



**ELECTRIC
ACTUATORS**

NEW

Compact series

KRF

Stepper / Servo Driver Controller

TSC/TLC/THC



For details, visit THK at www.thk.com

* Product information is updated regularly on the THK website.

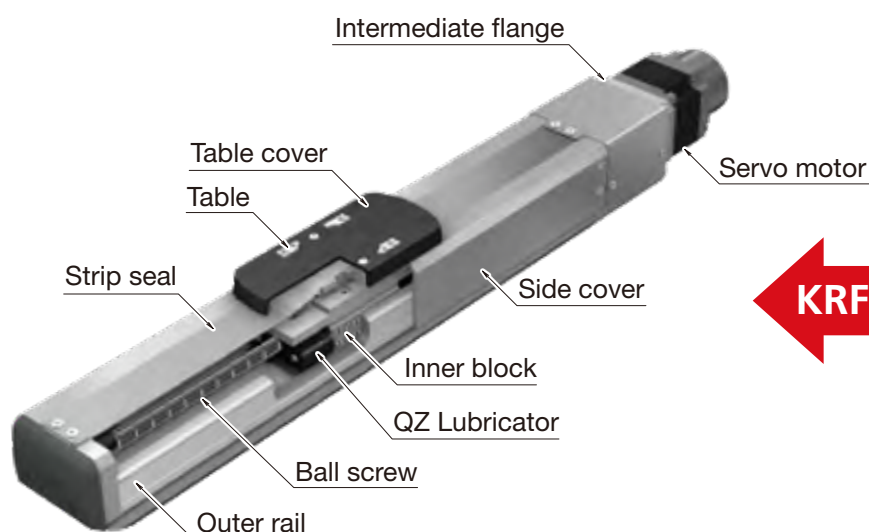
THK CO., LTD.
TOKYO, JAPAN

CATALOG No.374-11E

Compact Series

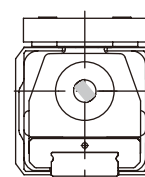
KRF

Fully enclosed actuator, designed for dedicated controller.



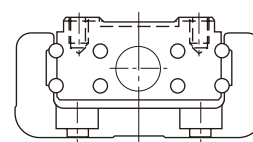
- ✓ Outer rail of KR/SKR with proven history adopted
- ✓ Single axis actuator with high moment rigidity

ES



Full-cover structure

KR/SKR

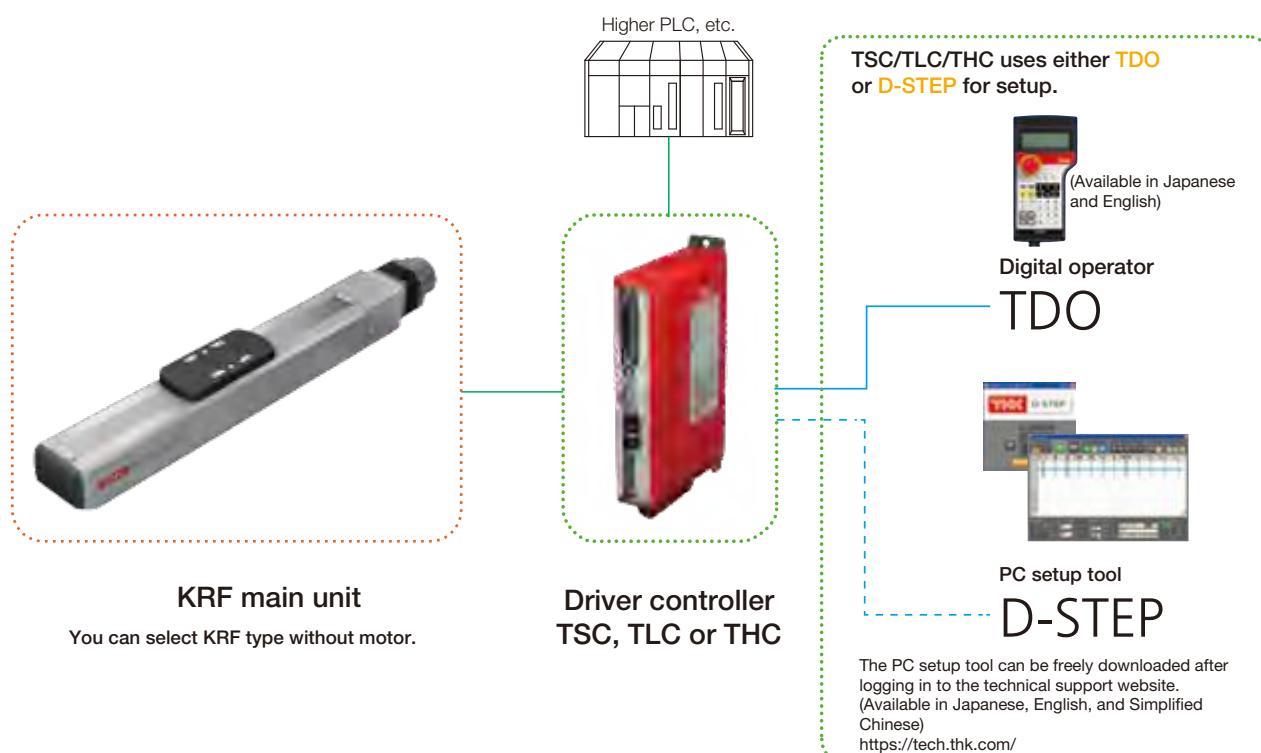


Equivalent load for four directions, with high rigidity

Supported size (guideline)

KR/SKR	20	26	33
KRF	4	5	6

System Configuration

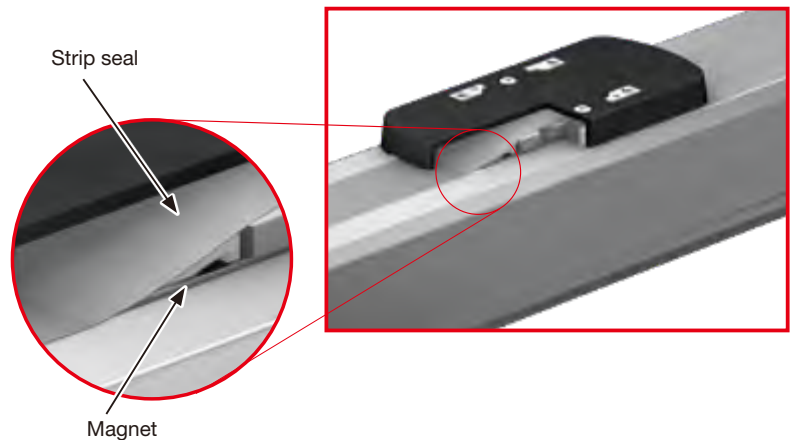


Features

1 Fully enclosed design

Strip seals on the side cover and upper surface using magnetic attraction method provide a fully enclosed structure.

It prevents any problems caused by entering of foreign materials from outside. As well, the top surface of the strip seal is less likely to generate dust by avoiding the contact.



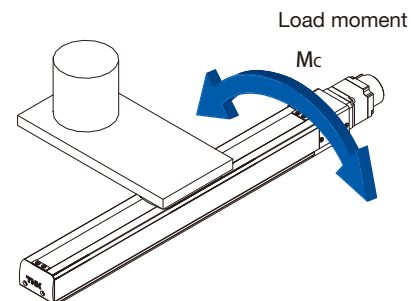
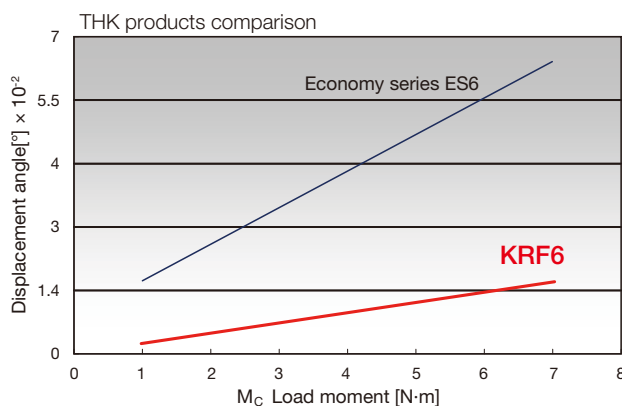
Magnetic attraction method

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

2 High rigidity

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

The actuator body's high rigidity allows for a compact, space-saving design.



Layout example of cantilever configuration

3 Easy setup

Setup is easy by combining with dedicated driver controller.



Stepper driver controller
TSC



Servo Driver controller
50W
TLC



Servo Driver controller
100W
THC

Lineup List (Stepper driver controller TSC Specification)



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

*1 Maximum load capacity and maximum speed vary dependent on usage conditions.

For details, see "Basic Specifications" and "Speed and Load Capacity: Relationship Diagram" of each model.

Series Specifications (Servo Driver Controller TLC/THC Specification)

[KRF4, 5]



[KRF6]



Model	Ball screw lead [mm]	Stroke [mm]	Rated speed *2 [mm/s]	Motor capacity [W]	Used driver controller	Maximum load capacity *3 [kg]			
						Horizontal mount	Wall mount	Vertical mount	
KRF4	6	50 to 300	300	50	TLC	6	5.5	4	
KRF5	6	50 to 550				19	14	6	
	10					500	15	12.5	3.5
KRF6	6	50 to 800	300	100	THC	35	24	10	
	10		500			30	22	5	

*2 At rated motor speed (3,000min⁻¹).

*3 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.

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

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



	Maximum speed for each stroke **4 [mm/s]																
	Stroke																
	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	
	300																
	300									250							
	500									430							
	300											260	220	200	170	150	
	500											440	380	330	290	260	

Model Configuration

KRF (type with motor)

When combining with dedicated driver controller



Model	Ball screw lead	Stroke	Design symbol	Control device type	Option	Motor size / motor rated output
KRF6R	06	0050	A	TH	MR-GR	M10
(1)	(2)	(3)	(4)	(5)	(6)	(7)
KRF4	06: 6 mm	0050: 50 mm	A	TS: TSC	No symbol: None	35P : Stepper motor □35
KRF5	10: 10 mm	0100: 100 mm		TL: TLC	MR: Motor right wrap*	42P : Stepper motor □42
KRF6		0150: 150 mm		TH: THC	ML: Motor left wrap*	M05 : 50W
KRF4R		0200: 200 mm			MD: Motor down wrap*	M10 : 100W
KRF5R		0250: 250 mm			GR: Gray cover	28PB : Stepper motor □28 with brake
KRF6R		0300: 300 mm			SB: Slider base	35PB : Stepper motor □35 with brake
		0350: 350 mm			□1□2: Sensor	42PB : Stepper motor □42 with brake
		0400: 400 mm				M05B : 50W with brake
		0450: 450 mm				M10B : 100W with brake
		0500: 500 mm				
		0550: 550 mm				
		0600: 600 mm				
		0650: 650 mm				
		0700: 700 mm				
		0750: 750 mm				
		0800: 800 mm				
R represents motor wrap.	KRF4, and KRF4R have ball screw lead of 6mm only.		Control device you can select differ depending on models. KRF4 : TSC, TLC KRF5 : TSC, TLC KRF6 : THC KRF4R : TLC KRF5R : TLC KRF6R : THC *Separate order for the control device is required.	Specify the option symbol by writing in the order of description from left adding "-". *Valid only when KRF□R is selected in model (1).		Motors you can select differ depending on models. KRF4 : "35P", "35PB", "M05", "M05B" KRF5 : "42P", "42PB", "M05", "M05B" KRF6 : "M10", "M10B" KRF4R: "M05", "M05B" KRF5R: "M05", "M05B" KRF6R: "M10", "M10B"
		Maximum stroke differs depending on models. KRF4: 300mm KRF5: 550mm KRF6: 800mm		Change the cover color to gray You can change the color of housing cover to gray. Standard: red When GR is selected: gray		

Sample model configuration

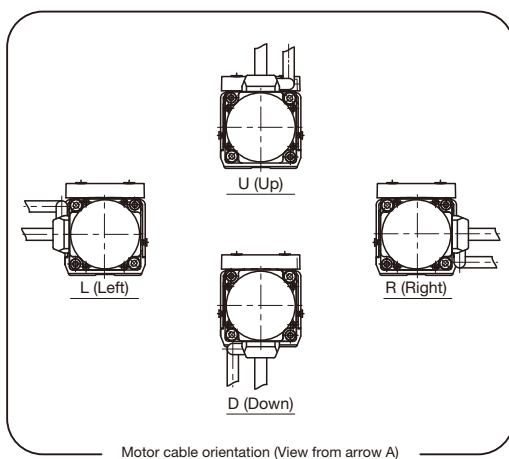
When combining with dedicated controller (TSC)	KRF4-06-0200A-TS-GR-SB-R6/35PD00S3
When combining with dedicated controller (TLC)	KRF4-06-0150A-TL-GR-SB-R6/M05BRD00F3
When combining with dedicated controller (THC)	KRF6-10-0800A-TH-GR-R6/M10RS02D1H3

Pages for detailed description

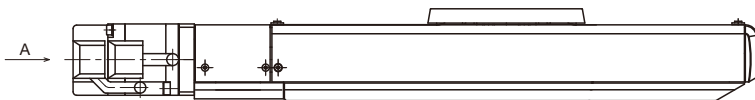
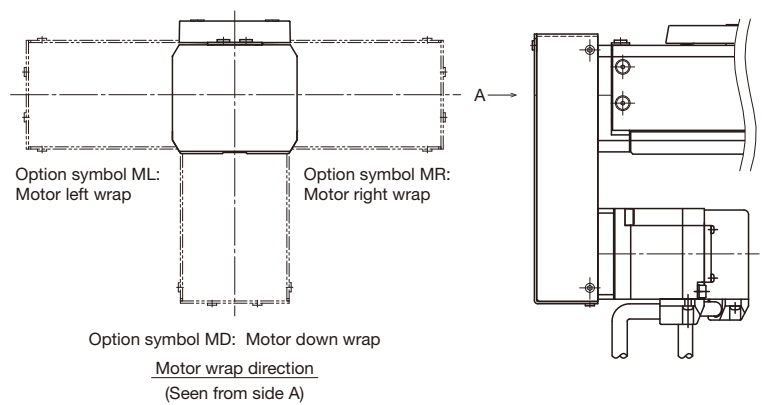
(6) Options	SB: With slider base → P. 25
	□1□2: Sensor → P. 26
	GR: Change the cover color to gray → P. 27

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

Motor cable orientation



Folded direction



KRF4 TSC specifications



Model Configuration

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

KRF4	06 : 6 mm	0050 : 50mm to 0300 : 300 mm	A	TS : TSC	No symbol: None GR : Gray cover SB : Slider base $\square_1 \square_2$: Sensor	35P : Stepper motor $\square 35$ 35PB : Stepper motor $\square 35$ with brake	D00 : Motor side R00 : Reverse motor side	No symbol: None S3 : Standard 3 m S5 : Standard 5 m SA : Standard 10 m
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Basic Specifications

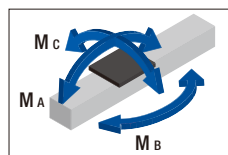
Control device type				TSC
Motor size				□35
Ball screw lead [mm]				6
Maximum load capacity [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	6.5
		Wall mount		6
		Vertical mount	0.2G	4
Electromagnetic brake retention [N]				251
Running life *1 [km]		Horizontal/wall mount		10,000
		Vertical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

*1 The conditions for calculation are as follows:

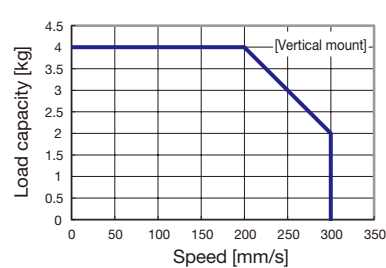
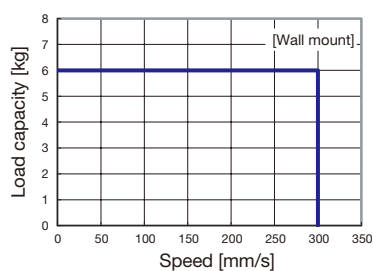
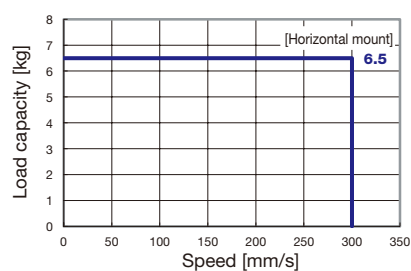
Under maximum load capacity at permissible overhang length.
Stroke 75 mm

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

Static Permissible Moment

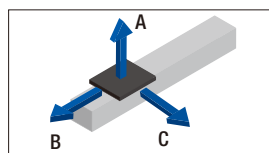


Speed and Load Capacity: Relationship Diagram

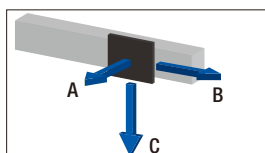


Permissible Overhang Length*

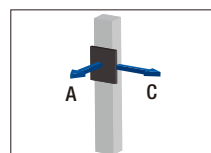
Horizontal use



Wall use



Vertical use



Horizontal mount [mm]

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

Wall mount [mm]

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

Vertical mount [mm]

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

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

A permissible value of the applied load in each direction.



Detailed Diagram: Elongated Hole

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

KRF5 TSC specifications



Model Configuration

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

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

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

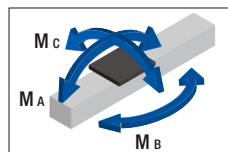
*1 The conditions for calculation are as follows:

Under maximum load capacity at permissible overhang length.

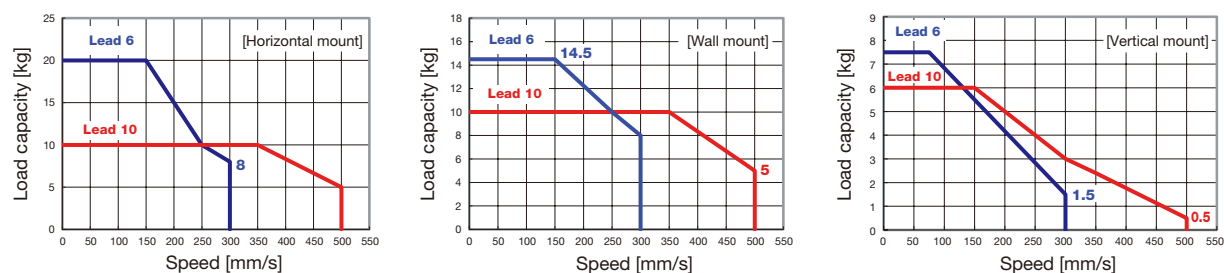
Stroke 275 mm

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

Static Permissible Moment

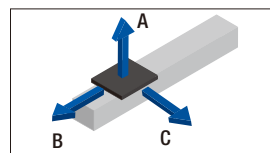


Speed and Load Capacity: Relationship Diagram

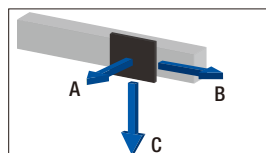


Permissible Overhang Length*

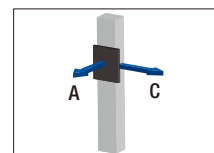
Horizontal use



Wall use



Vertical use



Horizontal mount [mm]

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

Wall mount [mm]

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

Vertical mount [mm]

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

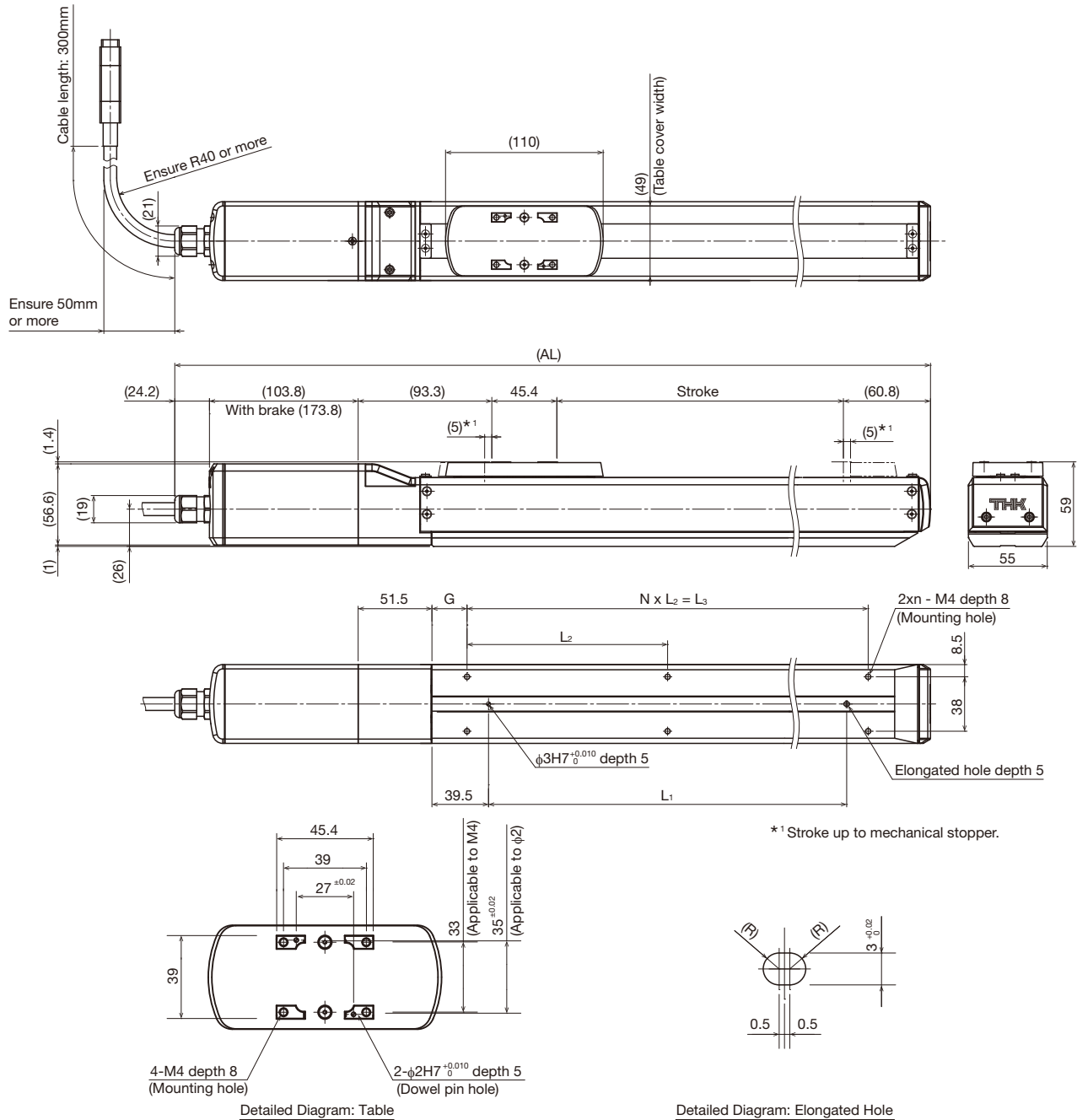
* This value is the overhang length whose running life is 10,000 km for horizontal direction/wall mount and 5,000 km for vertical direction.

A permissible value of the applied load in each direction.

KRF5 + TSC



Dimensions



Stroke [mm]		50	100	150	200	250	300	350	400	450	500	550
(Stroke between mechanical stoppers)		(60)	(110)	(160)	(210)	(260)	(310)	(360)	(410)	(460)	(510)	(560)
Maximum speed ^{*2} ^{*3} [mm/s]	Ball screw lead: 6 mm	300										250
	Ball screw lead: 10 mm	500										430
Dimensions [mm]	AL ^{*4}	377.5 (447.5)	427.5 (497.5)	477.5 (547.5)	527.5 (597.5)	577.5 (647.5)	627.5 (697.5)	677.5 (747.5)	727.5 (797.5)	777.5 (847.5)	827.5 (897.5)	877.5 (947.5)
	L ₁	100	150	200	250	300	350	400	450	500	550	600
	L ₂	140	100	120	140	115	130	110	120	135	120	130
	L ₃	140	200	240	280	345	390	440	480	540	600	650
	G	19.5	14.5	19.5	24.5	17	19.5	19.5	24.5	19.5	14.5	14.5
Mounting pitch count	N	1	2	2	2	3	3	4	4	4	5	5
Mounting hole count	n	2	3	3	3	4	4	5	5	5	6	6
Weight ^{*4} [kg]		2.8 (3.3)	3.1 (3.6)	3.4 (3.9)	3.7 (4.2)	4.0 (4.5)	4.4 (4.8)	4.7 (5.1)	5.0 (5.4)	5.3 (5.7)	5.6 (6.1)	5.9 (6.4)

^{*2} Load capacity and maximum speed vary dependent on usage conditions. For details, see "Speed and Load Capacity: Relationship Diagram".

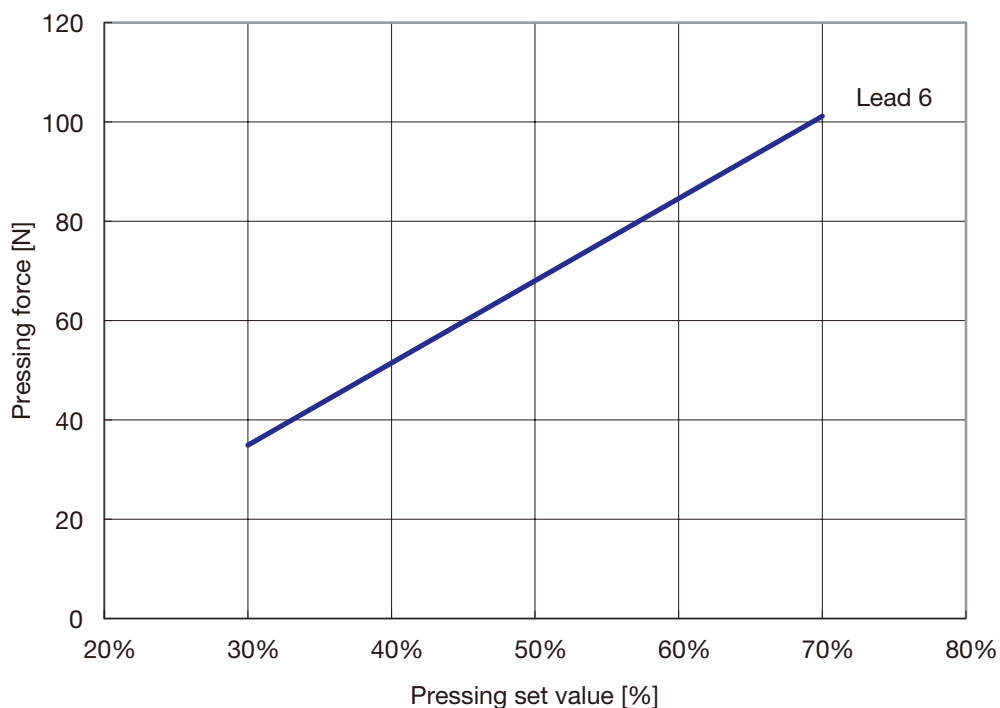
^{*3} Dependent on permissible rotational speed of ball screw.

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

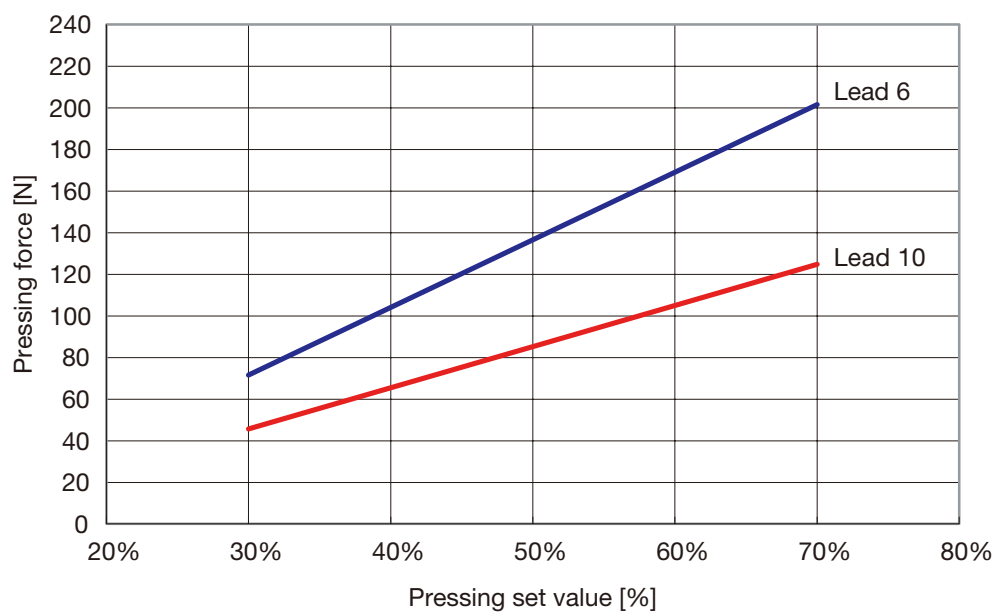
Pressing Force and Pressing Set Value for TSC specification: Relationship Diagram

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

■ KRF4



■ KRF5



MEMO

KRF4

TLC specifications



Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device	Option	Motor rated output	Motor cable orientation	Home position	Cable type and length
KRF4	06	0150	A	TL	GR-SB	M05	R	D00	F3

KRF4	06 : 6 mm	0050 : 50 mm to 0300 : 300 mm	A	TL : TLC	No symbol: Red cover GR : Gray cover SB : Slider base ☐ 1 ☐ 2: Sensor	M05 : 50W M05B : 50W with brake	R : Right L : Left U : Up D : Down	D00 : Motor side R00 : Reverse motor side	No symbol: None F3 : Standard 3 m F5 : Standard 5 m FA : Standard 10 m H3 : High flex 3 m H5 : High flex 5 m HA : High flex 10 m
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Note: If the GR is not included in the model configuration, cover will be red.

Basic Specifications

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

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

^{*2} At rated speed.

^{*3} At rated motor torque.

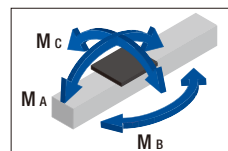
^{*4} Dependent on maximum peak torque and permissible load.

^{*5} The conditions for calculation are as follows:

Conditions: Under maximum load capacity at permissible overhang length
Stroke 75mm

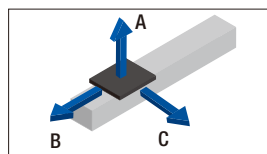
^{*6} Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static Permissible Moment

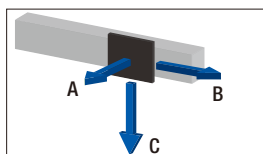


Permissible Overhang Length*

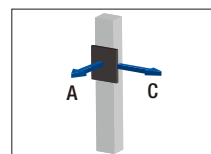
Horizontal use



Wall use



Vertical use



Horizontal mount [mm]

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

Wall mount [mm]

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

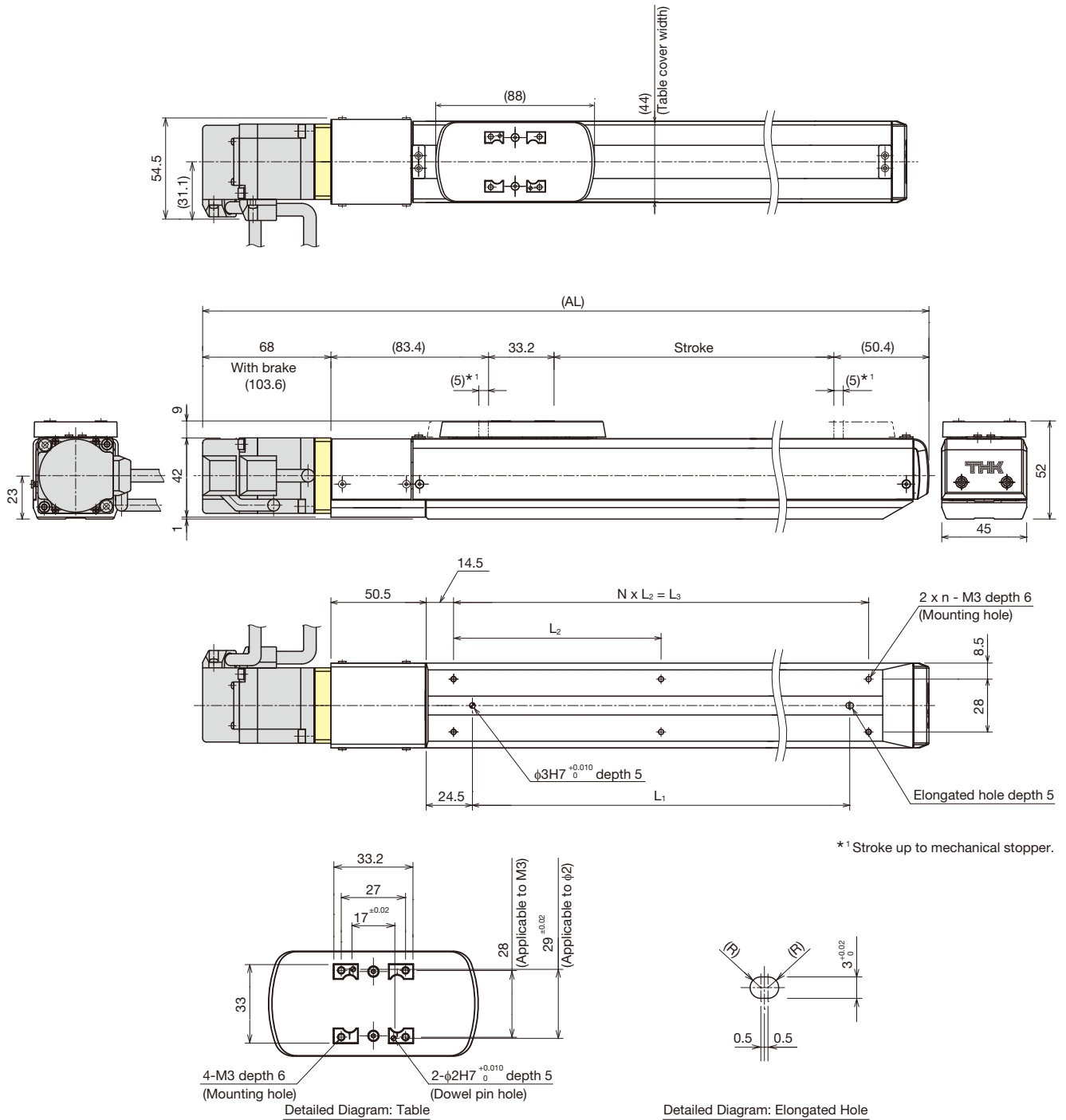
Vertical mount [mm]

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

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

KRF4 + TLC**Motor rated output
50W**

Dimensions



Stroke [mm]		50	100	150	200	250	300
(Stroke between mechanical stoppers)		(60)	(110)	(160)	(210)	(260)	(310)
Maximum speed * ² [mm/s]	Ball screw lead: 6mm	300					
Dimensions [mm]	AL * ³	285(320.6)	335(370.6)	385(420.6)	435(470.6)	485(520.6)	535(570.6)
	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 * ³ [kg]		1.6(1.8)	1.8(2.0)	2.0(2.2)	2.2(2.4)	2.4(2.6)	2.7(2.9)

*² Dependent on motor speed (3,000min⁻¹) and permissible rotational speed of the ball screw.

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

KRF4R

TLC specifications



Model Configuration

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

Basic Specifications

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

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

^{*2} At rated speed.

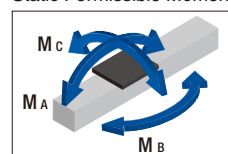
^{*3} At rated motor torque.

^{*4} Dependent on maximum peak torque and permissible load.

^{*5} The conditions for calculation are as follows:
Under maximum load capacity at permissible overhang length.
Stroke 75 mm

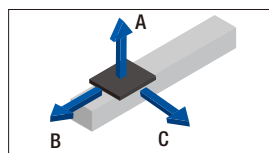
^{*6} Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static Permissible Moment

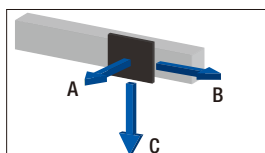


Permissible Overhang Length*

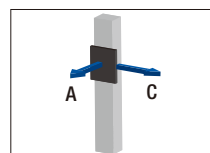
Horizontal use



Wall use



Vertical use



Horizontal mount [mm]

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

Wall mount [mm]

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

Vertical mount [mm]

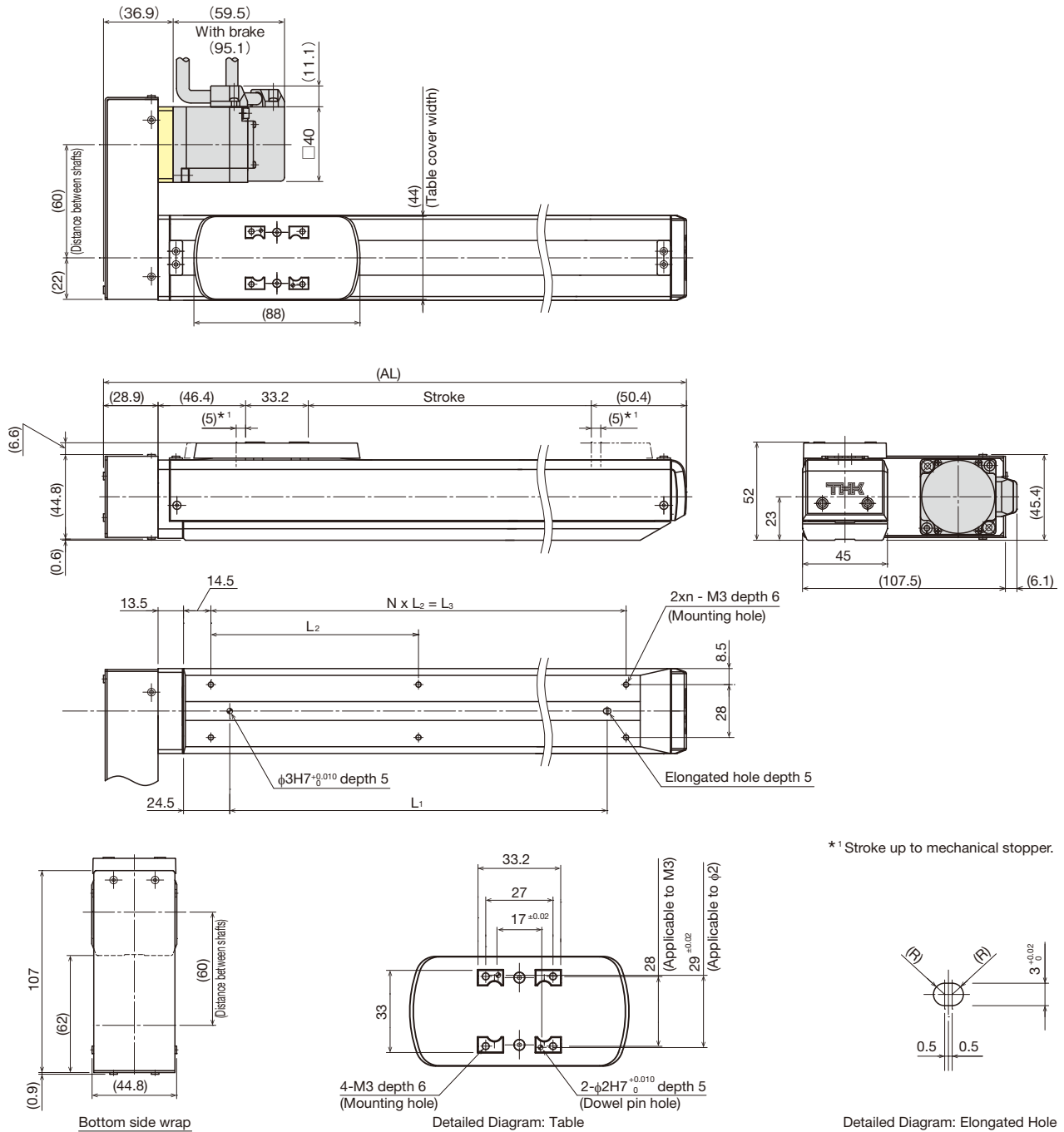
Ball screw lead [mm]	Load mass [kg]	A	C
6	2	100	100
	4	30	30

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

A permissible value of the applied load in each direction.

KRF4R + TLC**Motor rated output
50W**

Dimensions



Stroke [mm]		50	100	150	200	250	300
(Stroke between mechanical stoppers)		(60)	(110)	(160)	(210)	(260)	(310)
Maximum speed * ² [mm/s]	Ball screw lead: 6 mm	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 * ³ [kg]		1.6(1.8)	1.8(2.0)	2.0(2.2)	2.3(2.5)	2.5(2.7)	2.7(2.9)

*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.

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

KRF5

TLC specifications



Model Configuration

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

KRF5	06 : 6 mm 10 : 10 mm	0050 : 50 mm to 0550 : 550 mm	A	TL : TLC	No symbol : Red cover GR : Gray cover SB : Slider base ☐ 1 ☐ 2: Sensor	M05 : 50W M05B : 50W with brake	R : Right L : Left U : Up D : Down	D00 : Motor side R00 : Reverse motor side	No symbol : None F3 : Standard 3 m F5 : Standard 5 m FA : Standard 10 m H3 : High flex 3 m H5 : High flex 5 m HA : High flex 10 m
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Note: If the GR is not included in the model configuration, cover will be red.

Basic Specifications

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

*¹ At rated motor speed (3,000min⁻¹).

*² At rated speed.

*³ At rated motor torque.

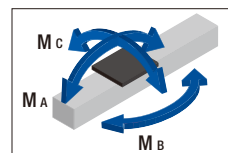
*⁴ Dependent on maximum peak torque and permissible load.

*⁵ The conditions for calculation are as follows:

Conditions: Under maximum load capacity at permissible overhang length
Stroke 275mm

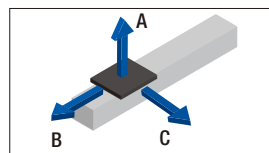
*⁶ Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static Permissible Moment

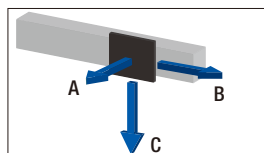


Permissible Overhang Length*

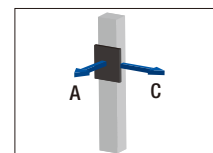
Horizontal use



Wall use



Vertical use



Horizontal mount [mm]

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

Wall mount [mm]

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

Vertical mount [mm]

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

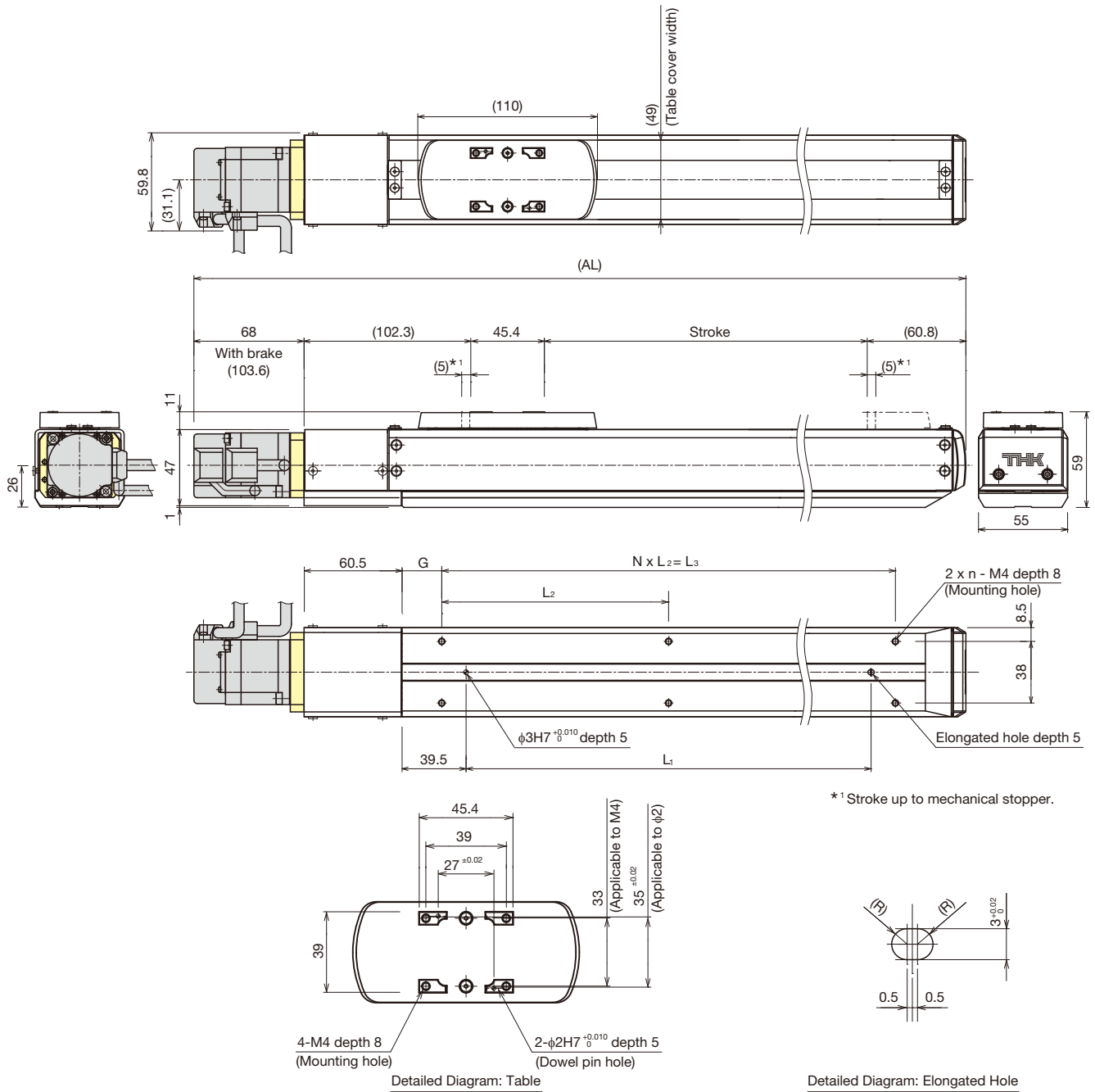
* This value is the overhang length whose running life is 10,000 km for horizontal and wall mount, and 5,000 km for vertical direction.

A permissible value of the applied load in each direction.

KRF5 + TLC


Motor rated output
50W

Dimensions



Stroke [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 ^{*2} [mm/s]	Ball screw lead: 6mm	300										250
	Ball screw lead: 10mm	500										430
Dimensions [mm]	AL ^{*3}	326.5 (362.1)	376.5 (412.1)	426.5 (462.1)	476.5 (512.1)	526.5 (562.1)	576.5 (612.1)	626.5 (662.1)	676.5 (712.1)	726.5 (762.1)	776.5 (812.1)	826.5 (862.1)
	L ₁	100	150	200	250	300	350	400	450	500	550	600
	L ₂	140	100	120	140	115	130	110	120	135	120	130
	L ₃	140	200	240	280	345	390	440	480	540	600	650
G		19.5	14.5	19.5	24.5	17	19.5	19.5	24.5	19.5	14.5	14.5
Mounting pitch count	N	1	2	2	2	3	3	4	4	4	5	5
Mounting hole count	n	2	3	3	3	4	4	5	5	5	6	6
Weight ^{*3} [kg]		2.6 (2.8)	2.9 (3.1)	3.2 (3.4)	3.5 (3.7)	3.8 (4.0)	4.1 (4.3)	4.4 (4.6)	4.7 (4.9)	5.0 (5.2)	5.3 (5.5)	5.6 (5.8)

^{*2} Dependent on motor speed (3,000min⁻¹) and permissible rotational speed of the ball screw.

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

KRF5R TLC specifications



Model Configuration

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

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

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

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

*2 At rated speed.

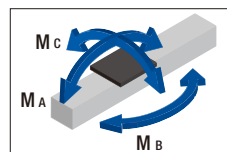
*3 At rated motor torque.

*4 Dependent on maximum peak torque and permissible load.

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

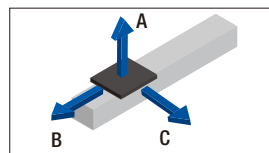
*6 Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static Permissible Moment

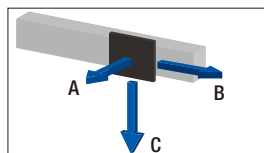


Permissible Overhang Length*

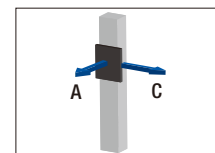
Horizontal use



Wall use



Vertical use



Horizontal mount [mm]

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

Wall mount [mm]

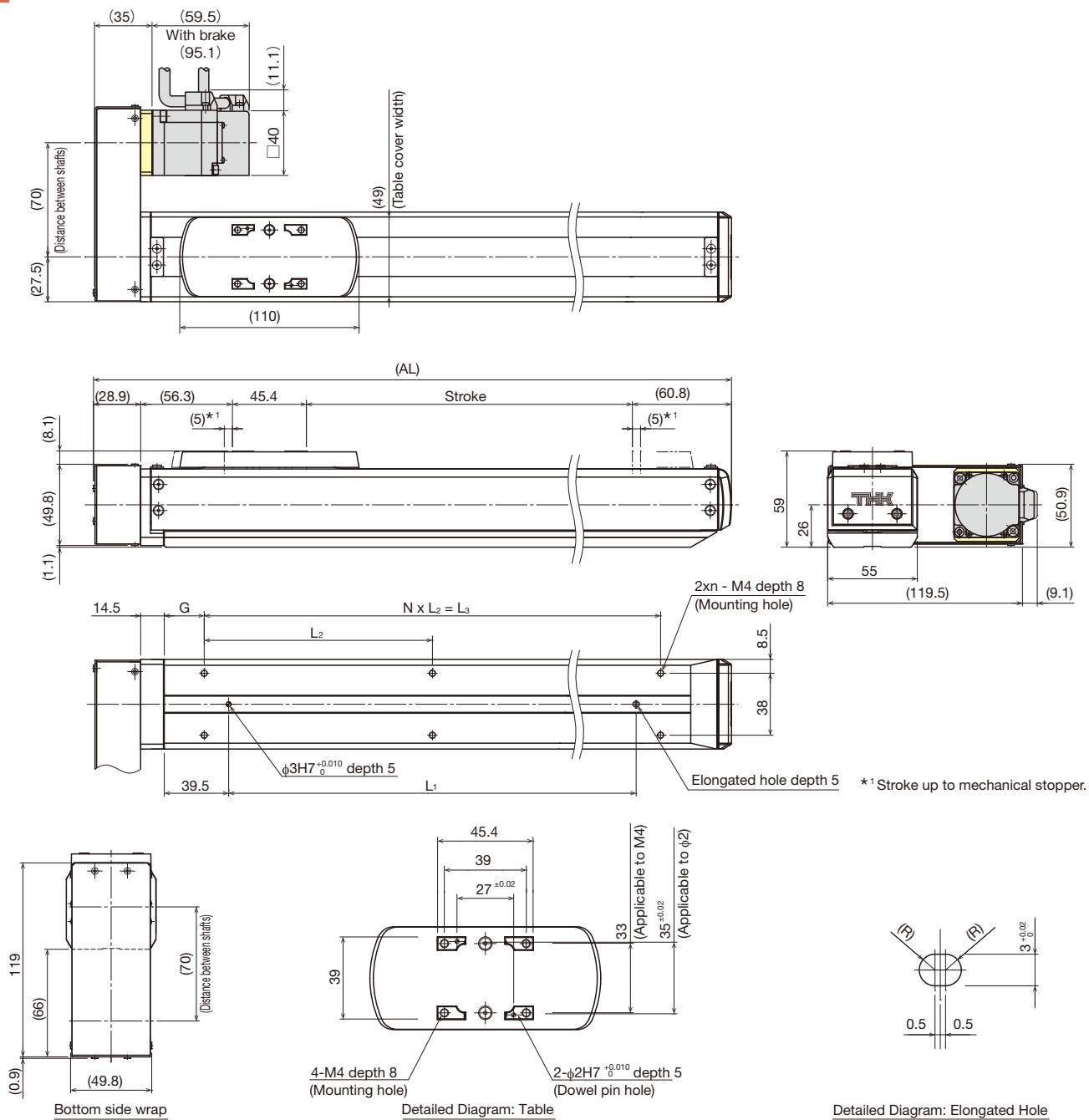
Ball screw lead [mm]	Load mass [kg]	A	B	C
6	7	180	60	500
	14	60	20	130
10	6	170	70	390
	12.5	60	20	120

Vertical mount [mm]

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

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

A permissible value of the applied load in each direction.

KRF5R + TLC**Motor rated output**
50W**Dimensions**

*1 Stroke up to mechanical stopper.

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 *2 [mm/s]	Ball screw lead: 6 mm	300										250
	Ball screw lead: 10 mm	500										430
Dimensions [mm]	AL	241.5	291.5	341.5	391.5	441.5	491.5	541.5	591.5	641.5	691.5	741.5
	L ₁	100	150	200	250	300	350	400	450	500	550	600
	L ₂	140	100	120	140	115	130	110	120	135	120	130
	L ₃	140	200	240	280	345	390	440	480	540	600	650
	G	19.5	14.5	19.5	24.5	17	19.5	19.5	24.5	19.5	14.5	14.5
Mounting pitch count	N	1	2	2	2	3	3	4	4	4	5	5
Mounting hole count	n	2	3	3	3	4	4	5	5	5	6	6
Weight *3 [kg]		2.5 (2.7)	2.8 (3.0)	3.1 (3.3)	3.5 (3.7)	3.8 (4.0)	4.1 (4.3)	4.4 (4.6)	4.7 (4.9)	5.0 (5.2)	5.3 (5.5)	5.6 (5.8)

*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.

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



KRF6

THC specifications

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
KRF6	06	0150	A	TH	GR-SB	M10	R	D00	D1	F3
KRF6	06: 6 mm 10: 10 mm	0050: 50 mm to 0800: 800 mm	A	TH : THC	No symbol: Red cover GR : Gray cover SB : Slider base ☐ ☐ ☐ : Sensor	M10 : 100W M10B : 100W with brake	R : Right L : Left U : Up D : Down	D00 : Motor side R00 : Reverse motor side S02 : Motor side S03 : Reverse motor side	D1 : 100 V D2 : 200 V	No symbol: None F3 : Standard 3 m F5 : Standard 5 m FA : Standard 10 m H3 : High flex 3 m H5 : High flex 5 m HA : High flex 10 m

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

Basic Specifications

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

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

^{*2} At rated speed.

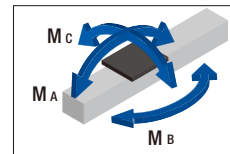
^{*3} At rated motor torque.

^{*4} Dependent on maximum peak torque and permissible load.

^{*5} The conditions for calculation are as follows:
Conditions: Under maximum load capacity at permissible overhang length
Stroke 275mm

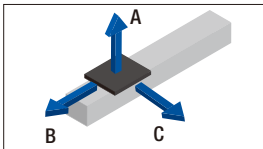
^{*6} Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static Permissible Moment

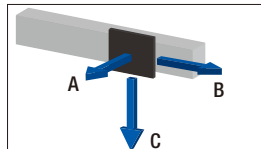


Permissible Overhang Length*

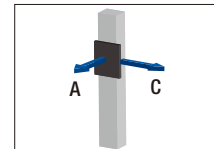
Horizontal use



Wall use



Vertical use



Horizontal mount [mm]

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

Wall mount [mm]

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

Vertical mount [mm]

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

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

A permissible value of the applied load in each direction.

Dimensions

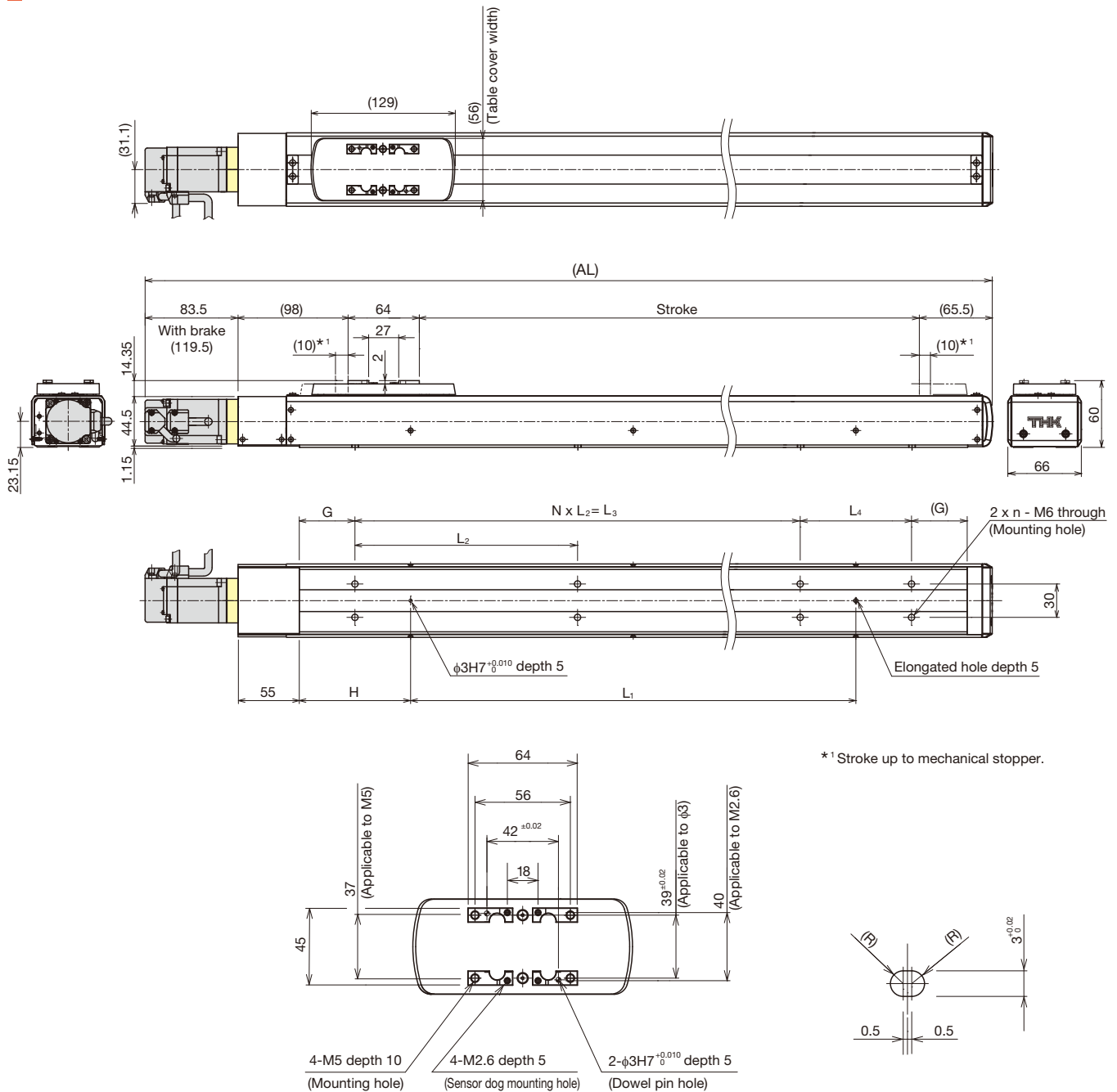
Stroke [mm] (Stroke between mechanical stoppers)		50 (70)	100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)
Maximum speed ^{*2} [mm/s]	Ball screw lead: 6mm	300							
	Ball screw lead: 10mm	500							
Dimensions [mm]	AL ^{*3}	361 (396.6)	411 (446.6)	461 (496.6)	511 (546.6)	561 (596.6)	611 (646.6)	661 (696.6)	711 (746.6)
	L ₁	100	150	200	200	250	250	300	350
	L ₂	100	200	200	200	200	200	200	200
	L ₃	100	200	200	200	200	400	400	400
	L ₄	—	—	—	—	100	—	—	—
	G	50	25	50	75	50	25	50	75
Mounting pitch count		50	50	50	75	75	100	100	100
Mounting hole count		N	1	1	1	1	2	2	2
Weight ^{*3} [kg]		n	2	2	2	3	3	3	3
Weight ^{*3} [kg]		3.2 (3.4)	3.6 (3.8)	4.0 (4.2)	4.5 (4.7)	4.9 (5.1)	5.3 (5.5)	5.7 (5.9)	6.1 (6.3)

^{*2} Dependent on motor speed (3,000min⁻¹) and permissible rotational speed of the ball screw.

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

KRF6 + THC**Motor rated output
100W**

Dimensions



Detailed Diagram: Table

Detailed Diagram: Elongated Hole

Stroke [mm] (Stroke between mechanical stoppers)		450 (470)	500 (520)	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)
Maximum speed * ² [mm/s]	Ball screw lead: 6mm	300			260	220	200	170	150
	Ball screw lead: 10mm	500			440	380	330	290	260
Dimensions [mm]	AL * ³	761(796.6)	811(846.6)	861(896.6)	911(946.6)	961(996.6)	1011(1046.6)	1061(1096.6)	1111(1146.6)
	L ₁	400	450	500	550	600	650	700	750
	L ₂	200	200	200	200	200	200	200	200
	L ₃	400	600	600	600	600	800	800	800
	L ₄	100	—	—	—	100	—	—	—
	G	50	25	50	75	50	25	50	75
Mounting pitch count		N	2	3	3	3	4	4	4
Mounting hole count		n	4	4	4	5	5	5	5
Weight * ³ [kg]		6.5 (6.7)	6.9 (7.1)	7.3 (7.5)	7.7 (7.9)	8.1 (8.3)	8.5 (8.7)	8.9 (9.1)	9.3 (9.5)

*² Dependent on motor speed (3,000min⁻¹) and permissible rotational speed of the ball screw.

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



KRF6R

THC specifications

Model Configuration

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

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

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

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

^{*2} At rated speed.

^{*3} At rated motor torque.

^{*4} Dependent on maximum peak torque and permissible load.

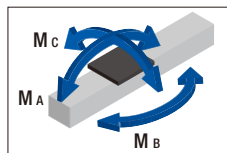
^{*5} The conditions for calculation are as follows:

Under maximum load capacity at permissible overhang length.

Stroke 275 mm

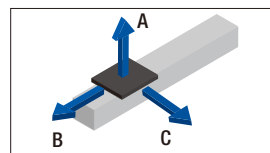
^{*6} Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.

Static Permissible Moment



Permissible Overhang Length*

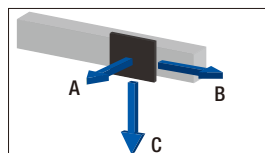
Horizontal use



Horizontal mount [mm]

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

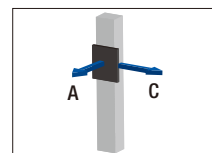
Wall use



Wall mount [mm]

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

Vertical use



Vertical mount [mm]

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

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

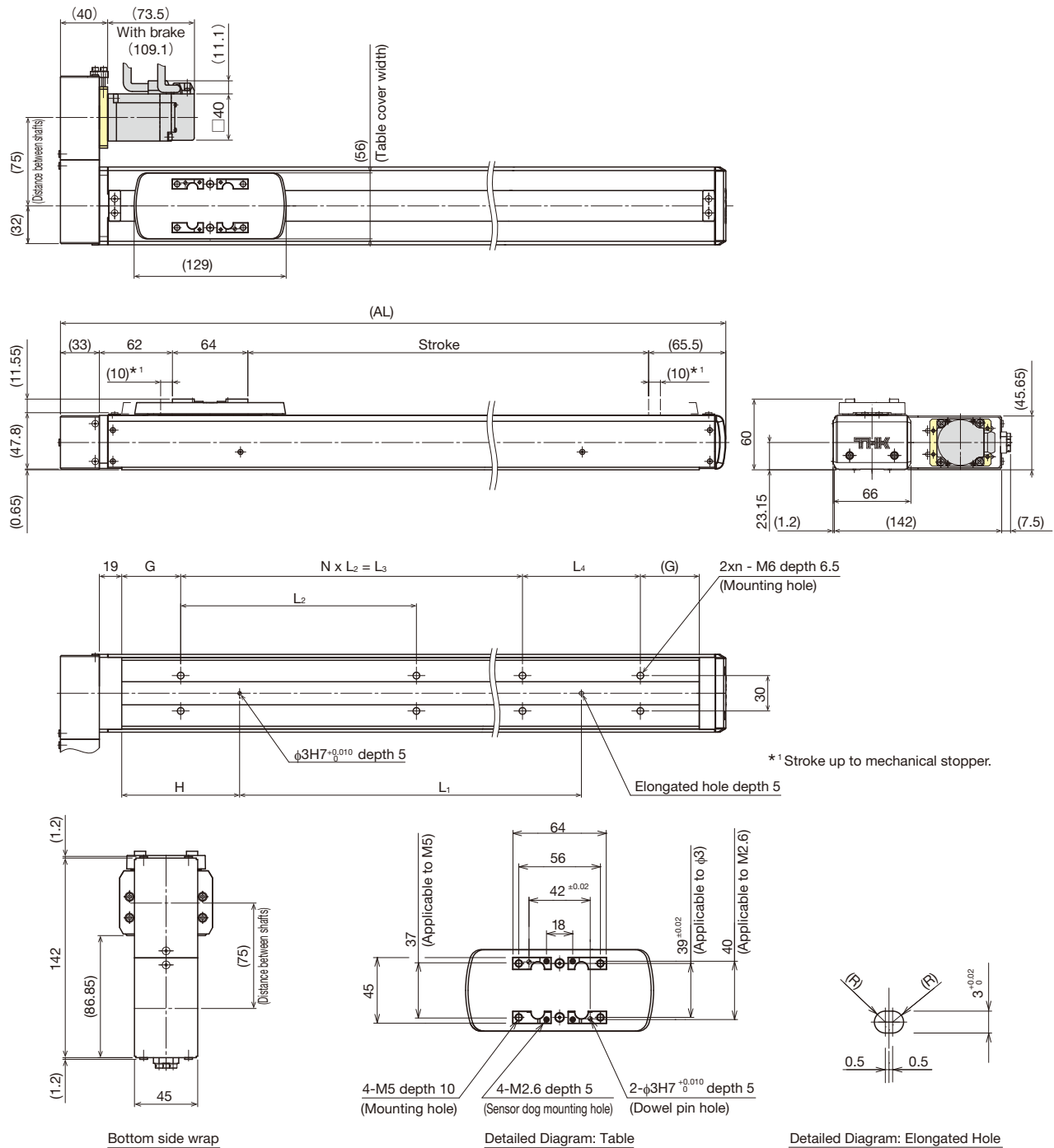
A permissible value of the applied load in each direction.

Dimensions

Stroke [mm] (Stroke between mechanical stoppers)		50 (70)	100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)
Maximum speed ^{*2} [mm/s]	Ball screw lead: 6 mm	300							
	Ball screw lead: 10 mm	500							
Dimensions [mm]	AL	276	326	376	426	476	526	576	626
	L ₁	100	150	200	200	250	250	300	350
	L ₂	100	200	200	200	200	200	200	200
	L ₃	100	200	200	200	200	400	400	400
	L ₄	—	—	—	—	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 ^{*3} [kg]		4.0(4.2)	4.4(4.6)	4.8(5.0)	5.2(5.4)	5.6(5.8)	6.0(6.2)	6.4(6.6)	6.8(7.0)

^{*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.

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

KRF6R + THC**Motor rated output
100W****Dimensions**

Stroke [mm] (Stroke between mechanical stoppers)	450 (470)	500 (520)	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)
Maximum speed ^{*2} [mm/s]								
Ball screw lead: 6 mm	300							
Ball screw lead: 10mm	500							
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
Mounting pitch count	N	2	3	3	3	3	4	4
Mounting hole count	n	4	4	4	4	5	5	5
Weight ^{*3} [kg]	7.2(7.4)	7.7(7.9)	8.0(8.3)	8.5(8.7)	8.9(9.1)	9.3(9.5)	9.7(9.9)	10.1(10.3)

^{*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.

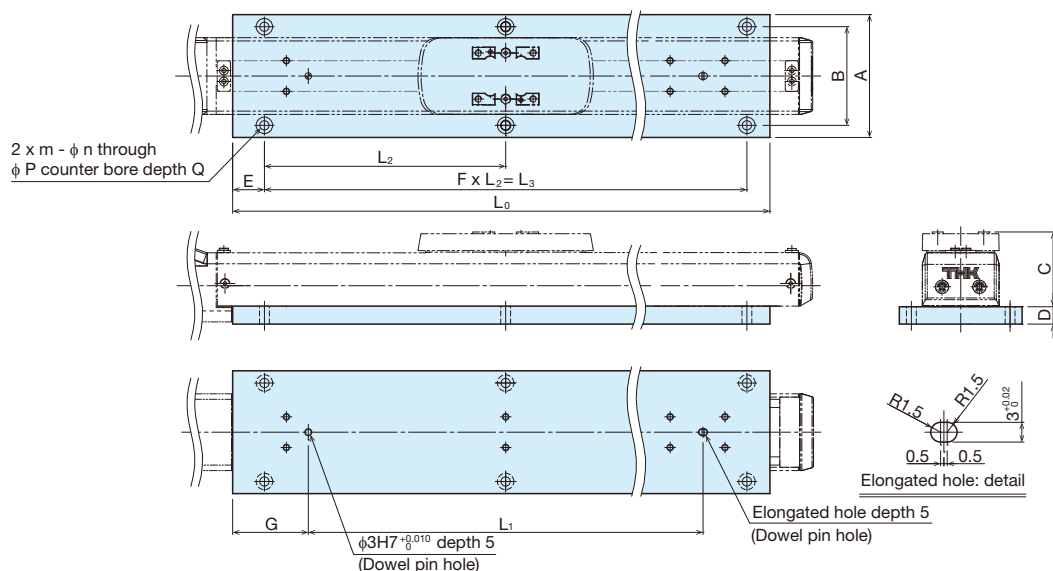
^{*3} Values when a brake is installed are shown in parentheses.

Options

SB: Slider base

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

* The product is shipped with this optional assembled.



Unit: mm

Model	A	B	C	D
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 is provided with CKRF6 only.

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

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

Note 5) Proximity sensors placed too close to each other may not work properly. In such a case, please prepare a different frequency type of sensor. (For specifications, contact each manufacturer.)

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

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

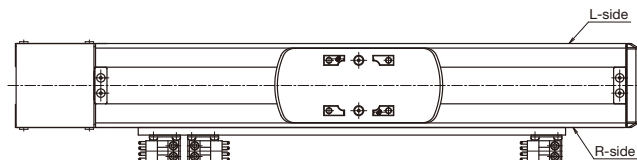
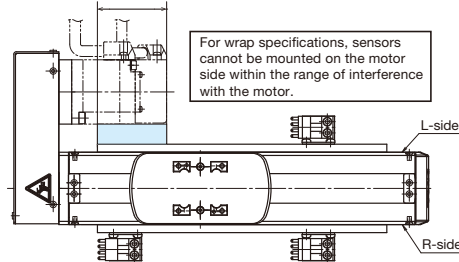
N.O. contact: Normally open contact point

N.C. contact: Normally closed contact point

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

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

The range of interference with the motor



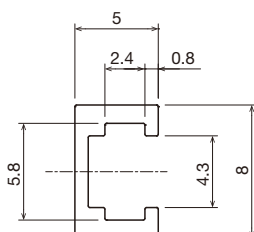
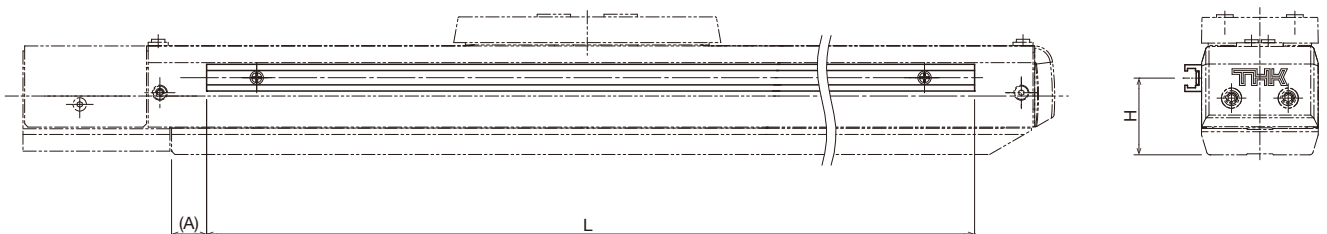
Option: Sensor symbol

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

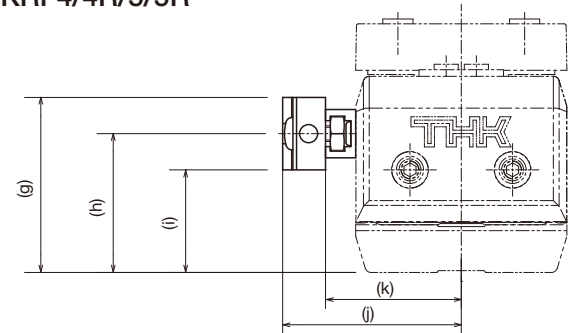


Unit: mm

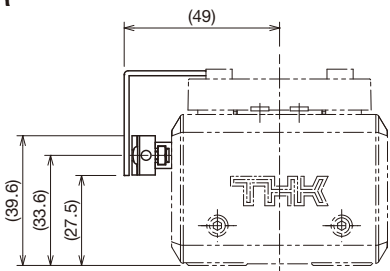
Model	H	(A)	L
KRF4/KRF4R	32.5	10.5	Stroke +80
KRF5/KRF5R	37.5	26	
KRF6/KRF6R	33.7	35	

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

KRF4/4R/5/5R



KRF6/6R



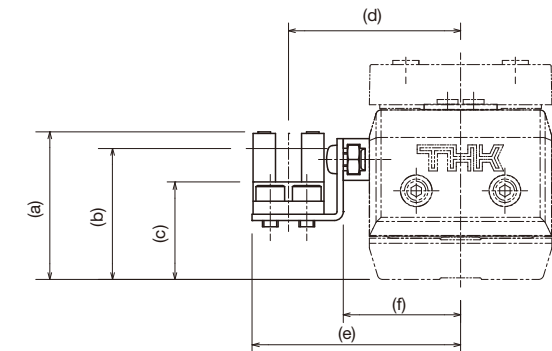
Sensor dog width: 26mm

Unit: mm

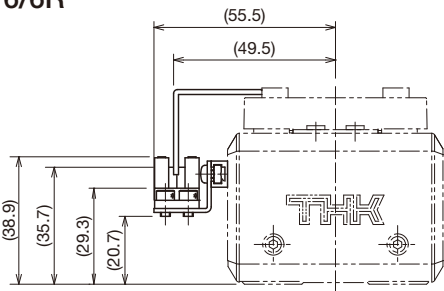
Model	g	h	i	j	k
KRF4/KRF4R	38.5	32.5	26.5	34.6	27.5
KRF5/KRF5R	43.5	37.5	31.5	39.6	32.5

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

KRF4/4R/5/5R



KRF6/6R



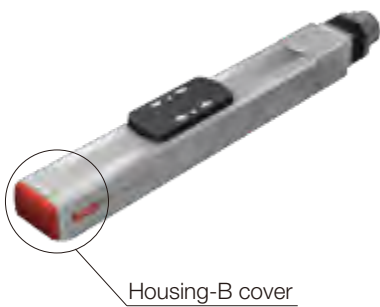
Sensor dog width: 26mm

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.



No symbol: red



When GR is selected: gray

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