



ACTUATOR UNITS

Mechanism only

Contents

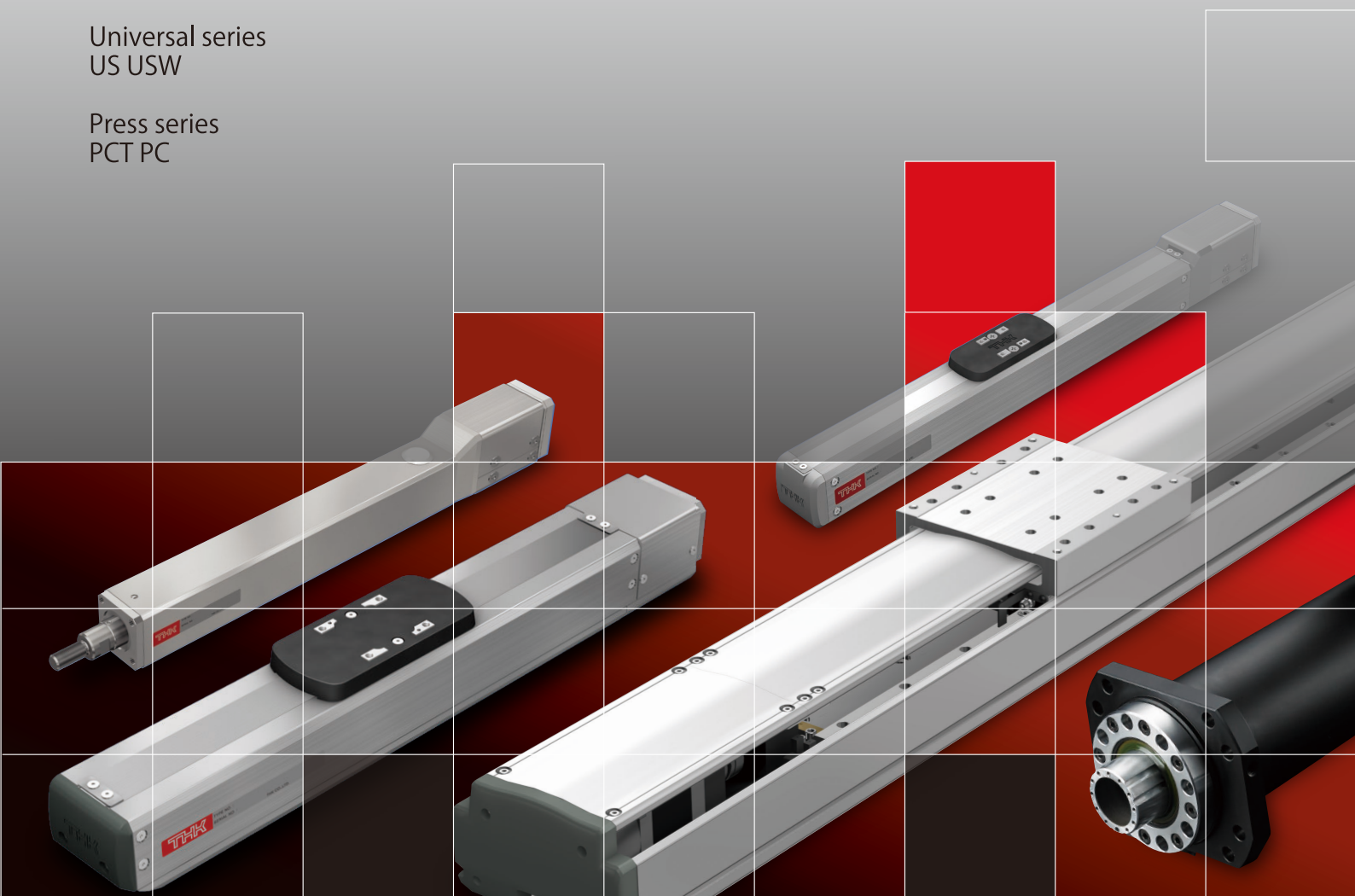
ENGLISH

Economy series
ES EC

Compact series
KRF KSF

Universal series
US USW

Press series
PCT PC



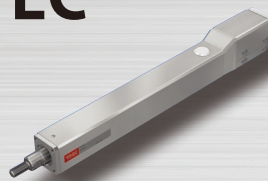
PRODUCT LINE UP

Economy series

ES



EC



▶ ▶ ▶ **Chapter 1**

Reasonably Priced

Compact series

KRF



KSF



▶ ▶ ▶ **Chapter 2**

High Rigidity

Universal series

US



USW



▶ ▶ ▶ **Chapter 3**

Long Stroke Heavy Object Transport

Press series

PCT

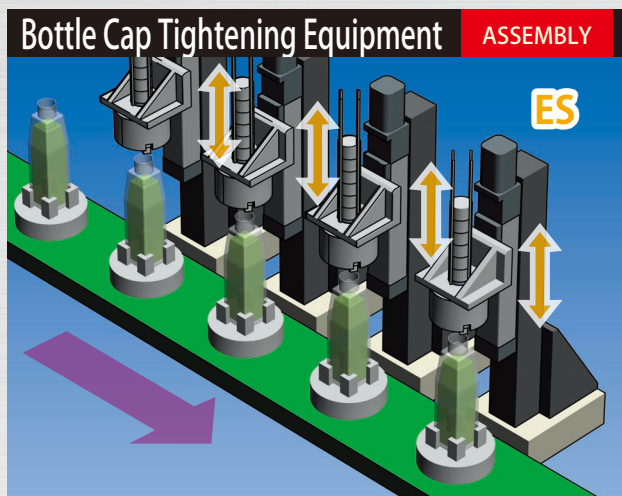


PC



▶ ▶ ▶ **Chapter 4**

Press Treated



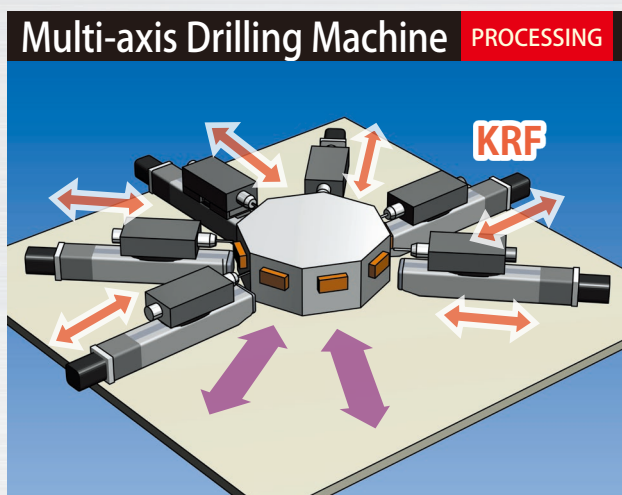
Bottle Cap Tightening Equipment

ASSEMBLY

ES

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

ES



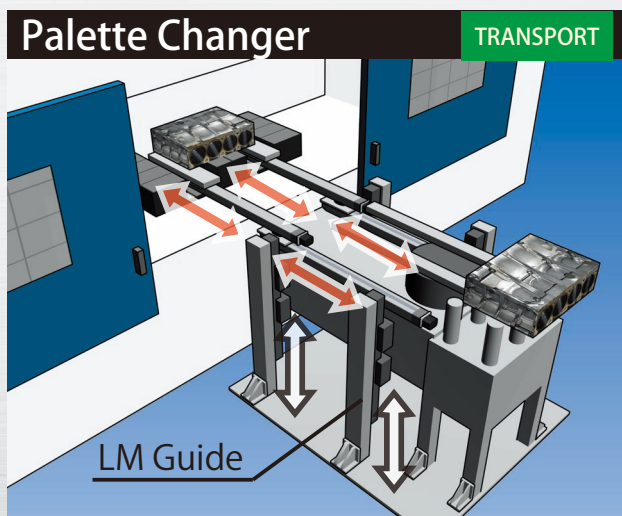
Multi-axis Drilling Machine

PROCESSING

KRF

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

KRF



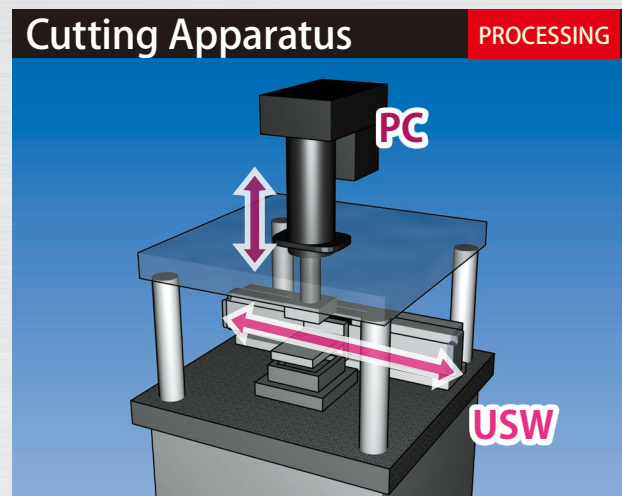
Palette Changer

TRANSPORT

LM Guide

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

KRF LM Guide



Cutting Apparatus

PROCESSING

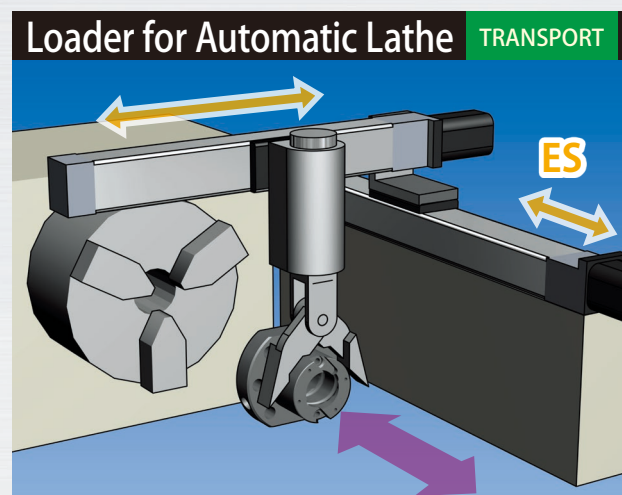
PC

USW

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.

PC

USW



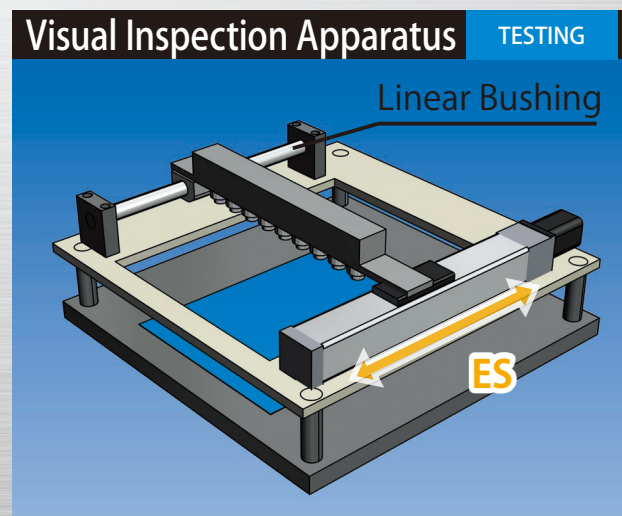
Loader for Automatic Lathe

TRANSPORT

ES

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

ES



Visual Inspection Apparatus

TESTING

Linear Bushing

ES

Model No. ES Linear Bushing 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.

ES

Linear Bushing

ES/EC

KRF/KSF

US/USW

PCT/PC

Economy series

Model: **ES** Slider Type

EC Cylinder Type



Chapter 1

Features	1-003
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Model Configuration	1-004
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Lineup List	1-005
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ES Slider Type Basic Specifications & Dimensions	1-007
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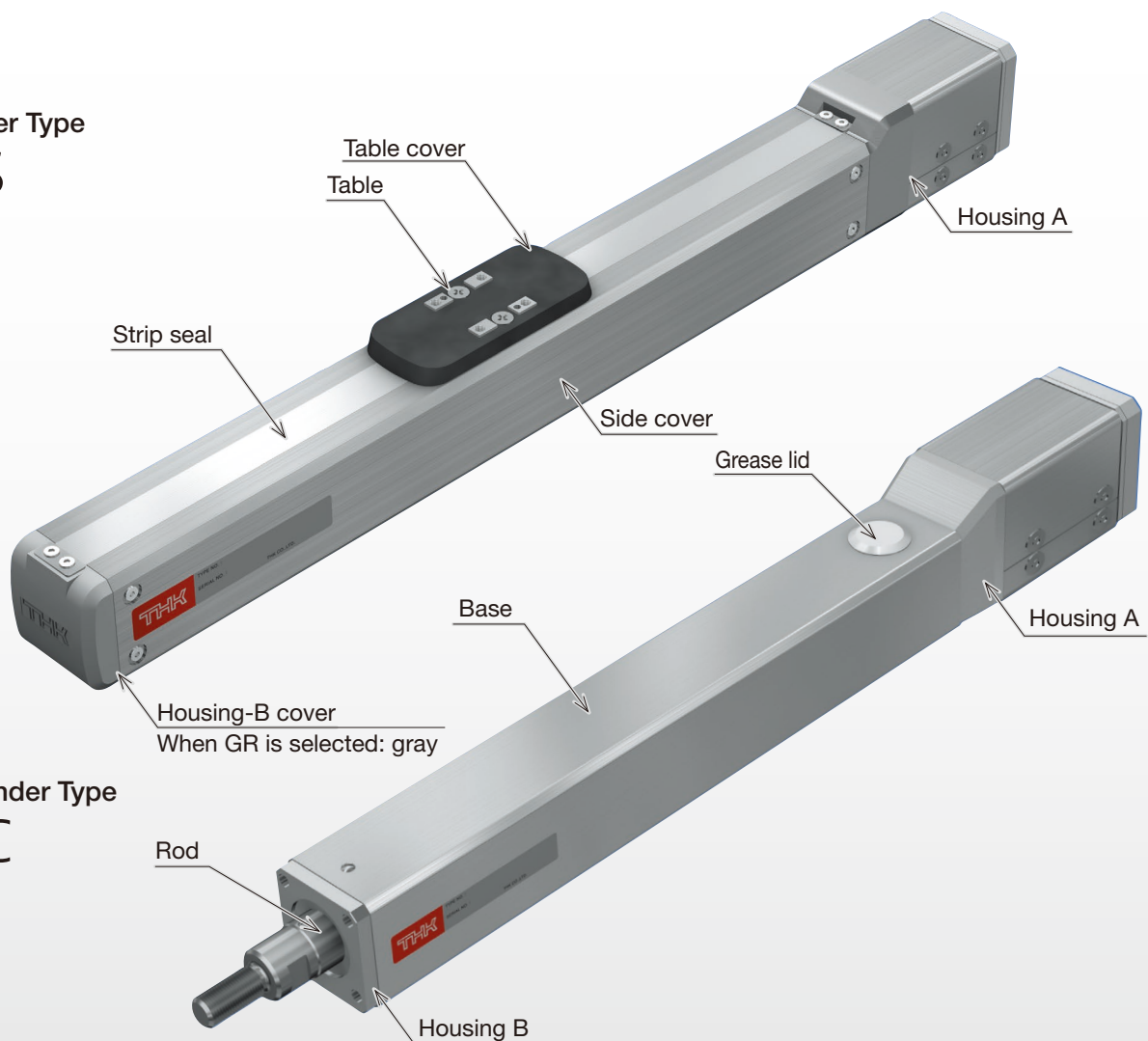
EC Cylinder Type Basic Specifications & Dimensions	1-023
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Options	1-035
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Electrical Actuator Economy series ES/EC

Lightweight, Compact

Slider Type ES



Cylinder Type EC

Features

Compact and reliable

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

Reasonably priced

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

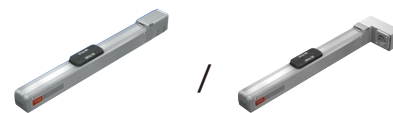
Long-term maintenance-free operation

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

Model Configuration



ES/EC (without motor)

Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Option
ES4R -	06 -	0150 -	B -	0 -	A -	MR-GR
(1)	(2)	(3)	(4)	(5)	(6)	(7)
ES3	06: 6mm	0050: 50mm	B	0: Without motor	N: None	No symbol: ES : Red cover : EC : None
ES4	12: 12mm	0100: 100mm		1: With motor (Prepared by THK)	A	MR: Motor right wrap *1
ES5		0150: 150mm			B	ML: Motor left wrap *1
ES6		0200: 200mm			C	GR: Change the cover color to gray *2
ES3R		0250: 250mm				SB: With slider base *2
ES4R		0300: 300mm				CB: With cylinder base *3
ES5R		0350: 350mm				FL: With flange *3 *4
ES6R		0400: 400mm				LB: With link ball *3 *4
EC3		0450: 450mm				□ ₁ □ ₂ : Sensor *2
EC4		0500: 500mm				
EC3R		0550: 550mm				
EC4R		0600: 600mm				
EC3H						
EC4H						

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

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

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

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

*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.

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.

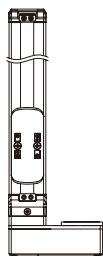
Specify the option symbol by writing in the order of description from left adding "-".

Motor wrap direction

Slider type ES

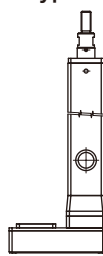


Option symbol ML: Motor left wrap

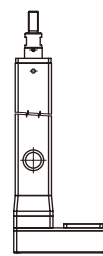


Option symbol MR: Motor right wrap

Cylinder type EC



Option symbol ML: Motor left wrap



Option symbol MR: Motor right wrap

Pages for detailed description

(6) Intermediate flange	P. 1-035
(7) Options	
GR: Change the cover color to gray	P. 1-035
SB: With slider base	P. 1-036
CB: With cylinder base	P. 1-040
FL: With flange	P. 1-040
LB: With link ball	P. 1-040
□ ₁ □ ₂ : Sensor	P. 1-038

Lineup List

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

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

*1 Based on rated motor speed (3,000min⁻¹).

*2 Load mass represents values with THK control devices used. Determine load mass according to specifications of the motor you actually use. For selecting a motor, see Reference Materials for Selecting on page 1-041 and 1-042.

*3 Maximum speed is dependent on motor speed of 3,000min⁻¹ and, if applicable, permissible rotation speed of ball screw.

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

ES/EC

KRF/KSF

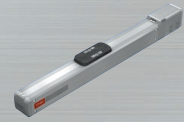
US/USW

PCT/PC

Economy series

ES3

Slider type Directly coupled without motor



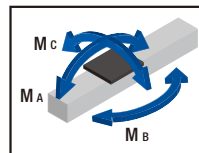
Model Configuration

Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Option
ES3	06	0150	B	0	A	GR-SB
ES3	06: 6mm	0050: 50mm to 0300: 300mm	B	0: Without motor 1: With motor	A B	No symbol: Red cover GR: Change the cover color to gray SB: With slider base □ ₁ □ ₂ : Sensor

Basic Specifications

LM Guide (SRS9)	Basic dynamic load rating C [N]		2690
	Basic static load rating C ₀ [N]		2310
	Radial clearance [μm]		-2 to +2
Ball screw portion	Screw shaft diameter [mm]		φ6
	Ball screw lead [mm]		6
	Basic dynamic load rating C _a [N]		780
	Basic static load rating C _{0a} [N]		1250
	Root diameter [mm]		φ5.1
	Ball center-to-center diameter [mm]		φ6.3
Bearing portion (fixed side)	Axial direction	Basic dynamic load rating C _a [N]	6550
		Static permissible load P _{0a} [N]	2310
Permissible rotational speed [min ⁻¹]			3000
Starting torque [N·mm]			8
Positioning repeatability [mm] * ²			±0.020
Lost motion [mm] * ²			0.1
Permissible input torque [N·m]			0.065

Static Permissible Moment *¹

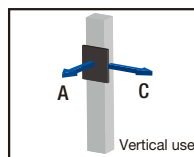
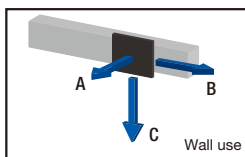
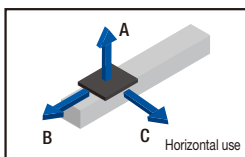


	[N·m]
M _A	6.0
M _B	7.5
M _C	5.9

*¹ Static maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

*² When the appropriate motor is used.

Reference Permissible Overhang Length *¹ *²



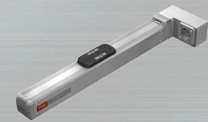
Horizontal mount [mm]					Wall mount [mm]					Vertical mount [mm]				
Ball screw lead [mm]	Load mass [kg]	A	B	C	Ball screw lead [mm]	Load mass [kg]	A	B	C	Ball screw lead [mm]	Load mass [kg]	A	C	
6	0.5	200	200	200	6	0.5	200	200	200	6	0.3	200	200	
	1	200	160	200		1	170	150	200		0.5	200	200	

*¹ Distance from the center of the top face of the table to the load center of gravity under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal or vertical, 150mm stroke.

*² Value when THK control device is used. Actual load mass should be determined based on the specifications of the motor used. See "Reference Materials for Selecting ES" in P.1-041.

Economy series

ES3R Slider type Motor wrap



Model Configuration

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

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

Basic Specifications

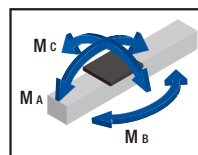
LM Guide (SRS9)	Basic dynamic load rating C [N]		2690
	Basic static load rating C ₀ [N]		2310
	Radial clearance [μm]		-2 to +2
Ball screw portion	Screw shaft diameter [mm]		φ6
	Ball screw lead [mm]		6
	Basic dynamic load rating C _a [N]		780
	Basic static load rating C _{0a} [N]		1250
	Root diameter [mm]		φ5.1
	Ball center-to-center diameter [mm]		φ6.3
Bearing portion (fixed side)	Axial direction	Basic dynamic load rating C _a [N]	6550
		Static permissible load P _{0a} [N]	2310
		Permissible rotational speed [min ⁻¹]	
Starting torque ^{*1} [N·mm]			8
Positioning repeatability [mm] ^{*3}			±0.020
Lost motion [mm] ^{*3}			0.1
Permissible input torque [N·m]			0.065

*¹ Pulley and timing belt not included.

*² Static maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

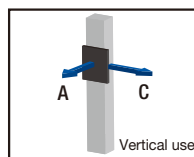
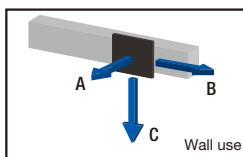
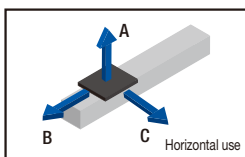
*³ When the appropriate motor is used.

Static Permissible Moment *²



	[N·m]
M _A	6.0
M _B	7.5
M _C	5.9

Reference Permissible Overhang Length *¹ *²



Horizontal mount [mm]					Wall mount [mm]					Vertical mount [mm]				
Ball screw lead [mm]	Load mass [kg]	A	B	C	Ball screw lead [mm]	Load mass [kg]	A	B	C	Ball screw lead [mm]	Load mass [kg]	A	C	
6	0.5	200	200	200	6	0.5	200	200	200	6	0.3	200	200	
	1	200	160	200		1	170	150	200		0.5	200	200	

*¹ Distance from the center of the top face of the table to the load center of gravity under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal or vertical, 150mm stroke.

*² Value when THK control device is used. Actual load mass should be determined based on the specifications of the motor used. See "Reference Materials for Selecting ES" in P.1-041.

ES3R

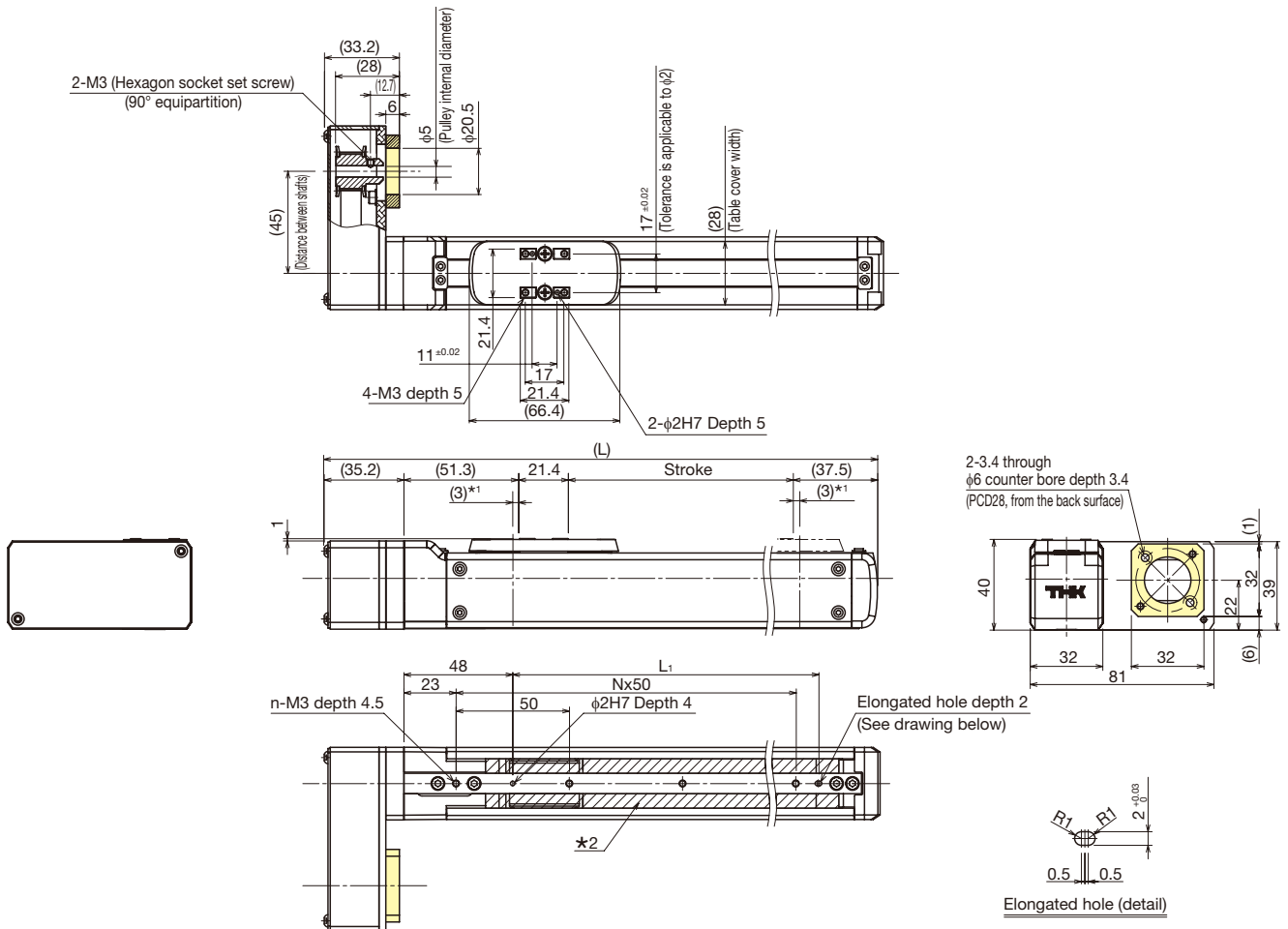
Dimensions

ES/EC

KRF/KSF

US/USW

PCT/PC

*¹ Stroke up to mechanical stopper.*² indicates an opening.

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

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

ES4

Slider type Directly coupled without motor



Model Configuration

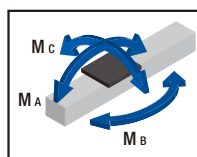
Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Option
ES4	06	0150	B	0	A	GR-SB
ES4	06: 6mm 12: 12mm	0050: 50mm to 0400: 400mm	B	0: Without motor 1: With motor	A B	No symbol: Red cover GR: Change the cover color to gray SB: With slider base □ ₁ □ ₂ : Sensor

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

Basic Specifications

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

Static Permissible Moment *¹

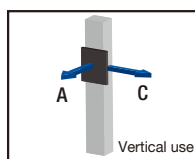
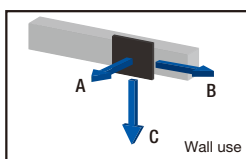
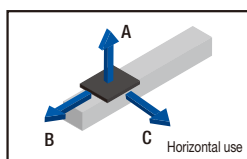


	[N·m]
MA	9.3
MB	13.5
MC	17.7

*¹ Static maximum permissible moment when unit is stationary. Moment standards: MA and MC: top of table; MB: center of table.

*² When the appropriate motor is used.

Reference Permissible Overhang Length *¹ *²



Horizontal mount					[mm]	Wall mount					[mm]	Vertical mount				[mm]
Ball screw lead [mm]	Load mass [kg]	A	B	C		Ball screw lead [mm]	Load mass [kg]	A	B	C		Ball screw lead [mm]	Load mass [kg]	A	C	
6	4.5	300	50	100		6	4.5	60	30	300		6	2	100	110	
	9	160	20	40			9	10	5	70			4	30	40	
12	3.8	260	60	100		12	3.8	70	40	220		12	0.8	260	300	
	7.5	110	20	40			7.5	10	10	50			1.5	130	150	

*¹ Distance from the center of the top face of the table to the load center of gravity under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal or vertical, 150mm stroke.

*² Value when THK control device is used. Actual load mass should be determined based on the specifications of the motor used. See "Reference Materials for Selecting ES" in P.1-041.

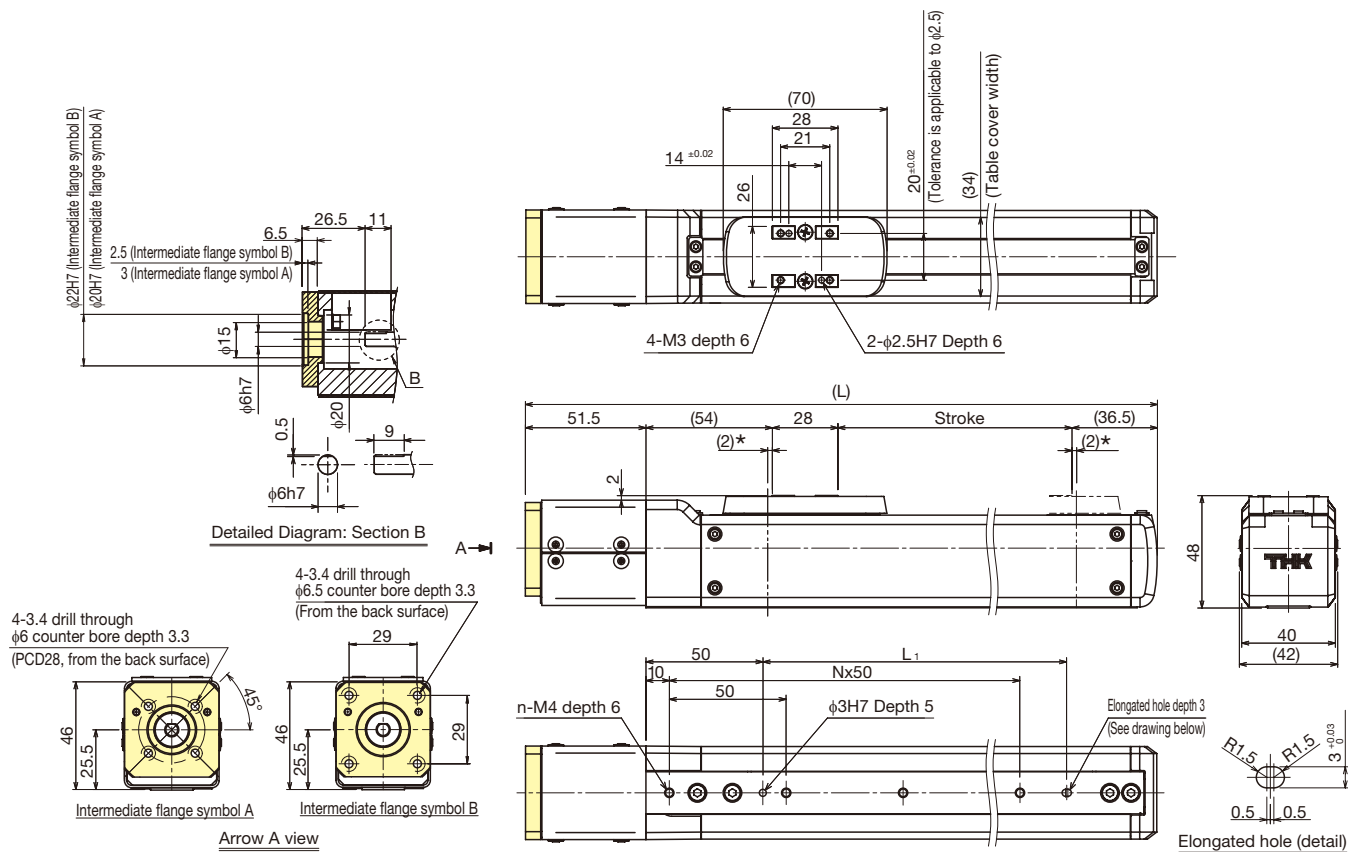
Dimensions

ES/EC

KRF/KSF

US/USW

PCT/PC



* 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	300							
	Ball screw lead: 12mm	600							
Dimensions [mm]	L	220	270	320	370	420	470	520	570
	L ₁	80	130	180	230	280	330	380	430
Mounting pitch count	N	2	3	4	5	6	7	8	9
Mounting hole count	n	3	4	5	6	7	8	9	10
Weight [kg]		1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9

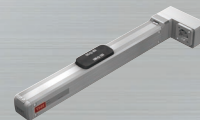
*1 Load capacity and maximum speed vary depending on the motor used.

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

Economy series

ES4R

Slider type Motor wrap



Model Configuration

Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Option
ES4R	06	0150	B	0	A	MR-GR
ES4R	06: 6mm 12: 12mm	0050: 50mm to 0400: 400mm	B	0: Without motor 1: With motor	A	MR: Motor right wrap ML: Motor left wrap GR: Change the cover color to gray SB: With slider base □ ₁ □ ₂ : Sensor

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

Basic Specifications

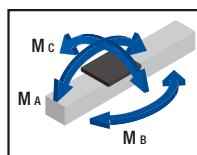
LM Guide (SRS9W)	Basic dynamic load rating C [N]		3290	
	Basic static load rating C ₀ [N]		3340	
	Radial clearance [μm]		-2 to +2	
Ball screw portion	Screw shaft diameter [mm]		φ8	
	Ball screw lead [mm]		6	12
	Basic dynamic load rating C _a [N]		1770	920
	Basic static load rating C _{0a} [N]		3040	1600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

*¹ Pulley and timing belt not included.

*² Static maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

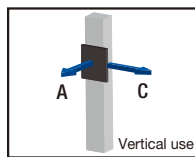
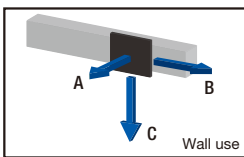
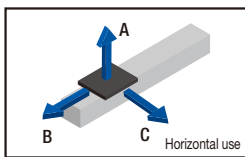
*³ When the appropriate motor is used.

Static Permissible Moment *²



	[N·m]
M _A	9.3
M _B	13.5
M _C	17.7

Reference Permissible Overhang Length *¹ *²



Horizontal mount [mm]					Wall mount [mm]					Vertical mount [mm]				
Ball screw lead [mm]	Load mass [kg]	A	B	C	Ball screw lead [mm]	Load mass [kg]	A	B	C	Ball screw lead [mm]	Load mass [kg]	A	C	
6	2	300	120	240	6	2	210	110	300	6	0.8	280	300	
	4	300	50	110		4	80	40	300		1.5	140	160	
12	1	300	240	300	12	1	300	260	300	12	0.5	300	300	
	2	300	120	200		2	170	110	300		1	210	240	

*¹ Distance from the center of the top face of the table to the load center of gravity under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal or vertical, 150mm stroke.

*² Value when THK control device is used. Actual load mass should be determined based on the specifications of the motor used. See "Reference Materials for Selecting ES" in P.1-041.

ES4R

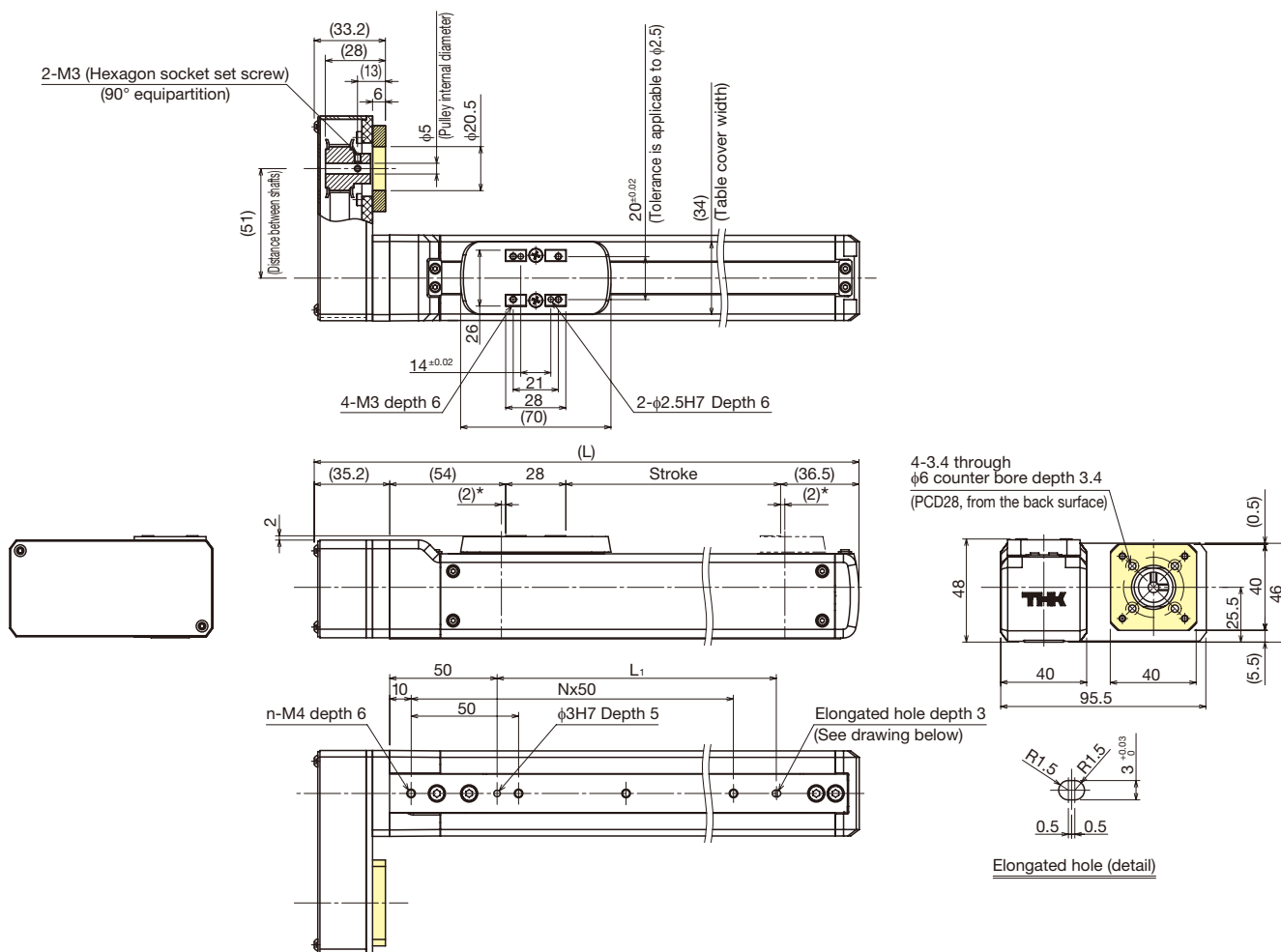
Dimensions

ES/EC

KRF/KSF

US/USW

PCT/PC



* 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	300							
	Ball screw lead: 12mm	600							
Dimensions [mm]	L	203.7	253.7	303.7	353.7	403.7	453.7	503.7	553.7
	L ₁	80	130	180	230	280	330	380	430
Mounting pitch count	N	2	3	4	5	6	7	8	9
Mounting hole count	n	3	4	5	6	7	8	9	10
Weight [kg]		1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9

*1 Load capacity and maximum speed vary depending on the motor used.

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

Economy series

ES5

Slider type Directly coupled without motor



ES/EC

KRF/KSF

US/USW

PCT/PC

Model Configuration

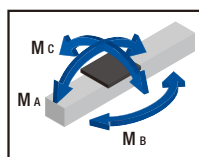
Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Option
ES5	06	0150	B	0	B	GR-SB
ES5	06: 6mm 12: 12mm	0050: 50mm to 0500: 500mm	B	0: Without motor 1: With motor	N: None B C	No symbol: Red cover GR: Change the cover color to gray SB: With slider base □ ₁ □ ₂ : Sensor

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

Basic Specifications

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

Static Permissible Moment ^{*1}

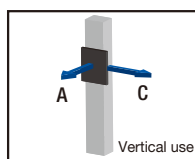
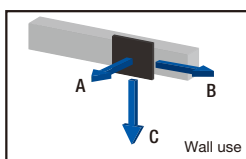
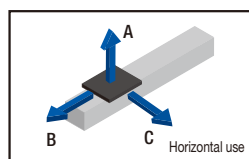


	[N·m]
MA	10.5
MB	22
MC	22.1

^{*1} Static maximum permissible moment when unit is stationary. Moment standards: MA and MC: top of table; MB: center of table.

^{*2} When the appropriate motor is used.

Reference Permissible Overhang Length ^{*1} ^{*2}



Horizontal mount					[mm]	Wall mount					[mm]	Vertical mount					[mm]
Ball screw lead [mm]	Load mass [kg]	A	B	C		Ball screw lead [mm]	Load mass [kg]	A	B	C		Ball screw lead [mm]	Load mass [kg]	A	C		
6	5	400	90	200		6	5	160	70	400		6	2.5	160	160		
	10	270	40	90			10	50	20	220			5	70	70		
12	3	400	160	280		12	3	260	130	400		12	1	400	400		
	6	320	70	130			6	100	50	250			2	200	200		

^{*1} Distance from the center of the top face of the table to the load center of gravity under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal or vertical, 150mm stroke.

^{*2} Value when THK control device is used. Actual load mass should be determined based on the specifications of the motor used. See "Reference Materials for Selecting ES" in P.1-041.

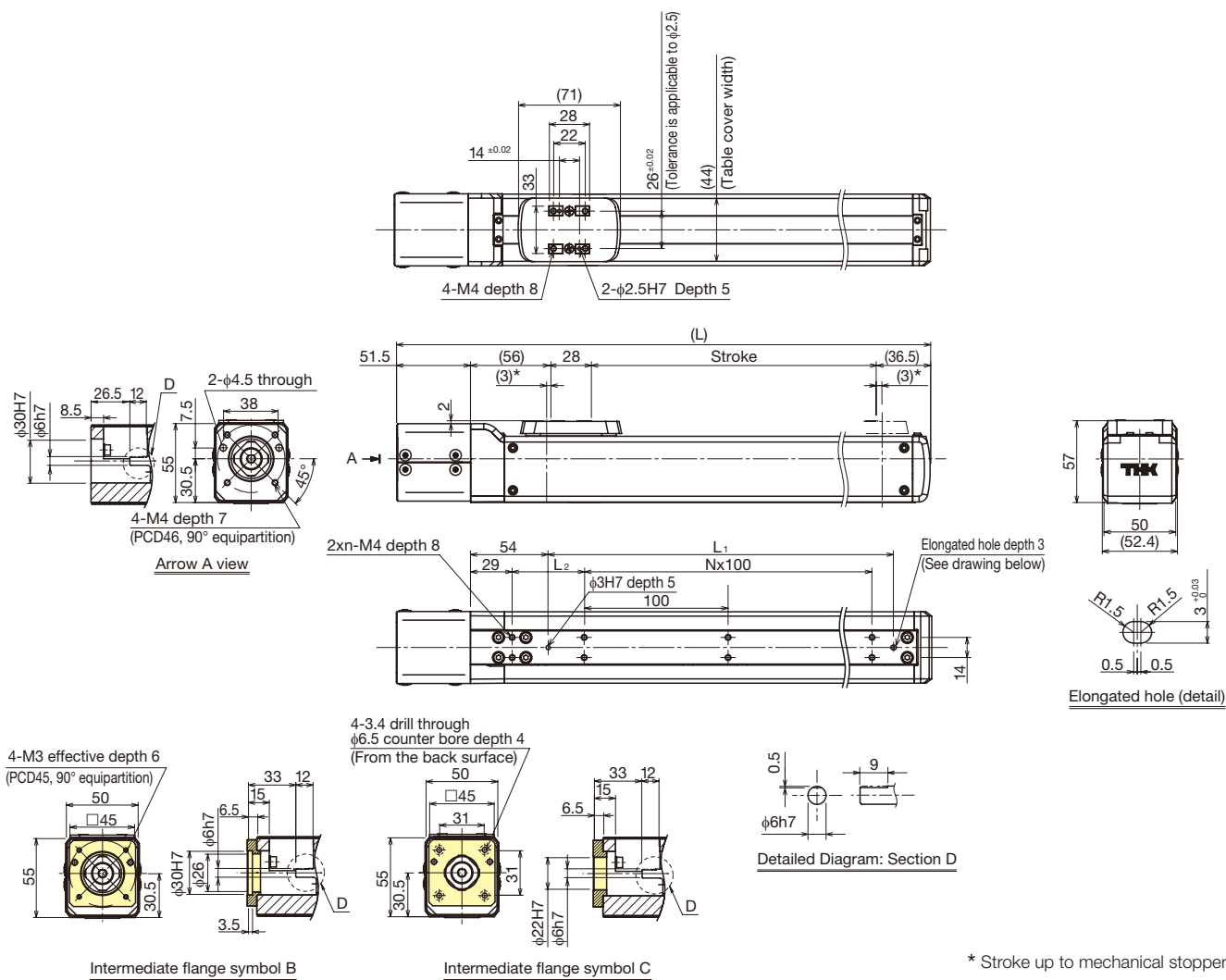
Dimensions

ES/EC

KRF/KSF

US/USW

PCT/PC

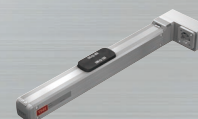


Stroke [mm] (Stroke between mechanical stoppers)		50 (56)	100 (106)	150 (156)	200 (206)	250 (256)	300 (306)	350 (356)	400 (406)	450 (456)	500 (506)
Maximum speed ^{*1 *2} [mm/s]	Ball screw lead: 6mm	300									
	Ball screw lead: 12mm	600									
Dimensions [mm]	L	222	272	322	372	422	472	522	572	622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

^{*1} Load capacity and maximum speed vary depending on the motor used.

^{*2} Dependent on the permissible rotational speed of the ball screw.

ES5R Slider type Motor wrap



Model Configuration

Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Option
ES5R	06	0150	B	0	A	MR-GR
ES5R	06: 6mm 12: 12mm	0050: 50mm to 0500: 500mm	B	0: Without motor 1: With motor	A	MR: Motor right wrap ML: Motor left wrap GR: Change the cover color to gray SB: With slider base □ ₁ □ ₂ : Sensor

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

Basic Specifications

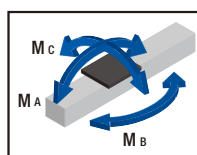
LM Guide (SRS12W)	Basic dynamic load rating C [N]		5480	
	Basic static load rating C ₀ [N]		5300	
	Radial clearance [μm]		-3 to +3	
Ball screw portion	Screw shaft diameter [mm]		φ8	
	Ball screw lead [mm]		6	12
	Basic dynamic load rating C _a [N]		1770	920
	Basic static load rating C _{0a} [N]		3040	1600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

*1 Pulley and timing belt not included.

*2 Static maximum permissible moment when unit is stationary. Moment standards: MA and MC: top of table; MB: center of table.

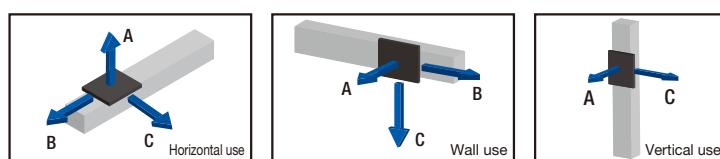
*3 When the appropriate motor is used.

Static Permissible Moment *2



	[N·m]
MA	10.5
MB	22
MC	22.1

Reference Permissible Overhang Length *1 *2



Horizontal mount					[mm]					Wall mount					[mm]					Vertical mount					[mm]				
Ball screw lead [mm]	Load mass [kg]	A	B	C	Ball screw lead [mm]	Load mass [kg]	A	B	C	Ball screw lead [mm]	Load mass [kg]	A	B	C	Ball screw lead [mm]	Load mass [kg]	A	C											
6	4	400	110	260	6	4	220	90	400	6	1	400		400	12	0.5	400	400											
	8	340	50	120		8	80	30	320		2	210	210																
12	3	400	160	280	12	3	260	130	400	12	1	400		400	12	0.5	400	400											
	6	320	70	130		6	100	50	250		1	400	400																

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

*2 Value when THK control device is used. Actual load mass should be determined based on the specifications of the motor used. See "Reference Materials for Selecting ES" in P.1-041.

ES5R

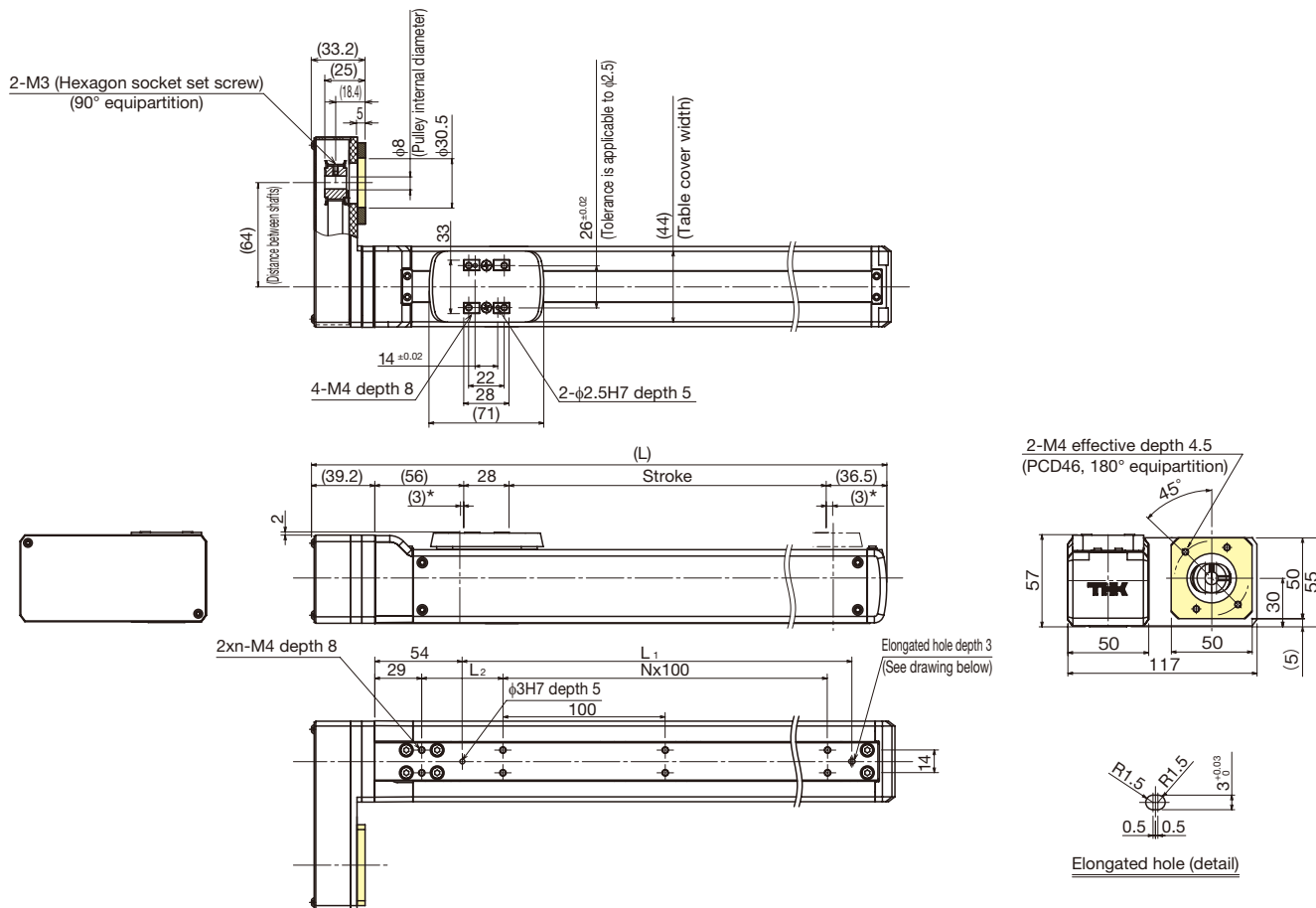
Dimensions

ES/EC

KRF/KSF

US/USW

PCT/PC



* Stroke up to mechanical stopper.

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

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

Economy series

ES6

Slider type Directly coupled without motor



Model Configuration

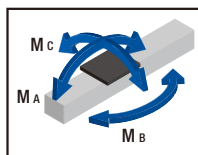
Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Option
ES6	06	0150	B	0	B	GR-SB
ES6	06: 6mm 12: 12mm	0050: 50mm to 0600: 600mm	B	0: Without motor 1: With motor	N: None B C	No symbol: Red cover GR: Change the cover color to gray SB: With slider base □ ₁ □ ₂ : Sensor

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

Basic Specifications

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

Static Permissible Moment ^{*1}

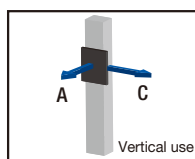
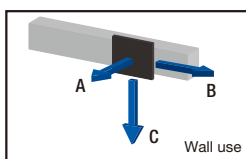
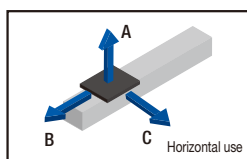


	[N·m]
MA	10.5
MB	22
MC	22.1

^{*1} Static maximum permissible moment when unit is stationary. Moment standards: MA and MC: top of table; MB: center of table.

^{*2} When the appropriate motor is used.

Reference Permissible Overhang Length ^{*1} ^{*2}



Horizontal mount					Wall mount					Vertical mount			
[mm]					[mm]					[mm]			
Ball screw lead [mm]	Load mass [kg]	A	B	C	Ball screw lead [mm]	Load mass [kg]	A	B	C	Ball screw lead [mm]	Load mass [kg]	A	C
6	5	500	90	200	6	5	160	70	500	6	2.5	160	160
	10	260	40	90		10	40	20	210		5	60	60
12	3	500	160	280	12	3	250	130	500	12	1	420	420
	6	320	70	130		6	90	50	240		2	190	190

^{*1} Distance from the center of the top face of the table to the load center of gravity under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal or vertical, 150mm stroke.

^{*2} Value when THK control device is used. Actual load mass should be determined based on the specifications of the motor used. See "Reference Materials for Selecting ES" in P.1-041.

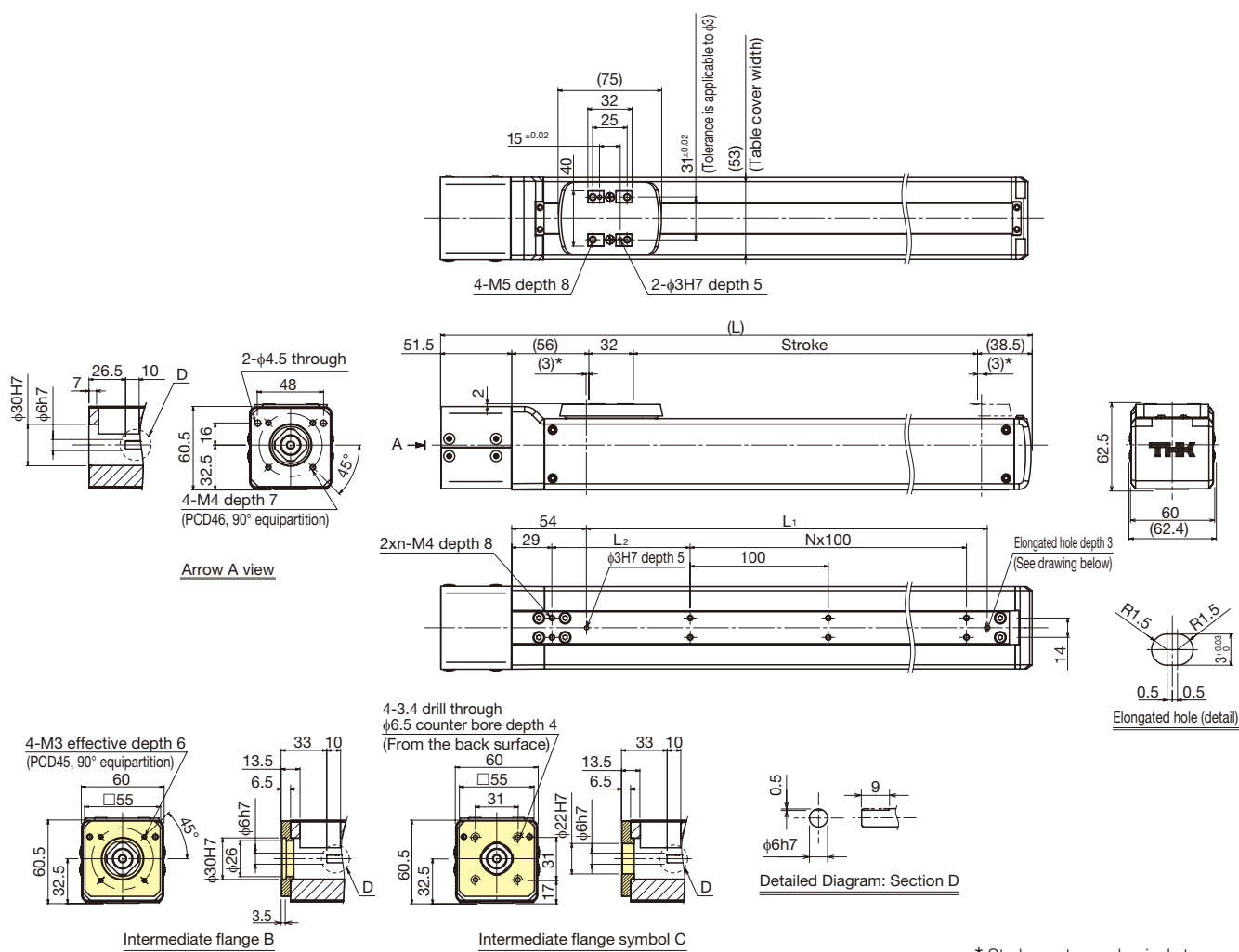
Dimensions

ES/EC

KRF/KSF

US/USW

PCT/PC



* Stroke up to mechanical stopper.

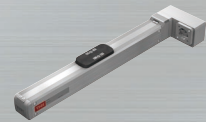
Stroke [mm] (Stroke between mechanical stoppers)		50 (56)	100 (106)	150 (156)	200 (206)	250 (256)	300 (306)	350 (356)	400 (406)	450 (456)	500 (506)	550 (556)	600 (606)
Maximum speed [mm/s]	Ball screw lead: 6mm	300										270	230
	Ball screw lead: 12mm	600										540	460
Dimensions [mm]	L	228	278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

*1 Load capacity and maximum speed vary depending on the motor used.

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

Economy series

ES6R Slider type Motor wrap



Model Configuration

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

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

Basic Specifications

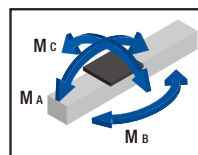
LM Guide (SRS12W)	Basic dynamic load rating C [N]		5480	
	Basic static load rating C ₀ [N]		5300	
Ball screw portion	Radial clearance [μm]		-3 to +3	
	Screw shaft diameter [mm]		φ8	
	Ball screw lead [mm]		6	12
	Basic dynamic load rating C _a [N]		1770	920
	Basic static load rating C _{0a} [N]		3040	1600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

*¹ Pulley and timing belt not included.

*² Static maximum permissible moment when unit is stationary. Moment standards: M_A and M_C: top of table; M_B: center of table.

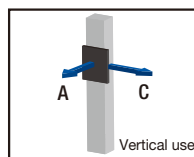
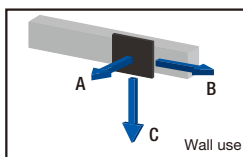
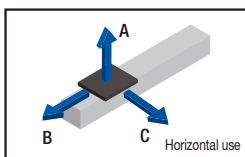
*³ When the appropriate motor is used.

Static Permissible Moment *²



	[N·m]
M _A	10.5
M _B	22
M _C	22.1

Reference Permissible Overhang Length *¹ *²



Horizontal mount					[mm]	Wall mount					[mm]	Vertical mount				[mm]
Ball screw lead [mm]	Load mass [kg]	A	B	C		Ball screw lead [mm]	Load mass [kg]	A	B	C		Ball screw lead [mm]	Load mass [kg]	A	C	
6	4	500	110	260		6	4	210	90	500		6	1	450	450	
	8	340	50	120			8	70	30	300			2	210	210	
12	3	500	160	280		12	3	250	130	500		12	0.5	500	500	
	6	320	70	130			6	90	50	240			1	420	420	

*¹ Distance from the center of the top face of the table to the load center of gravity under the following conditions: 5,000km running life, single-direction load, 0.3G horizontal or vertical, 150mm stroke.

*² Value when THK control device is used. Actual load mass should be determined based on the specifications of the motor used. See "Reference Materials for Selecting ES" in P.1-041.

ES6R

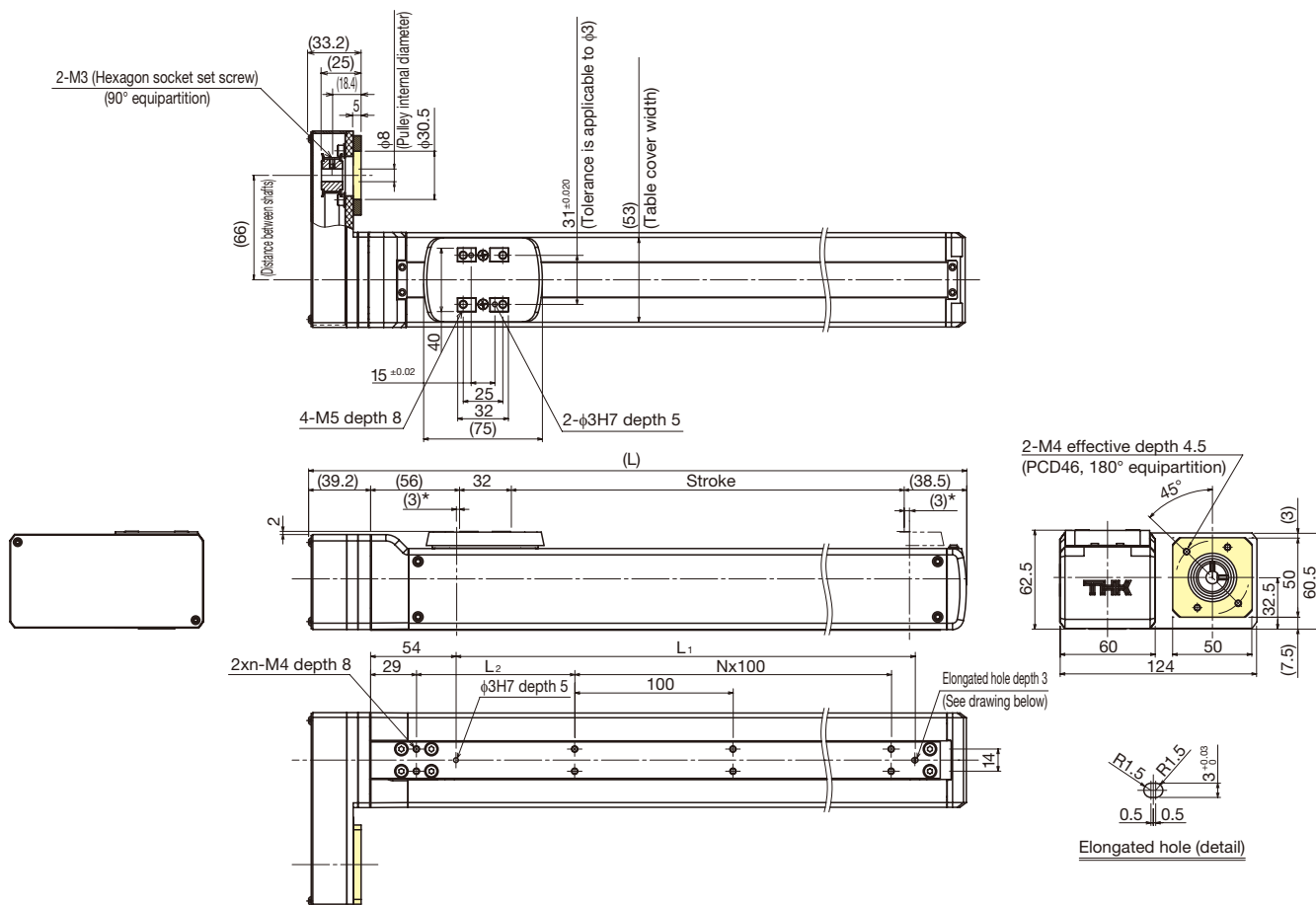
Dimensions

ES/EC

KRF/KSF

US/USW

PCT/PC



* Stroke up to mechanical stopper.

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

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

Economy series

EC3

Cylinder type Directly coupled without motor



Model Configuration

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

Basic Specifications

Ball screw portion	Screw shaft diameter [mm]		φ6
	Ball screw lead [mm]		6
	Basic dynamic load rating Ca [N]		780
	Basic static load rating Coa [N]		1250
	Root diameter [mm]		φ5.1
	Ball center-to-center diameter [mm]		φ6.3
Bearing portion (fixed side)	Axial direction	Basic dynamic load rating Ca [N]	6550
		Static permissible load P _{0a} [N]	2310
Permissible rotational speed [min ⁻¹]			3000
Starting torque [N·mm]			14
Positioning repeatability [mm] *			±0.020
Lost motion [mm] *			0.1
Permissible input torque [N·m]			0.16

Note: With EC, only an axial load is permissible; do not apply any other type of load to the rod using an LM Guide.

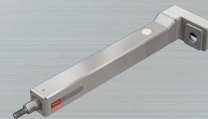
Take into account the sliding resistance of LM Guide when making selection.

* When appropriate motor is used.

Economy series

EC3R

Cylinder type Motor wrap



Model Configuration

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

Basic Specifications

Ball screw portion	Screw shaft diameter [mm]		φ6
	Ball screw lead [mm]		6
	Basic dynamic load rating Ca [N]		780
	Basic static load rating Coa [N]		1250
	Root diameter [mm]		φ5.1
	Ball center-to-center diameter [mm]		φ6.3
Bearing portion (fixed side)	Axial direction	Basic dynamic load rating Ca [N]	6550
		Static permissible load Pca [N]	2310
Permissible rotational speed [min ⁻¹]			3000
Starting torque *1 [N·mm]			14
Positioning repeatability [mm] *2			±0.020
Lost motion [mm] *2			0.1
Permissible input torque [N·m]			0.16

Note: With EC, only an axial load is permissible; do not apply any other type of load to the rod using an LM Guide.

Take into account the sliding resistance of LM Guide when making selection.

*1 Pulley and timing belt not included.

*2 When appropriate motor is used.

EC3R

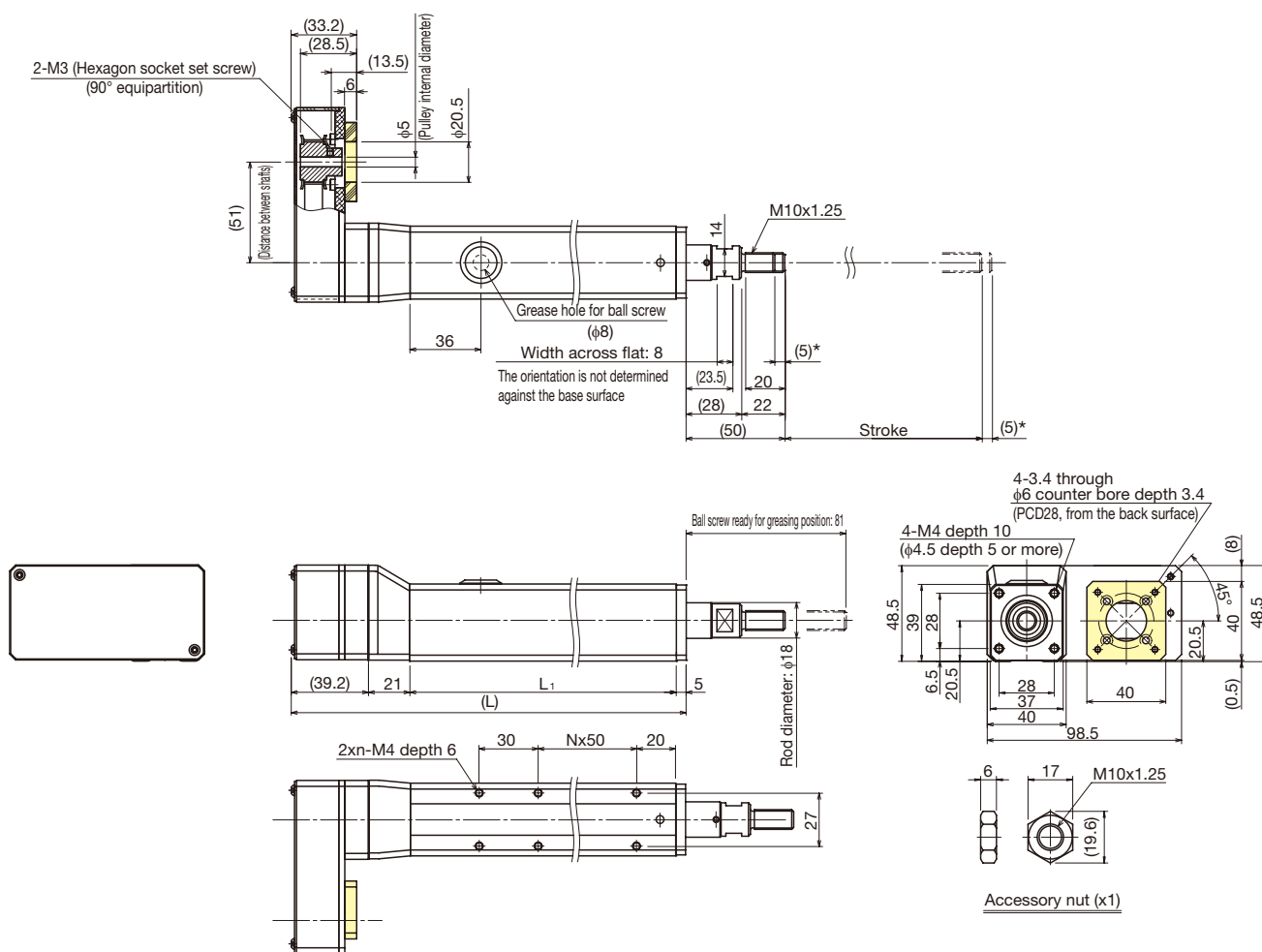
Dimensions

ES/EC

KRF/KSF

US/USW

PCT/PC



* Stroke up to mechanical stopper.

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

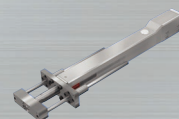
*¹ Load capacity and maximum speed vary depending on the motor used.

*² Dependent on the permissible rotational speed of the ball screw.

Economy series

EC3H

Cylinder type Directly coupled without motor/with linear bush



ES/EC

KRF/KSF

US/USW

PCT/PC

Model Configuration

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

Basic Specifications

Ball screw portion	Screw shaft diameter [mm]		φ6
	Ball screw lead [mm]		6
	Basic dynamic load rating Ca [N]		780
	Basic static load rating Co [N]		1250
	Root diameter [mm]		φ5.1
Ball center-to-center diameter [mm]			φ6.3
Bearing portion (fixed side)	Axial direction	Basic dynamic load rating Ca [N]	6550
		Static permissible load P _{0a} [N]	2310
Linear bush unit (LMK8LUU)	Basic dynamic load rating C [N]		265
	Basic static load rating Co [N]		402
Permissible rotational speed [min ⁻¹]			3000
Starting torque [N·mm]			18
Positioning repeatability [mm] *			±0.020
Lost motion [mm] *			0.1
Permissible input torque [N·m]			0.16

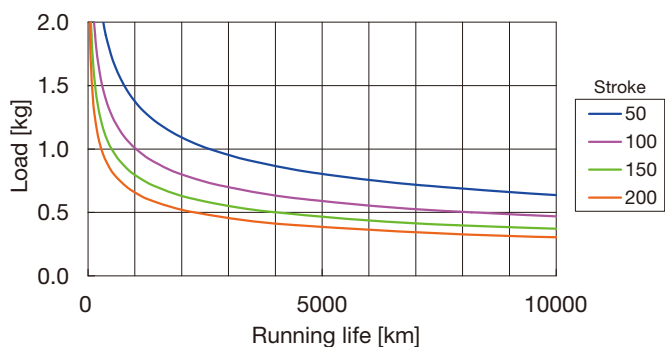
Note: With EC, only an axial load is permissible; do not apply any other type of load to the rod using an LM Guide.

Take into account the sliding resistance of LM Guide when making selection.

* When appropriate motor is used.

Reference Load and Running Life

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



EC3H

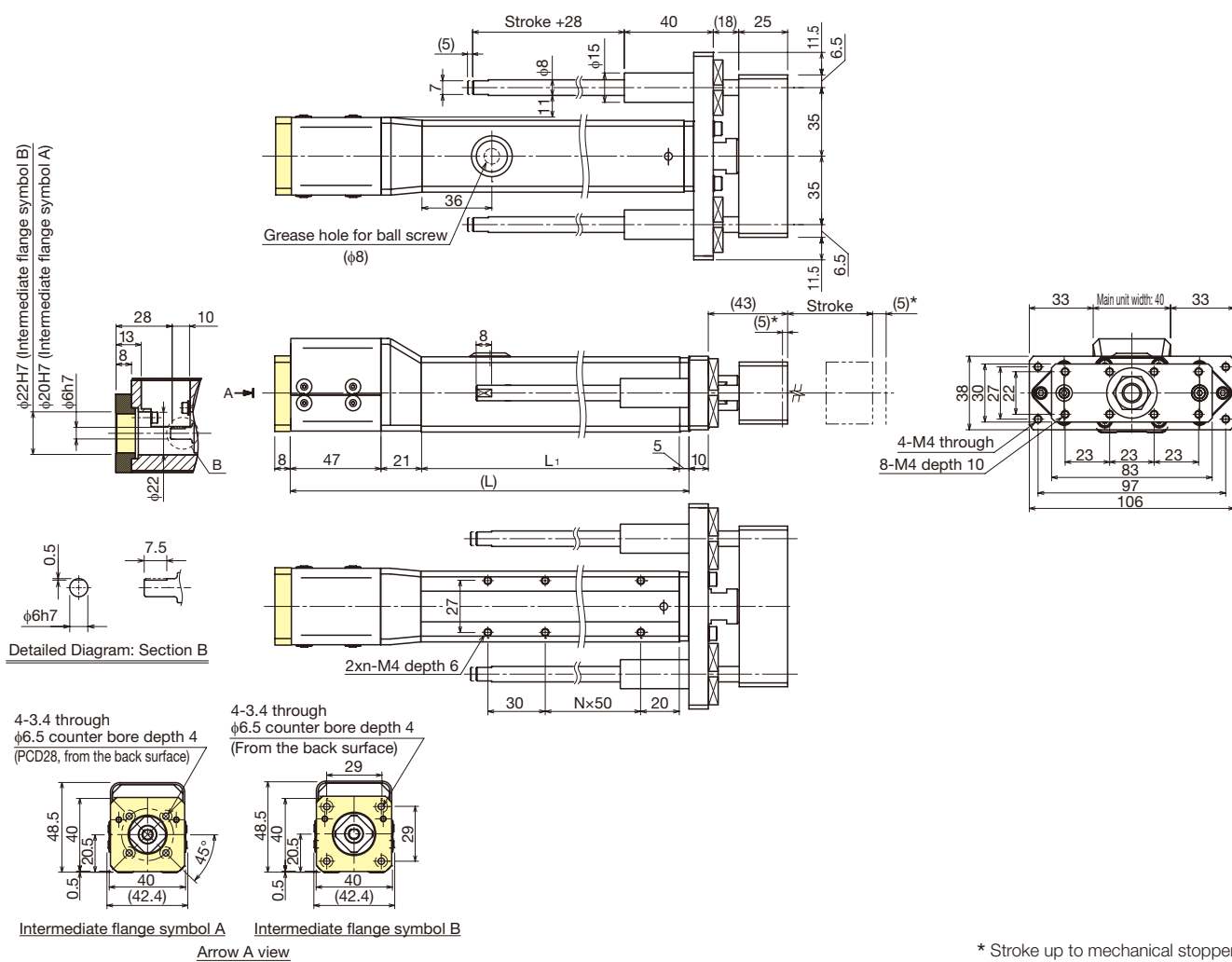
Dimensions

ES/EC

KRF/KSF

US/USW

PCT/PC



* Stroke up to mechanical stopper.

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

*1 Load capacity and maximum speed vary depending on the motor used.

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

Economy series

EC4

Cylinder type Directly coupled without motor



Model Configuration

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

Basic Specifications

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

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

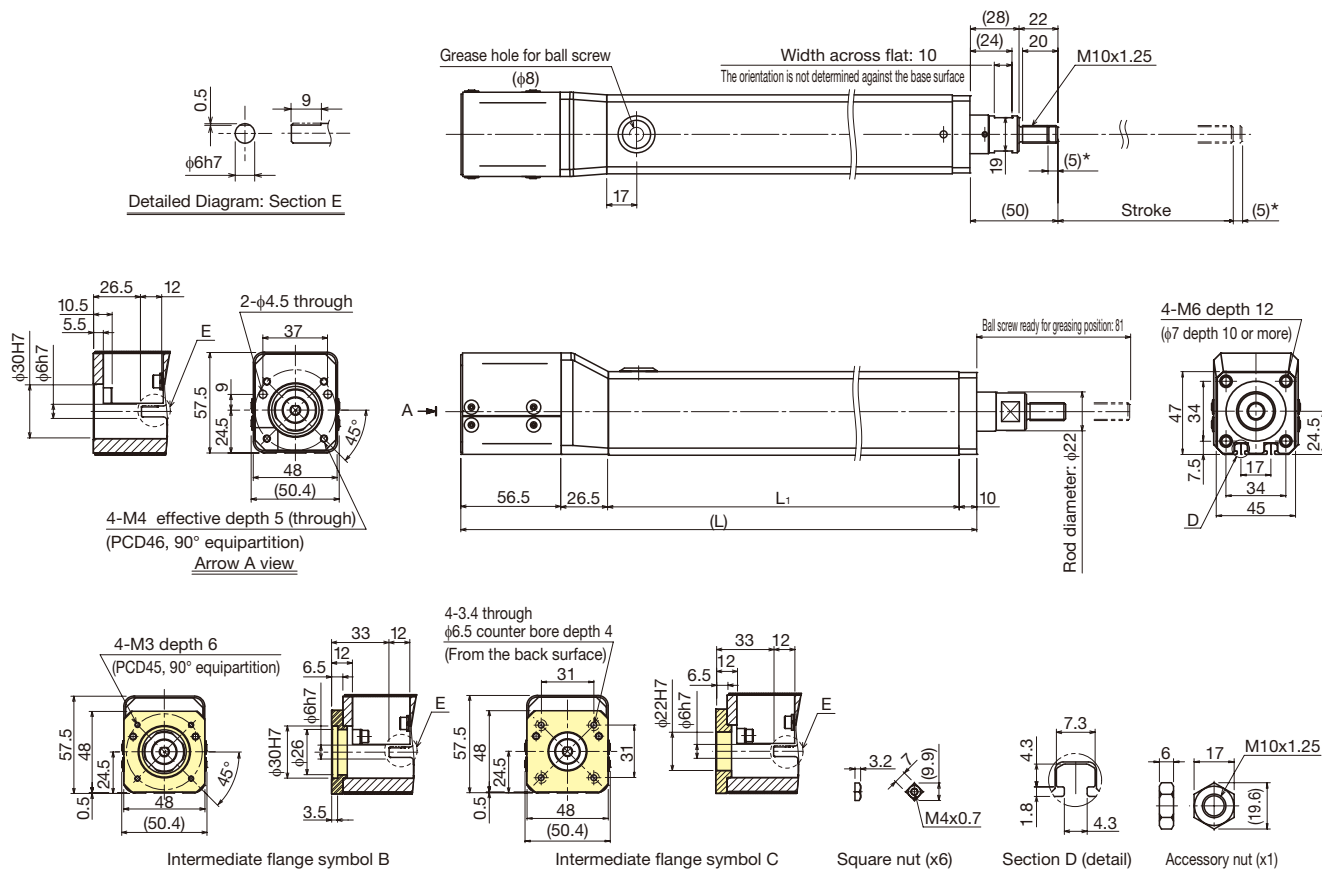
Dimensions

ES/EC

KRF/KSF

US/USW

PCT/PC



* Stroke up to mechanical stopper.

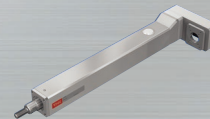
Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)	250 (260)	300 (310)
Maximum speed ^{*1} ^{*2} [mm/s]	Ball screw lead: 6mm	300				230	170
	Ball screw lead: 12mm	600				460	340
Dimensions [mm]	L	240	290	340	390	440	490
	L ₁ ^{*3}	147	197	247	297	347	397
Weight [kg]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

*¹ Load capacity and maximum speed vary depending on the motor used.*² Dependent on the permissible rotational speed of the ball screw.*³ T slot milling in the range of L₁.

Economy series

EC4R

Cylinder type Motor wrap



ES/EC

KRF/KSF

US/USW

PCT/PC

Model Configuration

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

Basic Specifications

Ball screw portion	Screw shaft diameter [mm]		φ8	
	Ball screw lead [mm]		6	12
	Basic dynamic load rating Ca [N]		1770	920
	Basic static load rating Co [N]		3040	1600
	Root diameter [mm]		φ6.8	
		Ball center-to-center diameter [mm]		φ8.4
Bearing portion (fixed side)	Axial direction	Basic dynamic load rating Ca [N]	8000	
		Static permissible load P _{0a} [N]	3240	
		Permissible rotational speed [min ⁻¹]		
Starting torque *1 [N·mm]			22	42
Positioning repeatability [mm] *2			±0.020	
Lost motion [mm] *2			0.1	
Permissible input torque [N·m]			0.35	

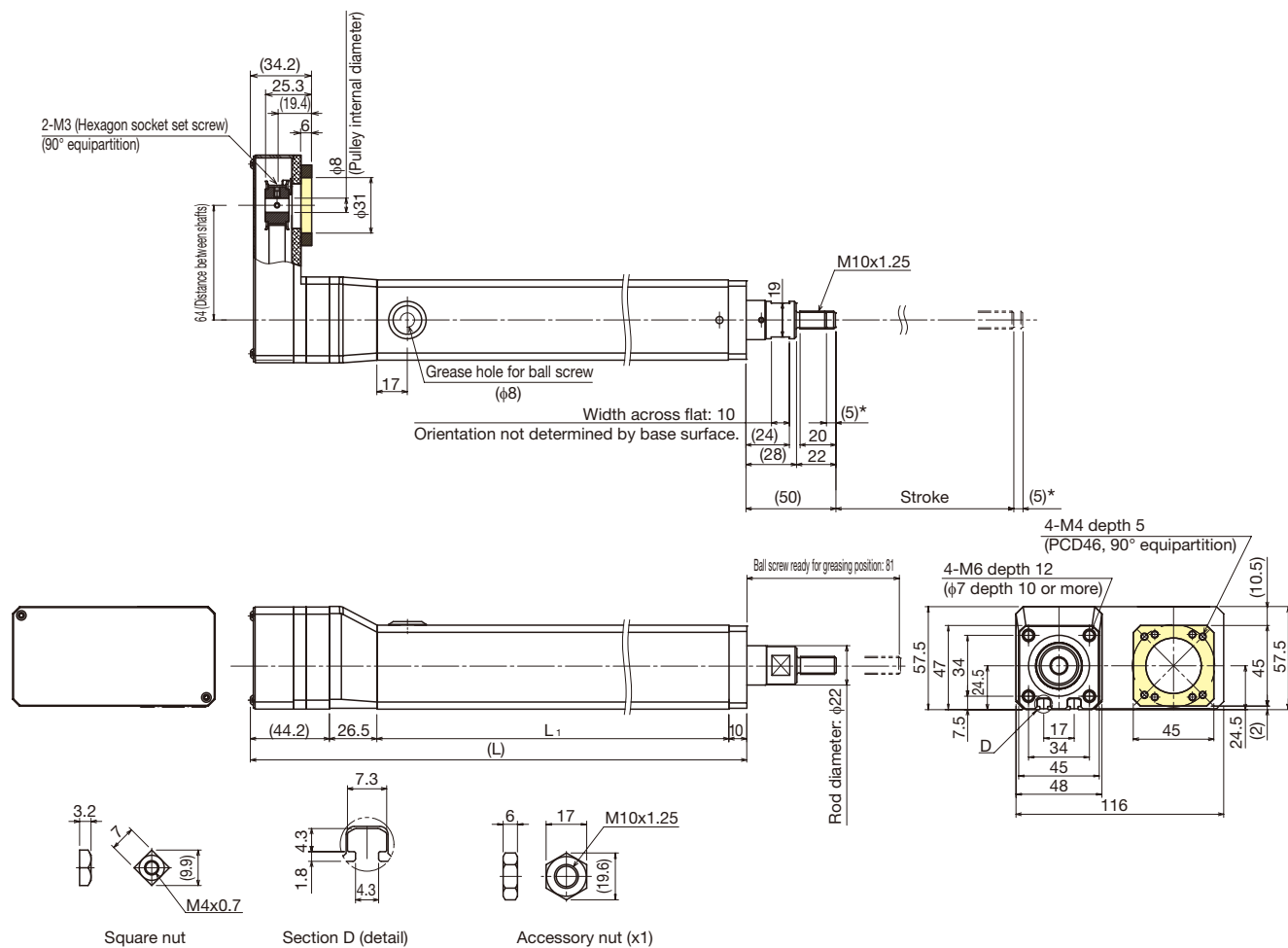
Note: With EC, only an axial load is permissible; do not apply any other type of load to the rod using an LM Guide.
Take into account the sliding resistance of LM Guide when making selection.

*1 Pulley and timing belt not included.

*2 When appropriate motor is used.

EC4R

Dimensions



* 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} ^{*2} [mm/s]	Ball screw lead: 6mm	300				230	170
	Ball screw lead: 12mm	600				460	340
Dimensions [mm]	L	227.7	277.7	327.7	377.7	427.7	477.7
	L ₁ ^{*3}	147	197	247	297	347	397
Weight [kg]		1.6	1.9	2.3	2.6	2.9	3.2

*¹ Load capacity and maximum speed vary depending on the motor used.*² Dependent on the permissible rotational speed of the ball screw.*³ T slot milling in the range of L₁.

ES/EC

KRF/KSF

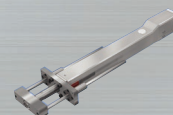
US/USW

PCT/PC

Economy series

EC4H

Cylinder type Directly coupled without motor/with linear bush



ES/EC

KRF/KSF

US/USW

PCT/PC

Model Configuration

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

Basic Specifications

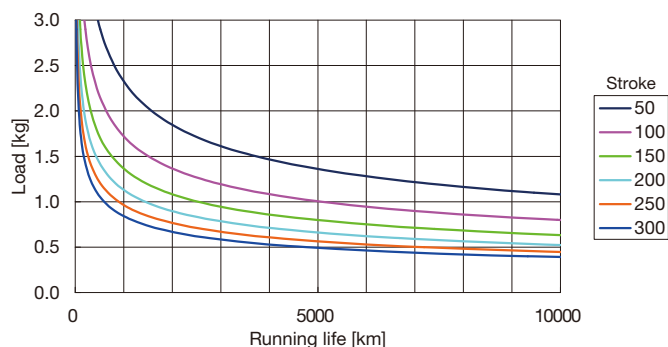
Ball screw portion	Screw shaft diameter [mm]		φ8	
	Ball screw lead [mm]		6	12
	Basic dynamic load rating Ca [N]		1770	920
	Basic static load rating Coa [N]		3040	1600
	Root diameter [mm]		φ6.8	
		Ball center-to-center diameter [mm]		φ8.4
Bearing portion (fixed side)	Axial direction	Basic dynamic load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

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

* When appropriate motor is used.

Reference Load and Running Life

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



EC4H

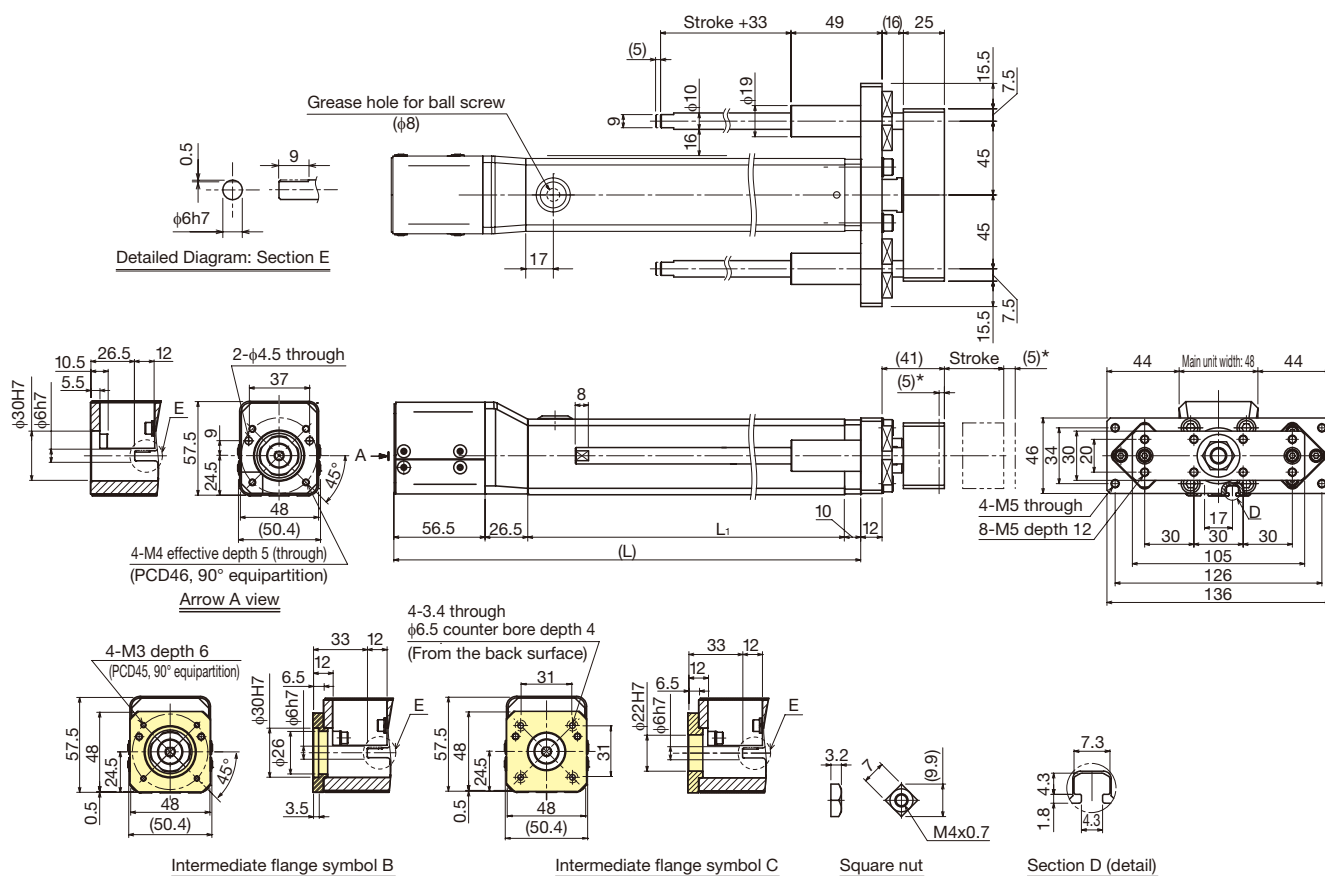
Dimensions

ES/EC

KRF/KSF

US/USW

PCT/PC



* 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} ^{*2} [mm/s]	Ball screw lead: 6mm	300				230	170
	Ball screw lead: 12mm	600				460	340
Dimensions [mm]	L	240	290	340	390	440	490
	L ₁ ^{*3}	147	197	247	297	347	397
Weight ^{*3} [kg]		2.2	2.5	2.9	3.3	3.6	4.0

*¹ Load capacity and maximum speed vary depending on the motor used.*² Dependent on the permissible rotational speed of the ball screw.*³ T slot milling in the range of L₁.

ES/EC Intermediate Flange

Intermediate flanges are available to mount various kinds of motors. Specify an intermediate flange that matches the motor used.

Motor type				Motor rated output	Flange angle	ES3		ES4		ES5		ES6		EC3		EC4		
						Direct coupling	Motor Wrap	Direct coupling	Motor Wrap	Direct coupling	Motor Wrap	Direct coupling	Motor Wrap	Direct coupling	Motor Wrap	Direct coupling	Motor Wrap	
AC servo motor	Yaskawa Electric Corporation	Σ-V	SGMMV-A2	20W	□25	A	A	A	A	-	-	-	-	A	A	-	-	
			SGMMV-A3	30W		A	A	A	A	-	-	-	-	A	A	-	-	
			SGMJV-A5	50W	□40	-	-	-	-	N	A	N	A	-	-	N	A	
			SGMAV-A5	-		-	-	-	N	A	N	A	-	-	N	A		
		Σ-7	SGM7J-A5	50W	□40	-	-	-	-	N	A	N	A	-	-	N	A	
			SGM7A-A5			-	-	-	-	N	A	N	A	-	-	N	A	
	Mitsubishi Electric Corporation	J3	HF-MP053	50W	□40	-	-	-	-	N	A	N	A	-	-	N	A	
			HF-KP053			-	-	-	-	N	A	N	A	-	-	N	A	
		J4	HG-AK0236	20W	□25	A	A	A	-	-	-	-	-	A	-	-	-	
			HG-AK0336	30W		A	-	A	A	-	-	-	-	A	A	-	-	
			HG-MR053	50W	□40	-	-	-	-	N	A	N	A	-	-	N	A	
			HG-KR053			-	-	-	-	N	A	N	A	-	-	N	A	
	Tamagawa Seiki Co., Ltd.	JN	HF-KN053	50W	□40	-	-	-	-	N	A	N	A	-	-	N	A	
		TBL-III	TS4602	50W		-	-	-	-	N	A	N	A	-	-	N	A	
		TBL-IV	TSM3101	30W		□40	-	-	-	-	N	A	N	A	-	-	N	A
			TSM3102	50W			-	-	-	-	N	A	N	A	-	-	N	A
	Panasonic Corporation	A5	MSMD5A	50W	□38	-	-	-	-	B	-	B	-	-	-	B	-	
			MSME5A			-	-	-	-	B	-	B	-	-	-	B	-	
		A6	MSMF5A	50W	□40	-	-	-	-	B	-	B	-	-	-	B	-	
			MHMF5A			-	-	-	-	N	A	N	A	-	-	N	A	
	Keyence Corporation	SV	SV-M005	50W	□40	-	-	-	-	N	A	N	A	-	-	N	A	
		SV2	SV2-M005	50W		-	-	-	-	N	A	N	A	-	-	N	A	
	Sanyo Denki Co., Ltd.	SANMOTION R	R2□A04003	30W	□40	-	-	-	-	N	-	N	-	-	-	N	-	
	R2□A04005		50W	-		-	-	-	N	-	N	-	-	-	N	-		
	OMRON Corporation	OMNUC G5	R88M-K05030	50W	□40	-	-	-	-	N	-	N	-	-	-	N	-	
Stepper motor	Oriental Motor Co. Ltd.	α step	AZ2*, AR2*	□28	□28	B	-	-	-	-	-	-	-	-	-	-	-	
			AZ4*, AR4*	□42		-	-	-	-	C	-	C	-	-	-	C	-	
		5-phase	CRK	CRK52*	□28	B	-	-	-	-	-	-	-	-	-	-	-	
			CRK54*	-		-	-	-	C	-	C	-	-	-	C	-		
			RK II	RKS54*	□42	-	-	-	-	C	-	C	-	-	-	C	-	
			PKA	PKA544		-	-	-	-	C	-	C	-	-	-	C	-	
		2-phase	CVK	CVK52*	□28	B	-	-	-	-	-	-	-	-	-	-	-	-
			CVK54*	□42	-	-	-	-	C	-	C	-	-	-	-	C	-	
			CMK	CMK22*	□28	B	-	-	-	-	-	-	-	-	-	-	-	-
			CMK24*	□42	-	-	-	-	C	-	C	-	-	-	-	C	-	
			CVK22*	□28	B	-	-	-	-	-	-	-	-	-	-	-	-	
			CVK23*	□35	-	-	B	-	C	-	C	-	B	-	C	-		
		CVK24*	□42	-	-	-	-	C	-	C	-	-	-	-	C	-		
		Sanyo Denki Co., Ltd.	PB	PBDM28*	□28	□42	B	-	-	-	-	-	-	-	-	-	-	-
				PBDM423, PBA**423	□42		-	-	-	-	C	-	C	-	-	-	C	-
			5-phase	FAF/FDF52*	□28	□42	B	-	-	-	-	-	-	-	-	-	-	-
	FAF54*/FDF54*/FA511M42/FB511M42			□42	-		-	-	-	C	-	C	-	-	-	C	-	
	2-phase		D*14S28*	□28	□42	B	-	-	-	-	-	-	-	-	-	-	-	
			DB14H52*	-		-	-	-	C	-	C	-	-	-	C	-		
			DU15H52*	-		-	-	-	C	-	C	-	-	-	-	C	-	
			QS-M28	□28		□42	B	-	-	-	-	-	-	-	-	-	-	-
	QS-M42	□42	-	-	-		-	C	-	C	-	-	-	C	-			

Notes:

- Motor model number in the table shows the main part of the model number only. For more details, please refer to catalogs from each motor manufacturers.
- For motor wrap type, a set screw connects pulley and motor output shaft. Select a D-cut motor output shaft.

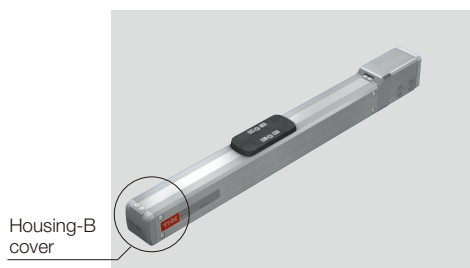
Under "Intermediate flange model," "N" indicates that there is no intermediate flange.

Mitsubishi model HF-KN053 does not support D-cut shafts; consult the manufacturer for further details.

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

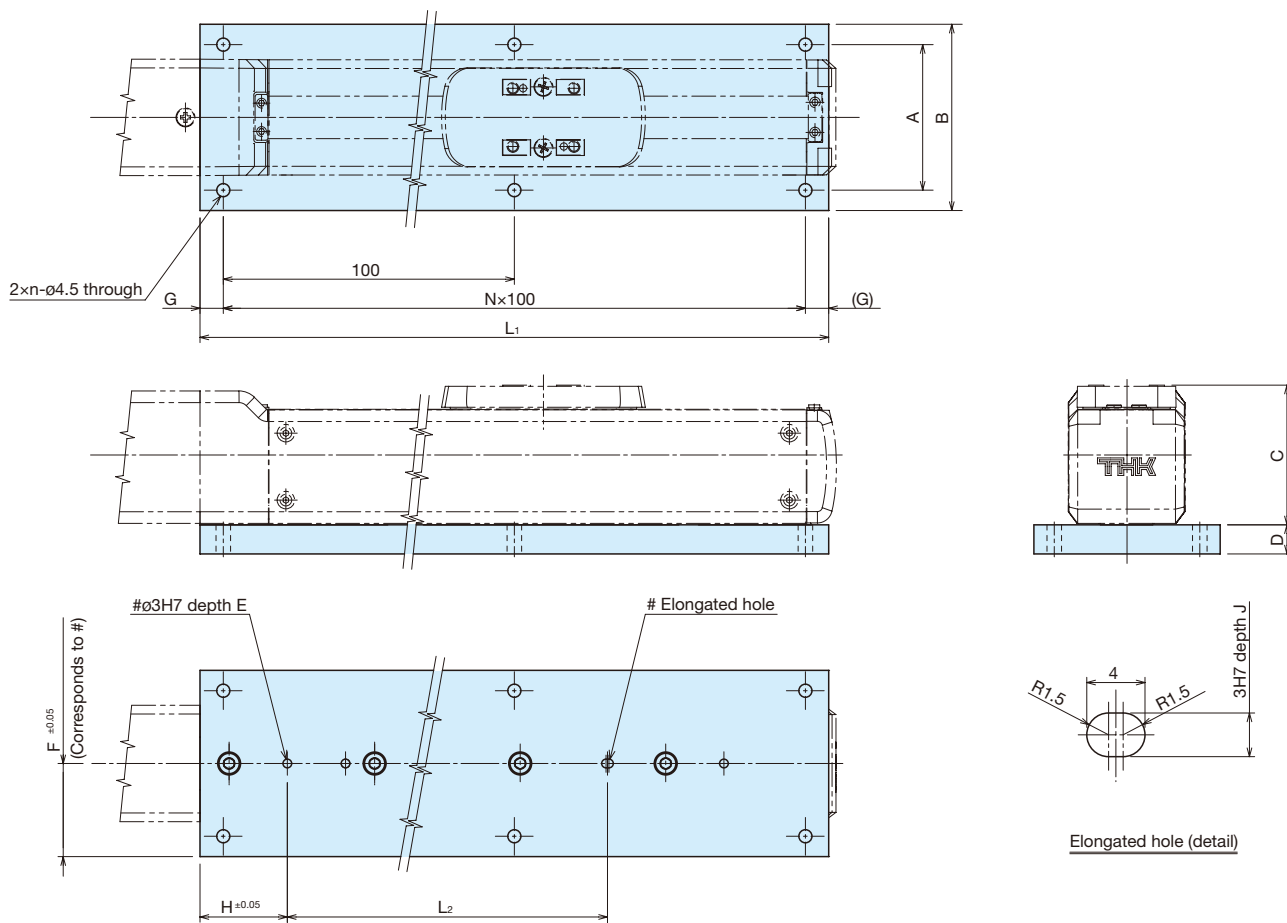
If the GR is not included in the model configuration, cover will be red.

ES Option

SB: Slider base (direct coupled specification)

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

* Included with unit



Unit: mm

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

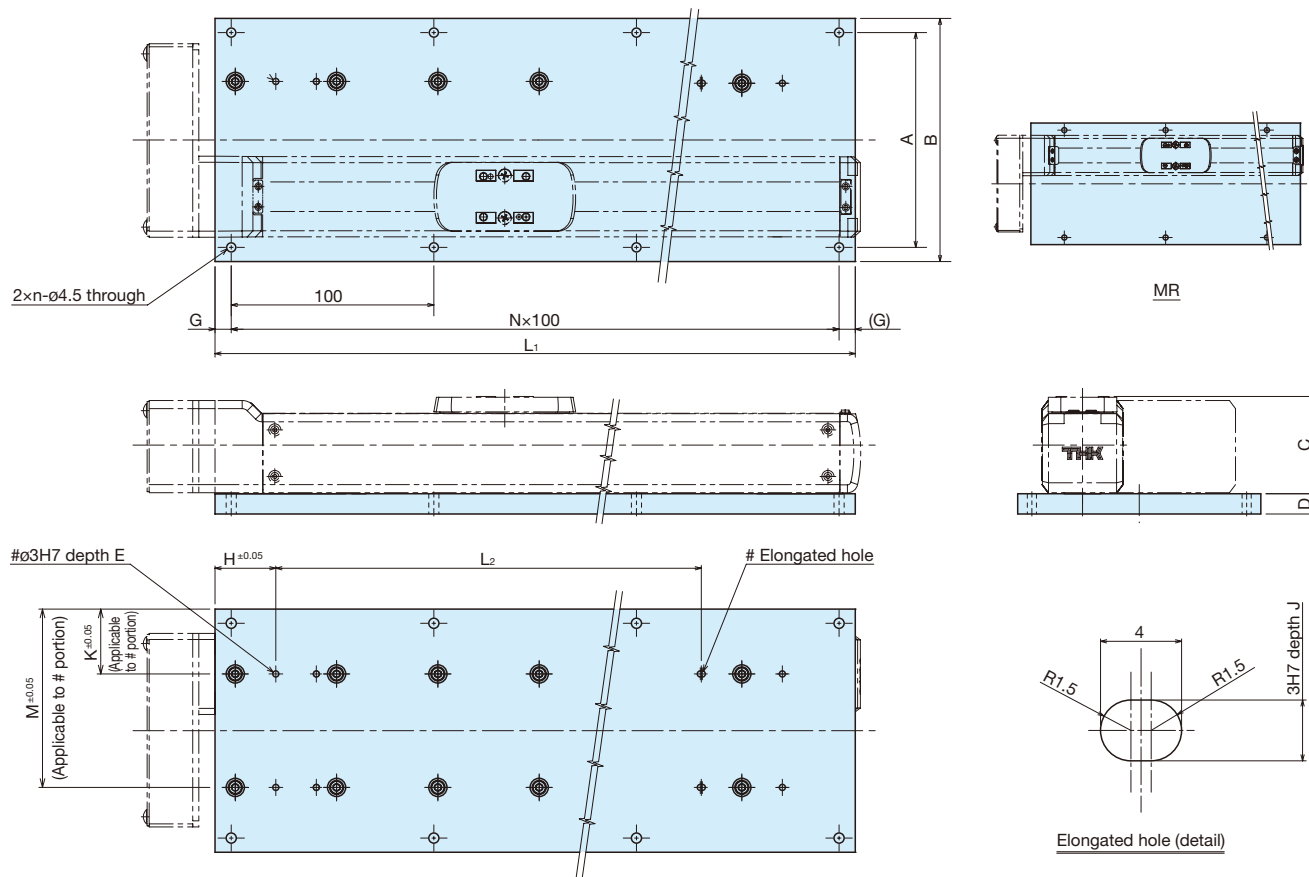
Stroke		50	100	150	200	250	300	350	400	450	500	550	600
ES3	L1[mm]	156	206	256	306	356	406	-	-	-	-	-	-
	L2[mm]	70	120	170	220	270	320	-	-	-	-	-	-
	n	2	2	3	3	4	4	-	-	-	-	-	-
	N	1	1	2	2	3	3	-	-	-	-	-	-
	G[mm]	28	53	28	53	28	53	-	-	-	-	-	-
ES4	L1[mm]	166	216	266	316	366	416	466	516	-	-	-	-
	L2[mm]	60	110	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	H	J	K	M
ES3	92	106	40	8	8	40	8	28	78
ES4	106	120	48	10	10	30	10	32	88
ES5	136	150	57	10	10	45	10	42	108
ES6	136	150	62.5	10	10	45	10	42	108

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; 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 homing method 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.)

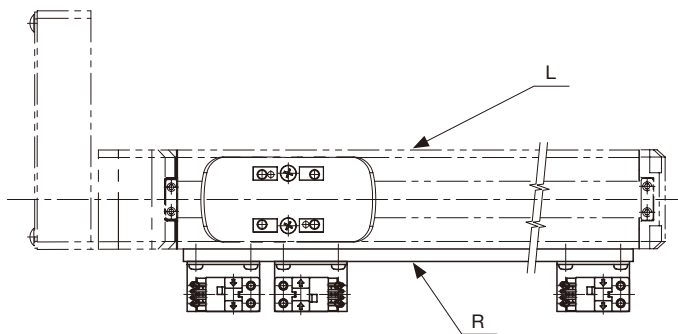
Description	Type	Accessory	Symbol	
			□ ₁	□ ₂
With sensor rail	—	—	L/R	1
Photo Sensor * [x3]	EE-SX674 (OMRON Corporation)	Mounting screw, nuts, sensor rail (x1), mounting plates (x3), connectors (EE-1001, x3)	L/R	6
Sensor N.O. contact [x1] N.C. contact points [x2]	GX-F12A (Panasonic Industrial Devices 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.

ES/EC

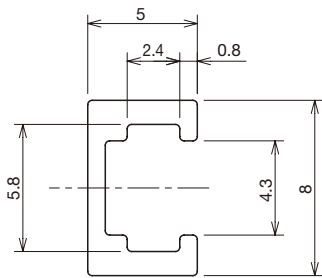
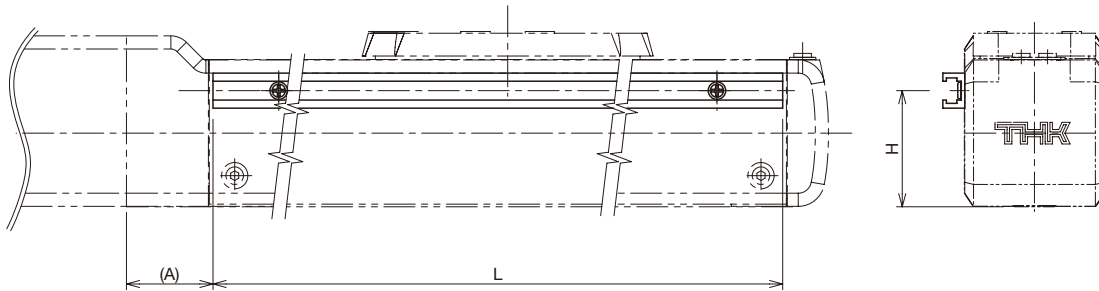
KRF/KSF

US/USW

PCT/PC

□₁□₂: Sensor

Symbol 1: Sensor rail

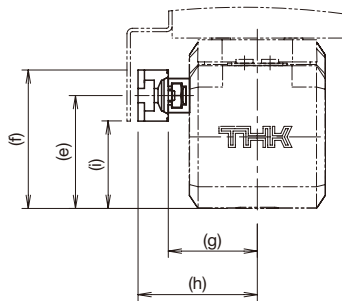


Sensor rail (detail)

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	

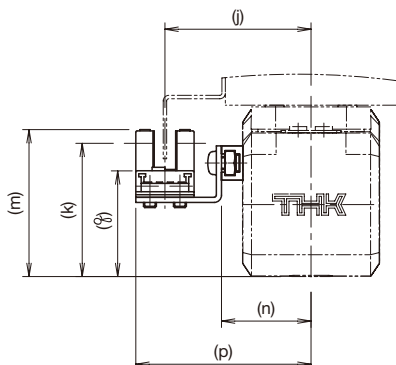
Symbols J, M: Proximity sensor GX-F12* (Panasonic Industrial Devices SUNX Co., Ltd.)



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)



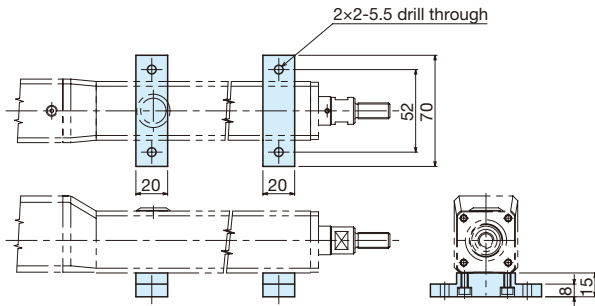
Unit: mm

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

EC Option

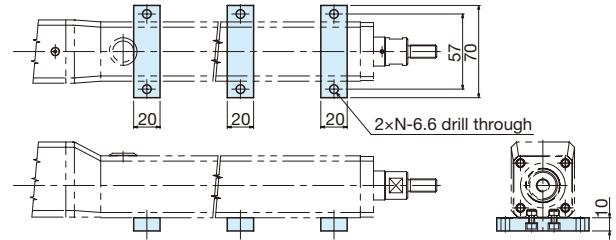
CB: Cylinder Base

EC3



* Included with unit

EC4

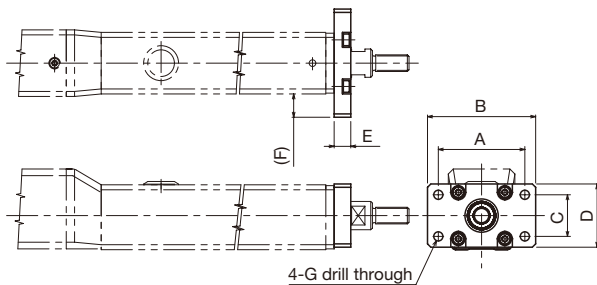


Stroke	50	100	150	200	250	300
N	2	2	2	2	3	3

* Included with unit

FL: Flange

EC3/4, EC3R/4R

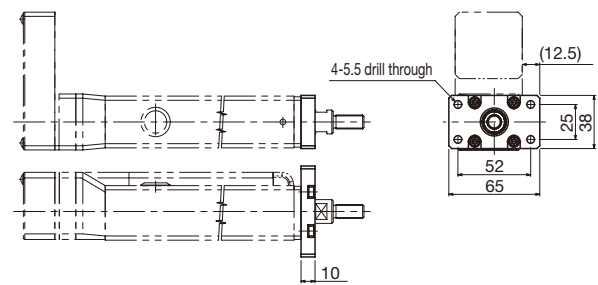


Unit: mm

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

* Included with unit

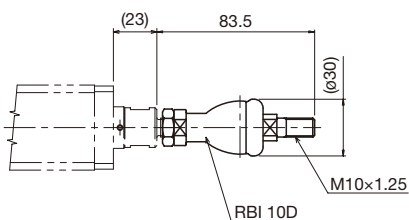
EC3R (When ST=50)



* Included with unit

LB: Link Ball

EC3/4



* Included with unit

ES/EC

KRF/KSF

US/USW

PCT/PC

ES Motor Selection

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

Actuator		Ball Screw				Recommended Coupling			
Model	Stroke ^{*1} [mm]	Lead [mm]	Shaft diameter [mm]	Shaft length [mm]	Outer diameter of shaft end [mm]	Actuator model	Model	Inertial moment [kg · cm ²]	
ES3	50	6	φ6	182	φ6h7	ES3	SFC-005DA2 (Miki Pulley Co., LTD.)	0.0036	
	300			432			XBW-15C2 (Nabeya Bi-tech Kaisha)	0.0022	
ES4	50	6	φ8	191	φ6h7	ES4	SFC-010DA2 (Miki Pulley Co., LTD.)	0.0079	
	400			541			XBW-19C2 (Nabeya Bi-tech Kaisha)	0.0067	
	50	12	φ8	191	φ6h7		ES5	SFC-020DA2 (Miki Pulley Co., LTD.)	0.034
	400			541				XBW-25C2 (Nabeya Bi-tech Kaisha)	0.023
ES5	50	6	φ8	191	φ6h7	ES6	SFC-020DA2 (Miki Pulley Co., LTD.)	0.034	
	500			641			XBW-25C2 (Nabeya Bi-tech Kaisha)	0.023	
	50	12	φ8	191	φ6h7		ES6	SFC-020DA2 (Miki Pulley Co., LTD.)	0.034
	500			641				XBW-25C2 (Nabeya Bi-tech Kaisha)	0.023
ES6	50	6	φ8	198	φ6h7	ES6	SFC-020DA2 (Miki Pulley Co., LTD.)	0.034	
	600			748			XBW-25C2 (Nabeya Bi-tech Kaisha)	0.023	
	50	12	φ8	198	φ6h7		ES6	SFC-020DA2 (Miki Pulley Co., LTD.)	0.034
	600			748				XBW-25C2 (Nabeya Bi-tech Kaisha)	0.023

^{*1} For strokes, see the corresponding specification tables.

^{*1} For strokes, see the corresponding specification tables.

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

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

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

EC Motor Selection

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

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

^{*1} For strokes, see the corresponding specification tables.

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

^{*1} For strokes, see the corresponding specification tables.

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

* Values with a Linear Bushing attached.

Permissible input torque			Timing pulley (The sum of two.)	
Actuator model	Direct motor coupling [N · m]	Motor wrap [N · m]	Actuator model	Inertial moment [kg · cm ²]
EC3	0.16	0.16	EC3	0.0195
EC4	0.35	0.35	EC4	0.0182

ES/EC

KRF/KSF

US/USW

PCT/PC



Precautions on Use

● Application

- This product cannot be applied to any equipment or system that may be used under a life-threatening condition.
- If you are considering using this product for special applications such as mobile vehicles, medical uses, aerospace, or thermonuclear power generation or a power plant, make sure to contact THK for applicability beforehand.

● Handling

- Do not disassemble this product unless absolutely necessary. This will cause dust to enter the product resulting in loss of functionality.
- Take care not to drop or strike this product. This could cause injury or product damage or impair the product's function even if the product looks intact.
- Exceeding the maximum recommended speed could damage components or cause an accident. Be sure to use the product within the specification range designated by THK.
- Foreign material entering the product will cause damage to the ball circulation components and loss of functionality. Prevent foreign material, such as dust or cutting chips, from entering the system.
- Using the product in an environment where coolant can penetrate the inner block could cause malfunction, depending on the type of the coolant. Contact THK for details.
- The service temperature range of this product is 0 to 40°C (no freezing or condensation). Consult THK before attempting to use the product outside this temperature range.
- Contact THK before attempting to use the product in a location exposed to vibration or abnormally high or low temperatures, or in a vacuum or clean room.
- When the product is operating or in the ready state, never touch a moving part. In addition, do not enter the operating area.
- If two or more people are involved in the operation, confirm the procedures in advance, and appoint another person to monitor the operation.

● 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 be used in a location exposed to vibrations or in a special environment such as vacuum, or abnormally high or low temperatures, or in a clean room, normal lubricants may not be used. Contact THK for details.
- When adopting oil lubrication method, contact THK.

● Storage

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

● Instruction Manual

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

Compact series

Model: **KRF**



Chapter 2

Features	2-003
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Model Configuration	2-004
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Lineup List	2-005
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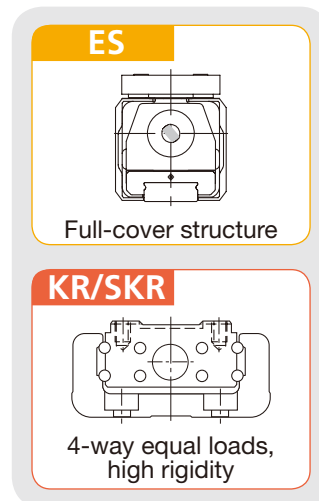
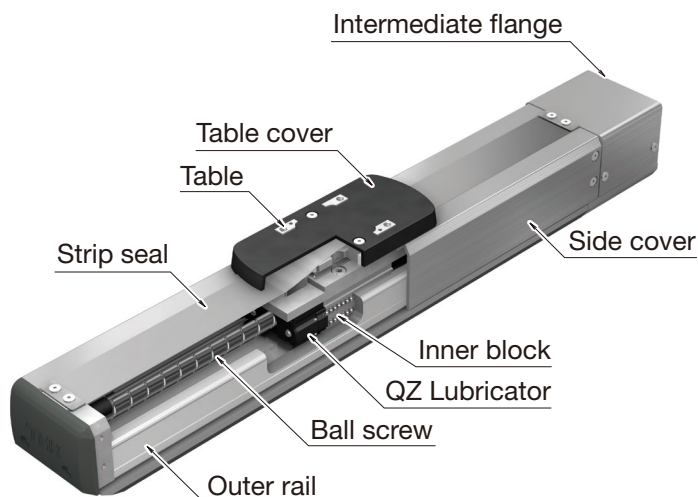
Basic Specifications & Dimensions	2-007
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Options	2-019
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Compact Series

KRF

High rigidity fully enclosed actuator



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

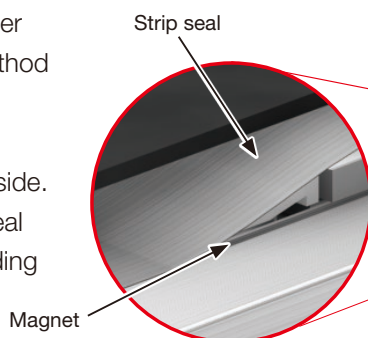
Supported size (guideline)

	20	26	33
KR/SKR			
KRF	4	5	6

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.

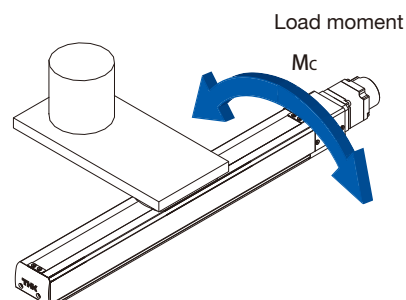
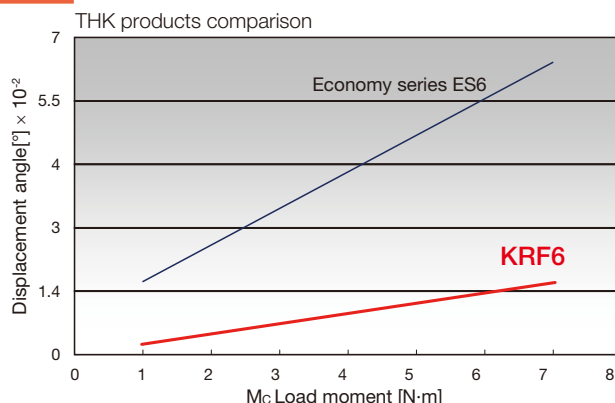


Magnetic attraction method

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

Lineup List

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

[KRF4, 5]



[KRF6]



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

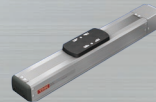
*1 The maximum load capacity indicates the capacity at the rated speed under 0.5 G for horizontal mount and wall mount and 0.3 G for vertical mount.

*2 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 *2 [mm/s]																
	Stroke [mm]																
	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	

KRF4 without motor



ES/EC

KRF/KSF

US/USW

PCT/PC

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Option
KRF4	- 06	- 0150	A	- 0	- AN	- GR-SB
KRF4	06: 6mm	0050: 50mm to 0300: 300mm	A	0: Without motor 1: With motor (Prepared by THK)	A0: Without intermediate flange AN AQ AP AS AR	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.

Basic Specifications

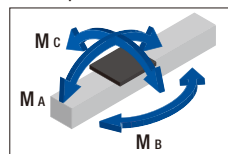
LM guide portion	Basic dynamic load rating C [N]		3590
	Basic Static Load Rating Co [N]		6300
Ball screw portion	Basic dynamic load rating Ca [N]		860
	Basic Static Load Rating Coa [N]		1450
	Screw shaft diameter [mm]		φ6
	Ball screw lead [mm]		6
Bearing portion (Fixed side)	Axial direction	Basic dynamic load rating Ca [N]	1150
		Static Permissible Load Poa [N]	735
Permissible rotational speed [min ⁻¹]			3000
Starting torque *1 [N·m]			0.008
Positioning repeatability *2 [mm]			±0.010
Lost motion *2 [mm]			0.1
Permissible input torque [N·m]			0.355
Static permissible moment *3 [N·m]			MA: 31 MB: 21.2 Mc: 52.7

*1 The starting torque represents values when the standard grease is filled.

*2 These represent values when measured using a motor provided by THK.

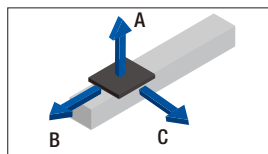
*3 Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static permissible moment

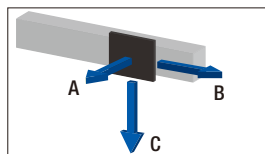


Reference Permissible Overhang Length*

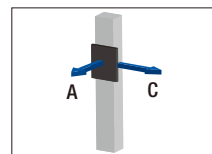
Horizontal use



Wall use



Vertical use



Horizontal mount [mm]

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

Wall mount [mm]

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

Vertical mount [mm]

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

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

KRF4

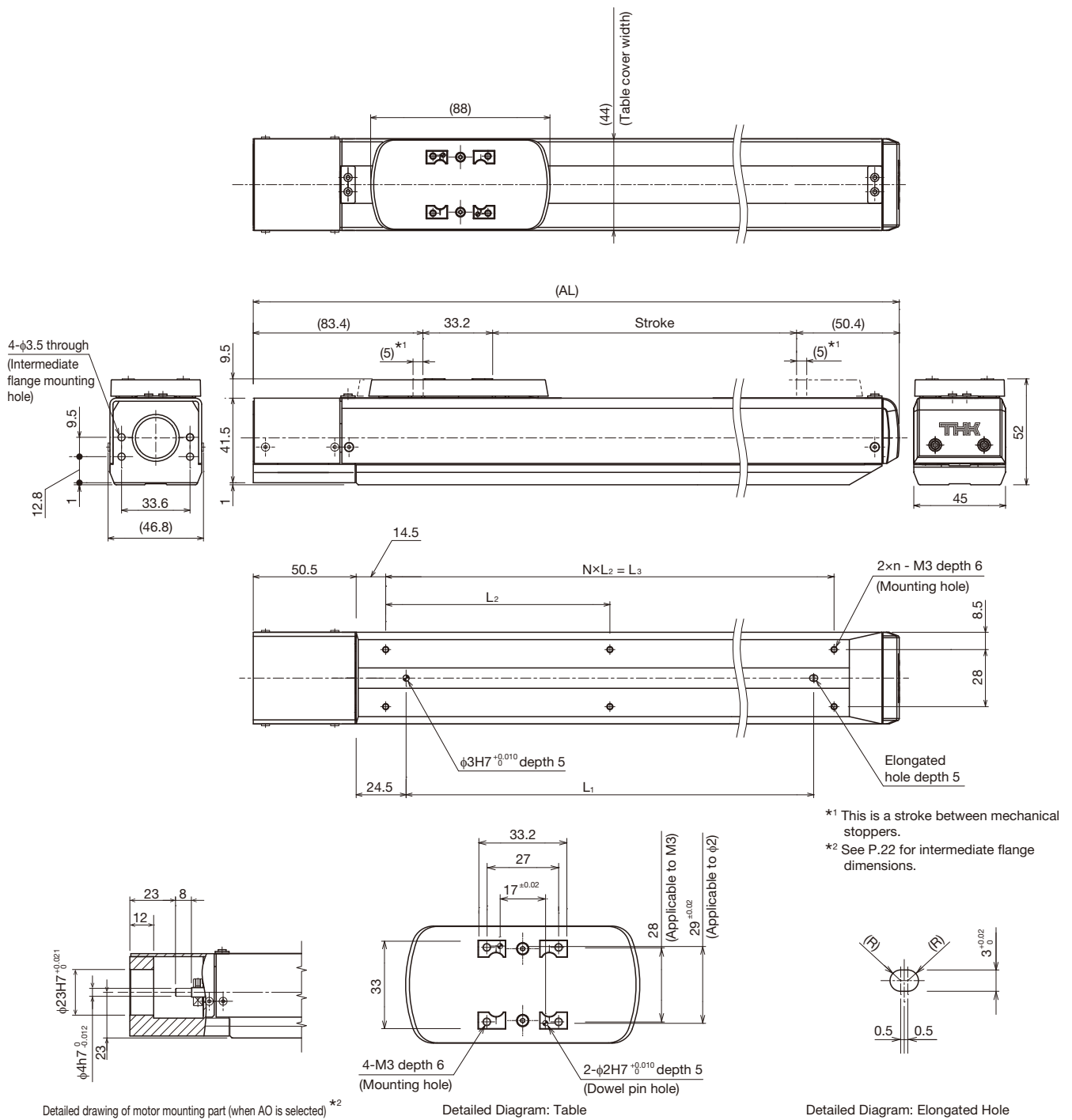
Dimensions

ES/EC

KRF/KSF

US/USW

PCT/PC

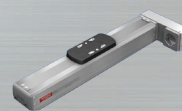


Stroke [mm]		50	100	150	200	250	300
(Stroke between mechanical stoppers)		(60)	(110)	(160)	(210)	(260)	(310)
Maximum speed *3 *4 [mm/s]	Ball screw lead: 6mm	300					
Dimensions [mm]	AL	217	267	317	367	417	467
	L1	100	150	200	250	300	350
	L2	120	85	110	90	105	120
	L3	120	170	220	270	315	360
Mounting pitch count	N	1	2	2	3	3	3
Mounting hole count	n	2	3	3	4	4	4
Weight [kg]		1.1	1.3	1.5	1.7	1.9	2.1

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

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

KRF4R without motor



ES/EC

KRF/KSF

US/USW

PCT/PC

Model Configuration

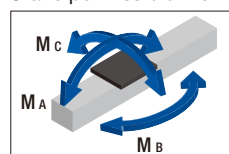
Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Motor shaft fixing method	Option
KRF4R	- 06	- 0150	A	- 1	- WN	- D	MR-GR
KRF4R	06 : 6mm	0050 : 50mm to 0300 : 300mm	A	0 : Without motor 1 : With motor (Prepared by THK)	WN WP WQ	D : D-cut K : Key	MR : Motor right wrap ML : Motor left wrap MD : Motor down wrap GR : Gray cover SB : Slider base ☐ 1 ☐ 2: Sensor

Basic Specifications

LM guide portion	Basic dynamic load rating C [N]		3590
	Basic Static Load Rating Co [N]		6300
Ball screw portion	Basic dynamic load rating Ca [N]		860
	Basic Static Load Rating Coa [N]		1450
	Screw shaft diameter [mm]		φ6
	Ball screw lead [mm]		6
Bearing portion (Fixed side)	Axial direction	Basic dynamic load rating Ca [N]	1150
		Static Permissible Load Poa [N]	735
Permissible rotational speed [min ⁻¹]			3000
Starting torque *1 [N·m]			0.008
Positioning repeatability *2 [mm]			±0.010
Lost motion *2 [mm]			0.1
Permissible input torque [N·m]			0.355
Static permissible moment *3 [N·m]			MA: 31 MB: 21.2 Mc: 52.7

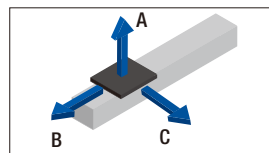
- *1 The starting torque represents values when the standard grease is filled.
 *2 These represent values when measured using a motor provided by THK.
 *3 Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static permissible moment

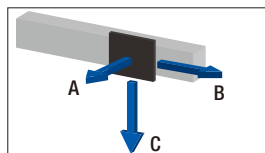


Reference Permissible Overhang Length*

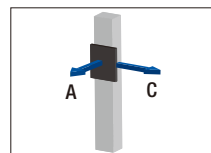
Horizontal use



Wall use



Vertical use



Horizontal mount [mm]

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

Wall mount [mm]

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

Vertical mount [mm]

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

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

KRF4R

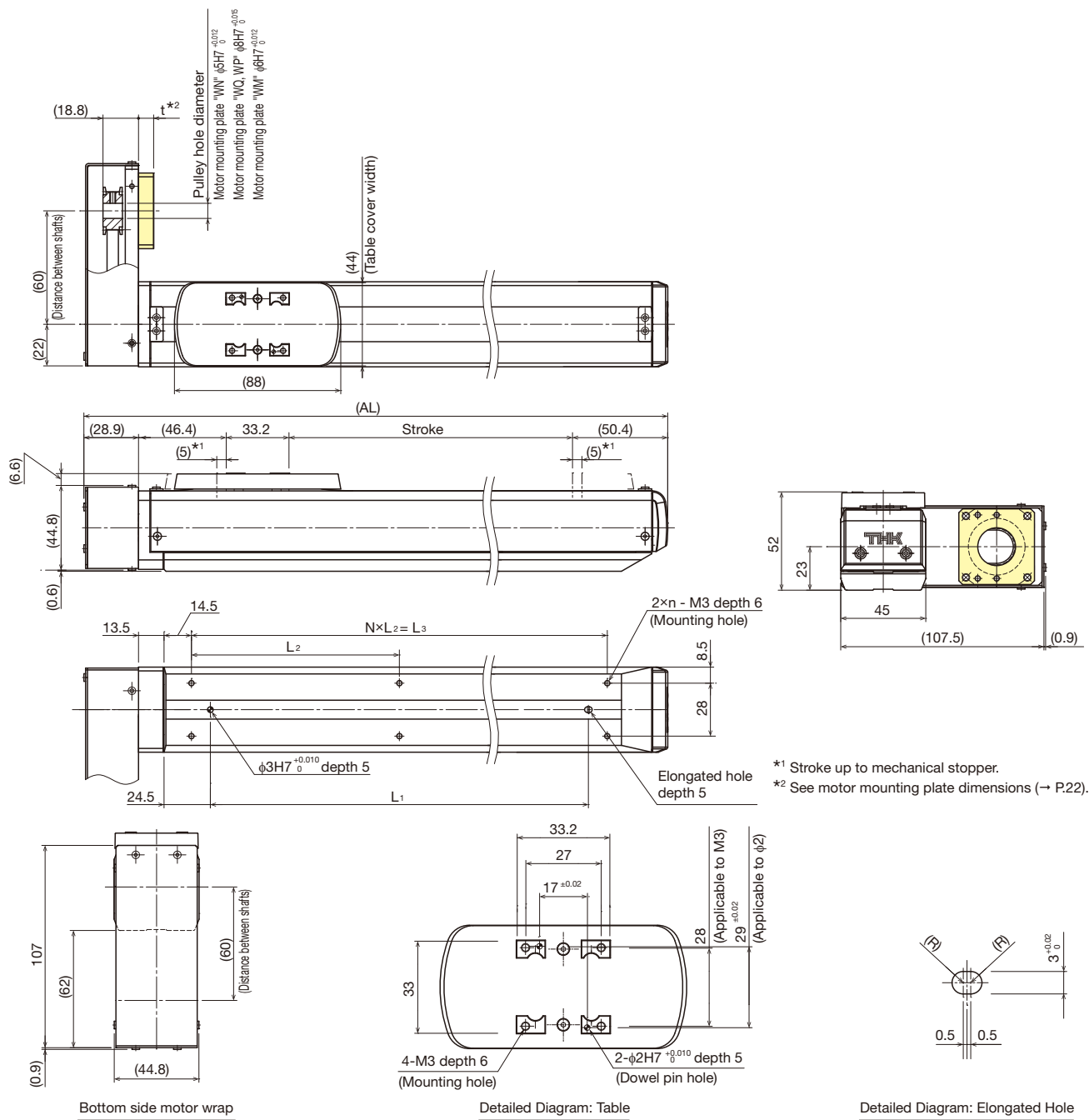
Dimensions

ES/EC

KRF/KSF

US/USW

PCT/PC

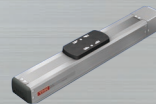


Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)	250 (260)	300 (310)
Maximum speed [mm/s]	Ball screw lead: 6mm	300					
Dimensions [mm]	AL	209	259	309	359	409	459
	L ₁	100	150	200	250	300	350
	L ₂	120	85	110	90	105	120
	L ₃	120	170	220	270	315	360
Mounting pitch count	N	1	2	2	3	3	3
Mounting hole count	n	2	3	3	4	4	4
Weight [kg]		1.2	1.4	1.6	1.8	2.0	2.2

*3 The maximum speed varies depending on the motor you use.

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

KRF5 without motor



ES/EC

KRF/KSF

US/USW

PCT/PC

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Option
KRF5	- 06	- 0150	A	- 0	- AN	- GR-SB
KRF5	06: 6mm 10: 10mm	0050: 50mm to 0550: 550mm	A	0: Without motor 1: With motor (Prepared by THK)	A0: Without intermediate flange AN AQ AP AS AR	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.

Basic Specifications

LM guide portion	Basic dynamic load rating C [N]		7240	
	Basic Static Load Rating C ₀ [N]		12150	
Ball screw portion	Basic dynamic load rating C _a [N]		1950	1120
	Basic Static Load Rating C _{0a} [N]		3510	1740
	Screw shaft diameter [mm]		φ8	
	Ball screw lead [mm]		6	10
Bearing portion (Fixed side)	Axial direction	Basic dynamic load rating C _a [N]	2050	
		Static Permissible Load P _{0a} [N]	1830	
Permissible rotational speed *1 [min ⁻¹]			3000	
Starting torque *2 [N·m]			0.01	0.012
Positioning repeatability *3 [mm]			±0.010	
Lost motion *3 [mm]			0.1	
Permissible input torque [N·m]			0.671	
Static permissible moment *4 [N·m]			M _A : 84 M _B : 48.4 M _C : 105.8	

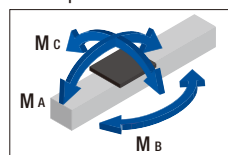
*1 Dependent on the stroke.

*2 The starting torque represents values when the standard grease is filled.

*3 These represent values when measured using a motor provided by THK.

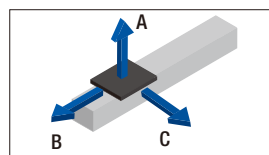
*4 Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static permissible moment

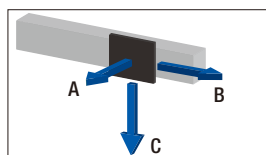


Reference Permissible Overhang Length*

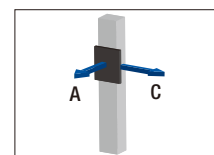
Horizontal use



Wall use



Vertical use



Horizontal mount [mm]

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

Wall mount [mm]

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

Vertical mount [mm]

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

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

KRF5

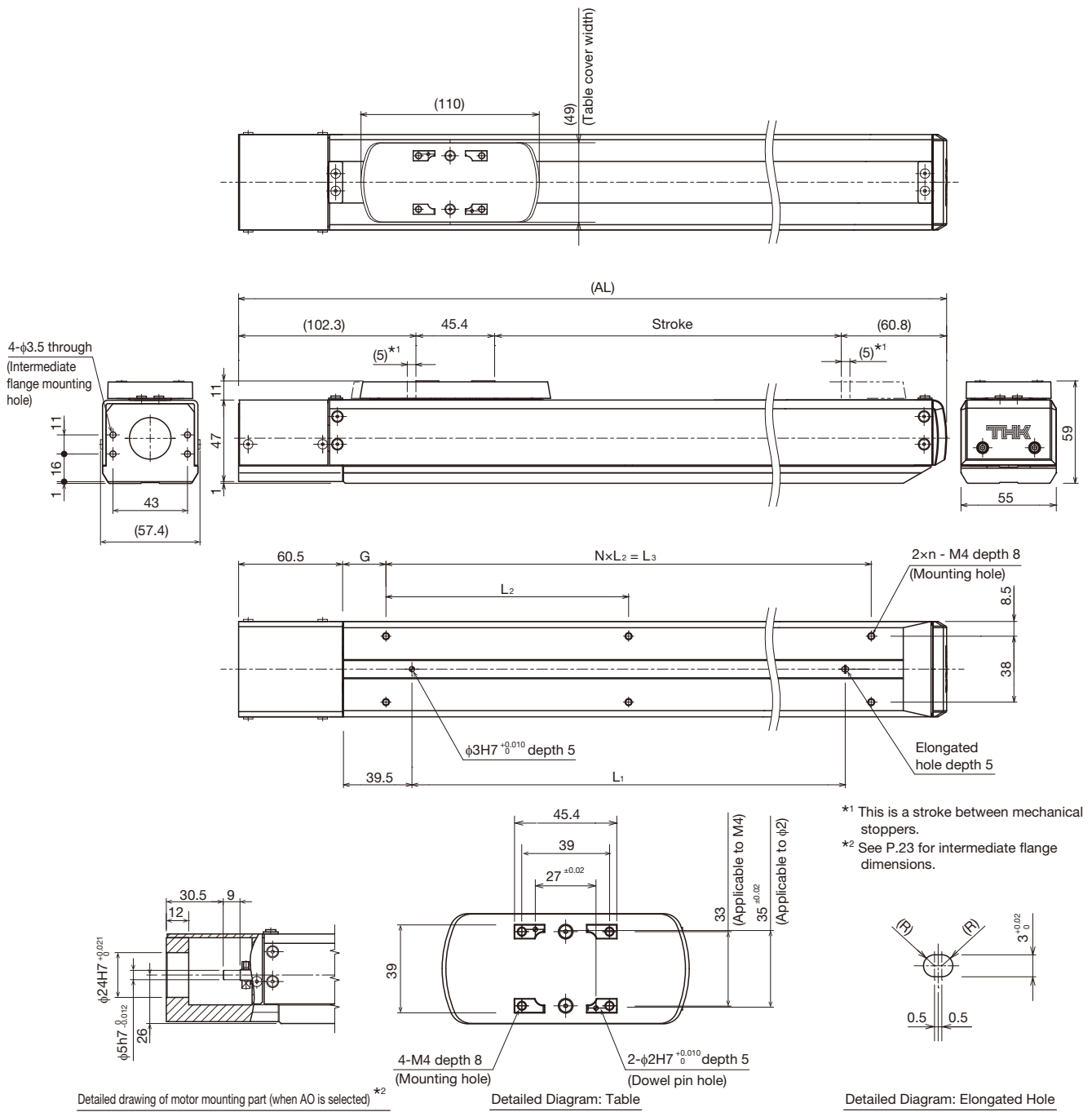
Dimensions

ES/EC

KRF/KSF

US/USW

PCT/PC



Detailed drawing of motor mounting part (when AO is selected) *2

Detailed Diagram: Table

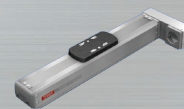
Detailed Diagram: Elongated Hole

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 *3 *4 [mm/s]	Ball screw lead: 6mm	300										250
	Ball screw lead: 10mm	500										430
Dimensions [mm]	AL	259	309	359	409	459	509	559	609	659	709	759
	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 [kg]		2.0	2.4	2.7	3.0	3.3	3.6	3.9	4.2	4.5	4.8	5.1

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

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

KRF5R without motor



Model Configuration

Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Motor shaft fixing method	Option
KRF5R	06	0150	A	1	WN	D	MR-GR

KRF5R	06: 6mm 10: 10mm	0050: 50mm to 0550: 550mm	A	0: Without motor 1: With motor (Prepared by THK)	WN WP WQ	D: D-cut K: Key	MR: Motor right wrap ML: Motor left wrap MD: Motor down wrap GR: Gray cover SB: Slider base □1□2: Sensor
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Basic Specifications

LM guide portion	Basic dynamic load rating C [N]		7240	
	Basic Static Load Rating Co [N]		12150	
Ball screw portion	Basic dynamic load rating Ca [N]		1950	1120
	Basic Static Load Rating Coa [N]		3510	1740
	Screw shaft diameter [mm]		φ8	
	Ball screw lead [mm]		6	10
Bearing portion (Fixed side)	Axial direction	Basic dynamic load rating Ca [N]	2050	
		Static Permissible Load Poa [N]	1830	
Permissible rotational speed *1 [min ⁻¹]			3000	
Starting torque *2 [N·m]			0.01	0.012
Positioning repeatability *3 [mm]			±0.010	
Lost motion *3 [mm]			0.1	
Permissible input torque [N·m]			0.671	
Static permissible moment *4 [N·m]			MA: 84 MB: 48.4 MC: 105.8	

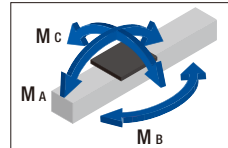
*1 Dependent on the stroke.

*2 The starting torque represents values when the standard grease is filled.

*3 These represent values when measured using a motor provided by THK.

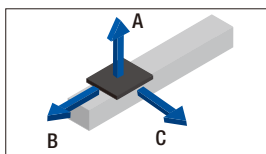
*4 Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static permissible moment

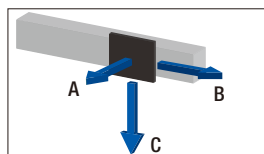


Reference Permissible Overhang Length*

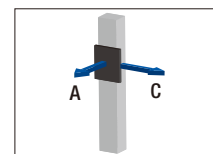
Horizontal use



Wall use



Vertical use



Horizontal mount

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

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

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

KRF5R

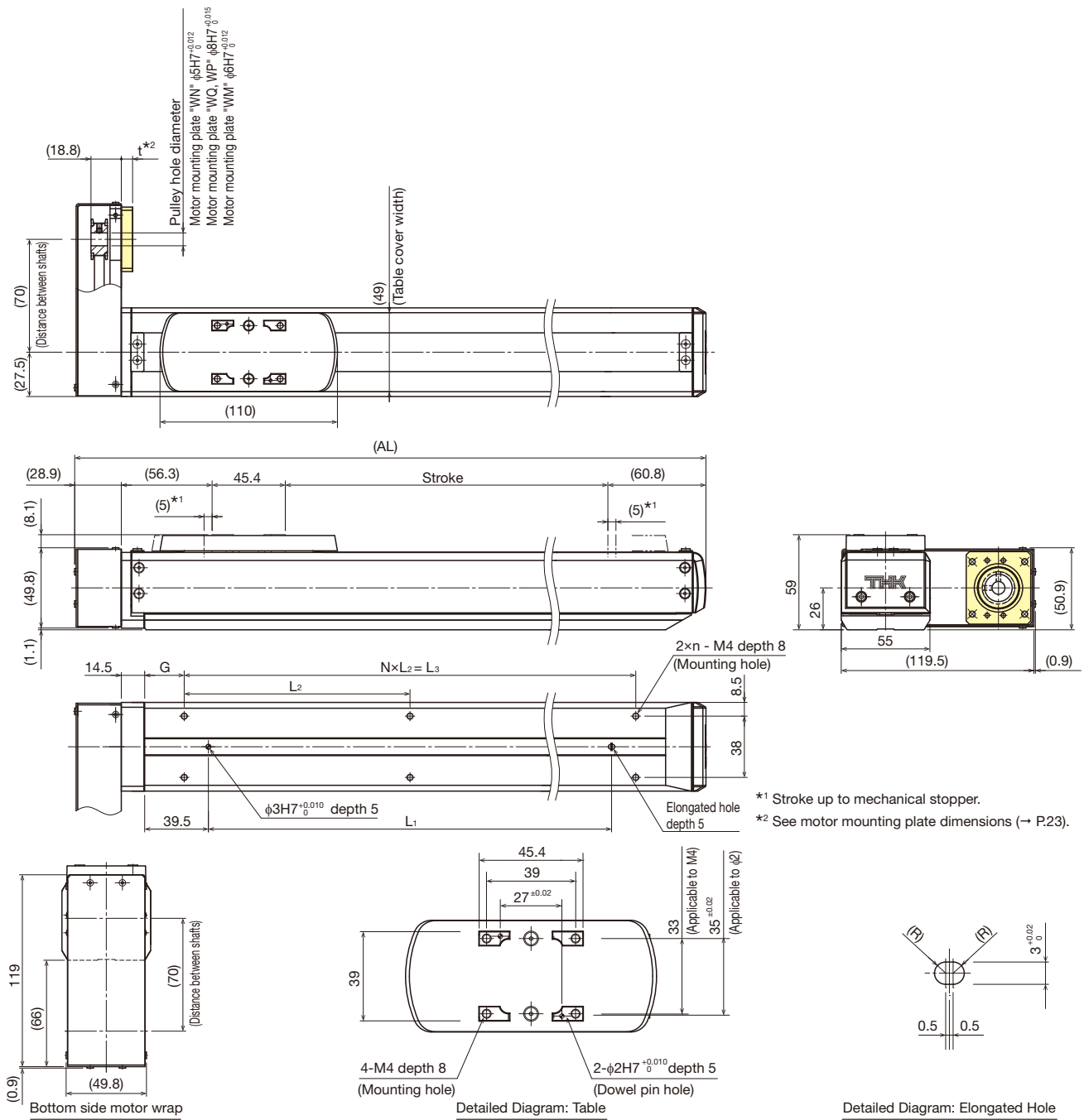
Dimensions

ES/EC

KRF/KSF

US/USW

PCT/PC

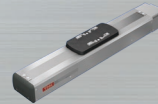


Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)	250 (260)	300 (310)	350 (360)	400 (410)	450 (460)	500 (510)	550 (560)
Maximum speed *3 *4 [mm/s]	Ball screw lead: 6mm	300										250
	Ball screw lead: 10mm	500										430
Dimensions [mm]	AL	241.5	291.5	341.5	391.5	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 [kg]		2.1	2.4	2.7	3.0	3.3	3.6	3.9	4.2	4.6	4.9	5.2

*3 The maximum speed varies depending on the motor you use.

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

KRF6 without motor



Model Configuration

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

KRF6	06: 6mm 10: 10mm	0050: 50mm to 0800: 800mm	A	0: Without motor 1: With motor (Prepared by THK)	A0: Without intermediate flange AQ AP AR AU AT	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.
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Basic Specifications

LM guide portion	Basic dynamic load rating C [N]		11600	
	Basic Static Load Rating C ₀ [N]		20200	
Ball screw portion	Basic dynamic load rating C _a [N]		2840	1760
	Basic Static Load Rating C _{0a} [N]		4900	2840
	Screw shaft diameter [mm]		φ10	
	Ball screw lead [mm]		6	10
Bearing portion (Fixed side)	Axial direction	Basic dynamic load rating C _a [N]	2930	
		Static Permissible Load P _{0a} [N]	2150	
Permissible rotational speed *1 [min ⁻¹]			3000	
Starting torque *2 [N·m]			0.014	0.02
Positioning repeatability *3 [mm]			±0.010	
Lost motion *3 [mm]			0.1	
Permissible input torque [N·m]			1.035	
Static permissible moment *4 [N·m]			MA: 166 Mb: 103.8 Mc: 179.5	

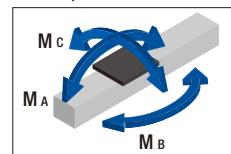
*1 Dependent on the stroke.

*2 The starting torque represents values when the standard grease is filled.

*3 These represent values when measured using a motor provided by THK.

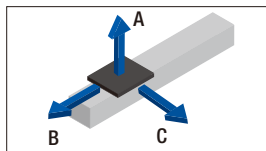
*4 Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static permissible moment



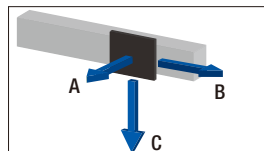
Reference Permissible Overhang Length*

Horizontal use



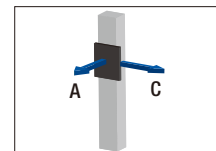
Ball screw lead [mm]	Load mass [kg]	A	B	C
6	17.5	390	50	160
	35	170	10	60
10	15	320	60	170
	30	130	10	50

Wall use



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



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

Dimensions

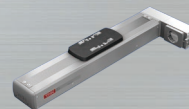
Stroke [mm] (Stroke between mechanical stoppers)	50 (70)	100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)
Maximum speed *3 *4 [mm/s]	Ball screw lead: 6mm							
	Ball screw lead: 10mm							
Dimensions [mm]	AL	277.5	327.5	377.5	427.5	477.5	527.5	577.5
	L ₁	100	150	200	200	250	250	300
	L ₂	100	200	200	200	200	200	200
	L ₃	100	200	200	200	200	400	400
	L ₄	—	—	—	—	100	—	—
	G	50	25	50	75	50	25	50
Mounting pitch count	N	1	1	1	1	2	2	2
	n	2	2	2	2	3	3	3
Weight [kg]	2.7	3.1	3.5	3.9	4.3	4.8	5.2	5.6

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

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

KRF6R

without motor



ES/EC

KRF/KSF

US/USW

PCT/PC

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Motor shaft fixing method	Option
KRF6R	06	0150	A	1	WQ	D	MR-GR

KRF6R	06: 6mm 10: 10mm	0050: 50mm to 0800: 800mm	A	0: Without motor 1: With motor (Prepared by THK)	WP WQ	D: D-cut K: Key M: Friction tightening	MR: Motor right wrap ML: Motor left wrap MD: Motor down wrap GR: Gray cover SB: Slider base □1□2: Sensor
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Basic Specifications

LM guide portion	Basic dynamic load rating C [N]		11600
	Basic Static Load Rating Co [N]		20200
Ball screw portion	Basic dynamic load rating Ca [N]		2840
	Basic Static Load Rating Coa [N]		4900
	Screw shaft diameter [mm]		φ10
	Ball screw lead [mm]		6
Bearing portion (Fixed side)	Axial direction	Basic dynamic load rating Ca [N]	2930
		Static Permissible Load Poa [N]	2150
	Permissible rotational speed *1 [min ⁻¹]		3000
Starting torque *2 [N·m]		0.014	0.02
Positioning repeatability *3 [mm]		±0.010	
Lost motion *3 [mm]		0.1	
Permissible input torque [N·m]		1.035	
Static permissible moment *4 [N·m]		MA: 166 MB: 103.8 MC: 179.5	

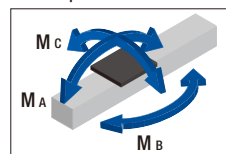
*1 Dependent on the stroke.

*2 The starting torque represents values when the standard grease is filled.

*3 These represent values when measured using a motor provided by THK.

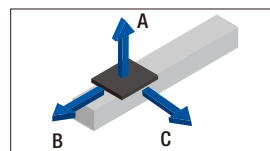
*4 Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static permissible moment

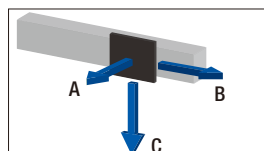


Reference Permissible Overhang Length*

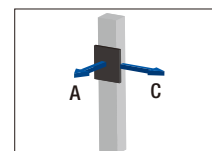
Horizontal use



Wall use



Vertical use



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

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

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

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

Dimensions

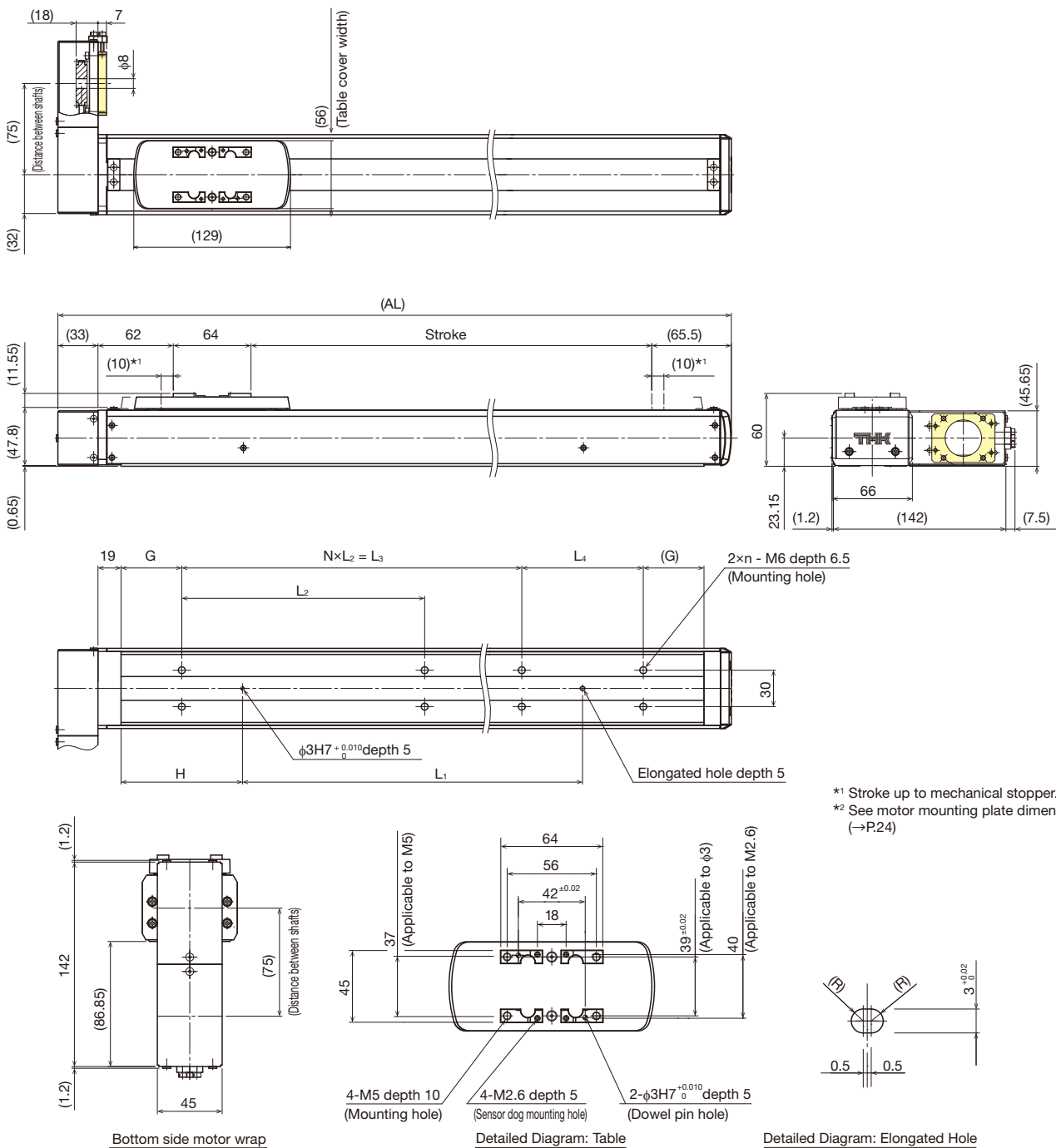
Stroke [mm] (Stroke between mechanical stoppers)		50 (70)	100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)
Maximum speed *2 *3 [mm/s]	Ball screw lead: 6mm	300							
	Ball screw lead: 10mm	500							
Dimensions [mm]	AL	276	326	376	426	476	526	576	626
	L1	100	150	200	200	250	250	300	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 [kg]		3.5	3.9	4.3	4.7	5.1	5.5	5.9	6.3

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

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

KRF6R

Dimensions



*1 Stroke up to mechanical stopper.

*2 See motor mounting plate dimensions (→P.24)

Stroke [mm] (Stroke between mechanical stoppers)	450 (470)	500 (520)	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)
Maximum speed *2 *3 [mm/s]	Ball screw lead: 6mm Ball screw lead: 10mm							
Dimensions [mm]	AL	676	726	776	826	876	926	1026
	L ₁	400	450	500	550	600	650	750
	L ₂	200	200	200	200	200	200	200
	L ₃	400	600	600	600	600	800	800
	L ₄	100	—	—	—	100	—	—
	G	50	25	50	75	50	25	75
	H	100	100	100	100	100	100	100
Mounting pitch count	N	2	3	3	3	3	4	4
Mounting hole count	n	4	4	4	4	5	5	5
Weight [kg]	6.7	7.1	7.5	7.9	8.3	8.7	9.1	9.5

*2 The maximum speed varies depending on the motor you use.

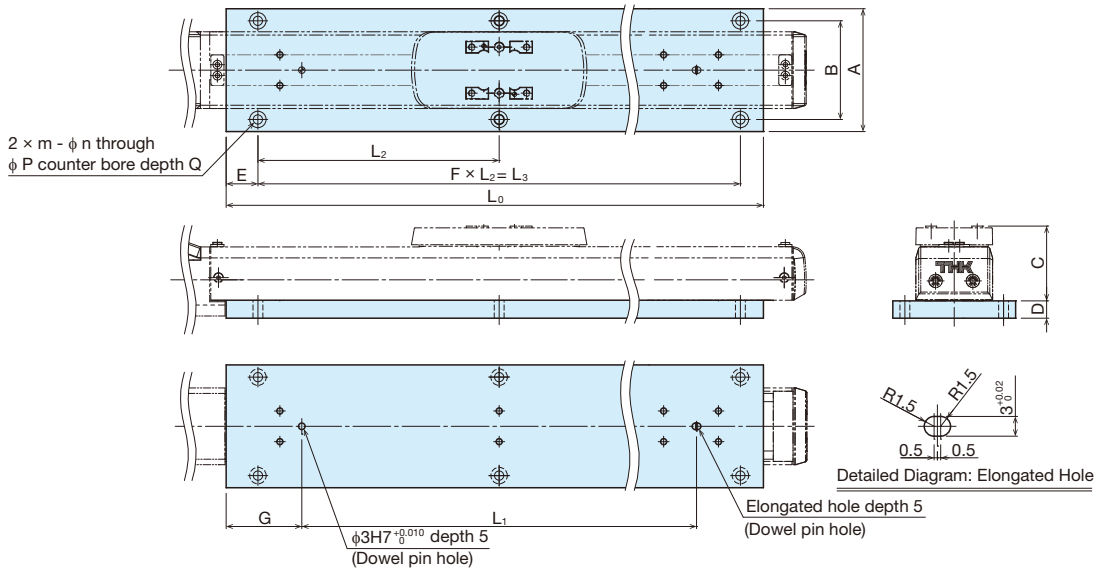
*3 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.

Options

SB: Slider base

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

* The product is shipped with this optional assembled.



Unit: mm

Model	A	B	C	D
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
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 for KRF6 to be shipped loose.

Note 3) Sensor rails are pre-mounted, and sensors are provided with the product.

Note 4) When optional sensor is used, note the home position may differ from the position indicated by the dimension in this catalog, in considering using them.

Note 5) Proximity sensors placed too close to each other may not work properly. In such a case, the customer should provide a different frequency type of sensor.

(For specifications, contact each manufacturer.)

Note 6) Mount the sensor/sensor rail on both sides if the stroke is not more than 100 mm.

Description	Model	Accessory	Symbol	
			□1	□2
With sensor rail	—	—	L/R	1
Photo sensor * [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

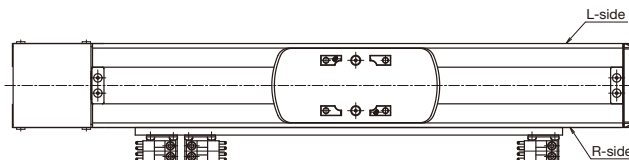
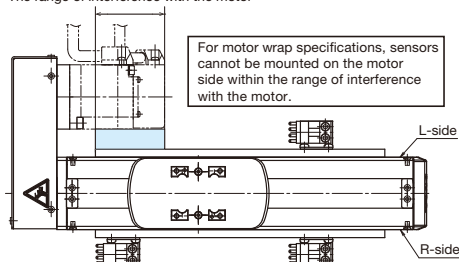
N.O. contact: Normally open contact point

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.

The range of interference with the motor



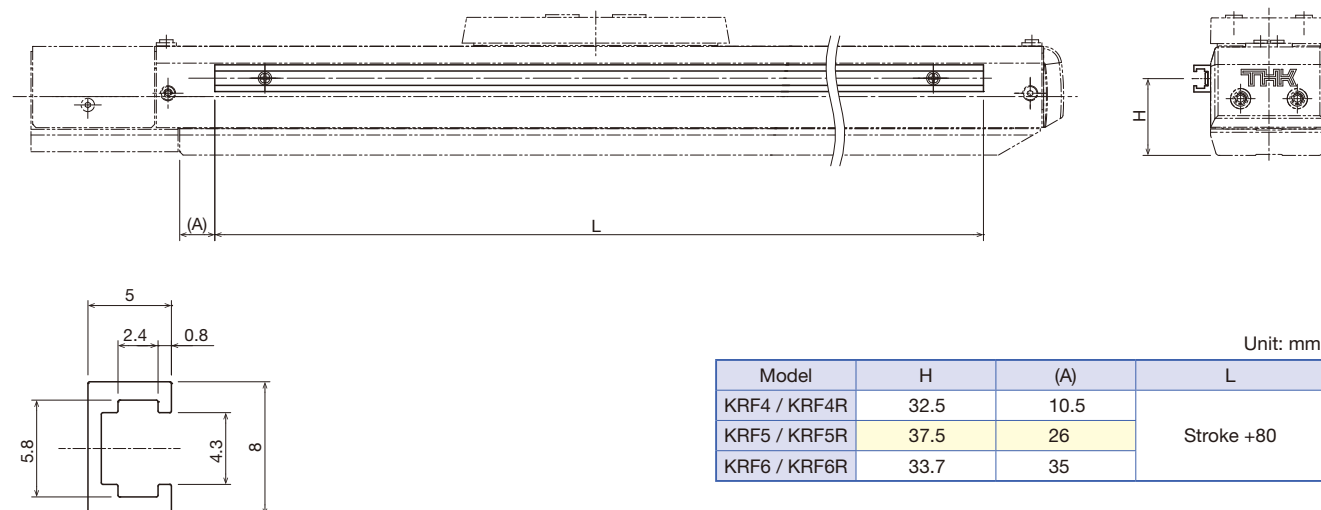
Option: Sensor symbol

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.

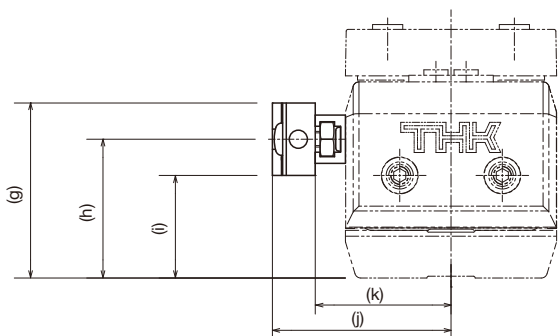
Symbol □2 represents the types of sensors.

Symbol 1: Sensor rail

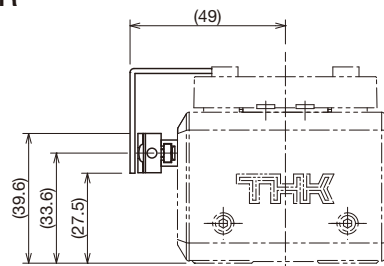


Symbols J, M: Proximity sensor GX-F12* (Panasonic Industrial Devices SUNX Co., Ltd.)

KRF4/4R/5/5R



KRF6/6R



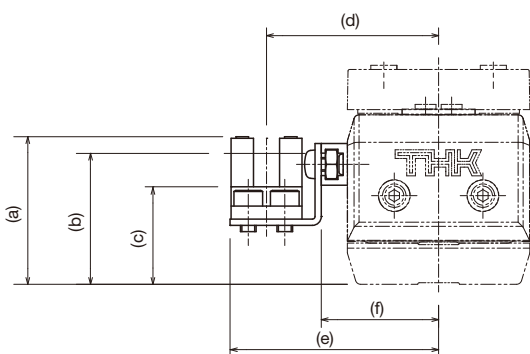
Sensor dog width: 26mm

Unit: mm

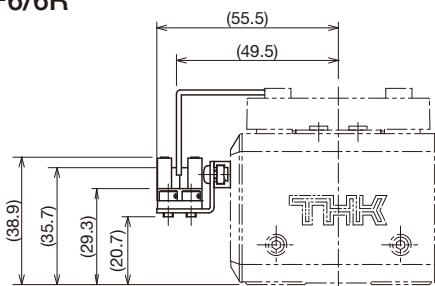
Model	g	h	i	j	k
KRF4 / KRF4R	38.5	32.5	26.5	34.6	27.5
KRF5 / KRF5R	43.5	37.5	31.5	39.6	32.5

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

KRF4/4R/5/5R



KRF6/6R



Sensor dog width: 26mm

Unit: mm

Model	a	b	c	d	e	f
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.



Housing-B
cover

No symbol: red



When GR is selected: gray

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

Intermediate flange

Intermediate flanges are available to mount various kinds of motors.

If choosing "0" or "1" as with/without motor for model of type without motor, specify an intermediate flange that matches the motor used.

Table: Table of Motors Used and Corresponding Intermediate Flanges

Motor type			Rated output	Flange angle	KRF4	KRF5	KRF6
AC servo motor	Yaskawa Electric Corporation	Σ -Vmini	SGMMV-A1	10W	$\square 25$	AN	AN
			SGMMV-A2	20W		AN	AN
			SGMMV-A3	30W		AN	AN
		Σ -V	SGMJV-A5	50W	$\square 40$	AQ	AQ
			SGMAV-A5			AQ	AQ
			SGMJV-01	100W		-	AQ
			SGMAV-01			-	AQ
			SGMJV-C2	150W		-	AQ
		Σ -7	SGM7J-A5	50W	$\square 40$	AQ	AQ
			SGM7A-A5			AQ	AQ
			SGM7J-01	100W		-	AQ
			SGM7A-01			-	AQ
			SGM7J-C2	150W		-	AQ
		J3	HF-MP053	50W	$\square 40$	AQ	AQ
			HF-KP053			AQ	AQ
			HF-MP13	100W		-	AQ
			HF-KP13			-	AQ
	Mitsubishi Electric Corporation	J4	HG-AK0136	10W	$\square 25$	AN	AN
			HG-AK0236	20W		AN	AN
			HG-AK0336	30W		AN	AN
			HG-MR053	50W	$\square 40$	AQ	AQ
			HG-KR053			AQ	AQ
			HG-MR13	100W		-	AQ
		JN	HG-KR13		$\square 40$	-	AQ
			HF-KN053	50W		AQ	AQ
		TBL-iII	HF-KN13	100W	$\square 40$	-	AQ
			TS4602	50W		AQ	AQ
			TS4603	100W		-	AQ
			TS4604	150W		-	AQ
		TBL-iIV	TSM3101	30W		AQ	AQ
			TSM3102	50W		AQ	AQ
			TSM3104	100W		-	AQ
	Panasonic Corporation	MINAS A5	MSMD5A	50W	$\square 38$	AP	AP
			MSME5A			AP	AP
			MSMD01	100W		-	AP
			MSME01			-	AP
		MINAS A6	MSMF5A	50W		AP	AP
			MHMF5A			AQ	AQ
			MSMF01	100W		-	AP
			MHMF01			-	AQ
	Keyence Corporation	SV	SV-M005	50W	$\square 40$	AQ	AQ
			SV-M010	100W		-	AQ
		SV2	SV2-M005	50W	$\square 40$	AQ	AQ
			SV2-M010	100W		-	AQ
	Sanyo Denki Co., Ltd.	SANMOTION R	R2□A04003	30W	$\square 40$	AQ	AQ
			R2□A04005	50W		AQ	AQ
			R2□A04010	100W		-	AQ
			R2□A04010	100W		-	AQ
	OMRON Corporation	OMNUC G5	R88M-K05030	50W	$\square 40$	AQ	AQ
			R88M-K10030	100W		-	AQ
	Fanuc Corporation	β is series	β is0.2/5000	50W	$\square 40$	AQ	AQ
			β is0.3/5000	100W		-	AQ
Stepper motor	Oriental Motor Co. Ltd.	α step	AZ2*, AR2*		$\square 28$	AS	AS
			AZ4*, AR4*		$\square 42$	AR	AR
			AZ6*, AR6*		$\square 60$	-	AU
		5-phase	CRK52*		$\square 28$	AS	AS
			CRK54*		$\square 42$	AR	AR
			CRK56*		$\square 60$	-	AU
		RK II	RKS54*		$\square 42$	AR	AR
			RKS56*		$\square 60$	-	AU
			PKA544		$\square 42$	AR	AR
			PKA566		$\square 60$	-	AU
		CVK	CVK52*		$\square 28$	AS	AS
			CVK54*		$\square 42$	AR	AR
			CVK56*		$\square 60$	-	AU
		2-phase	CMK22*		$\square 28$	AS	AS
			CMK24*		$\square 42$	AR	AR
			CMK26*		$\square 56.4$	-	AT
			CVK22*		$\square 28$	AS	AS
			CVK24*		$\square 42$	AR	AR
			CVK26*		$\square 56.4$	-	AT
	Sanyo Denki Co., Ltd.	PB	PBDM28*		$\square 28$	AS	AS
			PBDM423, PBA**423		$\square 42$	AR	AR
			PBDM60*, PBA**60*		$\square 60$	-	AU
		5-phase	FAF/FDF52*		$\square 28$	AS	AS
			FAF/FDF/FSF55*		$\square 42$	AR	AR
			FAF/FDF/FSF78*		$\square 60$	-	AU
		2-phase	D*14S28*		$\square 28$	AS	AS
			D*15H52*		$\square 42$	AR	AR
			D*16H71*		$\square 56.4$	-	AT
			DB16H78*		$\square 60$	-	AU
	Keyence Corporation	2-phase	QS-M28		$\square 28$	AS	AS
			QS-M42		$\square 42$	AR	AR
			QS-M60		$\square 60$	-	AU
			QS-M60		$\square 60$	-	AU

Note 1) The symbols in the table indicate the housing A and intermediate flange.

Note 2) For motor coupling, contact THK.

Note 3) Motor model number in the table shows the main part of the model number only. For more details, please refer to catalogs from each motor manufacturers.

Note 4) If the motor's maximum torque mounted exceeds the permissible input torque (refer to P.5, 7, 9, 11, 13, 15), take safety measures, such as torque restrictions.

Motor mounting plate for motor wrap

Motor wrap symbol configuration

Motor mounting plates are available to mount various kinds of motors.
Specify the motor wrap symbol corresponding to the motor used.

$$\frac{WQ}{(1)} - \frac{M}{(2)}$$

(1) Motor mounting plate type

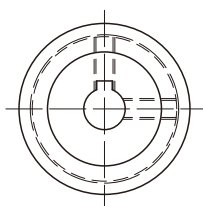
Refer to the table below "Motor wrap symbols corresponding to motors used".

(2) Motor shaft fixing method

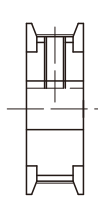
K: Key

D: D-cut

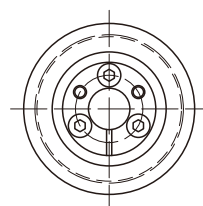
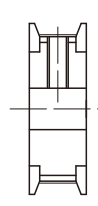
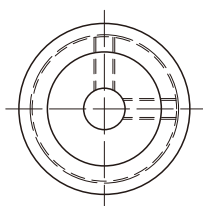
M: Friction tightening



Key



D-cut



Friction tightening tool

Figure: Motor shaft fixing method

Table: Motor wrap symbols corresponding to motors used

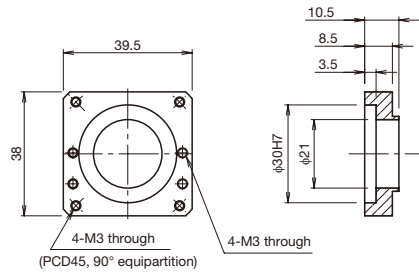
AC servo motor	Motor type		Rated output	Flange angle	KRF4	KRF5	KRF6
AC servo motor	Yaskawa Electric Corporation	Σ-Vmini	SGMMV-A1	10W	□25	WN-D	WN-D
			SGMMV-A2	20W		WN-D	WN-D
			SGMMV-A3	30W		WN-D	WN-D
		Σ-V	SGMJV-A5	50W	□40	WQ-K	WQ-K, WQ-M
			SGMAV-A5	50W		WQ-K	WQ-K, WQ-M
			SGMJV-01	100W		-	WQ-K, WQ-M
		Σ-7	SGMAV-01	100W	□40	-	WQ-K, WQ-M
			SGMJV-C2	150W		-	WQ-K, WQ-M
			SGM7J-A5	50W		WQ-K	WQ-K, WQ-M
			SGM7A-A5	50W		WQ-K	WQ-K, WQ-M
			SGM7J-01	100W		-	WQ-K, WQ-M
			SGM7A-01	100W		-	WQ-K, WQ-M
AC servo motor	Mitsubishi Electric Corporation	J3	SGM7J-C2	150W	□40	-	WQ-K, WQ-M
			HF-MP053	50W		WQ-D	WQ-D, WQ-M
			HF-KP053	50W		WQ-D	WQ-D, WQ-M
		J4	HF-MP13	100W	□40	-	WQ-D, WQ-M
			HF-KP13	100W		-	WQ-D, WQ-M
			HG-AK0136	10W		WN-D	WN-D
			HG-AK0236	20W		WN-D	WN-D
			HG-AK0336	30W		WN-D	WN-D
			HG-MR053	50W		WQ-D	WQ-D, WQ-M
			HG-KR053	50W		WQ-D	WQ-D, WQ-M
		JN	HG-MR13	100W	□40	-	WQ-D, WQ-M
			HG-KR13	100W		-	WQ-D, WQ-M
			HF-KN053	50W		WQ-D	WQ-D, WQ-M
			HF-KN13	100W		-	WQ-D, WQ-M
	Tamagawa Seiki Co., Ltd.	TBL-II	TS4602	50W	□40	WQ-D	WQ-D, WQ-M
			TS4603	100W		-	WQ-D, WQ-M
			TS4604	150W		-	WQ-D, WQ-M
		TBL-IV	TSM3101	30W	□40	WQ-D	WQ-D, WQ-M
			TSM3102	50W		WQ-D	WQ-D, WQ-M
			TSM3104	100W		-	WQ-D, WQ-M
	Panasonic Corporation	MINAS A5	MSMD5A	50W	□38	WP-K	WP-K, WP-M
			MSME5A	50W		WP-K	WP-K, WP-M
			MSMD01	100W		-	WP-K, WP-M
		MINAS A6	MSME01	100W	□38	-	WP-K, WP-M
			MSMF5A	50W		WP-K	WP-K, WP-M
			MHMF5A	50W		WQ-K	WQ-K, WQ-M
			MSMF01	100W		-	WP-K, WP-M
			MHMF01	100W		-	WP-K, WP-M
			-	-		-	WP-K, WP-M
	Keyence Corporation	SV	SV-M005	50W	□40	WQ-K	WQ-K, WQ-M
			SV-M010	100W		-	WQ-K, WQ-M
		SV2	SV2-M005	50W	□40	WQ-K	WQ-K, WQ-M
			SV2-M010	100W		-	WQ-K, WQ-M
	OMRON Corporation	OMNUC G5	R88M-K05030	50W	□40	WQ-K	WQ-K, WQ-M
			R88M-K10030	100W		-	WQ-K, WQ-M
	Sanyo Denki Co., Ltd.	SANMOTION R	R2AA04005	50W	□40	-	WQ-M
			R2AA04010	100W		-	WQ-M

Note) Motor model number in the table shows the main part of the model number only. For more details, please refer to catalogs from each motor manufacturers.

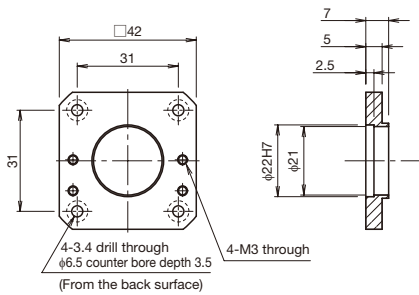
For KRF4

Intermediate flange

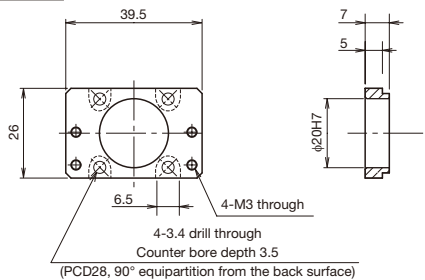
KRF4
AP



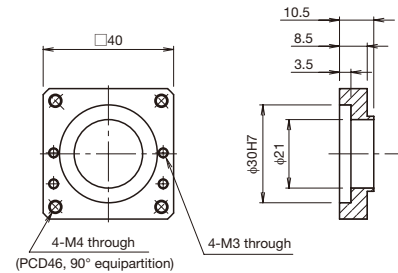
KRF4
AR



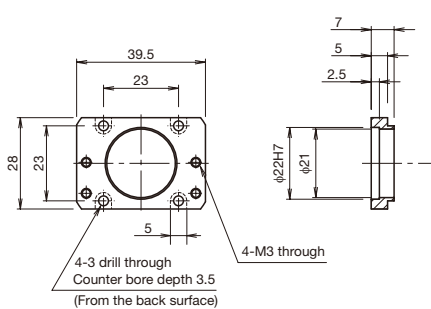
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KRF4
AQ



KRF4
AS

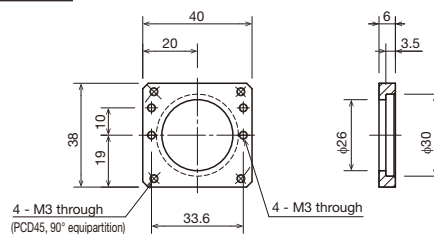


KRF*	... Actuator model
●	... Housing A
◇	Intermediate flange

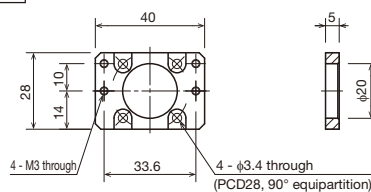
For KRF4R

Motor wrap specification (motor mounting plate)

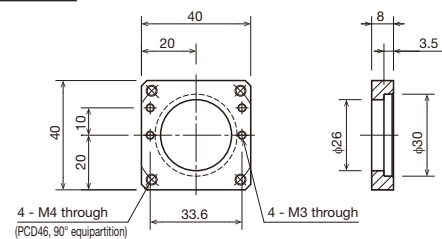
KRF4R
WP



KRF4R
WN



KRF4R
WQ

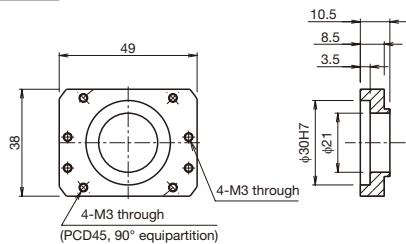


Note) For A0, see the external side view of intermediate flange without motor and the detailed drawing of motor mounting part.

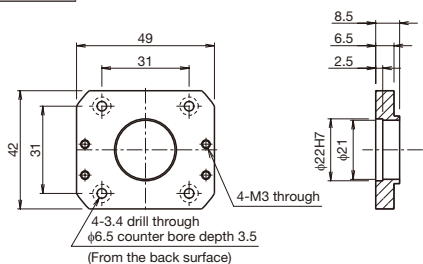
For KRF5

Intermediate flange

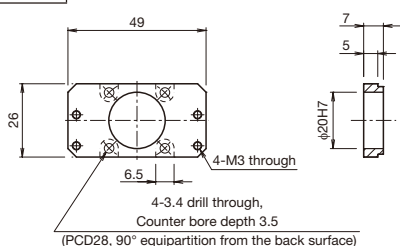
KRF5
AP



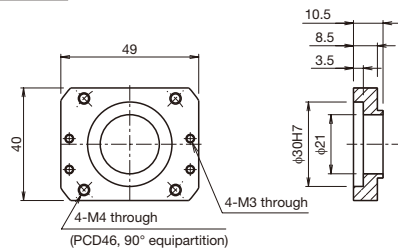
KRF5
AR



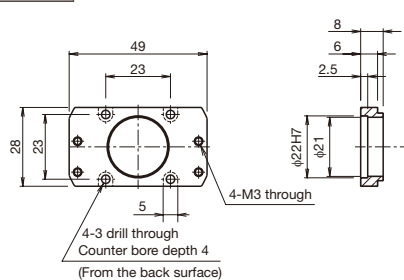
KRF5
AN



KRF5
AQ



KRF5
AS

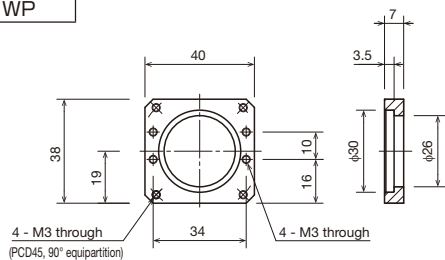


KRF*	... Actuator model
●	... : Housing A
◇	◇ : Intermediate flange

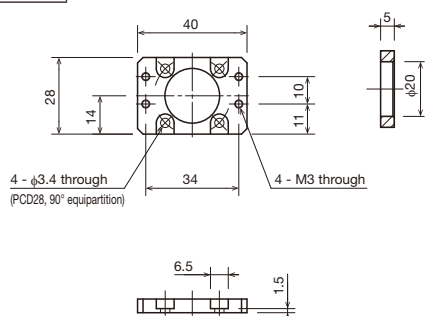
For KRF5R

Motor wrap specification (motor mounting plate)

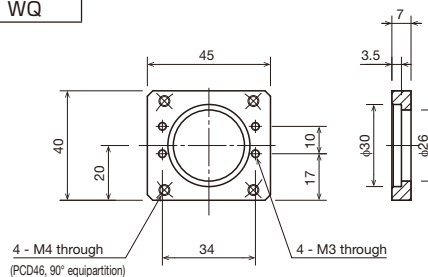
KRF5R
WP



KRF5R
WN



KRF5R
WQ



Note) For A0, see the external side view of intermediate flange without motor and the detailed drawing of motor mounting part.

Compact series

Model: **KSF**



Chapter 2

Features	2-029
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Lineup List	2-035
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Model Configuration	2-037
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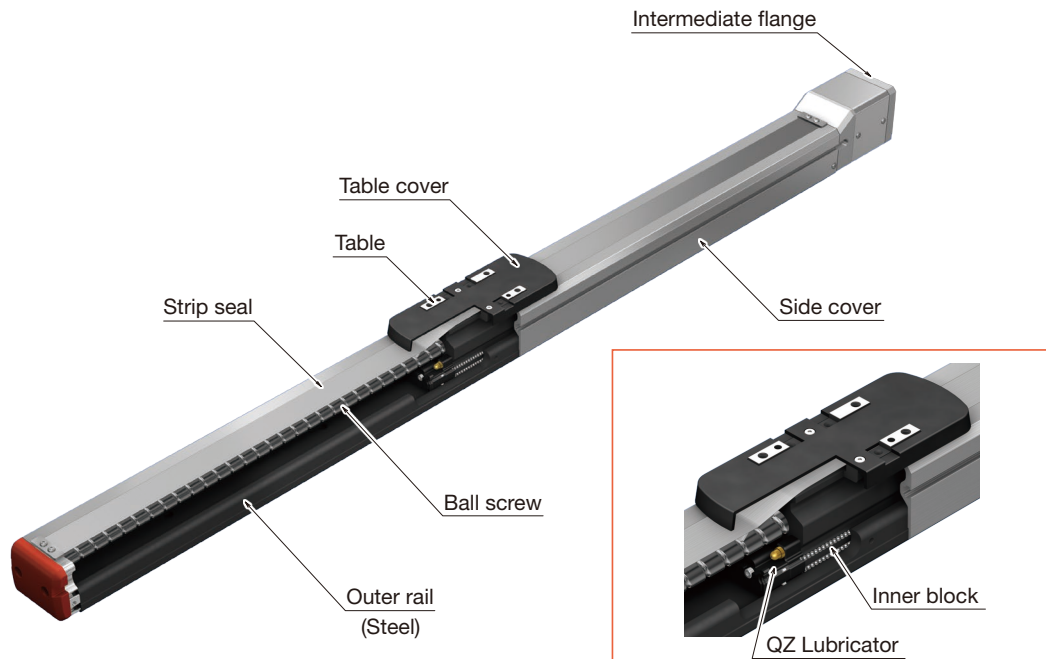
Basic Specifications & Dimensions	2-039
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Options	2-059
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Compact series

KSF

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



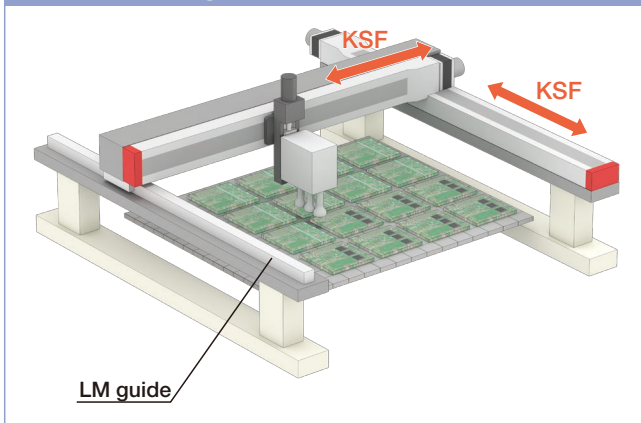
KSF is a compact, high-rigidity, high-precision actuator. An inner block structure integrated with an LM block and ball screw nut inside of a high-rigidity U-shaped cross-section outer rail.

Moreover, as A/B housings act as support units and the inner block can act as a table for overall cost reductions due to largely eliminated design and processing time.

Product Usage Example

Board Mounting Device

Processing / Assembly



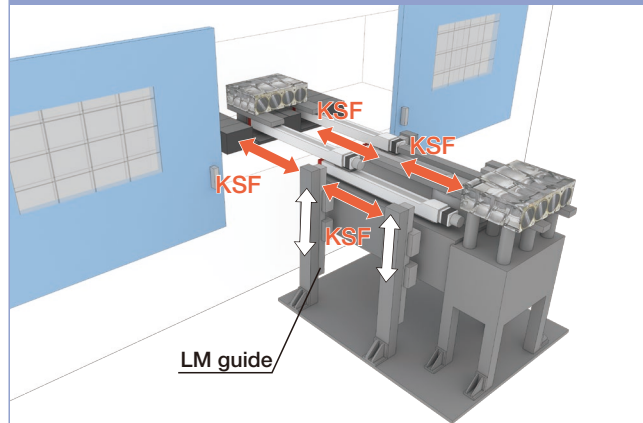
Model Number Used

KSF LM guide

KSF is used to enable the high-speed and high-precision positioning of the board mounting device.

Pallet Changer

Transport



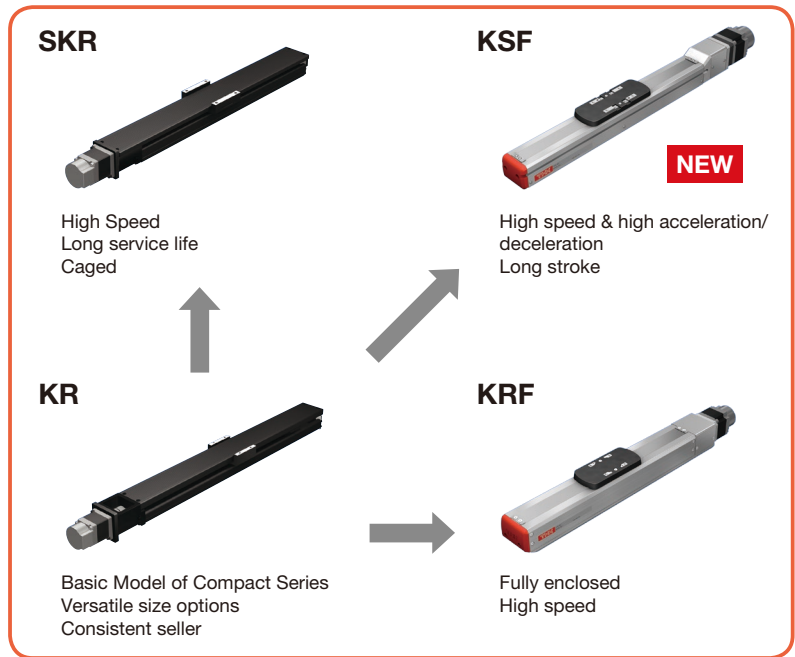
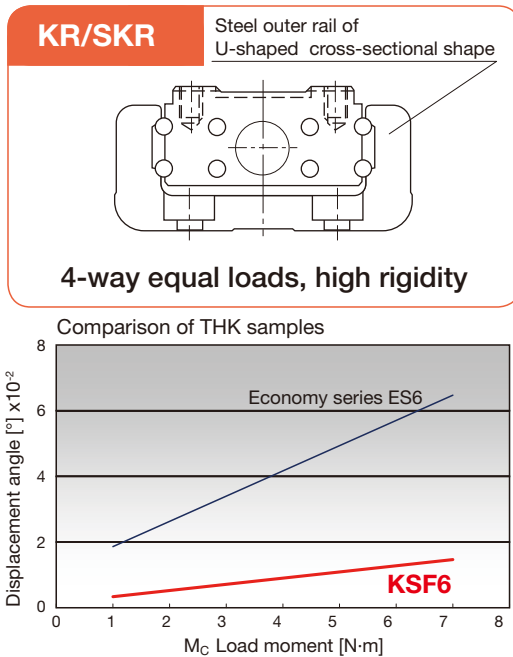
Model Number Used

KSF LM guide

2 stacked KSF units are used for the changer. This makes for more compact and rigid units than conventional multi-jointed robots.

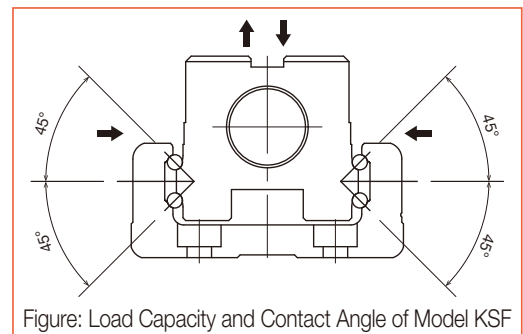
Features and Lineup of the Compact Series

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



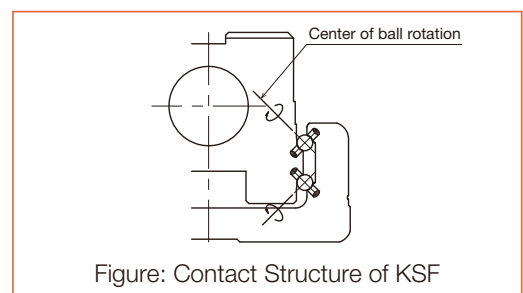
1 4-way Equal Load

Each row of balls is arranged at a contact angle of 45° so that the rated load on the inner block is uniform under loads applied to the inner block in the four directions (radial, reverse radial and lateral directions). As a result, model KSF can be used in any mounting orientation.



2 High Accuracy

Since the linear guide section consists of 4 rows of circular-arc grooves that enable balls to smoothly move even under a preload, a highly rigid guide with no clearance is achieved. Additionally, variation in frictional resistance caused by load fluctuation is minimized, allowing the system to follow highly accurate feed.



3 High Rigidity

Use of an outer rail with a U-shaped cross section increases the rigidity with respect to moment and torsion.

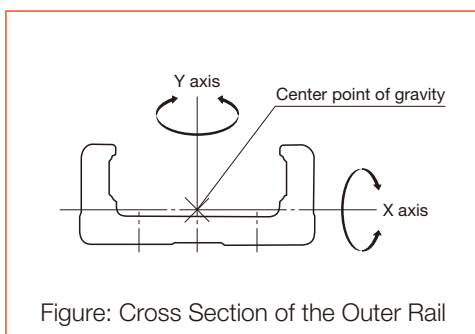


Table: Cross-sectional Characteristics of the Outer rail

Model	I_x [mm ⁴]	I_y [mm ⁴]	Weight [kg/m]
KSF4	6.1×10^3	6.2×10^4	2.6
KSF5	1.7×10^4	1.5×10^5	3.9
KSF6	2.7×10^4	2.8×10^5	5.0
KSF8	8.4×10^4	8.9×10^5	9.0
KSF10	2.2×10^5	2.3×10^6	15.0

I_x = geometrical moment of inertia around X axis

I_y = geometrical moment of inertia around Y axis

Compact Series KSF 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)	Model	Motor rated output (W)
KSF4, KSF5	100	KSF6	200	KSF8	400	KSF10	750
VLAST45	30	VLAST60	100	US8T	150	USW12T	200

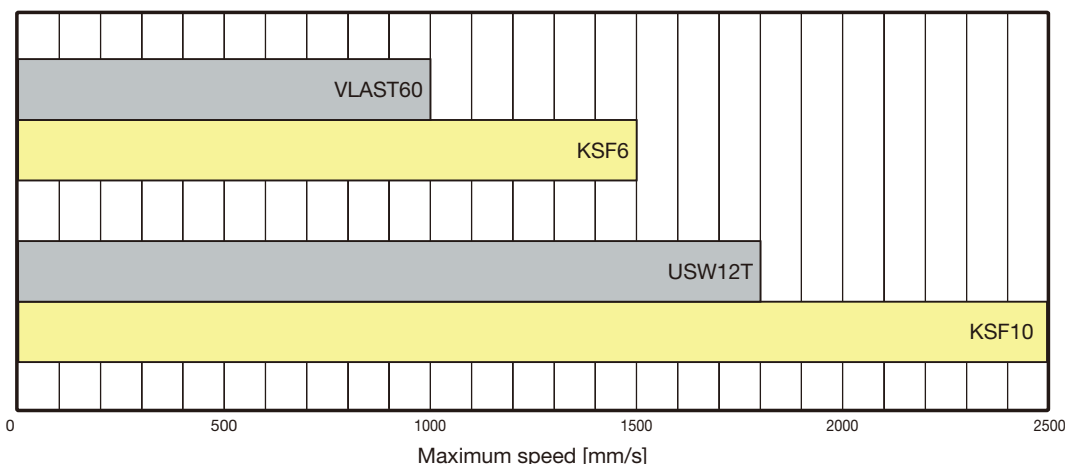
2 High speed & high acceleration/deceleration

Maximum speed 2,500 mm/s Maximum acceleration/deceleration 2 G

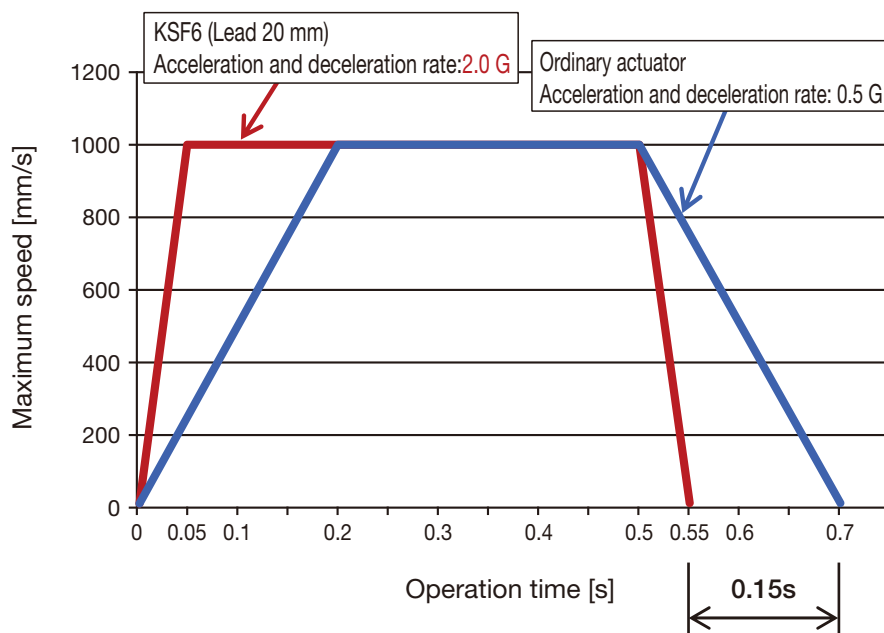
Larger lead of the ball screw has achieved the maximum speed of 2,500 mm/s. (*For KSF10, lead 50)

Using a larger rated output motor allows for the high-acceleration/deceleration conveyance. (Up to 2 G)

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)

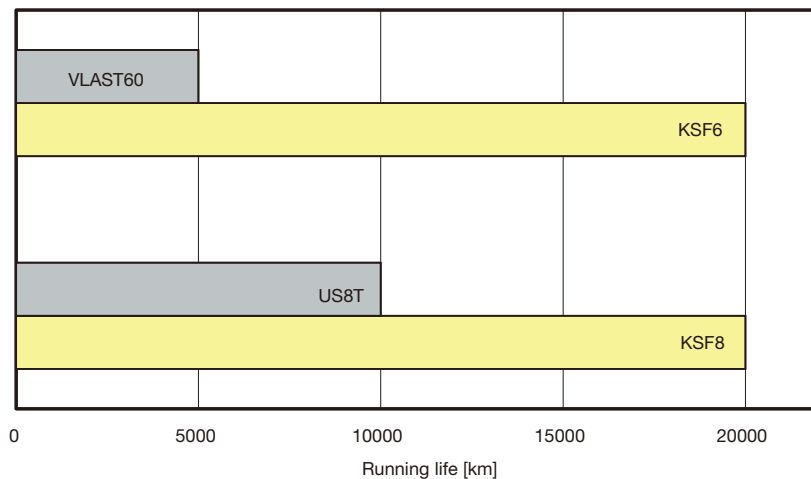
Process time reduced by 30 seconds per 100 cycles, for roughly 20% increase in productivity

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.

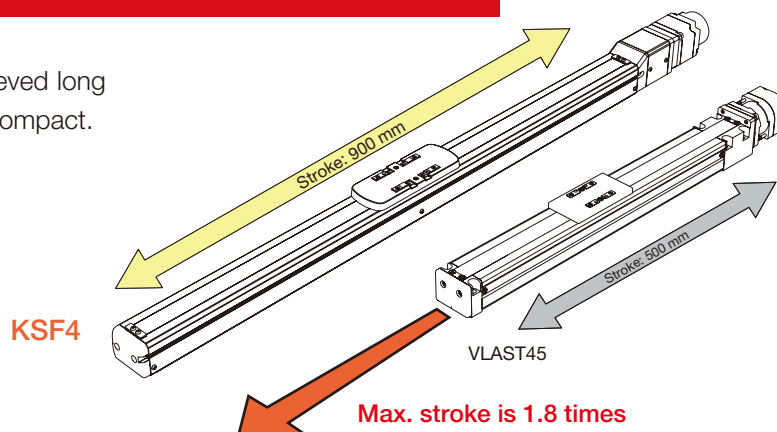
Running life comparison between KSF and other THK products



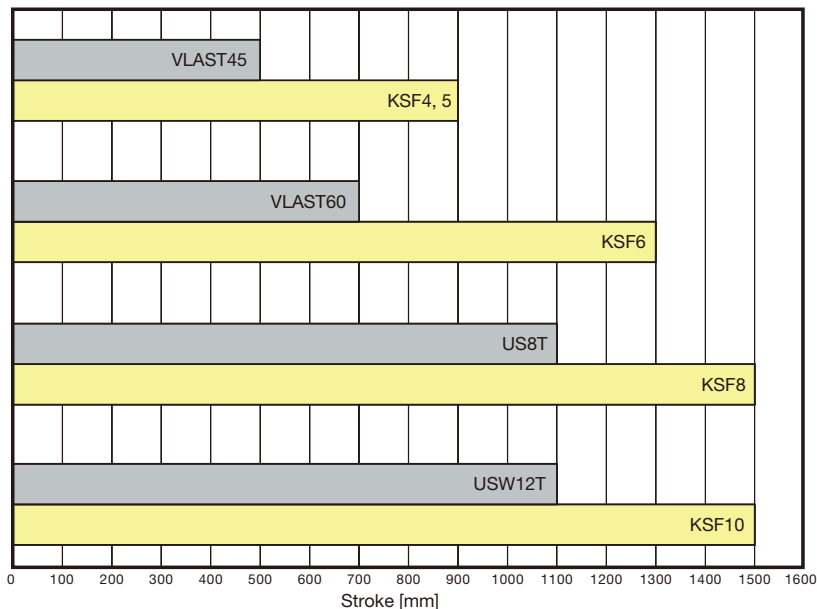
4 Long stroke

Maximum stroke 1,500 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

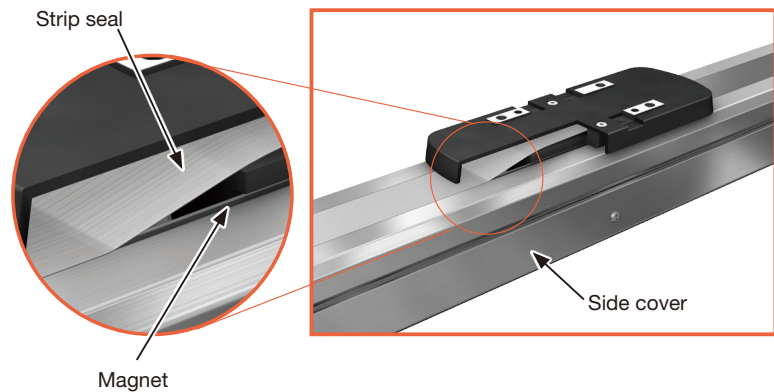
Reduced dust generation

Strip seal and top of side cover are magnetically sealed which provides a fully enclosed structure. It prevents failure by foreign matters getting inside.

By avoiding sliding with the top surface of the strip seals, there is low particle generations.

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 Versatile lineup

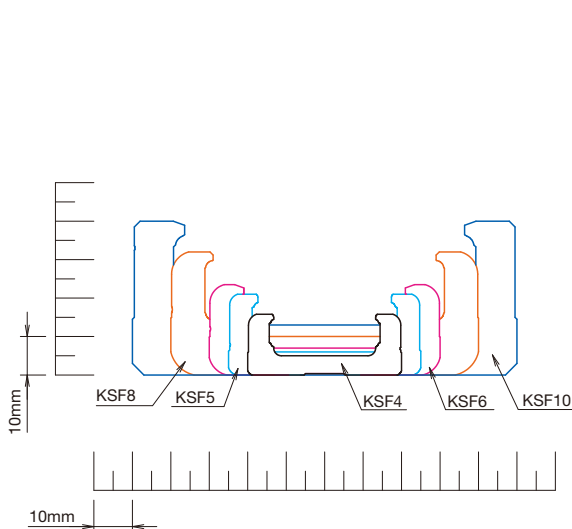
KSF10 has been added to the lineup for a total of 5 models.

Open cover and top cover specifications have recently been added for even easier maintenance and mounting.

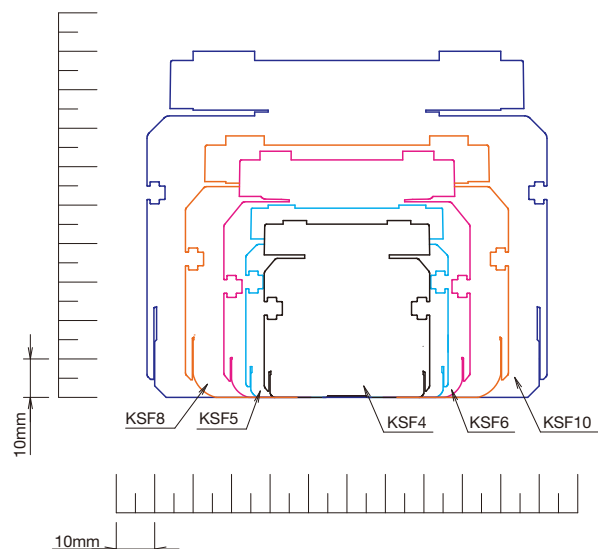
Furthermore, motor wrap type for compact length and back-tapped type that can be mounted without removing the cover have been added, allowing selection to suit the application.

Moreover, motors from various manufacturers can be mounted, allowing users to operate with familiarized control methods.

• Size Lineup



Comparison of outer rail cross-sections



Comparison of fully enclosed cross-sections

- Shapes Lineup



Fully Enclosed Type



Top Cover Type



Open Cover Type

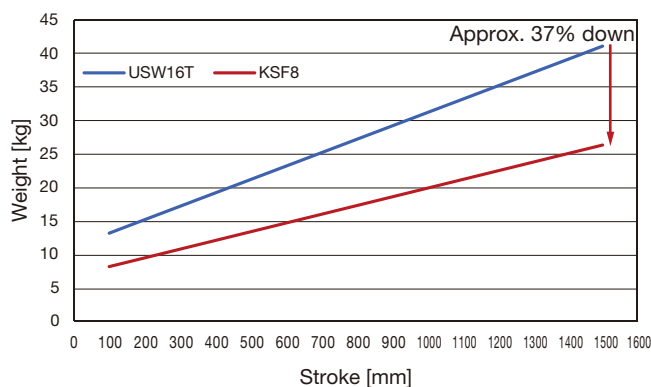
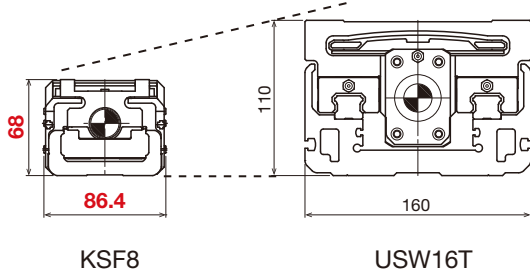
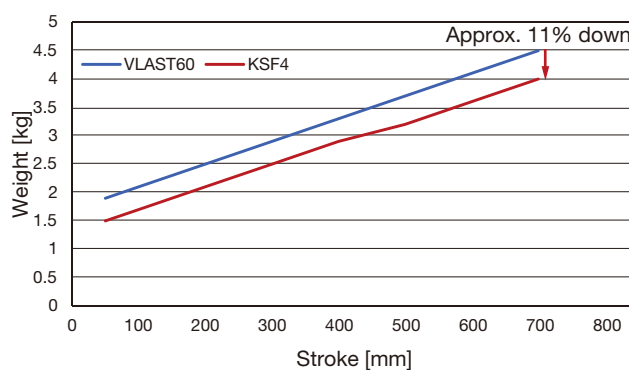
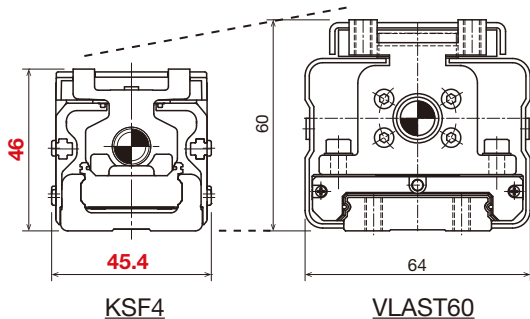
8 Compact & Lightweight

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 1,500 mm



Product Lineup



Fully Enclosed Type
KSF4 to 10



Fully Enclosed Type
KSF4R to 10R



Top Cover Type
KSF5T to 10T

Model	Ball screw lead [mm]	Stroke [mm]	Acceleration and deceleration rate [G]	Maximum load capacity*1[kg]		
				Horizontal/ Wall mount	Vertical mount	
KSF4 KSF4U	10	50 to 900	0.5	12	8	
			1.0	8	6	
	16		1.0	8	6	
			2.0	6	4	
KSF5 KSF5T KSF5U	10	50 to 900	0.5	20	13	
			1.0	15	8	
	20		1.0	7	6	
			2.0	5	3	
KSF6 KSF6T KSF6U	20	50 to 1300	1.0	22	10	
			2.0	5	3	
	30		1.0	14	6	
			2.0	6	4	
KSF8 KSF8T KSF8U	20	100 to 1500	1.0	43	20	
			2.0	6	3	
	40		1.0	16	8	
			2.0	7	5	
KSF10 KSF10T KSF10U	25	100 to 1500	1.0	60 (58)	25 (23)	
			1.5	26	13	
	50		1.0	17 (15)	9 (7)	
			1.5	8	5	
KSF4R KSF4RU	10	50 to 900	0.5	12	8	
			1.0	8	6	
	16		1.0	8	6	
			2.0	6	4	
KSF5R KSF5RT KSF5RU	10	50 to 900	0.5	20	11	
			1.0	15	8	
	20		1.0	7	5	
			2.0	4	2.5	
KSF6R KSF6RT KSF6RU	20	50 to 1300	1.0	19	9	
			2.0	4	2.5	
	30		1.0	11	5	
			2.0	4	2.5	
KSF8R KSF8RT KSF8RU	20	100 to 1500	1.0	41	20	
			2.0	6	3	
	40		1.0	16	8	
			2.0	7	5	
KSF10R KSF10RT KSF10RU	25	100 to 1500	1.0	38 (36)	19 (17)	
			1.5	8	3	
	50		1.0	12 (10)	7 (5)	
			1.5	4	3	

*1 () is the value for KSF10T, KSF10RT.

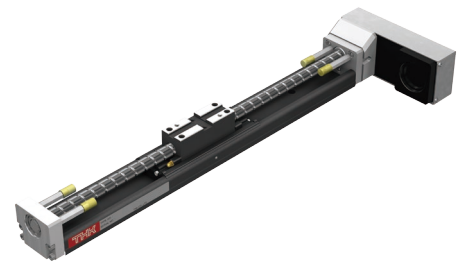
*2 The maximum speed is the value restricted by the motor rotational speed (at 3,000 min⁻¹) or by the permissible rotational speed of the ball screw.*1



Top Cover Type
KSF5RT to 10RT



Open Cover Type
KSF4U to 10U



Open Cover Type
KSF4RU to 10RU

ES/EC

KRF/KSF

US/USW

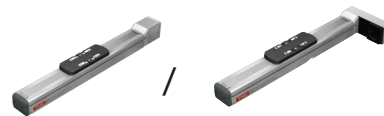
PCT/PC

Maximum speed for each stroke*2 [mm/s]																				
Stroke [mm]																				
up to 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													
800	690	600	520	460	410	360	330													
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				
1250								1050		890		760		660		580	510			
2500								2110		1790		1530		1330		1160	1030			
500	430	370	320	290	250	230	200													
800	690	600	520	460	410	360	330													
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				
1250								1050		890		760		660		580	510			
2500								2110		1790		1530		1330		1160	1030			

Model Configuration

KSF (type without motor)

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



Model	Ball screw lead	Stroke	With/without motor	Intermediate flange/ motor mounting plate	Motor shaft diameter	Motor shaft fixing method	Option
KSF4R -	10	-	0050	-	08	K	-
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
KSF4	10: 10 mm	0050: 50 mm	0: Without motor	A0	No symbol: Select when directly coupled	No symbol: Select when directly coupled	No symbol: None
KSF5	20: 20 mm	to	1: With motor	AQ	08: 8 mm	D: D-cut	MR: Motor right wrap*
KSF6	25: 25 mm	1500: 1500 mm		AP	11: 11 mm	K: Key	ML: Motor left wrap*
KSF8	30: 30 mm			AR	14: 14 mm	M: Friction tightening	MD: Motor down wrap*
KSF10	40: 40 mm			AV	16: 16 mm		T: Back tap
KSF4R	50: 50 mm			AY	19: 19 mm		GR: Change the cover color to gray
KSF5R				AU			□: Sensors
KSF6R				AZ			
KSF8R				A5			
KSF10R				A6			

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

*Specify the motor cable orientation separately.

Ball screw leads you can select differ depending on models.
KSF4: "10", "16"
KSF5: "10", "20"
KSF6: "20", "30"
KSF8: "20", "40"
KSF10: "25", "50"

R represents motor wrap.

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)
KSF10: 100 to 1500 mm (in 100mm pitch increments)

Motor shaft fixing methods you can select differ depending on models.
KSF4R: "D", "K"
KSF5R: "D", "K"
KSF6R: "D", "K", "M"
KSF8R: "M"
KSF10: "M"

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 selected: gray

Model configuration coding

When combining with dedicated driver controller (THC)	KSF4-10-0150-TH-6/M10BRS02D2H5
Main unit only (type without motor)	KSF4R-16-0150-0-WQ-08K-MR-6
Main unit only (when the motor specified by the customer is installed)	KSF4-10-0150-1-AQ-GR

Pages for detailed description

(5) Intermediate flange	→ P.2-063
(8) Options	T: Back taps → P.2-059
	Sensors → P.2-060
	GR: Change the cover color to gray → P.2-063

Model Configuration

KSF-T/U (type without motor)

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



Model	Ball screw lead	Stroke	With/without motor	Intermediate flange/ motor mounting plate	Motor shaft diameter	Motor shaft fixing method	Option
KSF4RU -	10 -	0050 -	0 -	WQ -	08 -	K -	ML
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
KSF5T KSF6T KSF8T KSF10T KSF5RT KSF6RT KSF8RT KSF10RT KSF4U KSF5U KSF6U KSF8U KSF10U KSF4RU KSF5RU KSF6RU KSF8RU KSF10RU	10: 10 mm 16: 16 mm 20: 20 mm 25: 25 mm 30: 30 mm 40: 40 mm 50: 50 mm	0050 : 50 mm to 1500 : 1500 mm	0: Without motor 1: With motor	A0 AQ AP AR AV AY AU AZ A5 A6 WQ WP WV WY WZ W5	No symbol:Select when directly coupled 08 : 8 mm 11 : 11 mm 14 : 14 mm 16 : 16 mm 19 : 19 mm	No symbol:Select when directly coupled D : D-cut K : Key M : Friction tightening	No symbol:None MR : Motor right wrap*1 ML : Motor left wrap*1 MD : Motor down wrap* T : Back tap □ : Sensors F : Sub-table iron specification*2
Ball screw leads you can select differ depending on models. KSF4: "10", "16" KSF5: "10", "20" KSF6: "20", "30" KSF8: "20", "40" KSF10: "25", "50"		Maximum stroke differs 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) KSF10: 100 to 1500 mm (in 100mm pitch increments)		When selecting "0", a coupling is not provided. When selecting "1", the motor you specify will be installed.		Motor shaft fixing methods you can select differ depending on models. KSF4R: "D", "K" KSF5R: "D", "K" KSF6R: "D", "K", "M" KSF8R: "M" KSF10R: "M"	
T indicates a top cover and U indicates an open cover. R represents motor wrap.		Specify the optional symbol by writing in the order of description from left adding "-". *1 Valid only when motor wrap is selected in model (1). *2 This is valid only when selecting Top Cover for model (1). KSF10T and KSF10RT are standard and the sub-table is iron.					

ES/EC

KRF/KSF

US/USW

PCT/PC

Model configuration coding

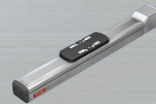
When combining with dedicated driver controller (THC)	KSF4T-16-0150-TH-T-6/M10BLS02D1F3
Main unit only (type without motor)	KSF4RU-10-0150-0-WQ-08K-MR-6
Main unit only (when the motor specified by the customer is installed)	KSF4U-10-0150-1-AQ-T

Pages for detailed description

(5) Intermediate flange	→ P.2-063
(6) Options	Back taps → P.2-059
	Sensors → P.2-060

Compact series

KSF4 Without Motor



Model Configuration

Model	Ball screw lead	Stroke	With/without motor	Intermediate flange	Option
KSF4	10	0050	0	AQ	GR
KSF4	10 : 10 mm 16 : 16 mm	0050 : 50 mm to 0900 : 900 mm	0 : Without motor 1 : With motor	A0 : Without intermediate flange AP AQ AR	No symbol : None T : Back tap GR : Change the cover color to gray 6 : Photo sensor J : Proximity sensor M : Proximity sensor (PNP)

Basic Specifications

LM guide portion	Basic dynamic load rating C [N]	6,400	
	Basic static load rating Co [N]	12,900	
Ball screw portion	Basic dynamic load rating Ca [N]	2,860	1,850
	Basic static load rating Coa [N]	5,110	3,420
	Screw shaft diameter [mm]	φ10	
	Ball screw lead [mm]	10	16
Bearing portion (Fixed side)	Axial direction Basic dynamic load rating Ca [N]	2,930	
	Static permissible load Poa [N]	2,140	
Permissible rotational speed *1 [min ⁻¹]		3,000	
Starting torque *2 [N·cm]		1.5	
Positioning repeatability *3 [mm]		±0.010	
Lost motion *3 [mm]		0.1	
Permissible input torque [N·m]		1.2	
Static permissible moment *4 [N·m]		MA: 103 MB: 103 MC: 58	

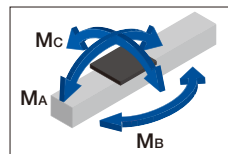
*1 The permissible rotational speed is restricted by the stroke.

*2 The starting torque represents values when the standard grease is filled.

*3 These represent values when measured using a motor provided by THK.

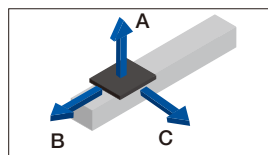
*4 Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static Permissible Moment

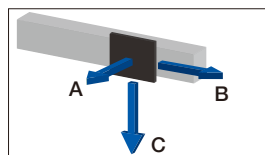


Permissible Overhang Length *7

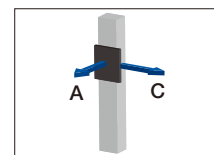
Horizontal use



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
16	2	400	260	350
	4	300	120	170
	8	130	50	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
16	2	310	240	400
	4	140	100	280
	8	50	30	110

Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
10	2	300	300
	4	140	140
	8	60	60
16	1.5	290	290
	3	130	130
	6	50	50

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
16	1.5	400	350	400
	3	250	170	200
	6	110	80	100

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
16	1.5	360	320	400
	3	160	150	240
	6	60	60	100

Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
10	1.5	400	400
	3	190	190
	6	80	80
16	1	400	400
	2	190	190
	4	80	80

*7 This value is the overhang length whose running life is 10,000 km (20,000 km for lead 16 mm) for each direction.
A permissible value of the applied load in each direction.

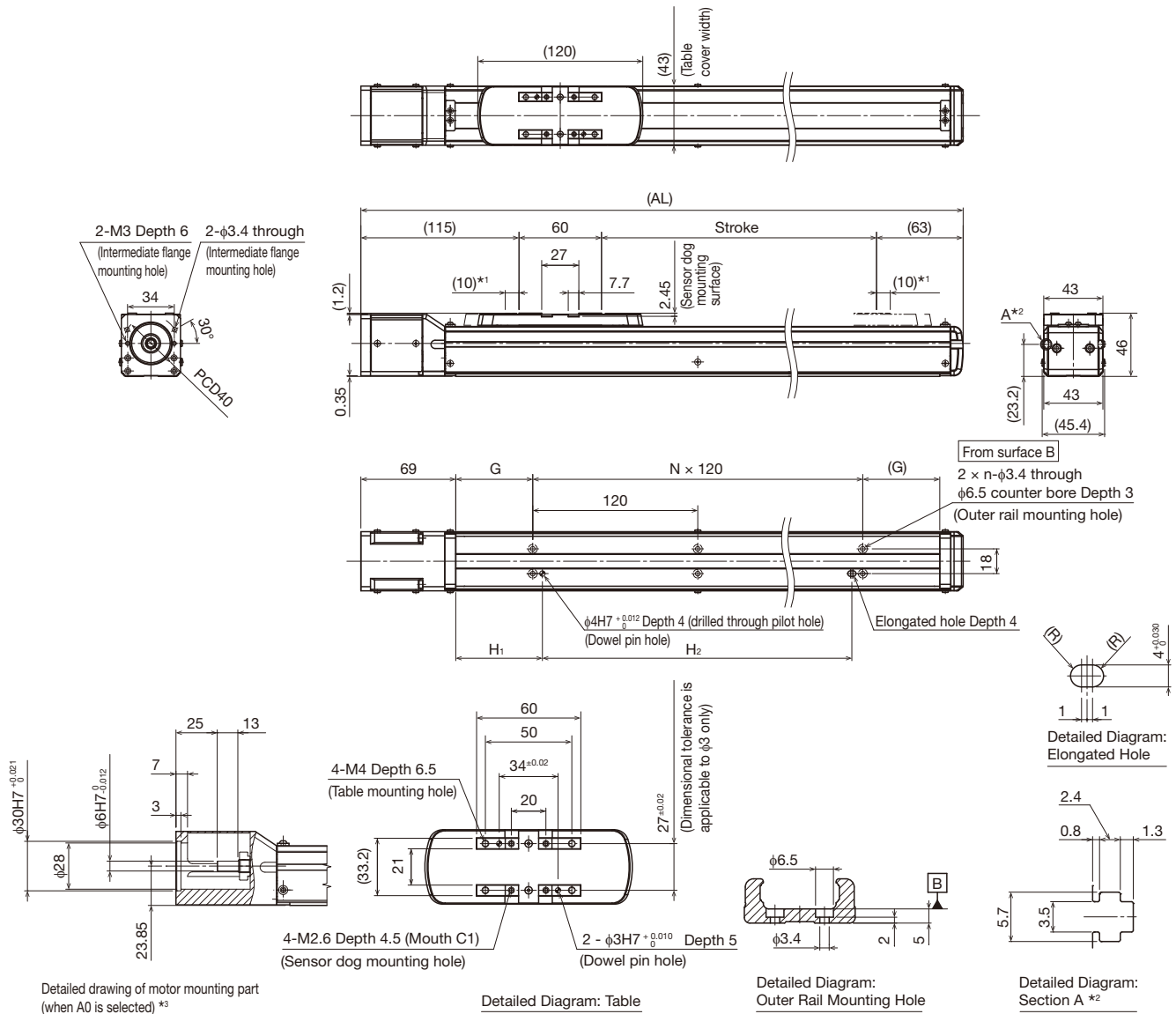
Dimensions

ES/EC

KRF/KSF

US/USW

PCT/PC



Detailed drawing of motor mounting part
(when A0 is selected) *3

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.

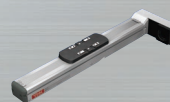
*3 See P.2-073 for intermediate flange dimensions.

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 *4 *5 [mm/s]	Ball screw lead: 10 mm	500								
	Ball screw lead: 16 mm	800								
Dimensions [mm]	AL	288	338	388	438	488	538	588	638	688
	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 [kg]		1.5	1.7	1.9	2.1	2.3	2.5	2.7	2.9	3.0
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 *4 *5 [mm/s]	Ball screw lead: 10 mm	500								
	Ball screw lead: 16 mm	800								
Dimensions [mm]	AL	738	788	838	888	938	988	1038	1088	1138
	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 [kg]		3.2	3.4	3.6	3.8	4.0	4.2	4.4	4.6	4.7

*4 The maximum speed varies depending on the motor you use.

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

KSF4R Without Motor



Model Configuration

Model	Ball screw lead	Stroke	With/without motor	Motor mounting plate	Motor shaft diameter	Motor shaft fixing method	Option
KSF4R	10	0050	0	WQ	08	D	MR-GR
KSF4R	10 : 10 mm 16 : 16 mm	0050 : 50 mm to 0900 : 900 mm	0 : Without motor 1 : With motor	WP WQ	08 : 8 mm	D : D-cut K : Key	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 M : Proximity sensor (PNP)

Basic Specifications

LM guide portion	Basic dynamic load rating C [N]	6,400	
	Basic static load rating Co [N]	12,900	
Ball screw portion	Basic dynamic load rating Ca [N]	2,860	1,850
	Basic static load rating Coa [N]	5,110	3,420
	Screw shaft diameter [mm]	φ10	
	Ball screw lead [mm]	10	16
Bearing portion (Fixed side)	Axial direction Basic dynamic load rating Ca [N]	2,930	
	Static permissible load Poa [N]	2,140	
Permissible rotational speed *1 [min ⁻¹]		3,000	
Starting torque *2 [N·cm]		1.5	
Positioning repeatability *3 [mm]		±0.010	
Lost motion *3 [mm]		0.1	
Permissible input torque [N·m]		1.1	
Static permissible moment *4 [N·m]		MA: 103 MB: 103 MC: 58	

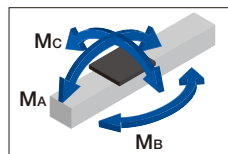
*1 The permissible rotational speed is restricted by the stroke.

*2 The starting torque represents values when the standard grease is filled.

*3 These represent values when measured using a motor provided by THK.

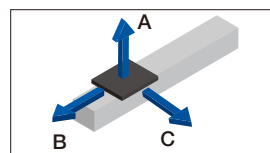
*4 Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static Permissible Moment

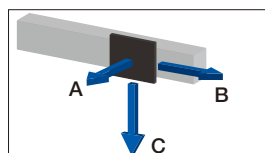


Permissible Overhang Length *5

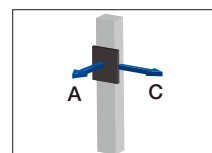
Horizontal use



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
16	2	400	260	350
	4	300	120	170
	8	130	50	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
16	2	310	240	400
	4	140	100	280
	8	50	30	110

Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
10	2	300	300
	4	140	140
	8	60	60
16	1.5	290	290
	3	130	130
	6	50	50

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
16	1.5	400	350	400
	3	250	170	200
	6	110	80	100

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
16	1.5	360	320	400
	3	160	150	240
	6	60	60	100

Vertical mount [mm]

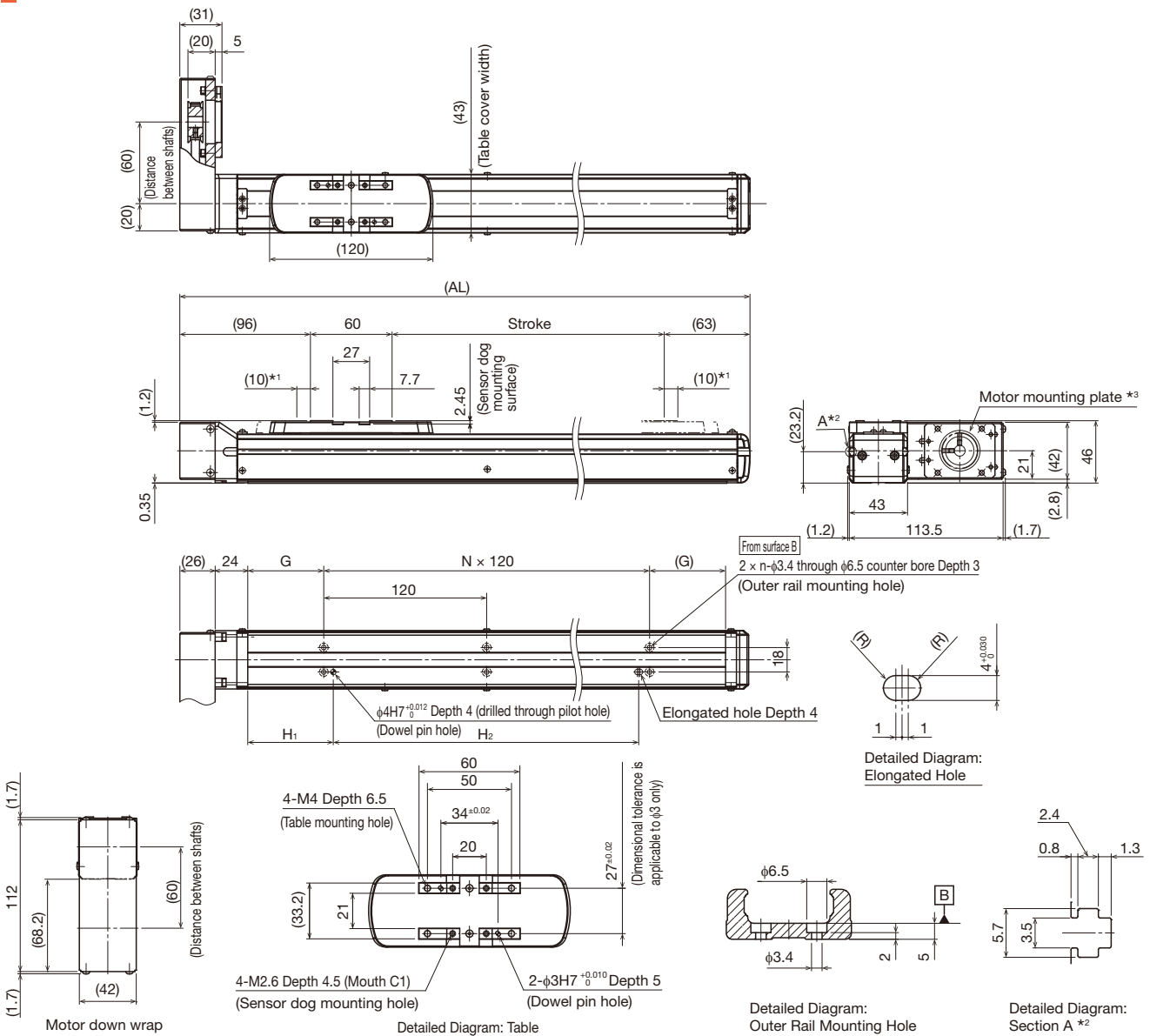
Ball screw lead [mm]	Load mass [kg]	A	C
10	1.5	400	400
	3	190	190
	6	80	80
16	1	400	400
	2	190	190
	4	80	80

*5 This value is the overhang length whose running life is 10,000 km (20,000 km for lead 16 mm) for each direction.

A permissible value of the applied load in each direction.

KSF4R

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.

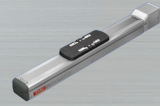
*3 See P2-073 for motor mounting plate dimensions.

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 ^{*4 *5} [mm/s]	Ball screw lead: 10 mm	500								
	Ball screw lead: 16 mm	800								
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 [kg]		1.7	1.9	2.1	2.3	2.5	2.7	2.8	3.0	3.2
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 ^{*4 *5} [mm/s]	Ball screw lead: 10 mm	500								
	Ball screw lead: 16 mm	800								
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 [kg]		3.4	3.6	3.8	4.0	4.2	4.4	4.5	4.7	4.9

*4 The maximum speed varies depending on the motor you use.

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

KSF5 Without Motor



Model Configuration

Model	Ball screw lead	Stroke	With/without motor	Intermediate flange	Option
KSF5	10	0050	0	AQ	GR
KSF5	10 : 10 mm 20 : 20 mm	0050 : 50 mm to 0900 : 900 mm	0 : Without motor 1 : With motor	A0 : Without intermediate flange AP AQ AR	No symbol : None T : Back tap GR : Change the cover color to gray 6 : Photo sensor J : Proximity sensor M : Proximity sensor (PNP)

Basic Specifications

LM guide portion	Basic dynamic load rating C [N]		10,200	
	Basic static load rating C ₀ [N]		17,900	
Ball screw portion	Basic dynamic load rating C _a [N]		3,350	2,150
	Basic static load rating C _{0a} [N]		6,600	4,470
	Screw shaft diameter [mm]		φ13	
	Ball screw lead [mm]		10	20
Bearing portion (Fixed side)	Axial direction	Basic dynamic load rating C _a [N]	6,100	
		Static permissible load P _{0a} [N]	3,100	
Permissible rotational speed *1 [min ⁻¹]			3,000	
Starting torque *2 [N·cm]			7	
Positioning repeatability *3 [mm]			±0.010	
Lost motion *3 [mm]			0.1	
Permissible input torque [N·m]			1.8	
Static permissible moment *4 [N·m]			M _A : 147 M _B : 147 M _C : 149	

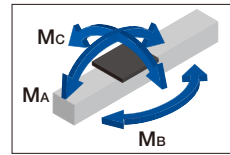
*1 The permissible rotational speed is restricted by the stroke.

*2 The starting torque represents values when the standard grease is filled.

*3 These represent values when measured using a motor provided by THK.

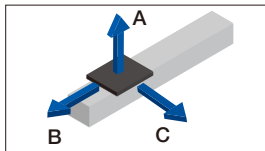
*4 Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static Permissible Moment

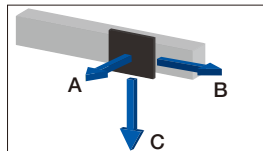


Permissible Overhang Length *5

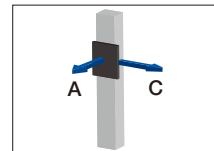
Horizontal use



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

*5 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.

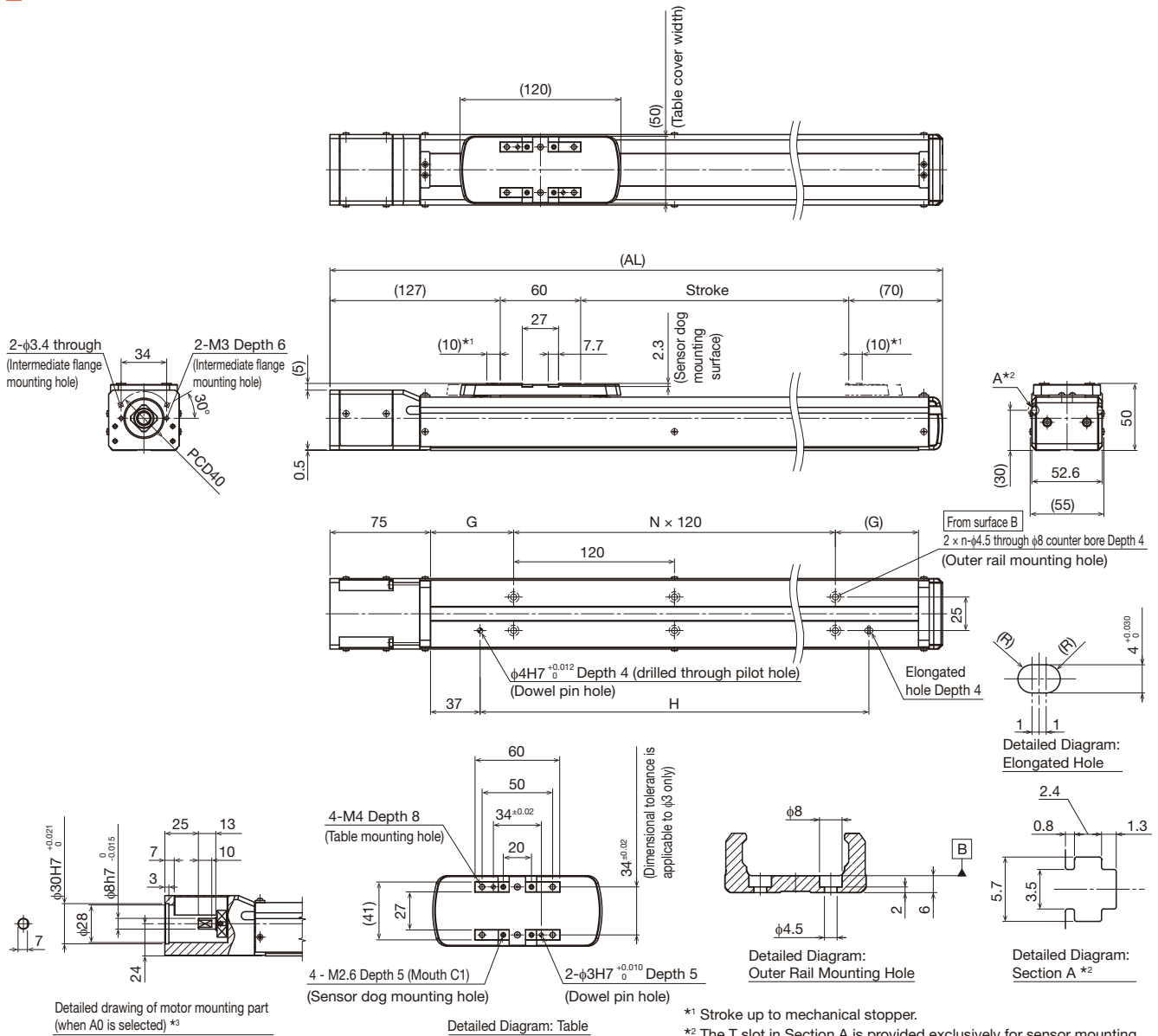
Dimensions

ES/EC

KRF/KSF

US/USW

PCT/PC



*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.

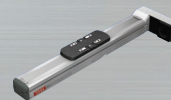
*3 See P.2-074 for intermediate flange dimensions.

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 *4 *5 [mm/s]	Ball screw lead: 10 mm	500								
	Ball screw lead: 20 mm	1000								
Dimensions [mm]	AL	307	357	407	457	507	557	607	657	707
	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 [kg]		2.3	2.6	2.8	3.1	3.4	3.7	4.0	4.2	4.5
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 *4 *5 [mm/s]	Ball screw lead: 10 mm	500								
	Ball screw lead: 20 mm	1000								
Dimensions [mm]	AL	757	807	857	907	957	1007	1057	1107	1157
	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 [kg]		4.8	5.1	5.4	5.6	5.9	6.2	6.5	6.8	7.0

*4 The maximum speed varies depending on the motor you use.

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

KSF5R Without Motor



Model Configuration

Model	Ball screw lead	Stroke	With/without motor	Motor mounting plate	Motor shaft diameter	Motor shaft fixing method	Option
KSF5R	10	0050	0	WQ	08	D	MR-GR
KSF5R	10 : 10 mm 20 : 20 mm	0050 : 50 mm to 0900 : 900 mm	0 : Without motor 1 : With motor	WP WQ	08 : 8 mm	D : D-cut K : Key	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 M : Proximity sensor (PNP)

Basic Specifications

LM guide portion	Basic dynamic load rating C [N]	10,200	
	Basic static load rating Co [N]	17,900	
Ball screw portion	Basic dynamic load rating Ca [N]	3,350	2,150
	Basic static load rating Coa [N]	6,600	4,470
	Screw shaft diameter [mm]	φ13	
	Ball screw lead [mm]	10	20
Bearing portion (Fixed side)	Axial Basic dynamic load rating Ca [N]	6,100	
	Static permissible load Poa [N]	3,100	
Permissible rotational speed *1 [min ⁻¹]		3,000	
Starting torque *2 [N·cm]		7	
Positioning repeatability *3 [mm]		±0.010	
Lost motion *3 [mm]		0.1	
Permissible input torque [N·m]		1.1	
Static permissible moment *4 [N·m]		Ma: 147 Mb: 147 Mc: 149	

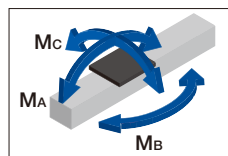
*1 The permissible rotational speed is restricted by the stroke.

*2 The starting torque represents values when the standard grease is filled.

*3 These represent values when measured using a motor provided by THK.

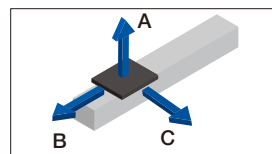
*4 Applied point of moment for Ma and Mc are the top face of the table, and that for Mb is the center of the table.

Static Permissible Moment

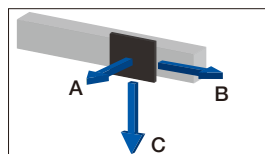


Permissible Overhang Length *5

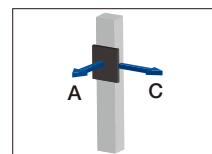
Horizontal use



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

*5 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

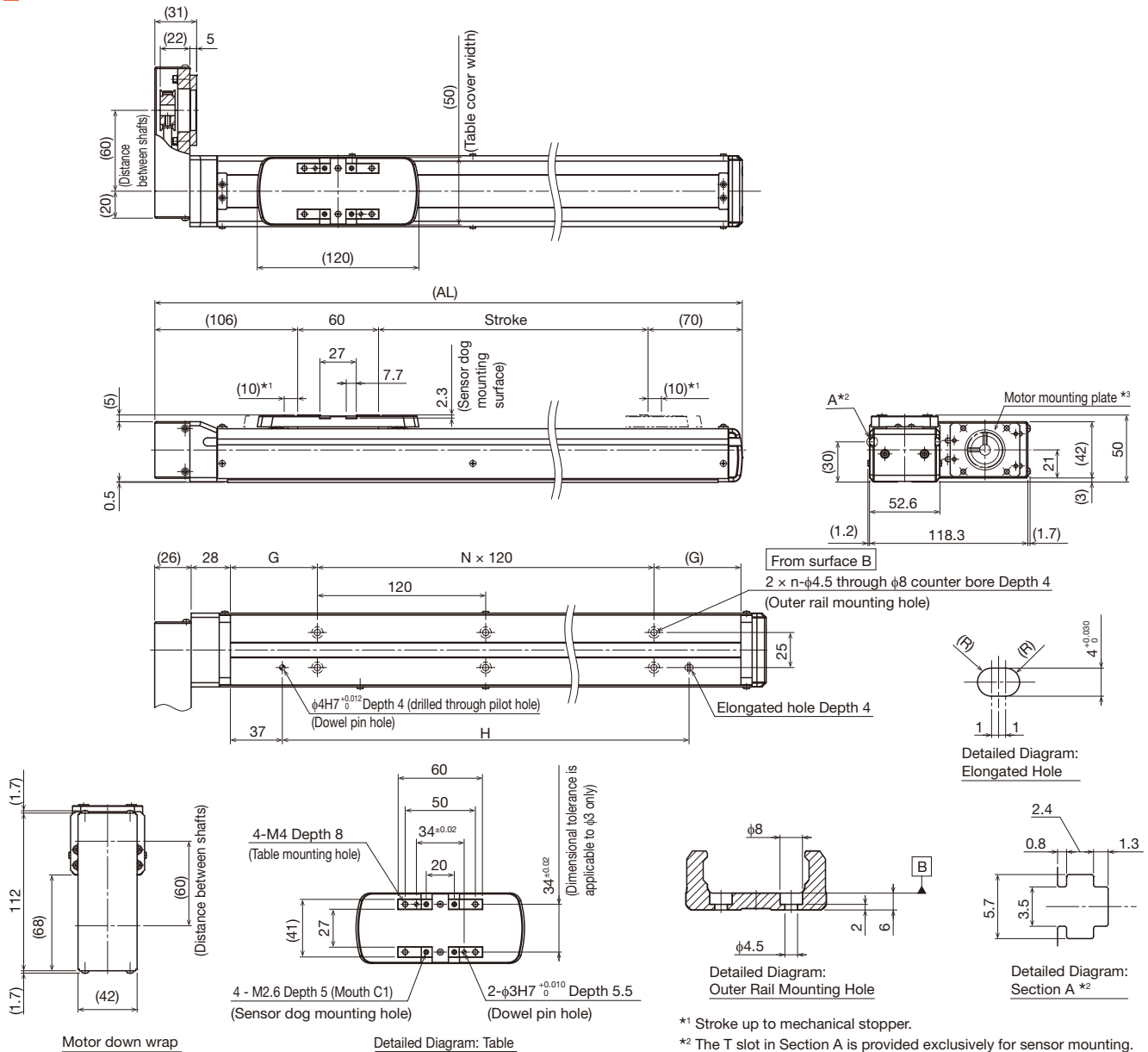
Dimensions

ES/EC

KRF/KSF

US/USW

PCT/PC



*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.

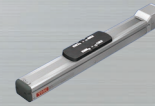
*3 See P.2-074 for motor mounting plate dimensions.

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 ^{*4 *5} [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 [kg]		2.4	2.7	3.0	3.3	3.5	3.8	4.1	4.4	4.7
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 ^{*4 *5} [mm/s]	Ball screw lead: 10 mm	500								
	Ball screw lead: 20 mm	1000								
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 [kg]		4.9	5.2	5.5	5.8	6.0	6.3	6.6	6.9	7.2

*4 The maximum speed varies depending on the motor you use.

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

KSF6 Without Motor



Model Configuration

Model	Ball screw lead	Stroke	With/without motor	Intermediate flange	Option
KSF6	20	0750	0	AV	GR-6
KSF6	20: 20 mm 30: 30 mm	0050: 50 mm to 1300: 1300 mm	0: Without motor 1: With motor	A0: Without intermediate flange AV AY AU	No symbol: None T: Back tap GR: Change the cover color to gray 6: Photo sensor J: Proximity sensor M: Proximity sensor (PNP)

Basic Specifications

LM guide portion	Basic dynamic load rating C [N]		17,400	
	Basic static load rating C ₀ [N]		33,000	
Ball screw portion	Basic dynamic load rating C _a [N]		3,400	3,230
	Basic static load rating C _{0a} [N]		8,070	6,570
	Screw shaft diameter [mm]		φ15	
	Ball screw lead [mm]		20	30
Bearing portion (Fixed side)	Axial direction	Basic dynamic load rating C _a [N]	6,650	
		Static permissible load P _{0a} [N]	3,250	
Permissible rotational speed *1 [min ⁻¹]			3,000	
Starting torque *2 [N·cm]			6.2	8.3
Positioning repeatability *3 [mm]			± 0.010	
Lost motion *3 [mm]			0.1	
Permissible input torque [N·m]			3.1	
Static permissible moment *4 [N·m]			M _A : 330 M _B : 216 M _C : 188	

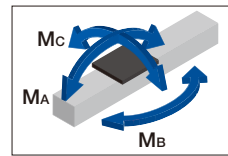
*1 The permissible rotational speed is restricted by the stroke.

*2 The starting torque represents values when the standard grease is filled.

*3 These represent values when measured using a motor provided by THK.

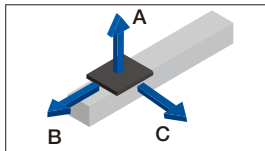
*4 Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static Permissible Moment

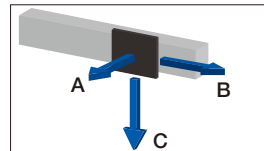


Permissible Overhang Length *5

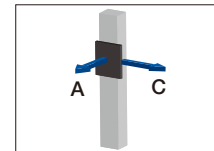
Horizontal use



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	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: 2.0 G

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]

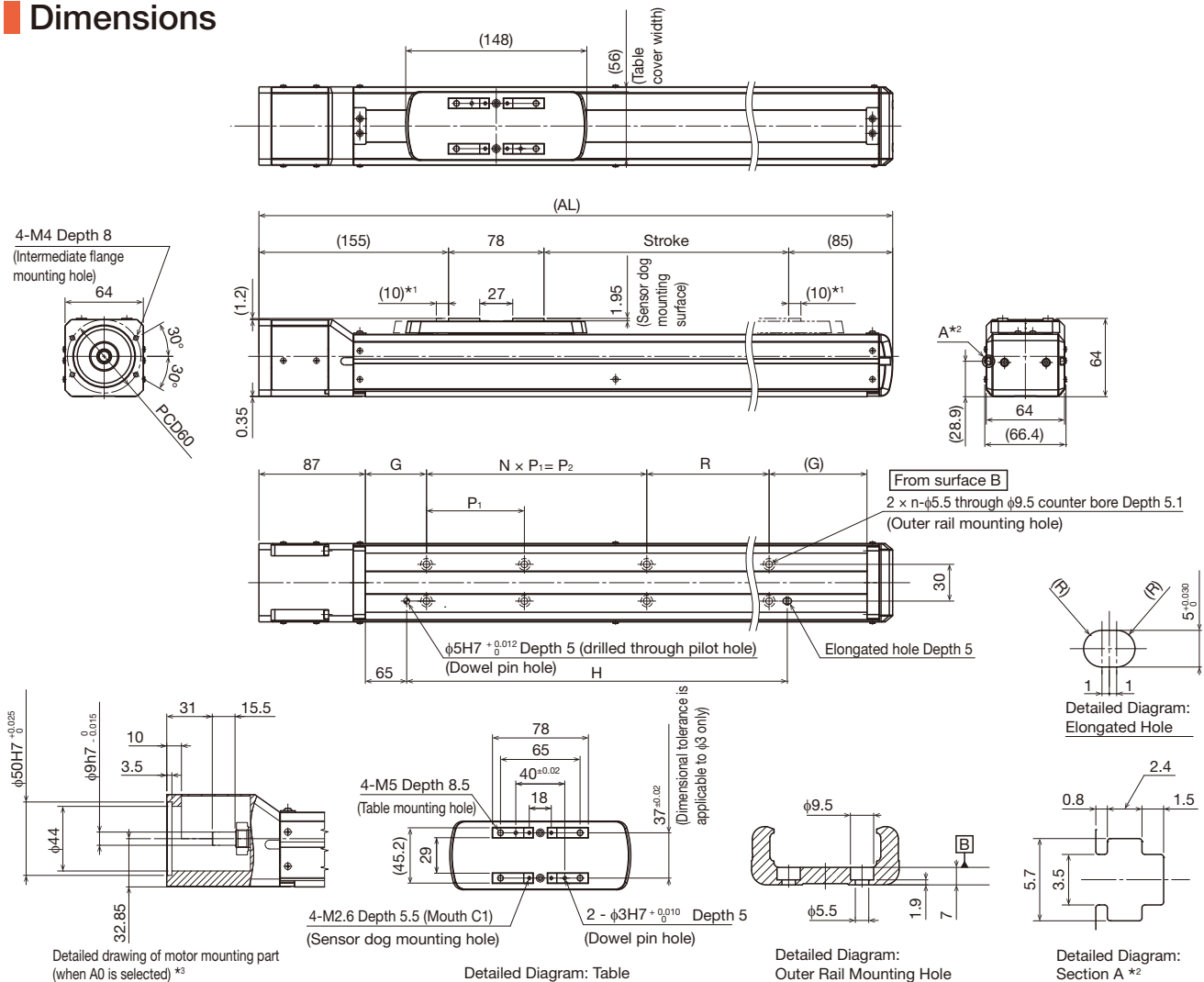
Ball screw lead [mm]	Load mass [kg]	A	B	C
20	1.25	600	600	600
	2.5	600	600	600
	5	360	350	470
30	1.5	600	600	600
	3	380	470	480
	6	170	210	210

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

*5 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.

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.

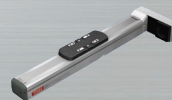
*3 See P.2-075 for intermediate flange dimensions.

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 [mm/s]	Ball screw	1000												
	lead	1500												
Dimensions [mm]	AL	368	418	468	518	568	618	668	718	768	818	868	918	968
	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 [kg]		3.9	4.3	4.7	5.1	5.5	5.8	6.2	6.6	7.0	7.4	7.8	8.2	8.6
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 [mm/s]	Ball screw	980	870	770	690	630	570	520	470	430	400	370	340	320
	lead	1470	1300	1160	1040	940	850	780	710	650	600	550	510	480
Dimensions [mm]	AL	1018	1068	1118	1168	1218	1268	1318	1368	1418	1468	1518	1568	1618
	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 [kg]		8.9	9.3	9.7	10.1	10.5	10.9	11.3	11.7	12.0	12.4	12.8	13.2	13.6

*4 The maximum speed varies depending on the motor you use.

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

KSF6R Without Motor



Model Configuration

Model	Ball screw lead	Stroke	With/without motor	Motor mounting plate	Motor shaft diameter	Motor shaft fixing method	Option
KSF6R	20	0050	0	WV	14	M	MR-T-GR
KSF6R	20: 20 mm 30: 30 mm	0050: 50 mm to 1300: 1300 mm	0: Without motor 1: With motor	WV WY	11: 11 mm 14: 14 mm	D: D-cut K: Key M: Friction tightening	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 M: Proximity sensor (PNP)

Basic Specifications

LM guide portion	Basic dynamic load rating C [N]	17,400	
	Basic static load rating Co [N]	33,000	
Ball screw portion	Basic dynamic load rating Ca [N]	3,400	3,230
	Basic static load rating Coa [N]	8,070	6,570
	Screw shaft diameter [mm]	φ15	
	Ball screw lead [mm]	20	30
Bearing portion (Fixed side)	Axial direction	Basic dynamic load rating Ca [N]	
	Static permissible load Poa [N]	6,650	
Permissible rotational speed *1 [min ⁻¹]		3,000	
Starting torque *2 [N·cm]		6.2	8.3
Positioning repeatability *3 [mm]		±0.010	
Lost motion *3 [mm]		0.1	
Permissible input torque [N·m]		2.2	
Static permissible moment *4 [N·m]		Ma: 330 Mb: 216 Mc: 188	

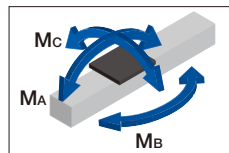
*1 The permissible rotational speed is restricted by the stroke.

*2 The starting torque represents values when the standard grease is filled.

*3 These represent values when measured using a motor provided by THK.

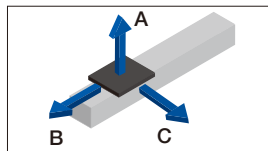
*4 Applied point of moment load for Ma and Mb are the top face of the table, and that for Mb is the center of the table.

Static Permissible Moment

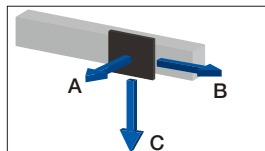


Permissible Overhang Length *5

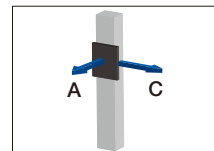
Horizontal use



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]

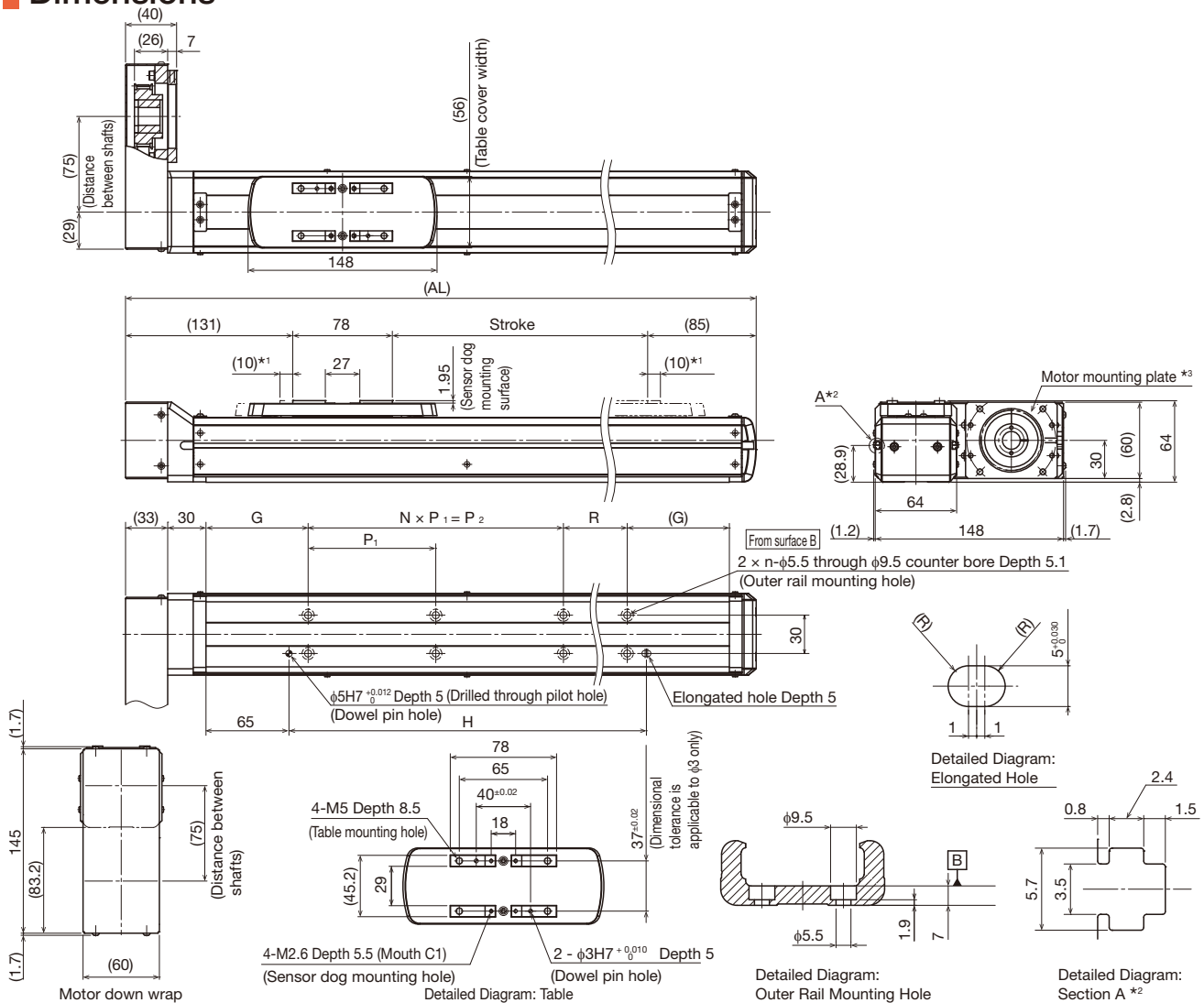
Ball screw lead [mm]	Load mass [kg]	A	C
20	0.38	600	600
	0.75	600	600
	1.5	600	600
30	0.625	600	600
	1.25	600	600
	2.5	360	360

*5 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

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.

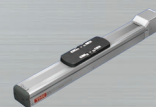
*3 See P.2-075 for motor mounting plate dimensions.

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 ^{*4 *5}	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 [kg]		4.5	4.9	5.3	5.6	6.0	6.4	6.8	7.2	7.6	8.0	8.4	8.7	9.1
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 ^{*4 *5}	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 [kg]		9.5	9.9	10.3	10.7	11.1	11.5	11.8	12.2	12.6	13.0	13.4	13.8	14.2

*4 The maximum speed varies depending on the motor you use.

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

KSF8 Without Motor



ES/EC

KRF/KSF

US/USW

PCT/PC

Model Configuration

Model	Ball screw lead	Stroke	With/without motor	Intermediate flange	Option
KSF8	20	0800	0	AV	GR-6
KSF8	20: 20 mm 40: 40 mm	0100: 100 mm to 1500: 1500 mm	0: Without motor 1: With motor	A0: Without intermediate flange AV AY AU	No symbol : None T: Back tap GR: Change the cover color to gray 6: Photo sensor J: Proximity sensor M: Proximity sensor (PNP)

Basic Specifications

LM guide portion	Basic dynamic load rating C [N]	32,400
	Basic static load rating C ₀ [N]	63,500
Ball screw portion	Basic dynamic load rating C _a [N]	4,030
	Basic static load rating C _{0a} [N]	10,540
	Screw shaft diameter [mm]	φ20
Bearing portion (Fixed side)	Ball screw lead [mm]	20
	Axial direction	40
Bearing portion (Fixed side)	Basic dynamic load rating C _a [N]	7,600
	Static permissible load P _{0a} [N]	4,000
Permissible rotational speed * ¹ [min ⁻¹]		3,000
Starting torque * ² [N·cm]		12
Positioning repeatability * ³ [mm]		±0.010
Lost motion * ³ [mm]		0.1
Permissible input torque [N·m]		7.1
Static permissible moment * ⁴ [N·m]		M _A : 730 M _B : 437 M _C : 387

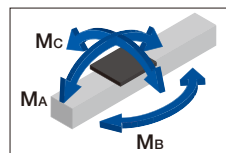
*¹ The permissible rotational speed is restricted by the stroke.

*² The starting torque represents values when the standard grease is filled.

*³ These represent values when measured using a motor provided by THK.

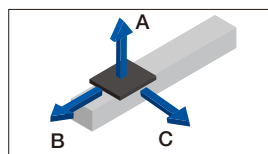
*⁴ Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.

Static Permissible Moment

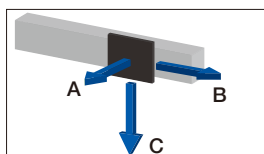


Permissible Overhang Length *⁵

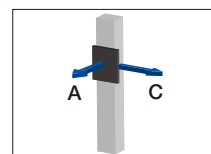
Horizontal use



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

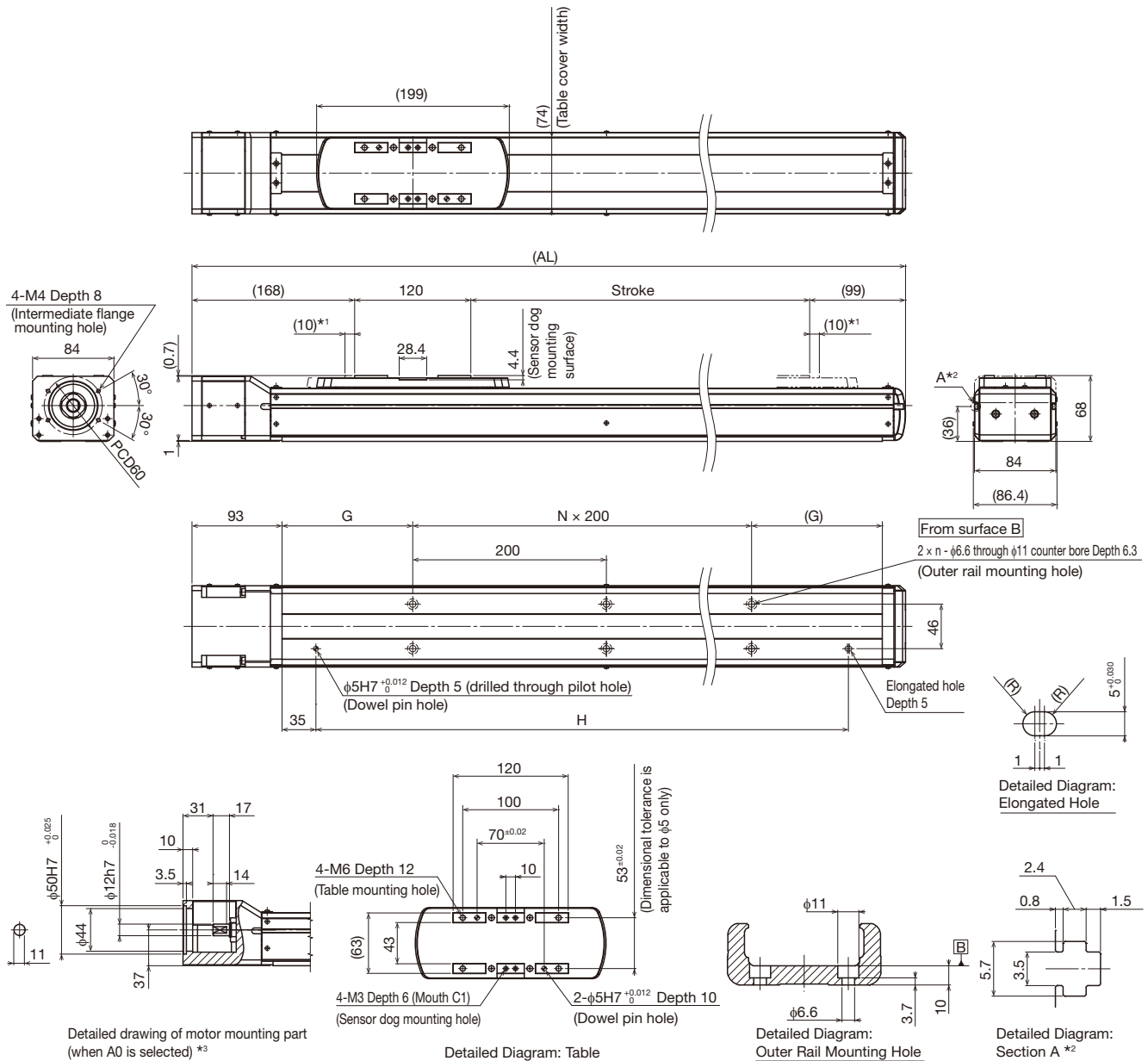
Horizontal mount [mm]				
Ball screw lead [mm]	Load mass [kg]	A	B	C
20	1.5	800	800	800
	3	800	800	800
	6	650	500	560
40	1.75	800	800	800
	3.5	750	800	670
	7	350	450	340

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

*⁵ 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.

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.

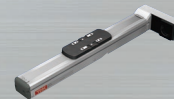
*3 See P.2-076 for intermediate flange dimensions.

Stroke [mm]		100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
(Stroke between mechanical stoppers)		(120)	(220)	(320)	(420)	(520)	(620)	(720)	(820)	(920)	(1020)	(1120)	(1220)	(1320)	(1420)	(1520)
Maximum speed [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 [mm]	AL	487	587	687	787	887	987	1087	1187	1287	1387	1487	1587	1687	1787	1887
	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 [kg]		8.1	9.4	10.7	12.0	13.3	14.6	15.9	17.2	18.5	19.8	21.1	22.4	23.7	25.0	26.3

*4 The maximum speed varies depending on the motor you use.

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

KSF8R Without Motor



Model Configuration

Model	Ball screw lead	Stroke	With/without motor	Motor mounting plate	Motor shaft diameter	Motor shaft fixing method	Option
KSF8R	20	0800	0	WV	14	M	MR-T-GR
KSF8R	20: 20 mm 40: 40 mm	0100: 100 mm to 1500: 1500 mm	0: Without motor 1: With motor	WV WY	14: 14 mm	M: Friction tightening	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 M : Proximity sensor (PNP)

Basic Specifications

LM guide portion	Basic dynamic load rating C [N]	32,400
	Basic static load rating Co [N]	63,500
Ball screw portion	Basic dynamic load rating Ca [N]	4,030
	Basic static load rating Coa [N]	10,540
	Screw shaft diameter [mm]	φ20
	Ball screw lead [mm]	20 40
Bearing portion (Fixed side)	Axial direction Basic dynamic load rating Ca [N]	7,600
	Static permissible load Poa [N]	4,000
	Permissible rotational speed *1 [min ⁻¹]	3,000
Starting torque *2 [N·cm]		12
Positioning repeatability *3 [mm]		±0.010
Lost motion *3 [mm]		0.1
Permissible input torque [N·m]		4.5
Static permissible moment *4 [N·m]		MA: 730 MB: 437 MC: 387

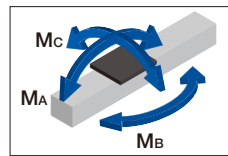
*1 The permissible rotational speed is restricted by the stroke.

*2 The starting torque represents values when the standard grease is filled.

*3 These represent values when measured using a motor provided by THK.

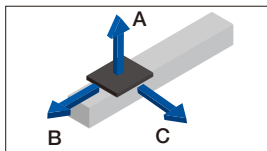
*4 Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static Permissible Moment

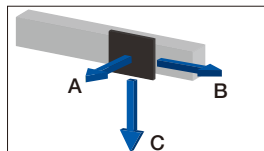


Permissible Overhang Length *5

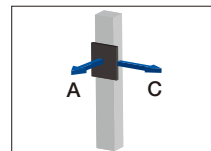
Horizontal use



Wall use



Vertical use



Acceleration and deceleration rate 1.0 G

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

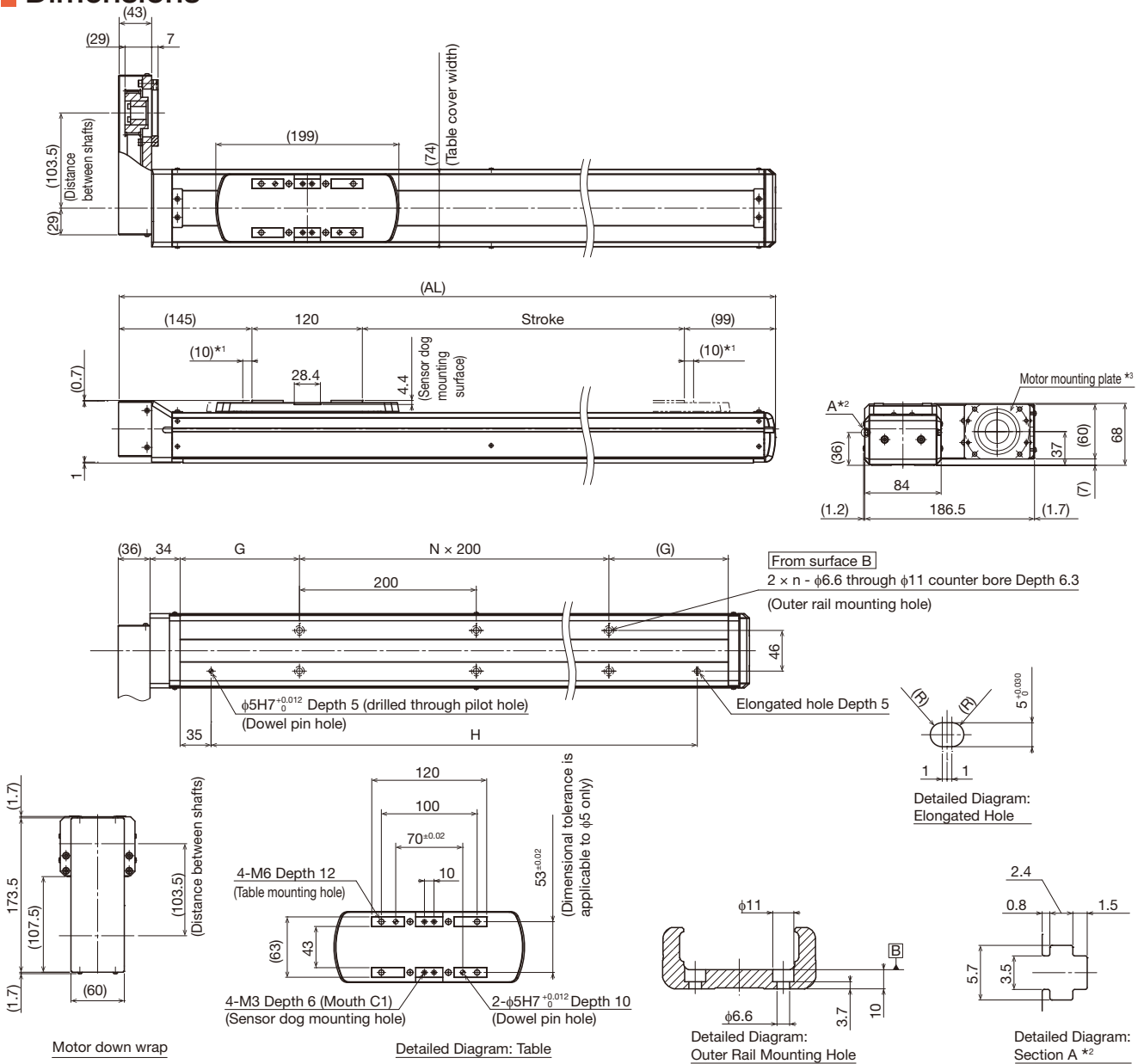
Ball screw lead [mm]	Load mass [kg]	A	C
20	0.75	800	800
	1.5	800	800
	3	740	740
40	1.25	800	800
	2.5	680	680
	5	320	320

*5 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

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.

*3 See P.2-076 for motor mounting plate dimensions.

Stroke [mm]	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
(Stroke between mechanical stoppers)	(120)	(220)	(320)	(420)	(520)	(620)	(720)	(820)	(920)	(1020)	(1120)	(1220)	(1320)	(1420)	(1520)
Maximum speed *4 *5 [mm/s]	Ball screw lead: 20 mm							970	790	660	550	470	410	360	320
	Ball screw lead: 40 mm							1940	1580	1320	1110	950	830	720	640
Dimensions [mm]	AL	464	564	664	764	864	964	1064	1164	1264	1364	1464	1564	1664	1864
	G	85	135	85	135	85	135	85	135	85	135	85	135	85	85
	H	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1700
Mounting pitch count	N	1	1	2	2	3	3	4	4	5	5	6	6	7	8
Mounting hole count	n	2	2	3	3	4	4	5	5	6	6	7	7	8	9
Weight [kg]	8.7	10.0	11.3	12.6	13.9	15.2	16.5	17.8	19.1	20.4	21.7	23.0	24.3	25.6	26.9

*4 The maximum speed varies depending on the motor you use.

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

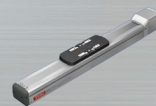
ES/EC

KRF/KSF

US/USW

PCT/PC

KSF10 Without Motor



ES/EC

KRF/KSF

US/USW

PCT/PC

Model Configuration

Model	Ball screw lead	Stroke	With/without motor	Intermediate flange	Option
KSF10	25	0800	0	AZ	GR-6
KSF10	25: 25 mm 50: 50 mm	0100: 100 mm to 1500: 1500 mm	0: Without motor 1: With motor	A0 AZ A5 A6	No symbol: None T: Back tap GR: Change the cover color to gray 6: Photo sensor J: Proximity sensor M: Proximity sensor (PNP)

Basic Specifications

LM guide portion	Basic dynamic load rating C [N]	58,500
	Basic static load rating C ₀ [N]	103,700
Ball screw portion	Basic dynamic load rating C _a [N]	6,650
	Basic static load rating C _{0a} [N]	21,050
	Screw shaft diameter [mm]	φ25
Bearing portion (Fixed side)	Ball screw lead [mm]	25
	Axial direction	50
Bearing portion (Fixed side)	Basic dynamic load rating C _a [N]	13,700
	Static permissible load P _{0a} [N]	5,830
Permissible rotational speed *1 [min ⁻¹]		3,000
Starting torque *2 [N·cm]		12
Positioning repeatability *3 [mm]		±0.010
Lost motion *3 [mm]		0.1
Permissible input torque [N·m]		15.5
Static permissible moment *4 [N·m]		M _A : 1,049 M _B : 712 M _C : 671

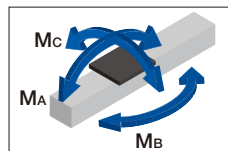
*1 The permissible rotational speed is restricted by the stroke.

*2 The starting torque represents values when the standard grease is filled.

*3 These represent values when measured using a motor provided by THK.

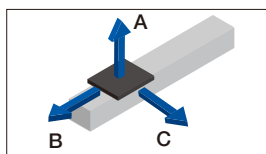
*4 Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.

Static Permissible Moment

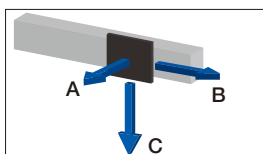


Permissible Overhang Length *5

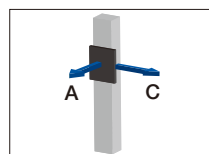
Horizontal use



Wall use



Vertical use



Acceleration and deceleration rate 1.0 G

Horizontal mount [mm]				
Ball screw lead [mm]	Load mass [kg]	A	B	C
25	15	1,000	760	900
	30	660	370	450
	60	300	170	220
50	4.25	1,000	1,000	1,000
	8.5	1,000	1,000	850
	17	580	530	430

Wall mount [mm]				
Ball screw lead [mm]	Load mass [kg]	A	B	C
25	15	840	730	1,000
	30	390	330	630
	60	160	140	270
50	4.25	1,000	1,000	1,000
	8.5	790	1,000	1,000
	17	360	490	550

Vertical mount [mm]			
Ball screw lead [mm]	Load mass [kg]	A	C
25	6.25	1,000	1,000
	12.5	710	710
	25	330	330
50	2.25	1,000	1,000
	4.5	1,000	1,000
	9	580	580

Acceleration and deceleration rate 1.5 G

Horizontal mount [mm]				
Ball screw lead [mm]	Load mass [kg]	A	B	C
25	5.25	1,000	1,000	1,000
	10.5	1,000	1,000	1,000
	21	600	540	520
50	1.75	1,000	1,000	1,000
	3.5	1,000	1,000	1,000
	7	930	1,000	800

Wall mount [mm]				
Ball screw lead [mm]	Load mass [kg]	A	B	C
25	5.25	1,000	1,000	1,000
	10.5	1,000	1,000	1,000
	21	600	540	520
50	1.75	1,000	1,000	1,000
	3.5	1,000	1,000	1,000
	7	720	1,000	910

Vertical mount [mm]			
Ball screw lead [mm]	Load mass [kg]	A	C
25	2.75	1,000	1,000
	5.5	1,000	1,000
	11	700	700
50	1	1,000	1,000
	2	1,000	1,000
	4	1,000	1,000

*5 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.

KSF10

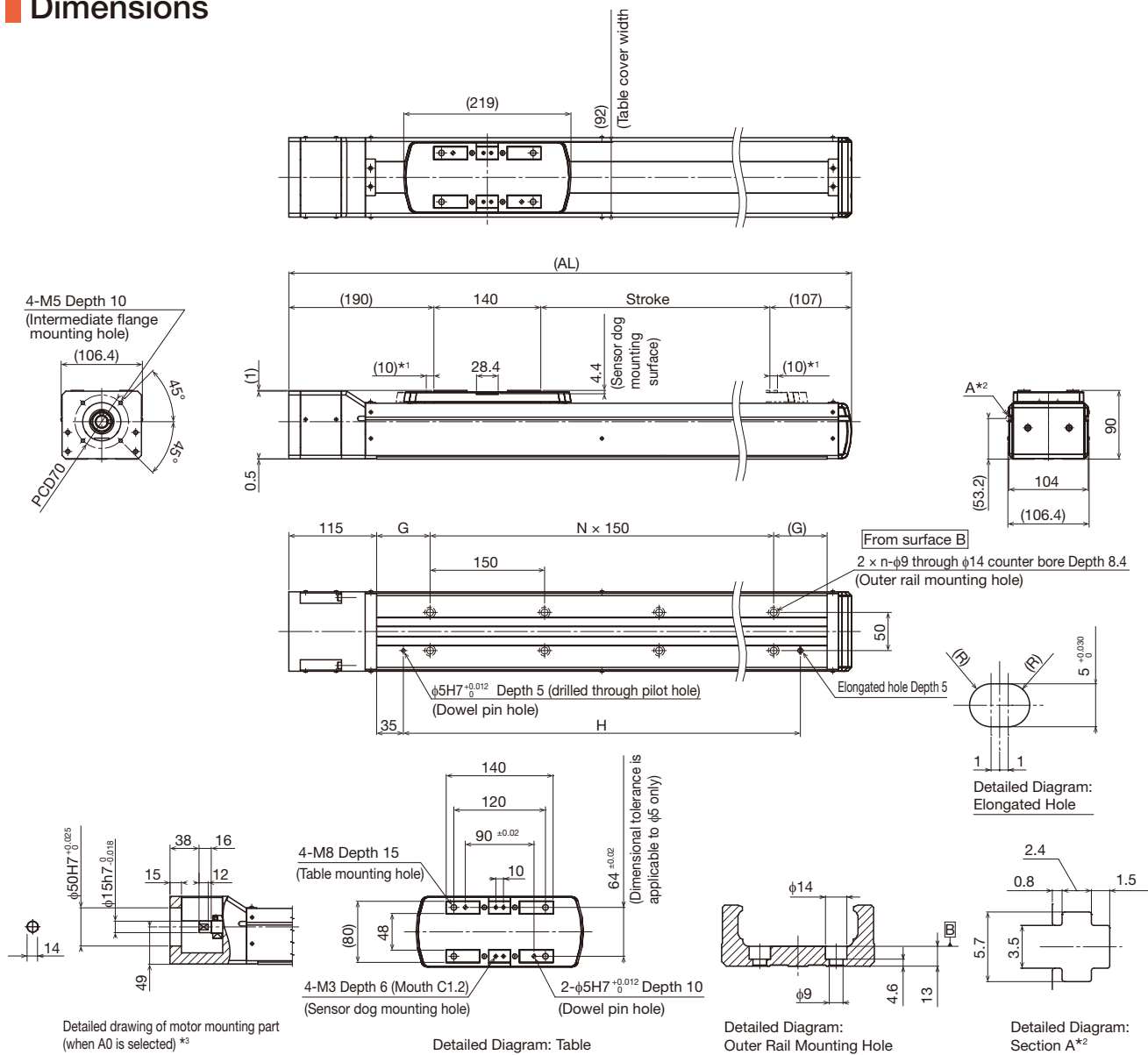
Dimensions

ES/EC

KRF/KSF

US/USW

PCT/PC



*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.

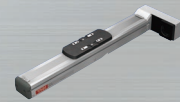
*3 See P2-077 for intermediate flange dimensions.

Stroke [mm]	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
(Stroke between mechanical stoppers)	(120)	(220)	(320)	(420)	(520)	(620)	(720)	(820)	(920)	(1020)	(1120)	(1220)	(1320)	(1420)	(1520)
Maximum speed ^{*4} ^{*5}	1250									1050	890	760	660	580	510
[mm/s]	2500									2110	1790	1530	1330	1160	1030
Dimensions [mm]	AL	537	637	737	837	937	1037	1137	1237	1337	1437	1537	1637	1737	1837
	G	120	95	70	120	95	70	120	95	70	120	95	70	120	95
	H	320	420	520	620	720	820	920	1020	1120	1220	1320	1420	1520	1620
Mounting pitch count	N	1	2	3	3	4	5	5	6	7	7	8	9	9	10
Mounting hole count	n	2	3	4	4	5	6	6	7	8	8	9	10	10	11
Weight [kg]		14.7	16.8	18.8	20.9	22.9	25.0	27.0	29.1	31.2	33.2	35.3	37.3	39.4	41.5

*4 The maximum speed varies depending on the motor you use.

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

KSF10R Without Motor



Model Configuration

Model	Ball screw lead	Stroke	With/without motor	Motor mounting plate	Motor shaft diameter	Motor shaft fixing method	Option
KSF10R -	25 -	0800 -	0 -	WZ -	19 -	M -	MR-T-GR
KSF10R	25: 25 mm 50: 50 mm	0100: 100 mm to 1500: 1500 mm	0: Without motor 1: With motor	WZ W5	16: 16 mm 19: 19 mm	M: Friction tightening	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 M : Proximity sensor (PNP)

Basic Specifications

LM guide portion	Basic dynamic load rating C [N]		58,500	
	Basic static load rating C ₀ [N]		103,700	
Ball screw portion	Basic dynamic load rating C _a [N]		6,650	4,150
	Basic static load rating C _{0a} [N]		21,050	11,170
	Screw shaft diameter [mm]		φ25	
	Ball screw lead [mm]		25	50
Bearing portion (Fixed side)	Axial direction	Basic dynamic load rating C _a [N]	13,700	
		Static permissible load P _{0a} [N]	5,830	
Permissible rotational speed *1[min^{-1}]			3,000	
Starting torque *2 [N·cm]			12	16
Positioning repeatability *3 [mm]			± 0.010	
Lost motion *3 [mm]			0.1	
Permissible input torque [N·m]			8.5	
Static permissible moment *4 [N·m]			M _A : 1,049 M _B : 712 M _C : 671	

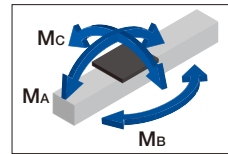
*1 The permissible rotational speed is restricted by the stroke.

*2 The starting torque represents values when the standard grease is filled.

*3 These represent values when measured using a motor provided by THK.

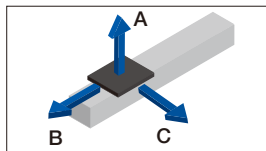
*4 Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static Permissible Moment

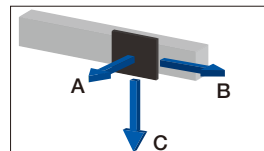


Permissible Overhang Length *5

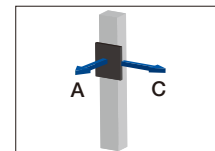
Horizontal use



Wall use



Vertical use



Acceleration and deceleration rate 1.0 G

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
25	9.5	1000	1000	1000
	19	1000	600	710
	38	510	290	350
50	3	1000	1000	1000
	6	1000	1000	1000
	12	850	760	620

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
25	9.5	1000	1000	1000
	19	650	560	1000
	38	290	250	480
50	3	1000	1000	1000
	6	1000	1000	1000
	12	540	720	810

Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
25	4.75	1000	1000
	9.5	950	950
	19	450	450
50	1.75	1000	1000
	3.5	1000	1000
	7	760	760

Acceleration and deceleration rate 1.5 G

Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
25	2	1000	1000	1000
	4	1000	1000	1000
	8	1000	1000	1000
50	1	1000	1000	1000
	2	1000	1000	1000
	4	1000	1000	1000

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
25	2	1000	1000	1000
	4	1000	1000	1000
	8	1000	1000	1000
50	1	1000	1000	1000
	2	1000	1000	1000
	4	1000	1000	1000

Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
25	0.75	1000	1000
	1.5	1000	1000
	3	1000	1000
50	0.75	1000	1000
	1.5	1000	1000
	3	1000	1000

*5 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.

KSF10R

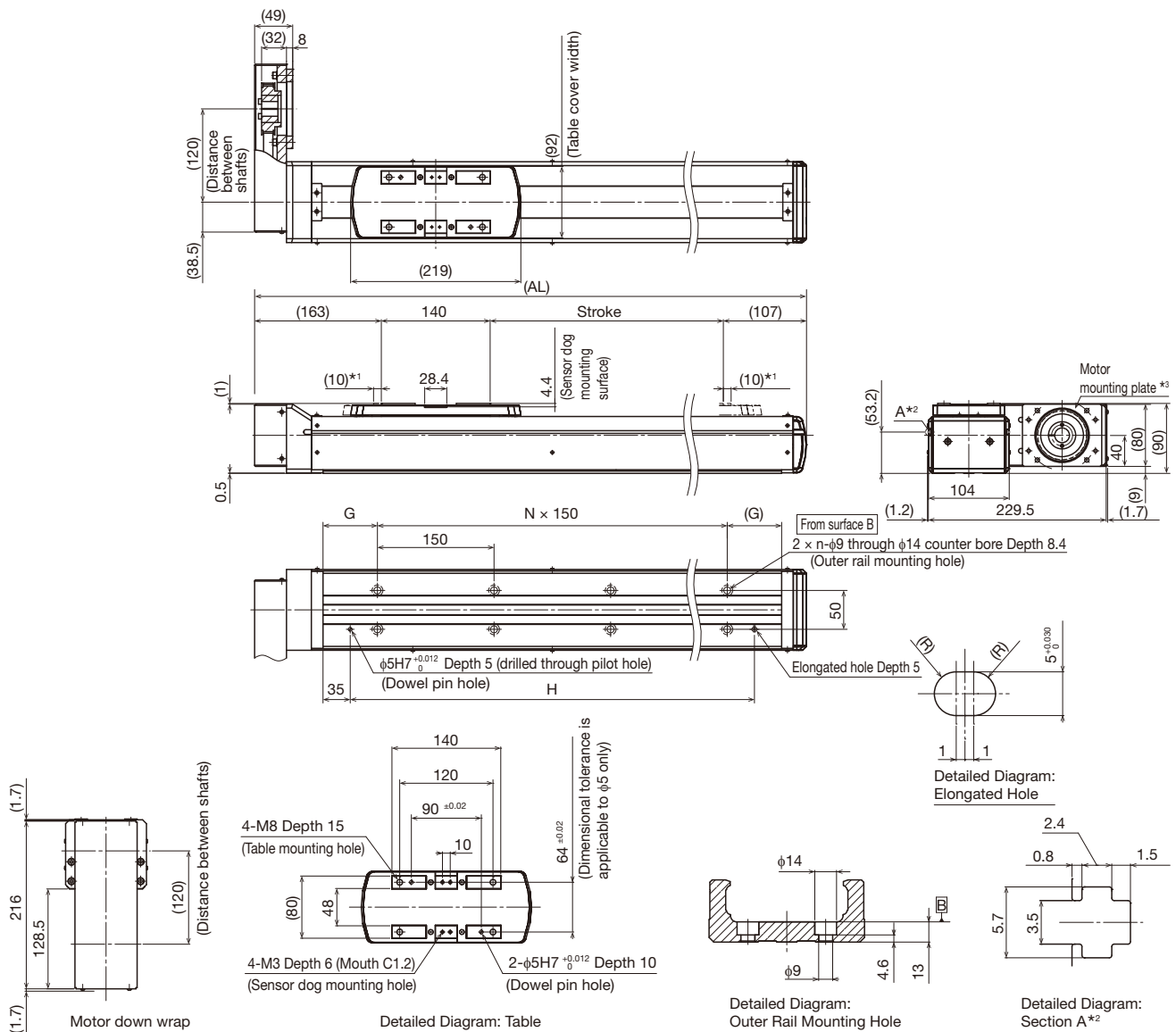
Dimensions

ES/EC

KRF/KSF

US/USW

PCT/PC



*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.

*3 See P.2-077 for motor mounting plate dimensions.

Stroke [mm]	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
(Stroke between mechanical stoppers)	(120)	(220)	(320)	(420)	(520)	(620)	(720)	(820)	(920)	(1020)	(1120)	(1220)	(1320)	(1420)	(1520)
Maximum speed *4 *5	1250										1050	890	760	660	510
[mm/s]	2500										2110	1790	1530	1330	1030
Dimensions [mm]	AL	510	610	710	810	910	1010	1110	1210	1310	1410	1510	1610	1710	1810
	G	120	95	70	120	95	70	120	95	70	120	95	70	120	95
	H	320	420	520	620	720	820	920	1020	1120	1220	1320	1420	1520	1620
Mounting pitch count	N	1	2	3	3	4	5	5	6	7	7	8	9	9	10
Mounting hole count	n	2	3	4	4	5	6	6	7	8	8	9	10	10	11
Weight [kg]		15.6	17.7	19.8	21.8	23.9	25.9	28.0	30.1	32.1	34.2	36.2	38.3	40.4	42.4

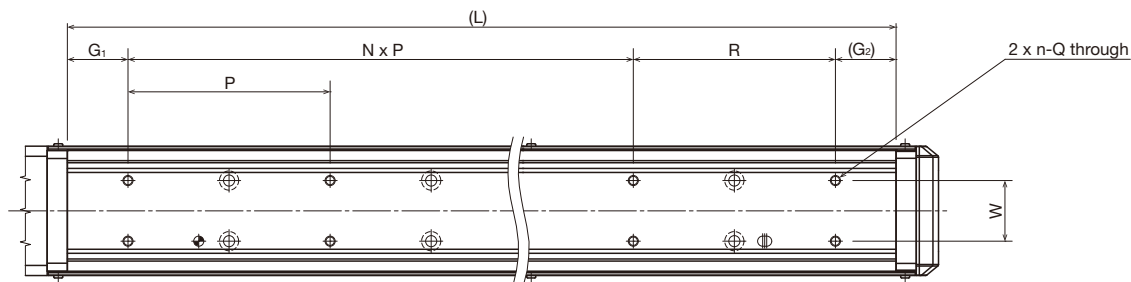
*4 The maximum speed varies depending on the motor you use.

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

Option

T: Back tap

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



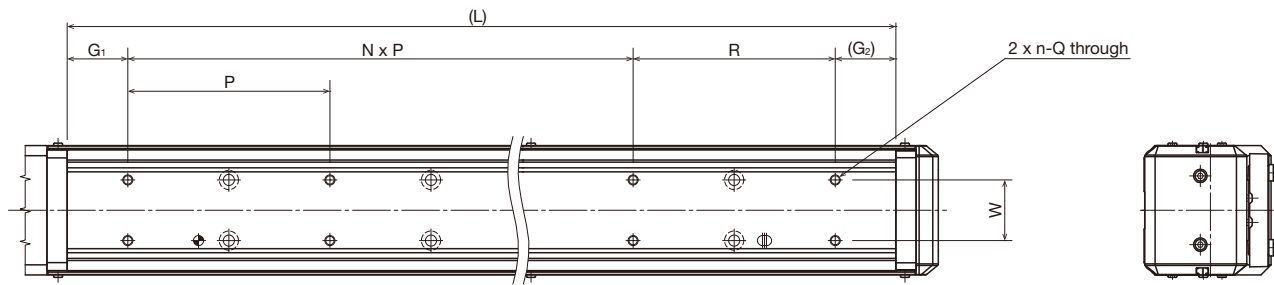
Note) The standard counter bore will remain even if a back tap is selected.

Model	Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
KSF4	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	7	7	8
	Mounting hole count	n	2	2	2	3	3	4	4	4	5	5	6	6	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	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	3	3	3	4	4	5	5	6	6	6	7	7	8
	Mounting hole count	n	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	L	260	310	360	410	460	510	560	610	660	710	760	810	860
	P	100												
	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	3	3	3	3	4
	Mounting hole count	n	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	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
	Mounting hole count	n	5	6	6	6	6	7	7	7	7	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	L	370	470	570	670	770	870	970	1070	1170	1270	1370	1470	1570	1670	1770
	P	120														
	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	8
	Mounting hole count	n	3	3	3	3	4	4	5	5	6	6	7	7	8	9
	Tap hole size	Q	M6													



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

Model	Stroke [mm]	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
KSF10	L	390	490	590	690	790	890	990	1090	1190	1290	1390	1490	1590	1690	1790
	P	150														
	G ₁	45	80	55	105	80	55	105	80	55	105	80	55	105	80	55
	G ₂	45	110	85	135	110	85	135	110	85	135	110	85	135	110	85
	R	-														
	W	50														
	Mounting pitch count	N	2	2	3	3	4	5	5	6	7	7	8	9	9	10
	Mounting hole count	n	3	3	4	4	5	6	6	7	8	8	9	10	10	11
	Tap hole size	Q	M8													

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) 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.)

Note 3) Mount two sensor dogs or sensor rails for 50 mm strokes.

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

N.O. contact: Normally open contact point

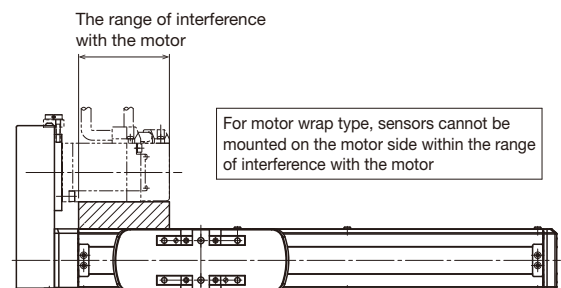
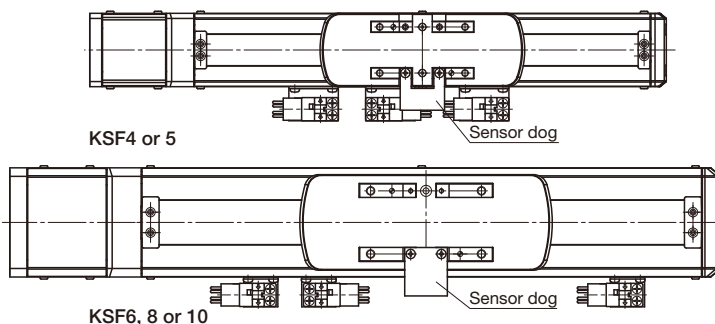
N.C. contact: Normally closed contact point

Sensors marked with a symbol "M", if combined with our controller, cannot be used as a home position sensor.

*¹ Sensor rails are included for Top Cover and Open Cover specification types only.

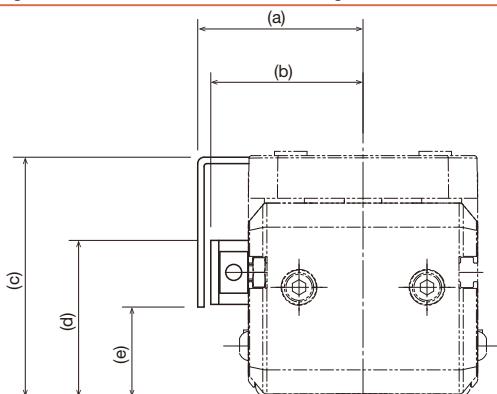
*² Selectable only for Top Cover and Open Cover specification types.

*³ The photo sensors can be switched between ON when lit and ON when unlit.



Fully enclosed

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

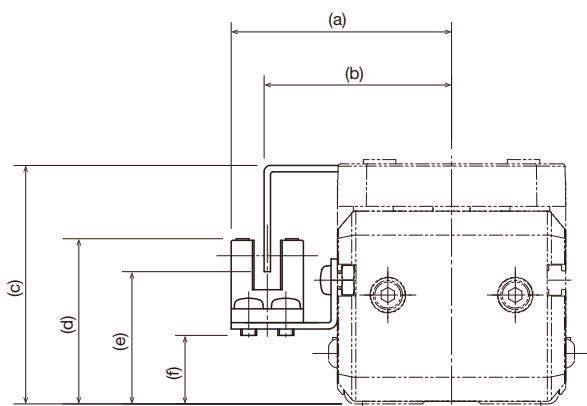


Unit: mm

Model	a	b	c	d	e
KSF4	31	28.6	44.8	29.2	16.7
KSF5	36.2	33.8	48.9	36	23.5
KSF6	41.5	39.1	63.3	34.9	22.6
KSF8	51.5	49.1	64.8	42	29.4
KSF10	61.4	59.1	86.8	59.2	46.6

Sensor dog width: KSF4 26mm
 KSF5 26mm
 KSF6 25mm
 KSF8 27mm
 KSF10 27mm

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



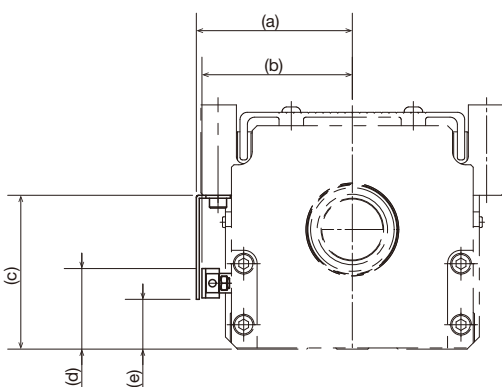
Unit: mm

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
KSF10	69.5	63.1	86.8	58.5	51.4	40.3

Sensor dog width: KSF4 26mm
 KSF5 26mm
 KSF6 25mm
 KSF8 27mm
 KSF10 27mm

Top cover

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

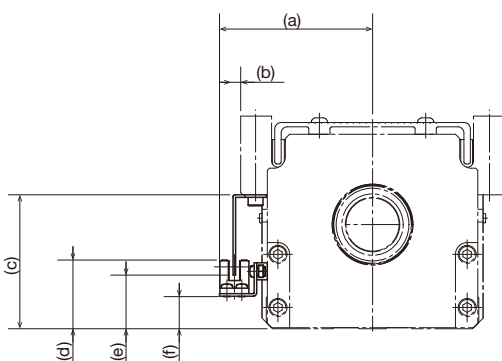


Unit: mm

Model	a	b	c	d	e
KSF5T	39.2	36.8	27.7	20	7.5
KSF6T	44.3	41.9	27.9	20	7.5
KSF8T	54.2	51.9	48	25	12.4
KSF10T	63.9	61.6	63	33	20.4

Sensor dog width: KSF5T 15mm
 KSF6T 15mm
 KSF8T 10mm
 KSF10T 10mm

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



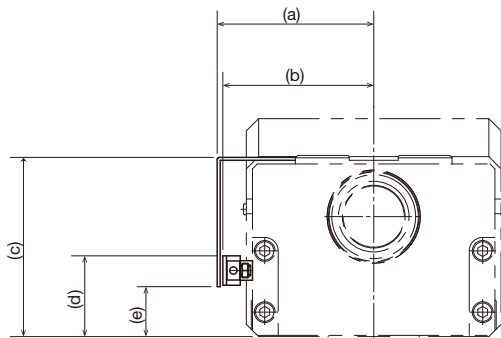
Unit: mm

Model	a	b	c	d	e	f
KSF5T	49.7	43.5	27.7	21.8	15.4	3.6
KSF6T	52.3	46	31.7	19.3	12.2	1.1
KSF8T	62.3	55.9	48	24.3	17.2	6.1
KSF10T	72	65.6	63	32.3	25.2	14.1

Sensor dog width: KSF5T 15mm
 KSF6T 15mm
 KSF8T 10mm
 KSF10T 10mm

Open Cover

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

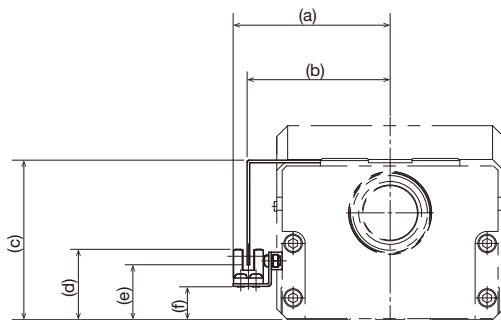


Unit: mm

Model	a	b	c	d	e
KSF4U	33.9	31.9	36.8	16.4	3.8
KSF5U	39.2	36.8	36.2	20	7.5
KSF6U	44.3	41.9	49.2	20	7.5
KSF8U	54.2	51.9	57.2	25	12.4
KSF10U	63.9	61.6	73.2	33	20.4

Sensor dog width: KSF4U 9mm
KSF5U 9mm
KSF6U 9mm
KSF8U 9mm
KSF10U 18mm

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



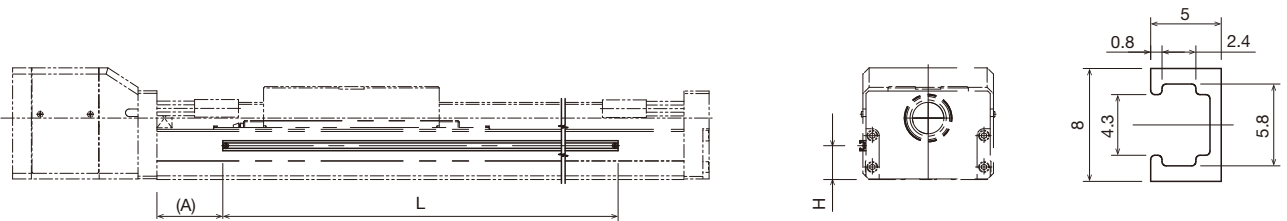
Unit: mm

Model	a	b	c	d	e	f
KSF4U	44.8	38.4	36.8	18.1	11.8	0.9
KSF5U	49.7	43.5	36.2	21.8	15.4	3.6
KSF6U	52.3	46	49.2	19.3	12.2	1.1
KSF8U	62.3	56	57.2	24.3	17.2	6.1
KSF10U	72	65.6	73.2	32.3	25.2	14.1

Sensor dog width: KSF4U 9mm
KSF5U 9mm
KSF6U 9mm
KSF8U 9mm
KSF10U 18mm

Sensor rail

Symbol 1: Sensor rail



Model	Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
KSF4U	Dimensions [mm]																		
	A	23.5																	
	L	155	205	255	305	355	405	455	505	555	605	655	705	755	805	855	905	955	1005
	H	10.35																	

Model	Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
KSF5T KSF5U	Dimensions [mm]																		
	A	29.5																	
	L	155	205	255	305	355	405	455	505	555	605	655	705	755	805	855	905	955	1005
	H	14																	

Model	Stroke [mm]	50	100	150	200	250	300	350	400	450	500	550	600	650
KSF6T KSF6U	Dimensions [mm]													
	A	27.5	52.5	27.5	2.5	27.5	2.5	27.5	2.5	27.5	52.5	27.5	2.5	27.5
	L	205	305	405	405	505	605	705	805	905	1005	1105	1205	1305
	H	14												
Model	Stroke [mm]	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300
KSF6T KSF6U	Dimensions [mm]													
	A	2.5	27.5	52.5	27.5	52.5	27.5	2.5	27.5	52.5	27.5	2.5	27.5	52.5
	L	805	905	1005	1105	1205	1305	1405	1505	1605	1705	1805	1905	2005
	H	14												

Model	Stroke [mm]	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
KSF8T KSF8U	Dimensions [mm]															
	A	82.5	32.5	82.5	32.5	82.5	32.5	82.5	32.5	82.5	32.5	82.5	32.5	82.5	32.5	82.5
	L	205	405	605	805	1005	1205	1405	1605	1805	2005	2205	2405	2605	2805	3005
	H	19														

Model	Stroke [mm]	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
KSF10T KSF10U	Dimensions [mm]															
	A	92.5	42.5	92.5	42.5	92.5	42.5	92.5	42.5	92.5	42.5	92.5	42.5	92.5	42.5	92.5
	L	205	405	605	805	1005	1205	1405	1605	1805	2005	2205	2405	2605	2805	3005
	H	27														

GR: Gray cover

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



Housing
B cover

Standard: red



When GR is selected: gray

Intermediate flange

Intermediate flanges are available to mount various kinds of motors.

If choosing "0" or "1" as with/without motor for model of type without motor, specify the intermediate flange suited for your motor.

Table: Table of Motors Used and Corresponding Intermediate Flanges

Motor type				Rated output [W]	Flange angle [mm]	KSF4	KSF5	KSF6	KSF8	KSF10
AC servo motor	Yaskawa Electric Corporation	Σ -V	SGMJV-A5	50	$\square$ 40	AQ	-	-	-	-
			SGMAV-A5			AQ	-	-	-	-
			SGMJV-01	100	$\square$ 40	AQ	AQ	-	-	-
			SGMAV-01			AQ	AQ	-	-	-
			SGMJV-02	200	$\square$ 60	-	-	AV	-	-
			SGMAV-02			-	-	AV	-	-
			SGMJV-04	400	$\square$ 60	-	-	-	AV	-
			SGMAV-04			-	-	-	AV	-
			SGMJV-08	750	$\square$ 80	-	-	-	-	AZ
			SGMAV-08			-	-	-	-	AZ
		Σ -7	SGM7J-A5	50	$\square$ 40	AQ	-	-	-	-
			SGM7A-A5			AQ	-	-	-	-
			SGM7J-01	100	$\square$ 40	AQ	AQ	-	-	-
			SGM7A-01			AQ	AQ	-	-	-
			SGM7J-02	200	$\square$ 60	-	-	AV	-	-
			SGM7A-02			-	-	AV	-	-
			SGM7J-04	400	$\square$ 60	-	-	-	AV	-
			SGM7A-04			-	-	-	AV	-
			SGM7J-08	750	$\square$ 80	-	-	-	-	AZ
			SGM7A-08			-	-	-	-	AZ
	Mitsubishi Electric Corporation	J3	HF-MP053	50	$\square$ 40	AQ	-	-	-	-
			HF-KP053			AQ	-	-	-	-
			HF-MP13	100	$\square$ 40	AQ	AQ	-	-	-
			HF-KP13			AQ	AQ	-	-	-
			HF-MP23	200	$\square$ 60	-	-	AV	-	-
			HF-KP23			-	-	AV	-	-
			HF-MP43	400	$\square$ 60	-	-	-	AV	-
			HF-KP43			-	-	-	AV	-
			HF-MP73	750	$\square$ 80	-	-	-	-	AZ
			HF-KP73			-	-	-	-	AZ
		J4	HG-MR053	50	$\square$ 40	AQ	-	-	-	-
			HG-KR053			AQ	-	-	-	-
			HG-MR13	100	$\square$ 40	AQ	AQ	-	-	-
			HG-KR13			AQ	AQ	-	-	-
			HG-KR23	200	$\square$ 60	-	-	AV	-	-
			HG-MR23			-	-	AV	-	-
			HG-KR43	400	$\square$ 60	-	-	-	AV	-
			HG-MR43			-	-	-	AV	-
			HG-KR73	750	$\square$ 80	-	-	-	-	AZ
			HG-MR73			-	-	-	-	AZ
	Tamagawa Seiki Co., Ltd.	TBL-III	TS4602	50	$\square$ 40	AQ	-	-	-	-
			TS4603	100	$\square$ 40	AQ	AQ	-	-	-
			TS4607	200	$\square$ 60	-	-	AV	-	-
			TS4609	400	$\square$ 60	-	-	-	AV	-
			TS4614	750	$\square$ 80	-	-	-	-	AZ

Note 1) The symbols in the table indicate the housing A and the intermediate flange.

Table: Table of Motors Used and Corresponding Intermediate Flanges

Motor type				Rated output [W]	Flange angle [mm]	KSF4	KSF5	KSF6	KSF8	KSF10
AC servo motor	Panasonic Corporation	MINAS A5	MSMD5A	50	□ 38	AP	-	-	-	-
			MSME5A			AP	-	-	-	-
			MSMD01	100	□ 38	AP	AP	-	-	-
			MSME01			AP	AP	-	-	-
			MSMD02	200	□ 60	-	-	AY	-	-
			MSME02			-	-	AY	-	-
			MSMD04	400	□ 60	-	-	-	AY	-
			MSME04			-	-	-	AY	-
			MSMD08	750	□ 80	-	-	-	-	A5
			MSME08			-	-	-	-	A5
	Sanyo Denki Co., Ltd.	SANMOTION R	R2AA04005	50	□ 40	AQ	-	-	-	-
			R2AA04010	100	□ 40	AQ	AQ	-	-	-
			R2AA06020	200	□ 60	-	-	AV	-	-
			R2AA06040	400	□ 60	-	-	-	AV	-
	Omron Corporation	OMNUC G5	R88M-K05030	50	□ 40	AQ	-	-	-	-
			R88M-K10030	100	□ 40	AQ	AQ	-	-	-
			R88M-K20030	200	□ 60	-	-	AY	AY	-
			R88M-K40030	400	□ 60	-	-	-	AY	-
			R88M-K75030	750	□ 80	-	-	-	-	A5
	Fanuc Corporation	β is series	β is 0.2/5000	50	□ 40	AQ	-	-	-	-
			β is 0.3/5000	100	□ 40	AQ	AQ	-	-	-
	Keyence Corporation	SV	SV-M005	50	□ 40	AQ	-	-	-	-
			SV-M010	100	□ 40	AQ	AQ	-	-	-
			SV-M020	200	□ 60	-	-	AV	-	-
			SV-M040	400	□ 60	-	-	-	AV	-
			SV-M075	750	□ 80	-	-	-	-	AZ
Stepper motor	Oriental Motor Co. Ltd.	α step	AS46, ASC46, AR46		□ 42	AR	AR	-	-	-
			AS6*, ASC66, AR6*		□ 60	-	-	AU	AU	-
			AR9*, ARL9*, AS9*		□ 85	-	-	-	-	A6
		5 phase	CRK	CRK54	□ 42	AR	AR	-	-	-
				CRK56	□ 60	-	-	AU	AU	-
			CSK II	CSK54	□ 42	AR	AR	-	-	-
				CSK56	□ 60	-	-	AU	AU	-
			RK II	RKS54	□ 42	AR	AR	-	-	-
				RKS56	□ 60	-	-	AU	AU	-
		2 phase	UMK	RKS59	□ 85	-	-	-	-	A6
				UMK24	□ 42	AR	AR	-	-	-
			CSK	CSK24	□ 42	AR	AR	-	-	-
				CSK24	□ 42	AR	AR	-	-	-

Note 1) The symbols in the table indicate the housing A and the intermediate flange.

Note 2) See the KSF technical materials for couplings used with installing the motors listed in the table. (→P.2-078)

Note 3) Motor model number in the table shows the main part of the model number only. For more details, please refer to catalogs from each motor manufacturers.

Motor mounting plate for motor wrap option

Wrap symbol configuration

Motor wrap components are available to mount various kinds of motors.
Specify the wrap symbol corresponding to the motor used.

$$\frac{W}{(1)} \quad \frac{Q}{(2)} \quad - \quad \frac{08}{(3)} \quad \frac{D}{(4)}$$

(1) Motor wrap symbol W

(2) Intermediate flange/motor mounting plate type Refer to the table below "Motor wrap symbols corresponding to motors used".

(3) Motor shaft diameter [mm] Please specify a motor shaft diameter. (Refer to the table below "Motor wrap symbols corresponding to motors used")

(4) Motor shaft fixing method
K : Key
D : D-cut
M: Friction tightening

Motor type				Rated output [W]	Flange angle [mm]	KSF4	KSF5	KSF6	KSF8	KSF10
AC servo motor	Yaskawa Electric Corporation	Σ-V	SGMJV-A5	50	□ 40	WQ-08D, WQ-08K	WQ-08D, WQ-08K	-	-	-
			SGMAV-A5			WQ-08D, WQ-08K	WQ-08D, WQ-08K	-	-	-
			SGMJV-01	100	□ 40	WQ-08D, WQ-08K	WQ-08D, WQ-08K	-	-	-
			SGMAV-01			WQ-08D, WQ-08K	WQ-08D, WQ-08K	-	-	-
			SGMJV-02	200	□ 60	-	-	WV-14D, WV-14K, WV-14M	-	-
			SGMAV-02			-	-	WV-14D, WV-14K, WV-14M	-	-
			SGMJV-04	400	□ 60	-	-	-	WV-14M	-
			SGMAV-04			-	-	-	WV-14M	-
			SGMJV-08	750	□ 80	-	-	-	-	WZ-19M
			SGMAV-08			-	-	-	-	WZ-19M
		Σ-7	SGM7J-A5	50	□ 40	WQ-08D, WQ-08K	WQ-08D, WQ-08K	-	-	-
			SGM7A-A5			WQ-08D, WQ-08K	WQ-08D, WQ-08K	-	-	-
			SGM7J-01	100	□ 40	WQ-08D, WQ-08K	WQ-08D, WQ-08K	-	-	-
			SGM7A-01			WQ-08D, WQ-08K	WQ-08D, WQ-08K	-	-	-
			SGM7J-02	200	□ 60	-	-	WV-14D, WV-14K, WV-14M	-	-
			SGM7A-02			-	-	WV-14D, WV-14K, WV-14M	-	-
			SGM7J-04	400	□ 60	-	-	-	WV-14M	-
			SGM7A-04			-	-	-	WV-14M	-
			SGM7J-08	750	□ 80	-	-	-	-	WZ-19M
			SGM7A-08			-	-	-	-	WZ-19M
	Mitsubishi Electric Corporation	J3	HF-MP053	50	□ 40	WQ-08D	WQ-08D	-	-	-
			HF-KP053			WQ-08D	WQ-08D	-	-	-
			HF-MP13	100	□ 40	WQ-08D	WQ-08D	-	-	-
			HF-KP13			WQ-08D	WQ-08D	-	-	-
			HF-MP23	200	□ 60	-	-	WV-14M	-	-
			HF-KP23			-	-	WV-14M	-	-
			HF-MP43	400	□ 60	-	-	-	WV-14M	-
			HF-KP43			-	-	-	WV-14M	-
			HF-MP73	750	□ 80	-	-	-	-	WZ-19M
			HF-KP73			-	-	-	-	WZ-19M
		J4	HG-MR053	50	□ 40	WQ-08D	WQ-08D	-	-	-
			HG-KR053			WQ-08D	WQ-08D	-	-	-
			HG-MR13	100	□ 40	WQ-08D	WQ-08D	-	-	-
			HG-KR13			WQ-08D	WQ-08D	-	-	-
			HG-KR23	200	□ 60	-	-	WV-14M	-	-
			HG-MR23			-	-	WV-14M	-	-
			HG-KR43	400	□ 60	-	-	-	WV-14M	-
			HG-MR43			-	-	-	WV-14M	-
			HG-KR73	750	□ 80	-	-	-	-	WZ-19M
			HG-MR73			-	-	-	-	WZ-19M
	Tamagawa Seiki Co., Ltd.	TBL-III	TS4602	50	□ 40	WQ-08D, WQ-08K	WQ-08D, WQ-08K	-	-	-
			TS4603	100	□ 40	WQ-08D, WQ-08K	WQ-08D, WQ-08K	-	-	-
			TS4607	200	□ 60	-	-	WV-14D, WV-14K, WV-14M	-	-
			TS4609	400	□ 60	-	-	-	WV-14M	-
			TS4614	750	□ 80	-	-	-	-	WZ-19M

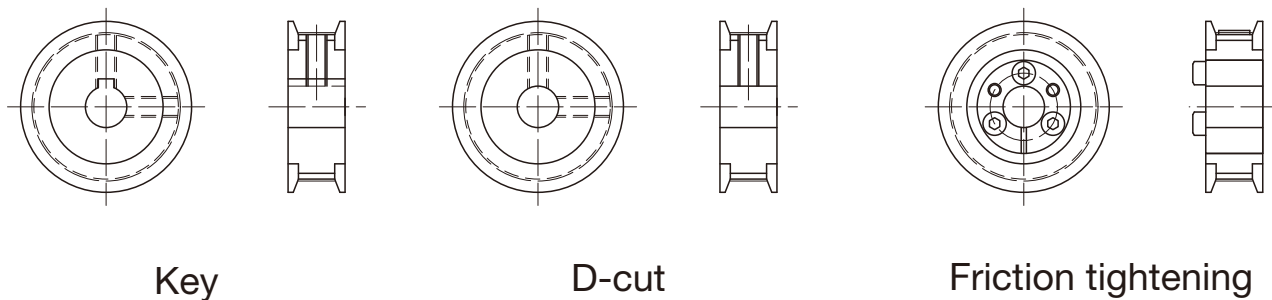


Figure : Motor shaft fixing method

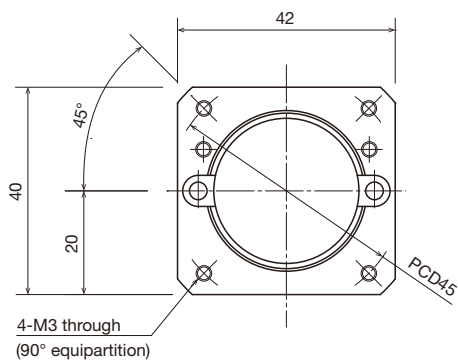
Motor type				Rated output [W]	Flange angle [mm]	KSF4	KSF5	KSF6	KSF8	KSF10
AC servo motor	Panasonic Corporation	MINAS A5	MSMD5A	50	□38	WP-08D, WP-08K	WP-08D, WP-08K	-	-	-
			MSME5A			WP-08D, WP-08K	WP-08D, WP-08K	-	-	-
			MSMD01	100	□38	WP-08D, WP-08K	WP-08D, WP-08K	-	-	-
			MSME01			WP-08D, WP-08K	WP-08D, WP-08K	-	-	-
			MSMD02	200	□60	-	-	WY-11D, WY-11K, WY-11M	-	-
			MSME02			-	-	WY-11D, WY-11K, WY-11M	-	-
			MSMD04	400	□60	-	-	-	WY-14M	-
			MSME04			-	-	-	WY-14M	-
			MSMD08	750	□80	-	-	-	-	W5-19M
			MSME08			-	-	-	-	W5-19M
	Sanyo Denki Co., Ltd.	SANMOTION R	R2AA06020	200	□60	-	-	WV-14M	-	-
			R2AA06040	400	□60	-	-	-	WV-14M	-
			R2AA08075	750	□80	-	-	-	-	WZ-16M
	Omron Corporation	OMNUC G5	R88M-K05030	50	□40	WQ-08K	WQ-08K	-	-	-
			R88M-K10030	100	□40	WQ-08K	WQ-08K	-	-	-
			R88M-K20030	200	□60	-	-	WY-11K, WY-11M	WY-14M	-
			R88M-K40030	400	□60	-	-	-	WY-14M	-
			R88M-K75030	750	□80	-	-	-	-	W5-19M
	Keyence Corporation	SV	SV-M005	50	□40	WQ-08K	WQ-08K	-	-	-
			SV-M010	100	□40	WQ-08K	WQ-08K	-	-	-
			SV-M020	200	□60	-	-	WV-14K, WV-14M	-	-
			SV-M040	400	□60	-	-	-	WV-14M	-
			SV-M075	750	□80	-	-	-	-	WZ-19M

Note) Motor model number in the table shows the main part of the model number only. For more details, please refer to catalogs from each motor manufacturers.

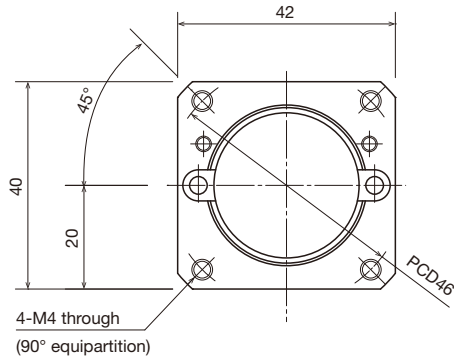
For KSF4

Intermediate flange

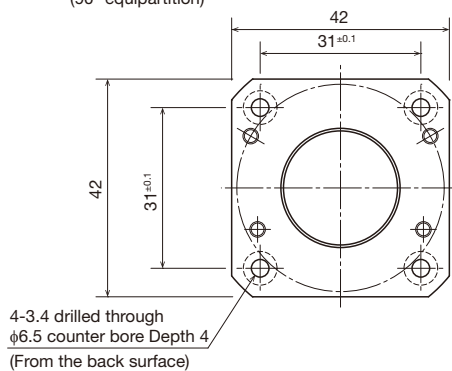
KSF4
AP



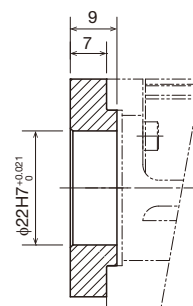
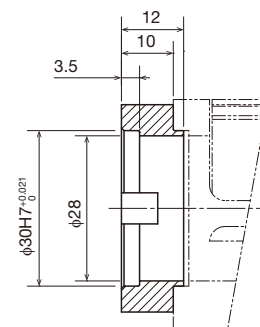
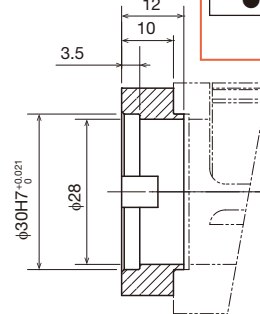
KSF4
AQ



KSF4
AR



KSF*	... Actuator model
●	... Housing A
◇	Intermediate flange

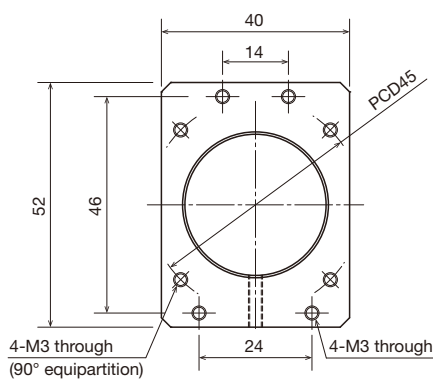


Note) For A0, see the external side view of intermediate flange without motor and the detailed drawing of motor mounting part. (→ P.2-046)

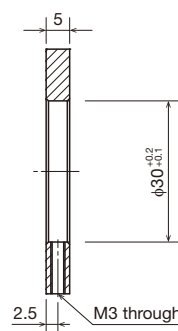
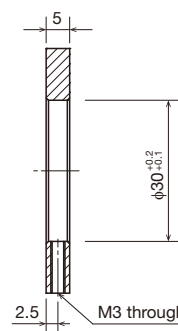
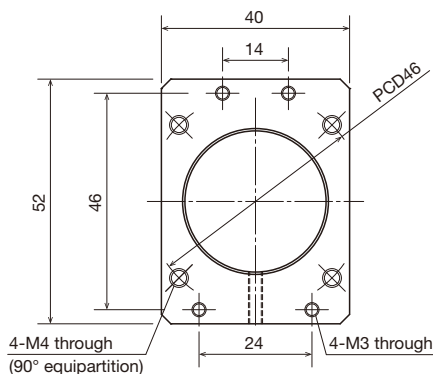
For KSF4R

Motor mounting plate

KSF4R
WP



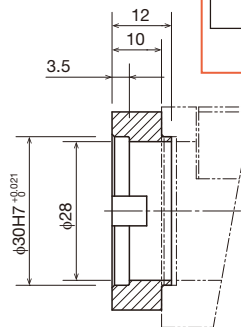
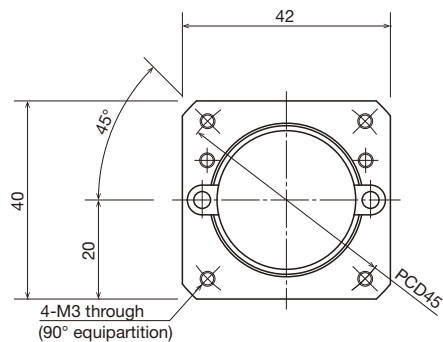
KSF4R
WQ



For KSF5

Intermediate flange

KSF5
AP



KSF*	... Actuator model
●	... Housing A
◇	Intermediate flange

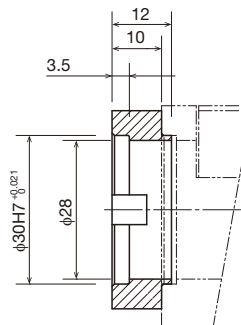
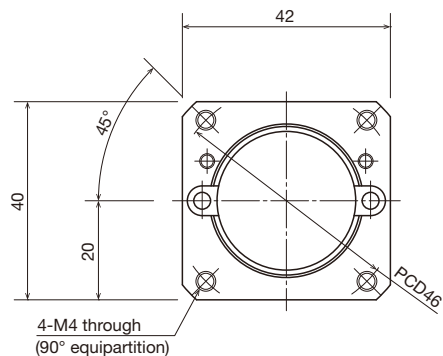
ES/EC

KRF/KSF

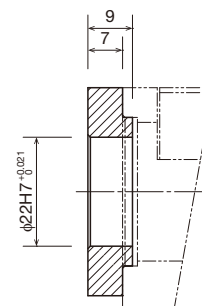
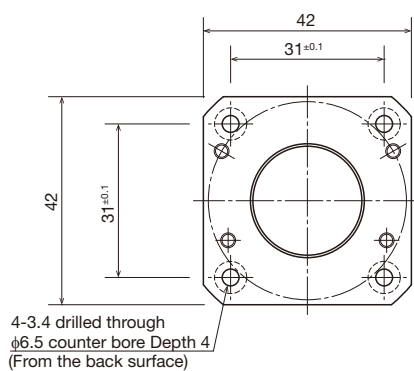
US/USW

PCT/PC

KSF5
AQ



KSF5
AR

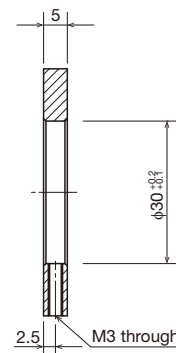
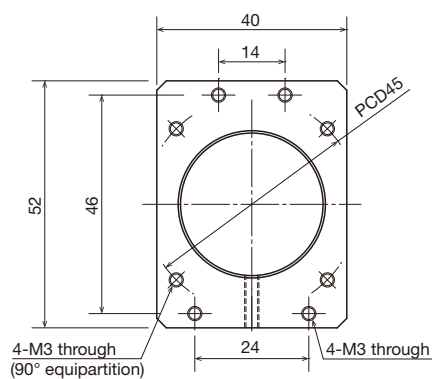


Note) For A0, see the external side view of intermediate flange without motor and the detailed drawing of motor mounting part. (→ P.2-050)

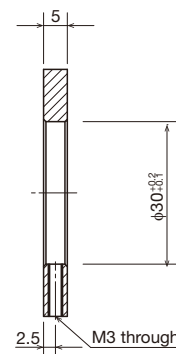
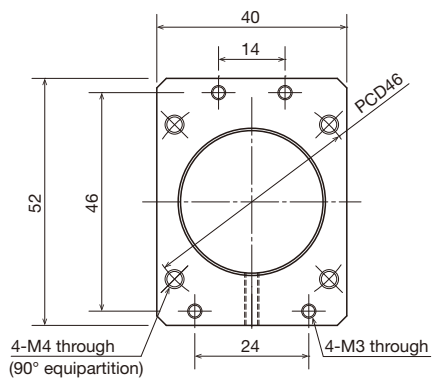
For KSF5R

Motor mounting plate

KSF5R
WP



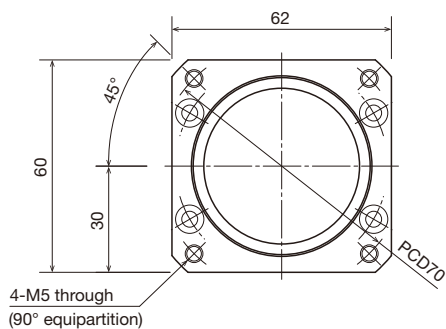
KSF5R
WQ



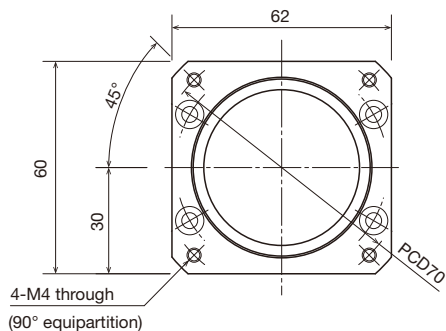
For KSF6

Intermediate flange

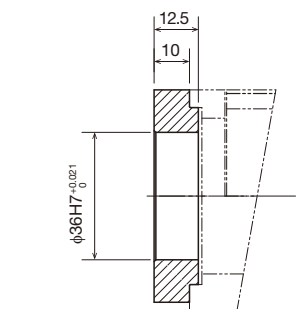
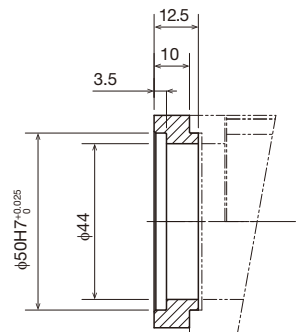
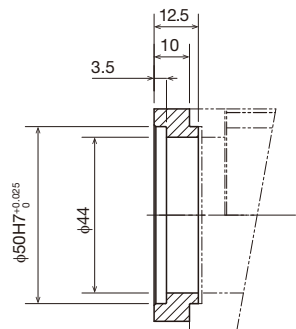
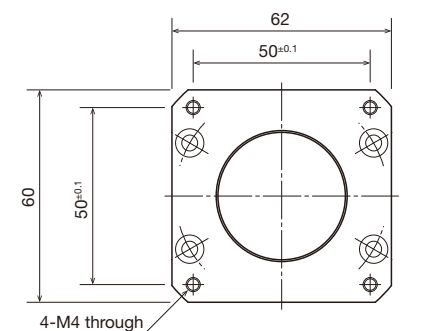
KSF6
AV



KSF6
AY



KSF6
AU



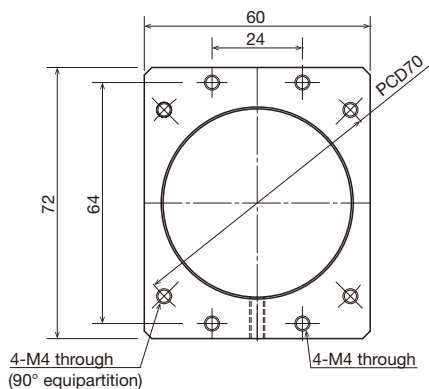
KSF*	... Actuator model
●	... Housing A
◇	Intermediate flange

Note) For A0, see the external side view of intermediate flange without motor and the detailed drawing of motor mounting part. (→ P.2-054)

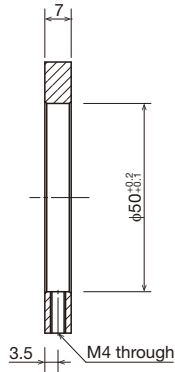
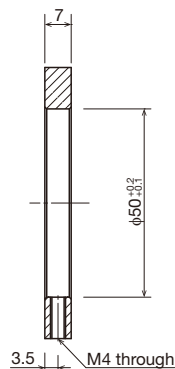
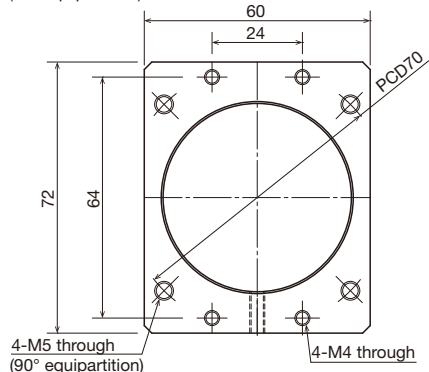
For KSF6R

Motor mounting plate

KSF6R
WY



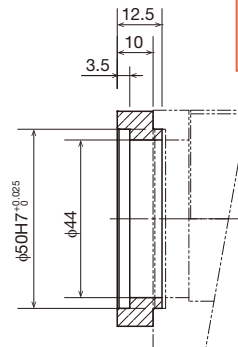
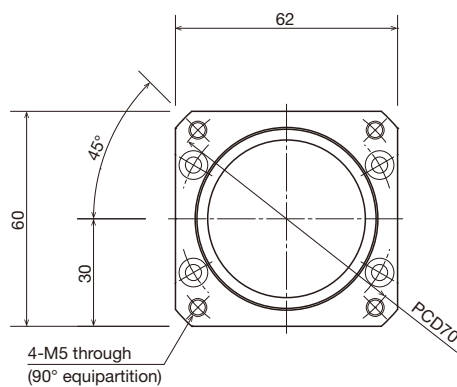
KSF6R
WV



For KSF8

Intermediate flange

KSF8
AV



KSF*	... Actuator model
●	... Housing A
◇	Intermediate flange

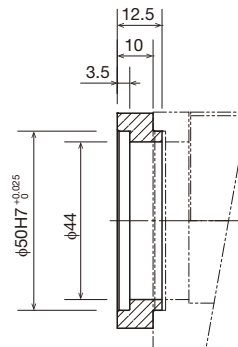
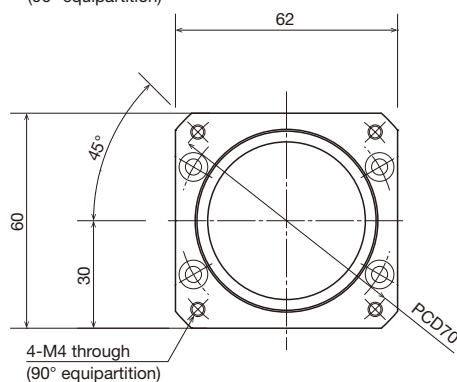
ES/EC

KRF/KSF

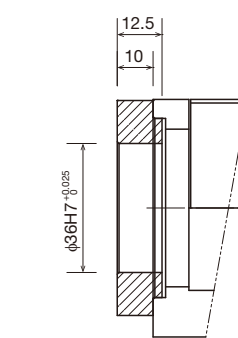
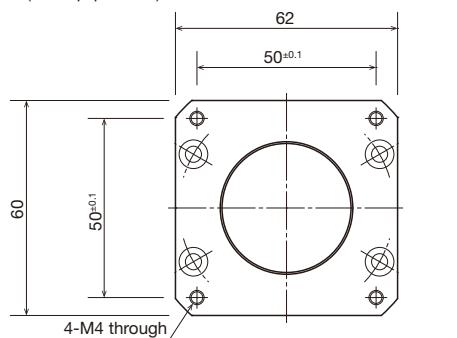
US/USW

PCT/PC

KSF8
AY



KSF8
AU

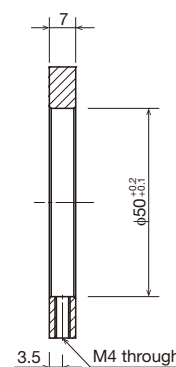
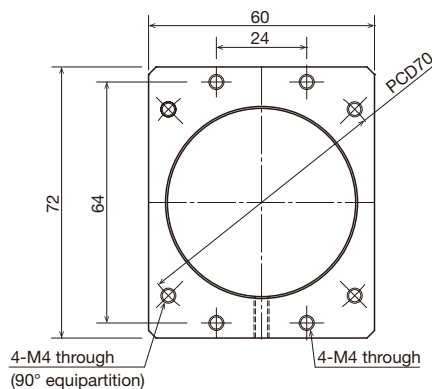


Note) For A0, see the external side view of intermediate flange without motor and the detailed drawing of motor mounting part. (→ P2-058)

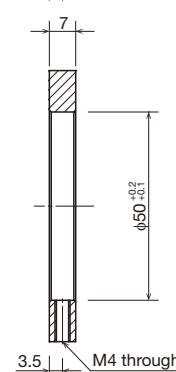
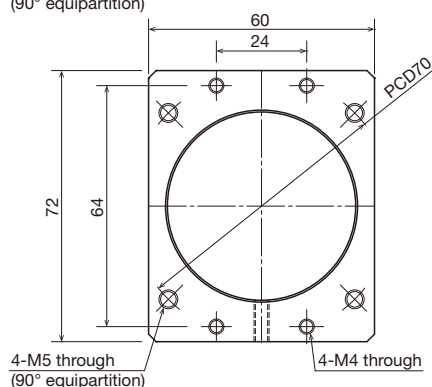
For KSF8R

Motor mounting plate

KSF8R
WY



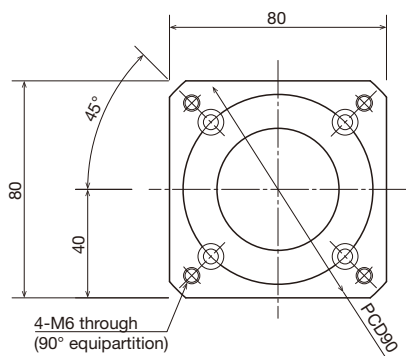
KSF8R
WV



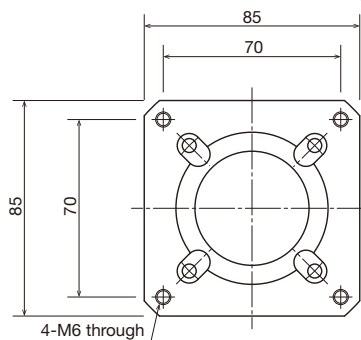
For KSF10

Intermediate flange

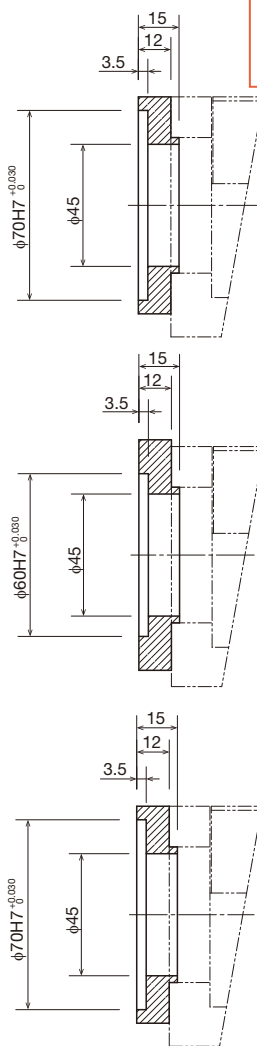
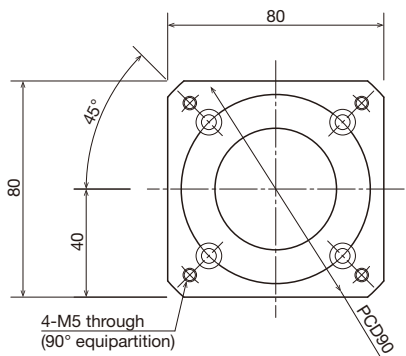
KSF10
AZ



KSF10
A6



KSF10
A5



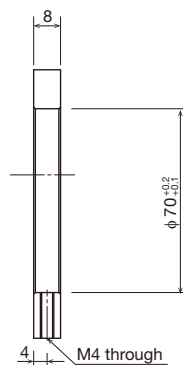
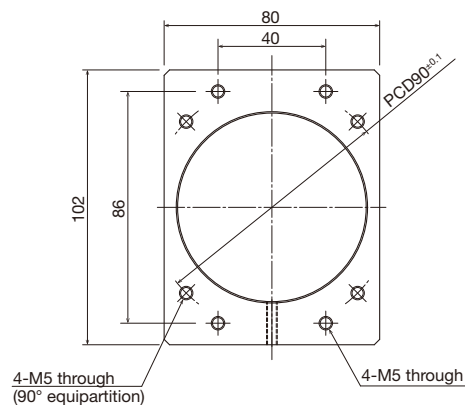
KSF*	... Actuator model
●	... Housing A
◇	Intermediate flange

Note) For A0, see the external side view of intermediate flange without motor and the detailed drawing of motor mounting part. (→ P.2-062)

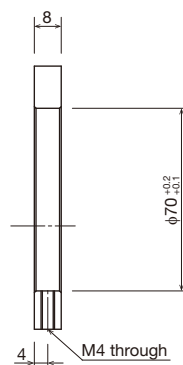
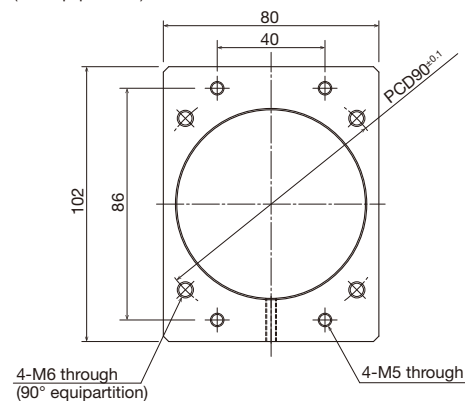
For KSF10R

Motor mounting plate

KSF10R
W5



KSF10R
WZ



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	φ10	257	φ6h7
	900			1107	
	50	16	φ10	257	φ6h7
	900			1107	
KSF5	50	10	φ13	274	φ8h7
	900			1124	
	50	20	φ13	274	φ8h7
	900			1124	
KSF6	50	20	φ15	328	φ9h7
	1300			1578	
	50	30	φ15	328	φ9h7
	1300			1578	
KSF8	100	20	φ20	446	φ12h7
	1500			1846	
	100	40	φ20	446	φ12h7
	1500			1846	
KSF10	100	25	φ25	485	φ15h7
	1500			1885	
	100	50	φ25	485	φ15h7
	1500			1885	

Weight of moving element

Model	Weight of moving element*[kg]		
	Fully enclosed	Open Cover	Top cover
KSF4	0.4	0.3	-
KSF5	0.5	0.4	0.5 (0.6)
KSF6	1.0	0.8	1.0 (1.4)
KSF8	2.1	1.9	2.4 (3.5)
KSF10	4.0	3.3	6.2

* () shows the value when option "F" is selected.

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
KSF10	15.5	8.4

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
KSF10	SFC-040DA2 (Miki Pulley Co., LTD.)	0.430
	XBW-44C2 (Nabeya Bi-tech Kaisha)	0.350

Timing Pulley

Timing Pulley (2 pieces total)	
Actuator model	Inertial moment [kg·cm ²]
KSF4R	0.028
KSF5R	0.028
KSF6R	0.398
KSF8R	0.497
KSF10R	2.061

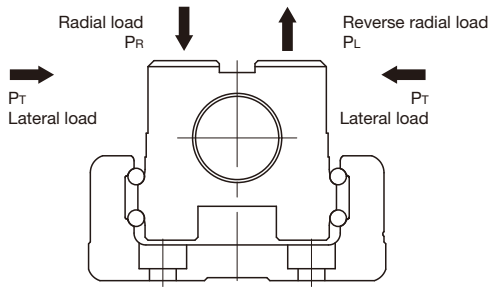
Load Ratings in All Directions and Static Permissible Moment

Equivalent Load (LM Guide Unit)

The equivalent load when the LM Guide unit of model KSF simultaneously receives loads in all directions is obtained from the following equation.

$$P_E = P_R(P_L) + P_T$$

- P_E : Equivalent load [N]
 · Radial direction
 · Reverse radial direction
 · Lateral directions
 P_R : Radial load [N]
 P_L : Reverse radial load [N]
 P_T : Lateral load [N]



● LM Guide Unit

Model KSF is capable of receiving loads in four directions (radial, reverse radial and lateral directions). Its basic load ratings are equal in all four directions (radial, reverse radial and lateral directions), and their values are indicated in Table: KSF Rated Loads.

● Ball Screw Unit

Since the inner block is incorporated with a ball screw nut, model KSF is capable of receiving an axial load. The basic load rating value is indicated in Table: KSF Rated Loads.

● Bearing Unit (Fixed Side)

Since housing A contains an angular bearing, model KSF is capable of receiving an axial load. The basic load rating value is indicated in Table: KSF Rated Loads.

Table: KSF Rated Loads

Item		Model	KSF4		KSF5		KSF6		KSF8		KSF10	
			KSF4-10	KSF4-16	KSF5-10	KSF5-20	KSF6-20	KSF6-30	KSF8-20	KSF8-40	KSF10-25	KSF10-50
LM guide Unit	Basic dynamic load rating C [N]		6,400		10,200		17,400		32,400		58,500	
	Basic static load rating C_0 [N]		12,900		17,900		33,000		63,500		103,700	
Ball screw Unit	Basic dynamic load rating C_a [N]		2,860	1,850	3,350	2,150	3,400	3,230	4,030	3,750	6,650	4,150
	Basic static load rating C_{0a} [N]		5,110	3,420	6,600	4,470	8,070	6,570	10,540	8,870	21,050	11,170
	Screw shaft diameter [mm]		$\phi 10$		$\phi 13$		$\phi 15$		$\phi 20$		$\phi 25$	
	Ball screw lead [mm]		10	16	10	20	20	40	20	40	25	50
Bearing Unit (Fixed side)	Axial direction	Basic dynamic load rating C_a [N]	2,930		6,100		6,650		7,600		13,700	
		Static permissible load P_{0a} [N]	2,140		3,100		3,250		4,000		5,830	

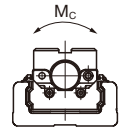
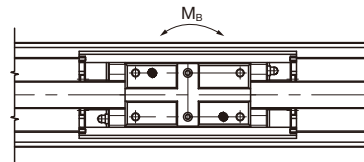
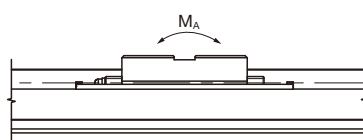
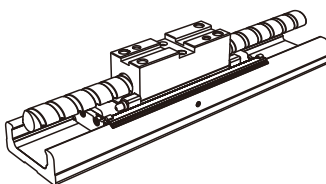


Table: Static Permissible Moment

Units: N·m

Model	Static Permissible Moment*			Model	Static Permissible Moment*		
	M_A	M_B	M_C		M_A	M_B	M_C
KSF4	103	103	58	KSF6U	355	203	152
KSF4U	103	95	58	KSF8	730	437	387
KSF5	147	147	149	KSF8T	324 (730)	253 (425)	265 (503)
KSF5T	103 (147)	61 (137)	80 (149)	KSF8U	730	414	277
KSF5U	147	107	89	KSF10	1,049	712	671
KSF6	330	216	188	KSF10T	1,259	949	787
KSF6T	150 (266)	124 (252)	139 (253)	KSF10U	1,259	775	504

* () shows the value for sub-table iron specifications.

Service Life

KSF is comprised of an LM guide, ball screw and retention bearing. The service life of each component can be obtained using the basic dynamic load rating indicated in P.154 Table: KSF Rated Loads.

LM Guide Unit

[Nominal Life]

$$L = \left(\frac{f_c \cdot C}{f_w \cdot P_c} \right)^3 \times 50$$

L : Nominal Life [km]

(this is the distance 90% of a group of the same LM guides can travel when operated individually under the same conditions)

C : Basic dynamic load rating [N]

P_c : Calculated applied load [N]

f_w : Load factor ("Table: Load factor (f_w)" serves as a reference)

f_c : Contact factor ("Table: Contact factor (f_c)" serves as a reference)

- If a moment is applied, calculate the equivalent load by multiplying the applied moment by the equivalent factor indicated in "Table: Moment Equivalent Factors (K)".

$$P_m = K \cdot M$$

P_m : Equivalent load (per 1 block) [N]

K : Equivalent moment factor ("Table: Moment Equivalent Factors (K)" serves as a reference)

M : Applied moment [N·mm]

(If planning to use the product with a wide inner block span, contact THK.)

- If a radial load (P) and a moment are simultaneously applied to model KSF

$$P_E = P_m + P$$

P_E : Overall equivalent radial load [N]

Perform a nominal life calculation using the above data.

[Service Life Time]

When the nominal life (L) has been obtained, the service life time is obtained using the following equation (if the stroke length and the number of reciprocations per minute are constant).

$$L_h = \frac{L \times 10^6}{2 \cdot \ell_s \cdot n_1 \times 60}$$

L_h : Service life time [h]

ℓ_s : Stroke length [mm]

n_1 : Number of reciprocations per minute [min^{-1}]

Ball Screw Unit/Bearing Unit(Fixed Side)

[Nominal Life]

$$L = \left(\frac{C_a}{f_w \cdot F_a} \right)^3 \times 10^6$$

L : Nominal Life [rev]

(The nominal life (L) means the total travel distance that 90% of a group of units of the same Ball Screw (bearing) can achieve without flaking after individually running under the same conditions.)

C_a : Basic dynamic load rating [N]F_a : Axial load [N]f_w : Load factor ("Table: Load factor (f_w)" serves as a reference)

[Service Life Time]

When the nominal life (L) has been obtained, the service life time is obtained using the following equation (if the stroke length and the number of reciprocations per minute are constant).

$$L_h = \frac{L \cdot \ell}{2 \cdot \ell_s \cdot n_1 \times 60}$$

L_h : Service Life Time [h]ℓ_s : Stroke length [mm]n₁ : Number of reciprocations per minute [min⁻¹]

ℓ : Ball screw lead [mm]

[f_w: Load Factor]

In general, machines in reciprocal motion are likely to cause vibration and impact during operation, and it is particularly difficult to accurately determine each of vibration generated during high-speed operation, impact applied during repeated starting and stopping in normal use, etc. Therefore, where the effect of speed vibration is estimated to be significant, divide the basic load rating (C) by an empirically obtained load factor.

Table: Load Factor (f_w)

Vibration / Impact	Velocity (V)	f _w
Tiny	For tiny speeds V ≤ 0.25 m/s	1 to 1.2
Weak	For low speeds 0.25 m/s < V ≤ 1 m/s	1.2 to 1.5
Medium	For medium speeds 1 m/s < V ≤ 2 m/s	1.5 to 2
Strong	For high speeds V > 2 m/s	2 to 3.5

[K: Moment Equivalent Factor (LM Guide Unit)]

When model KSF travels under a moment, the distribution of load applied to the LM Guide is locally large. In such cases, calculate the load by multiplying the moment value by the corresponding moment equivalent factor indicated in Table.

Symbols K_A, K_B and K_C indicate the moment equivalent loads in the M_A, M_B and M_C directions, respectively.

Table: Equivalent Moment Factors (K)

Model	K _A	K _B	K _C
KSF4	1.37 × 10 ⁻¹	1.37 × 10 ⁻¹	7.9 × 10 ⁻²
KSF5	1.34 × 10 ⁻¹	1.34 × 10 ⁻¹	6.0 × 10 ⁻²
KSF6	1.03 × 10 ⁻¹	1.03 × 10 ⁻¹	4.9 × 10 ⁻²
KSF8	6.7 × 10 ⁻²	6.7 × 10 ⁻²	3.6 × 10 ⁻²
KSF10	5.7 × 10 ⁻²	5.7 × 10 ⁻²	2.9 × 10 ⁻²

K_A: Moment equivalent factor in the M_A direction.K_B: Moment equivalent factor in the M_B direction.K_C: Moment equivalent factor in the M_C direction.



Precautions on Use

● Operation

- Do not unnecessarily disassemble the actuator or control devices. Doing so may allow foreign objects to enter or reduce functionality.
- Do not drop or knock the actuator or control devices. Doing so may cause injury or damage the unit. If the product is dropped or impacted, functionality may be reduced even if there is no surface damage.
- If the product will be used in location exposed to vibrations or in special environment such as vacuum/clean-room, and/or high/low temperatures, contact THK.
- Tilting the table or the outer rail may cause them to fall by their own weight.

● 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 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 parameter torque limit settings within the allowable torque.
- 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 wipe-off the anti-rust oil before using the product.
- In order to effectively use the KSF, lubrication is required. Insufficient lubrication may increase abrasion on moving parts and shorten service life.
- Do not use a mix of lubricants with different physical properties.
- Please contact THK if using special lubricants.
- When adopting oil lubrication method, contact THK.
- 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 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.

Universal series

Model: **US/USW**



Chapter 3

Features	3-003
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Lineup List	3-005
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Model Configuration	3-007
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US Basic Specifications & Dimensions	3-009
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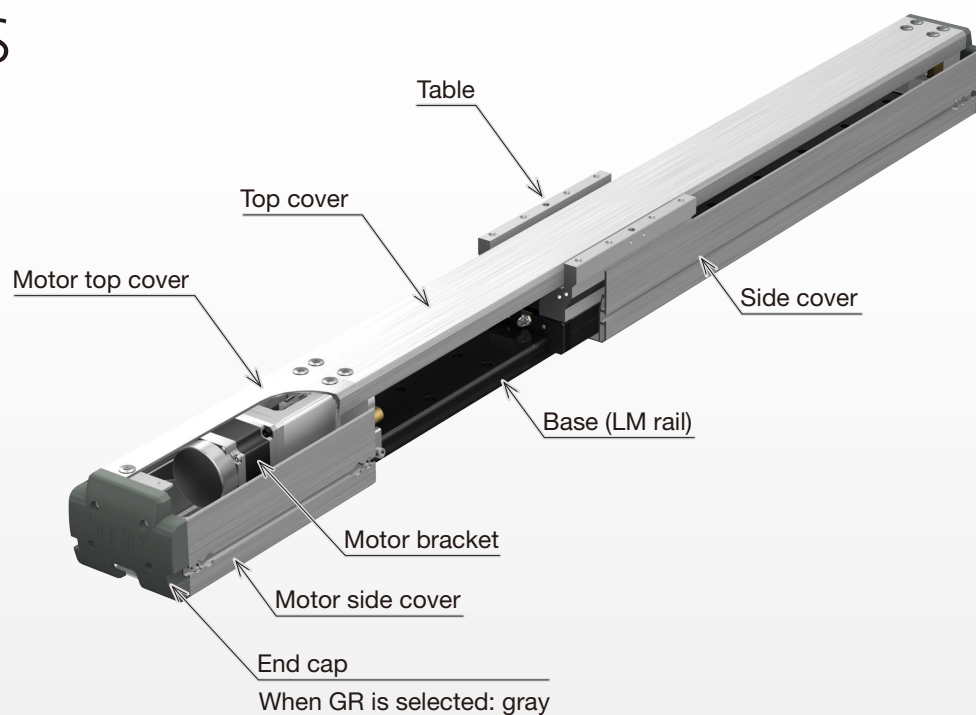
USW Basic Specifications & Dimensions	3-025
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Options	3-049
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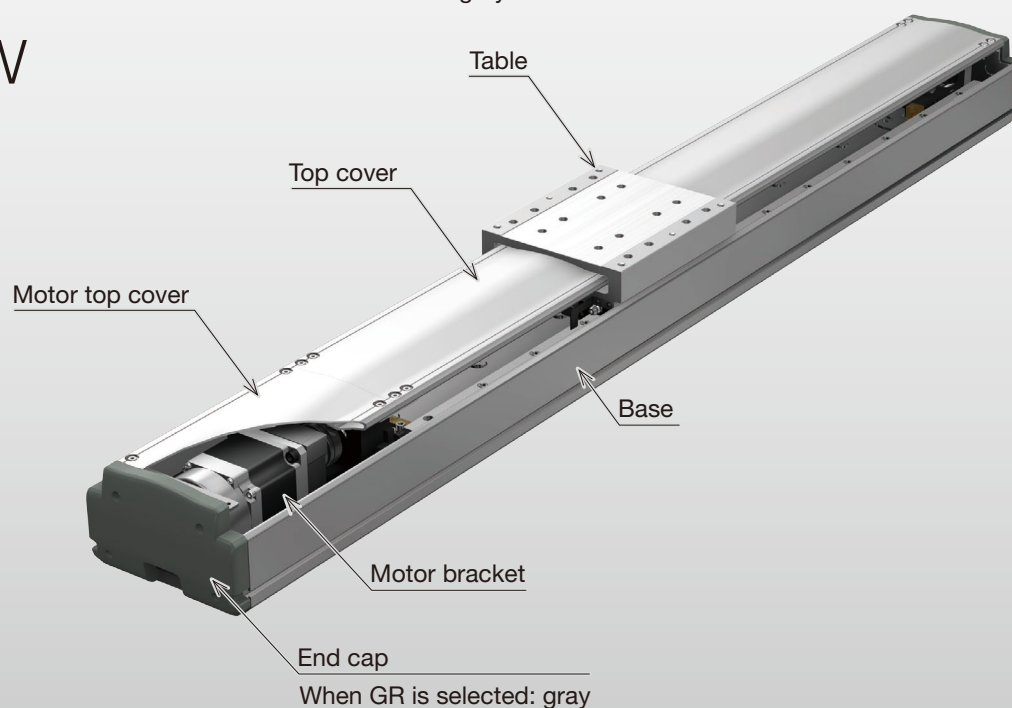
Electrical Actuator Universal Series US/USW

High Speed, High Load Capacity, Long Service Life

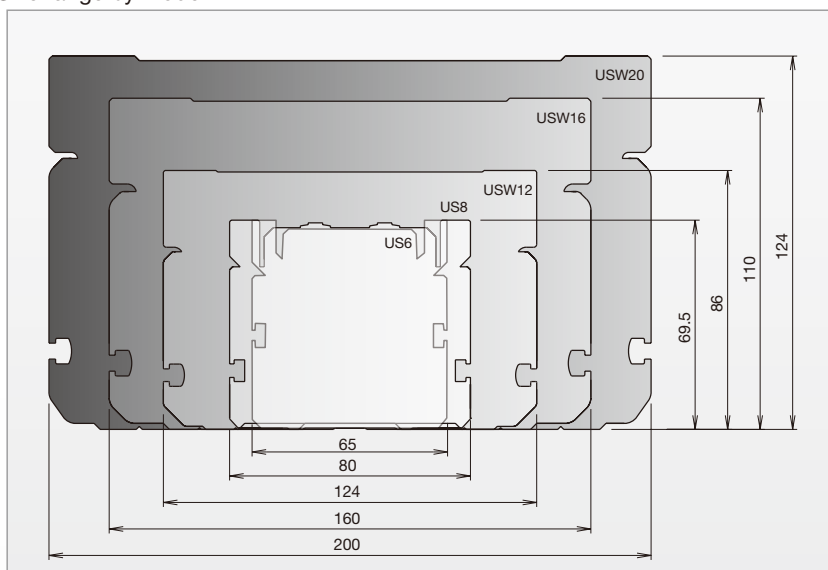
US



USW



Size range by model



Features

Long service life

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

Long-term maintenance-free operation

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

High speed

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

Smart structure

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

Easy assembly

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

Versatile lineup

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

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]	Motor rated output [W]							
				100	200	300	400	500	600	
US6	6	100 to 900	50	360						310
	12			720						630
	6		100	360						310
	12			720						630
US8	5	100 to 1100	100	300						
	10			600						
	20			1200						
	30			1800						
	10		150	600						
	20			1200						
	30			1800						
USW12	5	100 to 1100	200	300						
	10			600						580
	20			1200						1160
	30			1800						1700
USW16	10	100 to 1500	400	550						
	20			1100						
	40			2200						
USW20	20	200 to 1700	750	1100						
	40			2200						

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

Maximum speed [mm/s] *1 for each stroke [mm]																							Described on
Stroke [mm]																							
	700		800		900		1000		1100		1200		1300		1400		1500		1600		1700		
	270	240	210	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 3-017	
	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													Page 3-025	
	270	240	210	190	170	150	140	130	120														
	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													Page 3-033	
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					Page 3-041	
1100				1010	910	820	750	680	620	570	530	490	460	420	400	370	350	330	310	290	270		
2200			2140	1920	1730	1570	1430	1310	1210	1110	1030	950	890	830	770	720	680	640	600	570	530		

Model Configuration

ES/EC

KRF/KSF

US/USW

PCT/PC

Model	Ball screw lead	Stroke	Design symbol	With/without motor	Sensor	Sensor mounting position
USW12RT	05	0150	A	0	6	SR
(1)	(2)	(3)	(4)	(5)	(6)	(7)
US6T	05: 5mm	0100: 100mm	A	0 : Without motor	P	No symbol: When selecting P, Q, or N
US8T	06: 6mm	0150: 150mm		0B: Without motor (With brake)	Q	SR: On right side as seen from side A
USW12T	10: 10mm	0200: 200mm		1 : With motor (Prepared by THK)	N	SL: On left side as seen from side A
USW16T	12: 12mm	to		1B: With motor (Prepared by THK, with brake)	6	
USW20T	20: 20mm	1700: 1700mm			E	
US6RT	30: 30mm				J	
US8RT	40: 40mm				M	
USW12RT						
USW16RT						
USW20RT						

R represents motor wrap.

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

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

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

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

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

Pages for detailed description

(6) Sensors

P. 3-049

(9) Motor bracket

P. 3-050

Base mounting method	Motor bracket	Option
C	A	MR-GR
(8)	(9)	(10)
T : From underside of base (tapped holes)	A	No symbol : Red end cap
C : From top of base (counter-bore holes)	B	MR : Motor right wrap
	C	ML : Motor left wrap
		GR : Change the end cap color to gray
		HG : Hanging jig

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

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

No symbol: red



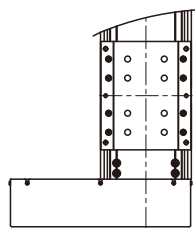
When GR is selected: gray



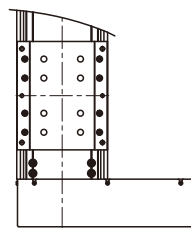
You can select a hanging jig only when selecting USW12, USW16 or USW20.

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

Motor wrap direction



Option symbol ML: Motor left wrap



Option symbol MR: Motor right wrap

US6T Direct motor coupling



Model Configuration

Model	Ball screw lead	Stroke	Design symbol	With/without motor	Sensor	Sensor mounting position
US6T	06	0150	A	0	6	SR

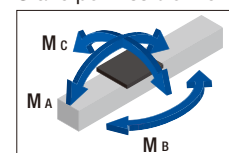
US6T	06: 6mm	0100: 100mm	A	0 : Without motor	N	No symbol: When selecting N
	12: 12mm	to		0B: Without motor (With brake)	6	SR
	0900: 900mm	1 : With motor (Prepared by THK)		E	SL	
				1B: With motor (Prepared by THK, with brake)	J	
					M	

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

Reference Basic Specifications

Motor rated output [W]			50		100	
Ball screw lead [mm]			6	12	6	12
Rated speed *1 [mm/s]			300	600	300	600
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	30	15	70
		Vertical mount	0.3G	7	3	14
Rated thrust *3 [N]			134	67	268	134
Maximum thrust *4 [N]			402	201	795	398
Electromagnetic brake retention [N]			268	134	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.

*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

ES/EC

KRF/KSF

US/USW

PCT/PC

Base mounting method

Motor
bracket

Option

C

A

GR

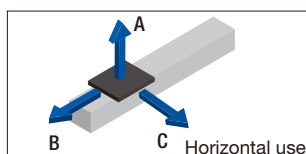
C: From top of base
(counter-base holes)

A

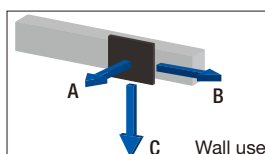
No symbol: Red end cap

GR: Gray end cap

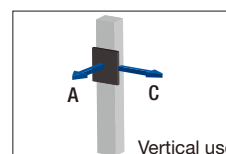
Reference Permissible Overhang Length*



Horizontal use



Wall use



Vertical use

Horizontal mount

[mm]

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

Wall mount

[mm]

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

Vertical mount

[mm]

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

* Dependent on running life of LM guide (10,000km) and on static permissible moment.

The conditions for calculation are as follows:

Stroke: 100mm

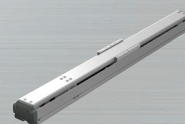
Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

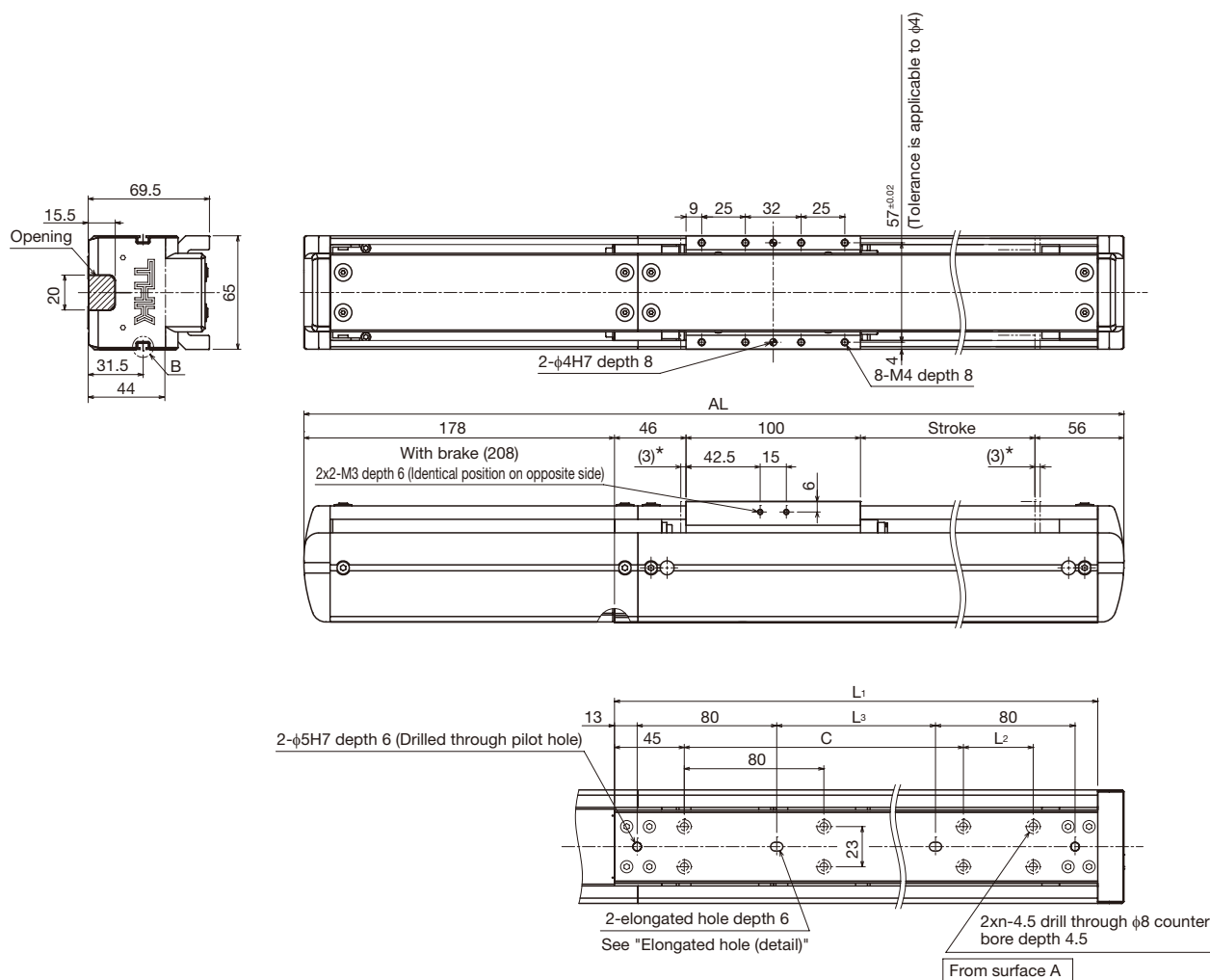
Applied load: maximum load capacity.

A, B, and C represent distances measured from the center of the top surface of the table.

US6T Direct motor coupling



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 [kg]		3.0	3.2	3.4	3.6	3.8	4.1	4.3	

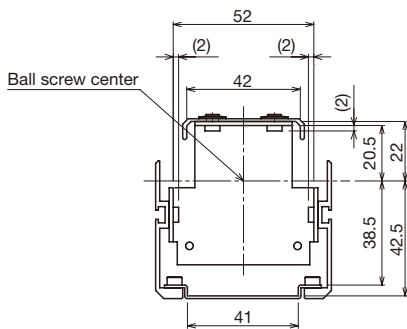
*1 Load capacity and maximum speed vary.

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

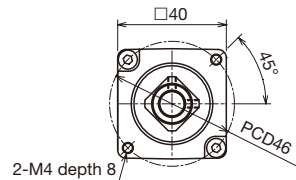
*³ Values when a brake is installed are shown in parentheses.

US6T

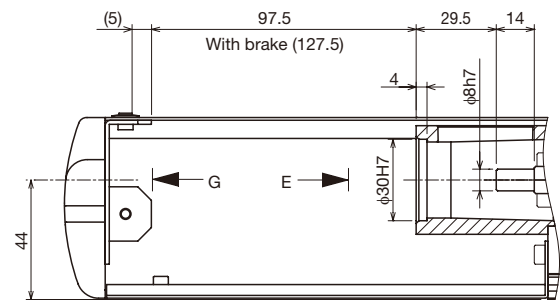
Detail



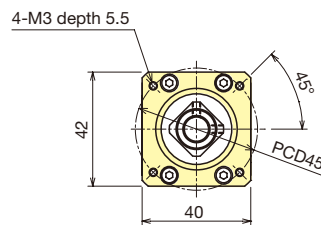
Arrow G view



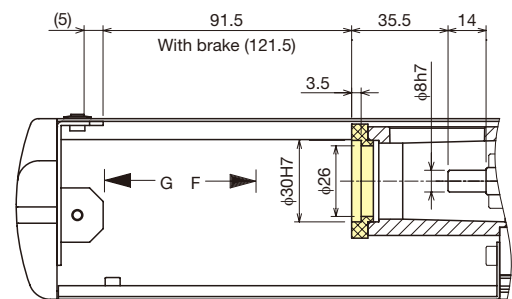
Arrow E view



Motor bracket (detail) (symbol: A)

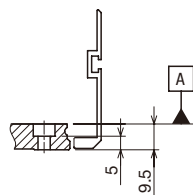


Arrow F view

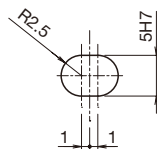


Motor bracket (detail) (symbol: B)

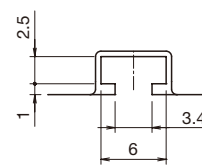
See page 3-50, "Motor Brackets," for a list of applicable motors.



Counter-bore hole on base (detail)



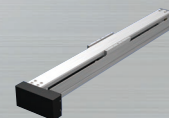
Elongated hole (detail)



Section B (detail)

	450 (456)	500 (506)	550 (556)	600 (606)	650 (656)	700 (706)	750 (756)	800 (806)	850 (856)	900 (906)
360					310	270	240	210	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
	4.5	4.7	4.9	5.1	5.3	5.5	5.7	5.9	6.2	6.4

US6RT Motor wrap



Model Configuration

Model	Ball screw lead	Stroke	Design symbol	With/without motor	Sensor	Sensor mounting position
US6RT	06	0150	A	0	6	SL

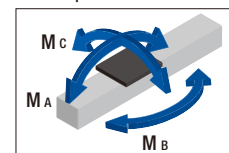
US6RT	06: 6mm	0100: 100mm	A	0 : Without motor	N	No symbol: When selecting N
	12: 12mm	to		0B: Without motor (With brake)	6	SR
		0900: 900mm		1 : With motor (Prepared by THK)	E	SL
				1B: With motor (Prepared by THK, with brake)	J	
					M	

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

Reference Basic Specifications

Motor rated output [W]		50		100	
Ball screw lead [mm]		6	12	6	12
Rated speed ^{*1} [mm/s]		300	600	300	600
Maximum load capacity ^{*2} [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	30	15
	Vertical mount	0.3G	7	3	14
Rated thrust ^{*3} [N]		134	67	268	134
Maximum thrust ^{*4} [N]		402	201	795	398
Electromagnetic brake retention [N]		268	134	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.

^{*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

ES/EC

KRF/KSF

US/USW

PCT/PC

Base mounting method	Motor bracket	Option
C	A	MR-GR

C: From top of base
(counter-base holes)

A

B

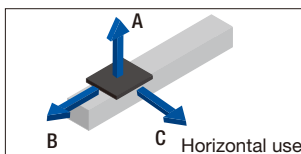
MR: Motor right wrap

ML: Motor left wrap

GR: Gray end cap

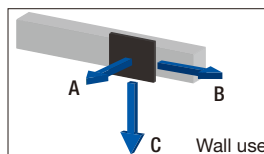
Note: If the GR is not included in the model configuration, cover will be red.

Reference Permissible Overhang Length*



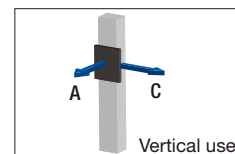
Horizontal mount [mm]

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

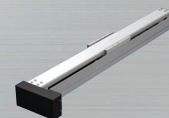
Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

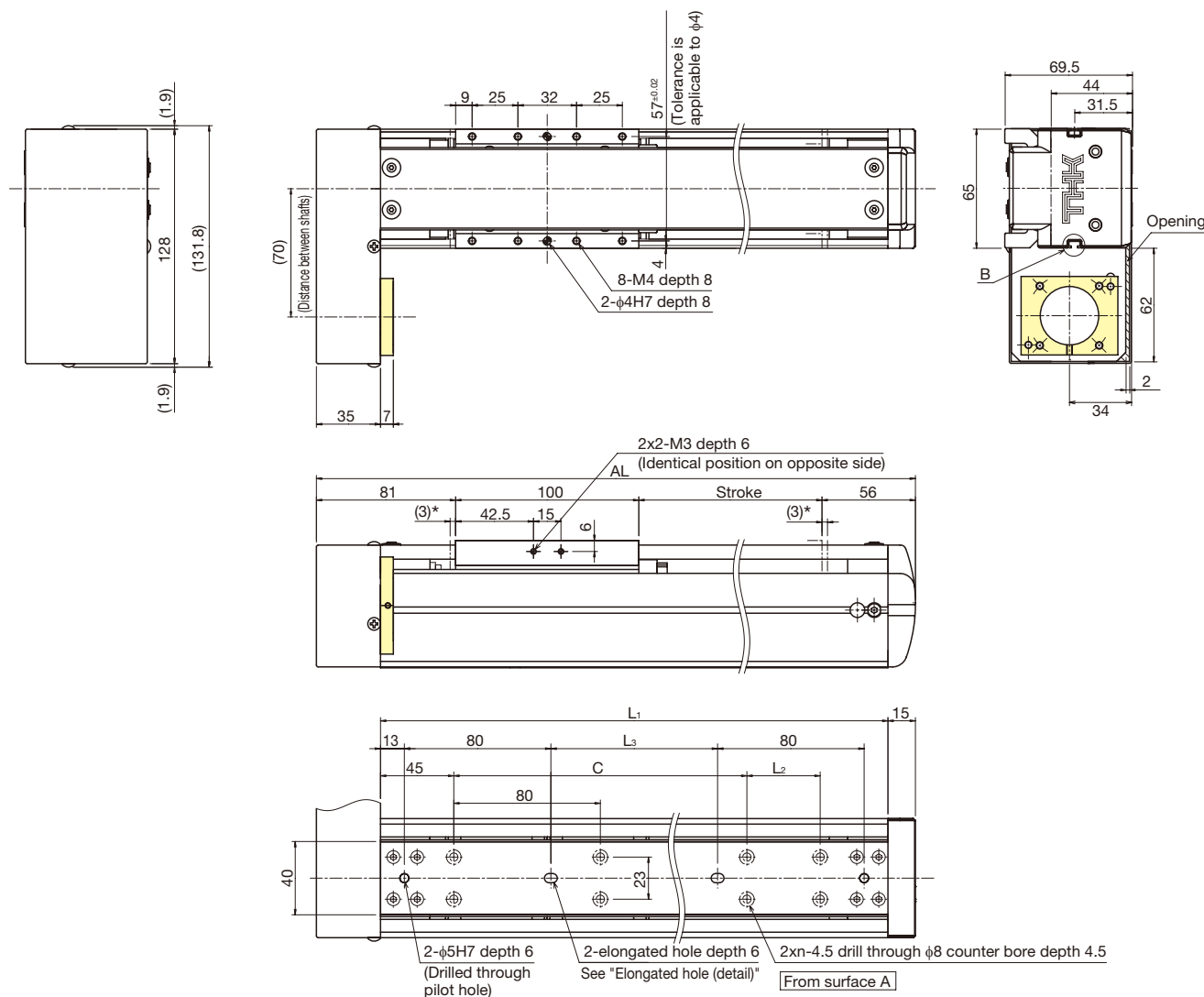
Applied load: maximum load capacity.

A, B, and C represent distances measured from the center of the top surface of the table.

US6RT Motor wrap



Dimensions



* Stroke up to mechanical stopper.

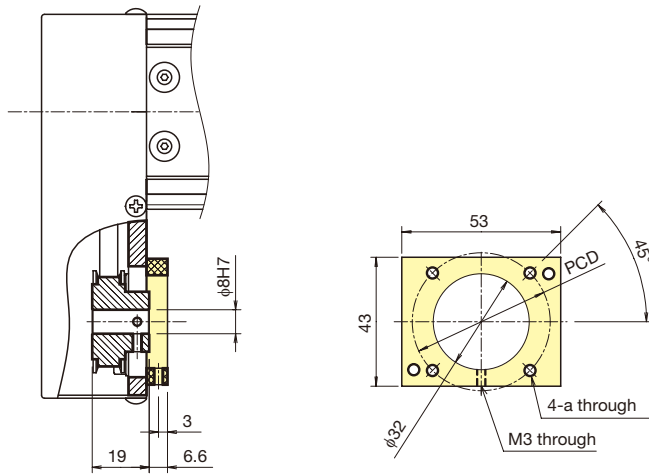
Stroke [mm] (Stroke between mechanical stoppers)		100 (106)	150 (156)	200 (206)	250 (256)	300 (306)	350 (356)	400 (406)	
Maximum speed [mm/s]	Ball screw lead: 6mm	360							
	Ball screw lead: 12mm	720							
Dimensions [mm]	AL	337	387	437	487	537	587	637	
	L ₁	287	337	387	437	487	537	587	
	L ₂	40	-	40	40	-	40	-	
	L ₃	101	151	201	251	301	351	401	
	C	160	240	240	320	400	400	480	
Mounting hole count	n	4	4	5	6	6	7	7	
Weight [kg]		3.0	3.2	3.4	3.6	3.8	4.0	4.2	

*1 Load capacity and maximum speed vary.

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

US6RT

Detail

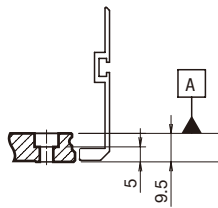


■ Motor bracket specifications [mm]

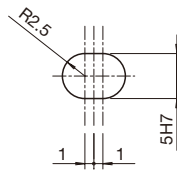
Symbol	a	PCD
A	M4	46
B	M3	45

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

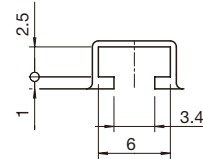
See page 3-50, "Motor Brackets," for a list of applicable motors.



Counter-bore hole on base (detail)



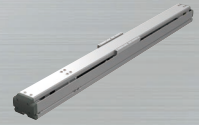
Elongated hole (detail)



Section B (detail)

	450 (456)	500 (506)	550 (556)	600 (606)	650 (656)	700 (706)	750 (756)	800 (806)	850 (856)	900 (906)
	360				310	270	240	210	180	160
	720				630	550	480	420	370	330
	687	737	787	837	887	937	987	1037	1087	1137
	637	687	737	787	837	887	937	987	1037	1087
	-	40	-	40	40	-	40	-	-	40
	451	501	551	601	651	701	751	801	851	901
	560	560	640	640	720	800	800	880	960	960
	8	9	9	10	11	11	12	12	13	14
	4.4	4.7	4.9	5.1	5.3	5.5	5.7	5.9	6.1	6.3

US8T Direct motor coupling



Model Configuration

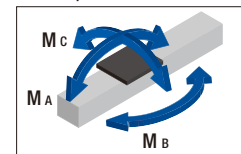
Model	Ball screw lead	Stroke	Design symbol	With/without motor	Sensor	Sensor mounting position
US8T	05	0150	A	0	6	SR

US8T	05: 5mm	0100: 100mm	A	0 : Without motor	P	No symbol: When selecting P, Q, or N
	10: 10mm	to		0B: Without motor (With brake)	Q	SR
	20: 20mm	1100: 1100mm		1 : With motor (Prepared by THK)	N	SL
	30: 30mm			1B: With motor (Prepared by THK, with brake)	6	
				E		
				J		
				M		

Reference Basic Specifications

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

Static permissible moment



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

^{*2} Load capacity and maximum speed are dependent on usage conditions.

^{*3} When acceleration and deceleration rate is 0.2G.

^{*4} At rated motor torque.

^{*5} Dependent on maximum 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

Base
mounting method

C

Motor
bracket

A

Option

GR

C: From top of base
(counter-base holes)

A

No symbol : Red end cap

B

GR : Gray end cap

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

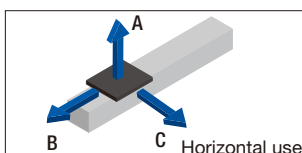
ES/EC

KRF/KSF

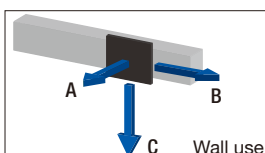
US/USW

PCT/PC

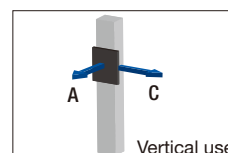
Reference Permissible Overhang Length*



Horizontal use



Wall use



Vertical use

Horizontal mount

[mm]

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

Wall mount

[mm]

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

Vertical mount

[mm]

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

*Dependent on running life of LM guide (10,000km) and on static permissible moment.

The conditions for calculation are as follows:

Stroke: 100mm

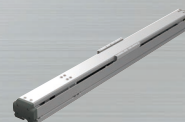
Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

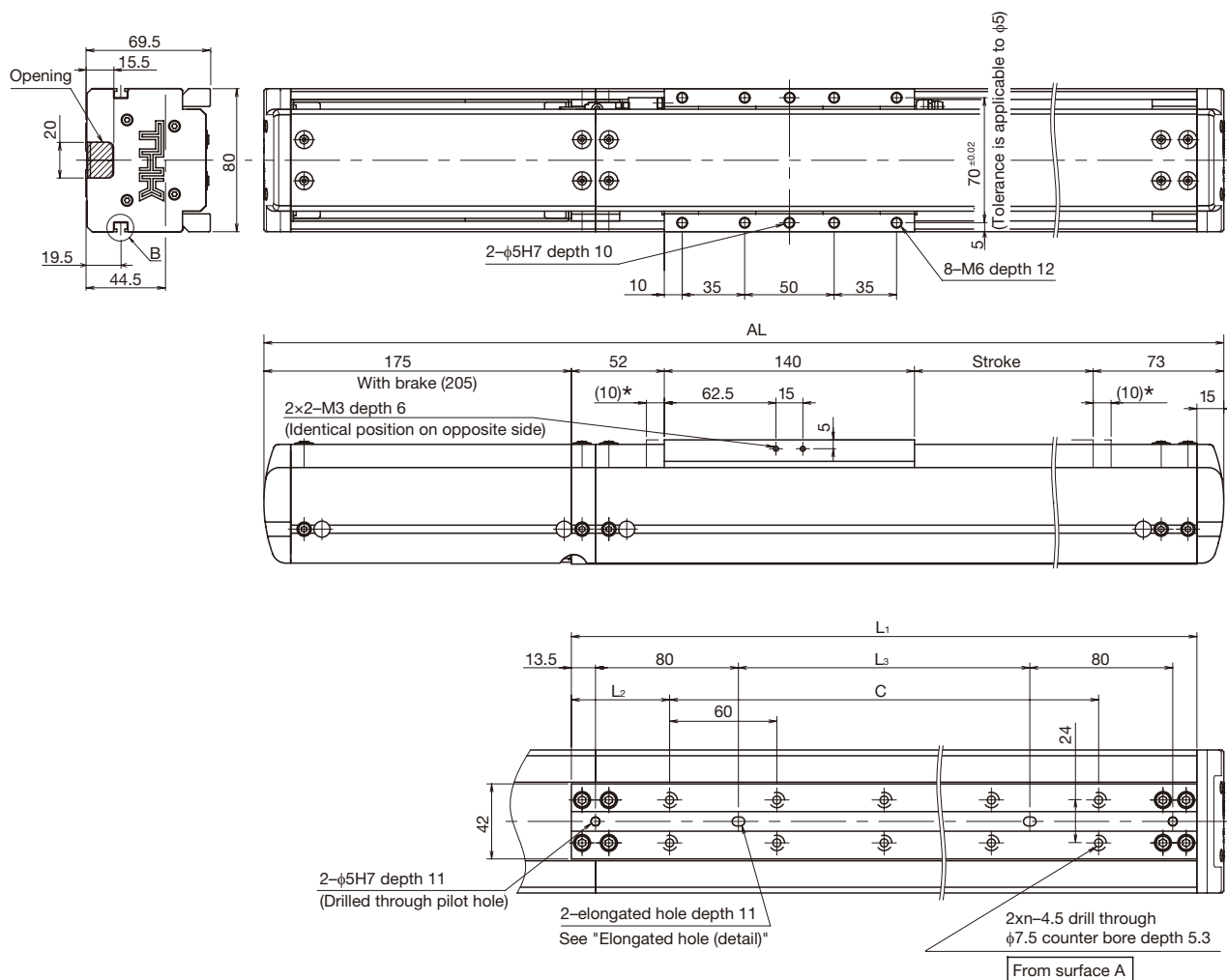
Applied load: maximum load capacity.

A, B, and C represent distances measured from the center of the top surface of the table.

US8T Direct motor coupling



Dimensions



* Stroke up to mechanical stopper.

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

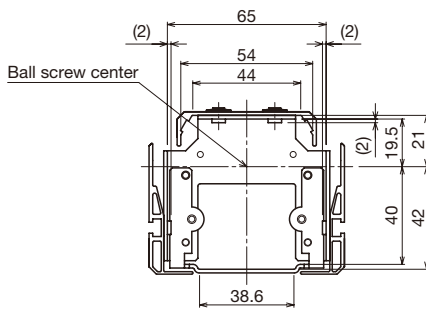
*1 Load capacity and maximum speed vary.

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

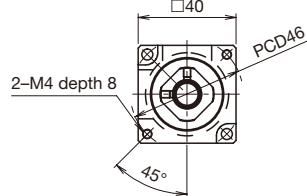
*3 Values when a brake is installed are shown in parentheses.

US8T

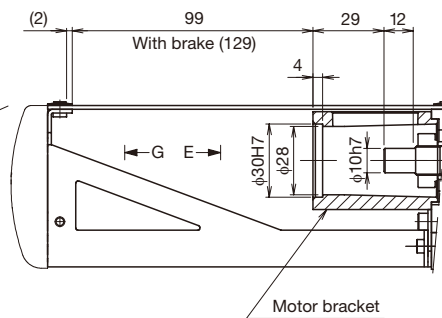
Detail



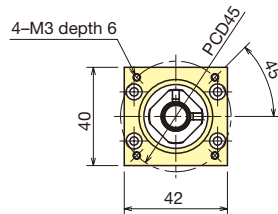
Arrow G view



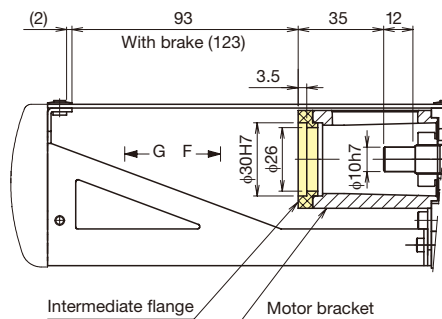
Arrow E view



Motor bracket (detail) (symbol: A)

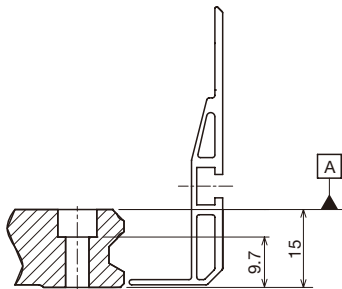


Arrow F view

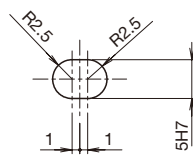


Motor bracket (detail) (symbol: B)

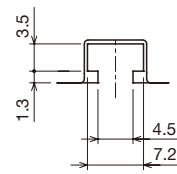
See page 3-50, "Motor Brackets," for a list of applicable motors.



Counter-bore hole on base (detail)



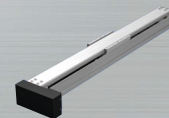
Elongated hole (detail)



Section B (detail)

	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)
	300			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
	8.1	8.4	8.6	8.9	9.1	9.4	9.6	9.9	10.2	10.4	10.7	10.9

US8RT Motor wrap



Model Configuration

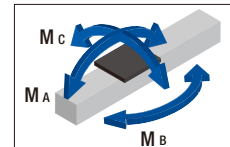
Model	Ball screw lead	Stroke	Design symbol	With/without motor	Sensor	Sensor mounting position
US8RT	05	0150	A	0	6	SL

US8RT	05: 5mm	0100: 100mm	A	0 : Without motor	P	No symbol: When selecting P, Q, or N
	10: 10mm	to		0B: Without motor (With brake)	Q	SR
	20: 20mm	1100: 1100mm		1 : With motor (Prepared by THK)	N	SL
	30: 30mm			1B: With motor (Prepared by THK, with brake)	6	
				E		
				J		
				M		

Reference Basic Specifications

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

Static permissible moment



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

^{*2} Load capacity and maximum speed are dependent on usage conditions.

^{*3} When acceleration and deceleration rate is 0.2G.

^{*4} At rated motor torque.

^{*5} Dependent on maximum 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

ES/EC

KRF/KSF

US/USW

PCT/PC

Base
mounting method

C

Motor
bracket

A

Option

MR-GR

C: From top of base
(counter-base holes)

A

MR : Motor right wrap

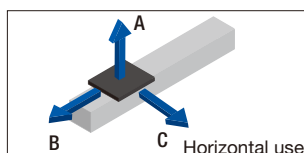
B

ML : Motor left wrap

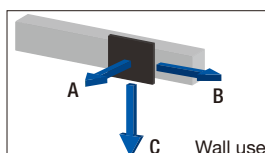
GR : Gray end cap

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

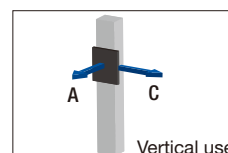
Reference Permissible Overhang Length*



Horizontal use



Wall use



Vertical use

Horizontal mount

[mm]

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

Wall mount

[mm]

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

Vertical mount

[mm]

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

*Dependent on running life of LM guide (10,000km) and on static permissible moment.

The conditions for calculation are as follows:

Stroke: 100mm

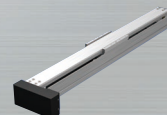
Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

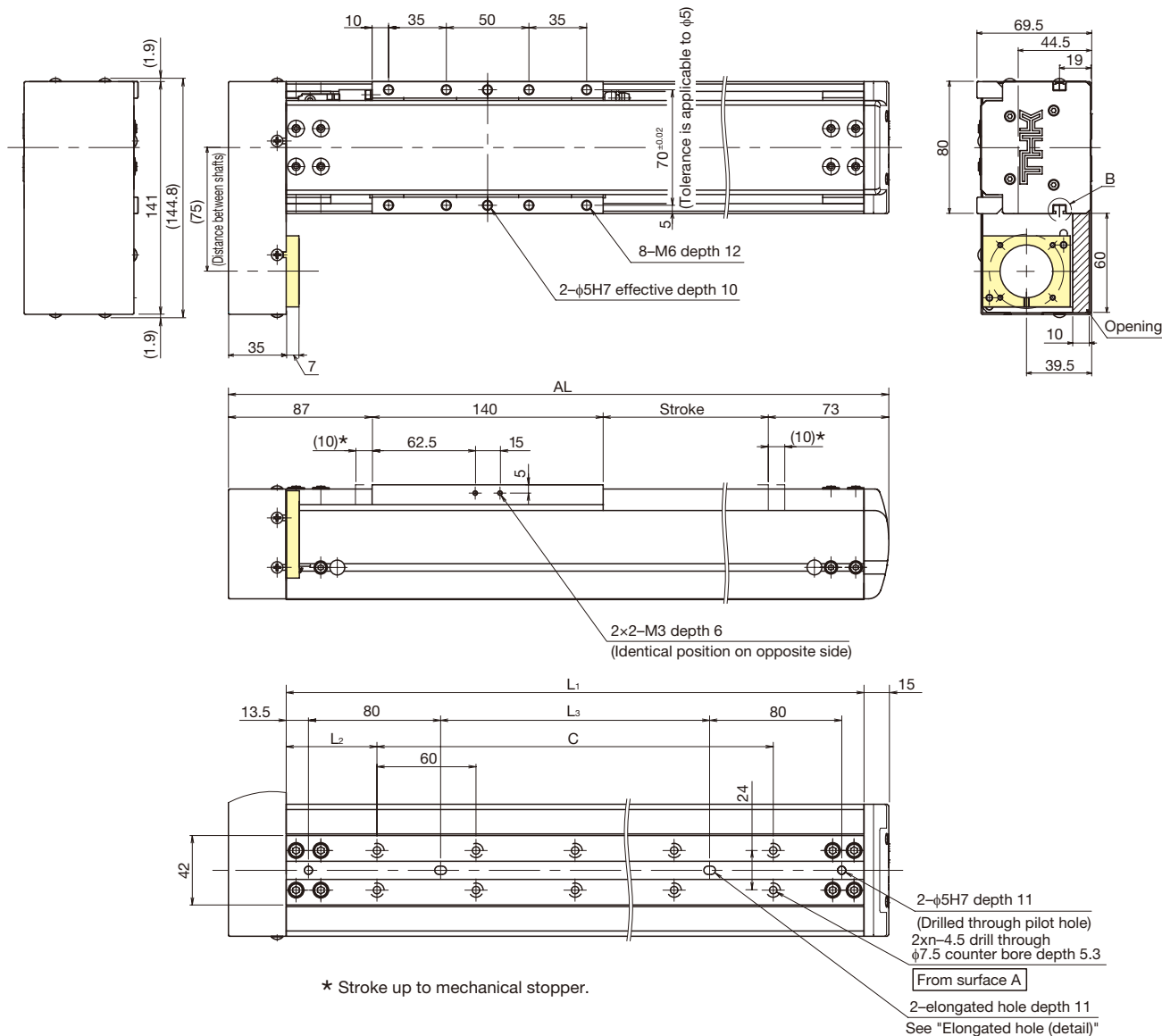
Applied load: maximum load capacity.

A, B, and C represent distances measured from the center of the top surface of the table.

US8RT Motor wrap



Dimensions



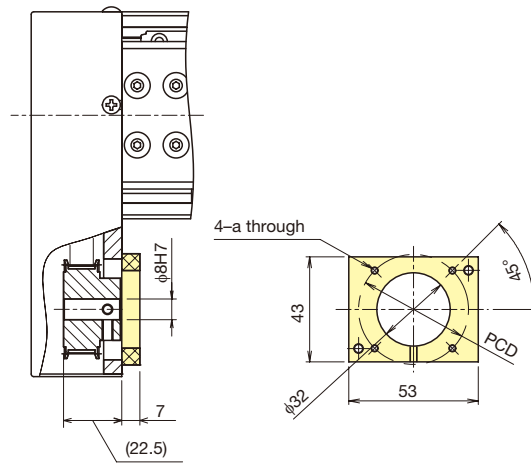
Stroke [mm] (Stroke between mechanical stoppers)		100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)	
Maximum speed [mm/s]	Ball screw lead	5mm	300								
		10mm	600								
		20mm	1200								
		30mm	1800								
Dimensions [mm]	AL	400	450	500	550	600	650	700	750	800	
	L ₁	350	400	450	500	550	600	650	700	750	
	L ₂	55	50	45	40	35	60	55	50	45	
	L ₃	163	213	263	313	363	413	463	513	563	
Mounting hole count	C	240	300	360	420	480	480	540	600	660	
	n	5	6	7	8	9	9	10	11	12	
Weight [kg]		5.8	6	6.3	6.6	6.9	7.2	7.5	7.7	8	

*1 Load capacity and maximum speed vary.

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

US8RT

Detail

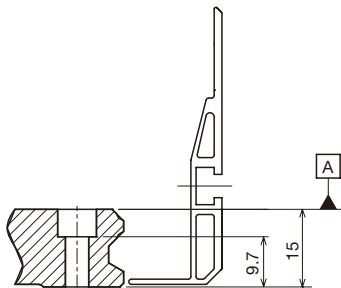


Motor bracket (detail) (symbol: A, B)

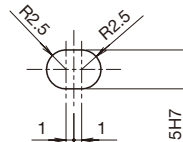
■ Motor bracket specifications [mm]

Symbol	a	PCD
A	M4	46
B	M3	45

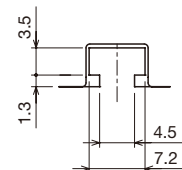
See page 3-50, "Motor Brackets," for a list of applicable motors.



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)
	300			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
	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350
	40	35	60	55	50	45	40	35	60	55	50	45
	613	663	713	763	813	863	913	963	1013	1063	1113	1163
	720	780	780	840	900	960	1020	1080	1080	1140	1200	1260
	13	14	14	15	16	17	18	19	19	20	21	22
	8.3	8.6	8.8	9.1	9.3	9.6	9.8	10.1	10.4	10.6	10.9	11.1

USW12T Motor coupling



Model Configuration

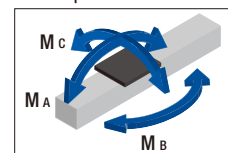
Model	Ball screw lead	Stroke	Design symbol	With/without motor	Sensor	Sensor mounting position	
USW12T	05	0150	A	0	6	SL	

USW12T	05: 5mm	0100: 100mm	A	0 : Without motor	P	No symbol: When selecting P, Q, or N
	10: 10mm	to		0B: Without motor (With brake)	Q	
	20: 20mm	1100: 1100mm	1 : With motor (Prepared by THK)	N	SL	
	30: 30mm		1B: With motor (Prepared by THK, with brake)	6		
				E		
				J		
				M		

Reference Basic Specifications

Motor rated output [W]				200			
Ball screw lead [mm]				5	10	20	30
Rated speed * ¹ [mm/s]				250	500	1000	1500
Maximum load capacity * ² [kg]	Acceleration and deceleration rate	Horizontal 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.

^{*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} 10,000km 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

ES/EC

KRF/KSF

US/USW

PCT/PC

Base
mounting methodMotor
bracket

Option

C

A

GR

T: From underside of
base (tapped holes)

A

No symbol: Red end cap

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

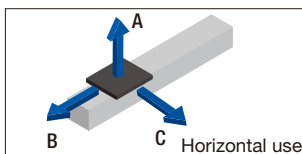
B

GR: Gray end cap

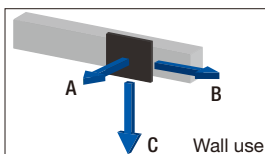
HG: Hanging jig

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

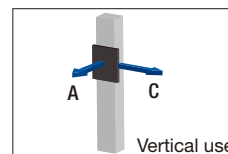
Reference Permissible Overhang Length*



Horizontal use



Wall use



Vertical use

Horizontal mount

[mm]

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

*Dependant 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

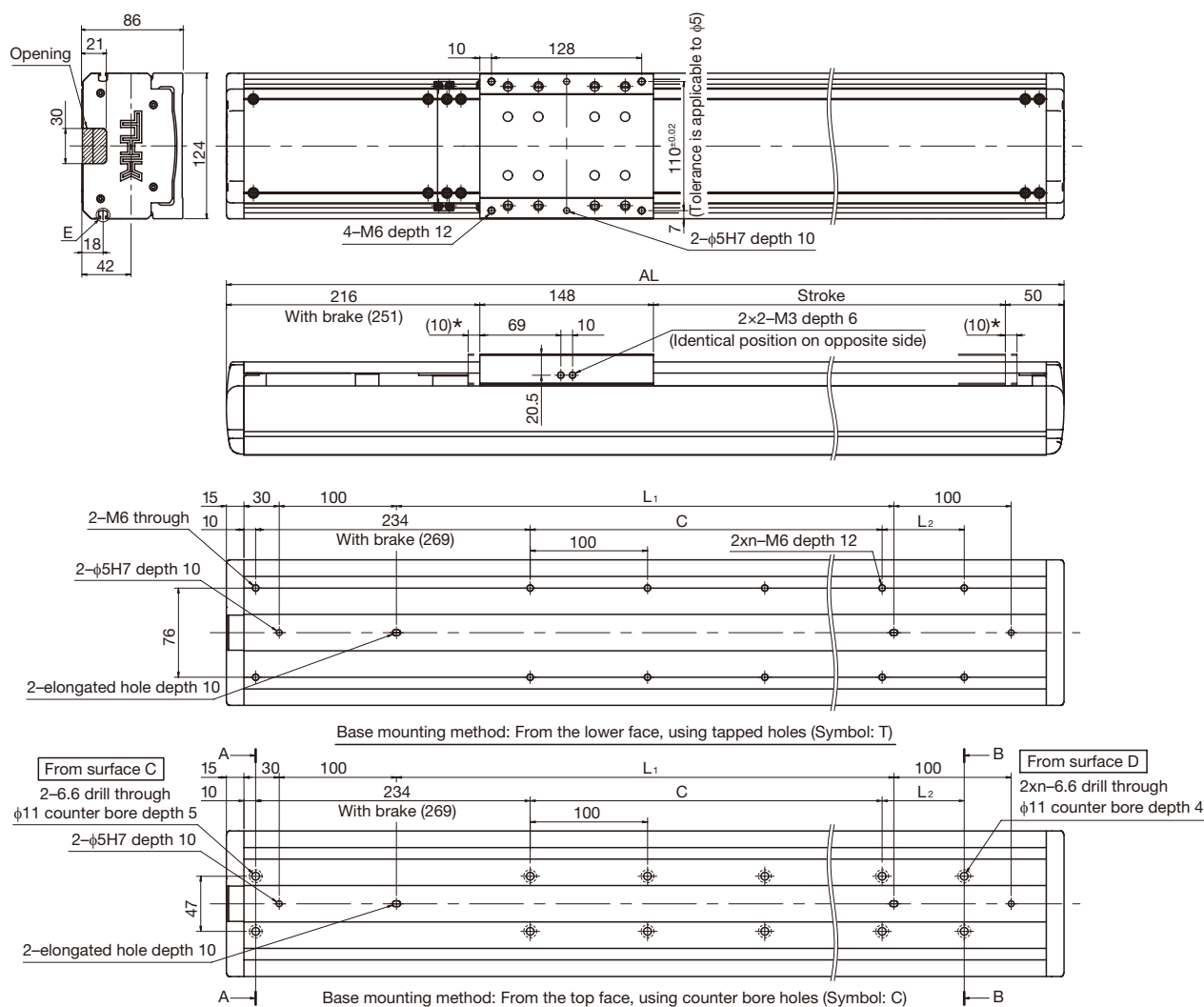
Applied load: maximum load capacity.

A, B, and C represent distances measured from the center of the top surface of the table.

USW12T Motor coupling



Dimensions



★ Stroke up to mechanical stopper.

Stroke [mm] (Stroke between mechanical stoppers)		100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)	
Maximum speed * ₁ * ₂ [mm/s]	Ball screw lead	5mm	300								
		10mm	600								
		20mm	1200								
		30mm	1800								
Dimensions [mm]	AL * ₃	514 (549)	564 (599)	614 (649)	664 (699)	714 (749)	764 (799)	814 (849)	864 (899)	914 (949)	
	L ₁ * ₃	224 (259)	274 (309)	324 (359)	374 (409)	424 (459)	474 (509)	524 (559)	574 (609)	624 (659)	
	L ₂	70	20	70	20	70	20	70	20	70	
	C	100	200	200	300	300	400	400	500	500	
Mounting hole count	n	3	4	4	5	5	6	6	7	7	
Weight [kg]		6.6 (6.9)	7.2 (7.5)	7.8 (8.1)	8.4 (8.7)	9 (9.3)	9.6 (9.9)	10.2 (10.5)	10.8 (11.1)	11.3 (11.6)	

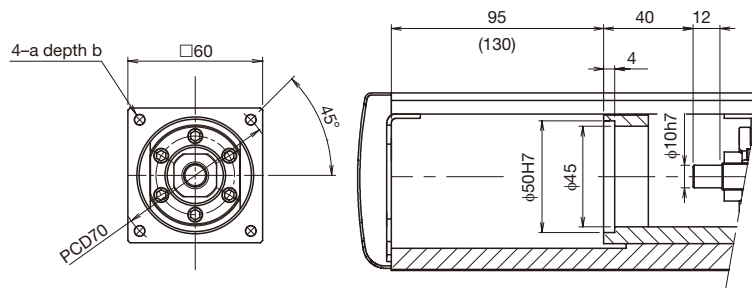
*₁ Load capacity and maximum speed vary.

*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

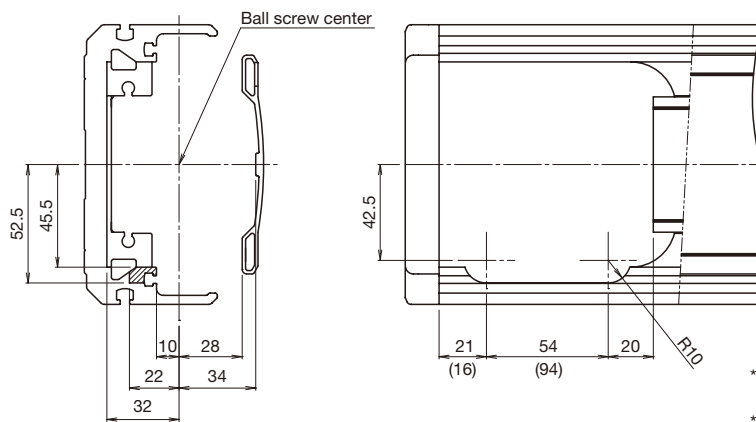
Detail



Motor bracket specifications

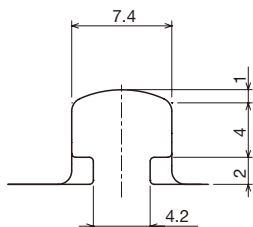
[mm]

Symbol	a	b
A	M5	10
B	M4	8

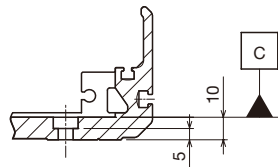


*1 Values when a brake is installed are shown in parentheses.

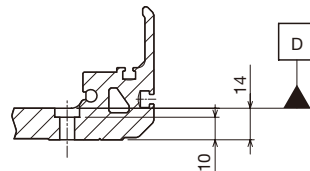
*2 See page 3-50, "Motor Brackets," for a list of applicable motors.



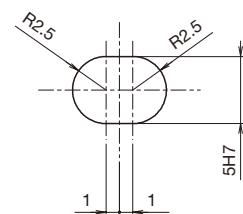
Section E (detail)



A-A (cross section)



B-B (cross section)

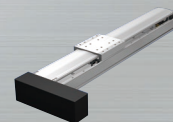


Elongated hole (detail)

Counter-bore hole in base (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	70
600	600	700	700	800	800	900	900	1000	1000	1100	1100	
8	8	9	9	10	10	11	11	12	12	13	13	
12 (12.3)	12.5 (12.8)	13.2 (13.5)	13.7 (14)	14.4 (14.7)	14.9 (15.2)	15.6 (15.9)	16.2 (16.5)	16.8 (17.1)	17.4 (17.7)	18 (18.3)	18.6 (18.9)	

USW12RT Motor wrap



Model Configuration

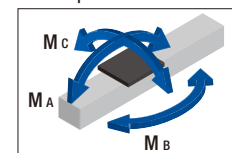
Model	Ball screw lead	Stroke	Design symbol	With/without motor	Sensor	Sensor mounting position
USW12RT	05	0150	A	0	6	SL

USW12RT	05: 5mm 10: 10mm 20: 20mm 30: 30mm	0100: 100mm to 1100: 1100mm	A	0 : Without motor 0B : Without motor (With brake) 1 : With motor (Prepared by THK) 1B : With motor (Prepared by THK, with brake)	P Q N 6 E J M	No symbol: When selecting P, Q, or N SR SL
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Reference Basic Specifications

Motor rated output [W]				200			
Ball screw lead [mm]				5	10	20	30
Rated speed * ¹ [mm/s]				250	500	1000	1500
Maximum load capacity * ² [kg]	Acceleration and deceleration rate	Horizontal 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.

^{*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} 10,000km 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

ES/EC

KRF/KSF

US/USW

PCT/PC

Base
mounting methodMotor
bracket

Option

C

A

MR-GR

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

A

B

C

MR: Motor right wrap

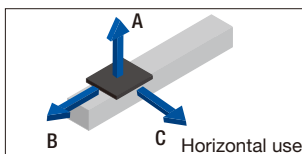
ML: Motor left wrap

GR: Gray end cap

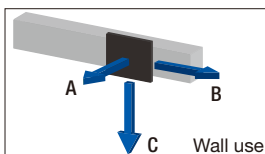
HG: Hanging jig

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

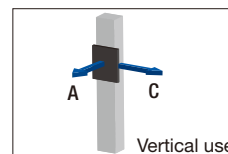
Reference Permissible Overhang Length*



Horizontal use



Wall use



Vertical use

Horizontal mount

[mm]

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

Wall mount

[mm]

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

Vertical mount

[mm]

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

*Dependant on running life of LM guide (20,000km) and on static permissible moment.

The conditions for calculation are as follows:

Stroke: 100mm

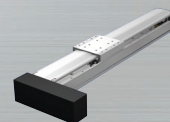
Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

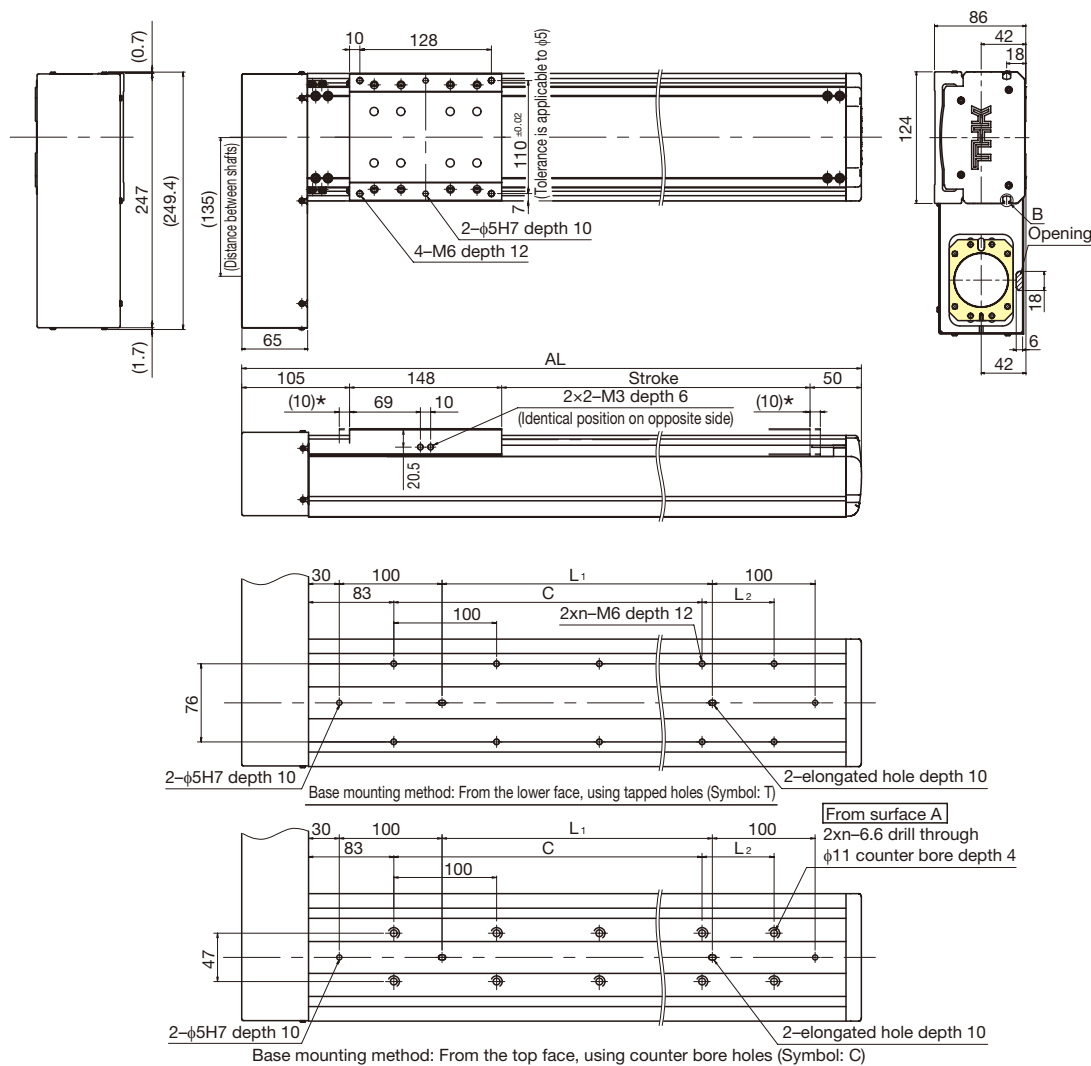
Applied load: maximum load capacity.

A, B, and C represent distances measured from the center of the top surface of the table.

USW12RT Motor wrap



Dimensions



* Stroke up to mechanical stopper.

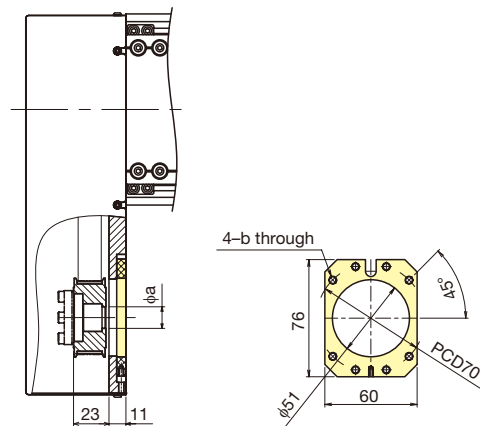
Stroke [mm] (Stroke between mechanical stoppers)			100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)	
Maximum speed [mm/s] *1 *2	Ball screw lead	5mm					300					
		10mm					600					
		20mm					1200					
		30mm					1800					
Dimensions [mm]	AL		403	453	503	553	603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

*1 Load capacity and maximum speed vary.

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

USW12RT

Detail

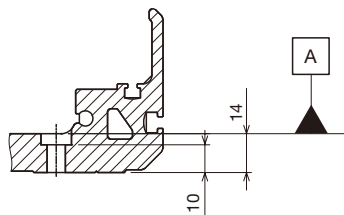


Motor bracket (detail) (symbol: A, B, C)

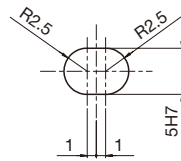
■ Motor bracket specifications [mm]

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

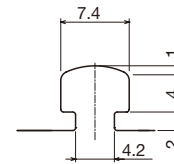
See page 3-50, "Motor Brackets," for a list of applicable motors.



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)
	300			270	240	210	190	170	150	140	130	120
	600		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
	513	563	613	663	713	763	813	863	913	963	1013	1063
	20	70	20	70	20	70	20	70	20	70	20	70
	600	600	700	700	800	800	900	900	1000	1000	1100	1100
	8	8	9	9	10	10	11	11	12	12	13	13
	13.4	14	14.6	15.2	15.8	16.4	17	17.6	18.2	18.8	19.4	20

USW16T Motor coupling



Model Configuration

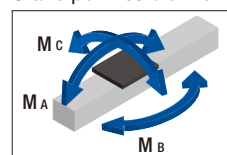
Model	Ball screw lead	Stroke	Design symbol	With/without motor	Sensor	Sensor mounting position
USW16T	10	0150	A	0	6	SR

USW16T	10: 10mm	0100: 100mm	A	0 : Without motor	P	No symbol: When selecting P, Q, or N
	20: 20mm	to		0B: Without motor (With brake)	Q	SR
	40: 40mm	1500: 1500mm		1 : With motor (Prepared by THK)	N	SL
				1B: With motor (Prepared by THK, with brake)	6	
					E	
					J	
					M	

Reference Basic Specifications

Motor rated output [W]	400		
Ball screw lead [mm]	10	20	40
Rated speed * ¹ [mm/s]	500	1000	2000
Maximum load capacity * ² [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G
		Vertical mount	0.3G
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.

*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

ES/EC

KRF/KSF

US/USW

PCT/PC

Base
mounting methodMotor
bracket

Option

C

A

GR

T: From underside of base
(tapped holes)

A

No symbol: Red end cap

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

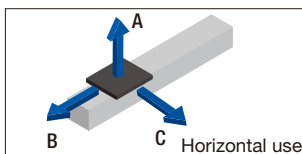
B

GR: Gray end cap

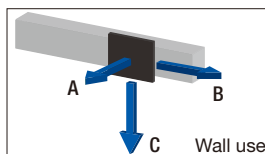
HG: Hanging jig

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

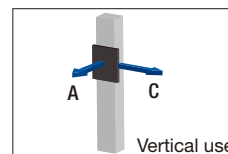
Reference Permissible Overhang Length*



Horizontal use



Wall use



Vertical use

Horizontal mount

[mm]

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

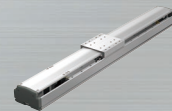
Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

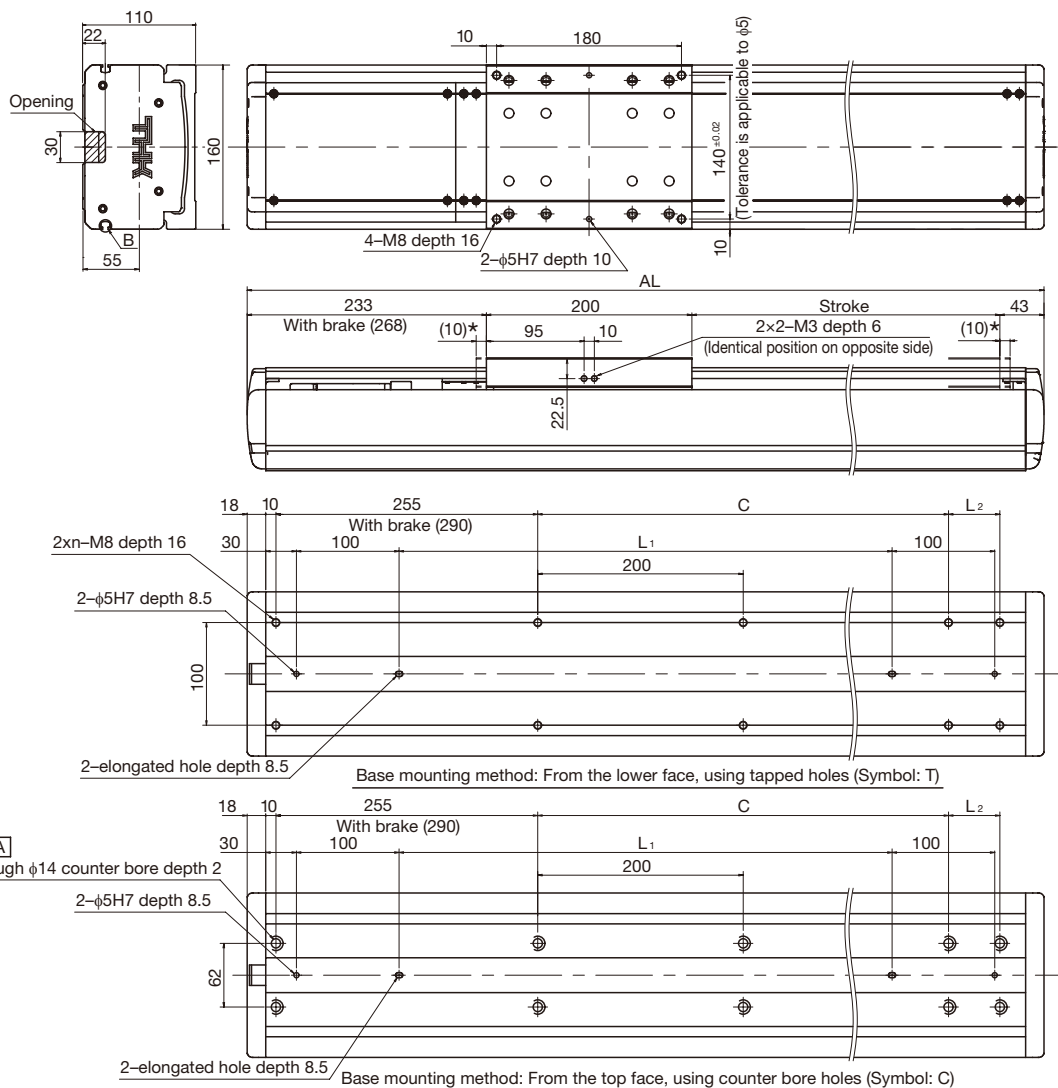
Applied load: maximum load capacity.

A, B, and C represent distances measured from the center of the top surface of the table.

USW16T Motor coupling



Dimensions



* Stroke up to mechanical stopper.

Stroke [mm] (Stroke between mechanical stoppers)			100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)	550 (570)	600 (620)	650 (670)	
Maximum speed *1 *2 [mm/s]	Ball screw lead	10mm	550												
		20mm	1100												
		40mm	2200												
Dimensions [mm]	AL *3	576 (611)	626 (661)	676 (711)	726 (761)	776 (811)	826 (861)	876 (911)	926 (961)	976 (1011)	1026 (1061)	1076 (1111)	1126 (1161)		
	L ₁ *3	280 (315)	330 (365)	380 (415)	430 (465)	480 (515)	530 (565)	580 (615)	630 (665)	680 (715)	730 (765)	780 (815)	830 (865)		
	L ₂	50	100	150	–	50	100	150	–	50	100	150	–		
	C	200	200	200	400	400	400	400	600	600	600	600	800		
Mounting hole count	n	4	4	4	4	5	5	5	5	6	6	6	6		
Weight [kg]		13.1 (13.5)	14.1 (14.5)	15.1 (15.5)	16.1 (16.5)	17.1 (17.5)	18.1 (18.5)	19.1 (19.5)	20.1 (20.5)	21.1 (21.5)	22.1 (22.5)	23.1 (23.5)	24.1 (24.5)		

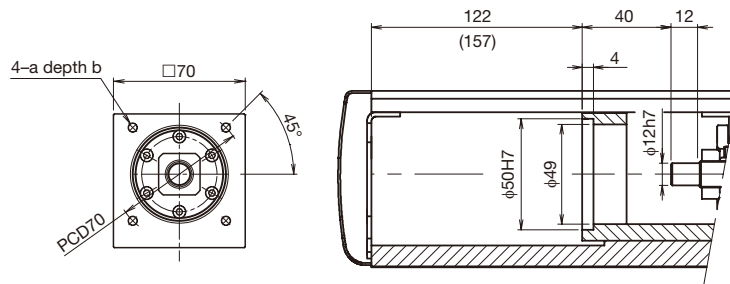
*1 Load capacity and maximum speed vary.

*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

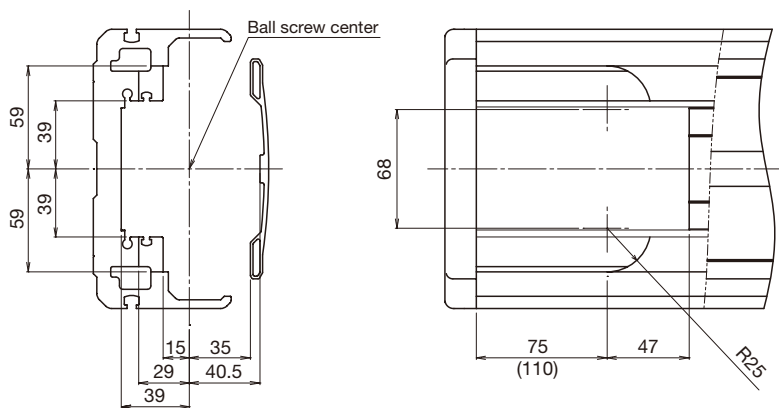
Detail



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

■ Motor bracket specifications [mm]

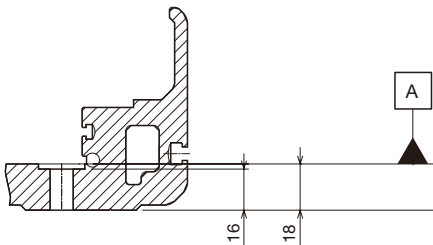
Symbol	a	b
A	M5	10
B	M4	8



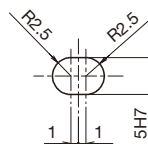
Detailed Diagram: Motor Mounting Part

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

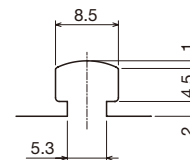
*2 See page 3-50, "Motor Brackets," for a list of applicable motors.



Counter-bore hole on base (detail)



Elongated hole (detail)

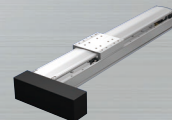


Section B (detail)

	700 (720)	750 (770)	800 (820)	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)	1150 (1170)	1200 (1220)	1250 (1270)	1300 (1320)	1350 (1370)	1400 (1420)	1450 (1470)	1500 (1520)
	550		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
	25.1 (25.5)	26.1 (26.5)	27.1 (27.5)	28.1 (28.5)	29.1 (29.5)	30.1 (30.5)	31.1 (31.5)	32.1 (32.5)	33.1 (33.5)	34.1 (34.5)	35.1 (35.5)	36.1 (36.5)	37.1 (37.5)	38.1 (38.5)	39.1 (39.5)	40.1 (40.5)	41.1 (41.5)

USW16RT

Motor wrap



Model Configuration

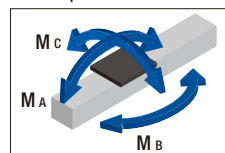
Model	Ball screw lead	Stroke	Design symbol	With/without motor	Sensor	Sensor mounting position
USW16RT	10	0150	A	0	6	SL

USW16RT	10: 10mm	0100: 100mm	A	0 : Without motor	P	No symbol: When selecting P, Q, or N
	20: 20mm	to		0B: Without motor (With brake)	Q	SR
	40: 40mm	1500: 1500mm		1 : With motor (Prepared by THK)	N	SL
				1B: With motor (Prepared by THK, with brake)	6	
					E	
					J	
					M	

Reference Basic Specifications

Motor rated output [W]				400		
Ball screw lead [mm]				10	20	40
Rated speed * ¹ [mm/s]				500	1000	2000
Maximum load capacity * ² [kg]	Acceleration and deceleration rate	Horizontal 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.*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

ES/EC

KRF/KSF

US/USW

PCT/PC

Base mounting method	Motor bracket	Option
C	A	MR-GR

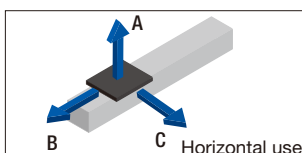
T: From underside of base (tapped holes)
C: From top of base (counter-bore holes)

A
B

MR: Motor right wrap
ML: Motor left wrap
GR: Gray end cap
HG: Hanging jig

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

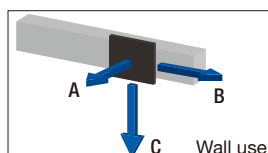
Reference Permissible Overhang Length*



Horizontal mount

[mm]

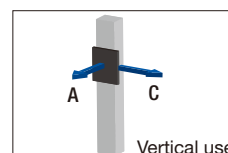
Ball screw lead [mm]	Load mass [kg]	A	B	C
10	40	2590	950	820
	80	1590	520	440
	120	1130	340	290
20	20	3000	1560	1380
	40	2590	950	820
	80	1590	520	440
40	10	3000	2360	2100
	20	3000	1560	1380
	40	2590	950	820



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

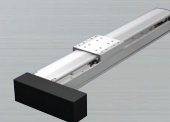
Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

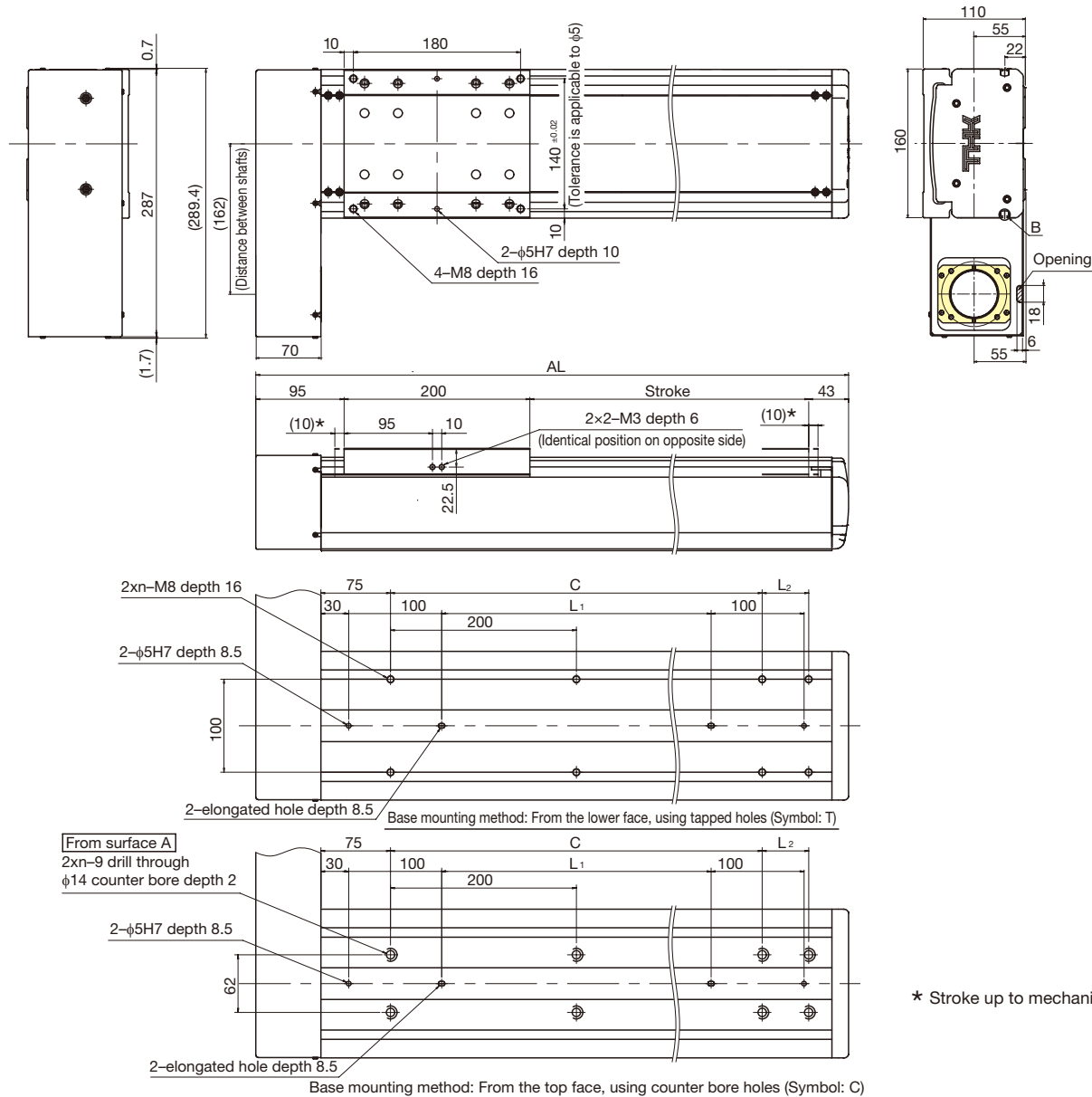
Applied load: maximum load capacity.

A, B, and C represent distances measured from the center of the top surface of the table.

USW16RT Motor wrap



Dimensions



* Stroke up to mechanical stopper.

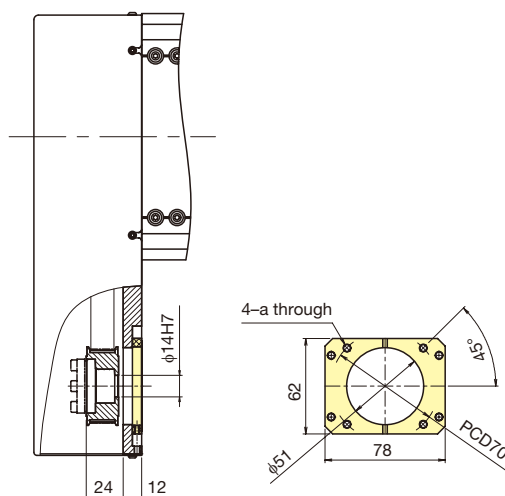
Stroke [mm] (Stroke between mechanical stoppers)		100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)	550 (570)	600 (620)	650 (670)	
Maximum speed *1 *2 [mm/s]	Ball screw lead	10mm	550											
		20mm	1100											
		40mm	2200											
Dimensions [mm]	AL	438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

*1 Load capacity and maximum speed vary.

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

USW16RT

Detail

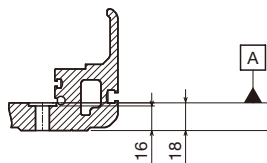


Motor bracket (detail) (symbol: A, B)

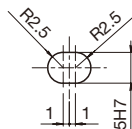
■ Motor bracket specifications

Symbol	a
A	M5
B	M4

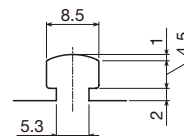
See page 3-50, "Motor Brackets," for a list of applicable motors.



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	700 (720)	750 (770)	800 (820)	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)	1150 (1170)	1200 (1220)	1250 (1270)	1300 (1320)	1350 (1370)	1400 (1420)	1450 (1470)	1500 (1520)
	550		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
	690	740	790	840	890	940	990	1040	1090	1140	1190	1240	1290	1340	1390	1440	1490
	50	100	150	–	50	100	150	–	50	100	150	–	50	100	150	–	50
	800	800	800	1000	1000	1000	1000	1200	1200	1200	1200	1400	1400	1400	1400	1600	1600
	6	6	6	6	7	7	7	7	8	8	8	8	9	9	9	9	10
	25.4	26.4	27.4	28.4	29.4	30.4	31.4	32.4	33.4	34.4	35.4	36.4	37.4	38.4	39.4	40.4	41.4

USW20T Motor coupling



Model Configuration

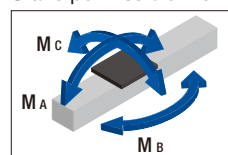
Model	Ball screw lead	Stroke	Design symbol	With/without motor	Sensor	Sensor mounting position
USW20T	20	0300	A	0	N	SR

USW20T	20: 20mm	0200: 200mm	A	0 : Without motor	P	No symbol: When selecting P, Q, or N
	40: 40mm	to		0B: Without motor (With brake)	Q	SR
		1700: 1700mm		1 : With motor (Prepared by THK)	N	SL
				1B: With motor (Prepared by THK, with brake)	6	
					E	
					J	
					M	

Reference Basic Specifications

Motor rated output [W]		750	
Ball screw lead [mm]		20	40
Rated speed ^{*1} [mm/s]		1000	2000
Maximum load capacity ^{*2} [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G
		Vertical mount	0.3G
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.

^{*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

ES/EC

KRF/KSF

US/USW

PCT/PC

Base mounting method	Motor bracket	Option
C	A	GR

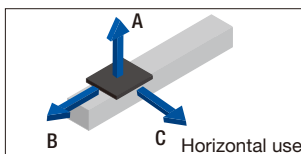
T: From underside of base (tapped holes)
C: From top of base (counter-bore holes)

A
B

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

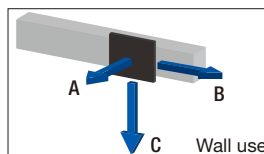
Note: If the GR is not included in the model configuration, cover will be red.

Reference Permissible Overhang Length*



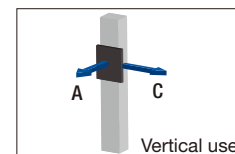
Horizontal mount [mm]

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

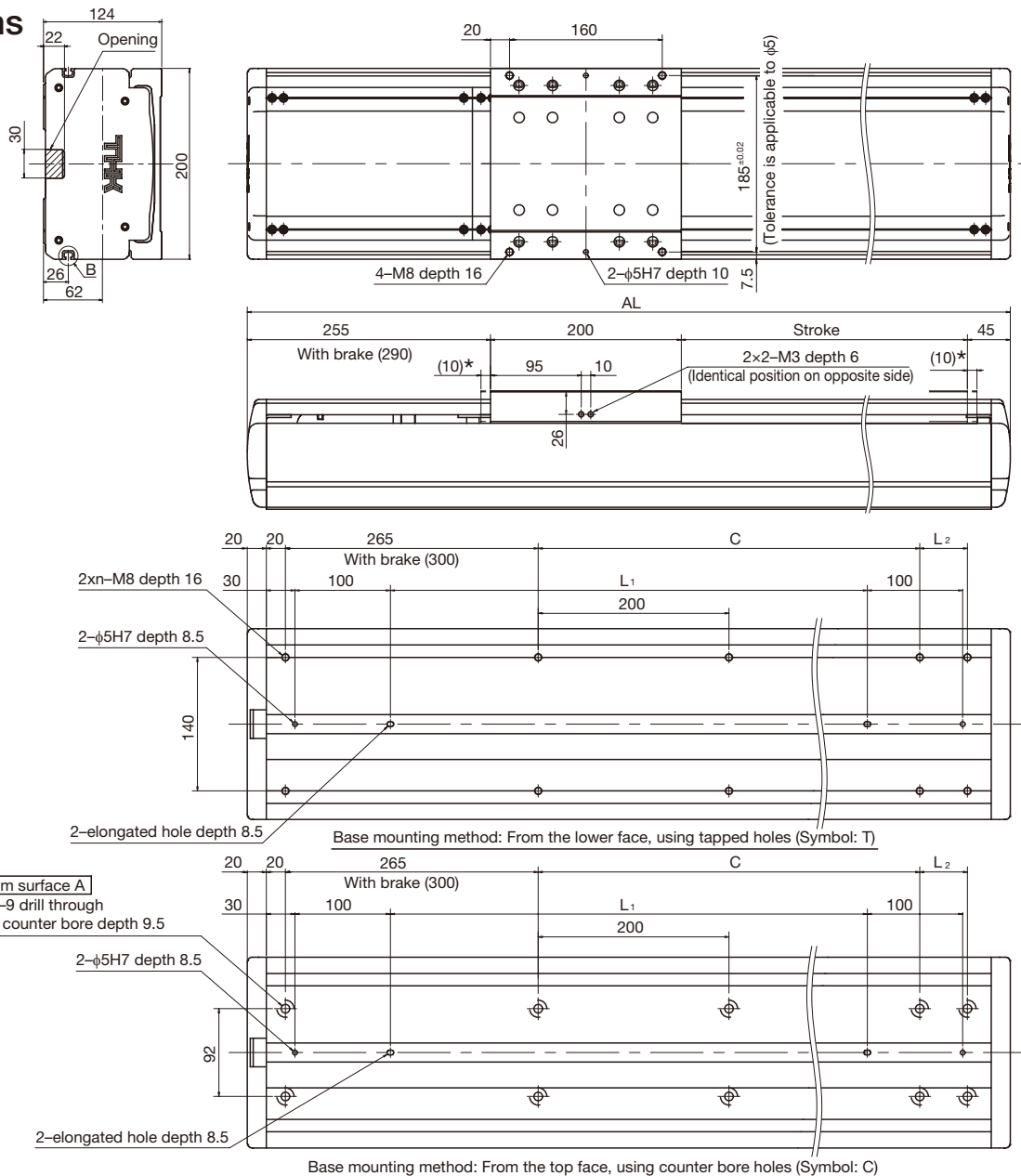
Applied load: maximum load capacity.

A, B, and C represent distances measured from the center of the top surface of the table.

USW20T Motor coupling



Dimensions



* Stroke up to mechanical stopper.

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 [kg]	Without motor		22.6 (23.3)	23.9 (24.6)	25.3 (26)	26.7 (27.4)	28.1 (28.8)	29.6 (30.3)	30.9 (31.6)	32.3 (33)	33.7 (34.4)	35.1 (35.8)	36.6 (37.3)	37.9 (38.6)	39.3 (40)	

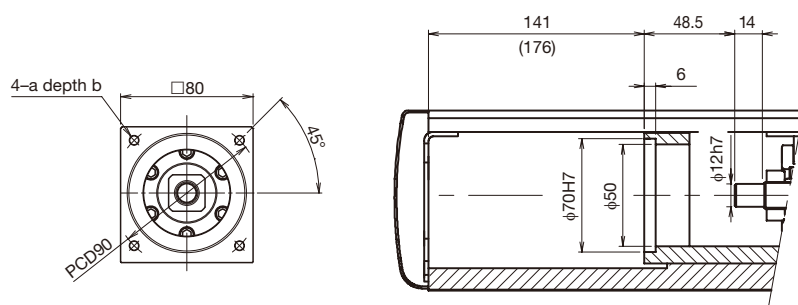
*₁ Load capacity and maximum speed vary.

*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

Detail

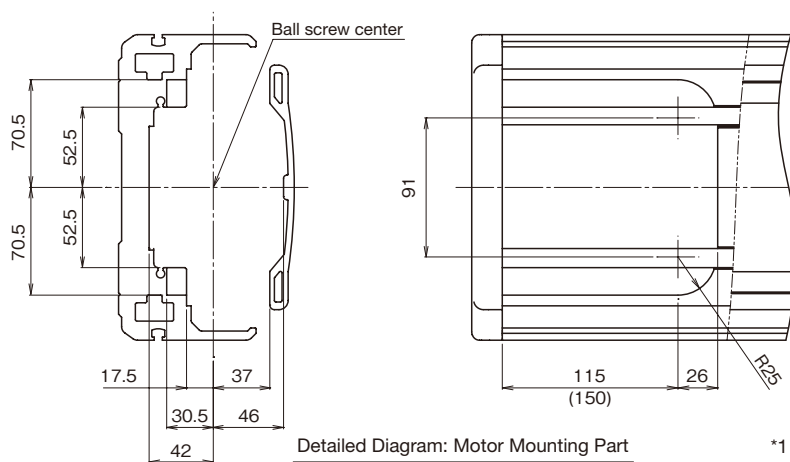


Motor bracket (detail) (symbol: A, B)

Motor bracket specifications

[mm]

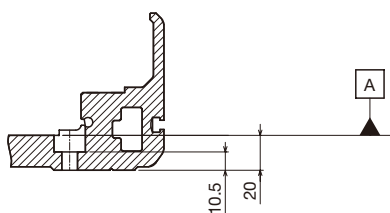
Symbol	a	b
A	M6	12
B	M5	10



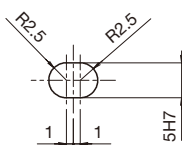
Detailed Diagram: Motor Mounting Part

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

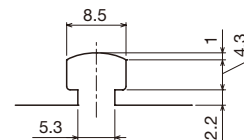
*2 See page 3-50, "Motor Brackets," for a list of applicable motors.



Counter-bore hole on base (detail)



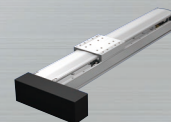
Elongated hole (detail)



Section B (detail)

	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)	1150 (1170)	1200 (1220)	1250 (1270)	1300 (1320)	1350 (1370)	1400 (1420)	1450 (1470)	1500 (1520)	1550 (1570)	1600 (1620)	1650 (1670)	1700 (1720)
	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
	40.7 (41.4)	42.1 (42.8)	43.3 (44)	44.9 (45.6)	46.3 (47)	47.7 (48.4)	49.1 (49.8)	50.6 (51.3)	51.9 (52.6)	53.3 (54)	54.7 (55.4)	56.1 (56.8)	57.6 (58.3)	58.9 (59.6)	60.3 (61)	61.7 (62.4)	63.1 (63.8)	64.6 (65.3)

USW20RT Motor wrap



Model Configuration

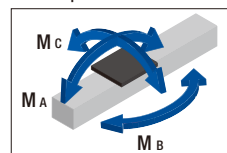
Model	Ball screw lead	Stroke	Design symbol	With/without motor	Sensor	Sensor mounting position	
USW20RT	20	0300	A	0	N	SL	

USW20RT	20: 20mm	0200: 200mm	A	0 : Without motor	P	No symbol: When selecting P, Q, or N
	40: 40mm	to		0B: Without motor (With brake)	Q	SR
		1700: 1700mm	1 : With motor (Prepared by THK)	N	SL	
			1B: With motor (Prepared by THK, with brake)	6		
				E		
				J		
				M		

Reference Basic Specifications

Motor rated output [W]				750	
Ball screw lead [mm]				20	40
Rated speed ^{*1} [mm/s]				1000	2000
Maximum load capacity ^{*2} [kg]	Acceleration and deceleration rate	Horizontal 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.

^{*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

ES/EC

KRF/KSF

US/USW

PCT/PC

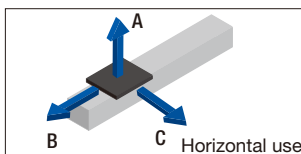
Base mounting method	Motor bracket	Option
C	A	MR-GR

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

A**B****MR**: Motor right wrap**ML**: Motor left wrap**GR**: Gray end cap**HG**: Hanging jig

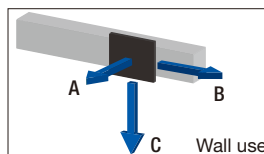
Note: If the GR is not included in the model configuration, cover will be red.

Reference Permissible Overhang Length*



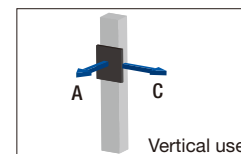
Horizontal mount [mm]

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

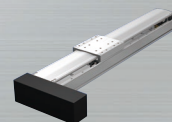
Acceleration and deceleration rate: 0.3G

Maximum speed: maximum speed or top speed for stroke length and acceleration and deceleration rate

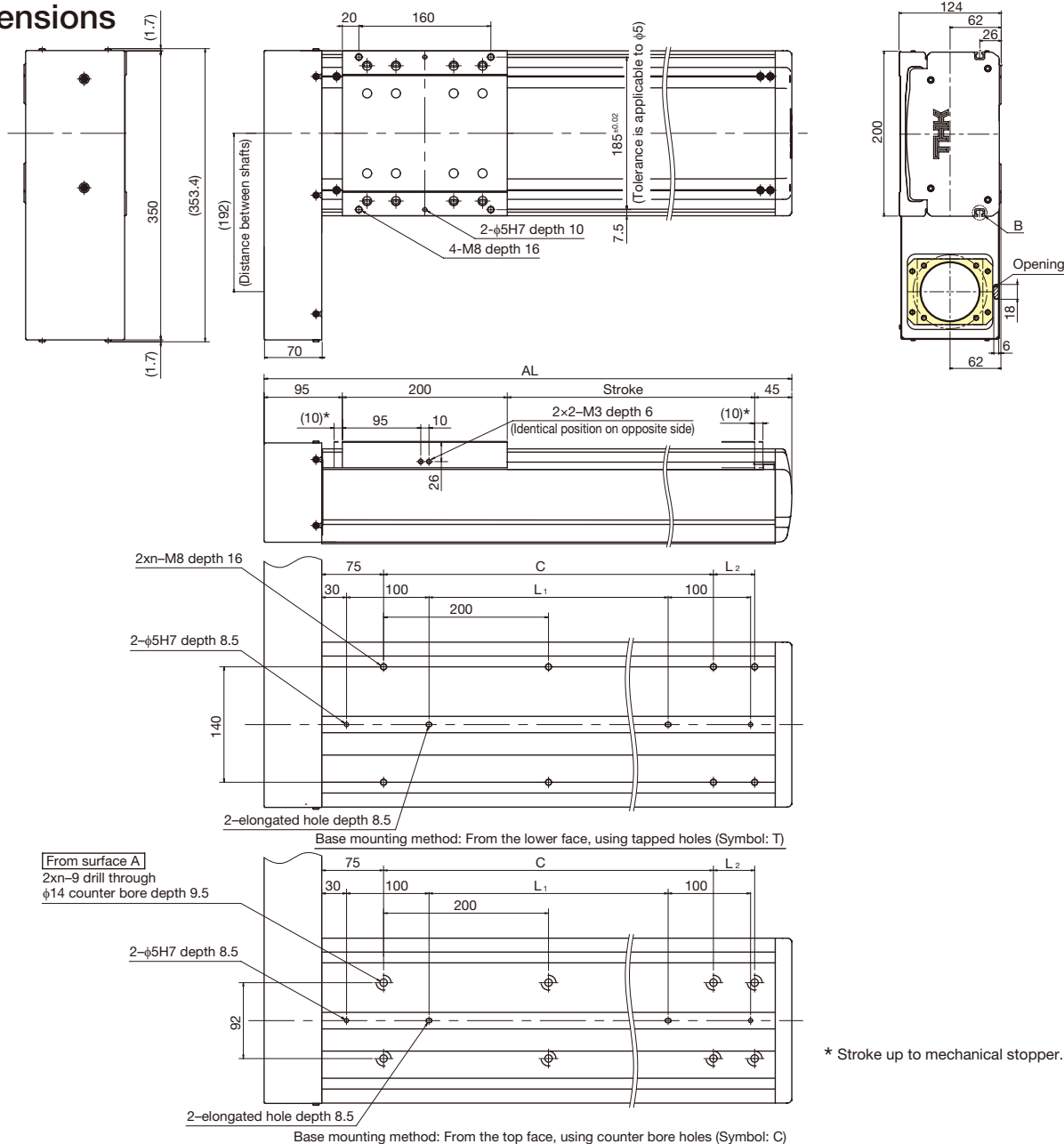
Applied load: maximum load capacity.

A, B, and C represent distances measured from the center of the top surface of the table.

USW20RT Motor wrap



Dimensions



* Stroke up to mechanical stopper.

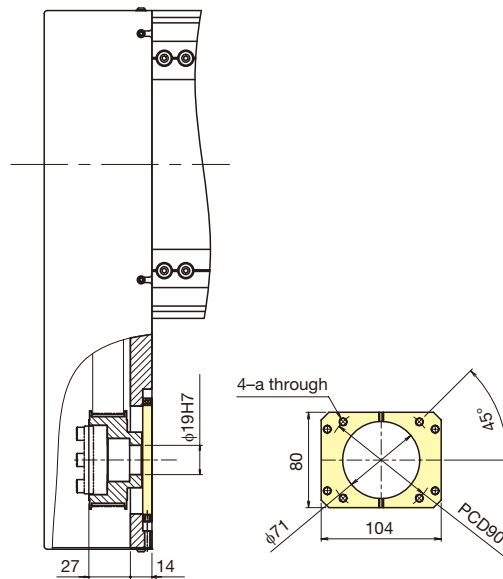
Stroke [mm] (Stroke between mechanical stoppers)		200	250	300	350	400	450	500	550	600	650	700	750	800	
		(220)	(270)	(320)	(370)	(420)	(470)	(520)	(570)	(620)	(670)	(720)	(770)	(820)	
Maximum speed * ₁ * ₂ [mm/s]	Ball screw lead	20mm	1100												
		40mm	2200												2140
Dimensions [mm]	AL	540	590	640	690	740	790	840	890	940	990	1040	1090	1140	
	L ₁	190	240	290	340	390	440	490	540	590	640	690	740	790	
	L ₂	150	—	50	100	150	—	50	100	150	—	50	100	150	
	C	200	400	400	400	400	600	600	600	600	800	800	800	800	
Mounting hole count	n	3	3	4	4	4	4	5	5	5	5	6	6	6	
Weight [kg]		24.8	26.1	27.4	28.8	30.2	31.6	32.9	34.2	35.6	36.9	38.3	39.6	41	

*₁ Load capacity and maximum speed vary.

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

USW20RT

Detail

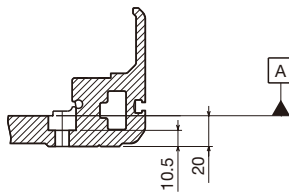


Motor bracket (detail)

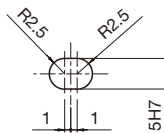
■ Motor bracket specifications

Symbol	a
A	M6
B	M5

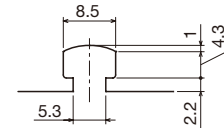
See page 3-50, "Motor Brackets," for a list of applicable motors.



Counter-bore hole on base (detail)



Elongated hole (detail)



Section B (detail)

	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)	1150 (1170)	1200 (1220)	1250 (1270)	1300 (1320)	1350 (1370)	1400 (1420)	1450 (1470)	1500 (1520)	1550 (1570)	1600 (1620)	1650 (1670)	1700 (1720)
	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
	840	890	940	990	1040	1090	1140	1190	1240	1290	1340	1390	1440	1490	1540	1590	1640	1690
	—	50	100	150	—	50	100	150	—	50	100	150	—	50	100	150	—	50
	1000	1000	1000	1000	1200	1200	1200	1200	1400	1400	1400	1400	1600	1600	1600	1600	1800	1800
	6	7	7	7	7	8	8	8	8	9	9	9	9	10	10	10	10	11
	42.3	43.7	45.1	46.4	47.7	49.1	50.4	51.8	53.1	54.4	55.9	57.2	58.6	59.9	61.2	62.6	63.9	65.3

Sensors

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

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

N.O. contact: Normally open contact point

N.C. contact: Normally closed contact point

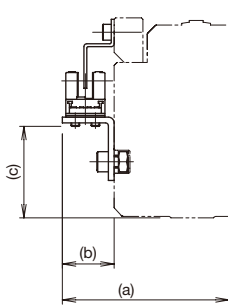
* The photo sensors can be switched between ON when lit and ON when unlit.

Notes:

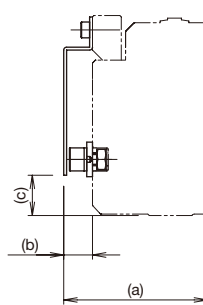
1. The standard sensor for US8 is APM-D3A1 (Azbil Corp.); the standard sensor for USW12/16/20 is EE-SX674 (Omron Corp.).
2. Non-standard sensors (symbol: 6-M) are mounted outside the cover.
3. When motor wrap is selected, a sensor cannot be mounted on the same side as the motor wrap direction of the 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

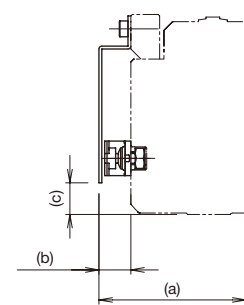
■US6/8



Symbol 6: EE-SX674 (Omron Corp.)

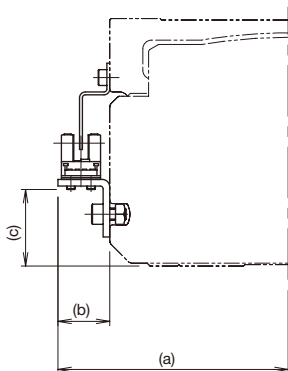


Symbol E: APM-D3** (Azbil Corp.)

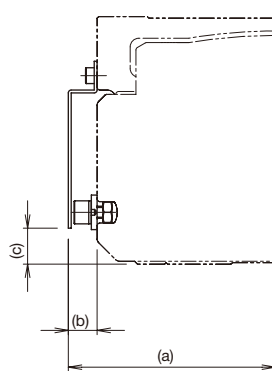


Symbol J, M: GX-F12*
(Panasonic Industrial Devices SUNX Co., Ltd.)

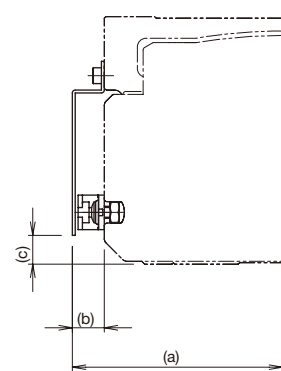
■USW12/16/20



Symbol 6: EE-SX674 (Omron Corp.)



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



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

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

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

Model	a	b	c
US6	43.5	11	23
US8	51.1	11.1	11
USW12	73	11	10
USW16	92	12	29
USW20	112	12	33

Motor Bracket

Motor brackets are available to mount various kinds of motors. Specify a motor bracket that matches the motor used.

Motor type				Motor rated output	Flange angle	US6T		US8T		USW12T		USW16T		USW20T	
						Direct coupling	Motor Wrap	Direct coupling	Motor Wrap	Direct coupling	Motor Wrap	Direct coupling	Motor Wrap	Direct coupling	Motor Wrap
AC servo motor	Yaskawa Electric Corporation	Σ-V	SGMJV-A5	50W	□40	A	A	-	-	-	-	-	-	-	-
			SGMAV-A5	50W		A	A	-	-	-	-	-	-	-	-
			SGMJV-01	100W		A	A	A	A	-	-	-	-	-	-
			SGMAV-01	100W		A	A	A	A	-	-	-	-	-	-
			SGMJV-C2	150W		-	-	A	A	-	-	-	-	-	-
			SGMJV-02	200W	□60	-	-	-	-	A	A	-	-	-	-
			SGMAV-02	200W		-	-	-	-	A	A	-	-	-	-
			SGMJV-04	400W		-	-	-	-	-	-	A	A	-	-
			SGMAV-04	400W		-	-	-	-	-	-	A	A	-	-
			SGMJV-08	750W		-	-	-	-	-	-	-	-	A	A
		Σ-7	SGMAV-08	750W	□80	-	-	-	-	-	-	-	-	A	A
			SGM7J-A5	50W		A	A	-	-	-	-	-	-	-	-
			SGM7A-A5	50W		A	A	-	-	-	-	-	-	-	-
			SGM7J-01	100W		A	A	A	A	-	-	-	-	-	-
			SGM7A-01	100W		A	A	A	A	-	-	-	-	-	-
			SGM7J-C2	150W	□60	-	-	A	A	-	-	-	-	-	-
			SGM7J-02	200W		-	-	-	-	A	A	-	-	-	-
			SGM7A-02	200W		-	-	-	-	A	A	-	-	-	-
			SGM7J-04	400W		-	-	-	-	-	-	A	A	-	-
			SGM7A-04	400W		-	-	-	-	-	-	A	A	-	-
	Mitsubishi Electric Corporation	J3	SGM7J-08	750W	□80	-	-	-	-	-	-	-	-	A	A
			SGM7A-08	750W		-	-	-	-	-	-	-	-	A	A
			HF-MP053	50W		A	A	-	-	-	-	-	-	-	-
			HF-KP053	50W		A	A	-	-	-	-	-	-	-	-
			HF-MP13	100W		A	A	A	A	-	-	-	-	-	-
			HF-KP13	100W		A	A	A	A	-	-	-	-	-	-
			HF-MP23	200W	□60	-	-	-	-	A	A	-	-	-	-
			HF-KP23	200W		-	-	-	-	A	A	-	-	-	-
			HF-MP43	400W		-	-	-	-	-	-	A	A	-	-
			HF-KP43	400W		-	-	-	-	-	-	A	A	-	-
			HF-MP73	750W		-	-	-	-	-	-	-	-	A	A
		J4	HF-KP73	750W	□80	-	-	-	-	-	-	-	-	A	A
			HG-MR053	50W		A	A	-	-	-	-	-	-	-	-
			HG-KR053	50W		A	A	-	-	-	-	-	-	-	-
			HG-MR13	100W		A	A	A	A	-	-	-	-	-	-
			HG-KR13	100W		A	A	A	A	-	-	-	-	-	-
			HG-MR23	200W	□60	-	-	-	-	A	A	-	-	-	-
			HG-KR23	200W		-	-	-	-	A	A	-	-	-	-
			HG-MR43	400W		-	-	-	-	-	-	A	A	-	-
			HG-KR43	400W		-	-	-	-	-	-	A	A	-	-
			HG-MR73	750W		-	-	-	-	-	-	-	-	A	A
			HG-KR73	750W		-	-	-	-	-	-	-	-	A	A
		JN	HF-KN053	50W	□40	A	A	A	A	-	-	-	-	-	-
			HF-KN13	100W		A	A	A	A	-	-	-	-	-	-
			HF-KN23	200W		-	-	-	-	A	A	-	-	-	-
			HF-KN43	400W		-	-	-	-	-	-	A	A	-	-
			TS4602	50W	□40	A	A	-	-	-	-	-	-	-	-
	Tamagawa Seiki Co., Ltd.	TBL-III	TS4603	100W		A	A	A	A	-	-	-	-	-	-
			TS4604	150W		-	-	A	A	-	-	-	-	-	-
			TS4607	200W		-	-	-	-	A	A	-	-	-	-
			TS4609	400W		-	-	-	-	-	-	A	A	-	-
			TS4614	750W		-	-	-	-	-	-	-	-	A	A
		TBL-IV	TSM3102	50W	□40	A	A	A	A	-	-	-	-	-	-
			TSM3104	100W		A	A	A	A	-	-	-	-	-	-
			TSM3202	200W		-	-	-	-	A	A	-	-	-	-
			TSM3204	400W		-	-	-	-	-	-	A	A	-	-
			TSM3304	750W		-	-	-	-	-	-	-	-	A	A
	Panasonic Corporation	A5	MSMD01	100W	□38	B	B	B	B	-	-	-	-	-	-
			MSMD02	200W		B	B	B	B	-	-	-	-	-	-
			MSME02	200W		-	-	-	-	B	C	-	-	-	-
			MSMD04	400W		-	-	-	-	-	-	B	B	-	-
			MSME04	400W		-	-	-	-	-	-	B	B	-	-
		A6	MSMD08	750W	□80	-	-	-	-	-	-	-	-	B	B
			MSME08	750W		-	-	-	-	-	-	-	-	B	B
			MSMF5A	50W		B	B	B	B	-	-	-	-	-	-
			MHMF5A	50W		A	A	A	A	-	-	-	-	-	-
			MSMF01	100W		B	B	B	B	-	-	-	-	-	-
			MHMF01	100W	□60	A	A	A	A	-	-	-	-	-	-
			MSMF02	200W		-	-	-	-	B	C	-	-	-	-
			MHMF02	200W		-	-	-	-	B	C	-	-	-	-
			MSMF04	400W		-	-	-	-	-	-	B	B	-	-
			MHMF04	400W		-	-	-	-	-	-	B	B	-	-
			MSMF08	750W		-	-	-	-	-	-	-	-	B	B
			MHMF08	750W		-	-	-	-	-	-	-	-	B	B
	Keyence Corporation	SV	SV-M005	50W	□40	A	A	A	A	-	-	-	-	-	-
			SV-M010	100W		A	A	A	A	-	-	-	-	-	-
			SV-M020	200W		-	-	-	-	A	A	-	-	-	-
			SV-M040	400W		-	-	-	-	-	-	A	A	-	-
			SV-M075	750W		-	-	-	-	-	-	-	-	A	A
		SV2	SV2-M005	50W	□40	A	A	A	A	-	-	-	-	-	-
			SV2-M010	100W		A	A	A	A	-	-	-	-	-	-
			SV2-M020	200W		-	-	-	-	A	A	-	-	-	-
			SV2-M040	400W		-	-	-	-	-	-	A	A	-	-
			SV2-M075	750W		-	-	-	-	-	-	-	-	A	A
	Sanyo Denki Co., Ltd.	SANMOTION R	R2E-A04008	80W	□40	A	-	A	-	-	-	-	-	-	-
			R2-A04010	100W		A	-	A	-	-	-	-	-	-	-
			R2-A06020	200W		-	-	-	-	A	-	-	-	-	-
			R2A-A06040	400W		-	-	-	-	-	-	A	-	-	-
			R2A-A08075	750W		-	-	-	-	-	-	-	-	A	-
	OMRON Corporation	OMNUC G5	R88M-K05030	50W	□40	-	A	-	-	-	-	-	-	-	-
			R88M-K10030	100W		-	A	-	A	-	-	-	-	-	-
			R88M-K20030	200W		-	-	-	-	C	B	-	-	-	-
			R88M-K40030	400W		-	-	-	-	-	-	B	B	-	-
			R88M-K75030	750W		-	-	-	-	-	-	-	-	B	B
		1S	R88M-1M10030	100W	□40	A	-	A	-	-	-	-	-	-	-
			R88M-1M20030	200W		-	-	-	-	B	-	-	-	-	-
			R88M-1M40030	400W		-	-	-	-	-	-	B	-	-	-
			R88M-1M75030	750W		-	-	-	-	-	-	-	-	B	-
						-	-	-	-	-	-	-	-	-	-

Notes:

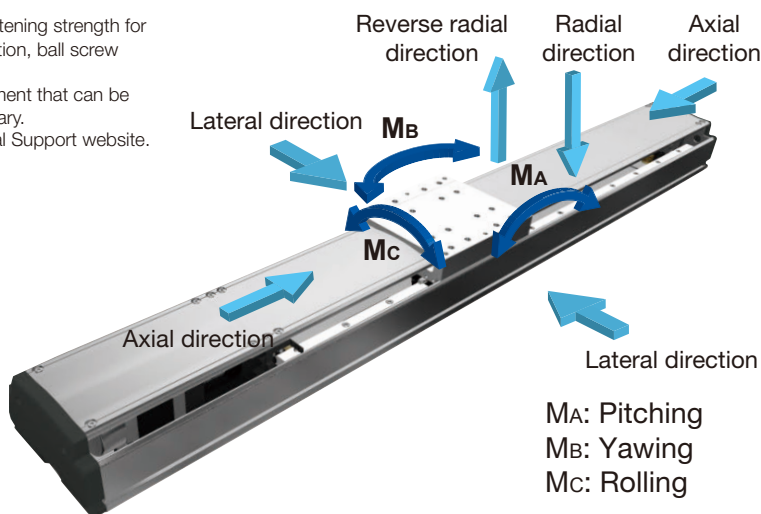
- Consult THK before installing a motor other than those listed above.
- For US6 and 8 with motor wrap type, use a two-surface D-cut motor output shaft. Note that Mitsubishi motors support only one-surface D-cut output shafts; consult the manufacturer for further details.
- For USW12, 16, and 20 with motor wrap type, use a straight motor output shaft.
- Motor model number in the table shows the main part of the model number only. For more details, please refer to catalogs from each motor manufacturers.

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

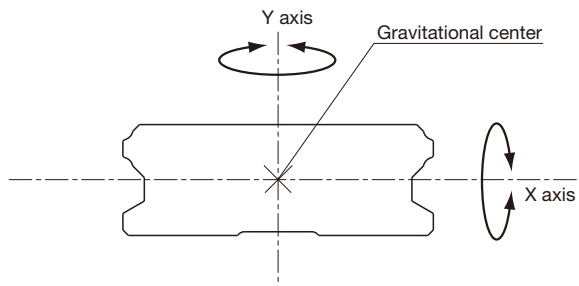
^{*1} The static permissible load is determined by the tightening strength for bolts and the static load ratings of the LM guide portion, ball screw portion, and support bearing.

^{*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.

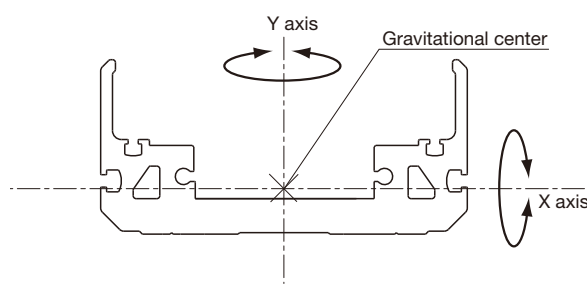


Geometrical Moment of Inertia

■ US6/8



■ USW12/16/20



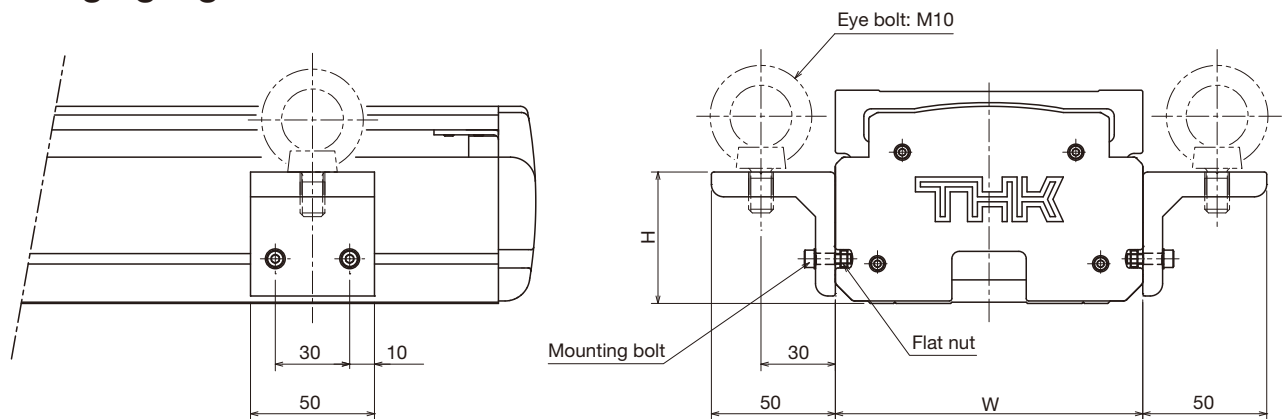
Model	I _x [mm ⁴]	I _y [mm ⁴]	Weight [kg/m]
US6	2.80×10 ³	5.20×10 ⁴	2.97
US8	1.11×10 ⁴	7.74×10 ⁴	4.61
USW12	4.07×10 ⁵	4.62×10 ⁶	6.67
USW16	1.27×10 ⁶	1.22×10 ⁷	11.55
USW20	2.19×10 ⁶	2.67×10 ⁷	16.06

Recommended Coupling

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

Actuator model	Standard coupling			Recommended coupling (1)			Recommended coupling (2)		
	Type	Manufacturer	Inertial moment [kg·cm ²]	Type	Manufacturer	Inertial moment [kg·cm ²]	Type	Manufacturer	Inertial moment [kg·cm ²]
US6	NES20W-N8C×N8C	TSUBAKI E & M CO.	0.034	SFC-020DA2_C	Miki Pulley Co., LTD.	0.034	XBW-25C2	Nabeya Bi-tech Kaisha	0.023
US8	NES20W-N8C×N10C	TSUBAKI E & M CO.	0.034	SFC-020DA2_C		0.034	XBW-25C2		0.023
USW12	SDWA31C-10×14	SUN GIL	0.075	SFC-030DA2_B		0.095	XBW-34C3		0.090
USW16	SDWA31C-12×14	SUN GIL	0.075	SFC-035DA2_B		0.271	XBW-34C3		0.090
USW20	SDWC47C-12×19	SUN GIL	0.550	SFC-040DA2_B		0.363	XBW-39C2		0.210

Hanging Jig



[mm]

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

Notes:

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

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

Motor Selection

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

Actuator		Ball screw				
Model	Stroke *1 [mm]	Lead [mm]	Model	Shaft diameter [mm]	Shaft length *2 [mm]	Outer diameter of shaft end [mm]
US6	100	06	WHF1206-3.6	12	315 (328)	φ8h7
	900				1115 (1128)	
	100	12	WHF1212-1.45	12	315 (328)	φ8h7
	900				1115 (1128)	
US8	100	05	BTK1605-2.6	16	378.5 (384.5)	φ10h7
	1100				1378.5 (1384.5)	
	100	10	BNK1510-2.8	15	378.5 (384.5)	φ10h7
	1100				1378.5 (1384.5)	
	100	20	BNK1520-1.5	15	378.5 (384.5)	φ10h7
	1100				1378.5 (1384.5)	
	100	30	WHF1530-1.7	15	378.5 (384.5)	φ10h7
	1100				1378.5 (1384.5)	
USW12	100	05	BTK1605-2.6	16	358 (394)	φ10h7
	1100				1358 (1394)	
	100	10	BNK1510-2.8	15	358 (394)	φ10h7
	1100				1358 (1394)	
	100	20	BNK1520-1.5	15	358 (394)	φ10h7
	1100				1358 (1394)	
	100	30	WHF1530-1.7	15	358 (394)	φ10h7
	1100				1358 (1394)	
USW16	100	10	BNK2010-2.5	20	387 (424)	φ12h7
	1500				1787 (1824)	
	100	20	WHF2020-1.7	20	387 (424)	φ12h7
	1500				1787 (1824)	
	100	40	WHF2040-1.7	20	387 (424)	φ12h7
	1500				1787 (1824)	
USW20	200	20	WHF2020-1.7	20	478 (526)	φ12h7
	1700				1978 (2026)	
	200	40	WHF2040-1.7	20	478 (526)	φ12h7
	1700				1978 (2026)	

*1 For further information on stroke, see the specifications for each model.

*2 Ball screw shaft length. Shaft lengths for motor wrap type are shown in parentheses.

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

Permissible input torque		
Actuator model	Direct motor coupling [N·m]	Motor wrap [N·m]
US6	1.67	1.23
US8	1.67	2.14
USW12	2.65	2.65
USW16	5.98	5.98
USW20	8.18	8.18

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

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

For further details on timing pulleys, contact THK.

ES/EC

KRF/KSF

US/USW

PCT/PC



Precautions on Use

● Application

- This product cannot be applied to any equipment or system that may be used under a life-threatening condition.
- If you are considering using this product for special applications such as mobile vehicles, medical uses, aerospace, or thermonuclear power generation or a power plant, make sure to contact THK for applicability beforehand.

● Handling

- Do not disassemble this product unless absolutely necessary. This will cause dust to enter the product resulting in loss of functionality.
- Take care not to drop or strike this product. This could cause injury or product damage or impair the product's function even if the product looks intact.
- Exceeding the maximum recommended speed could damage components or cause an accident. Be sure to use the product within the specification range designated by THK.
- Foreign material entering the product will cause damage to the ball circulation components and loss of functionality. Prevent foreign material, such as dust or cutting chips, from entering the system.
- Using the product in an environment where coolant can penetrate the inner block could cause malfunction, depending on the type of the coolant. Contact THK for details.
- The service temperature range of this product is 0 to 40°C (no freezing or condensation). Consult THK before attempting to use the product outside this temperature range.
- Contact THK before attempting to use the product in a location exposed to vibration or abnormally high or low temperatures, or in a vacuum or clean room.
- When the product is operating or in the ready state, never touch a moving part. In addition, do not enter the operating area.
- If two or more people are involved in the operation, confirm the procedures in advance, and appoint another person to monitor the operation.

● 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 be used in a location exposed to vibrations or in a special environment such as vacuum, or abnormally high or low temperatures, or in a clean room, normal lubricants may not be used. Contact THK for details.
- When adopting oil lubrication method, contact THK.

● Storage

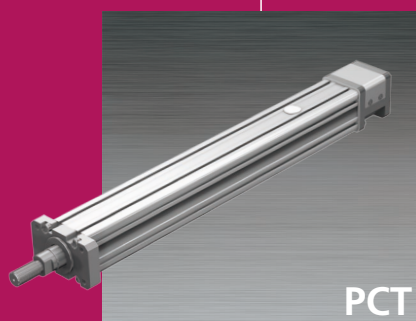
- When storing this actuator, enclose it in a package designated by THK and store it in a horizontal position away from abnormally high or low temperatures and high humidity.

● Instruction Manual

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

Press series

Model: PCT/PC



Chapter 4

Features	4-003
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Lineup List	4-007
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Model Configuration	4-009 4-019
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PCT Basic Specifications & Dimensions	4-011
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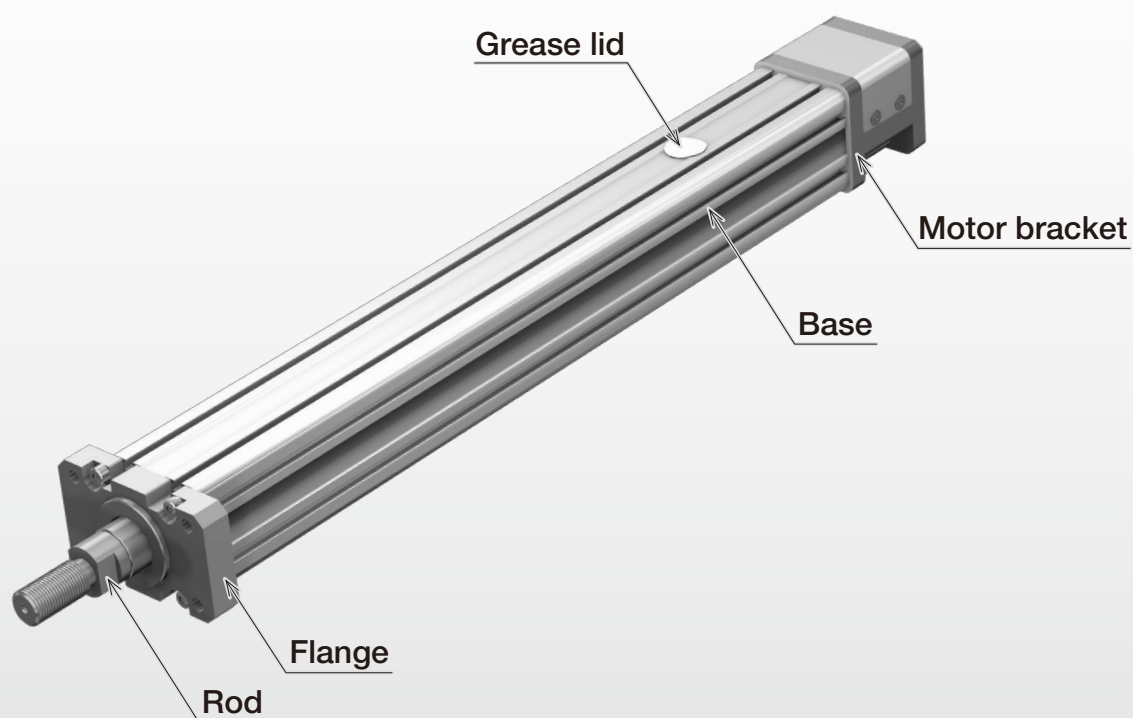
PC Basic Specifications & Dimensions	4-021
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Electrical Actuator

Press Series

PCT

Cylinder-type Actuator with Ball Screw



Features

Press actuator

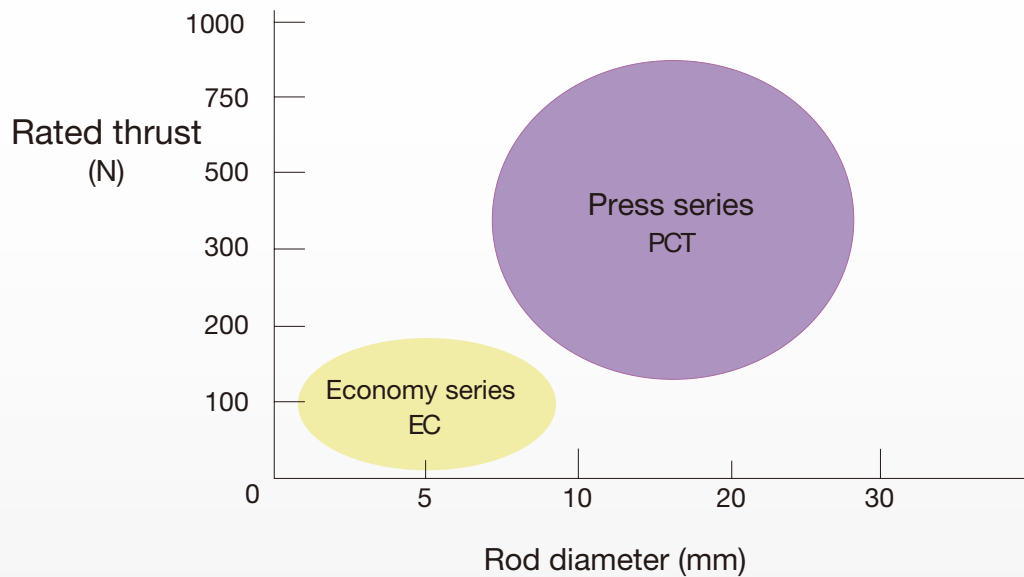
This actuator offers superior axial load rigidity and thus available for use in a small press fitting and caulking machine.

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.

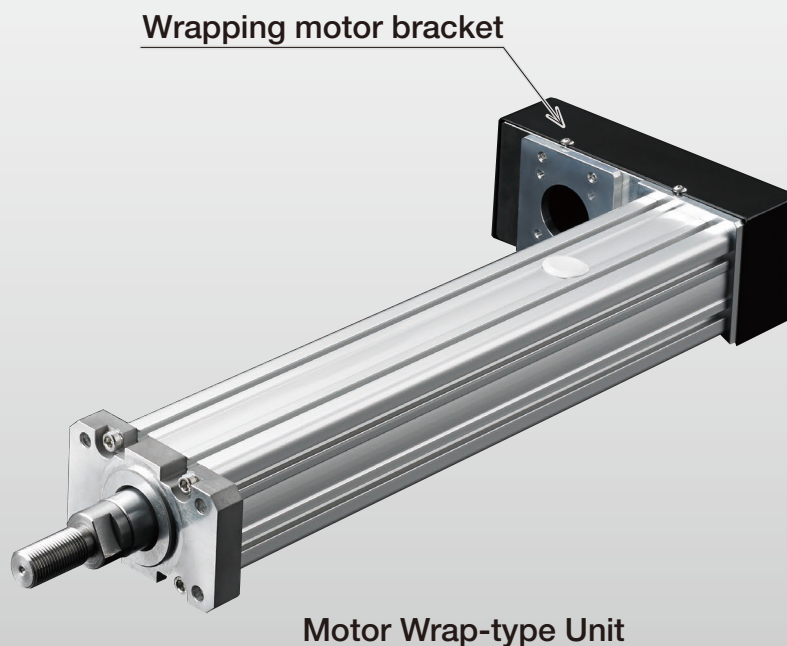


Flexible device design

PCT can support any installation direction through the use of a flange or T slot on the main unit.

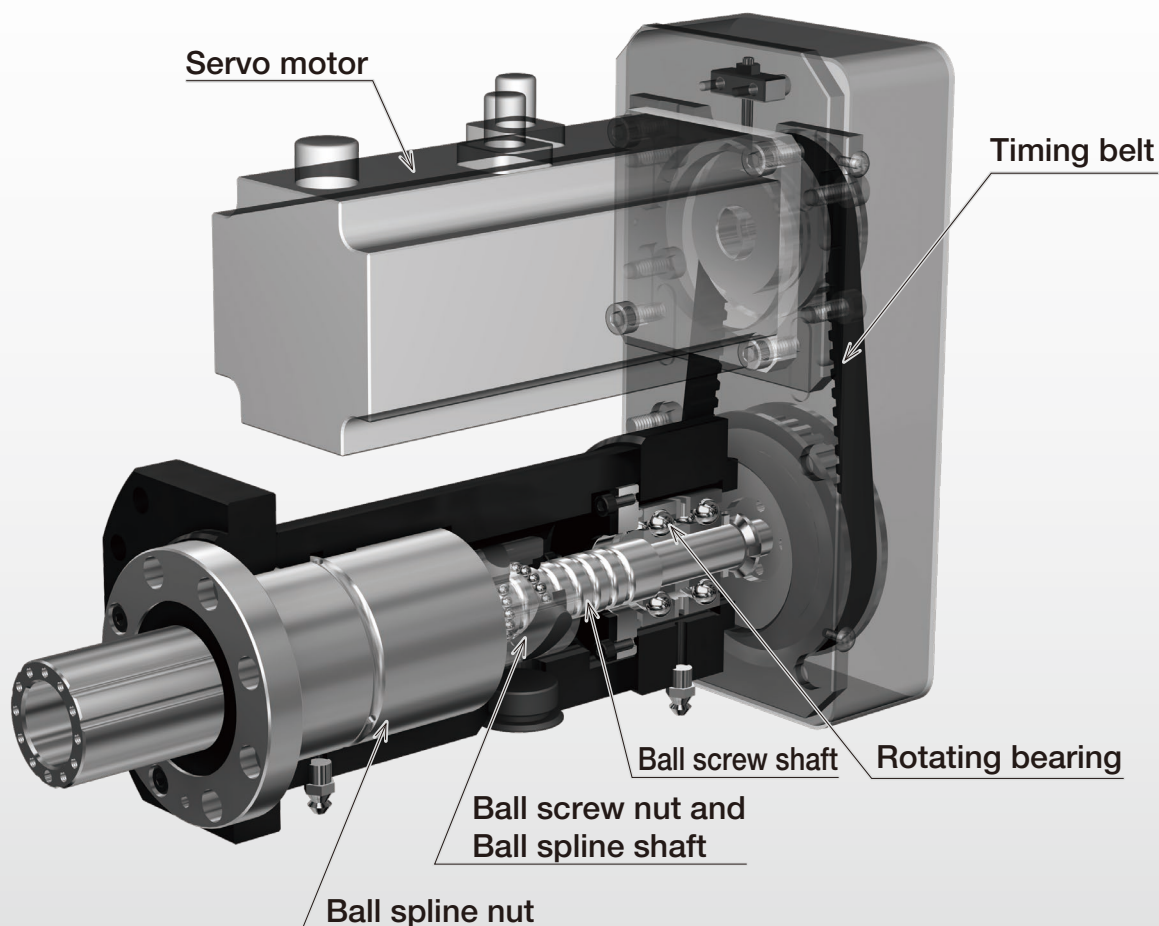
Motor installation is also possible by direct coupling or Wrap.

(When a radial load and moment load are applied to the rod, a guide must be installed separately.)



Electrical Actuator
Press Series

PC

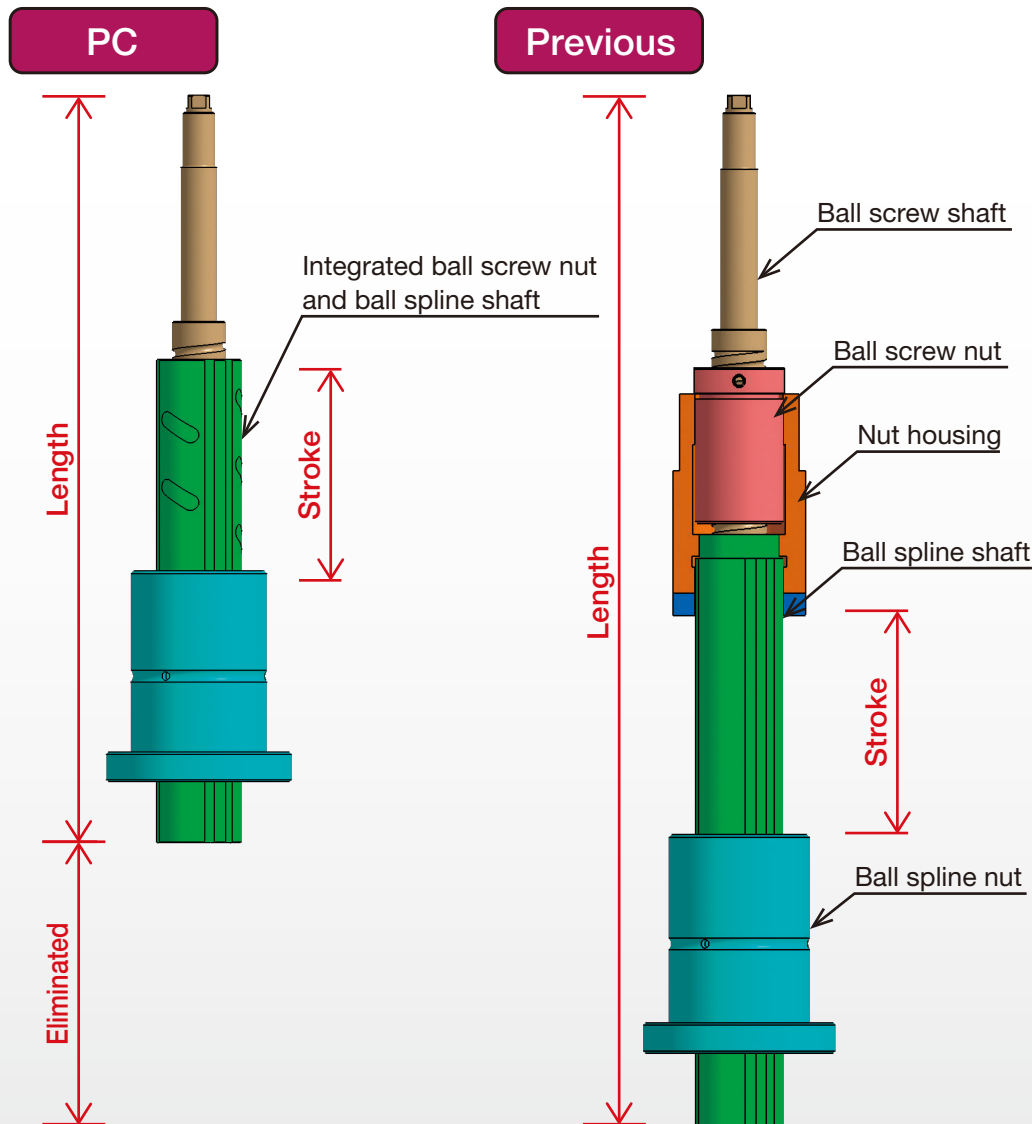
Compact, High-precision, High-rigidity
Servo Press Actuator

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.

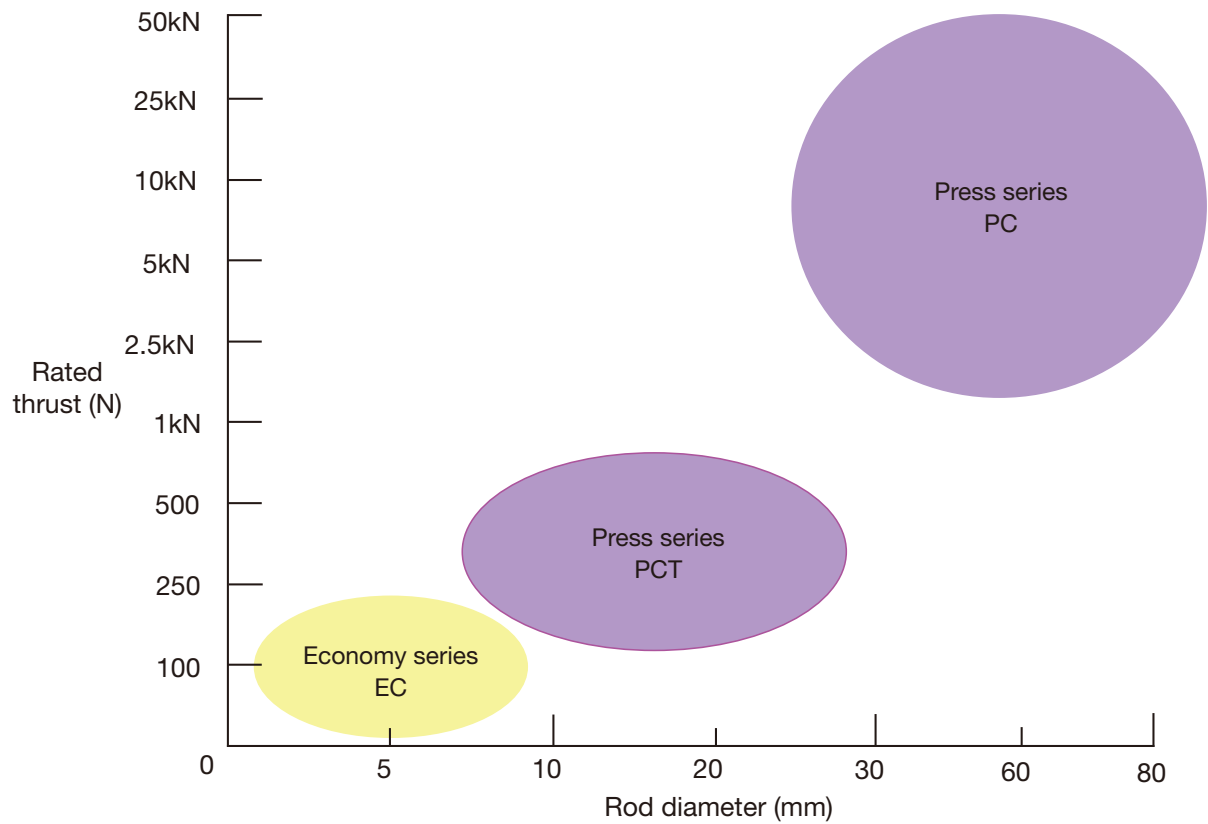
High feed precision

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

Specifications

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

Cylinder-type Products



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		Rated thrust [kN]	Maximum speed [mm/s]	Maximum stroke [mm]	Generated thrust [kN]														
		Manufacturer	Rated output [kW]				0	1	2	3	7.5	10	15	20	30	40	50	70	100	120	
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																
		Sanyo Denki Co., Ltd.	1.2	6.7	151																
PC50-06D	16.8	Mitsubishi Electric Corporation	1.5	8.4	150		8.4	16.8													
		Yaskawa Electric Corporation	1.3	9.8	112																
		Sanyo Denki Co., Ltd.	1.8	10.2	150																
PC60-10E	21.8	Mitsubishi Electric Corporation	2.0	10.9	155		10.9	21.8													
		Yaskawa Electric Corporation	1.8	13.1	116																
		Sanyo Denki Co., Ltd.	2.0	10.9	155																
PC60H-10F	35.6	Mitsubishi Electric Corporation	3.5	17.8	166		17.8	35.6													
		Yaskawa Electric Corporation	2.9	19.8	125																
		Sanyo Denki Co., Ltd.	3.5	18.1	166																
PC80L-12G	71	Mitsubishi Electric Corporation	5	24	177		24	71													
	71	Yaskawa Electric Corporation	4.4	28	133																
	75	Sanyo Denki Co., Ltd.	4.5	21	177																
PC80-12G	100	Mitsubishi Electric Corporation	7	33	177		33	100													
	102	Yaskawa Electric Corporation	5.5	35	133																
	107	Sanyo Denki Co., Ltd.	5.5	35	133																
PC80H-12G	120	Mitsubishi Electric Corporation	4.2	40	88		40	120													
		Yaskawa Electric Corporation	7.5	48	133																
		Sanyo Denki Co., Ltd.	7.5	48	133																

□ 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.

ES/EC

KRF/KSF

US/USW

PCT/PC

PCT Model Configuration (Types without Motor)

Model	Lead, reduction ratio	Stroke	Options	With/without motor	Motor Bracket	Motor shaft fixing method
PCT20R	06N	0200	R	0	A1	D
(1)	(2)	(3)	(4)	(5)	(6)	(7)
PCT20	04N	0050 : 50mm	N : Direct coupling	0 : Without motor	A1	No symbol: Select when directly coupled
PCT25	06N	0100 : 100mm	D : Down		A2	D : D-cut
PCT20R		0150 : 150mm	L : Left		K1	K : Key
PCT25R		0200 : 200mm	R : Right		K2	S : Clamp
		0250 : 250mm			B1	
		0300 : 300mm			B2	
R 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. Specify "N" for direct motor coupling and select motor wrap direction from the figure on the right for motor wrap. Select a motor bracket from the Table of motor brackets (→ P.4-010) according to the motor you use.						

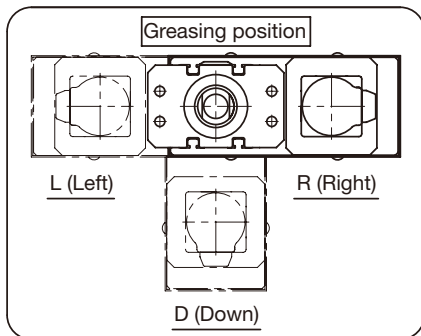
Combinations

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

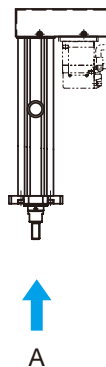
Model configuration coding

Direct coupling	PCT20-06N-0150-N-0-A1
Motor wrap	PCT25R-06N-0300-L-0-K2K

Option: Motor wrap



(Seen from side A)



Motor bracket and motor shaft fixing method compatibility table

Motor model				PCT20 (R)		PCT25 (R)	
Manufacturer	Series	Model	Rated output [W]	Direct motor coupling	Motor wrap	Direct motor coupling	Motor wrap
Yaskawa Electric Corporation	Σ -V	SGMJV-A5	50	A1	A1D, A1K, A1S	-	-
		SGMAV-A5		A1	A1D, A1K, A1S	-	-
		SGMJV-01	100	-	-	A1	A1D, A1K, A1S
		SGMAV-01		-	-	A1	A1D, A1K, A1S
		SGMJV-02	200	-	-	A2	A2D, A2K, A2S
		SGMAV-02		-	-	A2	A2D, A2K, A2S
	Σ -7	SGM7J-A5	50	A1	A1D, A1K, A1S	-	-
		SGM7A-A5		A1	A1D, A1K, A1S	-	-
		SGM7J-01	100	-	-	A1	A1D, A1K, A1S
		SGM7A-01		-	-	A1	A1D, A1K, A1S
		SGM7J-02	200	-	-	A2	A2D, A2K, A2S
		SGM7A-02		-	-	A2	A2D, A2K, A2S
Mitsubishi Electric Corporation	J4	HG-KR053	50	A1	A1D, A1S	-	-
		HG-MR053		A1	A1D, A1S	-	-
		HG-KR13	100	-	-	A1	A1D, A1S
		HG-MR13		-	-	A1	A1D, A1S
		HG-KR23	200	-	-	A2	A2K, A2S
		HG-MR23		-	-	A2	A2K, A2S
OMRON Corporation	G5	R88M-K05030	50	A1	A1K, A1S	-	-
		R88M-K10030	100	-	-	A1	A1K, A1S
		R88M-K20030	200	-	-	K2	K2K, K2S
Panasonic Corporation	A5	MSME5A	50	K1	K1D, K1K, K1S	-	-
		MSME01	100	-	-	K1	K1D, K1K, K1S
		MSME02	200	-	-	K2	K2D, K2K, K2S
Oriental Motor Co. Ltd.	α step	$\square$ 60	-	-	-	B1	-
	5-phase	$\square$ 60	-	-	-	B1	-
	2-phase	$\square$ 56.4	-	-	-	B2	-

Notes:

- When installing a motor other than the ones listed above, contact THK.
- Motor model number in the table shows the main part of the model number only. For more details, please refer to catalogs from each motor manufacturers.

ES/EC

KRF/KSF

US/USW

PCT/PC

PCT20

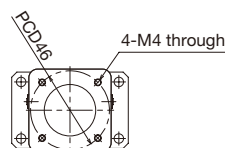
Press series
Rod diameter: 20mm



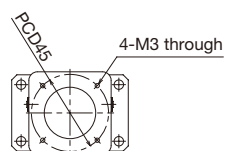
Specifications

Motor capacity (Rated output) [W]			50
Ball screw portion	Shaft diameter [mm]		8
	Lead [mm]		6
	Basic dynamic load rating Ca [N]		1,950
	Basic static load rating C0a [N]		3,510
	Root diameter [mm]		6.872
	Ball center-to-center diameter [mm]		8.4
Bearing portion (For fixed side)	Axial direction	Basic dynamic load rating Ca [N]	8,000
		Static permissible load P0a [N]	3,240
Positioning repeatability [mm]			±0.010
Lost motion [mm]			0.1
Rod non-rotational accuracy [°]			±1
Starting torque [N·cm]			1.6
Maximum input torque [N·m]			0.48

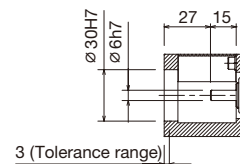
Motor bracket



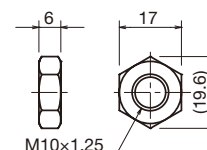
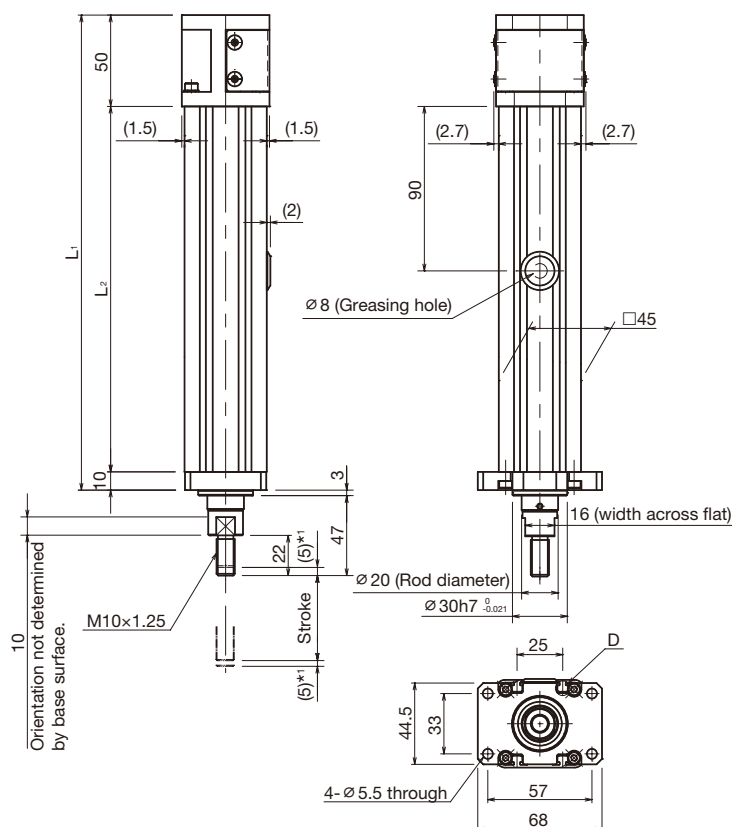
Symbol: A1



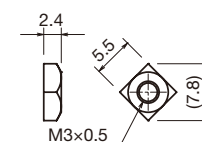
Symbol: K1



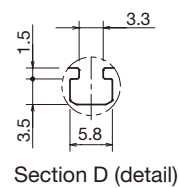
Dimensions



Hexagonal Nut (x1)



Square Nut (x8)



Section D (detail)

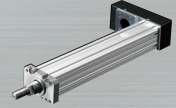
*1 Stroke up to mechanical stopper.

Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)
Maximum speed *2 [mm/s]	Ball screw lead: 6mm	300			230
	L ₁	260	310	360	410
Dimensions [mm]	L ₂	200	250	300	350
Weight [kg]		1.4	1.6	1.8	2.1

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

PCT20R

Press series
Rod diameter: 20mm

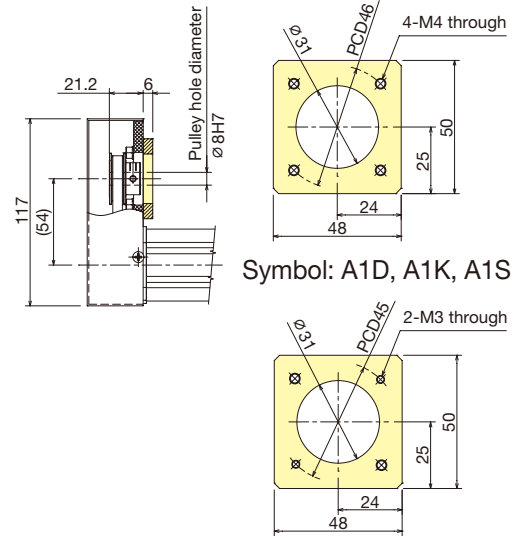


Specifications

Motor capacity (Rated output) [W]			50
Ball screw portion	Shaft diameter [mm]		8
	Lead [mm]		6
	Basic dynamic load rating Ca [N]		1,950
	Basic static load rating C0a [N]		3,510
	Root diameter [mm]		6.872
	Ball center-to-center diameter [mm]		8.4
Bearing portion (For fixed side)	Axial direction	Basic dynamic load rating Ca [N]	8,000
		Static permissible load P0a [N]	3,240
Positioning repeatability [mm]			±0.010
Lost motion [mm]			0.1
Rod non-rotational accuracy [°]			±1
Starting torque *1 [N·cm]			1.6
Maximum input torque [N·m]			0.48

*1 Pulley and timing belt are not included.

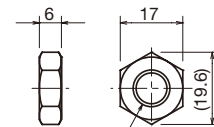
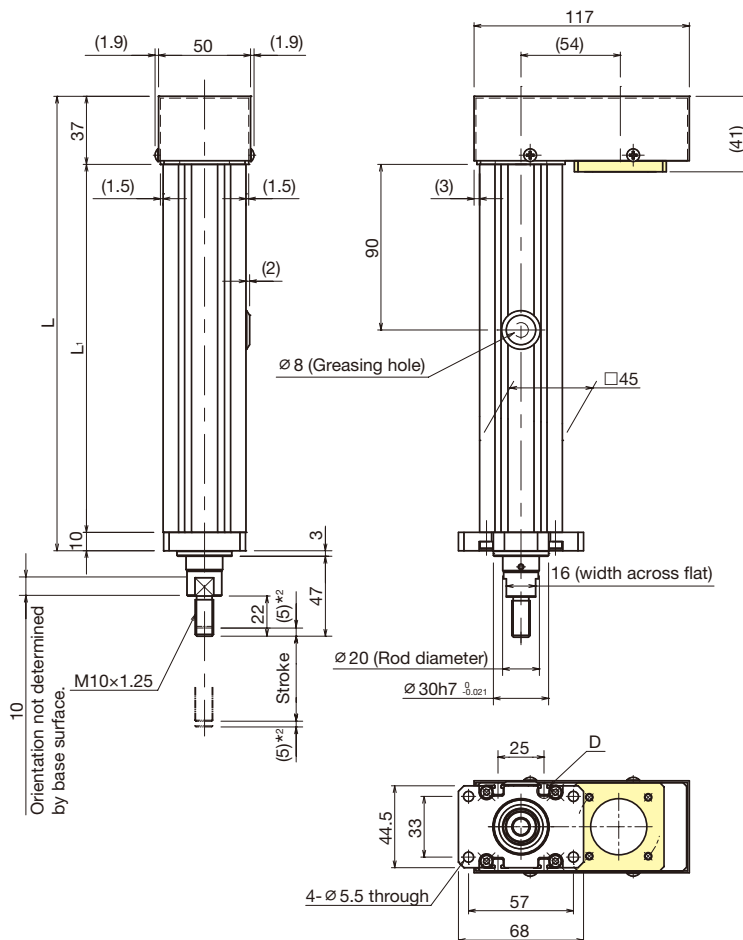
Motor bracket



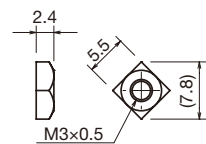
Symbol: A1D, A1K, A1S

Symbol: K1D, K1K, K1S

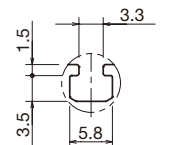
Dimensions



Hexagonal Nut (x1)



Square Nut (x8)



Section D (detail)

*2 Stroke up to mechanical stopper.

Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)
Maximum speed *3 [mm/s]	Ball screw lead: 6mm	300			230
	L	247	297	347	397
Dimensions [mm]	L ₁	200	250	300	350
	Weight [kg]	1.6	1.8	2.0	2.2

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

PCT25

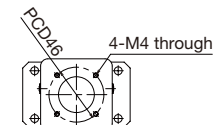
Press series
Rod diameter: 25mm



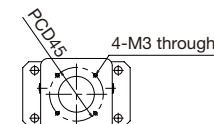
Specifications

Motor capacity (Rated output) [W]			100	
Ball screw portion	Shaft diameter [mm]		12	14
	Lead [mm]		6	4
	Basic dynamic load rating Ca [N]		4,910	5,500
	Basic static load rating C0a [N]		9,600	11,500
	Root diameter [mm]		9.872	11.5
	Ball center-to-center diameter [mm]		12.65	14.4
Bearing portion (For fixed side)	Axial direction	Basic dynamic load rating Ca [N]	13,800	
		Static permissible load P0a [N]	5,850	
Positioning repeatability [mm]			±0.010	
Lost motion [mm]			0.1	
Rod non-rotational accuracy [°]			±1	
Starting torque [N·cm]			3.2	2.8
Maximum input torque [N·m]			1.91	

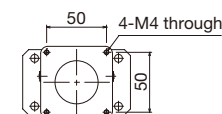
Motor bracket



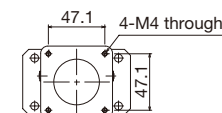
Symbol: A1



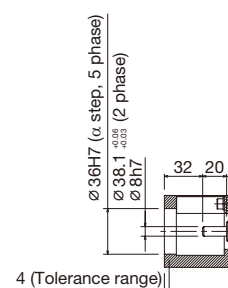
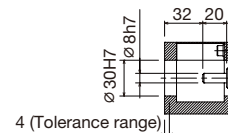
Symbol: K1



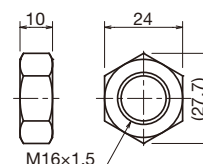
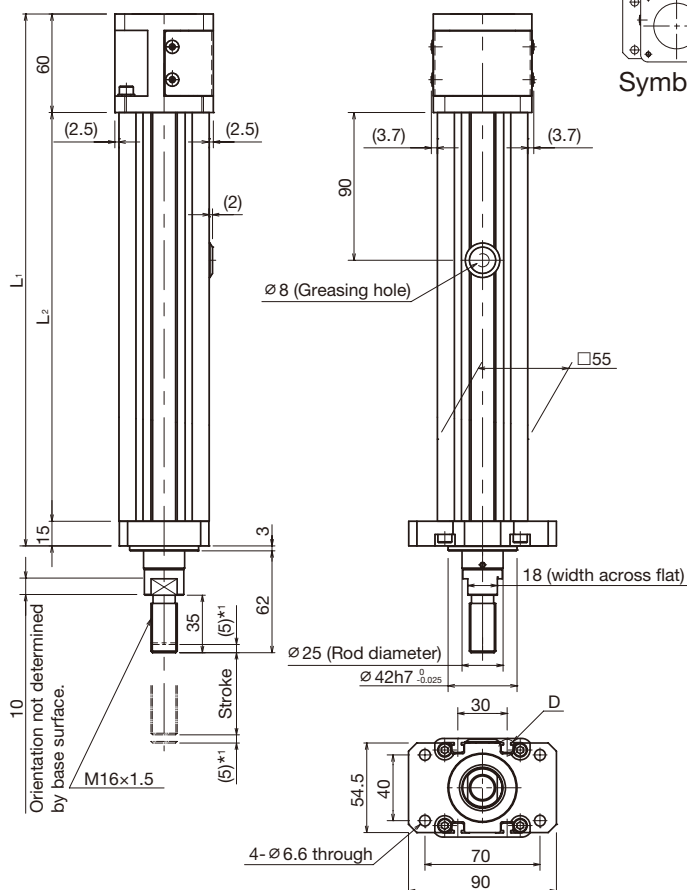
Symbol: B1



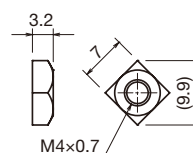
Symbol: B2



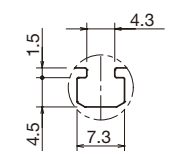
Dimensions



Hexagonal Nut (x1)



Square Nut (x8)



Section D (detail)

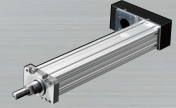
*1Stroke up to mechanical stopper.

Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)	250 (260)	300 (310)
Maximum speed *2 [mm/s]	Ball screw lead: 6mm	300			260	200	160
	Ball screw lead: 4mm	200			160	130	
Dimensions [mm]	L ₁	324	374	424	474	524	574
	L ₂	249	299	349	399	449	499
Weight [kg]		2.8	3.2	3.5	3.8	4.2	4.5

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

PCT25R

Press series
Rod diameter: 25mm

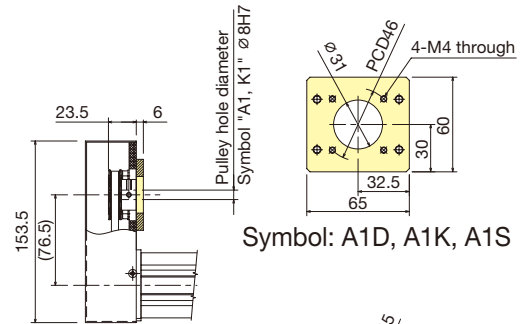


Specifications

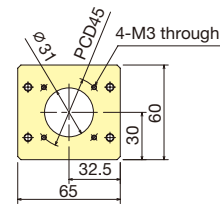
Motor capacity (Rated output) [W]			100	
Ball screw portion	Shaft diameter [mm]		12	14
	Lead [mm]		6	4
	Basic dynamic load rating Ca [N]		4,910	5,500
	Basic static load rating C0a [N]		9,600	11,500
	Root diameter [mm]		9.872	11.5
	Ball center-to-center diameter [mm]		12.65	14.4
Bearing portion (For fixed side)	Axial direction	Basic dynamic load rating Ca [N]	13,800	
		Static permissible load P0a [N]	5,850	
Positioning repeatability [mm]			±0.010	
Lost motion [mm]			0.1	
Rod non-rotational accuracy [°]			±1	
Starting torque *1 [N·cm]			3.2	2.8
Maximum input torque [N·m]			0.95	

*1 Pulley and timing belt are not included.

Motor bracket

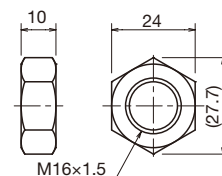
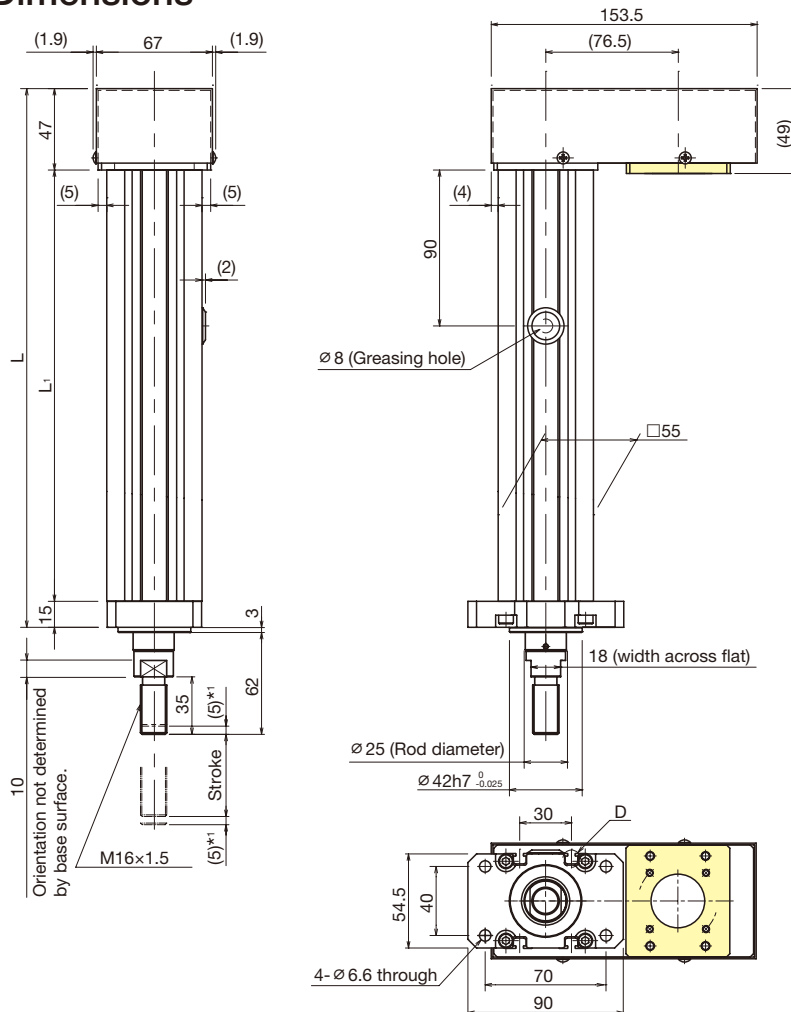


Symbol: A1D, A1K, A1S

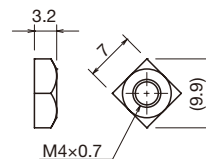


Symbol: K1D, K1K, K1S

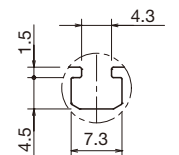
Dimensions



Hexagonal Nut (x1)



Square Nut (x8)



Section D (detail)

*1 Stroke up to mechanical stopper.

Stroke [mm]		50 (60)	100 (110)	150 (160)	200 (210)	250 (260)	300 (310)
(Stroke between mechanical stoppers)							
Maximum speed *2 [mm/s]	Ball screw lead: 6mm	300			260	200	160
	Ball screw lead: 4mm	200				160	130
Dimensions [mm]	L	311	361	411	461	511	561
	L ₁	249	299	349	399	449	499
Weight [kg]		3.1	3.4	3.8	4.1	4.4	4.7

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

PCT25

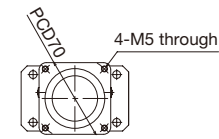
Press series
Rod diameter: 25mm



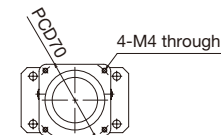
Specifications

Motor capacity (Rated output) [W]			200	
Ball screw portion	Shaft diameter [mm]		12	14
	Lead [mm]		6	4
	Basic dynamic load rating Ca [N]		4,910	5,500
	Basic static load rating C0a [N]		9,600	11,500
	Root diameter [mm]		9.872	11.5
	Ball center-to-center diameter [mm]		12.65	14.4
Bearing portion (For fixed side)	Axial direction	Basic dynamic load rating Ca [N]	13,800	
		Static permissible load P0a [N]	5,850	
Positioning repeatability [mm]			±0.010	
Lost motion [mm]			0.1	
Rod non-rotational accuracy [°]			±1	
Starting torque [N·cm]			3.2	2.8
Maximum input torque [N·m]			1.91	

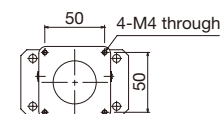
Motor bracket



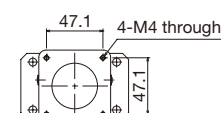
Symbol: A2



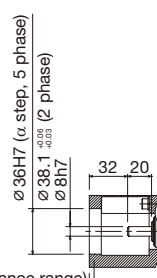
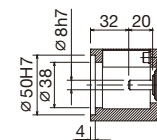
Symbol: K2



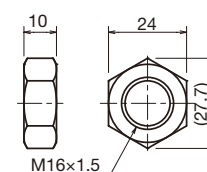
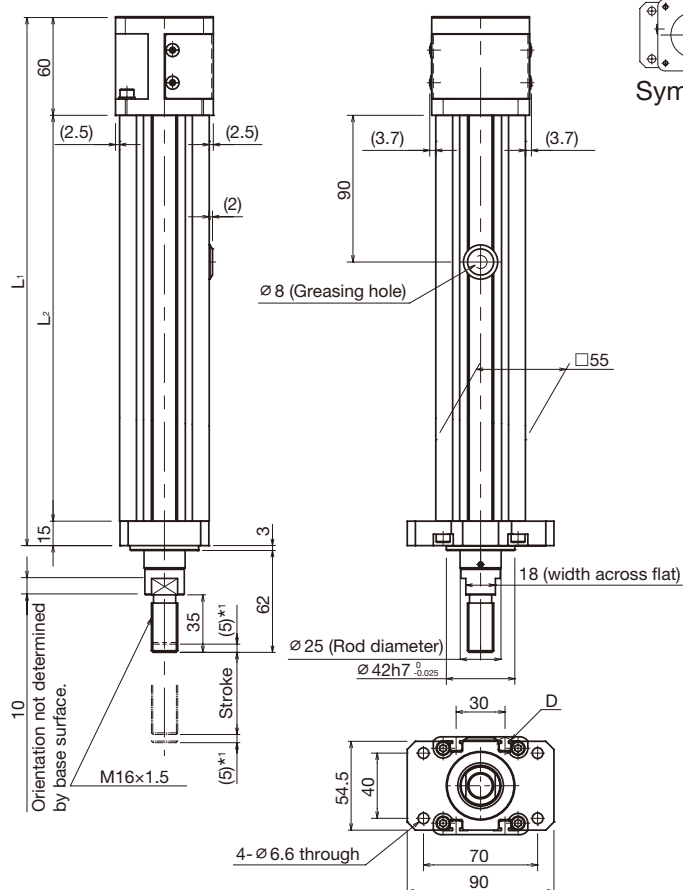
Symbol: B1



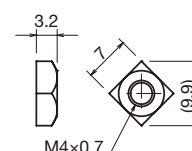
Symbol: B2



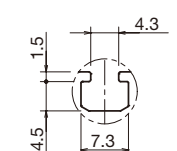
Dimensions



Hexagonal Nut (x1)



Square Nut (x8)



Section D (detail)

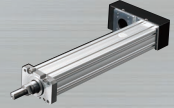
*1Stroke up to mechanical stopper.

Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)	250 (260)	300 (310)
Maximum speed *2 [mm/s]	Ball screw lead: 6mm	300			260	200	160
	Ball screw lead: 4mm	200				160	130
Dimensions [mm]	L ₁	324	374	424	474	524	574
	L ₂	249	299	349	399	449	499
Weight [kg]		2.8	3.1	3.5	3.8	4.1	4.5

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

PCT25R

Press series
Rod diameter: 25mm

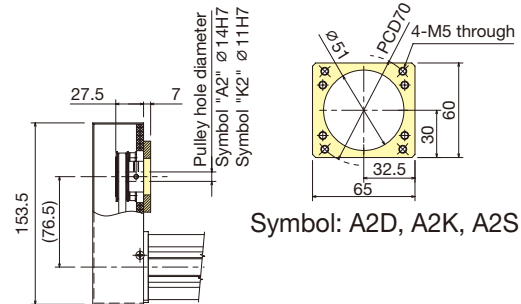


Specifications

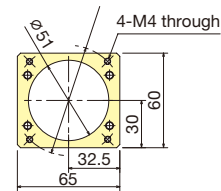
Motor capacity (Rated output) [W]			200	
Ball screw portion	Shaft diameter [mm]		12	14
	Lead [mm]		6	4
	Basic dynamic load rating Ca [N]		4,910	5,500
	Basic static load rating C0a [N]		9,600	11,500
	Root diameter [mm]		9.872	11.5
	Ball center-to-center diameter [mm]		12.65	14.4
Bearing portion (For fixed side)	Axial direction	Basic dynamic load rating Ca [N]	13,800	
		Static permissible load P0a [N]	5,850	
Positioning repeatability [mm]			±0.010	
Lost motion [mm]			0.1	
Rod non-rotational accuracy [°]			±1	
Starting torque *1 [N·cm]			3.2	2.8
Maximum input torque [N·m]			1.91	

*1 Pulley and timing belt are not included.

Motor bracket

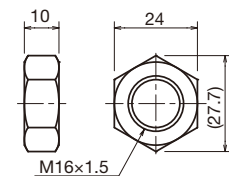
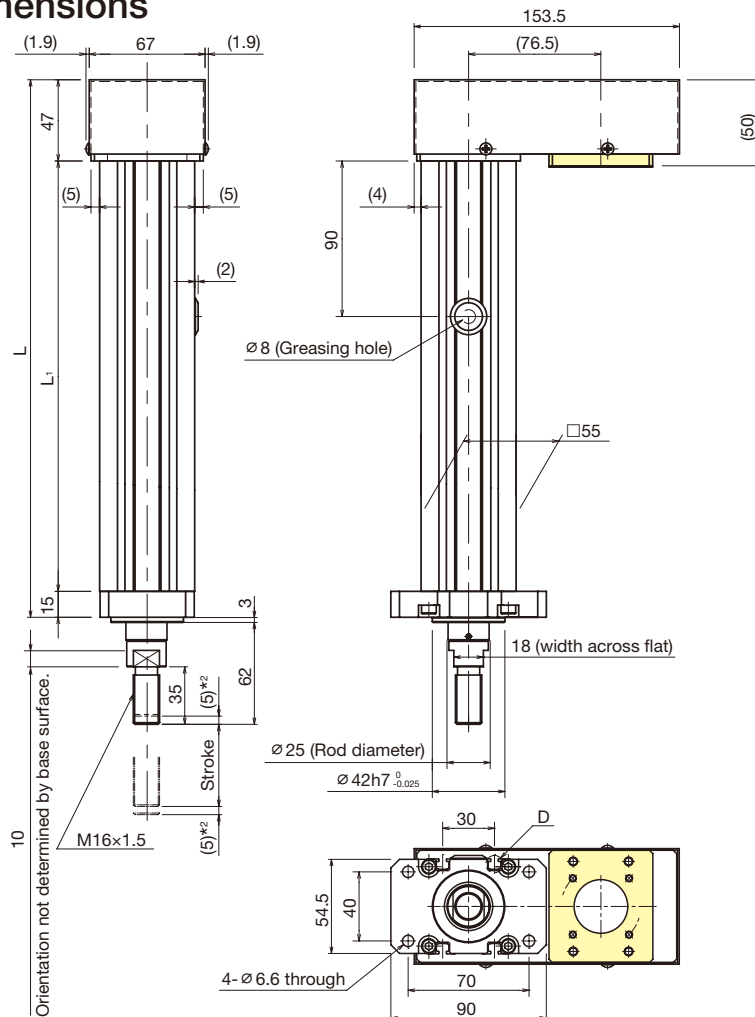


Symbol: A2D, A2K, A2S

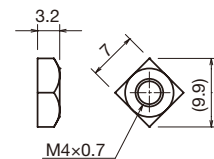


Symbol: K2D, K2K, K2S

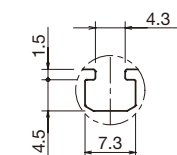
Dimensions



Hexagonal Nut (x1)



Square Nut (x8)



Section D (detail)

*2 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 *3 [mm/s]	Ball screw lead: 6mm	300			260	200	160
	Ball screw lead: 4mm	200				160	130
Dimensions [mm]	L	311	361	411	461	511	561
	L ₁	249	299	349	399	449	499
Weight [kg]		3.1	3.4	3.8	4.1	4.4	4.7

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

Motor Bracket List

ES/EC

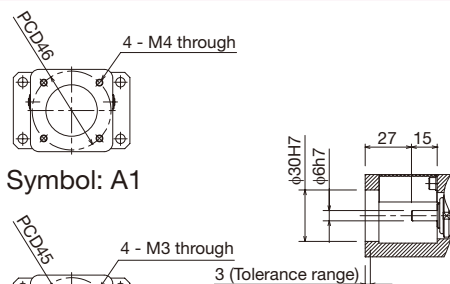
KRF/KSF

US/USW

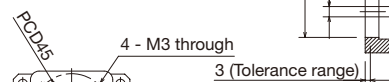
PCT/PC

Direct coupling type

PCT20

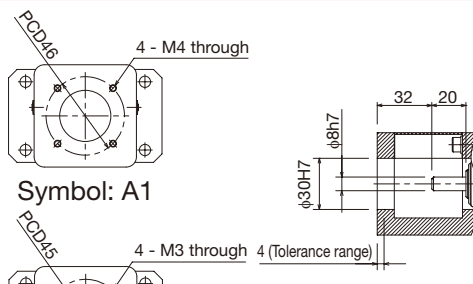


Symbol: A1

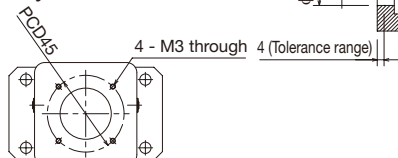


Symbol: K1

PCT25 (100W)

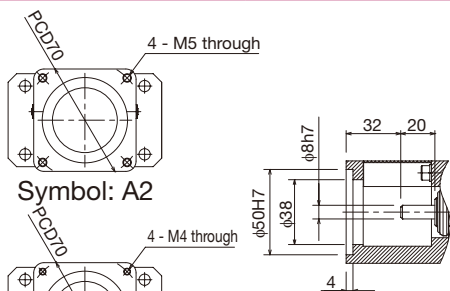


Symbol: A1

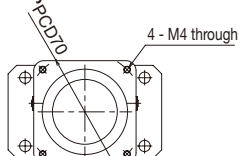


Symbol: K1

PCT25 (200W)

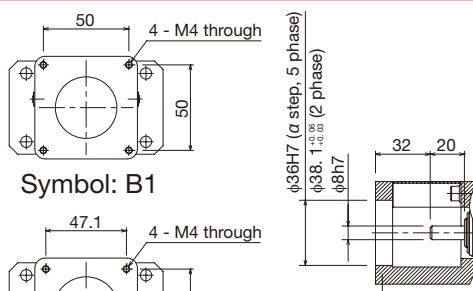


Symbol: A2

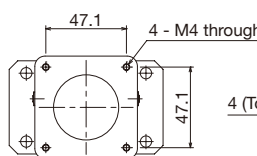


Symbol: K2

PCT25 (Stepper)

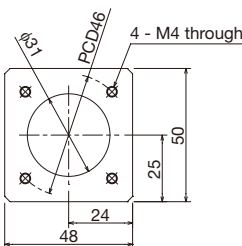
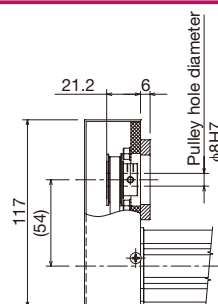


Symbol: B1

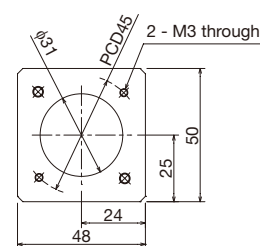


Symbol: B2

PCT20R

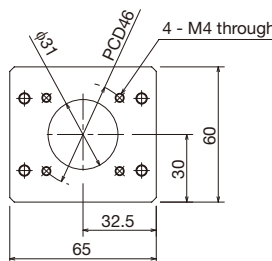
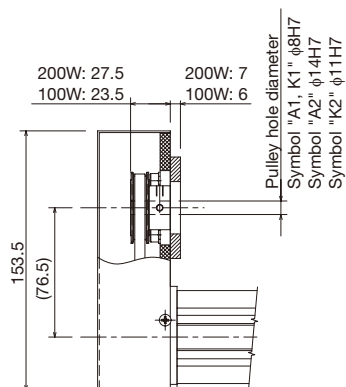


Symbol: A1D, A1K, A1S

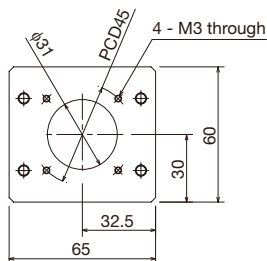


Symbol: K1D, K1K, K1S

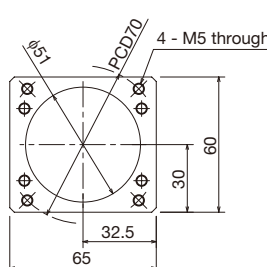
PCT25R



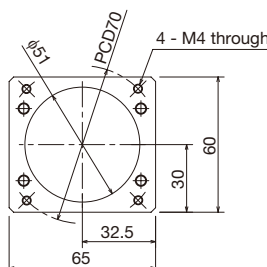
Symbol: A1D, A1K, A1S



Symbol: K1D, K1K, K1S



Symbol: A2D, A2K, A2S



Symbol: K2D, K2K, K2S

Motor wrap type

PCT technical materials

Specifications

			PCT20	PCT25		
Motor capacity (Rated output) [W]			50	100		200
Ball screw portion	Shaft diameter [mm]		8	12	14	12, 14
	Lead [mm]		6	6	4	6, 4
	Basic dynamic load rating Ca [N]		1,950	4,910	6,600	4,910, 6,600
	Basic static load rating C0a [N]		3,510	9,600	12,300	9,600, 12,300
	Root diameter [mm]		6.872	9.872	11.5	9.872, 11.5
	Ball center-to-center diameter [mm]		8.4	12.65	14.4	12.65, 14.4
Bearing portion (For fixed side)	Axial direction	Basic dynamic load rating Ca [N]	8,000	13,800		
		Static permissible load P0a [N]	3,240	5,850		
Starting torque *1 [N·cm]			1.6	3.2	2.8	3.2, 2.8
Maximum input torque *2 [N·m]			0.48	1.91 (0.95)		1.91

*1 Pulley and timing belt are not included.

*2 Parentheses show values limited when adopting a motor wrap type.

Motor Wrap Portion (Timing Belt)

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

Recommended Coupling

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

ES/EC

KRF/KSF

US/USW

PCT/PC

PC Model Configuration

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	0M : Without motor	U : Up
PC40	06B	0100 : 100mm		L : Left	0Y : Without motor	L : Left
PC40H	08C	0150 : 150mm		R : Right	0S : Without motor	R : Right
PC50	06D	0200 : 200mm			M040M : With motor	
PC60	10E	0250 : 250mm			to	
PC60H	10F				M750BS : With motor and driver (with brake)	
PC80L	12G					
PC80						
PC80H						

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

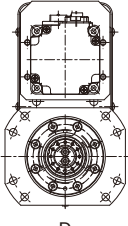
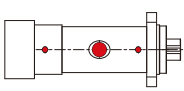
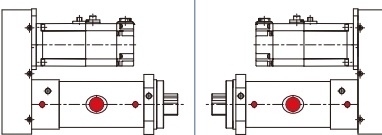
These symbols represent applicable motors.
“M”, “Y” or “S” at the end of the symbol represents the motor manufacturer.
M: Mitsubishi Electric Corporation
Y: Yaskawa Electric Corporation
S: Sanyo Denki Co., Ltd.

When motor and driver are required
Select from the applicable motor (control device) list symbols by model (→ P.4-020).
A driver and cables (5m each) are shipped with the PC main unit.

When motor is not required
Select a symbol from “0M”, “0Y”, and “0S”.
Parts for mounting the applicable motor (motor mounting plate, mechanical lock, pulley) are included by model

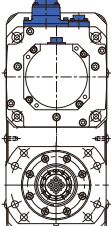
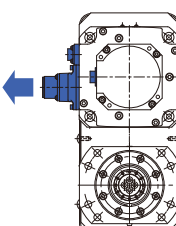
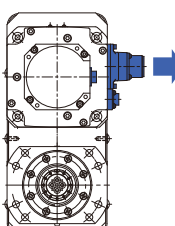
Note) If you want a network-supported servo amp/servo pack, contact THK.

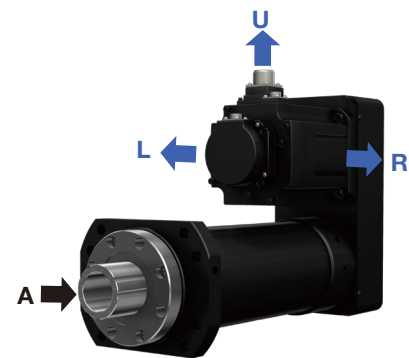
Greasing position orientation

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

Motor cable orientation

* With motor and driver

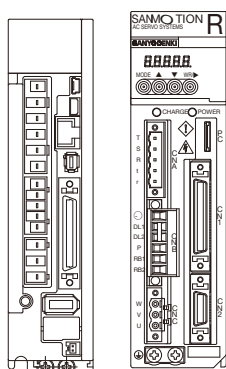
Motor cable orientation	Upper	Left	Right
Symbol	U	L	R
Motor cable orientation schematic diagram (Seen from side A)			



Motor cable orientation

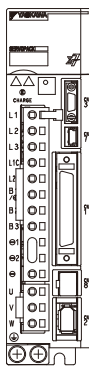
Accessory Shipped with the Main Unit

* With motor and driver

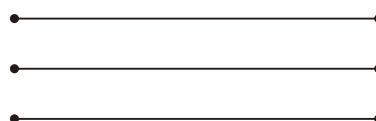


Servo amp

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*1	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-J3ENCL5M-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 *2	-
	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-J3ENCL5M-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 *2	-
	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-J3ENCL5M-L	SVPM-J3HF3-A-5 *3	-	-
	M100BM	HG-SR102B				SVPM-J3HF2B-A-5 *3	-
	M085Y	SGM7G-09AFA21	SGD7S-7R6A00A	JZSP-CVP01-05-E	JZSP-UVA101-05-E *4	-	-
	M085BY	SGM7G-09AFA2C				JZSP-UVA131-05-E *5	-
	M120S	R2AA13120BXHC0	RS1L03AC	AL-00918637-05	AL-00918631-05	-	-
	M120BS	R2AA13120BCHC0				AL-00918632-05	-
PC50-06D	M150M	HG-SR152	MR-J4-200A	MR-J3ENCL5M-L	SVPM-J3HF3-A-5 *3	-	-
	M150BM	HG-SR152B				SVPM-J3HF2B-A-5 *3	-
	M130Y	SGM7G-13AFA21	SGD7S-120A00A	JZSP-CVP01-05-E	JZSP-UVA101-05-E *4	-	-
	M130BY	SGM7G-13AFA2C				JZSP-UVA131-05-E *5	-
	M180S	R2AA13180HXHC0	RS1A05AC	AL-00918637-05	AL-00918633-05	-	-
	M180BS	R2AA13180HCHC0				AL-00918634-05	-
PC60-10E	M200M	HG-SR202	MR-J4-200A	MR-J3ENCL5M-L	SVPM-J3HF5-A-5 *3	-	-
	M200BM	HG-SR202B				SVPM-J3HF2B-A-5 *3	-
	M180Y	SGM7G-20AFA21	SGD7S-180A00A	JZSP-CVP01-05-E	JZSP-UVA301-05-E *4	-	-
	M180BY	SGM7G-20AFA2C				JZSP-UVA331-05-E *5	-
	M200S	R2AA13200LXHC0	RS1A05AC	AL-00918637-05	AL-00918633-05	-	-
	M200BS	R2AA13200LCHC0				AL-00918634-05	-
PC60H-10F	M350M	HG-SR352	MR-J4-350A	MR-J3ENCL5M-L	SVPM-J3HF6-A-5 *3	-	-
	M350BM	HG-SR352B				SVPM-J3HF2B-A-5 *3	-
	M290Y	SGM7G-30AFA21	SGD7S-330A00A	JZSP-CVP01-05-E	JZSP-UVA701-05-E *4	-	-
	M290BY	SGM7G-30AFA2C				JZSP-UVA731-05-E *5	-
	M350S	R2AA18350LXHC0 *6	RS1A10AC	AL-00918637-05	AL-00918635-05	-	-
	M350BS	R2AA18350LCHC0 *6				AL-00918636-05	-
PC80L-12G	M500M	HG-SR502	MR-J4-500A	MR-J3ENCL5M-L	SVPM-J3HF6-A-5 *3	-	-
	M500BM	HG-SR502B				SVPM-J3HF2B-A-5 *3	-
	M440Y	SGM7G-44AFA21	SGD7S-330A00A	JZSP-CVP01-05-E	JZSP-UVA701-05-E *4	-	-
	M440BY	SGM7G-44AFA2C				JZSP-UVA731-05-E *5	-
	M450S	R2AA18450HXHC0	RS1A15AC	AL-00918637-05	AL-00918635-05	-	-
	M450BS	R2AA18450HCHC0				AL-00918636-05 *2	-
PC80-12G	M700M	HG-SR702	MR-J4-700A	MR-J3ENCL5M-L	SVPM-J3HF8-A-5 *3	-	-
	M700BM	HG-SR702B				SVPM-J3HF2B-A-5 *3	-
	M550Y	SGM7G-55AFA21	SGD7S-470A00A	JZSP-CVP01-05-E	JZSP-UVAA01-05-E *4	-	JUSP-RA04-E *7
	M550BY	SGM7G-55AFA2C				JZSP-UVAA31-05-E *5	-
	M550S	R2AA18550HXHC0	RS1A30AC	AL-00918637-05	AL-00918629-05	-	REGIST-1000W6R7B *7
	M550BS	R2AA18550HCHC0				AL-00918630-05	-
PC80H-12G	M420M	HG-SR421	MR-J4-500A	MR-J3ENCL5M-L	SVPM-J3HF8-A-5 *3	-	-
	M420BM	HG-SR421B				SVPM-J3HF2B-A-5 *3	-
	M750Y	SGM7G-75AFA21	SGD7S-550A00A	JZSP-CVP01-05-E	JZSP-UVAA01-05-E *4	-	JUSP-RA05-E *7
	M750BY	SGM7G-75AFA2C				JZSP-UVAA31-05-E *5	-
	M750S	R2AA18750HXHC0	RS1A30AC	AL-00918637-05	AL-00918629-05	-	REGIST-1000W6R7B *7
	M750BS	R2AA18750HCHC0				AL-00918630-05	-

*1 "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.

*2 Motor cable and brake cable are integrated together

*3 Manufactured by Misumi Corporation

*4 Manufactured by Yaskawa Controls Co., LTD.

*5 Each model for a set of a motor cable and brake cable: Manufactured by Yaskawa Controls Co., LTD.

*6 PC specification special product (output shaft length differs from the manufacturer's catalog.)

*7 Servo amps and servo packs require an external regeneration resistor as they do not have a built-in regeneration resistor.

ES/EC

KRF/KSF

US/USW

PCT/PC

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.

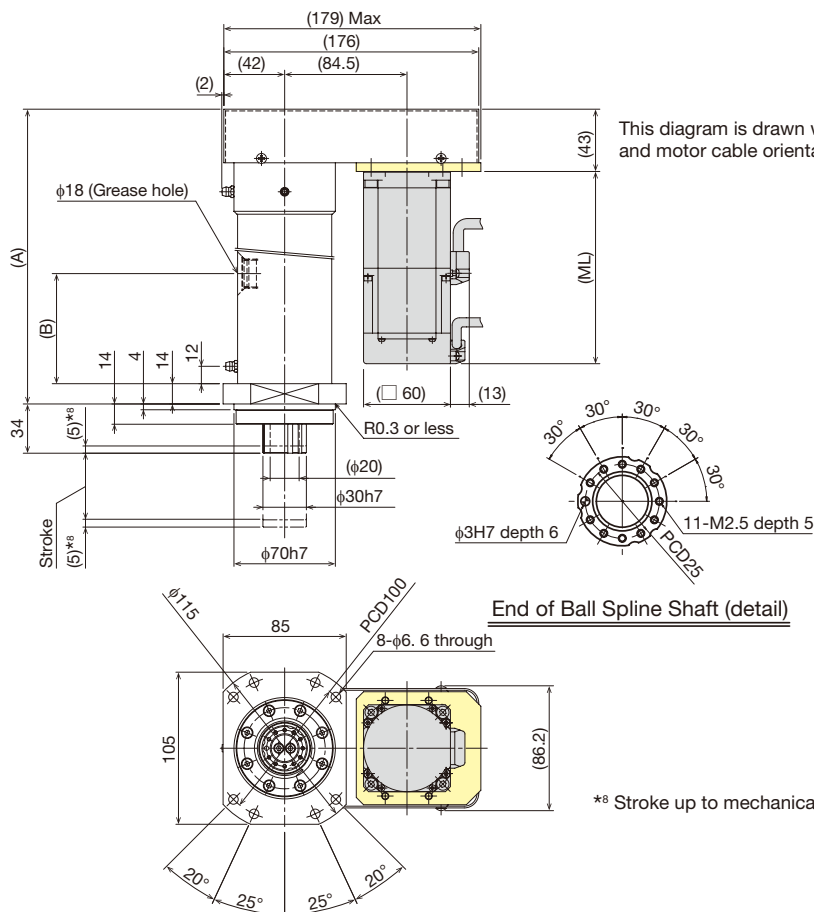
*4 When maximum load capacity is applied.

*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



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) *9	98.1 (132.7)				
		M040M (M040BM) *9 *10	98.3 (135.1)				
		M040Y (M040BY) *9 *10	85.5 (126)				
		M040S (M040BS) *9 *10	95.5 (123.5)				
Weight [kg]	THC: M40 (M40B) *9		8.1 (8.6)	9.2 (9.7)	10.3 (10.8)	11.4 (11.9)	12.6 (13.1)
	M040M (M040BM) *9 *10		8.2 (8.6)	9.3 (9.7)	10.4 (10.8)	11.5 (11.9)	12.7 (13.1)
	M040Y (M040BY) *9 *10		7.9 (8.5)	9.0 (9.6)	10.1 (10.7)	11.2 (11.8)	12.4 (13.0)
	M040S (M040BS) *9 *10		8.1 (8.5)	9.2 (9.6)	10.3 (10.7)	11.4 (11.8)	12.6 (13.0)

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

*10 "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.

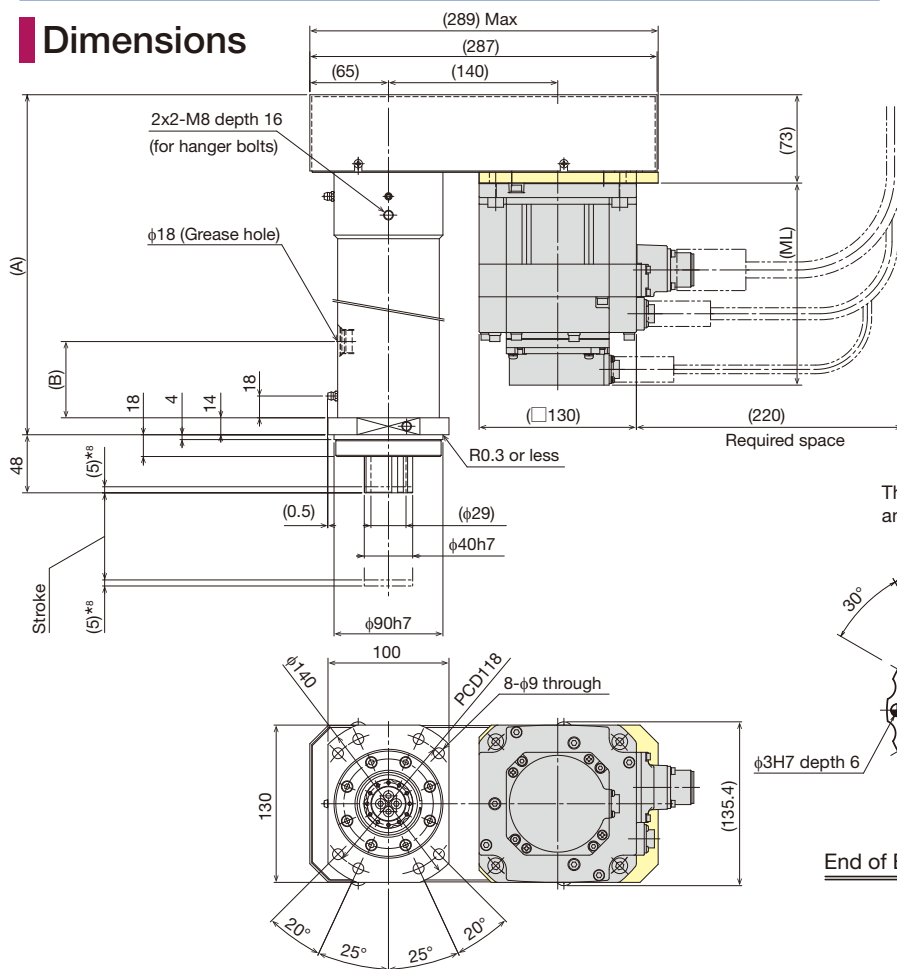
*4 When maximum load capacity is applied.

*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)

*8 Stroke up to mechanical stopper.

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) *9 *10	132.5 (167)				
		M085Y (M085BY) *9 *10	137 (173)				
		M120S (M120BS) *9 *10	120.5 (160)				
Weight [kg]	M100M (M100BM) *9 *10		21.8 (23.8)	23.4 (25.4)	25.0 (27.0)	26.6 (28.6)	28.2 (30.2)
	M085Y (M085BY) *9 *10		21.1 (23.1)	22.7 (24.7)	24.3 (26.3)	25.9 (27.9)	27.5 (29.5)
	M120S (M120BS) *9 *10		21.7 (23.6)	23.3 (25.2)	24.9 (26.8)	26.5 (28.4)	28.1 (30.0)

*9 Values when brake is installed are shown in parentheses.

*10 "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

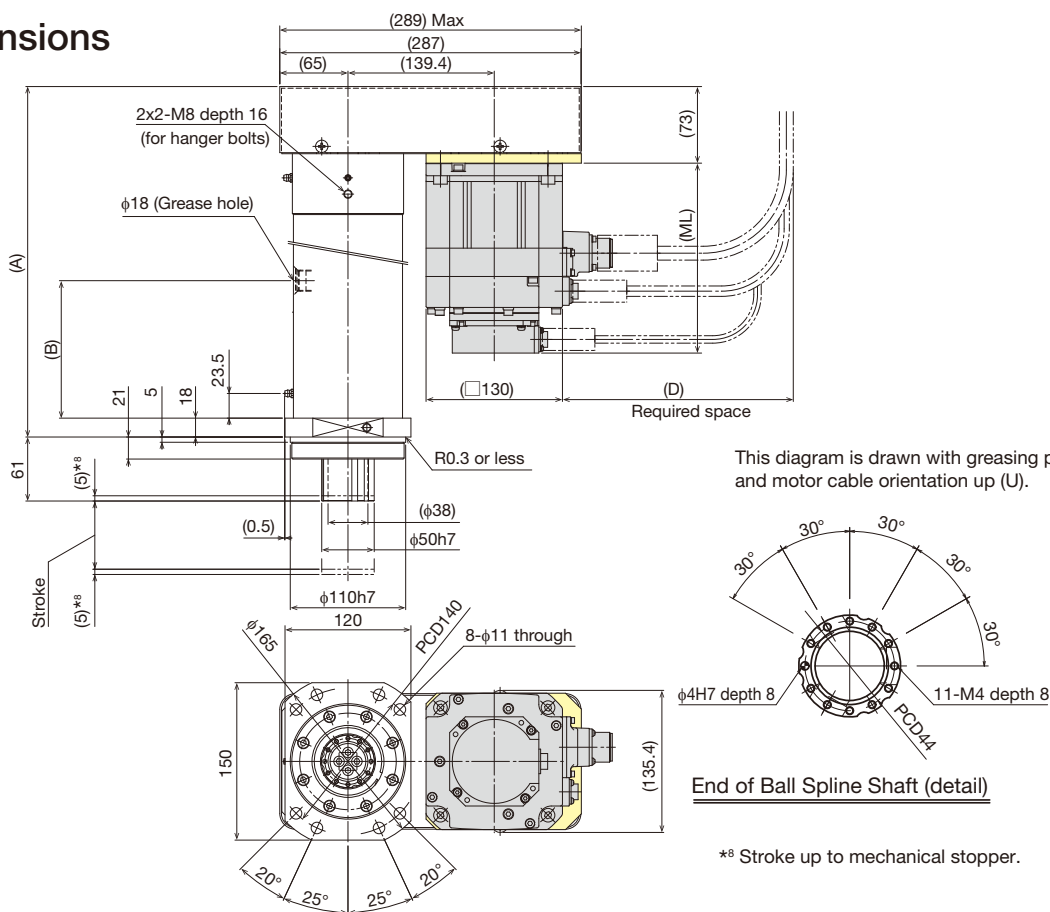


Specifications

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



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) *9 *10	146.5 (181)				
		M130Y (M130BY) *9 *10	153 (189)				
		M180S (M180BS) *9 *10	138 (179)				
	D	M150M (M150BM) *10	220				
		M130Y (M130BY) *10	220				
		M180S (M180BS) *10	250				
Weight [kg]	M150M (M150BM) *9 *10		29.1 (31.1)	31.6 (33.6)	34.0 (36.0)	36.5 (38.5)	39.0 (41.0)
	M130Y (M130BY) *9 *10		28.9 (30.8)	31.4 (33.3)	33.8 (35.7)	36.3 (38.2)	38.8 (40.7)
	M180S (M180BS) *9 *10		29.8 (31.0)	32.3 (33.5)	34.7 (35.9)	37.2 (38.4)	39.7 (40.9)

*⁹ Values when brake is installed are shown in parentheses.*¹⁰ "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.

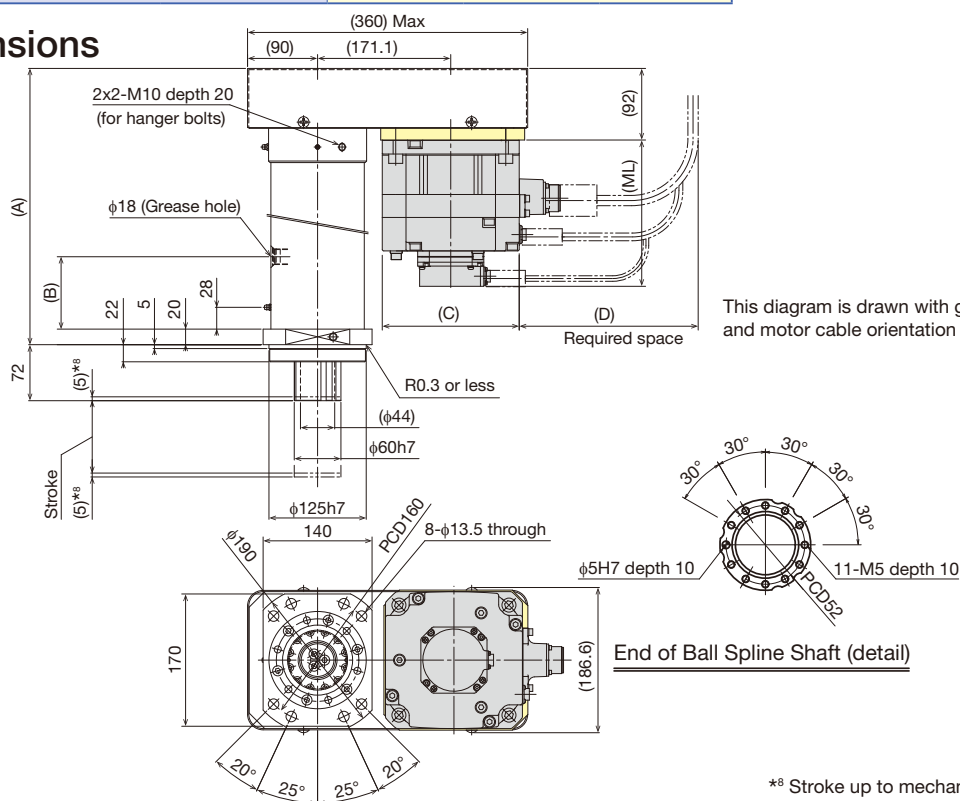
*4 When maximum load capacity is applied.

*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



*8 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) *9 *10	138.5 (188)				
		M180Y (M180BY) *9 *10	171 (207)				
		M200S (M200BS) *9 *10	171 (216)				
	C	M200M (M200BM) *10	□176				
		M180Y (M180BY) *10	□130				
		M200S (M200BS) *10	□130				
	D	M200M (M200BM) *10	230				
		M180Y (M180BY) *10	240				
		M200S (M200BS) *10	250				
Weight [kg]	M200M (M200BM) *9 *10		47.4 (53.4)	50.9 (56.9)	54.4 (60.4)	58.0 (64.0)	61.5 (67.5)
	M180Y (M180BY) *9 *10		45.0 (47.4)	48.5 (50.9)	52.0 (54.4)	55.6 (58.0)	59.1 (61.5)
	M200S (M200BS) *9 *10		46.4 (48.4)	49.9 (51.9)	53.4 (55.4)	57.0 (59.0)	60.5 (62.5)

*9 Values when brake is installed are shown in parentheses.

*10 "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

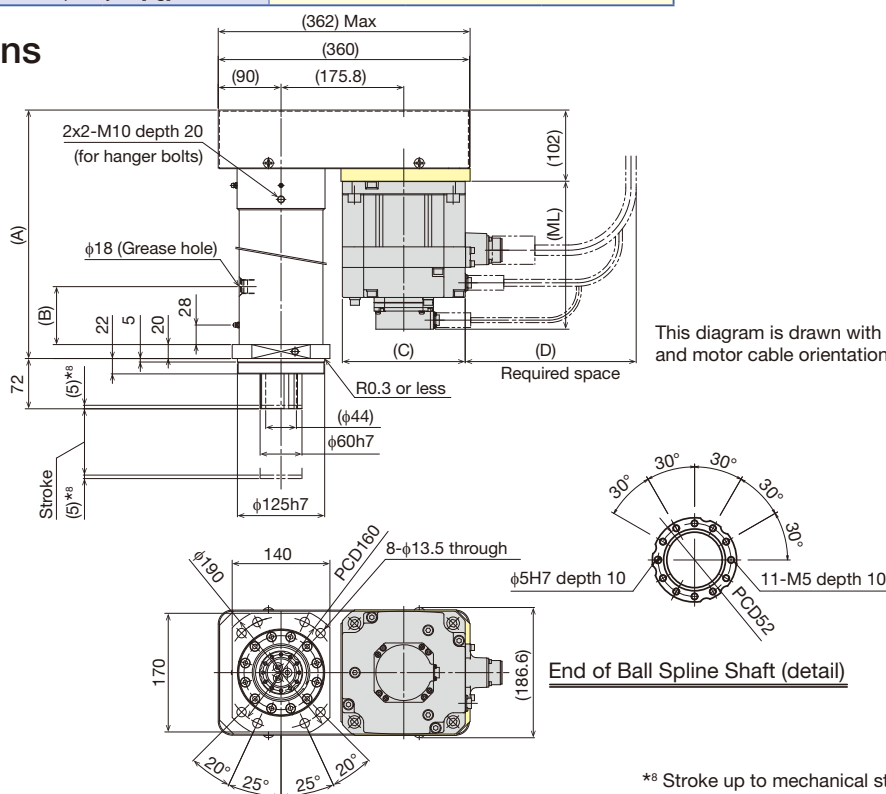


Specifications

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



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) * ⁹ * ¹⁰	162.5 (212)			
		M290Y (M290BY) * ⁹ * ¹⁰	160 (208)			
		M350S (M350BS) * ⁹ * ¹⁰	155 (205)			
	C	M350M (M350BM) * ¹⁰	□176			
		M290Y (M290BY) * ¹⁰	□180			
		M350S (M350BS) * ¹⁰	□180			
	D	M350M (M350BM) * ¹⁰	245			
		M290Y (M290BY) * ¹⁰	285			
		M350S (M350BS) * ¹⁰	300			
Weight [kg]	M350M (M350BM) * ⁹ * ¹⁰		57.2 (63.2)	60.7 (66.7)	64.3 (70.3)	67.8 (73.8)
	M290Y (M290BY) * ⁹ * ¹⁰		54.7 (60.7)	58.2 (64.2)	61.8 (67.8)	65.3 (71.3)
	M350S (M350BS) * ⁹ * ¹⁰		56.7 (61.2)	60.2 (64.7)	63.8 (68.3)	67.3 (71.8)

*⁹ Values when brake is installed are shown in parentheses.*¹⁰ "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.

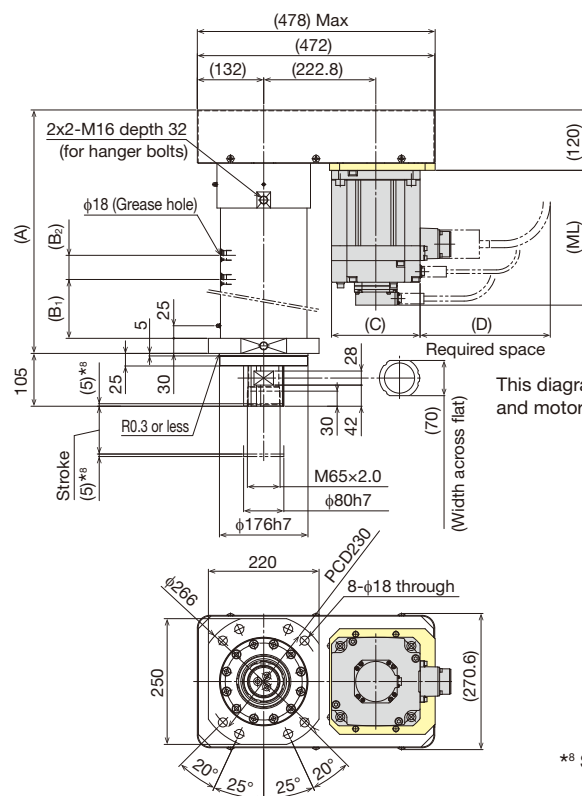
*4 When maximum load capacity is applied.

*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).

*8 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) *9 *10	178.5 (228)				
		M440Y (M440BY) *9 *10	184 (232)				
		M450S (M450BS) *9 *10	172 (222)				
	C	M500M (M500BM) *10	□176				
		M440Y (M440BY) *10	□180				
		M450S (M450BS) *10					
	D	M500M (M500BM) *10	245				
		M440Y (M440BY) *10	285				
		M450S (M450BS) *10	380				
Weight [kg]	M500M (M500BM) *9 *10		133 (139)	140 (146)	146 (152)	153 (159)	160 (166)
	M440Y (M440BY) *9 *10		131 (137)	137 (143)	144 (150)	151 (157)	157 (163)
	M450S (M450BS) *9 *10		133 (135)	139 (142)	146 (149)	153 (155)	159 (168)

*9 Values when brake is installed are shown in parentheses.

*10 "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

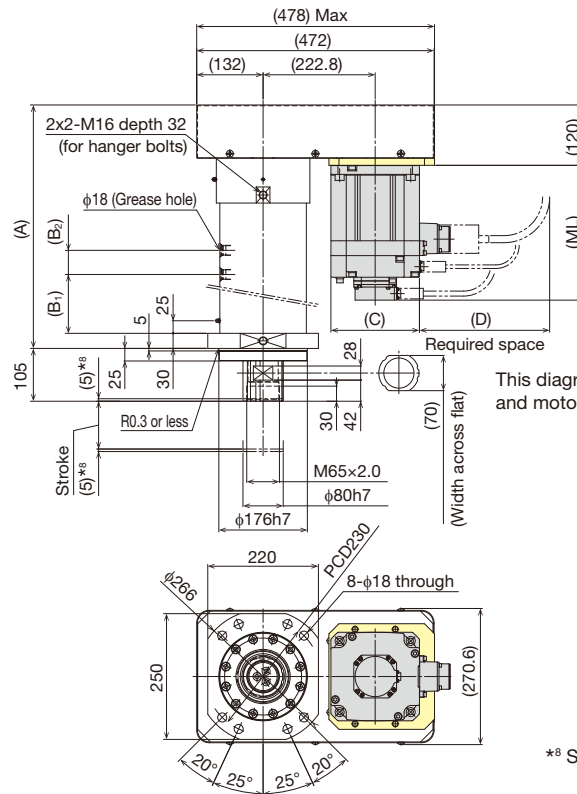


Specifications

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).

*⁸ 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) * ⁹ * ¹⁰	218.5 (268)				
		M550Y (M550BY) * ⁹ * ¹⁰	221 (265)				
		M550S (M550BS) * ⁹ * ¹⁰	228 (274)				
	C	M700M (M700BM) * ¹⁰	□176				
		M550Y (M550BY) * ¹⁰	□180				
		M550S (M550BS) * ¹⁰					
	D	M700M (M700BM) * ¹⁰	379				
		M550Y (M550BY) * ¹⁰	432				
		M550S (M550BS) * ¹⁰	505				
Weight [kg]	M700M (M700BM) * ⁹ * ¹⁰		140 (146)	147 (153)	153 (159)	160 (166)	167 (173)
	M550Y (M550BY) * ⁹ * ¹⁰		135 (141)	141 (147)	148 (154)	155 (161)	161 (167)
	M550S (M550BS) * ⁹ * ¹⁰		141 (144)	147 (150)	154 (157)	161 (164)	168 (170)

*⁹ Values when brake is installed are shown in parentheses.*¹⁰ "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.

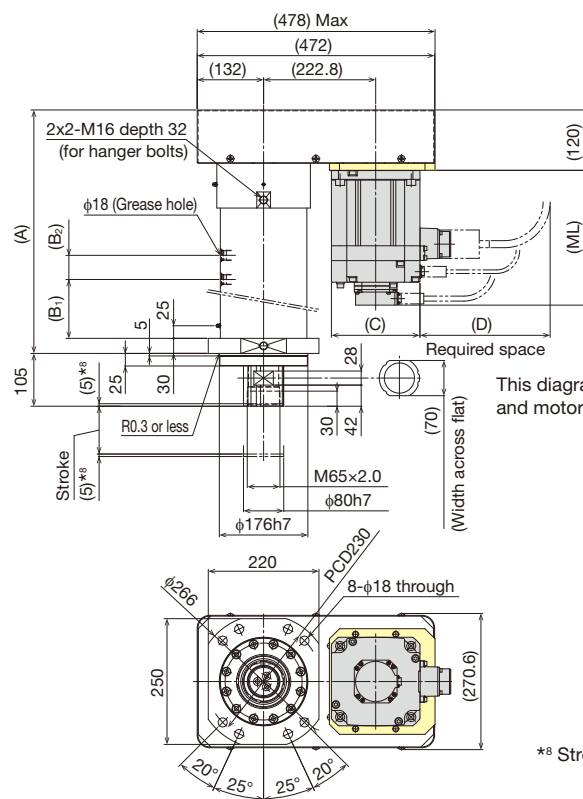
*4 When maximum load capacity is applied.

*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).

*8 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) *9 *10	218.5 (268)				
		M750Y (M750BY) *9 *10	267 (311)				
		M750S (M750BS) *9 *10	273 (329)				
	C	M420M (M420BM) *10	□176				
		M750Y (M750BY) *10	□180				
		M750S (M750BS) *10					
	D	M420M (M420BM) *10	379				
		M750Y (M750BY) *10	432				
		M750S (M750BS) *10	505				
Weight [kg]	M420M (M420BM) *9 *10		140 (146)	147 (153)	153 (159)	160 (166)	167 (173)
	M750Y (M750BY) *9 *10		143 (148)	149 (155)	156 (161)	163 (168)	169 (175)
	M750S (M750BS) *9 *10		149 (153)	155 (160)	162 (167)	169 (173)	176 (180)

*9 Values when brake is installed are shown in parentheses.

*10 "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.

MEMO

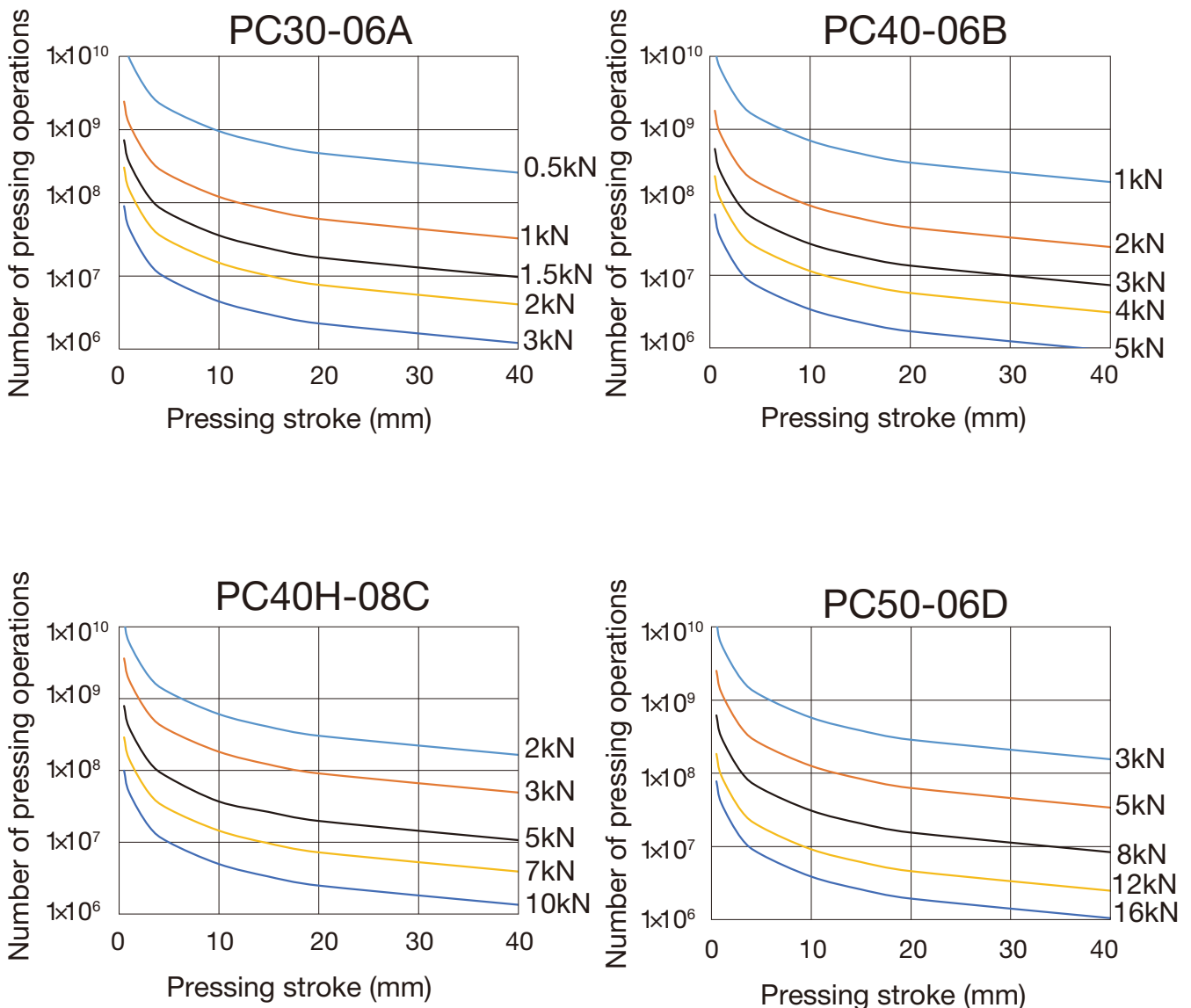
ES/EC

KRF/KSF

US/USW

PCT/PC

PC Theoretical pressing force service life (number of presses)



Service life will fluctuate depending on pressing load and pressing stroke.

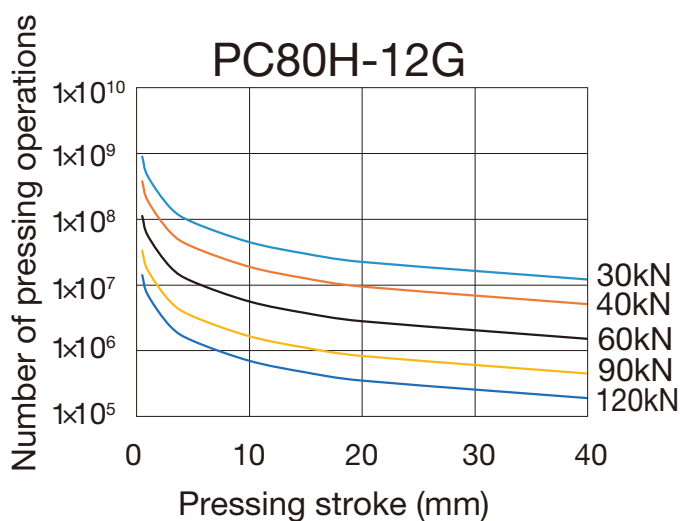
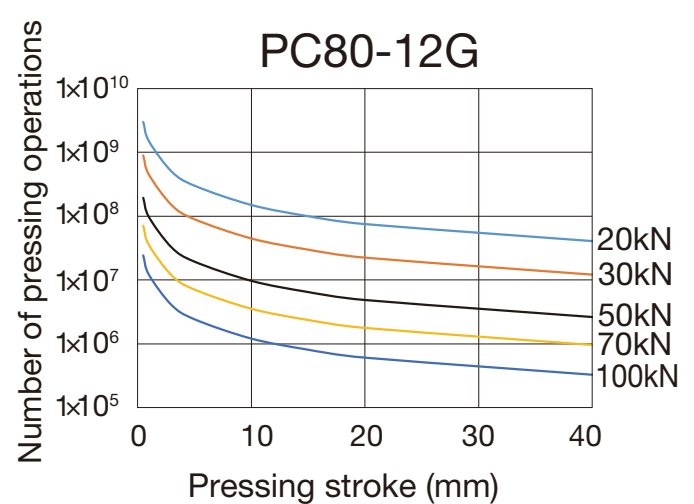
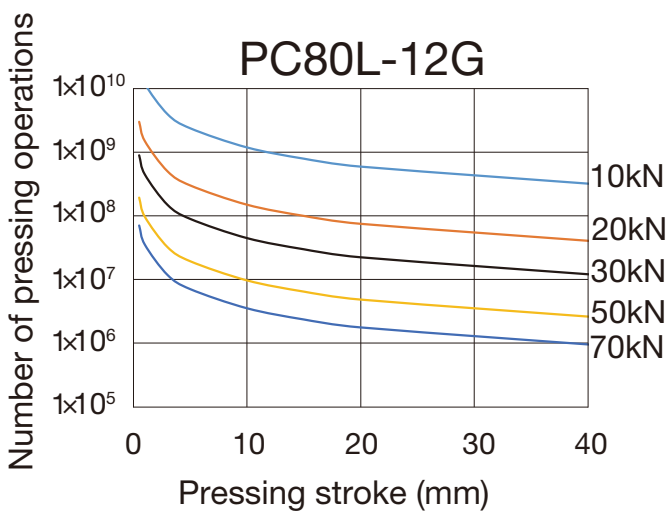
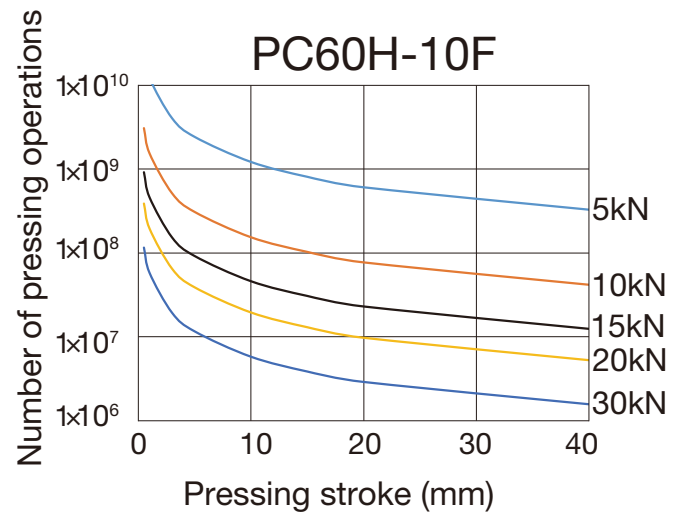
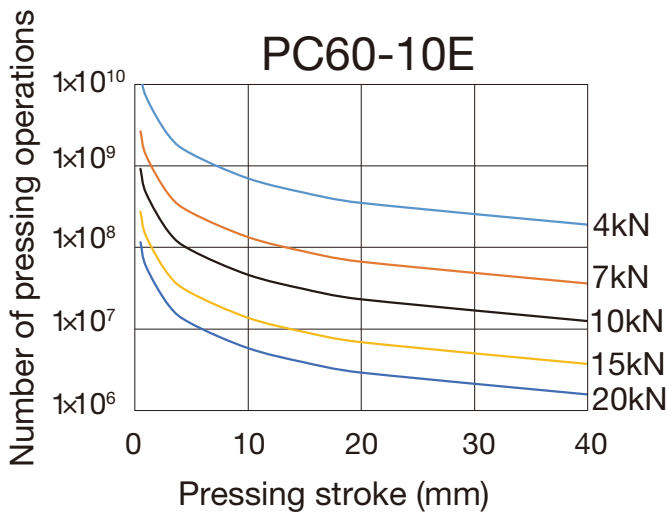
The operating life is a theoretical value under the following conditions.

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.



Service 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

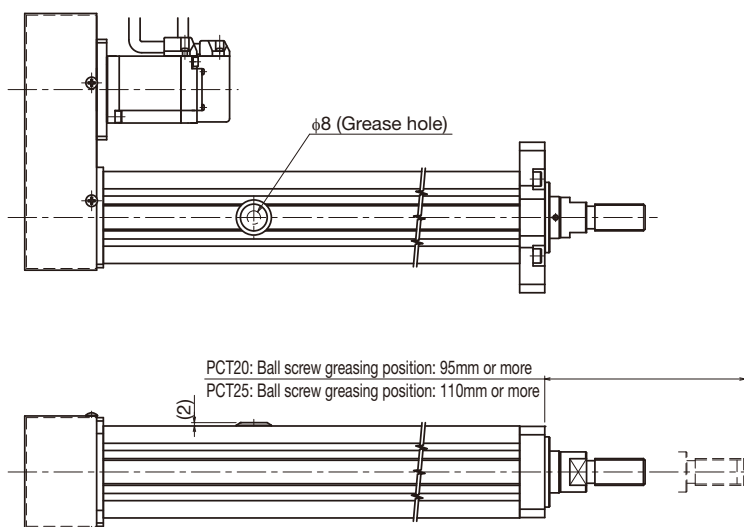
To maximize the performance of the actuator, periodic greasing is required.
THK cylinder-type actuators have a grease hole.

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

PCT

Standard grease: AFB-LF

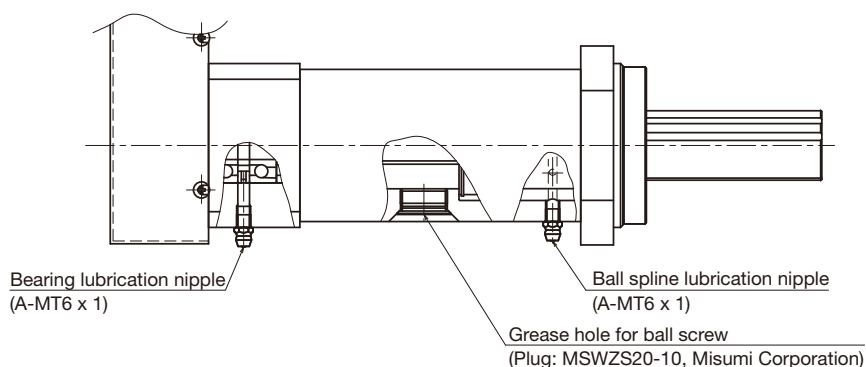
To grease the ball screw portion, remove the plug and apply the grease directly to the ball screw shaft.



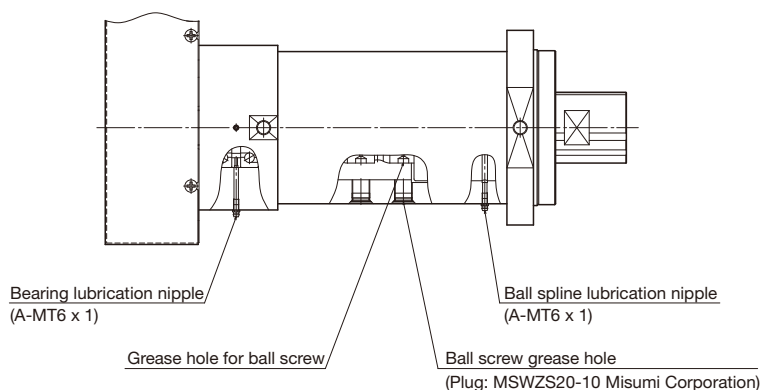
PC

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.





Precautions on Use

● Operation

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

● Environment

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

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

● Safety Precautions

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

● Storage

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

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

● Lubrication

- In order to effectively use the actuator, lubrication is required. Insufficient lubrication may increase abrasion on moving parts and shorten service life.
- Do not use a mix of lubricants with different physical properties.
- Please contact THK if using special lubricants.
- The greasing interval may vary depending on the usage conditions, so THK recommends determining a greasing interval during the initial inspection.

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