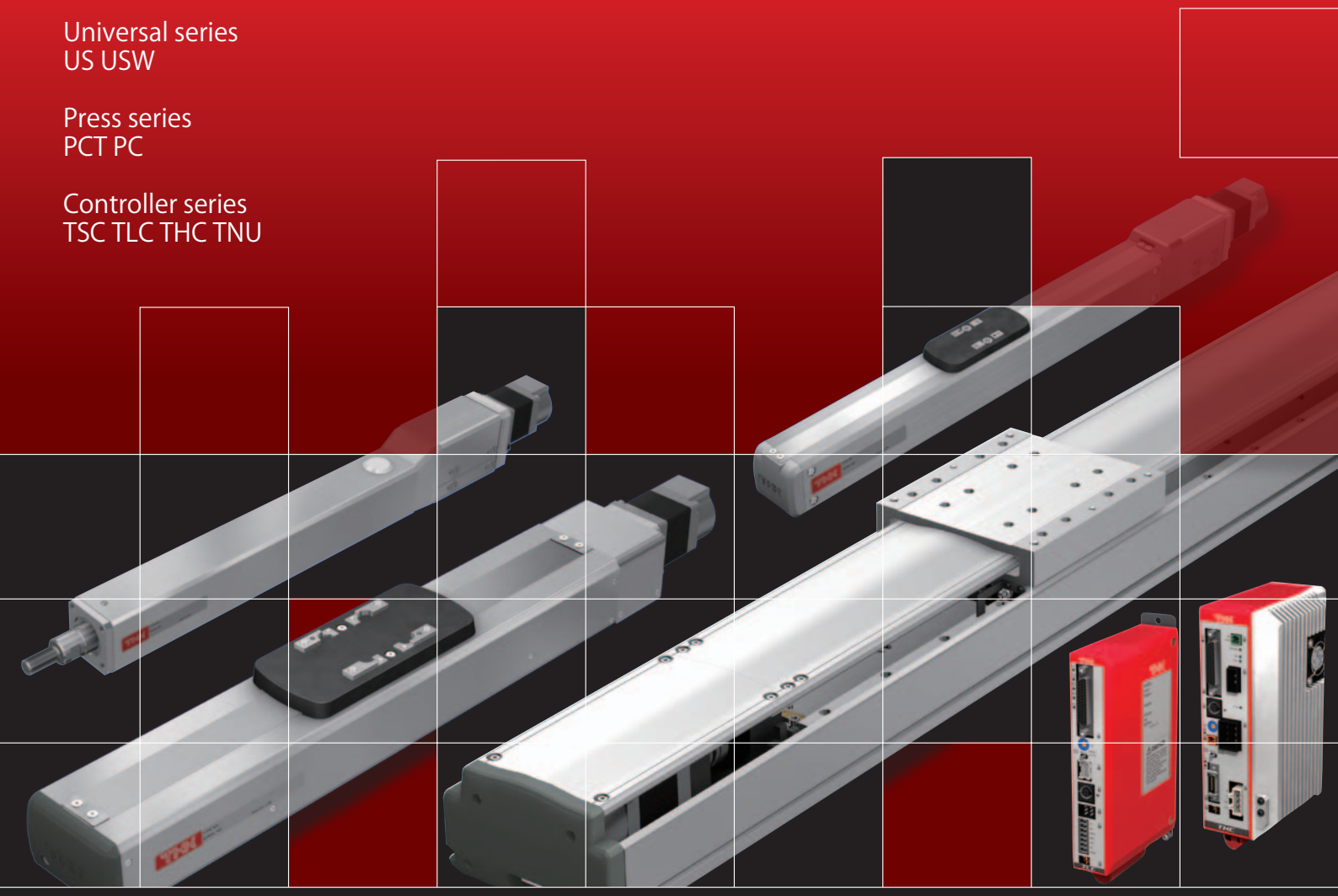
ELECTRIC ACTUATORS

Contents

with Servo driver controller

ENGLISH



CATALOG No. 660-9E

THK CO., LTD.
TOKYO, JAPAN

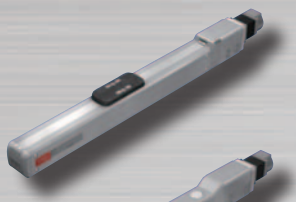
For details, visit THK at www.thk.com

*Product information is updated regularly on the THK website.

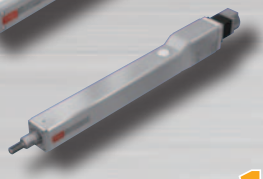
PRODUCT LINE UP

Economy series

ES



EC



Reasonably Priced

▶▶▶ Chapter 1

Compact series

KRF

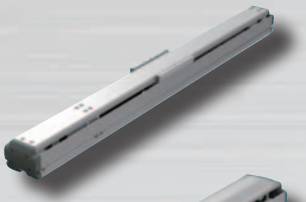
KSF

High Rigidity

▶▶▶ Chapter 2

Universal series

US



USW

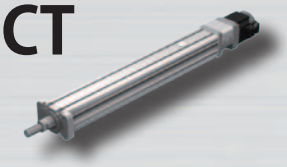
Long Stroke

Heavy Object Transport

▶▶▶ Chapter 3

Press series

PCT



PC

Press Treated

▶▶▶ Chapter 4

Controller

TSC

TLC

THC

TNU

Corresponding Actuators

-ES/EC	-KRF	-ES/EC -US/USW	-KRF -PCT/PC	-KRF/KSF -PCT/PC	-US/USW		

▶▶▶ Chapter 5

Options

PC Setup Tool

D-STEP

Digital Operator

TDO

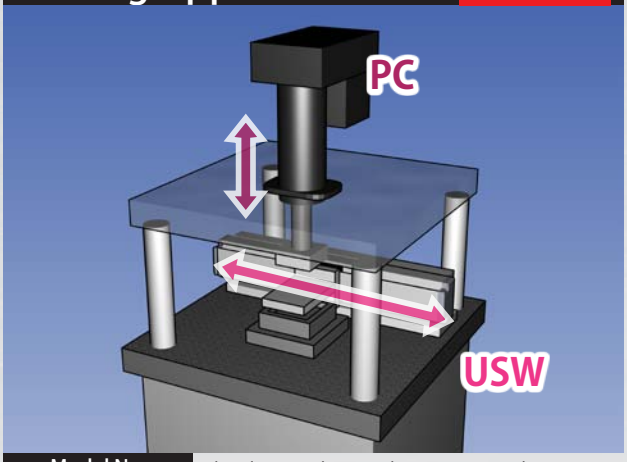
Supports two languages:
English / Japanese

▶▶▶ Chapter 5

Bottle Cap Tightening Equipment — ASSEMBLY

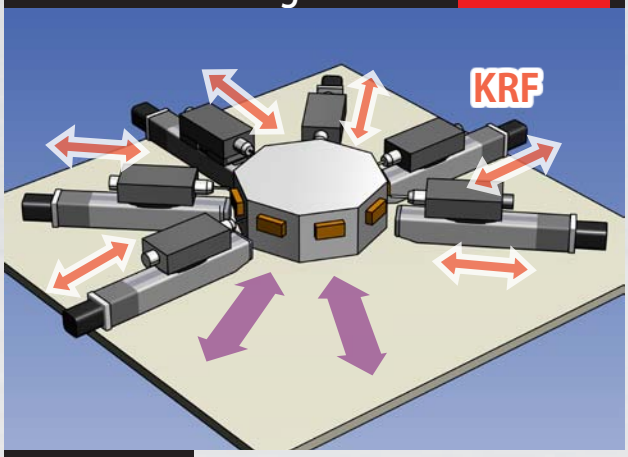
Model No.	
ES	ES is used for the cap supply unit. Eliminates variation due to differences between individuals and achieves further labor savings.

Cutting Apparatus — PROCESSING



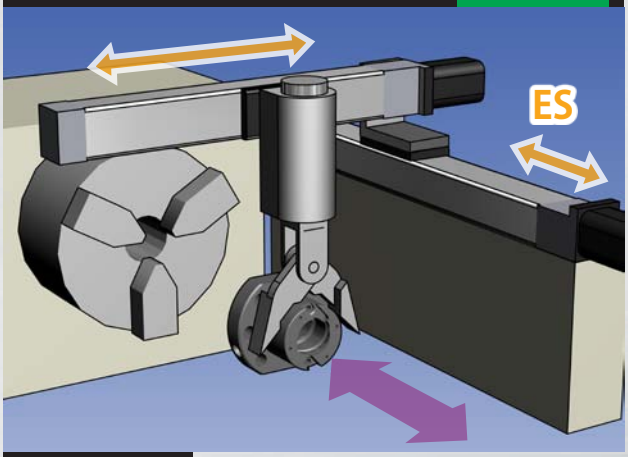
Model No.	
PC USW	The cleavage by punching using an electric press PC. By you are using a PC short overall length, the height of the equipment will be lower.

Multi-axis Drilling Machine — PROCESSING



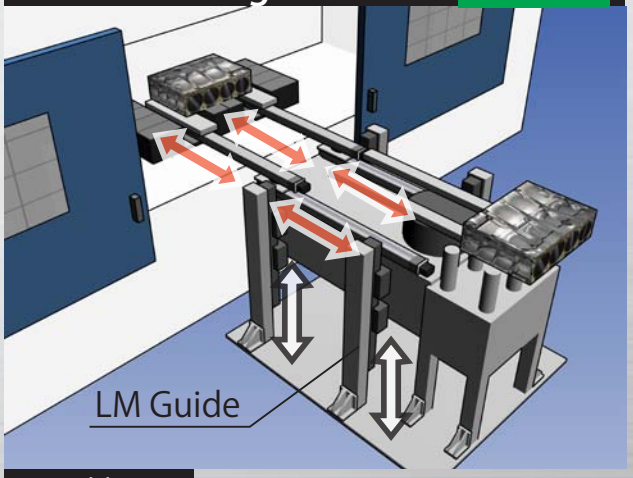
Model No.	
KRF	KRF is used for the multi-axis drilling machine. A smaller apparatus footprint is achieved with high rigidity and a compact design

Loader for Automatic Lathe — TRANSPORT



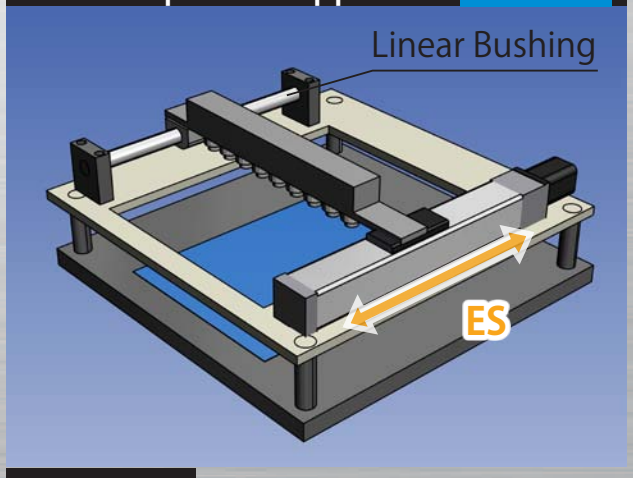
Model No.	
ES	ES is used as the loader for supplying work to the automatic lathe. Low cost device configuration is possible.

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

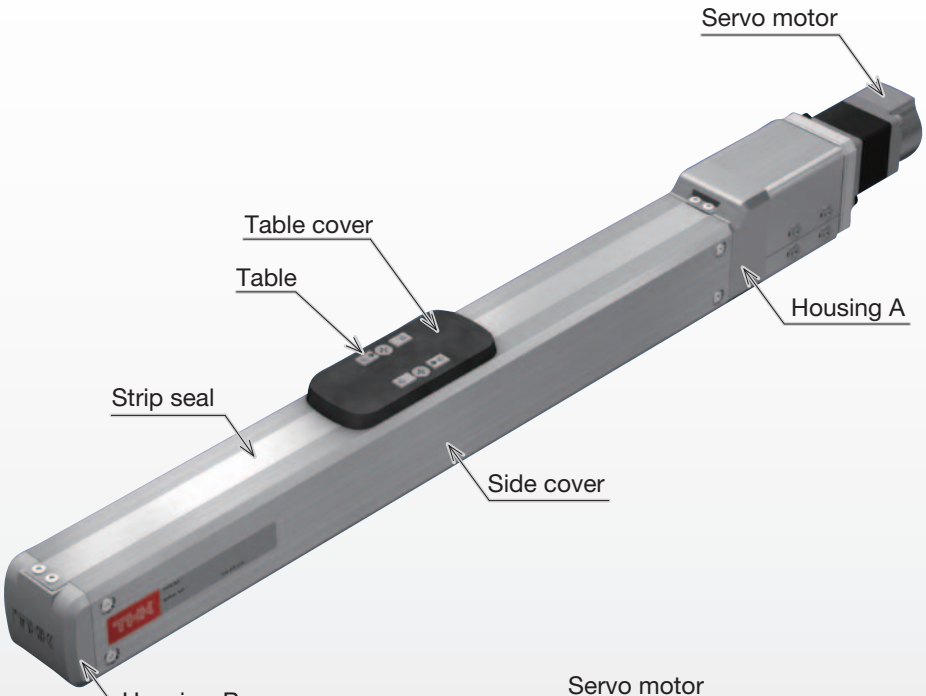
Corresponding Controller

Chapter 1

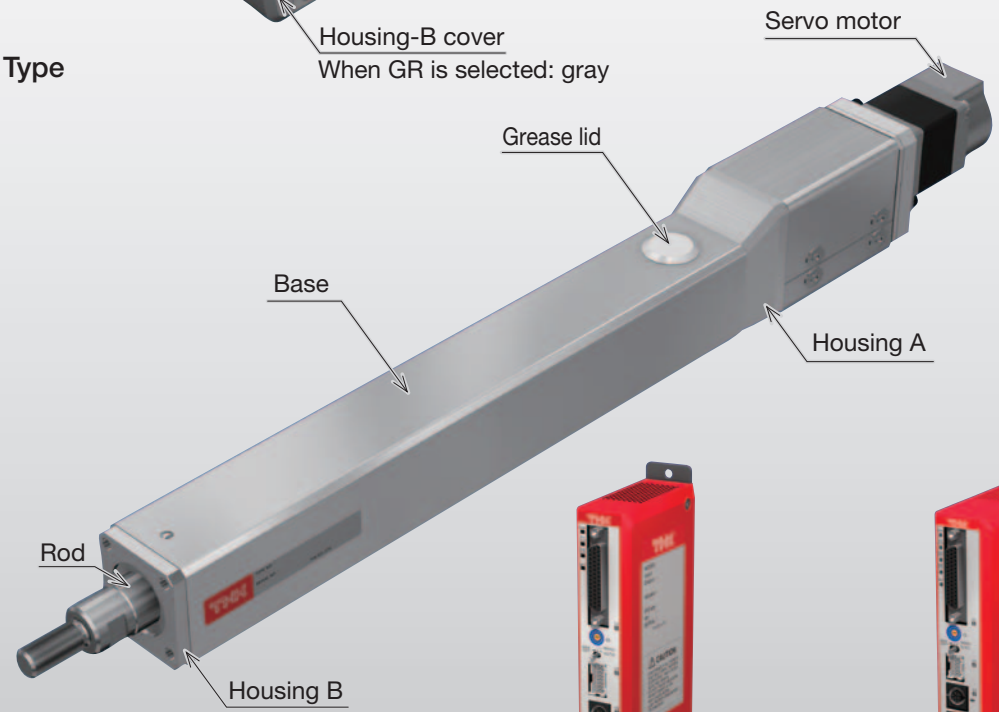
Electrical Actuator
Economy series
ES/EC

Lightweight, Compact

Slider Type
ES



Cylinder Type
EC



Stepper driver controller
TSC

Servo Driver Controller
TLC

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.

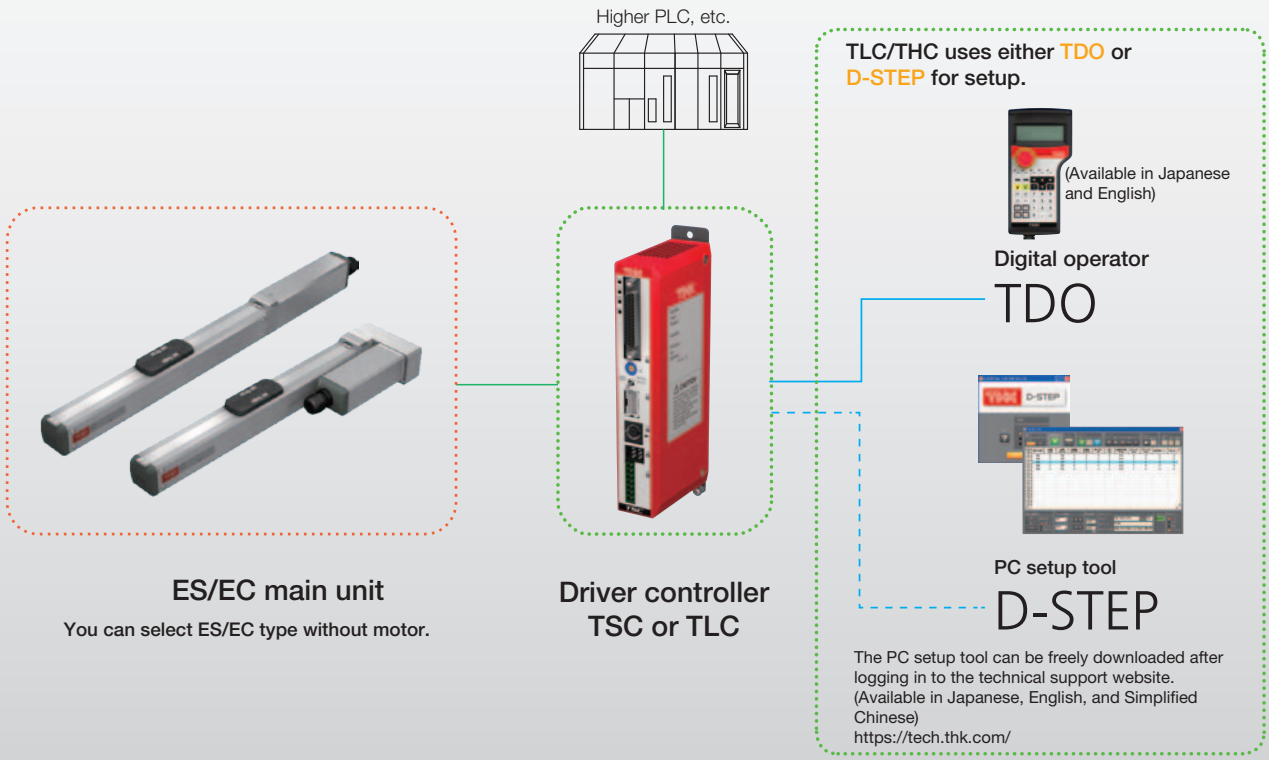
Long-term maintenance-free operation

The ES incorporates the model SRS LM Guide, equipped with Caged Ball, 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.

System



Lineup List (Stepper driver controller TSC Specification)

Model	Ball screw lead [mm]	Stroke [mm]	Motor type	Maximum load capacity *1 *2 [kg]	
				Horizontal mount	Vertical mount
ES3	6	50 - 300	Stepper motor □28	1	0.5
ES4	6	50 - 400	Stepper motor □35	9	4
	12			7.5	1.5
ES5	6	50 - 500	Stepper motor □42	10	5
	12			6	2
ES6	6	50 - 600	Stepper motor □42	10	5
	12			6	2
ES3R	6	50 - 300	Stepper motor □28	1	0.5
ES4R	6	50 - 400	Stepper motor □35	4	1.5
	12			2	1
ES5R	6	50 - 500	Stepper motor □42	8	2
	12			6	1
ES6R	6	50 - 600	Stepper motor □42	8	2
	12			6	1
EC3	6	50 - 200	Stepper motor □35	15	6
EC4	6	50 - 300	Stepper motor □42	40	12
	12			25	4.5
EC3R	6	50 - 200	Stepper motor □35	15	3
EC4R	6	50 - 300	Stepper motor □42	40	6
	12			15	4
EC3H	6	50 - 200	Stepper motor □35	15	6
EC4H	6	50 - 300	Stepper motor □42	40	12
	12			25	4.5

*1 This specification shows the values when combining with stepper driver controller TSC.
*2 Load capacity and maximum speed vary dependent on usage conditions. For details, see “Speed and Load Capacity: Relationship Diagram”.
*3 Horizontal: 460, Vertical: 450

Lineup List (Servo Driver Controller TLC Specification)

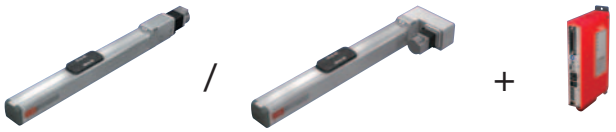
Model	Ball screw lead [mm]	Stroke [mm]	Rated speed *1 [mm/s]	Motor rated output [W]	Maximum load capacity *2 [kg]	
					Horizontal mount	Vertical mount
ES5	6	50 to 500	300	50	10	5
	12		600		6	2
ES6	6	50 to 600	300	50	10	5
	12		600		6	2
EC4	6	50 to 300	300	50	14	6
	12		600		7	3
ES5R	6	50 to 500	300	50	8	2
	12		600		6	1
ES6R	6	50 to 600	300	50	8	2
	12		600		6	1
EC4R	6	50 to 300	300	50	14	6
	12		600		7	3
EC4H	6	50 to 300	300	50	14	6
	12		600		7	3

*1 At rated motor speed (3,000min^{-1}).
*2 Based on load capacity at rated speed with 0.3G acceleration and deceleration rate.
*3 Maximum speed is dependent on motor speed of 3,000 min^{-1} and, if applicable, permissible rotation speed of ball screw.

Maximum speed for each stroke *1 *2 [mm/s]											
Stroke [mm]											
50	100	150	200	250	300	350	400	450	500	550	600
300											
250											
500											
300											
500											
300										270	230
500											460
300											
250											
Horizontal: 500, Vertical: 440											
Horizontal: 300, Vertical: 250											
500											
250											230
Horizontal: 500, Vertical: 450											★3
187											
Horizontal: 250, Vertical: 240				230	170						
450					340						
187											
250				230	170						
Horizontal: 400, Vertical: 370					340						
187											
Horizontal: 250, Vertical: 240				230	170						
450					340						

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

Model Configuration



ES/EC (with motor)

Model	Ball screw lead	Stroke	Design symbol	Control device	Option	Motor used	Motor cable orientation	Home position	Cable type and length
ES5R –	06	– 0150	B	– TL	– MR–GR	/ M05	L	– D00	– F3
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

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

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

For ES3, ES3R, EC3, EC3R and EC3H, have ball screw lead of 6mm only.

(2)
- 06: 6mm
- 12: 12mm

(3)
- 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)
- B

(5)
- TS: Stepper driver controller TSC
- TL: Servo driver controller TLC

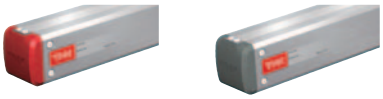
Separate order is required.

(6)
- No symbol: ES: Red cover : EC: None
- MR: Motor right wrap
- ML: Motor left wrap
- GR: Change the cover color to gray *2
- SB: With slider base
- CB: With cylinder base *3
- FL: With flange *3 *4
- LB: With link ball *3 *4
- $\square_1\square_2$: Sensor *2

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

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

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.

(7)
- 28P: Stepper motor □28
- 35P: Stepper motor □35
- 42P: Stepper motor □42
- 28PB: Stepper motor □28 with brake
- 35PB: Stepper motor □35 with brake
- 42PB: Stepper motor □42 with brake
- M05 : 50W
- M05B: 50W with brake

Motors differ depending on models.
ES3: "28P", "28PB"
ES4: "35P", "35PB"
ES5: "42P", "42PB" "M05", "M05B"
ES6: "42P", "42PB" "M05", "M05B"
EC3: "35P", "35PB"
EC4: "42P", "42PB" "M05", "M05B"

(8)
- No symbol: When selecting TSC
- R: Right
- U: Up
- L: Left
- D: Down

ES
If you select "MR" as an option, "R", "U" and "D" cannot be selected.
If you select "ML" as an option, "L", "U" and "D" cannot be selected.
EC
If you select "MR" as an option, "R" cannot be selected.
If you select "ML" as an option, "L" cannot be selected.

(9)
- D00: Motor side
- R00: Reverse motor side

(10)
- No symbol: None
- S3: Standard 3m
- S5: Standard 5m
- SA: Standard 10m*
- F3: Standard 3m
- F5: Standard 5m
- FA: Standard 10m
- H3: High flex 3m
- H5: High flex 5m
- HA: High flex 10m

Indicates the type and length of attached cables. Cables you can select differ depending on controllers.
TSC: "S3", "S5", "SA"
TLC: "F3", "F5", "FA", "H3", "H5", "HA"
* For control device (5) TSC, when using a 10m actuator cable, insert a noise filter to the TSC power supply. Recommended noise filter is "RSAN-2003 (TDK-Lambda Corporation)".

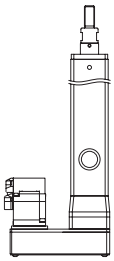
Motor wrap direction

Slider type ES

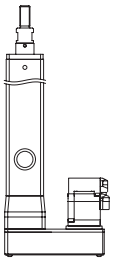
Option symbol ML: Motor left wrap

Option symbol MR: Motor right wrap

Cylinder type EC



Option symbol ML: Motor left wrap



Option symbol MR: Motor right wrap

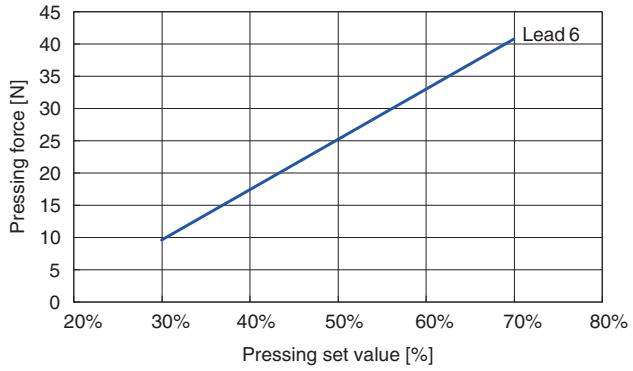
Pages for detailed description

(6) Options	GR: Change the cover color to gray	P. 1-051
	SB: With slider base	P. 1-052
	CB: With cylinder base	P. 1-056
	FL: With flange	P. 1-056
	LB: With link ball	P. 1-056
	$\square_1\square_2$: Sensor	P. 1-054

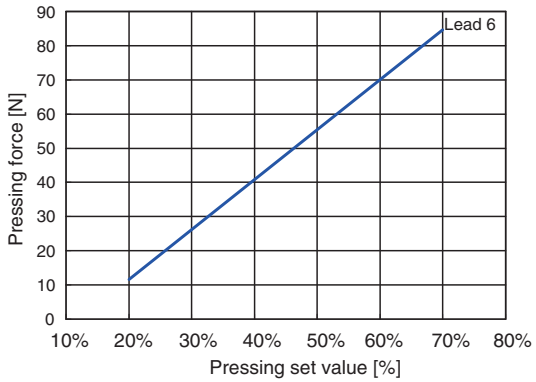
Pressing Force and Pressing Set Value: Relationship Diagram

Pressing force may vary depending on the pressing set value. For the mounting method, see .

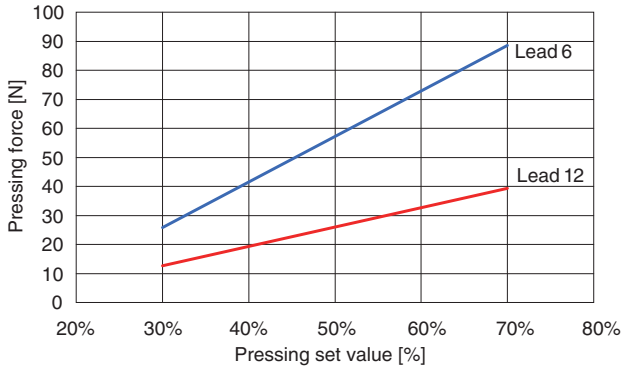
■ES3/ES3R (TSC)



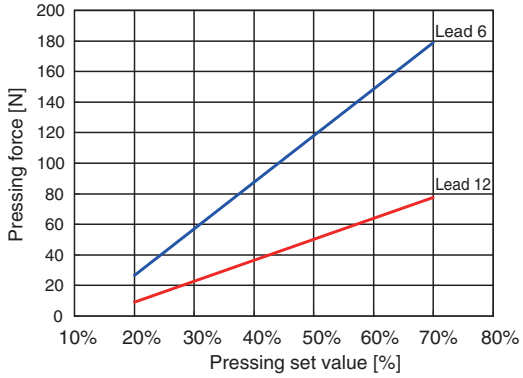
■EC3/EC3R (TSC)



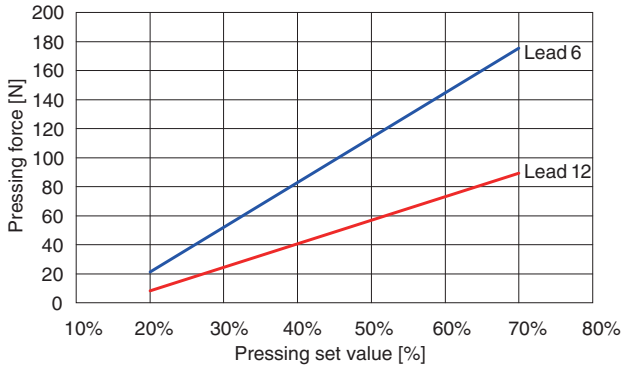
■ES4/ES4R (TSC)



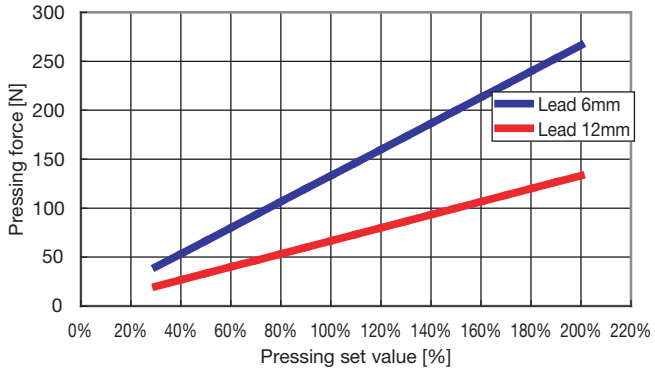
■EC4/EC4R (TSC)



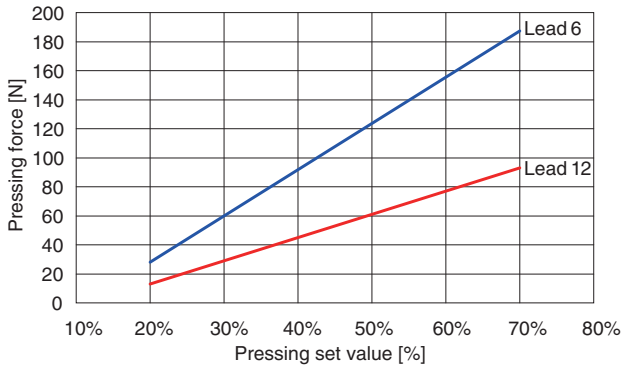
■ES5/ES5R (TSC)



■ES5,6/ES5,6R/EC4/EC4R/EC4H (TLC)



■ES6/ES6R (TSC)



Model	ES5,6/EC4 (For both direct coupling and motor wrap)	
Lead[mm]	6	12
Pressing set maximum thrust[N]	266	133

Precautions

(1) Pressing set value 100 [%] represents the value at the time of the rated motor torque.
(2) For ES/EC direct coupling, up to 200% can be set as pressing set value. Continuous operation, however, cannot be possible.
For continuous operation, use the effective load rating of 70% as a guide line.
(3) Since this thrust is a theoretical value calculated using the calculation formula, it may differ from the actual value.
(4) This diagram shows theoretical values for operation in horizontal orientation. When you use this product with a vertical orientation, the following precautions are required:
When pressing in the vertical orientation, or in the same direction as the gravitation, the force equal to Payload x Gravitation is added.
When pressing in the vertical orientation, or in the opposite direction from the gravitation, the force equal to Payload x Gravitation is reduced.

ES3 Slider type TSC specification Direct motor coupling

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device Type	Option	Motor used	Home position	Cable length
ES3	– 06	– 0150	B	– TS	– GR–SB	/ 28P	– D00	– S3
ES3	06: 6mm	0050: 50mm to 0300: 300mm	B	TS: TSC	No symbol: None GR: Change the cover color to gray SB : With slider base $\square_1\square_2$: Sensors	28P: □28 28PB: □28 with brake	D00: Motor side R00: Reverse motor side	No symbol: None S3 : Standard 3m S5 : Standard 5m SA*: Standard 10m

* To select SA, insert a noise filter to the TSC power supply. Recommended noise filter is "RSAN-2003 (TDK-Lambda Corporation)".

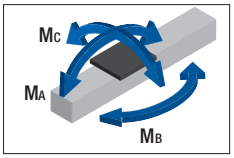
Basic Specifications

Control device type				TSC
Motor				□28
Ball screw lead [mm]				6
Maximum load Weight [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	1
		Vertical mount	0.2G	0.5
Running life *1 [km]				5000
Positioning repeatability [mm]				±0.020
Lost motion [mm]				0.1
Static permissible moment *2 [N·m]				M_A: 6.0, M_B: 7.5, M_C: 5.9

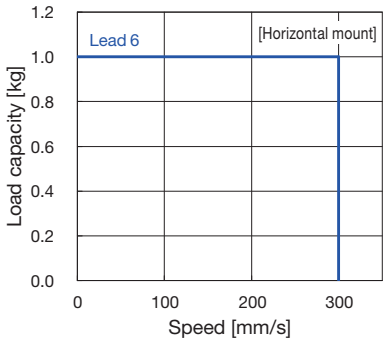
*1 Running life is based on below conditions.
Conditions: Horizontal or vertical, under the maximum load capacity, overhang length A=6mm, B and C=0mm, 0.3G for horizontal, 0.2G for vertical, stroke 50mm

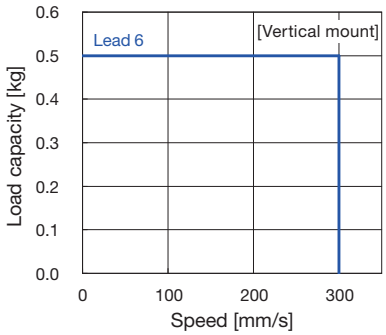
*2 Static maximum permissible moment when unit is stationary. Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.

Static Permissible Moment

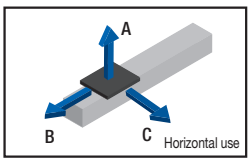


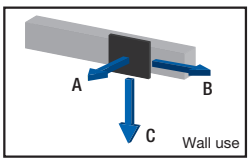
Speed and Load Capacity: Relationship Diagram

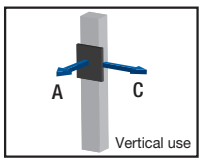




Permissible Overhang Length *







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

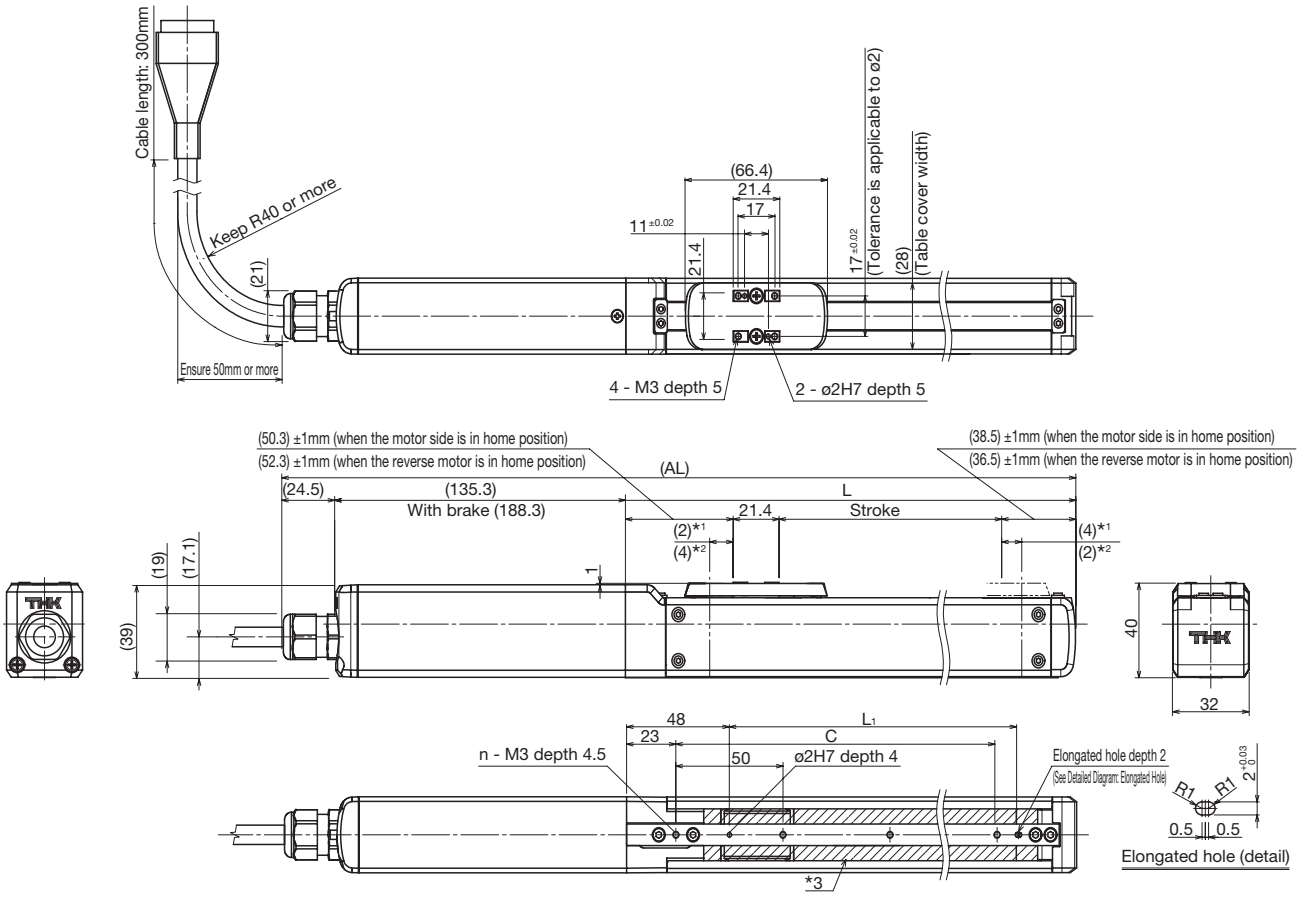
Vertical mount [mm]

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

* Distance from the center of the top face of the table to the load center of gravity position under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal, 0.2G vertical, 150mm stroke.

ES3 + TSC

Dimensions



*1 Stroke to the mechanical stopper when the motor side is in home position.
*2 Stroke to the mechanical stopper when the reverse motor side is in home position.
*3 ▨ represents the opening parts.

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]	AL*3	320 (373)	370 (423)	420 (473)	470 (523)	520 (573)	570 (623)
	L	160.2	210.2	260.2	310.2	360.2	410.2
	L_1	85	135	185	235	285	335
	C	100	150	200	250	300	350
Mounting hole count	n	3	4	5	6	7	8
Weight *3 [kg]		1 (1.3)	1 (1.4)	1.1 (1.4)	1.1 (1.5)	1.3 (1.5)	1.3 (1.6)

*1 Load capacity and maximum speed vary dependent on usage conditions. For details, see “Speed and Load Capacity: Relationship Diagram”.
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

ES3R Slider type TSC specification Motor wrap

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device Type	Option	Motor used	Home position	Cable length
ES3R –	06 –	0150 –	B –	TS –	MR–GR /	28P –	D00 –	S3
ES3R	06: 6mm	0050: 50mm to 0300: 300mm	B	TS: TSC	MR: Motor right wrap ML : Motor left wrap GR : Change the cover color to gray SB : With slider base □1□2: Sensors	28P: □28 28PB: □28 with brake	D00: Motor side R00: Reverse motor side	No symbol: None S3 : Standard 3m S5 : Standard 5m SA*: Standard 10m

* To select SA, insert a noise filter to the TSC power supply. Recommended noise filter is "RSAN-2003 (TDK-Lambda Corporation)".

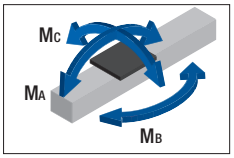
Basic Specifications

Control device type				TSC
Motor				□28
Ball screw lead [mm]				6
Maximum load Weight [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	1
		Vertical mount	0.2G	0.5
Running life *1 [km]				5000
Positioning repeatability [mm]				±0.020
Lost motion [mm]				0.1
Static permissible moment *2 [N·m]				MA: 6.0, MB: 7.5, MC: 5.9

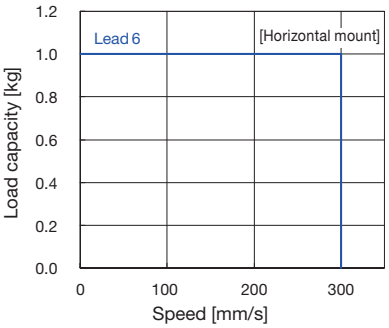
*1 Running life is based on below conditions.
Conditions: Horizontal or vertical, under the maximum load capacity, overhang length A=6mm, B and C=0mm, 0.3G for horizontal, 0.2G for vertical, stroke 50mm

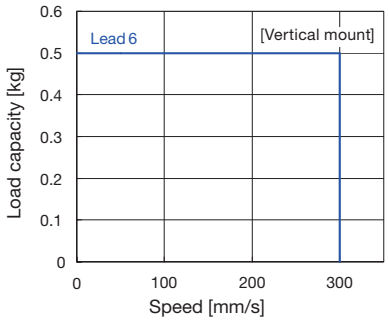
*2 Static maximum permissible moment when unit is stationary. Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static Permissible Moment

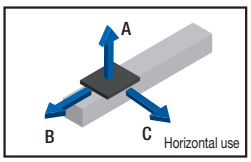


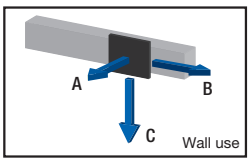
Speed and Load Capacity: Relationship Diagram

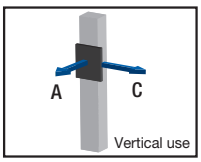




Permissible Overhang Length *







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

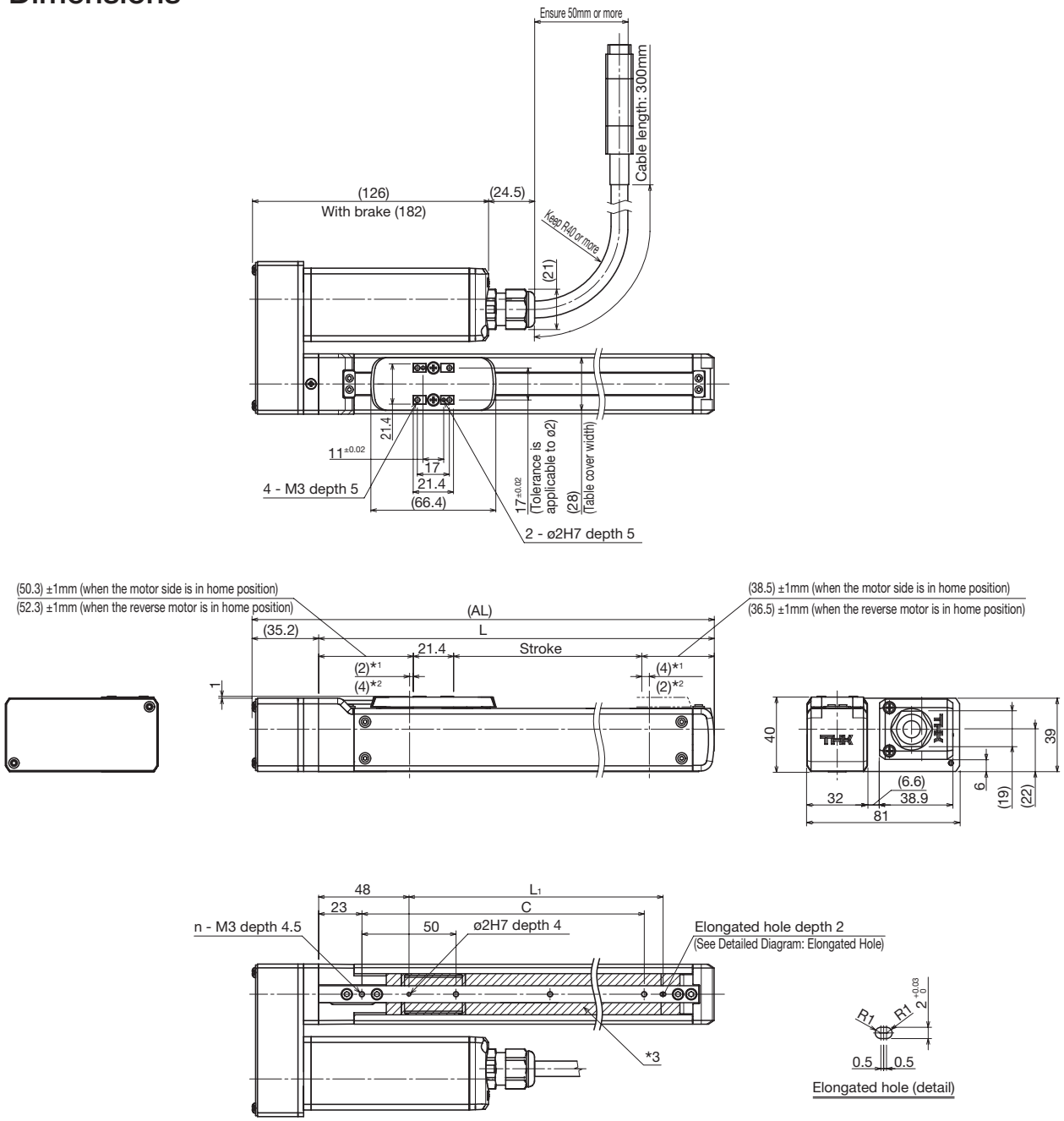
Vertical mount [mm]

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

* Distance from the center of the top face of the table to the load center of gravity position under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal, 0.2G vertical, 150mm stroke.

ES3R + TSC

Dimensions



*1 Stroke to the mechanical stopper when the motor side is in home position.
*2 Stroke to the mechanical stopper when the reverse motor side is in home position.
*3 ▨ represents the opening parts.

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]	AL	195.4	245.4	295.4	345.4	395.4	445.4
	L	160.2	210.2	260.2	310.2	360.2	410.2
	L_1	85	135	185	235	285	335
	C	100	150	200	250	300	350
Mounting hole count	n	3	4	5	6	7	8
Weight *3 [kg]		1 (1.3)	1.1 (1.3)	1.1 (1.4)	1.2 (1.5)	1.3 (1.5)	1.3 (1.6)

*1 Load capacity and maximum speed vary dependent on usage conditions. For details, see “Speed and Load Capacity: Relationship Diagram”.
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

ES4 Slider type TSC specification Direct motor coupling

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device Type	Option	Motor used	Home position	Cable length
ES4	06	0150	B	TS	GR–SB	/ 35P	D00	S3
ES4	06: 6mm 12: 12mm	0050: 50mm to 0400: 400mm	B	TS: TSC	No symbol: None GR: Change the cover color to gray SB : With slider base □1□2: Sensors	35P: □35 35PB: □35 with brake	D00: Motor side R00: Reverse motor side	No symbol: None S3 : Standard 3m S5 : Standard 5m SA*: Standard 10m

* To select SA, insert a noise filter to the TSC power supply. Recommended noise filter is "RSAN-2003 (TDK-Lambda Corporation)".

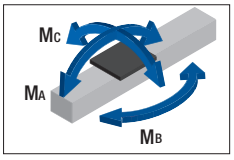
Basic Specifications

Control device type				TSC	
Motor				□35	
Ball screw lead [mm]				6	12
Maximum load Weight [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	9	7.5
		Vertical mount	0.2G	4	1.5
Running life *1 [km]				5000	
Positioning repeatability [mm]				±0.020	
Lost motion [mm]				0.1	
Static permissible moment *2 [N·m]				MA: 9.3, MB: 13.5, MC: 17.7	

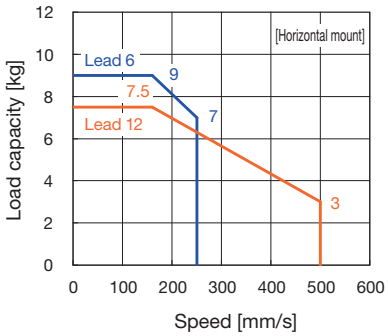
*1 Running life is based on below conditions.
Conditions: horizontal mount or vertical mount, under the maximum load capacity, overhang length A=6mm, B and C=0mm, 0.3G for horizontal mount, 0.2G for vertical mount, stroke 50mm

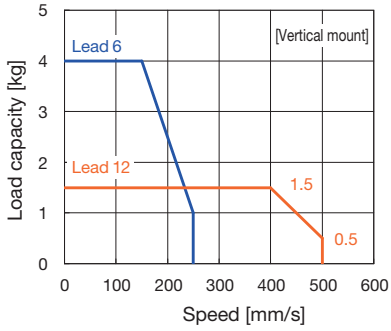
*2 Static maximum permissible moment when unit is stationary.
Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static Permissible Moment

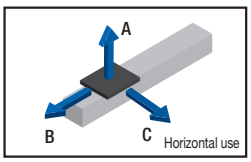


Speed and Load Capacity: Relationship Diagram



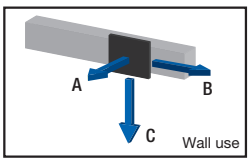


Permissible Overhang Length *



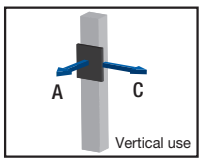
Horizontal mount [mm]

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



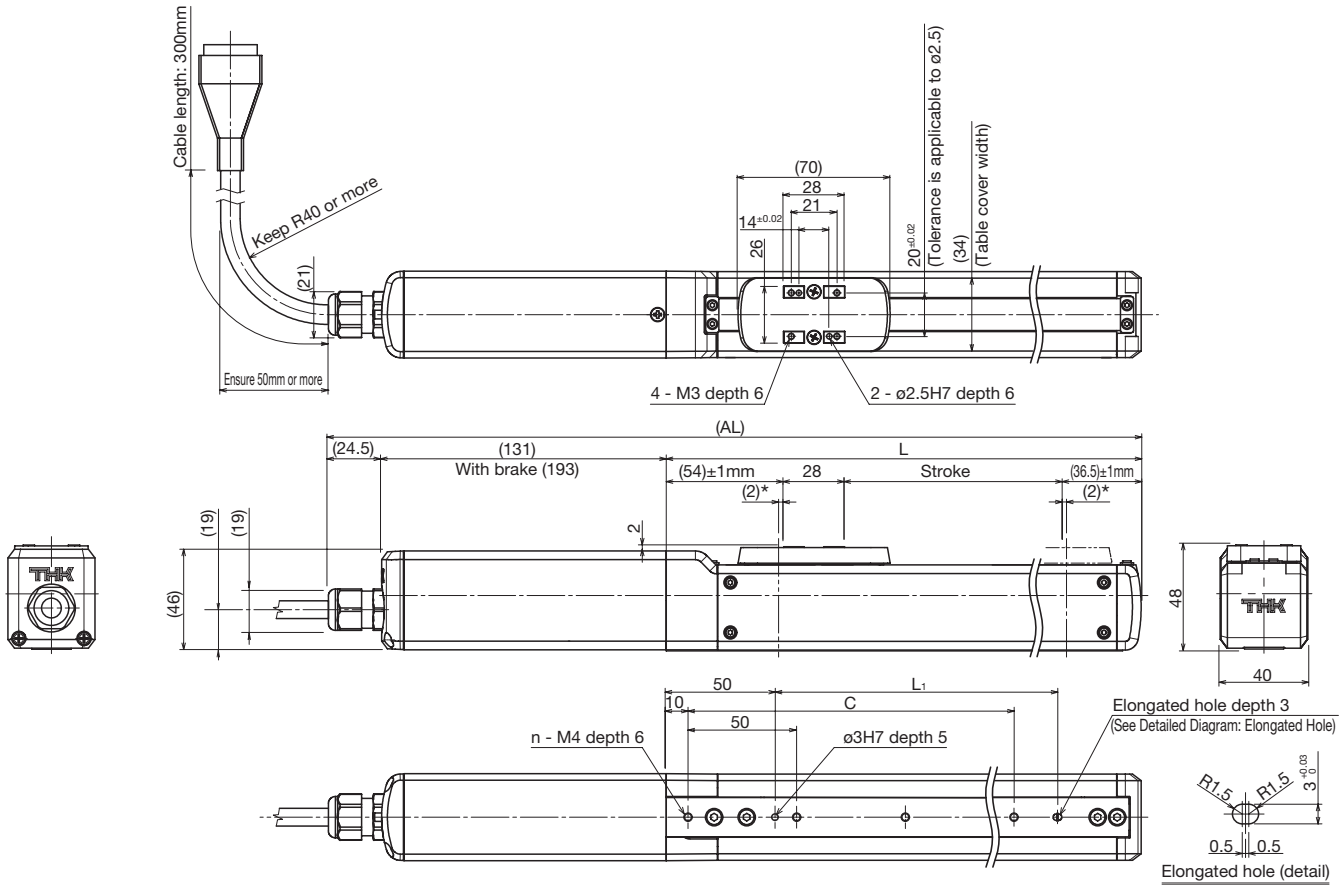
Vertical mount [mm]

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

* Distance from the center of the top face of the table to the load center of gravity position under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal, 0.2G vertical, 150mm stroke.

ES4 + TSC

Dimensions



* Stroke up to mechanical stopper.

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	250							
	Ball screw lead: 12mm	500							
Dimensions [mm]	AL*3	324 (386)	374 (436)	424 (486)	474 (536)	524 (586)	574 (636)	624 (686)	674 (736)
	L	168.5	218.5	268.5	318.5	368.5	418.5	468.5	518.5
	L_1	80	130	180	230	280	330	380	430
	C	100	150	200	250	300	350	400	450
Mounting hole count	n	3	4	5	6	7	8	9	10
Weight *3 [kg]		1.5 (1.9)	1.6 (2.1)	1.7 (2.2)	1.8 (2.3)	1.9 (2.4)	2 (2.5)	2.1 (2.6)	2.2 (2.7)

*1 Load capacity and maximum speed vary dependent on usage conditions. For details, see “Speed and Load Capacity: Relationship Diagram”.
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

ES4R Slider type TSC specification Motor wrap

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device Type	Option	Motor used	Home position	Cable length
ES4R –	06 –	0150 –	B –	TS –	MR–GR /	35P –	D00 –	S3
ES4R	06: 6mm 12: 12mm	0050: 50mm to 0400: 400mm	B	TS: TSC	MR: Motor right wrap ML : Motor left wrap GR : Change the cover color to gray SB : With slider base □1□2: Sensors	35P: □35 35PB: □35 with brake	D00: Motor side R00: Reverse motor side	No symbol: None S3 : Standard 3m S5 : Standard 5m SA*: Standard 10m

* To select SA, insert a noise filter to the TSC power supply. Recommended noise filter is "RSAN-2003 (TDK-Lambda Corporation)".

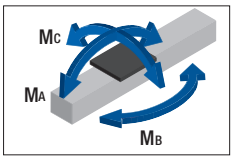
Basic Specifications

Control device type				TSC	
Motor				□35	
Ball screw lead [mm]				6	12
Maximum load Weight [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	4	2
		Vertical mount	0.2G	1.5	1
Running life *1 [km]				5000	
Positioning repeatability [mm]				±0.020	
Lost motion [mm]				0.1	
Static permissible moment *2 [N·m]				MA: 9.3, MB: 13.5, MC: 17.7	

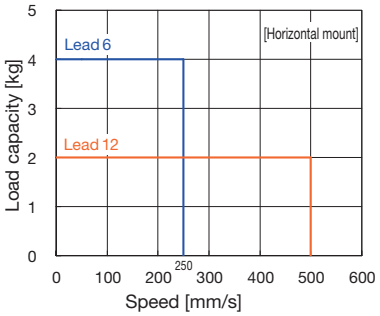
*1 Running life is based on below conditions.
Conditions: Horizontal or vertical, under the maximum load capacity, overhang length A=6mm, B and C=0mm, 0.3G for horizontal, 0.2G for vertical, stroke 50mm

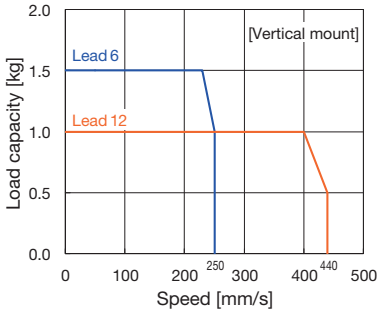
*2 Static maximum permissible moment when unit is stationary. Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static Permissible Moment

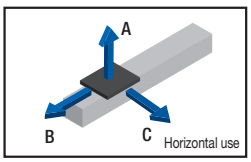


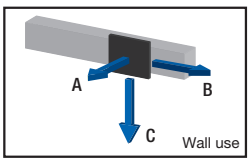
Speed and Load Capacity: Relationship Diagram

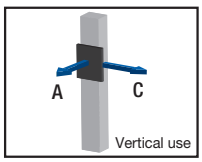




Permissible Overhang Length *







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

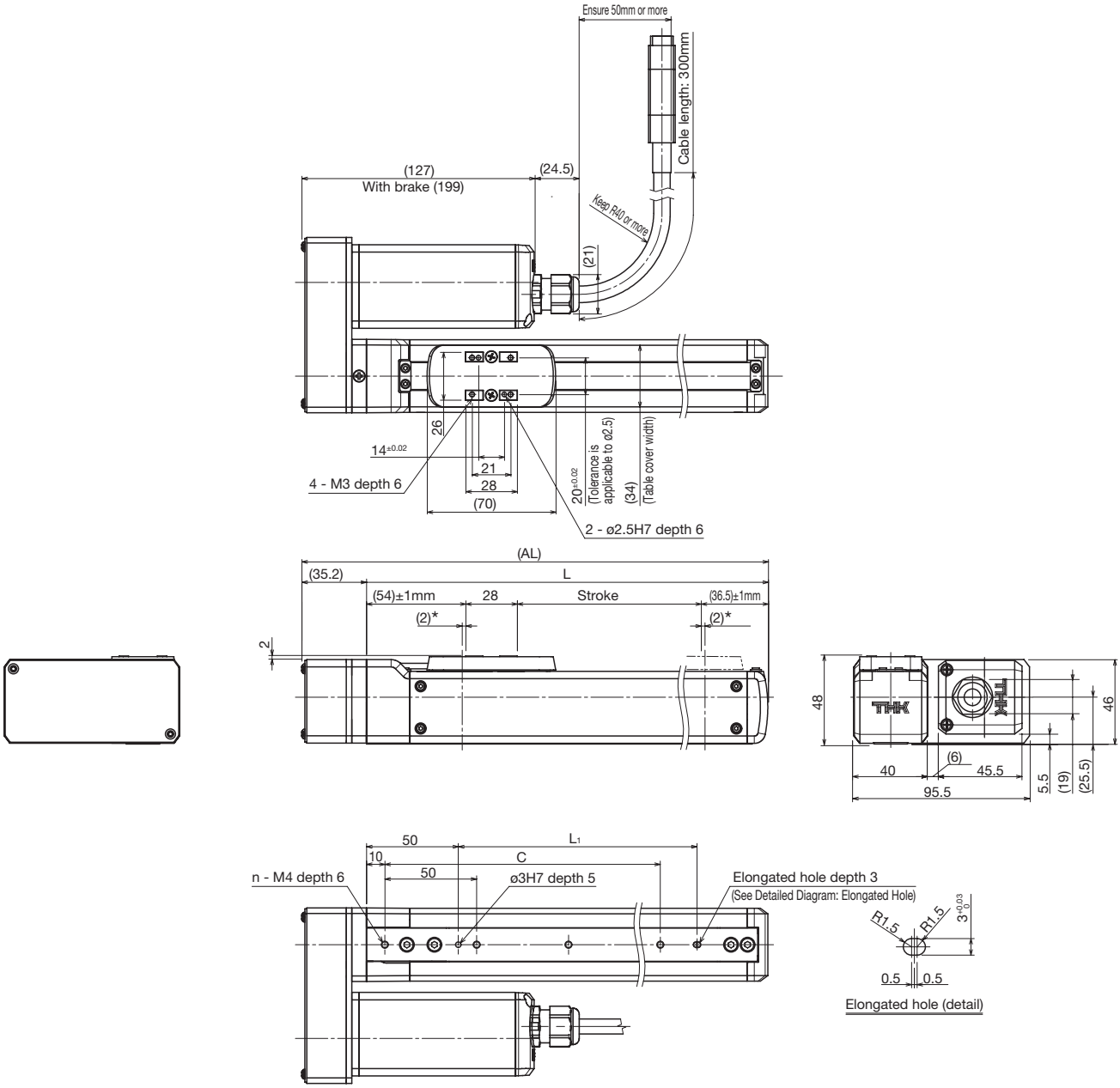
Vertical mount [mm]

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

* Distance from the center of the top face of the table to the load center of gravity position under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal, 0.2G vertical, 150mm stroke.

ES4R + TSC

Dimensions



* Stroke up to mechanical stopper.

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	250							
	Ball screw lead: 12mm	Horizontal: 500, Vertical: 440							
Dimensions [mm]	AL	203.7	253.7	303.7	353.7	403.7	453.7	503.7	553.7
	L	168.5	218.5	268.5	318.5	368.5	418.5	468.5	518.5
	L_1	80	130	180	230	280	330	380	430
	C	100	150	200	250	300	350	400	450
Mounting hole count	n	3	4	5	6	7	8	9	10
Weight *3 [kg]		1.6 (2)	1.7 (2.1)	1.8 (2.2)	1.9 (2.3)	2 (2.4)	2.1 (2.5)	2.2 (2.6)	2.3 (2.7)

*1 Load capacity and maximum speed vary dependent on usage conditions. For details, see “Speed and Load Capacity: Relationship Diagram”.
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

ES5 Slider type TSC specification Direct motor coupling

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device Type	Option	Motor used	Home position	Cable length
ES5	– 06	– 0150	B	– TS	– GR–SB	/ 42P	– D00	– S3
ES5	06: 6mm 12: 12mm	0050: 50mm to 0500: 500mm	B	TS: TSC	No symbol: None GR: Change the cover color to gray SB : With slider base $\square_1\square_2$: Sensors	42P: □42 42PB: □42 with brake	D00: Motor side R00: Reverse motor side	No symbol: None S3 : Standard 3m S5 : Standard 5m SA*: Standard 10m

* To select SA, insert a noise filter to the TSC power supply. Recommended noise filter is "RSAN-2003 (TDK-Lambda Corporation)".

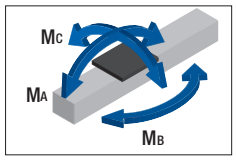
Basic Specifications

Control device type				TSC	
Motor				□42	
Ball screw lead [mm]				6	12
Maximum load Weight [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	10	6
		Vertical mount	0.2G	5	2
Running life *1 [km]				5000	
Positioning repeatability [mm]				±0.020	
Lost motion [mm]				0.1	
Static permissible moment *2 [N·m]				M_A: 10.5, M_B: 22, M_C: 22.1	

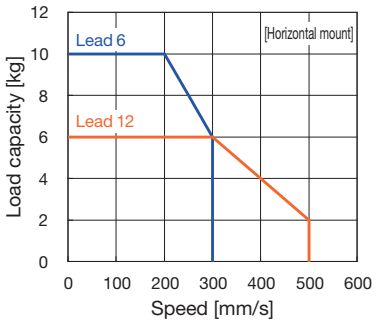
*1 Running life is based on below conditions.
Conditions: Horizontal or vertical, under the maximum load capacity, overhang length A=10mm, B and C=0mm, 0.3G for horizontal, 0.2G for vertical, stroke 50mm

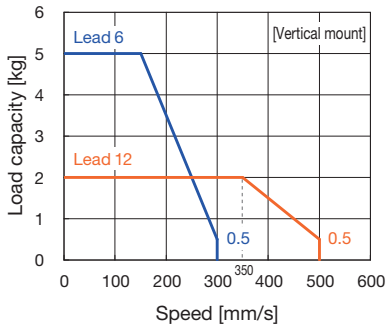
*2 Static maximum permissible moment when unit is stationary. Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.

Static Permissible Moment

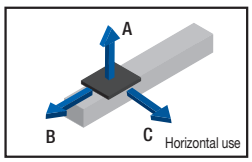


Speed and Load Capacity: Relationship Diagram



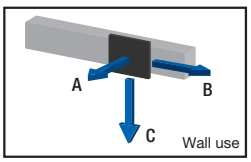


Permissible Overhang Length *



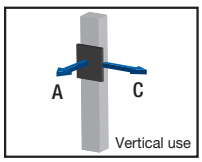
Horizontal mount [mm]

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



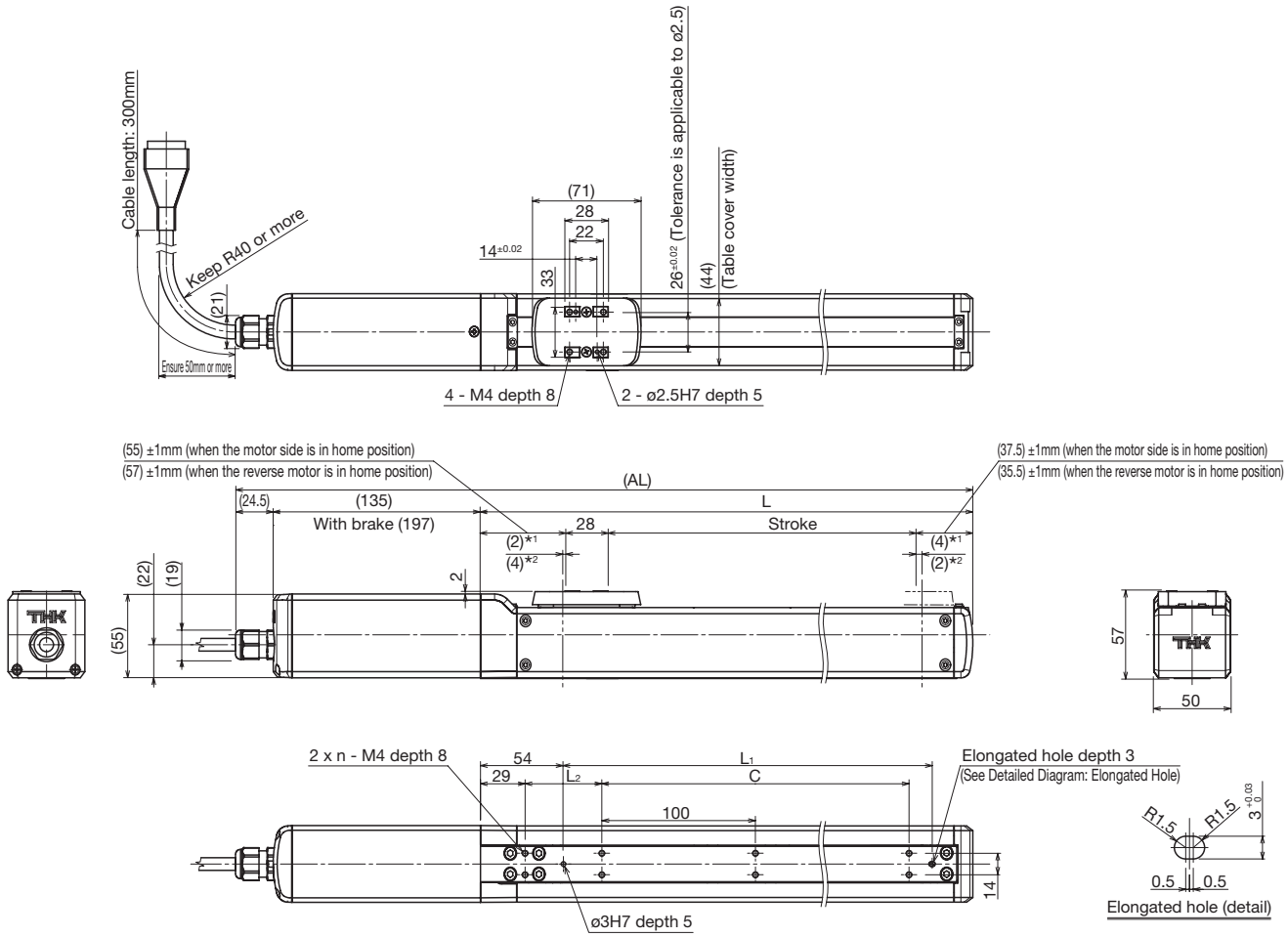
Vertical mount [mm]

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

* Distance from the center of the top face of the table to the load center of gravity position under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal, 0.2G vertical, 150mm stroke.

ES5 + TSC

Dimensions



*1 Stroke to the mechanical stopper when the motor side is in home position.
*2 Stroke to the mechanical stopper when the reverse motor side is in home position.

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	500									
Dimensions [mm]	AL*3	330 (392)	380 (442)	430 (492)	480 (542)	530 (592)	580 (642)	630 (692)	680 (742)	730 (792)	780 (842)
	L	170.5	220.5	270.5	320.5	370.5	420.5	470.5	520.5	570.5	620.5
	L_1	90	140	190	240	290	340	390	440	490	540
	L_2	100	50	100	50	100	50	100	50	100	50
	C	0	100	100	200	200	300	300	400	400	500
Mounting hole count	n	2	3	3	4	4	5	5	6	6	7
Weight *3 [kg]		2.1 (2.6)	2.2 (2.7)	2.3 (2.8)	2.5 (3)	2.6 (3.1)	2.8 (3.2)	2.9 (3.4)	3 (3.5)	3.2 (3.7)	3.3 (3.8)

*1 Load capacity and maximum speed vary dependent on usage conditions. For details, see “Speed and Load Capacity: Relationship Diagram”.
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

ES5R Slider type TSC specification Motor wrap

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device Type	Option	Motor used	Home position	Cable length
ES5R –	06 –	0150 –	B –	TS –	MR–GR /	42P –	D00 –	S3
ES5R	06: 6mm 12: 12mm	0050: 50mm to 0500: 500mm	B	TS: TSC	MR: Motor right wrap ML : Motor left wrap GR : Change the cover color to gray SB : With slider base □1□2: Sensors	42P: □42 42PB: □42 with brake	D00: Motor side R00: Reverse motor side	No symbol: None S3 : Standard 3m S5 : Standard 5m SA*: Standard 10m

* To select SA, insert a noise filter to the TSC power supply. Recommended noise filter is "RSAN-2003 (TDK-Lambda Corporation)".

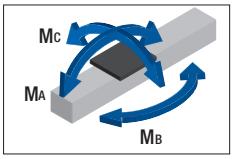
Basic Specifications

Control device type				TSC	
Motor				□42	
Ball screw lead [mm]				6	12
Maximum load Weight [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	8	6
		Vertical mount	0.2G	2	1
Running life *1 [km]				5000	
Positioning repeatability [mm]				±0.020	
Lost motion [mm]				0.1	
Static permissible moment *2 [N·m]				MA: 10.5, MB: 22, MC: 22.1	

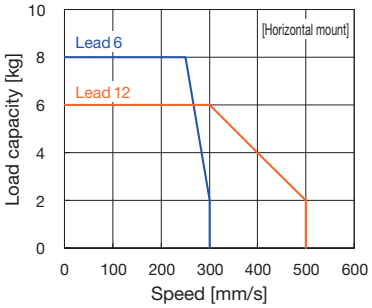
*1 Running life is based on below conditions.
Conditions: Horizontal or vertical, under the maximum load capacity, overhang length A=10mm, B and C=0mm, 0.3G for horizontal, 0.2G for vertical, stroke 50mm

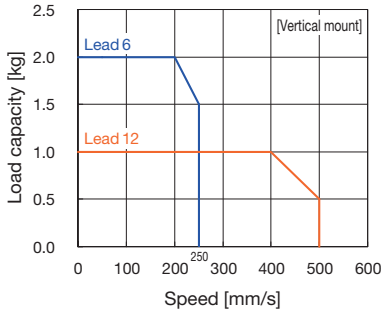
*2 Static maximum permissible moment when unit is stationary. Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static Permissible Moment

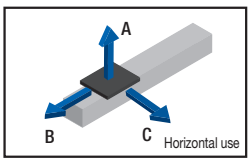


Speed and Load Capacity: Relationship Diagram



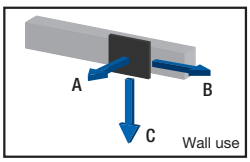


Permissible Overhang Length *



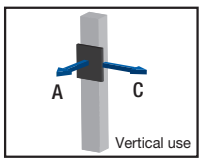
Horizontal mount [mm]

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



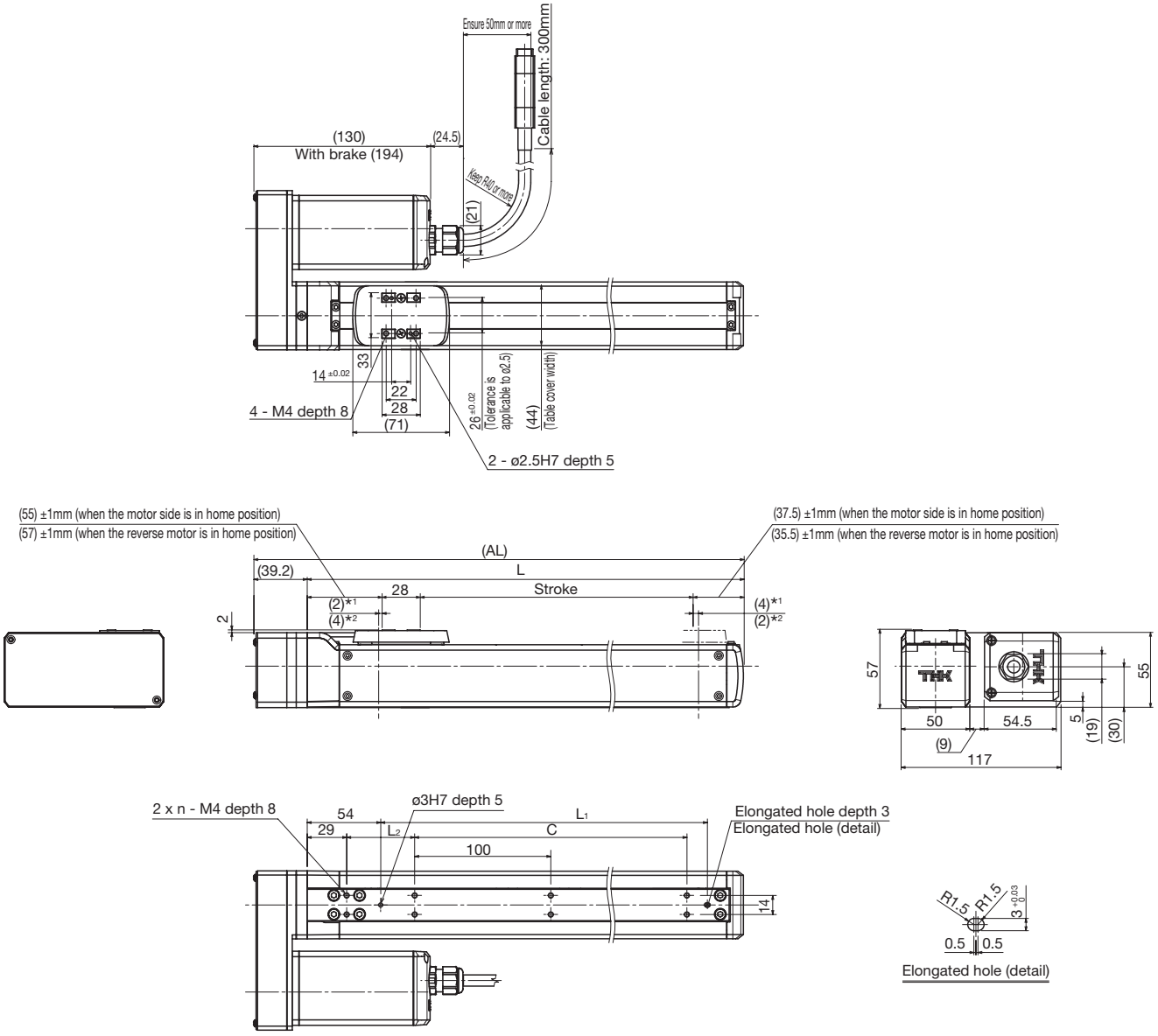
Vertical mount [mm]

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

* Distance from the center of the top face of the table to the load center of gravity position under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal, 0.2G vertical, 150mm stroke.

ES5R + TSC

Dimensions



*1 Stroke to the mechanical stopper when the motor side is in home position.
*2 Stroke to the mechanical stopper when the reverse motor side is in home position.

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	Horizontal: 300, Vertical: 250									
	Ball screw lead: 12mm	500									
Dimensions [mm]	AL	209.7	259.7	309.7	359.7	409.7	459.7	509.7	559.7	609.7	659.7
	L	170.5	220.5	270.5	320.5	370.5	420.5	470.5	520.5	570.5	620.5
	L_1	90	140	190	240	290	340	390	440	490	540
	L_2	100	50	100	50	100	50	100	50	100	50
	C	0	100	100	200	200	300	300	400	400	500
Mounting hole count	n	2	3	3	4	4	5	5	6	6	7
Weight *3 [kg]		2.2 (2.8)	2.3 (2.9)	2.4 (3)	2.6 (3.2)	2.7 (3.3)	2.8 (3.5)	3 (3.6)	3.1 (3.8)	3.3 (3.9)	3.4 (4)

*1 Load capacity and maximum speed vary dependent on usage conditions. For details, see “Speed and Load Capacity: Relationship Diagram”.
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

ES6 Slider type TSC specification Direct motor coupling

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device Type	Option	Motor used	Home position	Cable length
ES6 –	06 –	0150 –	B –	TS –	GR–SB /	42P –	D00 –	S3
ES6	06: 6mm 12: 12mm	0050: 50mm to 0600: 600mm	B	TS: TSC	No symbol: None GR: Change the cover color to gray SB : With slider base $\square_1\square_2$: Sensors	42P: □42 42PB: □42 with brake	D00: Motor side R00: Reverse motor side	No symbol: None S3 : Standard 3m S5 : Standard 5m SA*: Standard 10m

* To select SA, insert a noise filter to the TSC power supply. Recommended noise filter is "RSAN-2003 (TDK-Lambda Corporation)".

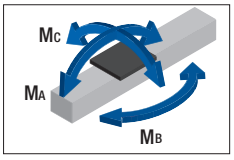
Basic Specifications

Control device type				TSC	
Motor				□42	
Ball screw lead [mm]				6	12
Maximum load Weight [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	10	6
		Vertical mount	0.2G	5	2
Running life *1 [km]				5000	
Positioning repeatability [mm]				±0.020	
Lost motion [mm]				0.1	
Static permissible moment *2 [N·m]				M_A: 10.5, M_B: 22, M_C: 22.1	

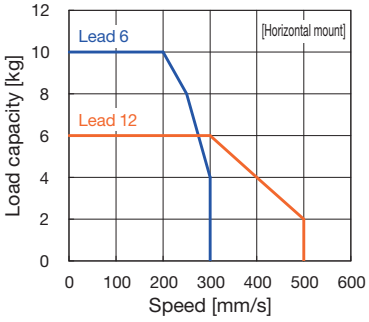
*1 Running life is based on below conditions.
Conditions: Horizontal or vertical, under the maximum load capacity, overhang length A=10mm, B and C=0mm, 0.3G for horizontal, 0.2G for vertical, stroke 50mm

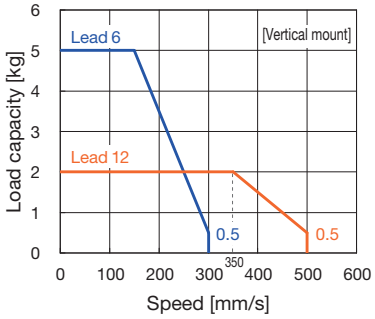
*2 Static maximum permissible moment when unit is stationary. Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.

Static Permissible Moment

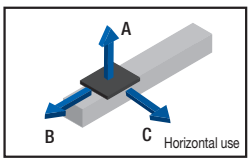


Speed and Load Capacity: Relationship Diagram



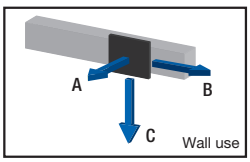


Permissible Overhang Length *



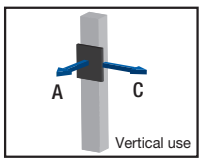
Horizontal mount [mm]

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



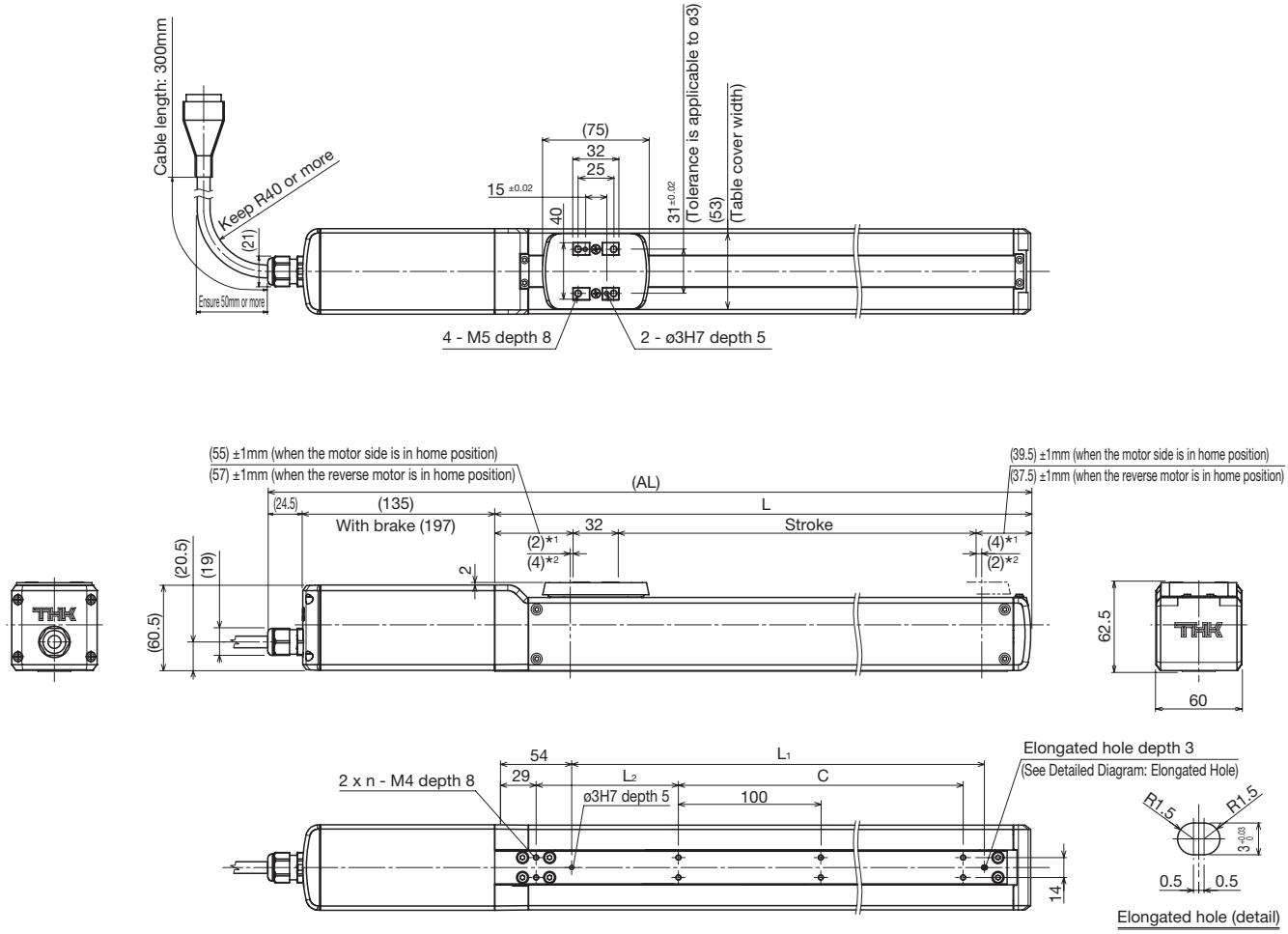
Vertical mount [mm]

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

* Distance from the center of the top face of the table to the load center of gravity position under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal, 0.2G vertical, 150mm stroke.

ES6 + TSC

Dimensions



*1 Stroke to the mechanical stopper when the motor side is in home position.
*2 Stroke to the mechanical stopper when the reverse motor side is in home position.

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	500											460
Dimensions [mm]	AL*3	336 (398)	386 (448)	436 (498)	486 (548)	536 (598)	586 (648)	636 (698)	686 (748)	736 (798)	786 (848)	836 (898)	886 (948)
	L	176.5	226.5	276.5	326.5	376.5	426.5	476.5	526.5	576.5	626.5	676.5	726.5
	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
	C	0	100	100	200	200	300	300	400	400	500	500	600
Mounting hole count	n	2	3	3	4	4	5	5	6	6	7	7	8
Weight *3 [kg]		2.4 (2.9)	2.6 (3)	2.7 (3.2)	2.8 (3.3)	3 (3.5)	3.1 (3.6)	3.3 (3.8)	3.4 (3.9)	3.5 (4)	3.7 (4.2)	3.8 (4.3)	4 (4.5)

*1 Load capacity and maximum speed vary dependent on usage conditions. For details, see “Speed and Load Capacity: Relationship Diagram”.
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

ES6R Slider type TSC specification Motor wrap

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device Type	Option	Motor used	Home position	Cable length
ES6R –	06 –	0150 –	B –	TS –	MR–GR /	42P –	D00 –	S3
ES6R	06: 6mm 12: 12mm	0050: 50mm to 0600: 600mm	B	TS: TSC	MR: Motor right wrap ML : Motor left wrap GR : Change the cover color to gray SB : With slider base $\square_1\square_2$: Sensors	42P: □42 42PB: □42 with brake	D00: Motor side R00: Reverse motor side	No symbol: None S3 : Standard 3m S5 : Standard 5m SA*: Standard 10m

* To select SA, insert a noise filter to the TSC power supply. Recommended noise filter is "RSAN-2003 (TDK-Lambda Corporation)".

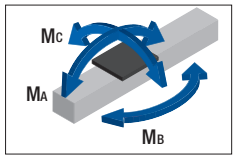
Basic Specifications

Control device type				TSC	
Motor				□42	
Ball screw lead [mm]				6	12
Maximum load Weight [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	8	6
		Vertical mount	0.2G	2	1
Running life *1 [km]				5000	
Positioning repeatability [mm]				±0.020	
Lost motion [mm]				0.1	
Static permissible moment *2 [N·m]				M_A: 10.5, M_B: 22, M_C: 22.1	

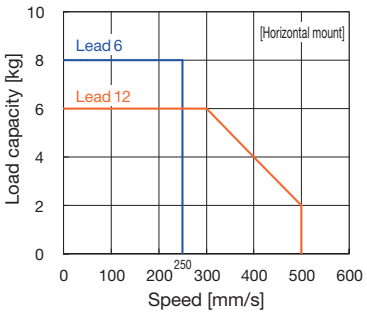
*1 Running life is based on below conditions.
Conditions: Horizontal or vertical, under the maximum load capacity, overhang length A=10mm, B and C=0mm, 0.3G for horizontal, 0.2G for vertical, stroke 50mm

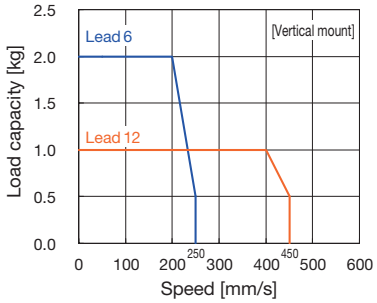
*2 Static maximum permissible moment when unit is stationary. Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.

Static Permissible Moment

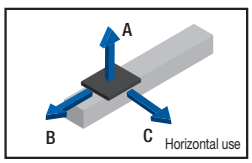


Speed and Load Capacity: Relationship Diagram



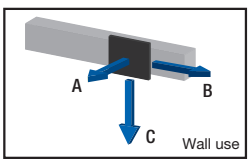


Permissible Overhang Length *



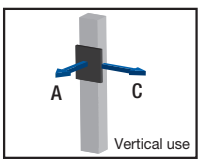
Horizontal mount [mm]

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



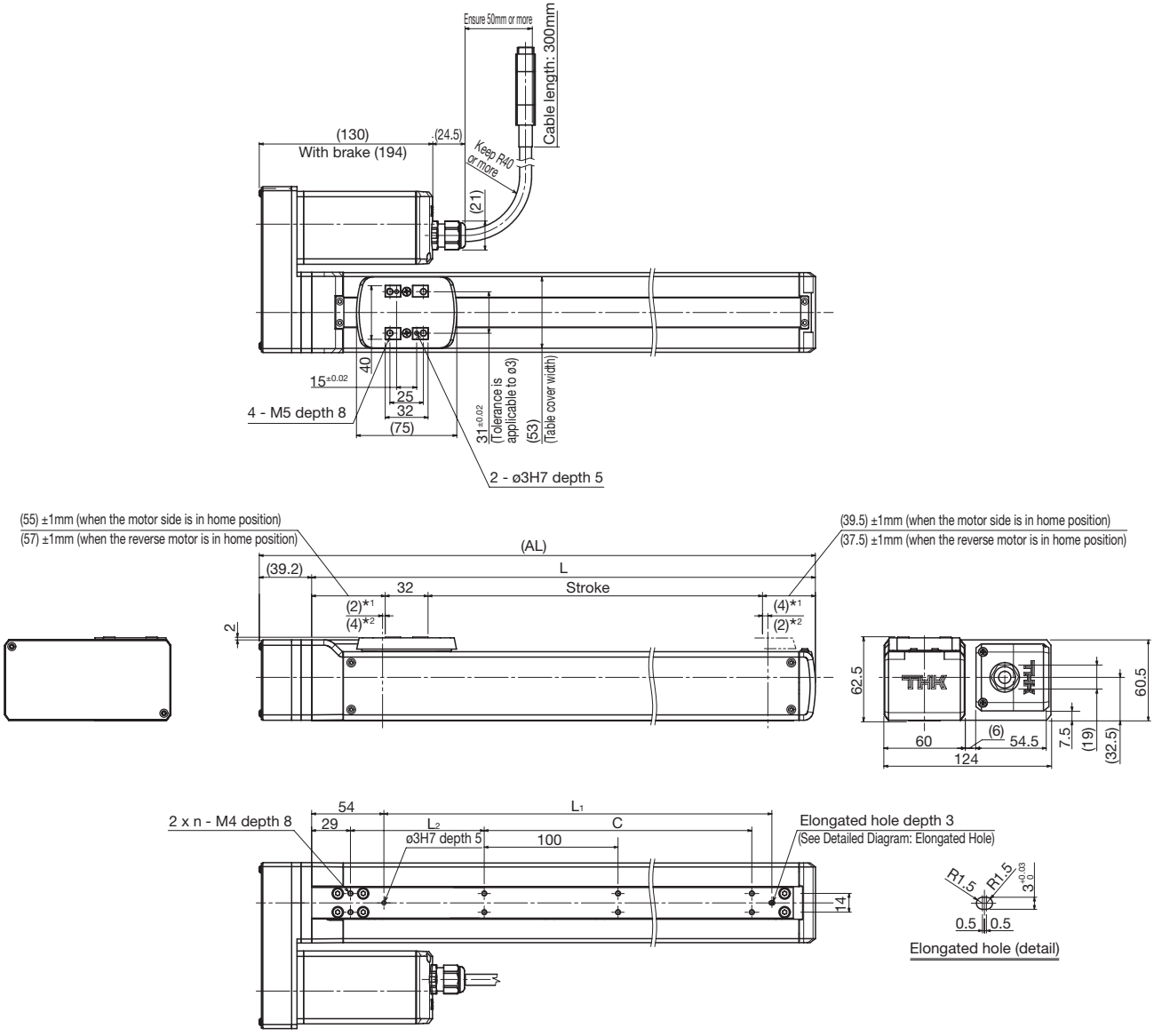
Vertical mount [mm]

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

* Distance from the center of the top face of the table to the load center of gravity position under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal, 0.2G vertical, 150mm stroke.

ES6R + TSC

Dimensions



*1 Stroke to the mechanical stopper when the motor side is in home position.
*2 Stroke to the mechanical stopper when the reverse motor side is in home position.

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	250											230
	Ball screw lead: 12mm	Horizontal: 500, Vertical: 450											★4
Dimensions [mm]	AL	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	176.5	226.5	276.5	326.5	376.5	426.5	476.5	526.5	576.5	626.5	676.5	726.5
	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
	C	0	100	100	200	200	300	300	400	400	500	500	600
Mounting hole count	n	2	3	3	4	4	5	5	6	6	7	7	8
Weight *3 [kg]		2.5 (3.1)	2.7 (3.3)	2.8 (3.4)	2.9 (3.5)	3.1 (3.7)	3.2 (3.8)	3.4 (4)	3.5 (4.1)	3.7 (4.3)	3.8 (4.4)	4 (4.6)	4.1 (4.7)

*1 Load capacity and maximum speed vary dependent on usage conditions. For details, see “Speed and Load Capacity: Relationship Diagram”.
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.
*4 Horizontal: 460, Vertical: 450

EC3 Cylinder type TSC specification Direct motor coupling

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device Type	Option	Motor used	Home position	Cable length
EC3	– 06	– 0150	B	– TS	– GR–FL–LB	/ 35P	– D00	– S3
EC3	06: 6mm	0050: 50mm to 0200: 200mm	B	TS: TSC	No symbol: None GR: Change the cover color to gray CB: With cylinder base FL : With flange LB : With link ball	35P: □35 35PB: □35 with brake	D00: Motor side R00: Reverse motor side	No symbol: None S3 : Standard 3m S5 : Standard 5m SA*: Standard 10m

* To select SA, insert a noise filter to the TSC power supply. Recommended noise filter is "RSAN-2003 (TDK-Lambda Corporation)".

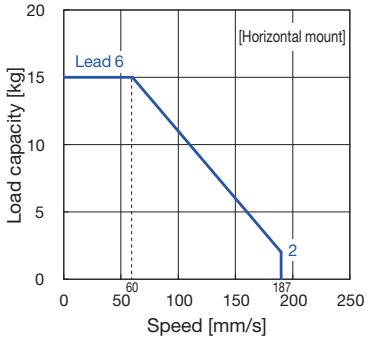
Basic Specifications

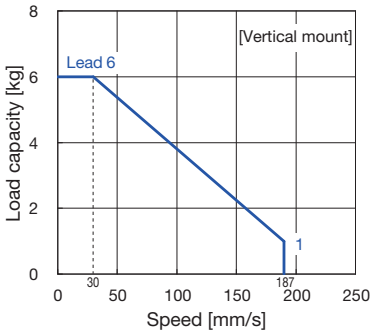
Control device type				TSC
Motor				□35
Ball screw lead [mm]				6
Maximum load Weight *1 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	15
		Vertical mount	0.2G	6
Running life *2 [km]				5000
Positioning repeatability [mm]				±0.020
Lost motion [mm]				0.1
Rod non-rotational accuracy [°]				±1.5

*1 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.

*2 Running life is based on below conditions.
Conditions: Under the maximum load capacity (with LM guide), maximum speed, 0.3G for horizontal, 0.2G for vertical

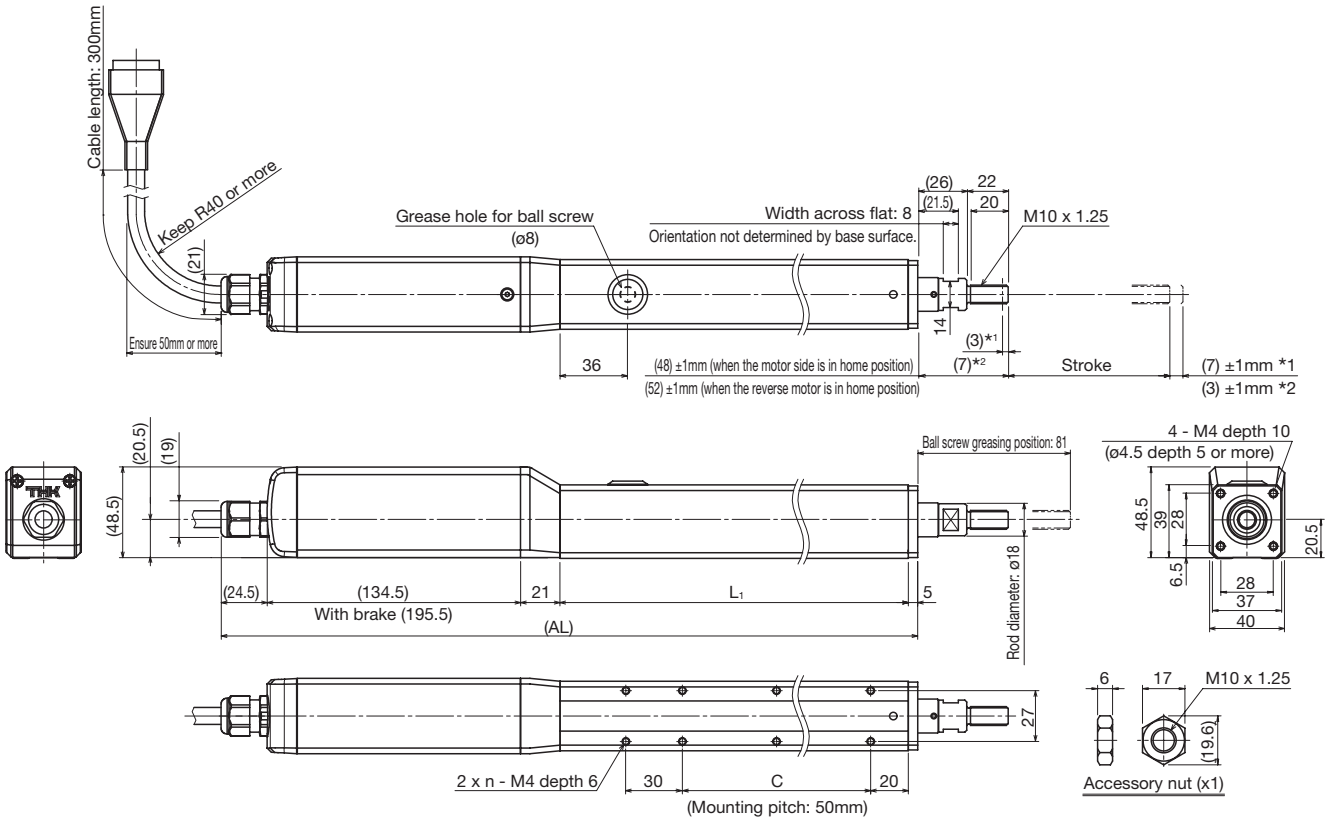
Speed and Load Capacity: Relationship Diagram





EC3 + TSC

Dimensions



*1 Stroke to the mechanical stopper when the motor side is in home position.
*2 Stroke to the mechanical stopper when the reverse motor side is in home position.

Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)
Maximum speed *1 *2 [mm/s]	Ball screw lead: 6mm	187			
Dimensions [mm]	AL*3	320 (381)	370 (431)	420 (481)	470 (531)
	L1	135	185	235	285
	C	50	100	150	200
Mounting hole count	n	3	4	5	6
Weight *3 [kg]		1.4 (1.8)	1.6 (2)	1.8 (2.2)	2 (2.4)

*1 Load capacity and maximum speed vary dependent on usage conditions. For details, see “Speed and Load Capacity: Relationship Diagram”.
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

EC3R Cylinder type TSC specification Motor wrap

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device Type	Option	Motor used	Home position	Cable length
EC3R	06	0150	B	TS	MR–GR–FL–LB	/ 35P	D00	S3
EC3R	06: 6mm	0050: 50mm to 0200: 200mm	B	TS: TSC	MR: Motor right wrap ML : Motor left wrap GR : Change the cover color to gray CB : With cylinder base FL : With flange LB : With link ball	35P: □35 35PB: □35 with brake	D00: Motor side R00: Reverse motor side	No symbol: None S3 : Standard 3m S5 : Standard 5m SA*: Standard 10m

* To select SA, insert a noise filter to the TSC power supply. Recommended noise filter is "RSAN-2003 (TDK-Lambda Corporation)".

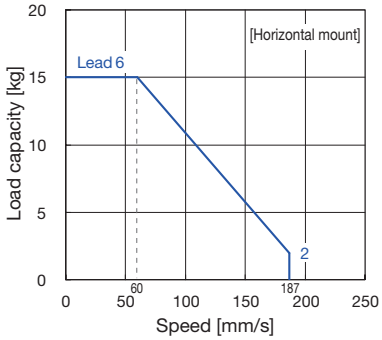
Basic Specifications

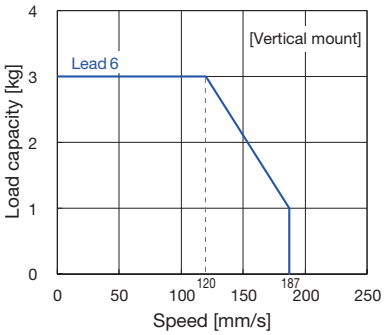
Control device type				TSC
Motor				□35
Ball screw lead [mm]				6
Maximum load Weight *1 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	15
		Vertical mount	0.2G	3
Running life *2 [km]				5000
Positioning repeatability [mm]				±0.020
Lost motion [mm]				0.1
Rod non-rotational accuracy [°]				±1.5

*1 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.

*2 Running life is based on below conditions.
Conditions: Under the maximum load capacity (with LM guide), maximum speed, 0.3G for horizontal, 0.2G for vertical

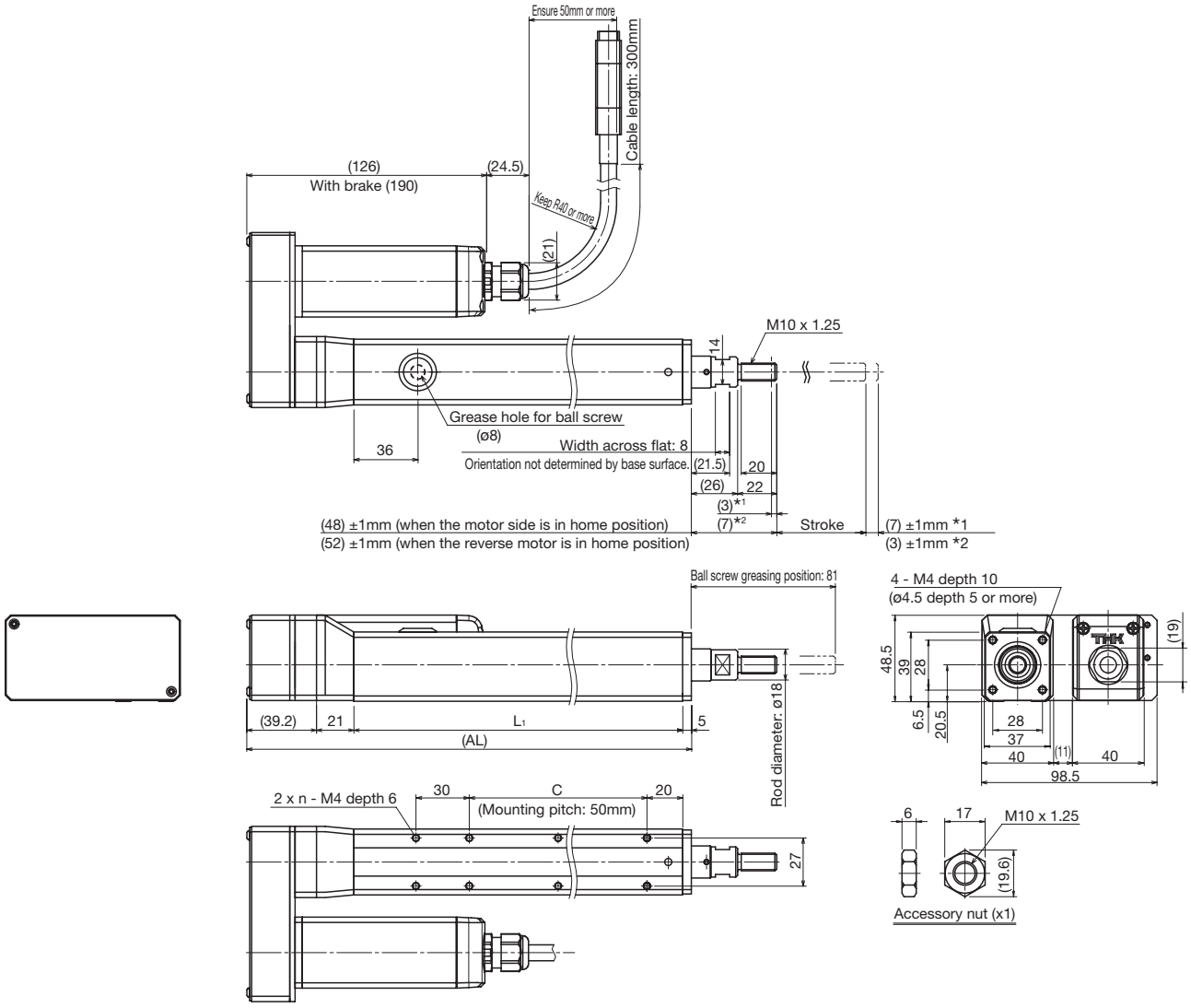
Speed and Load Capacity: Relationship Diagram





EC3R + TSC

Dimensions



*1 Stroke to the mechanical stopper when the motor side is in home position.
*2 Stroke to the mechanical stopper when the reverse motor side is in home position.

Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)
Maximum speed *1*2 [mm/s]	Ball screw lead: 6mm	187			
Dimensions [mm]	AL	200.2	250.2	300.2	350.2
	L1	135	185	235	285
	C	50	100	150	200
Mounting hole count	n	3	4	5	6
Weight *3 [kg]		1.4 (1.8)	1.6 (2.0)	1.8 (2.2)	2 (2.4)

*1 Load capacity and maximum speed vary dependent on usage conditions. For details, see “Speed and Load Capacity: Relationship Diagram”.
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

EC3H Cylinder type TSC specification Direct motor coupling/with linear bush

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device Type	Option	Motor used	Home position	Cable length
EC3H –	06 –	0150 –	B –	TS –	GR–CB /	35P –	D00 –	S3
EC3H	06: 6mm	0050: 50mm to 0200: 200mm	B	TS: TSC	No symbol: None GR: Change the cover color to gray CB: With cylinder base	35P: □35 35PB: □35 with brake	D00: Motor side R00: Reverse motor side	No symbol: None S3 : Standard 3m S5 : Standard 5m SA*: Standard 10m

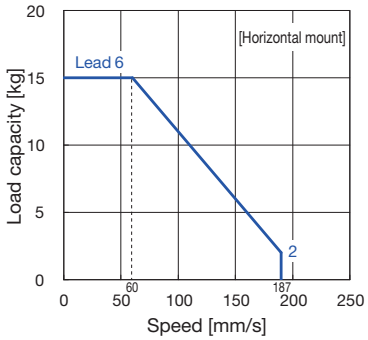
* To select SA, insert a noise filter to the TSC power supply. Recommended noise filter is "RSAN-2003 (TDK-Lambda Corporation)".

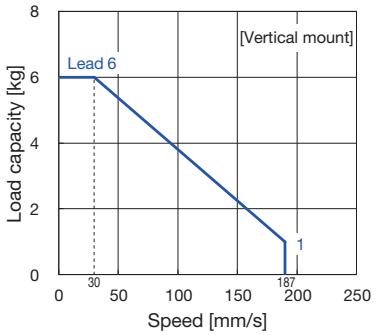
Basic Specifications

Control device type				TSC
Motor				□35
Ball screw lead [mm]				6
Maximum load Weight *1*2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	15
		Vertical mount	0.2G	6
Running life *2*3 [km]				5000
Positioning repeatability [mm]				±0.020
Lost motion [mm]				0.1
Rod non-rotational accuracy [°]				±0.05

*1 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.
*2 Load capacity and running life may vary without an LM guide. For details, see "Reference End Load and Running Life".
*3 Running life is based on below conditions.
Conditions: Under the maximum load capacity (with LM guide), maximum speed, 0.3G for horizontal, 0.2G for vertical

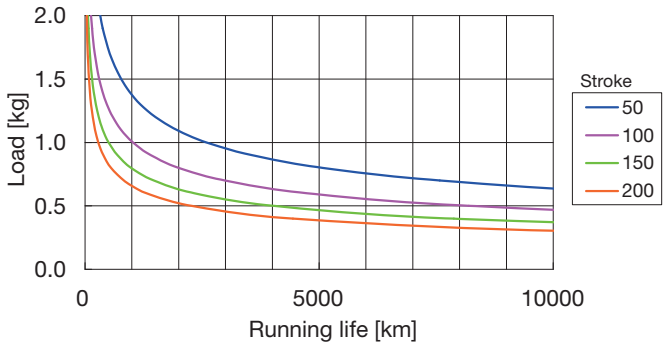
Speed and Load Capacity: Relationship Diagram





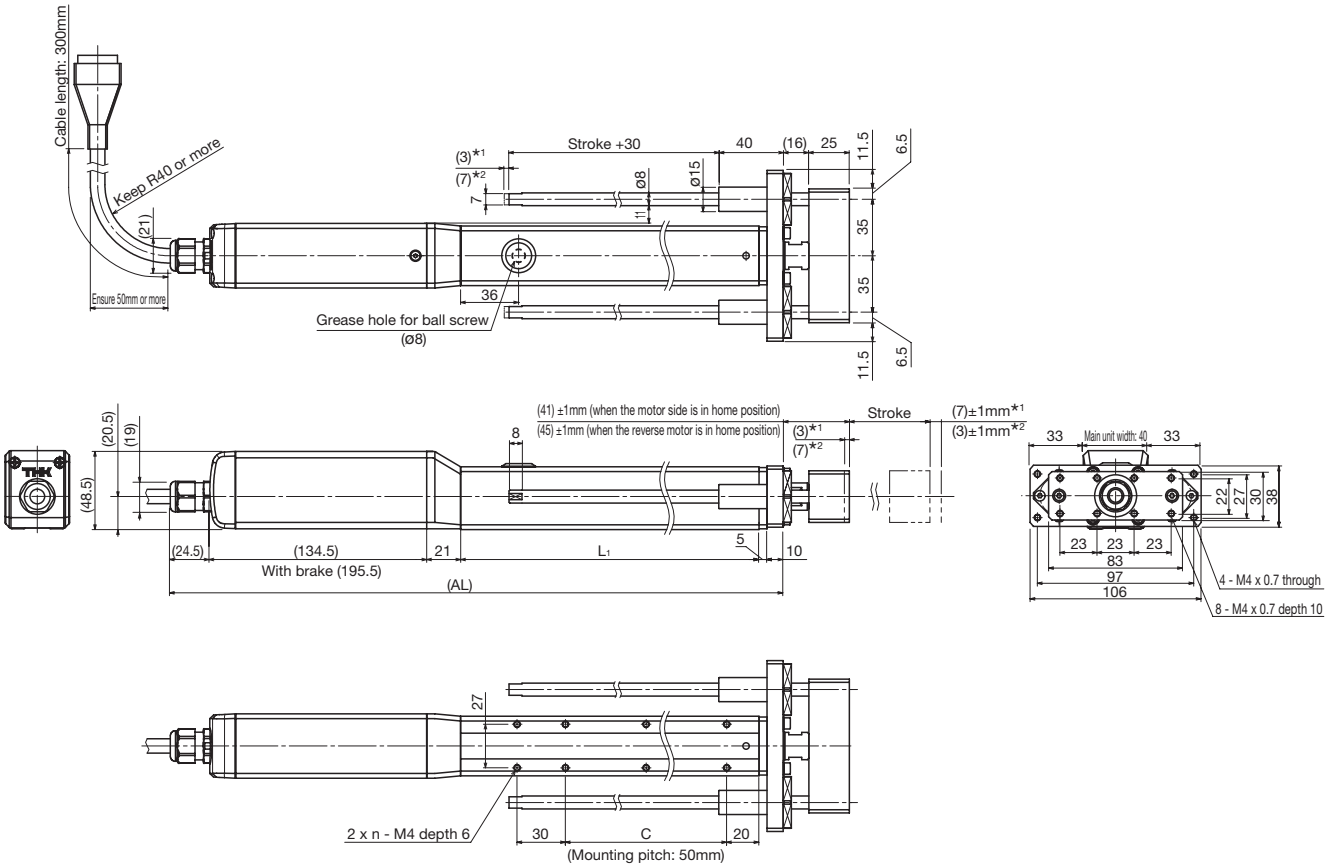
Reference End Load and Running Life

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



EC3H + TSC

Dimensions



*1 Stroke to the mechanical stopper when the motor side is in home position.
*2 Stroke to the mechanical stopper when the reverse motor side is in home position.

Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)
Maximum speed *1 *2 [mm/s]	Ball screw lead: 6mm	187			
Dimensions [mm]	AL*3	330 (391)	380 (441)	430 (491)	480 (541)
	L1	135	185	235	285
	C	50	100	150	200
Mounting hole count	n	3	4	5	6
Weight *3 [kg]		1.7 (2.1)	1.9 (2.4)	2.2 (2.6)	2.4 (2.9)

*1 Load capacity and maximum speed vary dependent on usage conditions. For details, see “Speed and Load Capacity: Relationship Diagram”.
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

EC4 Cylinder type TSC specification Direct motor coupling

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device Type	Option	Motor used	Home position	Cable length
EC4	– 06	– 0150	B	– TS	– GR–FL–LB	/ 42P	– D00	– S3
EC4	06: 6mm 12: 12mm	0050: 50mm to 0300: 300mm	B	TS: TSC	No symbol: None GR: Change the cover color to gray CB: With cylinder base FL : With flange LB : With link ball	42P: □42 42PB: □42 with brake	D00: Motor side R00: Reverse motor side	No symbol: None S3 : Standard 3m S5 : Standard 5m SA*: Standard 10m

* To select SA, insert a noise filter to the TSC power supply. Recommended noise filter is "RSAN-2003 (TDK-Lambda Corporation)".

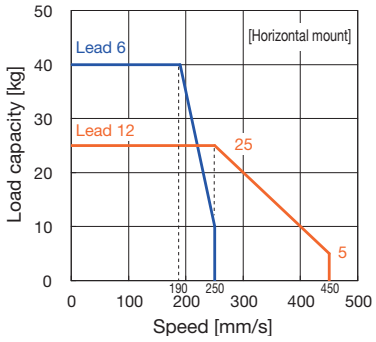
Basic Specifications

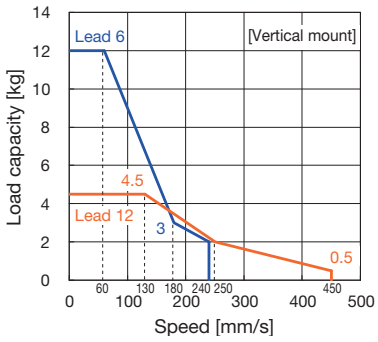
Control device type				TSC	
Motor				□42	
Ball screw lead [mm]				6	12
Maximum load Weight *1 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	40	25
		Vertical mount	0.2G	12	4.5
Running life *2 [km]				5000	
Positioning repeatability [mm]				±0.020	
Lost motion [mm]				0.1	
Rod non-rotational accuracy [°]				±1.5	

*1 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.

*2 Running life is based on below conditions.
Conditions: Under the maximum load capacity (with LM guide), maximum speed, 0.3G for horizontal, 0.2G for vertical

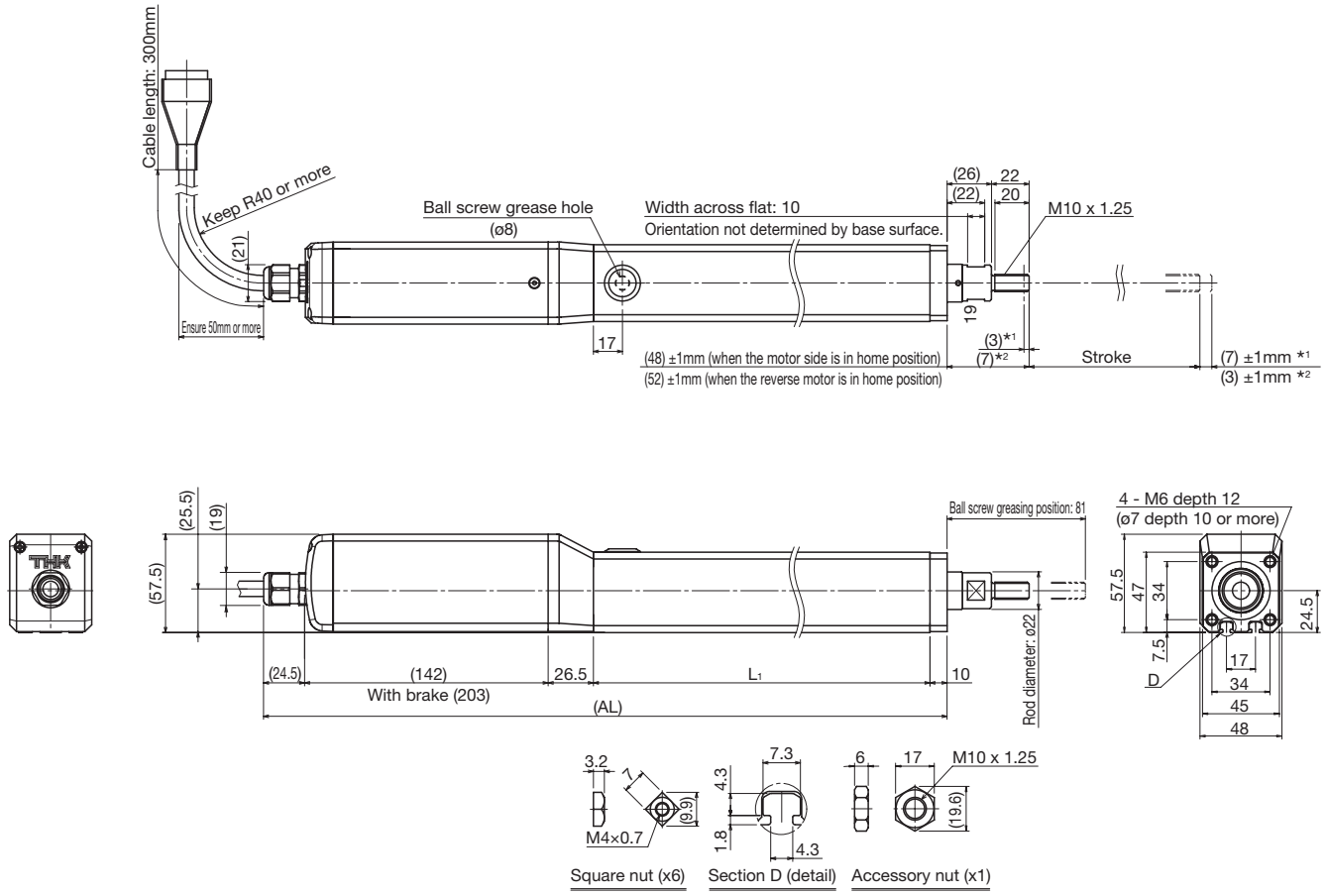
Speed and Load Capacity: Relationship Diagram





EC4 + TSC

Dimensions



*1 Stroke to the mechanical stopper when the motor side is in home position.
*2 Stroke to the mechanical stopper when the reverse motor side is in home position.

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	Horizontal: 250, Vertical: 240				230	170
	Ball screw lead: 12mm	450					340
Dimensions [mm]	AL*3	350 (411)	400 (461)	450 (511)	500 (561)	550 (611)	600 (661)
	L1*4	147	197	247	297	347	397
Weight *3 [kg]		2.3 (2.9)	2.6 (3.2)	3 (3.5)	3.3 (3.8)	3.6 (4.2)	4 (4.5)

*1 Load capacity and maximum speed vary dependent on usage conditions. For details, see “Speed and Load Capacity: Relationship Diagram”.
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.
*4 The dimension of the T slot corresponds to L1.

EC4R Cylinder type TSC specification Motor wrap

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device Type	Option	Motor used	Home position	Cable length
EC4R –	06 –	0150 –	B –	TS –	MR–GR–FL–LB /	42P –	D00 –	S3
EC4R	06: 6mm 12: 12mm	0050: 50mm to 0300: 300mm	B	TS: TSC	MR: Motor right wrap ML : Motor left wrap GR : Change the cover color to gray CB : With cylinder base FL : With flange LB : With link ball	42P: □42 42PB: □42 with brake	D00: Motor side R00: Reverse motor side	No symbol: None S3 : Standard 3m S5 : Standard 5m SA*: Standard 10m

* To select SA, insert a noise filter to the TSC power supply. Recommended noise filter is "RSAN-2003 (TDK-Lambda Corporation)".

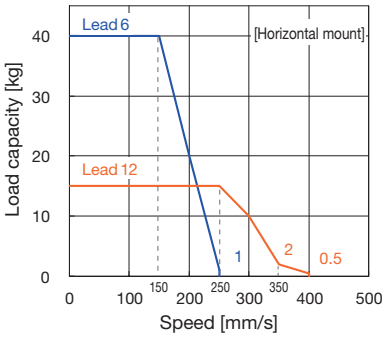
Basic Specifications

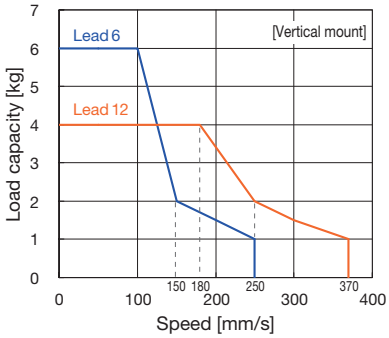
Control device type				TSC	
Motor				□42	
Ball screw lead [mm]				6	12
Maximum load Weight *1 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	40	15
		Vertical mount	0.2G	6	4.0
Running life *2 [km]				5000	
Positioning repeatability [mm]				±0.020	
Lost motion [mm]				0.1	
Rod non-rotational accuracy [°]				±1.5	

*1 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.

*2 Running life is based on below conditions.
Conditions: Under the maximum load capacity (with LM guide), maximum speed, 0.3G for horizontal, 0.2G for vertical

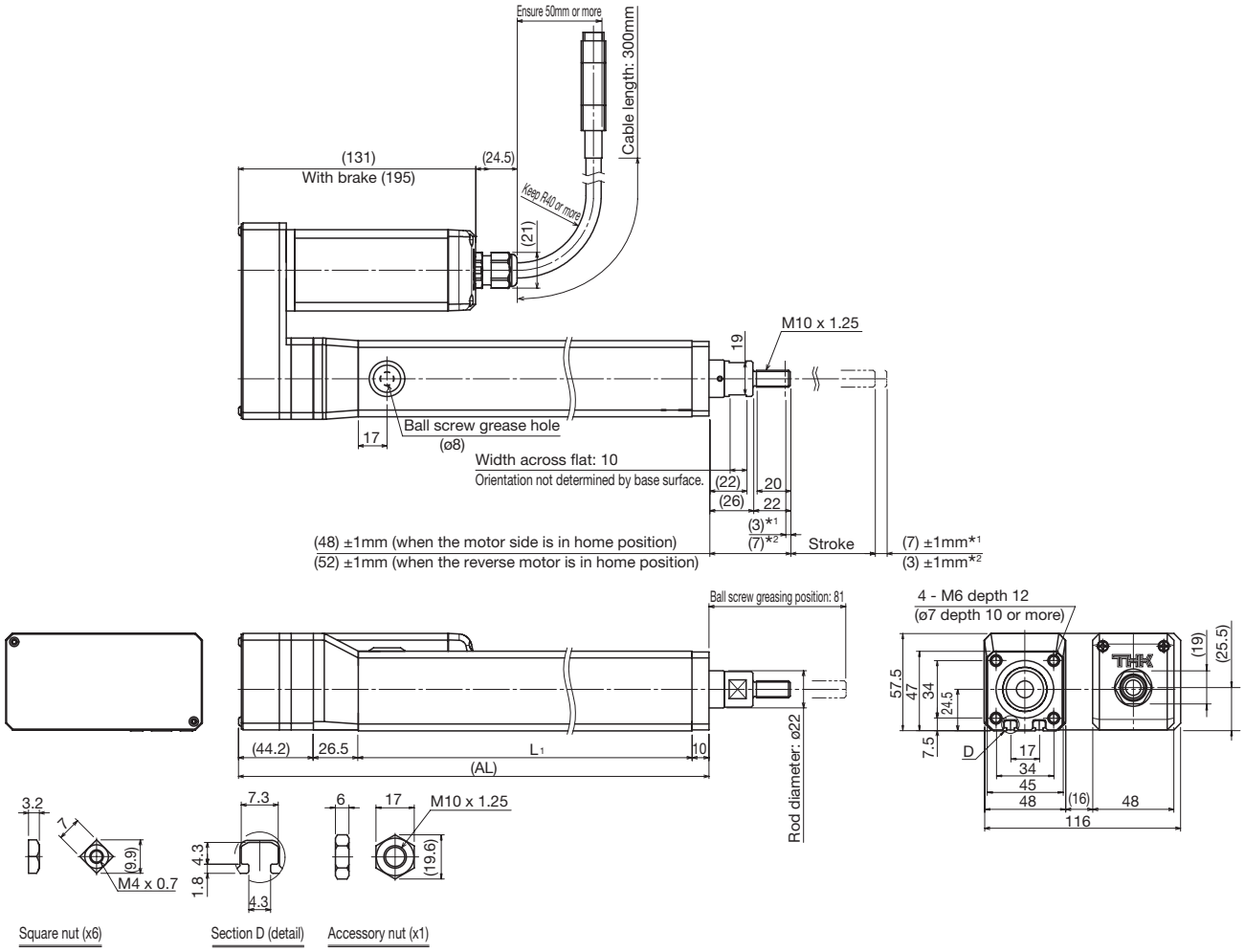
Speed and Load Capacity: Relationship Diagram





EC4R + TSC

Dimensions



*1 Stroke to the mechanical stopper when the motor side is in home position.
*2 Stroke to the mechanical stopper when the reverse motor side is in home position.

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	250				230	170
	Ball screw lead: 12mm	Horizontal: 400, Vertical: 370					340
Dimensions [mm]	AL	227.7	277.7	327.7	377.7	427.7	477.7
	L1*3	147	197	247	297	347	397
Weight *4 [kg]		2.3 (2.9)	2.6 (3.2)	2.9 (3.6)	3.3 (3.9)	3.6 (4.2)	3.9 (4.5)

*1 Load capacity and maximum speed vary dependent on usage conditions. For details, see “Speed and Load Capacity: Relationship Diagram”.
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 The dimension of the T slot corresponds to L1.
*4 Values when a brake is installed are shown in parentheses.

EC4H Cylinder type TSC specification Direct motor coupling/with linear bush

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device Type	Option	Motor used	Home position	Cable length
EC4H –	06 –	0150 –	B –	TS –	GR–CB /	42P –	D00 –	S3
EC4H	06: 6mm 12: 12mm	0050: 50mm to 0300: 300mm	B	TS: TSC	No symbol: None GR: Change the cover color to gray CB: With cylinder base	42P: □42 42PB: □42 with brake	D00: Motor side R00: Reverse motor side	No symbol: None S3 : Standard 3m S5 : Standard 5m SA*: Standard 10m

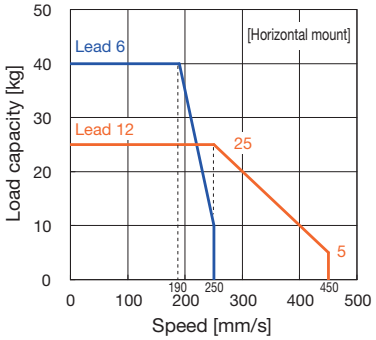
* To select SA, insert a noise filter to the TSC power supply. Recommended noise filter is "RSAN-2003 (TDK-Lambda Corporation)".

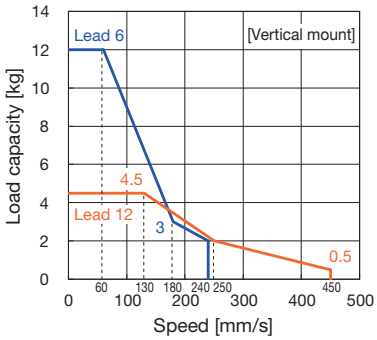
Basic Specifications

Control device type				TSC	
Motor				□42	
Ball screw lead [mm]				6	12
Maximum load Weight *1*2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	40	25
		Vertical mount	0.2G	12	4.5
Running life *2*3 [km]				5000	
Positioning repeatability [mm]				±0.020	
Lost motion [mm]				0.1	
Rod non-rotational accuracy [°]				±0.05	

*1 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.
*2 Load capacity and running life may vary without an LM guide. For details, see "End Load and Running Life".
*3 Running life is based on below conditions.
Conditions: Under the maximum load capacity (with LM guide), maximum speed, 0.3G for horizontal, 0.2G for vertical

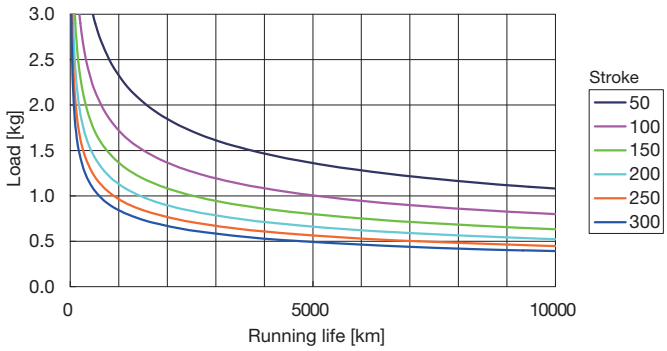
Speed and Load Capacity: Relationship Diagram





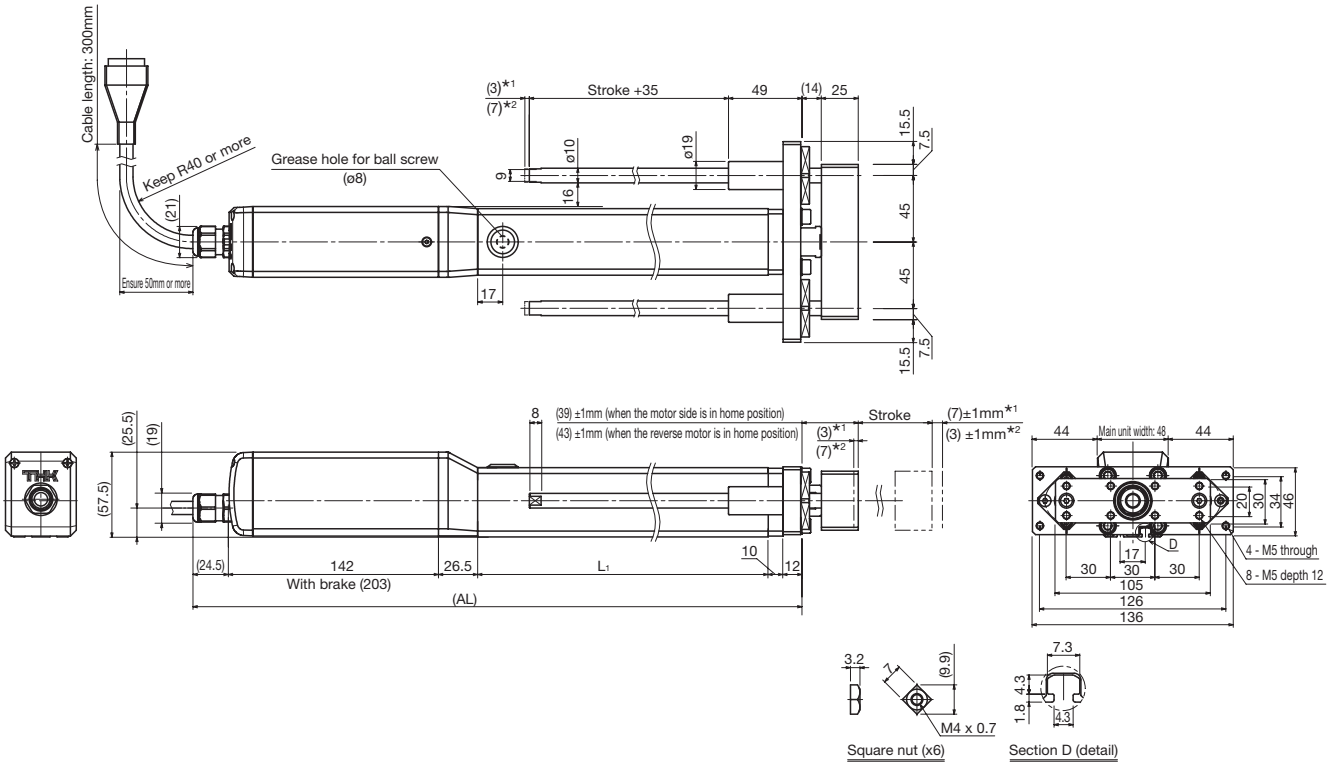
Reference End Load and Running Life

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



EC4H + TSC

Dimensions



*1 Stroke to the mechanical stopper when the motor side is in home position.
*2 Stroke to the mechanical stopper when the reverse motor side is in home position.

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	Horizontal: 250, Vertical: 240				230	170
	Ball screw lead: 12mm	450					340
Dimensions [mm]	AL*3	362 (423)	412 (473)	462 (523)	512 (573)	562 (623)	612 (673)
	L1*4	147	197	247	297	347	397
Weight *3 [kg]		2.8 (3.4)	3.1 (3.8)	3.5 (4.1)	3.9 (4.5)	4.2 (4.8)	4.6 (5.2)

*1 Load capacity and maximum speed vary dependent on usage conditions. For details, see “Speed and Load Capacity: Relationship Diagram”.
*2 Dependent on permissible rotational speed of ball screw.
*3 Values when a brake is installed are shown in parentheses.
*4 The dimension of the T slot corresponds to L1.

ES5 Slider type TLC specification Direct motor coupling, 50W

Model Configuration

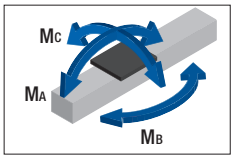
Model	Ball screw lead	Stroke	Design symbol	Control device type	Option	Motor rated output	Motor cable orientation	Home position	Cable type and length
ES5 –	06 –	0150 –	B –	TL –	GR–SB /	M05	R –	D00 –	F3
ES5	06: 6mm 12: 12mm	0050: 50mm to 0500: 500mm	B	TL: TLC	No symbol: None GR: Change the cover color to gray SB: With slider base □1□2: Sensor	M05 : 50W M05B: 50W with brake	R: Right U: Up L: Left D: Down	D00: Motor side R00: Reverse motor side	F3: Standard 3m F5: Standard 5m FA: Standard 10m H3: High flex 3m H5: High flex 5m HA: High flex 10m

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

Basic Specifications

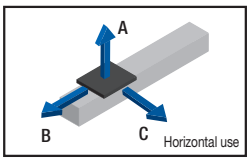
Control device type				TLC	
Motor rated output [W]				50	
Ball screw lead [mm]				6	12
Rated speed *1 [mm/s]				300	600
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	10	6
		Vertical mount	0.3G	5	2
Rated thrust *3 [N]				134	67
Maximum thrust *4 [N]				293	147
Electromagnetic brake retention [N]				268	134
Running life *5 [km]				5000	
Static permissible moment *6 [N·m]				MA: 10.5, MB: 22, MC: 22.1	
Positioning repeatability [mm]				±0.020	
Lost motion [mm]				0.1	

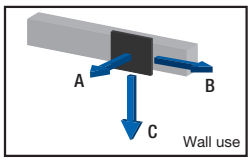
Static permissible moment

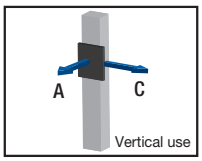


*1 At rated motor speed (3,000 min-1).
*2 At rated speed.
*3 At rated motor torque.
*4 Dependent on maximum peak torque and permissible load.
*5 Conditions: horizontal or vertical, 0.3G; under maximum load capacity; overhang length A: 10mm, B and C: 0mm; stroke: 50mm.
*6 Static maximum permissible moment when unit is stationary. Moment standards: MA and MC: top of table; MB: center of table.

Permissible Overhang Length*







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]

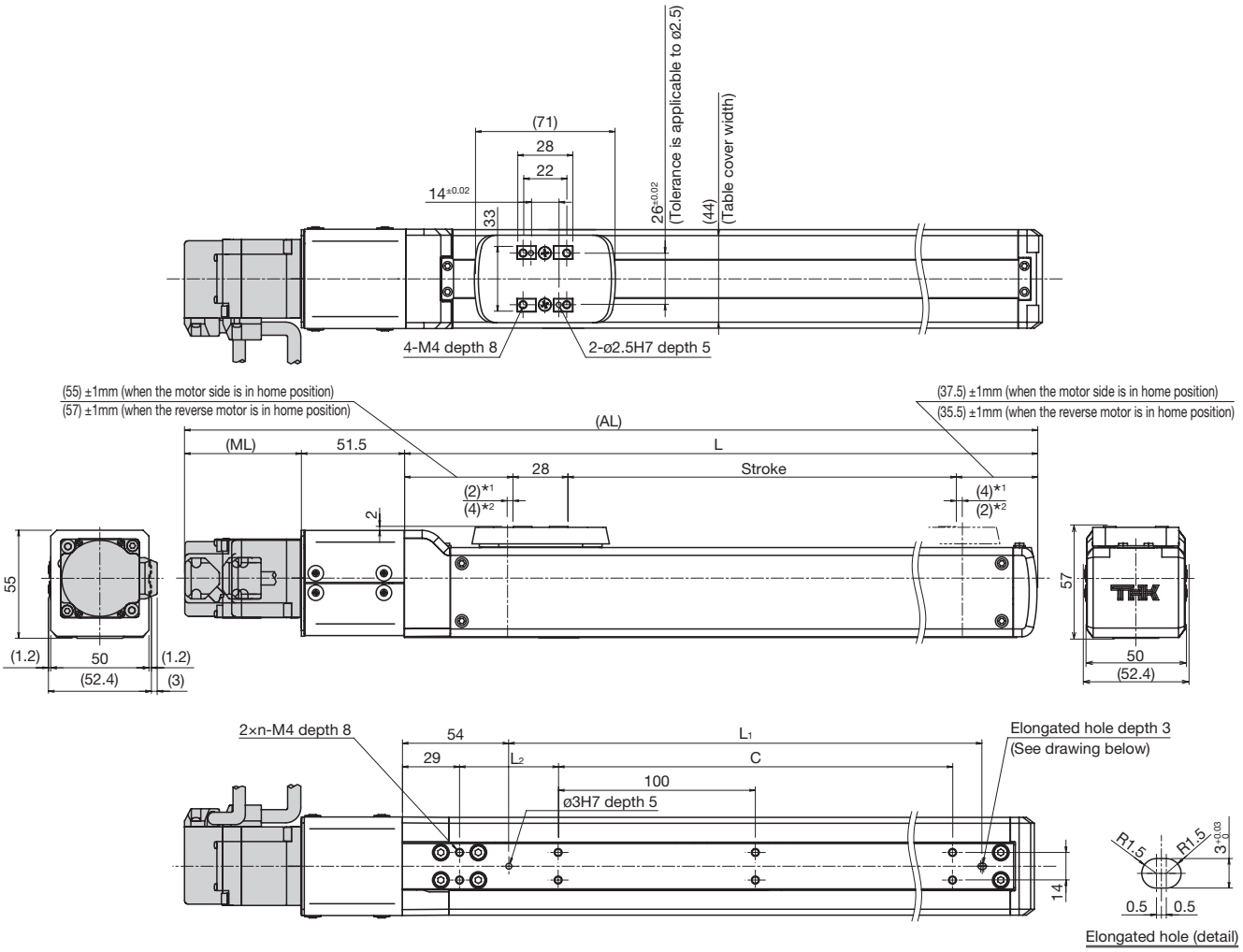
Ball screw lead [mm]	Load mass [kg]	A	C
6	2.5	160	160
	5	70	70
12	1	400	400
	2	200	200

* Distance from the center of the top face of the table to the load center of gravity position under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal or vertical, 150mm stroke.

ES5 + TLC

Motor rated output **50W**

Dimensions



*1 Stroke to the mechanical stopper when the motor side is in home position.
*2 Stroke to the mechanical stopper when the reverse motor side is in home position.

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 [mm/s]	Ball screw lead: 6mm	300									
	Ball screw lead: 12mm	600									
Dimensions [mm]	AL*2	281.5 (317.1)	331.5 (367.1)	381.5 (417.1)	431.5 (467.1)	481.5 (517.1)	531.5 (567.1)	581.5 (617.1)	631.5 (667.1)	681.5 (717.1)	731.5 (767.1)
	ML*2	59.5 (95.1)									
	L	170.5	220.5	270.5	320.5	370.5	420.5	470.5	520.5	570.5	620.5
	L1	90	140	190	240	290	340	390	440	490	540
	L2	100	50	100	50	100	50	100	50	100	50
	C	0	100	100	200	200	300	300	400	400	500
Mounting hole count	n	2	3	3	4	4	5	5	6	6	7
Weight *2 [kg]		2.0 (2.2)	2.1 (2.3)	2.2 (2.4)	2.4 (2.6)	2.5 (2.7)	2.7 (2.9)	2.8 (3.0)	2.9 (3.1)	3.1 (3.3)	3.2 (3.4)

*1 Dependent on ball screw's permissible rotation speed.
*2 Values when brake is installed are shown in parentheses.

ES5R Slider type TLC specification Motor wrap, 50W

Model Configuration

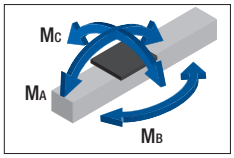
Model	Ball screw lead	Stroke	Design symbol	Control device type	Option	Motor rated output	Motor cable orientation	Home position	Cable type and length
ES5R –	06 –	0150	B –	TL –	MR–GR /	M05	L	– D00 –	F3
ES5R	06: 6mm 12: 12mm	0050: 50mm to 0500: 500mm	B	TL: TLC	MR : Motor right wrap ML : Motor left wrap GR : Change the cover color to gray SB : With slider base □1□2 : Sensor	M05 : 50W M05B: 50W with brake	R: Right L: Left	D00: Motor side R00: Reverse motor side	F3: Standard 3m F5: Standard 5m FA: Standard 10m H3: High flex 3m H5: High flex 5m HA: High flex 10m

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

Basic Specifications

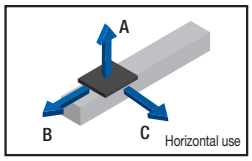
Control device type				TLC	
Motor rated output [W]				50	
Ball screw lead [mm]				6	12
Rated speed *1 [mm/s]				300	600
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	8	6
		Vertical mount	0.3G	2	1
Rated thrust *3 [N]				134	67
Maximum thrust *4 [N]				134	67
Electromagnetic brake retention [N]				268	134
Running life *5 [km]				5000	
Static permissible moment *6 [N·m]				MA: 10.5, MB: 22, MC: 22.1	
Positioning repeatability [mm]				±0.020	
Lost motion [mm]				0.1	

Static permissible moment



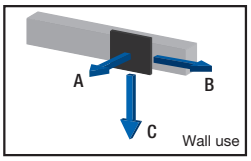
*1 At rated motor speed (3,000 min-1).
*2 At rated speed.
*3 At rated motor torque.
*4 Dependent on maximum peak torque and permissible load.
*5 Conditions: horizontal or vertical, 0.3G; under maximum load capacity; overhang length A: 10mm, B and C: 0mm; stroke: 50mm.
*6 Static maximum permissible moment when unit is stationary. Moment standards: MA and MC: top of table; MB: center of table.

Permissible Overhang Length*



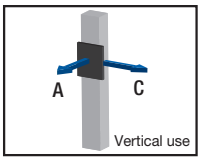
Horizontal mount [mm]

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]

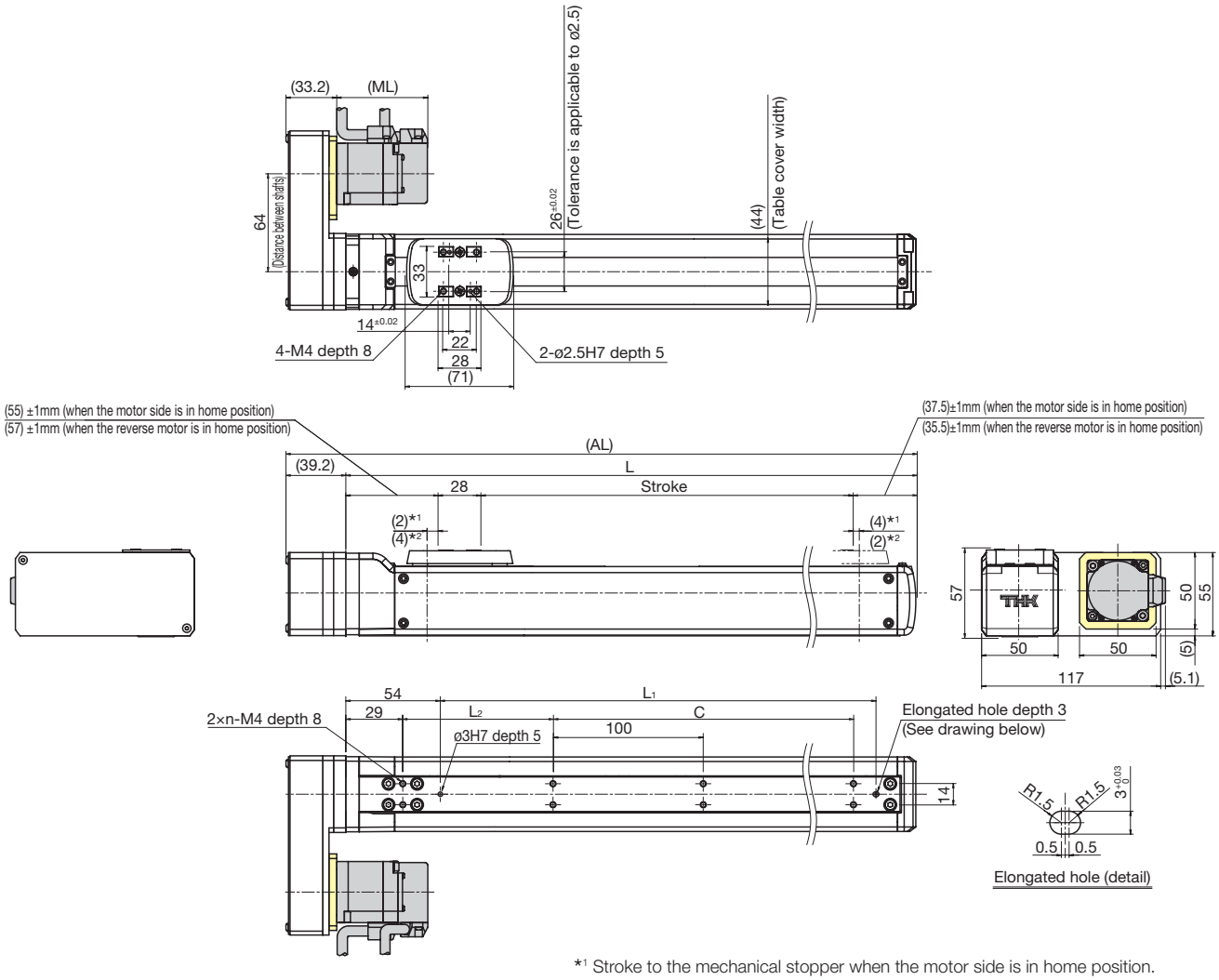
Ball screw lead [mm]	Load mass [kg]	A	C
6	1	400	400
	2	210	210
12	0.5	400	400
	1	400	400

* Distance from the center of the top face of the table to the load center of gravity position under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal or vertical, 150mm stroke.

ES5R + TLC

Motor rated output
50W

Dimensions



*1 Stroke to the mechanical stopper when the motor side is in home position.
*2 Stroke to the mechanical stopper when the reverse motor side is in home position.

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 [mm/s]	Ball screw lead: 6mm	300									
	Ball screw lead: 12mm	600									
Dimensions [mm]	AL	209.7	259.7	309.7	359.7	409.7	459.7	509.7	559.7	609.7	659.7
	ML*2	59.5 (95.1)									
	L	170.5	220.5	270.5	320.5	370.5	420.5	470.5	520.5	570.5	620.5
	L_1	90	140	190	240	290	340	390	440	490	540
	L_2	100	50	100	50	100	50	100	50	100	50
	C	0	100	100	200	200	300	300	400	400	500
Mounting hole count	n	2	3	3	4	4	5	5	6	6	7
Weight *2 [kg]		2.0 (2.2)	2.1 (2.3)	2.2 (2.4)	2.4 (2.6)	2.5 (2.7)	2.6 (2.8)	2.8 (3.0)	2.9 (3.1)	3.1 (3.3)	3.2 (3.4)

*1 Dependent on ball screw's permissible rotation speed.
*2 Values when brake is installed are shown in parentheses.

ES6 Slider type TLC specification Direct motor coupling, 50W

Model Configuration

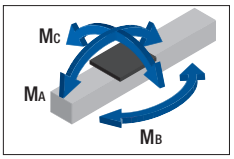
Model	Ball screw lead	Stroke	Design symbol	Control device type	Option	Motor rated output	Motor cable orientation	Home position	Cable type and length
ES6 –	06 –	0150 –	B –	TL –	GR–SB /	M05	R –	D00 –	F3
ES6	06: 6mm 12: 12mm	0050: 50mm to 0600: 600mm	B	TL: TLC	No symbol: None GR: Change the cover color to gray SB: With slider base □1□2: Sensor	M05 : 50W M05B: 50W with brake	R: Right U: Up L: Left D: Down	D00: Motor side R00: Reverse motor side	F3: Standard 3m F5: Standard 5m FA: Standard 10m H3: High flex 3m H5: High flex 5m HA: High flex 10m

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

Basic Specifications

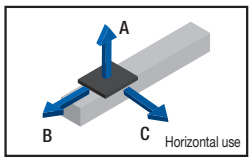
Control device type				TLC	
Motor rated output [W]				50	
Ball screw lead [mm]				6	12
Rated speed *1 [mm/s]				300	600
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	10	6
		Vertical mount	0.3G	5	2
Rated thrust *3 [N]				134	67
Maximum thrust *4 [N]				293	147
Electromagnetic brake retention [N]				268	134
Running life *5 [km]				5000	
Static permissible moment *6 [N·m]				MA: 10.5, MB: 22, MC: 22.1	
Positioning repeatability [mm]				±0.020	
Lost motion [mm]				0.1	

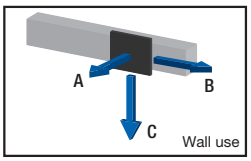
Static permissible moment

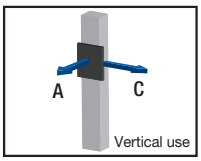


*1 At rated motor speed (3,000 min-1).
*2 At rated speed.
*3 At rated motor torque.
*4 Dependent on maximum peak torque and permissible load.
*5 Conditions: horizontal or vertical, 0.3G; under maximum load capacity; overhang length A: 10mm, B and C: 0mm; stroke: 50mm.
*6 Static maximum permissible moment when unit is stationary. Moment standards: MA and MC: top of table; MB: center of table.

Permissible Overhang Length*







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]

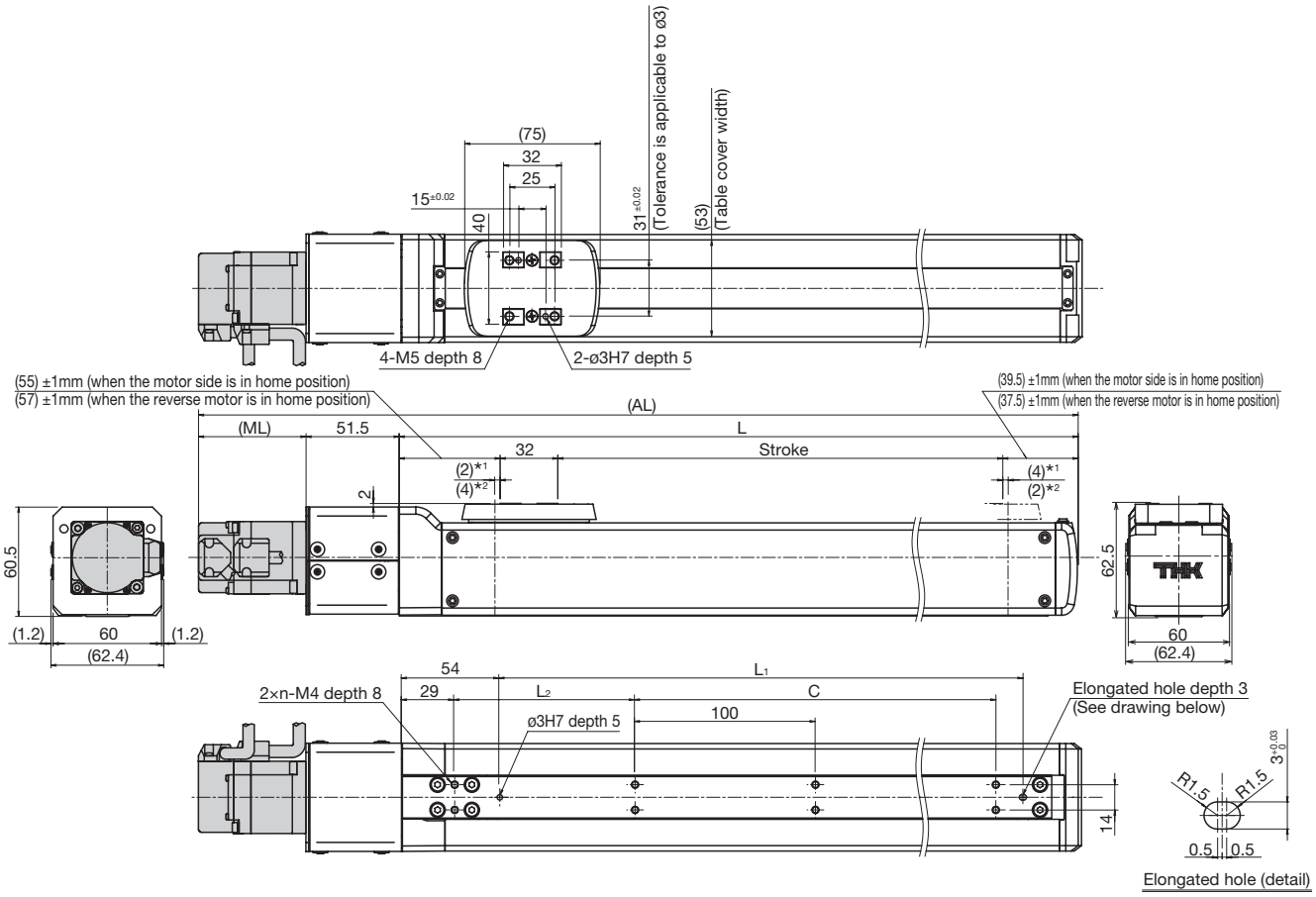
Ball screw lead [mm]	Load mass [kg]	A	C
6	2.5	160	160
	5	60	60
12	1	420	420
	2	190	190

* Distance from the center of the top face of the table to the load center of gravity position under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal or vertical, 150mm stroke.

ES6 + TLC

Motor rated output **50W**

Dimensions



*1 Stroke to the mechanical stopper when the motor side is in home position.
*2 Stroke to the mechanical stopper when the reverse motor side is in home position.

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 [mm/s]	Ball screw lead: 6mm	300										270	230
	Ball screw lead: 12mm	600										540	460
Dimensions [mm]	AL*2	287.5 (323.1)	337.5 (373.1)	387.5 (423.1)	437.5 (473.1)	487.5 (523.1)	537.5 (573.1)	587.5 (623.1)	637.5 (673.1)	687.5 (723.1)	737.5 (773.1)	787.5 (823.1)	837.5 (873.1)
	ML*2	59.5 (95.1)											
	L	176.5	226.5	276.5	326.5	376.5	426.5	476.5	526.5	576.5	626.5	676.5	726.5
	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
	C	0	100	100	200	200	300	300	400	400	500	500	600
Mounting hole count	n	2	3	3	4	4	5	5	6	6	7	7	8
Weight *2 [kg]		2.3 (2.5)	2.5 (2.7)	2.6 (2.8)	2.7 (2.9)	2.9 (3.1)	3.0 (3.2)	3.2 (3.4)	3.3 (3.5)	3.5 (3.7)	3.6 (3.8)	3.8 (4.0)	3.9 (4.1)

*1 Dependent on ball screw's permissible rotation speed.
*2 Values when brake is installed are shown in parentheses.

ES6R Slider type TLC specification Motor wrap, 50W

Model Configuration

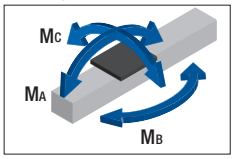
Model	Ball screw lead	Stroke	Design symbol	Control device type	Option	Motor rated output	Motor cable orientation	Home position	Cable type and length
ES6R –	06	– 0150	B	– TL	– MR–GR	/ M05	L	– D00	– F3
ES6R	06: 6mm 12: 12mm	0050: 50mm to 0600: 600mm	B	TL: TLC	MR: Motor right wrap ML: Motor left wrap GR: Change the cover color to gray SB: With slider base □1□2: Sensor	M05: 50W M05B: 50W with brake	R: Right L: Left	D00: Motor side R00: Reverse motor side	F3: Standard 3m F5: Standard 5m FA: Standard 10m H3: High flex 3m H5: High flex 5m HA: High flex 10m

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

Basic Specifications

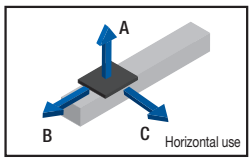
Control device type				TLC	
Motor rated output [W]				50	
Ball screw lead [mm]				6	12
Rated speed *1 [mm/s]				300	600
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	8	6
		Vertical mount	0.3G	2	1
Rated thrust *3 [N]				134	67
Maximum thrust *4 [N]				134	67
Electromagnetic brake retention [N]				268	134
Running life *5 [km]				5000	
Static permissible moment *6 [N·m]				MA: 10.5, MB: 22, MC: 22.1	
Positioning repeatability [mm]				±0.020	
Lost motion [mm]				0.1	

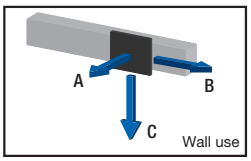
Static permissible moment

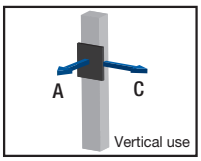


*1 At rated motor speed (3,000 min-1).
*2 At rated speed.
*3 At rated motor torque.
*4 Dependent on maximum peak torque and permissible load.
*5 Conditions: horizontal or vertical, 0.3G; under maximum load capacity; overhang length A: 10mm, B and C: 0mm; stroke: 50mm.
*6 Static maximum permissible moment when unit is stationary. Moment standards: MA and MC: top of table; MB: center of table.

Permissible Overhang Length*







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	360
12	3	250	130	500
	6	90	50	240

Vertical mount [mm]

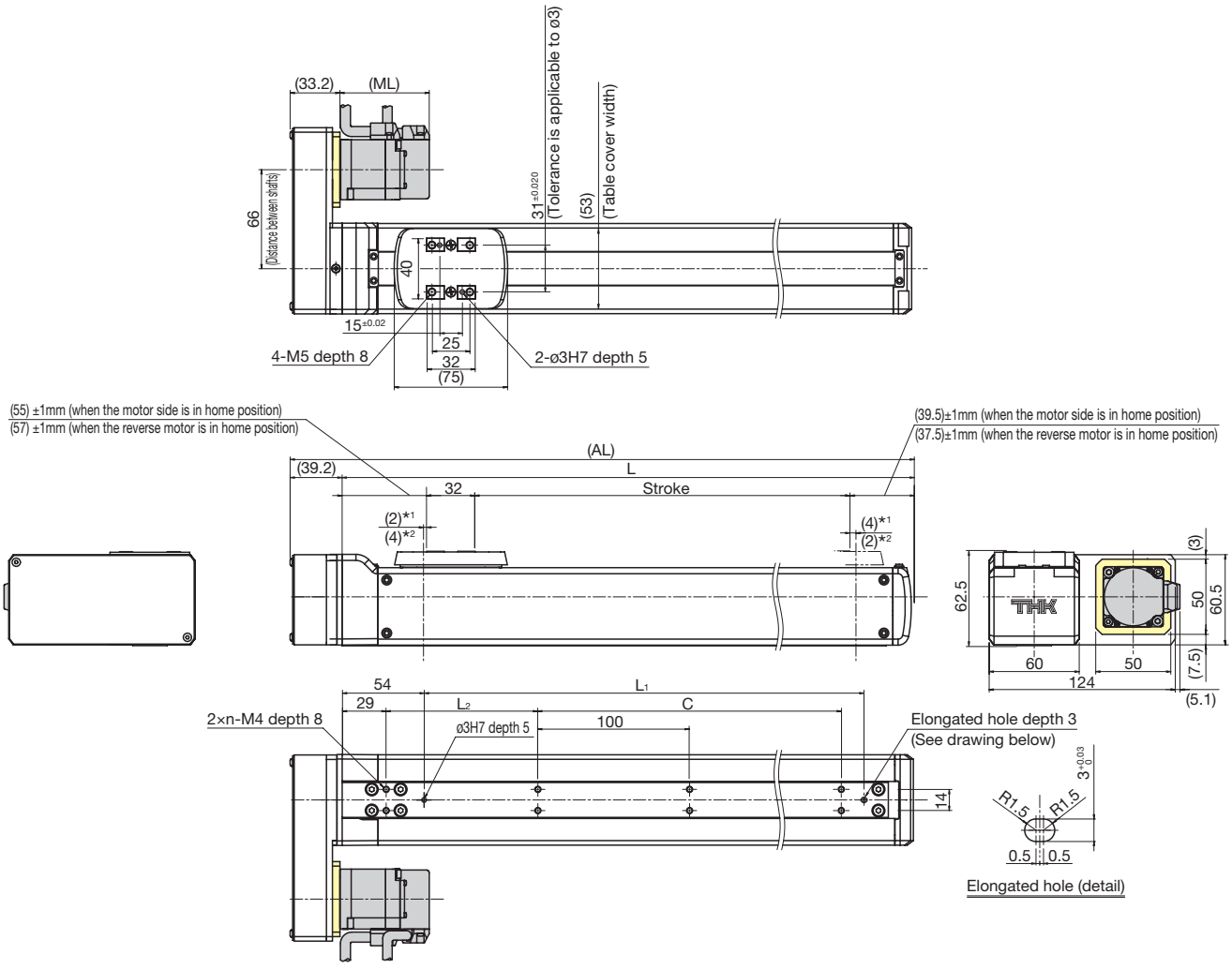
Ball screw lead [mm]	Load mass [kg]	A	C
6	1	450	450
	2	210	210
12	0.5	500	500
	1	420	420

* Distance from the center of the top face of the table to the load center of gravity position under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal or vertical, 150mm stroke.

ES6R + TLC

Motor rated output **50W**

Dimensions



*1 Stroke to the mechanical stopper when the motor side is in home position.
*2 Stroke to the mechanical stopper when the reverse motor side is in home position.

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 [mm/s]	Ball screw lead: 6mm	300										270	230
	Ball screw lead: 12mm	600										540	460
Dimensions [mm]	AL	215.7	265.7	315.7	365.7	415.7	465.7	515.7	565.7	615.7	665.7	715.7	765.7
	ML*2	59.5 (95.1)											
	L	176.5	226.5	276.5	326.5	376.5	426.5	476.5	526.5	576.5	626.5	676.5	726.5
	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
	C	0	100	100	200	200	300	300	400	400	500	500	600
Mounting hole count	n	2	3	3	4	4	5	5	6	6	7	7	8
Weight *2 [kg]		2.3 (2.5)	2.4 (2.6)	2.6 (2.8)	2.7 (2.9)	2.8 (3.0)	3.0 (3.2)	3.1 (3.3)	3.3 (3.5)	3.4 (3.6)	3.6 (3.8)	3.7 (3.9)	3.8 (4.0)

*1 Dependent on ball screw's permissible rotation speed.
*2 Values when brake is installed are shown in parentheses.

EC4 Cylinder type TLC specification Direct motor coupling, 50W

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device type	Option	Motor rated output	Motor cable orientation	Home position	Cable type and length
EC4 –	06 –	0150	B –	TL –	FL–LB /	M05	R	– D00 –	F3
EC4	06: 6mm 12: 12mm	0050: 50mm to 0300: 300mm	B	TL: TLC	No symbol: None CB: With cylinder base FL: With flange LB: With link ball	M05: 50W M05B: 50W with brake	R: Right U: Up L: Left D: Down	D00: Motor side R00: Reverse motor side	F3: Standard 3m F5: Standard 5m FA: Standard 10m H3: High flex 3m H5: High flex 5m HA: High flex 10m

Basic Specifications

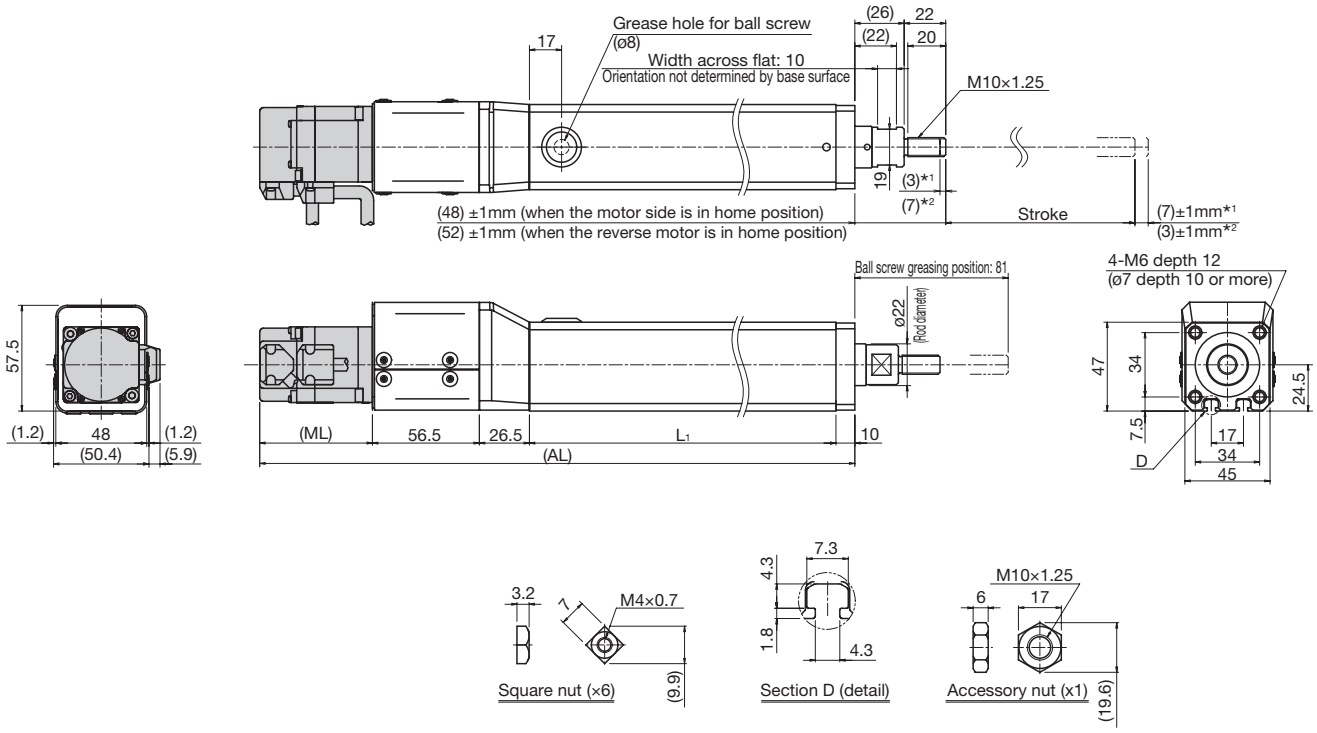
Control device type				TLC	
Motor rated output [W]				50	
Ball screw lead [mm]				6	12
Rated speed *1 [mm/s]				300	600
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	14	7
		Vertical mount	0.3G	6	3
Rated thrust *3 [N]				134	67
Maximum thrust *4 [N]				293	147
Electromagnetic brake retention [N]				268	134
Running life *5 [km]				5000	
Positioning repeatability [mm]				±0.020	
Lost motion [mm]				0.1	
Rod non-rotational accuracy [°]				±1.5	

*1 At rated motor speed (3,000 min^{-1}).
*2 At rated speed.
Only axial loads permissible for EC; only an axial load may be applied to rod via LM Guide.
LM Guide sliding resistance must be considered when making selection.
*3 At rated motor torque.
*4 Dependent on motor instantaneous maximum torque or permissible load.
*5 Running life is based on below conditions.
Conditions: Under maximum load capacity (with LM guide), maximum speed, 0.3G horizontal or vertical.

EC4 + TLC

Motor rated output **50W**

Dimensions



*1 Stroke to the mechanical stopper when the motor side is in home position.
*2 Stroke to the mechanical stopper when the reverse motor side is in home position.

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				230	170
	Ball screw lead: 12mm	600				460	340
Dimensions [mm]	AL*2	299.5 (335.1)	349.5 (385.1)	399.5 (435.1)	449.5 (485.1)	499.5 (535.1)	549.5 (585.1)
	ML*2	59.5 (95.1)					
	L1*3	147	197	247	297	347	397
Weight *2 [kg]		2.0 (2.2)	2.4 (2.6)	2.7 (2.9)	3.0 (3.2)	3.3 (3.5)	3.7 (3.9)

*1 Dependent on ball screw's permissible rotation speed.
*2 Values when brake is installed are shown in parentheses.
*3 T slot milling in the range of L1.

EC4R Cylinder type TLC specification Motor wrap, 50W

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device type	Option	Motor rated output	Motor cable orientation	Home position	Cable type and length
EC4R –	06 –	0150	B –	TL –	MR–FL–LB	/ M05	R	– D00 –	F3
EC4R	06: 6mm 12: 12mm	0050: 50mm to 0300: 300mm	B	TL: TLC	MR: Motor right wrap ML: Motor left wrap CB: With cylinder base FL: With flange LB: With link ball	M05: 50W M05B: 50W with brake	R: Right U: Up L: Left D: Down	D00: Motor side R00: Reverse motor side	F3: Standard 3m F5: Standard 5m FA: Standard 10m H3: High flex 3m H5: High flex 5m HA: High flex 10m

Basic Specifications

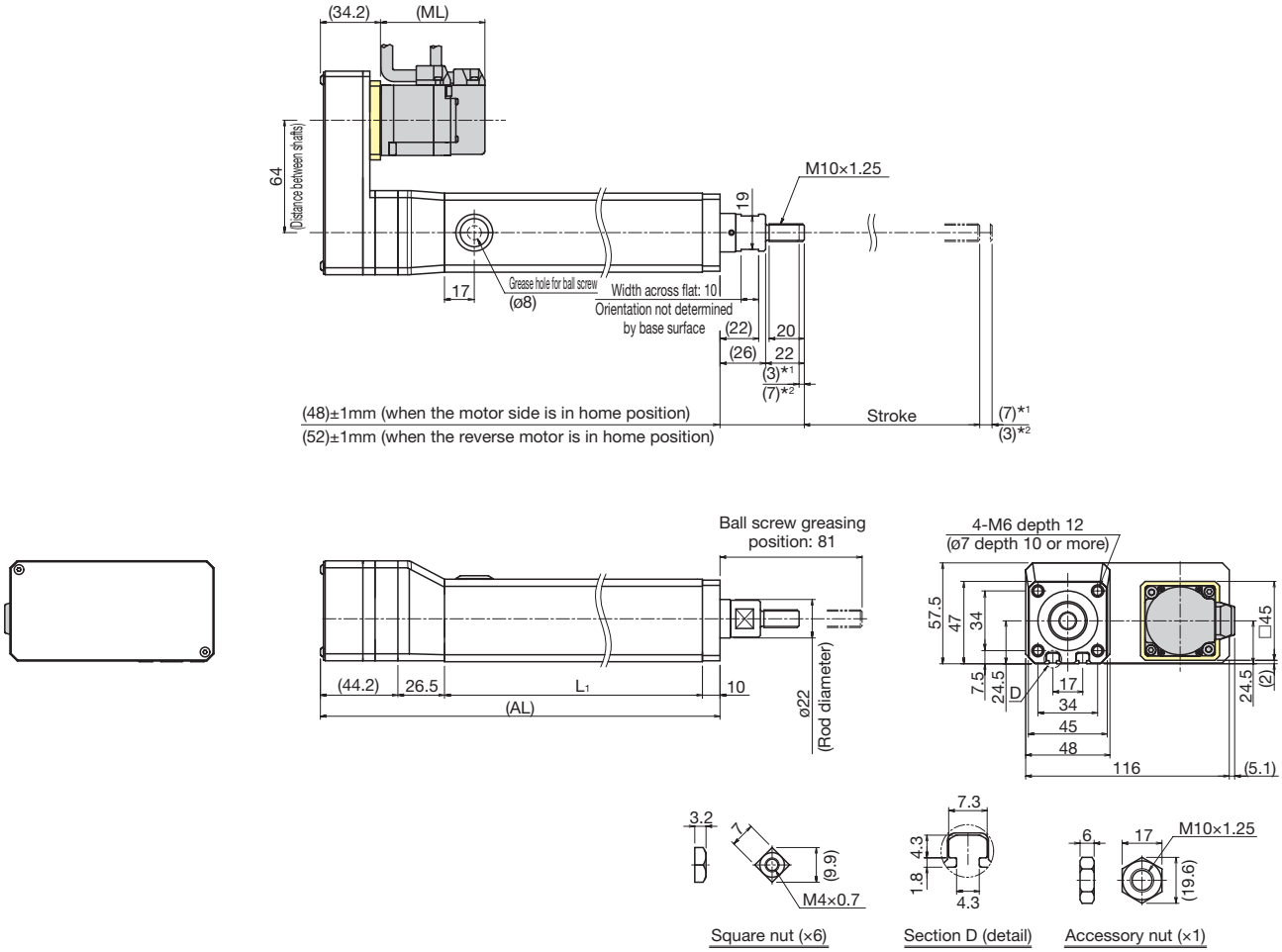
Control device type				TLC	
Motor rated output [W]				50	
Ball screw lead [mm]				6	12
Rated speed *1 [mm/s]				300	600
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	14	7
		Vertical mount	0.3G	6	3
Rated thrust *3 [N]				134	67
Maximum thrust *4 [N]				134	67
Electromagnetic brake retention [N]				268	134
Running life *5 [km]				5000	
Positioning repeatability [mm]				±0.020	
Lost motion [mm]				0.1	
Rod non-rotational accuracy [°]				±1.5	

*1 At rated motor speed (3,000 min^{-1}).
*2 At rated speed.
Only axial loads permissible for EC; only an axial load may be applied to rod via LM Guide.
LM Guide sliding resistance must be considered when making selection.
*3 At rated motor torque.
*4 Dependent on motor instantaneous maximum torque or permissible load.
*5 Running life is based on below conditions.
Conditions: Under maximum load capacity (with LM guide), maximum speed, 0.3G horizontal or vertical.

EC4R + TLC

Motor rated output
50W

Dimensions



*1 Stroke to the mechanical stopper when the motor side is in home position.
*2 Stroke to the mechanical stopper when the reverse motor side is in home position.

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				230	170
	Ball screw lead: 12mm	600				460	340
Dimensions [mm]	AL	227.7	277.7	327.7	377.7	427.7	477.7
	ML*2	59.5 (95.1)					
	L1*3	147	197	247	297	347	397
Weight *2 [kg]		2.1 (2.3)	2.4 (2.6)	2.7 (2.9)	3.0 (3.2)	3.4 (3.6)	3.7 (3.9)

*1 Dependent on ball screw's permissible rotation speed.
*2 Values when brake is installed are shown in parentheses.
*3 T slot milling in the range of L_1.

EC4H Cylinder type TLC specification Direct motor coupling/with linear bush

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device type	Option	Motor rated output	Motor cable orientation	Home position	Cable type and length
EC4H –	06 –	0150	B	– TL	– CB	/ M05	R	– D00	– F3
EC4H	06: 6mm 12: 12mm	0050: 50mm to 0300: 300mm	B	TL: TLC	No symbol: None CB: With cylinder base	M05 : 50W M05B: 50W with brake	R: Right U: Up L: Left D: Down	D00: Motor side R00: Reverse motor side	F3: Standard 3m F5: Standard 5m FA: Standard 10m H3: High flex 3m H5: High flex 5m HA: High flex 10m

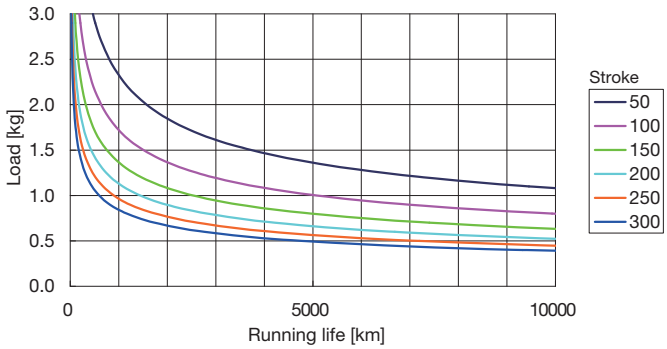
Basic Specifications

Control device type				TLC	
Motor rated output [W]				50	
Ball screw lead [mm]				6	12
Rated speed *1 [mm/s]				300	600
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	14	7
		Vertical mount	0.3G	6	3
Rated thrust *3 [N]				134	67
Maximum thrust *4 [N]				293	147
Electromagnetic brake retention [N]				268	134
Running life *5 [km]				5000	
Positioning repeatability [mm]				±0.020	
Lost motion [mm]				0.1	
Rod non-rotational accuracy [°]				±0.05	

*1 At rated motor speed (3,000 min^{-1}).
*2 At rated speed.
Only axial loads permissible for EC; only an axial load may be applied to rod via LM Guide.
LM Guide sliding resistance must be considered when making selection.
*3 At rated motor torque.
*4 Dependent on motor instantaneous maximum torque or permissible load.
*5 Load capacity and running life may vary without an LM guide. For details, see "End Load and Running Life".
Running life is based on below conditions.
Conditions: Under maximum load capacity (with LM guide), maximum speed, 0.3G horizontal or vertical

Reference End Load and Running Life

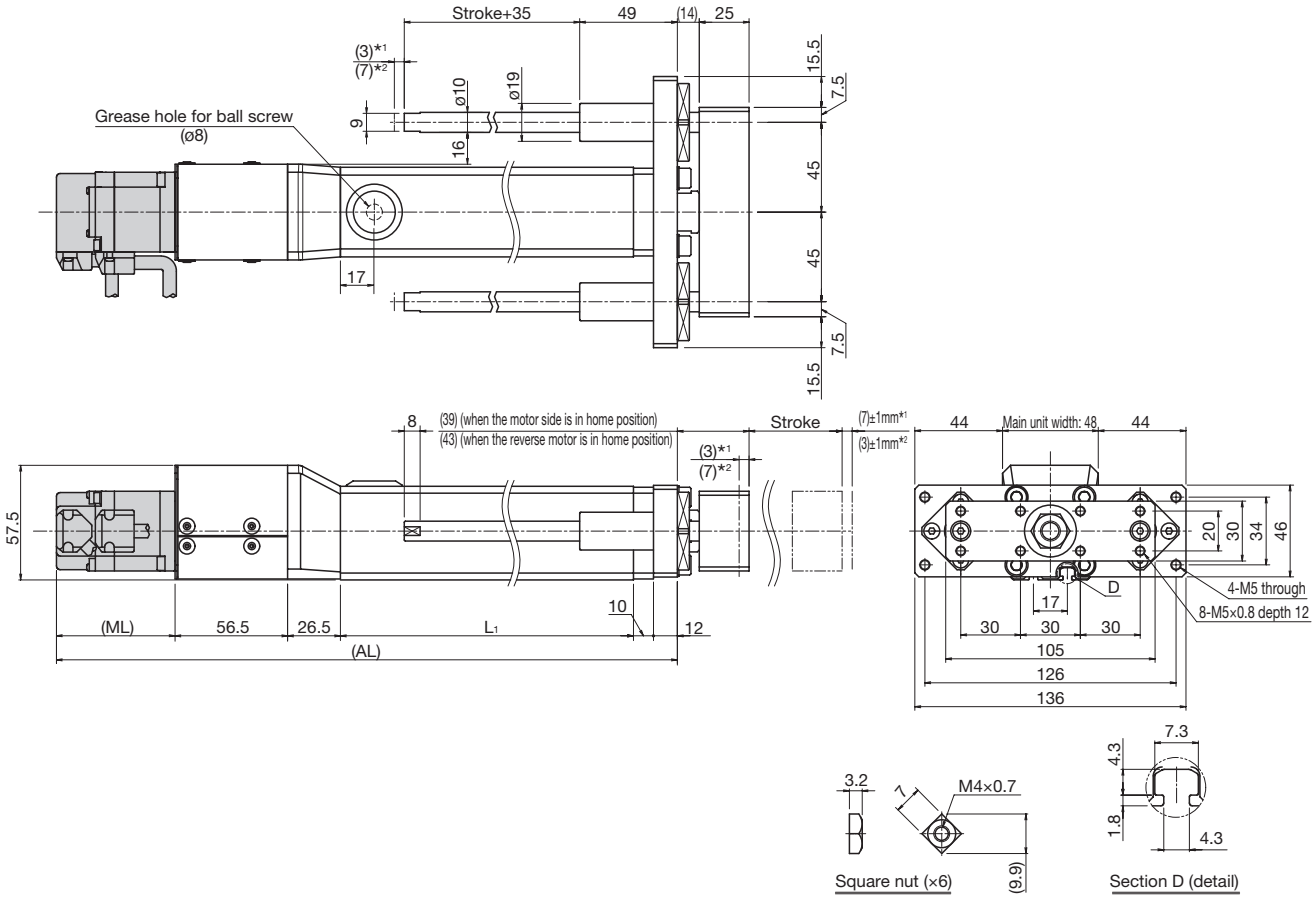
Running life varies when a load is applied to the end of the unit without using an LM Guide, as shown below.



EC4H + TLC

Motor rated output
50W

Dimensions



*1 Stroke to the mechanical stopper when the motor side is in home position.
*2 Stroke to the mechanical stopper when the reverse motor side is in home position.

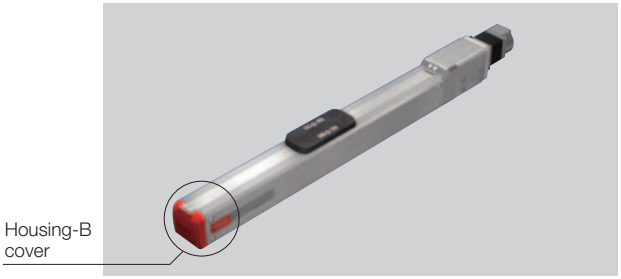
Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)	250 (260)	300 (310)
Maximum speed *1 [mm/s]	Ball screw lead: 6mm	300				230	170
	Ball screw lead: 12mm	600				460	340
Dimensions [mm]	AL*2	311.5 (347.1)	361.5 (397.1)	411.5 (447.1)	461.5 (497.1)	511.5 (547.1)	561.5 (597.1)
	ML*2	59.5 (95.1)					
	L1*3	147	197	247	297	347	397
Weight *2 [kg]		2.6 (2.8)	3.0 (3.2)	3.3 (3.5)	3.7 (3.9)	4.0 (4.2)	4.4 (4.6)

*1 Dependent on ball screw's permissible rotation speed.
*2 Values when brake is installed are shown in parentheses.
*3 T slot milling in the range of L_1.

ES Option

GR: Change the cover color to gray

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



No symbol: red cover

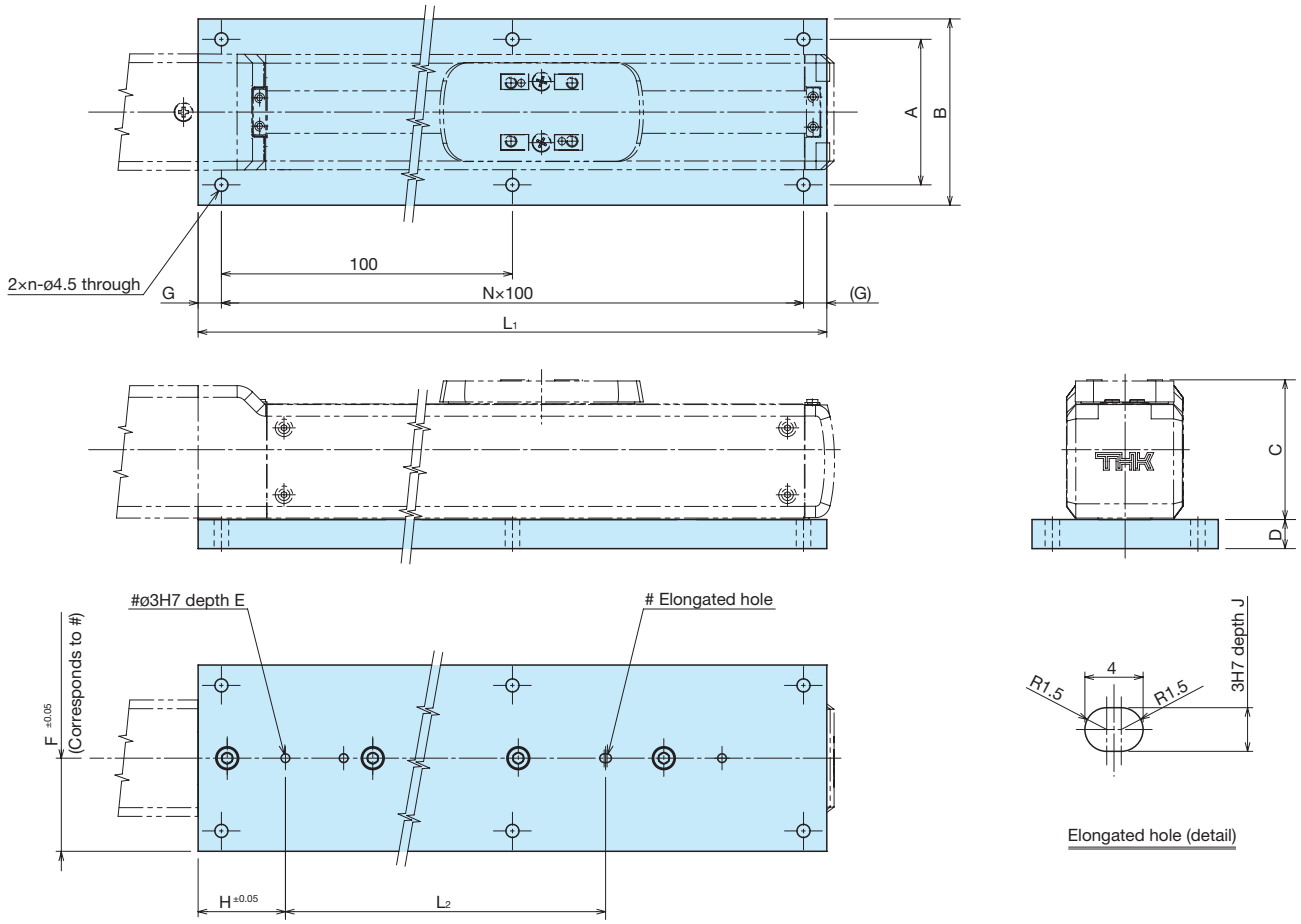
When GR is selected: gray cover

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

ES Option

SB: Slider base (direct coupled type)

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



Unit: mm

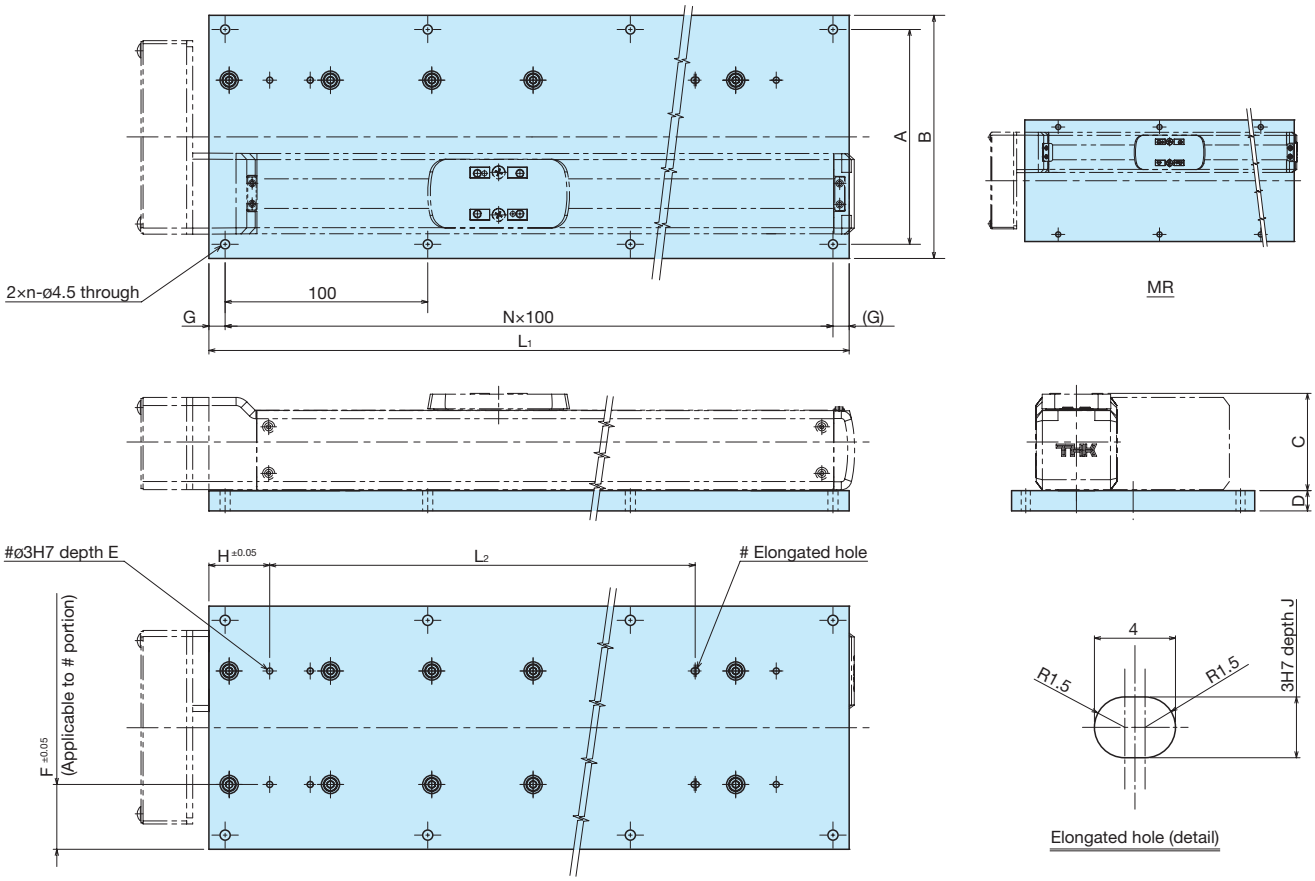
Model	A	B	C	D	E	F	H	J
ES3	42	56	40	8	8	28	40	8
ES4	50	64	48	10	10	32	30	10
ES5	70	84	57	10	10	42	45	10
ES6	70	84	62.5	10	10	42	45	10

Stroke		50	100	150	200	250	300	350	400	450	500	550	600
ES3	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

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	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

□1□2: Sensors

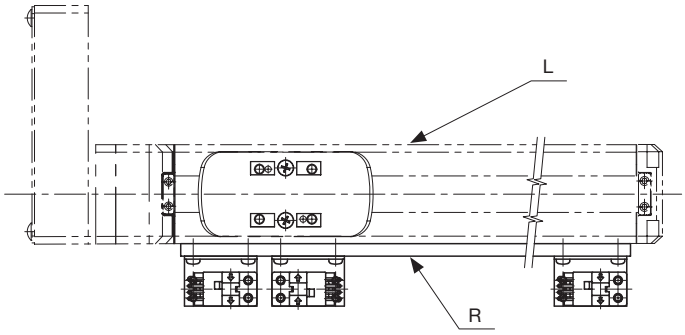
ES units can be equipped with optional proximity sensors and photo sensors. Sensor-equipped models also feature a dedicated sensor rail. The following precautions apply to sensor-equipped ES units.

1. The customer should provide a sensor dog; a sensor dog 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 motor wrap direction of the motor.
4. When an optional sensor is used, the home position may differ from that indicated in this brochure.
5. If proximity sensors are placed too close to each other, they may not work properly. In this case, the customer must provide sensors with variant frequencies. (For specifications, contact each manufacturer.)

Description	Type	Accessory	Symbol	
			□1	□2
With sensor rail	–	–	L/R	1
Photo Sensor * [x3]	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



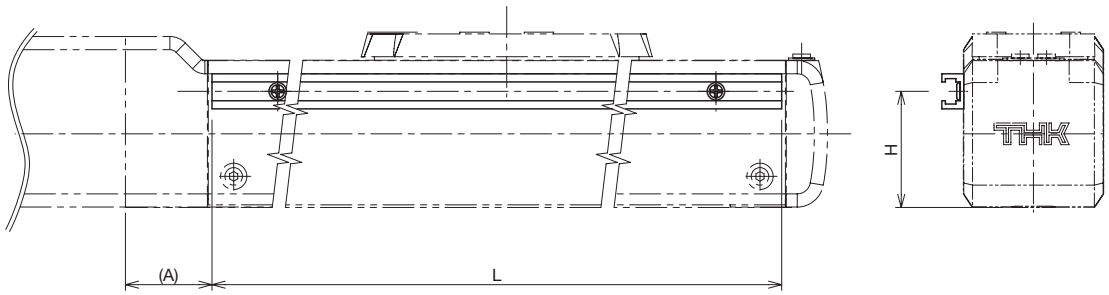
Option: Sensor symbols

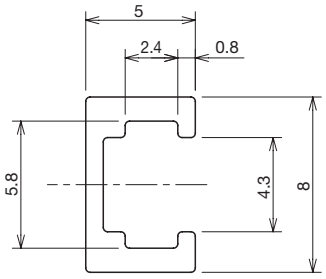
Symbol	
□1	□2
R	6

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

□1□2: Sensors

Symbol 1: Sensor rail



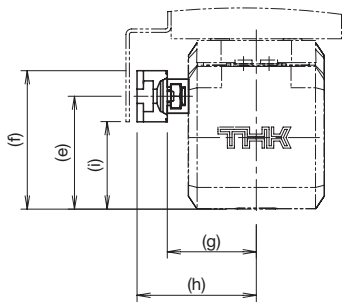


Sensor rail (detail)

Unit: mm

Model	H	A	L
ES3	26.5	19.8	Stroke +78
ES4	31.5	26.5	
ES5	38.1	27	
ES6	43.6	30	

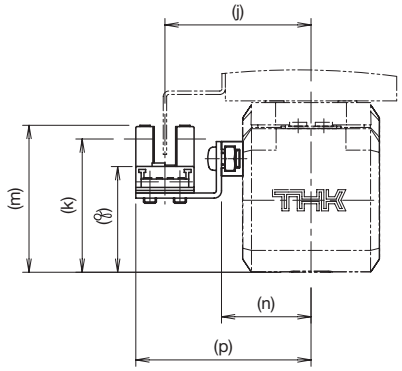
Symbols J, M: Proximity sensor GX-F12* (Panasonic Industrial Devices SUNX Co., Ltd.)



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)



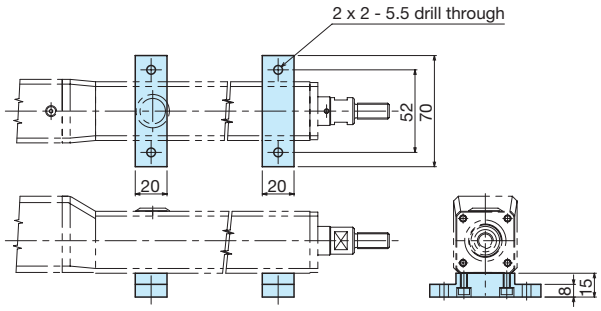
Unit: mm

Model	j	k	m	n	p	q
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

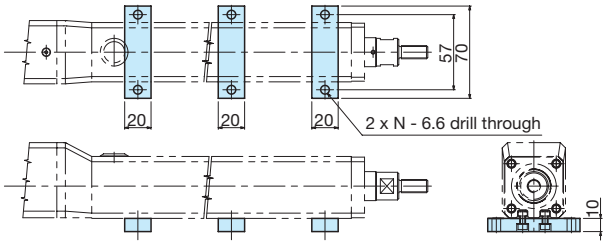
CB: Cylinder Base

EC3



* Included with unit

EC4

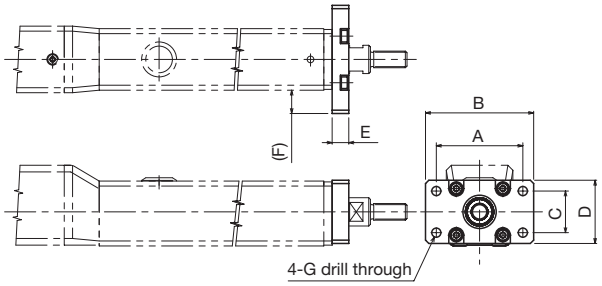


Stroke	50	100	150	200	250	300
N	2	2	2	2	3	3

* Included with unit

FL: Flange

EC3/4, EC3R/4R

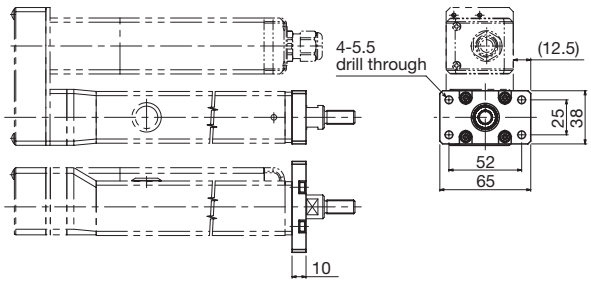


Unit: mm

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

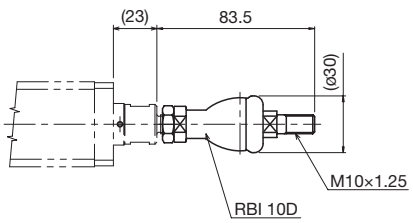
EC3R (When ST=50)



* Included with unit

LB: Link Ball

EC3/4



* Included with unit

● 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 aclean 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

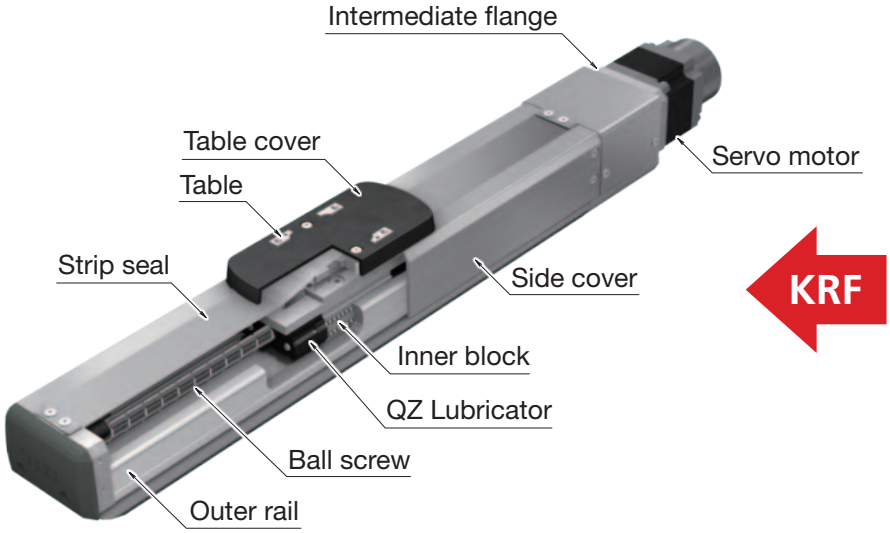
Corresponding Controller

Chapter 2

Compact Series

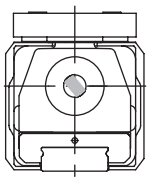
KRF

Fully enclosed actuator, designed for dedicated controller.



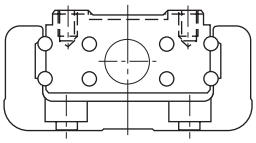
KRF

ES



Full-cover structure

KR/SKR



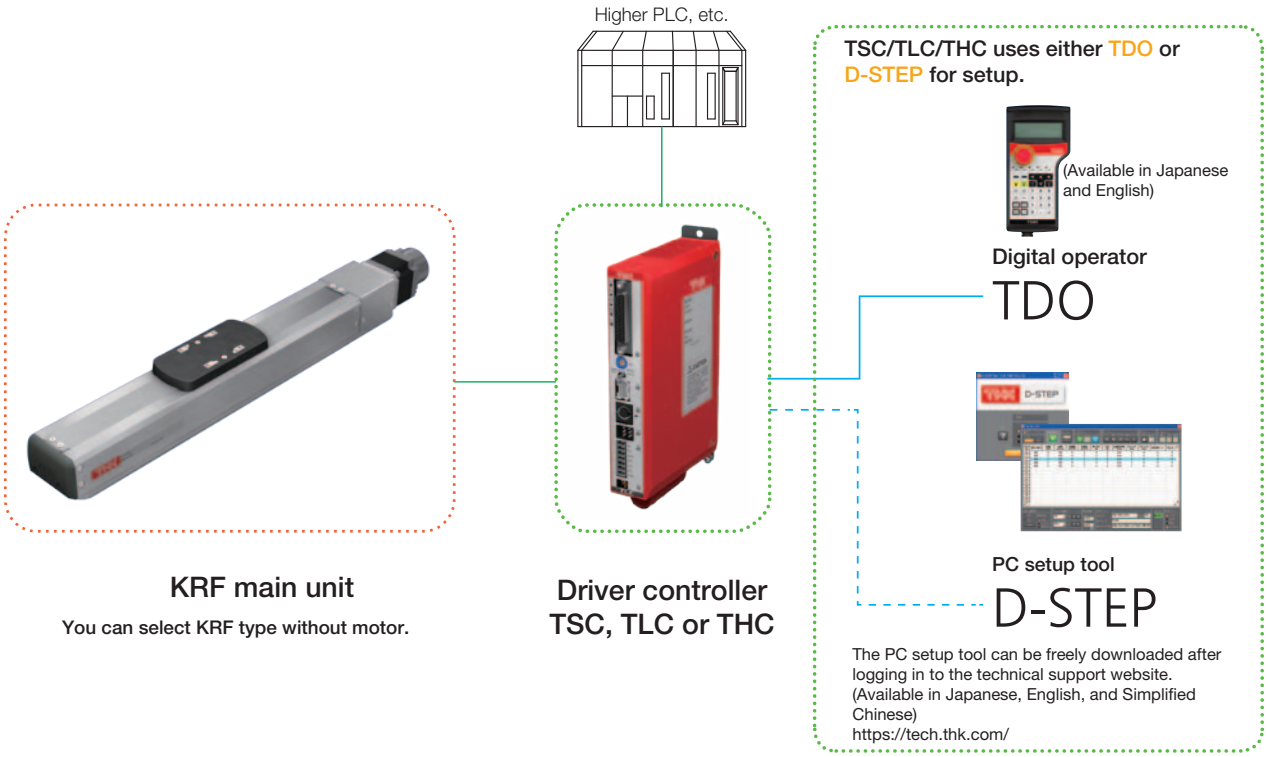
4-way equal loads, high rigidity

√ 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

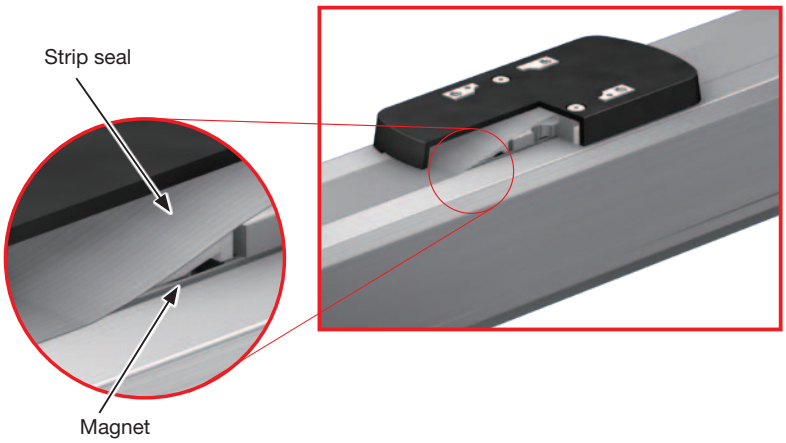
System Configuration



Features

1 Fully enclosed design

Strip seals on the side cover and upper surface using magnetic attraction method provide a fully enclosed structure.
It prevents any problems caused by entering of foreign materials from outside. As well, the top surface of the strip seal is less likely to generate dust by avoiding the contact. (Excluding KRF3)

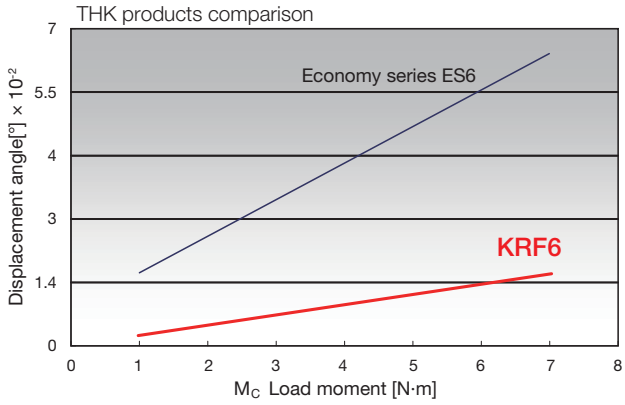


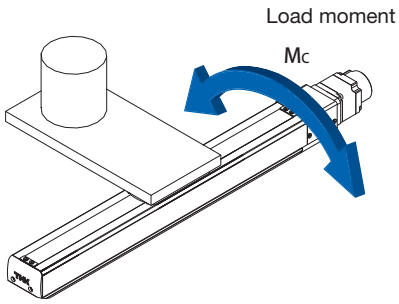
Magnetic attraction method

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

2 High rigidity

Use of a steel outer rail with a cross-sectional U shape enables to receive larger moment.
The actuator body's high rigidity allows for a compact, space-saving design.





Layout example of cantilever configuration

3 Easy setup

Setup is easy by combining with dedicated driver controller.

Stepper driver controller
TSC

Servo Driver controller 50W
TLC

Servo Driver controller 100W
THC

Lineup List (Servo Driver Controller TLC/THC Specification)

Model	Ball screw lead [mm]	Stroke [mm]	Motor size	Maximum load capacity *1 [kg]		
				Horizontal mount	Wall mount	Vertical mount
KRF3	6	50 to 300	Stepper motor □28	3	3	1.5
KRF4	6	50 to 300	Stepper motor □35	6.5	6	4
KRF5	6	50 to 550	Stepper motor □42	20	14.5	7.5
	10	50 to 550		10	10	6

*1 Maximum load capacity and maximum speed vary dependent on usage conditions.
For details, see "Basic Specifications" and "Speed and Load Capacity: Relationship Diagram" of each model.

Lineup List (Servo Driver Controller TLC/THC Specification)

[KRF4, 5]

[KRF6]

Model	Ball screw lead [mm]	Stroke [mm]	Rated speed *1 [mm/s]	Motor capacity [W]	Used driver controller	Maximum load capacity *2 [kg]		
						Horizontal mount	Wall mount	Vertical mount
KRF4	6	50 to 300	300	50	TLC	6	5.5	4
KRF5	6	50 to 550				19	14	6
	10		500			15	12.5	3.5
KRF6	6	50 to 800	300	100	THC	35	24	10
	10		500			30	22	5

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

	Maximum speed for each stroke *1 [mm/s]																
	Stroke																
	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	
	300																
	300																
	300									250							
	500									430							

	Maximum speed for each stroke *3 [mm/s]																
	Stroke																
	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	
	300																
	300									250							
	500									430							
	300										260	220	200	170	150		
	500										440	380	330	290	260		

Model Configuration

KRF (type with motor)

When combining with dedicated driver controller

Model	Ball screw lead	Stroke	Design symbol	Control device type	Option	Motor size / motor rated output
KRF6R -	06 -	0050	A -	TH -	MR-GR /	M10
(1)	(2)	(3)	(4)	(5)	(6)	(7)
KRF3	06: 6 mm	0050: 50 mm	A	TS: TSC	No symbol: None	28P : Stepper motor □28
KRF4	10: 10 mm	0100: 100 mm		TL: TLC	MR: Motor right wrap*	35P : Stepper motor □35
KRF5		0150: 150 mm		TH: THC	ML: Motor left wrap*	42P : Stepper motor □42
KRF6		0200: 200 mm			MD: Motor down wrap*	M05 : 50W
KRF4R		0250: 250 mm			GR: Gray cover	M10 : 100W
KRF5R		0300: 300 mm			SB: Slider base	28PB : Stepper motor □28 with brake
KRF6R		0350: 350 mm			□1□2: Sensor	35PB : Stepper motor □35 with brake
		0400: 400 mm				42PB : Stepper motor □42 with brake
		0450: 450 mm				M05B : 50W with brake
		0500: 500 mm				M10B : 100W with brake
		0550: 550 mm				
		0600: 600 mm				
		0650: 650 mm				
		0700: 700 mm				
		0750: 750 mm				
		0800: 800 mm				

R represents motor wrap.

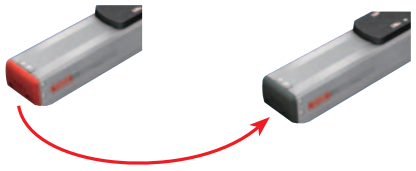
KRF3, KRF4, and KRF4R have ball screw lead of 6mm only.

Maximum stroke differs depending on models.
KRF3: 300mm
KRF4: 300mm
KRF5: 550mm
KRF6: 800mm

Control device you can select differ depending on models.
KRF3 : TSC only
KRF4 : TSC, TLC
KRF5 : TSC, TLC
KRF6 : THC
KRF4/5R: TLC
KRF6R : THC
*Separate order for the control device is required.

Specify the option symbol by writing in the order of description from left adding "-".
*This is valid only when selecting KRF□R for model (1).

Change the cover color to gray
You can change the color of housing cover to gray.
Standard: red When GR is selected: gray



Motors differ depending on models.
KRF3 : "28P", "28PB"
KRF4 : "35P", "35PB", "M05", "M05B"
KRF5 : "42P", "42PB", "M05", "M05B"
KRF6 : "M10", "M10B"
KRF4R: "M05", "M05B"
KRF5R: "M05", "M05B"
KRF6R: "M10", "M10B"

Sample model configuration

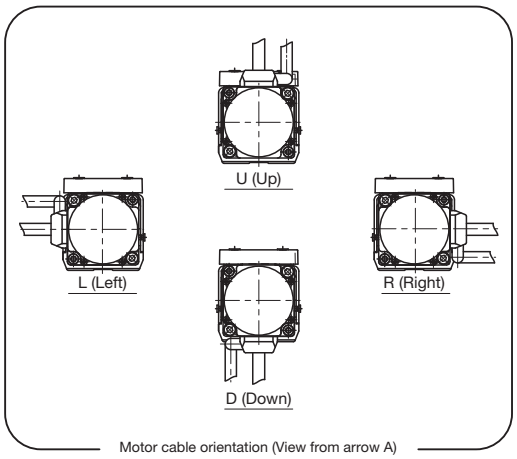
When combining with dedicated controller (TSC)	KRF4-06-0200A-TS-GR-SB-R6/35PD00S3
When combining with dedicated controller (TLC)	KRF4-06-0150A-TL-GR-SB-R6/M05BRD00F3
When combining with dedicated controller (THC)	KRF6-10-0800A-TH-GR-R6/M10RS02D1H3

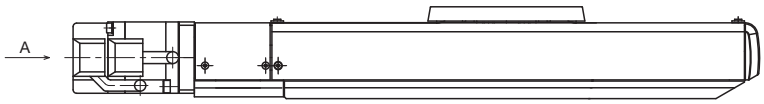
Pages for detailed description

(6) Options	SB: With slider base → P. 2-029
	□1□2: Sensor → P. 2-030
	GR: Change the cover color to gray → P. 2-031

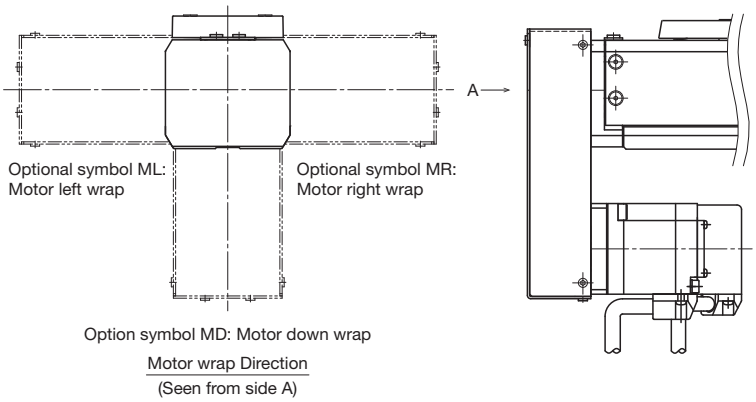
Motor cable orientation	Home position	Power supply voltage	Cable type and length
L	D00	D1	F3
(8)	(9)	(10)	(11)
No symbol : When selecting TSC	D00 : Motor side	No symbol: When selecting TSC or TLC	No symbol: None
R : Right	R00 : Reverse motor side	D1: 100 V	S3 : Standard 3 m
L : Left	S02 : Motor side	D2: 200 V	S5 : Standard 5 m
U : Up	S03 : Reverse motor side		SA : Standard 10 m
D : Down			F3 : Standard 3 m
			F5 : Standard 5 m
			FA : Standard 10 m
			H3 : High flex 3 m
			H5 : High flex 5 m
			HA: High flex 10 m
If you select "MR" as an option, "R" cannot be selected. If you select "ML" as an option, "L" cannot be selected. If you select "MD" as an option, "U" cannot be selected.	D00 and R00 are mechanical home seeking. S0 * (external sensor specification) only when selecting THC.	Only when selecting THC	Indicates the type and length of attached cables. Cables you can select differ depending on controllers. TSC : "S *" TLC : "F *", "H *" THC : "F *", "H *"

Motor cable orientation





Motor wrap direction



KRF3 TSC specifications

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device type	Option	Motor size	Home position	Cable type and length
KRF3 -	06 -	0150	A -	TS -	GR-SB /	28P	D00	S3

KRF3	06: 6 mm	0050: 50mm to 0300: 300 mm	A	TS: TSC	No symbol: None GR: Gray cover SB: Slider base □1□2: Sensor	28P : Stepper motor □28 28PB: Stepper motor □28 with brake	D00: Motor side R00 : Reverse motor side	No symbol: None S3: Standard 3 m S5: Standard 5 m SA: Standard 10 m

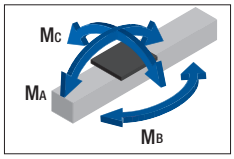
Basic Specifications

Control device type				TSC
Motor size				□28
Ball screw lead [mm]				6
Maximum load capacity [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	3
		Wall mount		3
		Vertical mount	0.2G	1.5
Electromagnetic brake retention [N]				42
Running life *1 [km]		Horizontal/wall mount		10,000
		Vertical mount		5,000
Positioning repeatability [mm]				±0.010
Lost motion [mm]				0.1
Static permissible moment *2 [N·m]				M_A: 12.1 M_B: 12.1 M_C: 32.3

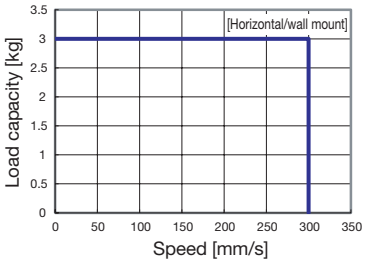
*1 The conditions for calculation are as follows:
Under maximum load capacity at permissible overhang length.
Stroke 75 mm

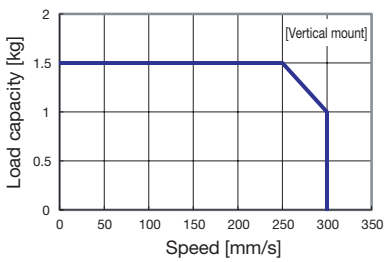
*2 Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.

Static Permissible Moment



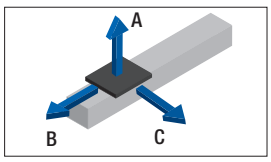
Speed and Load Capacity: Relationship Diagram



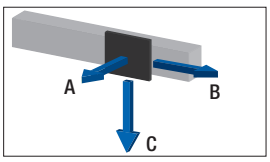


Permissible Overhang Length*

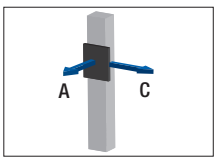
Horizontal use



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

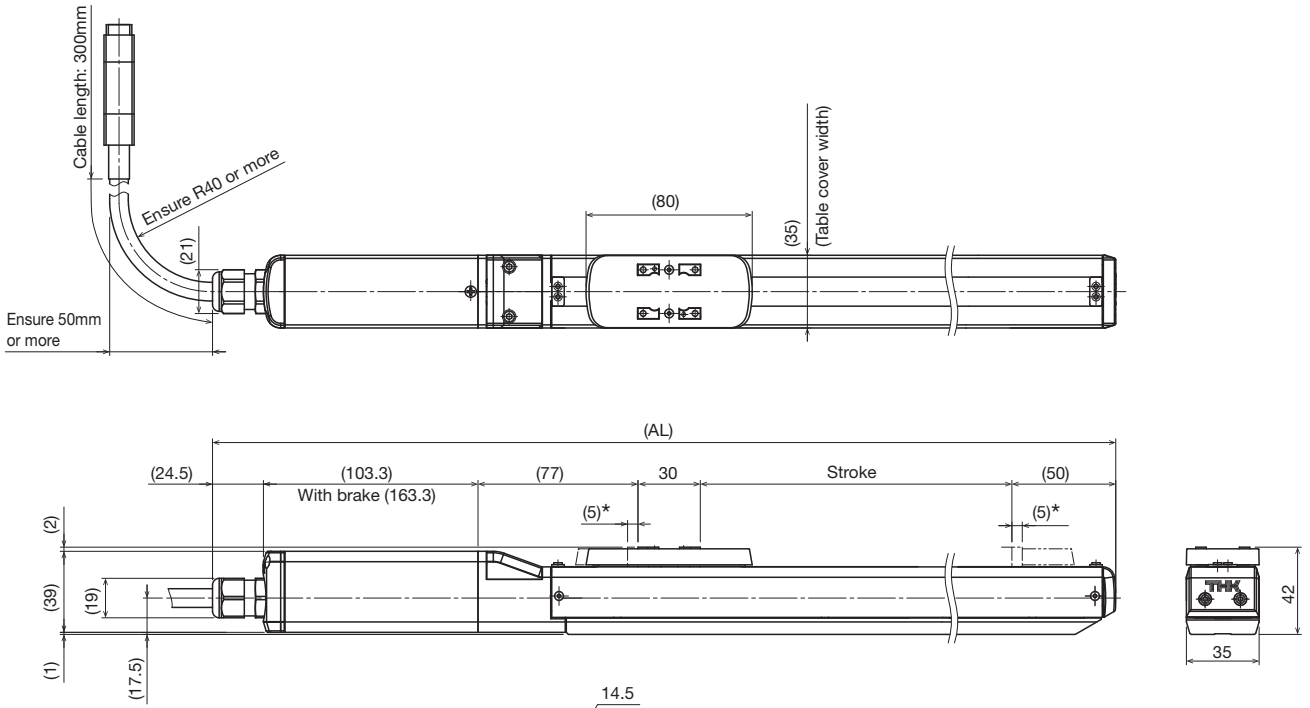
Vertical mount [mm]

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

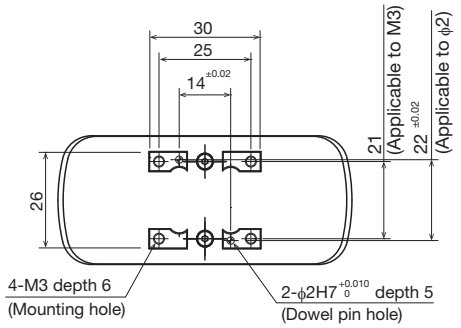
* This value is the overhang length whose running life is 10,000 km for horizontal direction/wall mount and 5,000 km for vertical direction.
A permissible value of the applied load in each direction.

KRF3 + TSC

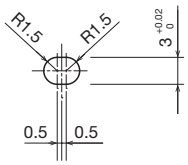
Dimensions



*Stroke up to mechanical stopper.



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)
Maximum speed *1, *2 [mm/s]	Ball screw lead: 6 mm	300					
Dimensions [mm]	AL*3	334.8(394.8)	384.8(444.8)	434.8(494.8)	484.8(544.8)	534.8(594.8)	584.8(644.8)
	L1	100	150	200	250	300	350
	L2	120	85	110	135	105	120
	L3	120	170	220	270	315	360
Mounting pitch count	N	1	2	2	2	3	3
Mounting hole count	n	2	3	3	3	4	4
Weight *3 [kg]		1.1(1.3)	1.2(1.5)	1.3(1.6)	1.4(1.7)	1.5(1.8)	1.7(1.9)

*1 Load capacity and maximum speed vary dependent on usage conditions. For details, see “Speed and Load Capacity: Relationship Diagram”.
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

KRF4 TSC specifications

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device type	Option	Motor size	Home position	Cable type and length
KRF4 -	06 -	0150	A -	TS -	GR-SB /	35P	D00	S3

Model	Ball screw lead	Stroke	Design symbol	Control device type	Option	Motor size	Home position	Cable type and length
KRF4	06: 6 mm	0050: 50mm to 0300: 300 mm	A	TS: TSC	No symbol: None GR: Gray cover SB: Slider base □1□2: Sensor	35P : Stepper motor □35 35PB: Stepper motor □35 with brake	D00: Motor side R00 : Reverse motor side	No symbol: None S3: Standard 3 m S5: Standard 5 m SA: Standard 10 m

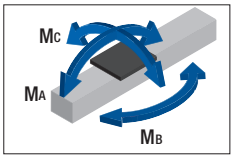
Basic Specifications

Control device type				TSC
Motor size				□35
Ball screw lead [mm]				6
Maximum load capacity [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	6.5
		Wall mount		6
		Vertical mount	0.2G	4
Electromagnetic brake retention [N]				251
Running life *1 [km]		Horizontal/wall mount		10,000
		Vertical mount		5,000
Positioning repeatability [mm]				±0.010
Lost motion [mm]				0.1
Static permissible moment *2 [N·m]				MA: 31 MB: 21.2 MC: 52.7

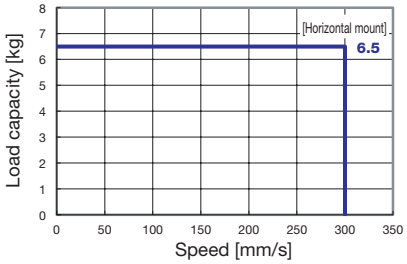
*1 The conditions for calculation are as follows:
Under maximum load capacity at permissible overhang length.
Stroke 75 mm

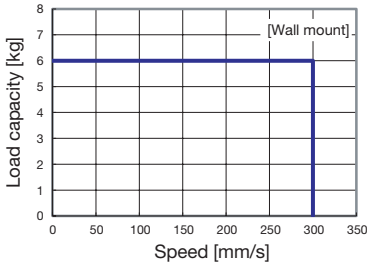
*2 Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

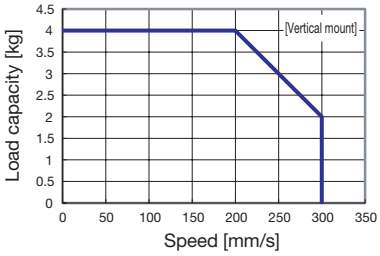
Static Permissible Moment



Speed and Load Capacity: Relationship Diagram

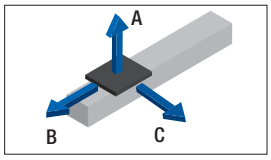




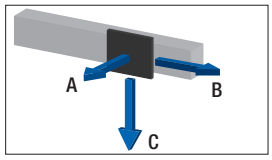


Permissible Overhang Length*

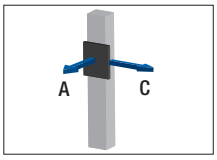
Horizontal use



Wall use



Vertical use



Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	3	330	60	160
	6.5	140	20	60

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	3	140	50	380
	6	50	20	110

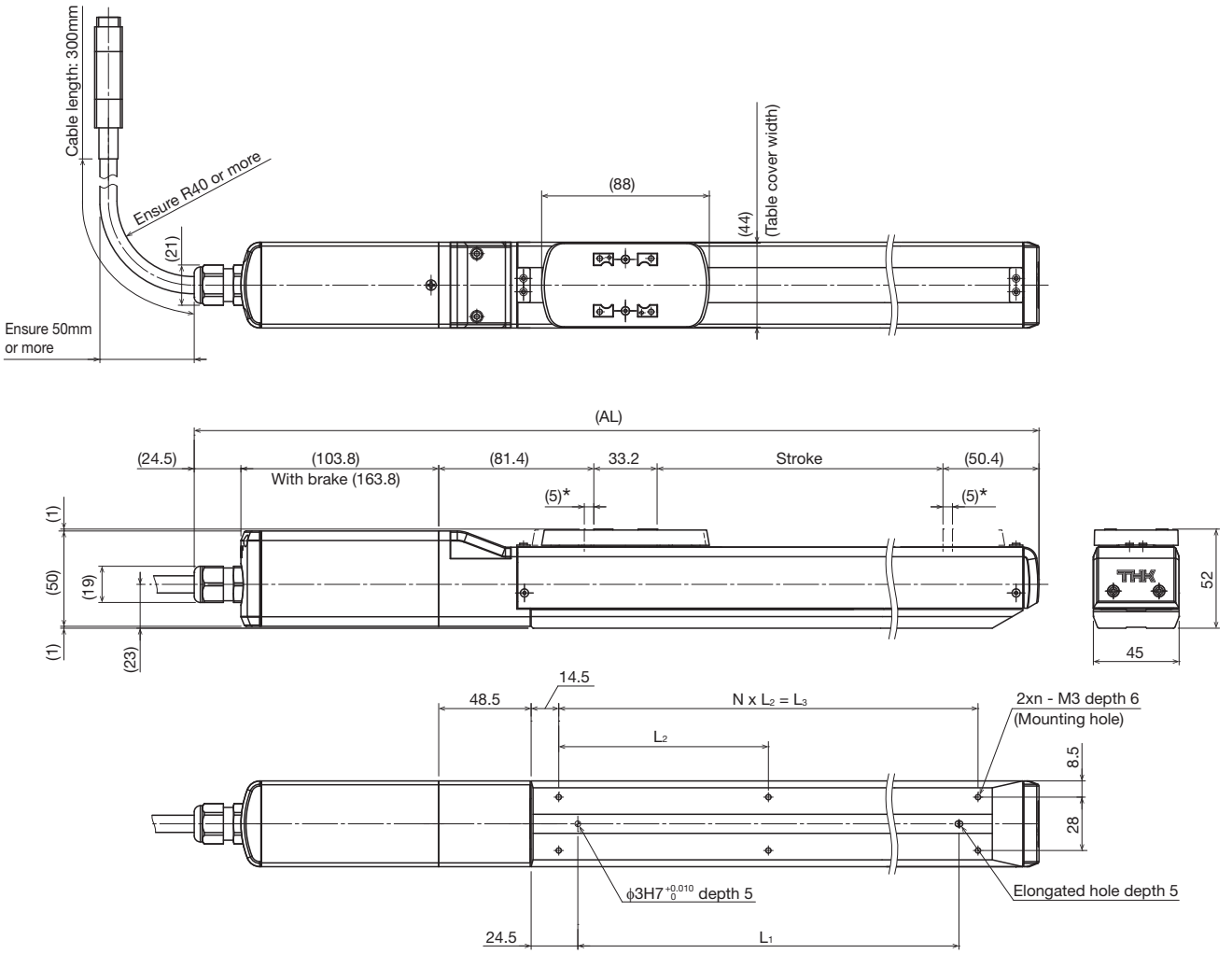
Vertical mount [mm]

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

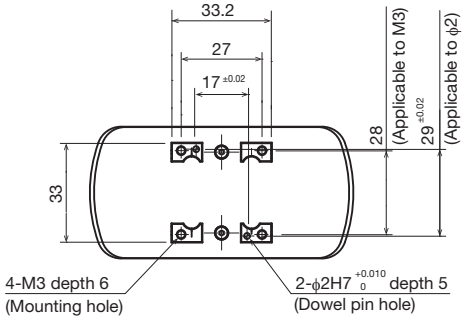
* This value is the overhang length whose running life is 10,000 km for horizontal direction/wall mount and 5,000 km for vertical direction.
A permissible value of the applied load in each direction.

KRF4 + TSC

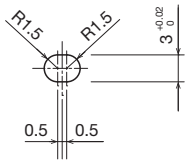
Dimensions



* Stroke up to mechanical stopper.



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)
Maximum speed *1, *2 [mm/s]	Ball screw lead: 6 mm	300					
Dimensions [mm]	AL*3	343.3(403.3)	393.3(453.3)	443.3(503.3)	493.3(553.3)	543.3(603.3)	593.3(653.3)
	L1	100	150	200	250	300	350
	L2	120	85	110	90	105	120
	L3	120	170	220	270	315	360
Mounting pitch count	N	1	2	2	3	3	3
Mounting hole count	n	2	3	3	4	4	4
Weight *3 [kg]		1.7(2.1)	1.9(2.3)	2.1(2.5)	2.3(2.7)	2.5(3.0)	2.7(3.2)

*1 Load capacity and maximum speed vary dependent on usage conditions. For details, see “Speed and Load Capacity: Relationship Diagram”.
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

KRF5 TSC specifications

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device type	Option	Motor size	Home position	Cable type and length
KRF5 -	06 -	0150	A	- TS	- GR-SB	/ 42P	D00	S3

KRF5	06: 6 mm 10: 10 mm	0050: 50mm to 0550: 550 mm	A	TS: TSC	No symbol: None GR: Gray cover SB: Slider base □1□2: Sensor	42P : Stepper motor □42 42PB: Stepper motor □42 with brake	D00: Motor side R00 : Reverse motor side	No symbol: None S3: Standard 3 m S5: Standard 5 m SA: Standard 10 m

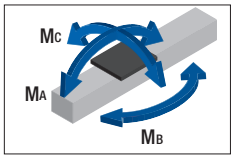
Basic Specifications

Control device type				TSC	
Motor size				□42	
Ball screw lead [mm]				6	10
Maximum load capacity [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	20	10
		Wall mount		14.5	10
		Vertical mount	0.2G	7.5	6
Electromagnetic brake retention [N]				251	151
Running life *1 [km]		Horizontal/wall mount		10,000	
		Vertical mount		5,000	
Positioning repeatability [mm]				±0.010	
Lost motion [mm]				0.1	
Static permissible moment *2 [N·m]				MA: 84 MB: 48.4 MC: 105.8	

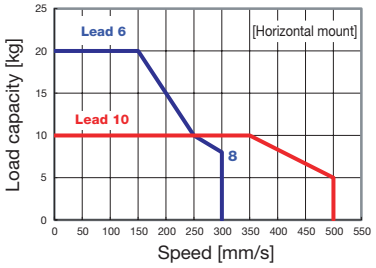
*1 The conditions for calculation are as follows:
Under maximum load capacity at permissible overhang length.
Stroke 275 mm

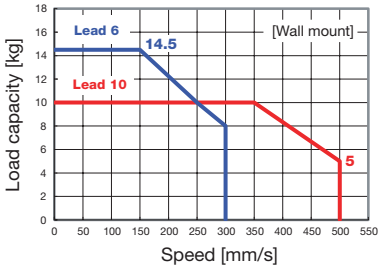
*2 Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

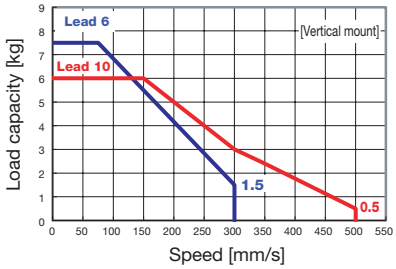
Static Permissible Moment



Speed and Load Capacity: Relationship Diagram

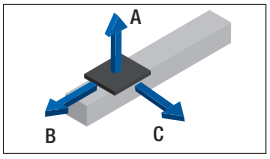




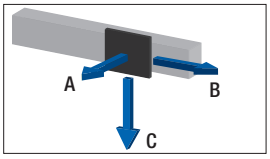


Permissible Overhang Length*

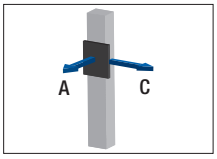
Horizontal use



Wall use



Vertical use



Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	10	470	50	150
	20	210	20	60
10	5	700	110	280
	10	320	40	130

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	7	180	60	680
	14.5	60	20	150
10	5	250	80	700
	10	100	20	210

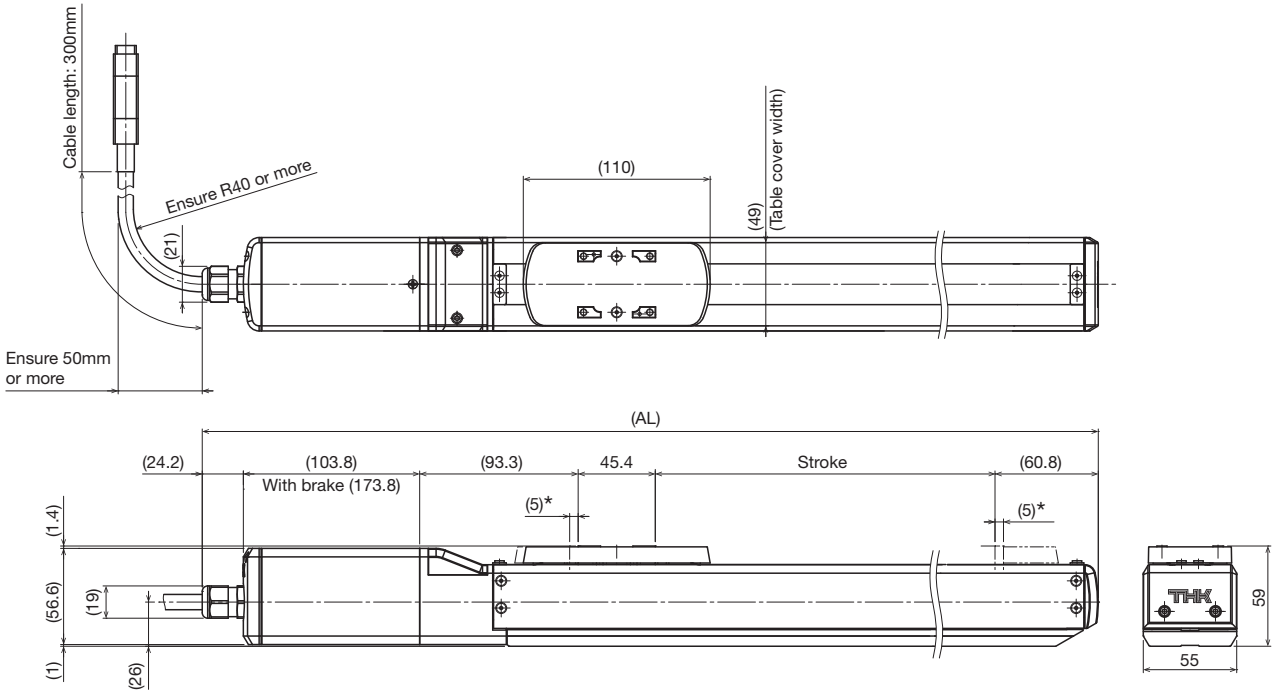
Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
6	3.5	160	160
	7.5	60	60
10	3	210	210
	6	90	90

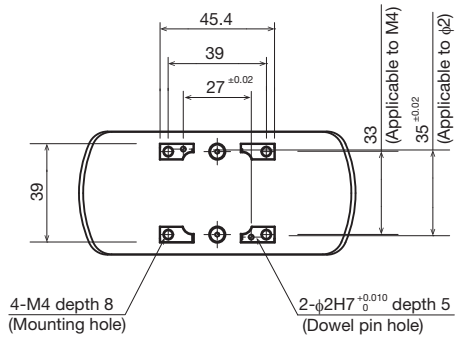
* This value is the overhang length whose running life is 10,000 km for horizontal direction/wall mount and 5,000 km for vertical direction.
A permissible value of the applied load in each direction.

KRF5 + TSC

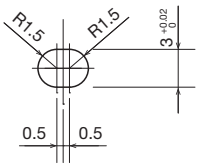
Dimensions



*Stroke up to mechanical stopper.



Detailed Diagram: Table



Detailed Diagram: Elongated Hole

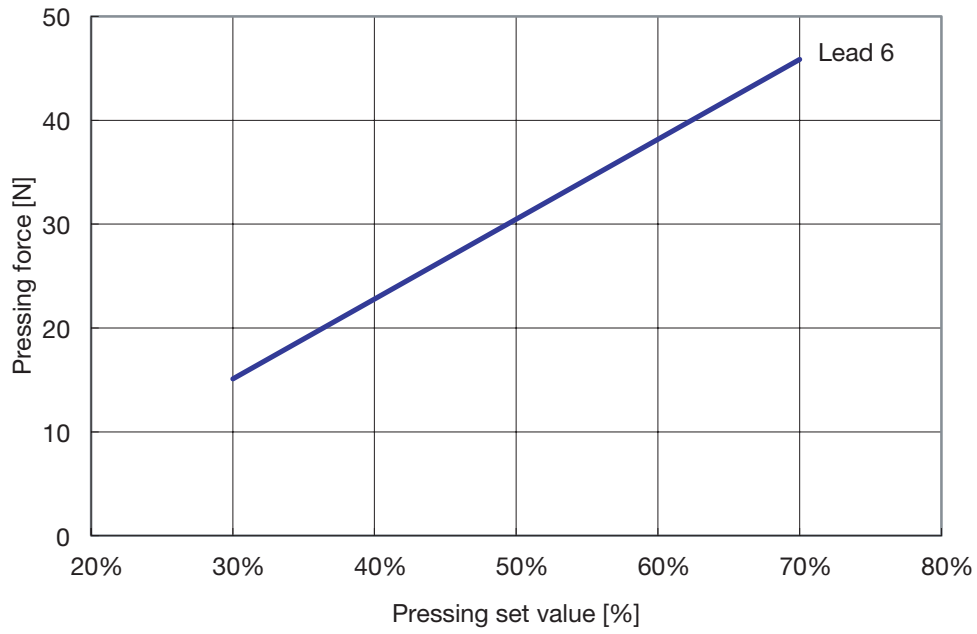
Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)	250 (260)	300 (310)	350 (360)	400 (410)	450 (460)	500 (510)	550 (560)
Maximum speed *1, *2 [mm/s]	Ball screw lead: 6 mm	300										250
	Ball screw lead: 10 mm	500										430
Dimensions [mm]	AL*3	377.5 (447.5)	427.5 (497.5)	477.5 (547.5)	527.5 (597.5)	577.5 (647.5)	627.5 (697.5)	677.5 (747.5)	727.5 (797.5)	777.5 (847.5)	827.5 (897.5)	877.5 (947.5)
	L_1	100	150	200	250	300	350	400	450	500	550	600
	L_2	140	100	120	140	115	130	110	120	135	120	130
	L_3	140	200	240	280	345	390	440	480	540	600	650
	G	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 *3 [kg]		2.8 (3.3)	3.1 (3.6)	3.4 (3.9)	3.7 (4.2)	4.0 (4.5)	4.4 (4.8)	4.7 (5.1)	5.0 (5.4)	5.3 (5.7)	5.6 (6.1)	5.9 (6.4)

*1 Load capacity and maximum speed vary dependent on usage conditions. For details, see “Speed and Load Capacity: Relationship Diagram”.
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

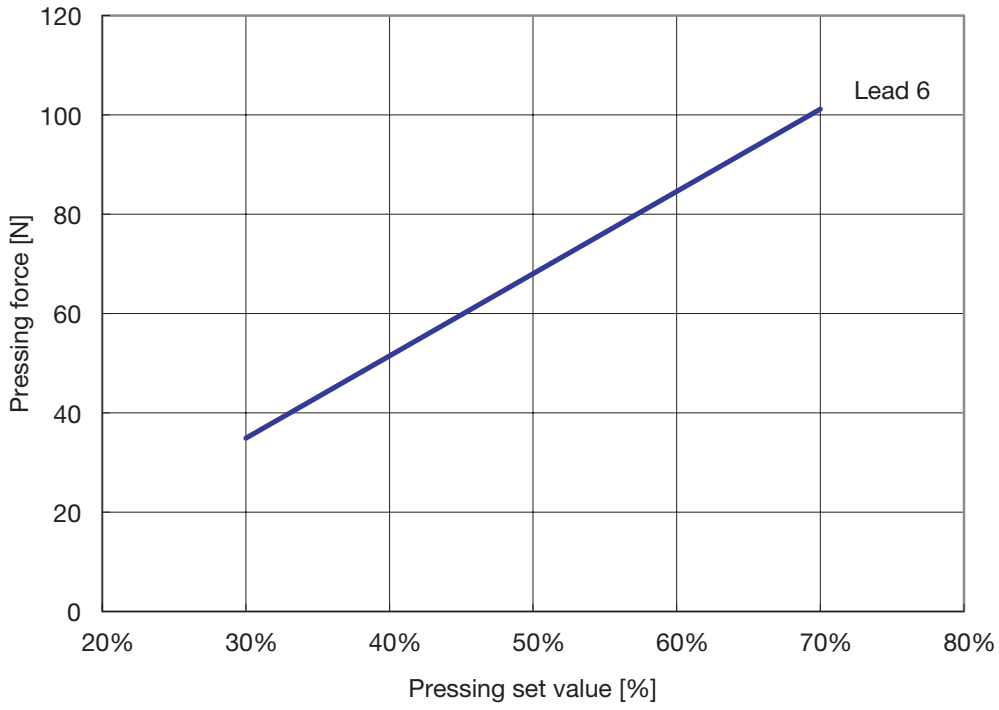
Pressing Force and Pressing Set Value for TSC specification: Relationship Diagram

Pressing force may vary depending on the pressing set value. Refer to the relationship diagram below.

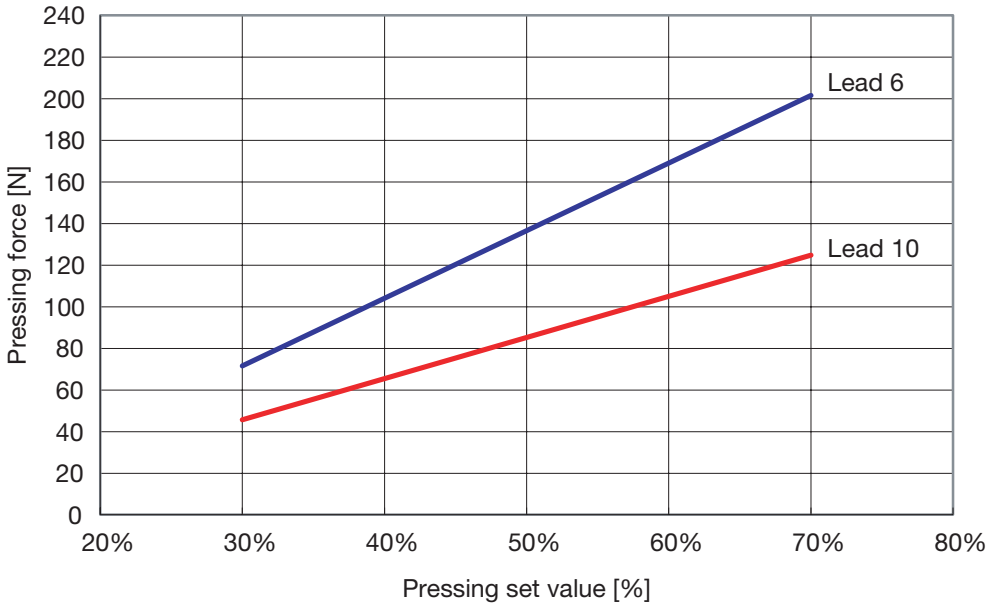
■ KRF3



■ KRF4



■ KRF5


240
220
200
180
160
140
120
100
80
60
40
20
0
Pressing force [N]
Lead 6
Lead 10
20%
30%
40%
50%
60%
70%
80%
Pressing set value [%]

KRF4 TLC specifications

Model Configuration

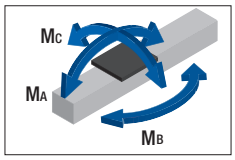
Model	Ball screw lead	Stroke	Design symbol	Control device	Option	Motor rated output	Motor cable orientation	Home position	Cable type and length
KRF4 -	06 -	0150	A	- TL	- GR-SB	/ M05	R	D00	F3
KRF4	06: 6 mm	0050: 50 mm to 0300: 300 mm	A	TL: TLC	No symbol: Red cover GR: Gray cover SB: Slider base □1□2: Sensor Note: If the GR is not included in the model configuration, cover will be red.	M05 : 50W M05B : 50W with brake	R : Right L : Left U : Up D : Down	D00: Motor side R00 : Reverse motor side	No symbol: None F3 : Standard 3 m F5 : Standard 5 m FA : Standard 10 m H3 : High flex 3 m H5 : High flex 5 m HA: High flex 10 m

Basic Specifications

Control device type				TLC
Motor rated output [W]				50
Ball screw lead [mm]				6
Rated speed *1 [mm/s]				300
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.5G	6
		Wall mount		5.5
		Vertical mount	0.3G	4
Rated thrust *3 [N]				133
Maximum thrust *4 [N]				241
Electromagnetic brake retention [N]				268
Running life *5 [km]		Horizontal and on wall		10,000
		Vertical		5,000
Positioning repeatability [mm]				±0.010
Lost motion [mm]				0.1
Static permissible moment *6 [N·m]				MA: 31 MB: 21.2 MC: 52.7

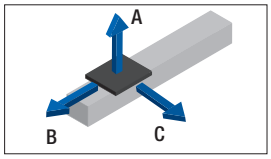
*1 At rated motor speed (3,000min^{-1}).
*2 At rated speed.
*3 At rated motor torque.
*4 Dependent on maximum peak torque and permissible load.
*5 The conditions for calculation are as follows:
Conditions: Under maximum load capacity at permissible overhang length
Stroke 75mm
*6 Moment standards:
MA and MC: top of table; MB: center of table.

Static Permissible Moment

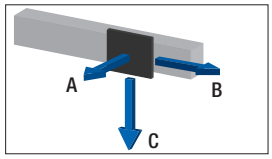


Permissible Overhang Length*

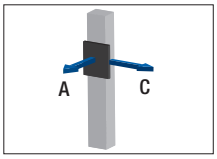
Horizontal use



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]

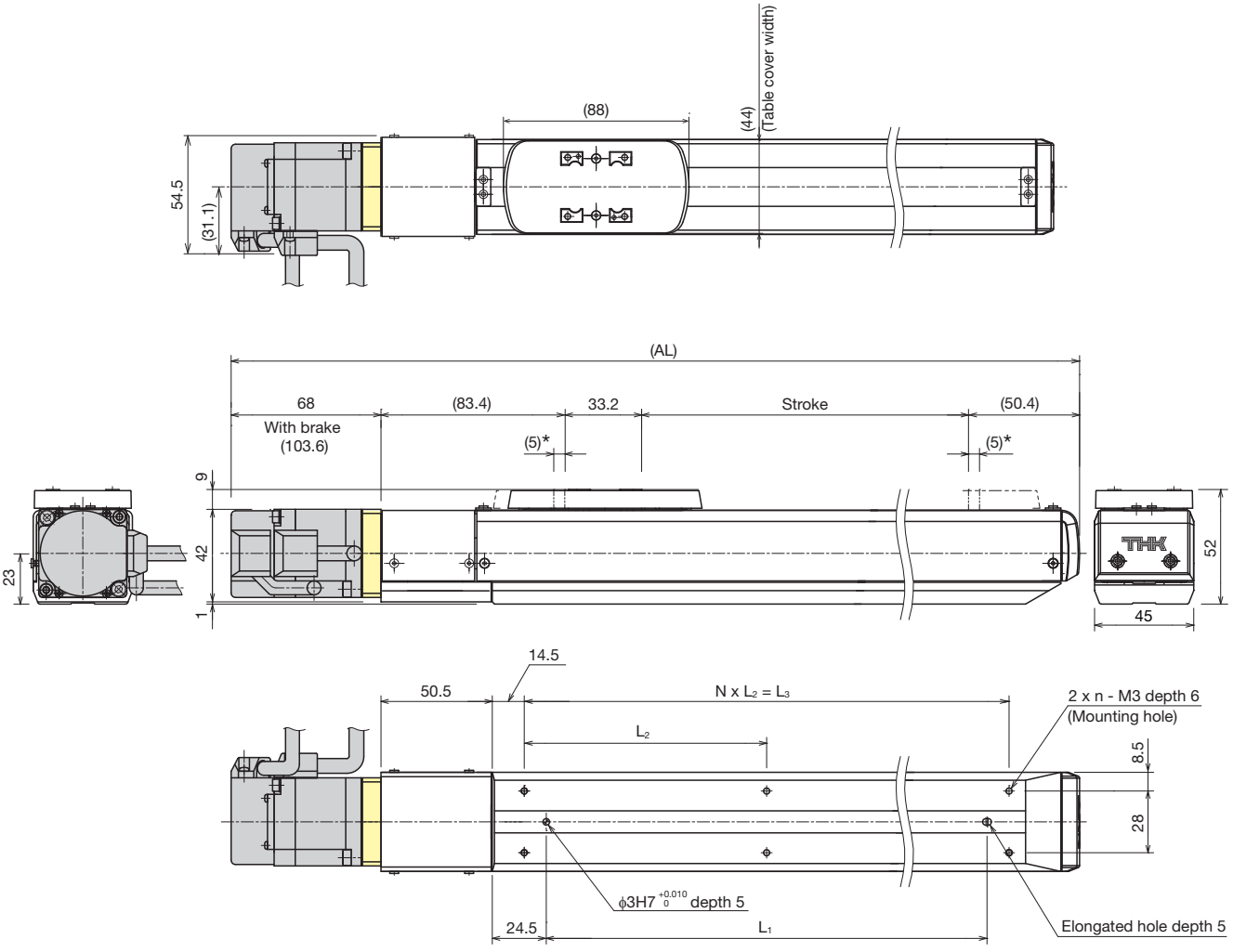
Ball screw lead [mm]	Load mass [kg]	A	C
6	2	100	100
	4	30	30

* 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.
A permissible value of the applied load in each direction.

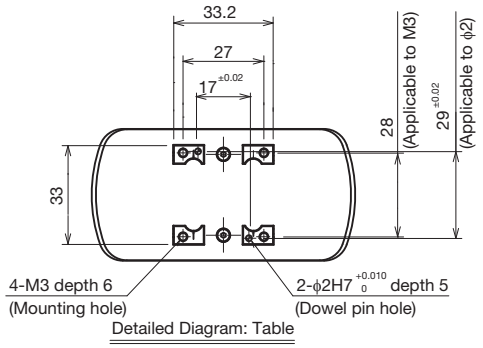
KRF4 + TLC

Motor rated output
50W

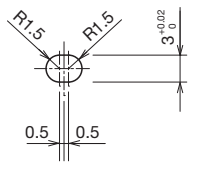
Dimensions



*Stroke up to mechanical stopper.



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)
Maximum speed *1 [mm/s]	Ball screw lead: 6mm	300					
Dimensions [mm]	AL*2	285(320.6)	335(370.6)	385(420.6)	435(470.6)	485(520.6)	535(570.6)
	L1	100	150	200	250	300	350
	L2	120	85	110	90	105	120
	L3	120	170	220	270	315	360
Mounting pitch count	N	1	2	2	3	3	3
Mounting hole count	n	2	3	3	4	4	4
Weight *2 [kg]		1.6(1.8)	1.8(2.0)	2.0(2.2)	2.2(2.4)	2.4(2.6)	2.7(2.9)

*1 Dependent on motor speed (3,000min^{-1}) and permissible rotational speed of the ball screw.
*2 Values when a brake is installed are shown in parentheses.

KRF4R TLC specifications

Model Configuration

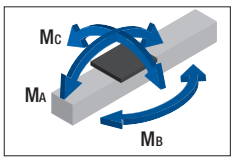
Model	Ball screw lead	Stroke	Design symbol	Control device type	Option	Motor rated output	Motor cable orientation	Home position	Cable type and length
KRF4R -	06 -	0150	A	- TL	- ML-GR	/ M05	R	D00	F3
KRF4R	06: 6 mm	0050: 50 mm to 0300: 300 mm	A	TL: TLC	No symbol: None MR: Motor right wrap ML: Motor left wrap MD: Motor down wrap GR: Gray cover SB: Slider base □1□2: Sensor	M05 : 50W M05B : 50W with brake	R : Right L : Left U : Up D : Down	D00: Motor side R00 : Reverse motor side	No symbol: None F3 : Standard 3 m F5 : Standard 5 m FA : Standard 10 m H3 : High flex 3 m H5 : High flex 5 m HA: High flex 10 m

Basic Specifications

Control device type				TLC
Motor rated output [W]				50
Ball screw lead [mm]				6
Rated speed *1 [mm/s]				300
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.5G	6
		Wall mount		5.5
		Vertical mount	0.3G	4
Rated thrust *3 [N]				133
Maximum thrust *4 [N]				241
Electromagnetic brake retention [N]				268
Running life *5 [km]		Horizontal/wall mount		10,000
		Vertical mount		5,000
Positioning repeatability [mm]				±0.010
Lost motion [mm]				0.1
Static permissible moment *6 [N·m]				M_A: 31 M_B: 21.2 M_C: 52.7

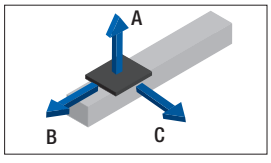
*1 Based on rated motor speed (3,000min^{-1}).
*2 At rated speed.
*3 At rated motor torque.
*4 Dependent on maximum peak torque and permissible load.
*5 The conditions for calculation are as follows:
Under maximum load capacity at permissible overhang length.
Stroke 75 mm
*6 Applied point of moment load 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

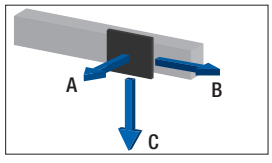


Permissible Overhang Length*

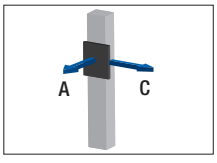
Horizontal use



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]

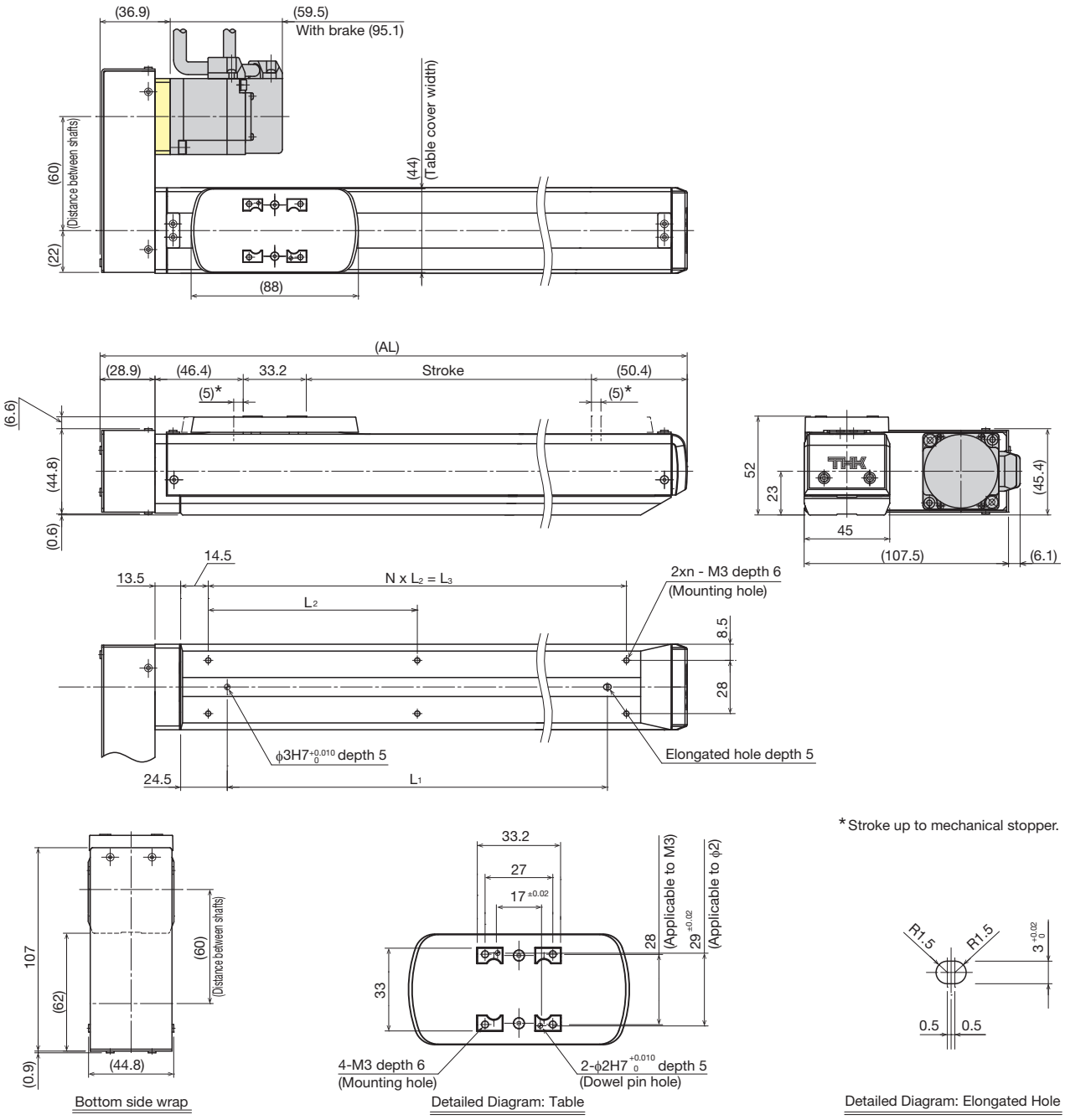
Ball screw lead [mm]	Load mass [kg]	A	C
6	2	100	100
	4	30	30

* This value is the overhang length whose running life is 10,000 km for horizontal direction/wall mount and 5,000 km for vertical direction.
A permissible value of the applied load in each direction.

KRF4R + TLC

Motor rated output **50W**

Dimensions



Bottom side wrap

Detailed Diagram: Table

*Stroke up to mechanical stopper.

Detailed Diagram: Elongated Hole

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: 6 mm	300					
Dimensions [mm]	AL*2	209	259	309	359	409	459
	L1	100	150	200	250	300	350
	L2	120	85	110	90	105	120
	L3	120	170	220	270	315	360
Mounting pitch count	N	1	2	2	3	3	3
Mounting hole count	n	2	3	3	4	4	4
Weight *2 [kg]		1.6(1.8)	1.8(2.0)	2.0(2.2)	2.3(2.5)	2.5(2.7)	2.7(2.9)

*1 The maximum speed is the value restricted by the motor rotational speed (at 3,000min-1), or by the permissible rotational speed of the ball screw.
*2 Values when a brake is installed are shown in parentheses.

KRF5 TLC specifications

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device	Option	Motor rated output	Motor cable orientation	Home position	Cable type and length
KRF5 -	06 -	0150	A -	TL -	GR-SB /	M05	R	D00	F3

Model	Ball screw lead	Stroke	Design symbol	Control device	Option	Motor rated output	Motor cable orientation	Home position	Cable type and length
KRF5	06: 6 mm 10: 10 mm	0050: 50 mm to 0550: 550 mm	A	TL: TLC	No symbol: Red cover GR: Gray cover SB: Slider base □1□2: Sensor	M05 : 50W M05B : 50W with brake	R : Right L : Left U : Up D : Down	D00: Motor side R00 : Reverse motor side	No symbol: None F3 : Standard 3 m F5 : Standard 5 m FA : Standard 10 m H3 : High flex 3 m H5 : High flex 5 m HA: High flex 10 m

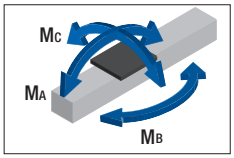
Note: If the GR is not included in the model configuration, cover will be red.

Basic Specifications

Control device type				TLC	
Motor rated output [W]				50	
Ball screw lead [mm]				6	10
Rated speed *1 [mm/s]				300	500
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.5 G	19	15
		Wall mount		14	12.5
		Vertical mount	0.3G	6	3.5
Rated thrust *3 [N]				133	80
Maximum thrust *4 [N]				402	241
Electromagnetic brake retention [N]				268	161
Running life *5 [km]	Horizontal and on wall			10,000	
	Vertical			5,000	
Positioning repeatability [mm]				±0.010	
Lost motion [mm]				0.1	
Static permissible moment *6 [N·m]				MA: 84 MB: 48.4 MC: 105.8	

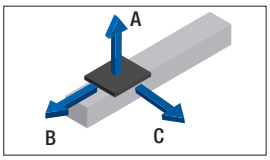
*1 At rated motor speed (3,000min^{-1}).
*2 At rated speed.
*3 At rated motor torque.
*4 Dependent on maximum peak torque and permissible load.
*5 The conditions for calculation are as follows:
Conditions: Under maximum load capacity at permissible overhang length
Stroke 275mm
*6 Moment standards:
MA and MC: top of table; MB: center of table.

Static Permissible Moment

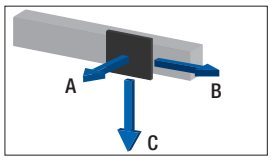


Permissible Overhang Length*

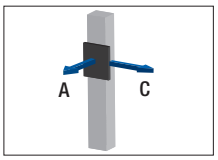
Horizontal use



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]

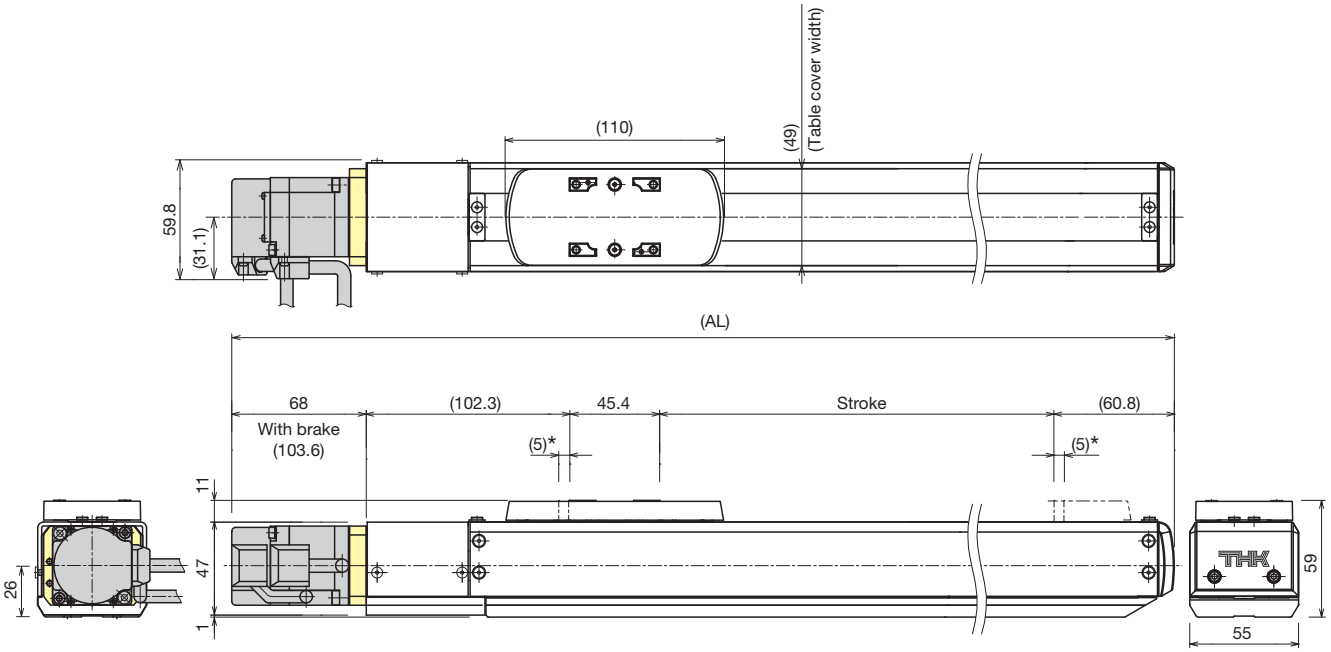
Ball screw lead [mm]	Load mass [kg]	A	C
6	3	210	210
	6	90	90
10	1.5	390	390
	3.5	180	180

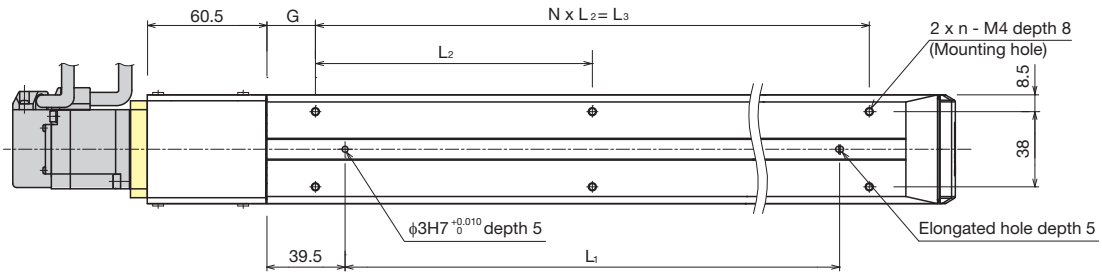
* This value is the overhang length whose running life is 10,000 km for horizontal and wall mount, and 5,000 km for vertical direction.
A permissible value of the applied load in each direction.

KRF5 + TLC

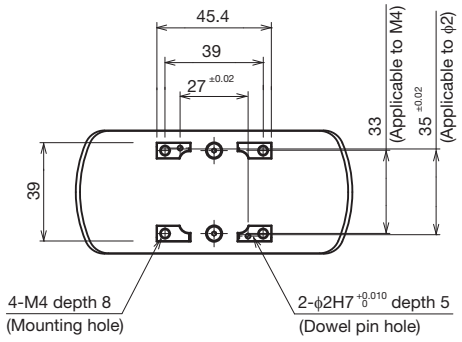
Motor rated output
50W

Dimensions

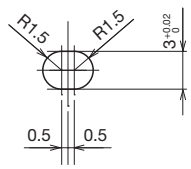




*Stroke up to mechanical stopper.



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 [mm/s]	Ball screw lead: 6mm	300										250
	Ball screw lead: 10mm	500										430
Dimensions [mm]	AL*2	326.5 (362.1)	376.5 (412.1)	426.5 (462.1)	476.5 (512.1)	526.5 (562.1)	576.5 (612.1)	626.5 (662.1)	676.5 (712.1)	726.5 (762.1)	776.5 (812.1)	826.5 (862.1)
	L_1	100	150	200	250	300	350	400	450	500	550	600
	L_2	140	100	120	140	115	130	110	120	135	120	130
	L_3	140	200	240	280	345	390	440	480	540	600	650
	G	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 *2 [kg]		2.6 (2.8)	2.9 (3.1)	3.2 (3.4)	3.5 (3.7)	3.8 (4.0)	4.1 (4.3)	4.4 (4.6)	4.7 (4.9)	5.0 (5.2)	5.3 (5.5)	5.6 (5.8)

*1 Dependent on motor speed (3,000min^{-1}) and permissible rotational speed of the ball screw.
*2 Values when a brake is installed are shown in parentheses.

KRF5R TLC specifications

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device	Option	Motor rated output	Motor cable orientation	Home position	Cable type and length
KRF5R -	06 -	0150	A	- TL	- ML-GR	/ M05	R	D00	F3

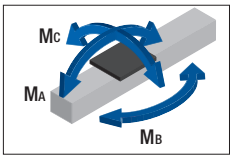
KRF5R	06: 6 mm 10: 10 mm	0050: 50mm to 0550: 550 mm	A	TL: TLC	No symbol: None MR: Motor right wrap ML: Motor left wrap MD: Motor down wrap GR: Gray cover SB: Slider base □1□2: Sensor	M05 : 50W M05B : 50W with brake	R : Right L : Left U : Up D : Down	D00: Motor side R00 : Reverse motor side	No symbol: None F3 : Standard 3 m F5 : Standard 5 m FA : Standard 10 m H3 : High flex 3 m H5 : High flex 5 m HA: High flex 10 m

Basic Specifications

Control device type				TLC	
Motor rated output [W]				50	
Ball screw lead [mm]				6	10
Rated speed *1 [mm/s]				300	500
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.5 G	19	15
		Wall mount		14	12.5
		Vertical mount	0.3G	6	3.5
Rated thrust *3 [N]				133	80
Maximum thrust *4 [N]				402	241
Electromagnetic brake retention [N]				268	161
Running life *5 [km]		Horizontal/wall mount		10,000	
		Vertical mount		5,000	
Positioning repeatability [mm]				±0.010	
Lost motion [mm]				0.1	
Static permissible moment *6 [N·m]				MA: 84 MB: 48.4 MC: 105.8	

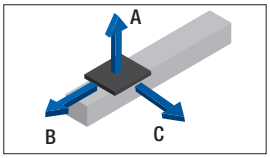
*1 Based on rated motor speed (3,000min-1).
*2 At rated speed.
*3 At rated motor torque.
*4 Dependent on maximum peak torque and permissible load.
*5 The conditions for calculation are as follows:
Under maximum load capacity at permissible overhang length.
Stroke 275 mm
*6 Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static Permissible Moment

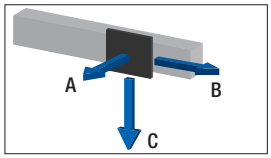


Permissible Overhang Length*

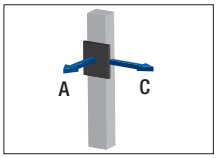
Horizontal use



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]

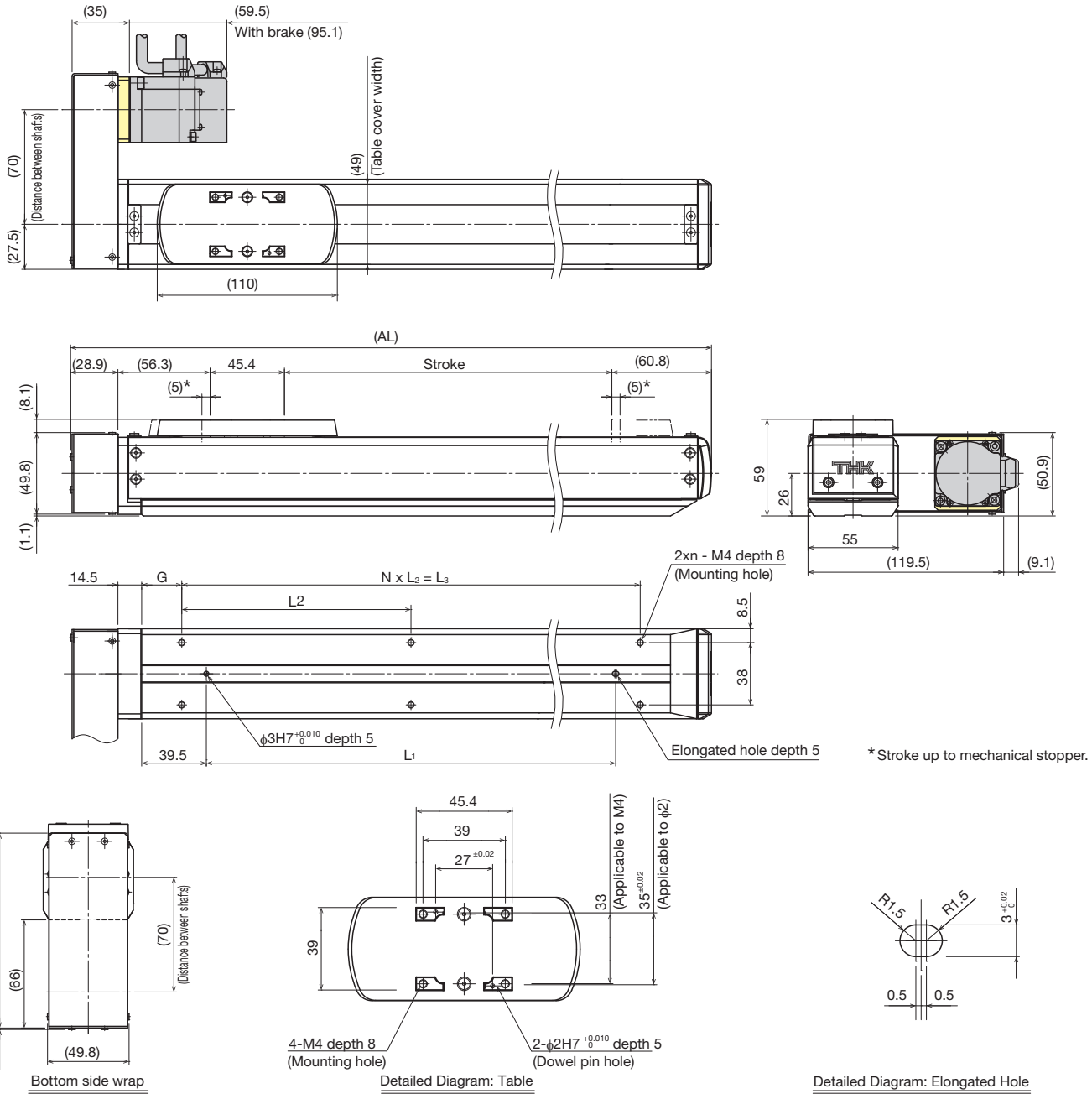
Ball screw lead [mm]	Load mass [kg]	A	C
6	3	210	210
	6	90	90
10	1.5	390	390
	3.5	180	180

* This value is the overhang length whose running life is 10,000 km for horizontal direction/wall mount and 5,000 km for vertical direction.
A permissible value of the applied load in each direction.

KRF5R + TLC

Motor rated output
50W

Dimensions



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 [mm/s]	Ball screw lead: 6 mm	300										250
	Ball screw lead: 10 mm	500										430
Dimensions [mm]	AL	241.5	291.5	341.5	391.5	441.5	491.5	541.5	591.5	641.5	691.5	741.5
	L_1	100	150	200	250	300	350	400	450	500	550	600
	L_2	140	100	120	140	115	130	110	120	135	120	130
	L_3	140	200	240	280	345	390	440	480	540	600	650
	G	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 *2 [kg]		2.5 (2.7)	2.8 (3.0)	3.1 (3.3)	3.5 (3.7)	3.8 (4.0)	4.1 (4.3)	4.4 (4.6)	4.7 (4.9)	5.0 (5.2)	5.3 (5.5)	5.6 (5.8)

*1 The maximum speed is the value restricted by the motor rotational speed (at 3,000min^{-1}), or by the permissible rotational speed of the ball screw.
*2 Values when a brake is installed are shown in parentheses.

KRF6 THC specifications

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
KRF6 -	06	- 0150	A	- TH	- GR-SB	/ M10	R	D00	D1	F3

KRF6	06: 6 mm 10: 10 mm	0050: 50 mm to 0800: 800 mm	A	TH: THC	No symbol: Red cover GR: Gray cover SB: Slider base □1□2: Sensor	M10 : 100W M10B: 100W with brake	R : Right L : Left U: Up D: Down	D00: Motor side R00: Reverse motor side S02: Motor side S03: Reverse motor side	D1: 100 V D2: 200 V	No symbol: None F3 : Standard 3 m F5 : Standard 5 m FA : Standard 10 m H3 : High flex 3 m H5 : High flex 5 m HA: High flex 10 m

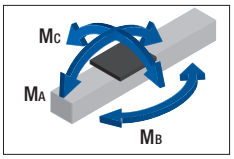
Note: If the GR is not included in the model configuration, cover will be red.

Basic Specifications

Control device type				THC	
Motor rated output [W]				100	
Ball screw lead [mm]				6	10
Rated speed *1 [mm/s]				300	500
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.5 G	35	30
		Wall mount		24	22
		Vertical mount	0.3G	10	5
Rated thrust *3 [N]				266	160
Maximum thrust *4 [N]				796	478
Electromagnetic brake retention [N]				268	161
Running life *5 [km]		Horizontal and on wall		10,000	
		Vertical		5,000	
Positioning repeatability [mm]				±0.010	
Lost motion [mm]				0.1	
Static permissible moment *6 [N·m]				MA: 166 MB: 103.8 MC: 179.5	

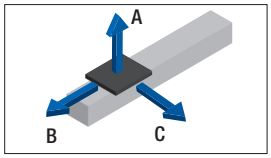
*1 At rated motor speed (3,000min^{-1}).
*2 At rated speed.
*3 At rated motor torque.
*4 Dependent on maximum peak torque and permissible load.
*5 The conditions for calculation are as follows:
Conditions: Under maximum load capacity at permissible overhang length
Stroke 275mm
*6 Moment standards:
MA and MC: top of table; MB: center of table.

Static Permissible Moment

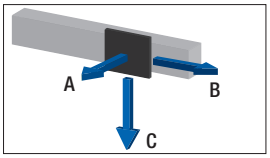


Permissible Overhang Length*

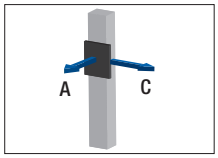
Horizontal use



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.
A permissible value of the applied load in each direction.

Dimensions

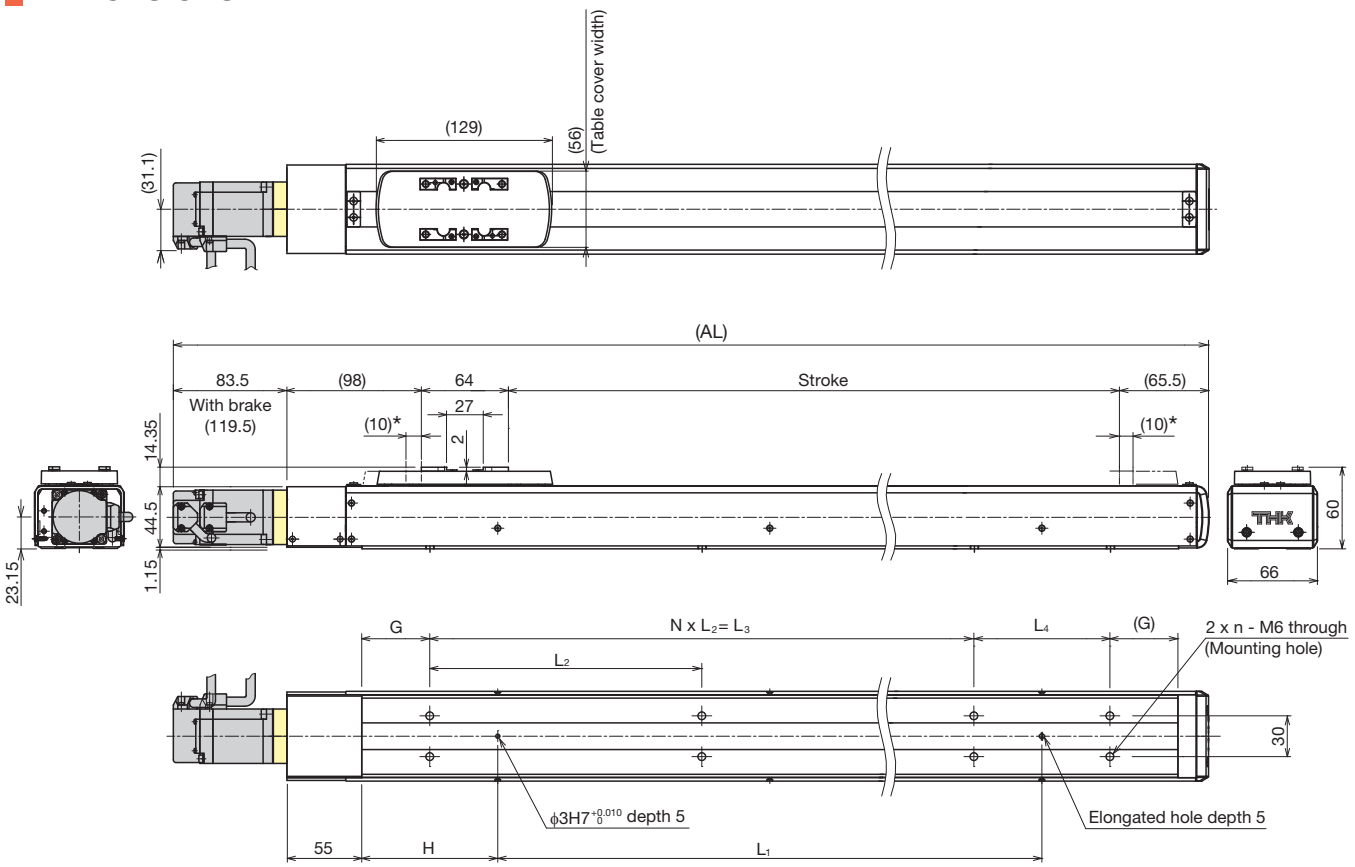
Stroke [mm] (Stroke between mechanical stoppers)		50 (70)	100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)
Maximum speed *1 [mm/s]	Ball screw lead: 6mm	300							
	Ball screw lead: 10mm	500							
Dimensions [mm]	AL*2	361 (396.6)	411 (446.6)	461 (496.6)	511 (546.6)	561 (596.6)	611 (646.6)	661 (696.6)	711 (746.6)
	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 *2 [kg]		3.2 (3.4)	3.6 (3.8)	4.0 (4.2)	4.5 (4.7)	4.9 (5.1)	5.3 (5.5)	5.7 (5.9)	6.1 (6.3)

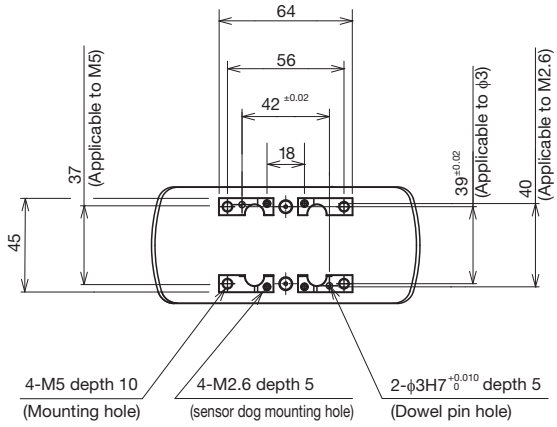
*1 Dependent on motor speed (3,000min^{-1}) and permissible rotational speed of the ball screw.
*2 Values when a brake is installed are shown in parentheses.

KRF6 + THC

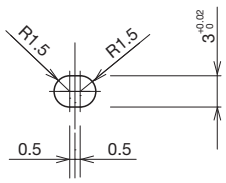
Motor rated output
100W

Dimensions





Detailed Diagram: Table



Detailed Diagram: Elongated Hole

*Stroke up to mechanical stopper.

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 [mm/s]	Ball screw lead: 6mm	300			260	220	200	170	150
	Ball screw lead: 10mm	500			440	380	330	290	260
Dimensions [mm]	AL*2	761(796.6)	811(846.6)	861(896.6)	911(946.6)	961(996.6)	1011(1046.6)	1061(1096.6)	1111(1146.6)
	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 *2 [kg]		6.5 (6.7)	6.9 (7.1)	7.3 (7.5)	7.7 (7.9)	8.1 (8.3)	8.5 (8.7)	8.9 (9.1)	9.3 (9.5)

*1 Dependent on motor speed (3,000min^{-1}) and permissible rotational speed of the ball screw.
*2 Values when a brake is installed are shown in parentheses.

KRF6R THC specifications

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device type	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
KRF6R -	06	- 0150	A	- TH	- ML-GR	/ M10	R	D00	D1	F3

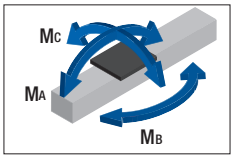
KRF6R	06: 6 mm 10: 10 mm	0050: 50 mm to 0800: 800 mm	A	TH: THC	No symbol: None MR: Motor right wrap ML: Motor left wrap MD: Motor down wrap GR: Gray cover SB: Slider base □1□2: Sensor	M10 : 100W M10B: 100W with brake	R : Right L : Left U: Up D: Down	D00: Motor side R00: Reverse motor side S02: Motor side S03: Reverse motor side	D1: 100 V D2: 200 V	No symbol: None F3 : Standard 3 m F5 : Standard 5 m FA : Standard 10 m H3 : High flex 3 m H5 : High flex 5 m HA: High flex 10 m

Basic Specifications

Control device type			THC	
Motor rated output [W]			100	
Ball screw lead [mm]			6	10
Rated speed *1 [mm/s]			300	500
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount 0.5G	35	30
		Wall mount 0.5G	24	22
		Vertical mount 0.3G	10	5
Rated thrust *3 [N]			266	160
Maximum thrust *4 [N]			796	478
Electromagnetic brake retention [N]			268	161
Running life *5 [km]		Horizontal/wall mount	10,000	
		Vertical mount	5,000	
Positioning repeatability [mm]			±0.010	
Lost motion [mm]			0.1	
Static permissible moment *6 [N·m]			MA: 166 MB: 103.8 MC: 179.5	

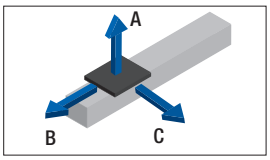
*1 Based on rated motor speed (3,000min-1).
*2 At rated speed.
*3 At rated motor torque.
*4 Dependent on maximum peak torque and permissible load.
*5 The conditions for calculation are as follows:
Under maximum load capacity at permissible overhang length.
Stroke 275 mm
*6 Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static Permissible Moment



Permissible Overhang Length*

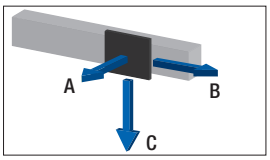
Horizontal use



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

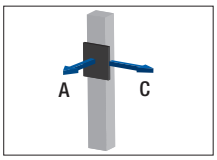
Wall use



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 use



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 direction/wall mount and 5,000 km for vertical direction.
A permissible value of the applied load in each direction.

Dimensions

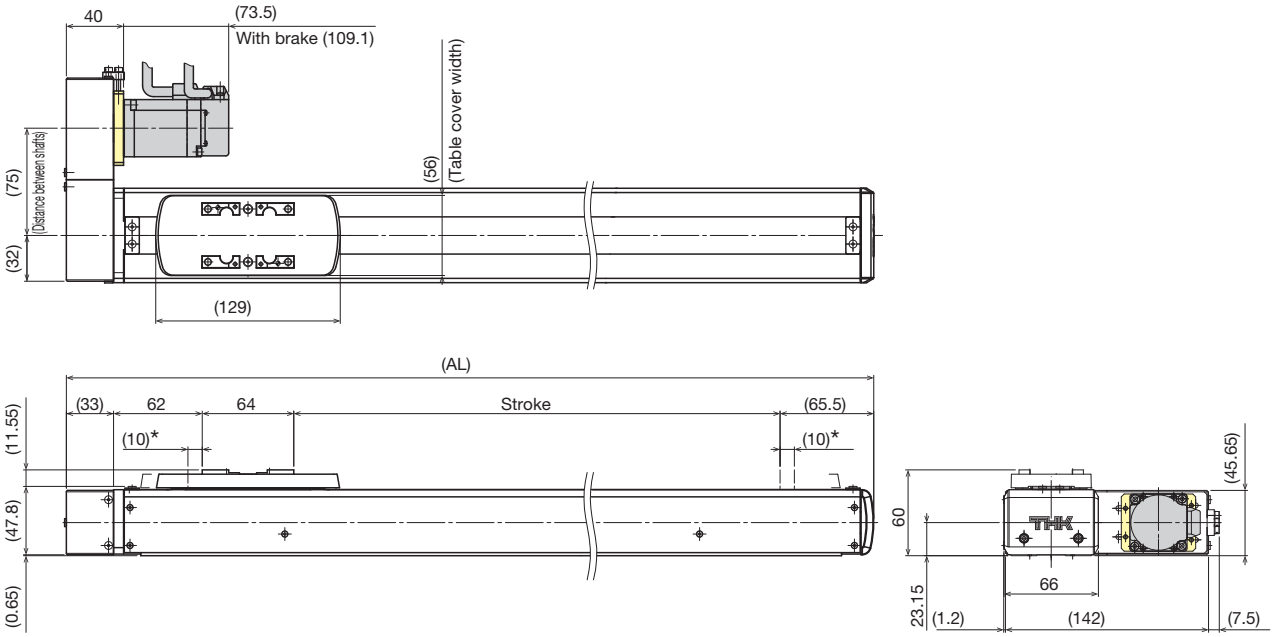
Stroke [mm] (Stroke between mechanical stoppers)		50 (70)	100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)
Maximum speed *1 [mm/s]	Ball screw lead: 6 mm	300							
	Ball screw lead: 10 mm	500							
Dimensions [mm]	AL	276	326	376	426	476	526	576	626
	L1	100	150	200	200	250	250	300	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 *2 [kg]		4.0(4.2)	4.4(4.6)	4.8(5.0)	5.2(5.4)	5.6(5.8)	6.0(6.2)	6.4(6.6)	6.8(7.0)

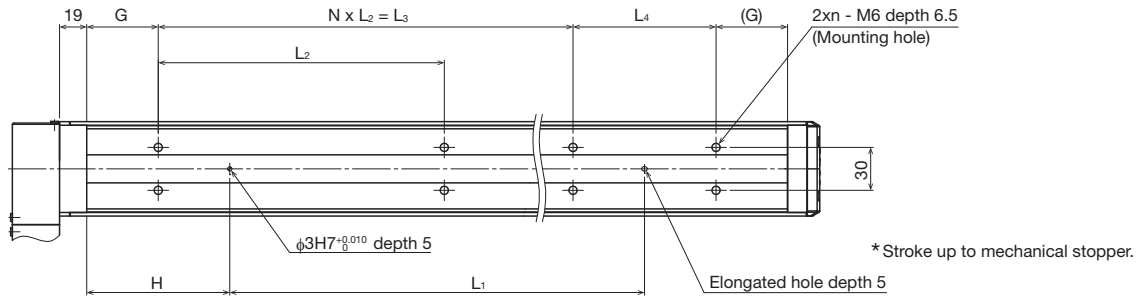
*1 The maximum speed is the value restricted by the motor rotational speed (at 3,000min-1), or by the permissible rotational speed of the ball screw.
*2 Values when a brake is installed are shown in parentheses.

KRF6R + THC

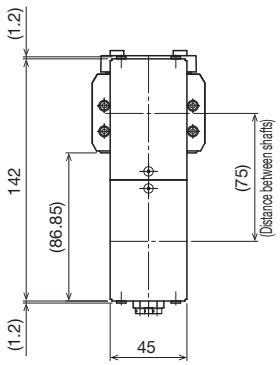
Motor rated output
100W

Dimensions

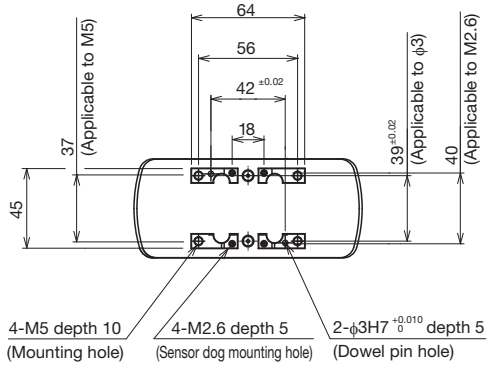




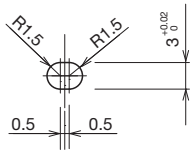
*Stroke up to mechanical stopper.



Bottom side wrap



Detailed Diagram: Table



Detailed Diagram: Elongated Hole

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 [mm/s]	Ball screw lead: 6 mm	300			260	220	200	170	150
	Ball screw lead: 10mm	500			440	380	330	290	260
Dimensions [mm]	AL	676	726	776	826	876	926	976	1026
	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 *2 [kg]		7.2(7.4)	7.7(7.9)	8.0(8.3)	8.5(8.7)	8.9(9.1)	9.3(9.5)	9.7(9.9)	10.1(10.3)

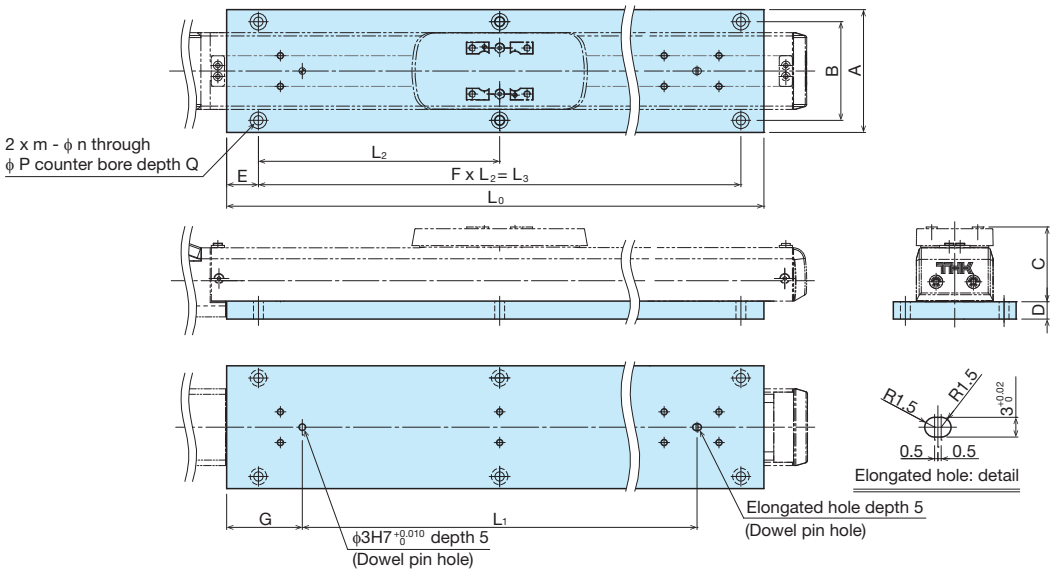
*1 The maximum speed is the value restricted by the motor rotational speed (at 3,000min-1), or by the permissible rotational speed of the ball screw.
*2 Values when a brake is installed are shown in parentheses.

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 / KRF4R	70	55	42.1	9.9
KRF5 / KRF5R	80	65	49.1	9.9
KRF6 / KRF6R	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.

Stroke		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
KRF3	L_0	145	195	245	295	345	395	–	–	–	–	–	–	–	–	–	–
	L_1	100	150	200	250	300	350	–	–	–	–	–	–	–	–	–	–
	L_2	120	85	110	135	105	120	–	–	–	–	–	–	–	–	–	–
	L_3	120	170	220	270	315	360	–	–	–	–	–	–	–	–	–	–
	E	14.5						–	–	–	–	–	–	–	–	–	–
	F	1	2	2	2	3	3	–	–	–	–	–	–	–	–	–	–
	G	24.5						–	–	–	–	–	–	–	–	–	–
	m	2	3	3	3	4	4	–	–	–	–	–	–	–	–	–	–
	n	4.5						–	–	–	–	–	–	–	–	–	–
	P	8						–	–	–	–	–	–	–	–	–	–
	Q	4.4						–	–	–	–	–	–	–	–	–	–
KRF4 KRF4R	L_0	142	192	242	292	342	392	–	–	–	–	–	–	–	–	–	–
	L_1	100	150	200	250	300	350	–	–	–	–	–	–	–	–	–	–
	L_2	120	85	110	90	105	120	–	–	–	–	–	–	–	–	–	–
	L_3	120	170	220	270	315	360	–	–	–	–	–	–	–	–	–	–
	E	14.5						–	–	–	–	–	–	–	–	–	–
	F	1	2	2	3	3	3	–	–	–	–	–	–	–	–	–	–
	G	24.5						–	–	–	–	–	–	–	–	–	–
	m	2	3	3	4	4	4	–	–	–	–	–	–	–	–	–	–
	n	4.5						–	–	–	–	–	–	–	–	–	–
	P	8						–	–	–	–	–	–	–	–	–	–
	Q	4.4						–	–	–	–	–	–	–	–	–	–
KRF5 KRF5R	L_0	180	230	280	330	380	430	480	530	580	630	680	–	–	–	–	–
	L_1	100	150	200	250	300	350	400	450	500	550	600	–	–	–	–	–
	L_2	140	100	120	140	115	130	110	120	135	120	130	–	–	–	–	–
	L_3	140	200	240	280	345	390	440	480	540	600	650	–	–	–	–	–
	E	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	39.5											–	–	–	–	–
	m	2	3	3	3	4	4	5	5	5	6	6	–	–	–	–	–
	n	4.5											–	–	–	–	–
	P	8											–	–	–	–	–
	Q	4.4											–	–	–	–	–
KRF6 KRF6R	L_0	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950
	L_1	100	150	200	200	250	250	300	350	400	450	500	550	600	650	700	750
	L_2	100	200	130	150	170	140	150	160	170	140	160	170	180	150	170	180
	L_3	100	200	260	300	340	420	450	480	510	560	640	680	720	750	850	900
	E	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	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															
	P	9.5															
	Q	5.4															

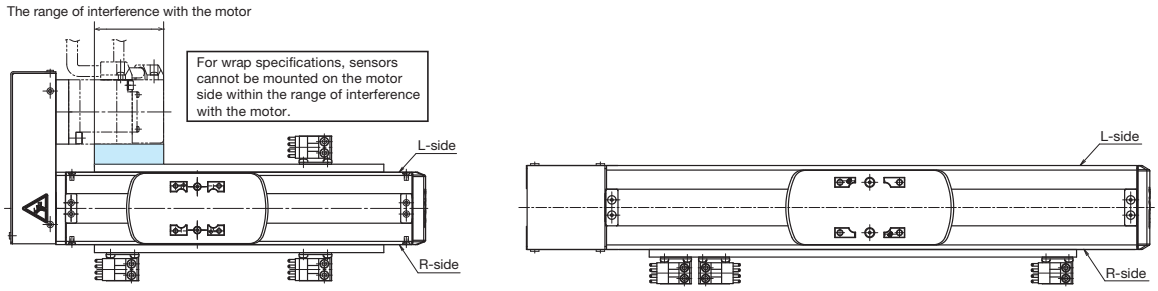
□1□2: Sensors

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 dog since it cannot be installed onto the actuator main unit. (Excluding KRF6)
Note 2) Sensor dog is provided with KRF6 only.
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, please prepare 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 * [x 3]	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.

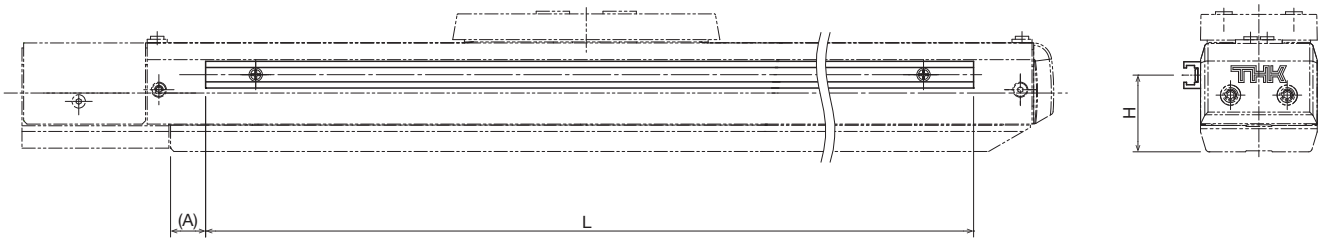


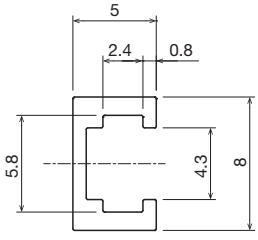
Option: Sensor symbol

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



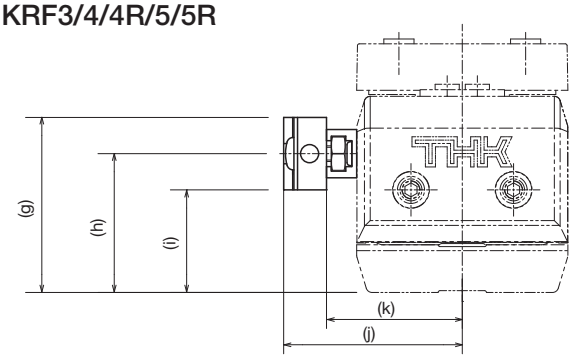


Unit: mm

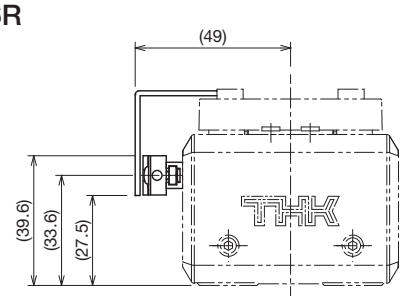
Model	H	(A)	L
KRF3	23	10.5	Stroke +80
KRF4/KRF4R	32.5	10.5	
KRF5/KRF5R	37.5	26	
KRF6/KRF6R	33.7	35	

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

KRF3/4/4R/5/5R



KRF6/6R



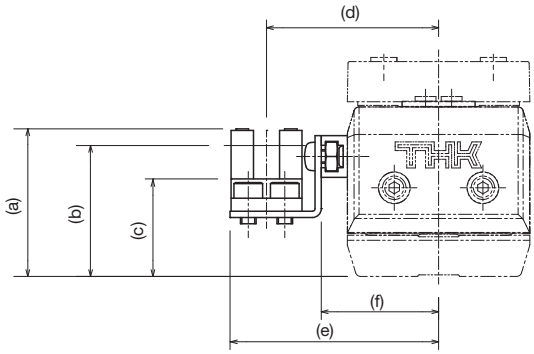
Sensor dog width: 26mm

Unit: mm

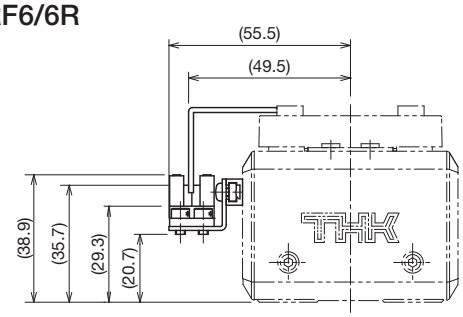
Model	g	h	i	j	k
KRF3	29	23	17	29.6	22.5
KRF4/KRF4R	38.5	32.5	26.5	34.6	27.5
KRF5/KRF5R	43.5	37.5	31.5	39.6	32.5

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

KRF3/4/4R/5/5R



KRF6/6R



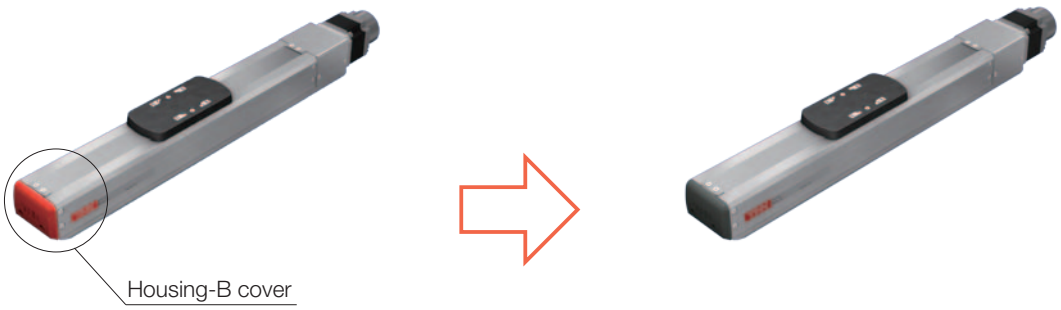
Sensor dog width: 26mm

Unit: mm

Model	a	b	c	d	e	f
KRF3	28.3	25.1	18.7	33	40	22.5
KRF4/KRF4R	37.8	34.6	28.2	38	45	27.5
KRF5/KRF5R	42.8	39.6	33.2	43	50	32.5

GR: Change the cover color to gray

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



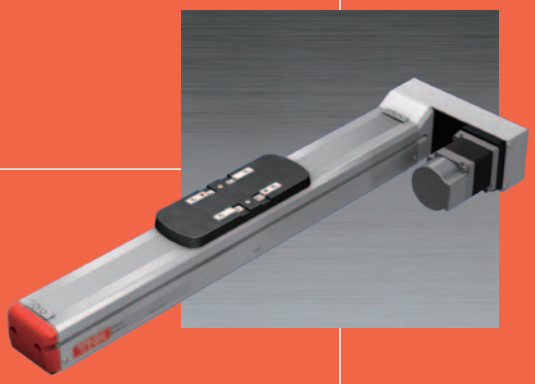
No symbol: red

When GR is selected: gray

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

Compact series

Model: KSF



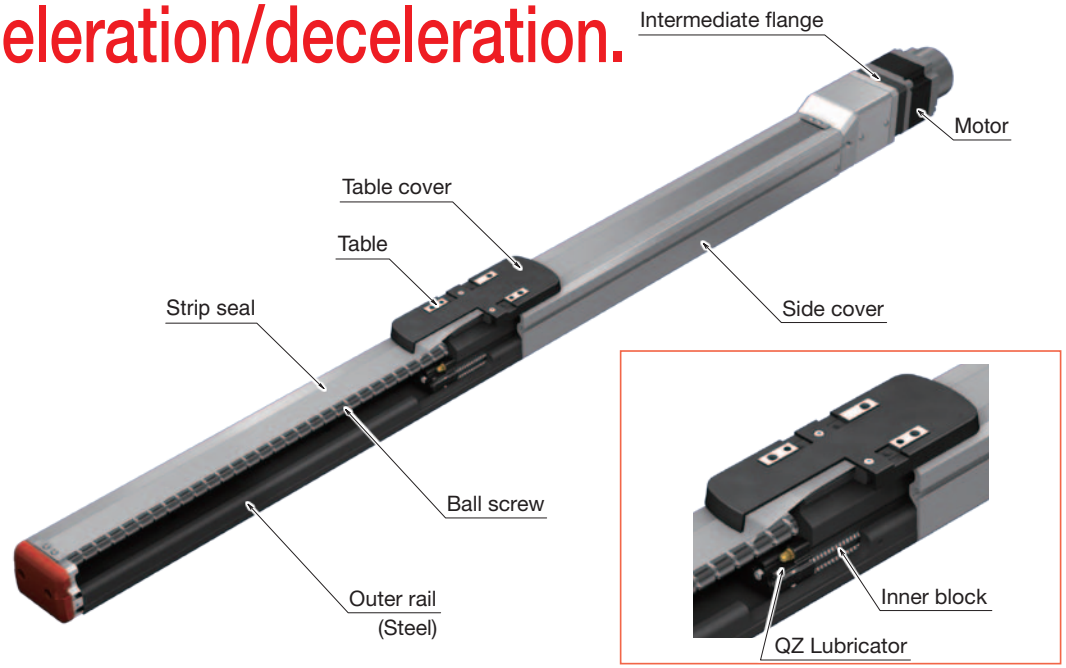
Corresponding Controller

Chapter 2

Compact series

KSF

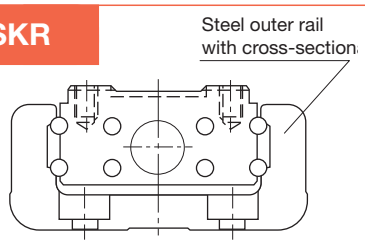
The adoption of a large diameter ball screw enables both long service life and improved process time via high-speed and high-acceleration/deceleration.



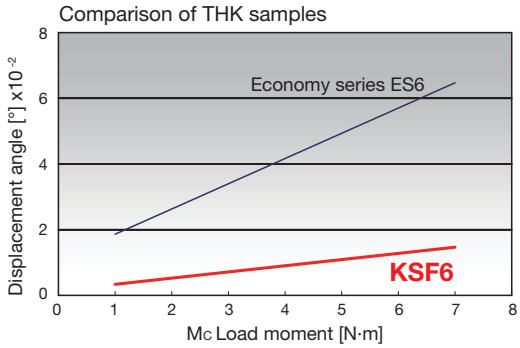
Features and Lineup of the Compact Series

Use of a steel outer rail with a cross-sectional U shape enables to receive larger moment.

KR/SKR



4-way equal loads, high rigidity



SKR

High Speed
Long service life
Caged

KSF

NEW

High speed &
high acceleration/
deceleration
Long stroke

KR

Basic Model of Compact Series
Versatile size options
Consistent seller

KRF

Fully enclosed
High Speed

Features

1 Increased Rated Output of the Applicable Motors

Ball screw shaft size was enlarged with the same compact outer rail unit. Shaft end was also enlarged which allows the use of larger size motors compared to THK actuators of the same size.
This allows high-speed, high-acceleration/deceleration operation which improves process time.

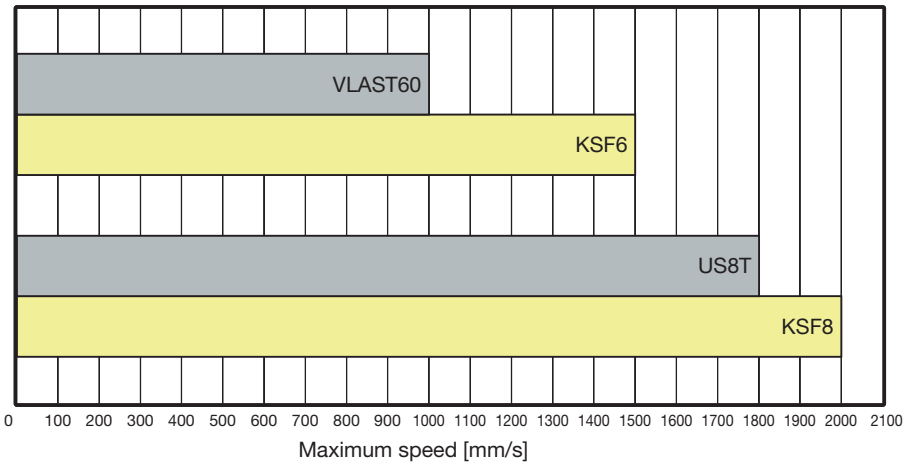
Model	Motor rated output (W)	Model	Motor rated output (W)	Model	Motor rated output (W)
KSF4, KSF5	**100**	**KSF6**	**200**	**KSF8**	**400**
VLAST45	30	VLAST60	100	US8T	150

2 High speed & high acceleration/deceleration

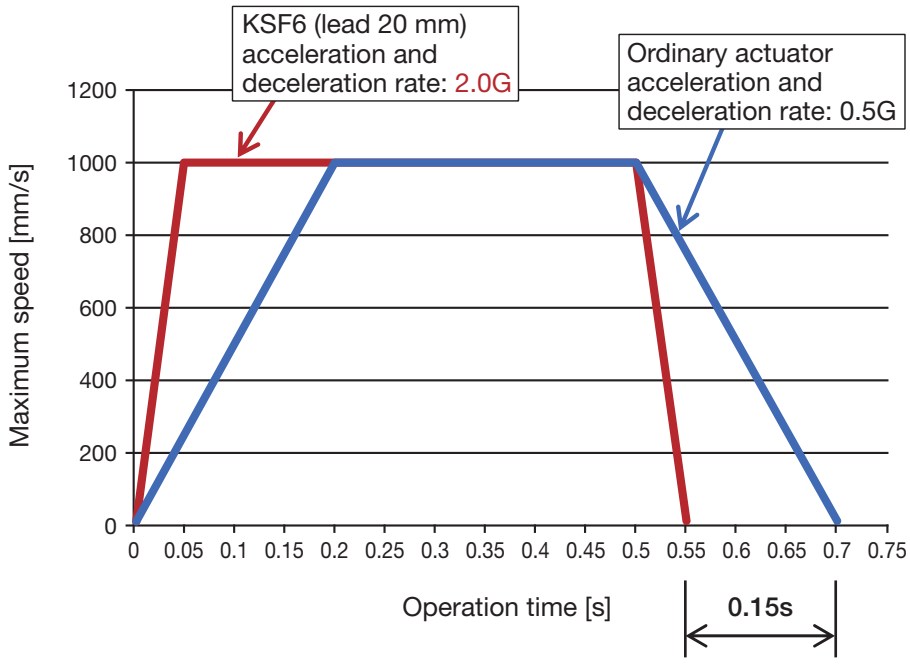
Maximum speed 2000 mm/s
Maximum acceleration/deceleration 2G

Larger lead of the ball screw has achieved the maximum speed of 2000 mm/s. (* When using KSF8 lead 40)
Using a larger rated output motor allows the high-acceleration/deceleration conveyance. (Up to 2G)

Max. speed comparison between KSF and other THK products



Reduced process time through high-acceleration operation



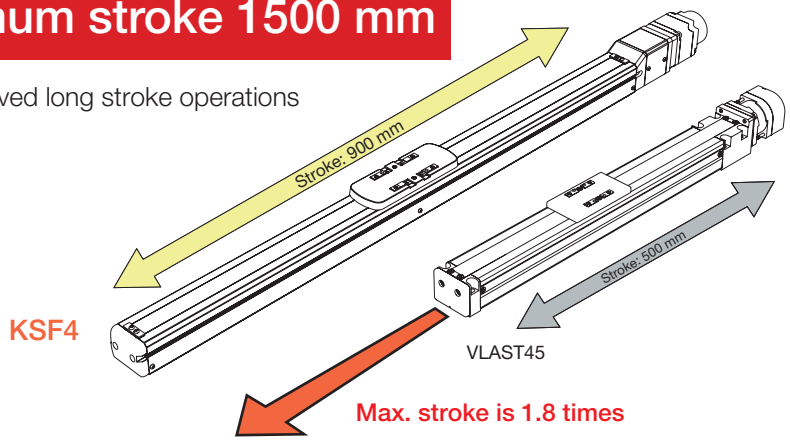
Process time reduced by 0.3 seconds per cycle (500 mm stroke)
Process time reduced by 30 seconds per 100 cycles, for roughly 20% increase in productivity

3 Long service life **20,000 km**

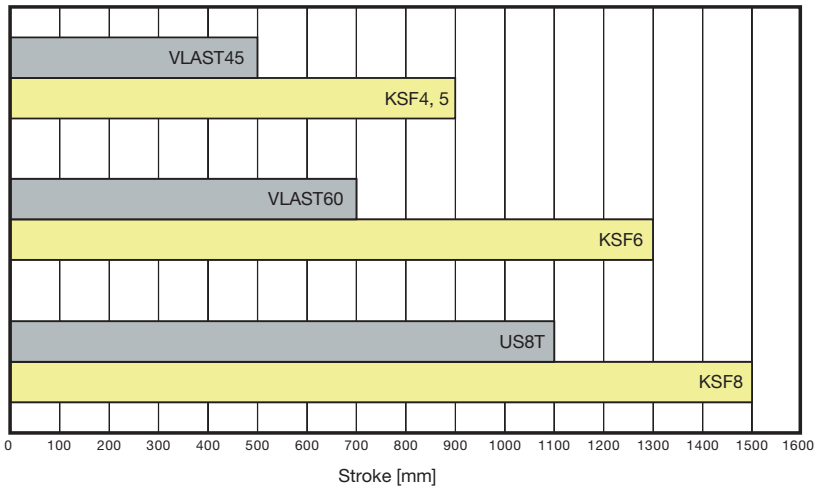
The long life of 20,000 km running life (10,000 km running life for KSF4 and KSF5 lead 10 mm) was made possible at the maximum load capacity by increasing the basic dynamic load rating of the LM guide unit and the ball screw unit.

4 Long stroke **Maximum stroke 1500 mm**

The larger ball screw shaft diameter has achieved long stroke operations while keeping the product compact.



Max. stroke comparison between KSF and other THK products



5 Long-term maintenance-free operation

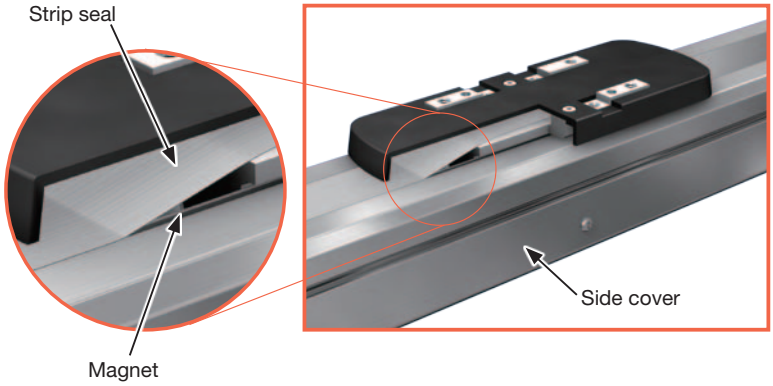
Lubricator QZ, which supplies the right amount of lubricant, adopted as the standard feature allows for long-term maintenance-free operations.

6 Fully enclosed design **Reduced dust generation**

Strip seals on the side cover and upper surface using magnetic attraction method provide a fully enclosed structure. It prevents failure due to foreign matter getting inside.
Avoiding sliding contact from the top surface of the strip seal allows low particle generation.

Magnetic attraction method

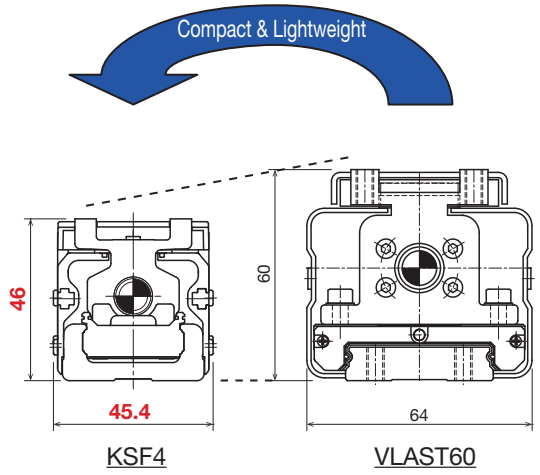
The magnet built in the side cover attracts the strip seal and prevents it from lifting, reducing the development of clearance.

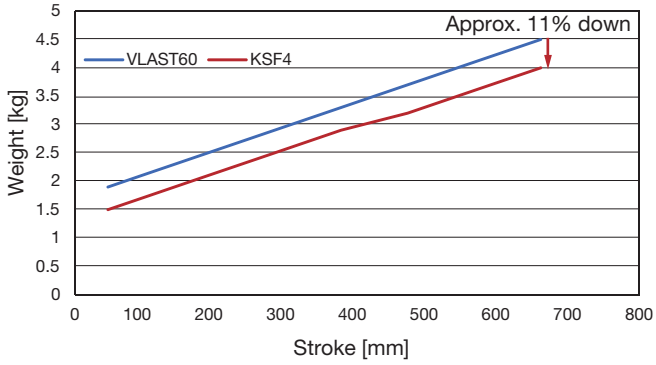


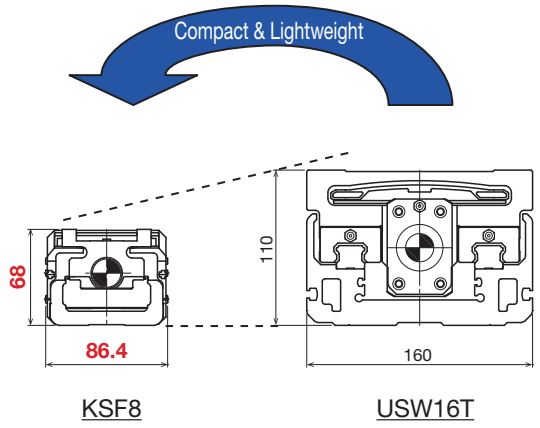
7 Compact & Lightweight

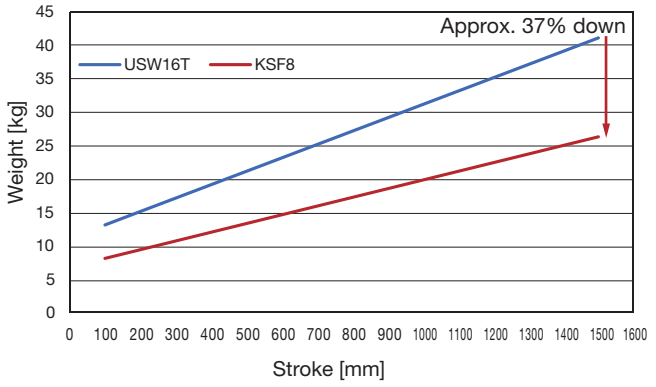
Sectional dimensions 67% down, weight 37% down

When compared with other THK actuators using motors of the same rated output, KSF4 is approximately 45% more compact and 11% lighter in weight than VLAST60 models, while KSF8 is approximately 67% more compact and 37% lighter in weight than USW16T models.
*KSF4: When the stroke is 700 mm
*KSF8: When the stroke is 1500 mm





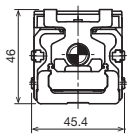
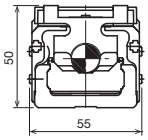
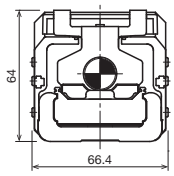
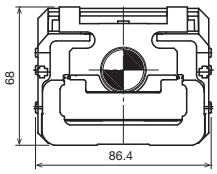
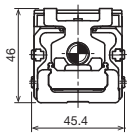
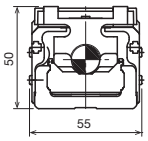
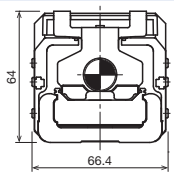
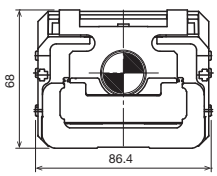




8 Versatile lineup

KSF5 and KSF8 have been added to the lineup for a total of 4 models. Furthermore, motor wrap type with compact length and back-tapped type that can be mounted without removing the cover have been added, allowing selection to suit the application.
Moreover, motors from various manufacturers can be mounted, allowing users to operate with familiarized control methods.

Product Lineup

Model	Cross section	Ball screw lead [mm]	Stroke [mm]	Motor rated output [W]	Acceleration and deceleration rate [G]	Maximum load capacity [kg]	
						Horizontal/Wall mount	Vertical mount
KSF4		10	50 to 900	100	0.5	12	8
					1.0	8	6
KSF5		10	50 to 900	100	0.5	20	13
					1.0	15	8
		20	50 to 900	100	1.0	7	6
					2.0	5	3
KSF6		20	50 to 1300	200	1.0	22	10
					2.0	5	3
		30	50 to 1300	200	1.0	14	6
					2.0	6	4
KSF8		20	100 to 1500	400	1.0	43	20
					2.0	6	3
		40	100 to 1500	400	1.0	16	8
					2.0	7	5
KSF4R		10	50 to 900	100	0.5	12	8
					1.0	8	6
KSF5R		10	50 to 900	100	0.5	20	11
					1.0	15	8
		20	50 to 900	100	1.0	7	5
					2.0	4	2.5
KSF6R		20	50 to 1300	200	1.0	19	9
					2.0	4	2.5
		30	50 to 1300	200	1.0	11	5
					2.0	4	2.5
KSF8R		20	100 to 1500	400	1.0	41	20
					2.0	6	3
		40	100 to 1500	400	1.0	16	8
					2.0	7	5

* The maximum speed is the value restricted by the motor rotational speed (at 3,000 min^{-1}) or by the permissible rotational speed of the ball screw.

Maximum speed for each stroke * [mm/s]																			
Stroke [mm]																			
~550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1400	1500		
500	430	370	320	290	250	230	200												
500		440	390	340	310	270	250												
1000		890	780	690	620	550	500												
1000			980	870	770	690	630	570	520	470	430	400	370	340	320				
1500			1470	1300	1160	1040	940	850	780	710	650	600	550	510	480				
1000				970		790		660		550		470		410		360	320		
2000				1940		1580		1320		1110		950		830		720	640		
500	430	370	320	290	250	230	200												
500		440	390	340	310	270	250												
1000		890	780	690	620	550	500												
1000			980	870	770	690	630	570	520	470	430	400	370	340	320				
1500			1470	1300	1160	1040	940	850	780	710	650	600	550	510	480				
1000				970		790		660		550		470		410		360	320		
2000				1940		1580		1320		1110		950		830		720	640		

Model Configuration

KSF (THC Specifications)
When combining with dedicated driver controller

Model	Ball screw lead	Stroke	Control device	Option
KSF4 -	10 -	0050 -	TH -	GR-6 /
(1)	(2)	(3)	(4)	(5)

(1) Model

- KSF4
- KSF5
- KSF6
- KSF8
- KSF4R
- KSF5R
- KSF6R
- KSF8R

R represents motor wrap.

(2) Ball screw lead

- 10: 10 mm
- 20: 20 mm
- 30: 30 mm
- 40: 40 mm

Ball screw leads you can select differ depending on models.
KSF4: "10"
KSF5: "10", "20"
KSF6: "20", "30"
KSF8: "20", "40"

(3) Stroke

Stroke and stroke pitch differ depending on models.
KSF4: 50 to 900 mm (in 50mm pitch increments)
KSF5: 50 to 900 mm (in 50mm pitch increments)
KSF6: 50 to 1300 mm (in 50mm pitch increments)
KSF8: 100 to 1500 mm (in 100mm pitch increments)

- 0050: 50 mm
- 0100: 100 mm
- 0150: 150 mm
- 0200: 200 mm
- 0250: 250 mm
- 0300: 300 mm
- 0350: 350 mm
- 0400: 400 mm
- 0450: 450 mm
- 0500: 500 mm
- 0550: 550 mm
- 0600: 600 mm
- 0650: 650 mm
- 0700: 700 mm
- 0750: 750 mm
- 0800: 800 mm
- 0850: 850 mm
- 0900: 900 mm
- 0950: 950 mm
- 1000: 1000 mm
- 1050: 1050 mm
- 1100: 1100 mm
- 1150: 1150 mm
- 1200: 1200 mm
- 1250: 1250 mm
- 1300: 1300 mm
- 1400: 1400 mm
- 1500: 1500 mm

(4) Control device

- TH: THC

Separate order for the control device is required.

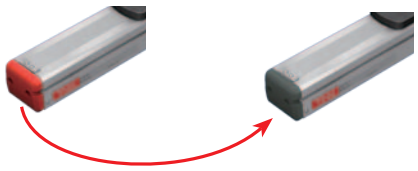
(5) Option

- No symbol: None
- MR: Motor right wrap*
- ML: Motor left wrap*
- MD: Motor down wrap*
- T: Back tap
- GR: Gray cover
- □: Sensors

Specify the optional symbol by writing in the order of description from left adding "-".
*Valid only when motor wrap is selected in model (1).

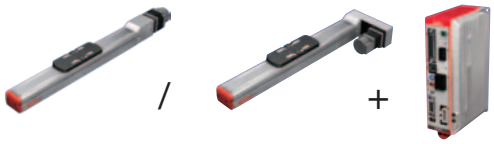
Change the cover color to gray
You can change the color of a housing cover to gray.

Standard: red | When GR is elected: gray



Pages for detailed description

(5) Option	
	T: Back tap → P.2-059
	Sensors → P.2-060
	GR: Change the cover color to gray → P.2-061



Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable length and type
M10	L	S02	D1	H3
(6)	(7)	(8)	(9)	(10)
M10: 100 W	R: Right	D00: Motor side	D1:100 V	No symbol: None
M20: 200 W	L: Left	R00: Reverse motor side	D2:200 V	F3: Standard 3m
M40: 400 W	U: Up	S02: Motor side (sensor right)		F5: Standard 5m
M10B: 100 W With brake	D: Down	S03: Reverse motor side (sensor right)		FA: Standard 10m
M20B: 200 W With brake		S20: Motor side (sensor left)		H3: High flex 3m
M40B: 400 W With brake		S30: Reverse motor side (sensor left)		H5: High flex 5m
				HA: High flex 10m

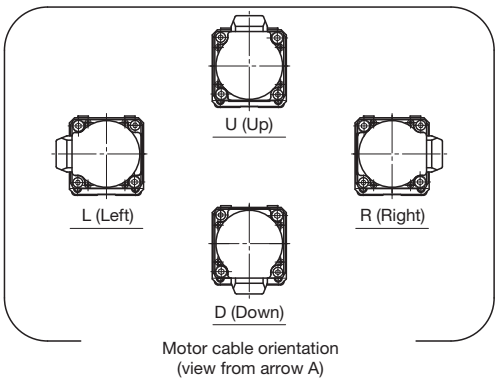
Motors you can select differ depending on models.
KSF4: “M10”, “M10B”
KSF5: “M10”, “M10B”
KSF6: “M20”, “M20B”
KSF8: “M40”, “M40B”

If you select “MR” as an option, “R” cannot be selected.
If you select “ML” as an option, “L” cannot be selected.
If you select “MD” as an option, “U” cannot be selected.

D00 and R00 are mechanical home seeking.
When motor wrap is selected, sensors cannot be mounted on the same side as the motor wrap direction.

Indicates the type and length of attached cables.

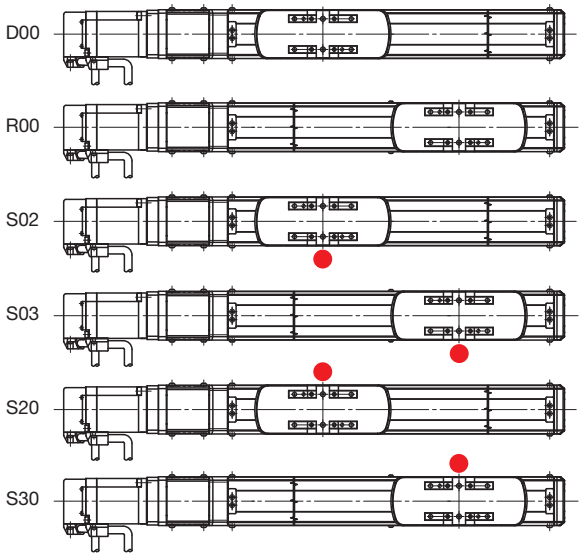
Motor cable orientation



Motor cable orientation
(view from arrow A)

Home position

●: Position of the external home position sensor



KSF4 THC Specifications

Model Configuration

Model	Ball screw lead	Stroke	Control device type	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
KSF4 -	10 -	0050 -	TH -	GR-6 /	M10	L	S02	D1	F3

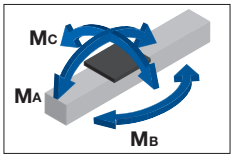
KSF4	10: 10mm	0050: 50mm to 0900: 900mm	TH: THC	No symbol: None T: Back tap GR: Change the cover color to gray 6: Photo sensor J: Proximity sensor	M10 : 100W M10B: 100W With brake	R : Right L : Left U : Up D : Down	D00 : Motor side R00 : Reverse motor side S02 : Motor side (sensor right) S03 : Reverse motor side (sensor right) S20 : Motor side (sensor left) S30 : Reverse motor side (sensor left)	D1: 100V D2: 200V	No symbol: None F3 : Standard 3m F5 : Standard 5m FA : Standard 10m H3 : High flex 3m H5 : High flex 5m HA : High flex 10m

Basic Specifications

Control device type				THC
Motor rated output [W]				100
Ball screw lead [mm]				10
Rated speed *1 [mm/s]				500
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal/ Wall mount	0.5G	12
			1.0G	8
		Vertical mount	0.5G	8
			1.0G	6
Rated thrust *3 [N]				180
Maximum thrust *4 [N]				537
Electromagnetic brake retention [N]				180
Running life *5 [km]				10,000
Positioning repeatability [mm]				±0.010
Lost motion [mm]				0.1
Static permissible moment *6 [N·m]				M_A: 103, M_B: 103, M_C: 58

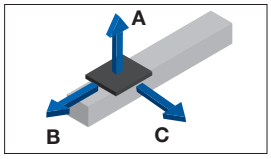
*1 At rated motor speed (3,000min^{-1}).
*2 At rated speed.
*3 At rated motor torque.
*4 The maximum thrust is a value at the maximum peak torque of the motor.
*5 The conditions for calculation are as follows:
Conditions: Horizontal mount, wall mount or vertical mount, under the maximum load capacity, stroke 500mm
*6 Applied point of moment load 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

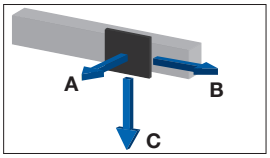


Permissible Overhang Length *

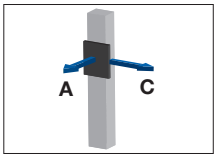
Horizontal use



Wall use



Vertical use



Acceleration and deceleration rate: 0.5G

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	3	400	210	350
	6	400	100	170
	12	260	45	80

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	3	320	190	400
	6	130	80	400
	12	45	25	210

Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
10	2	300	300
	4	140	140
	8	60	60

Acceleration and deceleration rate: 1.0G

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	2	400	330	400
	4	400	160	250
	8	250	70	120

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	2	400	310	400
	4	210	140	400
	8	80	50	230

Vertical mount [mm]

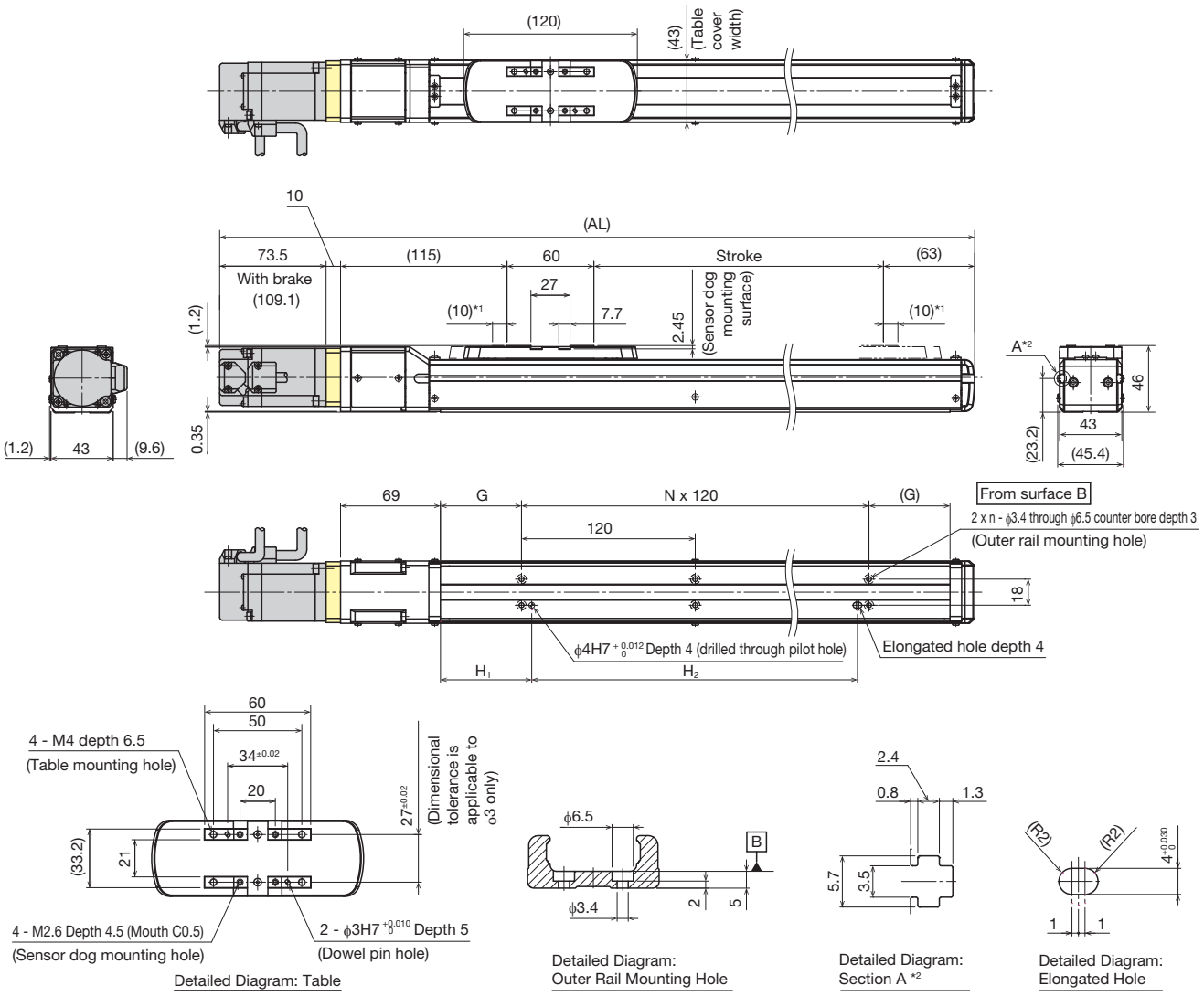
Ball screw lead [mm]	Load mass [kg]	A	C
10	1.5	400	400
	3	190	190
	6	80	80

* This value is the overhang length whose running life is 10,000 km for each direction.
A permissible value of the applied load in each direction.

KSF4 + THC

Motor rated output
100W

Dimensions



*1 Stroke up to mechanical stopper.
*2 The T slot in Section A is provided exclusively for sensor mounting. Do not use it for any other purpose.

Stroke [mm]		50	100	150	200	250	300	350	400	450
(Stroke between mechanical stoppers)		(70)	(120)	(170)	(220)	(270)	(320)	(370)	(420)	(470)
Maximum speed *1 [mm/s]	Ball screw lead: 10mm	500								
Dimensions *2 [mm]	AL	371.5(407.1)	421.5(457.1)	471.5(507.1)	521.5(557.1)	571.5(607.1)	621.5(657.1)	671.5(707.1)	721.5(757.1)	771.5(807.1)
	G	41	66	91	56	81	46	71	96	61
	H_1	48	48	48	63	63	63	48	48	48
	H_2	75	125	175	225	275	325	375	425	475
Mounting pitch count	N	1	1	1	2	2	3	3	3	4
Mounting hole count	n	2	2	2	3	3	4	4	4	5
Mass *2 [kg]		2.1(2.3)	2.3(2.5)	2.4(2.6)	2.6(2.8)	2.8(3.0)	3.0(3.2)	3.2(3.4)	3.4(3.6)	3.6(3.8)
Stroke [mm]		500	550	600	650	700	750	800	850	900
(Stroke between mechanical stoppers)		(520)	(570)	(620)	(670)	(720)	(770)	(820)	(870)	(920)
Maximum speed *1 [mm/s]	Ball screw lead: 10mm	500		430	370	320	290	250	230	200
Dimensions *2 [mm]	AL	821.5(857.1)	871.5(907.1)	921.5(957.1)	971.5(1007.1)	1021.5(1057.1)	1071.5(1107.1)	1121.5(1157.1)	1171.5(1207.1)	1221.5(1257.1)
	G	86	51	76	41	66	91	56	81	46
	H_1	63	63	63	48	48	48	63	63	63
	H_2	525	575	625	675	725	775	825	875	925
Mounting pitch count	N	4	5	5	6	6	6	7	7	8
Mounting hole count	n	5	6	6	7	7	7	8	8	9
Mass *2 [kg]		3.8(4.0)	4.0(4.2)	4.1(4.3)	4.3(4.5)	4.5(4.7)	4.7(4.9)	4.9(5.1)	5.1(5.3)	5.3(5.5)

*3 The maximum speed is the value restricted by the motor rotational speed (at 3,000min^{-1}), or by the permissible rotational speed of the ball screw.
*4 Values when a brake is installed are shown in parentheses.

KSF4R THC Specifications

Model Configuration

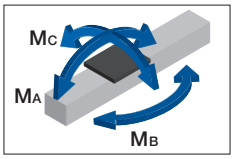
Model	Ball screw lead	Stroke	Control device	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable length and type
KSF4R -	10 -	0050 -	TH -	ML-GR-6 /	M10	R	S02	D1	F3
KSF4R	10: 10 mm	0050: 50 mm to 0900: 900 mm	TH: THC	MR: Motor right wrap ML: Motor left wrap MD: Motor down wrap T: Back tap GR: Change the cover color to gray 6: Photo sensor J: Proximity sensor	M10: 100 W M10B: 100 W With brake	R: Right L: Left U: Up D: Down	D00: Motor side R00: Reverse motor side S02: Motor side (sensor right) S03: Reverse motor side (sensor right) S20: Motor side (sensor left) S30: Reverse motor side (sensor left)	D1:100V D2: 200V	No symbol: None F3 : Standard 3m F5 : Standard 5m FA : Standard 10m H3 : High flex 3m H5 : High flex 5m HA: High flex 10m

Basic Specifications

Control device type			THC
Motor rated output [W]			100
Ball screw lead [mm]			10
Rated speed *1[mm/s]			500
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount 0.5G	12
		Horizontal mount 1.0G	8
		Vertical mount 0.5G	8
		Vertical mount 1.0G	6
Rated thrust *3 [N]			160
Maximum thrust *4 [N]			478
Electromagnetic brake retention [N]			160
Running life *5 [km]			10,000
Positioning repeatability [mm]			±0.010
Lost motion [mm]			0.1
Static permissible moment *6 [N·m]			MA: 103 MB: 103 MC: 58

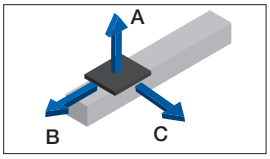
*1 At rated motor speed (3,000 min^{-1}).
*2 At rated speed
*3 At rated motor torque.
*4 The maximum thrust is a value at the maximum peak torque of the motor.
*5 The conditions for calculation are as follows:
Conditions: Horizontal mount, wall mount, or vertical mount, under the maximum load capacity, stroke 500 mm
*6 Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static Permissible Moment

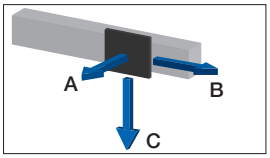


Permissible Overhang Length *

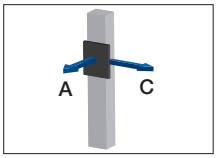
Horizontal use



Wall use



Vertical use



Acceleration and deceleration rate 0.5 G

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	3	400	210	350
	6	400	100	170
	12	260	45	80

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	3	320	190	400
	6	130	80	400
	12	45	25	210

Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
10	2	300	300
	4	140	140
	8	60	60

Acceleration and deceleration rate 1.0 G

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	2	400	330	400
	4	400	160	250
	8	250	70	120

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	2	400	310	400
	4	210	140	400
	8	80	50	230

Vertical mount [mm]

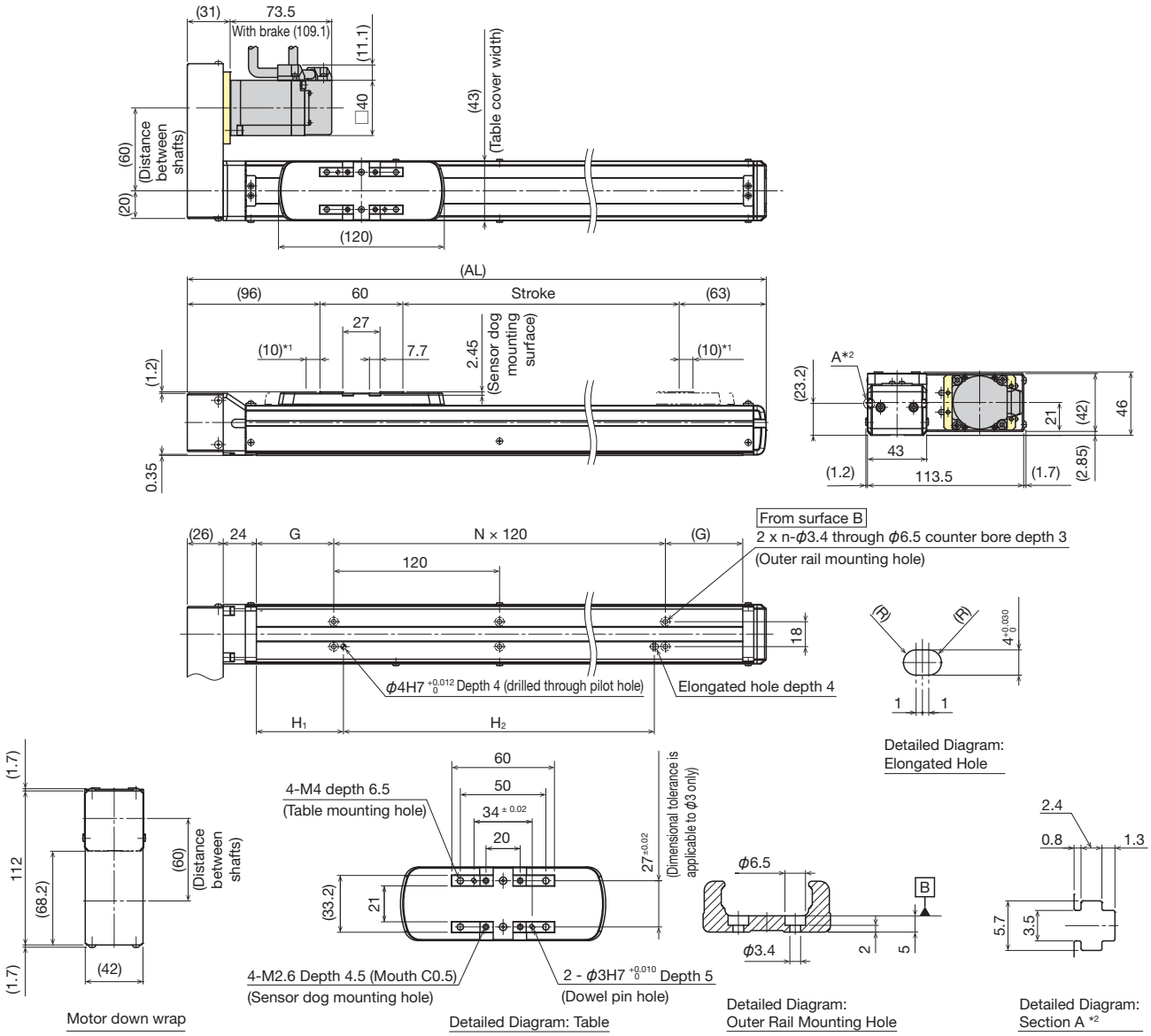
Ball screw lead [mm]	Load mass [kg]	A	C
10	1.5	400	400
	3	190	190
	6	80	80

* This value is the overhang length whose running life is 10,000 km for each direction.
A permissible value of the applied load in each direction.

KSF4R + THC

Motor rated output
100W

Dimensions



*1 Stroke up to mechanical stopper.
*2 The T slot in Section A is provided exclusively for sensor mounting. Do not use it for any other purpose.

Stroke [mm]		50	100	150	200	250	300	350	400	450
(Stroke between mechanical stoppers)		(70)	(120)	(170)	(220)	(270)	(320)	(370)	(420)	(470)
Maximum speed *3 [mm/s]	Ball screw lead: 10mm	500								
Dimensions [mm]	AL	269	319	369	419	469	519	569	619	669
	G	41	66	91	56	81	46	71	96	61
	H_1	48	48	48	63	63	63	48	48	48
	H_2	75	125	175	225	275	325	375	425	475
Mounting pitch count	N	1	1	1	2	2	3	3	3	4
Mounting hole count	n	2	2	2	3	3	4	4	4	5
Weight *4 [kg]		2.2(2.4)	2.4(2.6)	2.6(2.8)	2.8(3.0)	3.0(3.2)	3.2(3.4)	3.3(3.5)	3.5(3.7)	3.7(3.9)
Stroke [mm]		500	550	600	650	700	750	800	850	900
(Stroke between mechanical stoppers)		(520)	(570)	(620)	(670)	(720)	(770)	(820)	(870)	(920)
Maximum speed *3 [mm/s]	Ball screw lead: 10mm	500		430	370	320	290	250	230	200
Dimensions [mm]	AL	719	769	819	869	919	969	1019	1069	1119
	G	86	51	76	41	66	91	56	81	46
	H_1	63	63	63	48	48	48	63	63	63
	H_2	525	575	625	675	725	775	825	875	925
Mounting pitch count	N	4	5	5	6	6	6	7	7	8
Mounting hole count	n	5	6	6	7	7	7	8	8	9
Weight *4 [kg]		3.9(4.1)	4.1(4.3)	4.3(4.5)	4.5(4.7)	4.7(4.9)	4.9(5.1)	5.0(5.2)	5.2(5.4)	5.4(5.6)

*3 The maximum speed is the value restricted by the motor rotational speed (at 3,000 min^{-1}) or by the permissible rotational speed of the ball screw.
*4 Values when a brake is installed are shown in parentheses.

KSF5 THC Specifications

Model Configuration

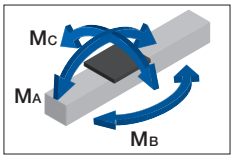
Model	Ball screw lead	Stroke	Control device	Option	Motor rated output	Motor Cable orientation	Home position	Power supply voltage	Cable length and type
KSF5 -	10 -	0050 -	TH -	GR-6 /	M10	L	S02	D1	F3
KSF5	10: 10 mm 20: 20 mm	0050: 50 mm to 0900: 900 mm	TH: THC	No symbol: None T: Back tap GR: Change the cover color to gray 6: Photo sensor J: Proximity sensor	M10: 100 W M10B: 100 W With brake	R: Right L: Left U: Up D: Down	D00: Motor side R00: Reverse motor side S02: Motor side (sensor right) S03: Reverse motor side (sensor right) S20: Motor side (sensor left) S30: Reverse motor side (sensor left)	D1: 100 V D2: 200 V	No symbol: None F3: Standard 3m F5: Standard 5m FA: Standard 10m H3: High flex 3m H5: High flex 5m HA: High flex 10m

Basic Specifications

Control device type				THC	
Motor rated output [W]				100	
Ball screw lead [mm]				10	20
Rated speed *1[mm/s]				500	1000
Maximum load capacity *2 [kg]	Acceleration/ deceleration Rate	Horizontal mount	0.5G	20	–
			1.0G	15	7
			2.0G	–	5
		Vertical mount	0.5G	13	–
			1.0G	8	6
			2.0G	–	3
Rated thrust *3 [N]				180	90
Maximum thrust *4 [N]				537	269
Electromagnetic brake retention [N]				180	90
Running life *5 [km]				10,000	20,000
Positioning repeatability [mm]				±0.010	
Lost motion [mm]				0.1	
Static permissible moment *6 [N·m]				MA: 147 MB: 147 MC: 149	

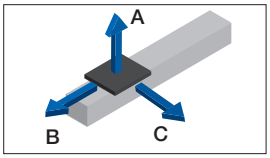
*1 At rated motor speed (3,000 min^{-1}).
*2 At rated speed.
*3 At rated motor torque.
*4 The maximum thrust is a value at the maximum peak torque of the motor.
*5 The conditions for calculation are as follows:
Conditions: Horizontal mount, wall mount, or vertical mount, under the maximum load capacity, stroke 500 mm
*6 Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static Permissible Moment

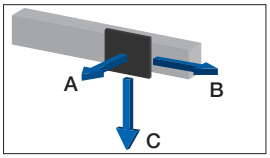


Permissible Overhang Length *

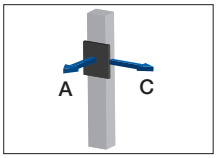
Horizontal use



Wall use



Vertical use



Acceleration and deceleration rate Lead 10 mm: 0.5 G, lead 20 mm: 1.0 G

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	5	500	210	420
	10	500	100	200
	20	250	40	90
20	1.75	500	490	500
	3.5	500	240	340
	7	230	110	170

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	5	390	190	500
	10	170	80	500
	20	60	30	210
20	1.75	500	470	500
	3.5	300	220	480
	7	130	90	210

Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
10	3.25	300	300
	6.5	140	140
	13	50	50
20	1.5	470	470
	3	220	220
	6	90	90

Acceleration and deceleration rate Lead 10 mm: 1.0 G, lead 20 mm: 2.0 G

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	3.75	500	280	500
	7.5	460	130	260
	15	210	60	120
20	1.25	500	500	500
	2.5	440	340	380
	5	200	160	190

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	3.75	490	260	500
	7.5	220	120	450
	15	90	40	190
20	1.25	500	500	500
	2.5	330	320	430
	5	150	140	190

Vertical mount [mm]

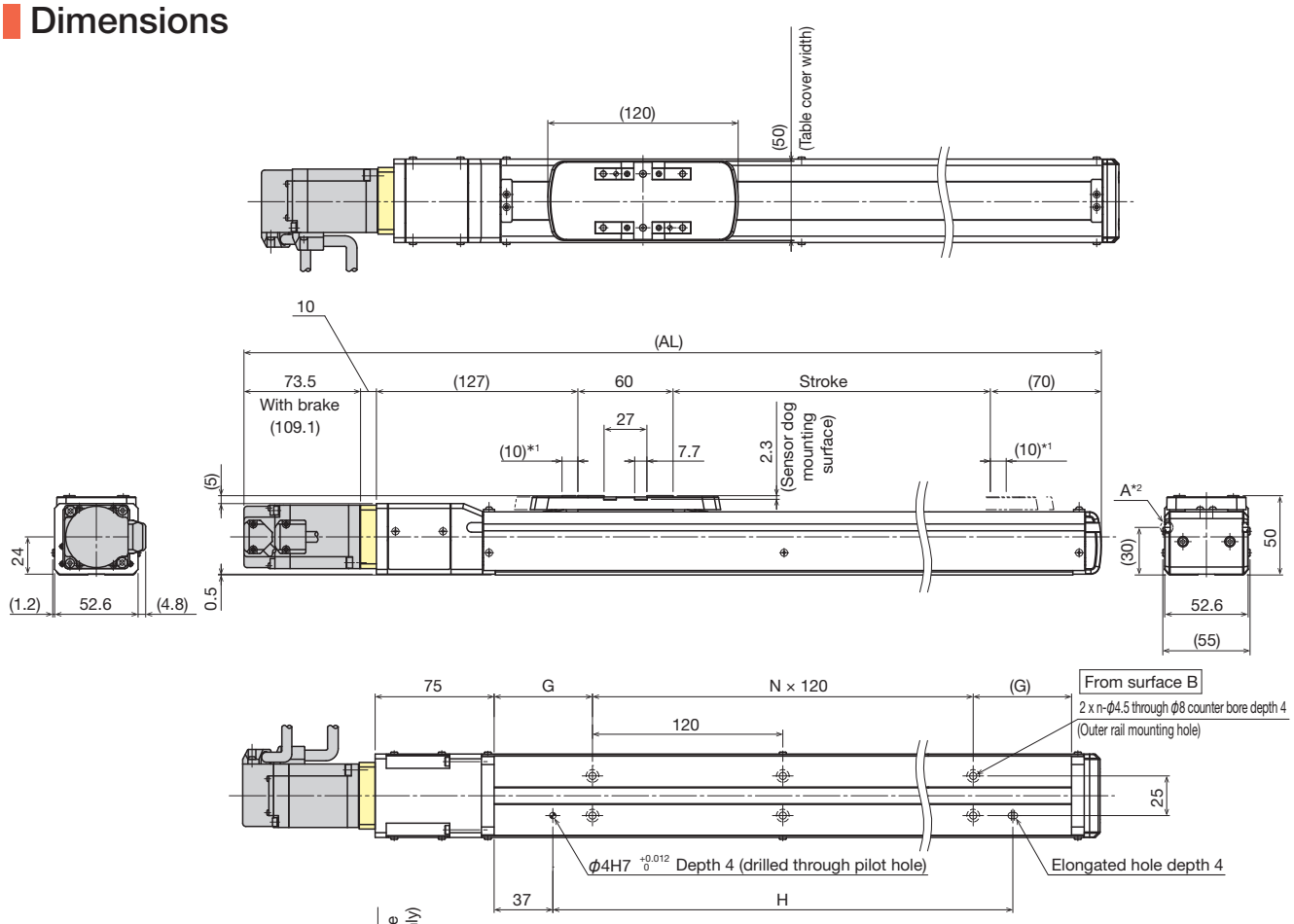
Ball screw lead [mm]	Load mass [kg]	A	C
10	2	500	500
	4	230	230
	8	100	100
20	0.75	500	500
	1.5	410	410
	3	190	190

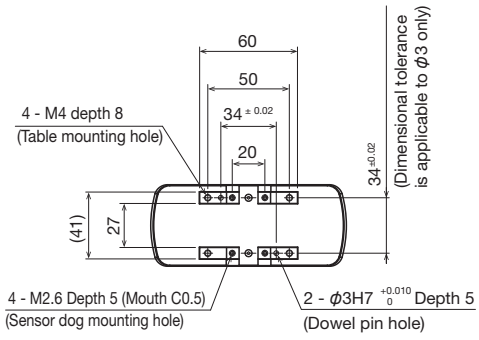
* This value is the overhang length whose running life is 10,000 km (20,000 km for lead 20 mm) for each direction.
A permissible value of the applied load in each direction.

KSF5 + THC

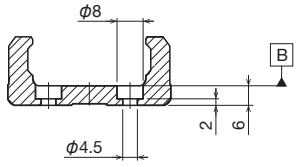
Motor rated output
100W

Dimensions

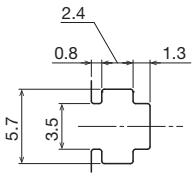




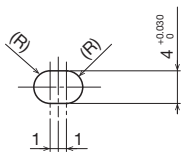
Detailed Diagram: Table



Detailed Diagram:
Outer Rail Mounting Hole



Detailed Diagram:
Section A *2



Detailed Diagram:
Elongated Hole

*1 Stroke up to mechanical stopper.

*2 The T slot in Section A is provided exclusively for sensor mounting. Do not use it for any other purpose.

Stroke [mm] (Stroke between mechanical stoppers)		50 (70)	100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)
Maximum speed *3 [mm/s]	Ball screw lead: 10 mm	500								
	Ball screw lead: 20 mm	1000								
Dimensions *4 [mm]	AL	390.5(426.1)	440.5(476.1)	490.5(526.1)	540.5(576.1)	590.5(626.1)	640.5(676.1)	690.5(726.1)	740.5(776.1)	790.5(826.1)
	G	47	72	97	62	87	52	77	102	67
	H	140	190	240	290	340	390	440	490	540
Mounting pitch count	N	1	1	1	2	2	3	3	3	4
Mounting hole count	n	2	2	2	3	3	4	4	4	5
Weight *4 [kg]		2.8(3.0)	3.1(3.3)	3.4(3.6)	3.7(3.9)	3.9(4.1)	4.2(4.4)	4.5(4.7)	4.8(5.0)	5.1(5.3)
Stroke [mm] (Stroke between mechanical stoppers)		500 (520)	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)	850 (870)	900 (920)
Maximum speed *3 [mm/s]	Ball screw lead: 10 mm	500			440	390	340	310	270	250
	Ball screw lead: 20 mm	1000			890	780	690	620	550	500
Dimensions *4 [mm]	AL	840.5(876.1)	890.5(926.1)	940.5(976.1)	990.5(1026.1)	1040.5(1076.1)	1090.5(1126.1)	1140.5(1176.1)	1190.5(1226.1)	1240.5(1276.1)
	G	92	57	82	47	72	97	62	87	52
	H	590	640	690	740	790	840	890	940	990
Mounting pitch count	N	4	5	5	6	6	6	7	7	8
Mounting hole count	n	5	6	6	7	7	7	8	8	9
Weight *4 [kg]		5.3(5.5)	5.6(5.8)	5.9(6.1)	6.2(6.4)	6.5(6.7)	6.7(6.9)	7.0(7.2)	7.3(7.5)	7.6(7.8)

*3 The maximum speed is the value restricted by the motor rotational speed (at 3,000 min^{-1}) or by the permissible rotational speed of the ball screw.

*4 Values when a brake is installed are shown in parentheses.

KSF5R THC Specifications

Model Configuration

Model	Ball screw lead	Stroke	Control device	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable length and type
KSF5R -	10 -	0050 -	TH -	ML-GR-6 /	M10	R	S02	D1	F3

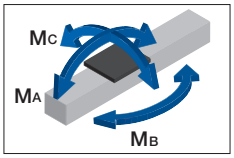
KSF5R	10: 10 mm 20: 20 mm	0050: 50 mm to 0900: 900 mm	TH: THC	MR : Motor right wrap ML : Motor left wrap MD : Motor down wrap T : Back tap GR : Change the cover color to gray 6 : Photo sensor J : Proximity sensor	M10: 100 W M10B: 100 W With brake	R: Right L: Left U: Up D: Down	D00: Motor side R00: Reverse motor side S02: Motor side (sensor right) S03: Reverse motor side (sensor right) S20: Motor side (sensor left) S30: Reverse motor side (sensor left)	D1: 100 V D2: 200 V	No symbol: None F3: Standard 3m F5: Standard 5m FA: Standard 10m H3: High flex 3m H5: High flex 5m HA: High flex 10m

Basic Specifications

Control device type				THC	
Motor rated output [W]				100	
Ball screw lead [mm]				10	20
Rated speed *1[mm/s]				500	1000
Maximum load capacity *2 [kg]	Acceleration/deceleration Rate	Horizontal mount	0.5G	20	–
			1.0G	15	7
			2.0G	–	4
		Vertical mount	0.5G	11	–
			1.0G	8	5
			2.0G	–	2.5
Rated thrust *3 [N]				160	80
Maximum thrust *4 [N]				478	239
Electromagnetic brake retention [N]				160	80
Running life *5 [km]				10,000	20,000
Positioning repeatability [mm]				±0.010	
Lost motion [mm]				0.1	
Static permissible moment *6 [N·m]				MA: 147 MB: 147 MC: 149	

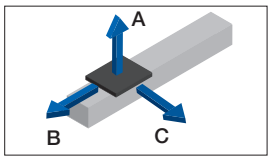
*1 At rated motor speed (3,000 min^{-1}).
*2 At rated speed.
*3 At rated motor torque.
*4 The maximum thrust is a value at the maximum peak torque of the motor.
*5 The conditions for calculation are as follows:
Conditions: Horizontal mount, wall mount, or vertical mount, under the maximum load capacity, stroke 500 mm
*6 Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static Permissible Moment

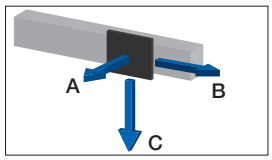


Permissible Overhang Length *

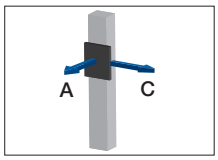
Horizontal use



Wall use



Vertical use



Acceleration and deceleration rate Lead 10 mm: 0.5 G, lead 20 mm: 1.0 G

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	5	500	210	420
	10	500	100	200
	20	250	40	90
20	1.75	500	490	500
	3.5	500	240	340
	7	230	110	170

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	5	390	190	500
	10	170	80	500
	20	60	30	210
20	1.75	500	470	500
	3.5	300	220	480
	7	130	90	210

Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
10	2.75	360	360
	5.5	170	170
	11	70	70
20	1.25	500	500
	2.5	270	270
	5	120	120

Acceleration and deceleration rate Lead 10 mm: 1.0 G, lead 20 mm: 2.0 G

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	3.75	500	280	500
	7.5	460	130	260
	15	210	60	120
20	1	500	500	500
	2	500	420	480
	4	260	210	240

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
10	3.75	490	260	500
	7.5	220	120	450
	15	90	40	190
20	1	500	500	500
	2	430	410	500
	4	190	190	250

Vertical mount [mm]

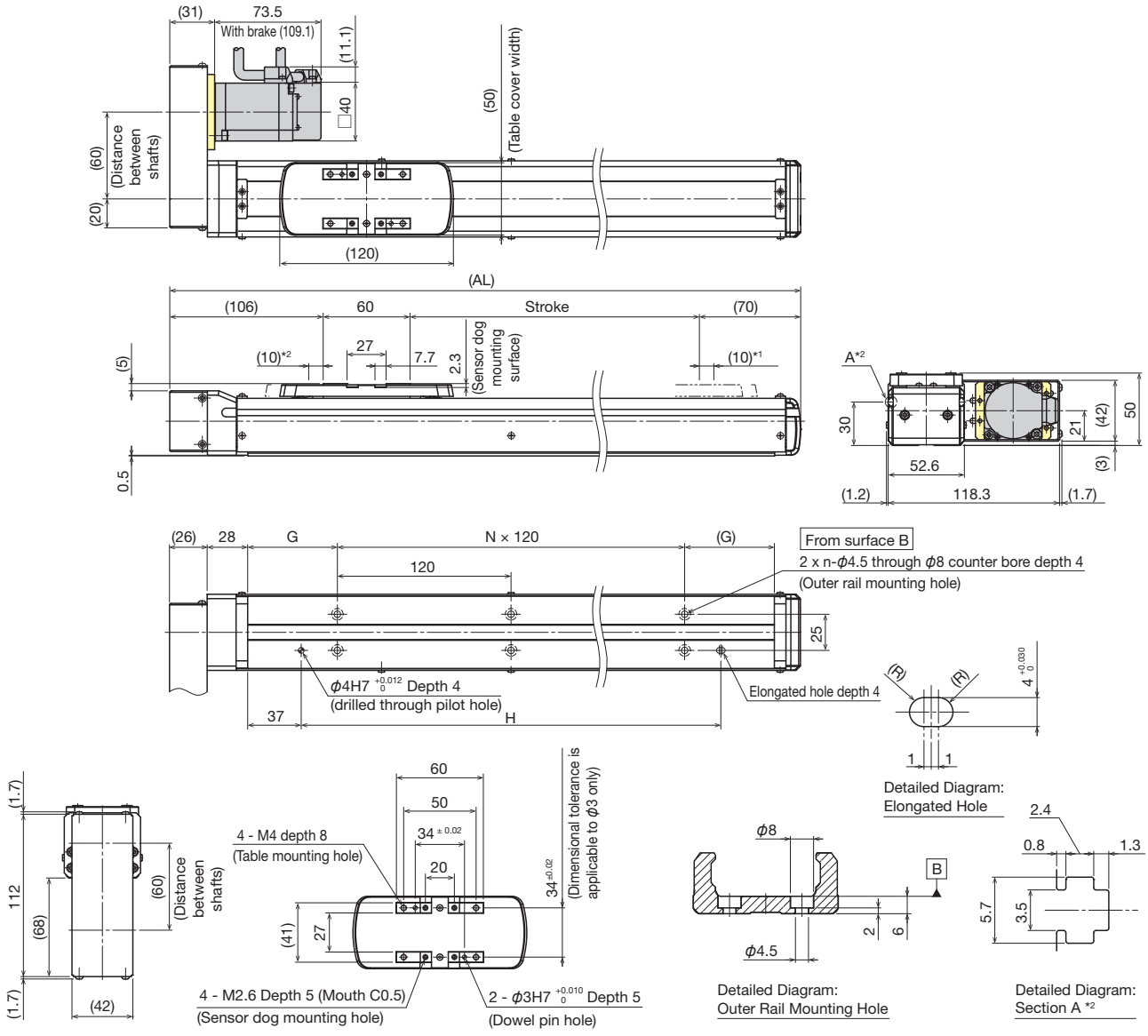
Ball screw lead [mm]	Load mass [kg]	A	C
10	2	500	500
	4	230	230
	8	100	100
20	0.63	500	500
	1.25	500	500
	2.5	240	240

* This value is the overhang length whose running life is 10,000 km (20,000 km for lead 20 mm) for each direction.
A permissible value of the applied load in each direction.

KSF5R + THC

Motor rated output
100W

Dimensions



*1 Stroke up to mechanical stopper.

*2 The T slot in Section A is provided exclusively for sensor mounting. Do not use it for any other purpose.

Stroke [mm] (Stroke between mechanical stoppers)		50 (70)	100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)
Maximum speed *3 [mm/s]	Ball screw lead: 10 mm	500								
	Ball screw lead: 20 mm	1000								
Dimensions [mm]	AL	286	336	386	436	486	536	586	636	686
	G	47	72	97	62	87	52	77	102	67
	H	140	190	240	290	340	390	440	490	540
Mounting pitch count	N	1	1	1	2	2	3	3	3	4
Mounting hole count	n	2	2	2	3	3	4	4	4	5
Weight *4 [kg]		2.9(3.1)	3.2(3.4)	3.5(3.7)	3.8(4.0)	4.0(4.2)	4.3(4.5)	4.6(4.8)	4.9(5.1)	5.2(5.4)
Stroke [mm] (Stroke between mechanical stoppers)		500 (520)	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)	850 (870)	900 (920)
Maximum speed *3 [mm/s]	Ball screw lead: 10 mm	500			440	390	340	310	270	250
	Ball screw lead: 20 mm	1000			890	780	690	620	550	500
Dimensions [mm]	AL	736	786	836	886	936	986	1036	1086	1136
	G	92	57	82	47	72	97	62	87	52
	H	590	640	690	740	790	840	890	940	990
Mounting pitch count	N	4	5	5	6	6	6	7	7	8
Mounting hole count	n	5	6	6	7	7	7	8	8	9
Weight *4 [kg]		5.4(5.6)	5.7(5.9)	6.0(6.2)	6.3(6.5)	6.5(6.7)	6.8(7.0)	7.1(7.3)	7.4(7.6)	7.7(7.9)

*3 The maximum speed is the value restricted by the motor rotational speed (at 3,000 min^{-1}) or by the permissible rotational speed of the ball screw.

*4 Values when a brake is installed are shown in parentheses.

KSF6 THC Specifications

Model Configuration

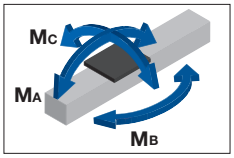
Model	Ball screw lead	Stroke	Control device type	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
KSF6 -	20 -	0650 -	TH -	GR-6 /	M20	L	S02	D1	F3
KSF6	20: 20mm 30: 30mm	0050: 50mm to 1300: 1300mm	TH: THC	No symbol: None T: Back tap GR: Change the cover color to gray 6: Photo sensor J: Proximity sensor	M20 : 200W M20B: 200W With brake	R : Right L : Left U : Up D : Down	D00: Motor side R00 : Reverse motor side S02 : Motor side (sensor right) S03 : Reverse motor side (sensor right) S20 : Motor side (sensor left) S30 : Reverse motor side (sensor left)	D1: 100V D2: 200V	No symbol: None F3 : Standard 3m F5 : Standard 5m FA : Standard 10m H3 : High flex 3m H5 : High flex 5m HA : High flex 10m

Basic Specifications

Control device type			THC	
Motor rated output [W]			200	
Ball screw lead [mm]			20	30
Rated speed *1 [mm/s]			1,000	1,500
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal/ Wall mount 1.0G	22	14
		Horizontal/ Wall mount 2.0G	5	6
		Vertical mount 1.0G	10	6
		Vertical mount 2.0G	3	4
Rated thrust *3 [N]			181	121
Maximum thrust *4 [N]			540	360
Electromagnetic brake retention [N]			359	239
Running life *5 [km]			20,000	
Positioning repeatability [mm]			±0.010	
Lost motion [mm]			0.1	
Static permissible moment *6 [N·m]			M_A: 330,	M_B: 216, M_C: 188

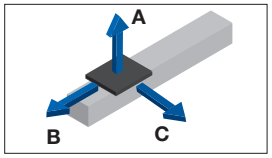
*1 At rated motor speed (3,000min^{-1}).
*2 At rated speed.
*3 At rated motor torque.
*4 The maximum thrust is a value at the maximum peak torque of the motor.
*5 The conditions for calculation are as follows:
Conditions: Horizontal mount, wall mount or vertical mount, under the maximum load capacity, stroke 500mm
*6 Applied point of moment load 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

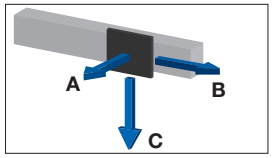


Permissible Overhang Length *

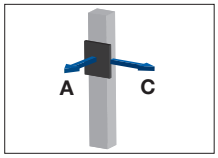
Horizontal use



Wall use



Vertical use



Acceleration and deceleration rate: 1.0G

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
20	5.5	600	340	470
	11	330	160	230
	22	140	70	110
30	3.5	600	430	480
	7	320	210	240
	14	140	90	120

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
20	5.5	420	310	600
	11	180	140	310
	22	60	50	120
30	3.5	430	400	600
	7	190	180	290
	14	70	70	110

Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
20	2.5	600	600
	5	300	300
	10	130	130
30	1.5	600	600
	3	350	350
	6	160	160

Acceleration and deceleration rate: 2.0G

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
20	1.25	600	600	600
	2.5	600	600	600
	5	480	370	420
30	1.5	600	600	600
	3	490	500	440
	6	230	240	220

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
20	1.25	600	600	600
	2.5	600	600	600
	5	360	350	470
30	1.5	600	600	600
	3	380	470	480
	6	170	210	210

Vertical mount [mm]

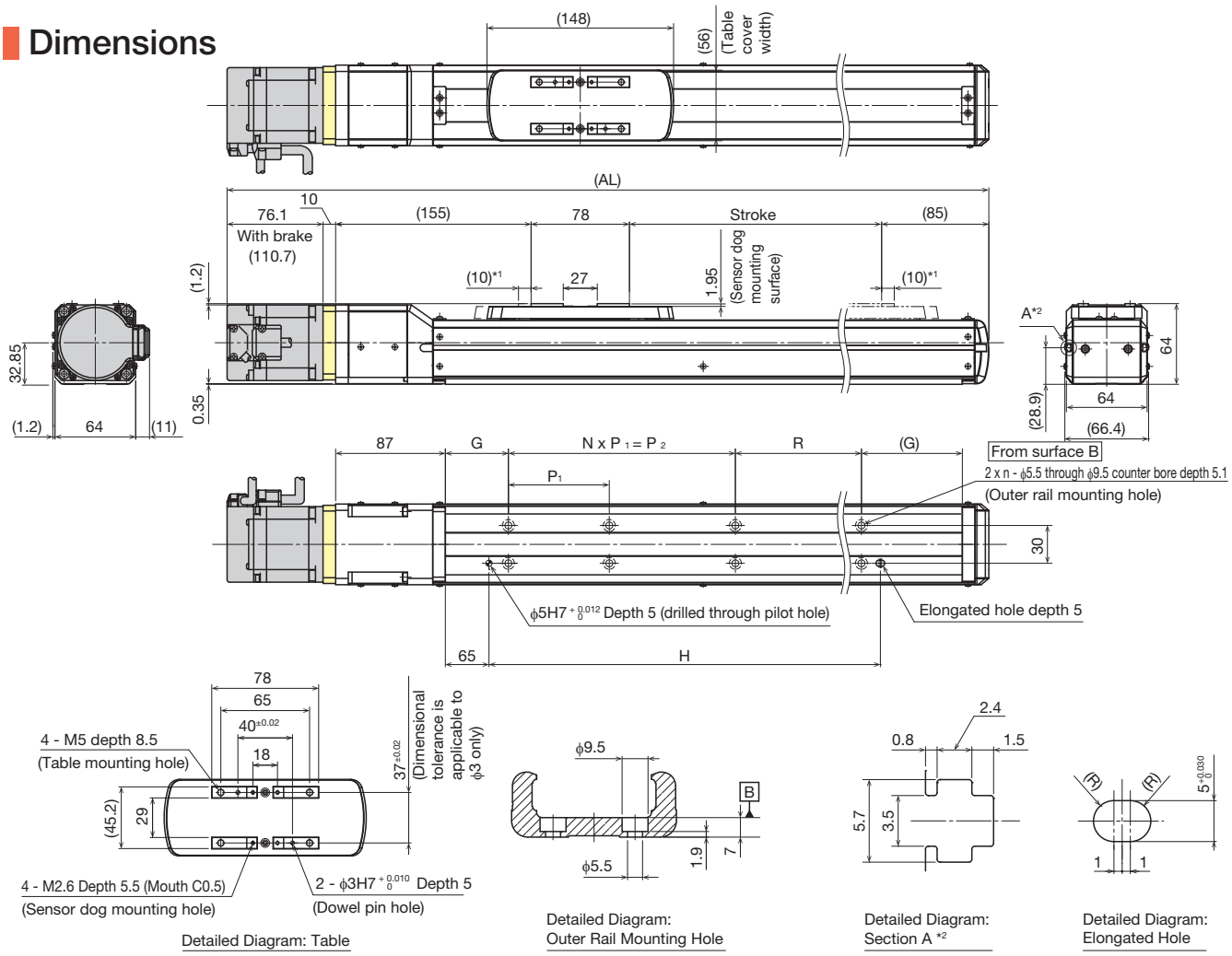
Ball screw lead [mm]	Load mass [kg]	A	C
20	0.75	600	600
	1.5	600	600
	3	460	460
30	1	600	600
	2	460	460
	4	210	210

* This value is the overhang length whose running life is 20,000 km for each direction.
A permissible value of the applied load in each direction.

KSF6 + THC

Motor rated output
200W

Dimensions



Detailed Diagram: Table

Detailed Diagram:
Outer Rail Mounting Hole

Detailed Diagram:
Section A *2

Detailed Diagram:
Elongated Hole

*1 Stroke up to mechanical stopper.
*2 The T slot in Section A is provided exclusively for sensor mounting.
Do not use it for any other purpose.

Stroke [mm]			50	100	150	200	250	300	350	400	450	500	550	600	650
(Stroke between mechanical stoppers)			(70)	(120)	(170)	(220)	(270)	(320)	(370)	(420)	(470)	(520)	(570)	(620)	(670)
Maximum speed *3 [mm/s]	Ball screw lead	20mm	1000												
		30mm	1500												
Dimensions *4 [mm]	AL		454.1 (488.7)	504.1 (538.7)	554.1 (588.7)	604.1 (638.7)	654.1 (688.7)	704.1 (738.7)	754.1 (788.7)	804.1 (838.7)	854.1 (888.7)	904.1 (938.7)	954.1 (988.7)	1004.1 (1038.7)	1054.1 (1088.7)
	G		80	105	80	105	80	105	80	105	80	105	80	105	80
	P_1		100	100	200	200	200	200	200	200	200	200	200	200	200
	P_2		–	–	–	–	–	–	400	400	400	400	600	600	600
	R		–	–	–	–	100	100	–	–	100	100	–	–	100
	H		130	180	230	280	330	380	430	480	530	580	630	680	730
Mounting pitch count	N		–	–	–	–	–	–	2	2	2	2	3	3	3
Mounting hole count	n		2	2	2	2	3	3	3	3	4	4	4	4	5
Mass *4 [kg]			4.9(5.4)	5.3(5.8)	5.7(6.2)	6.0(6.5)	6.4(6.9)	6.8(7.3)	7.2(7.7)	7.6(8.1)	8.0(8.5)	8.4(8.9)	8.8(9.3)	9.1(9.6)	9.5(10.0)
Stroke [mm]			700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300
(Stroke between mechanical stoppers)			(720)	(770)	(820)	(870)	(920)	(970)	(1020)	(1070)	(1120)	(1170)	(1220)	(1270)	(1320)
Maximum speed *3 [mm/s]	Ball screw lead	20mm	980	870	770	690	630	570	520	470	430	400	370	340	320
		30mm	1470	1300	1160	1040	940	850	780	710	650	600	550	510	480
Dimensions *4 [mm]	AL		1104.1 (1138.7)	1154.1 (1188.7)	1204.1 (1238.7)	1254.1 (1288.7)	1304.1 (1338.7)	1354.1 (1388.7)	1404.1 (1438.7)	1454.1 (1488.7)	1504.1 (1538.7)	1554.1 (1588.7)	1604.1 (1638.7)	1654.1 (1688.7)	1704.1 (1738.7)
	G		105	80	105	80	105	80	105	80	105	80	105	80	105
	P_1		200	200	200	200	200	200	200	200	200	200	200	200	200
	P_2		600	800	800	800	800	1000	1000	1000	1000	1200	1200	1200	1200
	R		100	–	–	100	100	–	–	100	100	–	–	100	100
	H		780	830	880	930	980	1030	1080	1130	1180	1230	1280	1330	1380
Mounting pitch count	N		3	4	4	4	4	5	5	5	5	6	6	6	6
Mounting hole count	n		5	5	5	6	6	6	6	7	7	7	7	8	8
Mass *4 [kg]			9.9(10.4)	10.3(10.8)	10.7(11.2)	11.1(11.6)	11.5(12.0)	11.9(12.4)	12.2(12.7)	12.6(13.1)	13.0(13.5)	13.4(13.9)	13.8(14.3)	14.2(14.7)	14.6(15.1)

*3 The maximum speed is the value restricted by the motor rotational speed (at 3,000min^{-1}), or by the permissible rotational speed of the ball screw.
*4 Values when a brake is installed are shown in parentheses.

KSF6R THC Specifications

Model Configuration

Model	Ball screw lead	Stroke	Control device	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable length and type
KSF6R -	20 -	0050 -	TH -	ML-GR-6 /	M20	R	S02	D1	F3

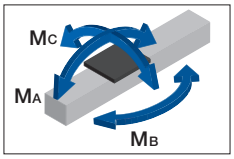
KSF6R	20: 20 mm 30: 30 mm	0050: 50mm to 1300: 1300mm	TH: THC	MR: Motor right wrap ML: Motor left wrap MD: Motor down wrap T: Back tap GR: Change the cover color to gray 6: Photo sensor J: Proximity sensor	M20: 200W M20B: 200W With brake	R: Right L: Left U: Up D: Down	D00: Motor side R00: Reverse motor side S02: Motor side (sensor right) S03: Reverse motor side (sensor right) S20: Motor side (sensor left) S30: Reverse motor side (sensor left)	D1:100V D2: 200V	No symbol: None F3: Standard 3m F5: Standard 5m FA: Standard 10m H3: High flex 3m H5: High flex 5m HA: High flex 10m

Basic Specifications

Control device type				THC	
Motor rated output [W]				200	
Ball screw lead [mm]				20	30
Rated speed *1[mm/s]				1000	1500
Maximum load capacity *2 [kg]	Acceleration/deceleration Rate	Horizontal mount	1.0G	19	11
			2.0G	4	4
		Vertical mount	1.0G	9	5
			2.0G	2.5	2.5
Rated thrust *3 [N]				161	107
Maximum thrust *4 [N]				480	320
Electromagnetic brake retention [N]				319	213
Running life *5 [km]				20,000	
Positioning repeatability [mm]				±0.010	
Lost motion [mm]				0.1	
Static permissible moment *6 [N·m]				MA: 330 MB: 216 MC: 188	

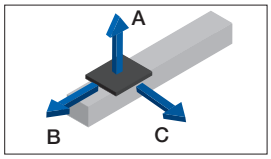
*1 At rated motor speed (3,000 min^{-1}).
*2 At rated speed.
*3 At rated motor torque.
*4 The maximum thrust is a value at the maximum peak torque of the motor.
*5 The conditions for calculation are as follows:
Conditions: Horizontal mount, wall mount, or vertical mount, under the maximum load capacity, stroke 500 mm
*6 Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static Permissible Moment

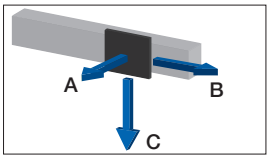


Permissible Overhang Length *

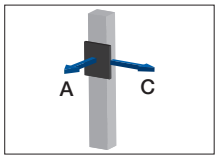
Horizontal use



Wall use



Vertical use



Acceleration and deceleration rate 1.0 G

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
20	4.75	600	390	540
	9.5	390	190	270
	19	170	90	130
30	2.75	600	550	600
	5.5	410	270	310
	11	180	120	150

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
20	4.75	490	370	600
	9.5	220	160	370
	19	80	60	150
30	2.75	560	520	600
	5.5	250	240	390
	11	100	100	160

Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
20	2.25	600	600
	4.5	330	330
	9	150	150
30	1.25	600	600
	2.5	430	430
	5	200	200

Acceleration and deceleration rate 2.0 G

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
20	1	600	600	600
	2	600	600	600
	4	600	470	520
30	1	600	600	600
	2	600	600	600
	4	360	370	330

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
20	1	600	600	600
	2	600	600	600
	4	460	440	600
30	1	600	600	600
	2	590	600	600
	4	270	340	350

Vertical mount [mm]

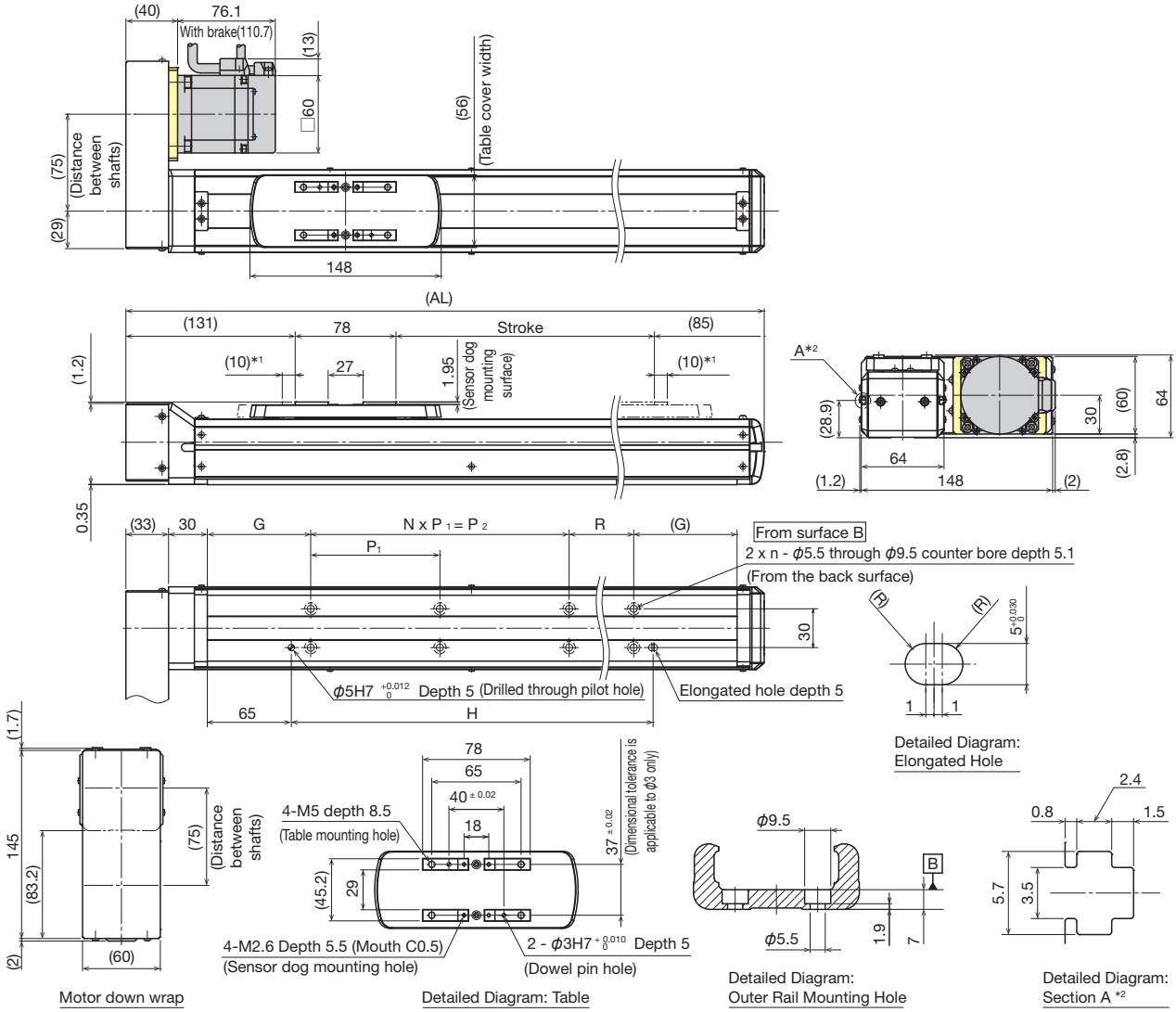
Ball screw lead [mm]	Load mass [kg]	A	C
20	0.63	600	600
	1.25	600	600
	2.5	550	550
30	0.625	600	600
	1.25	600	600
	2.5	360	360

* This value is the overhang length whose running life is 20,000 km for each direction.
A permissible value of the applied load in each direction.

KSF6R + THC

Motor rated output
200W

Dimensions



*1 Stroke up to mechanical stopper.
*2 The T slot in Section A is provided exclusively for sensor mounting. Do not use it for any other purpose.

Stroke [mm] (Stroke between mechanical stoppers)		50 (70)	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 *3 [mm/s]	Ball screw lead: 20 mm	1000												
	Ball screw lead: 30 mm	1500												
Dimensions [mm]	AL	344	394	444	494	544	594	644	694	744	794	844	894	944
	G	80	105	80	105	80	105	80	105	80	105	80	105	80
	P_1	100	100	200	200	200	200	200	200	200	200	200	200	200
	P_2	–	–	–	–	–	–	400	400	400	400	600	600	600
	R	–	–	–	–	100	100	–	–	100	100	–	–	100
	H	130	180	230	280	330	380	430	480	530	580	630	680	730
Mounting pitch count	N	–	–	–	–	–	–	2	2	2	2	3	3	3
Mounting hole count	n	2	2	2	2	3	3	3	3	4	4	4	4	5
Weight *4 [kg]		5.4(5.9)	5.8(6.3)	6.2(6.7)	6.5(7.0)	6.9(7.4)	7.3(7.8)	7.7(8.2)	8.1(8.6)	8.5(9.0)	8.9(9.4)	9.3(9.8)	9.6(10.1)	10.0(10.5)
Stroke [mm] (Stroke between mechanical stoppers)		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)
Maximum speed *3 [mm/s]	Ball screw lead: 20 mm	980	870	770	690	630	570	520	470	430	400	370	340	320
	Ball screw lead: 30 mm	1470	1300	1160	1040	940	850	780	710	650	600	550	510	480
Dimensions [mm]	AL	994	1044	1094	1144	1194	1244	1294	1344	1394	1444	1494	1544	1594
	G	105	80	105	80	105	80	105	80	105	80	105	80	105
	P_1	200	200	200	200	200	200	200	200	200	200	200	200	200
	P_2	600	800	800	800	800	1000	1000	1000	1000	1200	1200	1200	1200
	R	100	–	–	100	100	–	–	100	100	–	–	100	100
	H	780	830	880	930	980	1030	1080	1130	1180	1230	1280	1330	1380
Mounting pitch count	N	3	4	4	4	4	5	5	5	5	6	6	6	6
Mounting hole count	n	5	5	5	6	6	6	6	7	7	7	7	8	8
Weight *4 [kg]		10.4(10.9)	10.8(11.3)	11.2(11.7)	11.6(12.1)	12.0(12.5)	12.4(12.9)	12.7(13.2)	13.1(13.6)	13.5(14.0)	13.9(14.4)	14.3(14.8)	14.7(15.2)	15.1(15.6)

*3 The maximum speed is the value restricted by the motor rotational speed (at 3,000 min^{-1}) or by the permissible rotational speed of the ball screw.
*4 Values when a brake is installed are shown in parentheses.

KSF8 THC Specifications

Model Configuration

Model	Ball screw lead	Stroke	Control device	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable length and type
KSF8 -	20 -	0700 -	TH -	GR-6 /	M40	L	S02	D1	F3

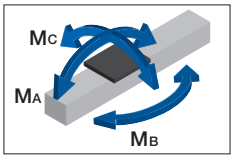
KSF8	20: 20 mm 40: 40 mm	0100: 100 mm to 1500: 1500 mm	TH: THC	No symbol: None T: Back tap GR: Change the cover color to gray 6: Photo sensor J: Proximity sensor	M40: 400 W M40B: 400W With brake	R: Right L: Left U: Up D: Down	D00: Motor side R00: Reverse motor side S02: Motor side (sensor right) S03: Reverse motor side (sensor right) S20: Motor side (sensor left) S30: Reverse motor side (sensor left)	D1: 100V D2: 200V	No symbol: None F3: Standard 3m F5: Standard 5m FA: Standard 10m H3: High flex 3m H5: High flex 5m HA: High flex 10m

Basic Specifications

Control device type				THC	
Motor rated output [W]				400	
Ball screw lead [mm]				20	40
Rated speed *1 [mm/s]				1000	2000
Maximum load capacity *2 [kg]	Acceleration/deceleration Rate	Horizontal mount	1.0G	43	16
			2.0G	6	7
		Vertical mount	1.0G	20	8
			2.0G	3	5
Rated thrust *3 [N]				359	180
Maximum thrust *4 [N]				1080	540
Electromagnetic brake retention [N]				359	180
Running life *5 [km]				20,000	
Positioning repeatability [mm]				±0.010	
Lost motion [mm]				0.1	
Static permissible moment *6 [N·m]				MA: 730	MB: 437 MC: 387

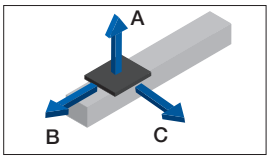
*1 At rated motor speed (3,000 min^{-1}).
*2 At rated speed.
*3 At rated motor torque.
*4 The maximum thrust is a value at the maximum peak torque of the motor.
*5 The conditions for calculation are as follows:
Conditions: Horizontal mount, wall mount, or vertical mount, under the maximum load capacity, stroke 500 mm
*6 Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static Permissible Moment

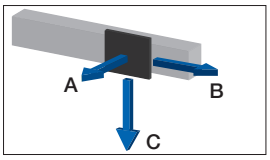


Permissible Overhang Length *

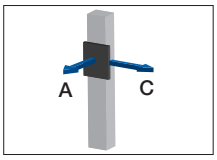
Horizontal use



Wall use



Vertical use



Acceleration and deceleration rate 1.0 G

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
20	10.75	730	350	510
	21.5	340	160	250
	43	140	70	120
40	4	800	800	770
	8	500	390	390
	16	220	180	200

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
20	10.75	450	330	710
	21.5	200	190	420
	43	70	50	120
40	4	710	780	800
	8	330	360	480
	16	140	160	200

Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
20	5	630	630
	10	290	290
	20	130	130
40	2	800	800
	4	500	500
	8	230	230

Acceleration and deceleration rate 2.0 G

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
20	1.5	800	800	800
	3	800	800	800
	6	650	500	560
40	1.75	800	800	800
	3.5	750	800	670
	7	350	450	340

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
20	1.5	800	800	800
	3	800	800	800
	6	500	470	640
40	1.75	800	800	800
	3.5	600	800	740
	7	280	420	340

Vertical mount [mm]

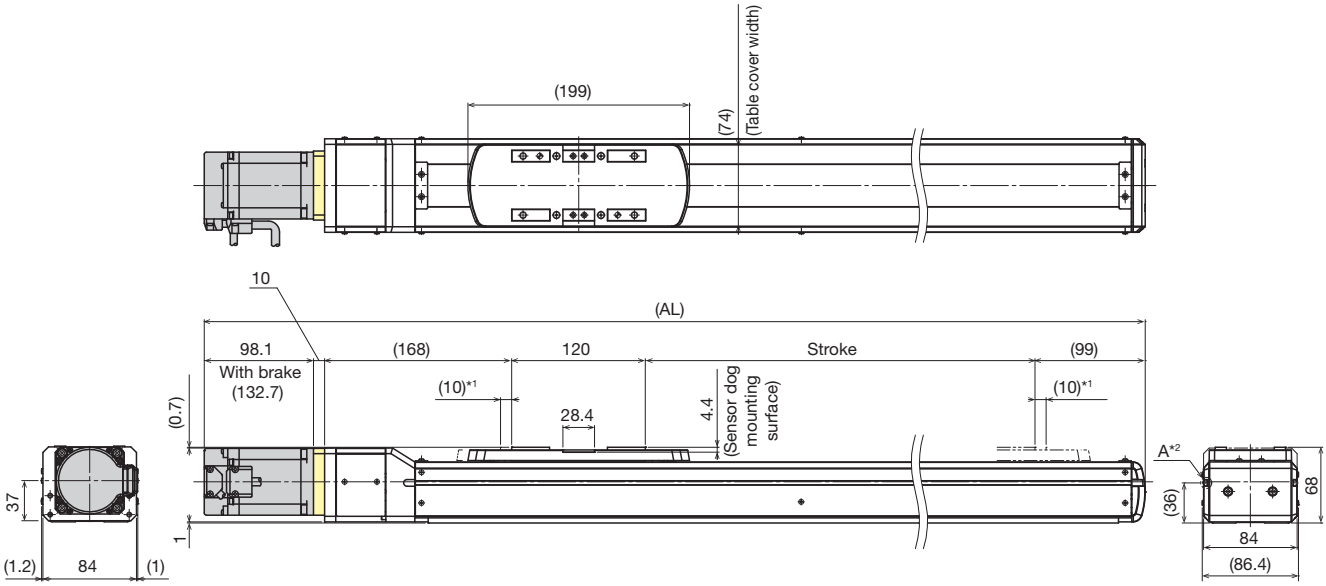
Ball screw lead [mm]	Load mass [kg]	A	C
20	0.75	800	800
	1.5	800	800
	3	740	740
40	1.25	800	800
	2.5	680	680
	5	320	320

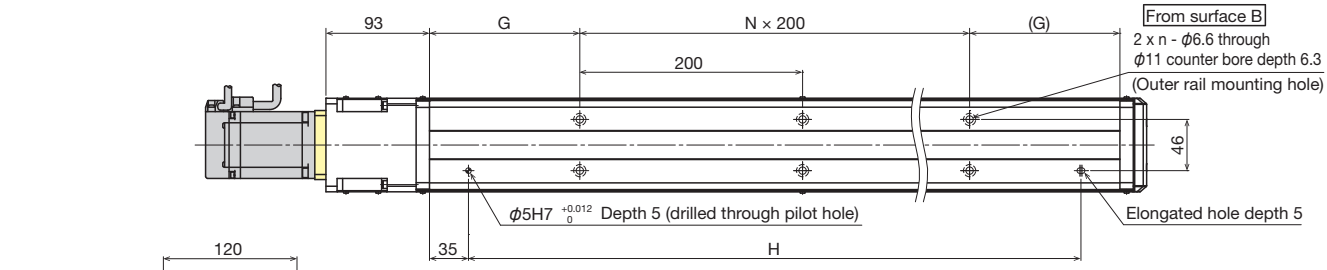
* This value is the overhang length whose running life is 20,000 km for each direction.
A permissible value of the applied load in each direction.

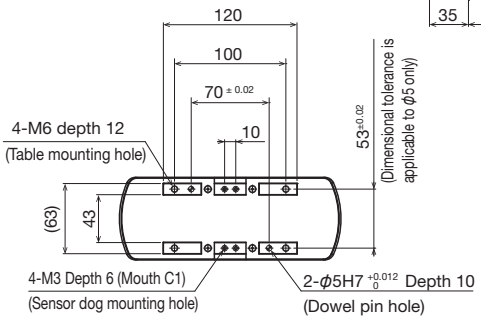
KSF8 + THC

Motor rated output
400W

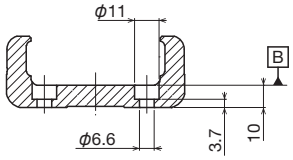
Dimensions



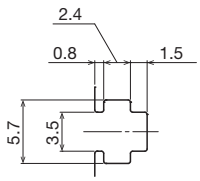




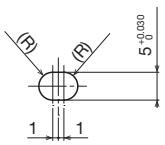
Detailed Diagram: Table



Detailed Diagram:
Outer Rail Mounting Hole



Detailed Diagram:
Section A *2



Detailed Diagram:
Elongated Hole

*1 Stroke up to mechanical stopper.
*2 The T slot in Section A is provided exclusively for sensor mounting. Do not use it for any other purpose.

Stroke [mm] (Stroke between mechanical stoppers)		100 (120)	200 (220)	300 (320)	400 (420)	500 (520)	600 (620)	700 (720)	800 (820)	900 (920)	1000 (1020)	1100 (1120)	1200 (1220)	1300 (1320)	1400 (1420)	1500 (1520)
Maximum speed *3 [mm/s]	Ball screw lead: 20 mm	1000							970	790	660	550	470	410	360	320
	Ball screw lead: 40 mm	2000							1940	1580	1320	1110	950	830	720	640
Dimensions *4 [mm]	AL	595.1 (629.7)	695.1 (729.7)	795.1 (829.7)	895.1 (929.7)	995.1 (1029.7)	1095.1 (1129.7)	1195.1 (1229.7)	1295.1 (1329.7)	1395.1 (1429.7)	1495.1 (1529.7)	1595.1 (1629.7)	1695.1 (1729.7)	1795.1 (1829.7)	1895.1 (1929.7)	1995.1 (2029.7)
	G	85	135	85	135	85	135	85	135	85	135	85	135	85	135	85
	H	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700
Mounting pitch count	N	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8
Mounting hole count	n	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9
Weight *4 [kg]		9.5 (10.0)	10.8 (11.3)	12.1 (12.6)	13.4 (13.9)	14.7 (15.2)	16.0 (16.5)	17.3 (17.8)	18.6 (19.1)	19.9 (20.4)	21.2 (21.7)	22.5 (23.0)	23.8 (24.3)	25.1 (25.6)	26.4 (26.9)	27.7 (28.2)

*3 The maximum speed is the value restricted by the motor rotational speed (at 3,000 min^{-1}) or by the permissible rotational speed of the ball screw.
*4 Values when a brake is installed are shown in parentheses.

KSF8R THC Specifications

Model Configuration

Model	Ball screw lead	Stroke	Control device	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable length and type
KSF8R -	20 -	0700 -	TH -	ML-GR-6 /	M40	R	S02	D1	F3

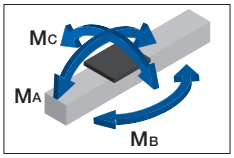
KSF8R	20: 20mm 40: 40mm	0100: 100mm to 1500: 1500mm	TH: THC	MR: Motor right wrap ML: Motor left wrap MD: Motor down wrap T: Back tap GR: Change the cover color to gray 6: Photo sensor J: Proximity sensor	M40: 400W M40B: 400W With brake	R: Right L: Left U: Up D: Down	D00: Motor side R00: Reverse motor side S02: Motor side (sensor right) S03: Reverse motor side (sensor right) S20: Motor side (sensor left) S30: Reverse motor side (sensor left)	D1: 100V D2: 200V	No symbol: None F3: Standard 3m F5: Standard 5m FA: Standard 10m H3: High flex 3m H5: High flex 5m HA: High flex 10m

Basic Specifications

Control device type				THC	
Motor rated output [W]				400	
Ball screw lead [mm]				20	40
Rated speed *1 [mm/s]				1000	2000
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	1.0G	41	16
			2.0G	6	7
		Vertical mount	1.0G	20	8
			2.0G	3	5
Rated thrust *3 [N]				319	160
Maximum thrust *4 [N]				960	480
Electromagnetic brake retention [N]				319	160
Running life *5 [km]				20,000	
Positioning repeatability [mm]				±0.010	
Lost motion [mm]				0.1	
Static permissible moment *6 [N·m]				MA: 730	MB: 437 MC: 387

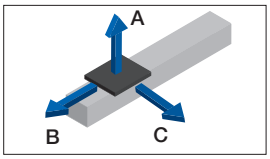
*1 At rated motor speed (3,000 min^{-1}).
*2 At rated speed.
*3 At rated motor torque.
*4 The maximum thrust is a value at the maximum peak torque of the motor.
*5 The conditions for calculation are as follows:
Conditions: Horizontal mount, wall mount, or vertical mount, under the maximum load capacity, stroke 500 mm
*6 Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static Permissible Moment

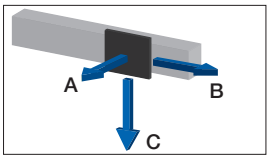


Permissible Overhang Length *

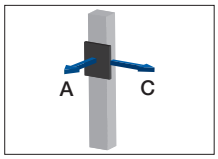
Horizontal use



Wall use



Vertical use



Acceleration and deceleration rate 1.0 G

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
20	10.25	800	520	670
	20.5	520	250	330
	41	230	110	160
40	4	800	800	770
	8	500	390	390
	16	220	180	200

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
20	10.25	620	490	800
	20.5	280	220	500
	41	110	90	210
40	4	710	780	800
	8	330	360	480
	16	140	160	200

Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
20	5	630	630
	10	290	290
	20	130	130
40	2	800	800
	4	500	500
	8	230	230

Acceleration and deceleration rate 2.0 G

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
20	1.5	800	800	800
	3	800	800	800
	6	650	500	560
40	1.75	800	800	800
	3.5	750	800	670
	7	350	450	340

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
20	1.5	800	800	800
	3	800	800	800
	6	500	470	640
40	1.75	800	800	800
	3.5	600	800	740
	7	280	420	340

Vertical mount [mm]

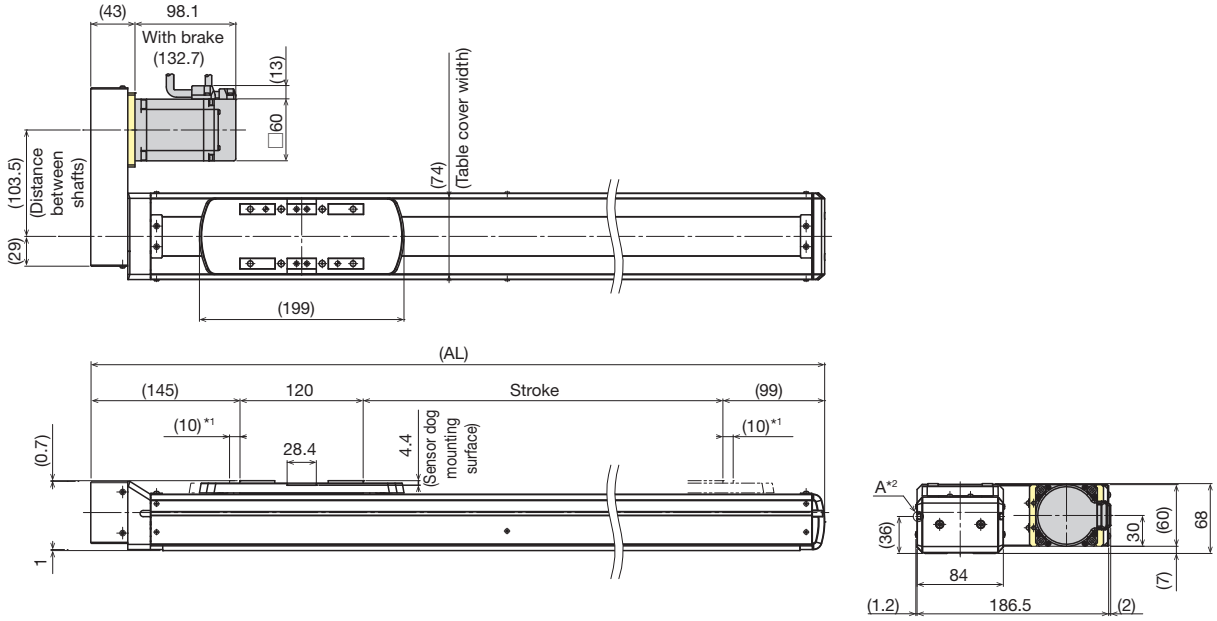
Ball screw lead [mm]	Load mass [kg]	A	C
20	0.75	800	800
	1.5	800	800
	3	740	740
40	1.25	800	800
	2.5	680	680
	5	320	320

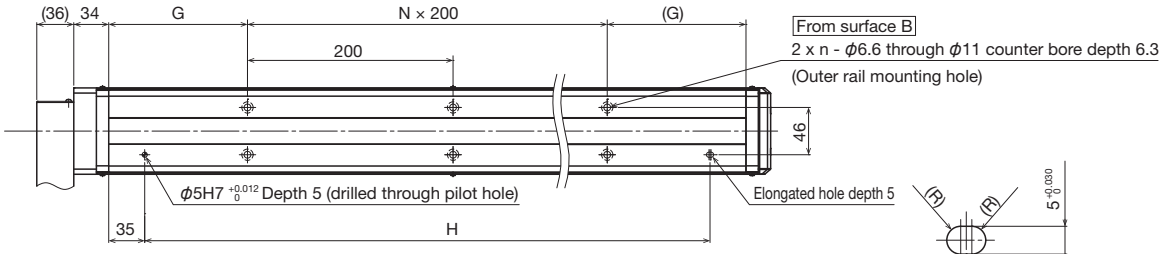
* This value is the overhang length whose running life is 20,000 km for each direction.
A permissible value of the applied load in each direction.

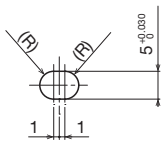
KSF8R + THC

Motor rated output
400W

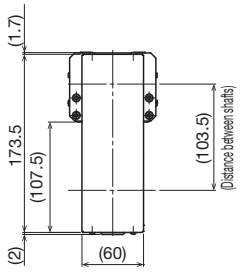
Dimensions



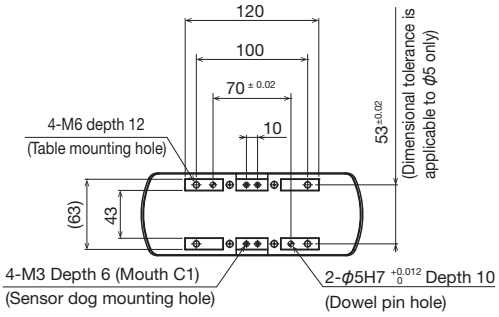




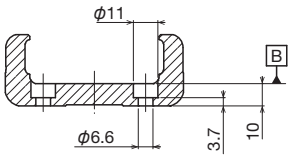
Detailed Diagram:
Elongated Hole



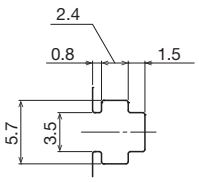
Motor down wrap



Detailed Diagram: Table



Detailed Diagram:
Outer Rail Mounting Hole



Detailed Diagram:
Section A *2

*1 Stroke up to mechanical stopper.
*2 The T slot in Section A is provided exclusively for sensor mounting. Do not use it for any other purpose.

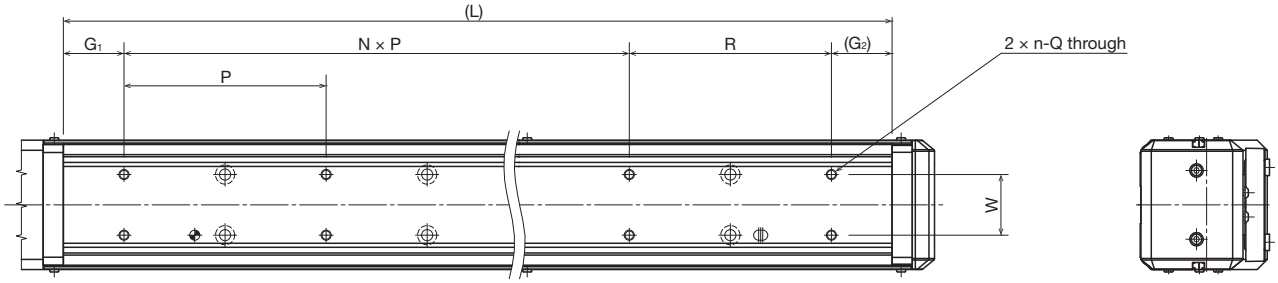
Stroke [mm] (Stroke between mechanical stoppers)		100 (120)	200 (220)	300 (320)	400 (420)	500 (520)	600 (620)	700 (720)	800 (820)	900 (920)	1000 (1020)	1100 (1120)	1200 (1220)	1300 (1320)	1400 (1420)	1500 (1520)
Maximum speed *3 [mm/s]	Ball screw lead: 20mm	1000							970	790	660	550	470	410	360	320
	Ball screw lead: 40mm	2000							1940	1580	1320	1110	950	830	720	640
Dimensions [mm]	AL	464	564	664	764	864	964	1064	1164	1264	1364	1464	1564	1664	1764	1864
	G	85	135	85	135	85	135	85	135	85	135	85	135	85	135	85
	H	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700
Mounting pitch count	N	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8
Mounting hole count	n	2	2	3	3	4	4	5	5	6	6	7	7	8	8	9
Weight *4 [kg]		10.0 (10.5)	11.3 (11.8)	12.6 (13.1)	13.9 (14.4)	15.2 (15.7)	16.5 (17.0)	17.8 (18.3)	19.1 (19.6)	20.4 (20.9)	21.7 (22.2)	23.0 (23.5)	24.3 (24.8)	25.6 (26.1)	26.9 (27.4)	28.2 (28.7)

*3 The maximum speed is the value restricted by the motor rotational speed (at 3,000 min^{-1}) or by the permissible rotational speed of the ball screw.
*4 Values when a brake is installed are shown in parentheses.

Option

T: Back tap

Back taps are available for KSF to enable mounting without removing the cover.



Note) The standard counter bore will remain even if a back tap is selected.

Model	Stroke [mm]		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
KSF4	Dimensions [mm]	L	202	252	302	352	402	452	502	552	602	652	702	752	802	852	902	952	1002	1052
		P	120																	
		G_1	34	59	84	42	74	39	78	89	54	79	44	69	34	59	84	42	74	39
		G_2	48	73	98	70	88	53	64	103	68	93	58	83	48	73	98	70	88	53
		R	–																	
		W	18																	
	Mounting pitch count	N	1	1	1	2	2	3	3	3	4	4	5	5	6	6	6	7	7	8
	Mounting hole count	n	2	2	2	3	3	4	4	4	5	5	6	6	7	7	7	8	8	9
	Tap hole size	Q	M4																	

Model	Stroke [mm]		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
KSF5	Dimensions [mm]	L	214	264	314	364	414	464	514	564	614	664	714	764	814	864	914	964	1014	1064
		P	80	120																
		G_1	27	12	27	52	77	27	67	92	57	82	47	72	27	62	87	52	77	27
		G_2	27	12	47	72	97	77	87	112	77	102	67	92	67	82	107	72	97	77
		R	–																	
		W	25																	
	Mounting pitch count	N	2	2	2	2	2	3	3	3	4	4	5	5	6	6	6	7	7	8
	Mounting hole count	n	3	3	3	3	3	4	4	4	5	5	6	6	7	7	7	8	8	9
	Tap hole size	Q	M5																	

Model	Stroke [mm]		50	100	150	200	250	300	350	400	450	500	550	600	650
KSF6	Dimensions [mm]	L	260	310	360	410	460	510	560	610	660	710	760	810	860
		P	100		200										
		G_1	30	55	30	55	30	55	30	55	30	55	30	55	30
		G_2	30	55	30	55	30	55	30	55	30	55	30	55	30
		R	–	–	100	100	–	–	100	100	–	–	100	100	–
		W	30												
	Mounting pitch count	N	2	2	1	1	2	2	2	2	3	3	3	3	4
	Mounting hole count	n	3	3	3	3	3	3	4	4	4	4	5	5	5
	Tap hole size	Q	M5												

Model	Stroke [mm]		700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300
KSF6	Dimensions [mm]	L	910	960	1010	1060	1110	1160	1210	1260	1310	1360	1410	1460	1510
		P	200												
		G_1	55	30	55	30	55	30	55	30	55	30	55	30	55
		G_2	55	30	55	30	55	30	55	30	55	30	55	30	55
		R	–	100	100	–	–	100	100	–	–	100	100	–	–
		W	30												
	Mounting pitch count	N	4	4	4	5	5	5	5	6	6	6	6	7	7
	Mounting hole count	n	5	6	6	6	6	7	7	7	7	8	8	8	8
	Tap hole size	Q	M5												

Model	Stroke [mm]		100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
KSF8	Dimensions [mm]	L	370	470	570	670	770	870	970	1070	1170	1270	1370	1470	1570	1670	1770
		P	120	200													
		G_1	65	25	70	120	70	120	70	120	70	120	70	120	70	120	70
		G_2	65	45	100	150	100	150	100	150	100	150	100	150	100	150	100
		R	–														
		W	46														
	Mounting pitch count	N	2	2	2	2	3	3	4	4	5	5	6	6	7	7	8
	Mounting hole count	n	3	3	3	3	4	4	5	5	6	6	7	7	8	8	9
	Tap hole size	Q	M6														

Option

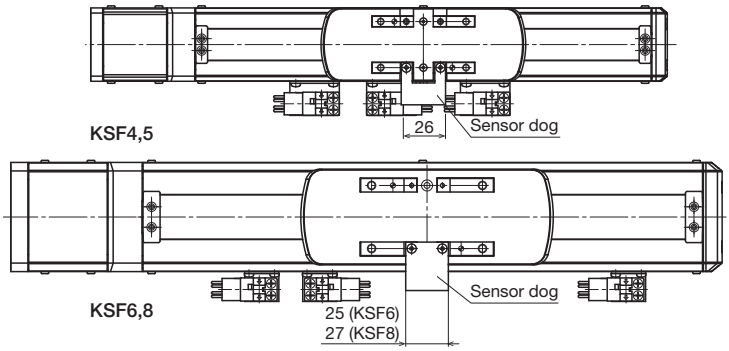
☐: Sensors

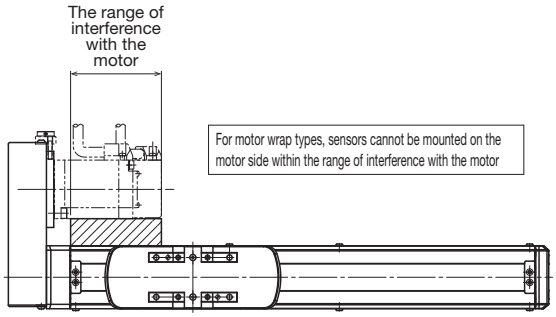
Optional proximity sensors and photo sensors are available for KSF. Please use the sensor with the following precautions (Notes 1 to 3) in mind.

Note 1) Types without motor will be shipped with the sensor and the sensor dog.
Note 2) Proximity sensors placed too close to each other may not work properly. In such a case, please prepare a different frequency type of sensor. (For specifications, contact each manufacturer.)
Note 3) Mount two pieces of sensor dogs for the stroke of 50mm.

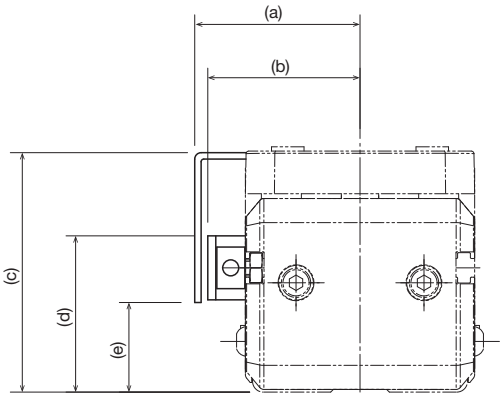
Description	Model	Accessory	Symbol
Photo Sensor * [x 3]	EE-SX674 (Omron Corp.)	Mounting screw, nut, mounting plate (x 3), connector (EE-1001, x 3), and sensor dog	6
Sensor N.O. contact [x 1] N.C. contact [x 2]	GX-F12A (Panasonic Industrial Devices SUNX Co., Ltd.) GX-F12B (Panasonic Industrial Devices SUNX Co., Ltd.)	Mounting screws, nuts, sensor dog	J
Sensors 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 screws, nuts, sensor dog	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.





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

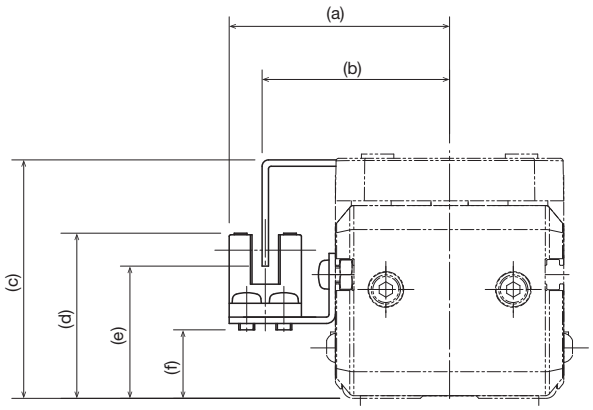


Unit: mm

Model	a	b	c	d	e
KSF4	31.0	28.6	44.8	29.2	16.7
KSF5	36.2	33.8	48.9	36.0	23.5
KSF6	41.5	39.1	63.3	34.9	22.6
KSF8	51.5	49.1	64.8	42.0	29.4

Sensor dog width: KSF4 26mm
KSF5 26mm
KSF6 25mm
KSF8 27mm

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



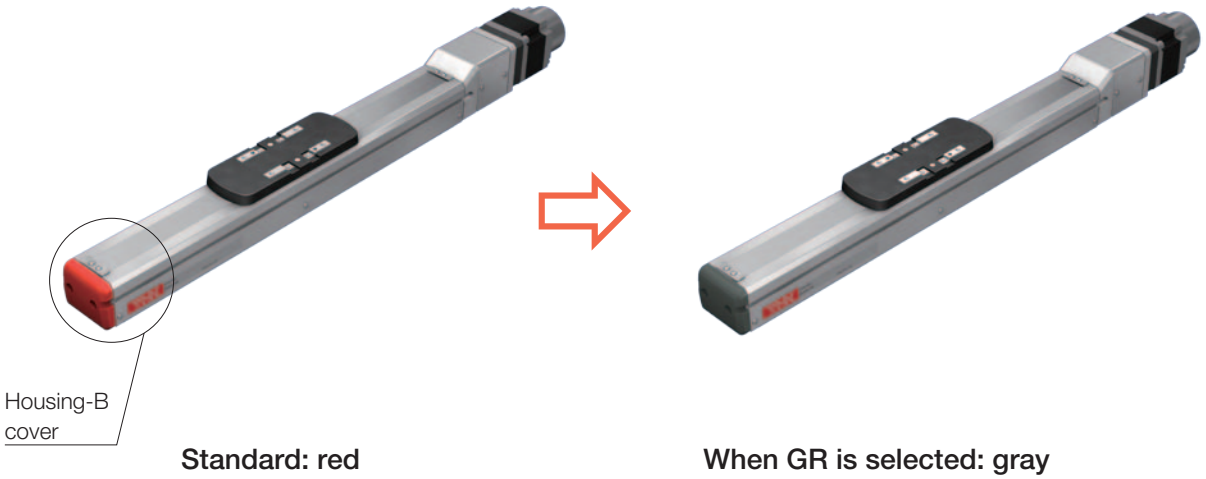
Unit: mm

Model	a	b	c	d	e	f
KSF4	41.5	35.3	44.8	31	24.8	12.8
KSF5	46.3	40.1	48.9	37.8	31.6	19.6
KSF6	49.5	43.1	63.3	34.2	27.3	16
KSF8	59.5	53.1	64.8	41.3	34.2	23.1

Sensor dog width: KSF4 26mm
KSF5 25mm
KSF6 25mm
KSF8 27mm

GR: Gray cover

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



Standard: red

When GR is selected: gray

KSF technical materials

Motor Selection

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

Model Configuration

Actuator		Ball screw			
Model	Stroke [mm]	Lead [mm]	Shaft diameter [mm]	Shaft length [mm]	Shaft end diameter [mm]
KSF4	50	10	ϕ 10	257	ϕ 6h7
	900			1107	
KSF5	50	10	ϕ 13	274	ϕ 8h7
	900			1124	
	50	20	ϕ 13	274	ϕ 8h7
	900			1124	
KSF6	50	20	ϕ 15	328	ϕ 9h7
	1300			1578	
	50	30	ϕ 15	328	ϕ 9h7
	1300			1578	
KSF8	100	20	ϕ 20	446	ϕ 12h7
	1500			1846	
	100	40	ϕ 20	446	ϕ 12h7
	1500			1846	

Weight of moving element

Model	Weight of moving element [kg]
KSF4	0.5
KSF5	0.65
KSF6	1.1
KSF8	2.4

Permissible input torque

Model	Permissible input torque [N·m]	
	Direct motor coupling	Motor wrap
KSF4	1.2	1.1
KSF5	1.8	1.1
KSF6	3.1	2.2
KSF8	7.1	4.5

Recommended Coupling

Recommended coupling (flat spring type)		
Model	Type	Inertial moment [kg·cm^2]
KSF4	SFC-020DA2 (Miki Pulley Co., LTD.)	0.034
	XBW-25C2 (Nabeya Bi-tech Kaisha)	0.023
KSF5	SFC-020DA2 (Miki Pulley Co., LTD.)	0.034
	XBW-25C2 (Nabeya Bi-tech Kaisha)	0.023
KSF6	SFC-030DA2 (Miki Pulley Co., LTD.)	0.094
	XBW-34C3 (Nabeya Bi-tech Kaisha)	0.090
KSF8	SFC-030DA2 (Miki Pulley Co., LTD.)	0.116
	XBW-34C3 (Nabeya Bi-tech Kaisha)	0.090

Timing Pulley

Timing pulley (Total 2pcs)	
Actuator model	Inertial moment [kg·cm^2]
KSF4R	0.028
KSF5R	0.028
KSF6R	0.398
KSF8R	0.497

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.
- Controller: A place with an ambient temperature from 0 to 40°C and humidity of 90% 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.
· When storing control devices, avoid abnormally high or low temperatures and high humidity.

Universal series

Model: US/USW

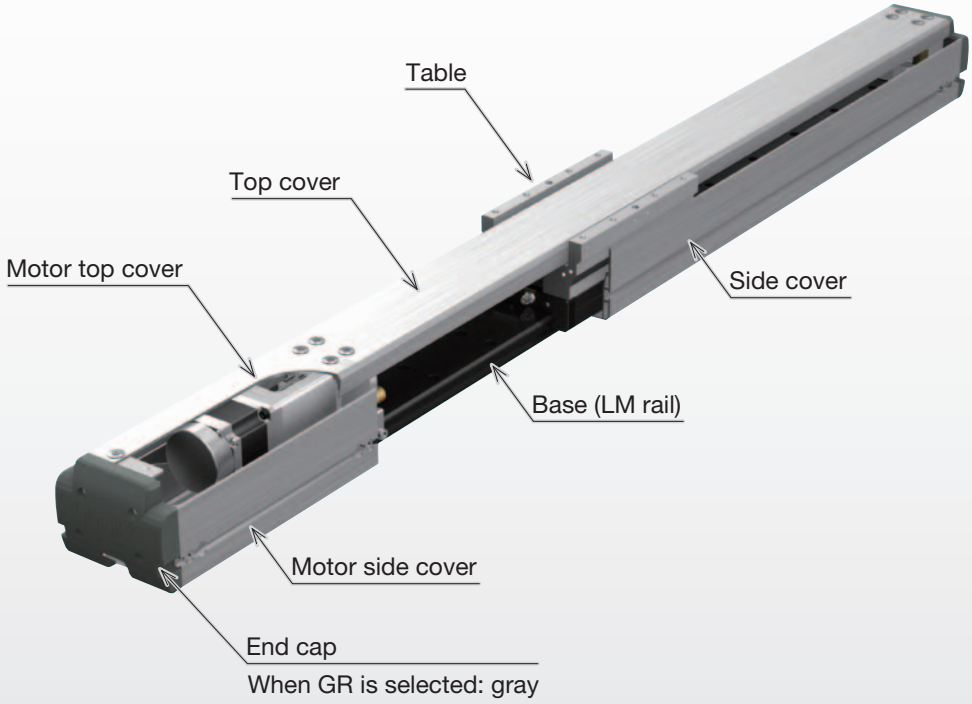
Corresponding Controller

Chapter 3

Electrical Actuator
Universal Series
US/USW

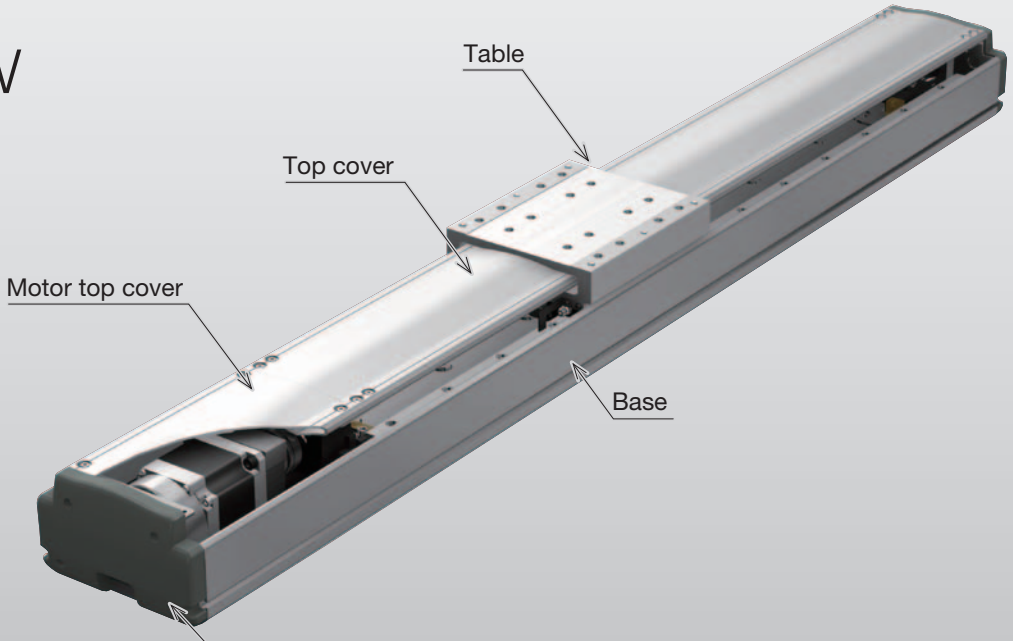
High Speed, High Load Capacity, Long Service Life

US



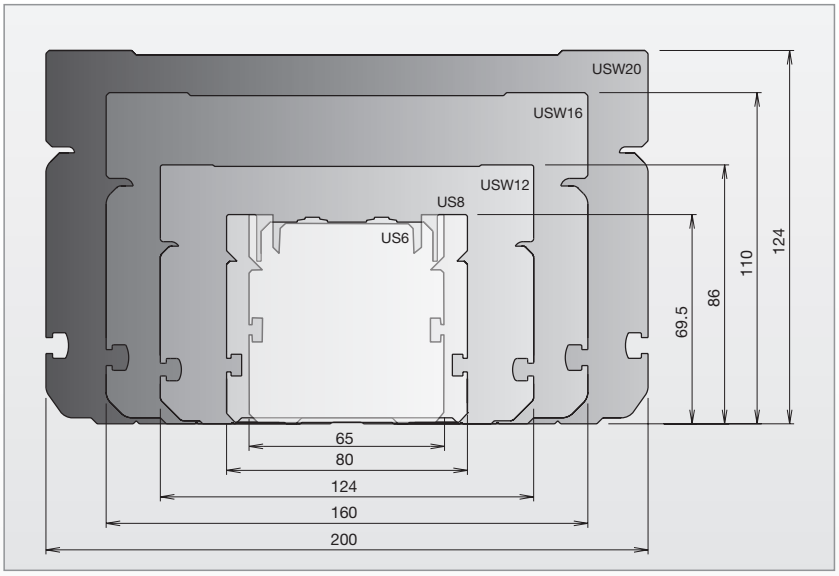
When GR is selected: gray

USW



When GR is selected: gray

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.

Lineup List

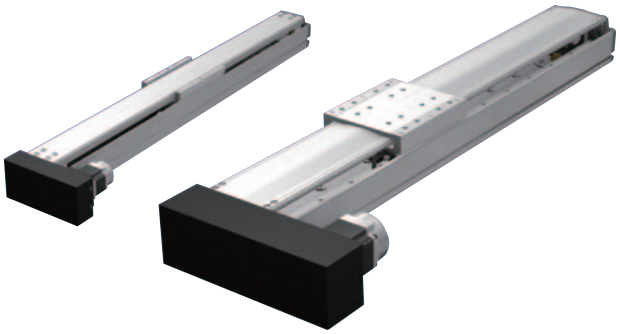
[With ball screw]

Direct motor coupling type

Ball screw and motor are connected using a coupling.

[With ball screw]

Motor wrap type



Motor can be wrapped laterally to reduce the axial dimension.

Model	Ball screw lead [mm]	Stroke [mm]	Rated speed *1 [mm/s]	Motor rated output [W]	Maximum load capacity *2 [kg]		100	200	300	400	500	600
					Horizontal mount	Vertical mount						
US6	6	100 to 900	300	50	30	7	360					310
	12		600		15	3	720					630
	6		300	100	70	14	360					310
	12		600		30	7	720					630
US8	5	100 to 1100	250	100	80	16	300					
	10		500		40	8	600					
	20		1000		20	4	1200					
	30		1500		8	2	1800					
	10		500	150	60	12	600					
	20		1000		30	6	1200					
	30		1500		12	3	1800					
USW12	5	100 to 1100	250	200	100	30	300					
	10		500		80	20	600					580
	20		1000		40	8	1200					1160
	30		1500		25	5	1800					1700
USW16	10	100 to 1500	500	400	120	35	550					
	20		1000		80	15	1100					
	40		2000		40	9	2200					
USW20	20	200 to 1700	1000	750	130	45	1100					
	40		2000		70	20	2200					

*1 At rated motor speed (3,000min^{-1}).

*2 At rated speed with acceleration and deceleration rate of 0.3G. (Ball screw lead 5mm for US8, 0.2G vertical only.)

*3 Dependent on motor speed (US6~USW12: 3,600min^{-1}, USW16~USW20: 3,300min^{-1}) and permissible rotational speed of the ball screw. Motor speed is dependent on the controller used.

Maximum speed [mm/s] for each stroke [mm] *3																							Described on
Stroke [mm]																							
700		800		900	1000		1100		1200		1300		1400		1500		1600		1700				
270	240	210	180	160																			Page 3-009
550	480	420	370	330																			
270	240	210	180	160																			
550	480	420	370	330																			
290	250	220	200	180	160	150	130	120															Page 3-025
550	480	430	380	340	310	280	250	230															
1090	960	850	760	680	610	560	510	460															
1600	1410	1250	1120	1000	910	820	750	690															
550	480	430	380	340	310	280	250	230															
1090	960	850	760	680	610	560	510	460															
1600	1410	1250	1120	1000	910	820	750	690															
270	240	210	190	170	150	140	130	120															Page 3-041
510	450	400	360	320	290	260	240	220															
1020	900	800	720	640	580	530	480	440															
1490	1320	1180	1050	950	860	780	720	660															
550		520	470	420	380	340	310	290	260	240	230	210	190	180	170	160							Page 3-049
1100			1040	930	840	760	700	640	590	540	500	460	430	400	380	350							
2200			1970	1780	1610	1470	1340	1230	1130	1050	970	900	840	780	730	690							
1100			1010	910	820	750	680	620	570	530	490	460	420	400	370	350	330	310	290	270			Page 3-057
2200		2140	1920	1730	1570	1430	1310	1210	1110	1030	950	890	830	770	720	680	640	600	570	530			

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method	
USW12RT	– 05	– 0150	A	– TL	– 6	– SR	– C	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	

(1)

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

R represents motor wrap.

(2)

- 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)

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

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

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

(4)

- A

(5)

- TL: Driver controller TLC
- TH: Driver controller THC

When TL or TH is selected:
Direct motor coupling type: Mounted parts: motor, coupling
Accessories: 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
A motor corresponding to each controller should be mounted.
TL: TBL-ill series (Tamagawa Seiki Co., Ltd.) 50W
TH: TBL-ill series (Tamagawa Seiki Co., Ltd.) 100 - 750W

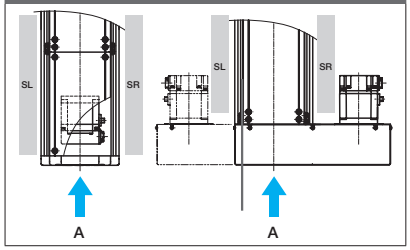
When TL or TH is selected, a controller must be separately ordered.
When TL or TH is selected, controllers are needed for each axis.
You can select TL only when selecting US6T or US6RT for model (1).

(6)

- P
- Q
- N
- 6
- E

(7)

- 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



Note: When motor wrap is selected, a sensor cannot be mounted on the same side as the motor wrap direction of the motor.

(8)

- 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

(6) Sensors P. 3-071

	Motor bracket	Option	Attributes common to TLC and THC: Motor rated output	Attributes common to TLC and THC: Motor cable orientation	Attributes common to TLC and THC: Home position	THC only: Power supply voltage	TLC and THC: Cable type and length
	– A –	MR–GR /	M20	R	S02	D2	H5
	(9)	(10)	(11)	(12)	(13)	(14)	(15)

(9) Motor bracket

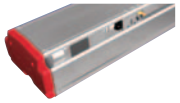
- A

(10) Option

- No symbol: Red end cap
- MR: Motor right wrap
- ML: Motor left wrap
- 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, cover will be red.

(11) Motor rated output

- M05: 50W
- M10: 100W
- M15: 150W
- M20: 200W
- M40: 400W
- M75: 750W
- M05B: 50W with brake
- M10B: 100W with brake
- M15B: 150W with brake
- M20B: 200W with brake
- M40B: 400W with brake
- M75B: 750W with brake

When selecting TL, you only can select M05 or M05B.
You can select M15 or M15B only when selecting TH.

(12) Motor cable orientation

- No symbol: Direct motor coupling
- R: Right
- U: Up
- L: Left
- D: Down

If you select MR as an option, R cannot be selected.
If you select ML as an option, L cannot be selected.
Note that the motor connector may be placed above the level of the top face of the slider when selecting U.

(13) Home position

- No symbol: When selecting a sensor P or Q
- S02: Motor side (Home position sensor)
- S03: Opposite motor side (Home position sensor)
- D00: Motor side (Mechanical home seeking)
- R00: Opposite motor side (Mechanical home seeking)

(14) Power supply voltage

- No symbol
- D1: 100V
- D2: 200V

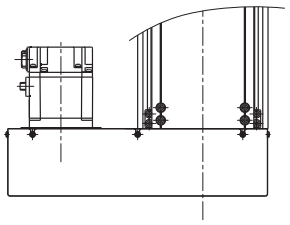
D1 and D2 are attributes for the controller THC. When selecting TLC, specify "No symbol".

(15) Cable type and length

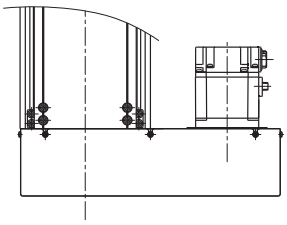
- F3: Standard 3m
- F5: Standard 5m
- FA: Standard 10m
- H3: High flex 3m
- H5: High flex 5m
- HA: High flex 10m

Lengths for motor cable, motor electromagnetic brake cable (only when selecting a motor with an electromagnetic cable), encoder cable, home position/limit sensor, and sensor cable.

Motor Wrap direction



Option symbol ML: Motor left wrap



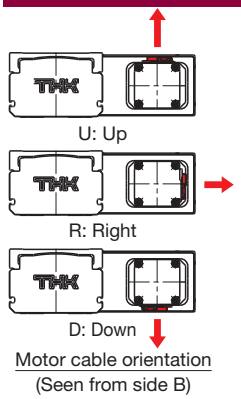
Option symbol MR: Motor right wrap

Combination of control device and sensor

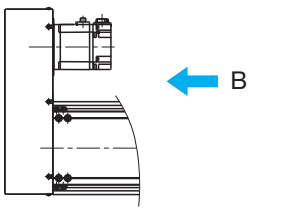
The selection of a sensor depends on the control device. You only can select one of the combinations shown in the following table.

Model	Control device type	Sensor symbol	Home position method
US6	TLC	N	D00, R00
	THC	N	D00, R00
		6, E	S02, S03
US8	THC	P, Q	No symbol
		N	D00, R00
		6, E	S02, S03

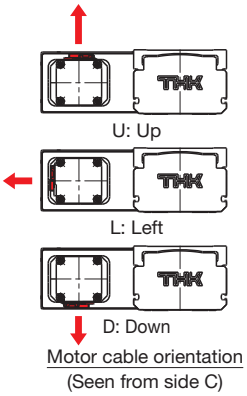
Motor cable orientation



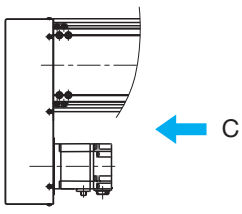
Motor cable orientation
(Seen from side B)



For motor wrap direction ML



Motor cable orientation
(Seen from side C)



For motor wrap direction MR

US6T Direct motor coupling, 50W

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method	
US6T	– 06	– 0150	A	– TL	– N	– SR	– C	–

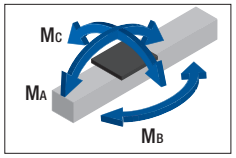
US6T	06: 6mm 12: 12mm	0100: 100mm to 0900: 900mm	A	TL: TLC	N	No symbol: When selecting N SR SL	C: From top of base (counter-base holes)

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

Basic Specifications

Control device type				TLC	
Motor rated output [W]				50	
Ball screw lead [mm]				6	12
Rated speed *1 [mm/s]				300	600
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	30	15
		Vertical mount	0.3G	7	3
Rated thrust *3 [N]				134	67
Maximum thrust *4 [N]				402	201
Electromagnetic brake retention [N]				268	134
Running life *5 [km]				10,000	
Static permissible moment *6 [N·m]				M_A: 123, M_B: 127, 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. See page 3-065, "Speed and Load Capacity."
*3 At rated motor torque.
*4 Dependent on maximum peak 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 Static maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

US6T + TLC

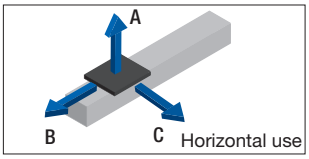
Motor rated output **50W**

Motor bracket		Option		Motor rated output		Home position		Cable type and length
A	–	GR	/	M05		S02		H5

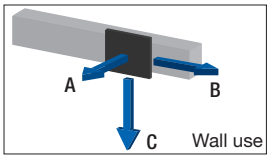
A	No symbol: Red end cap	M05: 50W	D00: Motor side (Mechanical home seeking)	F3: Standard 3m
	GR: Gray end cap	M05B: 50W with brake	R00: Opposite motor side (Mechanical home seeking)	F5: Standard 5m
				FA: Standard 10m
				H3: High flex 3m
				H5: High flex 5m
				HA: High flex 10m

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

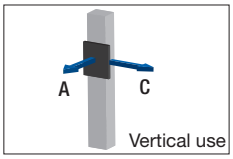
Permissible Overhang Length*



Horizontal use



Wall use



Vertical use

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	7	1790	470	510
	15	830	240	260
	30	410	110	130
12	1	2000	1580	1470
	7	1110	470	420
	15	630	240	210

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	1	1520	1520	2000
	7	410	410	1000
	15	190	180	520

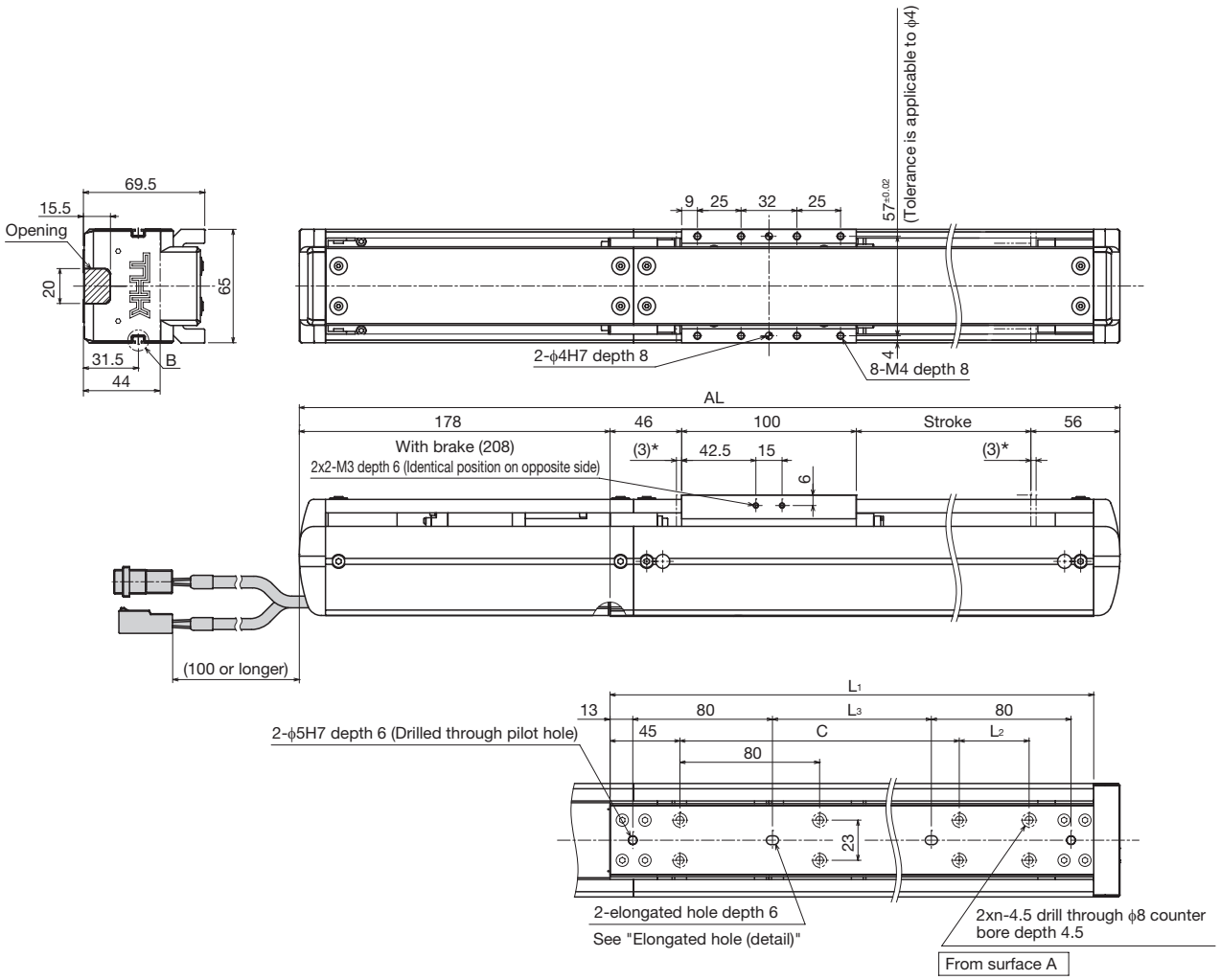
Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
6	1	1550	1540
	3	830	830
	7	450	440
12	1	1440	1430
	2	990	980
	3	760	760

*Dependent on running life of LM guide (10,000km) and on static permissible moment.
The conditions for calculation are as follows:
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, 50W

Dimensions



* Stroke up to mechanical stopper.

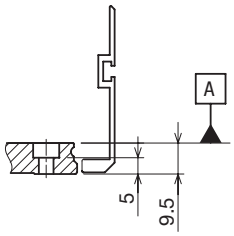
Stroke [mm] (Stroke between mechanical stoppers)		100 (106)	150 (156)	200 (206)	250 (256)	300 (306)	350 (356)	400 (406)
Maximum speed *1 *2 [mm/s]	Ball screw lead: 6mm	360						
	Ball screw lead: 12mm	720						
Dimensions [mm]	AL*3	480 (510)	530 (560)	580 (610)	630 (660)	680 (710)	730 (760)	780 (810)
	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 *3[kg]		3.4 (3.6)	3.6 (3.8)	3.8 (4.0)	4.0 (4.2)	4.2 (4.4)	4.5 (4.7)	4.7 (4.9)

*1 Load capacity and maximum speed are dependent on usage conditions. See page 3-065, "Speed and Load Capacity."
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

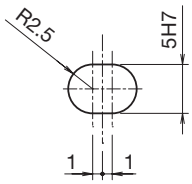
US6T + TLC

Motor rated output
50W

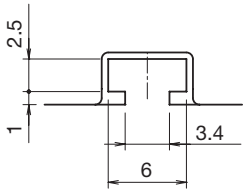
Detail



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	180	160
720					630	550	480	420	370	330
	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
	4.9 (5.1)	5.1 (5.3)	5.3 (5.5)	5.5 (5.7)	5.7 (5.9)	5.9 (6.1)	6.1 (6.3)	6.3 (6.5)	6.6 (6.8)	6.8 (7.0)

US6RT Motor wrap, 50W

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method	
US6RT	– 06	– 0150	A	– TL	– N	– SL	– C	–

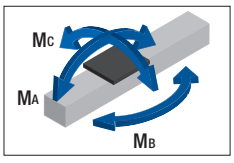
US6RT	06: 6mm 12: 12mm	0100: 100mm to 0900: 900mm	A	TL: TLC	N	No symbol: When selecting N SR SL	C: From top of base (counter-base holes)

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

Basic Specifications

Control device type				TLC	
Motor rated output [W]				50	
Ball screw lead [mm]				6	12
Rated speed *1 [mm/s]				300	600
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	30	15
		Vertical mount	0.3G	7	3
Rated thrust *3 [N]				134	67
Maximum thrust *4 [N]				402	201
Electromagnetic brake retention [N]				268	134
Running life *5 [km]				10,000	
Static permissible moment *6 [N·m]				M_A: 123, M_B: 127, 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. See page 3-065, "Speed and Load Capacity."
*3 At rated motor torque.
*4 Dependent on maximum peak 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 Static maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

US6RT + TLC

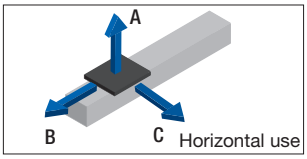
Motor rated output **50W**

Motor bracket		Option	Motor rated output	Motor cable orientation	Home position	Cable type and length
A	–	MR–GR	/ M05	L	S02	H5

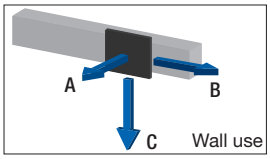
Motor bracket	Option	Motor rated output	Motor cable orientation	Home position	Cable type and length
A	MR: Motor right wrap	M05: 50W	R: Right	D00: Motor side (Mechanical home seeking)	F3: Standard 3m
	ML: Motor left wrap	M05B: 50W with brake	U: Up	R00: Opposite motor side (Mechanical home seeking)	F5: Standard 5m
	GR: Gray end cap		L: Left		FA: Standard 10m
			D: Down		H3: High flex 3m
					H5: High flex 5m
					HA: High flex 10m

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

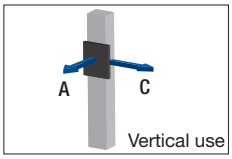
Permissible Overhang Length*



Horizontal use



Wall use



Vertical use

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	7	1790	470	510
	15	830	240	260
	30	410	110	130
12	1	2000	1580	1470
	7	1110	470	420
	15	630	240	210

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	1	1520	1520	2000
	7	410	410	1000
	15	190	180	520

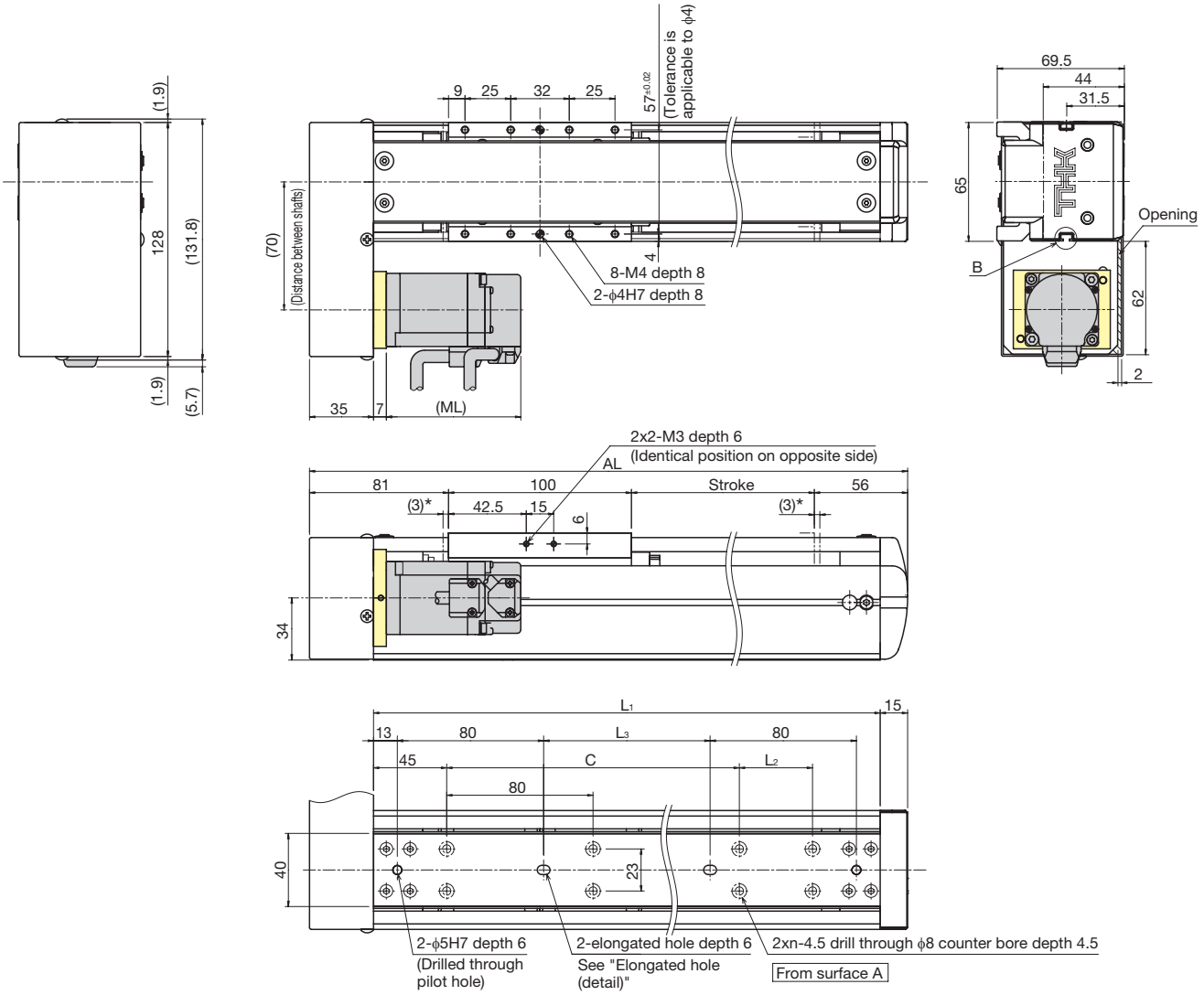
Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
6	1	1550	1540
	3	830	830
	7	450	440
12	1	1440	1430
	2	990	980
	3	760	760

*Dependent on running life of LM guide (10,000km) and on static permissible moment.
The conditions for calculation are as follows:
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, 50W

Dimensions



* Stroke up to mechanical stopper.

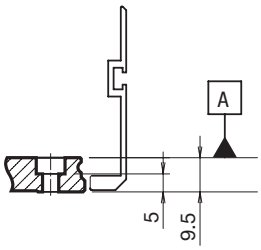
Stroke [mm] (Stroke between mechanical stoppers)		100 (106)	150 (156)	200 (206)	250 (256)	300 (306)	350 (356)	400 (406)
Maximum speed *1 *2 [mm/s]	Ball screw lead: 6mm	360						
	Ball screw lead: 12mm	720						
Dimensions [mm]	AL	337	387	437	487	537	587	637
	ML	59.5						
	ML: With brake	95.1						
	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 *3 [kg]		3.4 (3.6)	3.6 (3.8)	3.8 (4.0)	4.0 (4.2)	4.2 (4.4)	4.4 (4.6)	4.6 (4.8)

*1 Load capacity and maximum speed are dependent on usage conditions. See page 3-065, "Speed and Load Capacity."
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

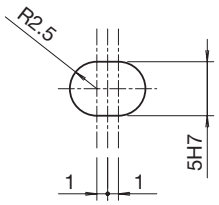
US6RT + TLC

Motor rated output
50W

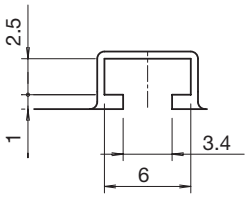
Detail



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	180	160
	720				630	550	480	420	370	330
	687	737	787	837	887	937	987	1037	1087	1137
	59.5									
	95.1									
	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
	4.8 (5.0)	5.0 (5.2)	5.3 (5.5)	5.5 (5.7)	5.7 (5.9)	5.9 (6.1)	6.1 (6.3)	6.3 (6.5)	6.5 (6.7)	6.7 (6.9)

US6T Direct motor coupling, 100W

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method	
US6T	– 06	– 0150	A	– TH	– 6	– SL	– C	–

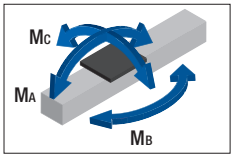
US6T	06: 6mm 12: 12mm	0100: 100mm to 0900: 900mm	A	TH: THC	N 6 E	No symbol: When selecting N SR SL	C: From top of base (counter-base holes)

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

Basic Specifications

Control device type				THC	
Motor rated output [W]				100	
Ball screw lead [mm]				6	12
Rated speed *1 [mm/s]				300	600
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	70	30
		Vertical mount	0.3G	14	7
Rated thrust *3 [N]				268	134
Maximum thrust *4 [N]				795	398
Electromagnetic brake retention [N]				268	134
Running life *5 [km]				10,000	
Static permissible moment *6 [N·m]				M_A: 123, M_B: 127, 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. See page 3-065, "Speed and Load Capacity."
*3 At rated motor torque.
*4 Dependent on maximum peak 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 Static maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

US6T + THC

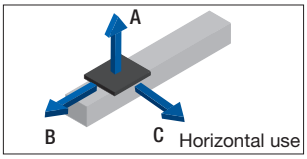
Motor rated output
100W

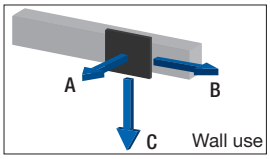
Motor bracket		Option		Motor rated output	Home position	Power supply voltage	Cable type and length
A	–	GR	/	M10	S02	D2	H5

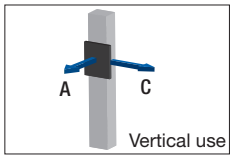
Motor bracket	Option	Motor rated output	Home position	Power supply voltage	Cable type and length
A	No symbol: Red end cap	M10: 100W	S02 : Motor side (Home position sensor)	D1: 100V	F3 : Standard 3m
	GR: Gray end cap	M10B: 100W with brake	S03 : Opposite motor side (Home position sensor)	D2: 200V	F5 : Standard 5m
			D00: Motor side (Mechanical home seeking)		FA : Standard 10m
			R00 : Opposite motor side (Mechanical home seeking)		H3 : High flex 3m
					H5 : High flex 5m
					HA: High flex 10m

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

Permissible Overhang Length*







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

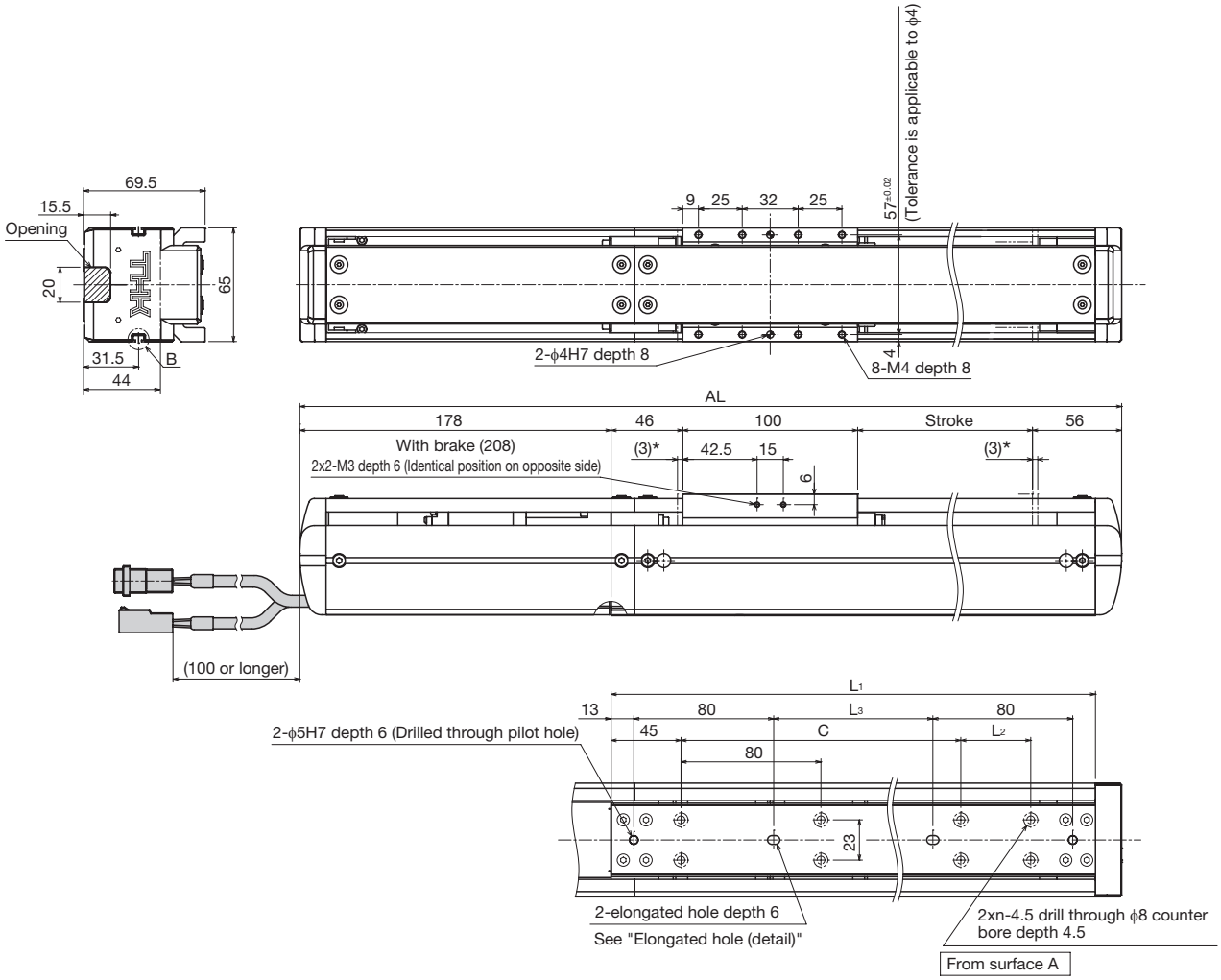
Vertical mount [mm]

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.
The conditions for calculation are as follows:
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, 100W

Dimensions



* Stroke up to mechanical stopper.

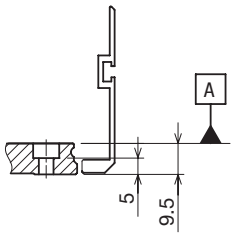
Stroke [mm] (Stroke between mechanical stoppers)		100 (106)	150 (156)	200 (206)	250 (256)	300 (306)	350 (356)	400 (406)
Maximum speed *1 *2 [mm/s]	Ball screw lead: 6mm	360						
	Ball screw lead: 12mm	720						
Dimensions [mm]	AL*3	480 (510)	530 (560)	580 (610)	630 (660)	680 (710)	730 (760)	780 (810)
	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 *3 [kg]		3.5 (3.7)	3.7 (3.9)	3.9 (4.1)	4.1 (4.3)	4.3 (4.5)	4.6 (4.8)	4.8 (5.0)

*1 Load capacity and maximum speed are dependent on usage conditions. See page 3-065, "Speed and Load Capacity."
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

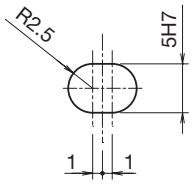
US6T + THC

Motor rated output
100W

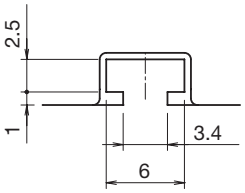
Detail



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	180	160
720					630	550	480	420	370	330
	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
	5.0 (5.2)	5.2 (5.4)	5.4 (5.6)	5.6 (5.8)	5.8 (6.0)	6.0 (6.2)	6.2 (6.4)	6.4 (6.6)	6.7 (6.9)	6.9 (7.1)

US6RT Motor wrap, 100W

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method	
US6RT	– 06	– 0150	A	– TH	– 6	– SL	– C	–

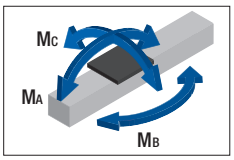
US6RT	06: 6mm 12: 12mm	0100: 100mm to 0900: 900mm	A	TH: THC	N 6 E	No symbol: When selecting N SR SL	C: From top of base (counter-base holes)

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

Basic Specifications

Control device type				THC	
Motor rated output [W]				100	
Ball screw lead [mm]				6	12
Rated speed *1 [mm/s]				300	600
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	70	30
		Vertical mount	0.3G	14	7
Rated thrust *3 [N]				268	134
Maximum thrust *4 [N]				795	398
Electromagnetic brake retention [N]				268	134
Running life *5 [km]				10,000	
Static permissible moment *6 [N·m]				M_A: 123, M_B: 127, 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. See page 3-065, "Speed and Load Capacity."
*3 At rated motor torque.
*4 Dependent on maximum peak 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 Static maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

US6RT + THC

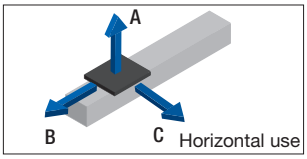
Motor rated output
100W

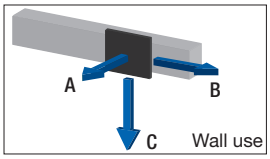
Motor bracket		Option		Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
A	–	MR–GR	/	M10	L	S02	D2	H5

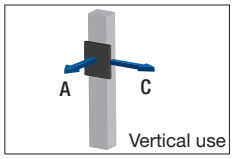
Motor bracket	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
A	MR: Motor right wrap	M10: 100W	R: Right	S02: Motor side (Home position sensor)	D1: 100V	F3: Standard 3m
	ML: Motor left wrap	M10B: 100W with brake	U: Up	S03: Opposite motor side (Home position sensor)	D2: 200V	F5: Standard 5m
	GR: Gray end cap		L: Left	D00: Motor side (Mechanical home seeking)		FA: Standard 10m
			D: Down	R00: Opposite motor side (Mechanical home seeking)		H3: High flex 3m
						H5: High flex 5m
						HA: High flex 10m

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

Permissible Overhang Length*







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

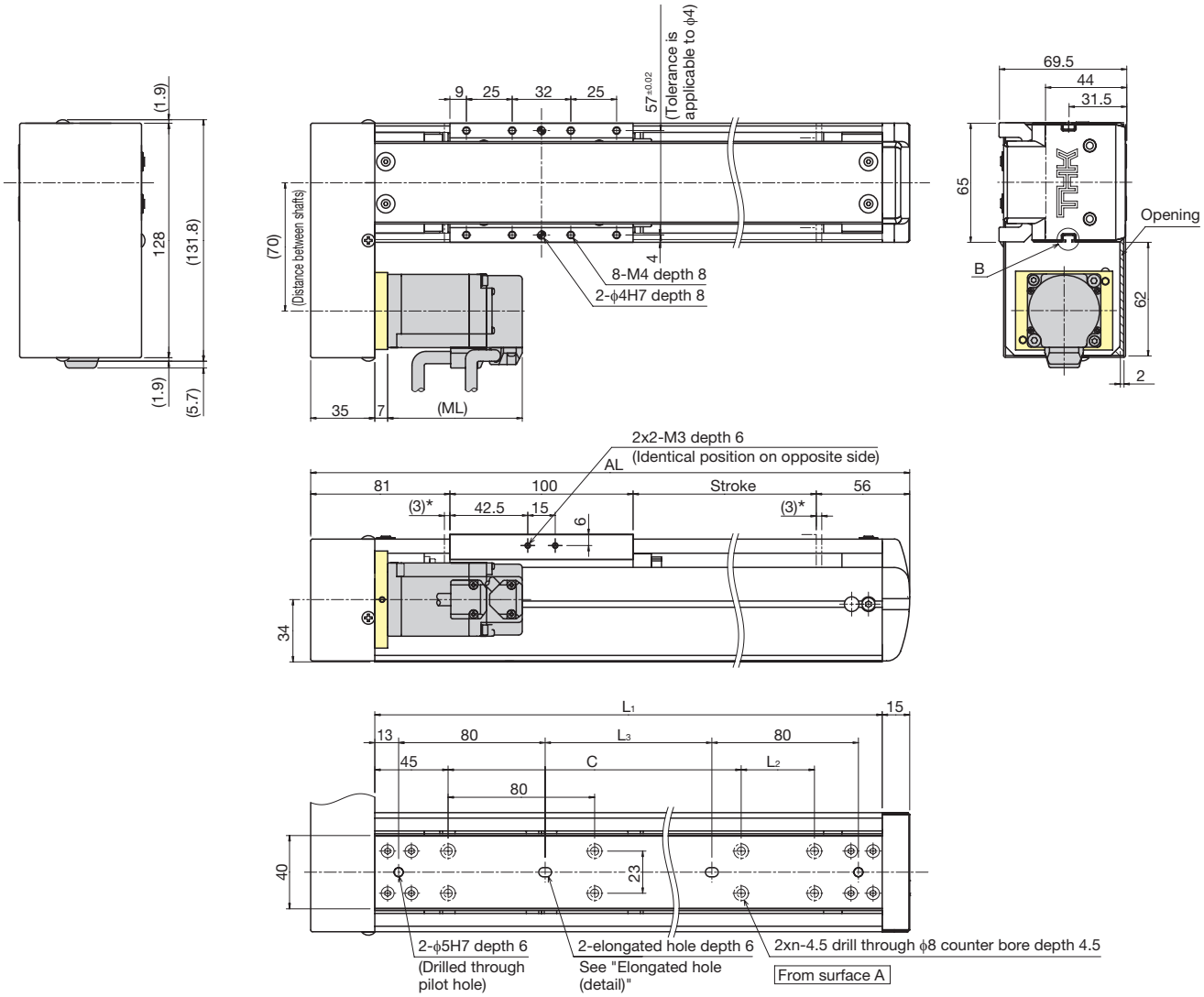
Vertical mount [mm]

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.
The conditions for calculation are as follows:
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, 100W

Dimensions



* Stroke up to mechanical stopper.

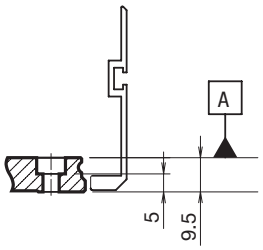
Stroke [mm] (Stroke between mechanical stoppers)		100 (106)	150 (156)	200 (206)	250 (256)	300 (306)	350 (356)	400 (406)
Maximum speed *1 *2 [mm/s]	Ball screw lead: 6mm	360						
	Ball screw lead: 12mm	720						
Dimensions [mm]	AL	337	387	437	487	537	587	637
	ML	73.5						
	ML: With brake	109.1						
	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 *3 [kg]		3.5 (3.7)	3.7 (3.9)	3.9 (4.1)	4.1 (4.3)	4.3 (4.5)	4.5 (4.7)	4.7 (4.9)

*1 Load capacity and maximum speed are dependent on usage conditions. See page 3-065, "Speed and Load Capacity."
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

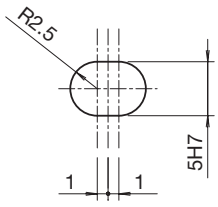
US6RT + THC

Motor rated output
100W

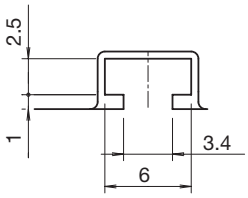
Detail



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	180	160
	720				630	550	480	420	370	330
	687	737	787	837	887	937	987	1037	1087	1137
	73.5									
	109.1									
	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
	4.9 (5.1)	5.1 (5.3)	5.4 (5.6)	5.6 (5.8)	5.8 (6.0)	6.0 (6.2)	6.2 (6.4)	6.4 (6.6)	6.6 (6.8)	6.8 (7.0)

US8T Direct motor coupling, 100W

Model Configuration

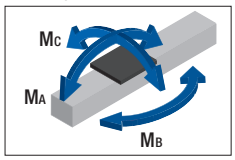
Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method	
US8T	– 05	– 0150	A	– TH	– 6	– SR	– C	–

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

Basic Specifications

Control device type				THC		
Motor rated output [W]				100		
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 mount	0.3G	80	40	20	8
		Vertical mount	0.3G	16*3	8	4	2
Rated thrust *4 [N]				322	161	80	54
Maximum thrust *5 [N]				955	478	239	159
Electromagnetic brake retention [N]				322	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. See page 3-066, "Speed and Load Capacity."
*3 When acceleration and deceleration rate is 0.2G.
*4 At rated motor torque.
*5 Dependent on maximum peak 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 Static maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

US8T + THC

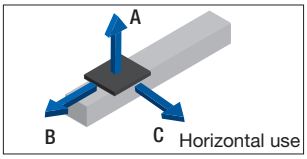
Motor rated output
100W

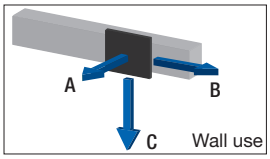
Motor bracket		Option		Motor rated output	Home position	Power supply voltage	Cable type and length
A	–	GR	/	M10	S02	D2	H5

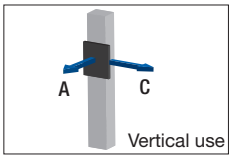
Motor bracket	Option	Motor rated output	Home position	Power supply voltage	Cable type and length
A	No symbol: Red end cap	M10: 100W	No symbol: When selecting P or Q	D1: 100V	F3: Standard 3m
	GR: Gray end cap	M10B: 100W with brake	S02 : Motor side (Home position sensor)	D2: 200V	F5: Standard 5m
			S03 : Opposite motor side (Home position sensor)		FA: Standard 10m
			D00: Motor side (Mechanical home seeking)		H3: High flex 3m
			R00 : Opposite motor side (Mechanical home seeking)		H5: High flex 5m
					HA: High flex 10m

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

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	10	1860	660	560
	20	1190	370	310
	40	680	190	150
20	5	2000	1060	930
	10	1860	660	560
	20	1190	370	310
30	2	2000	1780	1580
	4	2000	1220	1070
	8	2000	780	670

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	10	550	590	1690
	20	280	310	1010
	40	120	120	510
20	5	930	1000	2000
	10	550	590	1690
	20	180	310	1010
30	2	1610	1710	2000
	4	1080	1150	2000
	8	660	710	1910

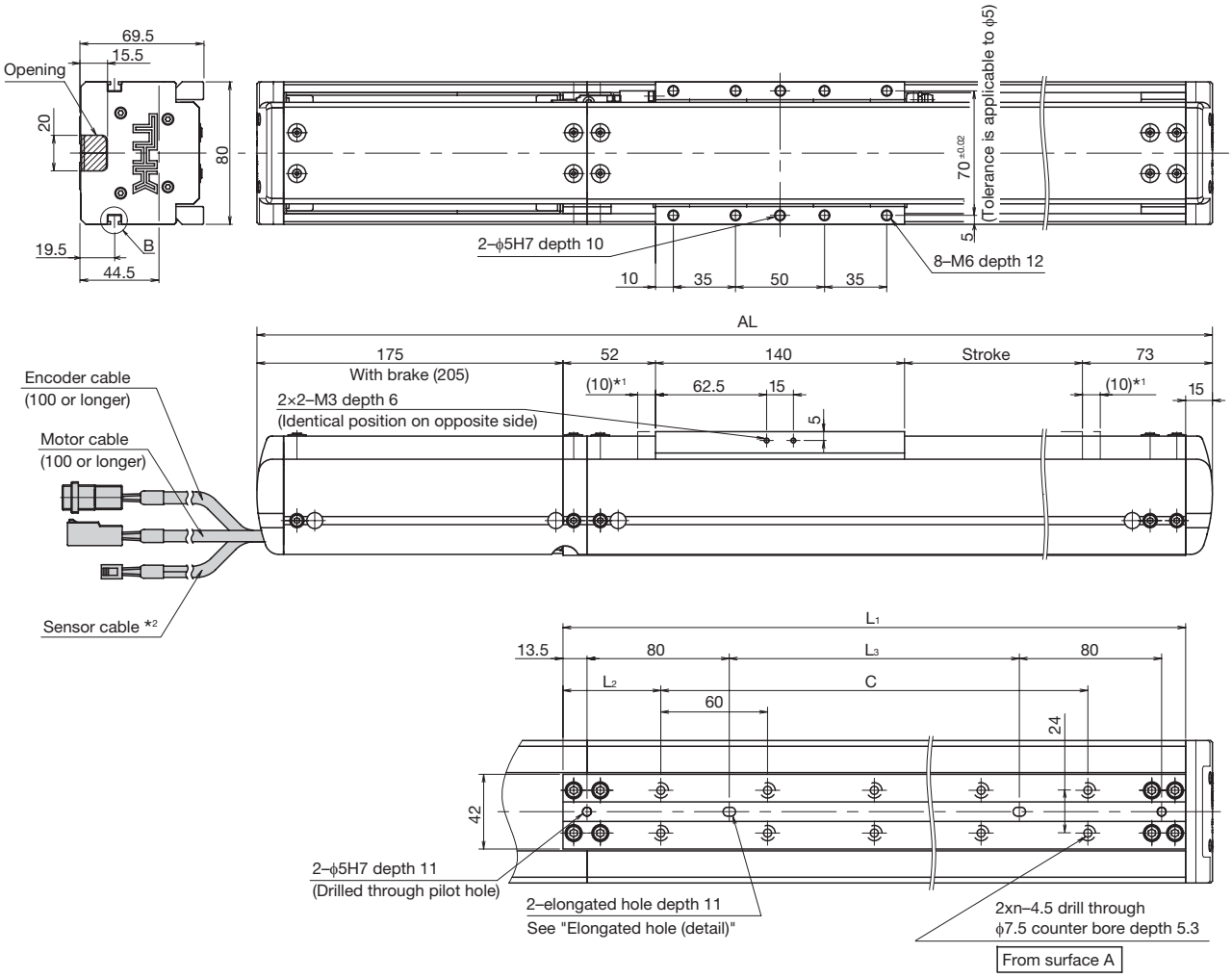
Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
5	4	1190	1180
	8	760	750
	16	440	430
10	2	1690	1680
	4	1150	1140
	8	720	720
20	1	2000	2000
	2	1690	1680
	4	1150	1140
30	0.5	2000	2000
	1	2000	2000
	2	1690	1680

*Dependent on running life of LM guide (10,000km) and on static permissible moment.
The conditions for calculation are as follows:
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, 100W

Dimensions



*1 Stroke up to mechanical stopper.
*2 The length of the sensor cable varies depending on specifications.
For details, visit the THK Technical Support website.

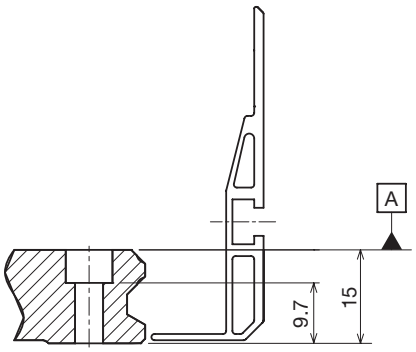
Stroke [mm] (Stroke between mechanical stoppers)			100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)
Maximum speed *1 *2 [mm/s]	Ball screw lead	5mm	300								
		10mm	600								
		20mm	1200								
		30mm	1800								
Dimensions [mm]	AL*3		540 (570)	590 (620)	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 *3 [kg]			6.1 (6.4)	6.4 (6.7)	6.7 (7.0)	7.0 (7.3)	7.3 (7.6)	7.5 (7.8)	7.8 (8.1)	8.1 (8.4)	8.4 (8.7)

*1 Load capacity and maximum speed are dependent on usage conditions. See page 3-066, "Speed and Load Capacity."
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

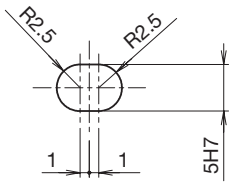
US8T + THC

Motor rated output
100W

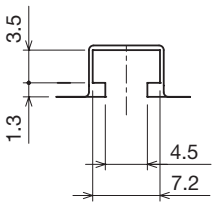
Detail



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			290	250	220	200	180	160	150	130	120
	600			550	480	430	380	340	310	280	250	230
	1200			1090	960	850	760	680	610	560	510	460
	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
	8.7 (9.0)	8.9 (9.2)	9.2 (9.5)	9.4 (9.7)	9.7 (10.0)	9.9 (10.2)	10.2 (10.5)	10.5 (10.8)	10.7 (11.0)	11.0 (11.3)	11.2 (11.5)	11.5 (11.8)

US8RT Motor wrap, 100W

Model Configuration

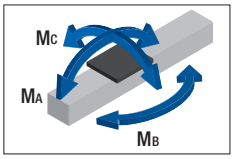
Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method	
US8RT	– 05	– 0150	A	– TH	– 6	– SL	– C	–

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

Basic Specifications

Control device type				THC			
Motor rated output [W]				100			
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 mount	0.3G	80	40	20	8
		Vertical mount	0.3G	16*3	8	4	2
Rated thrust *4 [N]				322	161	80	54
Maximum thrust *5 [N]				955	478	239	159
Electromagnetic brake retention [N]				322	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. See page 3-066, "Speed and Load Capacity."
*3 When acceleration and deceleration rate is 0.2G.
*4 At rated motor torque.
*5 Dependent on maximum peak 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 Static maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

US8RT + THC

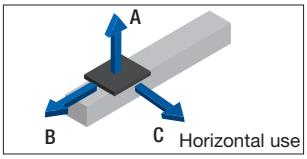
Motor rated output
100W

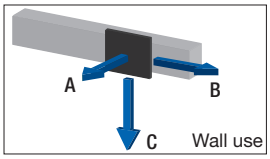
Motor bracket		Option		Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
A	–	MR–GR	/	M10	L	S02	D2	H5

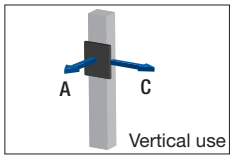
Motor bracket	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
A	MR: Motor right wrap	M10: 100W	R: Right	No symbol: When selecting P or Q	D1: 100V	F3 : Standard 3m
	ML: Motor left wrap	M10B: 100W with brake	U: Up	S02 : Motor side (Home position sensor)	D2: 200V	F5 : Standard 5m
	GR : Gray end cap		L : Left	S03 : Opposite motor side (Home position sensor)		FA : Standard 10m
			D: Down	D00: Motor side (Mechanical home seeking)		H3 : High flex 3m
				R00 : Opposite motor side (Mechanical home seeking)		H5 : High flex 5m
						HA: High flex 10m

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

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	10	1860	660	560
	20	1190	370	310
	40	680	190	150
20	5	2000	1060	930
	10	1860	660	560
	20	1190	370	310
30	2	2000	1780	1580
	4	2000	1220	1070
	8	2000	780	670

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	10	550	590	1690
	20	280	310	1010
	40	120	120	510
20	5	930	1000	2000
	10	550	590	1690
	20	180	310	1010
30	2	1610	1710	2000
	4	1080	1150	2000
	8	660	710	1910

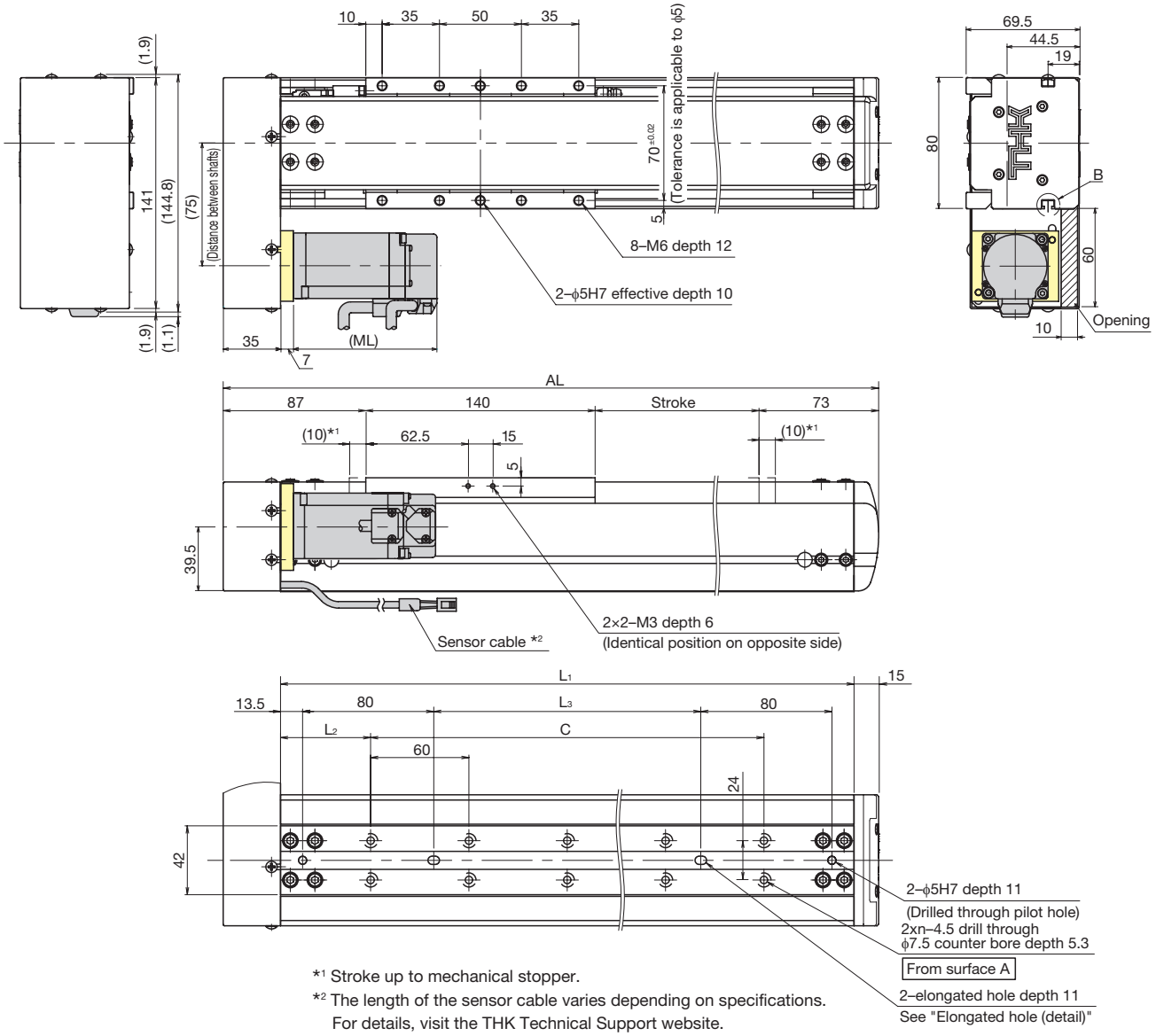
Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
5	4	1190	1180
	8	760	750
	16	440	430
10	2	1690	1680
	4	1150	1140
	8	720	720
20	1	2000	2000
	2	1690	1680
	4	1150	1140
30	0.5	2000	2000
	1	2000	2000
	2	1690	1680

*Dependent on running life of LM guide (10,000km) and on static permissible moment.
The conditions for calculation are as follows:
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, 100W

Dimensions



*1 Stroke up to mechanical stopper.
*2 The length of the sensor cable varies depending on specifications. For details, visit the THK Technical Support website.

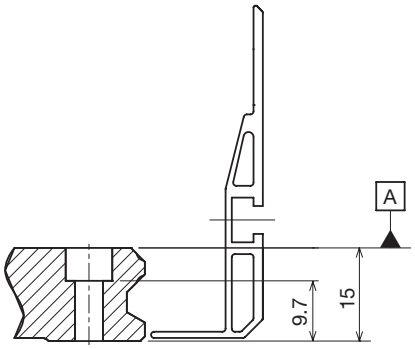
Stroke [mm] (Stroke between mechanical stoppers)			100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)
Maximum speed *1 *2 [mm/s]	Ball screw lead	5mm	300								
		10mm	600								
		20mm	1200								
		30mm	1800								
Dimensions [mm]	AL		400	450	500	550	600	650	700	750	800
	ML		73.5								
	ML: With brake		109.1								
	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 *3 [kg]			6.3 (6.6)	6.6 (6.9)	6.9 (7.2)	7.2 (7.5)	7.5 (7.8)	7.7 (8.0)	8.0 (8.3)	8.3 (8.6)	8.6 (8.9)

*1 Load capacity and maximum speed are dependent on usage conditions. See page 3-066, "Speed and Load Capacity."
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

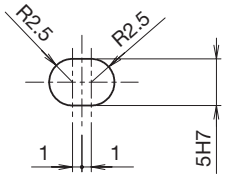
US8RT + THC

Motor rated output
100W

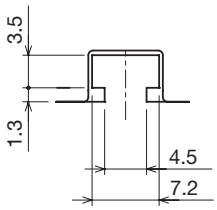
Detail



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		290	250	220	200	180	160	150	130	120
		600		550	480	430	380	340	310	280	250	230
		1200		1090	960	850	760	680	610	560	510	460
		1800		1600	1410	1250	1120	1000	910	820	750	690
	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400
						73.5						
						109.1						
	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
	8.9 (9.2)	9.1 (9.4)	9.4 (9.7)	9.6 (9.9)	9.9 (10.2)	10.1 (10.4)	10.4 (10.7)	10.7 (11.0)	10.9 (11.2)	11.2 (11.5)	11.4 (11.7)	11.7 (12.0)

US8T Direct motor coupling, 150W

Model Configuration

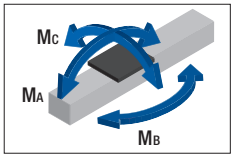
Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method	
US8T	– 10	– 0150	A	– TH	– 6	– SR	– C	–

US8T	10: 10mm 20: 20mm 30: 30mm	0100: 100mm to 1100: 1100mm	A	TH: THC	P Q N 6 E	No symbol: When selecting P, Q, or N SR SL	C: From top of base (counter-base holes)

Basic Specifications

Control device type				THC		
Motor rated output [W]				150		
Ball screw lead [mm]				10	20	30
Rated speed *1 [mm/s]				500	1000	1500
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	60	30	12
		Vertical mount	0.3G	12	6	3
Rated thrust *3 [N]				240	120	80
Maximum thrust *4 [N]				719	359	240
Electromagnetic brake retention [N]				161	80	54
Running life *5 [km]				10,000		
Static permissible moment *6 [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. See page 3-067, "Speed and Load Capacity."
*3 At rated motor torque.
*4 Dependent on maximum peak torque and permissible load.
*5 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.
*6 Static maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

US8T + THC

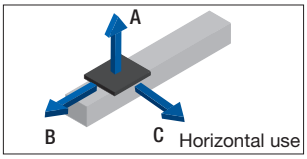
Motor rated output
150W

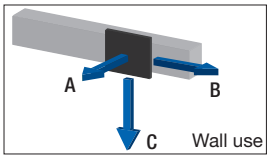
Motor bracket		Option		Motor rated output		Home position		Power supply voltage		Cable type and length	
A	–	GR	/	M15		S02		D2		H5	

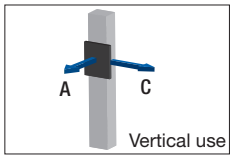
A	No symbol: Red end cap	M15: 150W	No symbol: When selecting P or Q	D1: 100V	F3 : Standard 3m
	GR: Gray end cap	M15B: 150W with brake	S02 : Motor side (Home position sensor)	D2: 200V	F5 : Standard 5m
			S03 : Opposite motor side (Home position sensor)		FA : Standard 10m
			D00: Motor side (Mechanical home seeking)		H3 : High flex 3m
			R00 : Opposite motor side (Mechanical home seeking)		H5 : High flex 5m
					HA: High flex 10m

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

Permissible Overhang Length*







Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
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
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

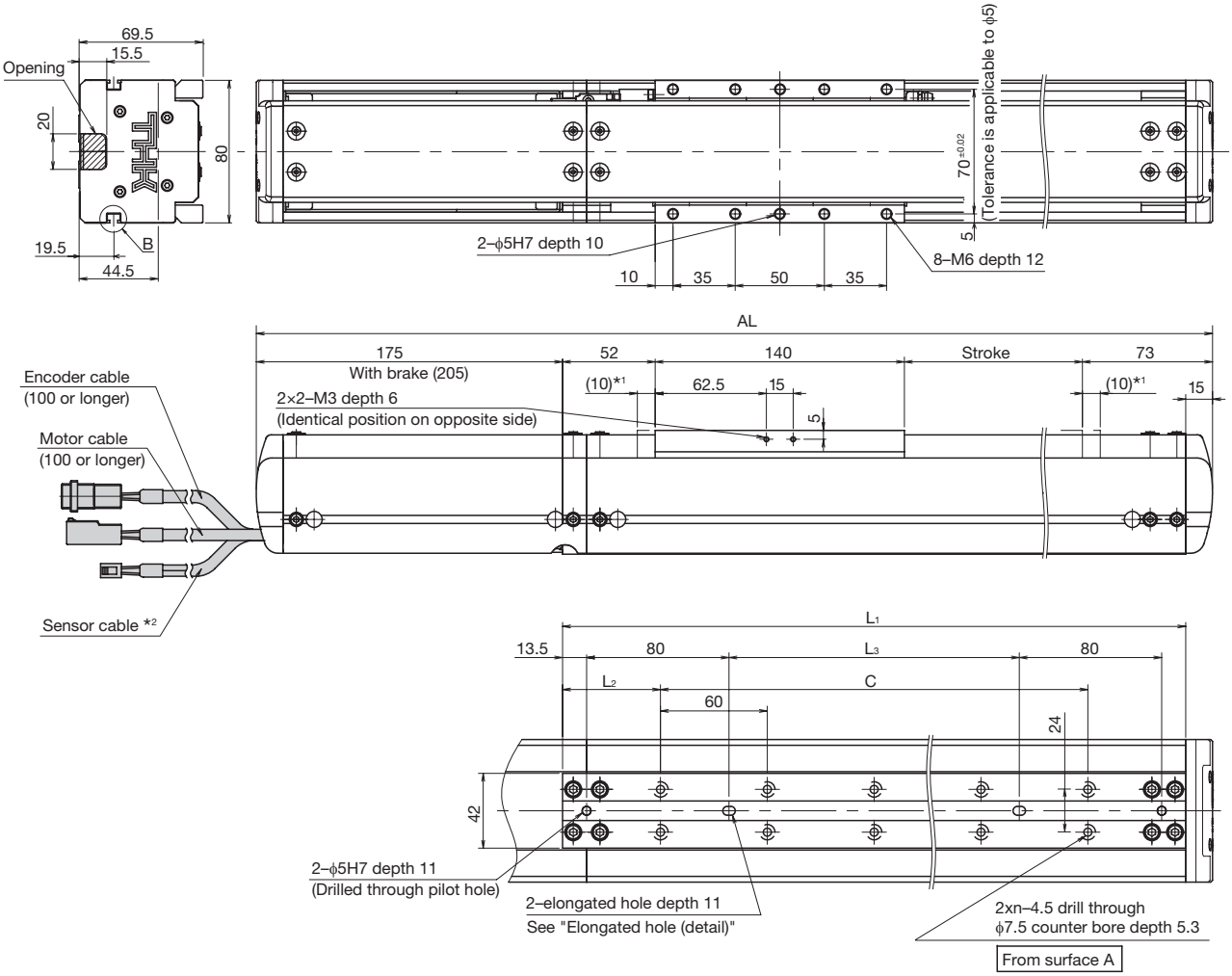
Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
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.
The conditions for calculation are as follows:
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, 150W

Dimensions



*1 Stroke up to mechanical stopper.
*2 The length of the sensor cable varies depending on specifications. For details, visit the THK Technical Support website.

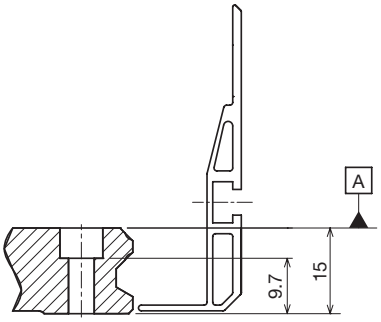
Stroke [mm] (Stroke between mechanical stoppers)			100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)
Maximum speed *1 *2 [mm/s]	Ball screw lead	10mm	600								
		20mm	1200								
		30mm	1800								
Dimensions [mm]	AL*3		540 (570)	590 (620)	640 (670)	690 (720)	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 *3 [kg]			6.2 (6.4)	6.4 (6.6)	6.7 (6.9)	7 (7.2)	7.3 (7.5)	7.6 (7.8)	7.9 (8.1)	8.2 (8.4)	8.4 (8.6)

*1 Load capacity and maximum speed are dependent on usage conditions. See page 3-067, "Speed and Load Capacity."
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

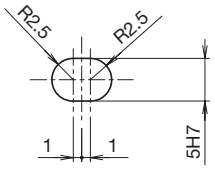
US8T + THC

Motor rated output
150W

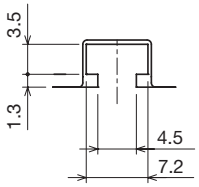
Detail



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)
	600			550	480	430	380	340	310	280	250	230
	1200			1090	960	850	760	680	610	560	510	460
	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
	8.7 (8.9)	9 (9.2)	9.2 (9.4)	9.5 (9.7)	9.7 (9.9)	10 (10.2)	10.2 (10.4)	10.5 (10.7)	10.8 (11)	11 (11.2)	11.3 (11.5)	11.5 (11.7)

US8RT Motor wrap, 150W

Model Configuration

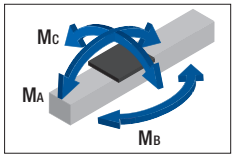
Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method	
US8RT –	10 –	0150	A –	TH –	6 –	SR –	C –	

US8RT	10: 10mm 20: 20mm 30: 30mm	0100: 100mm to 1100: 1100mm	A	TH: THC	P Q N 6 E	No symbol: When selecting P, Q, or N SR SL	C: From top of base (counter-base holes)

Basic Specifications

Control device type				THC		
Motor rated output [W]				150		
Ball screw lead [mm]				10	20	30
Rated speed *1 [mm/s]				500	1000	1500
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	60	30	12
		Vertical mount	0.3G	12	6	3
Rated thrust *3 [N]				240	120	80
Maximum thrust *4 [N]				719	359	240
Electromagnetic brake retention [N]				161	80	54
Running life *5 [km]				10,000		
Static permissible moment *6 [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. See page 3-067, "Speed and Load Capacity."
*3 At rated motor torque.
*4 Dependent maximum peak torque and permissible load.
*5 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.
*6 Static maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

US8RT + THC

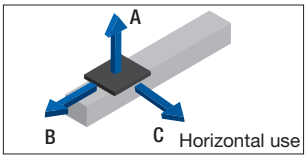
Motor rated output
150W

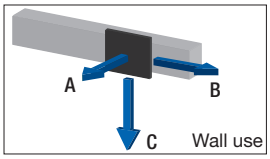
Motor bracket		Option		Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
A	–	MR–GR	/	M15	L	S02	D2	H5

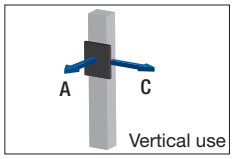
Motor bracket	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
A	MR: Motor right wrap	M15: 150W	R: Right	No symbol: When selecting P or Q	D1: 100V	F3 : Standard 3m
	ML: Motor left wrap	M15B: 150W with brake	U: Up	S02 : Motor side (Home position sensor)	D2: 200V	F5 : Standard 5m
	GR : Gray end cap		L : Left	S03 : Opposite motor side (Home position sensor)		FA : Standard 10m
			D: Down	D00: Motor side (Mechanical home seeking)		H3 : High flex 3m
				R00 : Opposite motor side (Mechanical home seeking)		H5 : High flex 5m
						HA: High flex 10m

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

Permissible Overhang Length*







Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
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
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

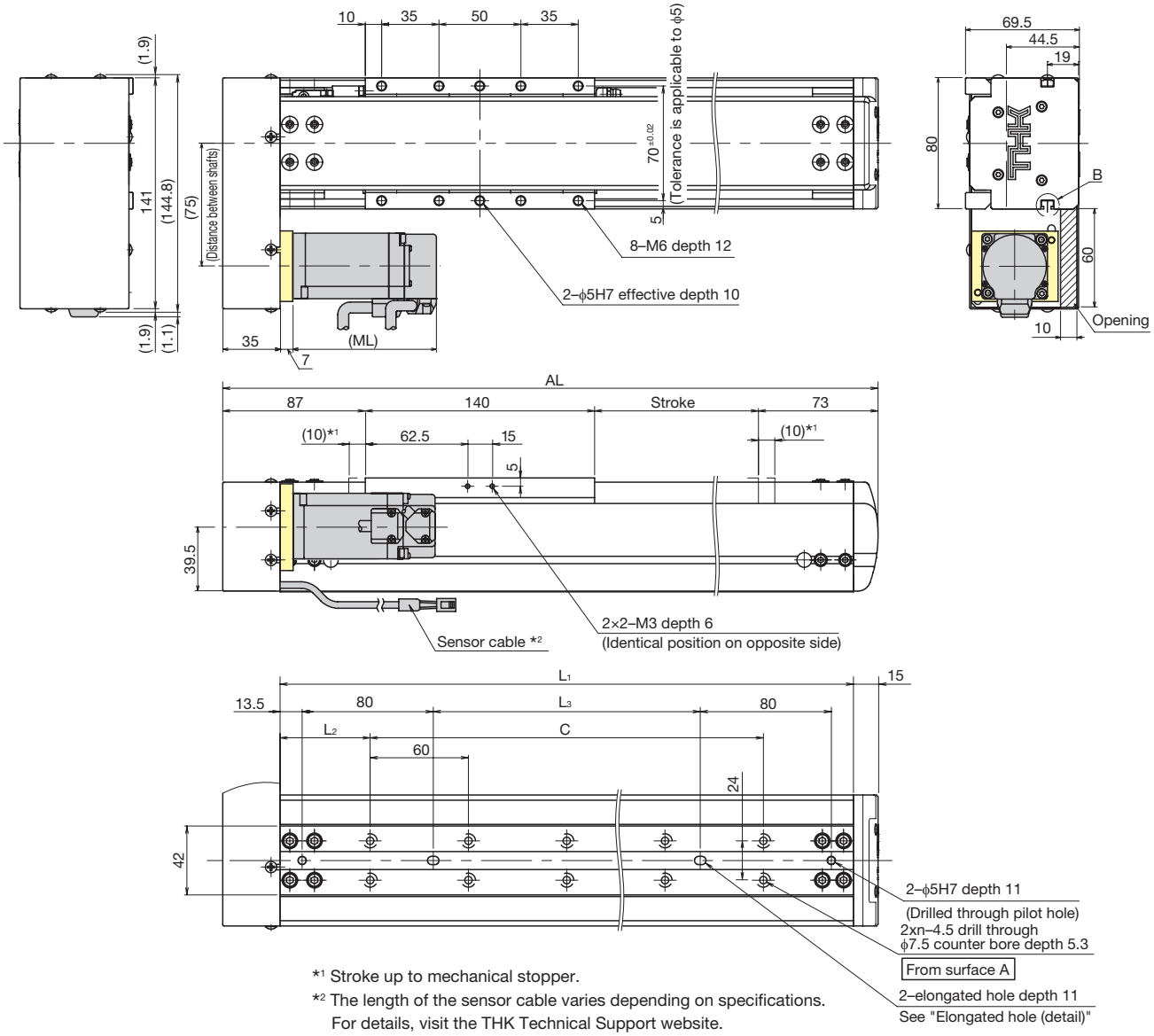
Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
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.
The conditions for calculation are as follows:
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, 150W

Dimensions



*1 Stroke up to mechanical stopper.
*2 The length of the sensor cable varies depending on specifications. For details, visit the THK Technical Support website.

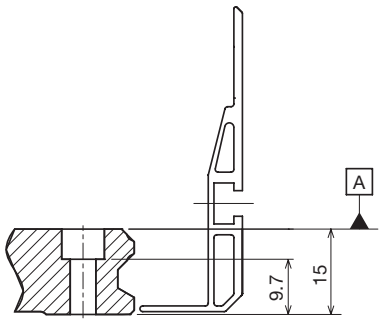
Stroke [mm] (Stroke between mechanical stoppers)		100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)
Maximum speed *1 *2 [mm/s]	Ball screw lead 10mm	600								
	Ball screw lead 20mm	1200								
	Ball screw lead 30mm	1800								
Dimensions [mm]	AL	400	450	500	550	600	650	700	750	800
	ML	87.5								
	ML: With brake	123.1								
	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 *3 [kg]		6.4 (6.6)	6.6 (6.8)	6.9 (7.1)	7.2 (7.4)	7.5 (7.7)	7.8 (8)	8.1 (8.3)	8.3 (8.5)	8.6 (8.8)

*1 Load capacity and maximum speed are dependent on usage conditions. See page 3-067, "Speed and Load Capacity."
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

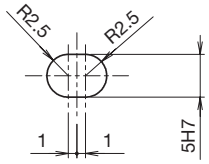
US8RT + THC

Motor rated output
150W

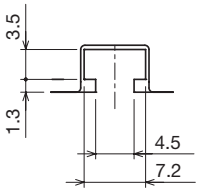
Detail



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)
		600		550	480	430	380	340	310	280	250	230
		1200		1090	960	850	760	680	610	560	510	460
		1800		1600	1410	1250	1120	1000	910	820	750	690
	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400
						87.5						
						123.1						
	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
	8.9 (9.1)	9.2 (9.4)	9.4 (9.6)	9.7 (9.9)	9.9 (10.1)	10.2 (10.4)	10.4 (10.6)	10.7 (10.9)	11 (11.2)	11.2 (11.4)	11.5 (11.7)	11.7 (11.9)

USW12T Direct motor coupling, 200W

Model Configuration

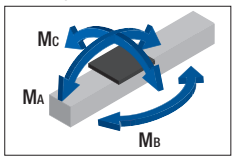
Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method	
USW12T –	05	– 0150	A	– TH	– 6	– SL	– C	–

USW12T	05: 5mm 10: 10mm 20: 20mm 30: 30mm	0100: 100mm to 1100: 1100mm	A	TH: THC	P Q N 6 E	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)

Basic Specifications

Control device type				THC		
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 mount	0.3G	100	80	40	25
		Vertical mount	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: 915, M_B: 317, M_C: 786			
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. See page 3-068, "Speed and Load Capacity."
*3 At rated motor torque.
*4 Dependent on maximum peak torque and permissible load.
*5 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.
*6 10,000 km with ball screw lead 5mm in vertical use.
*7 Static maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

USW12T + THC

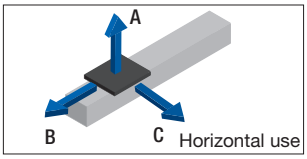
Motor rated output
200W

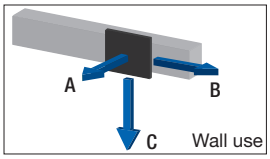
Motor bracket		Option		Motor rated output	Home position	Power supply voltage	Cable type and length
A	–	GR	/	M20	S02	D2	H5

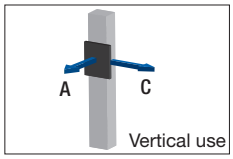
Motor bracket	Option	Motor rated output	Home position	Power supply voltage	Cable type and length
A	No symbol: Red end cap	M20: 200W	No symbol: When selecting P or Q	D1: 100V	F3 : Standard 3m
	GR: Gray end cap	M20B: 200W with brake	S02 : Motor side (Home position sensor)	D2: 200V	F5 : Standard 5m
	HG: Hanging jig		S03 : Opposite motor side (Home position sensor)		FA : Standard 10m
			D00: Motor side (Mechanical home seeking)		H3 : High flex 3m
			R00 : Opposite motor side (Mechanical home seeking)		H5 : High flex 5m
					HA: High flex 10m

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

Permissible Overhang Length*







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

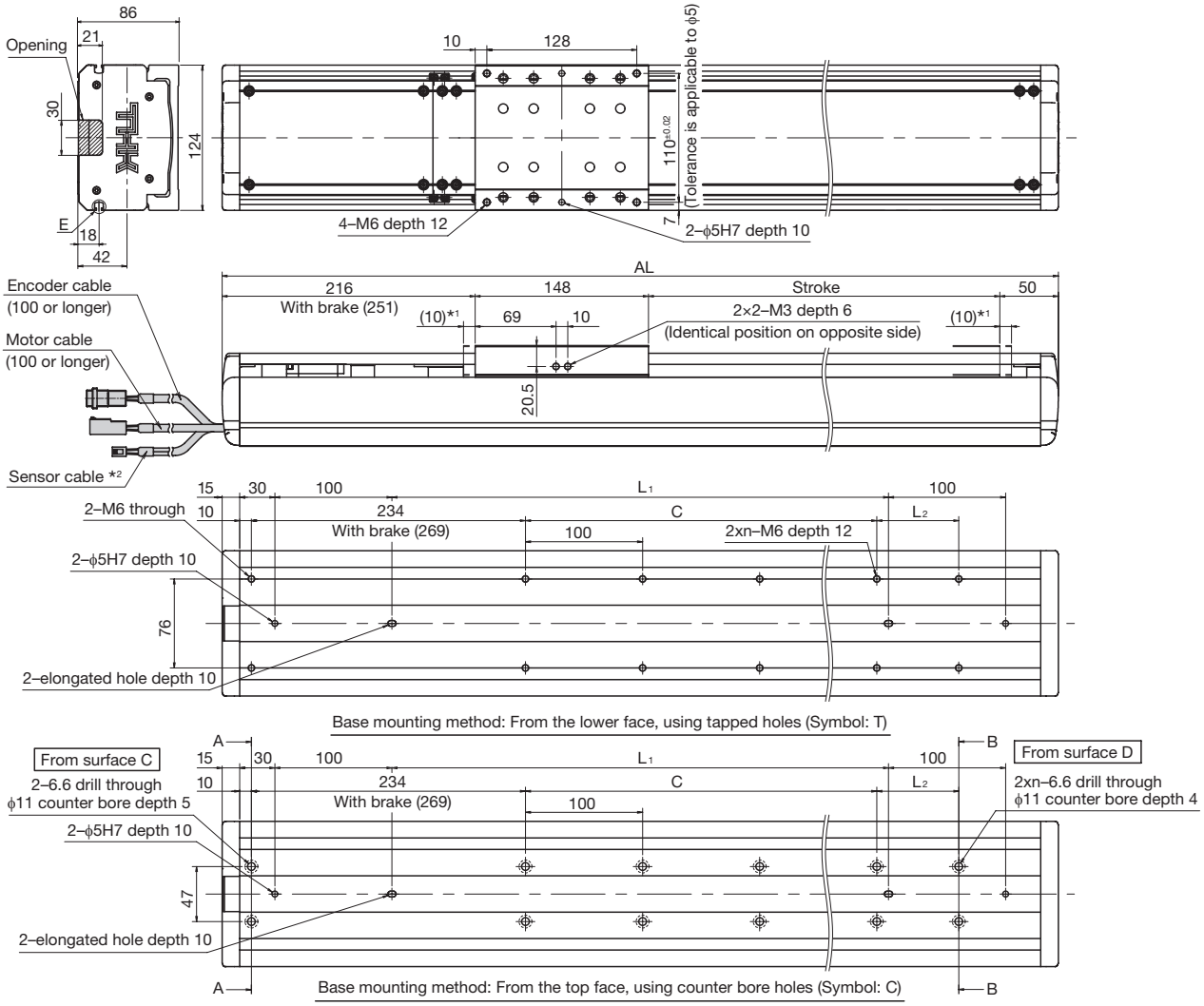
Vertical mount [mm]

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.
The conditions for calculation are as follows:
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 Direct motor coupling, 200W

Dimensions



*1 Stroke up to mechanical stopper.
*2 The length of the sensor cable varies depending on specifications. For details, visit the THK Technical Support website.

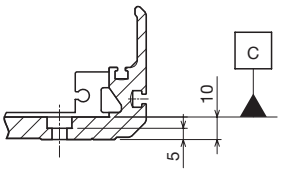
Stroke [mm] (Stroke between mechanical stoppers)			100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)
Maximum speed *1 *2 [mm/s]	Ball screw lead	5mm	300								
		10mm	600								
		20mm	1200								
		30mm	1800								
Dimensions [mm]	AL*3		514 (549)	564 (599)	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 *3 [kg]			7.5 (8.3)	8.1 (8.9)	8.7 (9.5)	9.3 (10.1)	9.9 (10.7)	10.5 (11.3)	11.1 (11.9)	11.7 (12.5)	12.2 (13)

*1 Load capacity and maximum speed are dependent on usage conditions. See page 3-068, "Speed and Load Capacity."
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

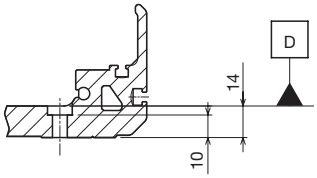
USW12T + THC

Motor rated output
200W

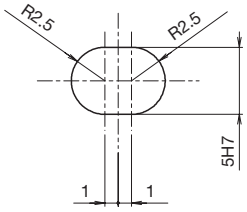
Detail



Cross section: A-A

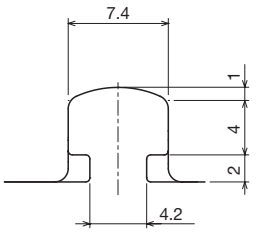


Cross section: B-B



Elongated hole (detail)

Counter-bore hole on 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			270	240	210	190	170	150	140	130	120
	600		580	510	450	400	360	320	290	260	240	220
	1200		1160	1020	900	800	720	640	580	530	480	440
	1800		1700	1490	1320	1180	1050	950	860	780	720	660
	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
	12.9 (13.7)	13.4 (14.2)	14.1 (14.9)	14.6 (15.4)	15.3 (16.1)	15.8 (16.6)	16.5 (17.3)	17.1 (17.9)	17.7 (18.5)	18.3 (19.1)	18.9 (19.7)	19.5 (20.3)

USW12RT Motor wrap, 200W

Model Configuration

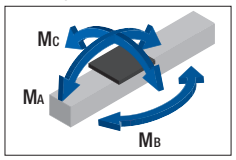
Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method	
USW12RT –	05 –	0150	A –	TH –	6 –	SL –	C –	

USW12RT	05: 5mm 10: 10mm 20: 20mm 30: 30mm	0100: 100mm to 1100: 1100mm	A	TH: THC	P Q N 6 E	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)

Basic Specifications

Control device type				THC			
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 mount	0.3G	100	80	40	25
		Vertical mount	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: 915, M_B: 317, M_C: 786			
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. See page 3-068, "Speed and Load Capacity."
*3 At rated motor torque.
*4 Dependent on maximum peak torque and permissible load.
*5 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.
*6 10,000 km with ball screw lead 5mm in vertical use.
*7 Static maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

USW12RT + THC

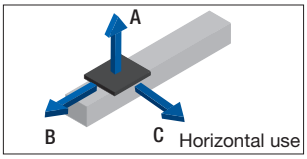
Motor rated output
200W

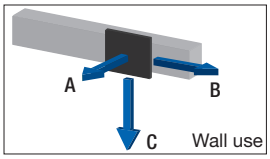
Motor bracket		Option		Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
A	–	MR–GR	/	M20	L	S02	D2	H5

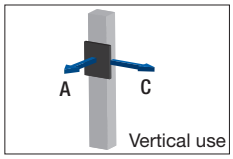
Motor bracket	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
A	MR: Motor right wrap	M20: 200W	R: Right	No symbol: When selecting P or Q	D1: 100V	F3 : Standard 3m
	ML: Motor left wrap	M20B: 200W with brake	U: Up	S02 : Motor side (Home position sensor)	D2: 200V	F5 : Standard 5m
	GR : Gray end cap		L : Left	S03 : Opposite motor side (Home position sensor)		FA : Standard 10m
	HG : Hanging jig		D: Down	D00: Motor side (Mechanical home seeking)		H3 : High flex 3m
				R00 : Opposite motor side (Mechanical home seeking)		H5 : High flex 5m
						HA: High flex 10m

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

Permissible Overhang Length*







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

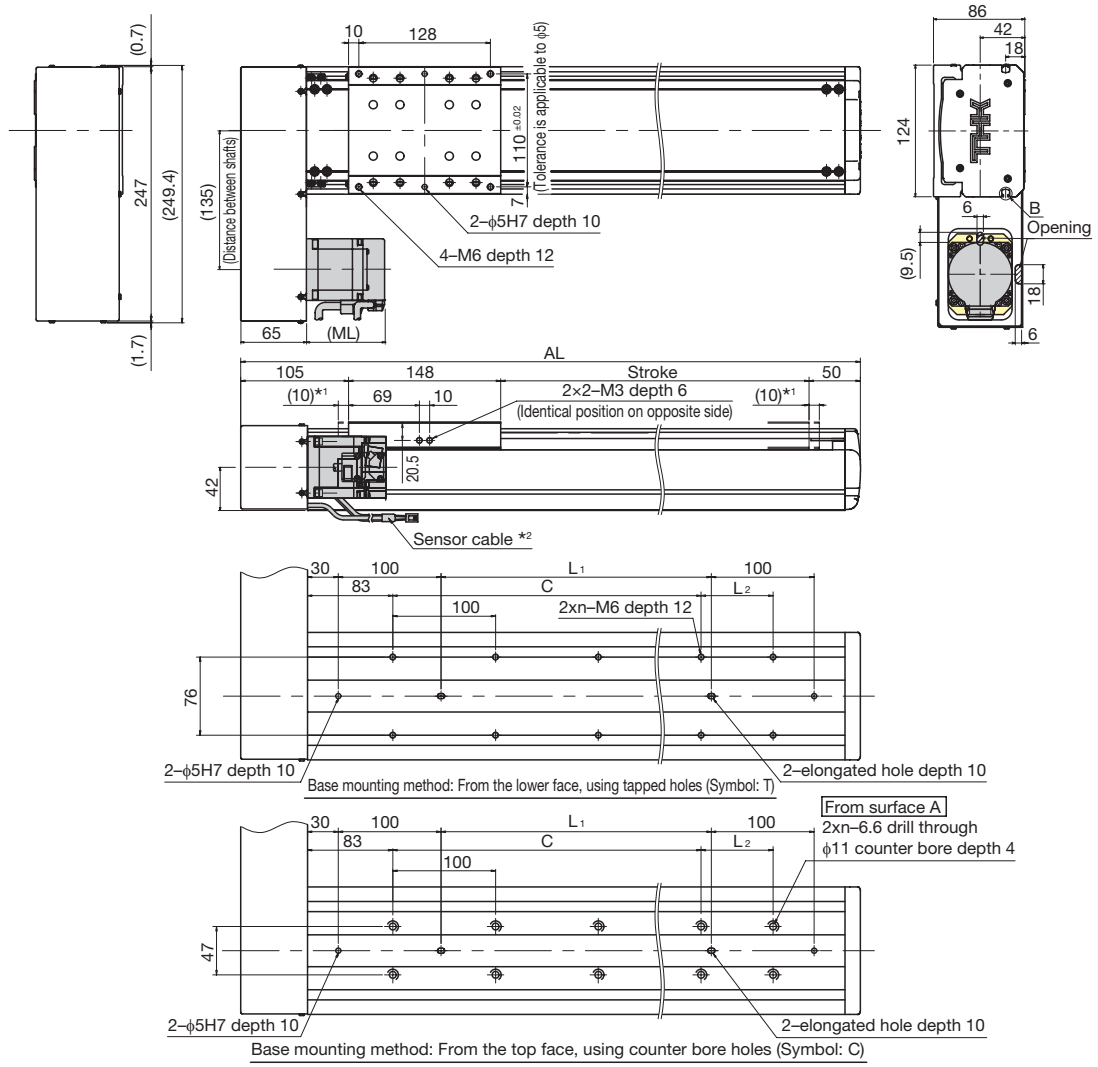
Vertical mount [mm]

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.
The conditions for calculation are as follows:
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, 200W

Dimensions



*1 Stroke up to mechanical stopper.
*2 The length of the sensor cable varies depending on specifications. For details, visit the THK Technical Support website.

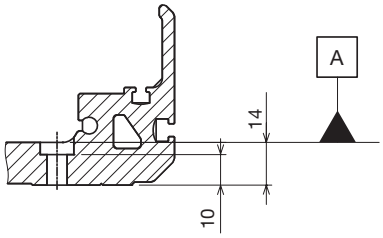
Stroke [mm] (Stroke between mechanical stoppers)			100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)
Maximum speed *1 *2 [mm/s]	Ball screw lead	5mm	300								
		10mm	600								
		20mm	1200								
		30mm	1800								
Dimensions [mm]	AL		403	453	503	553	603	653	703	753	803
	ML		76.1								
	ML: With brake		110.7								
	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 *3 [kg]			8.9 (9.4)	9.5 (10)	10.1 (10.6)	10.7 (11.2)	11.3 (11.8)	11.9 (12.4)	12.5 (13)	13.1 (13.6)	13.7 (14.2)

*1 Load capacity and maximum speed are dependent on usage conditions. See page 3-068, "Speed and Load Capacity."
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

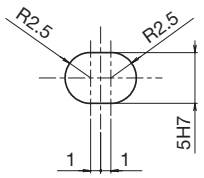
USW12RT + THC

Motor rated output
200W

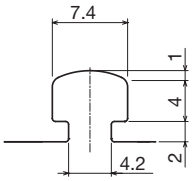
Detail



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		580	510	450	400	360	320	290	260	240	220
	1200		1160	1020	900	800	720	640	580	530	480	440
	1800		1700	1490	1320	1180	1050	950	860	780	720	660
	853	903	953	1003	1053	1103	1153	1203	1253	1303	1353	1403
	76.1											
	110.7											
	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
	14.3 (14.8)	14.9 (15.4)	15.5 (16)	16.1 (16.6)	16.7 (17.2)	17.3 (17.8)	17.9 (18.4)	18.5 (19)	19.1 (19.6)	19.7 (20.2)	20.3 (20.8)	20.9 (21.4)

USW16T Direct motor coupling, 400W

Model Configuration

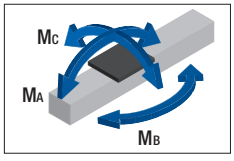
Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method	
USW16T –	10 –	0150	A –	TH –	6 –	SR –	C –	

USW16T	10: 10mm 20: 20mm 40: 40mm	0100: 100mm to 1500: 1500mm	A	TH: THC	P Q N 6 E	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)

Basic Specifications

Control device type				THC		
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 mount	0.3G	120	80	40
		Vertical mount	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: 2161, M_B: 740, M_C: 1681		
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. See page 3-069, "Speed and Load Capacity."
*3 At rated motor torque.
*4 Dependent on maximum peak 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 Static maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

USW16T + THC

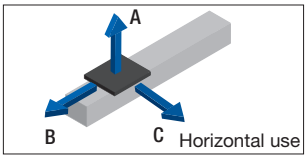
Motor rated output
400W

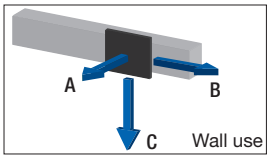
Motor bracket		Option		Motor rated output	Home position	Power supply voltage	Cable type and length
A	–	GR	/	M40	S02	D2	H5

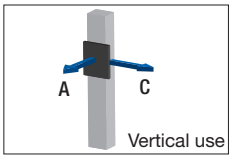
A	No symbol: Red end cap	M40: 400W	No symbol: When selecting P or Q	D1: 100V	F3 : Standard 3m
	GR: Gray end cap	M40B: 400W with brake	S02 : Motor side (Home position sensor)	D2: 200V	F5 : Standard 5m
	HG: Hanging jig		S03 : Opposite motor side (Home position sensor)		FA : Standard 10m
			D00: Motor side (Mechanical home seeking)		H3 : High flex 3m
			R00 : Opposite motor side (Mechanical home seeking)		H5 : High flex 5m
					HA: High flex 10m

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

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

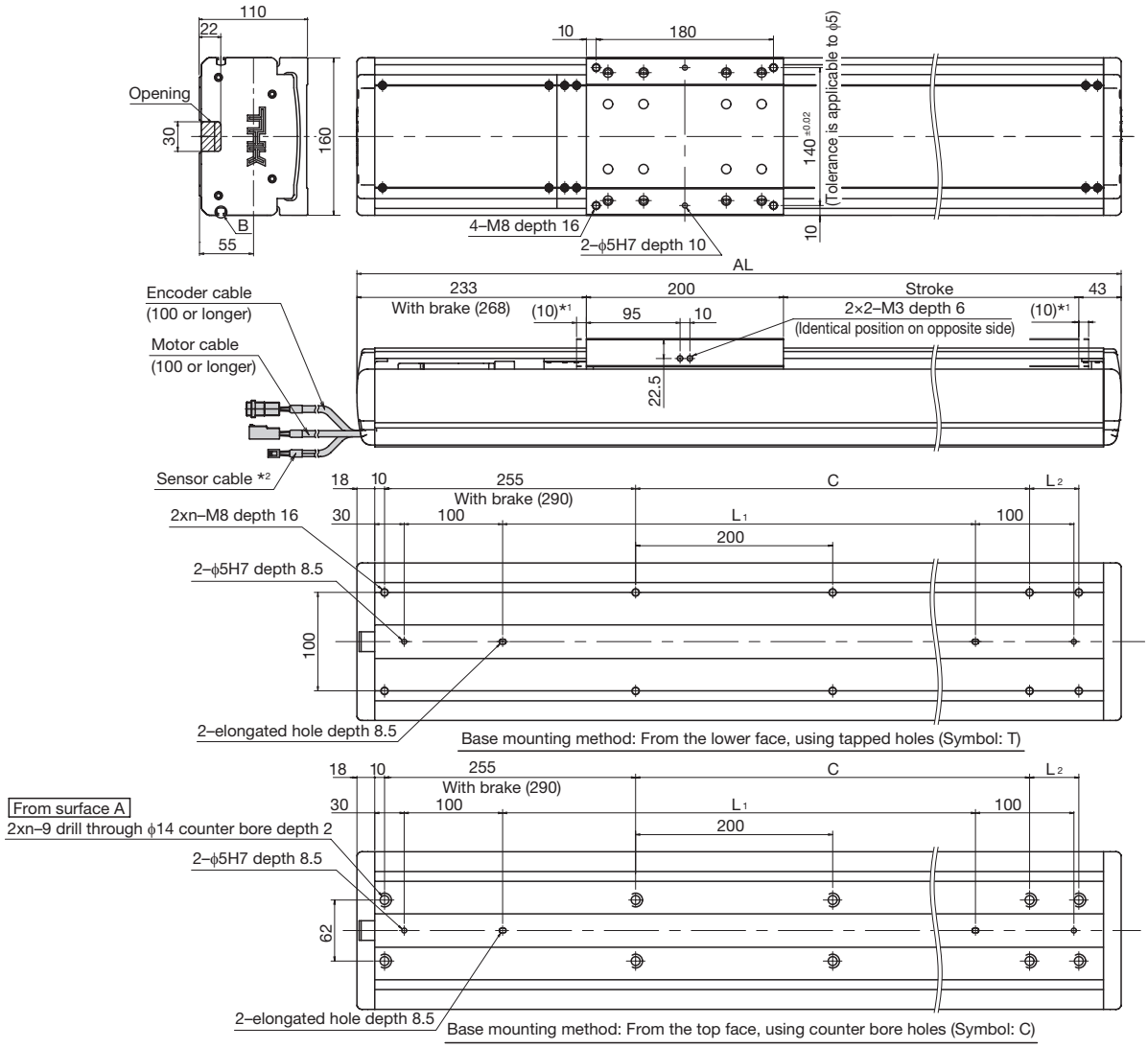
Vertical mount [mm]

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.
The conditions for calculation are as follows:
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 Direct motor coupling, 400W

Dimensions



*1 Stroke up to mechanical stopper.
*2 The length of the sensor cable varies depending on specifications. For details, visit the THK Technical Support website.

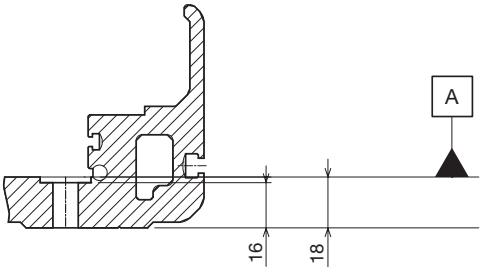
Stroke [mm] (Stroke between mechanical stoppers)			100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)	550 (570)	600 (620)	650 (670)
Maximum speed *1 *2 [mm/s]	Ball screw lead	10mm	550											
		20mm	1100											
		40mm	2200											
Dimensions [mm]	AL*3		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 *3 [kg]			14.4 (15.3)	15.4 (16.3)	16.4 (17.3)	17.4 (18.3)	18.4 (19.3)	19.4 (20.3)	20.4 (21.3)	21.4 (22.3)	22.4 (23.3)	23.4 (24.3)	24.4 (25.3)	25.4 (26.3)

*1 Load capacity and maximum speed are dependent on usage conditions. See page 3-069, "Speed and Load Capacity."
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

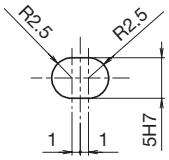
USW16T + THC

Motor rated output
400W

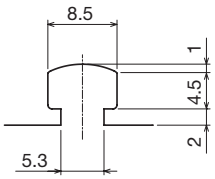
Detail



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		520	470	420	380	340	310	290	260	240	230	210	190	180	170	160
	1100			1040	930	840	760	700	640	590	540	500	460	430	400	380	350
	2200			1970	1780	1610	1470	1340	1230	1130	1050	970	900	840	780	730	690
	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
	26.4 (27.3)	27.4 (28.3)	28.4 (29.3)	29.4 (30.3)	30.4 (31.3)	31.4 (32.3)	32.4 (33.3)	33.4 (34.3)	34.4 (35.3)	35.4 (36.3)	36.4 (37.3)	37.4 (38.3)	38.4 (39.3)	39.4 (40.3)	40.4 (41.3)	41.4 (42.3)	42.4 (43.3)

USW16RT Motor wrap, 400W

Model Configuration

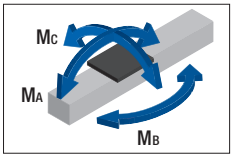
Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method	
USW16RT –	10 –	0150	A –	TH –	6 –	SL –	C –	

USW16RT	10: 10mm 20: 20mm 40: 40mm	0100: 100mm to 1500: 1500mm	A	TH: THC	P Q N 6 E	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)

Basic Specifications

Control device type				THC		
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 mount	0.3G	120	80	40
		Vertical mount	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: 2161, M_B: 740, M_C: 1681		
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. See page 3-069, "Speed and Load Capacity."
*3 At rated motor torque.
*4 Dependent on maximum peak 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 Static maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

USW16RT + THC

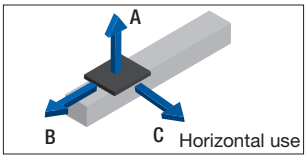
Motor rated output
400W

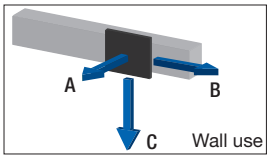
Motor bracket		Option		Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
A	–	MR–GR	/	M40	L	S02	D2	H5

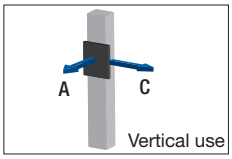
Motor bracket	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
A	MR: Motor right wrap	M40: 400W	R: Right	No symbol: When selecting P or Q	D1: 100V	F3 : Standard 3m
	ML: Motor left wrap	M40B: 400W with brake	U: Up	S02 : Motor side (Home position sensor)	D2: 200V	F5 : Standard 5m
	GR : Gray end cap		L : Left	S03 : Opposite motor side (Home position sensor)		FA : Standard 10m
	HG : Hanging jig		D: Down	D00: Motor side (Mechanical home seeking)		H3 : High flex 3m
				R00 : Opposite motor side (Mechanical home seeking)		H5 : High flex 5m
						HA: High flex 10m

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

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

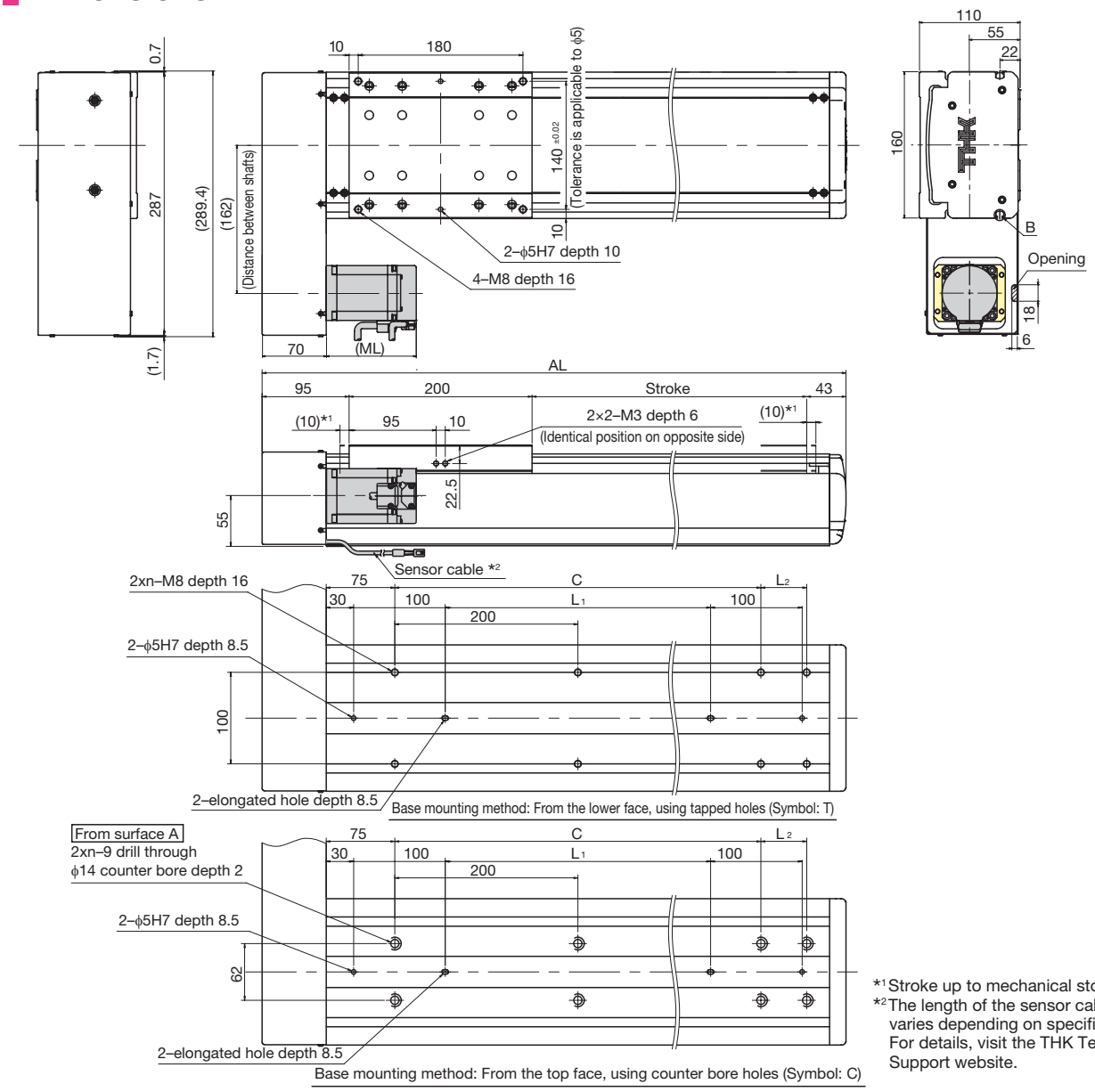
Vertical mount [mm]

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.
The conditions for calculation are as follows:
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, 400W

Dimensions



*1 Stroke up to mechanical stopper.
*2 The length of the sensor cable varies depending on specifications. For details, visit the THK Technical Support website.

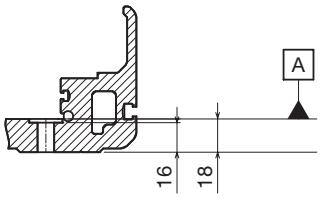
Stroke [mm] (Stroke between mechanical stoppers)		100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)	550 (570)	600 (620)	650 (670)
Maximum speed *1 *2 [mm/s]	Ball screw lead 10mm	550											
	Ball screw lead 20mm	1100											
	Ball screw lead 40mm	2200											
Dimensions [mm]	AL	438	488	538	588	638	688	738	788	838	888	938	988
	ML	98.1											
	ML: With brake	132.7											
	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 *3 [kg]		14.7 (15.2)	15.7 (16.2)	16.7 (17.2)	17.7 (18.2)	18.7 (19.2)	19.7 (20.2)	20.7 (21.2)	21.7 (22.2)	22.7 (23.2)	23.7 (24.2)	24.7 (25.2)	25.7 (26.2)

*1 Load capacity and maximum speed are dependent on usage conditions. See page 3-069, "Speed and Load Capacity."
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

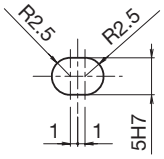
USW16RT + THC

Motor rated output
400W

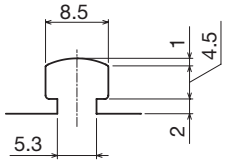
Detail



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		520	470	420	380	340	310	290	260	240	230	210	190	180	170	160
	1100			1040	930	840	760	700	640	590	540	500	460	430	400	380	350
	2200			1970	1780	1610	1470	1340	1230	1130	1050	970	900	840	780	730	690
	1038	1088	1138	1188	1238	1288	1338	1388	1438	1488	1538	1588	1638	1688	1738	1788	1838
	98.1																
	132.7																
	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
	26.7 (27.2)	27.7 (28.2)	28.7 (29.2)	29.7 (30.2)	30.7 (31.2)	31.7 (32.2)	32.7 (33.2)	33.7 (34.2)	34.7 (35.2)	35.7 (36.2)	36.7 (37.2)	37.7 (38.2)	38.7 (39.2)	39.7 (40.2)	40.7 (41.2)	41.7 (42.2)	42.7 (43.2)

USW20T Direct motor coupling, 750W

Model Configuration

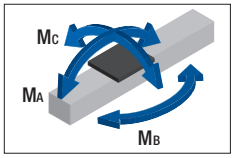
Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method	
USW20T –	20	– 0300	A	– TH	– 6	– SR	– C	–

USW20T	20: 20mm 40: 40mm	0200: 200mm to 1700: 1700mm	A	TH: THC	P Q N 6 E	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)	

Basic Specifications

Control device type				THC	
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 mount	0.3G	130	70
		Vertical mount	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*6 [km]				20,000 (10,000)	
Static permissible moment *7 [N·m]				M_A: 1921, M_B: 793, M_C: 2221	
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. See page 3-070, "Speed and Load Capacity."
*3 At rated motor torque.
*4 Dependent on maximum peak 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 10,000 km with ball screw lead 20 mm in vertical use.
*7 Static maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

USW20T + THC

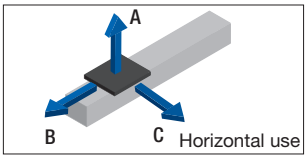
Motor rated output **750W**

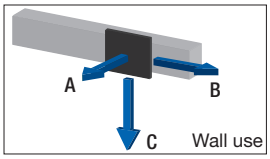
Motor bracket		Option		Motor rated output	Home position	Power supply voltage	Cable type and length
A	–	GR	/	M75	S02	D2	H5

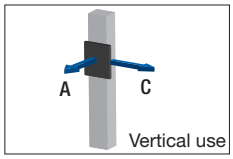
A	No symbol: Red end cap	M75: 750W	No symbol: When selecting P or Q	D2: 200V	F3 : Standard 3m
	GR: Gray end cap	M75B: 750W with brake	S02 : Motor side (Home position sensor)		F5 : Standard 5m
	HG: Hanging jig		S03 : Opposite motor side (Home position sensor)		FA : Standard 10m
			D00: Motor side (Mechanical home seeking)		H3 : High flex 3m
			R00 : Opposite motor side (Mechanical home seeking)		H5 : High flex 5m
					HA: High flex 10m

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

Permissible Overhang Length*







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

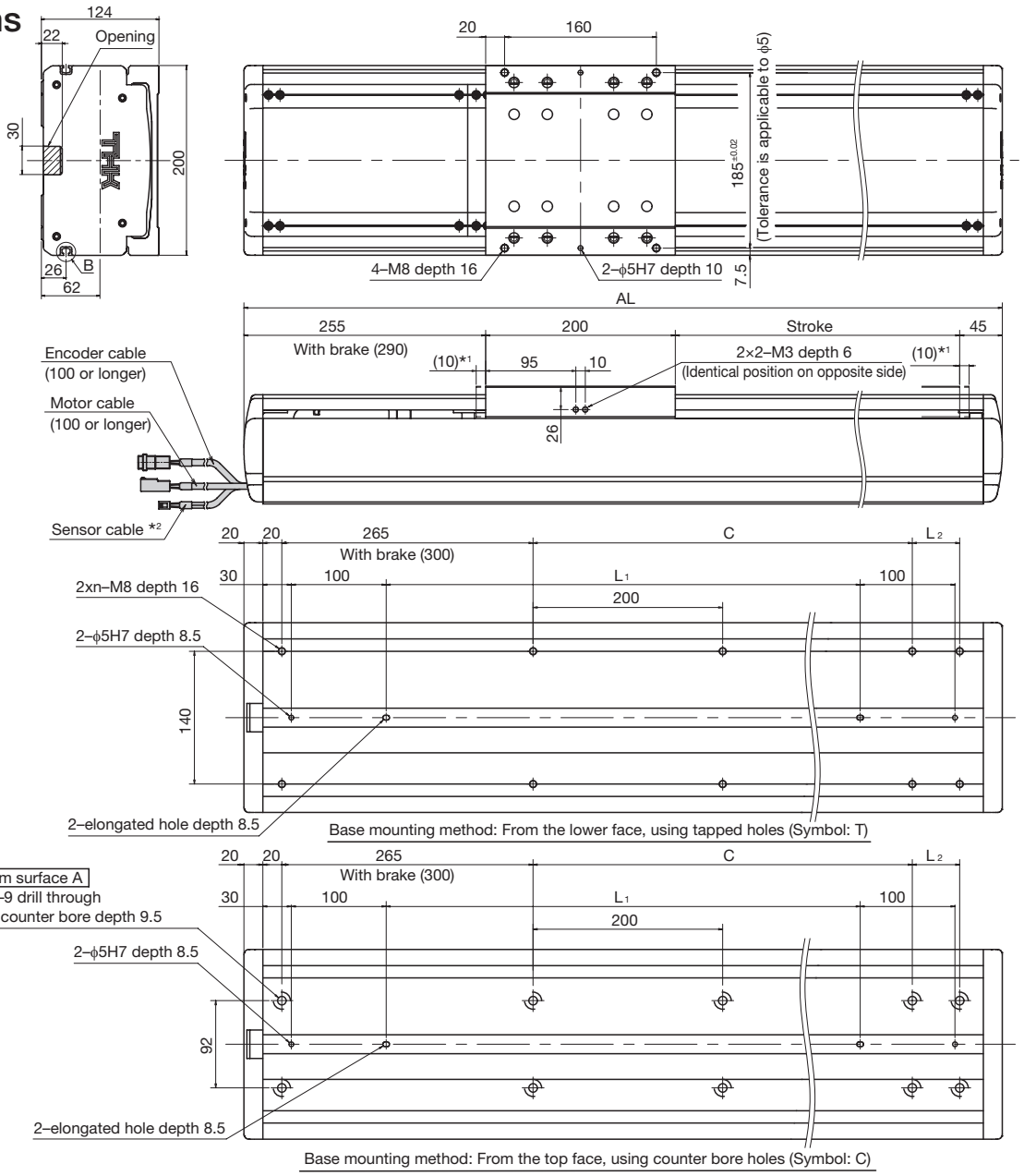
Vertical mount [mm]

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.
The conditions for calculation are as follows:
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 Direct motor coupling, 750W

Dimensions



*1 Stroke up to mechanical stopper.
*2 The length of the sensor cable varies depending on specifications. For details, visit the THK Technical Support website.

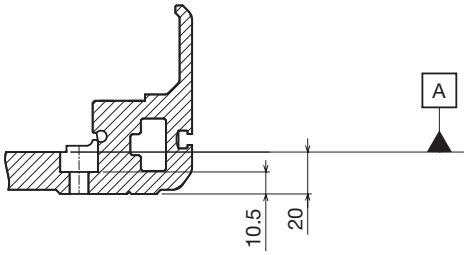
Stroke [mm] (Stroke between mechanical stoppers)			200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)
Maximum speed *1 *2 [mm/s]	Ball screw lead	20mm	1100												
		40mm	2200												2140
Dimensions [mm]	AL*3		700 (735)	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 *3 [kg]			25.1 (26.7)	26.4 (28)	27.8 (29.4)	29.2 (30.8)	30.6 (32.2)	32.1 (33.7)	33.4 (35)	34.8 (36.4)	36.2 (37.8)	37.6 (39.2)	39.1 (40.7)	40.4 (42)	41.8 (43.4)

*1 Load capacity and maximum speed are dependent on usage conditions. See page 3-070, "Speed and Load Capacity."
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

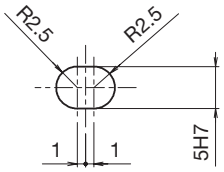
USW20T + THC

Motor rated output
750W

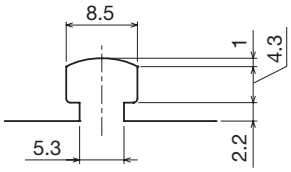
Detail



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)
	1010	910	820	750	680	620	570	530	490	460	420	400	370	350	330	310	290	270
	1920	1730	1570	1430	1310	1210	1110	1030	950	890	830	770	720	680	640	600	570	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
	43.2 (44.8)	44.6 (46.2)	45.8 (47.4)	47.4 (49)	48.8 (50.4)	50.2 (51.8)	51.6 (53.2)	53.1 (54.7)	54.4 (56)	55.8 (57.4)	57.2 (58.8)	58.6 (60.2)	60.1 (61.7)	61.4 (63)	62.8 (64.4)	64.2 (65.8)	65.6 (67.2)	67.1 (68.7)

USW20RT Motor wrap, 750W

Model Configuration

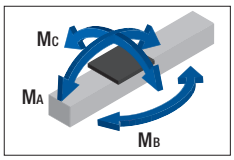
Model	Ball screw lead	Stroke	Design symbol	Control device type	Sensor	Sensor mounting position	Base mounting method	
USW20RT –	20 –	0300	A –	TH –	6 –	SL –	C –	

USW20RT	20: 20mm 40: 40mm	0200: 200mm to 1700: 1700mm	A	TH: THC	P Q N 6 E	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)

Basic Specifications

Control device type				THC	
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 mount	0.3G	130	70
		Vertical mount	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*6 [km]				20,000 (10,000)	
Static permissible moment *7 [N·m]				M_A: 1921, M_B: 793, M_C: 2221	
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. See page 3-070, "Speed and Load Capacity."
*3 At rated motor torque.
*4 Dependent on maximum peak 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 10,000 km with ball screw lead 20 mm in vertical use.
*7 Static maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

USW20RT + THC

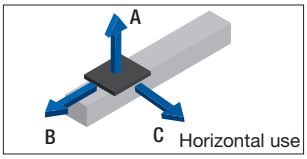
Motor rated output
750W

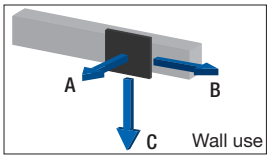
Motor bracket		Option		Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
A	–	MR–GR	/	M75	L	S02	D2	H5

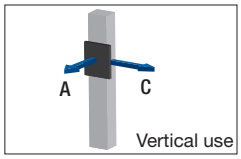
Motor bracket	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
A	MR: Motor right wrap	M75: 750W	R: Right	No symbol: When selecting P or Q	D2: 200V	F3 : Standard 3m
	ML: Motor left wrap	M75B: 750W with brake	U: Up	S02 : Motor side (Home position sensor)		F5 : Standard 5m
	GR : Gray end cap		L : Left	S03 : Opposite motor side (Home position sensor)		FA : Standard 10m
	HG : Hanging jig		D: Down	D00: Motor side (Mechanical home seeking)		H3 : High flex 3m
				R00 : Opposite motor side (Mechanical home seeking)		H5 : High flex 5m
						HA: High flex 10m

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

Permissible Overhang Length*







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

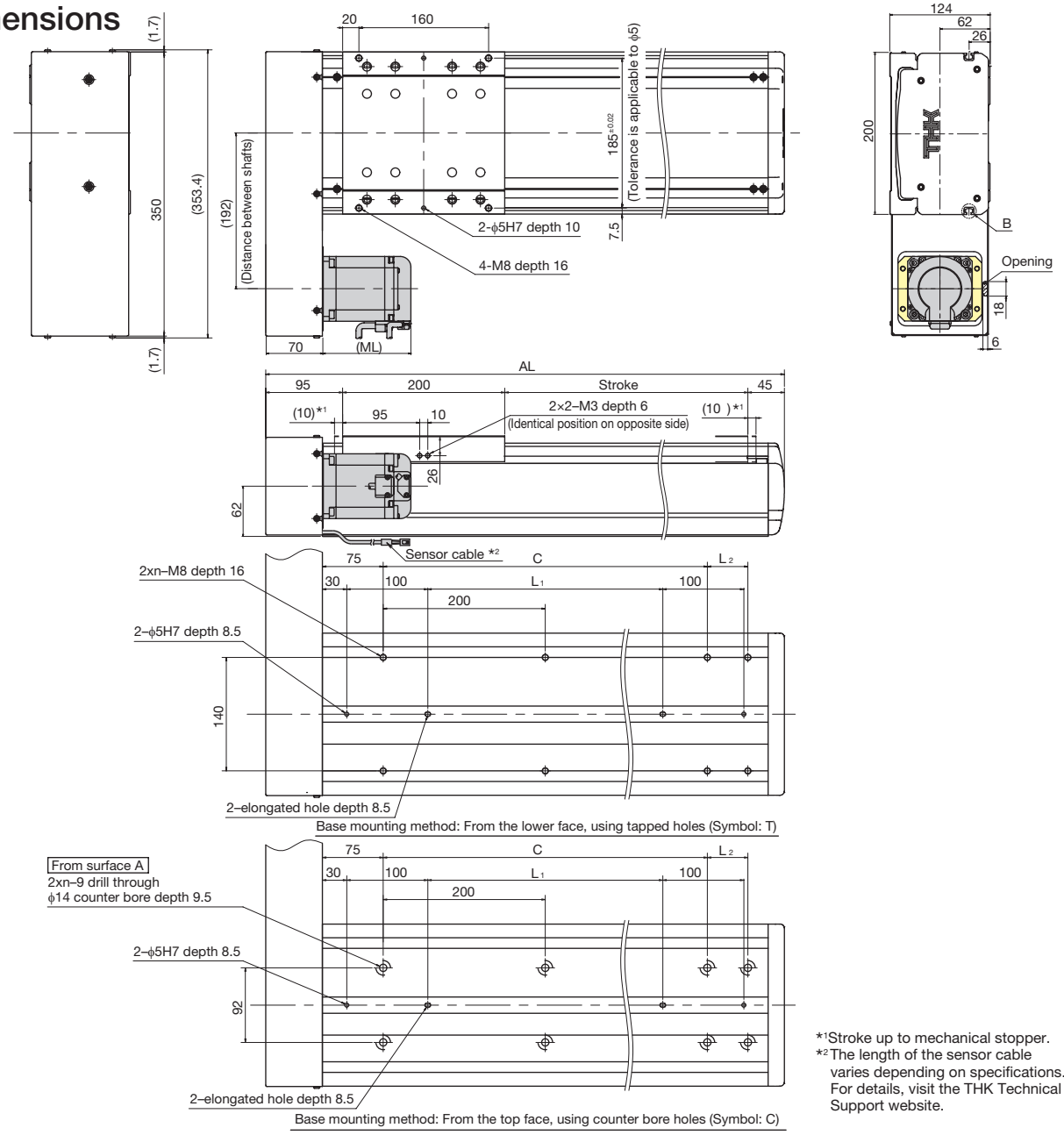
Vertical mount [mm]

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.
The conditions for calculation are as follows:
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, 750W

Dimensions



*1 Stroke up to mechanical stopper.
*2 The length of the sensor cable varies depending on specifications. For details, visit the THK Technical Support website.

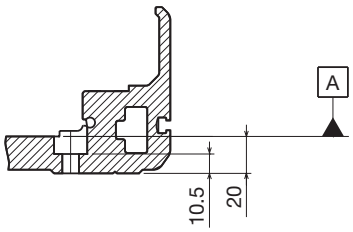
Stroke [mm] (Stroke between mechanical stoppers)			200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)
Maximum speed *1 *2 [mm/s]	Ball screw lead	20mm	1100												
		40mm	2200												2140
Dimensions [mm]	AL		540	590	640	690	740	790	840	890	940	990	1040	1090	1140
	ML		108.7												
	ML: With brake		145.3												
	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 *3 [kg]			27.3 (28.2)	28.6 (29.5)	29.9 (30.8)	31.3 (32.2)	32.7 (33.6)	34.1 (35)	35.4 (36.3)	36.7 (37.6)	38.1 (39)	39.4 (40.3)	40.8 (41.7)	42.1 (43)	43.5 (44.6)

*1 Load capacity and maximum speed are dependent on usage conditions. See page 3-070, "Speed and Load Capacity."
*2 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.
*3 Values when a brake is installed are shown in parentheses.

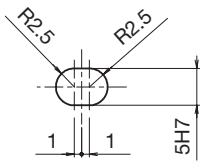
USW20RT + THC

Motor rated output
750W

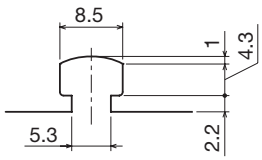
Detail



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

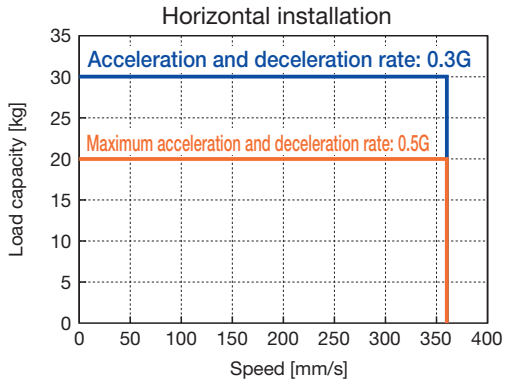
	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)	1150 (1170)	1200 (1220)	1250 (1270)	1300 (1320)	1350 (1370)	1400 (1420)	1450 (1470)	1500 (1520)	1550 (1570)	1600 (1620)	1650 (1670)	1700 (1720)
	1010	910	820	750	680	620	570	530	490	460	420	400	370	350	330	310	290	270
	1920	1730	1570	1430	1310	1210	1110	1030	950	890	830	770	720	680	640	600	570	530
	1190	1240	1290	1340	1390	1440	1490	1540	1590	1640	1690	1740	1790	1840	1890	1940	1990	2040
108.7																		
145.3																		
	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
	44.8 (45.7)	46.2 (47.1)	47.6 (48.5)	48.9 (49.8)	50.2 (51.1)	51.6 (52.5)	52.9 (53.8)	54.3 (55.2)	55.6 (56.5)	56.9 (57.8)	58.3 (59.2)	59.7 (60.6)	61.1 (62)	62.4 (63.3)	63.7 (64.6)	65.1 (66)	66.4 (67.3)	67.8 (68.7)

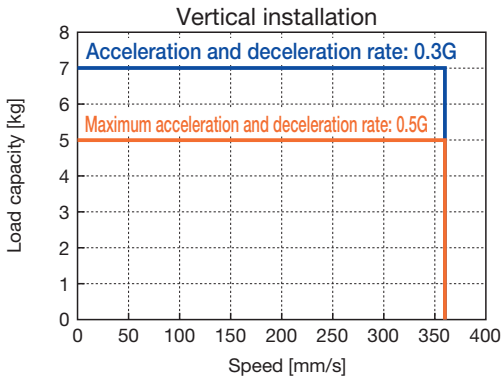
Speed and Load Capacity

Load capacity and maximum speed vary depending on usage conditions.
Conditions must be within the ranges shown below.

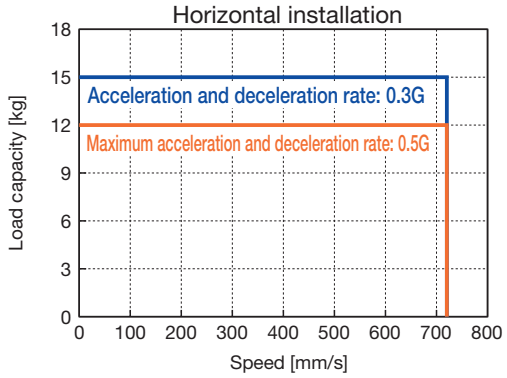
US6 (50W) with controller TLC

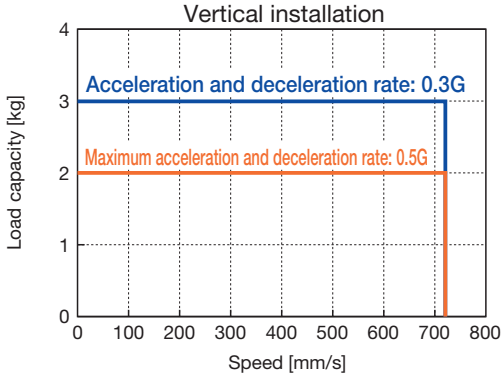
■Lead 6mm





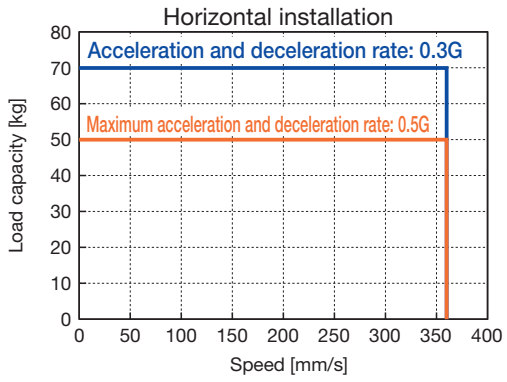
■Lead 12mm

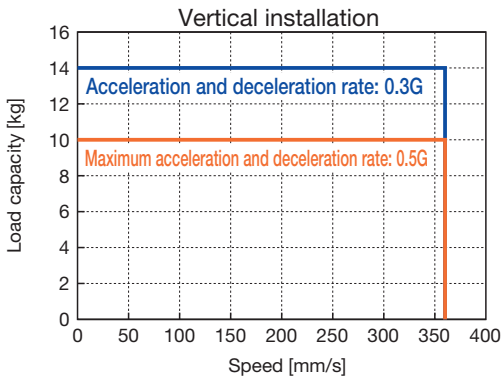




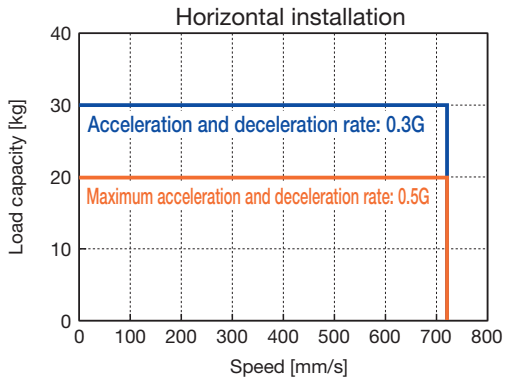
US6 (100W) with controller THC

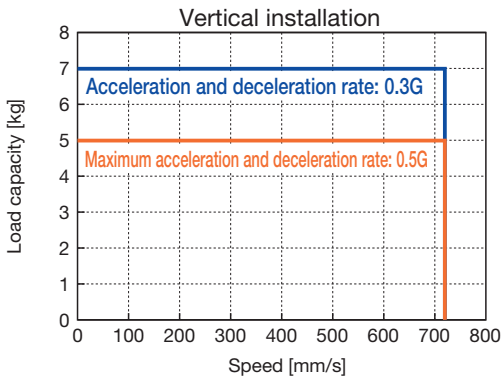
■Lead 6mm





■Lead 12mm

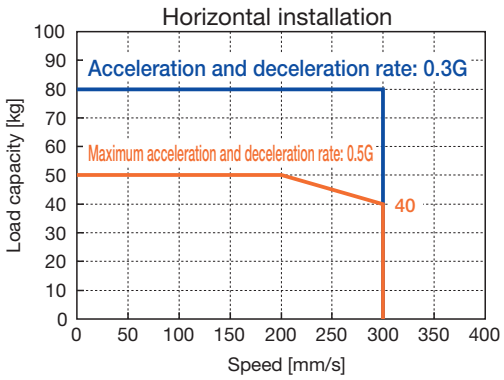


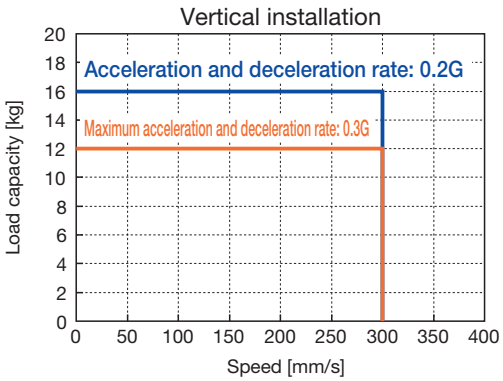


Load capacity and maximum speed vary depending on usage conditions.
Conditions must be within the ranges shown below.

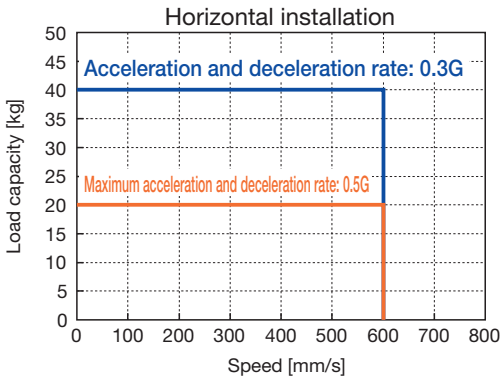
US8 (100W) with controller THC

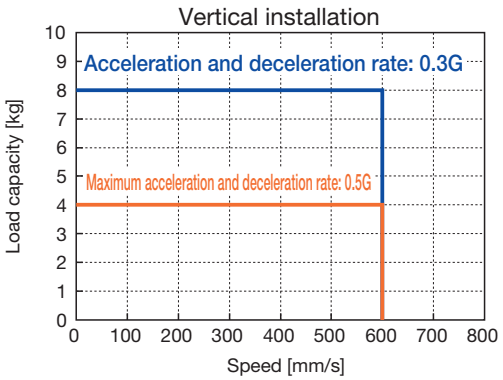
■Lead 5mm



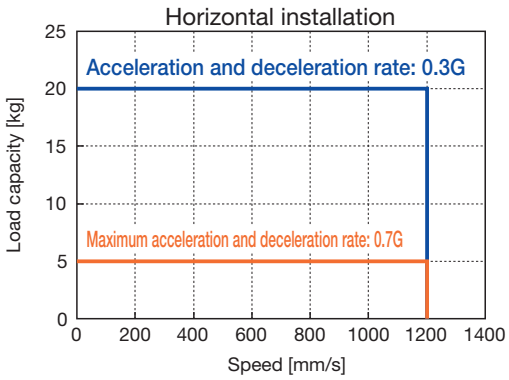


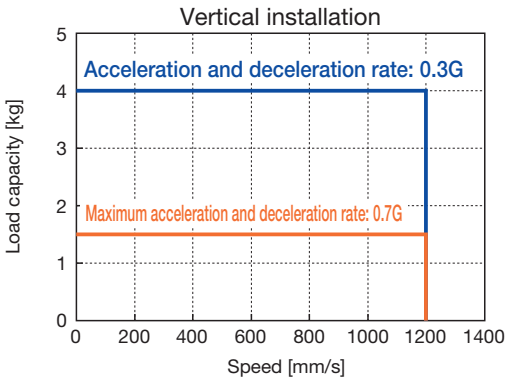
■Lead 10mm



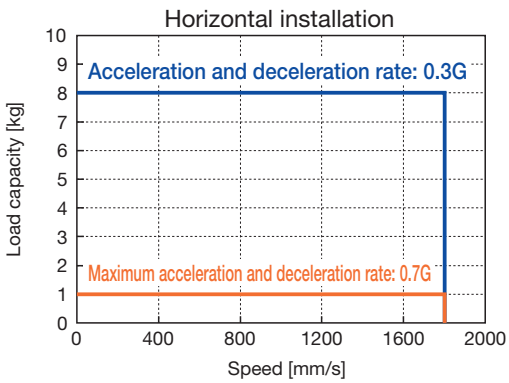


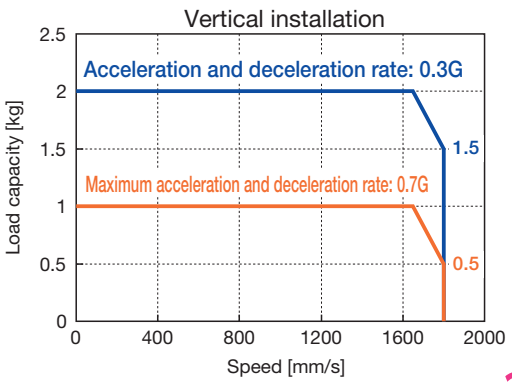
■Lead 20mm





■Lead 30mm

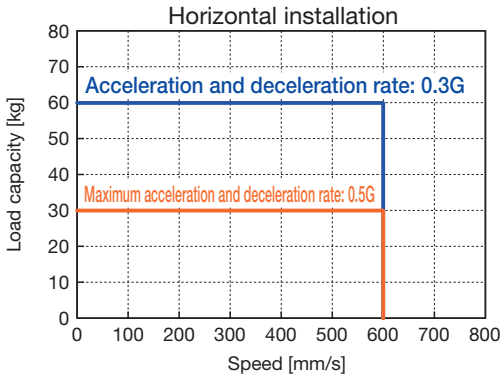


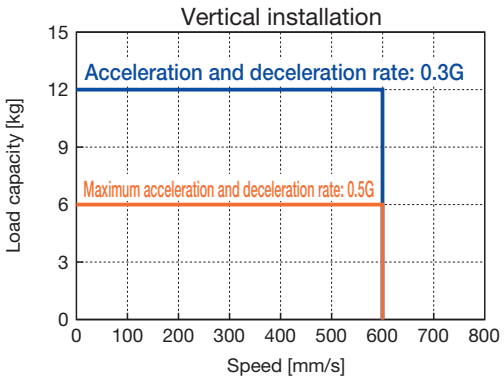


Load capacity and maximum speed vary depending on usage conditions.
Conditions must be within the ranges shown below.

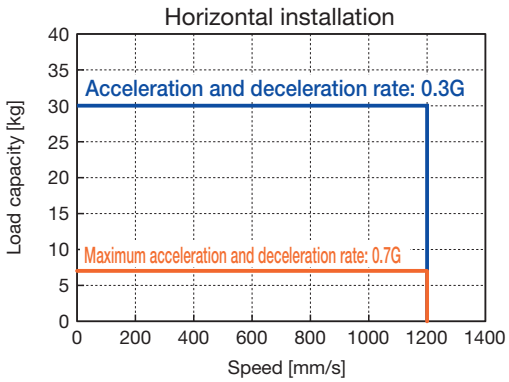
US8 (150W) with controller THC

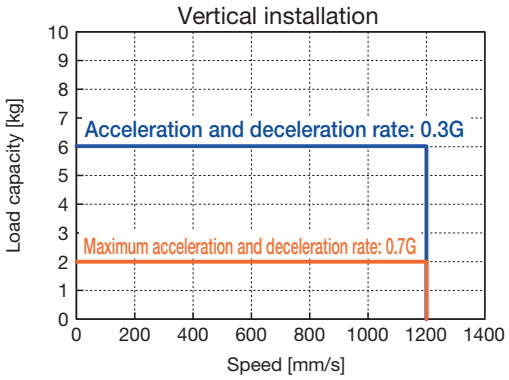
■Lead 10mm



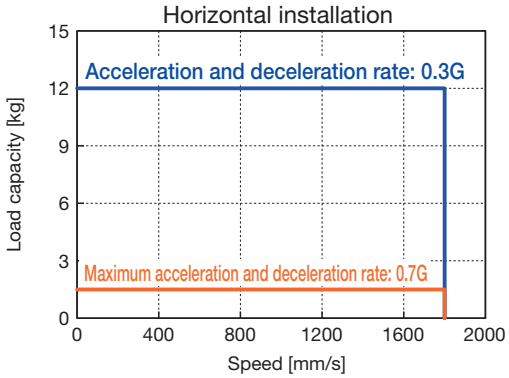


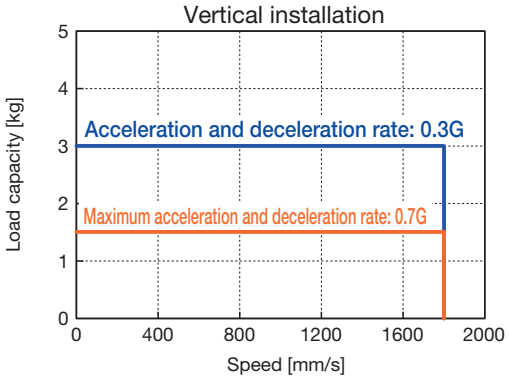
■Lead 20mm





■Lead 30mm

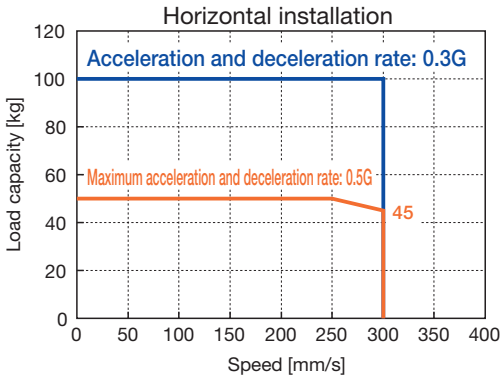


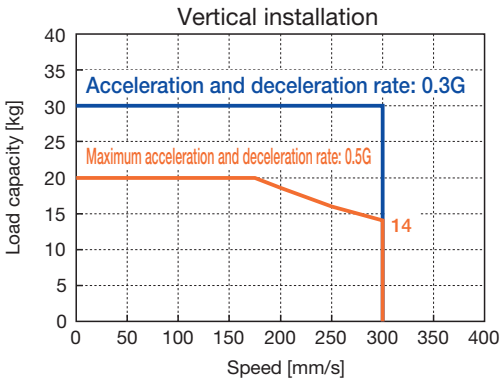


Load capacity and maximum speed vary depending on usage conditions.
Conditions must be within the ranges shown below.

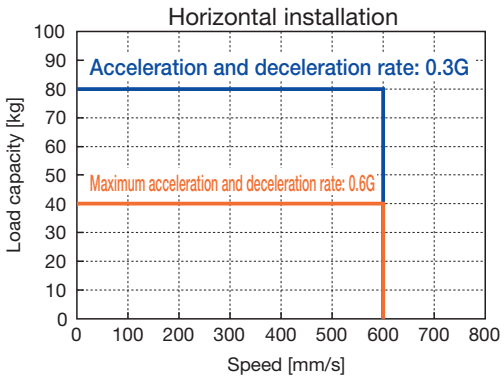
USW12 with controller THC

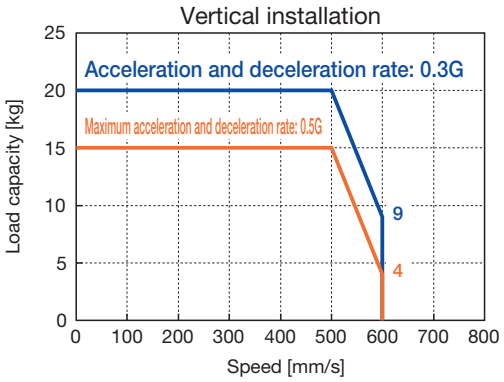
■Lead 5mm



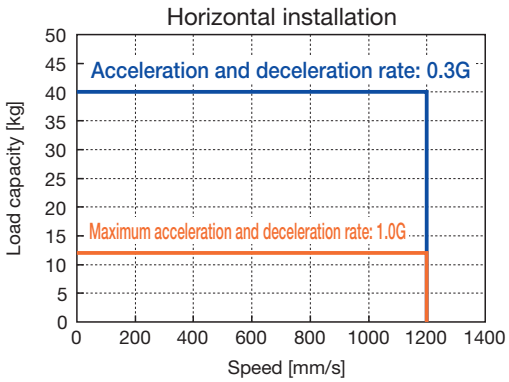


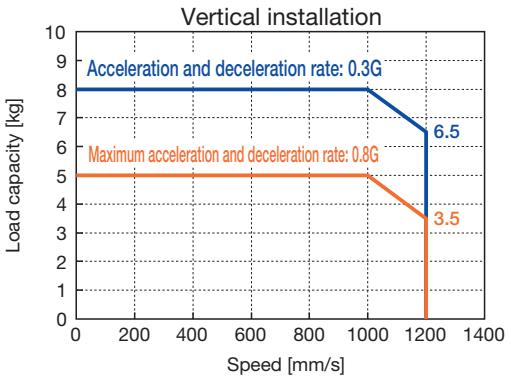
■Lead 10mm



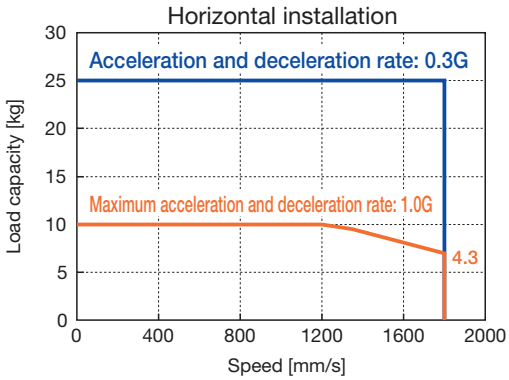


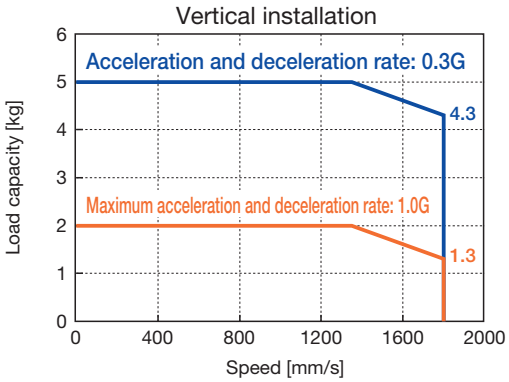
■Lead 20mm





■Lead 30mm

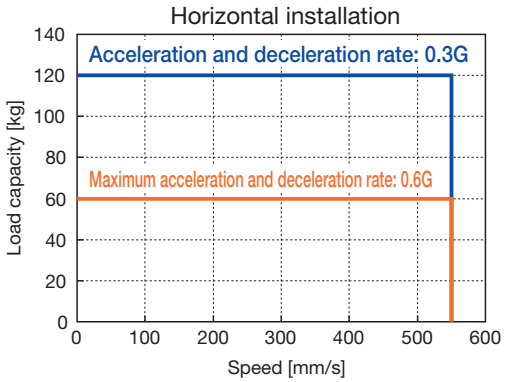


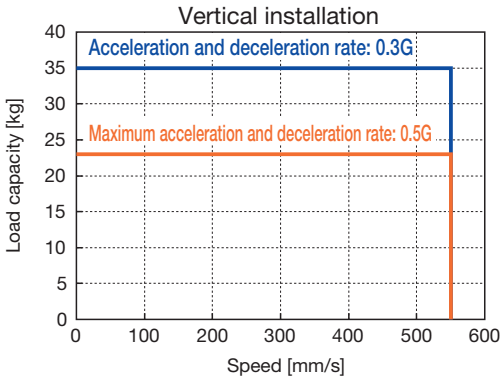


Load capacity and maximum speed vary depending on usage conditions.
Conditions must be within the ranges shown below.

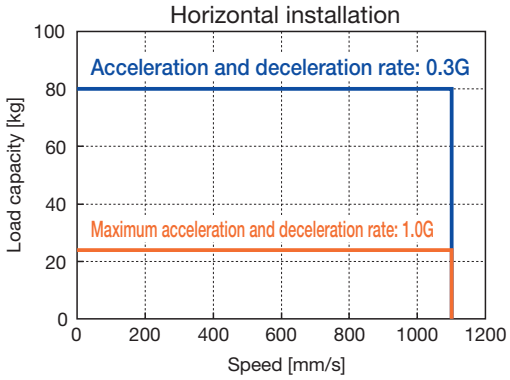
USW16 with controller THC

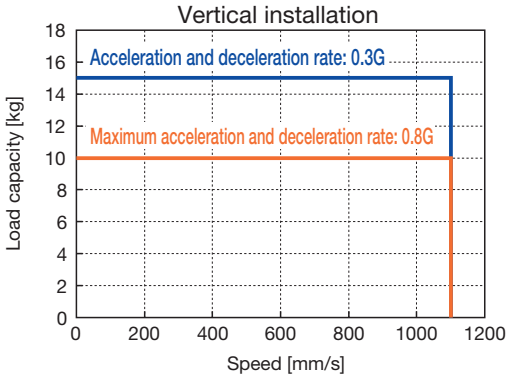
■Lead 10mm



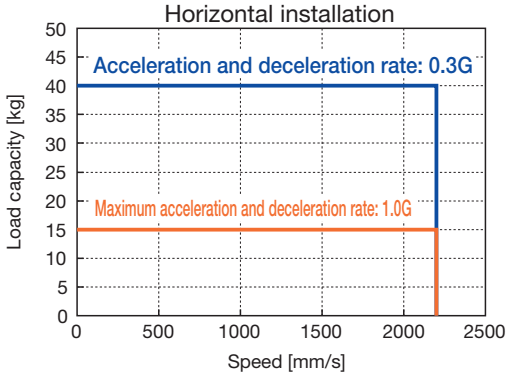


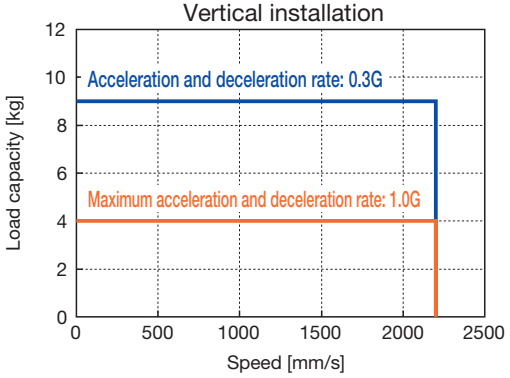
■Lead 20mm





■Lead 40mm

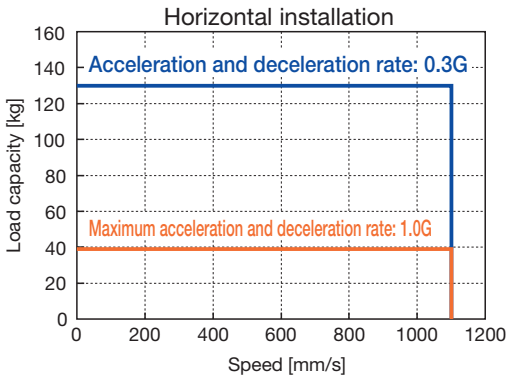


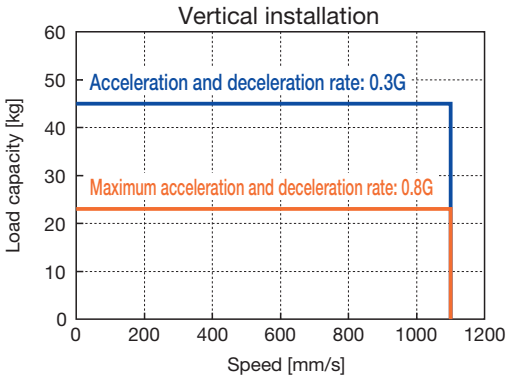


Load capacity and maximum speed vary depending on usage conditions.
Conditions must be within the ranges shown below.

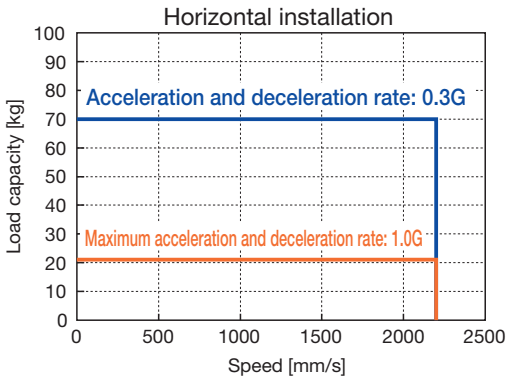
USW20 with controller THC

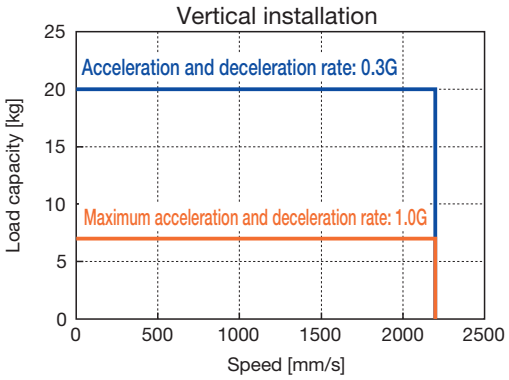
■Lead 20mm





■Lead 40mm





Sensors

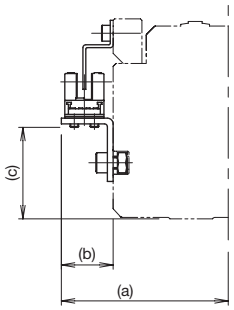
Various types of sensors can be mounted using a T slot on the side surface of the base. Select a sensor by specifying the appropriate option symbol. The standard sensor is mounted inside the actuator.

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

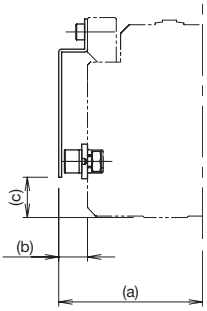
N.O. contact: Normally open contact point
N.C. contact: Normally closed contact point
* The photo sensors can be switched between ON when lit and ON when unlit.
Notes:
1. The standard sensor for US8 is APM-D3A1 (Azbil Corp.); the standard sensor for USW12/16/20 is EE-SX674 (Omron Corp.).
2. Non-standard sensors (symbol: 6, E) are mounted outside the cover.
3. When motor wrap is selected, a sensor cannot be mounted on the same side as the wrap 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

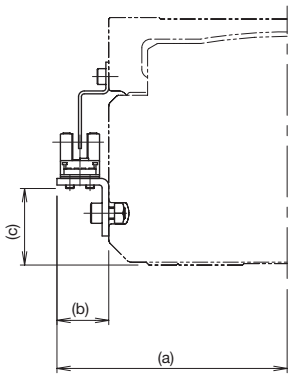


Symbol 6: EE-SX674 (Omron Corp.)

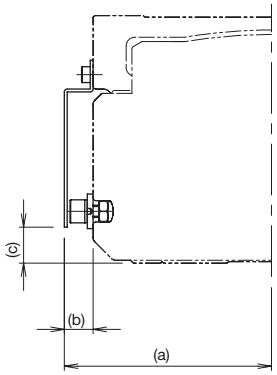


Symbol E: APM-D3** (Azbil Corp.)

■USW12/16/20



Symbol 6: EE-SX674 (Omron Corp.)



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

[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

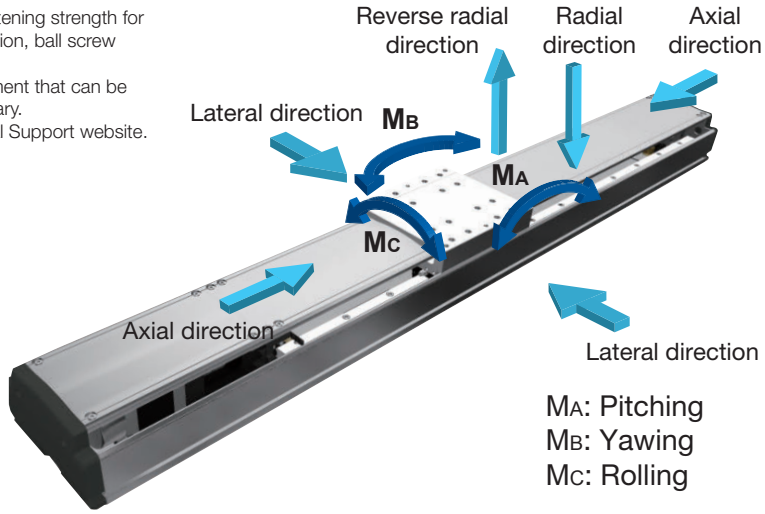
[mm]

Model	a	b	c
US6	43.5	11	23
US8	50	10	14
USW12	72	10	12.5
USW16	91	11	25.5
USW20	111	11	31

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	16753	28599	14300	24007	24007
	Lateral direction	3651	7520	3760	6488	6488
	Axial direction	1740 (Direct motor coupling)	2095 (100W, direct motor coupling)	3330	3760	2571
			2689 (100W, motor wrap)			
		1288 (Motor wrap)	1047 (150W, direct motor coupling)			
			1345 (150W, motor wrap)			
Static permissible moment *2 [N·m]	M_A	123	287	915	2161	1921
	M_B	127	235	317	740	793
	M_C	138	226	786	1681	2221

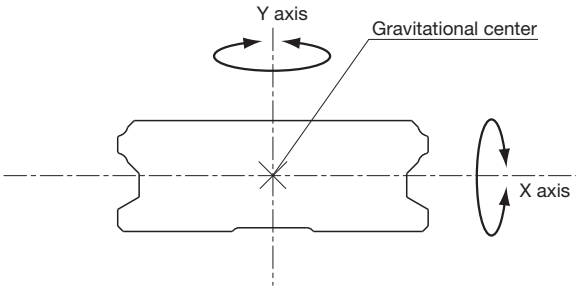
*1 The static permissible load is determined by the tightening strength for bolts and the static load ratings of the LM guide portion, ball screw portion, and support bearing.
*2 The static permissible moment is the maximum moment that can be applied in each direction while the product is stationary.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



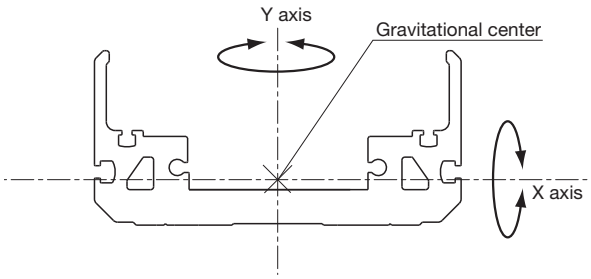
MA: Pitching
MB: Yawing
MC: Rolling

Geometrical Moment of Inertia

■US6/8

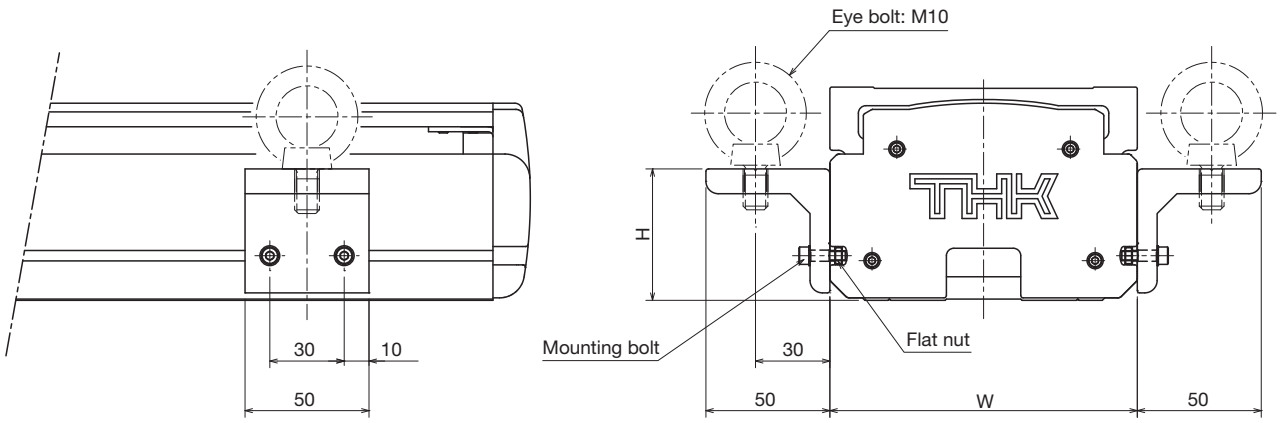


■USW12/16/20



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

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 the 6 E 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

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 mount (such as wall mount and vertical mount), contact THK.

● Lubrication

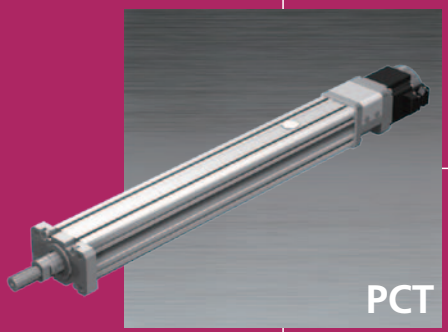
- In order to effectively use the actuator, lubrication is required. Insufficient lubrication may increase abrasion on the rolling part and cause early failure.
- Do not use a mix of lubricants with different physical properties. Note that encapsulated lubricant types vary depending on products.
- Please 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



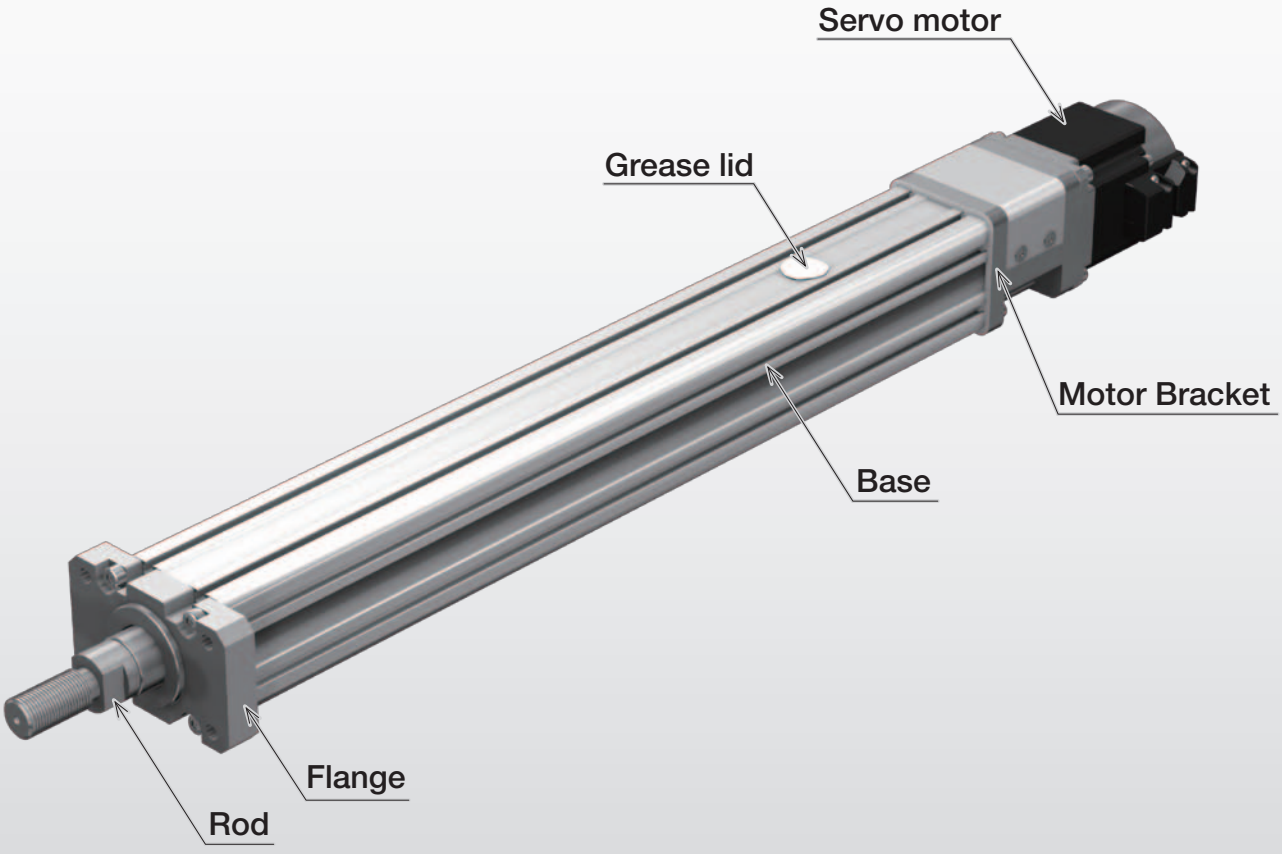
Corresponding Controller

Chapter 4

Electrical Actuator
Press Series

PCT

PCT are cylinder type electrical actuators that operate with the use of a ball screw.



Features

Press actuator

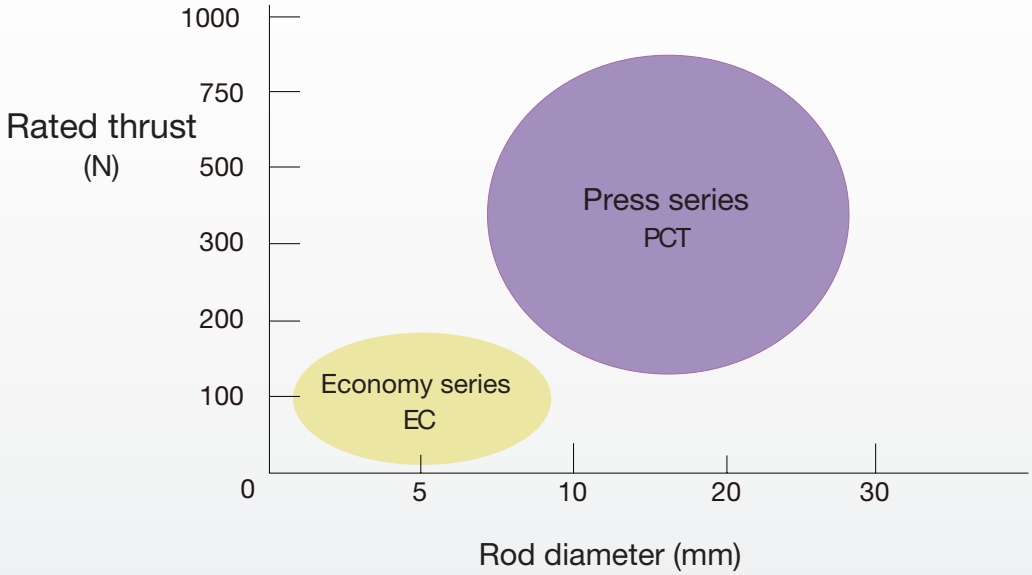
This actuator is offers superior axial load rigidity and thus available for use in a small press fitting and caulking machine.

Motorized

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

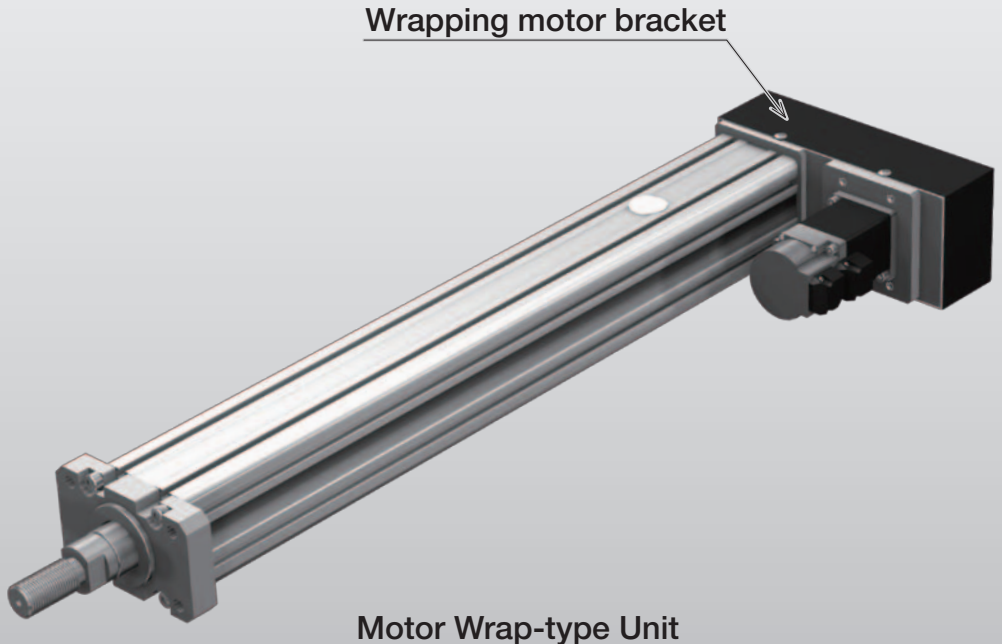
Many possible variations

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

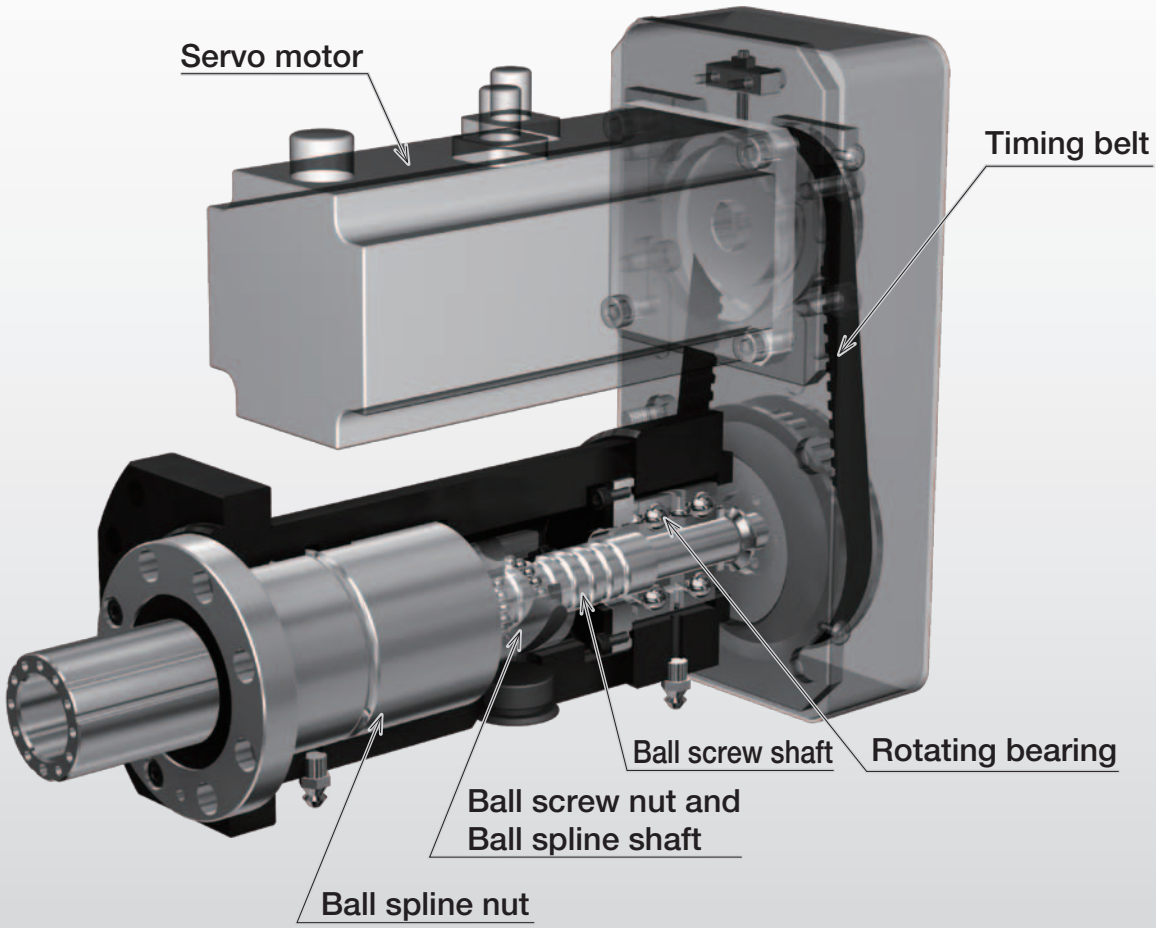
PCT can support any installation direction through the use of a flange or T slot on the main unit.
Motor installation is also possible by direct coupling or wrap.
(When a radial load and moment load are applied to the rod, a guide must be installed separately.)



Motor Wrap-type Unit

Electrical Actuator
Press Series
PC

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

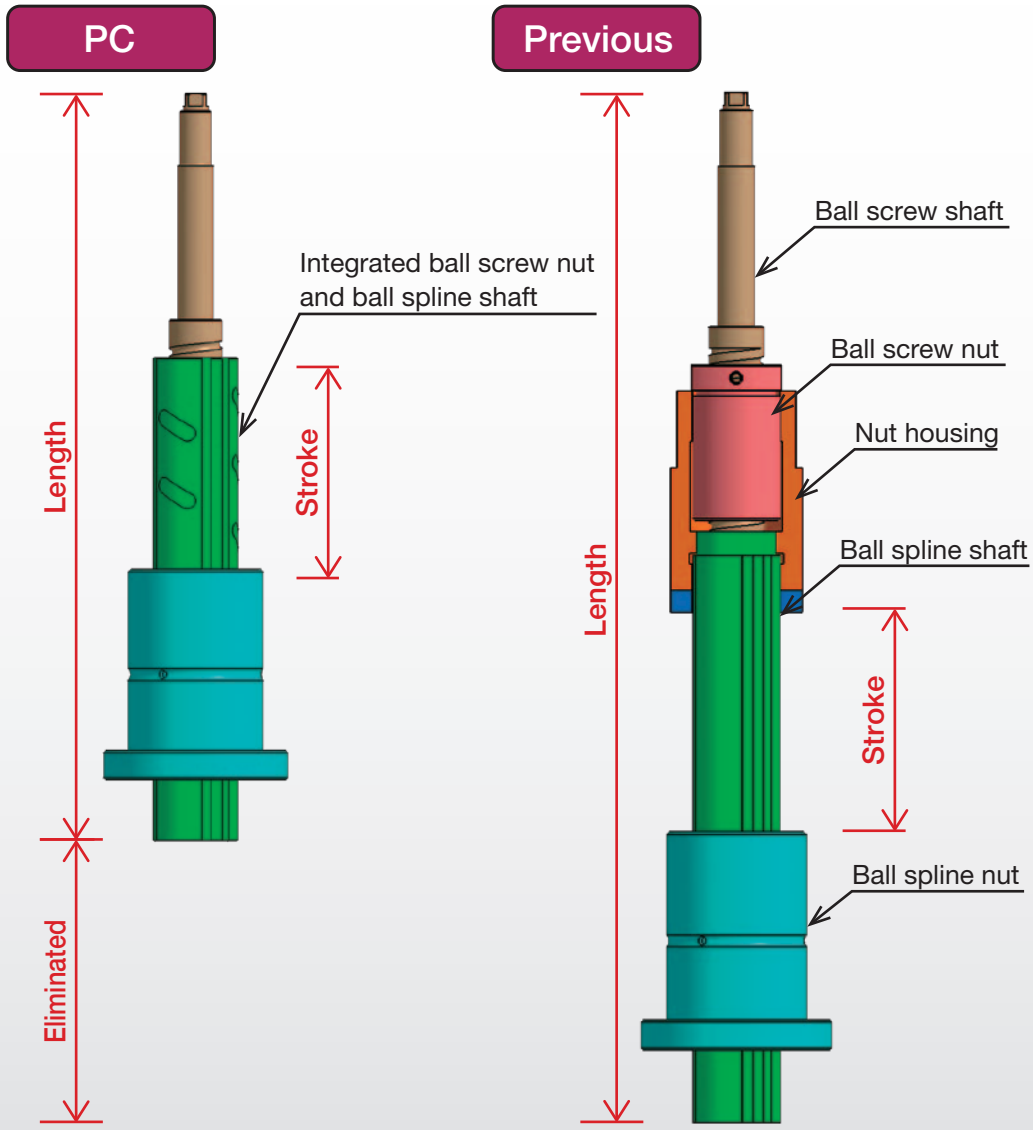


A servo press actuator with a new structure incorporating a precision ball screw nut and ball spline shaft, providing a compact unit that delivers high thrust.

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.

Controllers

TLC

Operation method	Position
Step data count *1	512
Input power supply	24VDC
Network *2	–

*1 Varies depending on function mode.
*2 For information on network support, visit the THK Technical Support website: https://tech.thk.com/.

THC

Operation method		Position
Step data count *1		512
Input power supply *2	Main circuit	100VAC single-phase 200VAC single-phase
	Control circuit	100VAC single-phase 200VAC single-phase
Network *3		–

*1 Varies depending on function mode.
*2 When 750W is selected for the motor rated output, specification for power supply voltage is limited to 200V type.
*3 For information on network support, visit the THK Technical Support website: https://tech.thk.com/.

Series Models

Model	PCT20(R)	PCT25(R)		PC30	PC40
Combined control device	TLC	THC			
Motor rated output	50W	100W	200W	400W	750W
Operation method	Position (pressing operation)				
Control axis count	1				
Input power supply	24VDC	100VAC or 200VAC			200VAC
Encoder method	Absolute (incremental)				
Control axis count	1				
Step data count *1	512				

*1 Varies depending on function mode.

- Selectable function modes
- Up to 50 alarms in alarm history (including power ON)
- Absolute supported

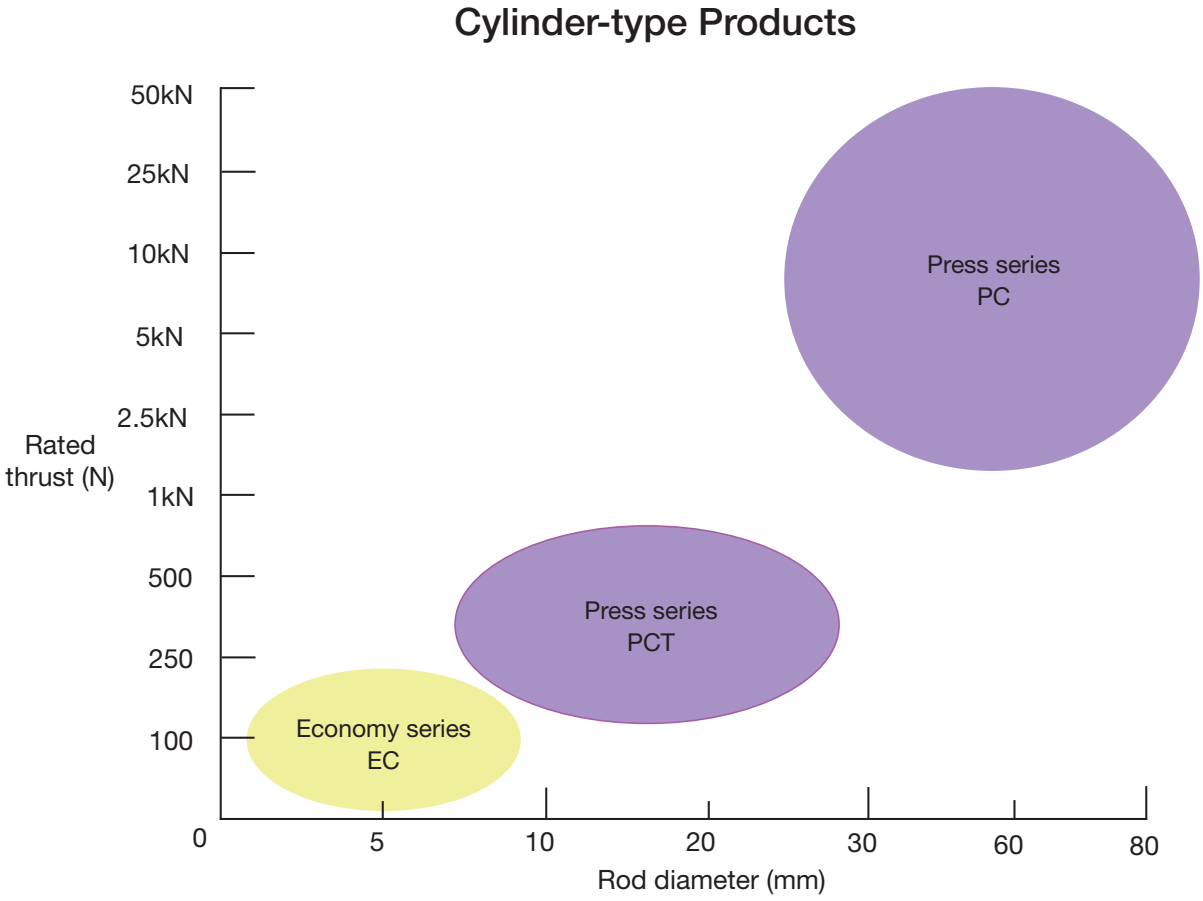
Function Modes

Six modes are provided to support various requirements and purposes.

Function mode		Overview	Step data count	Pressing operation
Multi-point positioning	0: 64-position	Multi-point positioning operation with 64 points With area output, with P area output	64	○
	1: External unit input instruction	Multi-point positioning operation with 64 points I/O-based external unit instruction mode Without area output, with P area output	64	–
	2: 256-position	Multi-point positioning operation with 256 points Without area output, with P area output	256	○
	3: 512-position	Multi-point positioning operation with 512 points Without area output, without P area output	512	○
Electromagnetic valve	4: Solenoid mode 1	Multi-point positioning operation with 7 points Direct move command input With area output, with P area output	7	○
	5: Solenoid mode 2	Multi-point positioning operation with 3 points Direct move command input With position sensor auto-switch output, area output, and P area output	3	–

For information on network support, visit the THK Technical Support website: https://tech.thk.com/.

Specifications



PCT

Model	Motor rated output [W]	Rated thrust [N]	Maximum speed [mm/s]	Maximum stroke [mm]	Generated thrust [N] (0 / 100 / 250 / 500 / 1000 / 1500 / 2500 / 5000)
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					

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	Instantaneous maximum thrust [kN]	Servo motor Manufacturer	Servo motor Rated output [kW]	Rated thrust [kN]	Maximum speed [mm/s]	Maximum stroke [mm]	Generated thrust [kN]
PC30-06A	3.3	Mitsubishi Electric Corporation	0.4	1.6	210	250	1.6 / 3.3
		Yaskawa Electric Corporation					
		Sanyo Denki Co., Ltd.					
PC40-06B	6.4	Mitsubishi Electric Corporation	0.75	3.2	200		3.2 / 6.4
		Yaskawa Electric Corporation					
		Sanyo Denki Co., Ltd.					
PC40H-08C	11.2	Mitsubishi Electric Corporation	1.0	5.6	151		5.6 / 11.2
		Yaskawa Electric Corporation	0.85	6.3	113		6.3 / 11.2
		Sanyo Denki Co., Ltd.	1.2	6.7	151		6.7 / 11.2
PC50-06D	16.8	Mitsubishi Electric Corporation	1.5	8.4	150		8.4 / 16.8
		Yaskawa Electric Corporation	1.3	9.8	112		9.8 / 16.8
		Sanyo Denki Co., Ltd.	1.8	10.2	150		10.2 / 16.8
PC60-10E	21.8	Mitsubishi Electric Corporation	2.0	10.9	155		10.9 / 21.8
		Yaskawa Electric Corporation	1.8	13.1	116		13.1 / 21.8
		Sanyo Denki Co., Ltd.	2.0	10.9	155		10.9 / 21.8
PC60H-10F	35.6	Mitsubishi Electric Corporation	3.5	17.8	166		17.8 / 35.6
		Yaskawa Electric Corporation	2.9	19.8	125		19.8 / 35.6
		Sanyo Denki Co., Ltd.	3.5	18.1	166		18.1 / 35.6
PC80L-12G	71	Mitsubishi Electric Corporation	5	24	177		24 / 71
	71	Yaskawa Electric Corporation	4.4	28	133		28 / 71
	75	Sanyo Denki Co., Ltd.	4.5	21	177		21 / 75
PC80-12G	100	Mitsubishi Electric Corporation	7	33	177		33 / 100
	102	Yaskawa Electric Corporation	5.5	35	133		35 / 102
	107	Sanyo Denki Co., Ltd.	5.5	35	133		35 / 107
PC80H-12G	120	Mitsubishi Electric Corporation	4.2	40	88		40 / 120
		Yaskawa Electric Corporation	7.5	48	133		48 / 120
		Sanyo Denki Co., Ltd.	7.5	48	133		48 / 120

Generated thrust [kN] scale: 0 1 2 3 7.5 10 15 20 30 40 50 70 100 120

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.

MEMO

Model Configuration with Servo Driver Controller TLC/THC

Model	Lead, reduction ratio	Stroke	Design symbol	Options	Control device	Motor cable orientation
PC30 -	06A -	0200	A	- R	- TH	- R /
(1)	(2)	(3)	(4)	(5)	(6)	(7)
PCT20	04N	0050 : 50mm	No symbol : PCT only	N : Direct coupling	TL: TLC	U: Up
PCT25	06N	0100 : 100mm	A : PC only	D : Down	TH: THC	D: Down
PCT20R	06A	0150 : 150mm		L : Left		L : Left
PCT25R	06B	0200 : 200mm		R : Right		R : Right
PC30		0250 : 250mm				
PC40		0300 : 300mm				

R for PCT represents motor wrap.

These symbols represent lead and reduction ratio. For PCT, motor wrap configuration is limited to reduction ratio 1/1. Select from the table below.

Select options from the table below. PCT: Select either direct motor coupling or motor wrap. PC: Select greasing position.

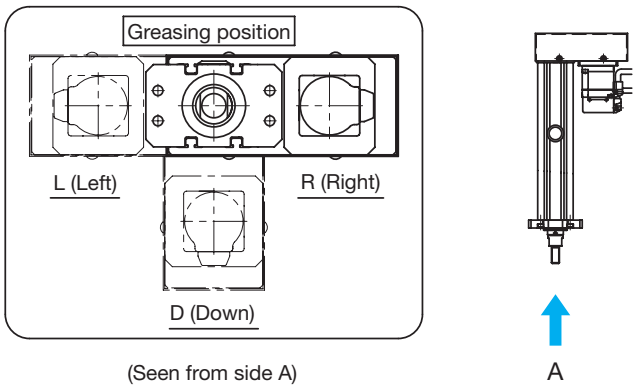
Select cable orientation from the table on page 4-012.

Combinations

Model (1)	Lead, reduction ratio (2)	Stroke (3)	Design symbol (4)	Control device (6)	Motor rated output (8)		Home position method (9)	Power supply voltage (10)
PCT20 PCT20R	06N	0050 to 0200	No symbol	TL: TLC	M05 M05B	50W	D00: Motor side or R00: Reverse motor side	DC: 24VDC
PCT25 PCT25R	06N or 04N	0050 to 0300	No symbol	TH: THC	M10 M10B	100W		D1: 100V or D2: 200V
					M20 M20B	200W		
PC30	06A	0050 to 0250	A	TH: THC	M40 M40B	400W	D00: Motor side	D1: 100V or D2: 200V
PC40	06B				M75 M75B	750W		D2: 200V

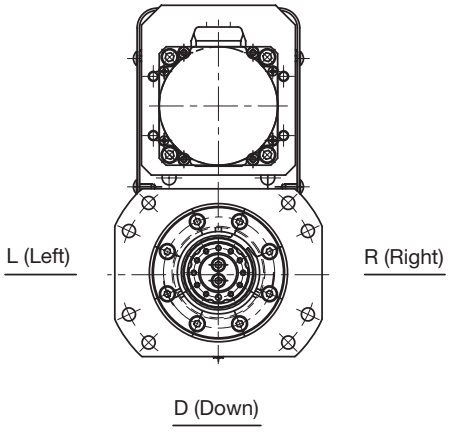
Options: Motor wrap direction or greasing position

PCT: Select wrap direction



(Seen from side A)

PC: Select greasing position

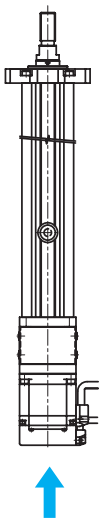


Motor rated output	Home position method	Power supply voltage	Cable type and length
M40	D00	D2	F3
(8)	(9)	(10)	(11)
M05 : 50W	D00: Motor side	DC: 24VDC	F3 : Standard 3m
M10 : 100W	R00: Reverse motor side	D1 : 100V	F5 : Standard 5m
M20 : 200W		D2 : 200V	FA : Standard 10m
M40 : 400W			H3 : High flex 3m
M75 : 750W			H5 : High flex 5m
M05B : 50W with brake			HA : High flex 10m
M10B : 100W with brake			
M20B : 200W with brake			
M40B : 400W with brake			
M75B : 750W with brake			

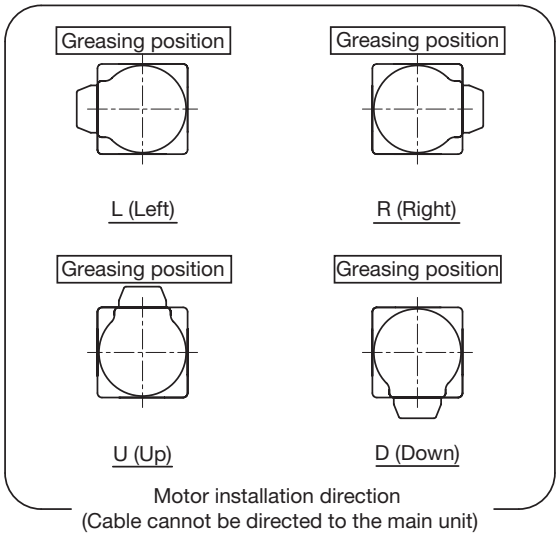
Select motor rated output, home position method, and power supply voltage from the Combinations table.

Select a type and length of motor, encoder, and brake cable.

Motor cable orientation when directly coupled (PCT)

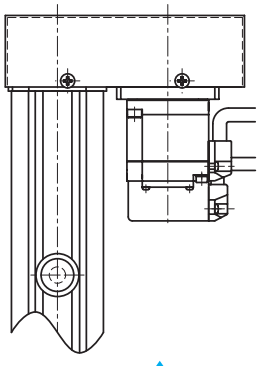


A



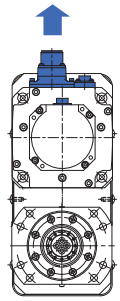
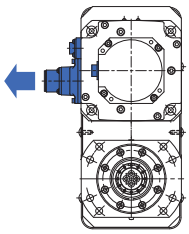
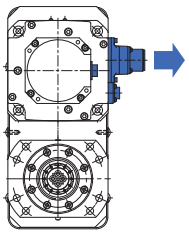
(Seen from side A)

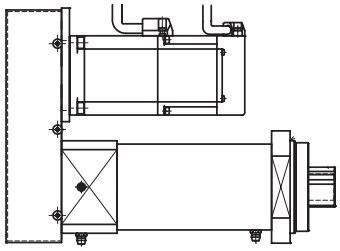
Motor cable orientation when wrapped (PCT)



A

Motor cable orientation (PC)

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



A

PCT20

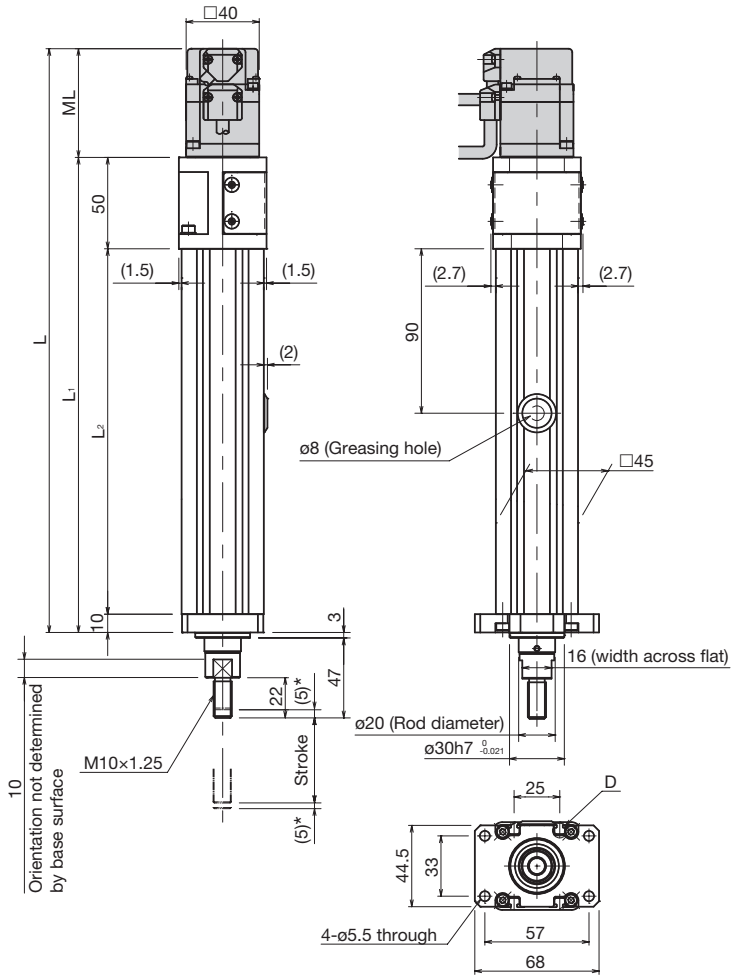
Press series
Rod diameter: 20mm, Direct motor coupling, 50W type

Specifications

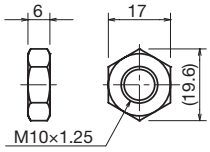
Motor rated output [W]				50
Ball screw lead [mm]				6
Rated thrust *1 [N]				133
Instantaneous maximum thrust *2 [N]				402
Brake retention [N]				133
Rated speed *3 [mm/s]				300
Positioning repeatability [mm]				±0.010
Lost motion [mm]				0.1
Rod non-rotational accuracy [°]				±1
Maximum load capacity *4 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	20
		Vertical mount	0.3G	5
Running life *5 [km]				5000

*1 At rated motor torque.
*2 Dependent on permissible axial load.
*3 At rated motor speed.
*4 At rated speed.
*5 Conditions: Under maximum load capacity (with LM guide), at rated speed, 0.3G acceleration and deceleration rate.

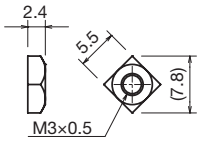
Dimensions



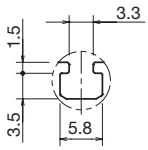
Direct motor coupling type with motor cable orientation right (R).



Hexagonal Nut (×1)



Square Nut (×8)



Section D (detail)

* Stroke up to mechanical stopper.

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 *2 [mm]	L	319.5 (355.1)	369.5 (405.1)	419.5 (455.1)	469.5 (505.1)
	L_1	260	310	360	410
	L_2	200	250	300	350
	ML	59.5 (95.1)			
Weight *2 [kg]	With motor	1.9 (2.1)	2.1 (2.3)	2.3 (2.5)	2.5 (2.7)

*1 Dependent on motor speed (at 3,000min^{-1}) and permissible rotational speed of the ball screw.
*2 Values when brake is installed are shown in parentheses.

PCT20R

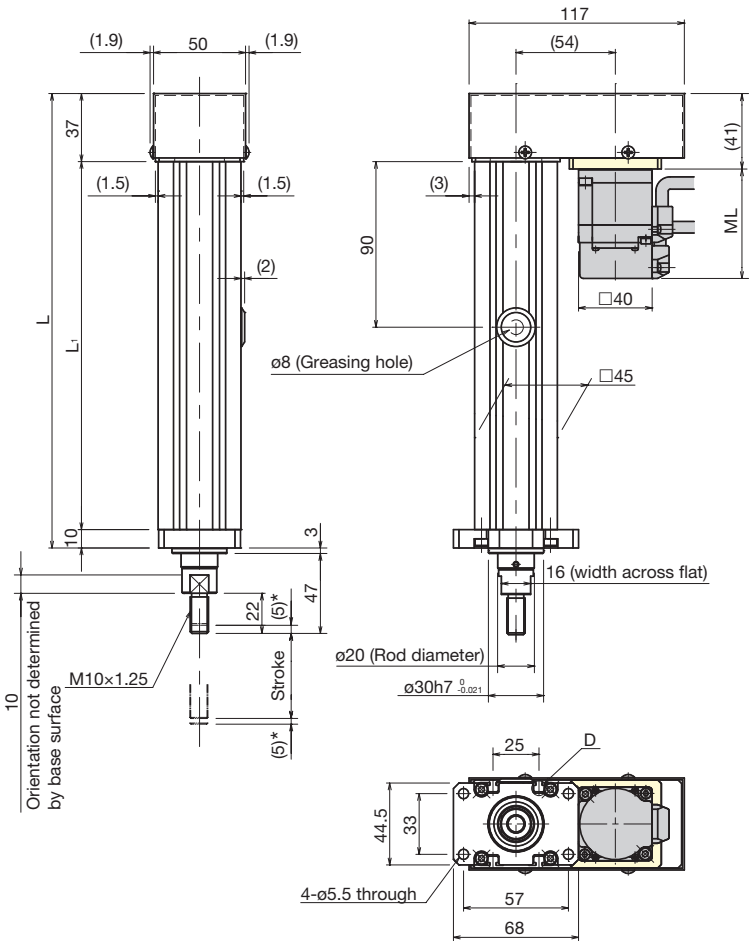
Press series
Rod diameter: 20mm, Motor wrap, 50W type

Specifications

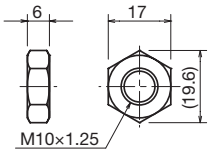
Motor rated output [W]				50
Ball screw lead [mm]				6
Rated thrust *1 [N]				133
Instantaneous maximum thrust *2 [N]				402
Brake retention [N]				133
Rated speed *3 [mm/s]				300
Positioning repeatability [mm]				±0.010
Lost motion [mm]				0.1
Rod non-rotational accuracy [°]				±1
Maximum load capacity *4 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	20
		Vertical mount	0.3G	5
Running life *5 [km]				5000

*1 At rated motor torque.
*2 Dependent on permissible axial load.
*3 At rated motor speed.
*4 At rated speed.
*5 Conditions: Under maximum load capacity (with LM guide), at rated speed, 0.3G acceleration and deceleration rate.

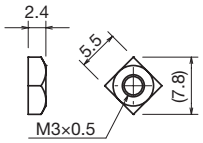
Dimensions



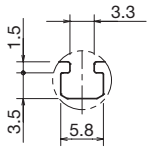
Motor wrap type with motor cable orientation right (R).



Hexagonal Nut (×1)



Square Nut (×8)



Section D (detail)

* Stroke up to mechanical stopper.

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 *2 [mm]	L	247	297	347	397
	L_1	200	250	300	350
	ML	59.5 (95.1)			
Weight *2 [kg]	With motor	2.0 (2.2)	2.2 (2.4)	2.4 (2.6)	2.6 (2.8)

*1 Dependent on motor speed (at 3,000min^{-1}) and permissible rotational speed of the ball screw.
*2 Values when brake is installed are shown in parentheses.

PCT25

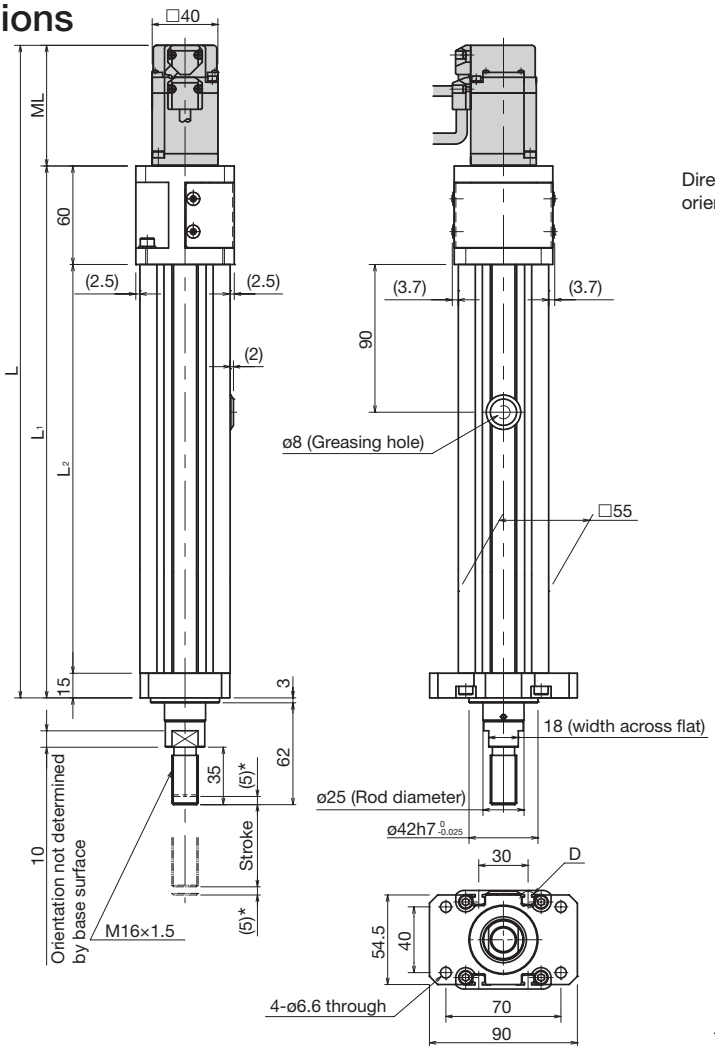
Press series
Rod diameter: 25mm, Direct motor coupling, 100W type

Specifications

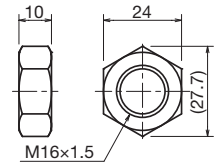
Motor rated output [W]				100	
Ball screw lead [mm]				6	4
Rated thrust *1 [N]				266	400
Instantaneous maximum thrust *2 [N]				796	1194
Brake retention [N]				266	400
Rated speed *3 [mm/s]				300	200
Positioning repeatability [mm]				±0.010	
Lost motion [mm]				0.1	
Rod non-rotational accuracy [°]				±1	
Maximum load capacity *4 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	35	40
		Vertical mount	0.3G	10	10
Running life *5 [km]				5000	

*1 At rated motor torque.
*2 Dependent on permissible axial load.
*3 At rated motor speed.
*4 At rated speed.
*5 Conditions: Under maximum load capacity (with LM guide), at rated speed, 0.3G acceleration and deceleration rate.

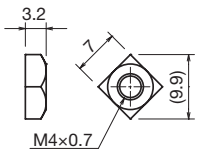
Dimensions



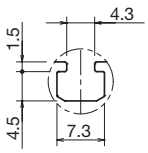
Direct motor coupling type with motor cable orientation right (R).



Hexagonal Nut (×1)



Square Nut (×8)



Section D (detail)

* Stroke up to mechanical stopper.

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 *2 [mm]	L	397.5 (433.1)	447.5 (483.1)	497.5 (533.1)	547.5 (583.1)	597.5 (633.1)	647.5 (683.1)
	L_1	324	374	424	474	524	574
	L_2	249	299	349	399	449	499
	ML	73.5 (109.1)					
Weight *2 [kg]	With motor	3.4 (3.6)	3.7 (3.9)	4.0 (4.2)	4.4 (4.6)	4.7 (4.9)	5.0 (5.2)

*1 Dependent on motor speed (at 3,000min^{-1}) and permissible rotational speed of the ball screw.
*2 Values when brake is installed are shown in parentheses.

PCT25R

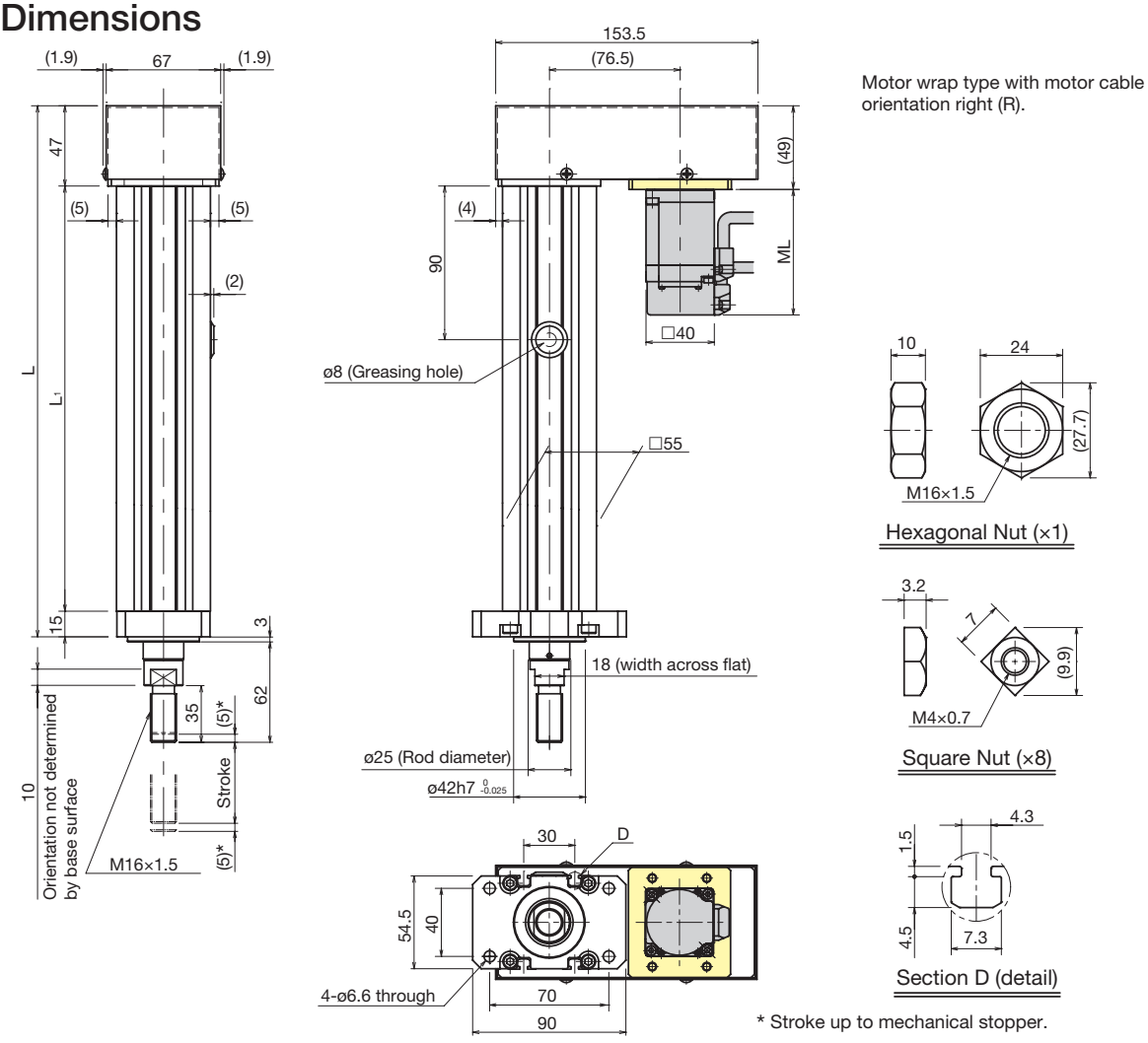
Press series
Rod diameter: 25mm, Motor wrap, 100W type

Specifications

Motor rated output [W]				100	
Ball screw lead [mm]				6	4
Rated thrust *1 [N]				266	400
Instantaneous maximum thrust *2 [N]				796	1194
Brake retention [N]				266	400
Rated speed *3 [mm/s]				300	200
Positioning repeatability [mm]				±0.010	
Lost motion [mm]				0.1	
Rod non-rotational accuracy [°]				±1	
Maximum load capacity *4 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	35	40
		Vertical mount	0.3G	10	10
Running life *5 [km]				5000	

*1 At rated motor torque.
*2 Dependent on permissible axial load.
*3 At rated motor speed.
*4 At rated speed.
*5 Conditions: Under maximum load capacity (with LM guide), at rated speed, 0.3G acceleration and deceleration rate.

Dimensions



Motor wrap type with motor cable orientation right (R).

* Stroke up to mechanical stopper.

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 *2 [mm]	L	311	361	411	461	511	561
	L_1	249	299	349	399	449	499
	ML	73.5 (109.1)					
Weight *2 [kg]	With motor	3.6 (3.8)	3.9 (4.1)	4.3 (4.5)	4.6 (4.8)	4.9 (5.1)	5.2 (5.4)

*1 Dependent on motor speed (at 3,000min^{-1}) and permissible rotational speed of the ball screw.
*2 Values when brake is installed are shown in parentheses.

PCT25

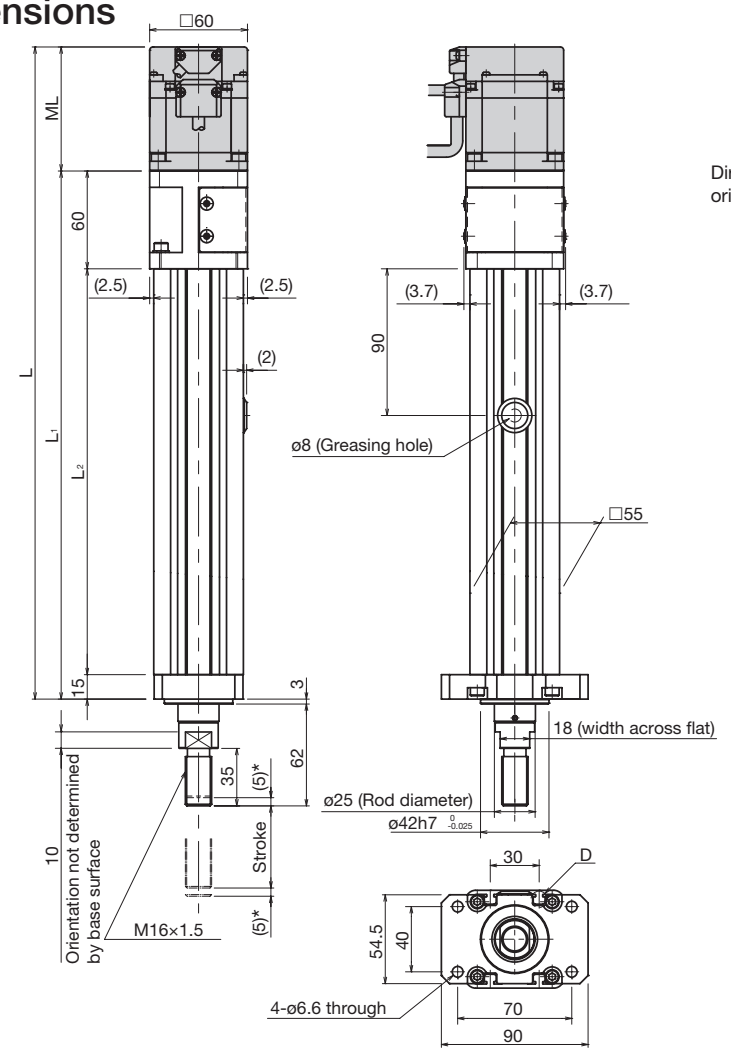
Press series
Rod diameter: 25mm, Direct motor coupling, 200W type

Specifications

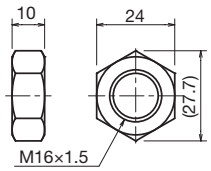
Motor rated output [W]				200	
Ball screw lead [mm]				6	4
Rated thrust *1 [N]				536	804
Instantaneous maximum thrust *2 [N]				1600	2400
Brake retention [N]				536	804
Rated speed *3 [mm/s]				300	200
Positioning repeatability [mm]				±0.010	
Lost motion [mm]				0.1	
Rod non-rotational accuracy [°]				±1	
Maximum load capacity *4 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	50	55
		Vertical mount	0.3G	20	20
Running life *5 [km]				5000	

*1 At rated motor torque.
*2 Dependent on permissible axial load.
*3 At rated motor speed.
*4 At rated speed.
*5 Conditions: Under maximum load capacity (with LM guide), at rated speed, 0.3G acceleration and deceleration rate.

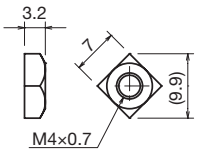
Dimensions



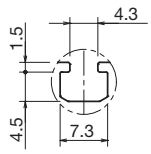
Direct motor coupling type with motor cable orientation right (R).



Hexagonal Nut (×1)



Square Nut (×8)



Section D (detail)

* Stroke up to mechanical stopper.

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 *2 [mm]	L	400.1 (434.7)	450.1 (484.7)	500.1 (534.7)	550.1 (584.7)	600.1 (634.7)	650.1 (684.7)
	L_1	324	374	424	474	524	574
	L_2	249	299	349	399	449	499
	ML	76.1 (110.7)					
Weight *2 [kg]	With motor	3.8 (4.3)	4.1 (4.6)	4.5 (5.0)	4.8 (5.3)	5.1 (5.6)	5.4 (5.9)

*1 Dependent on motor speed (at 3,000min^{-1}) and permissible rotational speed of the ball screw.
*2 Values when brake is installed are shown in parentheses.

PCT25R

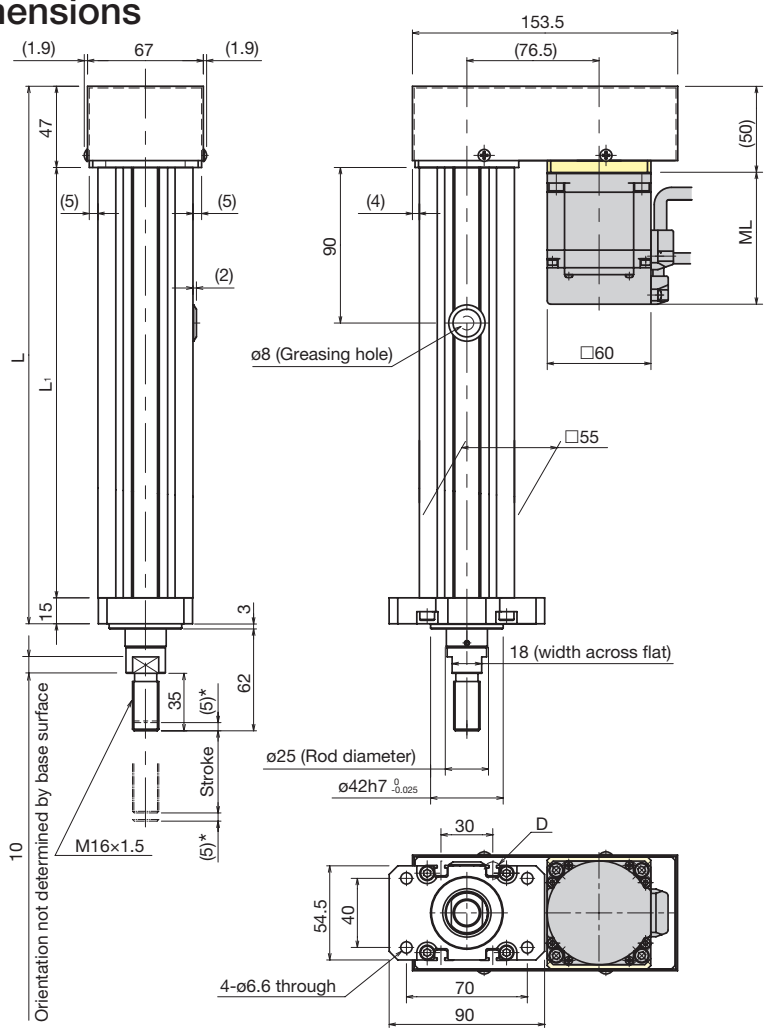
Press series
Rod diameter: 25mm, Motor wrap, 200W type

Specifications

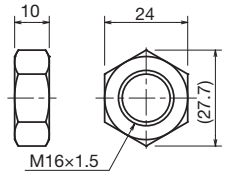
Motor rated output [W]				200	
Ball screw lead [mm]				6	4
Rated thrust *1 [N]				536	804
Instantaneous maximum thrust *2 [N]				1600	2400
Brake retention [N]				536	804
Rated speed *3 [mm/s]				300	200
Positioning repeatability [mm]				±0.010	
Lost motion [mm]				0.1	
Rod non-rotational accuracy [°]				±1	
Maximum load capacity *4 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	50	55
		Vertical mount	0.3G	20	20
Running life *5 [km]				5000	

*1 At rated motor torque.
*2 Dependent on permissible axial load.
*3 At rated motor speed.
*4 At rated speed.
*5 Conditions: Under maximum load capacity (with LM guide), at rated speed, 0.3G acceleration and deceleration rate.

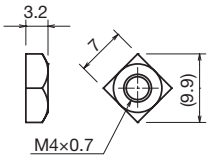
Dimensions



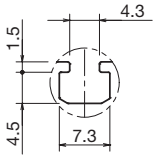
Motor wrap type with motor cable orientation right (R).



Hexagonal Nut (×1)



Square Nut (×8)



Section D (detail)

* Stroke up to mechanical stopper.

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 *2 [mm]	L	311	361	411	461	511	561
	L_1	249	299	349	399	449	499
	ML	76.1 (110.7)					
Weight *2 [kg]	With motor	4.0 (4.5)	4.3 (4.8)	4.7 (5.2)	5.0 (5.5)	5.3 (5.8)	5.7 (6.2)

*1 Dependent on motor speed (at 3,000min^{-1}) and permissible rotational speed of the ball screw.
*2 Values when brake is installed are shown in parentheses.

PC Model Configuration (with Motor and Driver)

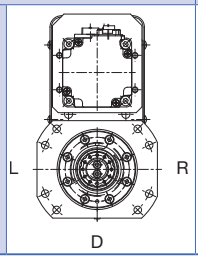
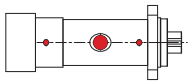
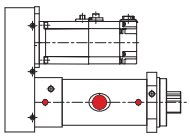
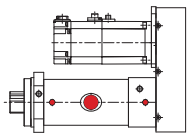
Model		Lead, reduction ratio		Stroke	Design symbol		Greasing position		Applicable motor (control device)		Motor cable orientation
PC30	-	06A	-	0050	A	-	D	-	M040BM	-	U
(1)		(2)		(3)	(4)		(5)		(6)		(7)
PC30		06A		0050 : 50mm	A		D : Down		M040M		U : Up
PC40		06B		0100 : 100mm			L : Left		'		L : Left
PC40H		08C		0150 : 150mm			R : Right		M750BS (with brake)		R : Right
PC50		06D		0200 : 200mm							
PC60		10E		0250 : 250mm							
PC60H		10F									
PC80L		12G									
PC80											
PC80H											

These symbols represent lead and reduction ratio. Select from the applicable motor (control device) list by model (→ P.4-020).

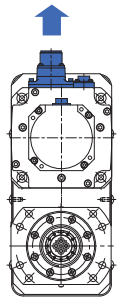
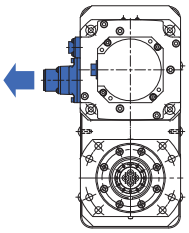
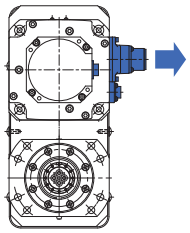
These symbols represent applicable motors.
Select from the applicable motor (control device) list symbols by model (→ P.4-020).
"M", "Y" or "S" at the end of the symbol represents the motor manufacturer.
M: Manufactured by Mitsubishi Electric Corporation
Y: Manufactured by Yaskawa Electric Corporation
S: Manufactured by Sanyo Denki Co., Ltd.

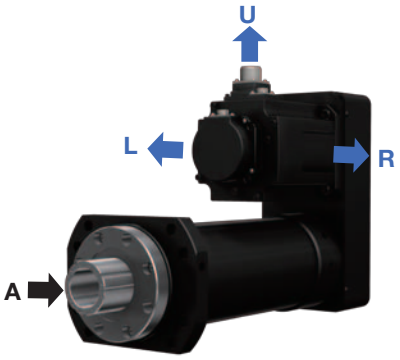
*A driver and cables (5m each) are shipped with the PC main unit.
If you want a network-supported servo amp/servo pack, contact THK.

Greasing position orientation

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

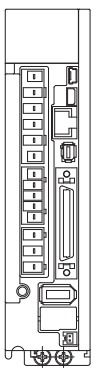
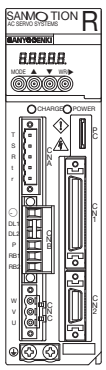
Motor cable orientation

Motor cable orientation	Upper	Left	Right
Symbol	U	L	R
Motor cable orientation schematic diagram (Seen from side A)			



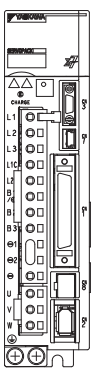
Motor cable orientation

Accessory Shipped with the Main Unit

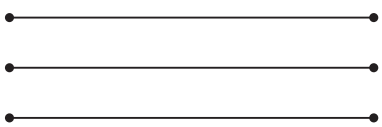



Servo amp

or



Servo pack



Various (5m) cables including motor power cable, encoder cable, brake cable, motor power/ brake cable

PC main unit

Applicable motor (control device) list by model

Model, lead, reduction ratio	Symbol	Servo motor	Servo amp/servo pack	Encoder cable (5m)	Motor cable (5m)	Brake cable (5m)	External regeneration resistor
PC30-06A	M040M	HG-KR43	MR-J4-40A	MR-J3ENCBL5M-A1-L	MR-PWS1CBL5M-A1-L	-	-
	M040BM	HG-KR43B				MR-BKS1CBL5M-A1-L	-
	M040Y	SGM7J-04AFA21	SGD7S-2R8A00A	JZSP-C7PI0D-05-E	JZSP-C7M20F-05-E	-	-
	M040BY	SGM7J-04AFA2C			JZSP-C7M23F-05-E *1		-
	M040S	R2AA06040FXHC0	RS1L03AC	RS-CA3-05-R	RS-CM3-05-R	-	-
	M040BS	R2AA06040FCHC0				RS-CB3-05-R	-
PC40-06B	M075M	HG-KR73	MR-J4-70A	MR-J3ENCBL5M-A1-L	MR-PWS1CBL5M-A1-L	-	-
	M075BM	HG-KR73B				MR-BKS1CBL5M-A1-L	-
	M075Y	SGM7J-08AFA21	SGD7S-5R5A00A	JZSP-C7PI0D-05-E	JZSP-C7M30F-05-E	-	-
	M075BY	SGM7J-08AFA2C			JZSP-C7M33F-05-E *1		-
	M075S	R2AA08075FXHC0	RS1L03AC	RS-CA3-05-R	RS-CM3-05-R	-	-
	M075BS	R2AA08075FCHC0				RS-CB3-05-R	-
PC40H-08C	M100M	HG-SR102	MR-J4-100A	MR-J3ENSCBL5M-L	SVPM-J3HF3-A-5 *2	-	-
	M100BM	HG-SR102B				SVPM-J3HF2B-A-5 *2	-
	M085Y	SGM7G-09AFA21	SGD7S-7R6A00A	JZSP-CVP01-05-E	JZSP-UVA101-05-E *3	-	-
	M085BY	SGM7G-09AFA2C			JZSP-UVA131-05-E *4		-
	M120S	R2AA13120BXHC0	RS1L03AC	AL-00918637-05	AL-00918631-05	-	-
	M120BS	R2AA13120BCHC0			AL-00918632-05		-
PC50-06D	M150M	HG-SR152	MR-J4-200A	MR-J3ENSCBL5M-L	SVPM-J3HF3-A-5 *2	-	-
	M150BM	HG-SR152B				SVPM-J3HF2B-A-5 *2	-
	M130Y	SGM7G-13AFA21	SGD7S-120A00A	JZSP-CVP01-05-E	JZSP-UVA101-05-E *3	-	-
	M130BY	SGM7G-13AFA2C			JZSP-UVA131-05-E *4		-
	M180S	R2AA13180HXHC0	RS1A05AC	AL-00918637-05	AL-00918633-05	-	-
	M180BS	R2AA13180HCHC0			AL-00918634-05		-
PC60-10E	M200M	HG-SR202	MR-J4-200A	MR-J3ENSCBL5M-L	SVPM-J3HF5-A-5 *2	-	-
	M200BM	HG-SR202B				SVPM-J3HF2B-A-5 *2	-
	M180Y	SGM7G-20AFA21	SGD7S-180A00A	JZSP-CVP01-05-E	JZSP-UVA301-05-E *3	-	-
	M180BY	SGM7G-20AFA2C			JZSP-UVA331-05-E *4		-
	M200S	R2AA13200LXHC0	RS1A05AC	AL-00918637-05	AL-00918633-05	-	-
	M200BS	R2AA13200LCHC0			AL-00918634-05		-
PC60H-10F	M350M	HG-SR352	MR-J4-350A	MR-J3ENSCBL5M-L	SVPM-J3HF6-A-5 *2	-	-
	M350BM	HG-SR352B				SVPM-J3HF2B-A-5 *2	-
	M290Y	SGM7G-30AFA21	SGD7S-330A00A	JZSP-CVP01-05-E	JZSP-UVA701-05-E *3	-	-
	M290BY	SGM7G-30AFA2C			JZSP-UVA731-05-E *4		-
	M350S	R2AA18350LXHC0 *7	RS1A10AC	AL-00918637-05	AL-00918635-05	-	-
	M350BS	R2AA18350LCHC0 *7			AL-00918636-05		-
PC80L-12G	M500M	HG-SR502	MR-J4-500A	MR-J3ENSCBL5M-L	SVPM-J3HF6-A-5 *2	-	-
	M500BM	HG-SR502B				SVPM-J3HF2B-A-5 *2	-
	M440Y	SGM7G-44AFA21	SGD7S-330A00A	JZSP-CVP01-05-E	JZSP-UVA701-05-E *3	-	-
	M440BY	SGM7G-44AFA2C			JZSP-UVA731-05-E *4		-
	M450S	R2AA18450HXHC0	RS1A15AC	AL-00918637-05	AL-00918635-05	-	-
	M450BS	R2AA18450HCHC0			AL-00918636-05 *1		-
PC80-12G	M700M	HG-SR702	MR-J4-700A	MR-J3ENSCBL5M-L	SVPM-J3HF8-A-5 *2	-	-
	M700BM	HG-SR702B				SVPM-J3HF2B-A-5 *2	-
	M550Y	SGM7G-55AFA21	SGD7S-470A00A	JZSP-CVP01-05-E	JZSP-UVAA01-05-E *3	-	JUSP-RA04-E *5
	M550BY	SGM7G-55AFA2C			JZSP-UVAA31-05-E *4		
	M550S	R2AA18550HXHC0	RS1A30AC	AL-00918637-05	AL-00918629-05	-	REGIST-1000W6R7B *5
	M550BS	R2AA18550HCHC0				AL-00918630-05	
PC80H-12G	M420M	HG-SR421	MR-J4-500A	MR-J3ENSCBL5M-L	SVPM-J3HF8-A-5 *2	-	-
	M420BM	HG-SR421B				SVPM-J3HF2B-A-5 *2	-
	M750Y	SGM7G-75AFA21	SGD7S-550A00A	JZSP-CVP01-05-E	JZSP-UVAA01-05-E *3	-	JUSP-RA05-E *5
	M750BY	SGM7G-75AFA2C			JZSP-UVAA31-05-E *4		
	M750S	R2AA18750HXHC0	RS1A30AC	AL-00918637-05	AL-00918629-05	-	REGIST-1000W6R7B *5
	M750BS	R2AA18750HCHC0				AL-00918630-05	

*1 Motor cable and brake cable are integrated together
*2 Manufactured by Misumi Corporation
*3 Manufactured by Yaskawa Controls Co., LTD.
*4 Each model for a set of a motor cable and brake cable: Manufactured by Yaskawa Controls Co., LTD.
*5 Servo amps and servo packs require an external regeneration resistor as they do not have a built-in regeneration resistor.
*6 "M", "Y" or "S" at the end of the symbol represents the motor manufacturer. M: Mitsubishi Electric Corporation, Y: Yaskawa Electric Corporation, S: Sanyo Denki Co., Ltd.
*7 PC specification special product (output shaft length differs from the manufacturer's catalog.)

PC30-06A

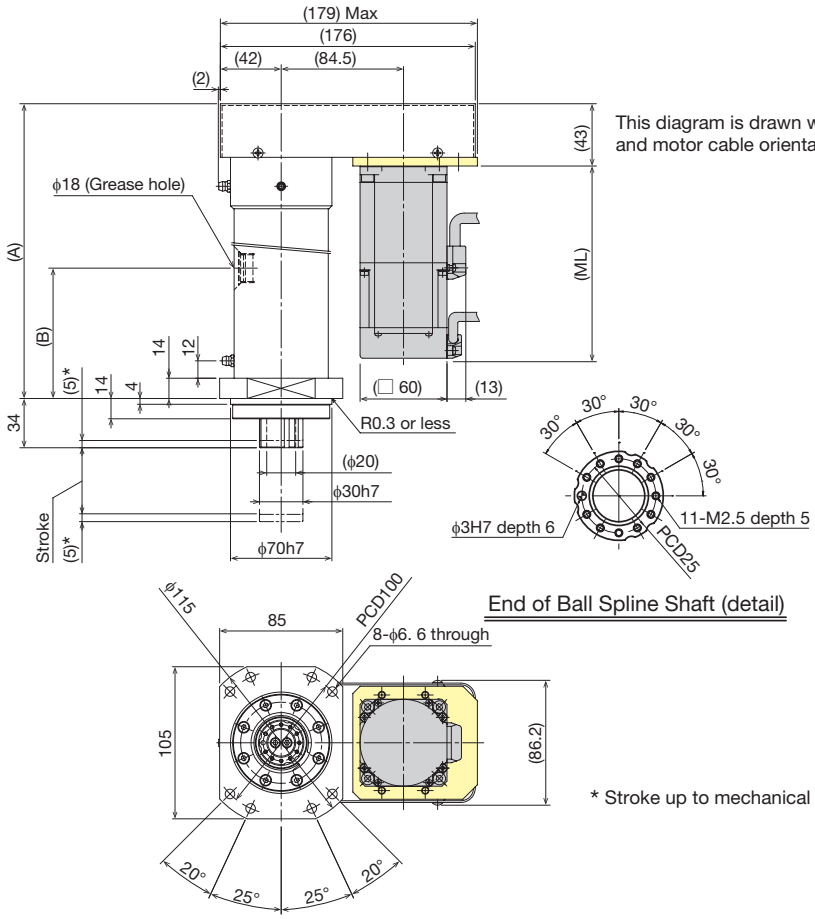
Press series
Rod outer diameter: 30mm, Rated thrust: 1.6kN

Specifications

Servo motor	Motor symbol	TH	M040 (B)M	M040 (B)Y	M040 (B)S
	Manufacturer	-	Mitsubishi Electric Corporation	Yaskawa Electric Corporation	Sanyo Denki Co., Ltd.
	Model	THC: M40	HG-KR43	SGM7J-04	R2AA06040F
	Rated output [kW]	0.4	0.4	0.4	0.4
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			

*1 At rated motor torque.
*2 Dependent on permissible axial load.
*3 At rated motor revolution.
*4 When maximum load capacity is applied.
*5 Load that can be applied to the 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.

Dimensions



This diagram is drawn with greasing position down (D) and motor cable orientation up (U).

* Stroke up to mechanical stopper.

Stroke (mm) (Stroke between mechanical stoppers)			50 (60)	100 (110)	150 (160)	200 (210)	250 (260)
Dimensions [mm]	A		203.5	253.5	303.5	353.5	403.5
	B		67	80	130	180	230
	ML	THC: M40 (M40B) *1	98.1 (132.7)				
		M040M (M040BM) *1, *2	98.3 (135.1)				
		M040Y (M040BY) *1, *2	85.5 (126)				
		M040S (M040BS) *1, *2	95.5 (123.5)				
Weight [kg]	THC: M40 (M40B) *1		8.1 (8.6)	9.2 (9.7)	10.3 (10.8)	11.4 (11.9)	12.6 (13.1)
	M040M (M040BM) *1, *2		8.2 (8.6)	9.3 (9.7)	10.4 (10.8)	11.5 (11.9)	12.7 (13.1)
	M040Y (M040BY) *1, *2		7.9 (8.5)	9.0 (9.6)	10.1 (10.7)	11.2 (11.8)	12.4 (13.0)
	M040S (M040BS) *1, *2		8.1 (8.5)	9.2 (9.6)	10.3 (10.7)	11.4 (11.8)	12.6 (13.0)

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

PC40-06B

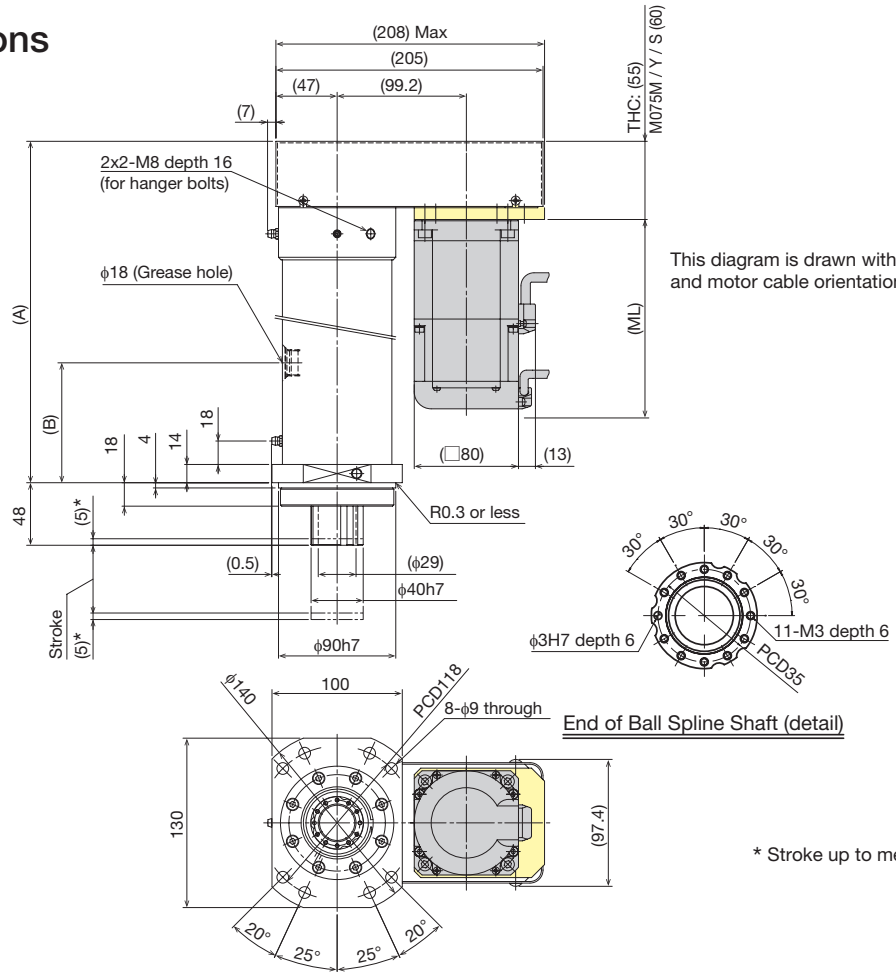
Press series
Rod outer diameter: 40mm, Rated thrust: 3.2kN

Specifications

Servo motor	Motor symbol	TH	M075 (B)M	M075 (B)Y	M075 (B)S
	Manufacturer	-	Mitsubishi Electric Corporation	Yaskawa Electric Corporation	Sanyo Denki Co., Ltd.
	Model	THC: M75	HG-KR73	SGM7J-08	R2AA08075F
	Rated output [kW]	0.75	0.75	0.75	0.75
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			

*1 At rated motor torque.
*2 Dependent on permissible axial load.
*3 At rated motor revolution.
*4 When maximum load capacity is applied.
*5 Load that can be applied to the 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.

Dimensions



This diagram is drawn with greasing position down (D) and motor cable orientation up (U).

* Stroke up to mechanical stopper.

Stroke [mm] (Stroke between mechanical stoppers)			50 (60)	100 (110)	150 (160)	200 (210)	250 (260)
Dimensions [mm]	A		237	287	337	387	437
	B		83	93	143	193	243
	ML	THC: M75 (M75B) *1	108.7 (145.3)				
		M075M (M075BM) *1, *2	112 (152.3)				
		M075Y (M075BY) *1, *2	97 (144)				
		M075S (M075BS) *1, *2	107.3 (143)				
Weight [kg]	THC: M75 (M75B) *1		13.5 (14.4)	15.1 (16.0)	16.6 (17.5)	18.1 (19.0)	19.6 (20.5)
	M075M (M075BM) *1, *2		13.8 (14.8)	15.4 (16.4)	16.9 (17.9)	18.4 (19.4)	19.9 (20.9)
	M075Y (M075BY) *1, *2		13.2 (13.8)	14.8 (15.4)	16.3 (16.9)	17.8 (18.4)	19.3 (19.9)
	M075S (M075BS) *1, *2		13.6 (14.5)	15.2 (16.1)	16.7 (17.6)	18.2 (19.1)	19.7 (20.6)

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

PC40H-08C

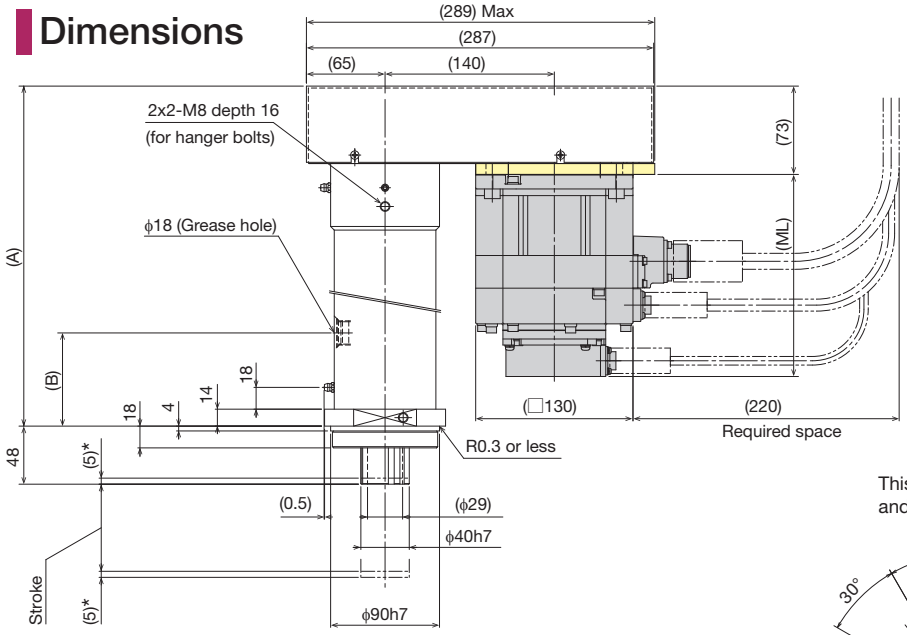
Press series
Rod outer diameter: 40mm, Rated thrust: 5.6 - 6.7kN

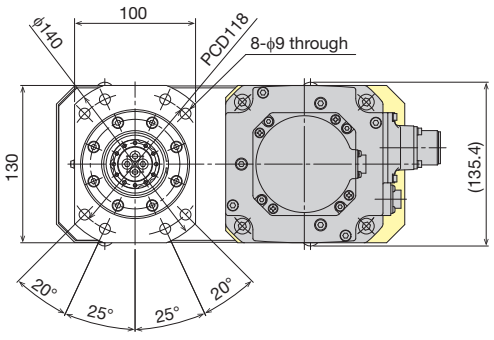
Specifications

Servo motor	Motor symbol	M100 (B)M	M085 (B)Y	M120 (B)S
	Manufacturer	Mitsubishi Electric Corporation	Yaskawa Electric Corporation	Sanyo Denki Co., Ltd.
	Model	HG-SR102	SGM7G-09	R2AA13120B
	Rated output [kW]	1	0.85	1.2
Ball screw lead [mm]		8		
Reduction ratio		25/44		
Rated thrust *1 [kN]		5.6	6.3	6.7
Instantaneous maximum thrust *2 [kN]		11.2		
Maximum speed *3 [mm/s]		151	113	151
Acceleration and deceleration rate *4 [G]		0.1		
Permissible axial load *5 [kN]	Pressing direction	11.2		
	Tensile direction	5.6		
Positioning repeatability [mm]		±0.005		
Backlash [mm]		0.020		
Permissible input torque *6 [N·m]		9.5		
Maximum load capacity *7 [kg]		50		

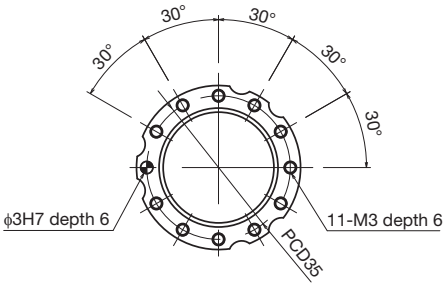
*1 At rated motor torque.
*2 Dependent on permissible axial load.
*3 At rated motor revolution.
*4 When maximum load capacity is applied.
*5 Load that can be applied to the actuator when static.
*6 To prevent mechanical damage, motor must be operated within this limit.
*7 When actuator is positioned vertically with rod reaching lower end.

Dimensions





This diagram is drawn with greasing position down (D) and motor cable orientation up (U).



End of Ball Spline Shaft (detail)

* Stroke up to mechanical stopper.

Effective stroke [mm] (Stroke between mechanical stoppers)			50 (60)	100 (110)	150 (160)	200 (210)	250 (260)
Dimensions [mm]	A		271	321	371	421	471
	B		83	93	113	163	213
	ML	M100M (M100BM) *	132.5 (167)				
		M085Y (M085BY) *	137 (173)				
		M120S (M120BS) *	120.5 (160)				
Weight [kg]	M100M (M100BM) *		21.8 (23.8)	23.4 (25.4)	25.0 (27.0)	26.6 (28.6)	28.2 (30.2)
	M085Y (M085BY) *		21.1 (23.1)	22.7 (24.7)	24.3 (26.3)	25.9 (27.9)	27.5 (29.5)
	M120S (M120BS) *		21.7 (23.6)	23.3 (25.2)	24.9 (26.8)	26.5 (28.4)	28.1 (30.0)

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

PC50-06D

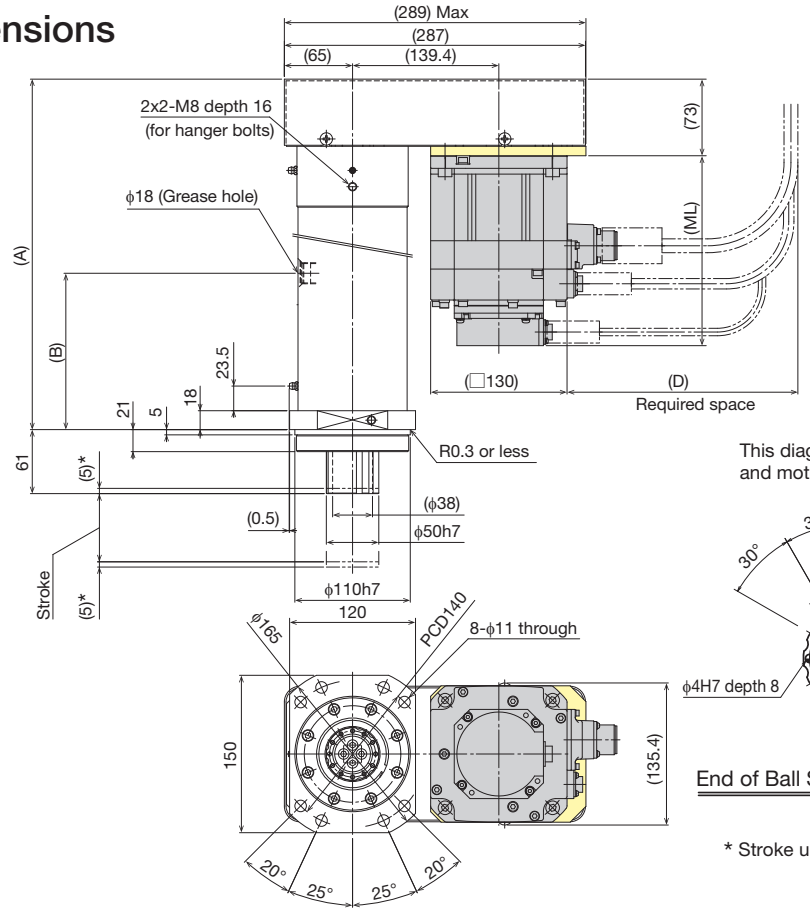
Press series
Rod outer diameter: 50mm, Rated thrust: 8.4 - 10.2kN

Specifications

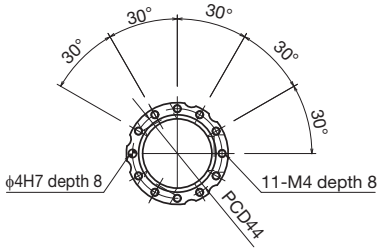
Servo motor	Motor symbol	M150 (B)M	M130 (B)Y	M180 (B)S
	Manufacturer	Mitsubishi Electric Corporation	Yaskawa Electric Corporation	Sanyo Denki Co., Ltd.
	Model	HG-SR152	SGM7G-13	R2AA13180H
	Rated output [kW]	1.5	1.3	1.8
Ball screw lead [mm]		6		
Reduction ratio		30/40		
Rated thrust *1 [kN]		8.4	9.8	10.2
Instantaneous maximum thrust *2 [kN]		16.8		
Maximum speed *3 [mm/s]		150	112	150
Acceleration and deceleration rate *4 [G]		0.1		
Permissible axial load *5 [kN]	Pressing direction	16.8		
	Tensile direction	8.4		
Positioning repeatability [mm]		±0.005		
Backlash [mm]		0.020		
Permissible input torque *6 [N·m]		14.3		
Maximum load capacity *7 [kg]		75		

*1 At rated motor torque.
*2 Dependent on permissible axial load.
*3 At rated motor revolution.
*4 When maximum load capacity is applied.
*5 Load that can be applied to the 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.

Dimensions



This diagram is drawn with greasing position down (D) and motor cable orientation up (U).



End of Ball Spline Shaft (detail)

* Stroke up to mechanical stopper.

Stroke [mm] (Stroke between mechanical stoppers)			50 (60)	100 (110)	150 (160)	200 (210)	250 (260)
Dimensions [mm]	A		294	344	394	444	494
	B		101		111	161	211
	ML	M150M (M150BM) *	146.5 (181)				
		M130Y (M130BY) *	153 (189)				
		M180S (M180BS) *	138 (179)				
	D	M150M (M150BM)	220				
		M130Y (M130BY)	220				
		M180S (M180BS)	250				
Weight [kg]	M150M (M150BM) *		29.1 (31.1)	31.6 (33.6)	34.0 (36.0)	36.5 (38.5)	39.0 (41.0)
	M130Y (M130BY) *		28.9 (30.8)	31.4 (33.3)	33.8 (35.7)	36.3 (38.2)	38.8 (40.7)
	M180S (M180BS) *		29.8 (31.0)	32.3 (33.5)	34.7 (35.9)	37.2 (38.4)	39.7 (40.9)

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

PC60-10E

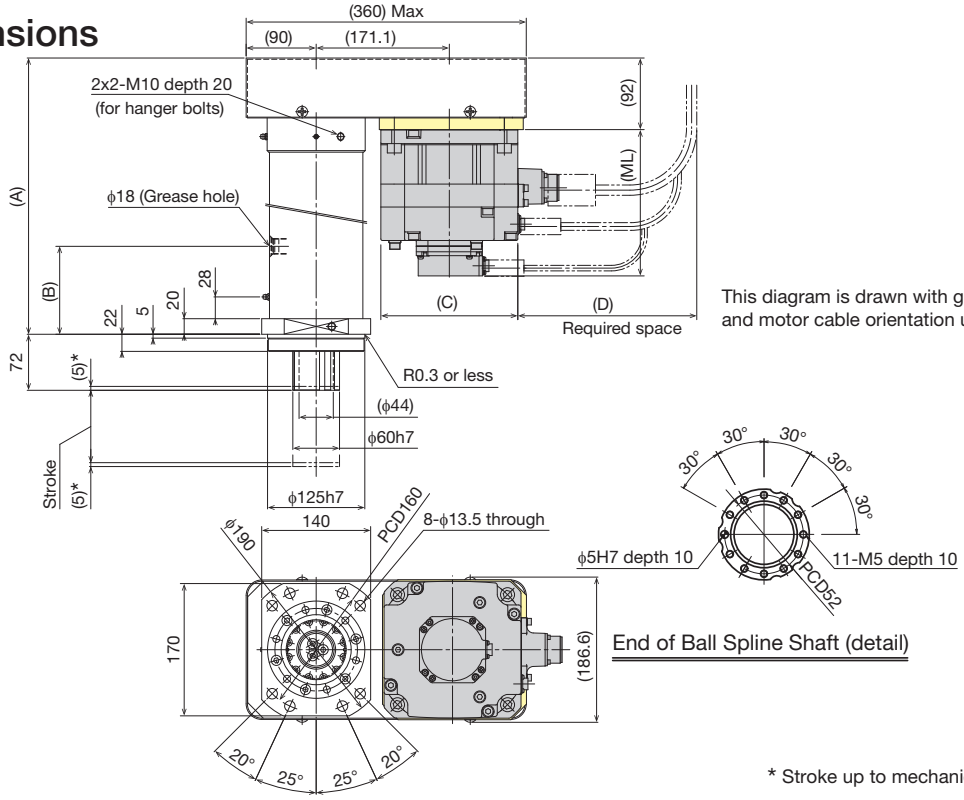
Press series
Rod outer diameter: 60mm, Rated thrust: 10.9 - 13.1kN

Specifications

Servo motor	Motor symbol	M200 (B)M	M180 (B)Y	M200 (B)S
	Manufacturer	Mitsubishi Electric Corporation	Yaskawa Electric Corporation	Sanyo Denki Co., Ltd.
	Model	HG-SR202	SGM7G-20	R2AA13200L
	Rated output [kW]	2	1.8	2
Ball screw lead [mm]		10		
Reduction ratio		28/60		
Rated thrust *1 [kN]		10.9	13.1	10.9
Instantaneous maximum thrust *2 [kN]		21.8		
Maximum speed *3 [mm/s]		155	116	155
Acceleration and deceleration rate *4 [G]		0.1		
Permissible axial load *5 [kN]	Pressing direction	21.8		
	Tensile direction	10.9		
Positioning repeatability [mm]		±0.005		
Backlash [mm]		0.020		
Permissible input torque *6 [N·m]		19.1		
Maximum load capacity *7 [kg]		100		

*1 At rated motor torque.
*2 Dependent on permissible axial load.
*3 At rated motor revolution.
*4 When maximum load capacity is applied.
*5 Load that can be applied to the 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.

Dimensions



This diagram is drawn with greasing position down (D) and motor cable orientation up (U).

* Stroke up to mechanical stopper.

Stroke [mm] (Stroke between mechanical stoppers)			50 (60)	100 (110)	150 (160)	200 (210)	250 (260)
Dimensions [mm]	A		305	355	405	455	505
	B		113			163	213
	ML	M200M (M200BM) *	138.5 (188)				
		M180Y (M180BY) *	171 (207)				
		M200S (M200BS) *	171 (216)				
	C	M200M (M200BM)	□176				
		M180Y (M180BY)	□130				
		M200S (M200BS)	□130				
	D	M200M (M200BM)	230				
		M180Y (M180BY)	240				
		M200S (M200BS)	250				
Weight [kg]	M200M (M200BM) *		47.4 (53.4)	50.9 (56.9)	54.4 (60.4)	58.0 (64.0)	61.5 (67.5)
	M180Y (M180BY) *		45.0 (47.4)	48.5 (50.9)	52.0 (54.4)	55.6 (58.0)	59.1 (61.5)
	M200S (M200BS) *		46.4 (48.4)	49.9 (51.9)	53.4 (55.4)	57.0 (59.0)	60.5 (62.5)

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

PC60H-10F

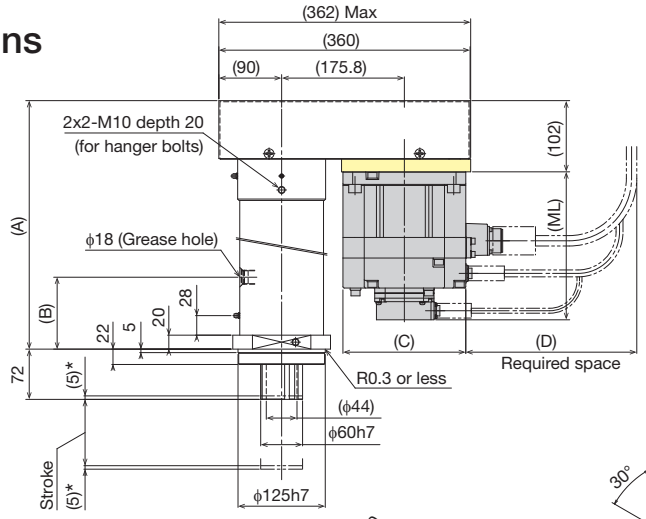
Press series
Rod outer diameter: 60mm, Rated thrust: 17.8 - 19.8kN

Specifications

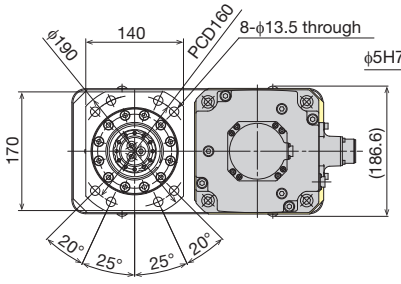
Servo motor	Motor symbol	M350 (B)M	M290 (B)Y	M350 (B)S
	Manufacturer	Mitsubishi Electric Corporation	Yaskawa Electric Corporation	Sanyo Denki Co., Ltd.
	Model	HG-SR352	SGM7G-30	R2AA18350L
	Rated output [kW]	3.5	2.9	3.5
Ball screw lead [mm]		10		
Reduction ratio		30/60		
Rated thrust *1 [kN]		17.8	19.8	18.1
Instantaneous maximum thrust *2 [kN]		35.6		
Maximum speed *3 [mm/s]		166	125	166
Acceleration and deceleration rate *4 [G]		0.1		
Permissible axial load *5 [kN]	Pressing direction	35.6		
	Tensile direction	17.8		
Positioning repeatability [mm]		±0.005		
Backlash [mm]		0.020		
Permissible input torque *6 [N·m]		33.4		
Maximum load capacity *7 [kg]		150		

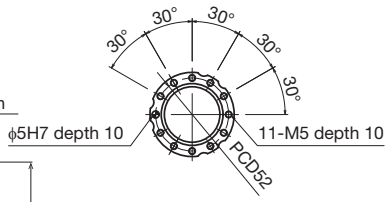
*1 At rated motor torque.
*2 Dependent on permissible axial load.
*3 At rated motor revolution.
*4 When maximum load capacity is applied.
*5 Load that can be applied to the actuator when static.
*6 To prevent mechanical damage, motor must be operated within this limit.
*7 When actuator is positioned vertically with rod reaching lower end.

Dimensions



This diagram is drawn with greasing position down (D) and motor cable orientation up (U).





End of Ball Spline Shaft (detail)

* Stroke up to mechanical stopper.

Stroke [mm] (Stroke between mechanical stoppers)			50 (60)	100 (110)	150 (160)	200 (210)	250 (260)
Dimensions [mm]	A		349	399	449	499	549
	B		123			145	195
	ML	M350M (M350BM) *	162.5 (212)				
		M290Y (M290BY) *	160 (208)				
		M350S (M350BS) *	155 (205)				
	C	M350M (M350BM)	□176				
		M290Y (M290BY)	□180				
		M350S (M350BS)	□180				
	D	M350M (M350BM)	245				
		M290Y (M290BY)	285				
		M350S (M350BS)	300				
Weight [kg]	M350M (M350BM) *		57.2 (63.2)	60.7 (66.7)	64.3 (70.3)	67.8 (73.8)	71.3 (77.3)
	M290Y (M290BY) *		54.7 (60.7)	58.2 (64.2)	61.8 (67.8)	65.3 (71.3)	68.8 (74.8)
	M350S (M350BS) *		56.7 (61.2)	60.2 (64.7)	63.8 (68.3)	67.3 (71.8)	70.8 (75.3)

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

PC80L-12G

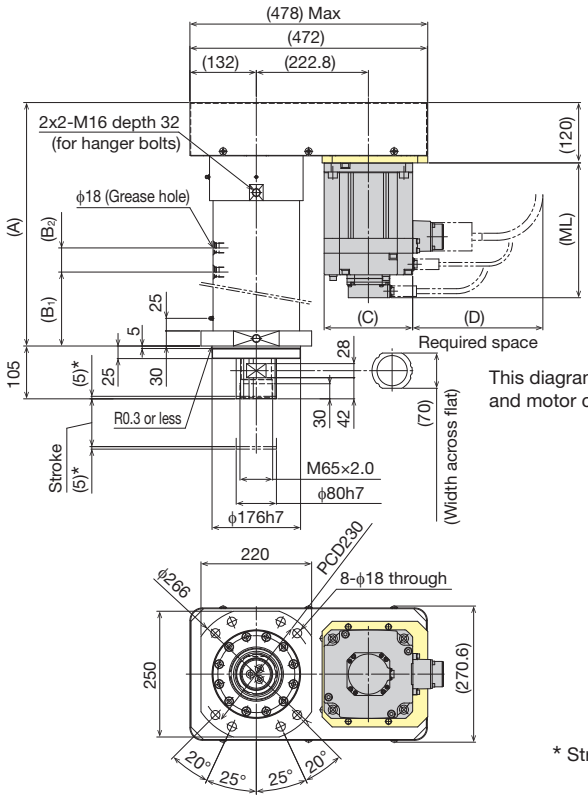
Press series
Rod outer shape: 80mm, Rated thrust: 21 - 28kN

Specifications

Servo motor	Motor symbol	M500 (B)M	M440 (B)Y	M450 (B)S
	Manufacturer	Mitsubishi Electric Corporation	Yaskawa Electric Corporation	Sanyo Denki Co., Ltd.
	Model	HG-SR502	SGM7G-44	R2AA18450H
	Rated output [kW]	5	4.4	4.5
Ball screw lead [mm]		12		
Reduction ratio		40/90		
Rated thrust *1 [kN]		24	28	21
Instantaneous maximum thrust *2 [kN]		71	71	75
Maximum speed *3 [mm/s]		177	133	177
Acceleration and deceleration rate *4 [G]		0.1		
Permissible axial load *5 [kN]	Pressing direction	120		
	Tensile direction	48		
Positioning repeatability [mm]		±0.005		
Backlash [mm]		0.020		
Permissible input torque *6 [N·m]		120		
Maximum load capacity *7 [kg]		200		

*1 At rated motor torque.
*2 Dependent on permissible axial load.
*3 At rated motor revolution.
*4 When maximum load capacity is applied.
*5 Load that can be applied to the 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.

Dimensions



This diagram is drawn with greasing position down (D) and motor cable orientation up (U).

* Stroke up to mechanical stopper.

Stroke [mm] (Stroke between mechanical stoppers)			50 (60)	100 (110)	150 (160)	200 (210)	250 (260)
Dimensions [mm]	A		484	534	584	634	684
	B_1		117	119	121	171	221
	B_2		48	96	144		
	ML	M500M (M500BM) *	178.5 (228)				
		M440Y (M440BY) *	184 (232)				
		M450S (M450BS) *	172 (222)				
	C	M500M, M500BM	□176				
		M440Y, M440BY	□180				
		M450S, M450BS					
	D	M500M, M500BM	245				
		M440Y, M440BY	285				
		M450S, M450BS	380				
Weight [kg]	M500M (M500BM) *		133 (139)	140 (146)	146 (152)	153 (159)	160 (166)
	M440Y (M440BY) *		131 (137)	137 (143)	144 (150)	151 (157)	157 (163)
	M450S (M450BS) *		133 (135)	139 (142)	146 (149)	153 (155)	159 (168)

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

PC80-12G

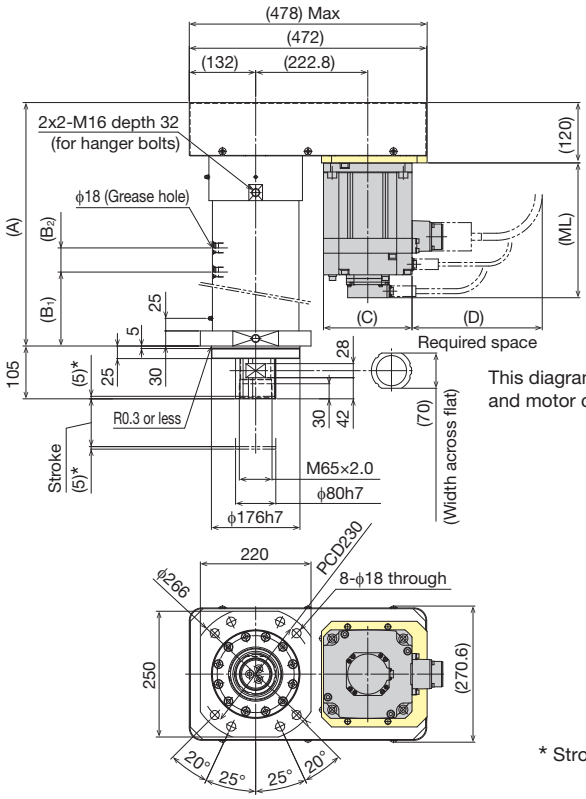
Press series
Rod outer shape: 80mm, Rated thrust: 33 - 35kN

Specifications

Servo motor	Motor symbol	M700 (B)M	M550 (B)Y	M550 (B)S
	Manufacturer	Mitsubishi Electric Corporation	Yaskawa Electric Corporation	Sanyo Denki Co., Ltd.
	Model	HG-SR702	SGM7G-55A	R2AA18550H
	Rated output [kW]	7	5.5	5.5
Ball screw lead [mm]		12		
Reduction ratio		40/90		
Rated thrust *1 [kN]		33	35	35
Instantaneous maximum thrust *2 [kN]		100	102	107
Maximum speed *3 [mm/s]		177	133	133
Acceleration and deceleration rate *4 [G]		0.1		
Permissible axial load *5 [kN]	Pressing direction	120		
	Tensile direction	48		
Positioning repeatability [mm]		±0.005		
Backlash [mm]		0.020		
Permissible input torque *6 [N·m]		120		
Maximum load capacity *7 [kg]		200		

*1 At rated motor torque.
*2 Dependent on permissible axial load.
*3 At rated motor revolution.
*4 When maximum load capacity is applied.
*5 Load that can be applied to the 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.

Dimensions



This diagram is drawn with greasing position down (D) and motor cable orientation up (U).

* Stroke up to mechanical stopper.

Stroke [mm] (Stroke between mechanical stoppers)			50 (60)	100 (110)	150 (160)	200 (210)	250 (260)
Dimensions [mm]	A		484	534	584	634	684
	B_1		117	119	121	171	221
	B_2		48	96	144		
	ML	M700M (M700BM) *	218.5 (268)				
		M550Y (M550BY) *	221 (265)				
		M550S (M550BS) *	228 (274)				
	C	M700M, M700BM	□176				
		M550Y, M550BY	□180				
		M550S, M550BS					
	D	M700M, M700BM	379				
		M550Y, M550BY	432				
		M550S, M550BS	505				
Weight [kg]	M700M (M700BM) *		140 (146)	147 (153)	153 (159)	160 (166)	167 (173)
	M550Y (M550BY) *		135 (141)	141 (147)	148 (154)	155 (161)	161 (167)
	M550S (M550BS) *		141 (144)	147 (150)	154 (157)	161 (164)	168 (170)

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

PC80H-12G

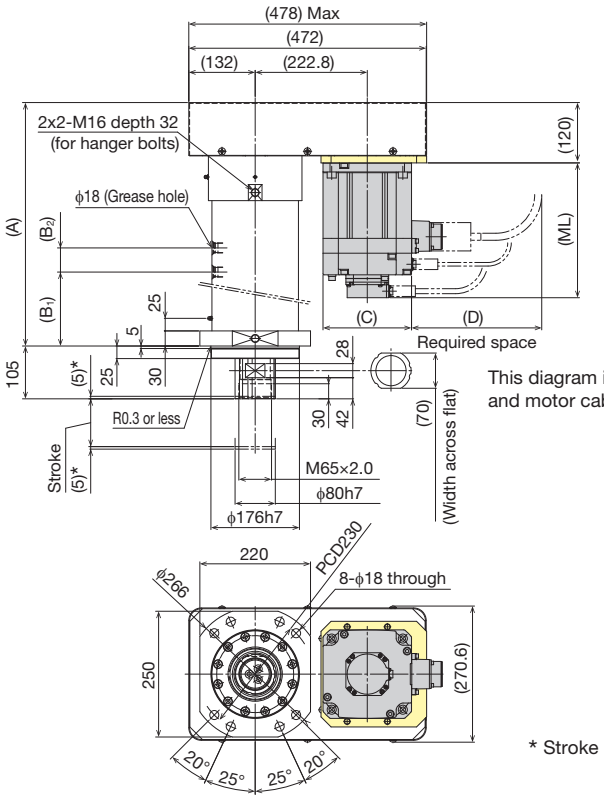
Press series
Rod outer shape: 80mm, Rated thrust: 40 - 48kN

Specifications

Servo motor	Motor symbol	M420 (B)M	M750 (B)Y	M750 (B)S
	Manufacturer	Mitsubishi Electric Corporation	Yaskawa Electric Corporation	Sanyo Denki Co., Ltd.
	Model	HG-SR421	SGM7G-75	R2AA18750H
	Rated output [kW]	4.2	7.5	7.5
Ball screw lead [mm]		12		
Reduction ratio		40/90		
Rated thrust *1 [kN]		40	48	48
Instantaneous maximum thrust *2 [kN]		120	120	120
Maximum speed *3 [mm/s]		88	133	133
Acceleration and deceleration rate *4 [G]		0.1		
Permissible axial load *5 [kN]	Pressing direction	120		
	Tensile direction	48		
Positioning repeatability [mm]		±0.005		
Backlash [mm]		0.020		
Permissible input torque *6 [N·m]		120		
Maximum load capacity *7 [kg]		200		

*1 At rated motor torque.
*2 Dependent on permissible axial load.
*3 At rated motor revolution.
*4 When maximum load capacity is applied.
*5 Load that can be applied to the 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.

Dimensions



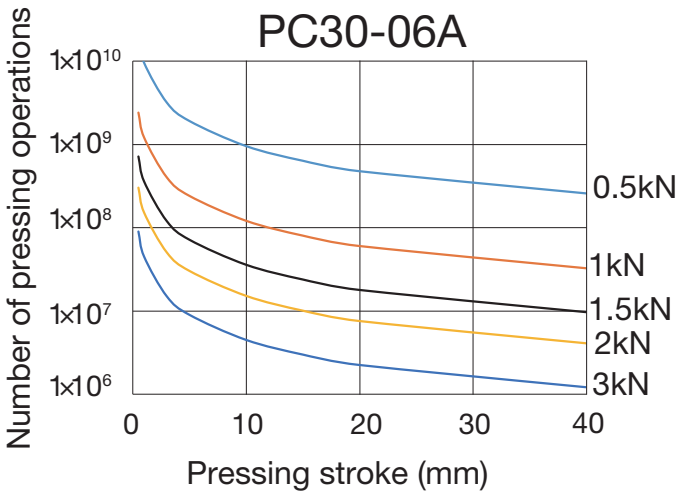
This diagram is drawn with greasing position down (D) and motor cable orientation up (U).

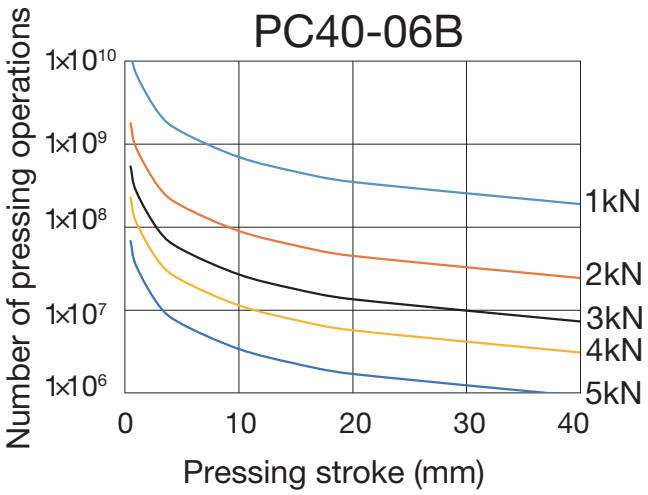
* Stroke up to mechanical stopper.

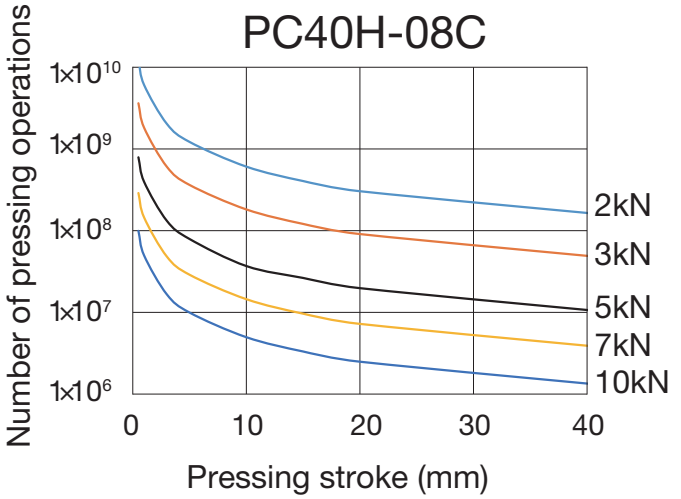
Stroke [mm] (Stroke between mechanical stoppers)			50 (60)	100 (110)	150 (160)	200 (210)	250 (260)
Dimensions [mm]	A		484	534	584	634	684
	B_1		117	119	121	171	221
	B_2		48	96	144		
	ML	M420M (M420BM) *	218.5 (268)				
		M750Y (M750BY) *	267 (311)				
		M750S (M750BS) *	273 (329)				
	C	M420M, M420BM	□176				
		M750Y, M750BY	□180				
		M750S, M750BS					
	D	M420M, M420BM	379				
		M750Y, M750BY	432				
		M750S, M750BS	505				
Weight [kg]	M420M (M420BM) *		140 (146)	147 (153)	153 (159)	160 (166)	167 (173)
	M750Y (M750BY) *		143 (148)	149 (155)	156 (161)	163 (168)	169 (175)
	M750S (M750BS) *		149 (153)	155 (160)	162 (167)	169 (173)	176 (180)

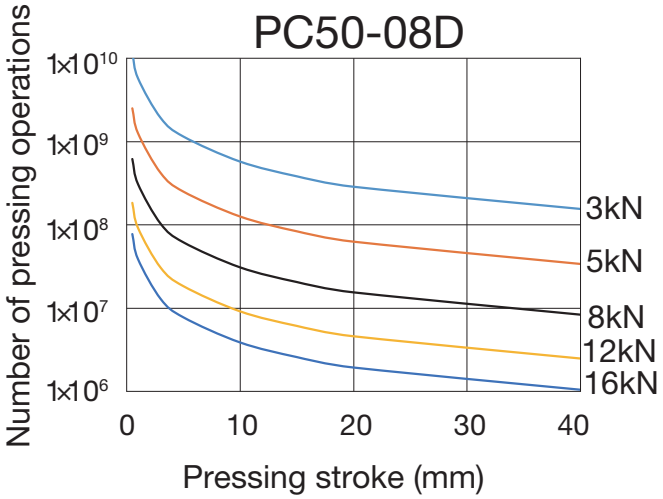
* Values when brake is installed are shown in parentheses. "M", "Y" or "S" at the end of the model number represents the motor manufacturer.
M: Mitsubishi Electric Corporation, Y: Yaskawa Electric Corporation, S: Sanyo Denki Co., Ltd.

PC Theoretical pressing force running life (number of presses)





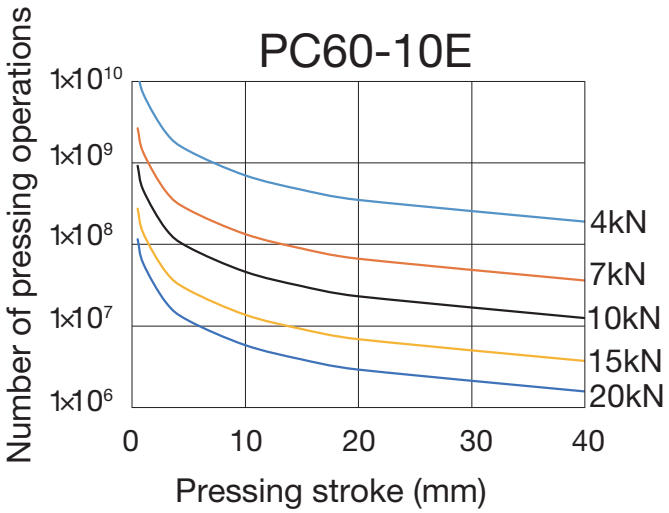


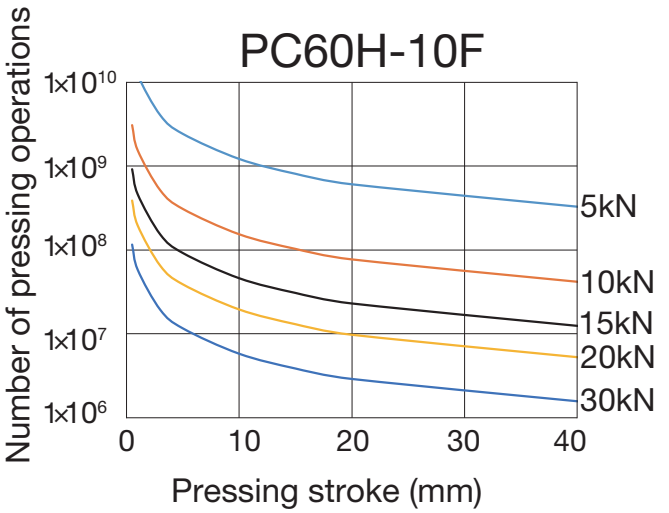


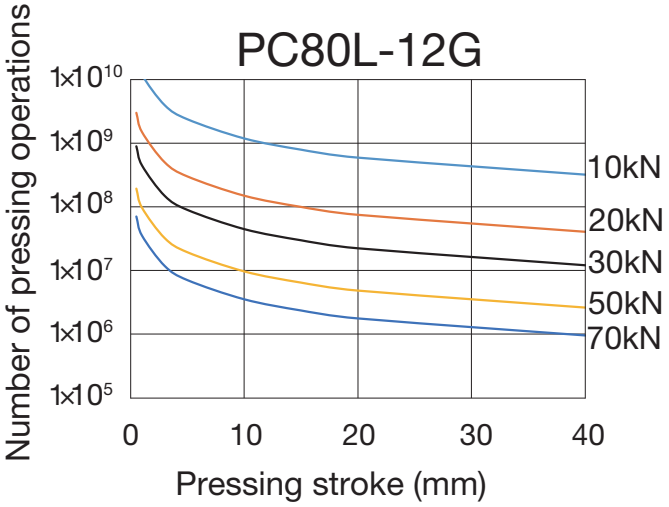
Running life will fluctuate depending on pressing load and pressing stroke.
The operating life is a theoretical value under the following conditions.

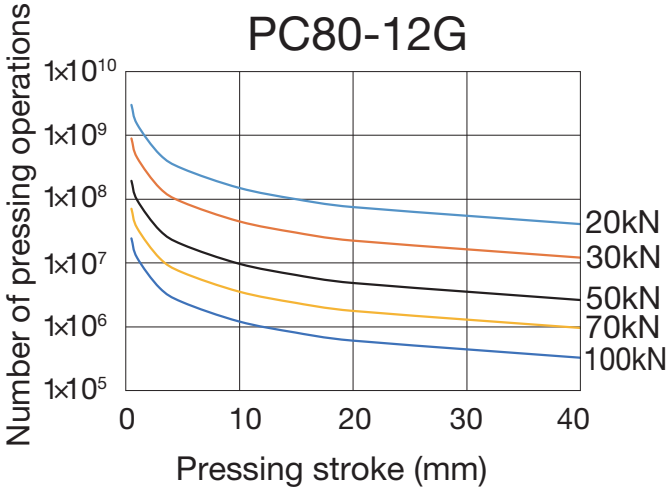
Mounting orientation: vertical (rod reaching lower end)
Pressing direction : compression direction
Payload : at maximum load capacity

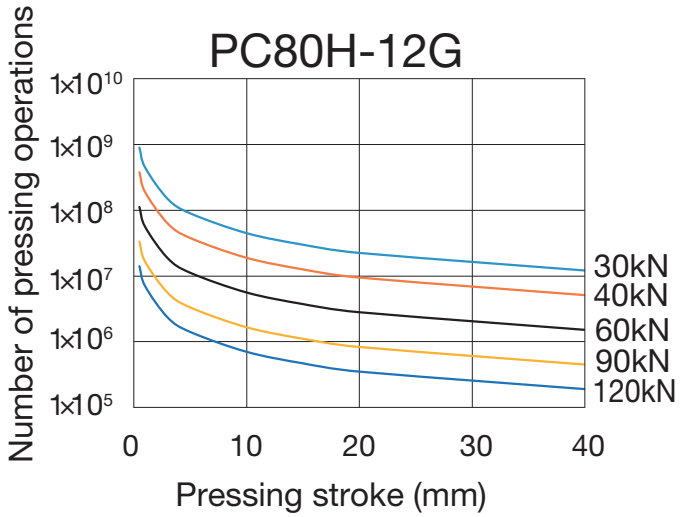
* The graph does not guarantee the pressing stroke operation for pressing load.











Running life will fluctuate depending on pressing load and pressing stroke.
The operating life is a theoretical value under the following conditions.

Mounting orientation : Vertical (rod reaching lower end)
Pressing direction : Compression direction
Payload : at maximum load capacity

* The graph does not guarantee the pressing stroke operation for pressing load.

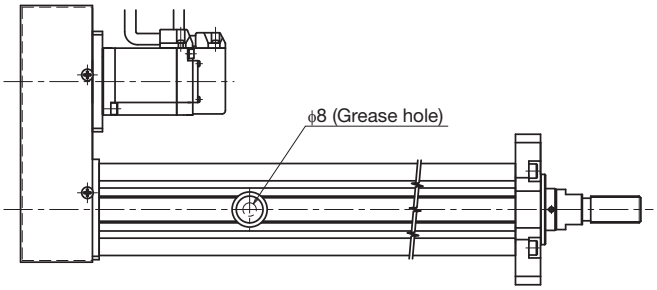
Maintenance

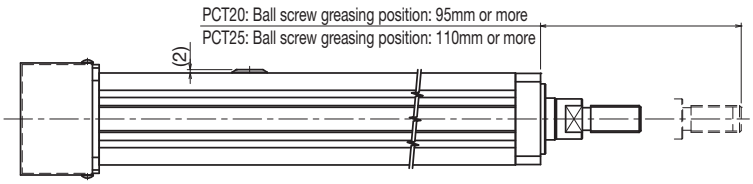
To maximize the performance of the actuator, periodic greasing is required.
THK cylinder-type actuators have a grease hole.

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

PCT

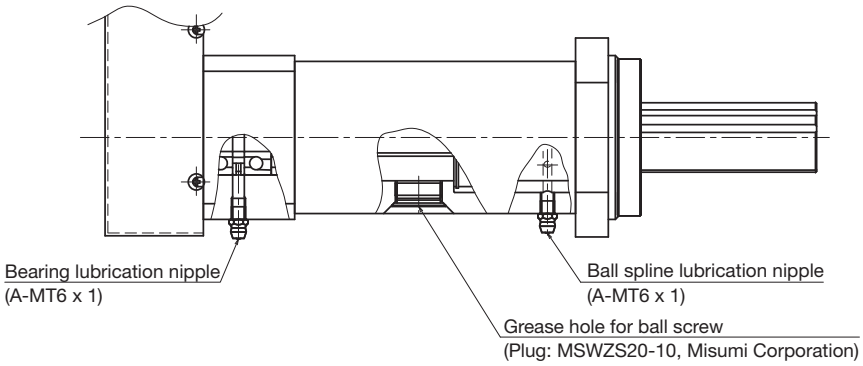
Standard grease: AFB-LF
To grease the ball screw portion, remove the plug and apply the grease directly to the ball screw shaft.



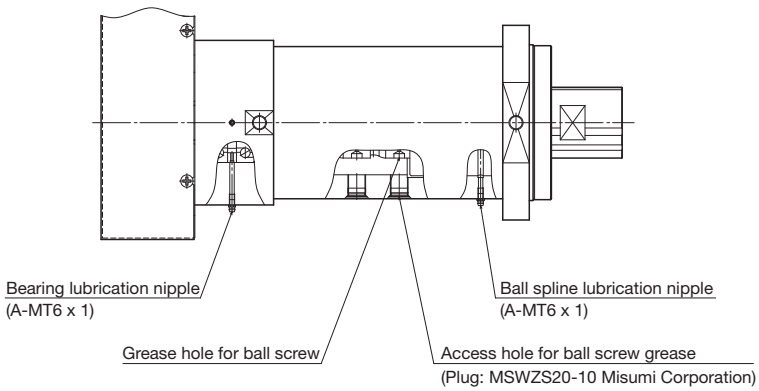


PC

Standard grease: L500
PC30 - 60H: To grease the ball screw portion, remove the plug and apply the grease directly to the ball screw shaft.



PC80L - 80H: To grease the ball screw portion, remove the plug and apply the grease via the ball screw grease hole.



● 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 running 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.

Controller series

Model: **TSC** Stepper driver controller

TLC Low-capacity servo driver controller

THC High-capacity servo driver controller

TNU Network unit

Chapter 5

Stepper driver controller

TSC

For single axis / Position type

Features

Ready to use by simplified setup.

Simple Operation

Use PC setup tool D-STEP or digital operator TDO to access many useful functions.

Functions

- Selectable function modes
  (64-position, external unit input instruction, 256-position, 512-position, Solenoid mode 1, and Solenoid mode 2)
- Step data count: Up to 512 (depending on function mode)
- Alarm history: Up to 50 (including power ON history)
- Switching between Auto/Manual, brake release switch
- Selectable control methods (positioning or pressing)

Changes on the new version (design symbol B)

TSC is now updated to a new version that specified with “B” in design symbol.
Differences from conventional version, design symbol “A” are shown below.

- Behavior at Servo-On

	Design symbol A	Design symbol B
Motion	Moves several millimeters	Standstill

- Compatibility
  Driver controller TSC, and actuator cable does not have compatibility between A and B.

* To use a 10m actuator cable, insert a noise filter to the TSC power supply.

Model Configuration

● Stepper driver controller *Separate order required.

Model	Current	Design symbol	Type	Combined Actuator	Combined actuator ball screw lead	Home position	Brake
TSC –	015	B	– MOD	– ES6	– 06	– D	– B
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
TSC	015: 1.5A	B	MOD: Mode switching type	ES3	06: 6mm	D: Motor side	No symbol: Without brake
				ES4	12: 12mm	R: Reverse motor side	B: With brake
				ES5			
				ES6			
				ES3R			
				ES4R			
				ES5R			
				ES6R			
				EC3*1			
				EC4*1			
				EC3R			
				EC4R			
				KRF3			
				KRF4			
				KRF5			

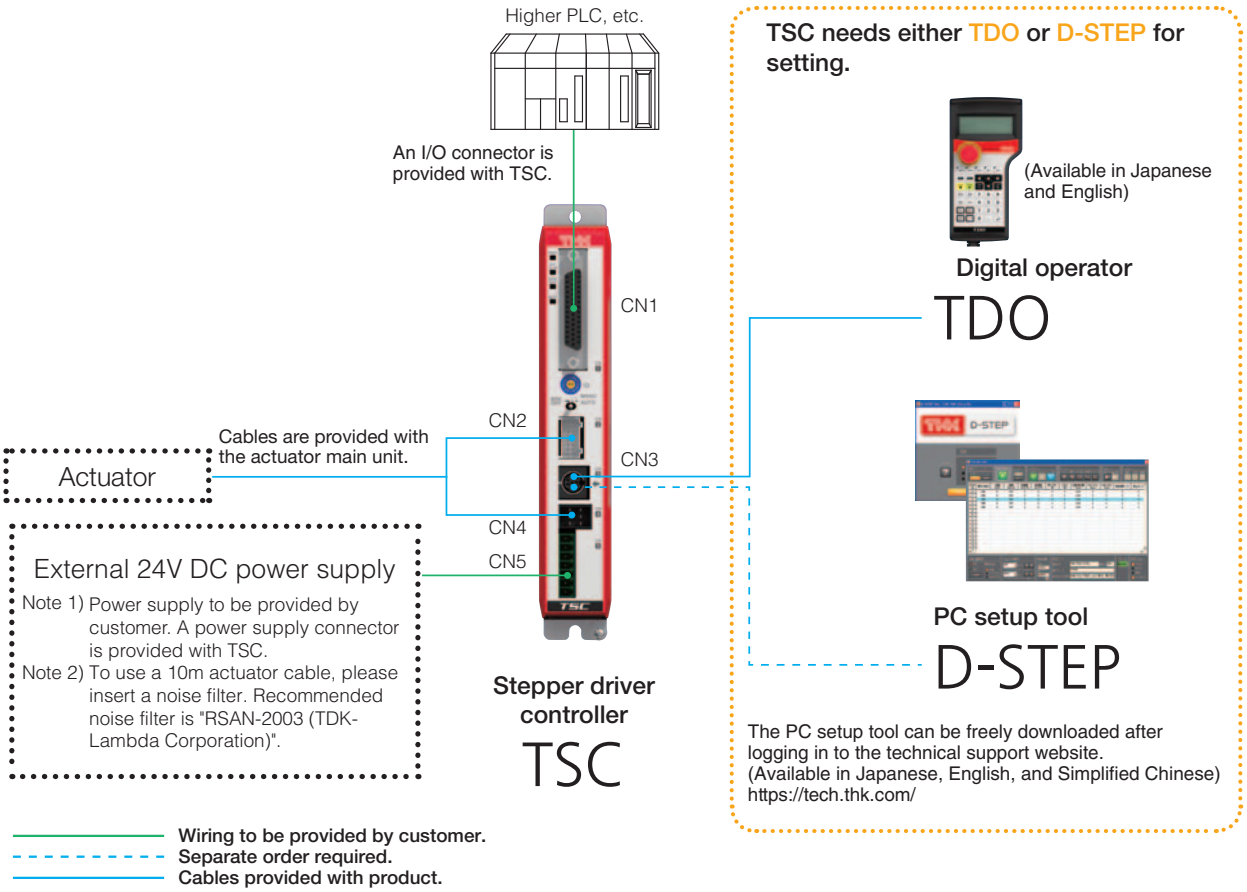
*1 Select “EC3” for EC3H and “EC4” for EC4H.

Basic Specifications

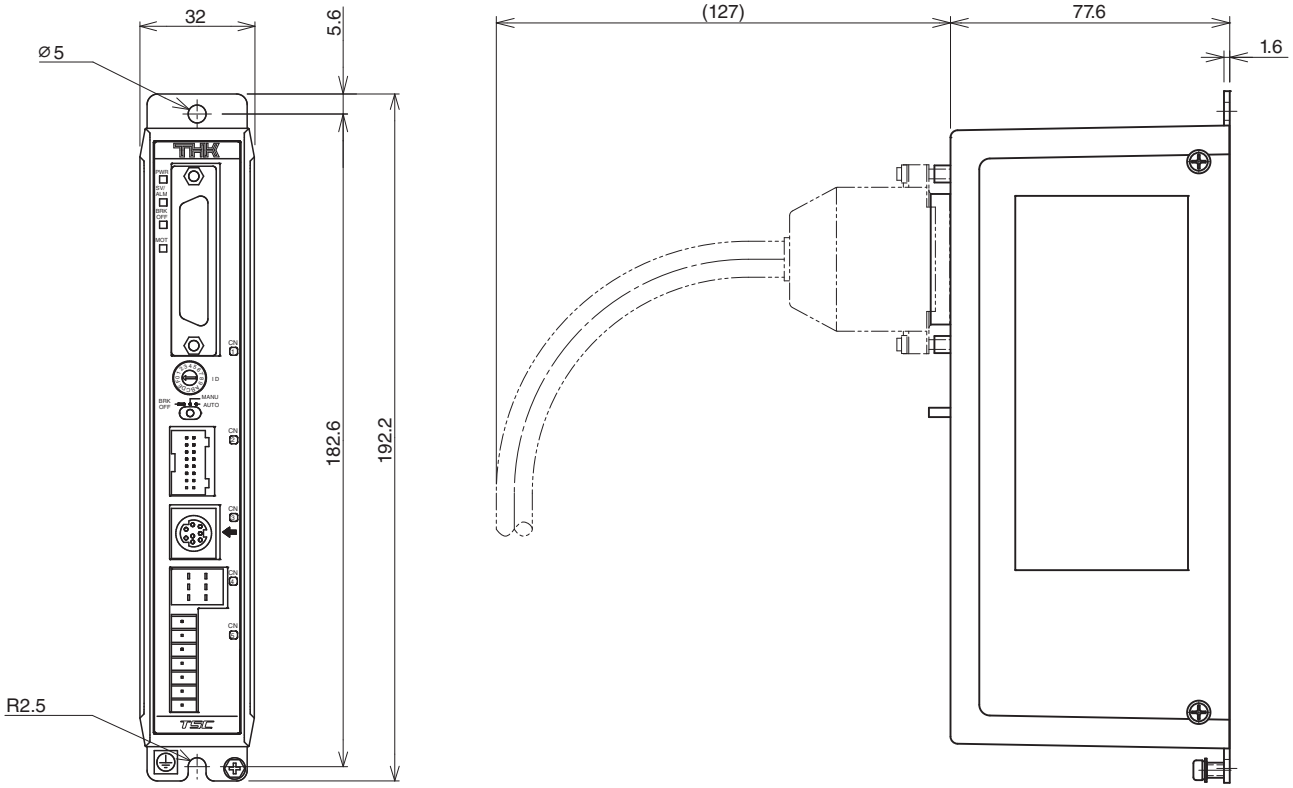
Basic Specifications	Input power supply		24V DC ±10% (Up to 2.5A)					
Control	Control axis		Single shaft					
	Motor type		Stepper motor (□28mm, □35mm, □42mm)					
	Control method		Feedback control (Semi-closed loop)					
	Position detection method		Incremental					
	Acceleration/deceleration method		Trapezoid acceleration					
Program	Function mode		64-position	External unit input	256-position	512-position	Solenoid mode 1	Solenoid mode 2
	Step data count		64 points	64 points	256 points	512 points	7 points	3 points
	Data input/output method		PC setup tool D-STEP or Digital operator TDO					
Input/output	Dedicated input/output	Input point	16 points (Start, Return to home position, Pause, Reset, Servo ON, Specify step number, etc.)*					
		Output point	16 points (Return to home position completed, In position, Servo ready, Alarm, Battery alarm, etc.)*					
	Input/output power supply		24V DC ±10% (This should be prepared by yourself.)					
Communication	Serial communication	Connected device	PC setup tool D-STEP or Digital operator TDO					
		Communication method	RS–485					
		Port count	Mini DIN × 1					
Usage conditions	Usage conditions		0 to 40°C (No freezing)/–20 to 85°C (No freezing)					
	Operating humidity/Storage humidity		90% RH or below (No condensation)					
	Ambient condition		Indoor (Free from direct sunlight, corrosive gas, flammable gas, oil mist, dust, water, oil and chemicals)					
General specifications	Protective function		Overload, overvoltage, excessive position deviation, software limit over error, etc.					
	Accessories		Power supply connector × 1 I/O connector × 1					
	Options (sold separately)		Digital operator TDO (Cable length 5 m) I/O cable 3m, 5m, 7m, and 10m PC communication cable (Mini DIN ↔ USB)					
	Outer dimensions		32mm (W) × 192.2mm (H) × 77.6mm (D)					
	Weight		300g or less					

* Varies depending on function mode.

System Configuration

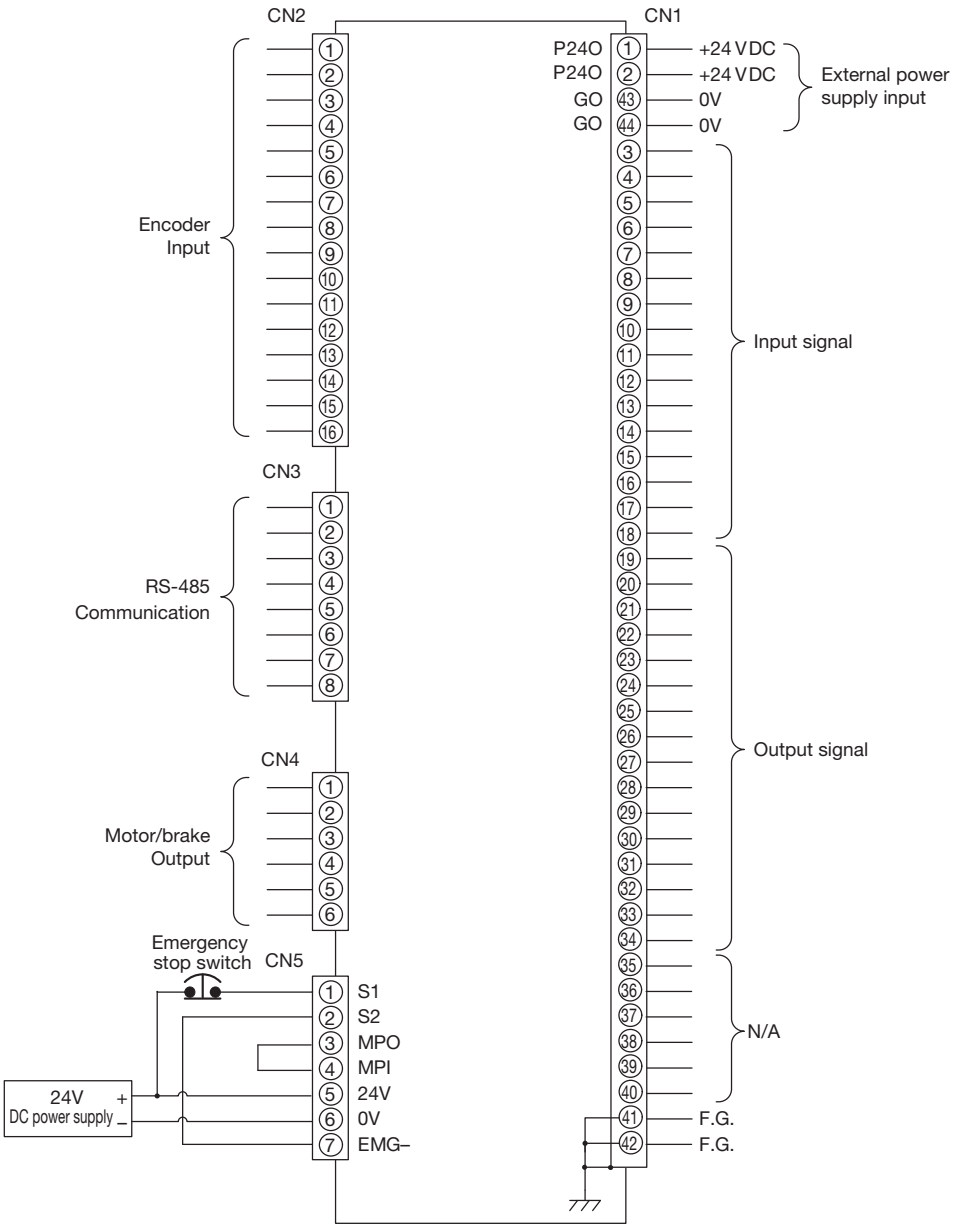


Dimensional Drawing of Controller



* For details of the dimensional drawing, please contact THK.

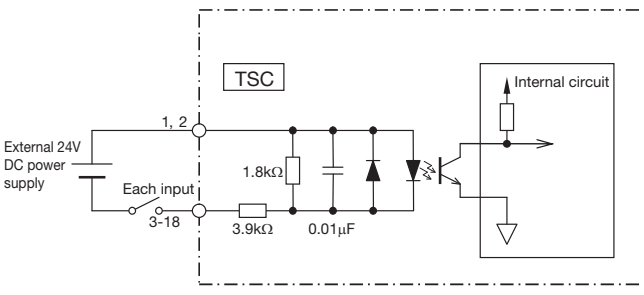
TSC Pin Assignment



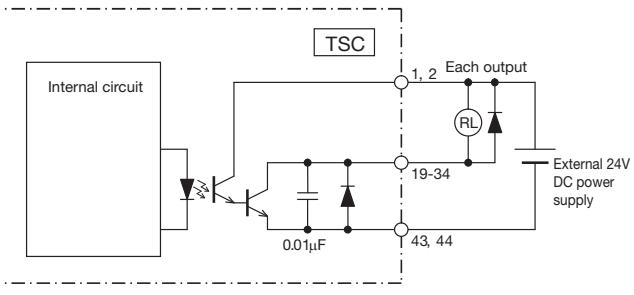
* For attached I/O connector pin numbers, see P.5-008.
* Customer provides 24V DC power supply for input/output circuitry.

Input/Output Circuitry for TSC (CN1)

Input circuit



Output circuit



TSC Function Modes

TSC provides six modes to support various requirements and purposes.

Function mode		Overview	Step data count	Pressing operation
Multi-point positioning	0: 64-position	Multi-point positioning operation with 64 points With area output, with P area output	64	○
	1: External unit input instruction	Multi-point positioning operation with 64 points I/O-based external unit instruction mode Without area output, with P area output	64	–
	2: 256-position	Multi-point positioning operation with 256 points Without area output, with P area output	256	○
	3: 512-position	Multi-point positioning operation with 512 points Without area output, without P area output	512	○
Electromagnetic valve	4: Solenoid mode 1	Multi-point positioning operation with 7 points Direct move command input With area output, with P area output	7	○
	5: Solenoid mode 2	Multi-point positioning operation with 3 points Direct move command input With position sensor auto-switch output, area output and P area output	3	–

Pin Assignment by Function Mode

I/O	CN1 pin number	Signal name					
		Function mode 0	Function mode 1	Function mode 2	Function mode 3	Function mode 4	Function mode 5
		64-position	External unit input	256-position	512-position	Solenoid mode 1	Solenoid mode 2
Input	3	PI 0	PI 0	PI 0	PI 0	ST 0	ST 0
	4	PI 1	PI 1	PI 1	PI 1	ST 1	ST 1
	5	PI 2	PI 2	PI 2	PI 2	ST 2	ST 2
	6	PI 3	PI 3	PI 3	PI 3	ST 3	–
	7	PI 4	PI 4	PI 4	PI 4	ST 4	–
	8	PI 5	PI 5	PI 5	PI 5	ST 5	–
	9	–	MODE	PI 6	PI 6	ST 6	–
	10	–	JOG/INCHING	PI 7	PI 7	–	–
	11	–	JOG P	–	PI 8	–	–
	12	BKRL	JOG N	BKRL	BKRL	BKRL	BKRL
	13	STRT	STRT/PWRT	STRT	STRT	–	–
	14	MANU	MANU	MANU	MANU	MANU	MANU
	15	HOME	HOME	HOME	HOME	HOME	HOME
	16	PAUSE	PAUSE	PAUSE	PAUSE	PAUSE	PAUSE
	17	REST	REST	REST	REST	REST	REST
	18	SV-ON	SV-ON	SV-ON	SV-ON	SV-ON	SV-ON
Output	19	PO 0	PO 0	PO 0	PO 0	PE 0	LS 0
	20	PO 1	PO 1	PO 1	PO 1	PE 1	LS 1
	21	PO 2	PO 2	PO 2	PO 2	PE 2	LS 2
	22	PO 3	PO 3	PO 3	PO 3	PE 3	–
	23	PO 4	PO 4	PO 4	PO 4	PE 4	–
	24	PO 5	PO 5	PO 5	PO 5	PE 5	–
	25	MOVE	MOVE	PO 6	PO 6	PE 6	–
	26	AREA	MODES	PO 7	PO 7	AREA	AREA
	27	P AREA	P AREA	P AREA	PO 8	P AREA	P AREA
	28	MANU S	MANU S	MANU S	MANU S	MANU S	MANU S
	29	HEND	HEND	HEND	HEND	HEND	HEND
	30	INPS	INPS	INPS	INPS	INPS	–
	31	LOAD/TRQS	WEND	LOAD/TRQS	LOAD/TRQS	LOAD/TRQS	–
	32	SVRDY	SVRDY	SVRDY	SVRDY	SVRDY	SVRDY
	33	EMGS	EMGS	EMGS	EMGS	EMGS	EMGS
	34	ALM	ALM	ALM	ALM	ALM	ALM

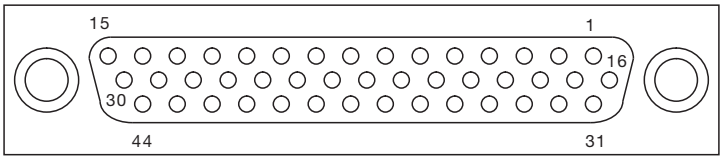
Input Signal Functions

Input		
Signal name	Description	Remarks
MANU	Operation mode	Switches AUTO/MANUAL from I/O. MANUAL when signal is on, and AUTO when it is off.
STRT	Start	Start signal of program step. Program starts when signal is on.
PI0 to PI8	Instruction position number	Input for specifying position numbers. Specifies programs at each signal level. Selects a program step and starts a program with “STRT” signal.
PAUSE	Pause	Temporarily interrupts the operation. PAUSE input status when signal is off. (N.C. connection specification)
HOME	Return to home position	Starts the return to home position operation. Returning to home position is started when signal is on. It stops when it is off.
SV-ON	Servo on	Turns the servo ON and OFF. Servo ON when signal is on, and servo OFF when signal is off.
REST	Alarm reset	Resets alarm. Resets remaining travel distance during pause. Resets when it is on.
BKRL	Brake release	Forcibly releases brake. Releases brake when it is on.
MODE	External unit input instruction mode	Enters the instruction mode when signal is on. Instruction mode when signal is on.
PWRT	Current position write with external unit input instruction	During the instruction mode, the position is written when this signal is greater than 20ms with the position for writing specified.
JOG/INCHING	Manual operation switch with external unit input instruction	Switching of manual operation during the instruction mode. Selects inching operation when it is on, and jog operation when it is off.
JOG P	Moving direction + with external unit input instruction	Operating direction and operation start signal during the instruction mode. Moves in + direction to the soft limit when signal is on. Decelerates and stops when it is off while moving.
JOG N	Moving direction - with external unit input instruction	Operating direction and operation start signal during the instruction mode. Moves in - direction to the soft limit when signal is on. Decelerates and stops when it is off while moving.
ST0 to 6	Cylinder type START	Program start signal for position numbers from ST0 to ST6. Can select either Level or Edge for signal using parameter 13 “move” command. Note that when more than two positions are on at the same time, the lowest-number signal takes precedence.

Output Signal Functions

Output		
Signal name	Description	Remarks
MANU S	Operation mode status	Operation mode status outputs (AUTO/MANUAL). MANUAL when signal is on, AUTO when off.
PO1 to PO8	End position number	Outputs the position number arrived after positioning is completed (binary outputs).
MOVE	Moving	Outputs signal during motor operation.
INPS	Positioning completed	Outputs when motor comes within the positioning completed width.
SVRDY	Operation preparations completed	Outputs signal when servo is on.
ALM	Alarm	Alarm output signal.
MODES	Operation mode status	Output signal for judging instruction mode or regular operation mode. Instruction mode when signal is on. Regular operation mode when it is off.
WEND	Writing completed	Signal is off after switching to the regular mode, and it is on for 30ms when writing of the PWRT signal is completed.
HEND	Return to home position completed	Outputs signal when returning to home position is completed.
AREA	Upper/lower area limit	On when the current position of actuator is within a range specified by the parameter.
P AREA	Position area	On when the current position of actuator is within a range specified by the program step.
EMGS	Emergency stop status	Outputs judgment for input of emergency stop. On during normal operation, and off when emergency stop circuit is shut off.
LOAD	Load output judgment status	On when a directive torque exceeds the threshold over a certain period within a judgment range.
TRQS	Torque level status	On when the load threshold is reached while moving. Off while the load remains under the threshold.
PE0 to PE6	Cylinder type arrival completed output	Signal generated after operation for position number is completed.
LS0 to LS2	Cylinder type position detection output	Outputs when the current position comes within the positioning width for each of the three points.

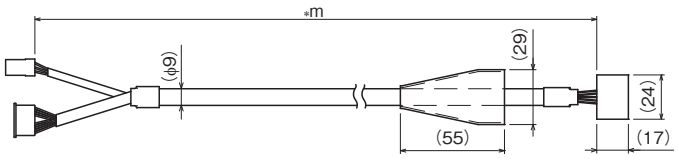
I/O Connector Pin Numbers



* Controller connector port view

Actuator Cable

TSC actuator cable: CBL-TSC-AC-∗ ∗-B (Standard)
∗ ∗ indicates cable length: 03 (3m), 05 (5m), or 10 (10m).



∗ To use a 10m actuator cable, insert a noise filter to the TSC power supply.
Recommended noise filter is "RSAN-2003 (TDK-Lambda Corporation)".

TLC

For single axis / Position type

Features

Ready to use, simplified setup.

Simple Operation

Use PC setup tool D-STEP or digital operator TDO to access many useful functions.

Functions

- Selectable function modes
  (64-position, external unit input instruction, 256-position, 512-position, Solenoid mode 1, and Solenoid mode 2)
- Step data count: Up to 512 (depending on function mode)
- Alarm history: Up to 50 (including power ON history)
- Switching between Auto/Manual, brake release switch
- Selectable control methods (positioning or pressing)
- Auto-tuning functionality built-in

Combined Control Device Model Configuration (TLC)

● Economy series

Control device model	Capacity	Power supply voltage	Type	Encoder type	Actuator model	Lead	Home position	Brake	Stroke
TLC	005	024DC	MOD	A	ES6	06	D	B	0050
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
TLC	005: 50W	024DC: 24VDC	MOD: Mode switching type	A: Absolute	Direct coupling ES5 ES6 EC4* Motor wrap ES5R ES6R EC4R	06: 6mm 12: 12mm	D: Motor side R: Reverse motor side	No symbol: Without brake B: With brake	Enter the stroke of the actuator model (6) Example) 0050: 50mm

* Select "EC4" for EC4H.

● Compact series

Control device model	Capacity	Power supply voltage	Type	Encoder type	Actuator model	Lead	Home position	Brake	Stroke
TLC	005	024DC	MOD	A	KRF4	06	D	B	0050
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
TLC	005: 50W	024DC: 24VDC	MOD: Mode switching type	A: Absolute	KRF4 KRF5	06: 6mm 10: 10mm	D: Motor side R: Reverse motor side	No symbol: Without brake B: With brake	Enter the stroke of the actuator model (6) Example) 0050: 50mm

● Universal series

Control device model	Capacity	Power supply voltage	Type	Encoder type	Actuator model	Lead	Home position	Brake	Stroke
TLC	005	024DC	MOD	A	US6T	12	D	B	0100
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
TLC	005: 50W	024DC: 24VDC	MOD: Mode switching type	A: Absolute	Direct coupling US6T Motor wrap US6RT	06: 6mm 12: 12mm	D: Motor side R: Reverse motor side	No symbol: Without brake B: With brake	Enter the stroke of the actuator model (6) Example) 0100: 100mm

● Press series

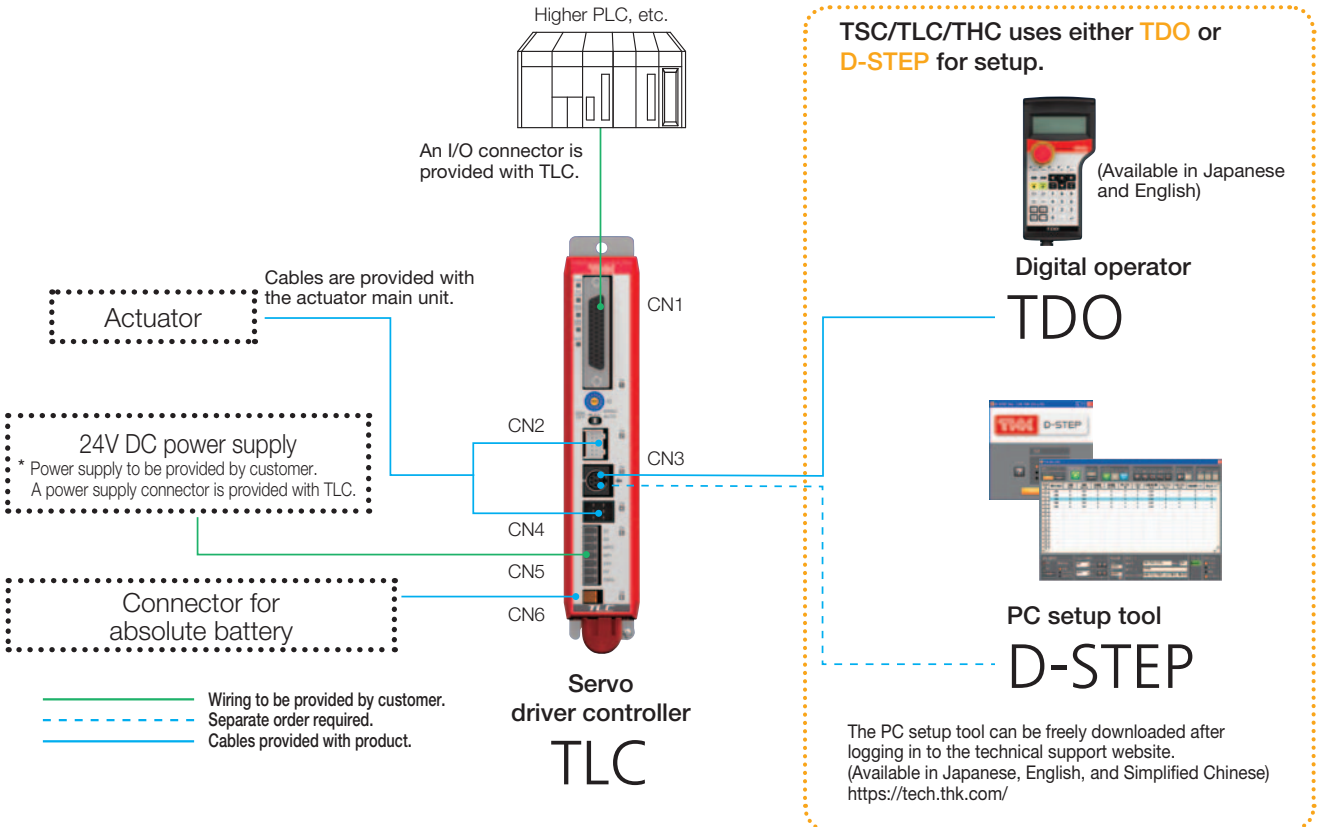
Control device model	Capacity	Power supply voltage	Type	Encoder type	Actuator model	Lead	Home position	Brake	Stroke
TLC	005	024DC	MOD	A	PCT20	06N	D	B	0050
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
TLC	005: 50W	024DC: 24VDC	MOD: Mode switching type	A: Absolute	Direct coupling PCT20 Motor wrap PCT20R	06N	D: Motor side R: Reverse motor side	No symbol: Without brake B: With brake	0050: 50mm 0100: 100mm 0150: 150mm 0200: 200mm

TLC Specifications

Type of machine	Model		TLC					
	Capacity		50W					
Input power supply	Main circuit		24VDC±10%					
	Control circuit							
	Power supply [A]		Rated 6A (Max 16A)					
Control	Control axis		Single axis					
	Motor		AC servo motor					
	Control		Feedback control (Semi-closed loop)					
	Position detection		Absolute					
	Acceleration/deceleration		Trapezoid acceleration, S-shape acceleration					
Program	Function mode		64-position	External unit input	256-position	512-position	Solenoid mode 1	Solenoid mode 2
	Step data count		64 points	64 points	256 points	512 points	7 points	3 points
	Data input/output		PC setup tool D-STEP or Digital operator TDO					
Input/output	Dedicated input/output	Input points	16 points (Start, Return to home position, Pause, Reset, Servo ON, Specify step number, etc.) *					
		Output points	16 points (Return to home position completed, In position, Servo ready, Alarm, Battery alarm, etc.) *					
	Input/output power supply		24VDC ±10% (This should be prepared by yourself.)					
Communication	Serial communication	Device	Digital operator or PC software					
		Method	RS–485					
		Ports	Mini DIN × 1					
Usage conditions	Operating/storage temperature		0 to 40°C (No freezing) / -20 to 85°C (No freezing)					
	Operating/storage humidity		90% RH or below (No condensation)					
	Ambient condition		Indoor (Free from direct sunlight, corrosive gas, flammable gas, oil mist, dust, water, oil and chemicals)					
General specifications	Protective function		Overload, overvoltage, excessive position deviation, software limit over error, etc.					
	Accessories		Power supply connector × 1 I/O connector × 1					
	Options (sold separately)		Digital operator TDO (Cable length 5m) I/O cable 3m, 5m, 7m, and 10m Communication cable (Mini DIN↔USB)					
	Outer dimensions [mm]		36.4mm (W)×199.2mm (H)×112.6mm (D)					
	Weight (not including battery)		0.4kg or less					

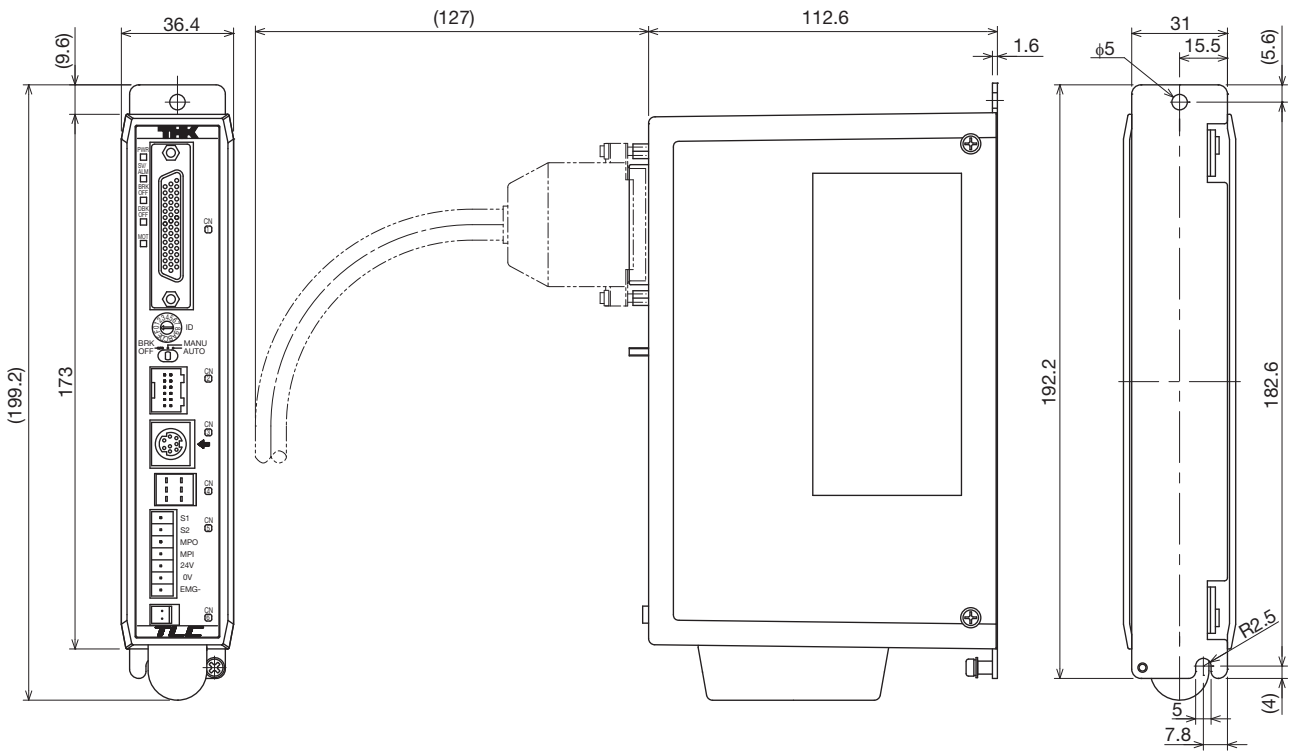
* This count varies depending on function mode.

System Configuration

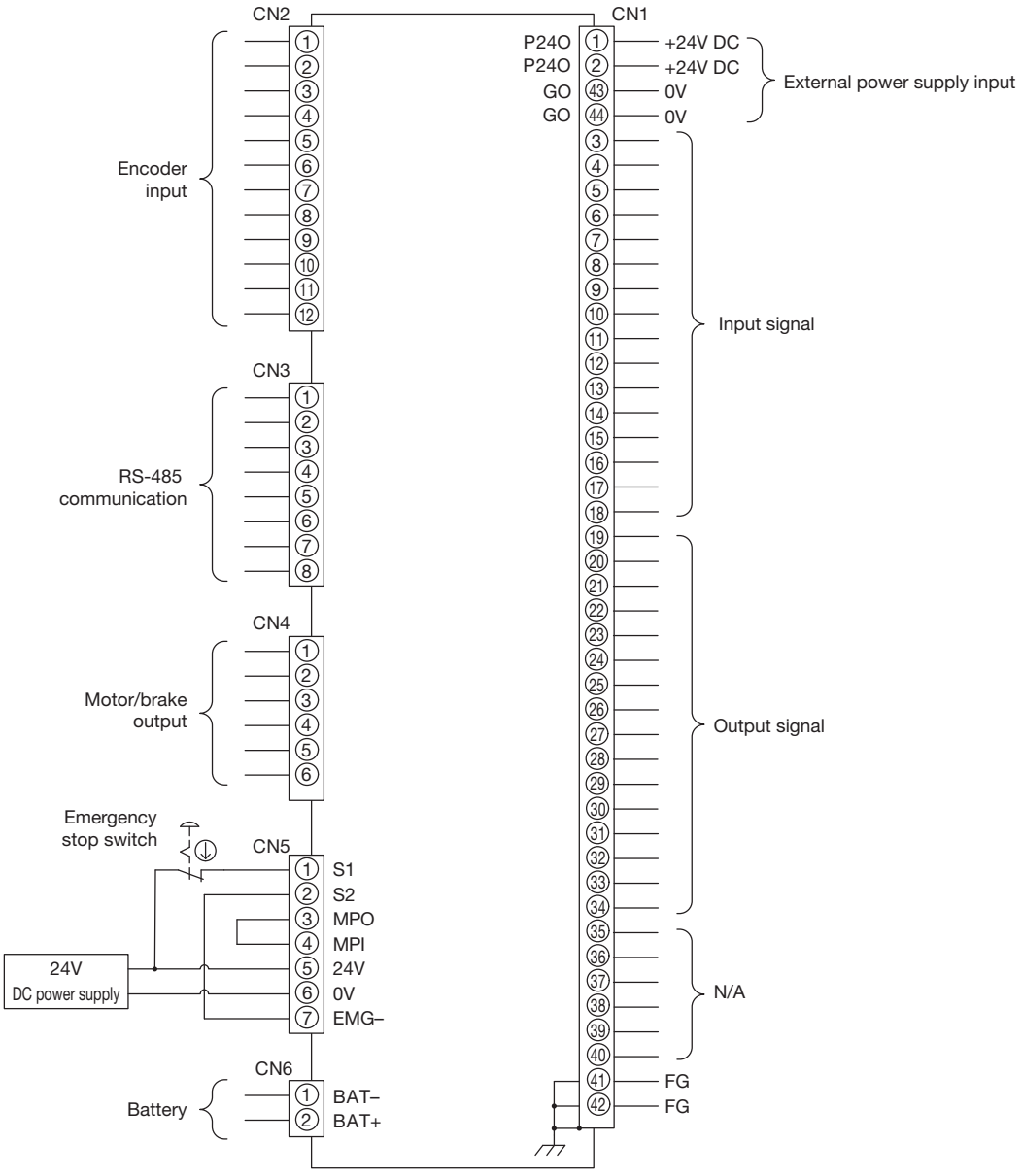


Dimensional Drawing of Controller

TLC



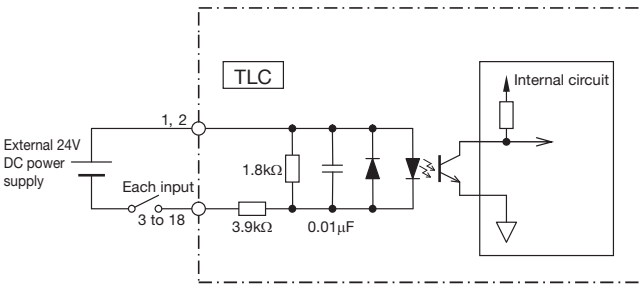
TLC Pin Assignment



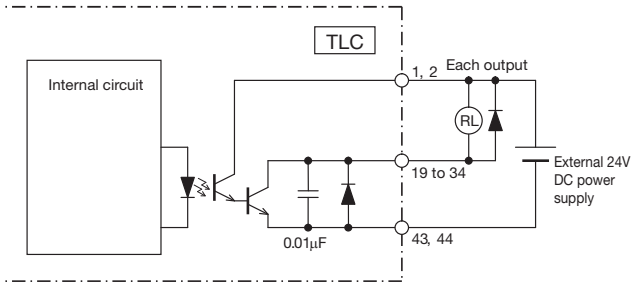
* For attached I/O connector pin numbers, see P.5-016.
* Customer provides 24V DC power supply for input/output circuitry.

Input/Output Circuitry for TLC (CN1)

Input circuit



Output circuit



TLC Function Modes

TLC provides six modes to support various requirements and purposes.

Function mode		Overview	Step data count	Pressing operation
Multi-point positioning	0: 64-position	Multi-point positioning operation with 64 points With area output, with P area output	64	○
	1: External unit input instruction	Multi-point positioning operation with 64 points I/O-based external unit instruction mode Without area output, with P area output	64	–
	2: 256-position	Multi-point positioning operation with 256 points Without area output, with P area output	256	○
	3: 512-position	Multi-point positioning operation with 512 points Without area output, without P area output	512	○
Electromagnetic valve	4: Solenoid mode 1	Multi-point positioning operation with 7 points Direct move command input With area output, with P area output	7	○
	5: Solenoid mode 2	Multi-point positioning operation with 3 points Direct move command input With position sensor auto-switch output, area output and P area output	3	–

Pin Assignment by Function Mode

I/O	CN1 pin number	Signal name					
		Function mode 0	Function mode 1	Function mode 2	Function mode 3	Function mode 4	Function mode 5
		64-position	External unit input	256-position	512-position	Solenoid mode 1	Solenoid mode 2
Input	3	PI 0	PI 0	PI 0	PI 0	ST 0	ST 0
	4	PI 1	PI 1	PI 1	PI 1	ST 1	ST 1
	5	PI 2	PI 2	PI 2	PI 2	ST 2	ST 2
	6	PI 3	PI 3	PI 3	PI 3	ST 3	–
	7	PI 4	PI 4	PI 4	PI 4	ST 4	–
	8	PI 5	PI 5	PI 5	PI 5	ST 5	–
	9	–	MODE	PI 6	PI 6	ST 6	–
	10	–	JOG/INCHING	PI 7	PI 7	–	–
	11	–	JOG P	–	PI 8	–	–
	12	BKRL	JOG N	BKRL	BKRL	BKRL	BKRL
	13	STRT	STRT/PWRT	STRT	STRT	–	–
	14	MANU	MANU	MANU	MANU	MANU	MANU
	15	HOME	HOME	HOME	HOME	HOME	HOME
	16	PAUSE	PAUSE	PAUSE	PAUSE	PAUSE	PAUSE
	17	REST	REST	REST	REST	REST	REST
	18	SV-ON	SV-ON	SV-ON	SV-ON	SV-ON	SV-ON
Output	19	PO 0	PO 0	PO 0	PO 0	PE 0	LS 0
	20	PO 1	PO 1	PO 1	PO 1	PE 1	LS 1
	21	PO 2	PO 2	PO 2	PO 2	PE 2	LS 2
	22	PO 3	PO 3	PO 3	PO 3	PE 3	–
	23	PO 4	PO 4	PO 4	PO 4	PE 4	–
	24	PO 5	PO 5	PO 5	PO 5	PE 5	–
	25	MOVE	MOVE	PO 6	PO 6	PE 6	–
	26	AREA	MODES	PO 7	PO 7	AREA	AREA
	27	P AREA	P AREA	P AREA	PO 8	P AREA	P AREA
	28	MANU S	MANU S	MANU S	MANU S	MANU S	MANU S
	29	HEND	HEND	HEND	HEND	HEND	HEND
	30	INPS	INPS	INPS	INPS	INPS	–
	31	LOAD/TRQS	WEND	LOAD/TRQS	LOAD/TRQS	LOAD/TRQS	–
	32	SVRDY	SVRDY	SVRDY	SVRDY	SVRDY	SVRDY
	33	BALM	BALM	BALM	BALM	BALM	BALM
	34	ALM	ALM	ALM	ALM	ALM	ALM

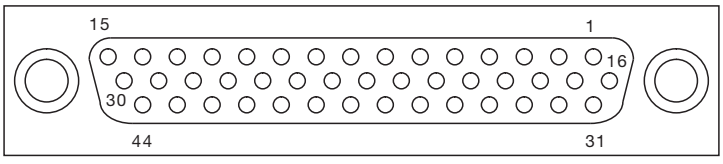
Input Signal Functions

Input		
Signal name	Description	Remarks
MANU	Operation mode	Switches AUTO/MANUAL from I/O. MANUAL when signal is on, and AUTO when it is off.
STRT	Start	Start signal of program step. Program starts when signal is on.
PI0 to PI8	Instruction position number	Input for specifying position numbers. Specifies programs at each signal level. Selects a program step and starts a program with "STRT" signal.
PAUSE	Pause	Temporarily interrupts the operation. PAUSE input status when signal is off. (N.C. connection specification)
HOME	Return to home position	Starts the return to home position operation. Returning to home position is started when signal is on. It stops when it is off.
SV-ON	Servo on	Turns the servo ON and OFF. Servo ON when signal is on, and servo OFF when signal is off.
REST	Alarm reset	Resets alarm. Resets remaining travel distance during pause. Resets when it is on.
BKRL	Brake release	Forcibly releases brake. Releases brake when it is on.
MODE	External unit input instruction mode	Enters the instruction mode when signal is on. Instruction mode when signal is on.
PWRT	Current position write with external unit input instruction	During the instruction mode, the position is written when this signal is greater than 20ms with the position for writing specified.
JOG/INCHING	Manual operation switch with external unit input instruction	Switching of manual operation during the instruction mode. Selects inching operation when it is on, and jog operation when it is off.
JOG P	Moving direction + with external unit input instruction	Operating direction and operation start signal during the instruction mode. Moves in + direction to the soft limit when signal is on. Decelerates and stops when it is off while moving.
JOG N	Moving direction - with external unit input instruction	Operating direction and operation start signal during the instruction mode. Moves in - direction to the soft limit when signal is on. Decelerates and stops when it is off while moving.
ST0 to 6	Cylinder type START	Program start signal for position numbers from ST0 to ST6. Can select either Level or Edge for signal using parameter 13 "move" command. Note that when more than two positions are on at the same time, the lowest-number signal takes precedence.

Output Signal Functions

Output		
Signal name	Description	Remarks
MANU S	Operation mode status	Operation mode status outputs (AUTO/MANUAL). MANUAL when signal is on, AUTO when off.
PO1 to PO8	End position number	Outputs the position number arrived after positioning is completed (binary outputs).
MOVE	Moving	Outputs signal during motor operation.
INPS	Positioning completed	Outputs when motor comes within the positioning completed width.
SVRDY	Operation preparations completed	Outputs signal when servo is on.
ALM	Alarm	Alarm output signal.
MODES	Operation mode status	Output signal for judging instruction mode or regular operation mode. Instruction mode when signal is on. Regular operation mode when it is off.
WEND	Writing completed	Signal is off after switching to the regular mode, and it is on for 30ms when writing of the PWRT signal is completed.
HEND	Return to home position completed	Outputs signal when returning to home position is completed.
AREA	Upper/lower area limit	On when the current position of actuator is within a range specified by the parameter.
P AREA	Position area	On when the current position of actuator is within a range specified by the program step.
BALM	Voltage reduction in battery	Off when the battery voltage decreases.
LOAD	Load output judgment status	On when a directive torque exceeds the threshold over a certain period within a judgment range.
TRQS	Torque level status	On when the load threshold is reached while moving. Off while the load remains under the threshold.
PE0 to PE6	Cylinder type arrival completed output	Signal generated after operation for positioning is completed.
LS0 to LS2	Cylinder type position detection output	Outputs when the current position comes within the positioning width for each of the three points.

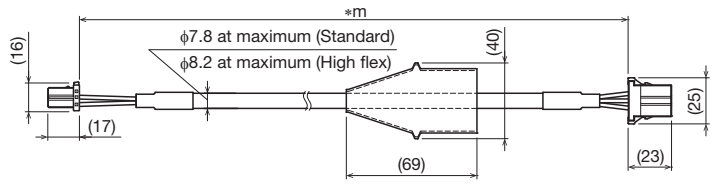
I/O Connector Pin Numbers



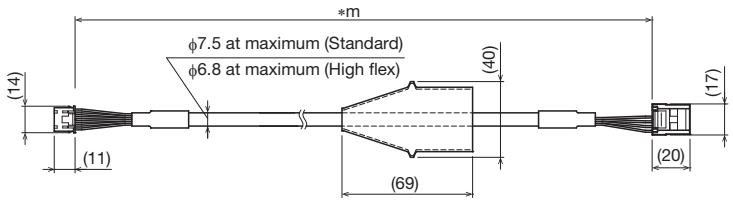
* Controller connector port view

Actuator Cable

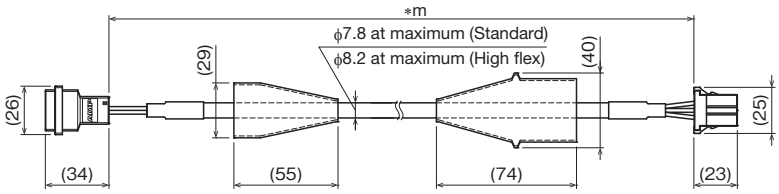
Motor brake cable for TLC: CBL-TLC-ACP-∗∗ F (Standard)
CBL-TLC-ACP-∗∗ R (High flex)
∗∗ indicates cable length: 03 (3m), 05 (5m), or 10 (10m)



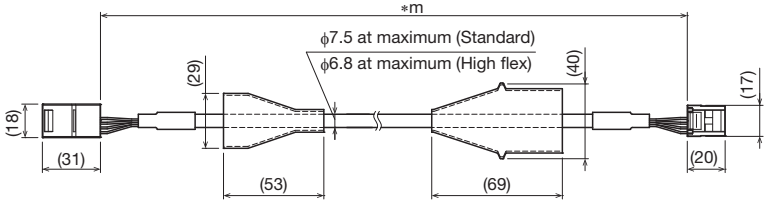
Encoder cable for TLC: CBL-TLC-ACS-∗∗ F (Standard)
CBL-TLC-ACS-∗∗ R (High flex)
∗∗ indicates cable length: 03 (3m), 05 (5m), or 10 (10m)



Motor brake extension cable for TLC/THC: CBL-ACP-EXT01-∗∗ F (Standard)
CBL-ACP-EXT01-∗∗ R (High flex)
∗∗ indicates cable length: 01 (1m), 03 (3m), or 05 (5m)



Extension encoder cable for TLC: CBL-ACS-EXT01-∗∗ F (Standard)
CBL-ACS-EXT01-∗∗ R (High flex)
∗∗ indicates cable length: 01 (1m), 03 (3m), or 05 (5m)



Note 1) For use involving moving elements, select high flex type. The recommended bending radius at the core of cable is R95 or greater.
(For use involving other than moving elements, R50 or greater is recommended.)
Note 2) When using the TLC servo driver controller, motor brake cable and encoder cable should be no longer than 11m.
Up to two extension cables can be connected.

Option

Lithium ion battery (for maintenance)

ER6V C4 (Toshiba Home Appliances Corporation)

- This is required for the absolute system.
- When replacing the battery, order the above.

High-capacity servo driver controller

THC

For single axis / Position type

Features

Ready to use, simplified setup.

Simple Operation

Use PC setup tool D-STEP or digital operator TDO to access many useful functions.

Functions

- Selectable function modes
  (64-position, external unit input instruction, 256-position, 512-position, Solenoid mode 1, and Solenoid mode 2)
- Step data count: Up to 512 (depending on function mode)
- Alarm history: Up to 50 (including power ON history)
- Switching between Auto/Manual, brake release switch
- Selectable control methods (positioning or pressing)
- Auto-tuning functionality built-in

Combined Control Device Model Configuration (THC)

● Compact series

Control device model	Capacity	Power supply voltage	Type	Encoder type	Actuator model	Lead	Home position	Brake	Stroke	Sensor
THC	010	100AC	MOD	A	KRF6	06	D	B	0050	1
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
THC	010: 100W	100AC: 100VAC 200AC: 200VAC	MOD: Mode switching type	A: Absolute	KRF6 KRF6R KSF4 KSF6	06: 6mm 10: 10mm	D: Motor side R: Reverse motor side	No symbol: Without brake B: With brake	Enter the stroke of the actuator model (6) Example) 0050: 50m	No symbol: None 1: With sensor

● Universal series

Control device model	Capacity	Power supply voltage	Type	Encoder type	Actuator model	Lead	Home position	Brake	Stroke	Sensor
THC	020	100AC	MOD	A	USW12T	10	D	B	0100	1
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
THC	010: 100W 020: 200W 040: 400W 075: 750W	100AC: 100VAC 200AC: 200VAC	MOD: Mode switching type	A: Absolute	Direct coupling US6T US8T USW12T USW16T USW20T Motor wrap US6RT US8RT USW12RT USW16RT USW20RT	05: 5mm 06: 6mm 10: 10mm 12: 12mm 20: 20mm 30: 30mm 40: 40mm	D: Motor side R: Reverse motor side	No symbol: Without brake B: With brake	Enter the stroke of the actuator model (6) Example) 0100: 100m	No symbol: None 1: With sensor Internal sensor 2: With sensor External sensor

When using motor rated output of 150W, select the capacity 020.

When the capacity is 750W, you only can select 200V AC.

Page 3-007 Model Configuration
When "P" and "Q" is selected in (5) sensor, select "1".
When "6" and "E" is selected in (5) sensor, select "2".

● Press series

Control device model	Capacity	Power supply voltage	Type	Encoder type	Actuator model	Lead	Home position	Brake	Stroke
THC	010	100AC	MOD	A	PCT25	04N	D	B	0050
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
THC	010: 100W 020: 200W 040: 400W 075: 750W	100AC: 100VAC 200AC: 200VAC	MOD: Mode switching type	A: Absolute	Direct coupling PCT25 Motor wrap PCT25R PC30 PC40	04N 06N 06A 06B	D: Motor side R: Reverse motor side	No symbol: Without brake B: With brake	Enter the stroke of the actuator model (6) Example) 0050: 50mm

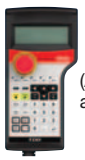
THC Specifications

Type of machine	Model		THC						
	Capacity		100V AC			200V AC			
			100W	200W	400W	100W	200W	400W	750W
Input power supply	Main circuit		100V AC single-phase, 50/60Hz (Permissible voltage: 90 to 120V)			200V AC single-phase, 50/60Hz (Permissible voltage: 170 to 250V)			
	Control circuit		100V AC single-phase, 50/60Hz (Permissible voltage: 90 to 120V)			200V AC single-phase, 50/60Hz (Permissible voltage: 170 to 250V)			
	Power supply [kVA]		0.5	0.9	1.3	0.5	0.9	1.6	2.4
Control	Control axis		Single axis						
	Motor		AC servo motor						
	Control		Feedback control (Semi-closed loop)						
	Position detection		Absolute						
	Acceleration/deceleration		Trapezoid acceleration, S-shape acceleration						
Program	Function mode		64-position	External unit input	256-position	512-position	Solenoid mode 1	Solenoid mode 2	
	Step data count		64 points	64 points	256 points	512 points	7 points	3 points	
	Data input/output		PC setup tool D-STEP or Digital operator TDO						
Input/output	Dedicated input/output	Input points	16 points (Start, Return to home position, Pause, Reset, Servo ON, Specify step number, etc.) *						
		Output points	16 points (Return to home position completed, In position, Servo ready, Alarm, Battery alarm, etc.) *						
	Input/output power supply		24VDC ±10% (This should be prepared by yourself.)						
Communication	Serial communication	Device	Digital operator or PC software						
		Method	RS–485						
		Ports	Mini DIN × 1						
Usage conditions	Operating/storage temperature		0 to 40°C (No freezing)/-20 to 85°C (No freezing)						
	Operating/storage humidity		90% RH or below (No condensation)						
	Ambient condition		Indoor (Free from direct sunlight, corrosive gas, flammable gas, oil mist, dust, water, oil and chemicals)						
Applicable standards	CE Marking		Low voltage directive: EN61800-5-1, EMC directive: EN61800-3						
General specifications	Protective function		Overload, overvoltage, excessive position deviation, software limit over error, etc.						
	Accessories		Power supply connector × 1 I/O connector × 1						
	Options (sold separately)		Digital operator TDO (Cable length 5m) I/O cable 3m, 5m, 7m, and 10m Communication cable (Mini DIN↔USB)						
	Outer dimensions [mm]		200W or lower: 58mm (W) × 208.6mm (H) × 120mm (D) 400W or higher: 67.5mm (W) × 208.6mm (H) × 120mm (D)						
	Weight (not including battery)		1.3kg or less	1.3kg or less	1.3kg or less	1.3kg or less	1.3kg or less	1.3kg or less	1.5kg or less

* This count varies depending on function mode.

System Configuration

THC needs either TDO or D-STEP for setting.



(Available in Japanese and English)

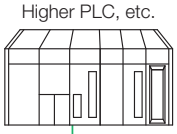
Digital operator

TDO

PC setup tool

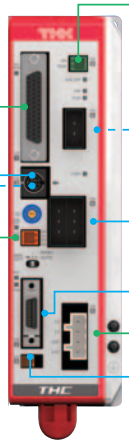
D-STEP

The PC setup tool can be freely downloaded after logging in to the technical support website.
(Available in Japanese, English, and Simplified Chinese)
https://tech.thk.com/



Higher PLC, etc.

An I/O connector is provided with THC.



CN1
CN3
CN7
CN9
CN8
CN4
CN2
CN5
CN6

Power supply connector for brake

A power supply connector for brake is provided with THC.

Regeneration resistance

Regeneration resistance may be needed when using THC. For details, see P.5-021.

Actuator

Cables are provided with the actuator main unit.

100V or 200V power supply

* Power supply to be provided by customer.
A power supply connector is provided with THC.

Connector for absolute battery

Connector for emergency stop

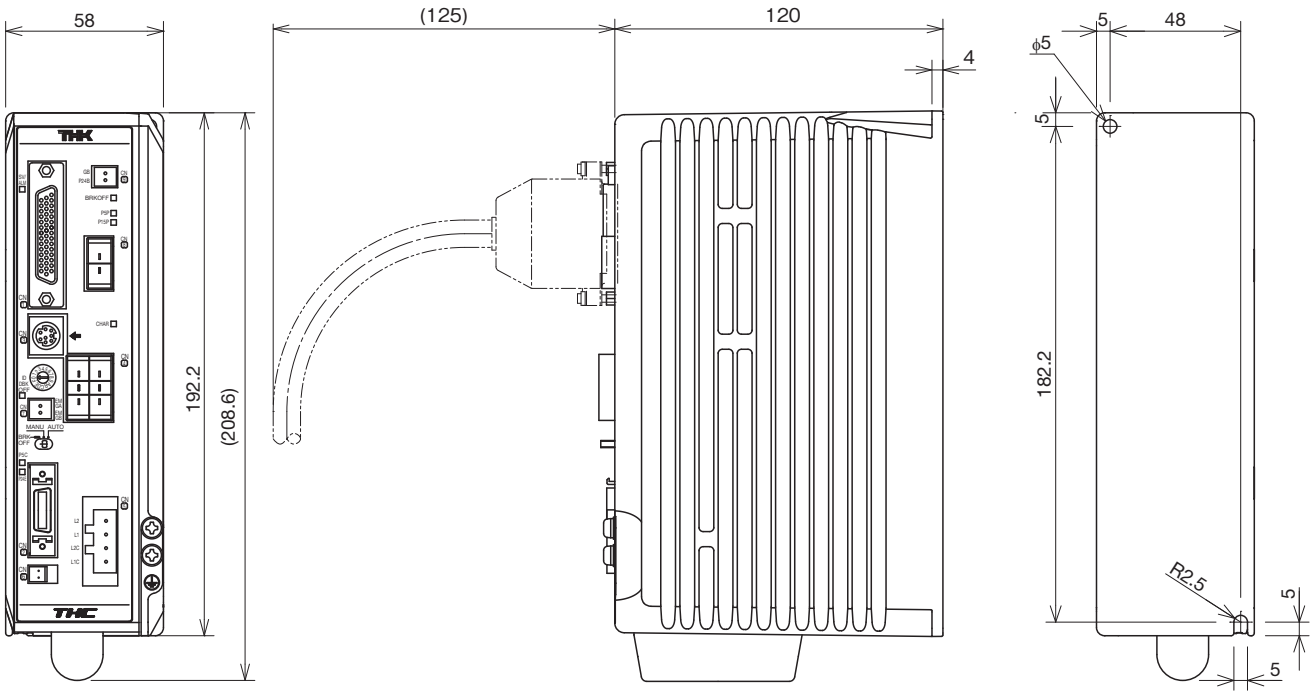
Servo driver controller

THC

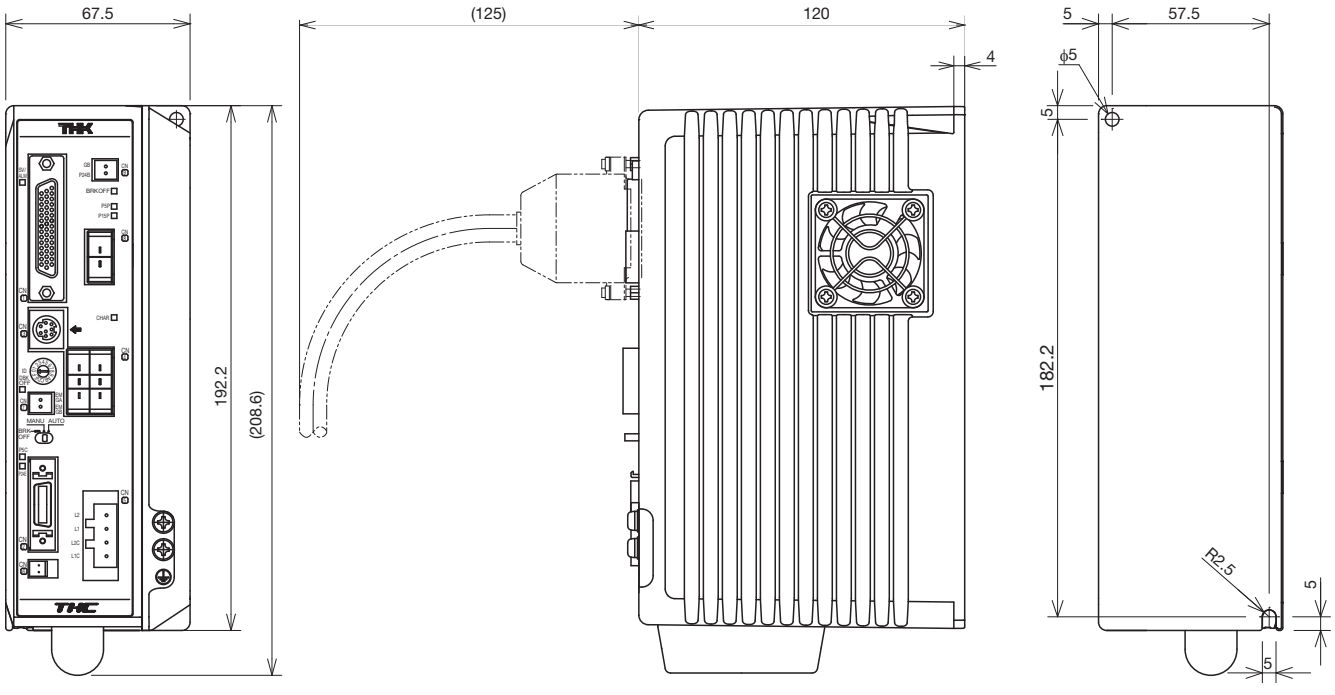
Wiring to be provided by customer.
Separate order required.
Cables provided with product.

Controller

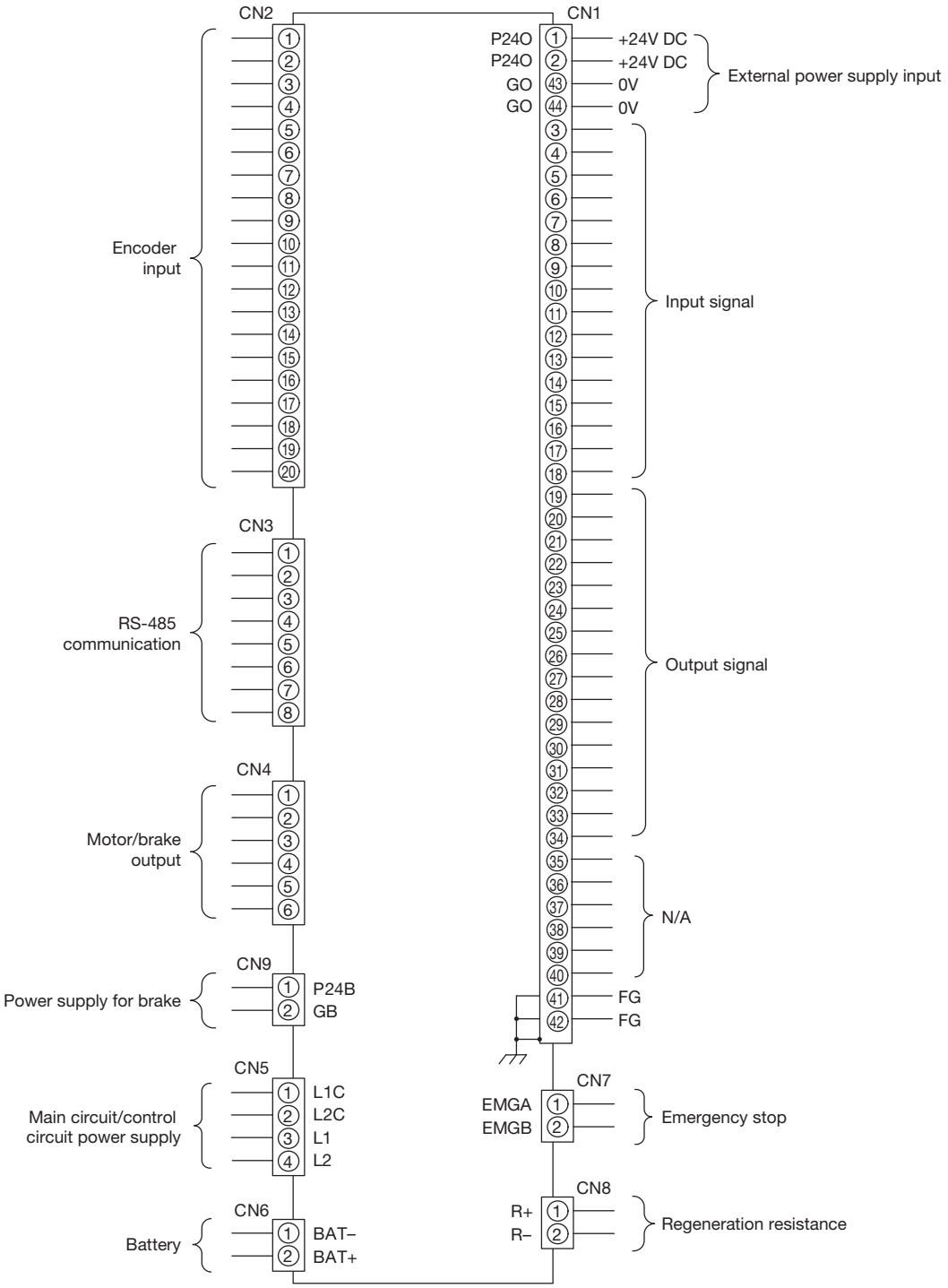
THC (100–200W)



THC (400W & 750W)



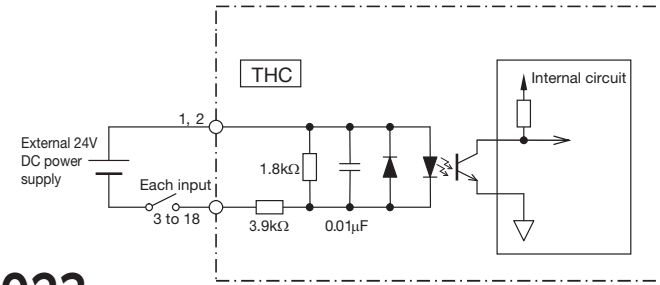
THC Pin Assignment



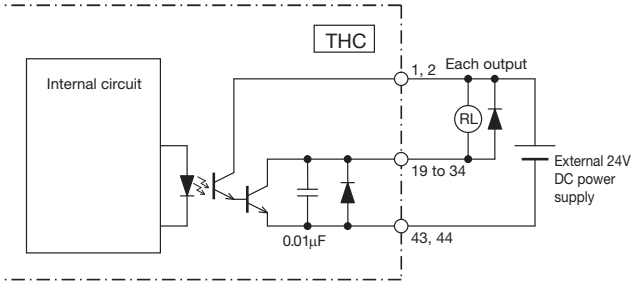
* For attached I/O connector pin numbers, see P.5-025.
* Customer provides 24V DC power supply for input/output circuitry.

Input/Output Circuitry for THC (CN1)

Input circuit



Output circuit



THC Function Modes

THC provides six modes to support various requirements and purposes.

Function mode		Overview	Step data count	Pressing operation
Multi-point positioning	0: 64-position	Multi-point positioning operation with 64 points With area output, with P area output	64	○
	1: External unit input instruction	Multi-point positioning operation with 64 points I/O-based external unit instruction mode Without area output, with P area output	64	–
	2: 256-position	Multi-point positioning operation with 256 points Without area output, with P area output	256	○
	3: 512-position	Multi-point positioning operation with 512 points Without area output, without P area output	512	○
Electromagnetic valve	4: Solenoid mode 1	Multi-point positioning operation with 7 points Direct move command input With area output, with P area output	7	○
	5: Solenoid mode 2	Multi-point positioning operation with 3 points Direct move command input With position sensor auto-switch output, area output and P area output	3	–

Pin Assignment by Function Mode

I/O	CN1 pin number	Signal name					
		Function mode 0	Function mode 1	Function mode 2	Function mode 3	Function mode 4	Function mode 5
		64-position	External unit input	256-position	512-position	Solenoid mode 1	Solenoid mode 2
Input	3	PI 0	PI 0	PI 0	PI 0	ST 0	ST 0
	4	PI 1	PI 1	PI 1	PI 1	ST 1	ST 1
	5	PI 2	PI 2	PI 2	PI 2	ST 2	ST 2
	6	PI 3	PI 3	PI 3	PI 3	ST 3	–
	7	PI 4	PI 4	PI 4	PI 4	ST 4	–
	8	PI 5	PI 5	PI 5	PI 5	ST 5	–
	9	–	MODE	PI 6	PI 6	ST 6	–
	10	–	JOG/INCHING	PI 7	PI 7	–	–
	11	–	JOG P	–	PI 8	–	–
	12	BKRL	JOG N	BKRL	BKRL	BKRL	BKRL
	13	STRT	STRT/PWRT	STRT	STRT	–	–
	14	MANU	MANU	MANU	MANU	MANU	MANU
	15	HOME	HOME	HOME	HOME	HOME	HOME
	16	PAUSE	PAUSE	PAUSE	PAUSE	PAUSE	PAUSE
	17	REST	REST	REST	REST	REST	REST
	18	SV-ON	SV-ON	SV-ON	SV-ON	SV-ON	SV-ON
Output	19	PO 0	PO 0	PO 0	PO 0	PE 0	LS 0
	20	PO 1	PO 1	PO 1	PO 1	PE 1	LS 1
	21	PO 2	PO 2	PO 2	PO 2	PE 2	LS 2
	22	PO 3	PO 3	PO 3	PO 3	PE 3	–
	23	PO 4	PO 4	PO 4	PO 4	PE 4	–
	24	PO 5	PO 5	PO 5	PO 5	PE 5	–
	25	MOVE	MOVE	PO 6	PO 6	PE 6	–
	26	AREA	MODES	PO 7	PO 7	AREA	AREA
	27	P AREA	P AREA	P AREA	PO 8	P AREA	P AREA
	28	MANU S	MANU S	MANU S	MANU S	MANU S	MANU S
	29	HEND	HEND	HEND	HEND	HEND	HEND
	30	INPS	INPS	INPS	INPS	INPS	–
	31	LOAD/TRQS	WEND	LOAD/TRQS	LOAD/TRQS	LOAD/TRQS	–
	32	SVRDY	SVRDY	SVRDY	SVRDY	SVRDY	SVRDY
	33	BALM	BALM	BALM	BALM	BALM	BALM
	34	ALM	ALM	ALM	ALM	ALM	ALM

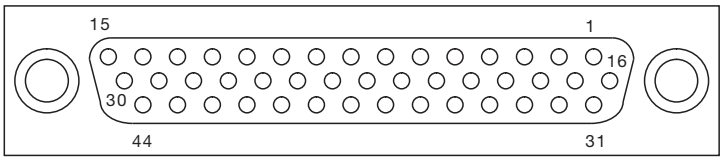
Input Signal Functions

Input		
Signal name	Description	Remarks
MANU	Operation mode	Switches AUTO/MANUAL from I/O. MANUAL when signal is on, and AUTO when it is off.
STRT	Start	Start signal of program step. Program starts when signal is on.
PI0 - PI8	Instruction position number	Input for specifying position numbers. Specifies programs at each signal level. Selects a program step and starts a program with "STRT" signal.
PAUSE	Pause	Temporarily interrupts the operation. PAUSE input status when signal is off. (N.C. connection specification)
HOME	Return to home position	Starts the return to home position operation. Returning to home position is started when signal is on. It stops when it is off.
SV-ON	Servo on	Turns the servo ON and OFF. Servo ON when signal is on, and servo OFF when signal is off.
REST	Alarm reset	Resets alarm. Resets remaining travel distance during pause. Resets when it is on.
BKRL	Brake release	Forcibly releases brake. Releases brake when it is on.
MODE	External unit input instruction mode	Enters the instruction mode when signal is on. Instruction mode when signal is on.
PWRT	Current position write with external unit input instruction	During the instruction mode, the position is written when this signal is greater than 20ms with the position for writing specified.
JOG/INCHING	Manual operation switch with external unit input instruction	Switching of manual operation during the instruction mode. Selects inching operation when it is on, and jog operation when it is off.
JOG P	Moving direction + with external unit input instruction	Operating direction and operation start signal during the instruction mode. Moves in + direction to the soft limit when signal is on. Decelerates and stops when it is off while moving.
JOG N	Moving direction - with external unit input instruction	Operating direction and operation start signal during the instruction mode. Moves in - direction to the soft limit when signal is on. Decelerates and stops when it is off while moving.
ST0 - 6	Cylinder type START	Program start signal for position numbers from ST0 to ST6. Can select either Level or Edge for signal using parameter 13 "move" command. Note that when more than two positions are on at the same time, the lowest-number signal takes precedence.

Output Signal Functions

Output		
Signal name	Description	Remarks
MANU S	Operation mode status	Operation mode status outputs (AUTO/MANUAL). MANUAL when signal is on, AUTO when off.
PO1 - PO8	End position number	Outputs the position number arrived after positioning is completed (binary outputs).
MOVE	Moving	Outputs signal during motor operation.
INPS	Positioning completed	Outputs when motor comes within the positioning completed width.
SVRDY	Operation preparations completed	Outputs signal when servo is on.
ALM	Alarm	Alarm output signal.
MODES	Operation mode status	Output signal for judging instruction mode or regular operation mode. Instruction mode when signal is on. Regular operation mode when it is off.
WEND	Writing completed	Signal is off after switching to the regular mode, and it is on for 30ms when writing of the PWRT signal is completed.
HEND	Return to home position completed	Outputs signal when returning to home position is completed.
AREA	Upper/lower area limit	On when the current position of actuator is within a range specified by the parameter.
P AREA	Position area	On when the current position of actuator is within a range specified by the program step.
BALM	Voltage reduction in battery	Off when the battery voltage decreases.
LOAD	Load output judgment status	On when a directive torque exceeds the threshold over a certain period within a judgment range.
TRQS	Torque level status	On when the load threshold is reached while moving. Off while the load remains under the threshold.
PE0 - PE6	Cylinder type arrival completed output	Signal generated after operation for positioning is completed.
LS0 - LS2	Cylinder type position detection output	Outputs when the current position comes within the positioning width for each of the three points.

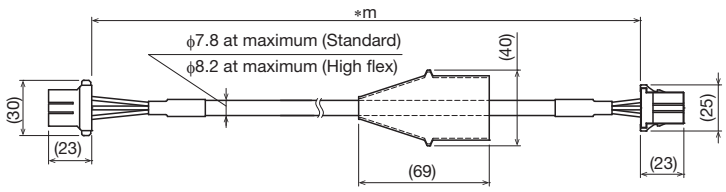
I/O Connector Pin Numbers



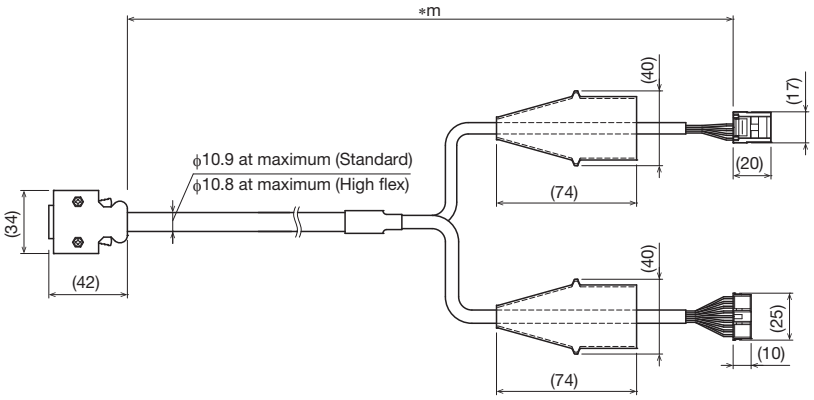
* Controller connector port view

Actuator Cable

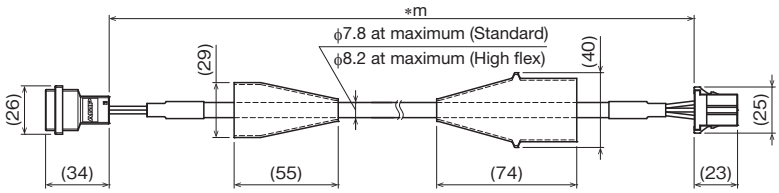
Motor brake cable for THC: CBL-THC-ACP-∗∗ F (Standard)
CBL-THC-ACP-∗∗ R (High flex)
∗∗ indicates cable length: 03 (3m), 05 (5m), or 10 (10m)



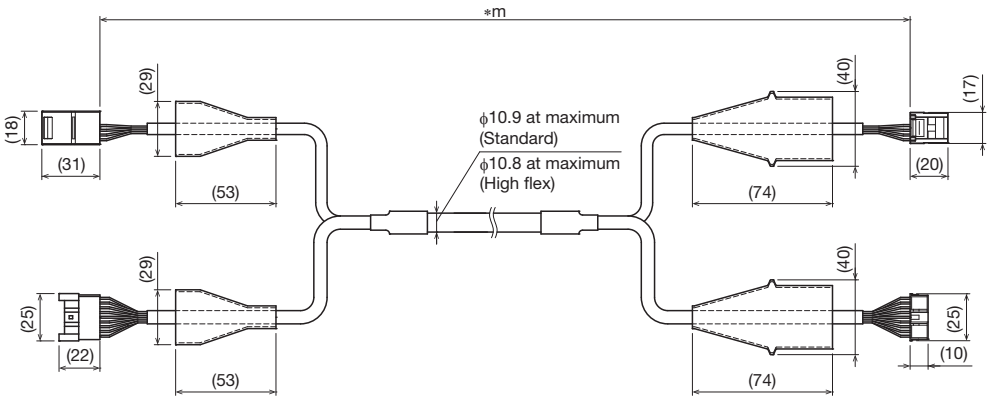
Encoder sensor cable for THC: CBL-THC-ACS-∗∗ F (Standard)
CBL-THC-ACS-∗∗ R (High flex)
∗∗ indicates cable length: 03 (3m), 05 (5m), or 10 (10m)



Motor brake extension cable for TLC/THC: CBL-ACP-EXT01-∗∗ F (Standard)
CBL-ACP-EXT01-∗∗ R (High flex)
∗∗ indicates cable length: 01 (1m), 03 (3m), or 05 (5m)



Encoder sensor extension cable for THC: CBL-ACS-EXT02-∗∗ F (Standard)
CBL-ACS-EXT02-∗∗ R (High flex)
∗∗ indicates cable length: 01 (1m), 03 (3m), or 05 (5m)



Note 1) For use involving moving elements, select high flex type. The recommended bending radius at the core of cable is R95 or greater.
(For use involving other than moving elements, R50 or greater is recommended.)
Note 2) When using the TLC servo driver controller, motor brake cable and encoder sensor cable should be no longer than 11m.
Up to two extension cables can be connected.
Note 3) When using the THC servo driver controller, the lengths of motor brake cable and encoder sensor cable should be no longer than 16m.
Up to two extension cables can be connected.

Option

Lithium ion battery (for maintenance)

ER6V C4 (Toshiba Home Appliances Corporation)

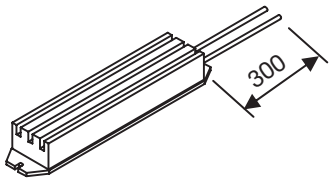
- This is required for the absolute system.
- When replacing the battery, order the above.

Optional (Regeneration Resistance)

Regeneration resistance

To make electrical actuator operate via the THC controller series, a regeneration resistance may be necessary depending on the operating conditions. The following table lists the required number of regeneration resistances just for reference. The customer should provide the required number of them.
It is recommended that you use regeneration resistances manufactured by Iwaki Musen Kenkyusho Co.,LTD.
THK supplies regeneration resistance connection cables. The customer can order them separately as necessary.

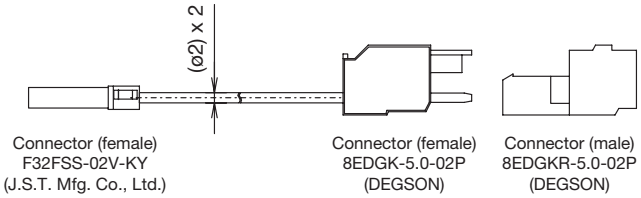
■ Regeneration resistance (Power-type cement resistor)



	Name of item	Manufacturer
A	RH150 100Ω J	Iwaki Musen Kenkyusho Co.,LTD.
B	RH150 50Ω J	

THC capacity	Orientation	
	Horizontal mount	Vertical mount
100W	A x 1	A x 1
200W	A x 1	A x 1
400W	B x 2	B x 2
750W	B x 2	B x 2

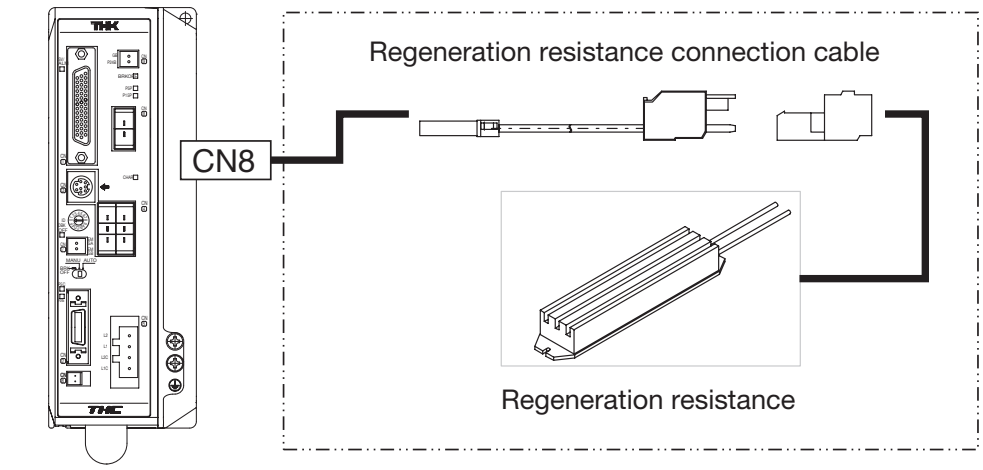
■ Regeneration resistance connection cable (CBL-REG00-01F)



* Cable insertion jig (DG010-01P-19-00AH) is provided.
(The customer does not have to provide special tools)

	Model	Length	Manufacturer
1	CBL-REG00-01F	1m	THK Co., Ltd.

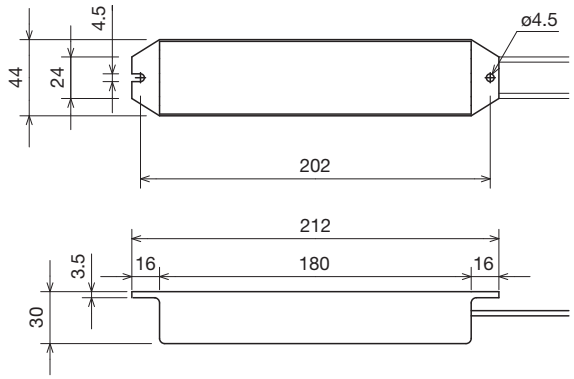
Configuration Diagram



* There is no polarity in wiring.

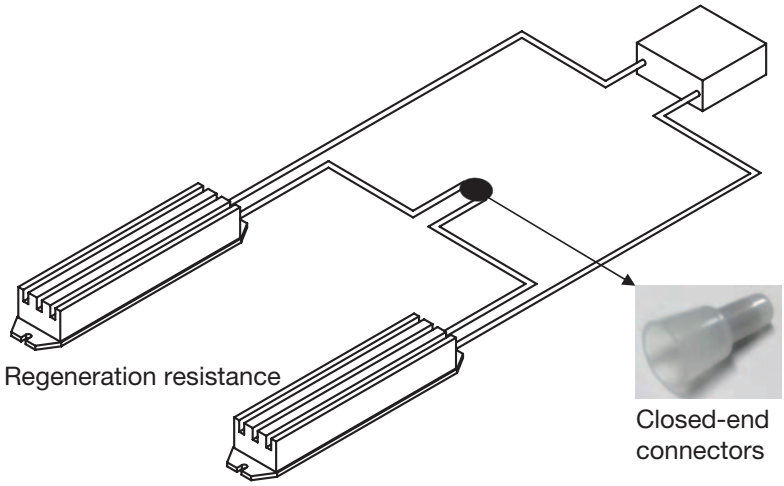
Regeneration Resistance External Drawing

RH150 (90W, 100Ω) (90W, 50Ω) common to all



Wiring Example (Using Two Regeneration Resistances)

When you use two regeneration resistances, connect them in series.



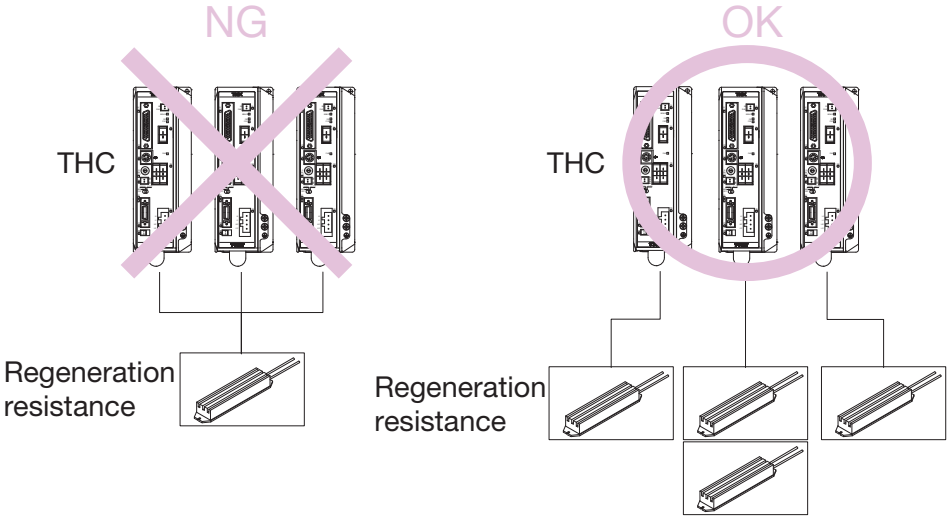
Connector (male)
8EDGKR-5.0-02P
(DEGSON)

Closed-end connectors

Wires should be connected using closed-end connectors.

Precautions on Selecting Resistance

The customer should provide the required number of regeneration resistances for each THC.



TNU/TJU

Multiple-axis connection fieldbus compatible

Less Wiring Required

Connecting to a PLC through a fieldbus network requires less wiring than an I/O cable connection.
In addition, the network unit and each driver controller can be connected with a single dedicated cable.

CC-Link EtherCAT EtherNet/IP DeviceNet

Up to 16 Axes Can Be Connected

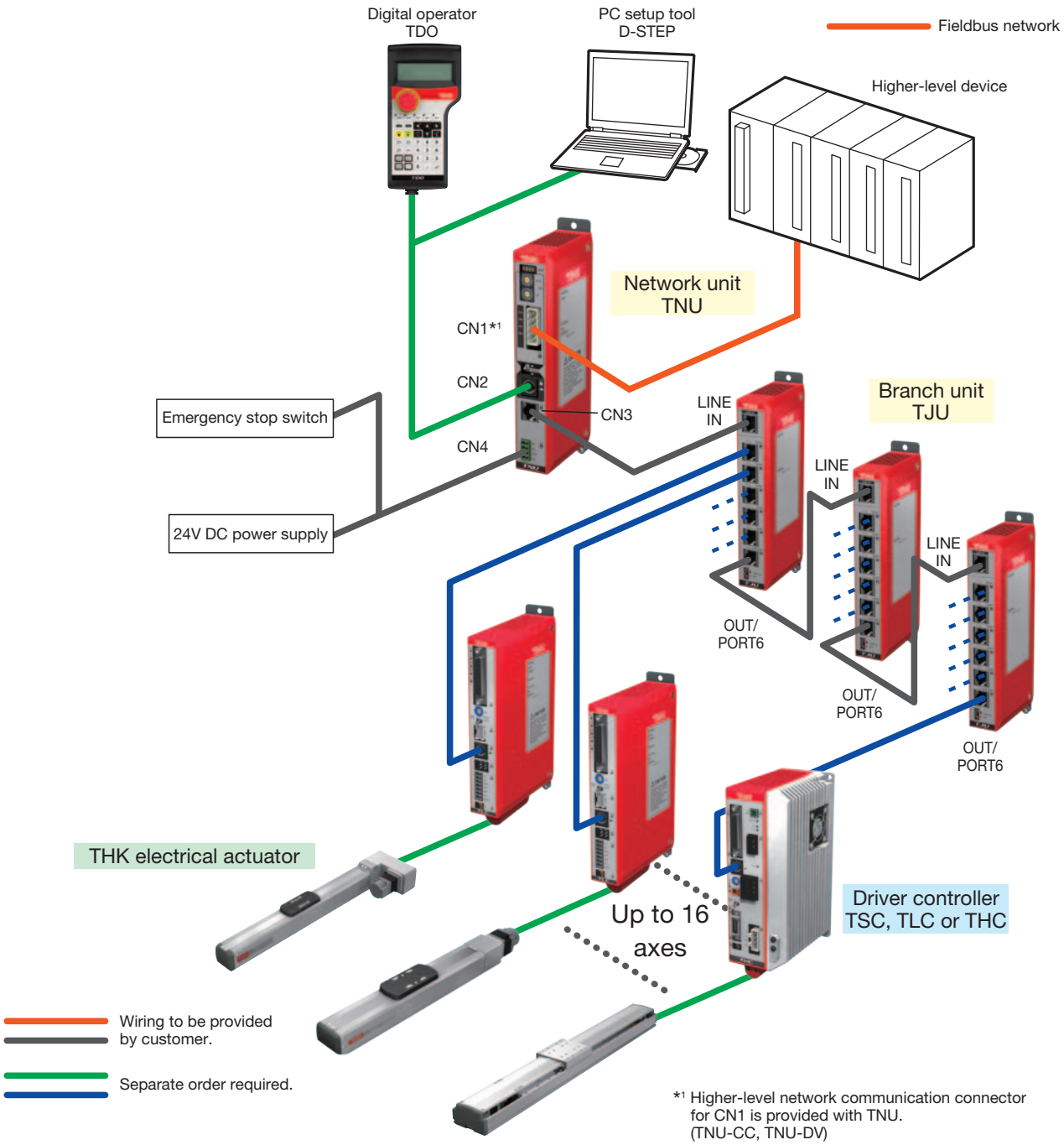
Up to 16 axes of mixed THK driver controllers (TSC, TLC, and THC) can be connected using one TNU and TJU (branch unit) in combination.

Direct Numerical Control Supported (Version 1.2 or later)

Position, speed, and acceleration commands can be made directly from the PLC. As well, information such as the current position can be monitored.

* TSC is supported with Version 1.22, TLC/THC with Version 1.07 or later.
* For TNU-EC support, contact THK.

System Configuration



Model Configuration

● Network unit

Model		Network type
TNU	–	CC
(1)		(2)
TNU		CC:CC-Link
		DV:DeviceNet
		EC:EtherCAT
		EP:EtherNet/IP

● Branch unit

Model
TJU
(1)
TJU

● TACnet cable (between TJU and driver controller)

Model		Type		Cable length
CBL	–	NW	–	01
(1)		(2)		(3)
CBL		NW		01:1m
				03:3m

Use an industrial Ethernet cable between TNU and TJU, and between TJUs.

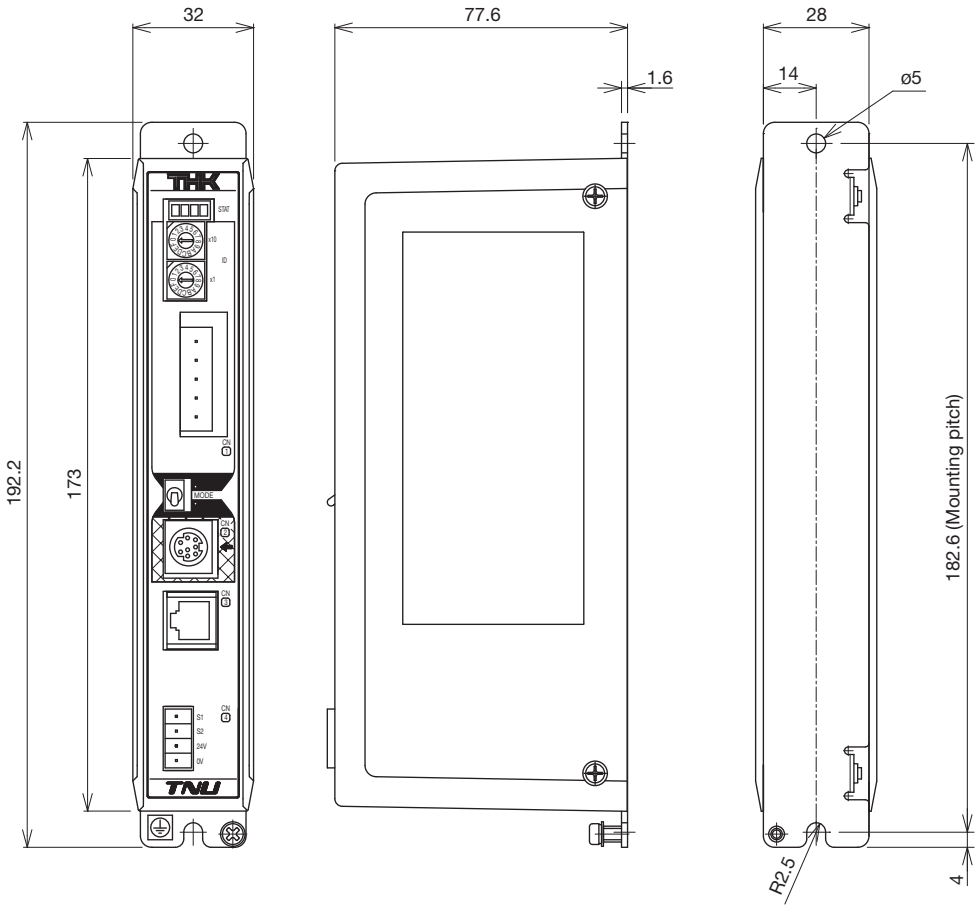
Specifications

Model		TNU-CC		TNU-DV	TNU-EC	TNU-EP
Fieldbus	Communication standard	CC-Link Ver1.10	CC-Link Ver2.00	DeviceNet	EtherCAT	EtherNet/IP
	Communication speed	10Mbps/5Mbps/2.5Mbps/625kbps/156kbps		500kbps/250kbps/125kbps	100M	10M/100M
	Number of occupied stations	Remote device stations	Remote device stations	Number of occupied nodes: 1	–	–
		4 stations	1 station, 2 stations, 3 stations, 4 stations	Number of occupied channels: input 128 CH output 128 CH		
Applicable controller		TSC/TLC/THC				
THK network	Transmission channel type	RS-485				
	Communication speed [bps]	38.4k/57.6k/115.2k				
	Communication method	Half duplex				
	Maximum trunk length [m]	20				
	Maximum number of connectable axes	16				
Input power supply		24V DC ±10%, up to 0.3A				
Operating/storage temperature		0 to 55°C (No freezing)/-20 to 85°C (No freezing)				
Ambient condition		Indoor (Free from direct sunlight, corrosive gas, flammable gas, oil mist)				
Protective function		Higher-level network communication error, communication error, system error				
Weight [g]		240(TJU:220)				

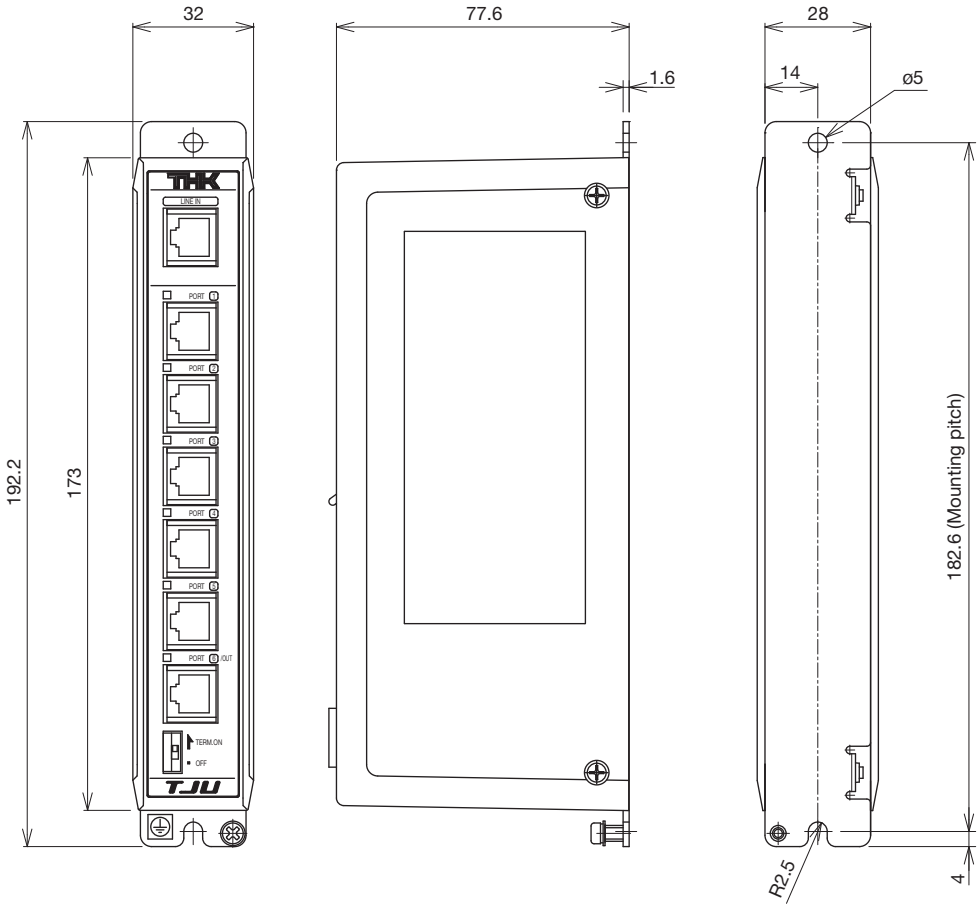
* The number of occupied channel numbers is fixed. If using master devices with 128 or fewer input occupied channels or 128 or fewer output occupied channels, contact THK.

Dimensions

● TNU



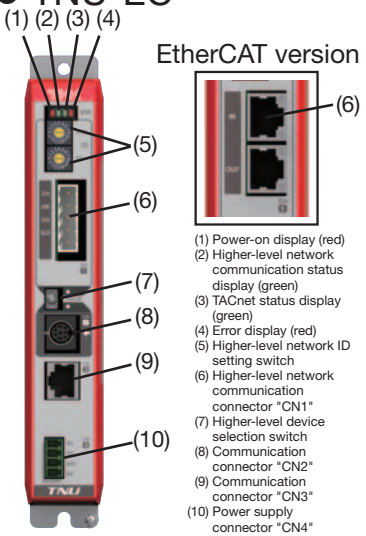
● TJU



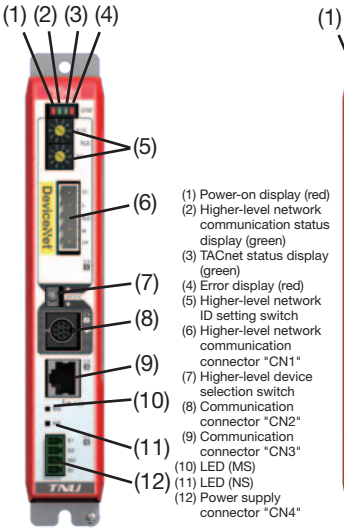
The Outer dimensions and mounting dimensions of TNU and TJU are the same.

Components

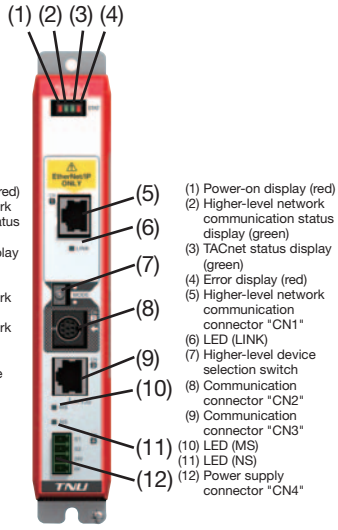
● TNU-CC
● TNU-EC



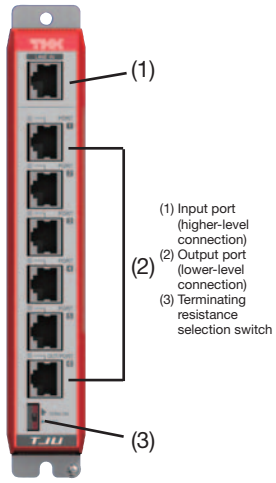
● TNU-DV



● TNU-EP

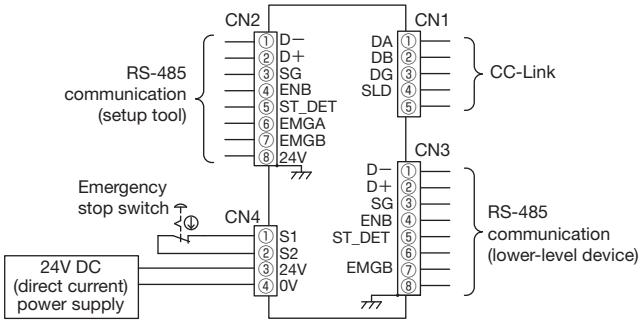


● TJU

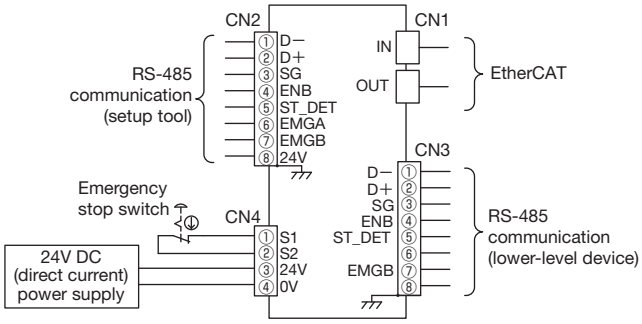


External Device Connection (TNU)

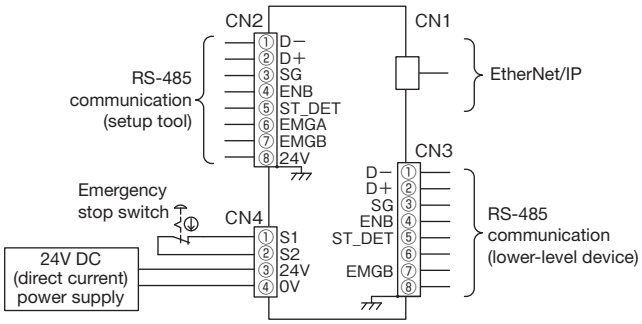
● CC-Link



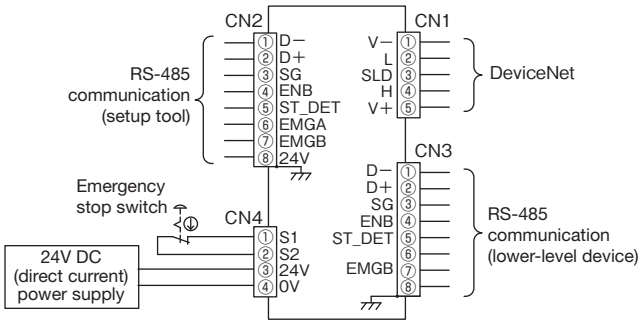
● EtherCAT



● EtherNet/IP



● DeviceNet



Note: The emergency stop terminals (CN4-S1 and S2) are not used for power shutdown of TNU, but used for an emergency stop of the lower-level device (THK driver controller).

TDO Digital operator (separate order required)

Features

Simple, quick operations and settings of TSC, TLC and THC are possible without using a PC.

Simple Operation

Key sheet with a straightforward design,
LC with backlight (20 digits × 4 lines).

Model Configuration

Model		Type
TDO	–	N
(1)		(2)
TDO		N: Category 2*1 compliant type

*1 ISO 13849-1

Functions

- Checking and editing step data and parameters
- Operation of actuator
  (Return to home position, Jog operation, Inching operation, Program execution, Servo ON/OFF, Electromagnetic brake ON/OFF)
- Monitor (I/O, Current position, Position command, Current command, Version display)
- Alarm (History display, Clear history, Interrupt display on occurrence, Alarm reset)
- Settings (Backlight luminance, LCD contrast, Beep tone, Automatic turn off of backlight)
- Enable switch (3 positions) - Protection structure IP54 (excluding cable connectors) - Display language (Japanese/English)

Outer dimention: 110mm (W) × 218.3mm (H) × 66.6mm (D) (excluding crests)
Main unit weight: 400g (excluding cables) Cable length: 5m
* TLC/THC is supported with Version 1.03 or later.
* TNU is supported with Version 1.10 or later.

D-STEP PC setup tool

Three languages supported


User-friendly interface

Features

Supports multifunctional TSC/TLC/THC with user-friendly interface.

Simple Operation

Operations and settings of TSC, TLC and THC are possible using a PC.
Equipped with functions useful for maintenance, such as backing up data or logging operating states.

Functions

- Checking, editing, backing up, or offline-editing of step data
- Checking, editing, backing up, or offline-editing of parameters
- Operations of actuator (Return to home position, Jog operation, Inching operation, Program execution, Servo ON/OFF)
- Monitor (I/O, Current position, Position command, Current command) - Logging (Speed and current waveform display)
- Alarm (History display, Clear history, Alarm reset) - Display language (Japanese/English/Simplified Chinese)

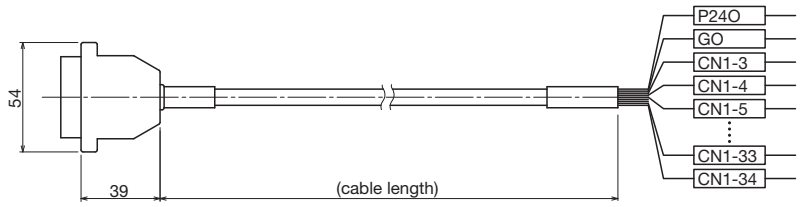
Supported OS: Windows XP/Windows Vista/Windows 7
D-STEP can be freely downloaded from the THK technical support website (https://tech.thk.com/).
* TLC/THC/TNU is supported with Version 1.10 or later.

Cable

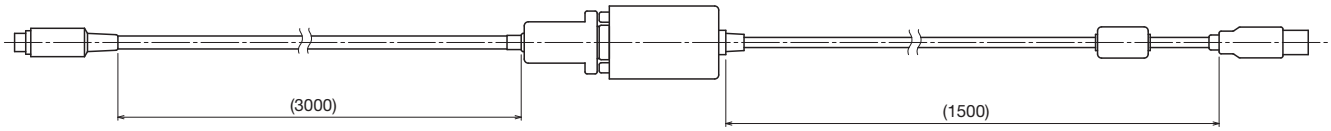
I/O cable: CBL-TSC-IO-** (optional)
** indicates cable length: 03 (3m), 05 (5m), 07 (7m), or 10 (10m).

Cables are used for TSC/TLC/THC.

* Cables are shipped with the discrete wire side terminals unprocessed.



PC communications cable: CBL-COM-03 (optional)



THK CO., LTD.

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

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
42450 West 12 Mile Road, Suite 300 Novi, MI. 48377, 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
7F., No192-1, Sec.4, Chengde Rd., Shilin Dist., Taipei City 11167, Taiwan, 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 RHYTHM(THAILAND) CO., LTD. LM System Division

BANGKOK BRANCH
Bangna Tower, Tower A #1701 2/3 M.14 Bangna-Trad Highway Km 6.5, Bangkaew, Bangplee, Samutprakarn. 10540 Thailand
Phone:+66-2751-3001 Fax:+66-2751-3003

INDIA

THK India Pvt. Ltd.

HEADQUARTERS & BANGALORE BRANCH
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

PUNE BRANCH
"Metro House" , Survey no. 471/C, Ground Floor, Office No-G7, Mangaldas Road, Pune-411001, Maharashtra, India
Phone:+91-20-4120-8742

CHENNAI BRANCH
Office No.118, Regus Prince Infocity II, Level 1, 1st Floor, 283/3 & 283/4 Rajiv Gandhi Road, Kandanchavady, Chennai - 600096, India
Phone:+91-44-4042-3132

AHMEDABAD BRANCH
Office No.113, GCP Business Centre, Opp Memnagar Fire Station, Vijay cross Road, Memnagar, Ahmedabad - 380014, India
Phone:+91-79-6134-4444

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
Şerifali Mahallesi, Edep Sokak, No:15 Giriş Kat, 34775 Yukarı Dudullu - Ümraniye / İstanbul, 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.

PARIS OFFICE
Roissypôle Le Dôme, 3 rue de la Haye, BP10959 Tremblay en France, 95733 Roissy CDG Cedex, France
Phone:+33-1-7425-3800 Fax:+33-1-7425-3799

PRODUCTION FACILITY

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 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 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.2 Minggu Road, Dalian Economic And Technological Development Zone, Liaoning Province, China 116650
Phone:+86-411-3925-2999 Fax:+86-411-3925-2888

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.

ELECTRIC ACTUATORS

201606020 E30 Printed in Thailand