series
Rod diameter: 25mm

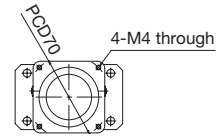
Specifications

Motor capacity (Rated output) [W]			200	
Ball screw portion	Shaft diameter [mm]		12	14
	Lead [mm]		6	4
	Basic dynamic load rating Ca [N]		4910	5500
	Basic static load rating Coa [N]		9600	11500
	Root diameter [mm]		9.872	11.5
	Ball center-to-center diameter [mm]		12.65	14.4
Bearing portion (For fixed side)	Axial direction	Basic dynamic load rating Ca [N]	13800	
		Static permissible load Poa [N]	5850	
Positioning repeatability [mm]			±0.010	
Lost motion [mm]			0.1	
Rod non-rotational accuracy [°]			±1	
Starting torque [N·cm]			3.2	2.8
Maximum input torque [N·m]			1.91	

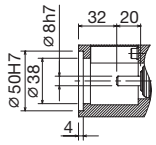
Motor bracket

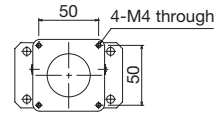


Symbol: A2

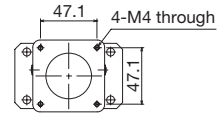


Symbol: K2

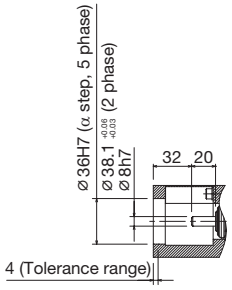




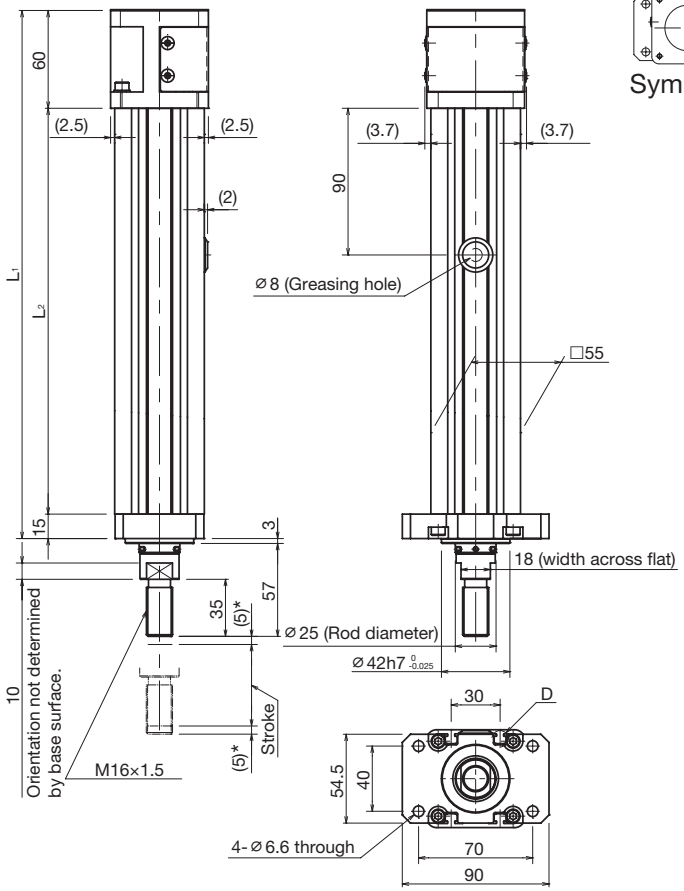
Symbol: B1

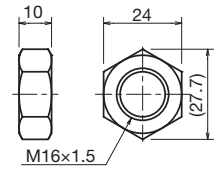


Symbol: B2

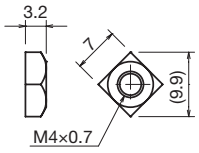


Dimensions

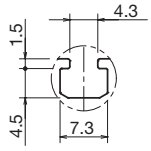




Hexagonal Nut (×1)



Square Nut (×8)



Section D (detail)

*This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)	250 (260)	300 (310)
Maximum speed *1 [mm/s]	Ball screw lead: 6mm	300			260	200	160
	Ball screw lead: 4mm	200				160	130
Dimensions [mm]	L_1	324	374	424	474	524	574
	L_2	249	299	349	399	449	499
Weight [kg]		2.8	3.1	3.5	3.8	4.1	4.5

*1 Dependent on permissible rotational speed of the ball screw.

PCT25R

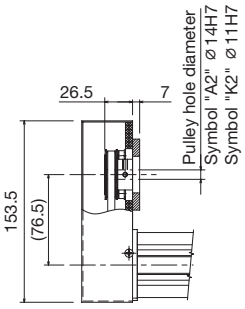
Press series
Rod diameter: 25mm

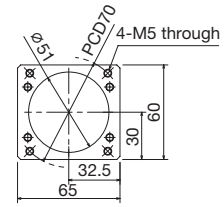
Specifications

Motor capacity (Rated output) [W]			200	
Ball screw portion	Shaft diameter [mm]		12	14
	Lead [mm]		6	4
	Basic dynamic load rating Ca [N]		4910	5500
	Basic static load rating Coa [N]		9600	11500
	Root diameter [mm]		9.872	11.5
	Ball center-to-center diameter [mm]		12.65	14.4
Bearing portion (For fixed side)	Axial direction	Basic dynamic load rating Ca [N]	13800	
		Static permissible load Poa [N]	5850	
Positioning repeatability [mm]			±0.010	
Lost motion [mm]			0.1	
Rod non-rotational accuracy [°]			±1	
Starting torque *1 [N·cm]			3.2	2.8
Maximum input torque [N·m]			1.91	

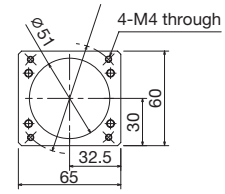
*1 Pulley and timing belt are not included.

Motor bracket



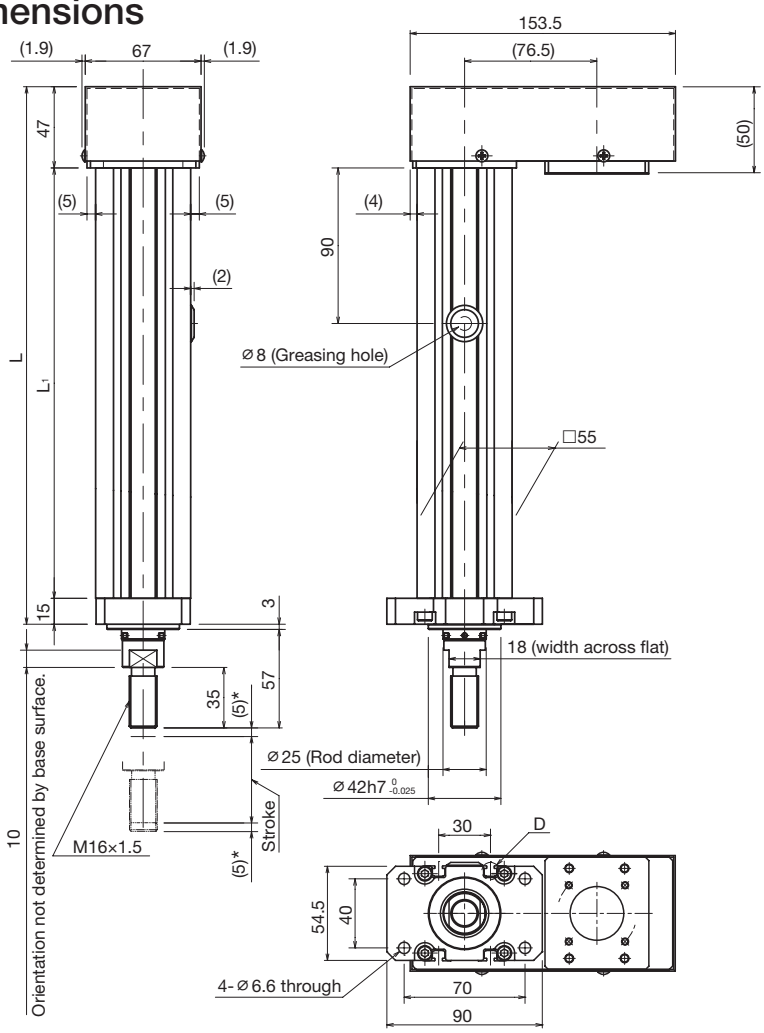


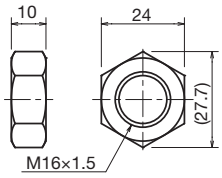
Symbol: A2



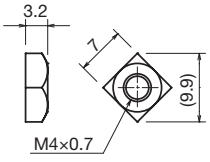
Symbol: K2

Dimensions

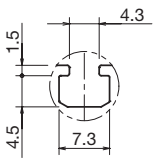




Hexagonal Nut (×1)



Square Nut (×8)



Section D (detail)

*This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)	250 (260)	300 (310)
Maximum speed *1 [mm/s]	Ball screw lead: 6mm	300			260	200	160
	Ball screw lead: 4mm	200				160	130
Dimensions [mm]	L	311	361	411	461	511	561
	L_1	249	299	349	399	449	499
Weight [kg]		3.1	3.4	3.8	4.1	4.4	4.7

*1 Dependent on permissible rotational speed of the ball screw.

PC30-06A

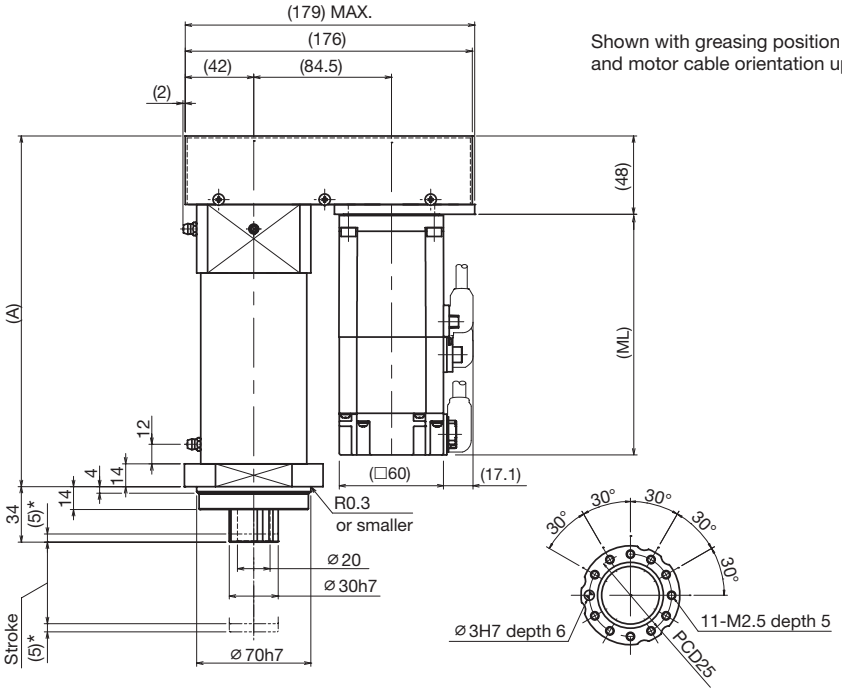
Press series
Rod outer diameter: 30mm, Rated thrust: 1.6kN

Specifications

Motor rated output [W]		400
Ball screw lead [mm]		6
Reduction ratio		28/40
Rated thrust *1 [kN]		1.6
Instantaneous maximum thrust *2 [kN]		3.3
Maximum speed *3 [mm/s]		210
Acceleration and deceleration rate *4 [G]		0.3
Permissible axial load *5 [kN]	Pressing direction	3.3
	Tensile direction	1.6
Positioning repeatability [mm]		±0.005
Backlash [mm]		0.020
Permissible input torque *6 [N·m]		2.6
Maximum load capacity *7 [kg]		15
Operating life *8		15,000,000 times

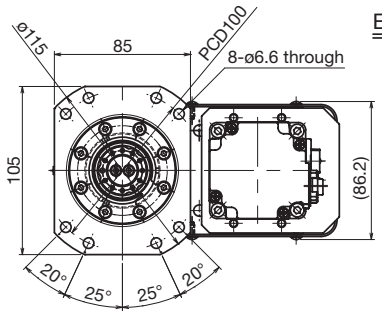
*1 At rated motor torque.
*2 Dependent on permissible axial load.
*3 At rated motor speed.
*4 When maximum load capacity is applied.
*5 Load that can be applied to actuator when static.
*6 To prevent mechanical damage, motor must be operated within this limit.
*7 When actuator is positioned vertically with rod reaching lower end.
*8 Conditions: actuator is positioned vertically with rod reaching lower end; pressing load: rated thrust; pressing direction: compressing direction; pressing distance: 15mm; payload: maximum load capacity.

Dimensions



Shown with greasing position down (D) and motor cable orientation up (U).

End of ball spline shaft (detail)



*This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)			50 (60)	100 (110)	150 (160)	200 (210)	250 (260)
Dimensions [mm]	A		215	265	315	365	415
	ML	M040M (M040BM)*1*2	98.5 (138)				
		M040Y (M040BY)*1*2	98.5 (138.5)				
Weight [kg]	M040M (M040BM)*1*2		8.8 (9.4)	9.9 (10.5)	11 (11.6)	12.1 (12.7)	13.3 (13.9)
	M040Y (M040BY)*1*2		8.6 (9.2)	9.7 (10.3)	10.8 (11.4)	11.9 (12.5)	13.1 (13.7)

*1 Values when a brake is installed are shown in parentheses.
*2 "M" or "Y" at the end of the model number represents the motor manufacturer.
M: Mitsubishi Electric Corporation. Y: Yaskawa Electric Corporation.

PC40-06B

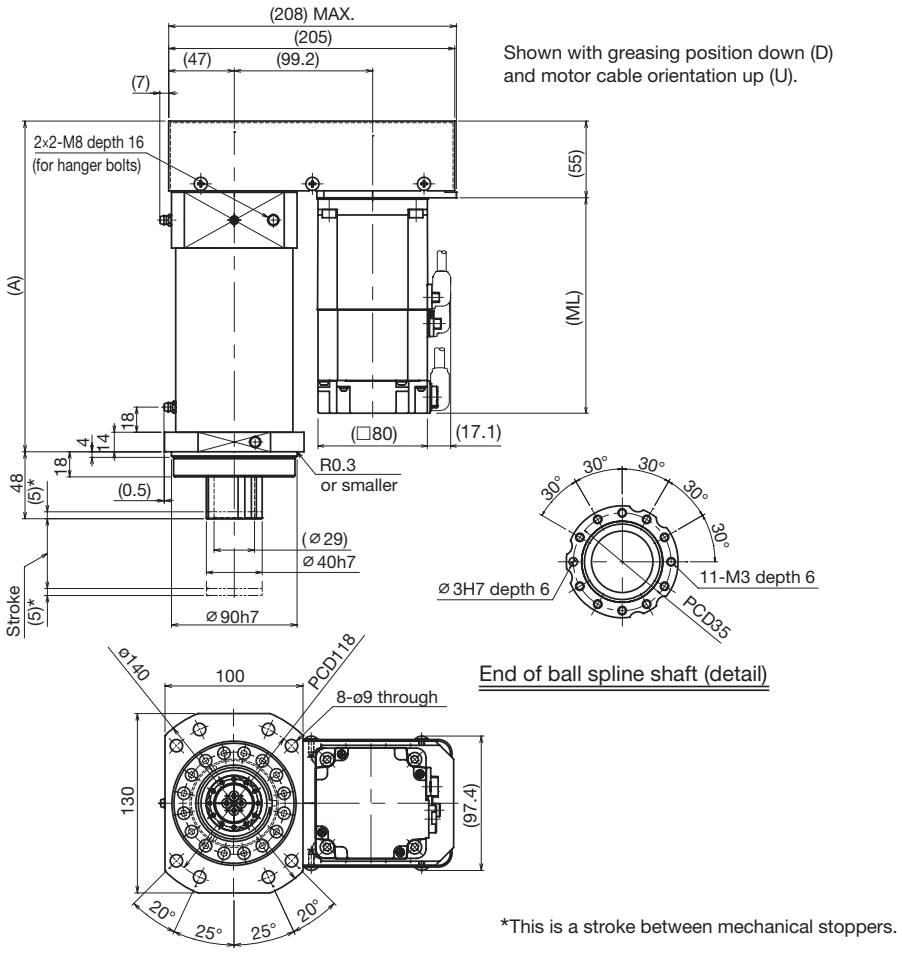
Press series
Rod outer diameter: 40mm, Rated thrust: 3.2kN

Specifications

Motor rated output [W]		750
Ball screw lead [mm]		6
Reduction ratio		32/48
Rated thrust *1 [kN]		3.2
Instantaneous maximum thrust *2 [kN]		6.4
Maximum speed *3 [mm/s]		200
Acceleration and deceleration rate *4 [G]		0.3
Permissible axial load *5 [kN]	Pressing direction	6.4
	Tensile direction	3.2
Positioning repeatability [mm]		±0.005
Backlash [mm]		0.020
Permissible input torque *6 [N·m]		4.8
Maximum load capacity *7 [kg]		25
Operating life *8		15,000,000 times

*1 At rated motor torque.
*2 Dependent on permissible axial load.
*3 At rated motor speed.
*4 When maximum load capacity is applied.
*5 Load that can be applied to actuator when static.
*6 To prevent mechanical damage, motor must be operated within this limit.
*7 When actuator is positioned vertically with rod reaching lower end.
*8 Conditions: actuator is positioned vertically with rod reaching lower end; pressing load: rated thrust; pressing direction: compressing direction; pressing distance: 15mm; payload: maximum load capacity.

Dimensions



Shown with greasing position down (D) and motor cable orientation up (U).

*This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)			50 (60)	100 (110)	150 (160)	200 (210)	250 (260)
Dimensions [mm]	A		237	287	337	387	437
	ML	M075M (M075BM)*1*2	113.8 (157)				
		M075Y (M075BY)*1*2	115 (160)				
Weight [kg]	M075M (M075BM)*1*2		14.4 (15.4)	16 (17)	17.5 (18.5)	19 (20)	20.5 (21.5)
	M075Y (M075BY)*1*2		14.2 (15.1)	15.8 (16.7)	17.3 (18.2)	18.8 (19.7)	20.3 (21.2)

*1 Values when a brake is installed are shown in parentheses.
*2 "M" or "Y" at the end of the model number represents the motor manufacturer.
M: Mitsubishi Electric Corporation. Y: Yaskawa Electric Corporation.

PC40H-08C

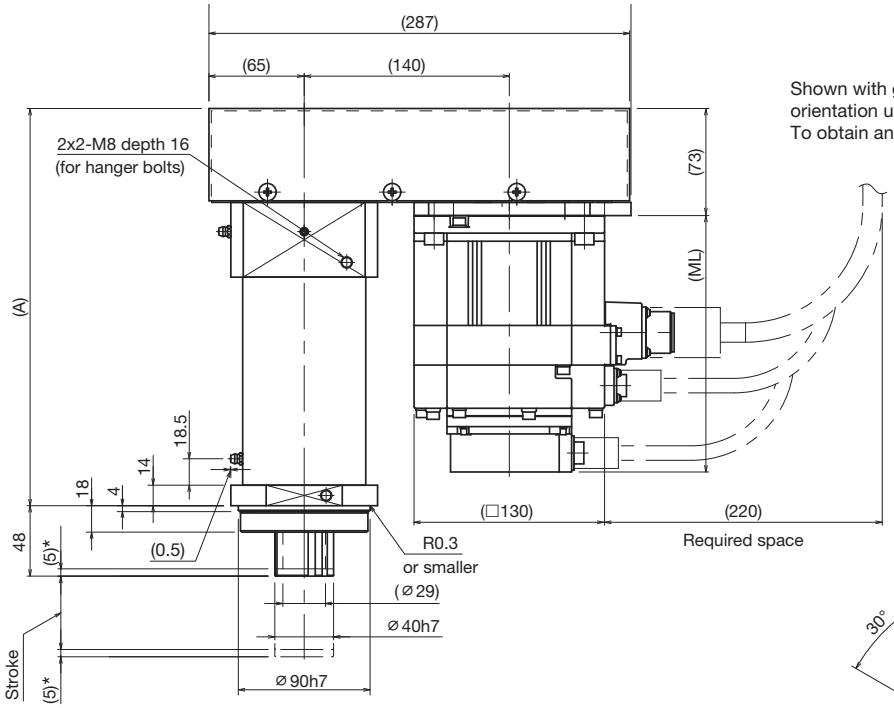
Press series
Rod outer diameter: 40mm, Rated thrust: 5.6kN

Specifications

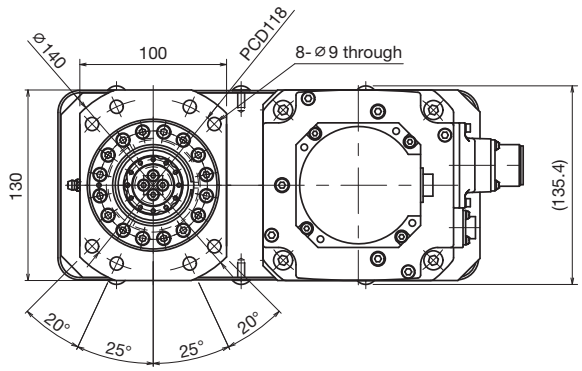
Motor rated output [kW] *1		1 (0.85)
Ball screw lead [mm]		8
Reduction ratio		25/44
Rated thrust *2 [kN]		5.6
Instantaneous maximum thrust *3 [kN]		11.2
Maximum speed *1 *4 [mm/s]		150 (112.5)
Acceleration and deceleration rate *5 [G]		0.1
Permissible axial load *6 [kN]	Pressing direction	11.2
	Tensile direction	5.6
Positioning repeatability [mm]		±0.005
Backlash [mm]		0.020
Permissible input torque *7 [N·m]		9.54
Maximum load capacity *8 [kg]		50
Pressing operation life *9		15,000,000 times

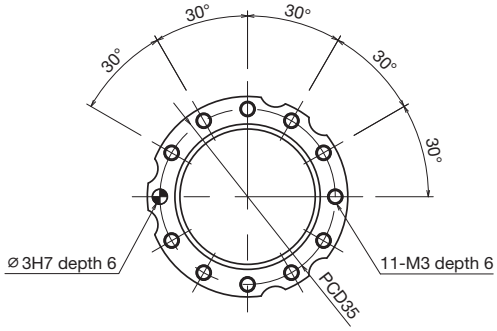
*1 Values with Yaskawa motor are shown in parentheses.
*2 At rate motor torque.
*3 Dependent on permissible axial load.
*4 At rated motor speed.
*5 When maximum load capacity is applied.
*6 Load that can be applied to actuator when static.
*7 To prevent mechanical damage, motor must be operated within this limit.
*8 When actuator is positioned vertically with rod reaching lower end.
*9 Conditions: actuator is positioned vertically with rod reaching lower end; pressing load: rated thrust; pressing direction: compressing direction; pressing distance: 15mm; payload: maximum load capacity.

Dimensions



Shown with greasing position down (D) and motor cable orientation up (U).
To obtain an angle-type motor connector, contact THK.





End of ball spline shaft (detail)

*This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)			50 (60)	100 (110)	150 (160)	200 (210)	250 (260)
Dimensions [mm]	A		271	321	371	421	471
	ML	M100M (M100BM)*	140.5 (175)				
		M085Y (M085BY)*	137 (173)				
Weight [kg]	M100M (M100BM)*		23.6 (25.6)	25.2 (27.2)	26.8 (28.8)	28.4 (30.4)	30 (32)
	M085Y (M085BY)*		22.6 (24.6)	24.2 (26.2)	25.8 (27.8)	27.4 (29.4)	29 (31)

* Values when a brake is installed are shown in parentheses.
"M" or "Y" at the end of the model number represents the motor manufacturer.
M: Mitsubishi Electric Corporation. Y: Yaskawa Electric Corporation.

PC50-06D

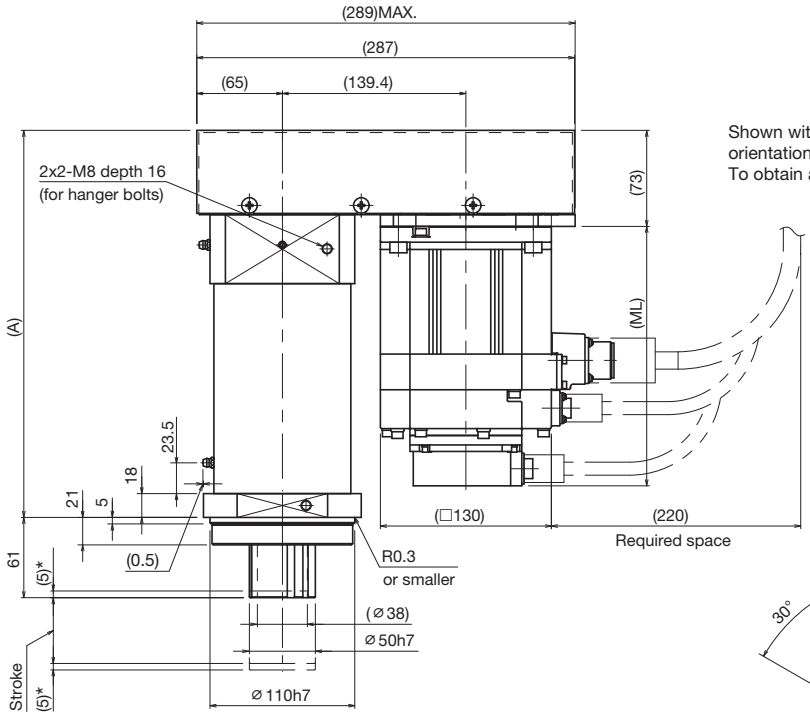
Press series
Rod outer diameter: 50mm, Rated thrust: 8.4kN

Specifications

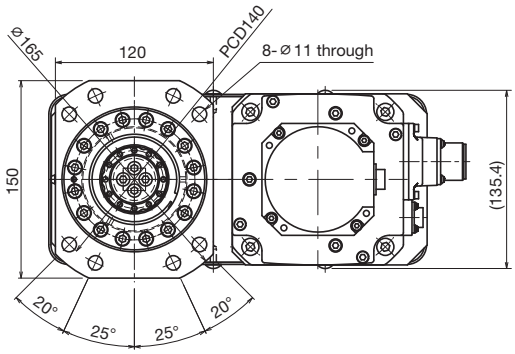
Motor rated output [kW] *1		1.5 (1.3)
Ball screw lead [mm]		6
Reduction ratio		30/40
Rated thrust *2 [kN]		8.4
Instantaneous maximum thrust *3 [kN]		16.8
Maximum speed *1 *4 [mm/s]		150 (112.5)
Acceleration and deceleration rate *5 [G]		0.1
Permissible axial load *6 [kN]	Pressing direction	16.8
	Tensile direction	8.4
Positioning repeatability [mm]		±0.005
Backlash [mm]		0.020
Permissible input torque *7 [N·m]		14.32
Maximum load capacity *8 [kg]		75
Pressing operation life *9		15,000,000 times

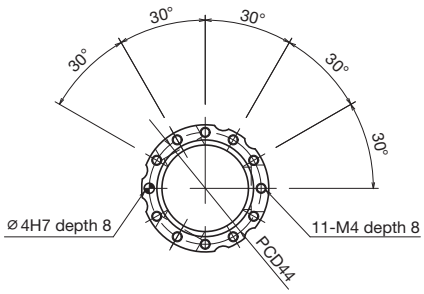
*1 Values with Yaskawa motor are shown in parentheses.
*2 At rate motor torque.
*3 Dependent on permissible axial load.
*4 At rated motor speed.
*5 When maximum load capacity is applied.
*6 Load that can be applied to actuator when static.
*7 To prevent mechanical damage, motor must be operated within this limit.
*8 When actuator is positioned vertically with rod reaching lower end.
*9 Conditions: actuator is positioned vertically with rod reaching lower end; pressing load: rated thrust; pressing direction: compressing direction; pressing distance: 15mm; payload: maximum load capacity.

Dimensions



Shown with greasing position down (D) and motor cable orientation up (U).
To obtain an angle-type motor connector, contact THK.





End of ball spline shaft (detail)

*This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)			50 (60)	100 (110)	150 (160)	200 (210)	250 (260)
Dimensions [mm]	A		294	344	394	444	494
	ML	M150M (M150BM)*	162.5 (197)				
		M130Y (M130BY)*	153 (189)				
Weight [kg]	M150M (M150BM)*		31.4 (33.4)	33.9 (35.9)	36.3 (38.3)	38.8 (40.8)	41.3 (43.3)
	M130Y (M130BY)*		30.2 (32.1)	32.7 (34.6)	35.1 (37)	37.6 (39.5)	40.1 (42)

* Values when a brake is installed are shown in parentheses.
"M" or "Y" at the end of the model number represents the motor manufacturer.
M: Mitsubishi Electric Corporation. Y: Yaskawa Electric Corporation.

PC60-10E

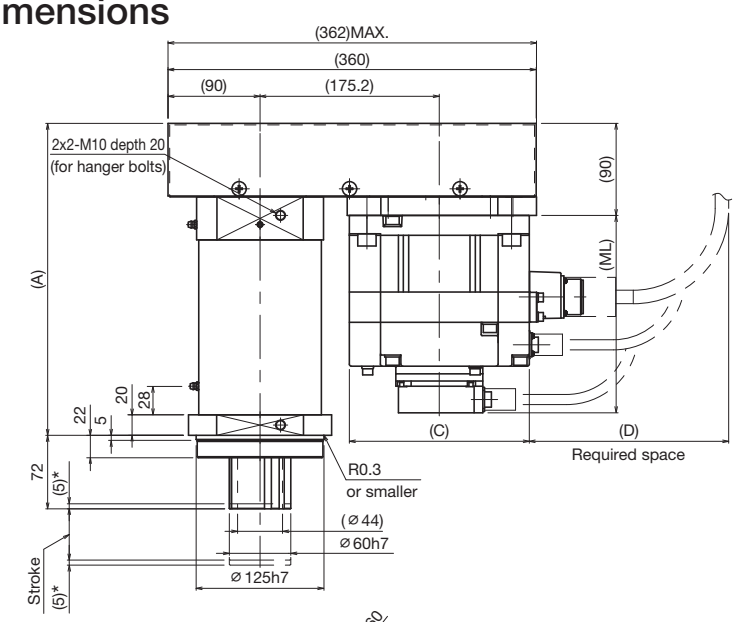
Press series
Rod outer diameter: 60mm, Rated thrust: 10.9kN

Specifications

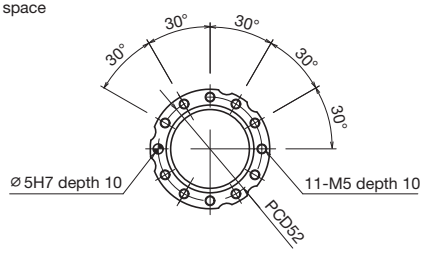
Motor rated output [kW] *1		2 (1.8)
Ball screw lead [mm]		10
Reduction ratio		28/60
Rated thrust *2 [kN]		10.9
Instantaneous maximum thrust *3 [kN]		21.8
Maximum speed *1 *4 [mm/s]		150 (112.5)
Acceleration and deceleration rate *5 [G]		0.1
Permissible axial load *6 [kN]	Pressing direction	21.8
	Tensile direction	10.9
Positioning repeatability [mm]		±0.005
Backlash [mm]		0.020
Permissible input torque *7 [N·m]		19.1
Maximum load capacity *8 [kg]		100
Pressing operation life *9		15,000,000 times

*1 Values with Yaskawa motor are shown in parentheses.
*2 At rate motor torque.
*3 Dependent on permissible axial load.
*4 At rated motor speed.
*5 When maximum load capacity is applied.
*6 Load that can be applied to actuator when static.
*7 To prevent mechanical damage, motor must be operated within this limit.
*8 When actuator is positioned vertically with rod reaching lower end.
*9 Conditions: actuator is positioned vertically with rod reaching lower end; pressing load: rated thrust; pressing direction: compressing direction; pressing distance: 15mm; payload: maximum load capacity.

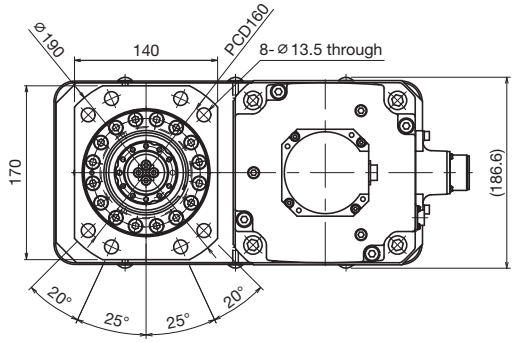
Dimensions



Shown with greasing position down (D) and motor cable orientation up (U).
To obtain an angle-type motor connector, contact THK.



End of ball spline shaft (detail)



*This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)			50 (60)	100 (110)	150 (160)	200 (210)	250 (260)
Dimensions [mm]	A		305	355	405	455	505
	ML	M200M (M200BM)*	143.5 (193)				
		M180Y (M180BY)*	171 (207)				
	C	M200M, M200BM	□176				
		M180Y, M180BY	□130				
	D	M200M, M200BM	230				
		M180Y, M180BY	240				
Weight [kg]	M200M (M200BM)*		49.7 (55.7)	53.2 (59.2)	56.7 (62.7)	60.3 (66.3)	63.8 (69.8)
	M180Y (M180BY)*		46.3 (48.7)	49.8 (52.2)	53.3 (55.7)	56.9 (59.3)	60.4 (62.8)

* Values when a brake is installed are shown in parentheses.
"M" or "Y" at the end of the model number represents the motor manufacturer.
M: Mitsubishi Electric Corporation. Y: Yaskawa Electric Corporation.

PC60H-10F

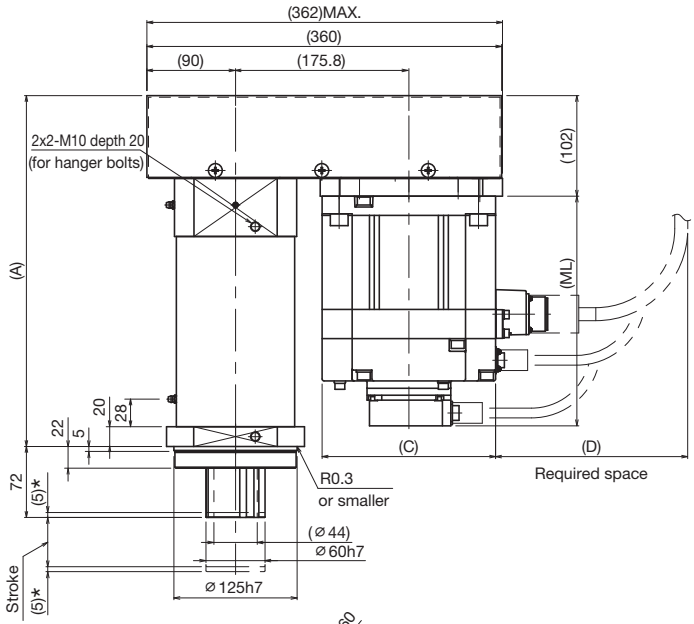
Press series
Rod outer diameter: 60mm, Rated thrust: 17.8kN

Specifications

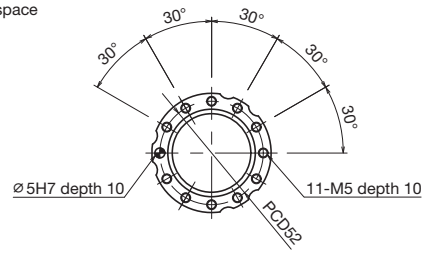
Motor rated output [kW] *1		3.5 (2.9)
Ball screw lead [mm]		10
Reduction ratio		30/60
Rated thrust *2 [kN]		17.8
Instantaneous maximum thrust *3 [kN]		35.6
Maximum speed *1 *4 [mm/s]		160 (125)
Acceleration and deceleration rate *5 [G]		0.1
Permissible axial load *6 [kN]	Pressing direction	35.6
	Tensile direction	17.8
Positioning repeatability [mm]		±0.005
Backlash [mm]		0.020
Permissible input torque *7 [N·m]		33.4
Maximum load capacity *8 [kg]		150
Pressing operation life *9		15,000,000 times

*1 Values with Yaskawa motor are shown in parentheses.
*2 At rate motor torque.
*3 Dependent on permissible axial load.
*4 At rated motor speed.
*5 When maximum load capacity is applied.
*6 Load that can be applied to actuator when static.
*7 To prevent mechanical damage, motor must be operated within this limit.
*8 When actuator is positioned vertically with rod reaching lower end.
*9 Conditions: actuator is positioned vertically with rod reaching lower end; pressing load: rated thrust; pressing direction: compressing direction; pressing distance: 15mm; payload: maximum load capacity.

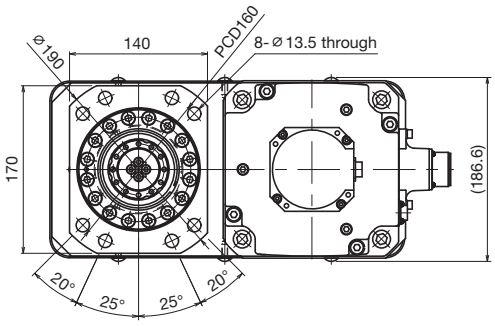
Dimensions



Shown with greasing position down (D) and motor cable orientation up (U).
To obtain an angle-type motor connector, contact THK.



End of ball spline shaft (detail)



*This is a stroke between mechanical stoppers.

Stroke [mm] (Stroke between mechanical stoppers)			50 (60)	100 (110)	150 (160)	200 (210)	250 (260)
Dimensions [mm]	A		356	406	456	506	556
	ML	M350M (M350BM)*	183.5 (233)				
		M290Y (M290BY)*	160 (208)				
	C	M350M, M350BM	□176				
		M290Y, M290BY	□180				
	D	M350M, M350BM	245				
		M290Y, M290BY	285				
Weight [kg]	M350M (M350BM)*		62 (68)	65.5 (71.5)	69.1 (75.1)	72.6 (78.6)	76.1 (82.1)
	M290Y (M290BY)*		56.5 (62.5)	60 (66)	63.6 (69.6)	67.1 (73.1)	70.6 (76.6)

* Values when a brake is installed are shown in parentheses.
"M" or "Y" at the end of the model number represents the motor manufacturer.
M: Mitsubishi Electric Corporation. Y: Yaskawa Electric Corporation.

PCT accessories

Timing Belt

Model	PCT20R (50W)	PCT25R (100W)	PCT25R (200W)
Timing belt model	196-2GT-6	273-3GT-6	273-3GT-9
Manufacturer	Gates Unitta Asia Company		
Mounting tension [N]	15.8 to 19.8	29 to 36	44 to 55
Belt unit mass [g/mm (width) x m (length)]	1.6	2.5	2.5
Belt width [mm]	6	6	9
Belt span [mm]	54	76.5	76.5

Note: Motor-wrap units incorporate set screws to connect the pulley and motor output shaft.
Use a D-cut motor output shaft.

Recommended Couplings

Model	PCT20 (50W)	PCT25 (100W)	PCT25 (200W)
Coupling model	SFC-010DA2	SFC-020DA2	SFC-025DA2
Manufacturer	Miki Pulley Co., Ltd.		

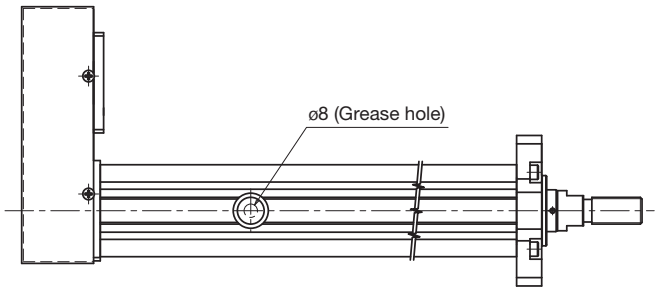
Maintenance

To maximize the performance of the actuator, periodic greasing is required.
THK cylinder-type actuators have a grease hole.

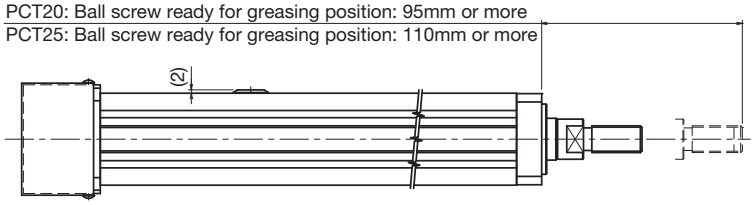
For details of greasing procedures, refer to the Instruction Manual.

PCT

Standard grease: AFB-LF
To grease the ball screw portion, remove the plug and apply the grease directly to the ball screw shaft.

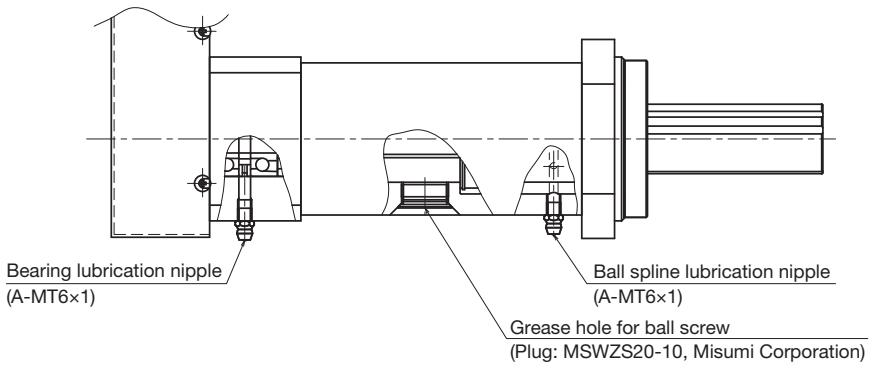


PCT20: Ball screw ready for greasing position: 95mm or more
PCT25: Ball screw ready for greasing position: 110mm or more



PC

Standard grease: FS2 (Lube Corporation)
To grease the ball screw portion, remove the plug and apply the grease directly to the ball screw shaft.



Precautions on Use

● Operation

- Do not unnecessarily disassemble the actuator or control devices. Doing so may allow foreign objects to enter or reduce functionality.
- Do not drop or knock the actuator or control devices. Doing so may cause injury or damage the unit. If the product is dropped or impacted, functionality may be reduced even if there is no surface damage.

● Environment

Wrong environment can cause failures of the actuator and control devices. The best place to use the product is as follows:

- Actuator: A place with an ambient temperature from 0 to 40°C and humidity of from 20% to 80% RH that will not expose the product to freezing or condensation.
- Controller: A place with an ambient temperature from 0 to 40°C and humidity of no more than 90% RH that will not expose the product to freezing or condensation.
- A place free from corrosive gas and flammable gas.
- A place free from electrically conductive powder (such as iron powder), dust, oil mist, moisture, salt, and organic solvent.
- A place free from direct sunlight and radiant heat.
- A place free from strong electric and magnetic fields
- A place where vibration or impact is not transmitted to the unit.
- A place that is easily accessible for service and cleaning purposes.

● Safety Precautions

- When the actuator is in motion or about to be in motion, do not touch any moving parts. Do not go near the actuator when it is in motion.
- Before performing installation, adjustment, checking, or services regarding the actuator and the connected peripherals, ensure that all power is disconnected. In addition, take countermeasures to prevent anyone other than the operator from turning on the power.
- If two or more people are involved in the operation, confirm the procedures such as sequences, signs, and abnormalities in advance, and appoint another person for monitoring the operation.
- Before operation, please read thoroughly and obey "Manipulating industrial robots - Safety" (JIS B8433) and "Ordinance on Industrial Safety and Health" (Ministry of Health, Labor and Welfare).
- Operation of the actuator over the torque limit value leads to damage of parts or injury. Please keep the torque limit settings of parameters within THK specifications.
- For folding type of PCT and PC, this product does not include a safety device to protect users when the timing belt is broken. The customer must provide a safety device.
- Although a stopper is installed inside the product, it is intended to limit the stroke and therefore may be damaged in case of a hard collision.
- PC is designed to accommodate load in the pressing direction. Applying a load in the tensile direction may shorten product life.
- With PCT, only an axial load is permissible.
- Please contact THK if a rotational torque or moment load is applied to the PC rod.
- The total weight of PC exceeds 20kg. When moving the product, use hanger bolts to raise and move the product.
  Do not use a hanger belt alone to raise the product.
  When moving the product vertically, such as for installation, use two bolts at the motor side and the rod side.
  When moving it horizontally, use two or four bolts at the motor side and the rod side.
  Some models may tilt when raised, due to unbalanced center of gravity.

● Storage

When storing the actuator, enclose it in a package designated by THK and store it in a horizontal position away from abnormally high or low temperatures and high humidity.

- When storing the control devices, avoid abnormally high or low temperatures and high humidity.

● Lubrication

In order to effectively use the actuator, lubrication is required. Insufficient lubrication may increase abrasion on moving parts and shorten service life.

- Do not use a mix of lubricants with different physical properties.
- Please contact THK if using special lubricants.
- The greasing interval may vary depending on the usage conditions, so THK recommends determining a greasing interval during the initial inspection.

THK CO., LTD.

Head Office 3-11-6 Nishi-Gotanda, Shinagawa-ku, Tokyo 141-8503 JAPAN
International Sales Department Phone:+81-3-5434-0351 Fax:+81-3-5434-0353

EUROPE

THK GmbH

EUROPEAN HEADQUARTERS
Hubert-Wollenberg-Strasse 13-15, D-40878 Ratingen, Germany
Phone:+49-2102-7425-555 Fax:+49-2102-7425-556

DÜSSELDORF OFFICE
Hubert-Wollenberg-Strasse 13-15, D-40878 Ratingen, Germany
Phone:+49-2102-7425-0 Fax:+49-2102-7425-299

STUTTGART OFFICE
Schwieberdinger-Strasse 56, D-71636 Ludwigsburg, Germany
Phone:+49-7141-4988-500 Fax:+49-7141-4988-888

U.K. OFFICE
Suite W6, Harbour Buildings West,The Waterfront,Brierley Hill, West Midlands,DY5 1LN, U.K.
Phone:+44-1384-47-1550 Fax:+44-1384-47-1551

ITALY OFFICE
Via Marconi, 35, 20812 Limbiate (MB), Italy
Phone:+39-02-9901-1801 Fax:+39-02-9901-1881

SWEDEN OFFICE
Datavägen 3A 175 43 Järfälla Sweden
Phone:+46-8-445-7630 Fax:+46-8-445-7639

AUSTRIA OFFICE
Commerz Park West 1, 4061 Pasching, Austria
Phone:+43-7229-51400 Fax:+43-7229-51400-79

SPAIN OFFICE
C/ L'Electrònica núm. 19, 5B 08915 Badalona Spain
Phone:+34-93-652-5740 Fax:+34-93-652-5746

TURKEY OFFICE
Huseyin Celik Street, Nail Ergin Business Centre No:7 Ground Floor Apartment No:2 Kozyatagi Kadikoy / Istanbul, Turkey
Phone:+90-216-362-4050 Fax:+90-216-569-7150

PRAGUE OFFICE
Michelska 300/60, Praha 4 CZ 14000, Czech
Phone:+420-2-41025-100 Fax:+420-2-41025-199

MOSCOW OFFICE
119049 Moscow, Krymsky val, 3, str.2, Office 510, Russian Federation
Phone:+7-495-649-80-47 Fax:+7-495-649-80-44

THK Europe B.V.

EINDHOVEN OFFICE
Hofstraat 191 NL-5641 TD Eindhoven Netherlands
Phone:+31-040-290-9500 Fax:+31-040-290-9599

THK France S. A. S.
Les carres du Parc 10 rue des Rosieristes Immeuble A 69410 Champagne Mont D'or, France
Phone:+33-4-3749-1400 Fax:+33-4-3749-1401

NORTH AMERICA

THK America, Inc.

HEADQUARTERS
200 East Commerce Drive, Schaumburg, IL. 60173, U.S.A.
Phone:+1-847-310-1111 Fax:+1-847-310-1271

CHICAGO OFFICE
200 East Commerce Drive, Schaumburg, IL. 60173, U.S.A.
Phone:+1-847-310-1111 Fax:+1-847-310-1182

NORTH EAST OFFICE
80 Orville Dr. Suite 100 Bohemia, NY 11716, U.S.A.
Phone:+1-631-244-1565 Fax:+1-631-244-1565

ATLANTA OFFICE
6621 Bay Circle, Suite 175 Norcross, GA 30071, U.S.A.
Phone:+1-770-840-7990 Fax:+1-770-840-7897

LOS ANGELES OFFICE
34 Executive Park, Suite 215 Irvine, CA. 92614, U.S.A.
Phone:+1-949-955-3145 Fax:+1-949-955-3149

SAN FRANCISCO OFFICE
3037 Independence Drive, Suite I Livermore, CA 94551, U.S.A.
Phone:+1-925-455-8948 Fax:+1-925-455-8965

DETROIT OFFICE
2600 South Telegraph Road, Suite 190 Bloomfield Hills, MI. 48302, U.S.A.
Phone:+1-248-858-9330 Fax:+1-248-858-9455

TORONTO OFFICE
3600B Laird Road, Unit #10 Mississauga, ONT Canada L5L 6A7
Phone:+1-905-820-7800 Fax:+1-905-820-7811

SOUTH AMERICA

THK BRAZIL INDUSTRIA E COMERCIO LTDA.
Av. Corifeu de Azevedo Marques,4077 Butanta-Sao Paulo SP Brazil 05339-002
Phone:+55-11-3767-0100 Fax:+55-11-3767-0101

CHINA

THK (CHINA) CO., LTD.

HEADQUARTERS
Xuefu South Street 5-B, Dalian Economic & Technical Development Zone, Dalian, China 116600
Phone:+86-411-8733-7111 Fax:+86-411-8733-7000

SHANGHAI OFFICE
1002 Kirin Plaza, 666 Gubei Road, Shanghai 200336, China
Phone:+86-21-6219-3000 Fax:+86-21-6219-9890

BEIJING OFFICE
B-2308 Tianyuangang Zhongxin, 2 Bing Dongsanhuan North Road, Chaoyang Qu, Beijing, China 100027
Phone:+86-10-8441-7277 Fax:+86-10-6590-3557

CHENGDU OFFICE
Room No.2002 Western Tower No.19, Sec4, Renmin nan Rd Chengdu 610041, China
Phone:+86-28-8526-8025 Fax:+86-28-8525-6357

GUANGZHOU OFFICE
Rm 2318, China Shine Plaza, No.9, Linhexi Rd., Tianhe District, Guangzhou city, China 510610
Phone:+86-20-8523-8418 Fax:+86-20-3801-0456

SHENZHEN OFFICE
Rm1308 Coastal Building (West BLock) Hai De San Dao, Nanshan District, Shenzhen 518054, China
Phone:+86-755-2642-9587 Fax:+86-755-2642-9604

XIAN OFFICE
Room708 LINNKING Internationnal Building ,No.38 Keji Road ,Gaoxin District, Xi'an ,China
Phone:+86-29-8834-1712 Fax:+86-29-8834-1710

THK (SHANGHAI) CO., LTD.
1003-A Kirin Plaza, 666 Gubei Road, Shanghai 200336, China
Phone:+86-21-6725-5280 Fax:+86-21-6219-9890

TAIWAN

THK TAIWAN CO., LTD.

TAIPEI HEAD OFFICE
Suite A, 7F., No.152, Sec 4, Chengde Rd., Shrlin Chiu, Taipei, Taiwan 111, R.O.C.
Phone:+886-2-2888-3818 Fax:+886-2-2888-3819

TAICHUNG OFFICE
No.2, 35th Rd., Taichung Ind. Park,Taichung,Taiwan 40707, R.O.C.
Phone:+886-4-2359-1505 Fax:+886-4-2359-1506

TAINAN OFFICE
6F.-3 NO.77, Sec.2, Jhonghua.E. Rd., Tainan City, Taiwan, R.O.C.
Phone:+886-6-289-7668 Fax:+886-6-289-7669

KOREA

SEOUL REPRESENTATIVE OFFICE
Geumgang Tower Bldg 16F.,889-13, Daechi-dong, Gangnam-gu, Seoul 135-280, Korea
Phone:+82-2-3468-4351 Fax:+82-2-3468-4353

SINGAPORE

THK LM SYSTEM Pte. Ltd.
38 Kaki Bukit Place LM Techno Building Singapore 416216
Phone:+65-6884-5500 Fax:+65-6884-5550

THAILAND

THK LM System Pte. Ltd. Representative Office in Thailand
Bangna Tower, Tower A #1701 2/3 M.14 Bangna-Trad Highway Km 6.5, Bangkaew, Bangplee, Samutprakarn. 10540 Thailand
Phone:+660-2751-3001 Fax:+660-2751-3003

INDIA

THK India Pvt. Ltd.
2nd Floor, 4/4, 1st Main Road, Industrial Town West of Chord Road, Service Road, Rajajinagar, Bangalore 560044, India
Phone:+91-80-2340-9934 Fax:+91-80-2340-9937

PRODUCTION FACILITY

THK Manufacturing of Europe S. A. S.
Parc d'Activités la Passerelle, 68190 Ensisheim, France
Phone:+33-3-8983-4400 Fax:+33-3-8983-4409

THK Manufacturing of Ireland Ltd.
Tallaght Business Park, Whitestown, Industrial Estate, Tallaght, Dublin24, Ireland
Phone:+353-1-462-8101 Fax:+353-1-462-9080

THK Manufacturing of America, Inc.
P.O.Box 759, 471 North High Street, Hebron, OH. 43025, U.S.A.
Phone:+1-740-928-1415 Fax:+1-740-928-1418

THK MANUFACTURING OF CHINA (LIAONING) CO., LTD.
No5, Xuefu South Street, Dalian Economic & Technical Development Zone,Dalian, Liaoning Province, China 116600
Phone:+86-411-8733-7333 Fax:+86-411-8733-7222

THK MANUFACTURING OF CHINA (WUXI) CO., LTD.
No.19, Changjiang South Road, Wuxi, Jiangsu Province, China 214028
Phone:+86-510-8534-4333 Fax:+86-510-8534-4666

DALIAN THK CO., LTD.
No.29 Huo Ju Road, Qi Xian Ling, Gan Jing Zi District, Dalian, Liaoning Province, China 116023
Phone:+86-411-8479-0999 Fax:+86-411-8479-0111

THK MANUFACTURING OF VIETNAM CO., LTD.
Lot5, TS9, Tien Son IZ, Tien Du, Bac Ninh, Vietnam
Phone:+84-241-373-4970 Fax:+84-241-373-4975

SAMICK THK CO., LTD.
1005, Weolam-dong, Dalseo-gu, Daegu, Korea
Phone:+82-53-665-7000 Fax:+82-53-581-9933

LIMITED WARRANTY

LIMITED WARRANTY AND LIMITATION OF LIABILITY: THK CO. LTD., FOR ITSELF AND ITS RELATED COMPANIES AND SUBSIDIARIES (HEREINAFTER DESCRIBED COLLECTIVELY AS “THK”) WARRANTS THAT ALL THK PRODUCTS SOLD WILL BE FREE OF DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF TWELVE (12) MONTHS FROM DATE OF DELIVERY. THE FOREGOING TWELVE (12) MONTH WARRANTY SHALL NOT BE EXTENDED OR CHANGED BY THK FURNISHING ANY REPLACEMENTS, ADDITIONS, ATTACHMENTS, ACCESSORIES OR REPAIRS TO THE PRODUCT SUBSEQUENT TO THE DATE OF DELIVERY OR ACCEPTANCE. THE FOREGOING WARRANTY IS THE SOLE AND EXCLUSIVE WARRANTY OF THK REGARDING THE PRODUCT.

DISCLAIMER OF OTHER WARRANTIES: OTHER THAN THE FOREGOING WARRANTY, THERE ARE NO EXPRESS OR IMPLIED WARRANTIES OR ANY AFFIRMATIONS OF FACT OR PROMISES BY THK WITH RESPECT TO THE PRODUCT. THK DISCLAIMS ANY WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, NOT SPECIFICALLY SET FORTH ABOVE. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, THK EXPRESSLY DISCLAIMS ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, INFRINGEMENT OR ANY REPRESENTATIONS OF FACT OR QUALITY NOT EXPRESSLY SET FORTH HEREIN.

LIMITATION OF LIABILITY AND REMEDIES: THK'S SOLE RESPONSIBILITY AND LIABILITY INCURRED AS A RESULT OF THE SALE AND/OR USE OF THE PRODUCT, AND THE PURCHASER'S EXCLUSIVE REMEDY AGAINST THK UNDER ANY WARRANTY SHALL BE LIMITED TO THE REPAIR OR REPLACEMENT, AT THK'S OPTION, OF PRODUCT COMPONENTS NOT CONFORMING TO THE WARRANTY. THE TOTAL LIABILITY OF THK SHALL IN NO EVENT EXCEED THE AMOUNT ACTUALLY PAID TO THK BY PURCHASER WITH RESPECT TO THE PRODUCT. THIS LIMITATION OF REMEDY IS INTENDED BY THE PARTIES TO SURVIVE EVEN IF THE REMEDY IS CLAIMED TO HAVE FAILED OF ITS ESSENTIAL PURPOSE. PURCHASER'S FULL AND COMPLETE PERFORMANCE OF ALL OBLIGATIONS OF PURCHASER RECITED IN THIS AGREEMENT IS A CONDITION PRECEDENT TO THK'S WARRANTY OBLIGATIONS AND LIABILITIES HEREIN.

PURCHASER'S DAMAGES AND LIMITATIONS: IN NO EVENT SHALL THK BE LIABLE TO PURCHASER, ITS ASSIGNS OR AGENTS, FOR ECONOMIC LOSS, INCIDENTAL OR CONSEQUENTIAL DAMAGES, IN CONTRACT OR IN TORT, INCLUDING BUT NOT LIMITED TO, ANY DAMAGES FOR LOST PROFITS, DOWN-TIME, LOST PRODUCTION, FAILURE TO MEET PURCHASER'S SALES CONTRACTS, OR DEFECTS IN PURCHASER'S MATERIALS OR WORKMANSHIP ARISING DIRECTLY OR INDIRECTLY FROM THE USE OF THE PRODUCT.

DISCLAIMER

This Catalog provides basic information relating to THK linear motion and related products. The Catalog, including all information, charts, formulas, factors, accuracy standards, tolerances and application recommendations contained herein, is only a starting point for the customer’ s selection of appropriate products, and may not apply in all intended applications. The Catalog is not a substitute for a proper application analysis conducted by an experienced, knowledgeable design engineer. Product selection should be based upon your specific application needs and conditions, which will vary greatly depending on many factors. No specific product application should be based solely on the information contained in this Catalog. All purchases of THK Products are subject to the limited warranty offered by THK Co., Ltd, for itself and on behalf of its related companies and subsidiaries. Customers should confirm independently that a contemplated application is safe, appropriate and effective.

"All trademarks used in this Catalog are registered trademarks in the Country of Japan. If there is any question as to the validity of such trademarks outside of Japan, an inquiry should be made in that particular country."

For inquiries, please contact :

For the export of our products or technologies and for the sale for exports, THK in principle complies with the foreign exchange law and the Foreign Exchange and Foreign Trade Control Law as well as other relevant laws. For export of THK products as single items, contact THK in advance.

ACTUATOR UNITS

201310010 Printed in KOREA