ELECTRIC ACTUATORS

NEW

Clean series

CKSF/CKRF

Newly Added New size CKSF 10 Lineup
Maximum speed 2500 mm/s, maximum stroke 1500 mm

For details, visit THK at **www.thk.com**

＊ Product information is updated regularly on the THK website.

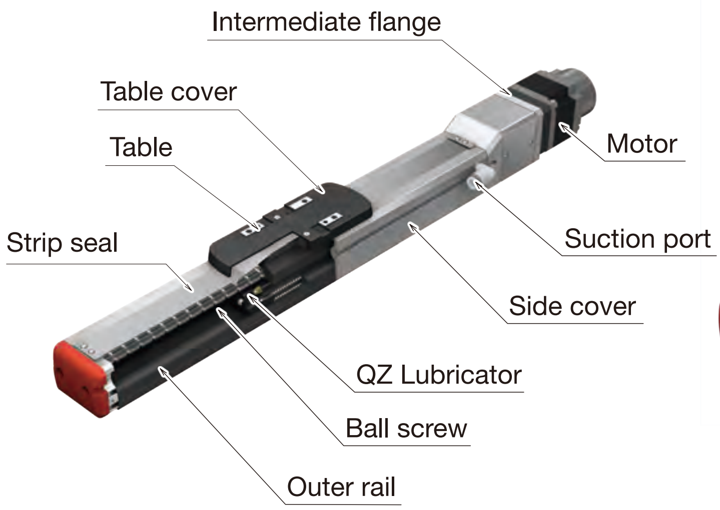
THK CO., LTD.
TOKYO. JAPAN

CATALOG No.386-8E

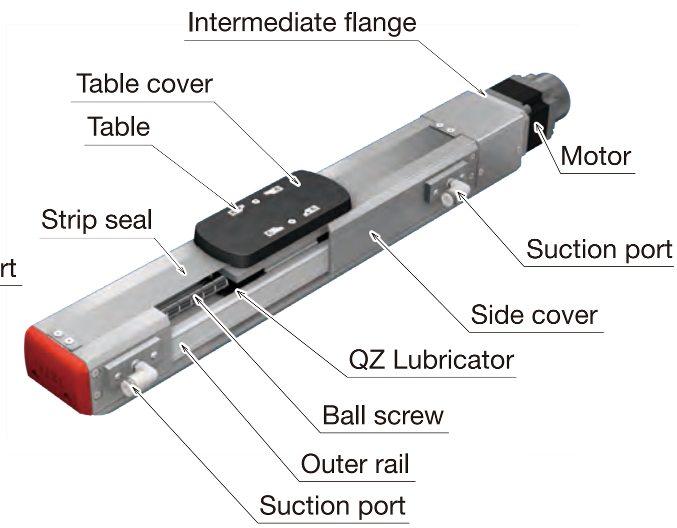
Clean Series

CKSF/CKRF

Low Dust Generation Type of Compact Series KSF/KRF



CKSF Structure



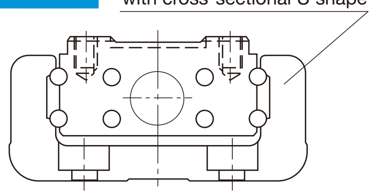
CKRF Structure

Features and Lineup of the Compact Series

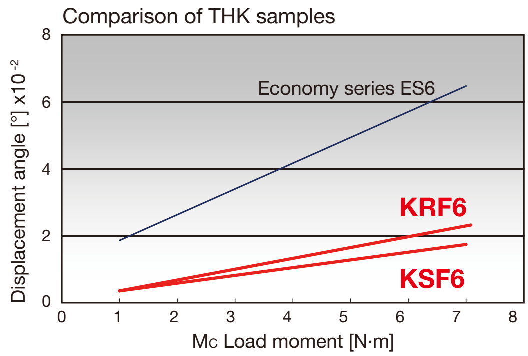
Use of a steel outer rail with a cross-sectional U shape enables to receive larger moment.

KR/SKR

Steel outer rail with cross-sectional U shape



4-way equal loads, high rigidity



SKR

High Speed
Long service life
Caged

KSF

High speed & high acceleration/deceleration
Long stroke

KR

Basic Model of Compact Series
Versatile size options
Consistent seller

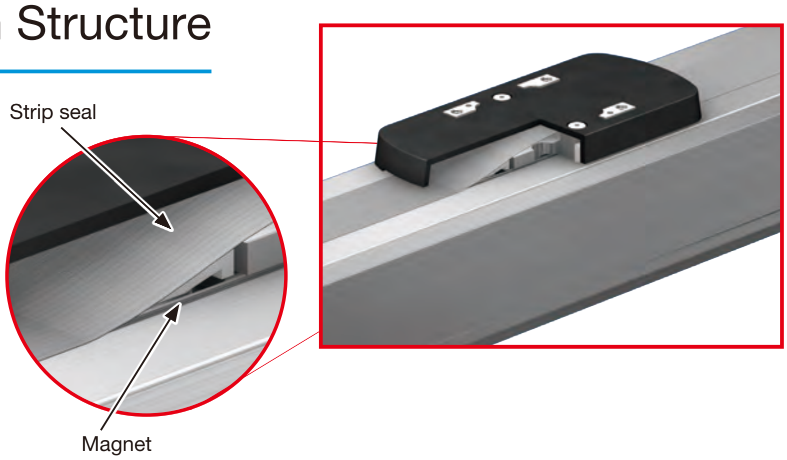
KRF

Fully enclosed
High Speed

Features

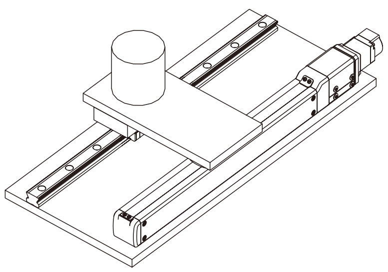
1 Low Dust Generation Structure

The novel mechanism of the full cover structure allows for low particle generation by avoiding sliding contact with the top surface of the strip seal. Additionally, adoption of the clean specification one-touch KPQL pipe fitting (made by SMC Co., Ltd.) dramatically reduces the dust generated by allowing suction to occur.
Suction fitting can be mounted on either the left or right side.

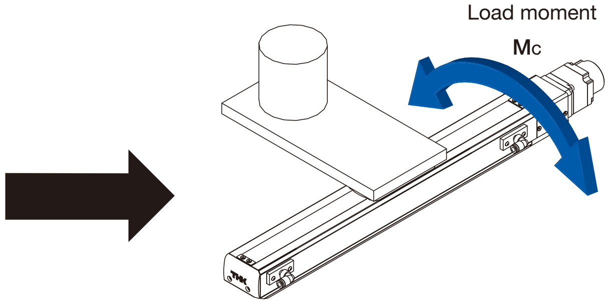


2 High rigidity

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 using the auxiliary guide



Layout example of cantilever configuration

3 Long-term maintenance-free operation

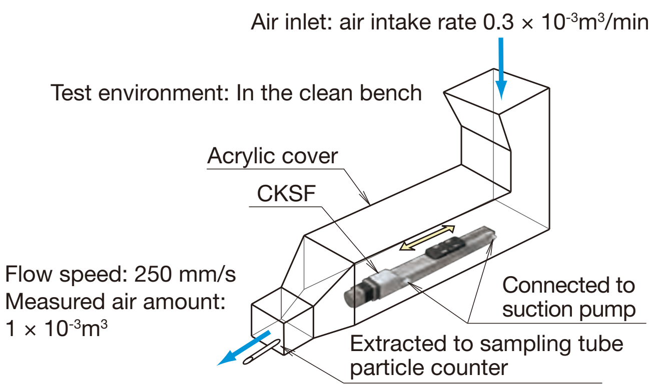
Lubricator QZ, which supplies the right amount of lubricant, is adopted as a standard feature to allow for long-term maintenance-free operation.

4 Increased Rated Output of the Applicable Motors (CKSF)

Larger diameter ball screw shaft. The ball screw end part is also larger.
Using a larger rated output motor allows high-speed and high-acceleration/deceleration operations without changing the main unit size.

Dust generation test (for reference)

Measurement method (CKSF)



<Test conditions>

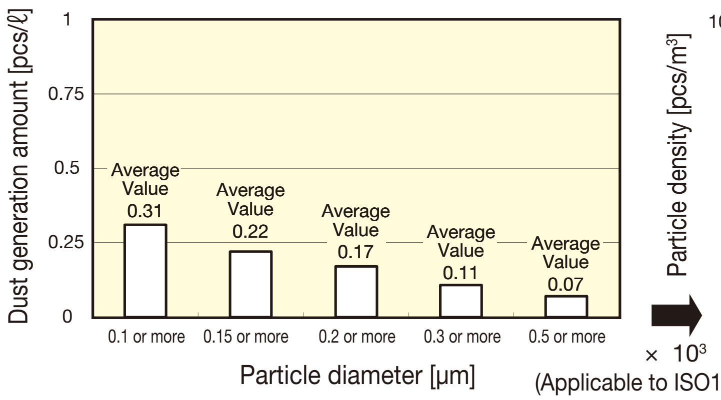
Item	Description
Model	CKSF4-10-0400
Stroke	400mm
Rate	500mm/s
Acceleration and deceleration rate	9.8 m/s^2(1.0 G)
Vacuum rate	30 × 10^{-3} m^3/min (30ℓ/min)
Load	None

<Measurement conditions>

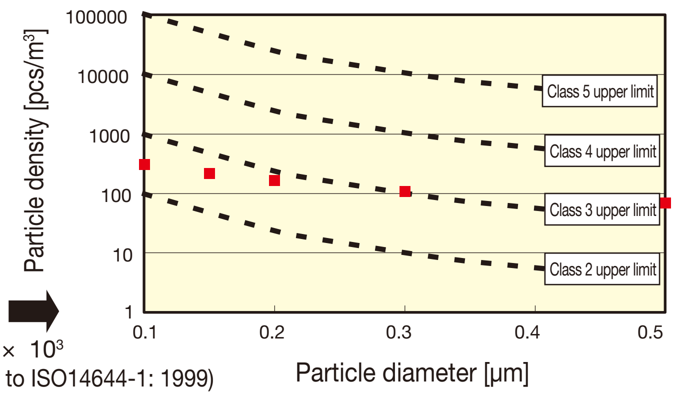
Item	Description
Measuring equipment	Particle counter (KC-18 supplied by Rion Co., Ltd.)
Flow speed at measurement point	250mm/s
Air intake rate	0.3 × 10^{-3} m^3/min (0.3ℓ/min)
Measured air amount	1 × 10^{-3} m^3 (1ℓ)
Measurement time	50h

Measurements

Evaluation result of 50 hour continuous running for CKSF4 (maximum speed 500 mm/s)



Air cleanliness class: ISO014644-1: 1999



Air cleanliness class evaluation test for CKSF

Model	Stroke [mm]	Speed [mm/s]	Acceleration and deceleration rate [m/s^2]	Vacuum rate *1 x10^{-3} [m^3/min]	Air cleanliness class: *2*3 (ISO14644-1: 1999)
CKSF4-10-0400	400	500	9.8	30	Class 4
CKSF5-20-0600	600	1000	19.6	50	Class 6
CKSF6-30-0650	650	1500	19.6	60	Class 5
CKSF8-40-0750	750	2000	19.6	160	Class 5
CKSF10-50-0850	850	2500	14.7	230	Class 7

*1 The vacuum rate does not include the effect of piping resistance. Piping resistance is dependent on the piping length and piping diameter, and can reduce the flow amount.

*2 The air cleanliness class varies with the use conditions.

*3 The sliding part of the strip seal will show initial wear. (Evaluation test results represent post-initial wear data.) Additionally, the measurement data is for reference and does not ensure an air cleanliness class.

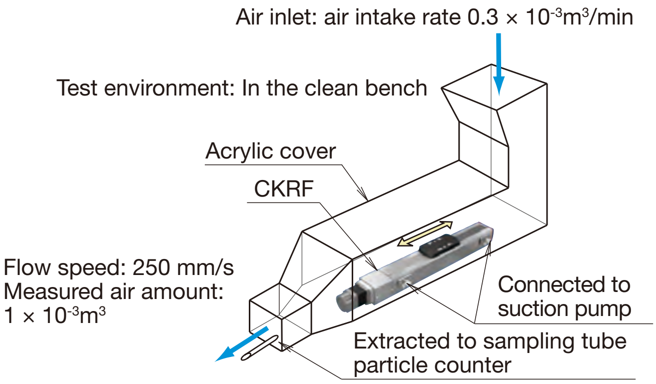
Upper concentration limit of cleanliness based on ISO14644-1: 1999 **(reference)**

Unit: pcs/m^3

Particle diameter	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7
0.1 µm or more	10	100	1000	10000	100000	1000000	-
0.2 µm or more	2	24	237	2370	23700	237000	-
0.3 µm or more	-	10	102	1020	10200	102000	-
0.5 µm or more	-	4	35	352	3520	35200	352000

Dust generation test (for reference)

Measurement method (CKRF)



<Test conditions>

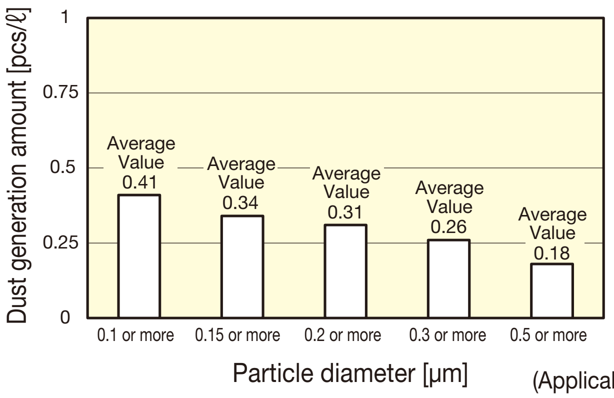
Item	Description
Model	CKRF5-10-0300A-0
Stroke	300mm
Rate	500mm/s
Acceleration and deceleration rate	4.9 m/s² (0.5 G)
Vacuum rate	12 × 10^{-3} m³/min (12ℓ/min)
Load	None

<Measurement conditions>

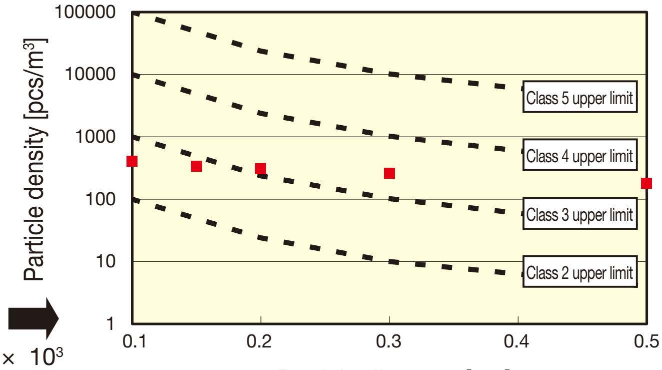
Item	Description
Measuring equipment	Particle counter (KC-18 supplied by Rion Co., Ltd.)
Flow speed at measurement point	250mm/s
Air intake rate	0.3 × 10^{-3} m³/min (0.3ℓ/min)
Measured air amount	1 × 10^{-3} m³ (1ℓ)
Measurement time	50h

Measurements

Evaluation result of 50 hour continuous running for CKRF5 (maximum speed 500 mm/s)



× 10^3
(Applicable to ISO14644-1: 1999)



Air cleanliness class evaluation test for CKRF

Model	Stroke [mm]	Speed [mm/s]	Acceleration and deceleration rate [m/s²]	Vacuum rate *1 x10^{-3} [m³/min]	Air cleanliness class: *2*3 (ISO14644-1: 1999)
CKRF4-06-0150A-0	150	300	4.9	10	Class 4
CKRF5-10-0300A-0	300	500	4.9	12	Class 4
CKRF6-10-0400A-0	400	500	4.9	15	Class 4

*1 The vacuum rate does not include the effect of piping resistance. Piping resistance is dependent on the piping length and piping diameter, and can reduce the flow amount.
*2 The air cleanliness class varies with the use conditions.
*3 The sliding part of the strip seal will show initial wear. (Evaluation test results represent post-initial wear data.)
Additionally, the measurement data is for reference and does not ensure an air cleanliness class.

Upper concentration limit of cleanliness based on ISO14644-1: 1999 **(reference)**

Unit: pcs/m³

Particle diameter	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6
0.1 μm or more	10	100	1000	10000	100000	1000000
0.2 μm or more	2	24	237	2370	23700	237000
0.3 μm or more	-	10	102	1020	10200	102000
0.5 μm or more	-	4	35	352	3520	35200

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
CKRF4	6	50 to 300	Stepper motor □35	6.5	6	4
CKRF5	6	50 to 550	Stepper motor □42	20	14.5	7.5
	10	50 to 550		10	10	6

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

Lineup List (Servo Driver Controller TLC/THC Specification)

CKSF

CKRF

Model	Ball screw lead [mm]	Stroke [mm]	Rated speed *1 [mm/s]	Motor rated output [W]	Acceleration and deceleration rate [G]	Maximum load capacity [kg]		
						Horizontal mount	Wall mount	Vertical mount
CKRF4	6	50 to 300	300	50	Horizontal/wall mount: 0.5 vertical : 0.3	6	5.5	4
CKRF5	6	50 to 550	300	50	Horizontal/wall mount: 0.5 vertical : 0.3	19	14	6
	10	50 to 550	500			15	12.5	3.5
CKRF6	6	50 to 800	300	100	Horizontal/wall mount: 0.5 vertical : 0.3	35	24	10
	10	50 to 800	500			30	22	5
CKSF4	10	50 to 900	500	100	0.5	12		8
					1.0	8		6
	16	50 to 900	800	100	1.0	8		6
					2.0	6		4
CKSF5	10	50 to 900	500	100	0.5	20		13
					1.0	15		8
	20	50 to 900	1000		1.0	7		6
					2.0	5		3
CKSF6	20	50 to 1300	1000	200	1.0	22		10
					2.0	5		3
	30	50 to 1300	1500		1.0	14		6
					2.0	6		4
CKSF8	20	100 to 1500	1000	400	1.0	43		20
					2.0	6		3
	40	100 to 1500	2000		1.0	16		8
					2.0	7		5
CKSF10	25	100 to 1500	1250	750	1.0	60		25
					1.5	26		13
	50	100 to 1500	2500		1.0	17		9
					1.5	8		5

*1 At rated motor speed (3000min^{-1}).
*2 The maximum speed is the value restricted by the motor rotational speed (at 3000 min^{-1}) or by the permissible rotational speed of the ball screw.

<table>
<tr><td></td><td colspan="16">Maximum speed for each stroke *1 [mm/s]</td></tr>
<tr><td></td><td colspan="16">Stroke [mm]</td></tr>
<tr><td></td><td>50</td><td>100</td><td>150</td><td>200</td><td>250</td><td>300</td><td>350</td><td>400</td><td>450</td><td>500</td><td>550</td><td>600</td><td>650</td><td>700</td><td>750</td><td>800</td></tr>
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<tr><td></td><td colspan="10">500</td><td>430</td><td></td><td></td><td></td><td></td><td></td></tr>
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<table>
<tr><td></td><td colspan="23">Maximum speed for each stroke *2 [mm/s]</td></tr>
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<tr><td></td><td>300</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td colspan="5">300</td><td>250</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
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<tr><td></td><td colspan="6">500</td><td>430</td><td>370</td><td>320</td><td>290</td><td>250</td><td>230</td><td>200</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
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Model Configuration

CKSF (THC Specifications)

When combining with dedicated driver controller

Model	Ball screw lead	Stroke	Control device	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable length and type
CKSF4 -	10 -	0050 -	TH -	GR-6 /	M10	L	S02	D1	H3
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
CKSF4	10: 10 mm	0050: 50 mm	TH: THC	No symbol: None	M10: 100 W	R : Right	D00: Motor side	D1:100 V	No symbol : None
CKSF5	16: 16 mm	to		T: Back tap	M20: 200 W	L : Left	R00: Reverse motor side	D2: 200 V	F3 : Standard 3 m
CKSF6	20: 20 mm	1500: 1500 mm		GR: Change the cover color to gray	M40: 400 W	U : Up	S02: Motor side (sensor right)		F5 : Standard 5 m
CKSF8	25: 25 mm			□: Sensors	M75: 750 W	D : Down	S03: Motor side (sensor right)		FA : Standard 10 m
CKSF10	30: 30 mm				M10B: 100 W with brake		S20: Motor side (sensor left)		H3 : High flex 3 m
	40: 40 mm				M20B: 200 W with brake		S30: Motor side (sensor left)		H5 : High flex 5 m
	50: 50 mm				M40B: 400 W with brake				HA : High flex 10 m
					M75B: 750 W with brake				

Ball screw leads you can select differ depending on models.
CKSF4: “10”, “16”
CKSF5: “10”, “20”
CKSF6: “20”, “30”
CKSF8: “20”, “40”
CKSF10: “25”, “50”

Separate order for the control device is required.

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

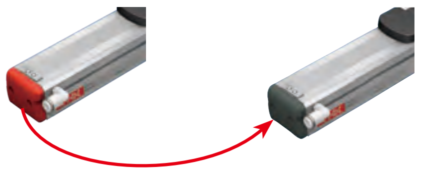
Motors you can select differ depending on models.
CKSF4: “M10”, “M10B”
CKSF5: “M10”, “M10B”
CKSF6: “M20”, “M20B”
CKSF8: “M40”, “M40B”
CKSF10: “M75”, “M75B”

D00 and R00 are mechanical home seeking.

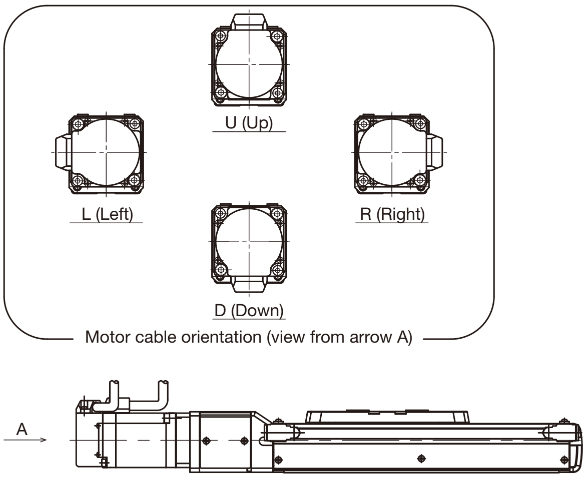
Indicates the type and length of attached cables.

Stroke and stroke pitch differ depending on models.
CKSF4: 50 to 900 mm
(in 50 mm pitch increments)
CKSF5: 50 to 900 mm
(in 50 mm pitch increments)
CKSF6: 50 to 1300 mm
(in 50 mm pitch increments)
CKSF8: 100 to 1500 mm
(in 100 mm pitch increments)
CKSF10: 100 to 1500 mm
(in 100 mm pitch increments)

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



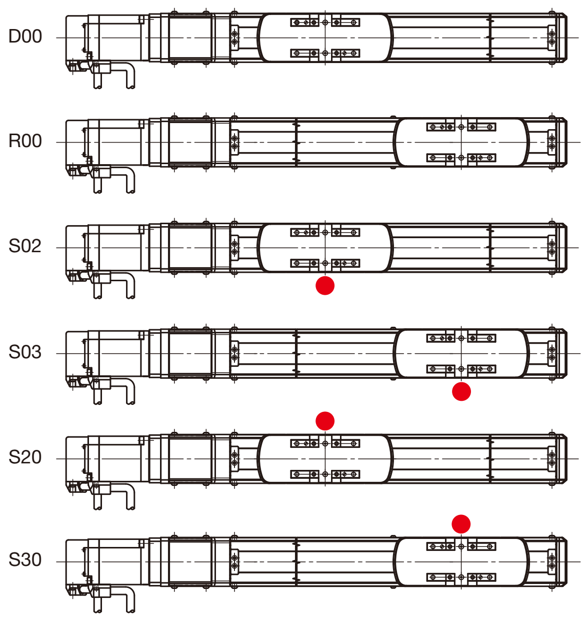
Motor cable orientation



Motor cable orientation (view from arrow A)

Home position

●: Position of the external home position sensor



Pages for detailed description

(5) Option	
	T: Back tap → P.31
	GR: Change the cover color to gray → P.32
	□: Sensors → P.32

Model Configuration

CKSF (type without motor)

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

Model		Ball screw lead		Stroke		With/without motor		Intermediate flange		Option
CKSF4	-	10	-	0050	-	0	-	AQ	-	T-GR
(1)		(2)		(3)		(4)		(5)		(6)

(1) Model

CKSF4
CKSF5
CKSF6
CKSF8
CKSF10

(2) Ball screw lead

10: 10 mm
16: 16 mm
20: 20 mm
25: 25 mm
30: 30 mm
40: 40 mm
50: 50 mm

Ball screw leads you can select differ depending on models.
CKSF4: “10”, “16”
CKSF5: “10”, “20”
CKSF6: “20”, “30”
CKSF8: “20”, “40”
CKSF10: “25”, “50”

(3) Stroke

0050: 50 mm
to
1500: 1500 mm

Stroke and stroke pitch differ depending on models.
CKSF4:50 to 900 mm (in 50 mm pitch increments)
CKSF5:50 to 900 mm (in 50 mm pitch increments)
CKSF6:50 to 1300 mm (in 50 mm pitch increments)
CKSF8:100 to 1500 mm (in 100 mm pitch increments)
CKSF10:100 to 1500 mm (in 100 mm pitch increments)

(4) With/without motor

0: Without motor
1: With motor

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

* Specify the motor cable orientation separately.

(5) Intermediate flange

A0
AQ
AP
AR
AV
AY
AU
AZ
A5
A6

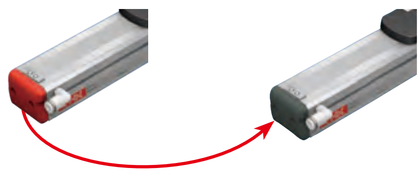
(6) Option

No symbol: None
T: Back tap
GR: Change the cover color to gray
□: Sensors

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

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)	CKSF4-10-0800-TH-GR-6/M10RS02D1H3
Main unit only (type without motor)	CKSF4-10-0150-0-AQ-GR
Main unit only (when the motor specified by the customer is installed)	CKSF5-10-0500-1-AQ-6

Pages for detailed description

(5) Intermediate flange	→ P.33
(6) Options	T: Back tap → P.31
	GR: Change the cover color to gray → P.32
	□: Sensors → P.32

Model Configuration

CKRF (type with motor)

When combining with dedicated driver controller

Model	Ball screw lead	Stroke	Design symbol	Control device	Option	Motor size / motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
CKRF6 -	06 -	0050	A -	TH -	GR-R6 /	M10	R	D00	D1	F3
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
CKRF4	06: 6 mm	0050: 50 mm	A	TS: TSC	No symbol: None	35P: Stepper motor □35	No symbol: When selecting TSC	D00: Motor side	No symbol: When selecting TSC or TLC	No symbol : None
CKRF5	10: 10 mm	to		TL: TLC	GR: Change the cover color to gray	42P: Stepper motor □42	R:Right	R00: Reverse motor side	D1:100 V	S3 : Standard 3 m
CKRF6		0800: 800 mm		TH: THC	SB: Slider base	M05: 50 W	L: Left	S02: Motor side	D2: 200 V	S5 : Standard 5 m
					□1□2: Sensor	M10:100 W	U: Up	S03: Reverse motor side		SA : Standard 10 m
						35PB: Stepper motor □35 With brake	D: Down			F3 : Standard 3 m
						42PB: Stepper motor □42 With brake				F5 : Standard 5 m
						M05B: 50 W with brake				FA : Standard 10 m
						M10B: 100 W with brake				H3 : High flex 3 m
										H5 : High flex 5 m
										HA : High flex 10 m

CKRF4 has a ball screw lead of 6 mm only.

Control device you can select differ depending on models.
CKRF4: TSC, TLC
CKRF5: TSC, TLC
CKRF6: THC
* Separate order for the control device is required.

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

S0 ∗(external sensor specification) only when selecting THC.

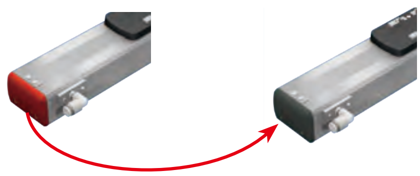
Motors you can select differ depending on models.
CKRF4: "35P", "35PB"
"M05", "M05B"
CKRF5: "42P", "42PB"
"M05", "M05B"
CKRF6: "M10", "M10B"

Only when selecting TLC, THC

THC Only when selecting

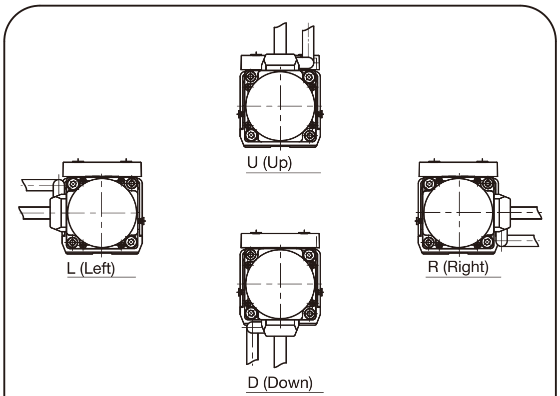
Maximum stroke differs depending on models.
CKRF4: 300 mm
CKRF5: 550 mm
CKRF6: 800 mm

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

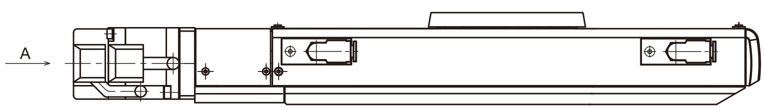


Indicates the type and length of attached cables. Control device you can select differ depending on models.
TSC: "S ∗"
TLC: "F ∗", "H ∗"
THC: "F ∗", "H ∗"

Motor cable orientation



Motor cable orientation (view from arrow A)



Pages for detailed description

(6) Options	SB: With slider base → P.57
	GR: Change the cover color to gray → P.58
	□1□2: Sensor → P.58

Model Configuration

CKRF (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	Design symbol		With/without motor		Intermediate flange		Option
CKRF4	-	06	-	0300	A	-	0	-	AQ	-	GR-SB-R6
(1)		(2)		(3)	(4)		(5)		(6)		(7)

(1) Model
- CKRF4
- CKRF5
- CKRF6

(2) Ball screw lead
- 06: 6 mm
- 10: 10 mm

CKRF4 has a ball screw lead of 6 mm only.

(3) Stroke
- 0050: 50 mm
- to
- 0800: 800 mm

Maximum stroke differs depending on models.
CKRF4: 300 mm
CKRF5: 550 mm
CKRF6: 800 mm

(4) Design symbol
- A

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

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

* Specify the motor cable orientation separately.

(6) Intermediate flange
- A0: Without intermediate flange
- AN
- AQ
- AM
- AP
- AS
- AR
- AU
- AT

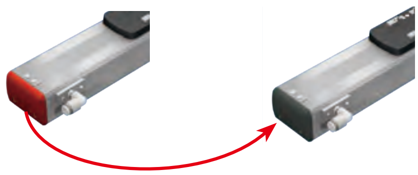
(7) Option
- No symbol: None
- GR: Change the cover color to gray
- SB: Slider base
- □1□2: Sensor

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

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 (TSC)	CKRF4-06-0250A-TS/35PD00SA
When combining with dedicated driver controller (TLC)	CKRF4-06-0150A-TL-GR-SB-R6/M05BRD00F3
When combining with dedicated driver controller (THC)	CKRF6-10-0800A-TH-GR-R6/M10RS02D1H3
Main unit only (type without motor)	CKRF4-06-0150A-0-AM-GR
Main unit only (when the motor specified by the customer is installed)	CKRF5-10-0500A-1-AQ-L6

Pages for detailed description

(6) Intermediate flange	→ P.59
(7) Options	SB: With slider base → P.57
	GR: Change the cover color to gray → P.58
	□1□2: Sensor → P.58

CKSF4 THC Specifications

Model Configuration

Model		Ball screw Lead		Stroke		Control device		Option		Motor rated output	Motor Cable orientation	Home position	Power supply Voltage	Cable Length and type
CKSF4	-	10	-	0050	-	TH	-	GR-6	/	M10	R	S02	D1	F3

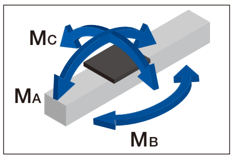
Model	Ball screw Lead	Stroke	Control device	Option	Motor rated output	Motor Cable orientation	Home position	Power supply Voltage	Cable Length and type
CKSF4	10: 10 mm 16: 16 mm	0050: 50 mm to 0900: 900 mm	TH: THC	No symbol: None T: Back tap GR: Change the cover color to gray 6: Photo sensor J: Proximity sensor	M10 : 100 W M10B : 100 W With brake	R : Right L : Left U : Up D : Down	D00 : Motor side R00 : Reverse motor side S02 : Motor side (sensor right) S03 : Reverse motor side (sensor right) S20 : Motor side (sensor left) S30 : Reverse motor side (sensor left)	D1:100 V D2: 200 V	No symbol : None F3 : Standard 3 m F5 : Standard 5 m FA : Standard 10 m H3 : High flex 3 m H5 : High flex 5 m HA : High flex 10 m

Basic Specifications

Control device type				THC	
Motor rated output [W]				100	
Ball screw lead [mm]				10	16
Rated speed *1 [mm/s]				500	800
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.5G	12	-
			1.0G	8	8
			2.0G	-	6
		Vertical mount	0.5G	8	-
			1.0G	6	6
			2.0G	-	4
Rated thrust *3 [N]				180	112
Maximum thrust *4 [N]				537	336
Electromagnetic brake retention [N]				180	112
Running life *5 [km]				10,000	20,000
Positioning repeatability [mm]				±0.010	
Lost motion [mm]				0.1	
Static permissible moment *6 [N·m]				M_A: 103 M_B: 103 M_C: 58	
Guideline value of vacuum rate *7 × 10^{-3} [m^3/min]				30	

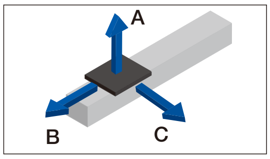
*1 At rated motor speed (3000 min^{-1}).
*2 At rated speed.
*3 At rated motor torque.
*4 The maximum thrust is a value at the maximum peak torque of the motor.
*5 The conditions for calculation are as follows:
Conditions: Horizontal mount, wall mount, or vertical mount, under the maximum load capacity, stroke 500 mm
*6 Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.
*7 The vacuum rate does not include the effect of piping resistance.

Static Permissible Moment

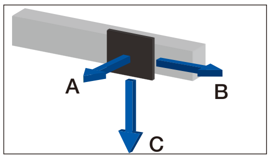


Permissible Overhang Length *8

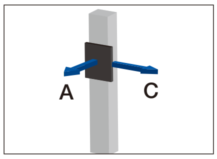
Horizontal use



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]

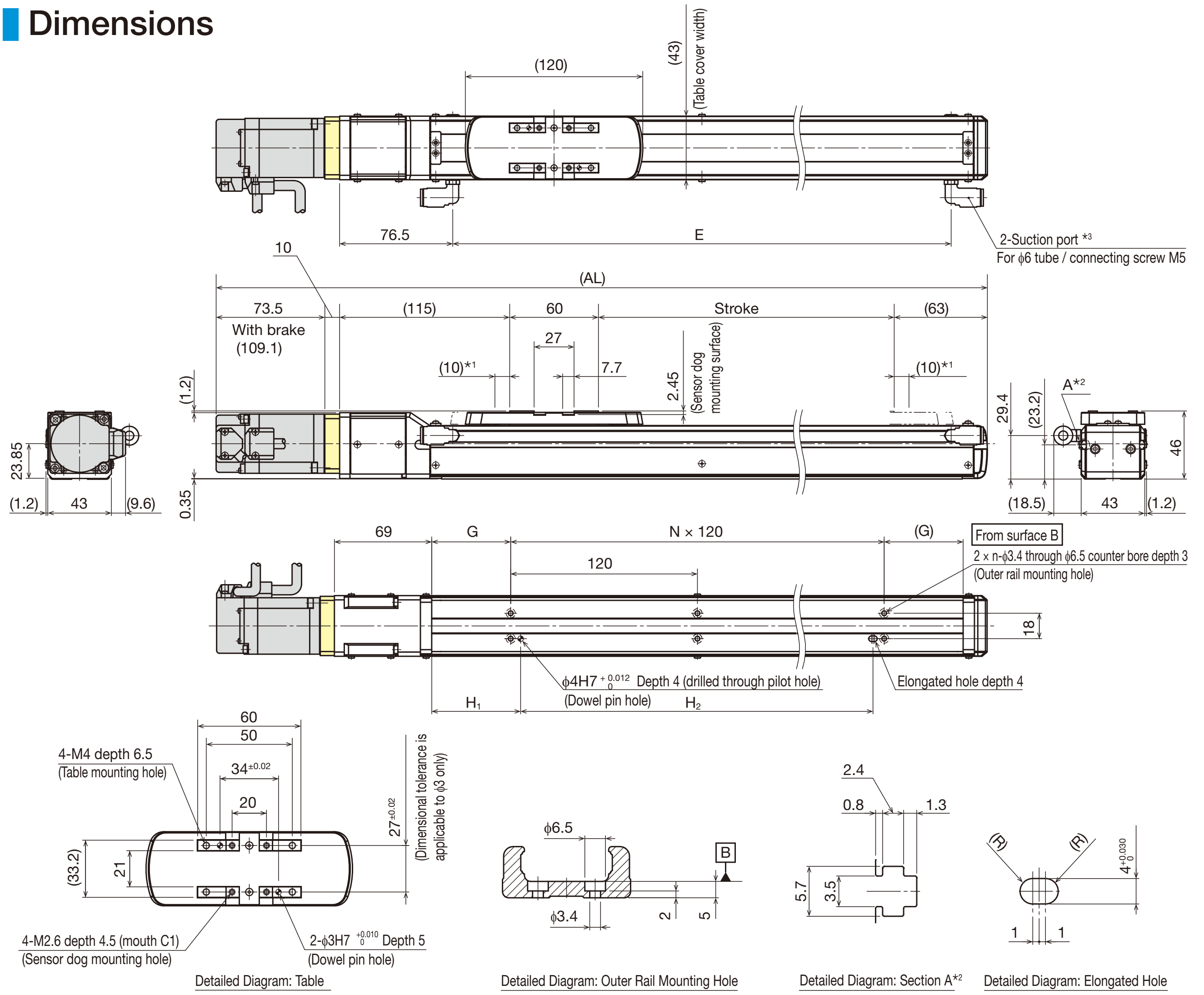
Ball screw lead [mm]	Load mass [kg]	A	C
10	1.5	400	400
	3	190	190
	6	80	80
16	1	400	400
	2	190	190
	4	80	80

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

CKSF4 + THC

Motor rated output
100W

Dimensions



*1 Stroke up to mechanical stopper.
*2 The T slot in Section A is provided exclusively for sensor mounting. Do not use it for any other purpose.
*3 Suction fitting can be mounted on either side.

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 [mm/s]	Ball screw lead: 10 mm	500								
	Ball screw lead: 16 mm	800								
Dimensions *5 [mm]	AL	371.5 (407.1)	421.5 (457.1)	471.5 (507.1)	521.5 (557.1)	571.5 (607.1)	621.5 (657.1)	671.5 (707.1)	721.5 (757.1)	771.5 (807.1)
	G	41	66	91	56	81	46	71	96	61
	H_1	48	48	48	63	63	63	48	48	48
	H_2	75	125	175	225	275	325	375	425	475
	E	187	237	287	337	387	437	487	537	587
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 *5 [kg]		2.1 (2.3)	2.3 (2.5)	2.4 (2.6)	2.6 (2.8)	2.8 (3.0)	3.0 (3.2)	3.2 (3.4)	3.4 (3.6)	3.6 (3.8)
Stroke [mm] (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 [mm/s]	Ball screw lead: 10 mm	500		430	370	320	290	250	230	200
	Ball screw lead: 16 mm	800		690	600	520	460	410	360	330
Dimensions *5 [mm]	AL	821.5 (857.1)	871.5 (907.1)	921.5 (957.1)	971.5 (1007.1)	1021.5 (1057.1)	1071.5 (1107.1)	1121.5 (1157.1)	1171.5 (1207.1)	1221.5 (1257.1)
	G	86	51	76	41	66	91	56	81	46
	H_1	63	63	63	48	48	48	63	63	63
	H_2	525	575	625	675	725	775	825	875	925
	E	637	687	737	787	837	887	937	987	1037
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 *5 [kg]		3.8 (4.0)	4.0 (4.2)	4.1 (4.3)	4.3 (4.5)	4.5 (4.7)	4.7 (4.9)	4.9 (5.1)	5.1 (5.3)	5.3 (5.5)

*4 The maximum speed is the value restricted by the motor rotational speed (at 3000 min^{-1}) or by the permissible rotational speed of the ball screw.
*5 Values when a brake is installed are shown in parentheses.

CKSF5 THC Specifications

Model Configuration

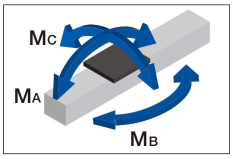
Model	Ball screw lead	Stroke	Control device	Option	Motor rated output	Motor cable orientation	Home position	Power supply Voltage	Cable length and type
CKSF5 -	10 -	0050 -	TH -	GR-6 /	M10	L	S02	D1	F3
CKSF5	10: 10 mm	0050: 50 mm	TH: THC	No symbol: None	M10 : 100 W	R : Right	D00 : Motor side	D1:100 V	No symbol : None
	20: 20 mm	to		T: Back tap	M10B : 100 W With brake	L : Left	R00 : Reverse motor side	D2: 200 V	F3 : Standard 3 m
		0900: 900 mm		GR: Change the cover color to gray		U : Up	S02 : Motor side (sensor right)		F5 : Standard 5 m
				6: Photo sensor		D : Down	S03 : Reverse motor side (sensor right)		FA : Standard 10 m
				J: Proximity sensor			S20 : Motor side (sensor left)		H3 : High flex 3 m
							S30 : Reverse motor side (sensor left)		H5 : High flex 5 m
									HA : High flex 10 m

Basic Specifications

Control device type				THC	
Motor rated output [W]				100	
Ball screw lead [mm]				10	20
Rated speed *1 [mm/s]				500	1,000
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.5G	20	-
			1.0G	15	7
			2.0G	-	5
		Vertical mount	0.5G	13	-
			1.0G	8	6
			2.0G	-	3
Rated thrust *3 [N]				180	90
Maximum thrust *4 [N]				537	269
Electromagnetic brake retention [N]				180	90
Running life *5 [km]				10,000	20,000
Positioning repeatability [mm]				±0.010	
Lost motion [mm]				0.1	
Static permissible moment *6 [N·m]				M_A: 147 M_B: 147 M_C: 149	
Guideline value of vacuum rate *7 × 10^{-3} [m^3/min]				50	

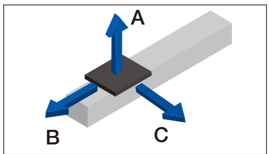
*1 At rated motor speed (3000 min^{-1}).
*2 At rated speed.
*3 At rated motor torque.
*4 The maximum thrust is a value at the maximum peak torque of the motor.
*5 The conditions for calculation are as follows:
Conditions: Horizontal mount, wall mount, or vertical mount, under the maximum load capacity, stroke 500 mm
*6 Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.
*7 The vacuum rate does not include the effect of piping resistance.

Static Permissible Moment

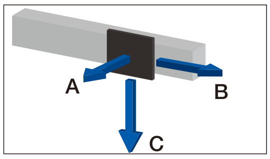


Permissible Overhang Length *8

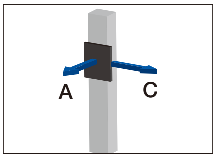
Horizontal use



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]

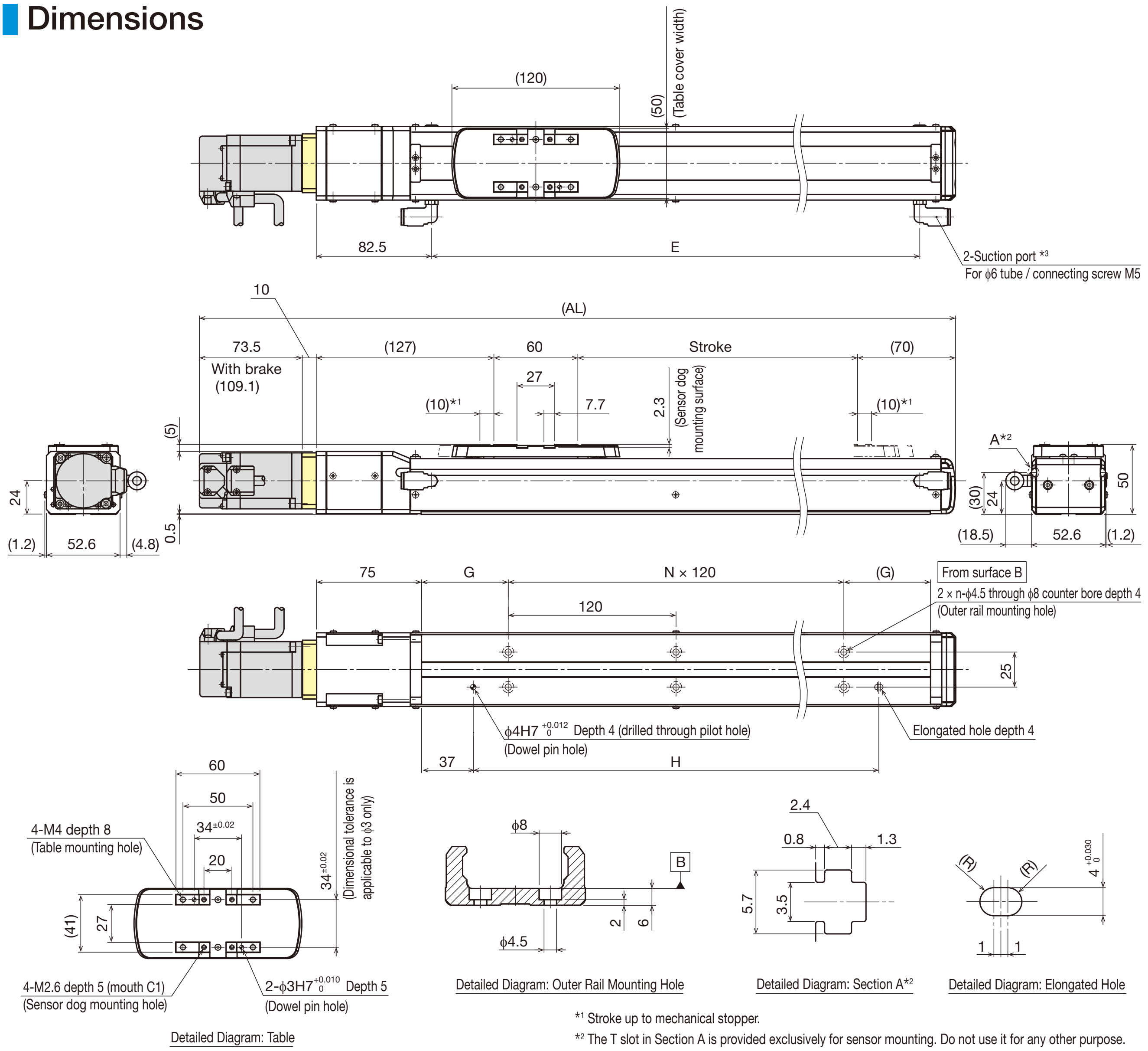
Ball screw lead [mm]	Load mass [kg]	A	C
10	2	500	500
	4	230	230
	8	100	100
20	0.75	500	500
	1.5	410	410
	3	190	190

*8 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.

CKSF5 + THC

Motor rated output
100W

Dimensions



*1 Stroke up to mechanical stopper.
*2 The T slot in Section A is provided exclusively for sensor mounting. Do not use it for any other purpose.
*3 Suction fitting can be mounted on either side.

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 [mm/s]	Ball screw lead: 10 mm	500								
	Ball screw lead: 20 mm	1000								
Dimensions *5 [mm]	AL	390.5 (426.1)	440.5 (476.1)	490.5 (526.1)	540.5 (576.1)	590.5 (626.1)	640.5 (676.1)	690.5 (726.1)	740.5 (776.1)	790.5 (826.1)
	G	47	72	97	62	87	52	77	102	67
	H	140	190	240	290	340	390	440	490	540
	E	199	249	299	349	399	449	499	549	599
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 *5 [Kg]		2.8 (3.0)	3.1 (3.3)	3.4 (3.6)	3.7 (3.9)	3.9 (4.1)	4.2 (4.4)	4.5 (4.7)	4.8 (5.0)	5.1 (5.3)
Stroke [mm] (Stroke between mechanical stoppers)		500 (520)	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)	850 (870)	900 (920)
Maximum speed *4 [mm/s]	Ball screw lead: 10 mm	500			440	390	340	310	270	250
	Ball screw lead: 20 mm	1000			890	780	690	620	550	500
Dimensions *5 [mm]	AL	840.5 (876.1)	890.5 (926.1)	940.5 (976.1)	990.5 (1026.1)	1040.5 (1076.1)	1090.5 (1126.1)	1140.5 (1176.1)	1190.5 (1226.1)	1240.5 (1276.1)
	G	92	57	82	47	72	97	62	87	52
	H	590	640	690	740	790	840	890	940	990
	E	649	699	749	799	849	899	949	999	1049
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 *5 [Kg]		5.3 (5.5)	5.6 (5.8)	5.9 (6.1)	6.2 (6.4)	6.5 (6.7)	6.7 (6.9)	7.0 (7.2)	7.3 (7.5)	7.6 (7.8)

*4 The maximum speed is the value restricted by the motor rotational speed (at 3000 min^{-1}) or by the permissible rotational speed of the ball screw.
*5 Values when a brake is installed are shown in parentheses.

CKSF6 THC Specifications

Model Configuration

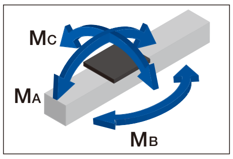
Model	Ball screw lead	Stroke	Control device	Option	Motor rated output	Motor cable orientation	Home position	Power supply Voltage	Cable length and type
CKSF6 -	30 -	0050 -	TH -	GR-6 /	M20	R	S02	D1	F3
CKSF6	20: 20 mm	0050: 50 mm	TH: THC	No symbol: None	M20 : 200 W	R : Right	D00 : Motor side	D1:100 V	No symbol : None
	30: 30 mm	to		T: Back tap	M20B : 200 W With brake	L : Left	R00 : Reverse motor side	D2: 200 V	F3 : Standard 3 m
		1300: 1300 mm		GR: Change the cover color to gray		U : Up	S02 : Motor side (sensor right)		F5 : Standard 5 m
				6: Photo sensor		D : Down	S03 : Reverse motor side (sensor right)		FA : Standard 10 m
				J: Proximity sensor			S20 : Motor side (sensor left)		H3 : High flex 3 m
							S30 : Reverse motor side (sensor left)		H5 : High flex 5 m
									HA : High flex 10 m

Basic Specifications

Control device type				THC	
Motor rated output [W]				200	
Ball screw lead [mm]				20	30
Rated speed *1 [mm/s]				1,000	1,500
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal/ Wall mount	1.0G	22	14
			2.0G	5	6
		Vertical mount	1.0G	10	6
			2.0G	3	4
Rated thrust *3 [N]				181	121
Maximum thrust *4 [N]				540	360
Electromagnetic brake retention [N]				359	239
Running life *5 [km]				20,000	
Positioning repeatability [mm]				±0.010	
Lost motion [mm]				0.1	
Static permissible moment *6 [N·m]				M_A: 330 M_B: 216 M_C: 188	
Guideline value of vacuum rate *7 × 10^{-3} [m^3/min]				60	

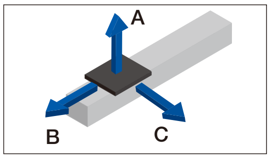
*1 At rated motor speed (3000 min^{-1}).
*2 At rated speed.
*3 At rated motor torque.
*4 The maximum thrust is a value at the maximum peak torque of the motor.
*5 The conditions for calculation are as follows:
Conditions: Horizontal mount, wall mount, or vertical mount, under the maximum load capacity, stroke 500 mm
*6 Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.
*7 The vacuum rate does not include the effect of piping resistance.

Static Permissible Moment

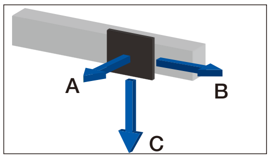


Permissible Overhang Length *8

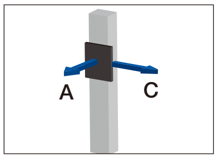
Horizontal use



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]

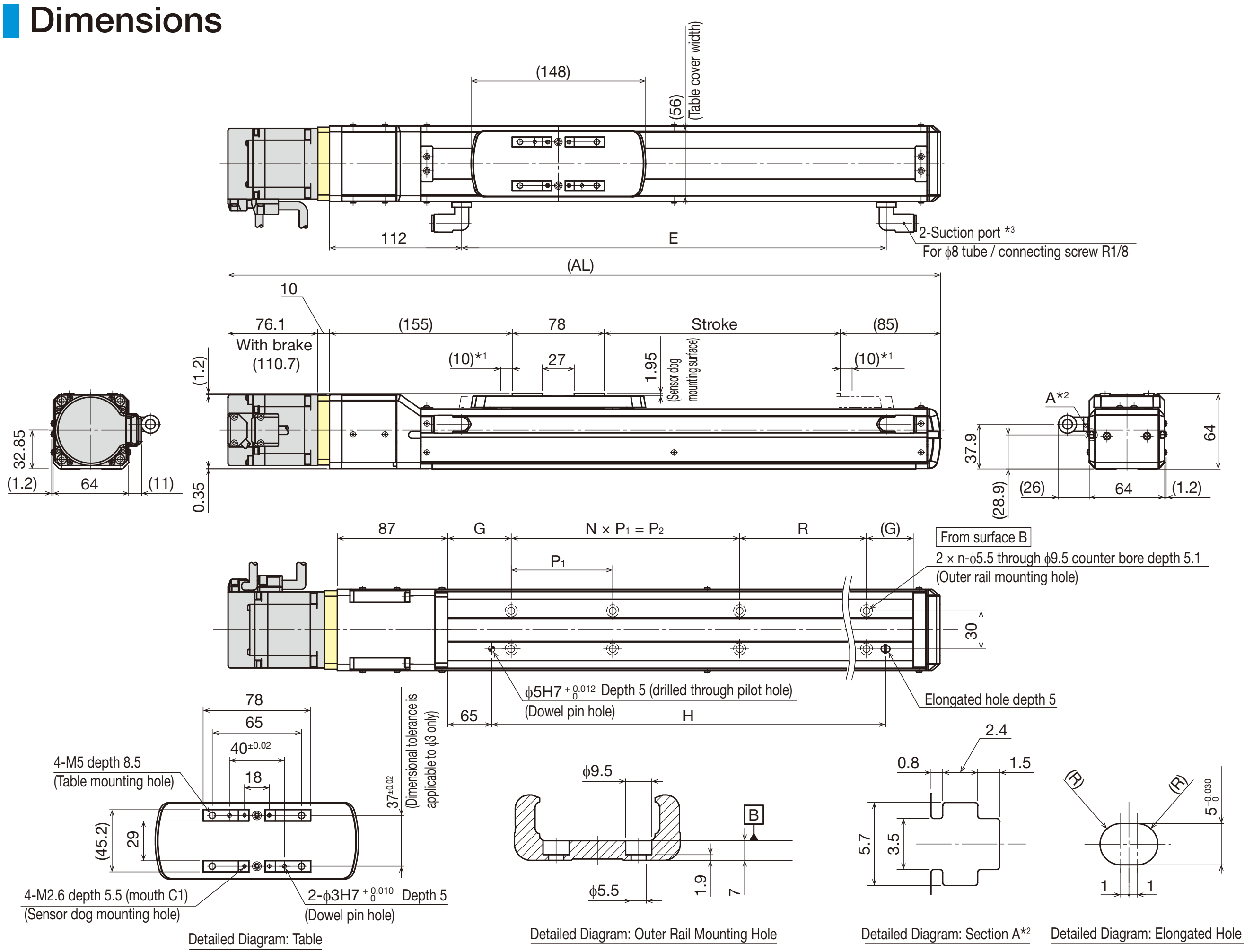
Ball screw lead [mm]	Load mass [kg]	A	C
20	0.75	600	600
	1.5	600	600
	3	460	460
30	1	600	600
	2	460	460
	4	210	210

*8 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.

CKSF6+THC

Motor rated output
200W

Dimensions



*1 Stroke up to mechanical stopper.
*2 The T slot in Section A is provided exclusively for sensor mounting. Do not use it for any other purpose.
*3 Suction fitting can be mounted on either side.

Stroke [mm] (Stroke between mechanical stoppers)			50 (70)	100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)	450 (470)	500 (520)	550 (570)	600 (620)	650 (670)
Maximum speed *4 [mm/s]	Ball screw lead	20mm	1000												
		30mm	1500												
Dimensions *5 [mm]	AL		454.1 (488.7)	504.1 (538.7)	554.1 (588.7)	604.1 (638.7)	654.1 (688.7)	704.1 (738.7)	754.1 (788.7)	804.1 (838.7)	854.1 (888.7)	904.1 (938.7)	954.1 (988.7)	1004.1 (1038.7)	1054.1 (1088.7)
	G		80	105	80	105	80	105	80	105	80	105	80	105	80
	P_1		100	100	200	200	200	200	200	200	200	200	200	200	200
	P_2		-	-	-	-	-	-	400	400	400	400	600	600	600
	R		-	-	-	-	100	100	-	-	100	100	-	-	100
	H		130	180	230	280	330	380	430	480	530	580	630	680	730
	E		210	260	310	360	410	460	510	560	610	660	710	760	810
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 *5 [kg]			4.9 (5.4)	5.3 (5.8)	5.7 (6.2)	6.0 (6.5)	6.4 (6.9)	6.8 (7.3)	7.2 (7.7)	7.6 (8.1)	8.0 (8.5)	8.4 (8.9)	8.8 (9.3)	9.1 (9.6)	9.5 (10.0)
Stroke [mm] (Stroke between mechanical stoppers)			700 (720)	750 (770)	800 (820)	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)	1150 (1170)	1200 (1220)	1250 (1270)	1300 (1320)
Maximum speed *4 [mm/s]	Ball screw lead	20mm	980	870	770	690	630	570	520	470	430	400	370	340	320
		30mm	1470	1300	1160	1040	940	850	780	710	650	600	550	510	480
Dimensions *5 [mm]	AL		1104.1 (1138.7)	1154.1 (1188.7)	1204.1 (1238.7)	1254.1 (1288.7)	1304.1 (1338.7)	1354.1 (1388.7)	1404.1 (1438.7)	1454.1 (1488.7)	1504.1 (1538.7)	1554.1 (1588.7)	1604.1 (1638.7)	1654.1 (1688.7)	1704.1 (1738.7)
	G		105	80	105	80	105	80	105	80	105	80	105	80	105
	P_1		200	200	200	200	200	200	200	200	200	200	200	200	200
	P_2		600	800	800	800	800	1000	1000	1000	1000	1200	1200	1200	1200
	R		100	-	-	100	100	-	-	100	100	-	-	100	100
	H		780	830	880	930	980	1030	1080	1130	1180	1230	1280	1330	1380
	E		860	910	960	1010	1060	1110	1160	1210	1260	1310	1360	1410	1460
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 *5 [kg]			9.9 (10.4)	10.3 (10.8)	10.7 (11.2)	11.1 (11.6)	11.5 (12.0)	11.9 (12.4)	12.2 (12.7)	12.6 (13.1)	13.0 (13.5)	13.4 (13.9)	13.8 (14.3)	14.2 (14.7)	14.6 (15.1)

*4 The maximum speed is the value restricted by the motor rotational speed (at 3000 min^{-1}) or by the permissible rotational speed of the ball screw.
*5 Values when a brake is installed are shown in parentheses.

CKSF8 THC Specifications

Model Configuration

Model		Ball screw lead		Stroke		Control device		Option		Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable length and type
CKSF8	-	20	-	0700	-	TH	-	GR-6	/	M40	L	S02	D1	F3

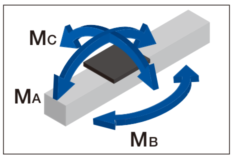
Model	Ball screw lead	Stroke	Control device	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable length and type
CKSF8	20: 20 mm	0100: 100 mm	TH: THC	No symbol: None	M40 : 400 W	R : Right	D00 : Motor side	D1:100 V	No symbol : None
	40: 40 mm	to		T: Back tap	M40B : 400 W With brake	L : Left	R00 : Reverse motor side	D2: 200 V	F3 : Standard 3 m
		1500: 1500 mm		GR: Change the cover color to gray		U : Up	S02 : Motor side (sensor right)		F5 : Standard 5 m
				6: Photo sensor		D : Down	S03 : Reverse motor side (sensor right)		FA : Standard 10 m
				J: Proximity sensor			S20 : Motor side (sensor left)		H3 : High flex 3 m
							S30 : Reverse motor side (sensor left)		H5 : High flex 5 m
									HA : High flex 10 m

Basic Specifications

Item				THC	
Control device type				THC	
Motor rated output [W]				400	
Ball screw lead [mm]				20	40
Rated speed *1 [mm/s]				1,000	2,000
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	1.0G	43	16
			2.0G	6	7
		Vertical mount	1.0G	20	8
			2.0G	3	5
Rated thrust *3 [N]				359	180
Maximum thrust *4 [N]				1,080	540
Electromagnetic brake retention [N]				359	180
Running life *5 [km]				20,000	
Positioning repeatability [mm]				±0.010	
Lost motion [mm]				0.1	
Static permissible moment *6 [N·m]				M_A: 730 M_B: 437 M_C: 387	
Guideline value of vacuum rate *7 × 10^{-3} [m^3/min]				160	

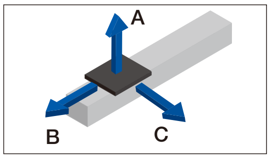
*1 At rated motor speed (3000 min^{-1}).
*2 At rated speed.
*3 At rated motor torque.
*4 The maximum thrust is a value at the maximum peak torque of the motor.
*5 The conditions for calculation are as follows:
Conditions: Horizontal mount, wall mount, or vertical mount, under the maximum load capacity, stroke 500 mm
*6 Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.
*7 The vacuum rate does not include the effect of piping resistance.

Static Permissible Moment

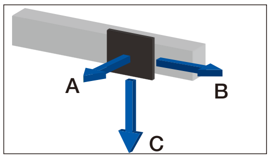


Permissible Overhang Length *8

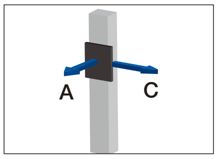
Horizontal use



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]

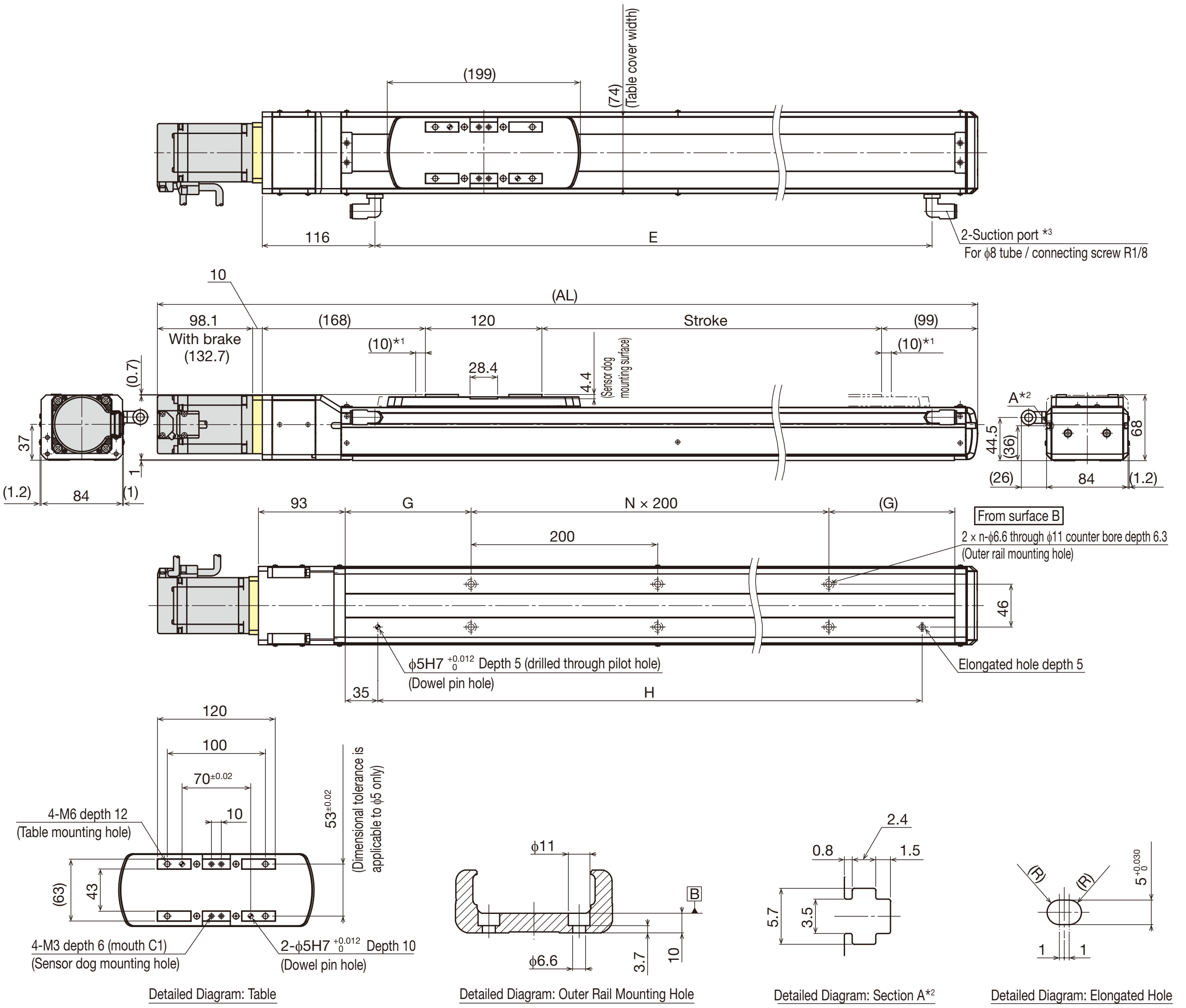
Ball screw lead [mm]	Load mass [kg]	A	C
20	0.75	800	800
	1.5	800	800
	3	740	740
40	1.25	800	800
	2.5	680	680
	5	320	320

*8 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.

CKSF8 + THC

Motor rated output
400W

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 Suction fitting can be mounted on either side.

Stroke [mm] (Stroke between mechanical stoppers)		100 (120)	200 (220)	300 (320)	400 (420)	500 (520)	600 (620)	700 (720)	800 (820)	900 (920)	1000 (1020)	1100 (1120)	1200 (1220)	1300 (1320)	1400 (1420)	1500 (1520)
Maximum speed *4 [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 *5 [mm]	AL	595.1 (629.7)	695.1 (729.7)	795.1 (829.7)	895.1 (929.7)	995.1 (1029.7)	1095.1 (1129.7)	1195.1 (1229.7)	1295.1 (1329.7)	1395.1 (1429.7)	1495.1 (1529.7)	1595.1 (1629.7)	1695.1 (1729.7)	1795.1 (1829.7)	1895.1 (1929.7)	1995.1 (2029.7)
	G	85	135	85	135	85	135	85	135	85	135	85	135	85	135	85
	H	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700
	E	324	424	524	624	724	824	924	1024	1124	1224	1324	1424	1524	1624	1724
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 *5 [Kg]		9.5 (10.0)	10.8 (11.3)	12.1 (12.6)	13.4 (13.9)	14.7 (15.2)	16.0 (16.5)	17.3 (17.8)	18.6 (19.1)	19.9 (20.4)	21.2 (21.7)	22.5 (23.0)	23.8 (24.3)	25.1 (25.6)	26.4 (26.9)	27.7 (28.2)

*4 The maximum speed is the value restricted by the motor rotational speed (at 3000 min^{-1}) or by the permissible rotational speed of the ball screw.
*5 Values when a brake is installed are shown in parentheses.

CKSF10 THC Specifications

Model Configuration

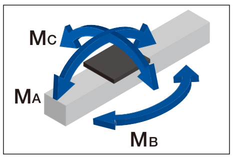
Model	Ball screw lead	Stroke	Control device	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable length and type
CKSF10 -	25 -	0700 -	TH -	GR-6 /	M75	L	S02	D2	F3
CKSF10	25: 25 mm 50: 50 mm	0100: 100 mm to 1500: 1500 mm	TH: THC	No symbol: None T: Back tap GR: Change the cover color to gray 6: Photo sensor J: Proximity sensor	M75 : 750 W M75B : 750 W With brake	R : Right L : Left U : Up D : Down	D00 : Motor side R00 : Reverse motor side S02 : Motor side (sensor right) S03 : Reverse motor side (sensor right) S20 : Motor side (sensor left) S30 : Reverse motor side (sensor left)	D2: 200 V	No symbol : None F3 : Standard 3 m F5 : Standard 5 m FA : Standard 10 m H3 : High flex 3 m H5 : High flex 5 m HA : High flex 10 m

Basic Specifications

Control device type				THC	
Motor rated output [W]				750	
Ball screw lead [mm]				25	50
Rated speed *1 [mm/s]				1,250	2,500
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	1.0G	60	17
			1.5G	26	8
		Vertical mount	1.0G	25	9
			1.5G	13	5
Rated thrust *3 [N]				541	270
Maximum thrust *4 [N]				1,620	810
Electromagnetic brake retention [N]				541	270
Running life *5 [km]				20,000	
Positioning repeatability [mm]				±0.010	
Lost motion [mm]				0.1	
Static permissible moment *6 [N·m]				M_A: 1,049 M_B: 712 M_C: 671	
Guideline value of vacuum rate *7 × 10^{-3} [m^3/min]				230	

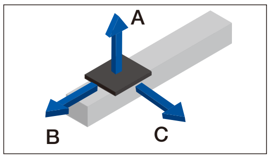
*1 At rated motor speed (3000 min^{-1}).
*2 At rated speed.
*3 At rated motor torque.
*4 The maximum thrust is a value at the maximum peak torque of the motor.
*5 The conditions for calculation are as follows:
Conditions: Horizontal mount, wall mount, or vertical mount, under the maximum load capacity, stroke 500 mm
*6 Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.
*7 The vacuum rate does not include the effect of piping resistance.

Static Permissible Moment

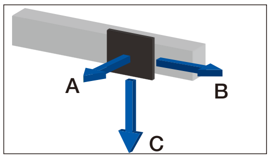


Permissible Overhang Length *8

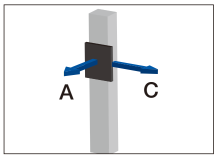
Horizontal use



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	1000	760	900
	30	660	370	450
	60	300	170	220
50	4.25	1000	1000	1000
	8.5	1000	1000	850
	17	580	530	430

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
25	15	840	730	1000
	30	390	330	630
	60	160	140	270
50	4.25	1000	1000	1000
	8.5	790	1000	1000
	17	360	490	550

Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
25	6.25	1000	1000
	12.5	710	710
	25	330	330
50	2.25	1000	1000
	4.5	1000	1000
	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	1000	1000	1000
	10.5	1000	1000	1000
	21	600	540	520
50	1.75	1000	1000	1000
	3.5	1000	1000	1000
	7	930	1000	800

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
25	5.25	1000	1000	1000
	10.5	1000	1000	1000
	21	600	540	520
50	1.75	1000	1000	1000
	3.5	1000	1000	1000
	7	720	1000	910

Vertical mount [mm]

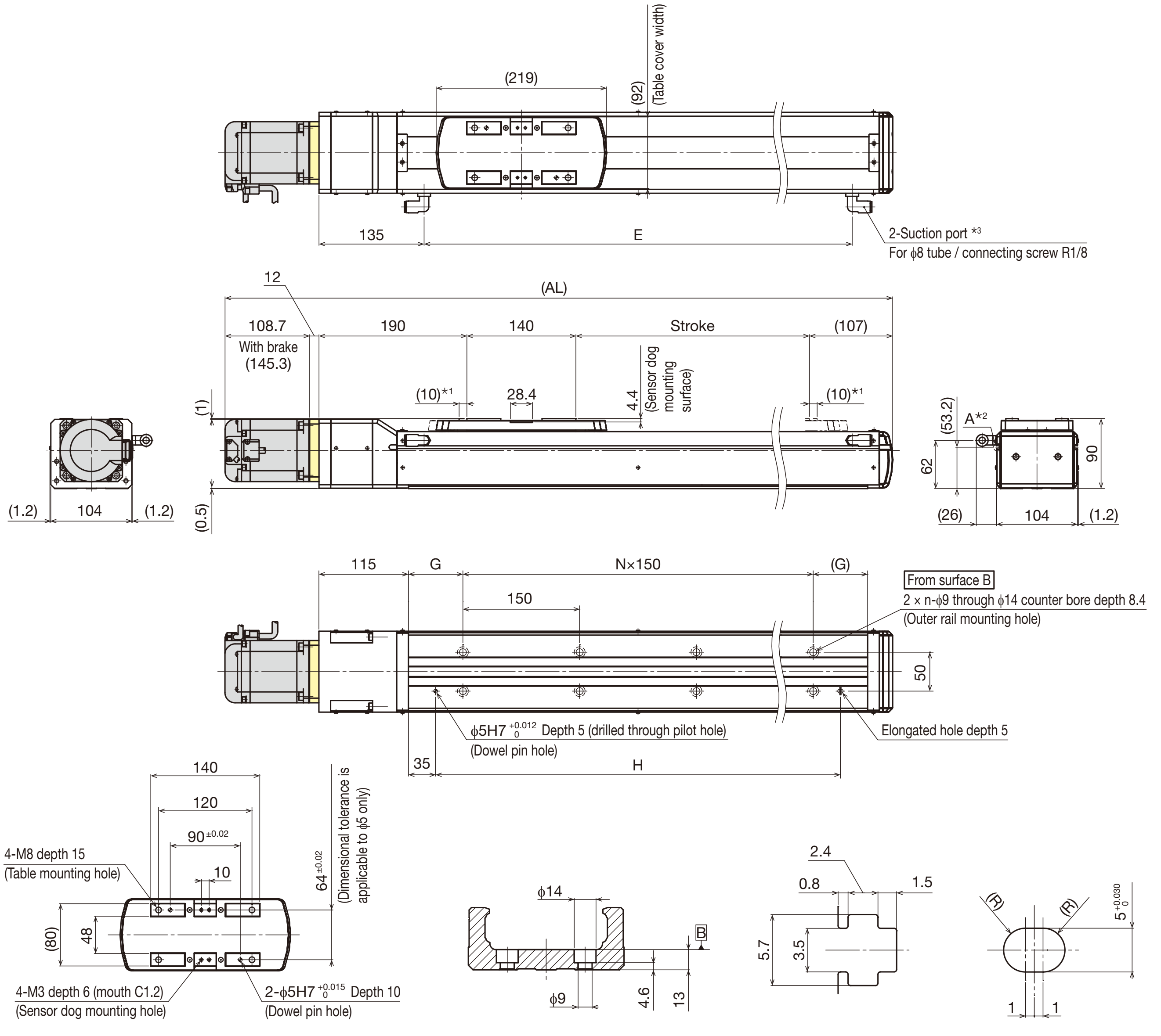
Ball screw lead [mm]	Load mass [kg]	A	C
25	2.75	1000	1000
	5.5	1000	1000
	11	700	700
50	1	1000	1000
	2	1000	1000
	4	1000	1000

*8 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.

CKSF10 + THC

Motor rated output
750W

Dimensions



Detailed Diagram: Table

Detailed Diagram: Outer Rail Mounting Hole

Detailed Diagram: Section A*2

Detailed Diagram: Elongated Hole

*1 Stroke up to mechanical stopper.
*2 The T slot in Section A is provided exclusively for sensor mounting. Do not use it for any other purpose.
*3 Suction fitting can be mounted on either side.

Stroke [mm] (Stroke between mechanical stoppers)		100 (120)	200 (220)	300 (320)	400 (420)	500 (520)	600 (620)	700 (720)	800 (820)	900 (920)	1000 (1020)	1100 (1120)	1200 (1220)	1300 (1320)	1400 (1420)	1500 (1520)
Maximum speed *4 [mm/s]	Ball screw lead: 25 mm	1250									1050	890	760	660	580	510
	Ball screw lead: 50 mm	2500									2110	1790	1530	1330	1160	1030
Dimensions *5 [mm]	AL	657.7 (694.3)	757.7 (794.3)	857.7 (894.3)	957.7 (994.3)	1057.7 (1094.3)	1157.7 (1194.3)	1257.7 (1294.3)	1357.7 (1394.3)	1457.7 (1494.3)	1557.7 (1594.3)	1657.7 (1694.3)	1757.7 (1794.3)	1857.7 (1894.3)	1957.7 (1994.3)	2057.7 (2094.3)
	G	120	95	70	120	95	70	120	95	70	120	95	70	120	95	70
	H	320	420	520	620	720	820	920	1020	1120	1220	1320	1420	1520	1620	1720
	E	350	450	550	650	750	850	950	1050	1150	1250	1350	1450	1550	1650	1750
Mounting pitch count	N	1	2	3	3	4	5	5	6	7	7	8	9	9	10	11
Mounting hole count	n	2	3	4	4	5	6	6	7	8	8	9	10	10	11	12
Weight *5 [Kg]		15.3 (16.2)	17.4 (18.3)	19.4 (20.3)	21.5 (22.4)	23.5 (24.4)	25.6 (26.5)	27.7 (28.6)	29.7 (30.6)	31.8 (32.7)	33.8 (34.7)	35.9 (36.8)	38.0 (38.9)	40.0 (40.9)	42.1 (43.0)	44.1 (45.0)

*4 The maximum speed is the value restricted by the motor rotational speed (at 3000 min^{-1}) or by the permissible rotational speed of the ball screw.
*5 Values when a brake is installed are shown in parentheses.

CKSF4 Without Motor

Model Configuration

Model	Ball screw lead	Stroke	With/without motor	Intermediate flange	Option
CKSF4	10	0050	0	AQ	GR

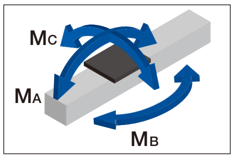
Model	Ball screw lead	Stroke	With/without motor	Intermediate flange	Option
CKSF4	10: 10 mm	0050: 50 mm	0: Without motor	A0: Without intermediate flange	No symbol: None
	16: 16 mm	to	1: With motor	AP	T: Back tap
		0900: 900 mm		AQ	GR: Change the cover color to gray
				AR	6: Photo sensor
					J: Proximity sensor
					M: Proximity sensor (PNP)

Basic Specifications

			Lead 10	Lead 16
LM guide portion		Basic dynamic load rating C [N]	6,400	
		Basic static load rating C0 [N]	12,900	
Ball screw portion		Basic dynamic load rating Ca [N]	2,860	1,850
		Basic static load rating C0a [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 P0a [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	
Guideline value of vacuum rate *5 × 10^{-3} [m^3/min]			30	

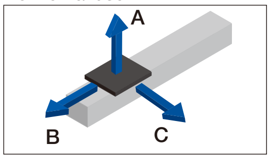
*1 The permissible rotational speed is restricted by the stroke.
*2 The starting torque represents values when the standard grease is filled.
*3 These represent values when measured using a motor provided by THK.
*4 Applied point of moment load for MA and MC are the top face of the table, and that for MB is the center of the table.
*5 The vacuum rate does not include the effect of piping resistance.

Static Permissible Moment

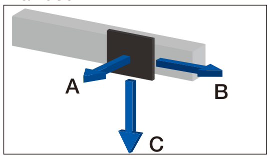


Permissible Overhang Length *6

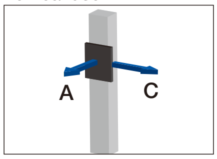
Horizontal use



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	250
	8	80	50	120
16	1.5	360	320	400
	3	160	150	240
	6	60	60	100

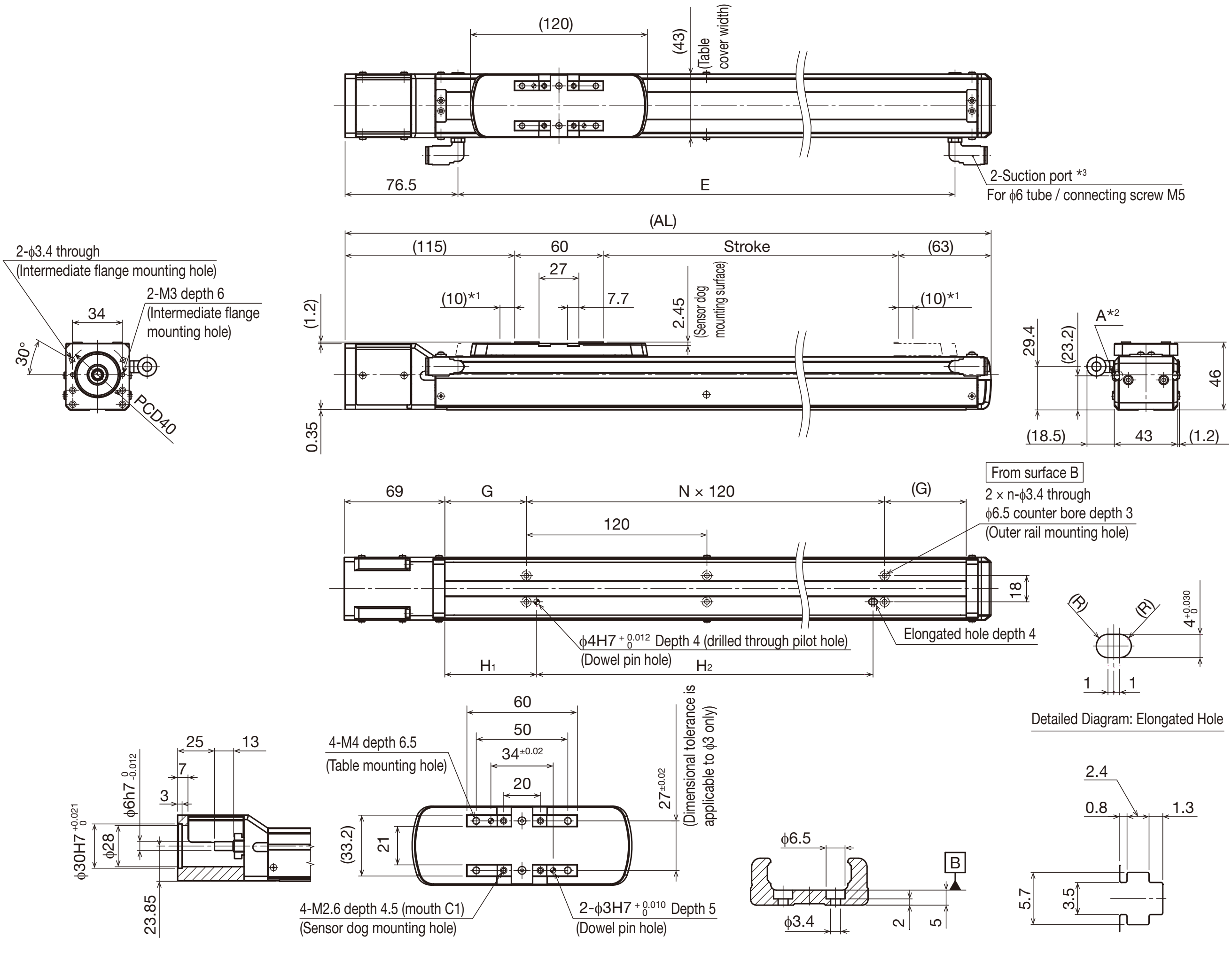
Vertical mount [mm]

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

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

CKSF4

Dimensions



Detailed drawing of motor mounting part (when A0 is selected)*4

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 Suction fitting can be mounted on either side.
*4 See P.35 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 *5 *6 [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
	E	187	237	287	337	387	437	487	537	587
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 *5 *6 [mm/s]	Ball screw lead: 10 mm	500		430	370	320	290	250	230	200
	Ball screw lead: 16 mm	800		690	600	520	460	410	360	330
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
	E	637	687	737	787	837	887	937	987	1037
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

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

CKSF5 Without Motor

Model Configuration

Model		Ball screw lead		Stroke		With/without motor		Intermediate flange		Option
CKSF5	-	10	-	0050	-	0	-	AQ	-	GR

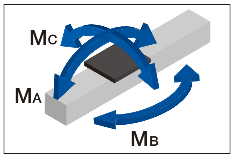
Model	Ball screw lead	Stroke	With/without motor	Intermediate flange	Option
CKSF5	10: 10 mm	0050: 50 mm	0: Without motor	A0: Without intermediate flange	No symbol: None
	20: 20 mm	to	1: With motor	AP	T: Back tap
		0900: 900 mm		AQ	GR: Change the cover color to gray
				AR	6: Photo sensor
					J: Proximity 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 Ca [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 Ca [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	
Guideline value of vacuum rate *5 × 10^{-3} [m^3/min]			50	

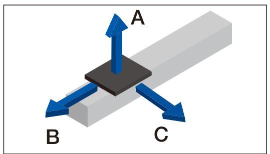
*1 The permissible rotational speed is restricted by the stroke.
*2 The starting torque represents values when the standard grease is filled.
*3 These represent values when measured using a motor provided by THK.
*4 Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.
*5 The vacuum rate does not include the effect of piping resistance.

Static Permissible Moment

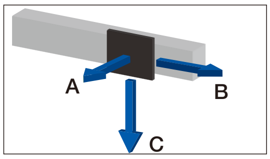


Permissible Overhang Length *6

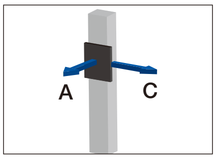
Horizontal use



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

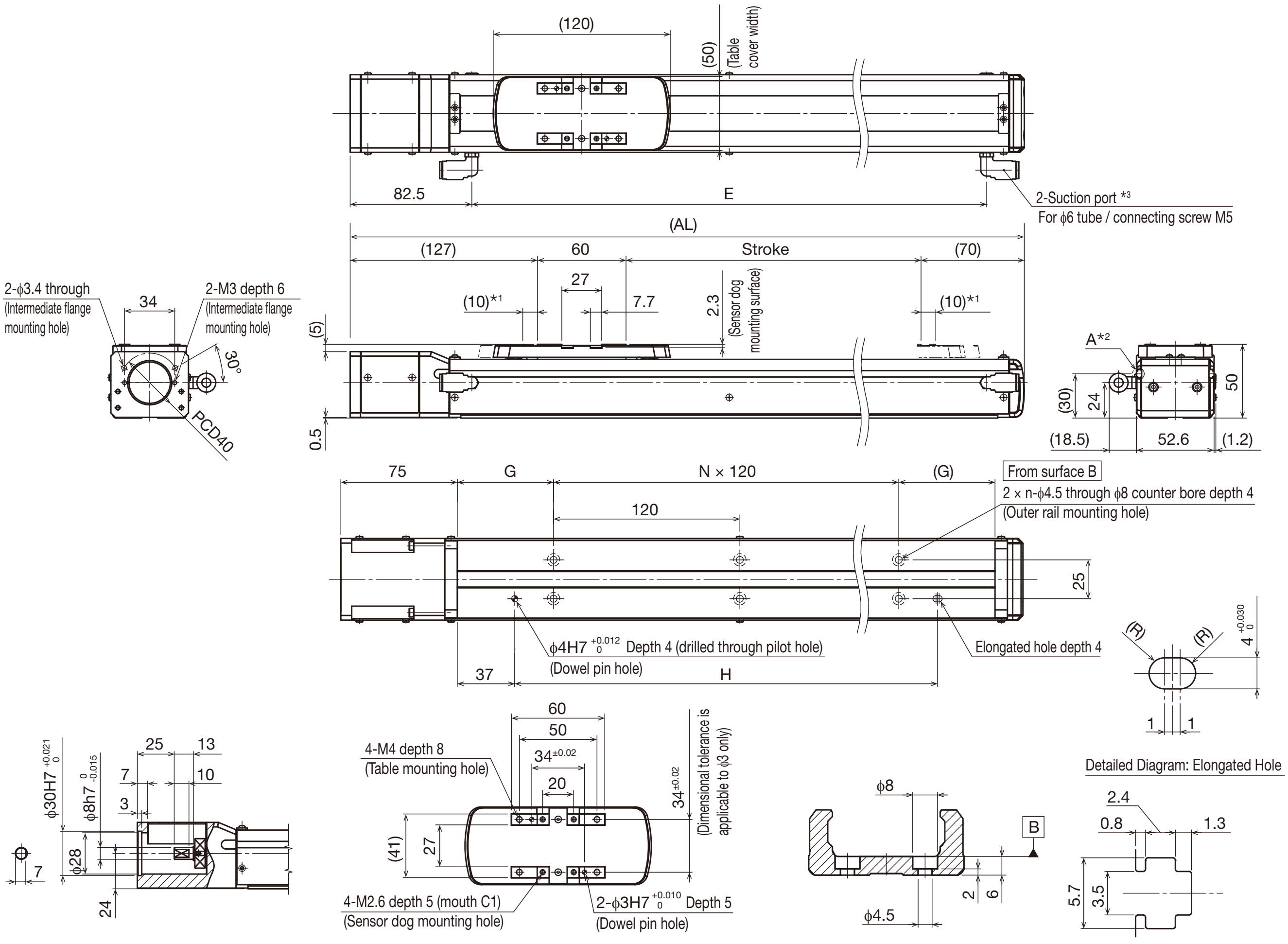
Vertical mount [mm]

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

*6 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.

CKSF5

Dimensions



Detailed drawing of motor mounting part (when A0 is selected)*4

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 Suction fitting can be mounted on either side.
*4 See P.36 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 *5 *6 [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
	E	199	249	299	349	399	449	499	549	599
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 *5 *6 [mm/s]	Ball screw lead: 10 mm	500			440	390	340	310	270	250
	Ball screw lead: 20 mm	1000			890	780	690	620	550	500
Dimensions [mm]	AL	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
	E	649	699	749	799	849	899	949	999	1049
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

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

CKSF6 Without Motor

Model Configuration

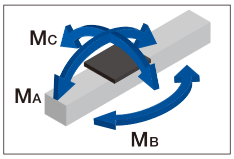
Model		Ball screw lead		Stroke		With/without motor		Intermediate flange		Option
CKSF6	-	20	-	0050	-	0	-	AV	-	GR
CKSF6		20: 20 mm		0050: 50 mm		0: Without motor		A0: Without intermediate flange		No symbol: None
		30: 30 mm		to		1: With motor		AV		T: Back tap
				1300: 1300 mm				AY		GR: Change the cover color to gray
								AU		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 Ca [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 Ca [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	
Guideline value of vacuum rate *5 × 10^{-3} [m^3/min]			60	

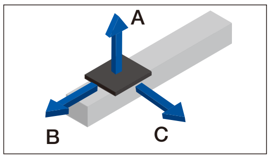
*1 The permissible rotational speed is restricted by the stroke.
*2 The starting torque represents values when the standard grease is filled.
*3 These represent values when measured using a motor provided by THK.
*4 Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.
*5 The vacuum rate does not include the effect of piping resistance.

Static Permissible Moment

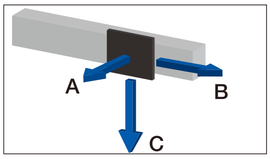


Permissible Overhang Length *6

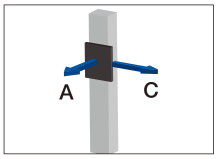
Horizontal use



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

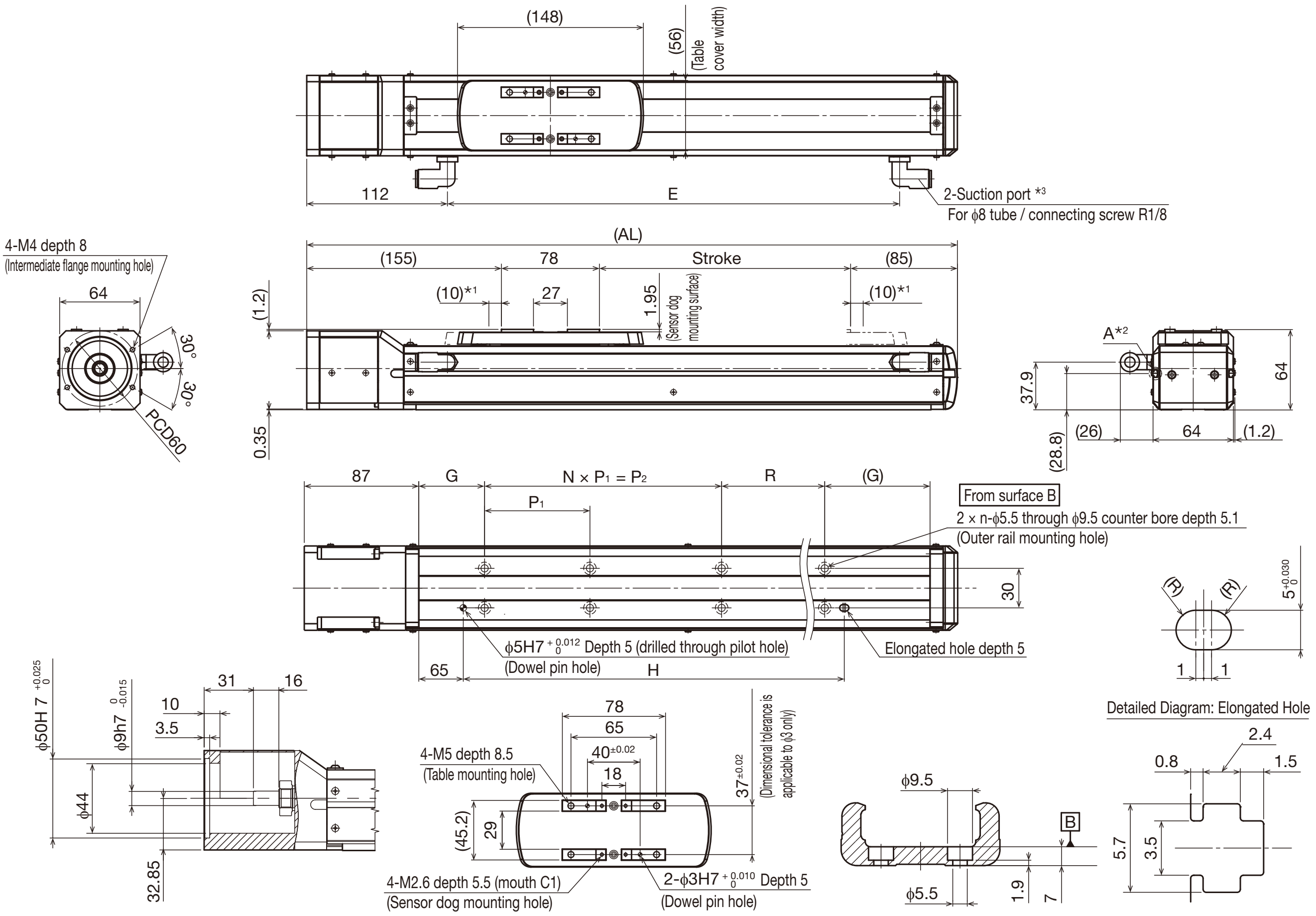
Vertical mount [mm]

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

*6 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.

CKSF6

Dimensions



Detailed drawing of motor mounting part (when A0 is selected)*4

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 Suction fitting can be mounted on either side.
*4 See P.37 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)	500 (520)	550 (570)	600 (620)	650 (670)
Maximum speed *5 *6 [mm/s]	Ball screw lead	20mm	1000												
		30mm	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
	E		210	260	310	360	410	460	510	560	610	660	710	760	810
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] (Stroke between mechanical stoppers)			700 (720)	750 (770)	800 (820)	850 (870)	900 (920)	950 (970)	1000 (1020)	1050 (1070)	1100 (1120)	1150 (1170)	1200 (1220)	1250 (1270)	1300 (1320)
Maximum speed *5 *6 [mm/s]	Ball screw lead	20mm	980	870	770	690	630	570	520	470	430	400	370	340	320
		30mm	1470	1300	1160	1040	940	850	780	710	650	600	550	510	480
Dimensions [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
	E		860	910	960	1010	1060	1110	1160	1210	1260	1310	1360	1410	1460
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

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

CKSF8 Without Motor

Model Configuration

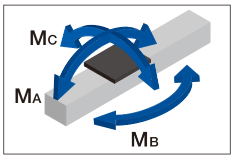
Model	Ball screw lead	Stroke	With/without motor	Intermediate flange	Option
CKSF8 -	20 -	0800 -	0 -	AV -	GR-6
CKSF8	20: 20 mm	0100: 100 mm	0: Without motor	A0: Without intermediate flange	No symbol: None
	40: 40 mm	to	1: With motor	AV	T: Back tap
		1500: 1500 mm		AY	GR: Change the cover color to gray
				AU	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 Ca [N]		4,030	3,750
	Basic static load rating C_{0a} [N]		10,540	8,870
	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 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	
Guideline value of vacuum rate *5 × 10^{-3} [m^3/min]			160	

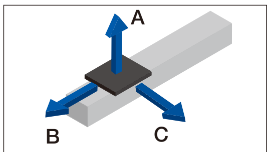
*1 The permissible rotational speed is restricted by the stroke.
*2 The starting torque represents values when the standard grease is filled.
*3 These represent values when measured using a motor provided by THK.
*4 Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.
*5 The vacuum rate does not include the effect of piping resistance.

Static Permissible Moment

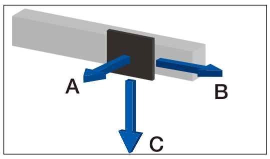


Permissible Overhang Length *6

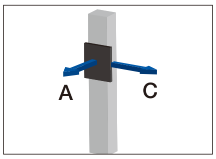
Horizontal use



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

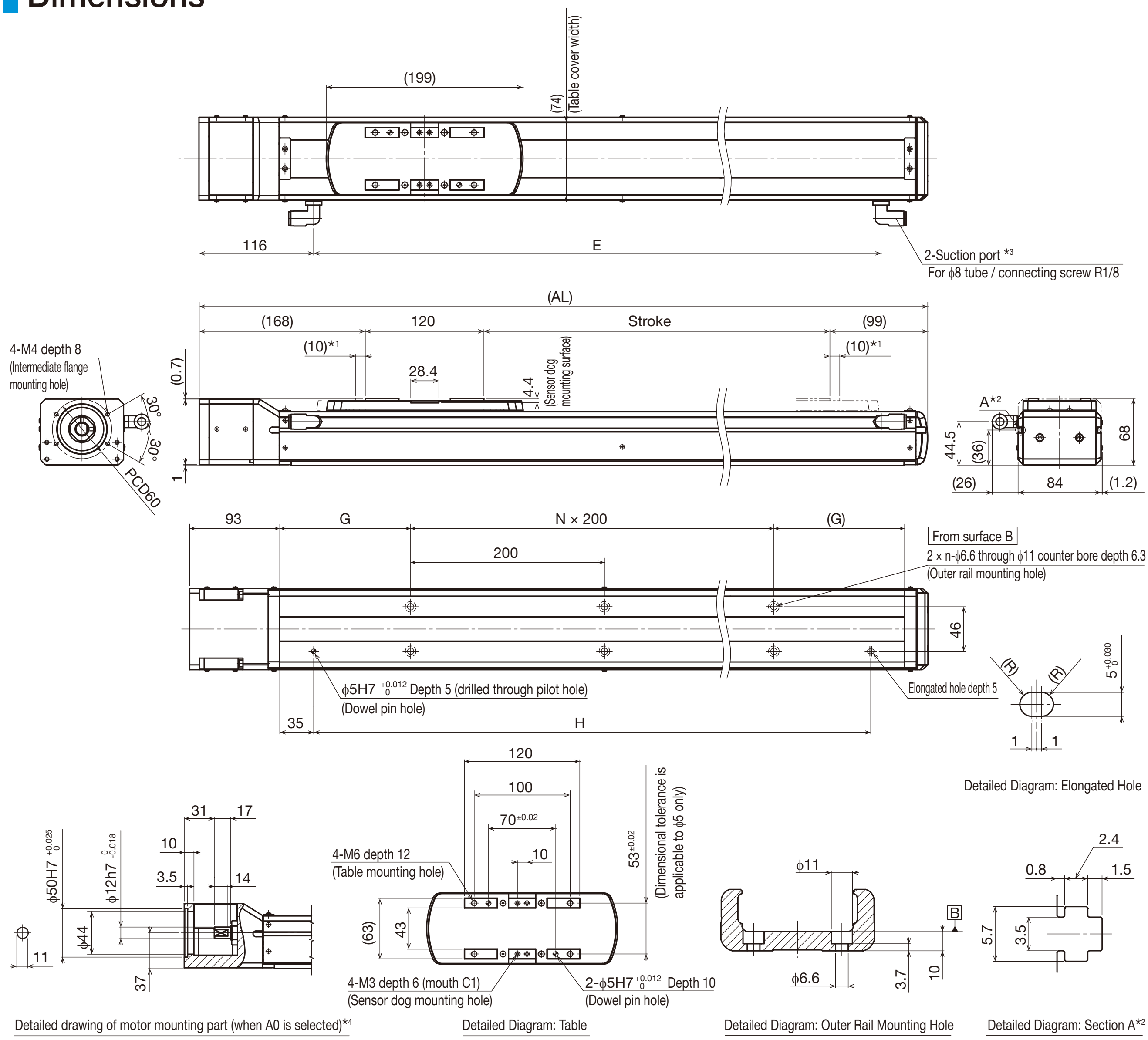
Vertical mount [mm]

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

*6 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.

CKSF8

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 Suction fitting can be mounted on either side.
*4 See P.38 for intermediate flange dimensions.

Stroke [mm] (Stroke between mechanical stoppers)		100 (120)	200 (220)	300 (320)	400 (420)	500 (520)	600 (620)	700 (720)	800 (820)	900 (920)	1000 (1020)	1100 (1120)	1200 (1220)	1300 (1320)	1400 (1420)	1500 (1520)
Maximum speed *5 *6 [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
	E	324	424	524	624	724	824	924	1024	1124	1224	1324	1424	1524	1624	1724
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	24.9	26.2

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

CKSF10 Without Motor

Model Configuration

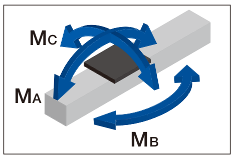
Model	Ball screw lead	Stroke	With/without motor	Intermediate flange	Option
CKSF10 -	25 -	0800 -	0 -	AZ -	GR-6
CKSF10	25: 25 mm	0100: 100 mm	0: Without motor	A0	No symbol: None
	50: 50 mm	to	1: With motor	AZ	T: Back tap
		1500: 1500 mm		A5	GR: Change the cover color to gray
				A6	6: Photo sensor
					J: Proximity sensor
					M: Proximity sensor (PNP)

Basic Specifications

			Ball screw lead 25	Ball screw lead 50
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 Ca [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 Ca [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]			15.5	
Static permissible moment *4 [N·m]			M_A: 1,049 M_B: 712 M_C: 671	
Guideline value of vacuum rate *5 × 10^{-3} [m^3/min]			230	

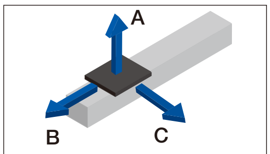
*1 The permissible rotational speed is restricted by the stroke.
*2 The starting torque represents values when the standard grease is filled.
*3 These represent values when measured using a motor provided by THK.
*4 Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.
*5 The vacuum rate does not include the effect of piping resistance.

Static Permissible Moment

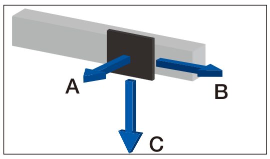


Permissible Overhang Length *6

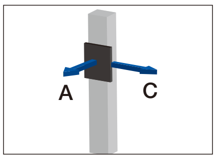
Horizontal use



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	1000	760	900
	30	660	370	450
	60	300	170	220
50	4.25	1000	1000	1000
	8.5	1000	1000	850
	17	580	530	430

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
25	15	840	730	1000
	30	390	330	630
	60	160	140	270
50	4.25	1000	1000	1000
	8.5	790	1000	1000
	17	360	490	550

Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
25	6.25	1000	1000
	12.5	710	710
	25	330	330
50	2.25	1000	1000
	4.5	1000	1000
	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	1000	1000	1000
	10.5	1000	1000	1000
	21	600	540	520
50	1.75	1000	1000	1000
	3.5	1000	1000	1000
	7	930	1000	800

Wall mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
25	5.25	1000	1000	1000
	10.5	1000	1000	1000
	21	600	540	520
50	1.75	1000	1000	1000
	3.5	1000	1000	1000
	7	720	1000	910

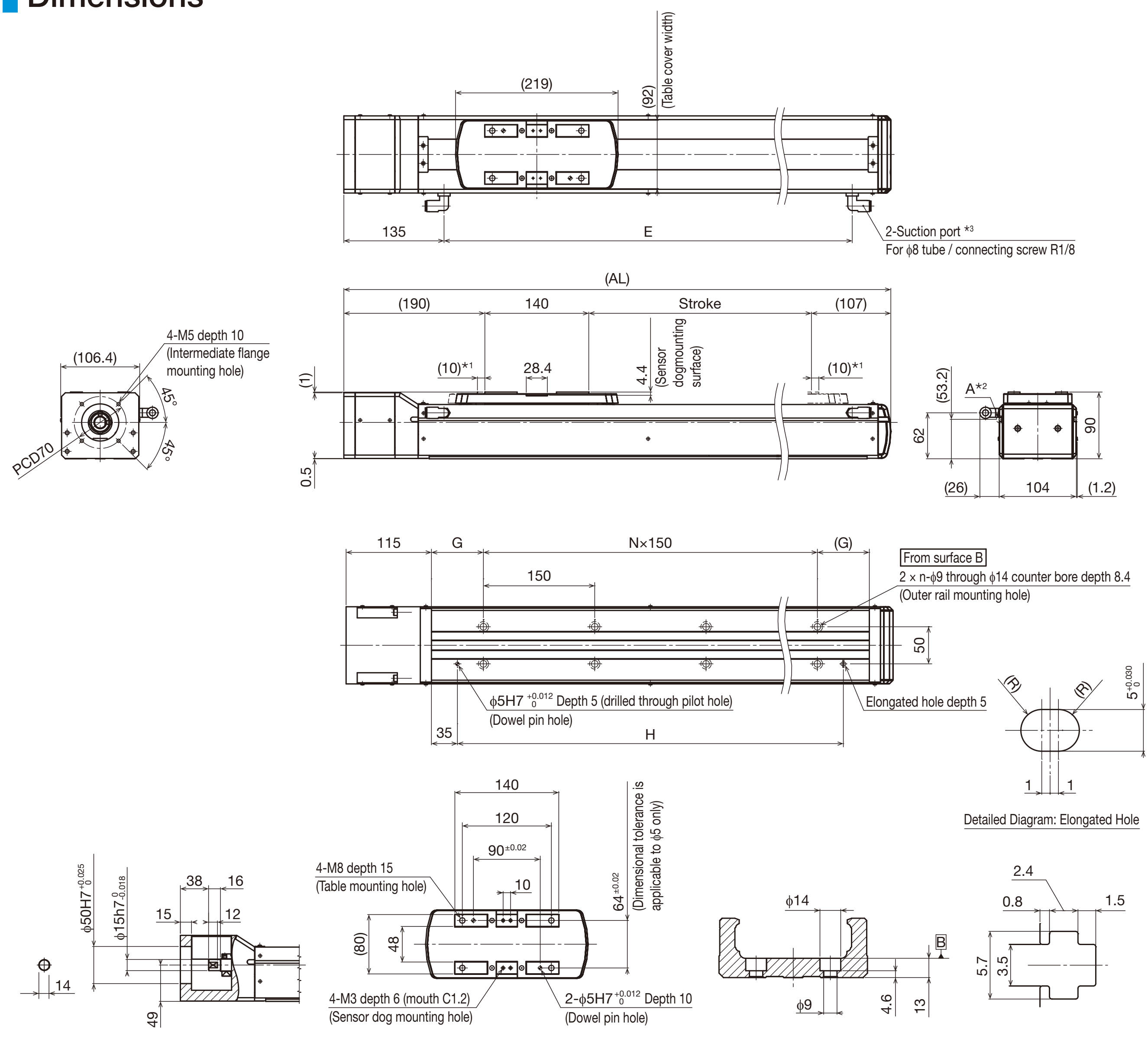
Vertical mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	C
25	2.75	1000	1000
	5.5	1000	1000
	11	700	700
50	1	1000	1000
	2	1000	1000
	4	1000	1000

*6 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.

CKSF10

Dimensions



Detailed drawing of motor mounting part (when A0 is selected)*4

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 Suction fitting can be mounted on either side.
*4 See P.39 for intermediate flange dimensions.

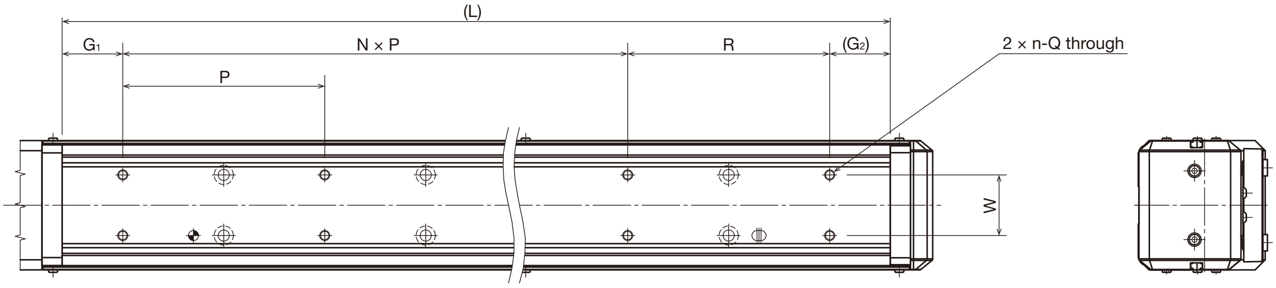
Stroke [mm] (Stroke between mechanical stoppers)		100 (120)	200 (220)	300 (320)	400 (420)	500 (520)	600 (620)	700 (720)	800 (820)	900 (920)	1000 (1020)	1100 (1120)	1200 (1220)	1300 (1320)	1400 (1420)	1500 (1520)
Maximum speed *5 *6 [mm/s]	Ball screw lead: 25 mm	1250									1050	890	760	660	580	510
	Ball screw lead: 50 mm	2500									2110	1790	1530	1330	1160	1030
Dimensions [mm]	AL	537	637	737	837	937	1037	1137	1237	1337	1437	1537	1637	1737	1837	1937
	G	120	95	70	120	95	70	120	95	70	120	95	70	120	95	70
	H	320	420	520	620	720	820	920	1020	1120	1220	1320	1420	1520	1620	1720
	E	350	450	550	650	750	850	950	1050	1150	1250	1350	1450	1550	1650	1750
Mounting pitch count	N	1	2	3	3	4	5	5	6	7	7	8	9	9	10	11
Mounting hole count	n	2	3	4	4	5	6	6	7	8	8	9	10	10	11	12
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	43.5

*5 The maximum speed varies depending on the motor used.
*6 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 CKSF to enable mounting without removing the cover.



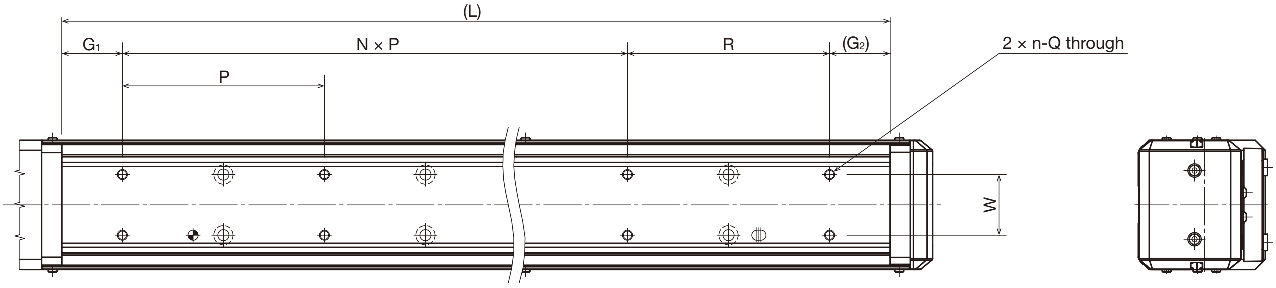
Note) The standard counter bore will remain even if a back tap is selected.

Model	Stroke [mm]		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
CKSF4	Dimensions [mm]	L	202	252	302	352	402	452	502	552	602	652	702	752	802	852	902	952	1002	1052
		P	120																	
		G_1	34	59	84	42	74	39	78	89	54	79	44	69	34	59	84	42	74	39
		G_2	48	73	98	70	88	53	64	103	68	93	58	83	48	73	98	70	88	53
		R	-																	
		W	18																	
	Mounting pitch count	N	1	1	1	2	2	3	3	3	4	4	5	5	6	6	6	7	7	8
	Mounting hole count	n	2	2	2	3	3	4	4	4	5	5	6	6	7	7	7	8	8	9
	Tap hole size	Q	M4																	

Model	Stroke [mm]		50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900
CKSF5	Dimensions [mm]	L	214	264	314	364	414	464	514	564	614	664	714	764	814	864	914	964	1014	1064
		P	80	120																
		G_1	27	12	27	52	77	27	67	92	57	82	47	72	27	62	87	52	77	27
		G_2	27	12	47	72	97	77	87	112	77	102	67	92	67	82	107	72	97	77
		R	-																	
		W	25																	
	Mounting pitch count	N	2	2	2	2	2	3	3	3	4	4	5	5	6	6	6	7	7	8
	Mounting hole count	n	3	3	3	3	3	4	4	4	5	5	6	6	7	7	7	8	8	9
	Tap hole size	Q	M5																	

Model	Stroke [mm]		50	100	150	200	250	300	350	400	450	500	550	600	650
CKSF6	Dimensions [mm]	L	260	310	360	410	460	510	560	610	660	710	760	810	860
		P	100		200										
		G_1	30	55	30	55	30	55	30	55	30	55	30	55	30
		G_2	30	55	30	55	30	55	30	55	30	55	30	55	30
		R	-	-	100	100	-	-	100	100	-	-	100	100	-
		W	30												
	Mounting pitch count	N	2	2	1	1	2	2	2	2	3	3	3	3	4
	Mounting hole count	n	3	3	3	3	3	3	4	4	4	4	5	5	5
	Tap hole size	Q	M5												
Model	Stroke [mm]		700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300
CKSF6	Dimensions [mm]	L	910	960	1010	1060	1110	1160	1210	1260	1310	1360	1410	1460	1510
		P	200												
		G_1	55	30	55	30	55	30	55	30	55	30	55	30	55
		G_2	55	30	55	30	55	30	55	30	55	30	55	30	55
		R	-	100	100	-	-	100	100	-	-	100	100	-	-
		W	30												
	Mounting pitch count	N	4	4	4	5	5	5	5	6	6	6	6	7	7
	Mounting hole count	n	5	6	6	6	6	7	7	7	7	8	8	8	8
	Tap hole size	Q	M5												

Model	Stroke [mm]		100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
CKSF8	Dimensions [mm]	L	370	470	570	670	770	870	970	1070	1170	1270	1370	1470	1570	1670	1770
		P	120	200													
		G_1	65	25	70	120	70	120	70	120	70	120	70	120	70	120	70
		G_2	65	45	100	150	100	150	100	150	100	150	100	150	100	150	100
		R	-														
		W	46														
	Mounting pitch count	N	2	2	2	2	3	3	4	4	5	5	6	6	7	7	8
	Mounting hole count	n	3	3	3	3	4	4	5	5	6	6	7	7	8	8	9
	Tap hole size	Q	M6														



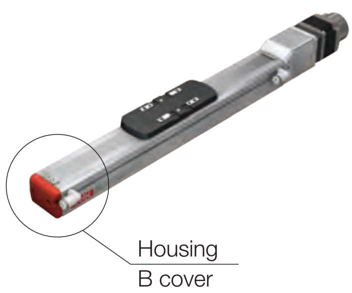
Note) The standard counter bore will remain even if a back tap is selected.

Model	Stroke [mm]		100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
CKSF10	Dimensions [mm]	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	11
	Mounting hole count	n	3	3	4	4	5	6	6	7	8	8	9	10	10	11	12
	Tap hole size	Q	M8														

Option

GR: Gray cover

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



Standard: red

When GR is selected: gray

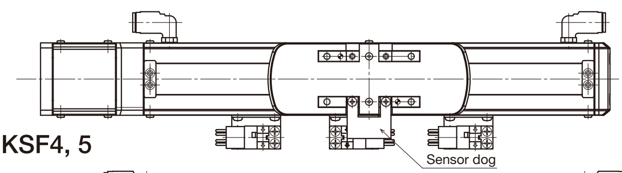
□: Sensors

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

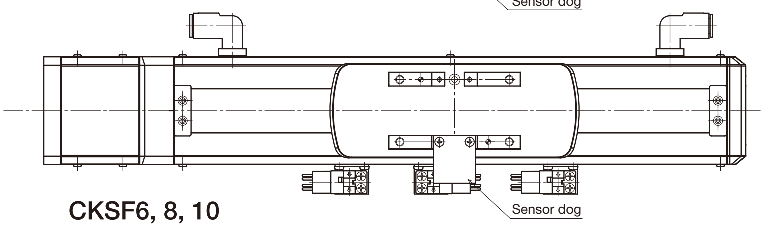
Note 1) Types without motor will be shipped with the sensor and the sensor dog.
Note 2) Proximity sensors placed too close to each other may not work properly. In such a case, please prepare a different frequency type of sensor. (For specifications, contact each manufacturer.)
Note 3) Mount two pieces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

Description	Model	Accessory	Symbol
Photo Sensor * [× 3]	EE-SX674 (Omron Corp.)	Mounting screw, nut, mounting plate (× 3), connector (EE-1001, × 3), and sensor dog	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	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	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.

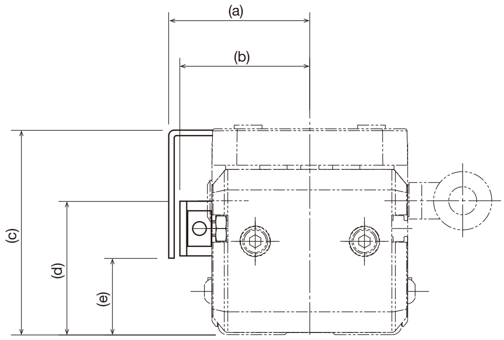


CKSF4, 5



CKSF6, 8, 10

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

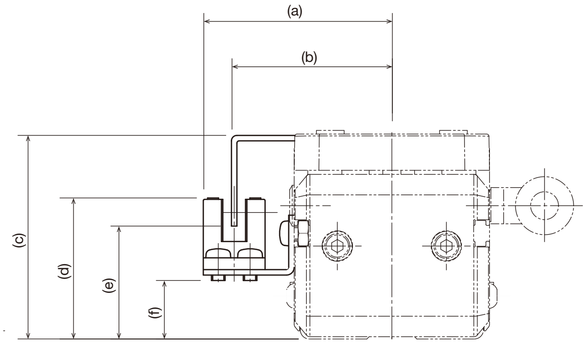


Unit: mm

Model	a	b	c	d	e
CKSF4	31	28.6	44.8	29.2	16.7
CKSF5	36.2	33.8	48.9	36	23.5
CKSF6	41.5	39.1	63.3	34.9	22.6
CKSF8	51.5	49.1	64.8	42	29.4
CKSF10	61.4	59.1	86.8	59.2	46.6

Sensor dog width: CKSF4 26mm
CKSF5 26mm
CKSF6 25mm
CKSF8 27mm
CKSF10 27mm

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



Unit: mm

Model	a	b	c	d	e	f
CKSF4	41.5	35.3	44.8	31	24.8	12.8
CKSF5	46.3	40.1	48.9	37.8	31.6	19.6
CKSF6	49.5	43.1	63.3	34.2	27.3	16
CKSF8	59.5	53.1	64.8	41.3	34.2	23.1
CKSF10	69.5	63.1	86.8	58.5	51.4	40.3

Sensor dog width: CKSF4 26mm
CKSF5 26mm
CKSF6 25mm
CKSF8 27mm
CKSF10 27mm

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]	CKSF4	CKSF5	CKSF6	CKSF8	CKSF10
AC servo motor	Yaskawa Electric Corporation	Σ-V	SGMJV-A5	50	□40	AQ	AQ	-	-	-
			SGMAV-A5			AQ	AQ	-	-	-
			SGMJV-01	100	□40	AQ	AQ	-	-	-
			SGMAV-01			AQ	AQ	-	-	-
			SGMJV-02	200	□60	-	-	AV	AV	-
			SGMAV-02			-	-	AV	AV	-
			SGMJV-04	400	□60	-	-	AV	AV	-
			SGMAV-04			-	-	AV	AV	-
			SGMJV-08	750	□80	-	-	-	-	AZ
			SGMAV-08			-	-	-	-	AZ
		Σ-7	SGM7J-A5	50	□40	AQ	AQ	-	-	-
			SGM7A-A5			AQ	AQ	-	-	-
			SGM7J-01	100	□40	AQ	AQ	-	-	-
			SGM7A-01			AQ	AQ	-	-	-
			SGM7J-02	200	□60	-	-	AV	AV	-
			SGM7A-02			-	-	AV	AV	-
			SGM7J-04	400	□60	-	-	AV	AV	-
			SGM7A-04			-	-	AV	AV	-
			SGM7J-08	750	□80	-	-	-	-	AZ
			SGM7A-08			-	-	-	-	AZ
	Mitsubishi Electric Corporation	J3	HF-MP053	50	□40	AQ	AQ	-	-	-
			HF-KP053			AQ	AQ	-	-	-
			HF-MP13	100	□40	AQ	AQ	-	-	-
			HF-KP13			AQ	AQ	-	-	-
			HF-MP23	200	□60	-	-	AV	AV	-
			HF-KP23			-	-	AV	AV	-
			HF-MP43	400	□60	-	-	AV	AV	-
			HF-KP43			-	-	AV	AV	-
			HF-MP73	750	□80	-	-	-	-	AZ
			HF-KP73			-	-	-	-	AZ
		J4	HG-MR053	50	□40	AQ	AQ	-	-	-
			HG-KR053			AQ	AQ	-	-	-
			HG-MR13	100	□40	AQ	AQ	-	-	-
			HG-KR13			AQ	AQ	-	-	-
			HG-MR23	200	□60	-	-	AV	AV	-
			HG-KR23			-	-	AV	AV	-
			HG-MR43	400	□60	-	-	AV	AV	-
			HG-KR43			-	-	AV	AV	-
			HG-MR73	750	□80	-	-	-	-	AZ
			HG-KR73			-	-	-	-	AZ

Table: Table of Motors Used and Corresponding Intermediate Flanges

Motor type				Rated output [W]	Flange angle [mm]	CKSF4	CKSF5	CKSF6	CKSF8	CKSF10
AC servo motor	Mitsubishi Electric Corporation	JN	HF-KN053	50	□40	AQ	AQ	-	-	-
			HF-KN13	100	□40	AQ	AQ	-	-	-
			HF-KN23	200	□60	-	-	AV	AV	-
			HF-KN43	400	□60	-	-	AV	AV	-
	Tamagawa Seiki Co., Ltd.	TBL-iII	TS4602	50	□40	AQ	AQ	-	-	-
			TS4603	100	□40	AQ	AQ	-	-	-
			TS4604	150	□40	AQ	AQ	-	-	-
			TS4607	200	□60	-	-	AV	AV	-
			TS4609	400	□60	-	-	AV	AV	-
			TS4614	750	□80	-	-	-	-	AZ
	Panasonic Corporation	MINAS A5	MSMD5A	50	□38	AP	AP	-	-	-
			MSME5A			AP	AP	-	-	-
			MSMD01	100	□38	AP	AP	-	-	-
			MSME01			AP	AP	-	-	-
			MSMD02	200	□60	-	-	AY	AY	-
			MSME02			-	-	AY	AY	-
			MSMD04	400	□60	-	-	AY	AY	-
			MSME04			-	-	AY	AY	-
			MSMD08	750	□80	-	-	-	-	A5
			MSME08			-	-	-	-	A5
		MINAS A6	MSMF5A	50	□38	AP	AP	-	-	-
			MHMF5A		□40	AQ	AQ	-	-	-
			MSMF01	100	□38	AP	AP	-	-	-
			MHMF01		□40	AQ	AQ	-	-	-
			MSMF02	200	□60	-	-	AY	AY	-
			MHMF02			-	-	AY	AY	-
			MSMF04	400	□60	-	-	AY	AY	-
			MHMF04			-	-	AY	AY	-
			MSMF08	750	□80	-	-	-	-	A5
			MHMF08			-	-	-	-	A5
	Keyence Corporation	SV	SV-M005	50	□40	AQ	AQ	-	-	-
			SV-M010	100	□40	AQ	AQ	-	-	-
			SV-M020	200	□60	-	-	AV	AV	-
			SV-M040	400	□60	-	-	AV	AV	-
			SV-M075	750	□80	-	-	-	-	AZ
		SV2	SV2-M005	50	□40	AQ	AQ	-	-	-
			SV2-M010	100	□40	AQ	AQ	-	-	-
			SV2-M020	200	□60	-	-	AV	AV	-
			SV2-M040	400	□60	-	-	AV	AV	-
			SV2-M075	750	□80	-	-	-	-	AZ
	Sanyo Denki Co., Ltd.	SANMOTION R	R2□A04003	30	□40	AQ	AQ	-	-	-
			R2□A04005	50	□40	AQ	AQ	-	-	-
			R2EA04008	80	□40	AQ	AQ	-	-	-
			R2□A04010	100	□40	AQ	AQ	-	-	-
			R2□A06020	200	□60	-	-	AV	AV	-
			R2AA06040	400	□60	-	-	AV	AV	-
			R2AA08075	750	□80	-	-	-	-	AZ
	Omron Corporation	OMNUC G5	R88M-K05030	50	□40	AQ	AQ	-	-	-
			R88M-K10030	100	□40	AQ	AQ	-	-	-
			R88M-K20030	200	□60	-	-	AY	AY	-
			R88M-K40030	400	□60	-	-	AY	AY	-
			R88M-K75030	750	□80	-	-	-	-	A5
	Fanuc Corporation	βis series	βis0.2/5000	50	□40	AQ	AQ	-	-	-
			βis0.3/5000	100	□40	AQ	AQ	-	-	-

Motor type					Flange angle	CKSF4	CKSF5	CKSF6	CKSF8	CKSF10
Stepper motor	Oriental Motor Co. Ltd.	α step		AZ4*, AR4*	□42	AR	AR	-	-	-
				AZ6*, AR6*	□60	-	-	AU	AU	-
				AZ9*, AR9*	□85	-	-	-	-	A6
		5 phase	CRK	CRK54*	□42	AR	AR	-	-	-
				CRK56*	□60	-	-	AU	AU	-
			CSK II	CSK59*	□85	-	-	-	-	A6
			RK II	RKS54*	□42	AR	AR	-	-	-
				RKS56*	□60	-	-	AU	AU	-
				RKS59*	□85	-	-	-	-	A6
			PKA	PKA544	□42	AR	AR	-	-	-
				PKA566	□60	-	-	AU	AU	-
			CVK	CVK54*	□42	AR	AR	-	-	-
				CVK56*	□60	-	-	AU	AU	-
		2 phase	CMK	CMK24*	□42	AR	AR	-	-	-
			CVK	CVK24*	□42	AR	AR	-	-	-
	Sanyo Denki Co., Ltd.	PB		PBDM423, PBA**423	□42	AR	AR	-	-	-
				PBDM60*, PBA**60*	□60	-	-	AU	AU	-
		5 phase		FAF54*/FDF54*/FA511M42/FB511M42	□42	AR	AR	-	-	-
				FAM56*/FDM56*/FA512M60/FA512M60	□60	-	-	AU	AU	-
		2 phase		D*15H52*	□42	AR	AR	-	-	-
				DB16H78*	□60	-	-	AU	AU	-
	Keyence Corporation	2 phase		QS-M42	□42	AR	AR	-	-	-
				QS-M60	□60	-	-	AU	AU	-

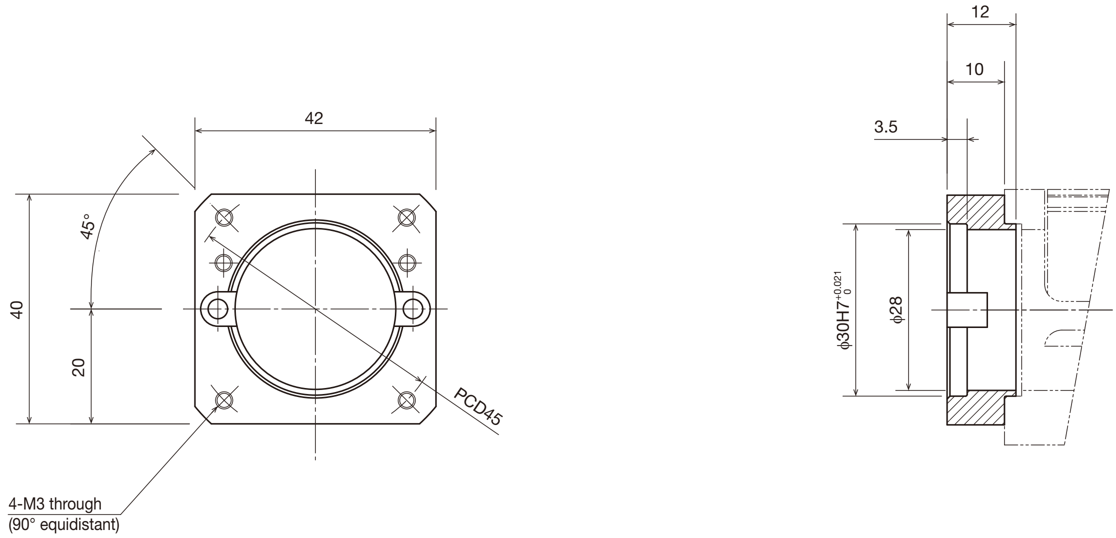
Note 1) The symbols in the table indicate the housing A and the intermediate flange.
Note 2) See the CKSF technical materials for couplings used with installing the motors listed in the table. (→ P.40)
Note 3) The motor model in the table shows only part of the model number. For model details, see the catalogs of the motor manufacturers.

For CKSF4

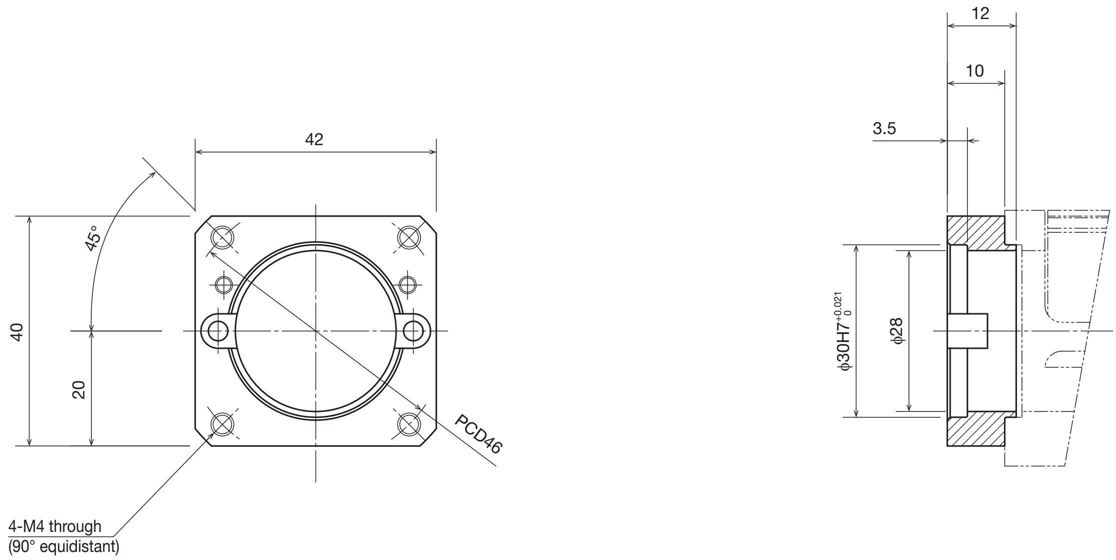
CKSF＊	… Actuator model
●◇	… ●: Housing A ◇: Intermediate flange

Intermediate flange

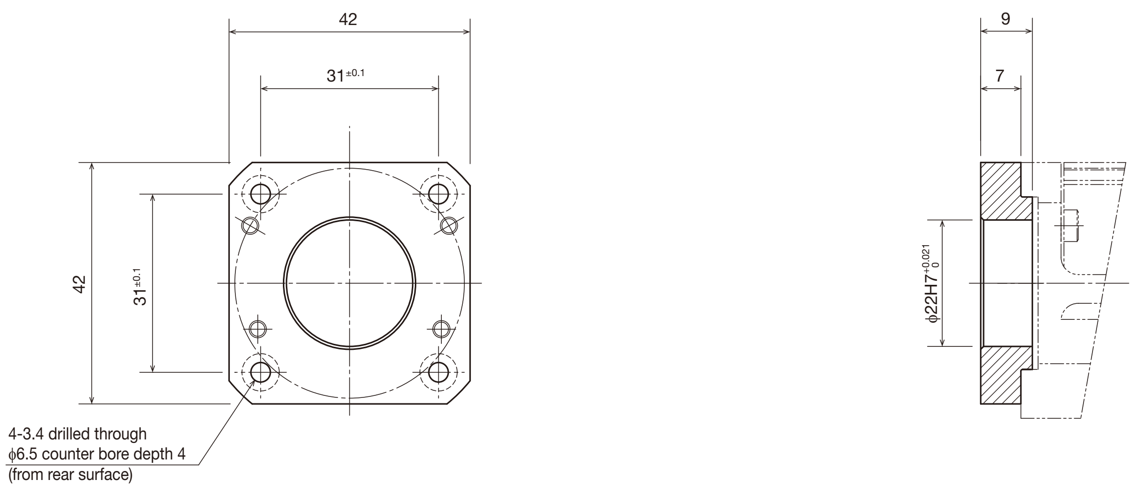
CKSF4
AP



CKSF4
AQ



CKSF4
AR



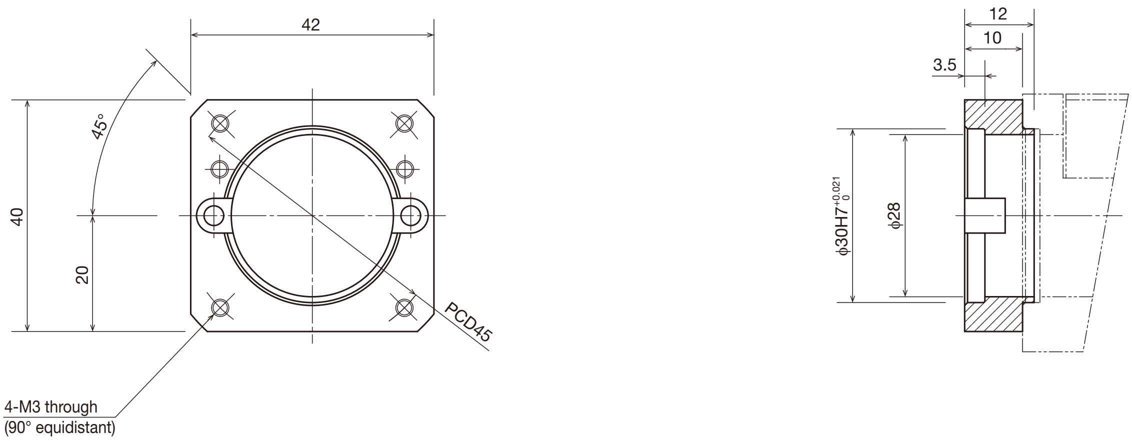
Note) For A0, see the external side view of intermediate flange without motor and the detailed drawing of motor mounting part. (→ P.22)

For CKSF5

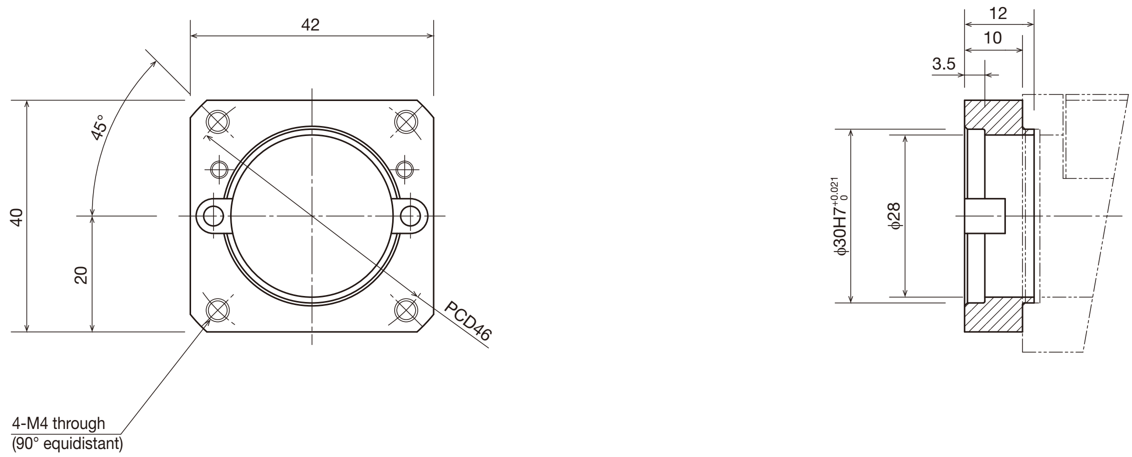
CKSF✻	··· Actuator model
●◇	··· ●: Housing A ◇: Intermediate flange

Intermediate flange

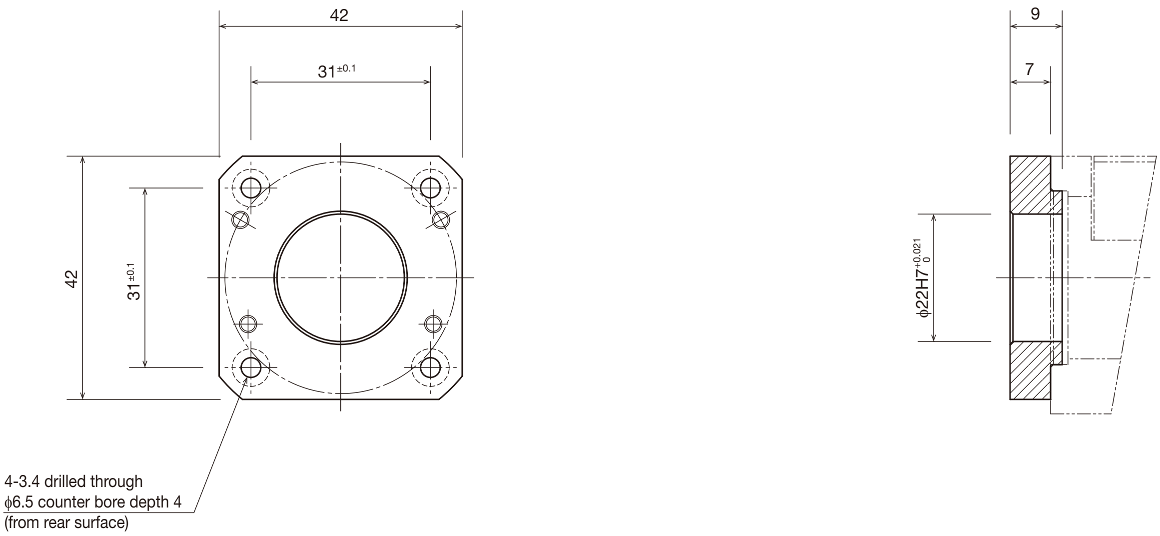
CKSF5
AP



CKSF5
AQ



CKSF5
AR



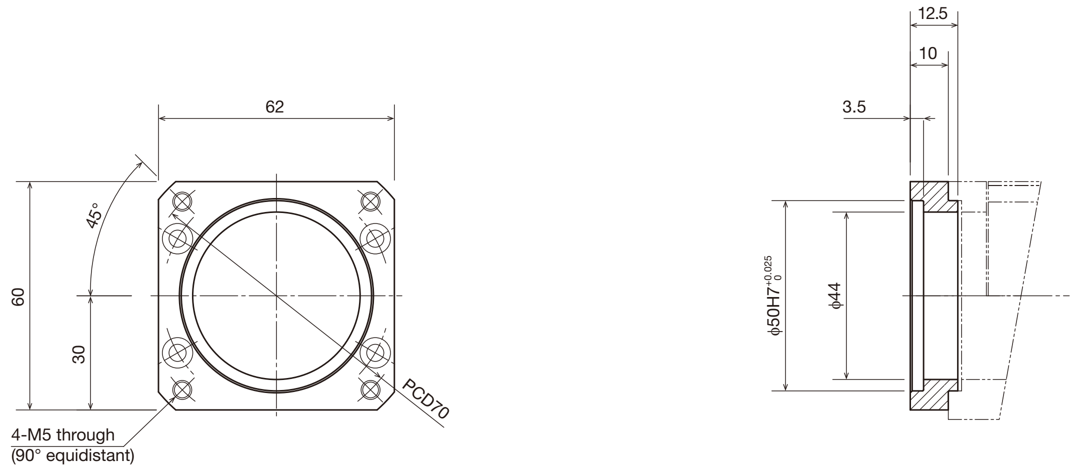
Note) For A0, see the external side view of intermediate flange without motor and the detailed drawing of motor mounting part. (→ P.24)

For CKSF6

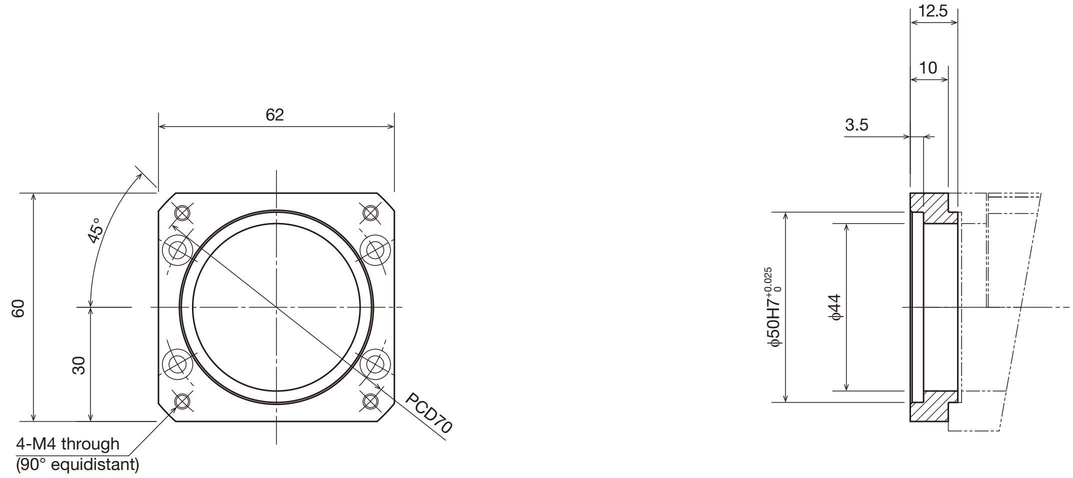
CKSF✻	··· Actuator model
●◇	··· ●: Housing A ◇: Intermediate flange

Intermediate flange

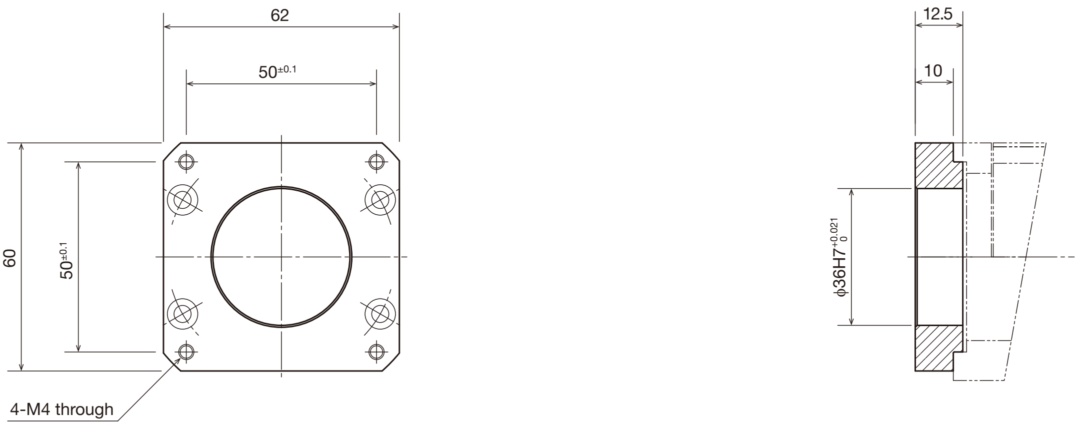
CKSF6
AV



CKSF6
AY



CKSF6
AU



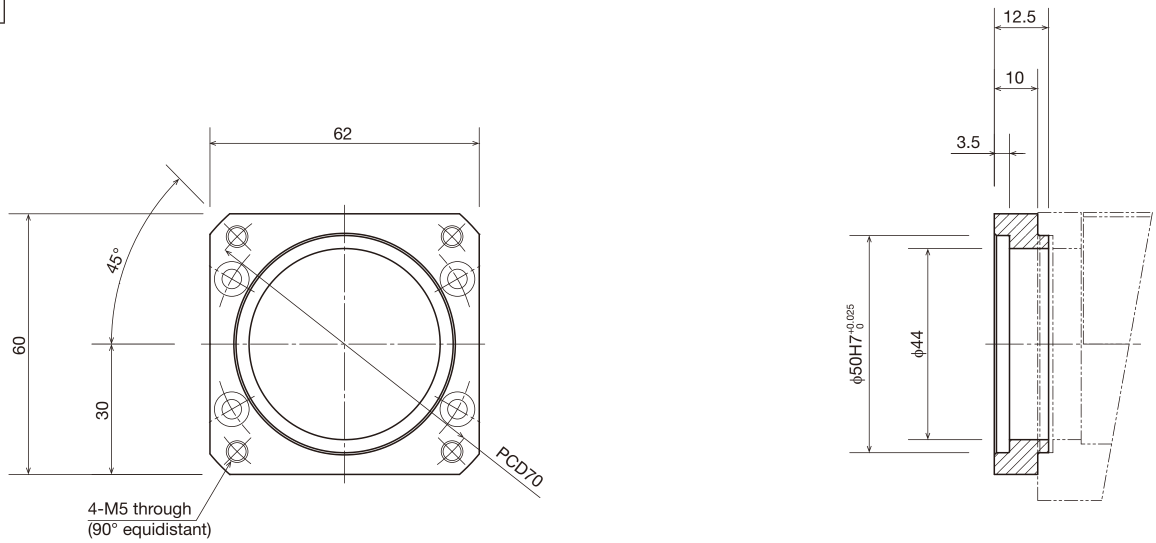
Note) For A0, see the external side view of intermediate flange without motor and the detailed drawing of motor mounting part. (→ P.26)

For CKSF8

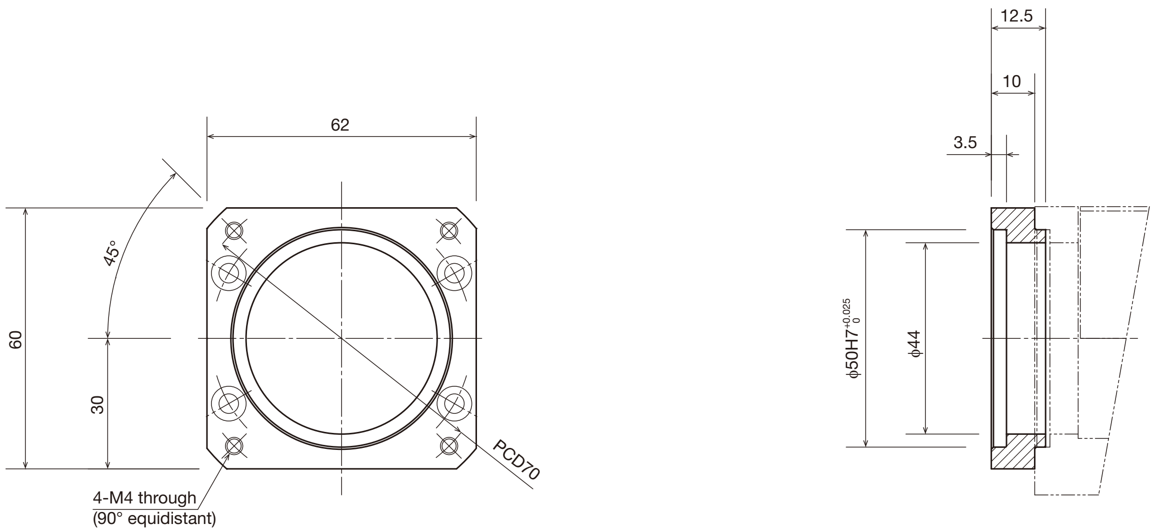
CKSF*	… Actuator model
●◇	… ●: Housing A ◇: Intermediate flange

Intermediate flange

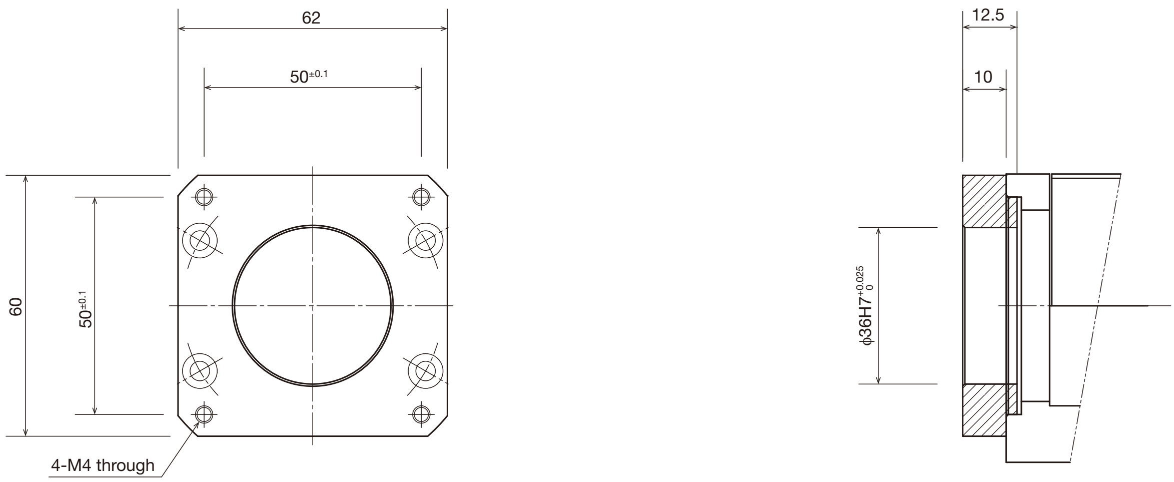
CKSF8
AV



CKSF8
AY



CKSF8
AU



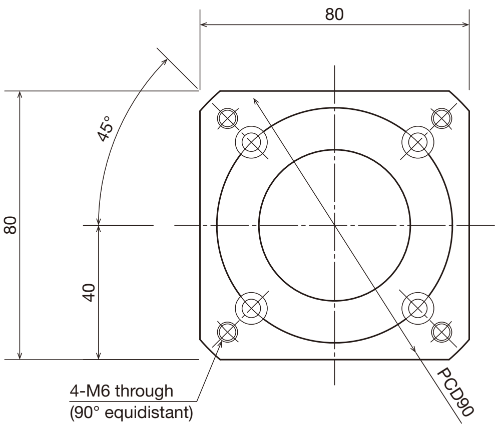
Note) For A0, see the external side view of intermediate flange without motor and the detailed drawing of motor mounting part. (→ P.28)

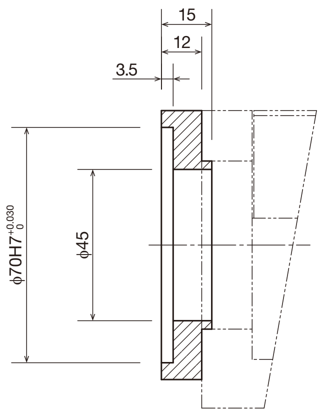
For CKSF10

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

Intermediate flange

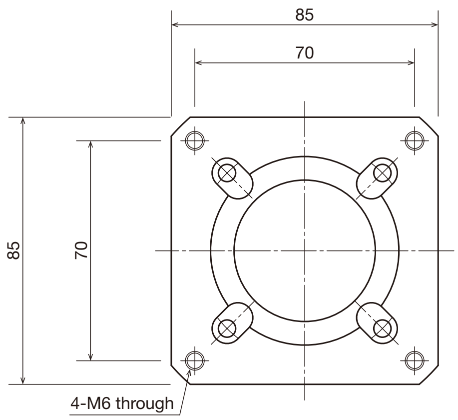
CKSF10
AZ

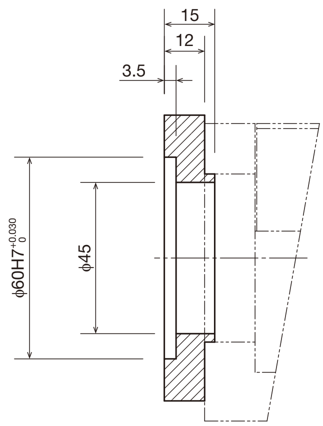




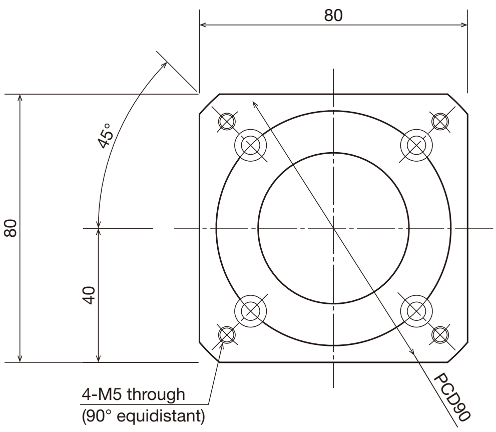
CKSF10
A6

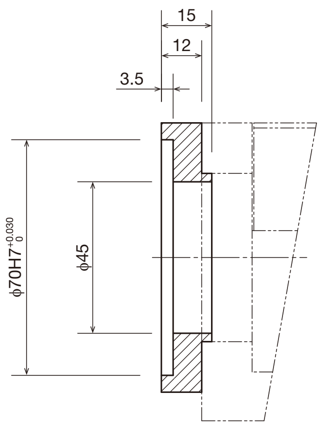
4-M6 through
(90° equidistant)





CKSF10
A5





Note) For A0, see the external side view of intermediate flange without motor and the detailed drawing of motor mounting part. (→ P.30)

CKSF Technical Materials

Motor Selection

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

Actuator		Ball screw			
Model	Stroke [mm]	Lead [mm]	Shaft diameter [mm]	Shaft length [mm]	Shaft end diameter [mm]
CKSF4	50	10	ϕ10	257	ϕ6h7
	900			1107	
	50	16	ϕ10	257	ϕ6h7
	900			1107	
CKSF5	50	10	ϕ13	274	ϕ8h7
	900			1124	
	50	20	ϕ13	274	ϕ8h7
	900			1124	
CKSF6	50	20	ϕ15	328	ϕ9h7
	1300			1578	
	50	30	ϕ15	328	ϕ9h7
	1300			1578	
CKSF8	100	20	ϕ20	446	ϕ12h7
	1500			1846	
	100	40	ϕ20	446	ϕ12h7
	1500			1846	
CKSF10	100	25	ϕ25	485	ϕ15h7
	1500			1885	
	100	50	ϕ25	485	ϕ15h7
	1500			1885	

Weight of moving element

Model	Weight of moving element [kg]
CKSF4	0.4
CKSF5	0.5
CKSF6	1.0
CKSF8	2.1
CKSF10	4.0

Permissible input torque

Model	Permissible input torque [N·m]
CKSF4	1.2
CKSF5	1.8
CKSF6	3.1
CKSF8	7.1
CKSF10	15.5

Recommended Coupling

Recommended coupling (flat spring type)		
Model	Type	Inertial moment [kg·cm^2]
CKSF4	SFC-020DA2 (Miki Pulley Co., LTD.)	0.034
	XBW-25C2 (Nabeya Bi-tech Kaisha)	0.023
CKSF5	SFC-020DA2 (Miki Pulley Co., LTD.)	0.034
	XBW-25C2 (Nabeya Bi-tech Kaisha)	0.023
CKSF6	SFC-030DA2 (Miki Pulley Co., LTD.)	0.094
	XBW-34C3 (Nabeya Bi-tech Kaisha)	0.090
CKSF8	SFC-030DA2 (Miki Pulley Co., LTD.)	0.116
	XBW-34C3 (Nabeya Bi-tech Kaisha)	0.090
CKSF10	SFC-040DA2 (Miki Pulley Co., LTD.)	0.430
	XBW-44C2 (Nabeya Bi-tech Kaisha)	0.350

* Recommended coupling is for servo motor use. When using a stepper motor, contact THK.

CKRF4 TSC specifications

Model Configuration

Model	Ball screw lead	Stroke	Design symbol	Control device	Option	Motor size	Home position	Cable type and length
CKRF4 -	06 -	0150	A -	TS -	GR-SB /	35P	D00	S3
CKRF4	06: 6mm	0050: 50mm	A	TS: TSC	No symbol: None	35P : Stepper motor □35	D00: Motor side	No symbol : None
		~			GR: Gray cover	35PB: Stepper motor □35 With brake	R00: Reverse motor side	S3 : Standard 3m
		0300: 300mm			SB: Slider base			S5 : Standard 5m
					□1□2: Sensors			SA : Standard 10m

Basic Specifications

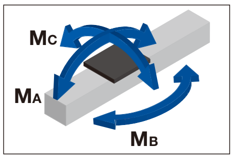
Control device type				TSC
Motor size				□35
Ball screw lead [mm]				6
Maximum load capacity [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	6.5
		Wall mount		6
		Vertical mount	0.2G	4
Electromagnetic brake retention [N]				251
Running life *1 [km]		Horizontal/Wall mount		10,000
		Vertical mount		5,000
Positioning repeatability [mm]				±0.010
Lost motion [mm]				0.1
Static permissible moment *2 [N·m]				M_A: 31, M_B: 21.2, M_C: 52.7
Guideline value of vacuum rate *3 x 10^{-3} [m³/min]				10

*1 The conditions for calculation are as follows:
Conditions: Permissible overhang length under the maximum load capacity Stroke 75mm

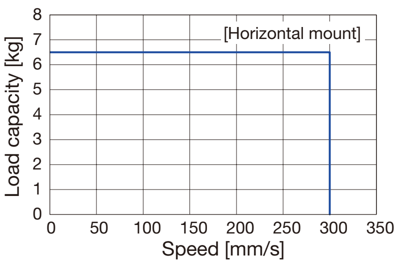
*2 Moment standards for M_A and M_C are the top face of the table, and that for M_B is the center of the table.

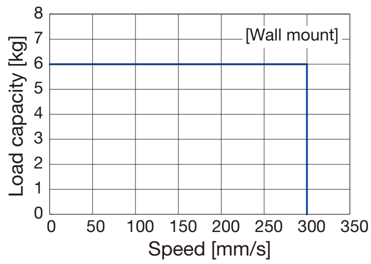
*3 The vacuum rate does not include the effect of piping resistance.

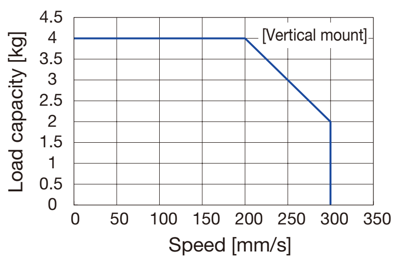
Static Permissible Moment



Speed and Load Capacity: Relationship Diagram



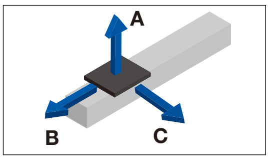




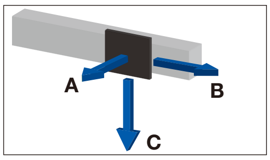
Refer to the TSC specification pressing force and pressing set value relationship diagram (→P.64) for details about pressing operations.

Permissible Overhang Length *4

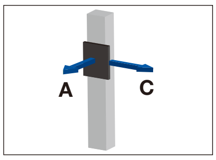
Horizontal use



Wall use



Vertical use



Horizontal mount [mm]

Ball screw lead [mm]	Load mass [kg]	A	B	C
6	3	330	60	150
	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

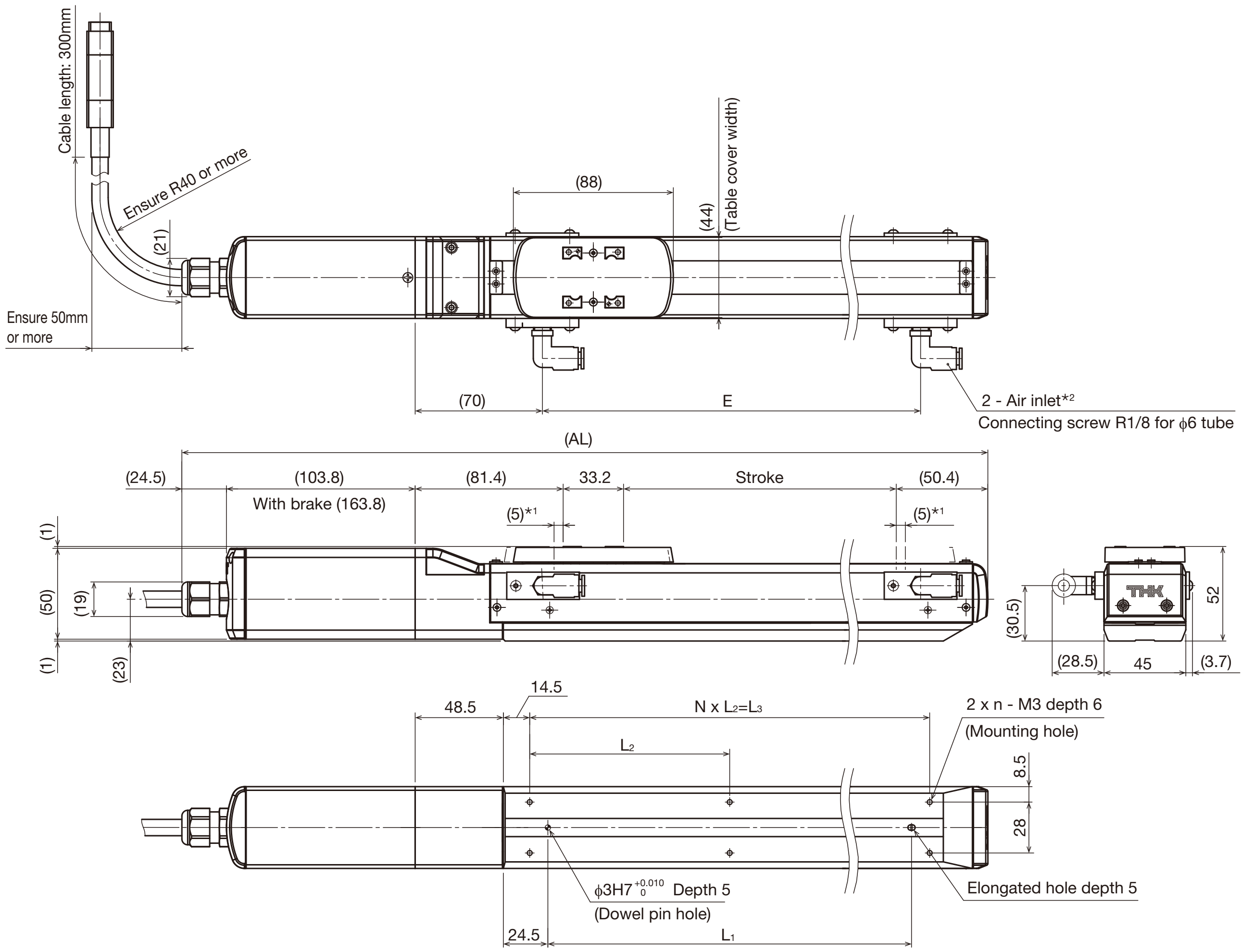
Vertical mount [mm]

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

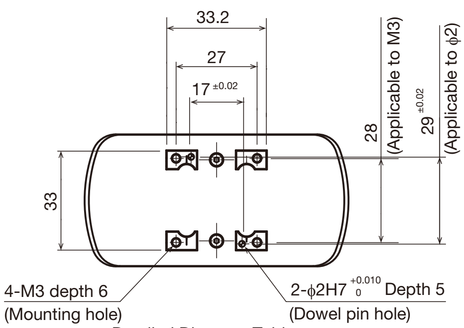
*4 This value is the overhang length whose running life is 10,000 km for horizontal direction/wall mount and 5,000 km for vertical direction. A permissible value of the applied load in each direction.

CKRF4 + TSC

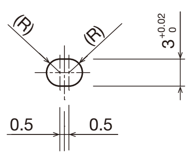
Dimensions



*1 Stroke between mechanical stoppers.
*2 While the suction ports can be connected from either right or left of the product, the product at the factory shipment is so arranged that the port is connected to the side as shown in this figure, and the port comes with the product.



Detailed Diagram: Table



Detailed Diagram: Elongated Hole

Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)	250 (260)	300 (310)
Maximum speed *3 *4 [mm/s]	Ball screw lead: 6mm	300					
Dimensions [mm]	AL *5	343.3(403.3)	393.3(453.3)	443.3(503.3)	493.3(553.3)	543.3(603.3)	593.3(653.3)
	L1	100	150	200	250	300	350
	L2	120	85	110	90	105	120
	L3	120	170	220	270	315	360
	E	108	158	208	258	308	358
Mounting pitch count	N	1	2	2	3	3	3
Mounting hole count	n	2	3	3	4	4	4
Weight *5 [kg]		1.8(2.3)	2.1(2.5)	2.3(2.7)	2.5(2.9)	2.7(3.1)	2.9(3.3)

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

CKRF5 TSC specifications

Model Configuration

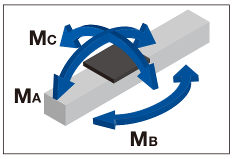
Model	Ball screw lead	Stroke	Design symbol	Control device	Option	Motor size	Home position	Cable type and length
CKRF5 -	10 -	0150	A -	TS -	GR-SB /	42P	D00	S3
CKRF5	06: 6mm	0050: 50mm	A	TS: TSC	No symbol: None	42P : Stepper motor □42	D00: Motor side	No symbol : None
	10: 10mm	~			GR: Gray cover	42PB: Stepper motor □42 With brake	R00: Reverse motor side	S3 : Standard 3m
		0550: 550mm			SB: Slider base			S5 : Standard 5m
					□1□2: Sensors			SA : Standard 10m

Basic Specifications

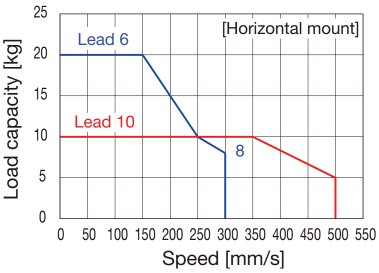
Control device type				TSC	
Motor size				□42	
Ball screw lead [mm]				6	10
Maximum load capacity [kg]	Acceleration and deceleration rate	Horizontal mount	0.3G	20	10
		Wall mount		14.5	10
		Vertical mount	0.2G	7.5	6
Electromagnetic brake retention [N]				251	151
Running life *1 [km]	Horizontal/Wall mount			10,000	
	Vertical mount			5,000	
Positioning repeatability [mm]				±0.010	
Lost motion [mm]				0.1	
Static permissible moment *2 [N·m]				M_A: 84, M_B: 48.4, M_C: 105.8	
Guideline value of vacuum rate *3 x 10^{-3} [m^3/min]				12	

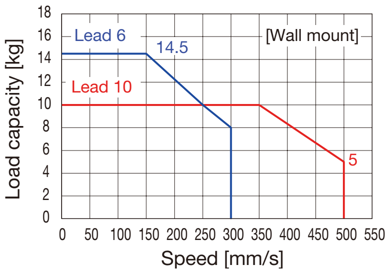
*1 The conditions for calculation are as follows:
Conditions: Permissible overhang length under the maximum load capacity Stroke 275mm
*2 Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.
*3 The vacuum rate does not include the effect of piping resistance.

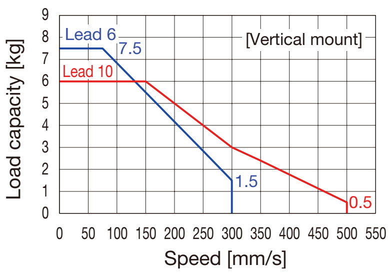
Static Permissible Moment



Speed and Load Capacity: Relationship Diagram



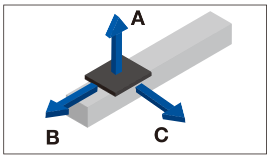




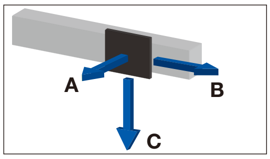
Refer to the TSC specification pressing force and pressing set value relationship diagram (→P.64) for details about pressing operations.

Permissible Overhang Length *4

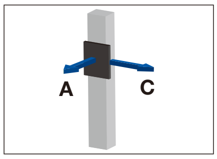
Horizontal use



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]

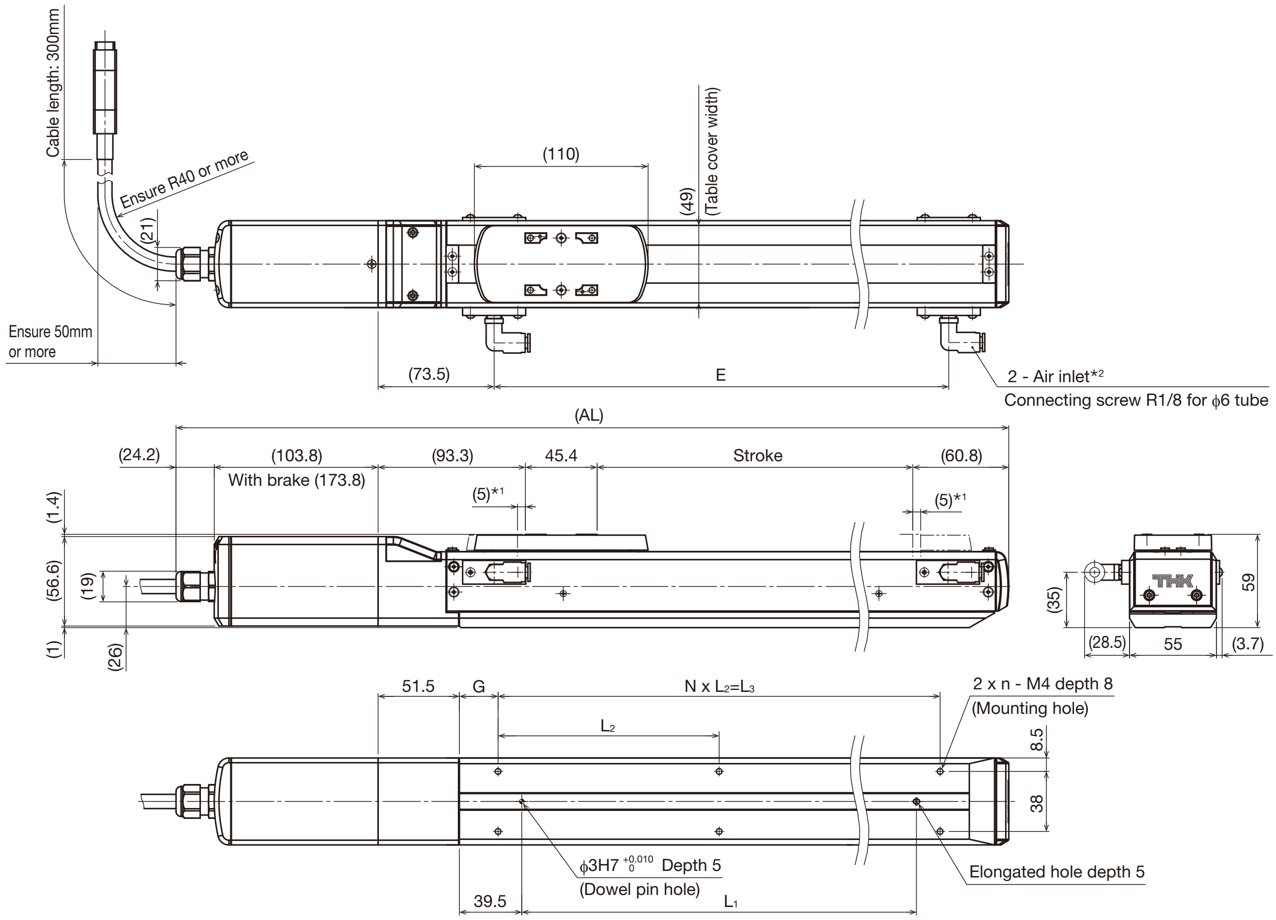
Ball screw lead [mm]	Load mass [kg]	A	B	C
6	7	180	60	680
	14.5	60	20	150
10	5	250	80	700
	10	100	20	210

Vertical mount [mm]

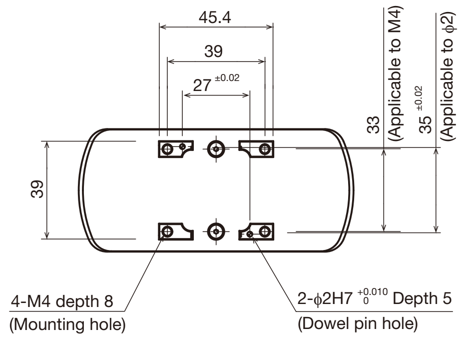
Ball screw lead [mm]	Load mass [kg]	A	C
6	3.5	160	160
	7.5	60	60
10	3	210	210
	6	90	90

*4 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.

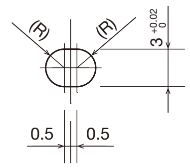
Dimensions



*1 Stroke between mechanical stoppers.
*2 While the suction ports can be connected from either right or left of the product, the product at the factory shipment is so arranged that the port is connected to the side as shown in this figure, and the port comes with the product.



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 *5	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
	E	137.5	187.5	237.5	287.5	337.5	387.5	437.5	487.5	537.5	587.5	637.5
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 *5 [kg]		3.0 (3.4)	3.3 (3.7)	3.6 (4.1)	3.9 (4.4)	4.2 (4.7)	4.5 (5.0)	4.8 (5.3)	5.1 (5.6)	5.4 (5.9)	5.7 (6.2)	6.0 (6.5)

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

CKRF4 TLC specifications

Model Configuration

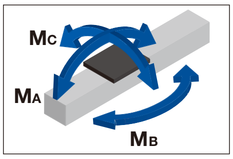
Model		Ball screw lead		Stroke	Design symbol		Control device		Option		Motor rated output	Motor cable orientation	Home position	Cable type and length
CKRF4	-	06	-	0150	A	-	TL	-	GR-SB	/	M05	R	D00	F3
CKRF4		06: 6mm		0050: 50mm	A		TL: TLC		No symbol: None		M05 : 50W	R: Right	D00: Motor side	No symbol : None
				~					GR: Gray cover		M05B: 50W with brake	L: Left	R00: Reverse motor side	F3 : Standard 3m
				0300: 300mm					SB: Slider base			U: Up		F5 : Standard 5m
									□1□2: Sensors			D: Down		FA : Standard 10m
														H3 : High flex 3m
														H5 : High flex 5m
														HA : High flex 10m

Basic Specifications

Item				TLC
Control device type				TLC
Motor rated output [W]				50
Ball screw lead [mm]				6
Rated speed *1 [mm/s]				300
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.5G	6
		Wall mount		5.5
		Vertical mount	0.3G	4
Rated thrust *3 [N]				133
Maximum thrust *4 [N]				241
Electromagnetic brake retention [N]				268
Running life *5 [km]		Horizontal/Wall mount		10,000
		Vertical mount		5,000
Positioning repeatability [mm]				±0.010
Lost motion [mm]				0.1
Static permissible moment *6 [N·m]				M_A: 31, M_B: 21.2, M_C: 52.7
Guideline value of vacuum rate *7 x 10^{-3} [m³/min]				10

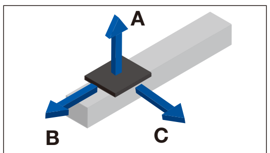
*1 At rated motor speed (3000min^{-1}).
*2 At rated speed.
*3 At rated motor torque.
*4 Dependent on maximum peak torque and permissible load.
*5 The conditions for calculation are as follows:
Conditions: Permissible overhang length under the maximum load capacity Stroke 75mm
*6 Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.
*7 The vacuum rate does not include the effect of piping resistance.

Static Permissible Moment

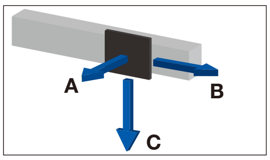


Permissible Overhang Length *8

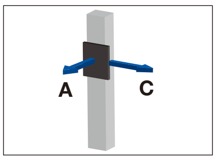
Horizontal use



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]

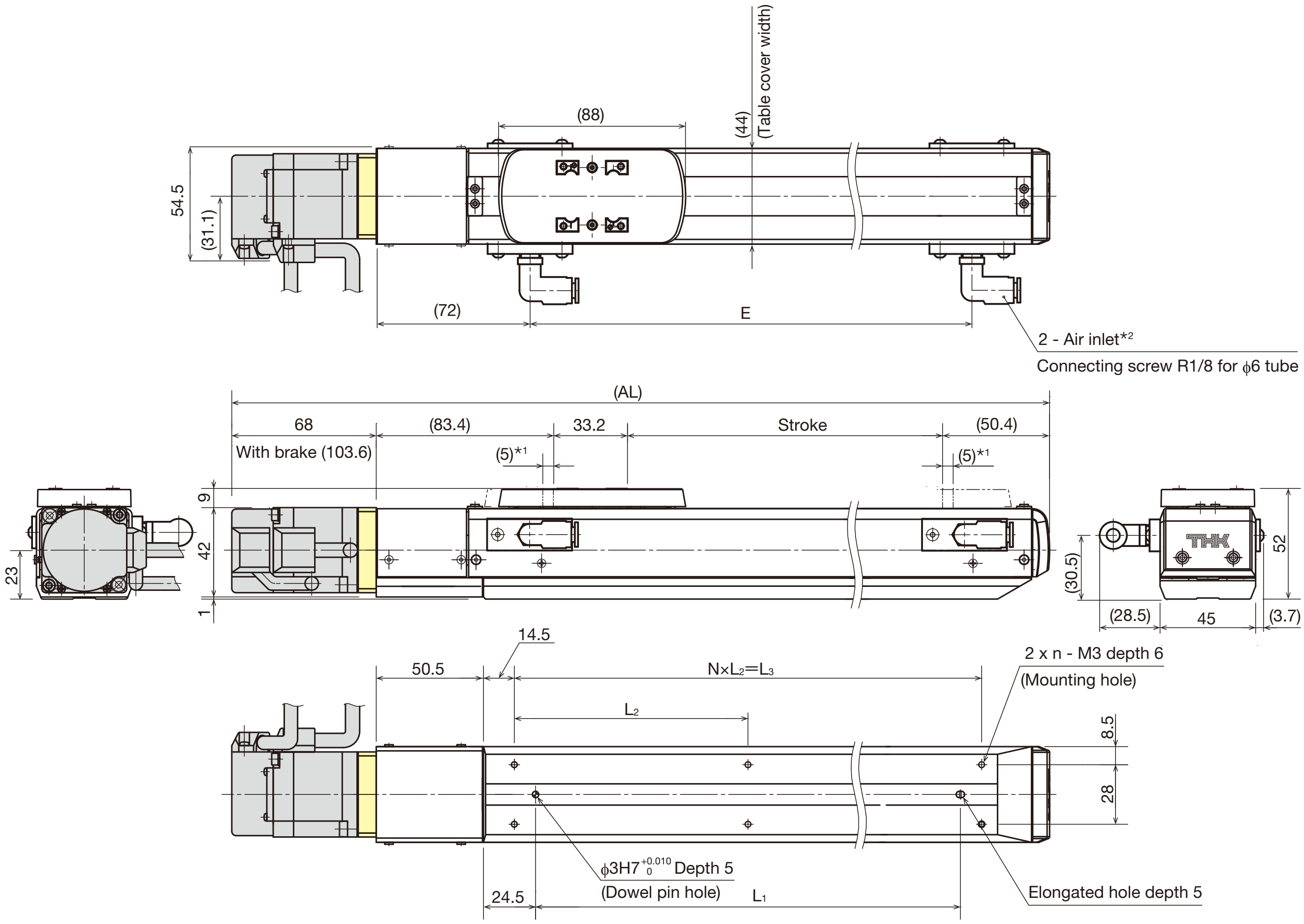
Ball screw lead [mm]	Load mass [kg]	A	C
6	2	100	100
	4	30	30

*8 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.

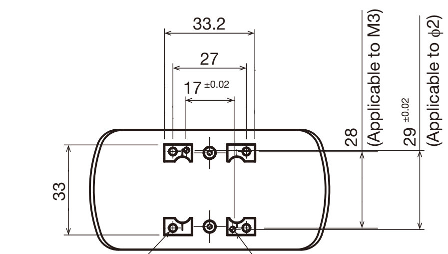
CKRF4 + TLC

Motor rated output **50W**

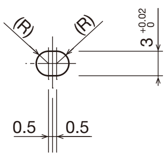
Dimensions



*1 Stroke between mechanical stoppers.
*2 While the suction ports can be connected from either right or left of the product, the product at the factory shipment is so arranged that the port is connected to the side as shown in this figure, and the port comes with the product.



Detailed Diagram: Table



Detailed Diagram: Elongated Hole

Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)	250 (260)	300 (310)
Maximum speed *3 [mm/s]	Ball screw lead: 6mm	300					
Dimensions [mm]	AL *4	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
	E	108	158	208	258	308	358
Mounting pitch count	N	1	2	2	3	3	3
Mounting hole count	n	2	3	3	4	4	4
Weight *4 [kg]		1.8(2.0)	2.0(2.2)	2.2(2.4)	2.4(2.6)	2.6(2.8)	2.8(3.0)

*3 The maximum speed is the value restricted by the motor rotational speed (at 3000min^{-1}), or by the permissible rotational speed of the ball screw.
*4 Values when a brake is installed are shown in parentheses.

CKRF5 TLC specifications

Model Configuration

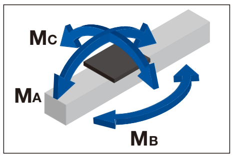
Model	Ball screw lead	Stroke	Design symbol	Control device	Option	Motor rated output	Motor cable orientation	Home position	Cable type and length
CKRF5 -	06 -	0150	A -	TL -	GR-SB /	M05	R	D00	F3
CKRF5	06: 6mm	0050: 50mm	A	TL: TLC	No symbol: None	M05 : 50W	R: Right	D00: Motor side	No symbol : None
	10: 10mm	≀			GR: Gray cover	M05B: 50W With brake	L: Left	R00: Reverse motor side	F3 : Standard 3m
		0550: 550mm			SB: Slider base		U: Up		F5 : Fixed 5m
					□1□2: Sensors		D: Down		FA : Fixed 10m
									H3 : High flex. 3m
									H5 : High flex. 5m
									HA : High flex. 10m

Basic Specifications

Control device type				TLC	
Motor rated output [W]				50	
Ball screw lead [mm]				6	10
Rated speed *1 [mm/s]				300	500
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.5G	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]				M_A: 84, M_B: 48.4, M_C: 105.8	
Guideline value of vacuum rate *7 x 10^{-3} [m³/min]				12	

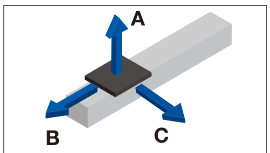
*1 At rated motor speed (3000min^{-1}).
*2 At rated speed.
*3 At rated motor torque.
*4 Dependent on maximum peak torque and permissible load.
*5 The conditions for calculation are as follows:
Conditions: Permissible overhang length under the maximum load capacity Stroke 275mm
*6 Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.
*7 The vacuum rate does not include the effect of piping resistance.

Static Permissible Moment

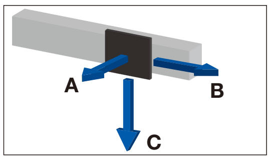


Permissible Overhang Length *8

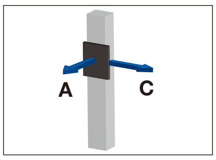
Horizontal use



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]

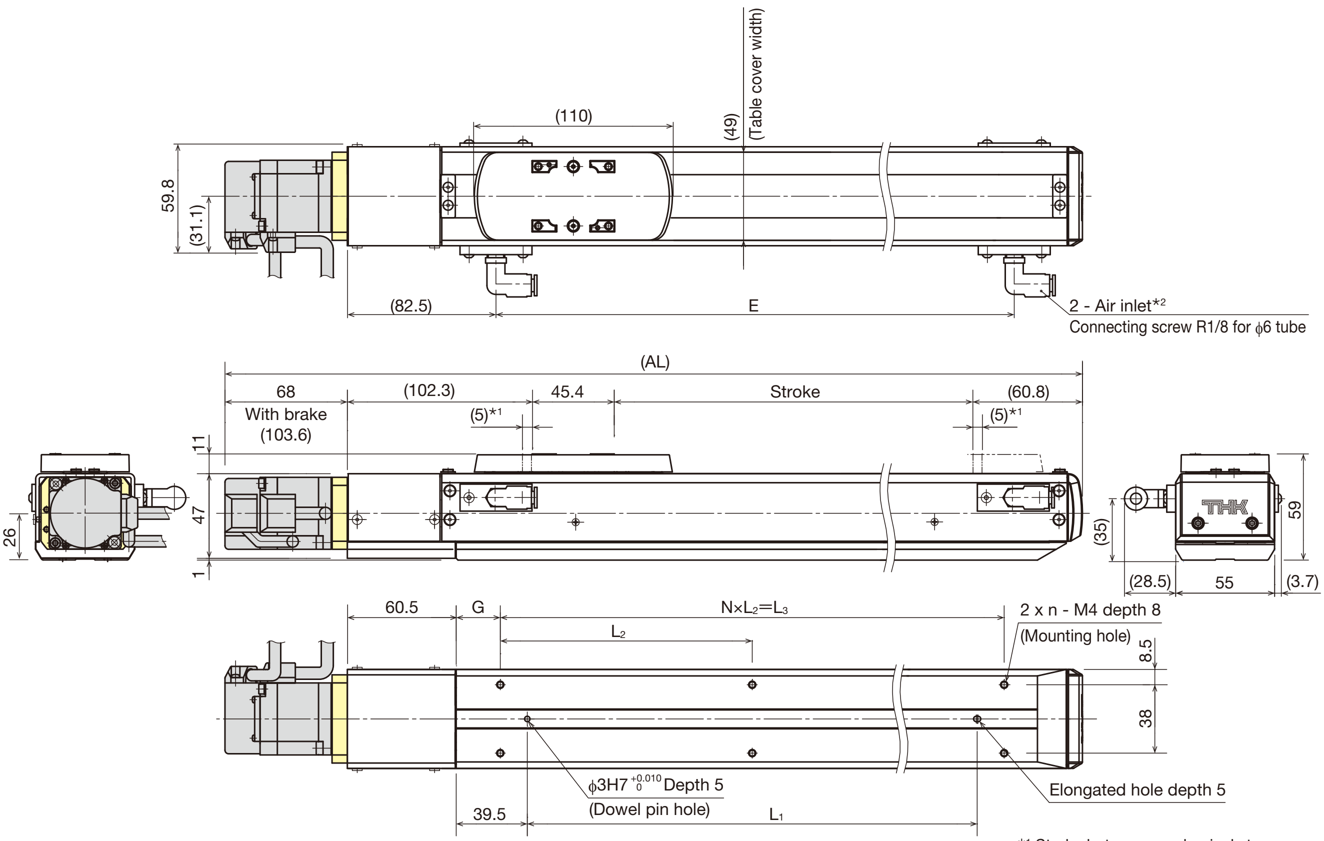
Ball screw lead [mm]	Load mass [kg]	A	C
6	3	210	210
	6	90	90
10	1.5	390	390
	3.5	180	180

*8 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.

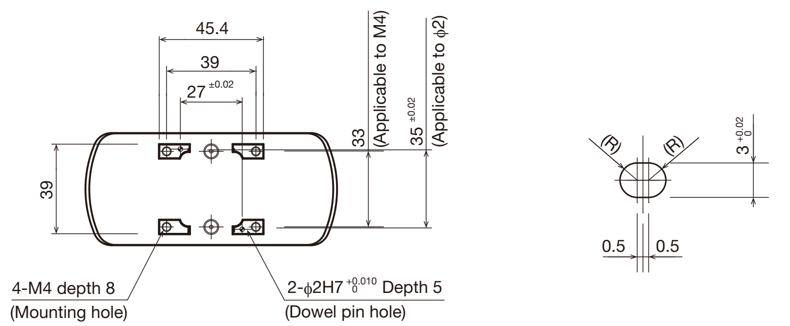
CKRF5 + TLC

Motor rated output **50W**

Dimensions



*1 Stroke between mechanical stoppers.
*2 While the suction ports can be connected from either right or left of the product, the product at the factory shipment is so arranged that the port is connected to the side as shown in this figure, and the port comes with the product.



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 [mm/s]	Ball screw lead: 6mm	300										250
	Ball screw lead: 10mm	500										430
Dimensions [mm]	AL *4	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
	E	137.5	187.5	237.5	287.5	337.5	387.5	437.5	487.5	537.5	587.5	637.5
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 (3.0)	3.1 (3.3)	3.4 (3.6)	3.7 (3.9)	4.0 (4.2)	4.3 (4.5)	4.6 (4.8)	4.9 (5.1)	5.2 (5.4)	5.5 (5.7)	5.8 (6.0)

*3 The maximum speed is the value restricted by the motor rotational speed (at 3000min^{-1}), or by the permissible rotational speed of the ball screw.
*4 Values when a brake is installed are shown in parentheses.

CKRF6 THC specifications

Model Configuration

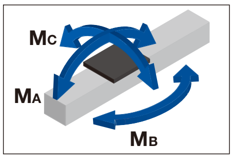
Model	Ball screw lead	Stroke	Design symbol	Control device	Option	Motor rated output	Motor cable orientation	Home position	Power supply voltage	Cable type and length
CKRF6 -	06 -	0150	A -	TH -	GR-SB /	M10	R	D00	D1	F3
CKRF6	06: 6mm	0050: 50mm	A	TH: THC	No symbol: None	M10: 100W	R : Right	D00: Motor side	D1: 100V	No symbol : None
	10: 10mm	~			GR: Gray cover	M10B: 100W With brake	L : Left	R00 : Reverse motor side	D2: 200V	F3 : Standard 3m
		0800: 800mm			SB: Slider base		U : Up	S02 : Motor side		F5 : Standard 5m
					□1□2: Sensors		D : Down	S03 : Reverse motor side		FA : Standard 10m
										H3 : High flex 3m
										H5 : High flex 5m
										HA : High flex 10m

Basic Specifications

Control device type				THC	
Motor rated output [W]				100	
Ball screw lead [mm]				6	10
Rated speed *1 [mm/s]				300	500
Maximum load capacity *2 [kg]	Acceleration and deceleration rate	Horizontal mount	0.5G	35	30
		Wall mount		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]				M_A: 166, M_B: 103.8, M_C: 179.5	
Guideline value of vacuum rate *7 x 10^{-3} [m^3/min]				15	

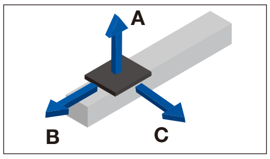
*1 At rated motor speed (3000min^{-1}).
*2 At rated speed.
*3 At rated motor torque.
*4 Dependent on maximum peak torque and permissible load.
*5 The conditions for calculation are as follows:
Conditions: Permissible overhang length under the maximum load capacity Stroke 275mm
*6 Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.
*7 The vacuum rate does not include the effect of piping resistance.

Static Permissible Moment



Permissible Overhang Length *8

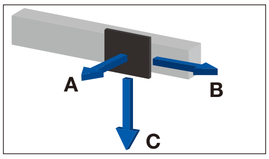
Horizontal use



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

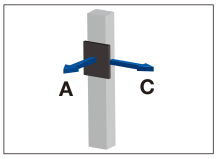
Wall use



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

*8 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

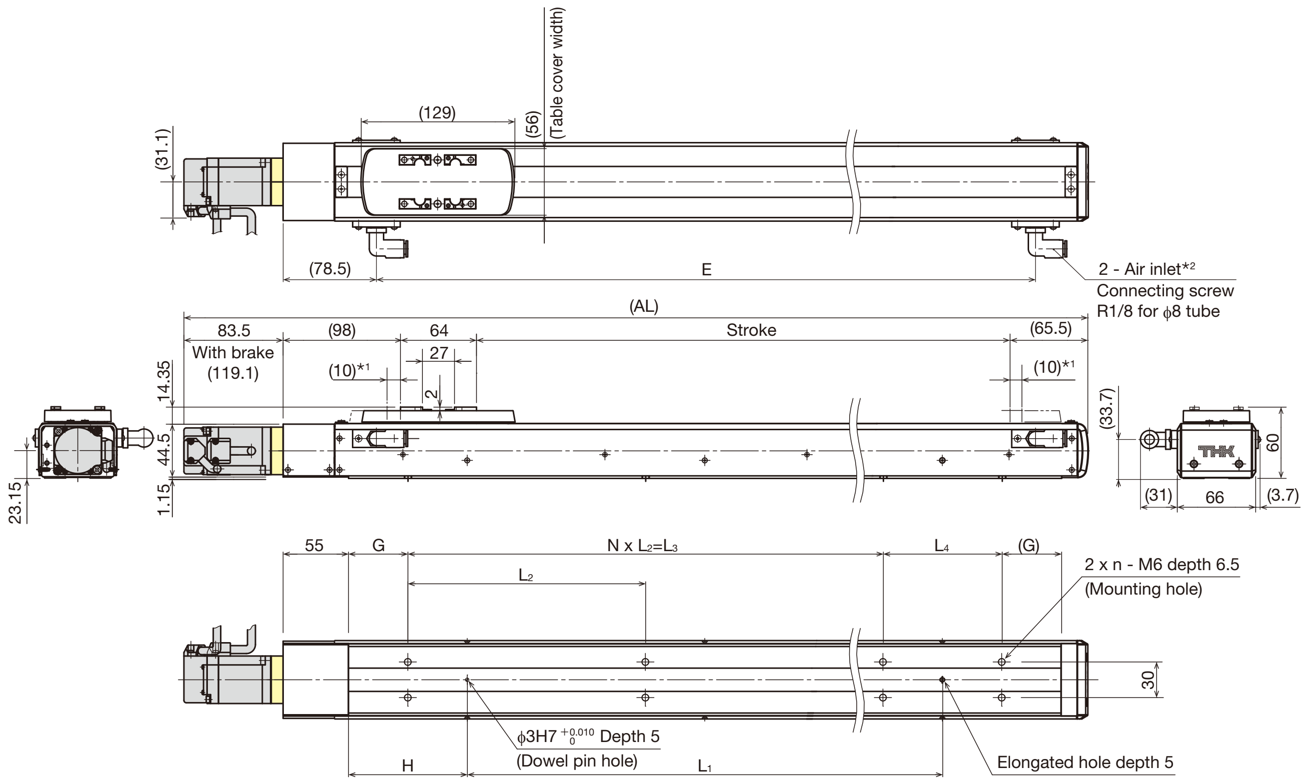
Stroke [mm] (Stroke between mechanical stoppers)		50 (70)	100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)
Maximum speed *9 [mm/s]	Ball screw lead: 6mm	300							
	Ball screw lead: 10mm	500							
Dimensions [mm]	AL *10	361(396.6)	411(446.6)	461(496.6)	511(546.6)	561(596.6)	611(646.6)	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
	H	50	50	50	75	75	100	100	100
	E	154.5	204.5	254.5	304.5	354.5	404.5	454.5	504.5
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 *10 [kg]		3.4(3.6)	3.8(4.0)	4.2(4.4)	4.6(4.8)	5(5.2)	5.4(5.6)	5.9(6.1)	6.3(6.5)

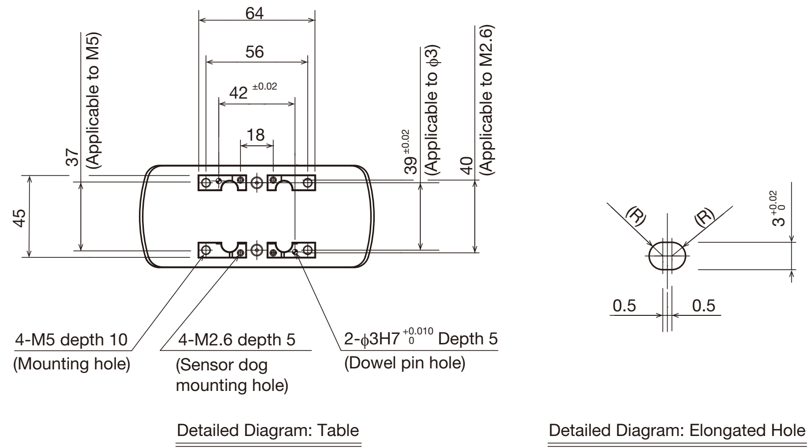
*9 The maximum speed is the value restricted by the motor rotational speed (at 3000min^{-1}), or by the permissible rotational speed of the ball screw.
*10 Values when a brake is installed are shown in parentheses.

CKRF6 + THC

Motor rated output **100W**

Dimensions





Detailed Diagram: Table

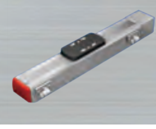
Detailed Diagram: Elongated Hole

*1 Stroke between mechanical stoppers.
*2 While the suction ports can be connected from either right or left of the product, the product at the factory shipment is so arranged that the port is connected to the side as shown in this figure, and the port comes with the product.

Stroke [mm] (Stroke between mechanical stoppers)		450 (470)	500 (520)	550 (570)	600 (620)	650 (670)	700 (720)	750 (770)	800 (820)
Maximum speed *3 [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 *4	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
	H	100	100	100	100	100	100	100	100
	E	554.5	604.5	654.5	704.5	754.5	804.5	854.5	904.5
Mounting pitch count	N	2	3	3	3	3	4	4	4
Mounting hole count	n	4	4	4	4	5	5	5	5
Weight *4 [kg]		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(9.7)

*3 The maximum speed is the value restricted by the motor rotational speed (at 3000min^{-1}), or by the permissible rotational speed of the ball screw.
*4 Values when a brake is installed are shown in parentheses.

CKRF4 without motor



Model Configuration

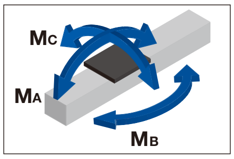
Model		Ball screw lead		Stroke	Design symbol		With/without motor		Intermediate flange		Option
CKRF4	-	06	-	0150	A	-	0	-	AN	-	GR-SB
CKRF4		06: 6mm		0050: 50mm	A		0: Without motor		A0: Without intermediate flange		No symbol: None
				≀			1: With motor (Prepared by THK)		AN		GR: Gray cover
				0300: 300mm					AQ		SB: Slider base
									AM		□1□2: Sensors
									AP		
									AS		
									AR		

Basic Specifications

LM guide portion	Basic dynamic load rating C [N]		3,590
	Basic static load rating C_0 [N]		6,300
Ball screw portion	Basic dynamic load rating Ca [N]		860
	Basic static load rating C_0a [N]		1,450
	Screw shaft diameter [mm]		ϕ6
	Ball screw lead [mm]		6
Bearing portion (Fixed side)	Axial direction	Basic dynamic load rating Ca [N]	1,150
		Static permissible load P_0a [N]	735
Permissible rotational speed [min⁻¹]			3,000
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]			M_A:31 M_B:21.2 M_C:52.7
Guideline value of vacuum rate *4 x 10^{-3} [m³/min]			10

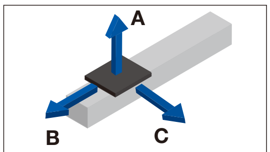
*1 The starting torque represents values when the standard grease is filled.
*2 These represent values when measured using a motor provided by THK.
*3 Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.
*4 The vacuum rate does not include the effect of piping resistance.

Static Permissible Moment

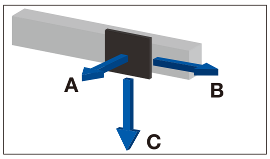


Permissible Overhang Length *5

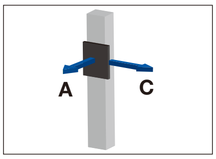
Horizontal use



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

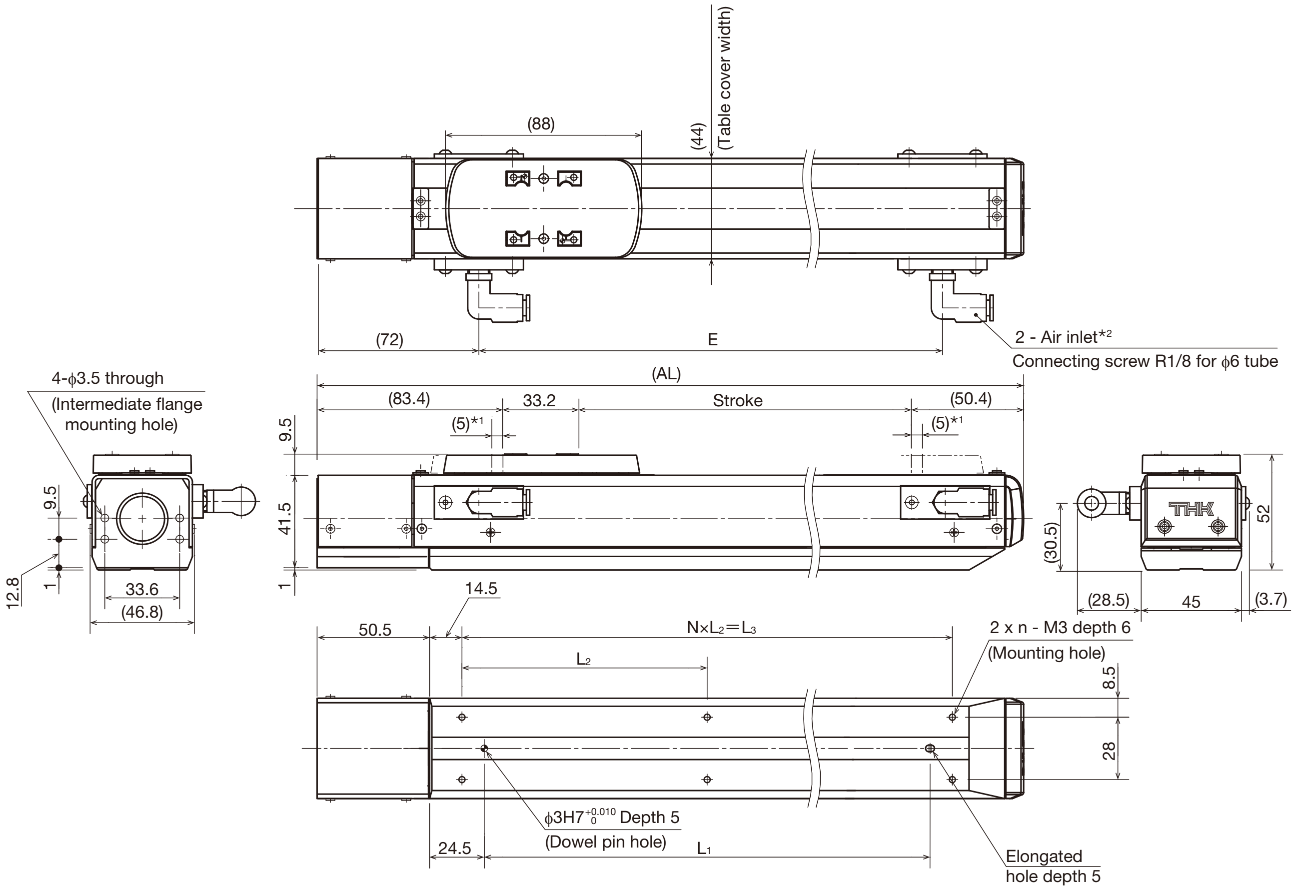
Vertical mount [mm]

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

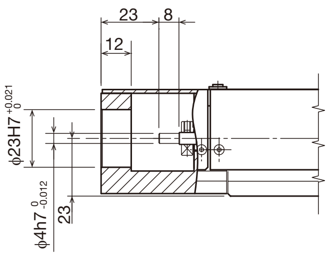
*5 This value is the overhang length whose running life is 10,000 km for horizontal direction/wall mount and 5,000 km for vertical direction. A permissible value of the applied load in each direction.

CKRF4

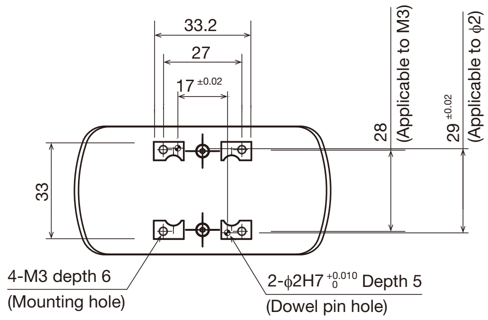
Dimensions



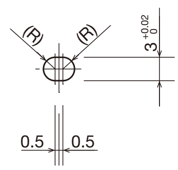
*1 Stroke between mechanical stoppers.
*2 While the suction ports can be connected from either right or left of the product, the product at the factory shipment is so arranged that the port is connected to the side as shown in this figure, and the port comes with the product.
*3 See P.61 for intermediate flange dimensions.



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



Detailed Diagram: Table

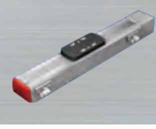


Detailed Diagram: Elongated Hole

Stroke [mm] (Stroke between mechanical stoppers)		50 (60)	100 (110)	150 (160)	200 (210)	250 (260)	300 (310)
Maximum speed *4 *5 [mm/s]	Ball screw lead: 6mm	300					
Dimensions [mm]	AL	217	267	317	367	417	467
	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	108	158	208	258	308	358
Mounting pitch count	N	1	2	2	3	3	3
Mounting hole count	n	2	3	3	4	4	4
Weight [kg]		1.2	1.5	1.7	1.9	2.1	2.3

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

CKRF5 without motor



Model Configuration

Model		Ball screw lead		Stroke	Design symbol		With/without motor		Intermediate flange		Option
CKRF5	-	06	-	0150	A	-	0	-	AN	-	GR-SB

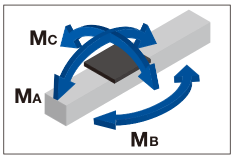
Model	Ball screw lead	Stroke	Design symbol	With/without motor	Intermediate flange	Option
CKRF5	06: 6mm	0050: 50mm	A	0: Without motor	A0: Without intermediate flange	No symbol: None
	10: 10mm	≀		1: With motor (Prepared by THK)	AN	GR: Gray cover
		0550: 550mm			AQ	SB: Slider base
					AM	□1□2: Sensors
					AP	
					AS	
					AR	

Basic Specifications

LM guide portion	Basic dynamic load rating C [N]		7,240	
	Basic static load rating C_0 [N]		12,150	
Ball screw portion	Basic dynamic load rating Ca [N]		1,950	1,120
	Basic static load rating C_{0a} [N]		3,510	1,740
	Screw shaft diameter [mm]		ϕ8	
	Ball screw lead [mm]		6	10
Bearing portion (Fixed side)	Axial direction	Basic dynamic load rating Ca [N]	2,050	
		Static permissible load P_{0a} [N]	1,830	
Permissible rotational speed *1 [min^{-1}]			3,000	
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	
Guideline value of vacuum rate *5 x 10^{-3} [m^3/min]			12	

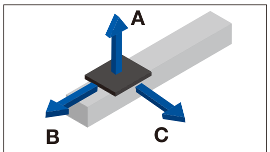
*1 The permissible rotational speed is restricted by the stroke.
*2 The starting torque represents values when the standard grease is filled.
*3 These represent values measured by using a motor provided by THK.
*4 Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.
*5 The vacuum rate does not include the effect of piping resistance.

Static Permissible Moment

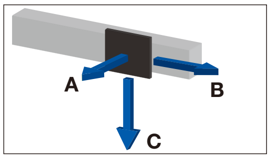


Permissible Overhang Length *6

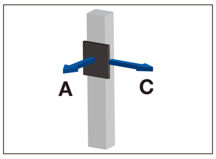
Horizontal use



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

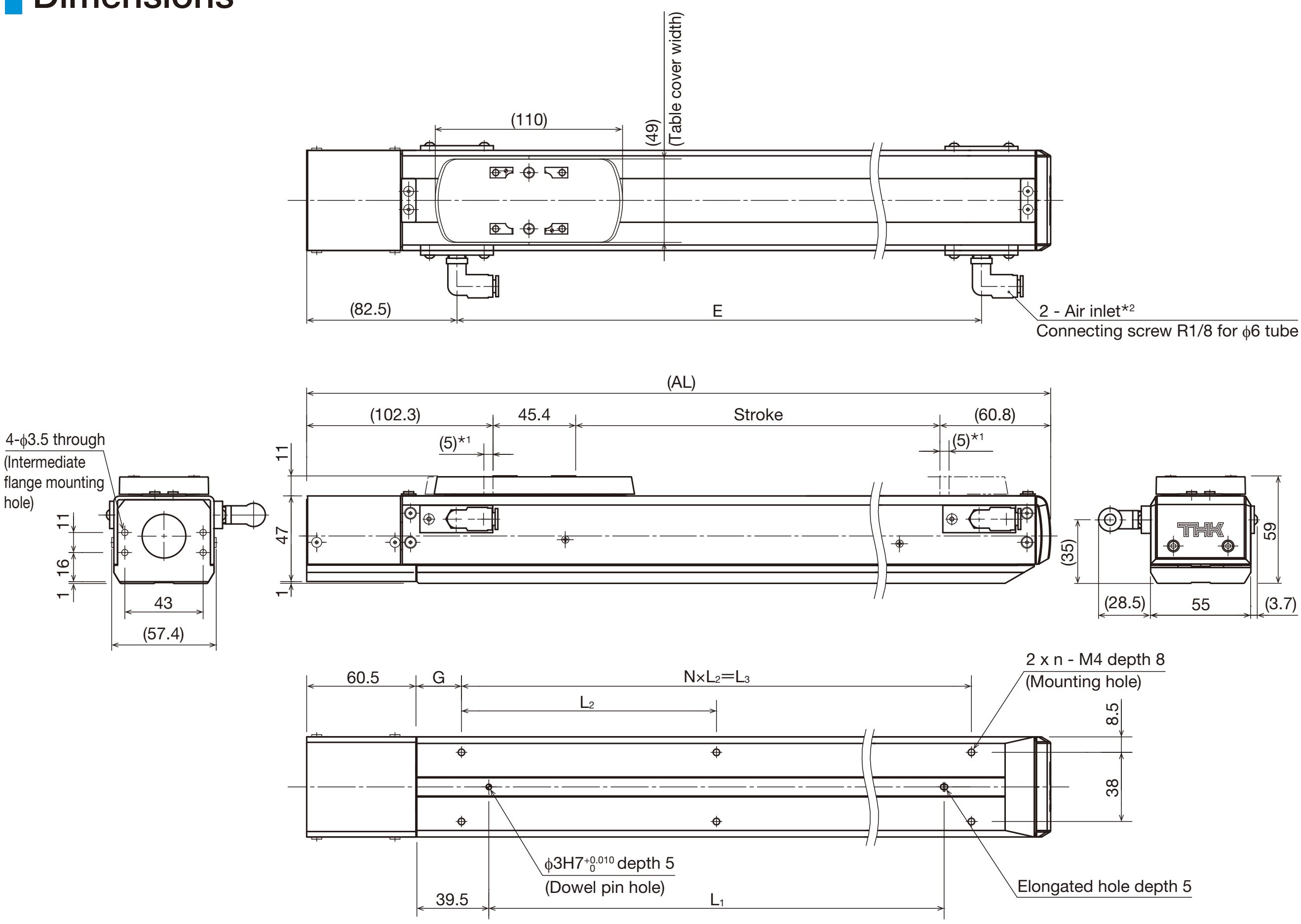
Vertical mount [mm]

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

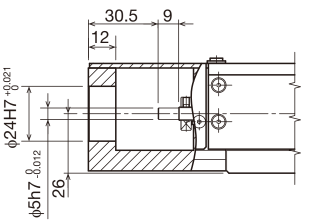
*6 This value is the overhang length whose running life is 10,000 km for horizontal direction/wall mount and 5,000 km for vertical direction. A permissible value of the applied load in each direction.

CKRF5

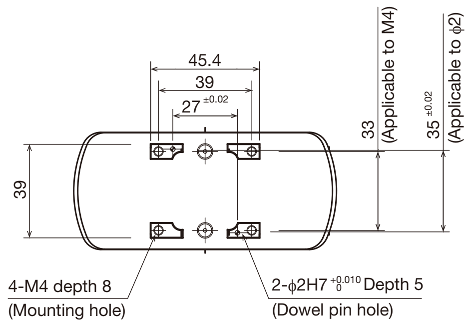
Dimensions



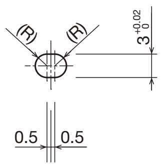
*1 Stroke between mechanical stoppers.
*2 While the suction ports can be connected from either right or left of the product, the product at the factory shipment is so arranged that the port is connected to the side as shown in this figure, and the port comes with the product.
*3 See P.62 for intermediate flange dimensions.



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



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 *4 *5 [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
	E	137.5	187.5	237.5	287.5	337.5	387.5	437.5	487.5	537.5	587.5	637.5
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]		2.2	2.5	2.8	3.1	3.4	3.7	4	4.3	4.6	4.9	5.3

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

CKRF6 without motor

Model Configuration

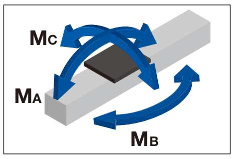
Model		Ball screw lead		Stroke	Design symbol		With/without motor		Intermediate flange		Option
CKRF6	-	06	-	0150	A	-	0	-	AQ	-	GR-SB
CKRF6		06: 6mm		0050: 50mm	A		0: Without motor		A0: Without intermediate flange		No symbol: None
		10: 10mm		≀			1: With motor (Prepared by THK)		AQ		GR: Gray cover
				0800: 800mm					AP		SB: Slider base
									AR		□1□2: Sensors
									AU		
									AT		

Basic Specifications

Portion	Item	Ball screw lead 6	Ball screw lead 10
LM guide portion	Basic dynamic load rating C [N]	11,600	
	Basic static load rating C_0 [N]	20,200	
Ball screw portion	Basic dynamic load rating Ca [N]	2,840	1,760
	Basic static load rating C_{0a} [N]	4,900	2,840
	Screw shaft diameter [mm]	ϕ10	
	Ball screw lead [mm]	6	10
Bearing portion (Fixed side)	Axial direction: Basic dynamic load rating Ca [N]	2,930	
	Axial direction: Static permissible load P_{0a} [N]	2,150	
Permissible rotational speed *1 [min⁻¹]		3,000	
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]		M_A: 166, M_B: 103.8, M_C: 179.5	
Guideline value of vacuum rate *5 x 10^{-3} [m³/min]		15	

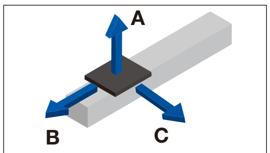
*1 The permissible rotational speed is restricted by the stroke.
*2 The starting torque represents values when the standard grease is filled.
*3 These represent values measured by using a motor provided by THK.
*4 Applied point of moment load for M_A and M_C are the top face of the table, and that for M_B is the center of the table.
*5 The vacuum rate does not include the effect of piping resistance.

Static Permissible Moment

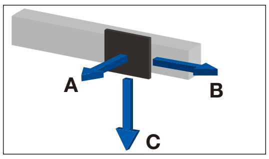


Permissible Overhang Length *6

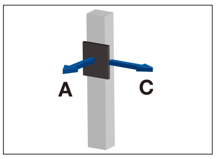
Horizontal use



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

*6 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.

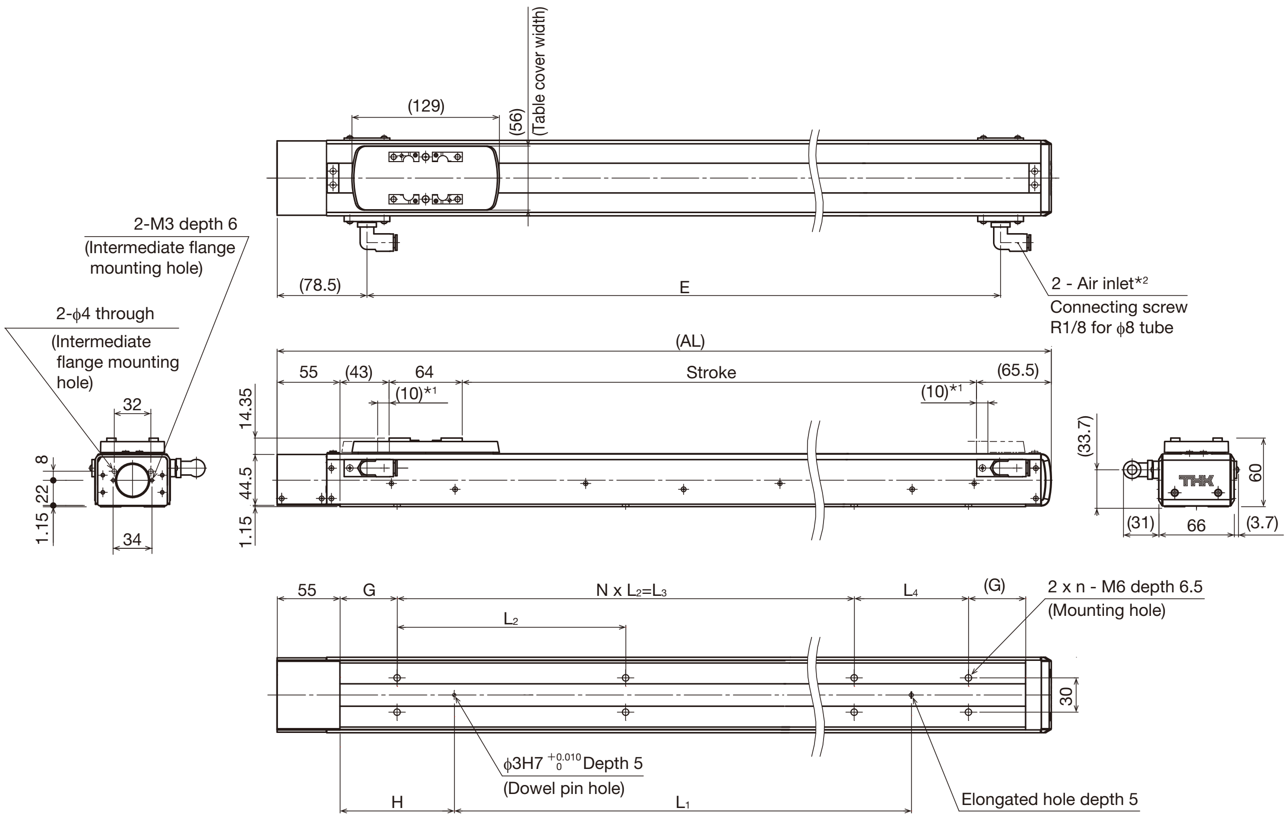
Dimensions

Stroke [mm] (Stroke between mechanical stoppers)		50 (70)	100 (120)	150 (170)	200 (220)	250 (270)	300 (320)	350 (370)	400 (420)
Maximum speed *7 *8 [mm/s]	Ball screw lead: 6mm	300							
	Ball screw lead: 10mm	500							
Dimensions [mm]	AL	277.5	327.5	377.5	427.5	477.5	527.5	577.5	627.5
	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
	E	154.5	204.5	254.5	304.5	354.5	404.5	454.5	504.5
Mounting pitch count	N	1	1	1	1	1	2	2	2
Mounting hole count	n	2	2	2	2	3	3	3	3
Weight [kg]		2.9	3.3	3.7	4.1	4.5	4.9	5.3	5.7

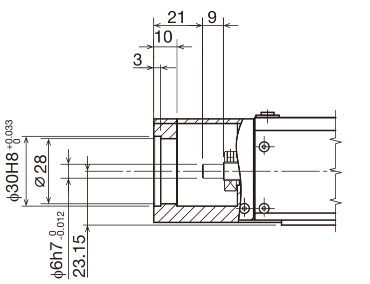
*7 The maximum speed varies depending on the motor used.
*8 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.

CKRF6

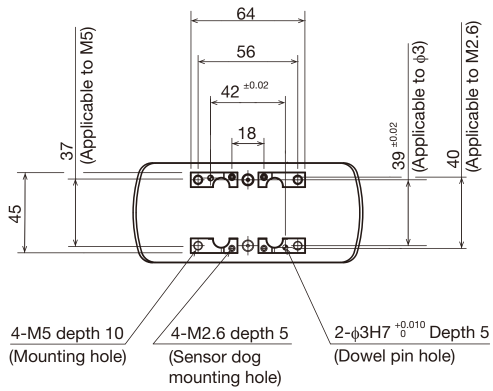
Dimensions



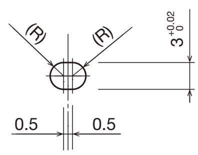
*1 Stroke between mechanical stoppers.
*2 While the suction ports can be connected from either right or left of the product, the product at the factory shipment is so arranged that the port is connected to the side as shown in this figure, and the port comes with the product.
*3 See P.63 for intermediate flange dimensions.



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



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 *4 *5 [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	677.5	727.5	777.5	827.5	877.5	927.5	977.5	1027.5
	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
	H	100	100	100	100	100	100	100	100
	E	554.5	604.5	654.5	704.5	754.5	804.5	854.5	904.5
Mounting pitch count	N	2	3	3	3	3	4	4	4
Mounting hole count	n	4	4	4	4	5	5	5	5
Weight [kg]		6.1	6.5	6.9	7.3	7.7	8.1	8.5	8.9

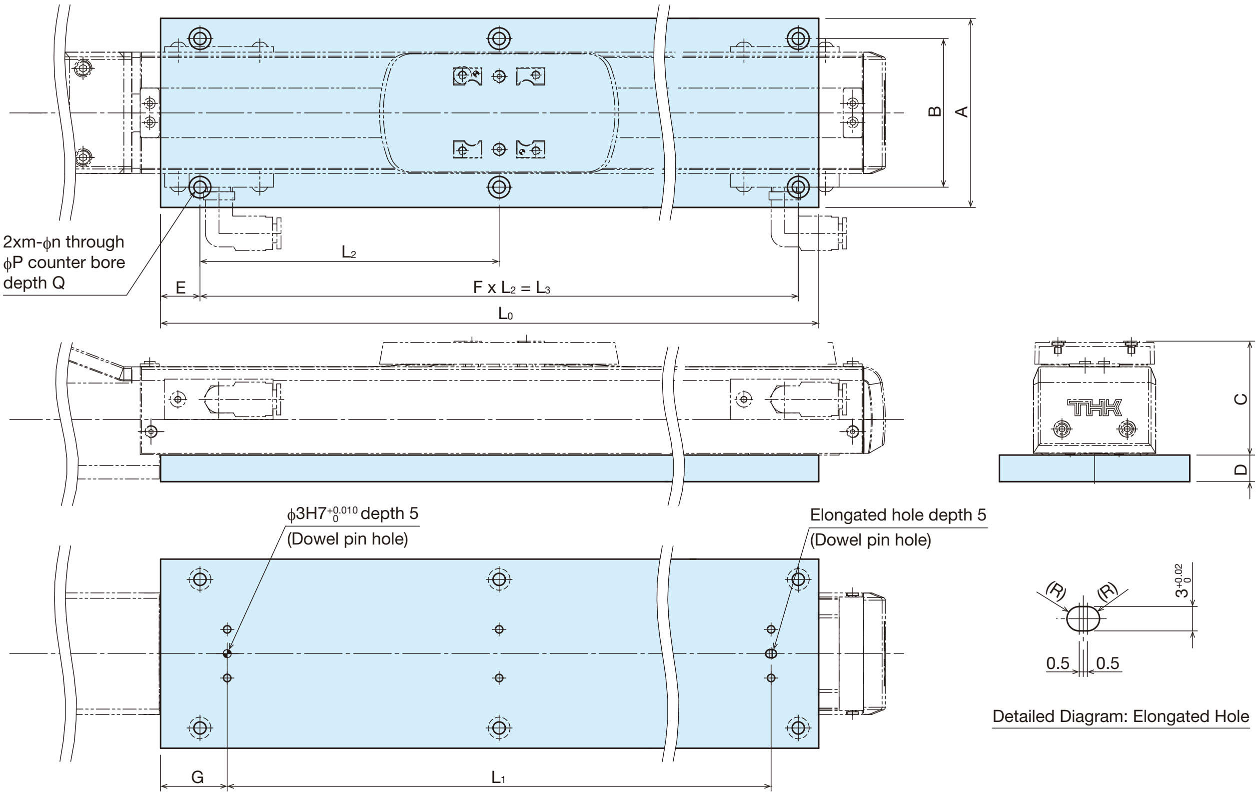
*4 The maximum speed varies depending on the motor used.
*5 The maximum speed is the value restricted by the permissible rotational speed of the ball screw.

Option

SB: Slider base

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

* The product is shipped with this optional assembled.



Unit: mm

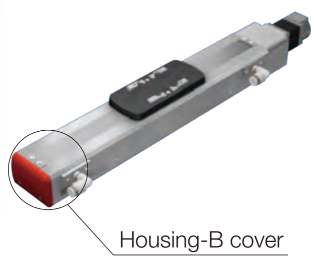
Model	A	B	C	D
CKRF4	70	55	42.1	9.9
CKRF5	80	65	49.1	9.9
CKRF6	90	78	60	10

Note) When the slider base is mounted on CKRF6, the height of CKRF6 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
CKRF4	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						–	–	–	–	–	–	–	–	–	–
CKRF5	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											–	–	–	–	–
CKRF6	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															

GR: Gray cover

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



Standard: red

When GR is selected: gray

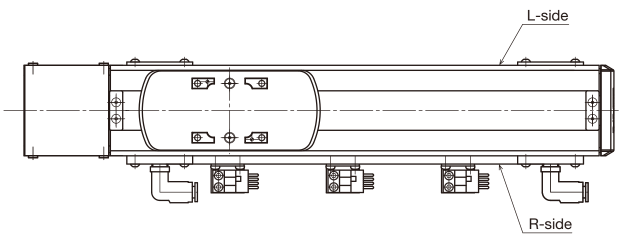
□1□2 : Sensors

Optional proximity sensors and photo sensors are available for CKRF. 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; sensor dog cannot be installed onto the actuator main unit. (Excluding CKRF6.)
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 an optional sensor is used, the home position may differ from that indicated in this brochure.
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 100mm.

Description	Model	Accessory	Symbol	
			□1	□2
With sensor rail	–	–	L/R	1
Photo Sensor * [3 units]	EE-SX674 (Omron Corp.)	Mounting screw, nut, sensor rail (x 1 or 2), mounting plate (x 3), connector (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 screws, 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 screws, nuts, sensor rail (x 1 or 2)	L/R	M

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

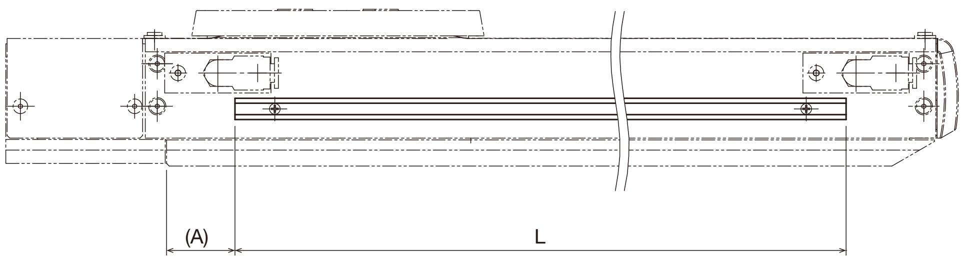


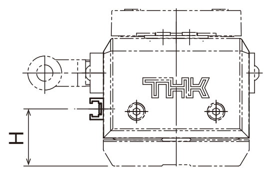
Option: Sensor symbol

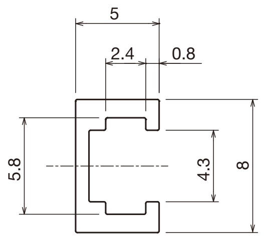
Symbol	
□1	□2
R	6

* Symbol □1 represents the mounting position for sensor rail and sensor. No symbol if the stroke is not more than 100mm.
Symbol □2 represents the types of sensors.

Symbol 1: Sensor rail





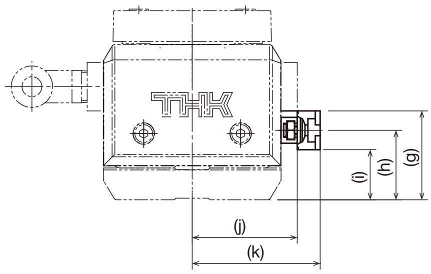


Unit: mm

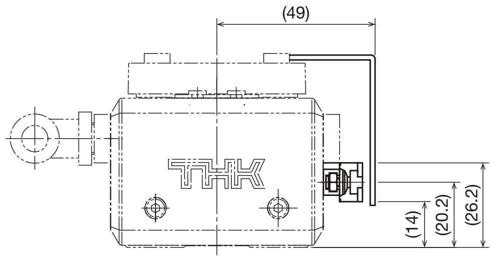
Model	H	(A)	L
CKRF4	17	11	Stroke +80
CKRF5	21.5	26.3	
CKRF6	20.2	35.8	

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

CKRF4/5



CKRF6



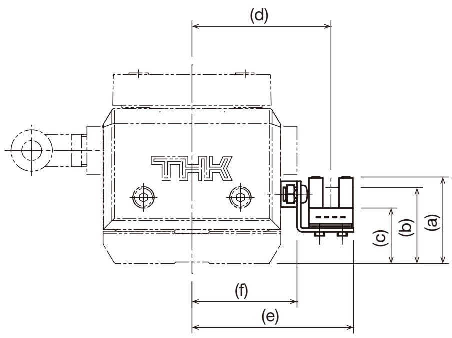
Sensor dog width 26mm

Unit: mm

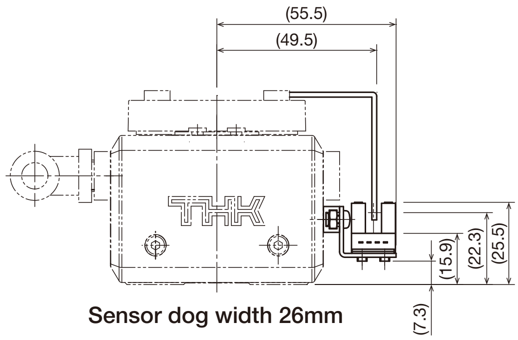
Model	g	h	i	k	j
CKRF4	23	17	11	34.6	27.5
CKRF5	27.5	21.5	15.5	39.6	32.5

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

CKRF4/5



CKRF6



Sensor dog width 26mm

Unit: mm

Model	a	b	c	d	e	f
CKRF4	22.3	19.1	12.7	38	45	27.5
CKRF5	26.8	23.6	17.2	43	50	32.5

Intermediate flange

Motor wrap components 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]	CKRF4	CKRF5	CKRF6
AC servo motor	Yaskawa Electric Corporation	Σ-V	SGMMV-A1	10	□25	AN	AN	-
			SGMMV-A2	20		AN	AN	-
			SGMMV-A3	30		AN	AN	-
			SGMJV-A5	50	□40	AQ	AQ	AQ
			SGMAV-A5			AQ	AQ	AQ
			SGMJV-01	100	□40	AQ	AQ	AQ
			SGMAV-01			AQ	AQ	AQ
		Σ-7	SGM7J-A5	50	□40	AQ	AQ	AQ
			SGM7A-A5			AQ	AQ	AQ
			SGM7J-01	100	□40	AQ	AQ	AQ
			SGM7A-01			AQ	AQ	AQ
	Mitsubishi Electric Corporation	J3	HF-MP053	50	□40	AQ	AQ	AQ
			HF-KP053			AQ	AQ	AQ
			HF-MP13	100	□40	AQ	AQ	AQ
			HF-KP13			AQ	AQ	AQ
		J4	HG-AK0136	10	□25	AN	AN	-
			HG-AK0236	20		AN	AN	-
			HG-AK0336	30		AN	AN	-
			HG-MR053	50	□40	AQ	AQ	AQ
			HG-KR053			AQ	AQ	AQ
			HG-MR13	100	□40	AQ	AQ	AQ
			HG-KR13			AQ	AQ	AQ
		JN	HF-KN053	50	□40	AQ	AQ	AQ
			HF-KN13	100	□40	AQ	AQ	AQ

Table: Table of Motors Used and Corresponding Intermediate Flanges

Motor type				Rated output [W]	Flange angle [mm]	CKRF4	CKRF5	CKRF6
AC servo motor	Tamagawa Seiki Co., Ltd.	TBL-iII	TS4602	50	□40	AQ	AQ	AQ
			TS4603	100	□40	AQ	AQ	AQ
			TS4604	150	□40	AQ	AQ	AQ
	Panasonic Corporation	MINAS A5	MSMD5A	50	□38	AP	AP	AP
			MSME5A			AP	AP	AP
			MSMD01	100	□38	AP	AP	AP
			MSME01			AP	AP	AP
		MINAS A6	MSMF5A	50	□38	AP	AP	AP
			MHMF5A		□40	AQ	AQ	AQ
			MSMF01	100	□38	AP	AP	AP
			MHMF01		□40	AQ	AQ	AQ
	Keyence Corporation	SV	SV-M005	50	□40	AQ	AQ	AQ
			SV-M010	100	□40	AQ	AQ	AQ
		SV2	SV2-M005	50	□40	AQ	AQ	AQ
			SV2-M010	100	□40	AQ	AQ	AQ
	Sanyo Denki Co., Ltd.	SANMOTION R	R2□A04003	30	□40	AQ	AQ	AQ
			R2□A04005	50	□40	AQ	AQ	AQ
			R2EA04008	80	□40	AQ	AQ	AQ
			R2□A04010	100	□40	AQ	AQ	AQ
	Omron Corporation	OMNUC G5	R88M-K05030	50	□40	AQ	AQ	AQ
			R88M-K10030	100	□40	AQ	AQ	AQ
	Fanuc Corporation	$\beta$is series	βis0.2/5000	50	□40	AQ	AQ	AQ
			βis0.3/5000	100	□40	AQ	AQ	AQ

Motor type					Flange angle	CKRF4	CKRF5	CKRF6
Stepper motor	Oriental Motor Co. Ltd.	α step		AZ2*, AR2*	□28	AS	AS	-
				AZ4*, AR4*	□42	AR	AR	AR
				AZ6*, AR6*	□60	-	-	AU
		5 phase	CRK	CRK52*	□28	AS	AS	-
				CRK54*	□42	AR	AR	AR
				CRK56*	□60	-	-	AU
			RK II	RKS54*	□42	AR	AR	AR
				RKS56*	□60	-	-	AU
			PKA	PKA544	□42	AR	AR	AR
				PKA566	□60	-	-	AU
			CVK	CVK52*	□28	AS	AS	-
				CVK54*	□42	AR	AR	AR
				CVK56*	□60	-	-	AU
		2 phase	CMK	CMK22*	□28	AS	AS	-
				CMK24*	□42	AR	AR	AR
				CMK26*	□56.4	-	-	AT
			CVK	CVK22*	□28	AS	AS	-
				CVK24*	□42	AR	AR	AR
				CVK26*	□56.4	-	-	AT
	Sanyo Denki Co., Ltd.	PB		PBDM28*	□28	AS	AS	-
				PBDM423, PBA**423	□42	AR	AR	AR
				PBDM60*, PBA**60*	□60	-	-	AU
		5 phase		FAF/FDF52*	□28	AS	AS	-
				FAF54*/FDF54*/FA511M42/FB511M42	□42	AR	AR	AR
				FAM56*/FDM56*/FA512M60/FA512M60	□60	-	-	AU
		2 phase		D*14S28*	□28	AS	AS	-
				D*15H52*	□42	AR	AR	AR
				D*16H71*	□56.4	-	-	AT
				DB16H78*	□60	-	-	AU
	Keyence Corporation	2 phase		QS-M28	□28	AS	AS	-
				QS-M42	□42	AR	AR	AR
				QS-M60	□60	-	-	AU

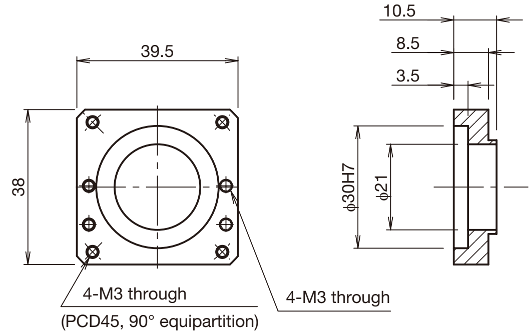
Note 1) The symbols in the table indicate the housing A and the intermediate flange.
Note 2) See the CKRF technical materials for couplings used with installing the motors listed in the table. (→ P.64)
Note 3) The motor model in the table shows only part of the model number. For model details, see the catalogs of the motor manufacturers.
Note 4) If the motor's maximum torque mounted exceeds the permissible input torque (→ P.64), take safety measures, such as torque restrictions.

For CKRF4

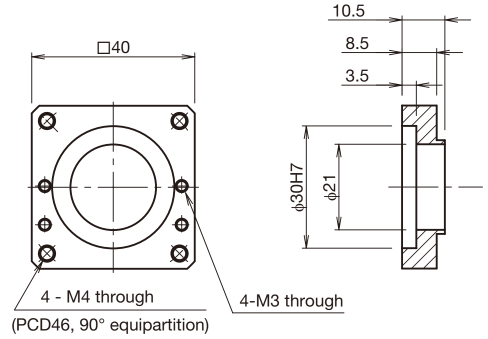
CKRF✻	··· Actuator model
●◇	··· ●: Housing A ◇: Intermediate flange

Intermediate flange

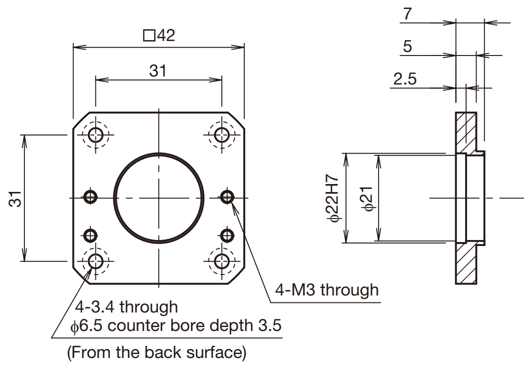
CKRF4
AP



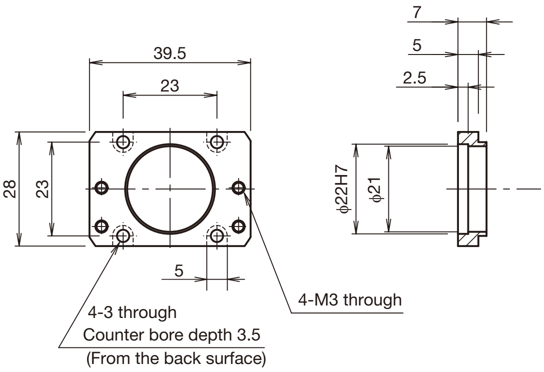
CKRF4
AQ



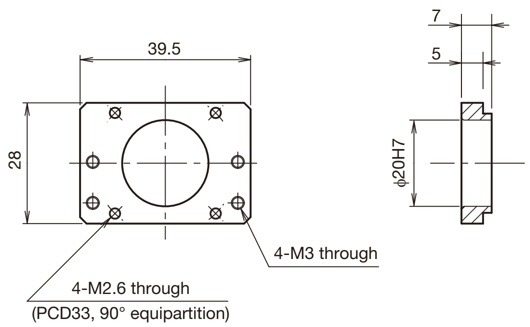
CKRF4
AR



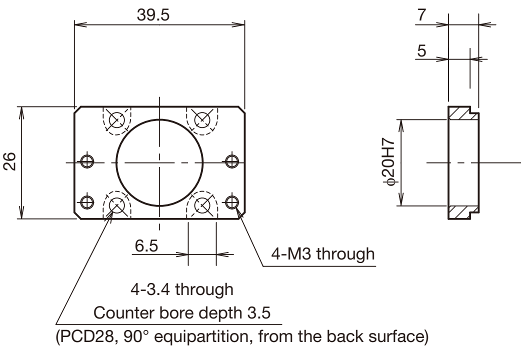
CKRF4
AS



CKRF4
AM



CKRF4
AN



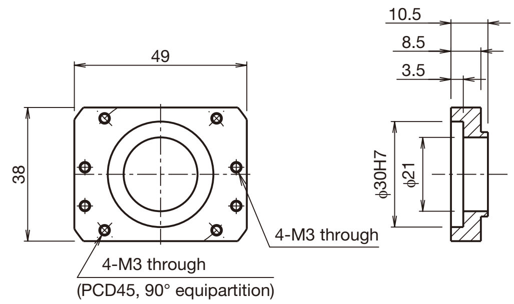
Note) For A0, see the external side view without motor and the detailed drawing for motor mounting part. (→ P.52)

For CKRF5

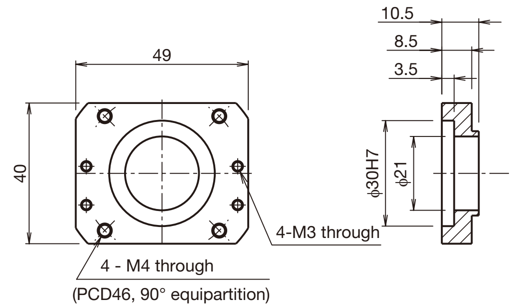
CKRF*	··· Actuator model
●◇	··· ●: Housing A ◇: Intermediate flange

Intermediate flange

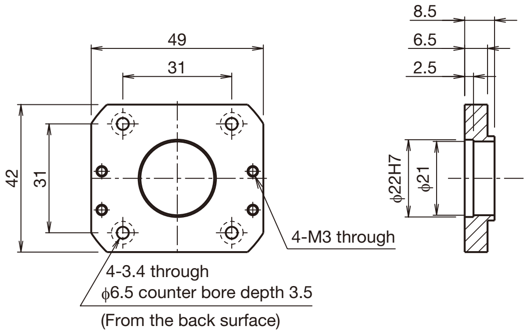
CKRF5
AP



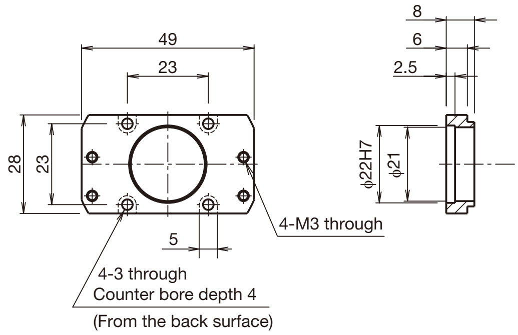
CKRF5
AQ



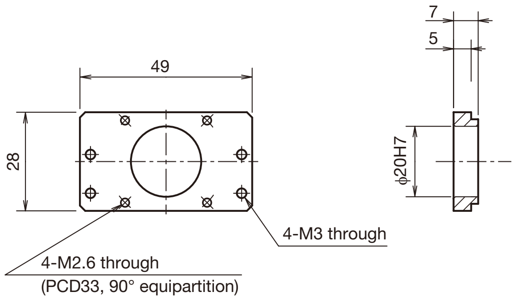
CKRF5
AR



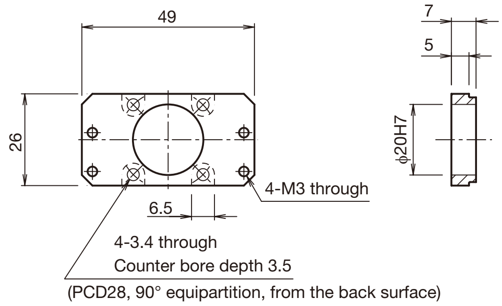
CKRF5
AS



CKRF5
AM



CKRF5
AN



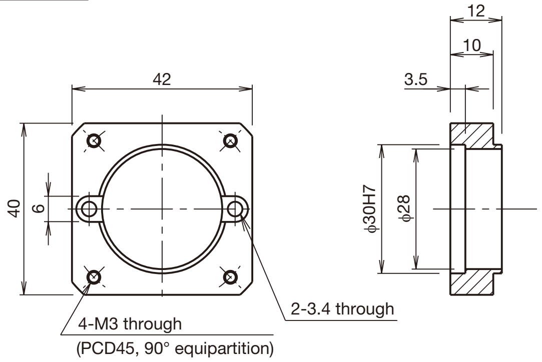
Note) For A0, see the external side view without motor and the detailed drawing for motor mounting part. (→ P.54)

For CKRF6

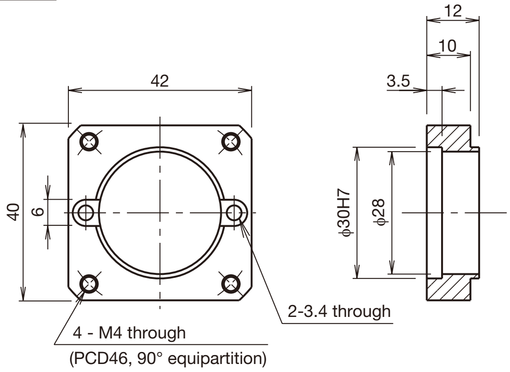
CKRF* ··· Actuator model
●◇ ··· ●: Housing A
◇: Intermediate flange

Intermediate flange

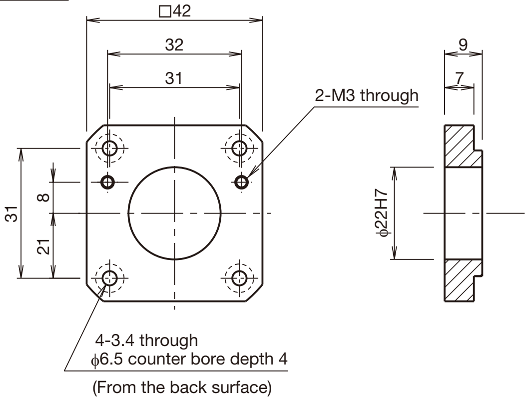
CKRF6
AP



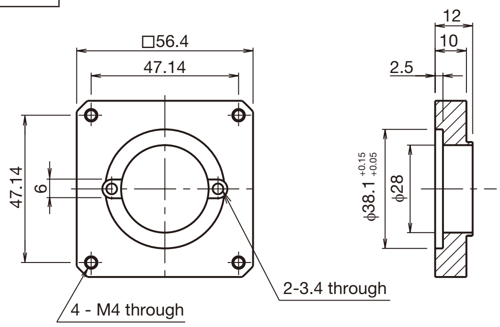
CKRF6
AQ



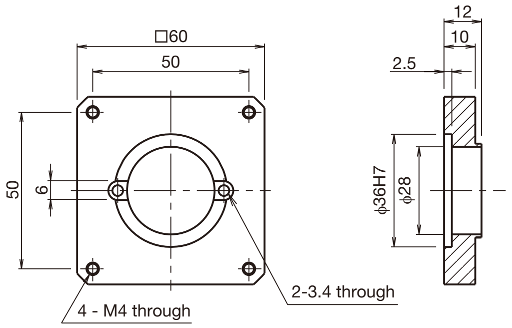
CKRF6
AR



CKRF6
AT



CKRF6
AU



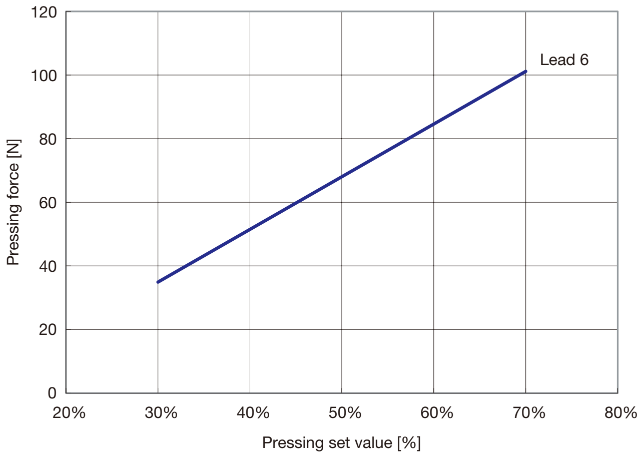
Note) For A0, see the external side view without motor and the detailed drawing for motor mounting part. (→ P.56)

CKRF technical materials

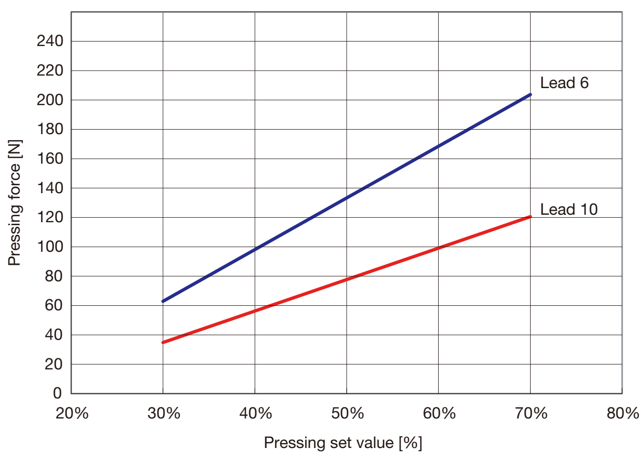
Pressing Force and Pressing Set Value for TSC specification: Relationship Diagram

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

■CKRF4



■CKRF5



Motor Selection

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

Actuator		Ball screw			
Model	Stroke [mm]	Lead [mm]	Shaft diameter [mm]	Shaft length [mm]	Shaft end diameter [mm]
CKRF4	50	6	ϕ6	185	ϕ4
	300			435	
CKRF5	50	6,10	ϕ8	218	ϕ5
	550			718	
CKRF6	50	6,10	ϕ10	245	ϕ6
	800			995	

Weight of moving element

Model	Weight of moving element [kg]
CKRF4	0.14
CKRF5	0.31
CKRF6	0.46

Permissible input torque

Model	Permissible input torque [N·m]
CKRF4	0.355
CKRF5	0.671
CKRF6	1.035

Recommended Coupling

Recommended coupling (flat spring type) *3		
Model	Model	Inertial moment [kg·cm²]
CKRF4	SFC-010DA2-4B-8B (Miki Pulley Co., LTD.)	0.008
	XBW-19C2-4 x 8 (Nabeya Bi-tech Kaisha)	0.0067
CKRF5	SFC-010DA2-5B-8B-T013 *1 (Miki Pulley Co., LTD.)	0.008
	XBW-19C2-5 x 8 *2 (Nabeya Bi-tech Kaisha)	0.0067
CKRF6	SFC-020DA2-6B-8B (Miki Pulley Co., LTD.)	0.034
	XBW-25C2-6 x 8 (Nabeya Bi-tech Kaisha)	0.023

*1 This is a THK custom product whose intermediate hub of coupling is longer than the standard product by 5.8mm. Since the product is a proprietary item of THK, place the order to THK when this is to be specified.
*2 When this is used, it is necessary to use a special coupling whose length is extended by the manufacturer (by 5.8mm).
*3 Recommended coupling is for servo motor use. When using a stepper motor, contact THK.

TSC/TLC/THC

Controller series
Driver controller for single axis

Stepper driver controller
TSC

Low-capacity servo driver controller
TLC

High-capacity servo driver controller
THC

Features

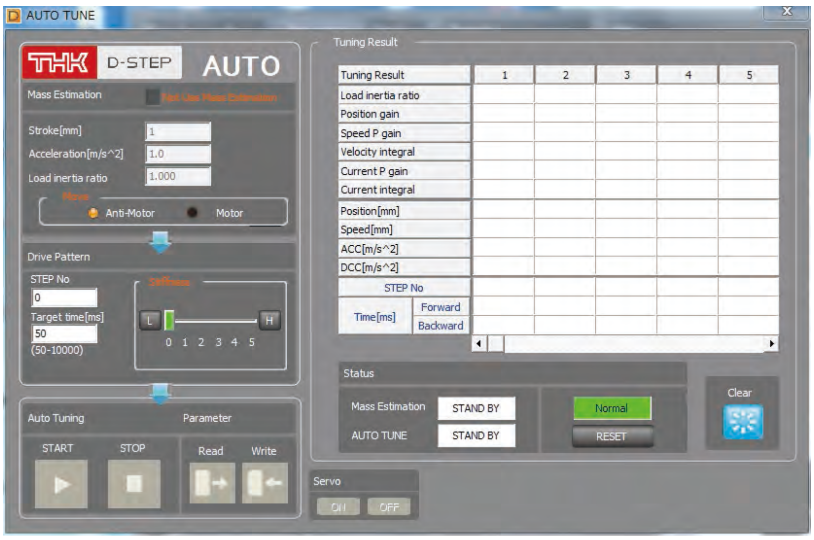
Ready to use by simplified setup.

Simple Operation

Use PC setup tool D-Step or digital operator TDO to access many useful functions.

Functions

· Selectable function modes
(64-position, external unit input instruction, 256-position, 512-position, Solenoid mode 1, and Solenoid mode 2)
· Step data count: Up to 512 (depending on function mode)
· Alarm history: Up to 50 (including power ON history)
· Switching between Auto/Manual, brake release switch
· Selectable control methods (positioning or pressing)
· Absolute supported
· Auto-tuning functionality built-in (TLC/THC)



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

Lineup of Controllers

THK offers the following controllers. Choose according to your applications.

For single axis

TSC

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

TLC

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

THC

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

*1 Varies depending on function mode.
*2 For information on network support, visit the THK Technical Support website. (http://www.ea-thk.com/)

Model Configuration

● Stepper driver controller TSC

Model	Current value	Design symbol	Type	Compatible actuator	Ball screw lead	Home position	Brake
TSC -	015	B -	MOD -	CKRF4 -	06 -	D -	B
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
TSC	015: 1.5A	B	MOD: Mode switching type	CKRF4	06: 6mm	D: Motor side	No symbol: Without brake
				CKRF5	10: 10mm	R: Reverse motor side	B: With brake

● Servo driver controller TLC

Model	Capacity	Power supply voltage	Type	Encoder type	Compatible actuator	Ball screw lead	Home position	Brake	Stroke
TLC -	005 -	024DC -	MOD -	A -	CKRF4 -	06 -	D -	B -	0050
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
TLC	005: 50W	024DC: 24V DC	MOD: Mode switching type	A: Absolute	CKRF4	06: 6mm	D: Motor side	No symbol: Without brake	Enter the stroke of the compatible actuator (6) Example) 0050: 50mm
					CKRF5	10: 10mm	R: Reverse motor side	B: With brake	

● Servo driver controller THC

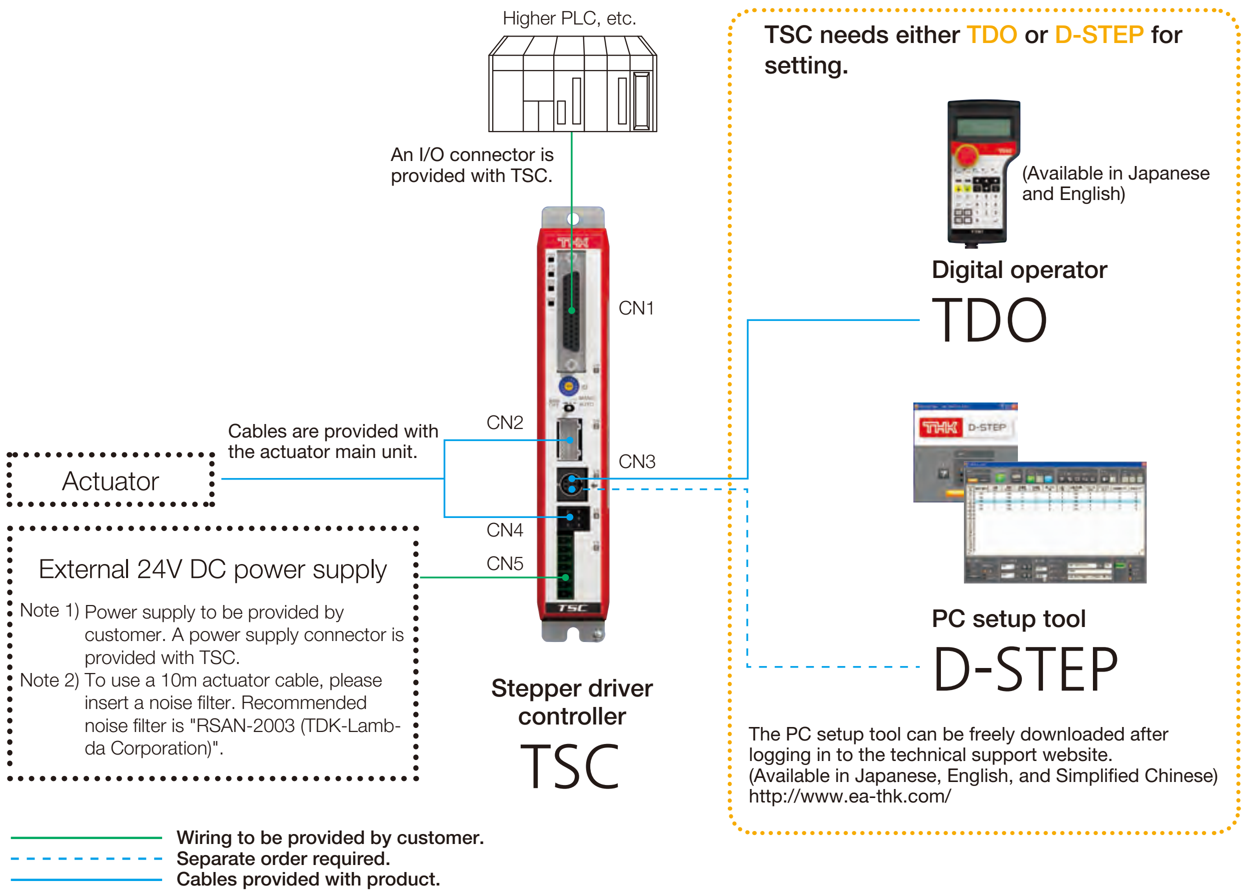
Model	Capacity	Power supply voltage	Type	Encoder type	Compatible actuator	Ball screw lead	Home position	Brake	Stroke	Sensors
THC -	010 -	100AC -	MOD -	A -	CKSF6 -	06 -	D -	B -	0050 -	1
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
THC	010: 100W	100AC: 100V AC	MOD: Mode switching type	A: Absolute	CKSF4	06: 6mm	D: Motor side	No symbol: Without brake	Enter the stroke of the compatible actuator (6) Example) 0050: 50mm	No symbol: None
	020: 200W	200AC: 200V AC			CKSF5	10: 10mm	R: Reverse motor side	B: With brake		1: N.O. contact [1 unit] N.C. contact [2 unit]
	040: 400W				CKSF6	16: 16mm				
	075: 750W				CKSF8	20: 20mm				
					CKSF10	25: 25mm				
					CKRF6	30: 30mm				
						40: 40mm				
						50: 50mm				

TSC specifications

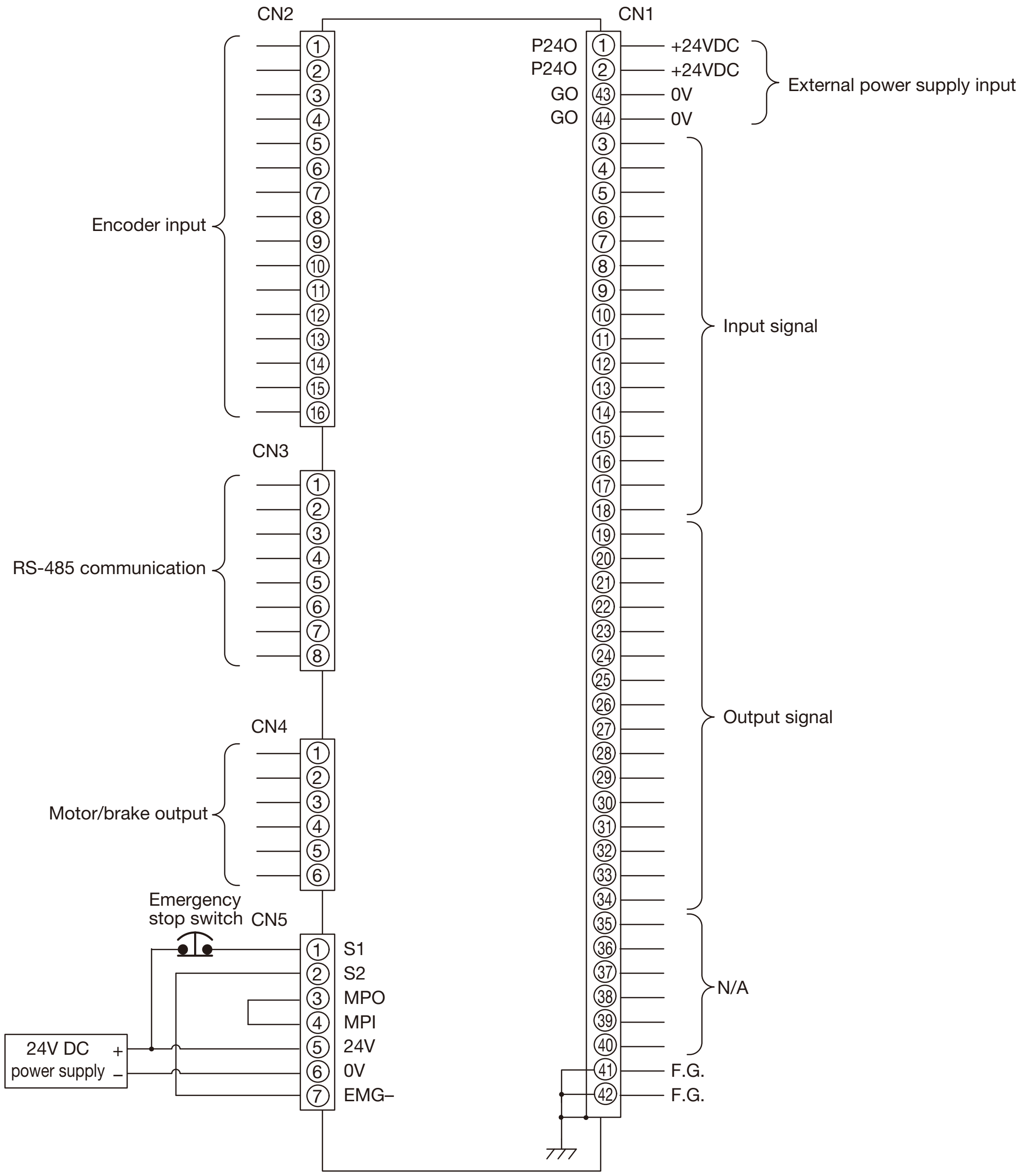
Basic Specifications	Input power supply		24V DC ±10% (Up to 2.5 A)					
Control	Control axis		1 shaft					
	Motor type		Stepper motor (□28 mm, □35 mm, □42 mm)					
	Control method		Feedback control (Semi-closed loop)					
	Position detection method		Incremental					
	Acceleration/deceleration method		Trapezoid acceleration					
Program	Function mode		64-position	External unit input	256-position	512-position	Solenoid mode 1	Solenoid mode 2
	Step data count		64 points	64 points	256 points	512 points	7 points	3 points
	Data input/output method		PC setup tool D-STEP or digital operator TDO					
Input/output	Dedicated input/output	Input point	16 points (Start, Return to home position, Pause, Reset, Servo ON, Specify step number, etc.) *					
		Output point	16 points (Return to home position completed, In position, Servo ready, Alarm, Emergency stop status, etc.) *					
	Input/output power supply		24V DC ±10% (This should be prepared by yourself.)					
Communication	Serial communication	Connected device	PC setup tool D-STEP or digital operator TDO					
		Communication method	RS-485					
		Port count	Mini DIN x 1					
Usage conditions	Operating/storage temperature		0 to 40°C (No freezing)/-20 to 85°C (No freezing)					
	Operating humidity/Storage humidity		90% RH or below (No condensation)					
	Ambient condition		Indoor (Free from direct sunlight, corrosive gas, flammable gas, oil mist)					
General specifications	Protective function		Overload, overvoltage, excessive position deviation, software limit over error, etc.					
	Accessories		Power supply connector x 1 I/O connector x 1					
	Option (sold separately)		Digital operator TDO (cable length: 5m) I/O cable 3m, 5m, 7m, 10m PC communication cable (mini DIN ⇔ USB)					
	Outer dimensions		32mm (W)×192.2mm (H)×77.6mm (D)					
	Weight		300 g or less					

* Varies depending on function mode.

System Configuration



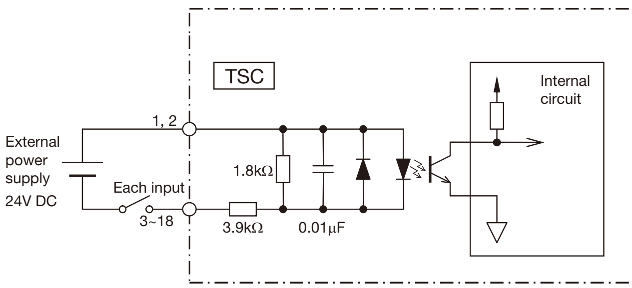
TSC Pin Assignment



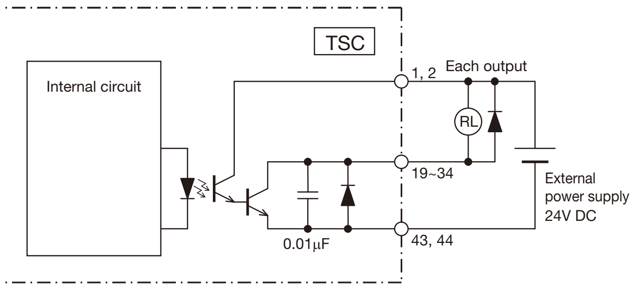
* For attached I/O connector pin numbers, see P.74.
* Customer provides 24V DC power supply for input/output circuitry.

Input/Output Circuitry for TSC (CN1)

Input circuit



Output circuit

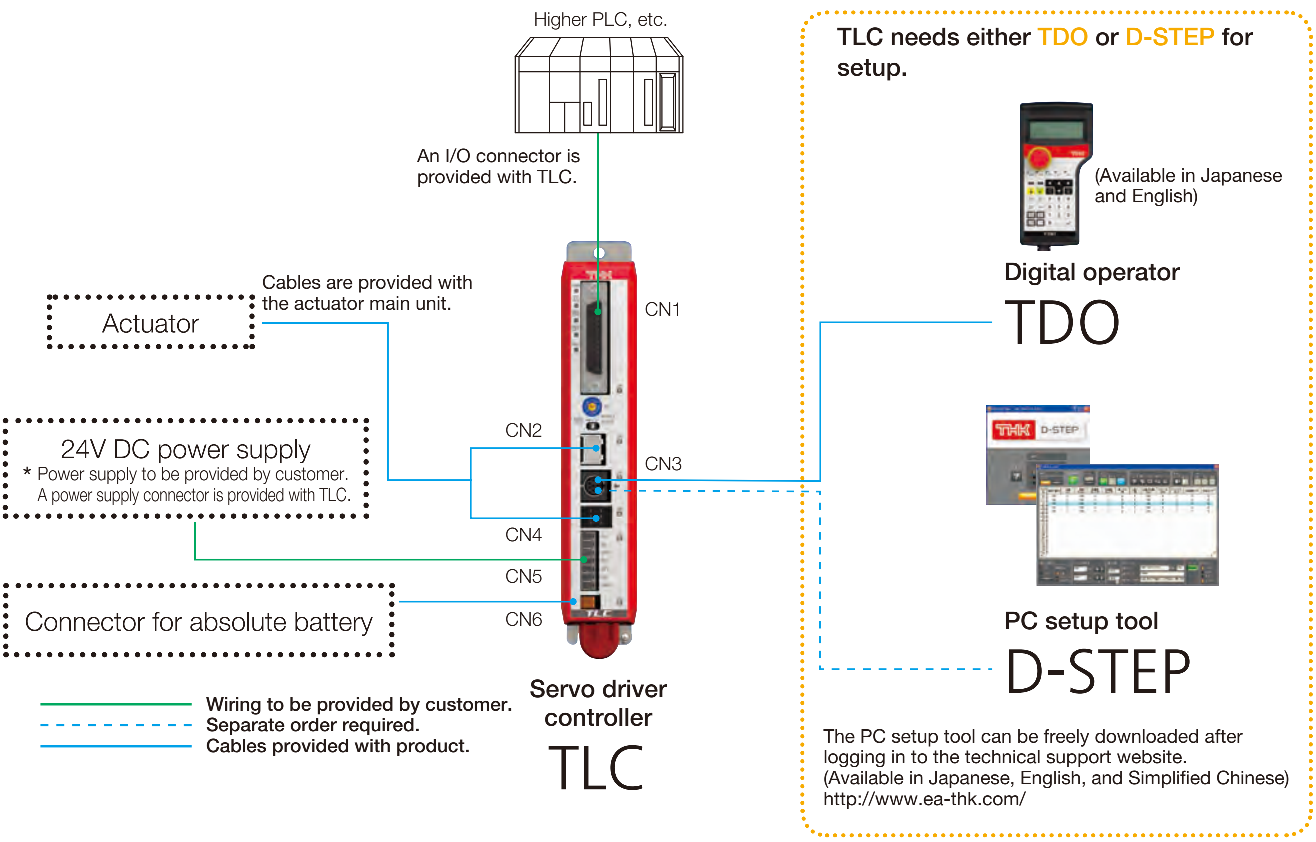


TLC Specifications

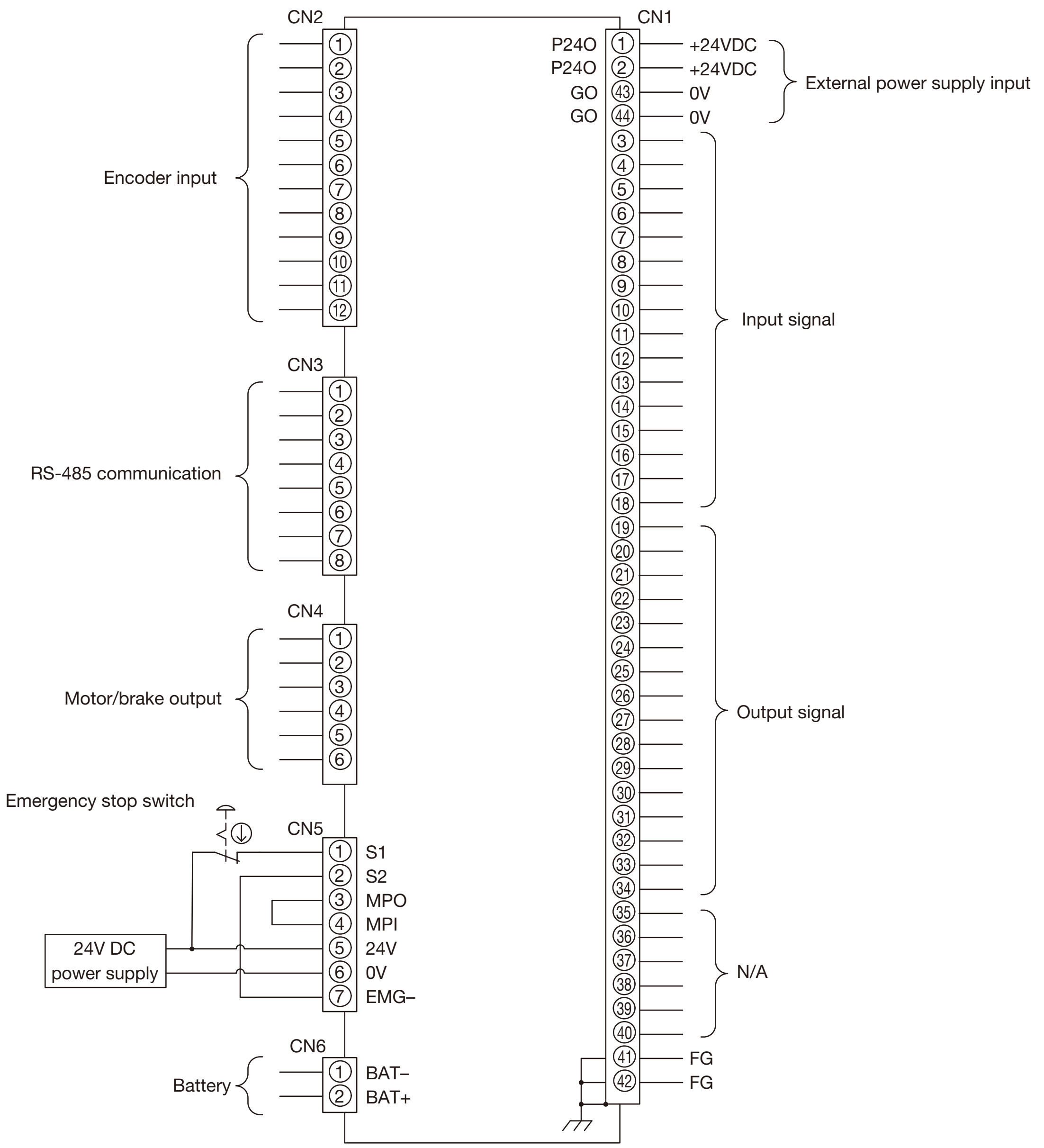
<table>
<tr><td rowspan="2">Type of machine</td><td colspan="2">Model</td><td colspan="6">TLC</td></tr>
<tr><td colspan="2">Capacity</td><td colspan="6">50W</td></tr>
<tr><td rowspan="3">Input power supply</td><td colspan="2">Main circuit</td><td colspan="6" rowspan="2">24V DC ±10%</td></tr>
<tr><td colspan="2">Control circuit</td></tr>
<tr><td colspan="2">Power supply [A]</td><td colspan="6">Rated 6A (Max 16A)</td></tr>
<tr><td rowspan="5">Control</td><td colspan="2">Control axis</td><td colspan="6">1 shaft</td></tr>
<tr><td colspan="2">Motor type</td><td colspan="6">AC servo motor</td></tr>
<tr><td colspan="2">Control method</td><td colspan="6">Feedback control (Semi-closed loop)</td></tr>
<tr><td colspan="2">Position detection method</td><td colspan="6">Absolute</td></tr>
<tr><td colspan="2">Acceleration/deceleration method</td><td colspan="6">Trapezoid acceleration, S-shape acceleration</td></tr>
<tr><td rowspan="3">Program</td><td colspan="2">Function mode</td><td>64-position</td><td>External unit input</td><td>256-position</td><td>512-position</td><td>Solenoid mode 1</td><td>Solenoid mode 2</td></tr>
<tr><td colspan="2">Step data count</td><td>64 points</td><td>64 points</td><td>256 points</td><td>512 points</td><td>7 points</td><td>3 points</td></tr>
<tr><td colspan="2">Data input/output method</td><td colspan="6">PC setup tool D-STEP or digital operator TDO</td></tr>
<tr><td rowspan="3">Input/output</td><td rowspan="2">Dedicated input/output</td><td>Input point</td><td colspan="6">16 points (Start, Return to home position, Pause, Reset, Servo ON, Specify step number, etc.) *</td></tr>
<tr><td>Output point</td><td colspan="6">16 points (Return to home position completed, In position, Servo ready, Alarm, Battery alarm, Emergency stop status, etc.) *</td></tr>
<tr><td colspan="2">Input/output power supply</td><td colspan="6">24V DC ±10% (This should be prepared by yourself.)</td></tr>
<tr><td rowspan="3">Communication</td><td rowspan="3">Serial communication</td><td>Connected device</td><td colspan="6">Digital operator or PC software</td></tr>
<tr><td>Communication method</td><td colspan="6">RS-485</td></tr>
<tr><td>Port count</td><td colspan="6">Mini DIN x 1</td></tr>
<tr><td rowspan="3">Usage conditions</td><td colspan="2">Operating/storage temperature</td><td colspan="6">0 to 40°C (No freezing)/-20 to 85°C (No freezing)</td></tr>
<tr><td colspan="2">Operating humidity/Storage humidity</td><td colspan="6">90% RH or below (No condensation)</td></tr>
<tr><td colspan="2">Ambient condition</td><td colspan="6">Indoor (Free from direct sunlight, corrosive gas, flammable gas, oil mist)
No exposure to water, oil, or chemicals.</td></tr>
<tr><td rowspan="5">General specifications</td><td colspan="2">Protective function</td><td colspan="6">Overload, overvoltage, excessive position deviation, software limit over error, etc.</td></tr>
<tr><td colspan="2">Accessories</td><td colspan="6">Power supply connector x 1
I/O connector x 1</td></tr>
<tr><td colspan="2">Options (sold separately)</td><td colspan="6">Digital operator TDO (cable length: 5m)
I/O cable 3m, 5m, 7m, 10m
Communication cable (mini DIN ⇔ USB)</td></tr>
<tr><td colspan="2">Outer dimensions [mm]</td><td colspan="6">36.4mm(W)×199.2mm(H)×112.6mm(D)</td></tr>
<tr><td colspan="2">Weight (not including battery)</td><td colspan="6">0.4kg or less</td></tr>
</table>

* Varies depending on function mode.

TLC System Configuration Diagram



TLC Pin Assignment

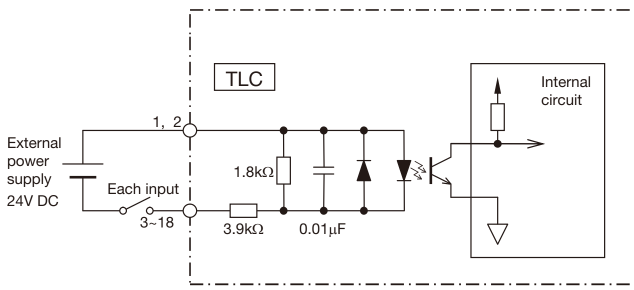


* For attached I/O connector pin numbers, see P.74.

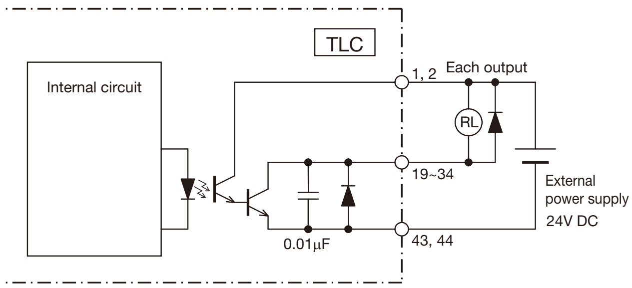
* Customer provides 24V DC power supply for input/output circuitry.

Input/Output Circuitry for TLC (CN1)

Input circuit



Output circuit

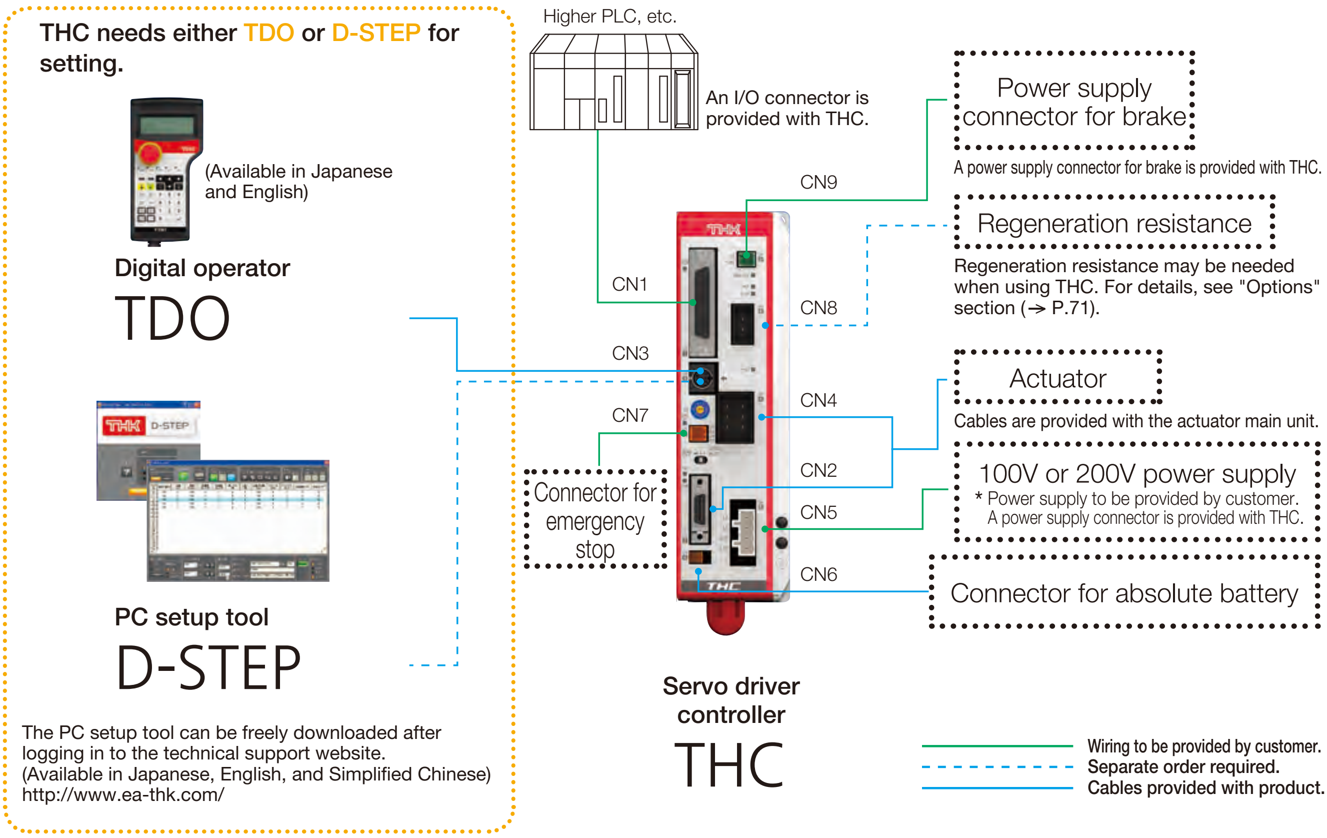


THC Specifications

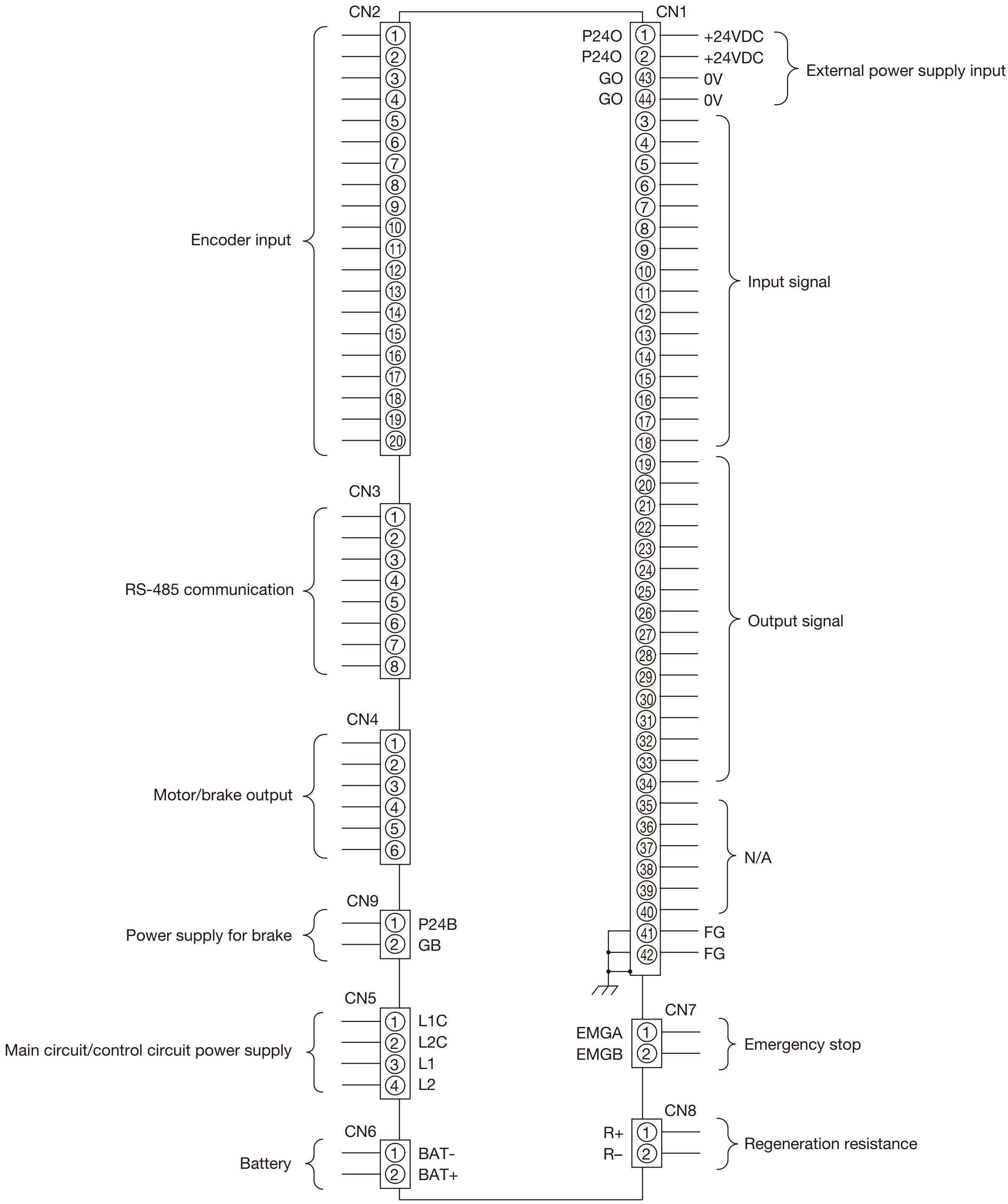
Type of machine	Model		THC						
	Capacity		100V AC type			200V AC type			
			100W	200W	400W	100W	200W	400W	750W
Input power supply	Main circuit		100V AC single phase, 50/60Hz (Permissible voltage: 90 to 120V)			200V AC single phase, 50/60Hz (Permissible voltage: 170 to 250V)			
	Control circuit		100V AC single phase, 50/60Hz (Permissible voltage: 90 to 120V)			200V AC single phase, 50/60Hz (Permissible voltage: 170 to 250V)			
	Power supply [kVA]		0.5	0.9	1.3	0.5	0.9	1.6	2.4
Control	Control axis		1 shaft						
	Motor type		AC servo motor						
	Control method		Feedback control (Semi-closed loop)						
	Position detection method		Absolute						
	Acceleration/deceleration method		Trapezoid acceleration, S-shape acceleration						
Program	Function mode		64-position	External unit input	256-position	512-position	Solenoid mode 1	Solenoid mode 2	
	Step data count		64 points	64 points	256 points	512 points	7 points	3 points	
	Data input/output method		PC setup tool D-STEP or digital operator TDO						
Input/output	Dedicated input/output	Input point	16 points (Start, Return to home position, Pause, Reset, Servo ON, Specify step number, etc.) *						
		Output point	16 points (Return to home position completed, In position, Servo ready, Alarm, Battery alarm, Emergency stop status, etc.) *						
	Input/output power supply		24V DC ±10% (This should be prepared by yourself.)						
Communication	Serial communication	Connected device	Digital operator or PC software						
		Communication method	RS-485						
		Port count	Mini DIN x 1						
Usage conditions	Operating/storage temperature		0 to 40°C (No freezing)/-20 to 85°C (No freezing)						
	Operating humidity/Storage humidity		90% RH or below (No condensation)						
	Ambient condition		Indoor (Free from direct sunlight, corrosive gas, flammable gas, oil mist) No exposure to water, oil, or chemicals.						
Applicable standards	CE Marking		Low voltage directive: EN61800-5-1, EMC directive: EN61800-3						
General specifications	Protective function		Overload, overvoltage, excessive position deviation, software limit over error, etc.						
	Accessories		Power supply connector x 1 I/O connector x 1						
	Options (sold separately)		Digital operator TDO (cable length: 5m) I/O cable 3m, 5m, 7m, 10m Communication cable (mini DIN ⇔ USB)						
	Outer dimensions [mm]		200W or lower: 58mm (W) x 208.6mm (H) x 120mm (D) 400W or lower: 67.5mm (W) x 208.6mm (H) x 120mm (D)						
	Weight (not including battery)		1.3kg or less	1.3kg or less	1.3kg or less	1.3kg or less	1.3kg or less	1.3kg or less	1.5kg or less

* Varies depending on function mode.

THC System Configuration Diagram



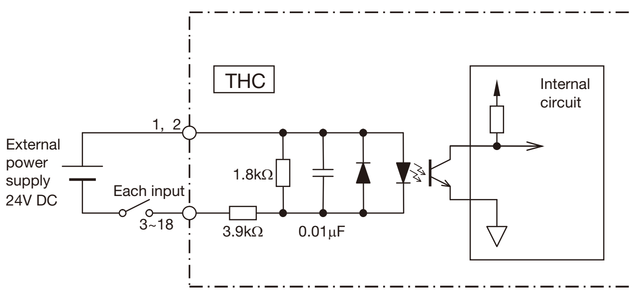
THC Pin Assignment



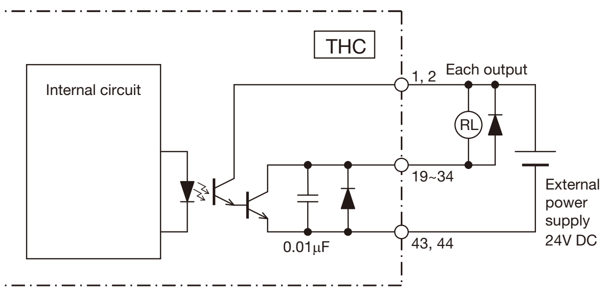
* For attached I/O connector pin numbers, see P.74.
* Customer provides 24V DC power supply for input/output circuitry.

Input/Output Circuitry for THC (CN1)

Input circuit



Output circuit



Function Mode (Commonly for TSC/TLC/THC)

Six modes are provided to support various requirements and purposes.

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

Pin Assignment by Function Mode (Commonly for TSC/TLC/THC)

I/O	CN1 Pin number	Signal name					
		Function mode "0"	Function mode "1"	Function mode "2"	Function mode "3"	Function mode "4"	Function mode "5"
		64-position	External unit input	256-position	512-position	Solenoid mode 1	Solenoid mode 2
Input	3	PI 0	PI 0	PI 0	PI 0	ST 0	ST 0
	4	PI 1	PI 1	PI 1	PI 1	ST 1	ST 1
	5	PI 2	PI 2	PI 2	PI 2	ST 2	ST 2
	6	PI 3	PI 3	PI 3	PI 3	ST 3	–
	7	PI 4	PI 4	PI 4	PI 4	ST 4	–
	8	PI 5	PI 5	PI 5	PI 5	ST 5	–
	9	–	MODE	PI 6	PI 6	ST 6	–
	10	–	JOG/INCHING	PI 7	PI 7	–	–
	11	–	JOG P	–	PI 8	–	–
	12	BKRL	JOG N	BKRL	BKRL	BKRL	BKRL
	13	STRT	STRT/PWRT	STRT	STRT	–	–
	14	MANU	MANU	MANU	MANU	MANU	MANU
	15	HOME	HOME	HOME	HOME	HOME	HOME
	16	PAUSE	PAUSE	PAUSE	PAUSE	PAUSE	PAUSE
	17	REST	REST	REST	REST	REST	REST
	18	SV-ON	SV-ON	SV-ON	SV-ON	SV-ON	SV-ON
Output	19	PO 0	PO 0	PO 0	PO 0	PE 0	LS 0
	20	PO 1	PO 1	PO 1	PO 1	PE 1	LS 1
	21	PO 2	PO 2	PO 2	PO 2	PE 2	LS 2
	22	PO 3	PO 3	PO 3	PO 3	PE 3	–
	23	PO 4	PO 4	PO 4	PO 4	PE 4	–
	24	PO 5	PO 5	PO 5	PO 5	PE 5	–
	25	MOVE	MOVE	PO 6	PO 6	PE 6	–
	26	AREA	MODES	PO 7	PO 7	AREA	AREA
	27	P AREA	P AREA	P AREA	PO 8	P AREA	P AREA
	28	MANU S	MANU S	MANU S	MANU S	MANU S	MANU S
	29	HEND	HEND	HEND	HEND	HEND	HEND
	30	INPS	INPS	INPS	INPS	INPS	–
	31	LOAD/TRQS	WEND	LOAD/TRQS	LOAD/TRQS	LOAD/TRQS	–
	32	SVRDY	SVRDY	SVRDY	SVRDY	SVRDY	SVRDY
	33*	EMGS*	EMGS*	EMGS*	EMGS*	EMGS*	EMGS*
	34	ALM	ALM	ALM	ALM	ALM	ALM

* While pin number 33 is EMGS for TSC, it is BALM for TLC and THC.

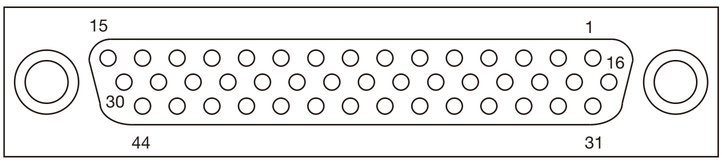
Detailed Specifications of Input Signal Functions (Commonly for TSC/TLC/THC)

Input		
Signal name	Description	Remarks
MANU	Operation mode	Switches AUTO/MANUAL from I/O. MANUAL when signal is on, AUTO when off.
STRT	Start	Start signal of program step. Program starts when signal is on.
PI0 - PI8	Instruction position number	Input for specifying position numbers. Specifies programs at each signal level. Selects a program step and starts a program with "STRT" signal.
PAUSE	Pause	Temporarily interrupts the operation. PAUSE input status when signal is off. (N.C. connection specification)
HOME	Return to home position	Starts the return to home position operation. Returning to home position is started when signal is on. It stops when it is off.
SV-ON	Servo on	Turns the servo ON and OFF. Servo ON when signal is on, and servo OFF when signal is off.
REST	Alarm reset	Resets alarm. Resets remaining travel distance during pause. Resets when it is on.
BKRL	Brake release	Forcibly releases brake. Releases brake when it is on.
MODE	External unit input instruction mode	Enters the instruction mode when signal is on. Instruction mode when signal is on.
PWRT	Current position write with external unit input instruction	During the instruction mode, the position is written when this signal is greater than 20ms with the position for writing specified.
JOG/INCHING	Manual operation switch with external unit input instruction	Switching of manual operation during the instruction mode. Selects inching operation when it is on, and jog operation when it is off.
JOG P	Moving direction + with external unit input instruction	Operating direction and operation start signal during the instruction mode. Moves in + direction to the soft limit when signal is on. Decelerates and stops when it is off while moving.
JOG N	Moving direction - with external unit input instruction	Operating direction and operation start signal during the instruction mode. Moves in - direction to the soft limit when signal is on. Decelerates and stops when it is off while moving.
ST0 - 6	Cylinder type START	Program start signal for position numbers from "ST0" to "ST6". Can select either Level or Edge for signal using parameter 13 "move" command. Note that when more than two positions are on at the same time, the lowest-number signal takes precedence.

Detailed Specifications of Output Signal Functions (Commonly for TSC/TLC/THC)

Output		
Signal name	Description	Remarks
MANU S	Operation mode status	Operation mode status outputs (AUTO/MANUAL). MANUAL when signal is on, AUTO when off.
PO0 - PO8	End position number	Outputs the position number arrived after positioning is completed (binary outputs).
MOVE	Moving	Outputs signal during motor operation.
INPS	Positioning completed	Outputs when motor comes within the positioning completed width.
SVRDY	Operation preparations completed	Outputs signal when servo is on.
ALM	Alarm	Alarm output signal.
MODES	External unit input instruction mode status	Output signal for judging instruction mode or regular operation mode. Instruction mode when signal is on. Regular operation mode when it is off.
WEND	Writing completed	Signal is off after switching to the regular mode, and it is on for 30ms when writing of the PWRT signal is completed.
HEND	Return to home position completed	Outputs signal when returning to home position is completed.
AREA	Upper/lower area limit	On when the current position of actuator is within a range specified by the parameter.
P AREA	Position area	On when the current position of actuator is within a range specified by the program step.
EMGS	Emergency stop status	Outputs judgment for input of emergency stop. On during normal operation, and off when emergency stop circuit is shut off.
BALM	Voltage reduction in battery	Off when the battery voltage is reduced.
LOAD	Load output judgment status	On when a directive torque exceeds the threshold over a certain period within a judgment range.
TRQS	Torque level status	On when the load threshold is reached while moving. Off while the load remains under the threshold.
PE0 - PE6	Cylinder type arrival completed output	Signal generated after operation for position number is completed.
LS0 - LS2	Cylinder type position detection output	Outputs when the current position comes within the positioning width for each of the three points.

I/O Connector Pin Numbers (Commonly for TSC/TLC/THC)



* This is the arrangement of the connectors mounted on the controller viewed from the panel front.

Optional (Battery)

Lithium ion battery (for maintenance)

ER6V C4 (Toshiba Home Appliances Corporation)

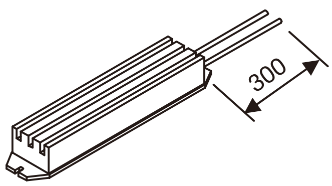
- This is required for the absolute system.
- When replacing the battery, order the above.

Optional (Regeneration Resistance)

Regeneration resistance

To make electrical actuator operate via the THC controller series, a regeneration resistance may be necessary depending on the operating conditions. The following table lists the required number of regeneration resistances just for reference. The customer should provide the required number of them.
It is recommended that you use regeneration resistances manufactured by Iwaki Musen Kenkyusho Co.,LTD.
THK supplies regeneration resistance connection cables. The customer can order them separately as necessary.

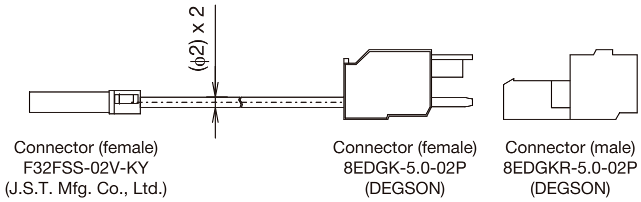
■Regeneration resistance (Power-type cement resistor)



	Name of item	Manufacturer
A	RH150 100Ω J	Iwaki Musen Kenkyusho Co.,LTD.
B	RH150 50Ω J	

THC capacity	Orientation	
	Horizontal	Vertical
100W	A x 1	A x 1
200W	A x 1	A x 1
400W	B x 2	B x 2
750W	B x 2	B x 2

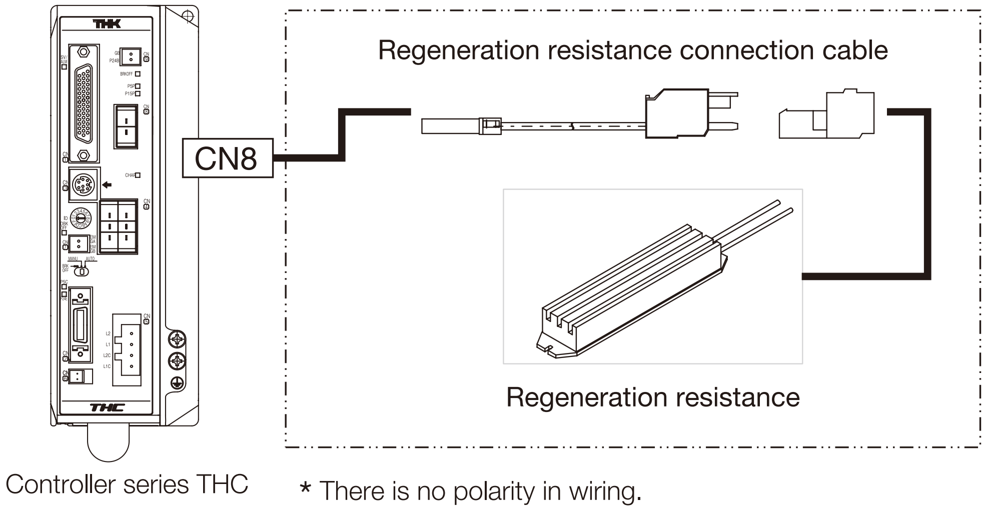
■Regeneration resistance connection cable (CBL-REG00-01F)



* Cable insertion jig (DG010-01P-19-00AH) is provided.
(The customer does not have to provide special tools)

	Model	Length	Manufacturer
1	CBL-REG00-01F	1m	THK Co., Ltd.

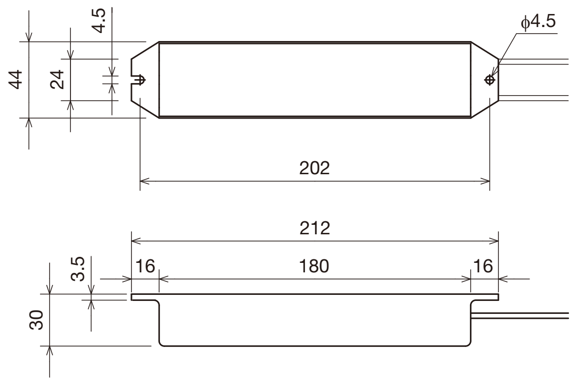
Configuration Diagram



* There is no polarity in wiring.

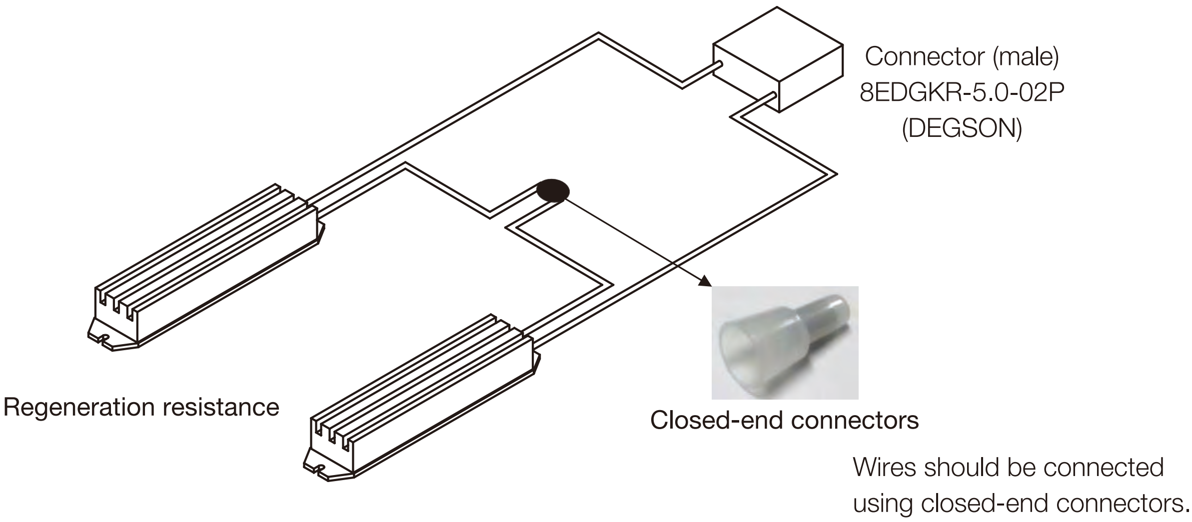
Regeneration Resistance External Drawing

RH150 (90W, 100Ω) (90W, 50Ω) common to all



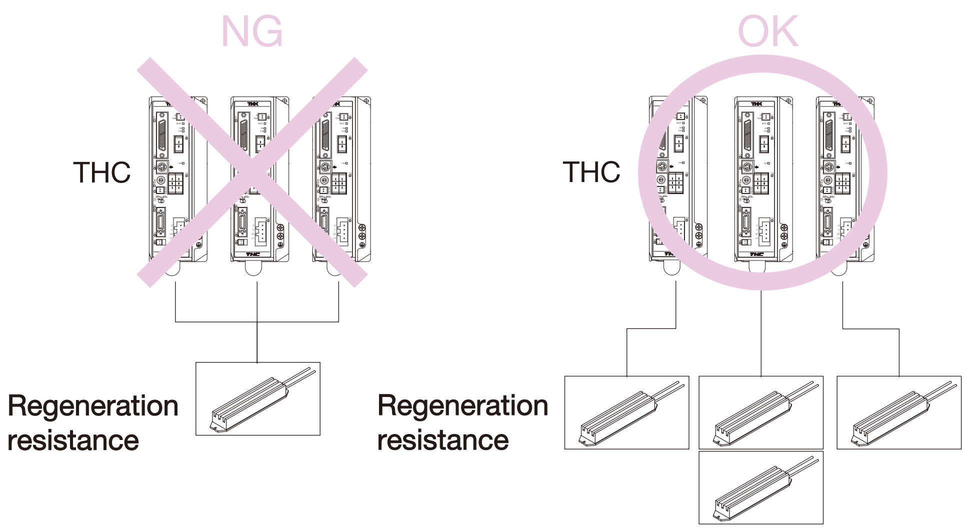
Wiring Example (Using Two Regeneration Resistances)

When you use two regeneration resistances, connect them in series.



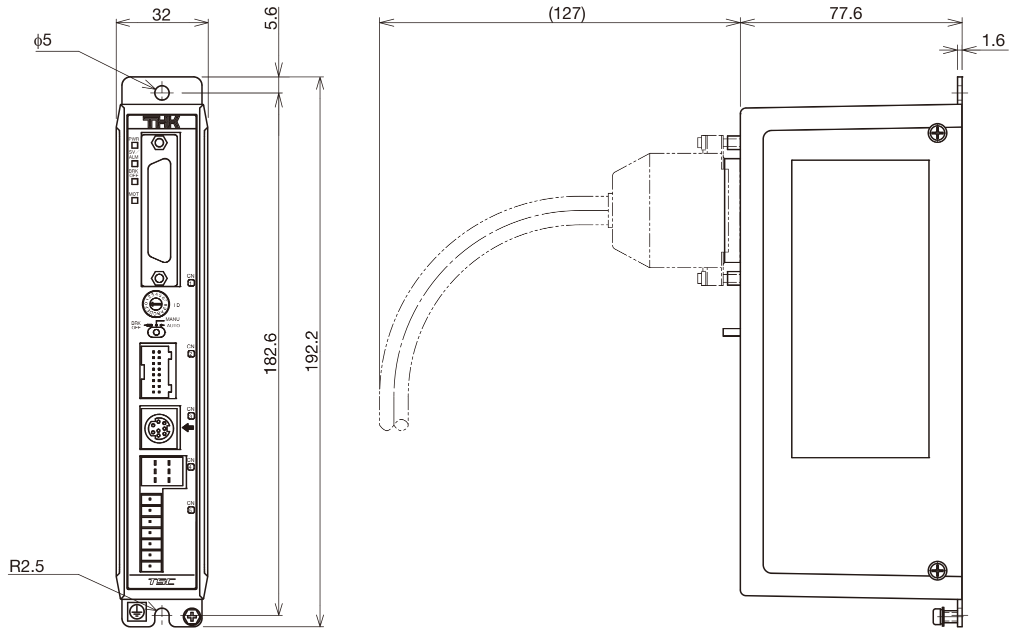
Precautions on Selecting Resistance

The customer should provide the required number of regeneration resistances for each THC.

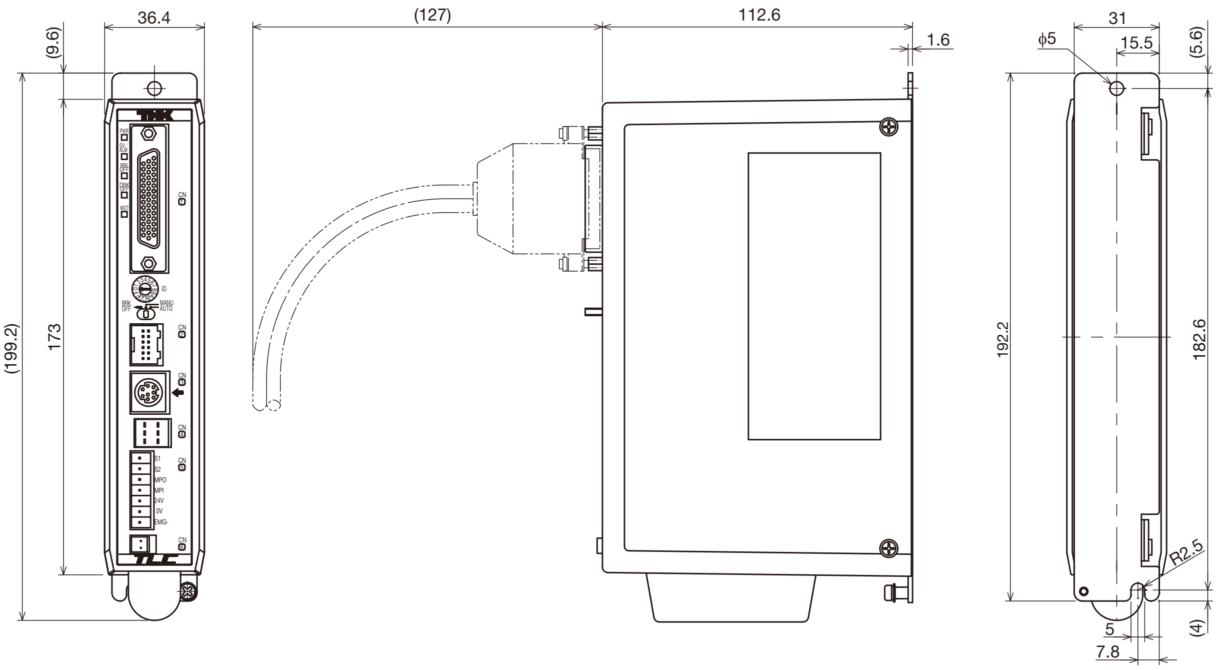


Dimensional Drawing of Controller

TSC

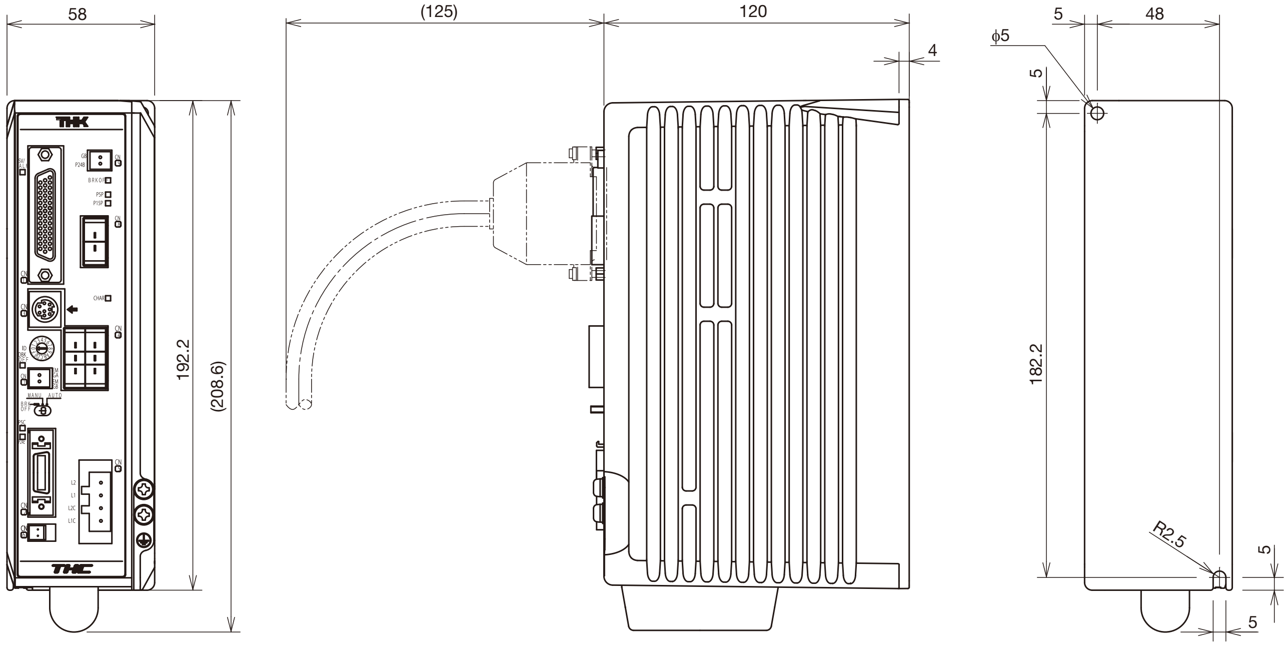


TLC (50W)

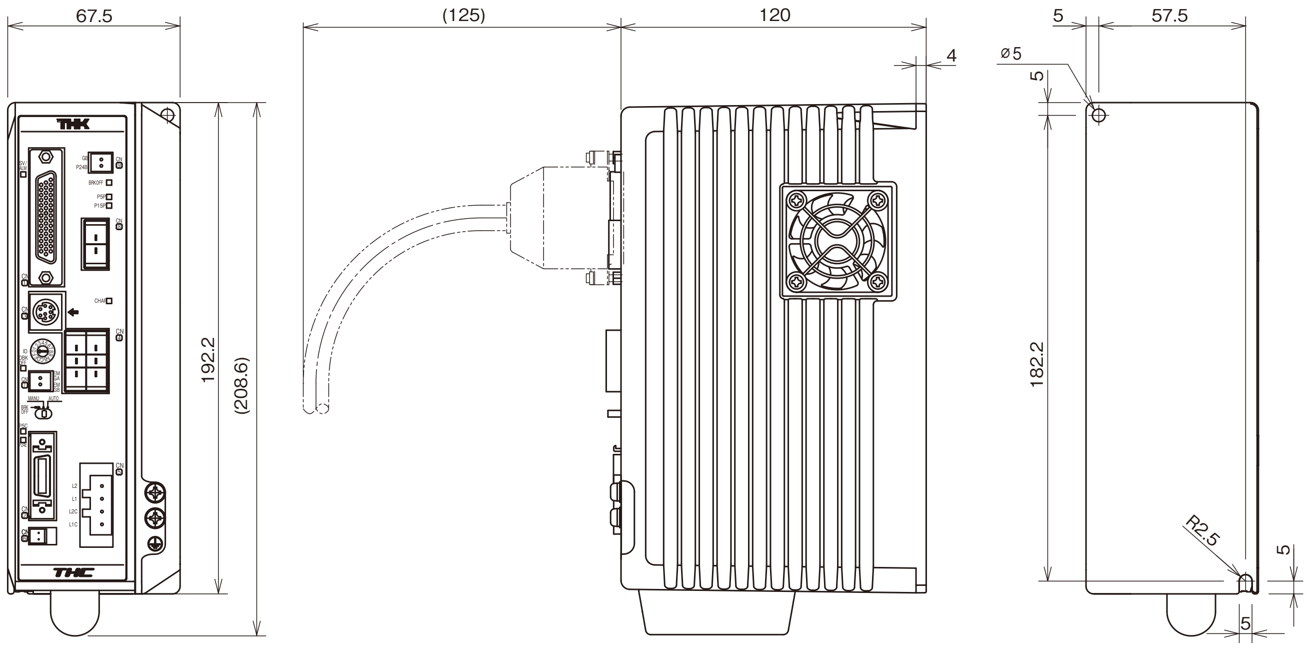


Dimensional Drawing of Controller

THC (100W, 200W)

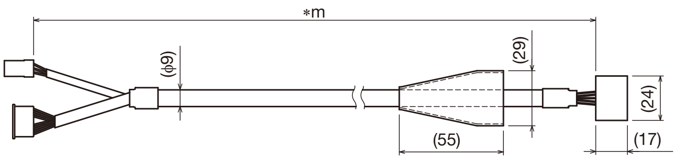


THC (400W, 750W)



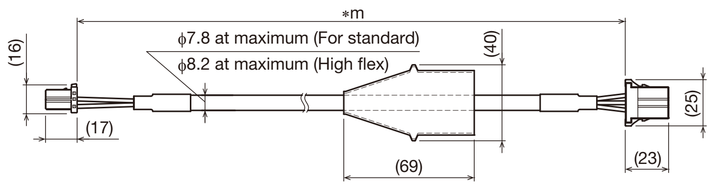
Actuator Cable

Actuator cable for TSC: CBL-TSC-AC-∗∗-B (Standard)
∗∗ indicates cable length: 03 (3m), 05 (5m), or 10 (10m)

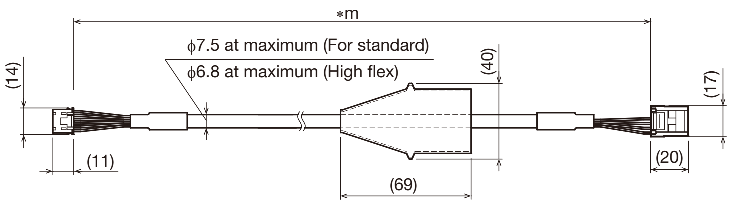


* To use a 10m actuator cable, insert a noise filter to the TSC power supply.
Recommended noise filter is "RSAN-2003 (TDK-Lambda Corporation)".

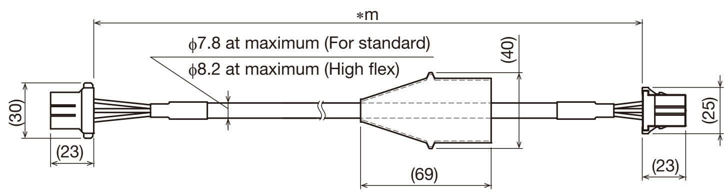
Motor brake cable for TLC: CBL-TLC-ACP-∗∗ F (For standard)
CBL-TLC-ACP-∗∗ R (High flex)
∗∗ indicates cable length: 03 (3m), 05 (5m), or 10 (10m)



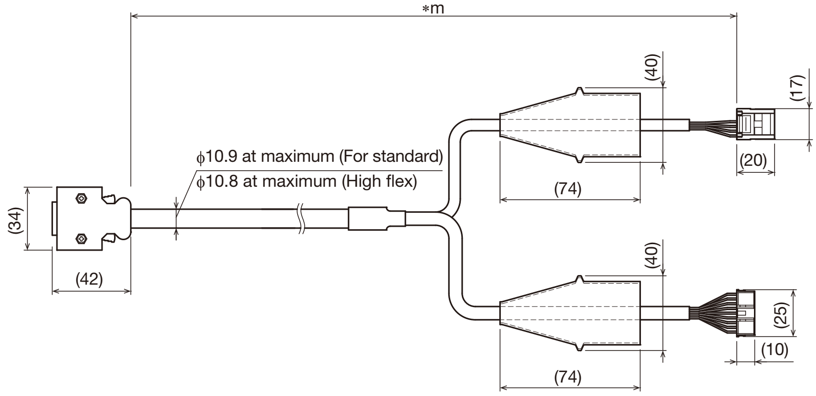
Encoder cable for TLC: CBL-TLC-ACS-∗∗ F (For standard)
CBL-TLC-ACS-∗∗ R (High flex)
∗∗ indicates cable length: 03 (3m), 05 (5m), or 10 (10m)



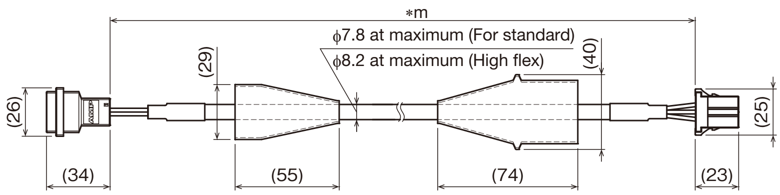
Motor brake cable for THC: CBL-THC-ACP-∗∗ F (For standard)
CBL-THC-ACP-∗∗ R (High flex)
∗∗ indicates cable length: 03 (3m), 05 (5m), or 10 (10m)



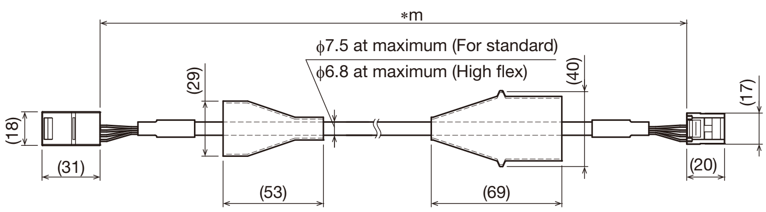
Encoder sensor cable for THC: CBL-THC-ACS-∗∗ F (For standard)
CBL-THC-ACS-∗∗ R (High flex)
∗∗ indicates cable length: 03 (3m), 05 (5m), or 10 (10m)



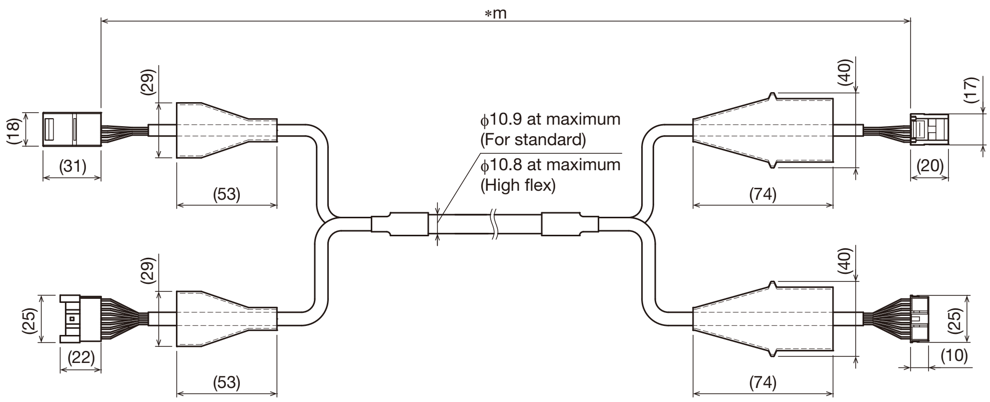
Motor brake extension cable for TLC/THC: CBL-ACP-EXT01-∗∗ F (For standard)
CBL-ACP-EXT01-∗∗ R (High flex)
∗∗ indicates cable length: 01 (1m), 03 (3m), or 05 (5m)



Extension encoder cable for TLC: CBL-ACS-EXT01-∗∗ F (For standard)
CBL-ACS-EXT01-∗∗ R (High flex)
∗∗ indicates cable length: 01 (1m), 03 (3m), or 05 (5m)



Encoder sensor extension cable for THC: CBL-ACS-EXT02-∗∗ F (For standard)
CBL-ACS-EXT02-∗∗ R (High flex)
∗∗ indicates cable length: 01 (1m), 03 (3m), or 05 (5m)



Note 1) For use involving moving elements, select high flex cable type or standard cable type. The recommended bending radius at the core of cable is R95 or greater. (For use involving other than moving elements, R50 or greater is recommended.)
Note 2) When using the TLC servo driver controller, motor brake cable and encoder cable should be no longer than 11m.
Up to two extension cables can be connected.
Note 3) When using the THC servo driver controller, motor brake cable and encoder sensor cable should be no longer than 16m.
Up to two extension cables can be connected.

TDO Digital operator Separate order required

Features

Simple, quick operations and settings of TSC/TLC/THC are possible without using a PC.

Simple Operation

Key sheet with a straightforward design
and an LC with backlight (20 digits x 4 lines) are mounted.

Model Configuration

Model		Type
TDO	–	N
(1)		(2)
TDO		N: Category 2 *1 compliant type

*1 ISO 13849-1

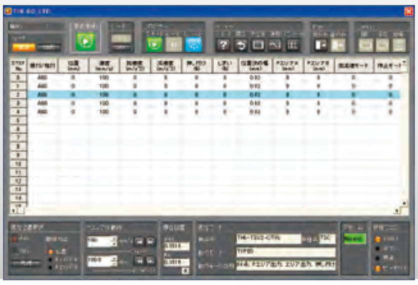
Functions

· Checking and editing step data and parameters
· Operation of actuator
(Return to home position, Jog operation, Inching operation, Program execution, Servo ON/OFF, Electromagnetic brake ON/OFF)
· Monitor (I/O, Current position, Position command, Current command, Version display)
· Alarm (History display, Clear history, Interrupt display on occurrence, Alarm reset)
· Settings (Backlight luminance, LCD contrast, Beep tone, Automatic turn off of backlight)
· Enable switch (3 positions) · Protection structure IP54 (excluding cable connectors) · Display language (Japanese/English)

Outer dimensions: 110mm (W) x 218.3mm (H) x 66.6mm (D) * excluding crests
Main unit weight: 400g * excluding cables Cable length: 5m
* TLC/THC is supported with Version 1.03 or later.
* TNU is supported with Version 1.10 or later.

D-STEP PC setup tool

Three languages supported



User-friendly interface

Features

Supports multifunctional TSC/TLC/THC with user-friendly interface.

Simple Operation

Operations and settings of TSC/TLC/THC are possible using a PC. Equipped with functions useful for maintenance, such as backing up data or logging operating states.

Functions

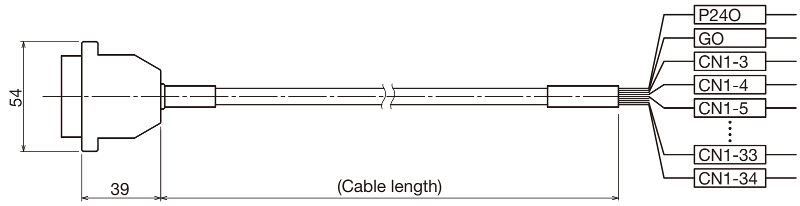
· Checking, editing, backing up, or offline-editing of step data
· Checking, editing, backing up, or offline-editing of parameters
· Operations of actuator (Return to home position, Jog operation, Inching operation, Program execution, Servo ON/OFF)
· Monitor (I/O, Current position, Position command, Current command) · Logging (Speed and current waveform display)
· Alarm (History display, Clear history, Alarm reset) · Display language (Japanese/English/Simplified Chinese)

Supported OS: Windows XP/Windows Vista/Windows 7
D-STEP can be freely downloaded from the THK Technical Support website. (http://www.ea-thk.com/)
* TLC/THC/TNU is supported with Version 1.10 or later.

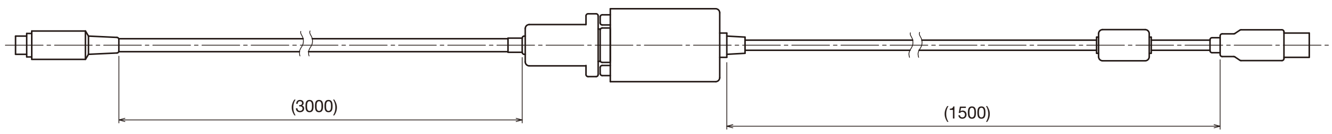
Cables

I/O cable: CBL-CON-IO-⁎⁎ (⁎⁎ indicates cable length: 03 (3m), 05 (5m), or 10 (10m).)
(Optional)

* Can be used with the dedicated driver controllers TSC/TLC/THC.
* Cables are shipped with the discrete wire side terminals unprocessed.



PC communications cable: CBL-COM-03
(Optional)



MEMO

MEMO

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, 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:

- When performance under air cleanliness is necessary, the operating temperature must be +16°C to +24°C (humidity of 50% RH or lower, no condensation)
- When used in normal environment (in atmosphere), the operating temperature must be +10°C to +40°C (humidity of 80% RH or lower, no 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 CKRF, 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 the 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.

THK ELECTRIC ACTUATORS **Clean Series CKSF/CKRF**

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- The actual products may differ from the pictures and photographs in this catalog.
- Outward appearances and specifications are subject to change without notification for the purpose of improvement.
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