LM Guide Actuator

THK General Catalog

A Technical Descriptions of the Products

B Product Specifications (Separate)

* Please see the separate "B Product Specifications".

LM Guide Actuator

Model KR

LM Guide + Ball Screw = Integral-structure Actuator

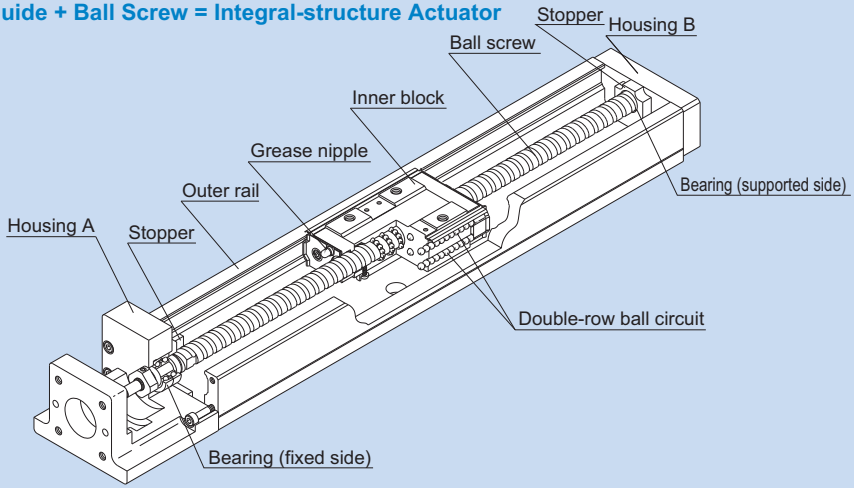


Fig.1 Structure of LM Guide Actuator Model KR

Structure and Features

Because of its integral-structure inner block consisting of a highly rigid outer rail with a U-shaped cross section, LM Guide units on both side faces and a Ball Screw unit in the center, LM Guide Actuator model KR achieves a highly rigid and highly accurate actuator in a minimal space.
In addition, since the housings A and B also serve as support units and the inner block as a table, the this model allows significant reduction of man-hours and time required for design and assembly since it incorporates a support unit and a table, thus to contribute to total cost cutting.

[4-way Equal Load]

Each circuit of balls is arranged at a contact angle of 45° so that the rated load on the inner block is uniform in the all directions (radial, reverse radial and lateral directions). As a result, model KR can be used in any mounting orientation.

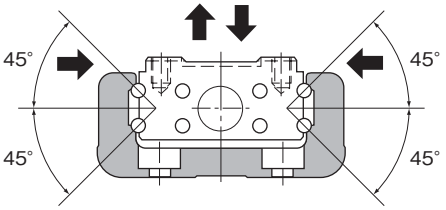


Fig.2 Load Capacity and Contact Angle of Model KR

[High Rigidity]

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

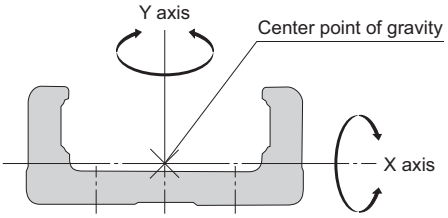


Fig.3 Cross Section of the Outer Rail

Table1 Cross-sectional Characteristics of the Outer rail Rail
Unit: mm⁴

Model No.	I_X	I_Y	Mass (kg/100mm)
KR15	9.08×10^2	1.42×10^4	0.104
KR20	6.1×10^3	6.2×10^4	0.26
KR26	1.7×10^4	1.5×10^5	0.39
KR30H	2.7×10^4	2.8×10^5	0.5
KR33	6.2×10^4	3.8×10^5	0.66
KR45H	8.4×10^4	8.9×10^5	0.9
KR46	2.4×10^5	1.5×10^6	1.26
KR55	2.2×10^5	2.3×10^6	1.5
KR65	4.6×10^5	5.9×10^6	2.31

I_X=geometrical moment of inertia around X axis
I_Y=geometrical moment of inertia around Y axis

[High Accuracy]

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

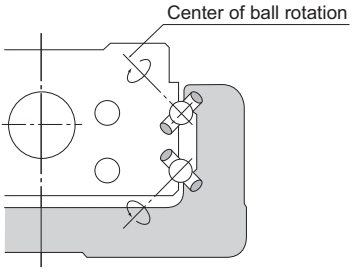


Fig.4 Contact Structure of Model KR

[Space Saving]

Use of a inner block integrating LM Guide units on both ends and a Ball Screw unit in the center makes model KR a highly rigid and highly accurate actuator in a minimal space.

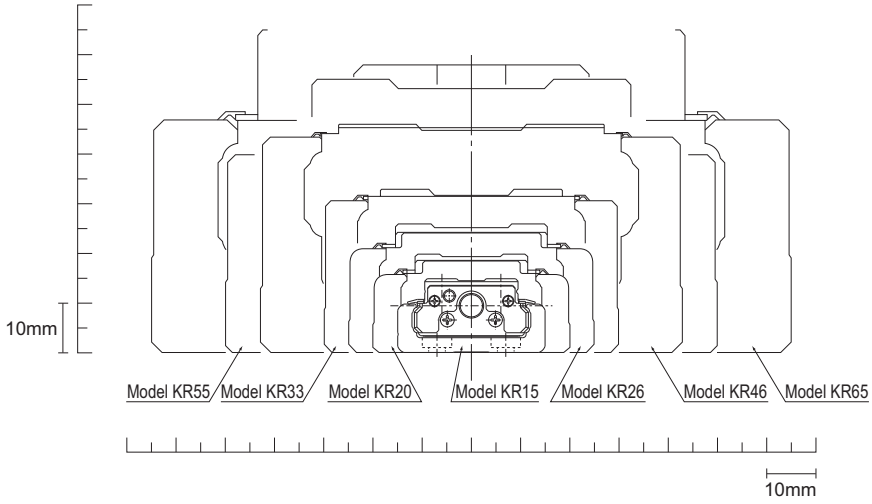


Fig.5 Cross Sectional Drawing

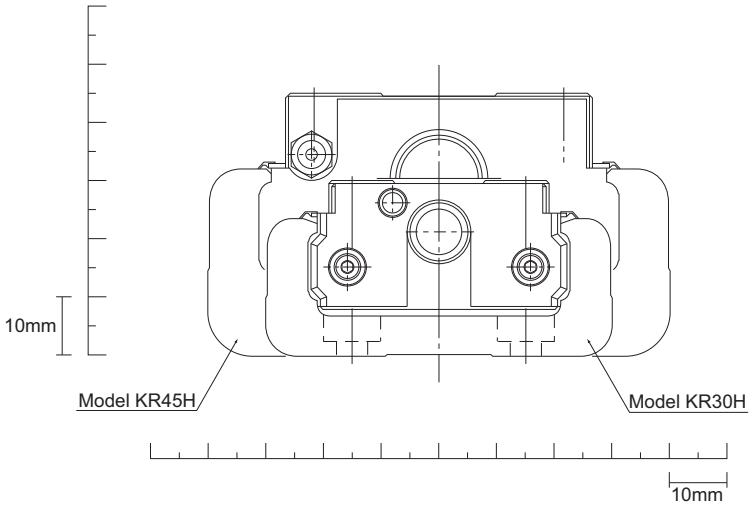


Fig.6 Cross Sectional Drawing

[Seal]

Model KR is equipped with end seals and side seals for dust prevention as standard.

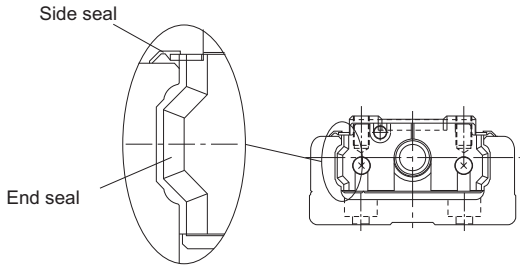


Table2 shows the rolling resistance and seal resistance per inner block (guide section).

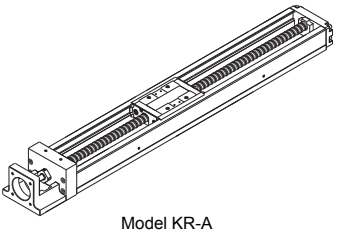
Table2 Maximum Resistance Value Unit: N

Model No.	Rolling resistance value	Seal resistance value	Total
KR15	0.2	0.7	0.9
KR20	0.5	0.7	1.2
KR26	0.6	0.8	1.4
KR30H	1.5	2.0	3.5
KR33	1.5	1.9	3.4
KR45H	2.5	2.6	5.1
KR46	2.5	2.5	5
KR55	5.0	3.8	8.8
KR65	6.0	4.1	10.1

Note) The rolling resistance represents the value when a lubricant is not used.

Model KR-A (with a Single Long Type Block)

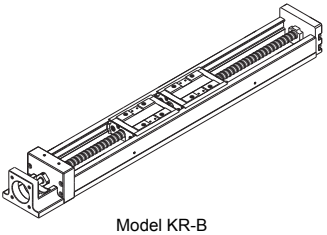
Representative model of KR.



Model KR-A

Model KR-B (with Two Long Type Blocks)

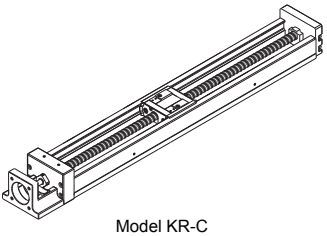
Equipped with two units of the inner block of model KR-A, this model achieves higher rigidity, higher load capacity and higher accuracy.



Model KR-B

Model KR-C (with a Single Short Type Block)

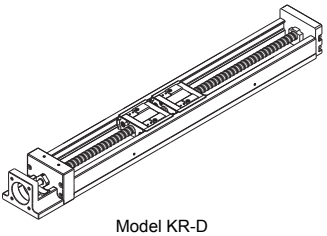
This model has a shorter overall length of the inner block and a longer stroke than model KR-A.
(Supported models: model KR30H, 33, 45H, 46)



Model KR-C

Model KR-D (with Two Short Type Blocks)

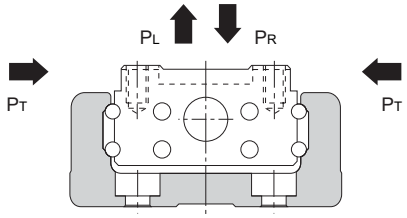
Equipped with two units of the inner block of model KR-C, this design allows a span between blocks that suits the equipment, thus to achieve high rigidity.
(Supported models: model KR30H, 33, 45H, 46)



Model KR-D

Load Ratings in All Directions and Static Permissible Moment

[Load Rating]



● **LM Guide Unit**

Model KR is capable of receiving loads in all directions: radial, reverse radial and lateral directions. Its basic load ratings are equal in all directions (radial, reverse radial and lateral directions), and their values are indicated in Table3 on A2-8 and A2-9.

● **Ball Screw Unit**

Since the inner block is incorporated with a Ball Screw, model KR is capable of receiving an axial load. The basic load rating value is indicated in Table3 on A2-9 and Table3.

● **Bearing Unit (Fixed Side)**

Since housing A contains an angular bearing, model KR is capable of receiving an axial load.
The basic load rating value is indicated in Table3 on A2-8 and A2-9.

[Equivalent Load (LM Guide Unit)]

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

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

P_E	: Equivalent load : Radial direction : Reverse radial direction : Lateral direction	(N)
P_R	: Radial load	(N)
P_L	: Reverse radial load	(N)
P_T	: Lateral load	(N)

Table3 Load Rating of Model KR

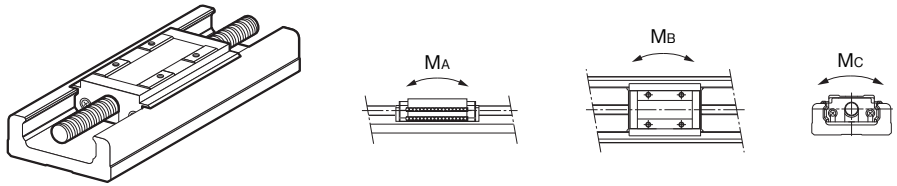
	Model No.		KR15		KR20		KR26	
			KR1501	KR1502	KR2001	KR2006	KR2602	KR2606
LM guide unit	Basic dynamic load rating C (N)	Long type block	1930		3590		7240	
		Short type block	—		—		—	
	Basic static load rating C_0 (N)	Long type block	3450		6300		12150	
		Short type block	—		—		—	
	Radial clearance (mm)	Normal grade, high accuracy grade	−0.001 to +0.002		−0.003 to +0.002		−0.004 to +0.002	
		Precision grade	−0.005 to −0.002		−0.007 to −0.003		−0.01 to −0.004	
Ball screw unit	Basic dynamic load rating Ca (N)	Normal grade, high accuracy grade	340	230	660	860	2350	1950
		Precision grade	340	230	660	1060	2350	2390
	Basic static load rating C_0a (N)	Normal grade, high accuracy grade	660	410	1170	1450	4020	3510
		Precision grade	660	410	1170	1600	4020	3900
	Screw shaft diameter (mm)		5		6		8	
	Lead (mm)		1	2	1	6	2	6
	Thread minor diameter (mm)		4.5		5.3	5.0	6.6	6.7
	Ball center-to-center diameter (mm)		5.15		6.15	6.3	8.3	8.4
Bearing unit (Fixed side)	Axial direction	Basic dynamic load rating Ca (N)	590		1000		1380	
		Static permissible load P_0a (N)	290		1240		1760	

Note1) The load ratings in the LM Guide unit each indicate the load rating per inner block.
Note2) The Ball Screw of precision grade (grade P) for models KR30H, KR33, KR45H10 and KR4610 is incorporated with spacer balls in the proportion of one to one.
Note3) The Ball Screw of precision grade (grade P) for models KR45H20, KR4620, KR55 and KR65 is incorporated with spacer balls in the proportion of two to one.

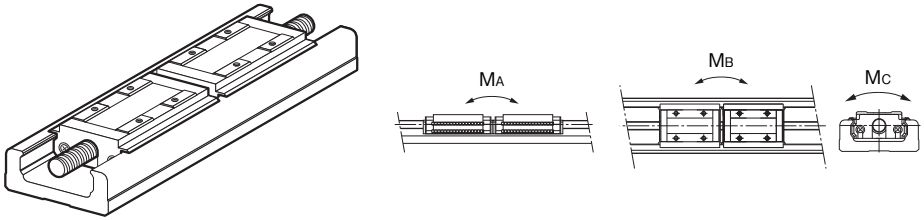
	KR30H		KR33		KR45H		KR46		KR55	KR65
	KR30H06	KR30H10	KR3306	KR3310	KR45H10	KR45H20	KR4610	KR4620		
	11600		11600		23300		27400		38100	50900
	4900		4900		11900		14000		—	—
	20200		20200		39200		45500		61900	80900
	10000		10000		19600		22700		—	—
	−0.004 to +0.002		−0.004 to +0.002		−0.006 to +0.003		−0.006 to +0.003		−0.007 to +0.004	−0.008 to +0.004
	−0.012 to −0.004		−0.012 to −0.004		−0.016 to −0.006		−0.016 to −0.006		−0.019 to −0.007	−0.022 to −0.008
	2840	1760	2840	1760	3140	3040	3140	3040	3620	5680
	2250	1370	2250	1370	2940	3430	2940	3430	3980	5950
	4900	2840	4900	2840	6760	7150	6760	7150	9290	14500
	2740	1570	2740	1570	3720	5290	3720	5290	6850	10700
	10		10		15		15		20	25
	6	10	6	10	10	20	10	20	20	25
	7.8		7.8		12.5		12.5		17.5	22
	10.5		10.5		15.75		15.75		20.75	26
	1790		1790		6660		6660		7600	13700
	2590		2590		3240		3240		3990	5830

[Static Permissible Moment (LM Guide Unit)]

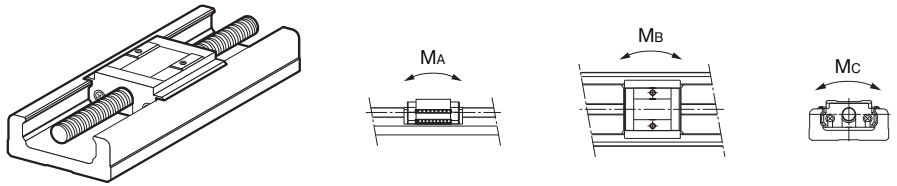
The Inner block is capable of receiving moment loads in all three (3) directions.
Table4 on A2-11 shows static permissible moments in the M_A, M_B and M_C directions.



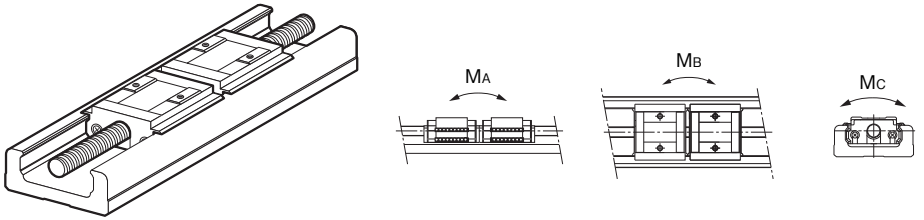
With a single long type block (Model KR-A)



With double long type blocks (Model KR-B)



With a single long type block (Model KR-C)



With double long type blocks (Model KR-D)

Table4 Static Permissible Moments of Model KR Unit: N-m

Model No.	Static permissible moment		
	M_A	M_B	M_C
KR15-A	12.1	12.1	38
KR15-B	70.3	70.3	76
KR20-A	31	31	83
KR20-B	176	176	165
KR26-A	84	84	208
KR26-B	480	480	416
KR30H-A	166	166	428
KR30H-B	908	908	857
KR30H-C	44	44	214
KR30H-D	319	319	427
KR33-A	166	166	428
KR33-B	908	908	857
KR33-C	44	44	214
KR33-D	319	319	427
KR45H-A	486	486	925
KR45H-B	2732	2732	1850
KR45H-C	130	130	463
KR45H-D	994	994	925
KR46-A	547	547	1400
KR46-B	2940	2940	2800
KR46-C	149	149	700
KR46-D	1010	1010	1400
KR55-A	870	870	2280
KR55-B	4890	4890	4570
KR65-A	1300	1300	3920
KR65-B	7230	7230	7840

Note1) Symbols A, B, C or D in the end of each model number indicates the inner block size and the number of inner blocks used.
A: With a single long type block
B: With double long type blocks
C: With a single short type block
D: With double short type blocks
Note2) The values for models KR-B/D indicate the values when double inner blocks are used in close contact with each other.

Maximum Travel Speed and the Maximum Length

Table5 Maximum Travel Speed and the Maximum Length

Model No.	Ball Screw lead (mm)	Outer rail length (mm)	Maximum travel speed (mm/s)						Maximum length(mm)	
			Precision grade	High-accuracy grade	Normal grade	Precision grade	High-accuracy grade	Normal grade	Precision grade	High-accuracy grade, normal grade
			Long type block			Short type block				
KR15	01	—	100	100		—	—	—	250	250
	02	—	200	200		—	—	—		
KR20	01	—	100	100		—	—	—	250	250
	06	—	600	600		—	—	—		
KR26	02	—	200	200		—	—	—	350	350
	06	—	600	590		—	—	—		
KR30H	06	150	600	470		600	470		600	700
		200	600	470		600	470			
		300	600	470		600	470			
		400	600	470		600	470			
		500	590	470		530	470			
		600	395	395		360	360			
	10	150	1000	790		1000	790			
		200	1000	790		1000	790			
		300	1000	790		1000	790			
		400	1000	790		1000	790			
		500	980	790		880	790			
		600	650	650		600	600			
KR33	06	150	600	470		600	470		600	700
		200	600	470		600	470			
		300	600	470		600	470			
		400	600	470		600	470			
		500	590	470		530	470			
		600	395	395		360	360			
	10	150	1000	790		1000	790			
		200	1000	790		1000	790			
		300	1000	790		1000	790			
		400	1000	790		1000	790			
		500	980	790		880	790			
		600	650	650		600	600			
KR45H	10	340	740	520		740	520		800	1200
		440	740	520		740	520			
		540	740	520		740	520			
		640	740	520		740	520			
		740	730	520		640	520			
		840	—	520		—	490			
		940	—	430		—	380			
	20	340	1480	1050		1480	1050			
		440	1480	1050		1480	1050			
		540	1480	1050		1480	1050			
		640	1480	1050		1480	1050			
		740	1430	1050		1280	1050			
		840	—	1050		—	980			
		940	—	840		—	770			

Model No.	Ball Screw lead (mm)	Outer rail length (mm)	Maximum travel speed (mm/s)						Maximum length(mm)	
			Precision grade	High-accuracy grade	Normal grade	Precision grade	High-accuracy grade	Normal grade	Precision grade	High-accuracy grade, normal grade
			Long type block			Short type block				
KR46	10	340	740	520		740	520		800	1200
		440	740	520		740	520			
		540	740	520		740	520			
		640	740	520		740	520			
		740	730	520		650	520			
		840	—	520		—	490			
		940	—	430		—	390			
	20	340	1480	1050		1480	1050			
		440	1480	1050		1480	1050			
		540	1480	1050		1480	1050			
		640	1480	1050		1480	1050			
		740	1440	1050		1300	1050			
		840	—	1050		—	990			
		940	—	850		—	780			
KR55	20	980	1120	800		—	—	—	1180	2000
		1080	900	800		—	—	—		
		1180	740	740		—	—	—		
		1280	—	620		—	—	—		
		1380	—	530		—	—	—		
KR65	25	980	1120	800		—	—	—	1380	2000
		1180	1120	800		—	—	—		
		1380	840	800		—	—	—		
		1680	—	550		—	—	—		

Note1) The maximum travel speed for model KR is restricted by Ball Screw Shaft Critical Speed, DN Value, or the maximum rotational speed of the motor (6,000 min^{-1}).
Note2) If you require an outer rail that is longer than the standard length, restrictions apply to the maximum travel speed depending on the critical speedTable5. Contact THK for details.
Note3) If you are considering using this product at the maximum travel speed of Table5 or faster, contact THK.
Note4) The maximum lengths are indicated in terms of outer rail length.

Lubrication

Table6 shows standard greases used in model KR and grease nipple types.

Table6 Standard greases and grease nipple types

Model No.	Standard grease	Grease nipple
KR15	THK AFF Grease	—
KR20	THK AFA Grease	PB107
KR26	THK AFA Grease	PB107
KR30H	THK AFB-LF Grease	PB107
KR33	THK AFB-LF Grease	PB107
KR45H	THK AFB-LF Grease	A-M6F
KR46	THK AFB-LF Grease	A-M6F
KR55	THK AFB-LF Grease	A-M6F
KR65	THK AFB-LF Grease	A-M6F

Service Life

Model KR consists of an LM Guide, a Ball Screw and a support bearing. The nominal life of each component can be obtained using the basic dynamic load rating indicated in Table3 on A2-8 and A2-9 (Rated Load of Model KR).

[LM Guide Unit]

● **Nominal Life**

$$L = \left(\frac{f_C \cdot C}{f_W \cdot P_C}\right)^3 \times 50$$

L : Nominal life (km)
(The total travel distance that 90% of a group of identical LM Guide units independently operating under the same conditions can achieve without showing flaking)
C : Basic dynamic load rating (N)
P_C : Calculated applied load (N)
f_W : Load factor (see Table8 on A2-17)
f_C : Contact factor (see Table7 on A2-17)

● If a moment is applied to model KR-A/C or model KR-B/D using two inner blocks in close contact with each other, calculate the equivalent load by multiplying the applied moment by the equivalent factor indicated in Table9 on A2-17.

$$P_m = K \cdot M$$

P_m : Equivalent load (per nut block) (N)
K : Equivalent moment factor(see Table9 on A2-17)
M : Applied moment (N-mm)
(If planning to use three or more Inner Blocks, or use with wider Block Span, contact THK.)

● If moment Mc is applied to model KR-B/D

$$P_m = \frac{K_C \cdot M_C}{2}$$

● If a radial load (P) and a moment are simultaneously applied to model KR

$$P_E = P_m + P$$

P_E : Total equivalent radial load (N)
Perform a nominal life calculation using the above data.

● **Service Life Time**

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

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

L_h : Service life time (h)
ℓ_s : Stroke length (mm)
n_1 : Number of reciprocations per minute(min^{-1})

[Ball Screw Unit/Bearing Unit(Fixed Side)]

● **Nominal Life**

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

L : Nominal life (rev)
(The total number of revolutions that 90% of a group of identical Ball Screw units independently operating under the same conditions can achieve without showing flaking)
Ca : Basic dynamic load rating (N)
Fa : Applied axial load (N)
f_w : Load factor (see Table8 on A2-17)

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

● **Service Life Time**

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

L_h : Service life time (h)
ℓ_s : Stroke length (mm)
n_1 : Number of reciprocations per minute(min^{-1})
ℓ : Ball Screw lead (mm)

■f_C: Contact Factor

If two inner blocks are used in close contact with each other with model KR-B/D, multiply the basic load rating by the corresponding contact factor indicated in Table7.

Table7 Contact Factor (f_C)

Inner block types	Contact factor f_C
Model KR-B Model KR-D	0.81

■f_W: Load Factor

Table8 shows load factors.

Table8 Load Factor (f_W)

Vibrations/ impact	Speed(V)	f_W
Faint	Very low V≦0.25m/s	1 to 1.2
Weak	Slow 0.25<V≦1m/s	1.2 to 1.5
Medium	Medium 1<V≦2m/s	1.5 to 2
Strong	High V>2m/s	2 to 3.5

■K: Moment Equivalent Factor (LM Guide Unit)

When model KR travels under a moment, the distribution of load applied to the LM Guide is locally large (see A1-51). In such cases, calculate the load by multiplying the moment value by the corresponding moment equivalent factor indicated in Table9.

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

Table9 Equivalent moment factor(K)

Model No.	K_A	K_B	K_C
KR15-A	3.2×10^{-1}	3.2×10^{-1}	9.09×10^{-2}
KR15-B	5.96×10^{-2}	5.96×10^{-2}	9.09×10^{-2}
KR20-A	2.4×10^{-1}	2.4×10^{-1}	7.69×10^{-2}
KR20-B	4.26×10^{-2}	4.26×10^{-2}	7.69×10^{-2}
KR26-A	1.73×10^{-1}	1.73×10^{-1}	5.88×10^{-2}
KR26-B	3.06×10^{-2}	3.06×10^{-2}	5.88×10^{-2}
KR30H-A	1.51×10^{-1}	1.51×10^{-1}	4.78×10^{-2}
KR30H-B	2.76×10^{-2}	2.76×10^{-2}	4.78×10^{-2}
KR30H-C	2.77×10^{-1}	2.77×10^{-1}	4.78×10^{-2}
KR30H-D	3.99×10^{-2}	3.99×10^{-2}	4.78×10^{-2}
KR33-A	1.51×10^{-1}	1.51×10^{-1}	4.93×10^{-2}
KR33-B	2.57×10^{-2}	2.57×10^{-2}	4.93×10^{-2}
KR33-C	2.77×10^{-1}	2.77×10^{-1}	4.93×10^{-2}
KR33-D	3.55×10^{-2}	3.55×10^{-2}	4.93×10^{-2}
KR45H-A	9.83×10^{-2}	9.83×10^{-2}	3.45×10^{-2}
KR45H-B	1.87×10^{-2}	1.87×10^{-2}	3.45×10^{-2}
KR45H-C	1.83×10^{-1}	1.83×10^{-1}	3.45×10^{-2}
KR45H-D	2.81×10^{-2}	2.81×10^{-2}	3.45×10^{-2}
KR46-A	1.01×10^{-1}	1.01×10^{-1}	3.38×10^{-2}
KR46-B	1.78×10^{-2}	1.78×10^{-2}	3.38×10^{-2}
KR46-C	1.85×10^{-1}	1.85×10^{-1}	3.38×10^{-2}
KR46-D	2.5×10^{-2}	2.5×10^{-2}	3.38×10^{-2}
KR55-A	8.63×10^{-2}	8.63×10^{-2}	2.83×10^{-2}
KR55-B	1.53×10^{-2}	1.53×10^{-2}	2.83×10^{-2}
KR65-A	7.55×10^{-2}	7.55×10^{-2}	2.14×10^{-2}
KR65-B	1.35×10^{-2}	1.35×10^{-2}	2.14×10^{-2}

Note) The values for models KR-B/D indicate the values when double inner blocks are used in close contact with each other.

Static Safety Factor

[Calculating the Static Safety Factor]

● **LM Guide Unit**

To calculate a load applied to the LM Guide of model KR, the average load required for calculating the service life and the maximum load needed for calculating the static safety factor must be obtained first. In particular, if the system starts and stops frequently, or if a large moment caused by an overhung load is applied to the system, it may receive an unexpectedly large load.

When selecting a model number, make sure that the desired model is capable of receiving the required maximum load (whether stationary or in motion).

$$f_s = \frac{C_0}{P_{max}}$$

f_S : Static safety factor
C_0 : Basic static load rating (N)
P_{max} : Maximum applied load (N)

* The basic static load rating is a static load with a constant direction and magnitude whereby the sum of the permanent deformation of the rolling element and that of the raceway on the contact area under the maximum stress is 0.0001 times the rolling element diameter.

● **Ball Screw Unit/Bearing Unit(Fixed Side)**

If an unexpected external force is applied in the axial direction as a result of an inertia caused by an impact or start and stop while model KR is stationary or operating, it is necessary to take into account the static safety factor.

$$f_s = \frac{C_{0a}}{F_{max}}$$

f_S : Static safety factor
C_{0a} : Basic static load rating (N)
F_{max} : Maximum applied load (N)

[Standard Values for the Static Safety Factor (f_S)]

Machine type	Load conditions	Minimum Static Safety Factor (f_S)
General industrial machinery	Without vibration or impact	1.0 to 3.5
	With vibration or impact	2.0 to 5.0

* The standard value of the static safety factor may vary depending on the load conditions as well as environment, lubrication status, mounting accuracy, and/or rigidity.

Example of Calculating the Nominal Life

[Condition (Horizontal Installation)]

Assumed model number : KR 5520A
LM Guide unit (C=38100N, C_0=61900N)
Ball Screw unit (C_a=3620N, C_{0a}=9290N)
Bearing unit(Fixed Side) (C_a=7600N, P_{0a}=3990N)
Mass : m = 30kg
Speed : v = 500mm/s
Acceleration : α =2.4m/s^2
Stroke : ℓ_s = 1200mm
Gravitational acceleration : g = 9.807m/s^2
Velocity diagram : see Fig.7

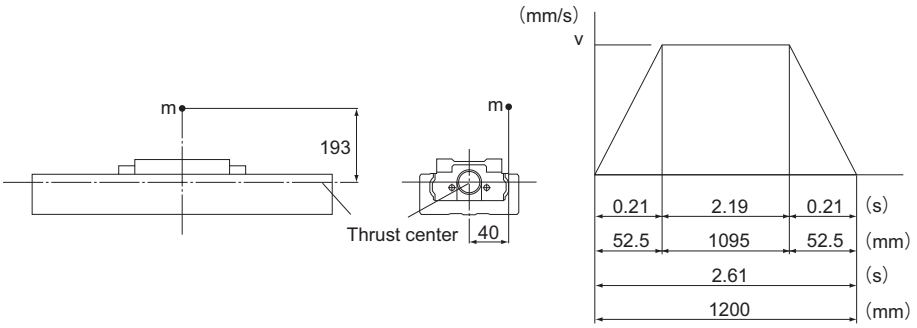


Fig.7 Velocity Diagram

[Consideration]

● **Studying the LM Guide Unit**

■Load Applied to the Inner Block

* Assuming that a single inner block is used, convert applied moments M_A and M_B into applied load by multiplying them by the moment equivalent factor (K_A=K_B=8.63 × 10^{-2}).
* Assuming that a single shaft is used, convert applied moment M_C into applied load by multiplying it by the moment equivalent factor (K_C=2.83 × 10^{-2}).

- During uniform motion:
  $P_1 = mg + K_C \cdot mg \times 40 = 627$ N
- During acceleration:
  $P_{1a} = P_1 + K_A \cdot m\alpha \times 193 = 1826$ N
  $P_{1aT} = -K_B \cdot m\alpha \times 40 = -249$ N
- During deceleration:
  $P_{1d} = P_1 - K_A \cdot m\alpha \times 193 = -572$ N
  $P_{1dT} = K_B \cdot m\alpha \times 40 = 249$ N

* Since the groove under a load is different from the assumed groove, give "0" (zero) to P_{1aT} and P_{1d}.

■Combined Radial And Thrust Load

- During uniform motion:
  $P_{1E} = P_1 = 627$ N
- During acceleration:
  $P_{1aE} = P_{1a} + P_{1aT} = 1826$ N
- During deceleration:
  $P_{1dE} = P_{1d} + P_{1dT} = 249$ N

■Static Safety Factor

$$f_s = \frac{C_0}{P_{max}} = \frac{C_0}{P_{1aE}} = 33.9$$

■Nominal Life

- Average load

$$P_m = \sqrt[3]{\frac{1}{\ell_S}\left(P_{1E}^{\ 3} \times 1095 + P_{1aE}^{\ 3} \times 52.5 + P_{1dE}^{\ 3} \times 52.5\right)} = 790 \text{ N}$$

- Nominal life

$$L = \left(\frac{C}{f_w \cdot P_m}\right)^3 \times 50 = 3.25 \times 10^6 \text{ km}$$

f_w : Load factor (1.2)

● Studying the Ball Screw Unit

■Axial load

● During forward uniform motion:

$Fa_1 = \mu \cdot mg + f = 11$ N

μ : Friction coefficient(0.005)

f : Rolling resistance of one KR inner block + seal resistance(10.0 N)

● During forward acceleration:

$Fa_2 = Fa_1 + m\alpha = 83$ N

● During forward deceleration:

$Fa_3 = Fa_1 - m\alpha = -61$ N

● During uniform backward motion

$Fa_4 = -Fa_1 = -11$ N

● During backward acceleration:

$Fa_5 = Fa_4 - m\alpha = -83$ N

● During backward deceleration:

$Fa_6 = Fa_4 + m\alpha = 61$ N

* Since the groove under a load is different from the assumed groove, give "0" (zero) to Fa_3, Fa_4 and Fa_5.

■Static Safety Factor

$$f_s = \frac{C_{0a}}{Fa_{max}} = \frac{C_{0a}}{Fa_2} = 111.9$$

■Buckling Load

$$P_1 = \frac{n \cdot \pi^2 \cdot E \cdot I}{\ell_a^{\,2}} \times 0.5 = 11000 \text{ N}$$

P_1 : Buckling load (N)

ℓ_a : Distance between two mounting surfaces (1300 mm)

E : Young's modulus (2.06×10^5 N/mm^2)

n : Factor for mounting method (fixed-fixed: 4.0, see A15-34)

0.5 : Safety factor

I : Minimum geometrical moment of inertia of the shaft (mm^4)

$$I = \frac{\pi}{64} \cdot d_1^4$$

d_1 : Screw-shaft thread minor diameter (17.5 mm)

■Permissible tensile Compressive Load

$$P_2 = \delta \cdot \frac{\pi}{4} \cdot d_1^2 = 35300\ \mathrm{N}$$

P_2 : Permissible tensile compressive load (N)
δ : Permissible tensile compressive stress (147 N/mm²)
d_1 : Screw-shaft thread minor diameter (17.5mm)

■Dangerous Speed

$$N_1 = \frac{60 \cdot \lambda^2}{2\pi \cdot \ell_b^{\,2}} \cdot \sqrt{\frac{E \times 10^3 \cdot I}{\gamma \cdot A}} \times 0.8 = 1560\ \mathrm{min}^{-1}$$

N_1 : Dangerous speed (min^{-1})
ℓ_b : Distance between two mounting surfaces (1300mm)
γ : Density (7.85×10^{-6}kg/mm³)
λ : Factor according to the mounting method (fixed-supported 3.927, see A15-36)
0.8 : Safety factor

■DN Value

DN=31125(≦50000)
D : Ball center-to-center diameter (20.75mm)
N : Maximum working rotation speed ($1500\mathrm{min}^{-1}$)

■Nominal Life

● Average axial load

$$F_{am} = \sqrt[3]{\frac{1}{2 \cdot \ell_S}\left(F_{a1}^{\,3} \times 1095 + F_{a2}^{\,3} \times 52.5 + F_{a6}^{\,3} \times 52.5\right)} = 26.2\ \mathrm{N}$$

● Nominal life

$$L = \left(\frac{C_a}{f_w \cdot F_{am}}\right)^3 \cdot \ell = 3.05 \times 10^7\ \mathrm{km}$$

f_w : Load factor (1.2)
ℓ : Ball Screw lead (20mm)

● **Bearing Unit (Fixed Side)**

■Axial Load (Same as the Ball Screw Unit)

$Fa_1 = 11$ N
$Fa_2 = 83$ N
$Fa_3 = 0$ N
$Fa_4 = 0$ N
$Fa_5 = 0$ N
$Fa_6 = 61$ N

■Static Safety Factor

$$f_s = \frac{P_{0a}}{Fa_{max}} = \frac{P_{0a}}{Fa_2} = 48.0$$

■Nominal Life

● Average axial load

$$Fa_m = \sqrt[3]{\frac{1}{2 \cdot \ell_S}\left(Fa_1^{\,3} \times 1095 + Fa_2^{\,3} \times 52.5 + Fa_6^{\,3} \times 52.5\right)} = 26.2 \text{ N}$$

● Nominal life

$$L = \left(\frac{Ca}{f_w \cdot Fa_m}\right)^3 \times 10^6 = 1.41 \times 10^{13} \text{ rev}$$

f_w : Load factor (1.2)

* Convert the above nominal life into the service life in travel distance of the Ball Screw.

$L_S = L \cdot \ell \times 10^{-6} = 2.82 \times 10^8$ km

[Result]

The table below shows the result of the examination.

KR5520A	LM guide unit	Ball screw unit	Bearing unit (Fixed side)
Static safety factor	33.9	111.9	48.0
Buckling load(N)	—	11000	—
Permissible tensile compressive load(N)	—	35300	—
Dangerous speed(min^{-1})	—	1560	—
DN Value	—	31125	—
Nominal life(km)	3.25×10^6	3.05×10^7	2.82×10^8
Maximum working rotation speed(min^{-1})	—	1500	—

Note1) From the static safety coefficient and other values above, it is judged that the assumed model can be used.
Note2) Of the rated lives of the three components, the shortest value (of LM Guide unit) is considered the nominal life of the assumed model KR 5520A.

[Condition (Vertical Installation)]

Assumed model number : KR 5520A
LM Guide Unit (C = 38100 N, C_0 = 61900N)
Ball Screw Unit (C_a=3620 N, C_{0a}=9290 N)
Bearing Unit(Fixed Side) (C_a=7600 N, P_{0a}=3990 N)
Mass : m = 30 kg
Speed : v = 500mm/s
Acceleration : α =2.4 m/s^2
Stroke : ℓ_s = 1200 mm
Gravitational acceleration : g = 9.807 m/s^2
Velocity diagram see Fig.8

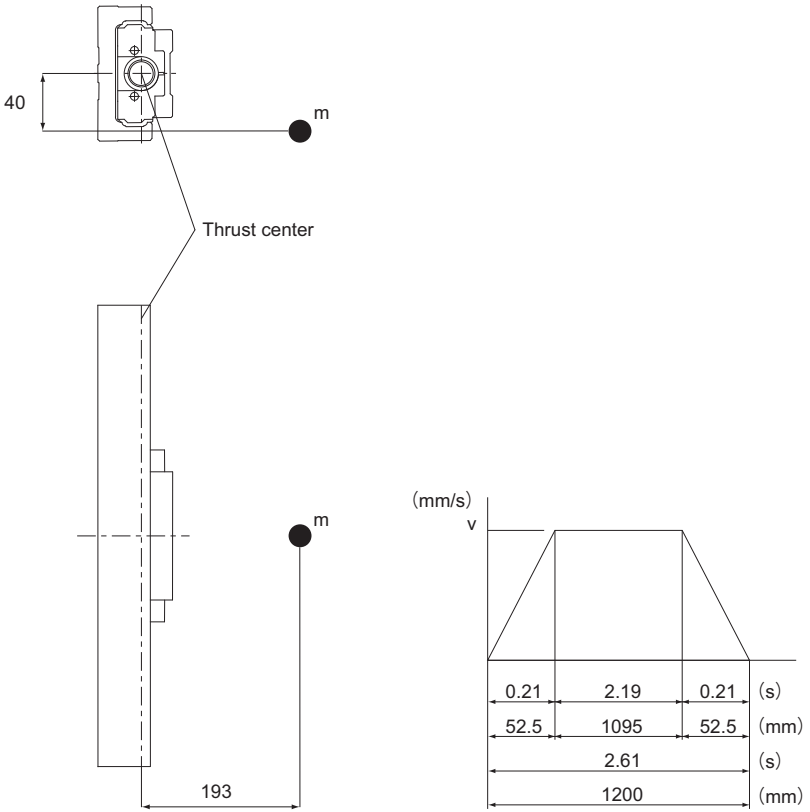


Fig.8 Velocity Diagram

[Consideration]

● **Studying the LM Guide Unit**

■Load Applied to the Inner Block

∗ Assuming that a single inner block is used, convert applied moments M_A and M_B into applied load by multiplying them by the moment equivalent factor ($K_A=K_B=8.63\times10^{-2}$).

● During uniform motion:

$P_1 = K_A \cdot mg \times 193 = 4900$ N

$P_{1T} = K_B \cdot mg \times 40 = 1016$ N

● During acceleration:

$P_{1a} = P_1 + K_A \cdot m\alpha \times 193 = 6100$ N

$P_{1aT} = P_{1T} + K_B \cdot m\alpha \times 40 = 1264$ N

● During deceleration:

$P_{1d} = P_1 - K_A \cdot m\alpha \times 193 = 3701$ N

$P_{1dT} = P_{1d} - K_B \cdot m\alpha \times 40 = 767$ N

■Combined Radial And Thrust Load

● During uniform motion:

$P_{1E} = P_1 + P_{1T} = 5916$ N

● During acceleration:

$P_{1aE} = P_{1a} + P_{1aT} = 7364$ N

● During deceleration:

$P_{1dE} = P_{1d} + P_{1dT} = 4468$ N

■Static Safety Factor

$$f_s = \frac{C_0}{P_{max}} = \frac{C_0}{P_{1aE}} = 8.4$$

■Nominal Life

● Average load

$$P_m = \sqrt[3]{\frac{1}{\ell_S}\left(P_{1E}^{\ 3} \times 1095 + P_{1aE}^{\ 3} \times 52.5 + P_{1dE}^{\ 3} \times 52.5\right)} = 5947 \text{ N}$$

● Nominal life

$$L = \left(\frac{C}{f_w \cdot P_m}\right)^3 \times 50 = 7.61 \times 10^3 \text{ km}$$

f_w : Load factor (1.2)

● **Studying the Ball Screw Unit**

■Axial Load

● During upward uniform motion:

$Fa_1 = mg + f = 304$ N

f : Sliding resistance per block (10.0 N)

● During upward acceleration:

$Fa_2 = Fa_1 + m\alpha = 376$ N

● During upward deceleration:

$Fa_3 = Fa_1 - m\alpha = 232$ N

● During downward uniform motion:

$Fa_4 = mg - f = 284$ N

● During downward acceleration:

$Fa_5 = Fa_4 - m\alpha = 212$ N

● During downward deceleration:

$Fa_6 = Fa_4 + m\alpha = 356$ N

■Static Safety Factor

$$f_s = \frac{C_{0a}}{F_{max}} = \frac{C_{0a}}{Fa_2} = 24.7$$

■Buckling Load

Same as Horizontal Installation

■Permissible Tensile Compressive Load

Same as Horizontal Installation

■Dangerous Speed

Same as Horizontal Installation

■DN Value

Same as Horizontal Installation

■Nominal Life

● Average axial load

$$F_m = \sqrt[3]{\frac{1}{2 \cdot \ell_s}(Fa_1^3 \times 1095 + Fa_2^3 \times 52.5 + Fa_3^3 \times 52.5 + Fa_4^3 \times 1095 + Fa_5^3 \times 52.5 + Fa_6^3 \times 52.5)} = 296 \text{ N}$$

● Nominal life

$$L = \left(\frac{Ca}{f_w \cdot F_m}\right)^3 \times \ell = 2.11 \times 10^4 \text{ km}$$

f_w : Load factor (1.2) ℓ : Ball Screw Lead (20mm)

● **Bearing Unit (Fixed Side)**

■Axial Load (Same as the Ball Screw Unit)

Fa_1 = 304 N
Fa_2 = 376 N
Fa_3 = 232 N
Fa_4 = 284 N
Fa_5 = 212 N
Fa_6 = 356 N

■Static Safety Factor

$$f_s = \frac{P_{0a}}{F_{max}} = \frac{P_{0a}}{Fa_2} = 10.6$$

■Nominal Life

● Average axial load

$$F_m = \sqrt[3]{\frac{1}{2 \cdot \ell_s}(Fa_1^3 \times 1095 + Fa_2^3 \times 52.5 + Fa_3^3 \times 52.5 + Fa_4^3 \times 1095 + Fa_5^3 \times 52.5 + Fa_6^3 \times 52.5)} = 296 \text{ N}$$

● Nominal life

$$L = \left(\frac{Ca}{f_w \cdot F_m}\right)^3 \times 10^6 = 9.80 \times 10^9 \text{ rev}$$

f_w : Load factor (1.2)

* Convert the above nominal life into the service life in travel distance of the Ball Screw.

$L_s = L \cdot \ell \times 10^{-6} = 1.95 \times 10^5$ km

[Result]

The table below shows the result of the examination.

KR5520A	LM guide unit	Ball screw unit	Bearing unit (Fixed side)
Static safety factor	8.4	24.7	10.6
Buckling load(N)	—	11000	—
Permissible tensile compressive load(N)	—	35300	—
Dangerous speed(min^{-1})	—	1560	—
DN Value	—	31125	—
Nominal life(km)	7.61×10^3	2.11×10^4	1.95×10^5
Maximum working rotation speed(min^{-1})	—	1500	—

Note1) From the static safety coefficient and other values above, it is judged that the assumed model can be used.
Note2) Of the rated lives of the three components, the shortest value (of LM Guide unit) is considered the nominal life of the assumed model KR 5520A.

Accuracy Standards

The accuracy standard of model KR is defined in positioning repeatability, positioning accuracy, running parallelism (vertical direction) and backlash.

[Positioning Repeatability]

After repeating positioning to a given point in the same direction seven times, measure the halting point and obtain the value of half the maximum difference. Perform this measurement in the center and both ends of the travel distance, use the maximum value as the measurement value and express the value of half the maximum difference with symbol "±" as positioning repeatability.

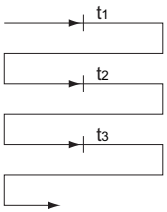


Fig.9 Positioning Repeatability

[Positioning Accuracy]

Using the maximum stroke as the reference length, express the maximum error between the actual distance traveled from the reference point and the command value in an absolute value as positioning accuracy.

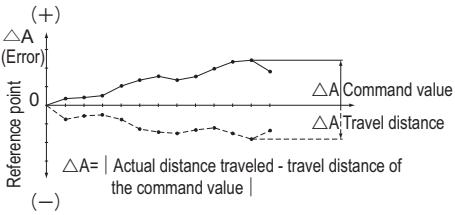


Fig.10 Positioning Accuracy

[Running of Parallelism (Vertical direction)]

Place a straightedge on the surface table where model KR is mounted, measure almost throughout the travel distance of the inner block using a test indicator. Use the maximum difference among the readings within the travel distance as the running parallelism measurement.

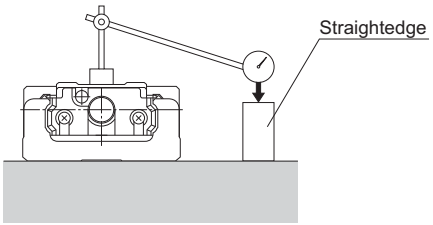


Fig.11 Running of Parallelism

[Backlash]

Feed and slightly move the inner block and read the measurement on the test indicator as the reference value. Subsequently, apply a load to the inner block from the same direction (table feed direction), and then release the inner block from the load. Use the difference between the reference value and the return as the backlash measurement.

Perform this measurement in the center and near both ends, and use the maximum value as the measurement value.

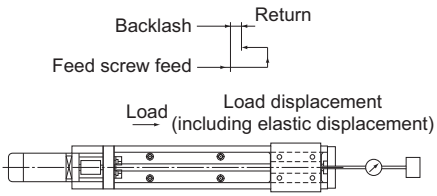


Fig.12 Backlash

The accuracies of model KR are classified into normal grade (no symbol), high accuracy grade (H) and precision grade (P). Tables below show standards for all the accuracies.

Table10 Normal Grade (No Symbol) Unit: mm

Model No.	Outer Rail Length	Positioning Repeatability	Positioning Accuracy	Running Parallelism (Vertical Direction)	Backlash	Starting torque (N・cm)
KR20	100	±0.01	No standard defined	No standard defined	0.02	0.5
	150					
	200					
KR26	150	±0.01	No standard defined	No standard defined	0.02	1.5
	200					
	250					
	300					
KR30H	150	±0.01	No standard defined	No standard defined	0.02	7
	200					
	300					
	400					
	500					
	600					
KR33	150	±0.01	No standard defined	No standard defined	0.02	7
	200					
	300					
	400					
	500					
	600					
KR45H	340	±0.01	No standard defined	No standard defined	0.02	10
	440					
	540					
	640					
	740					
	840					
	940					
KR46	340	±0.01	No standard defined	No standard defined	0.02	10
	440					
	540					
	640					
	740					
	940					
KR55	980	±0.01	No standard defined	No standard defined	0.05	12
	1080					
	1180					
	1280					
	1380					
KR65	980	±0.01	No standard defined	No standard defined	0.05	12
	1180					
	1380					
	1680	±0.012				15

Note1) The evaluation method complies with THK standards.
Note2) Measurements are taken while using a motor provided by THK. For motor-wrap configuration, these values may not apply.
Note3) The starting torque represents the value when THK AFB-LF Grease is used.
However, that of models KR20 and KR26 represents the value when THK AFA Grease is used, and that of KR15 represents the value when THK AFF Grease is used.
Note4) If highly viscous grease such as vacuum grease and clean room grease is used, the actual starting torque may exceed the corresponding value in the table. Use much care in selecting a motor.
Note5) Contact THK for information on the accuracy for outer rails longer than the standard length.

Table11 High Accuracy Grade (H) Unit: mm

Model No.	Outer rail length	Positioning accuracy repeatability	Positioning Accuracy	Running of Parallelism (Vertical direction)	Backlash	Starting torque (N・cm)
KR15	75	±0.004	0.04	0.02	0.01	0.4
	100					
	125					
	150					
	175					
	200					
KR20	100	±0.005	0.06	0.025	0.01	0.5
	150					
	200					
KR26	150	±0.005	0.06	0.025	0.01	1.5
	200					
	250					
	300					
KR30H	150	±0.005	0.06	0.025	0.02	7
	200					
	300					
	400					
	500		0.1	0.035		
	600					
KR33	150	±0.005	0.06	0.025	0.02	7
	200					
	300					
	400					
	500		0.1	0.035		
	600					
KR45H	340	±0.005	0.1	0.035	0.02	10
	440					
	540					
	640					
	740		0.12	0.04		
	840		0.15	0.05		
	940					
KR46	340	±0.005	0.1	0.035	0.02	10
	440					
	540					
	640					
	740		0.12	0.04		
	940		0.15	0.05		
KR55	980	±0.005	0.18	0.05	0.05	12
	1080					
	1180		0.25			
	1280					
	1380					
KR65	980	±0.008	0.18	0.05	0.05	12
	1180		0.2			
	1380					
	1680		0.28	0.055		15

Table12 Precision Grade (P) Unit: mm

Model No.	Outer rail length	Positioning accuracy repeatability	Positioning Accuracy	Running of Parallelism (Vertical direction)	Backlash	Starting torque (N·cm)
KR15	75	±0.003	0.02	0.01	0.002	0.8
	100					
	125					
	150					
	175					
	200					
KR20	100	±0.003	0.02	0.01	0.003	1.2
	150					
	200					
KR26	150	±0.003	0.02	0.01	0.003	4
	200					
	250					
	300					
KR30H	150	±0.003	0.02	0.01	0.003	15
	200					
	300					
	400					
	500		0.025	0.015		
	600					
KR33	150	±0.003	0.02	0.01	0.003	15
	200					
	300					
	400					
	500		0.025	0.015		
	600					
KR45H	340	±0.003	0.025	0.015	0.003	15
	440					
	540					
	640					17
	740		0.03	0.02		
KR46	340	±0.003	0.025	0.015	0.003	15
	440					
	540					
	640					17
	740		0.03	0.02		
KR55	980	±0.005	0.035	0.025	0.003	17
	1080					
	1180		0.04	0.03		20
KR65	980	±0.005	0.035	0.025	0.005	20
	1180					
	1380		0.04	0.03		22

Note1) The evaluation method complies with THK standards.
Note2) Measurements are taken while using a motor provided by THK. For motor-wrap configuration, these values may not apply.
Note3) The starting torque represents the value when THK AFB-LF Grease is used.
However, that of models KR20 and KR26 represents the value when THK AFA Grease is used, and that of KR15 represents the value when THK AFF Grease is used.
Note4) If highly viscous grease such as vacuum grease and clean room grease is used, the actual starting torque may exceed the corresponding value in the table. Use much care in selecting a motor.
Note5) Contact THK for information on the accuracy for outer rails longer than the standard length.

Caged Ball LM Guide Actuator

Model SKR

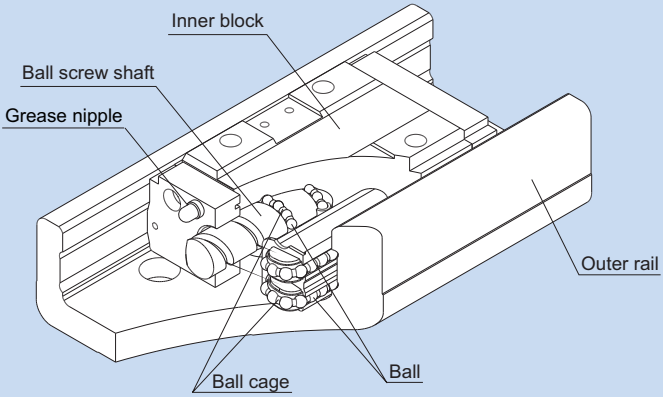


Fig.1 Structure of Caged Ball LM Guide Model SKR

Structure and Features

Caged Ball LM Guide Actuator model SKR is a compact actuator that has a inner block consisting of LM blocks and a ball screw nut integrated inside a U-shaped outer rail.
In addition, this model achieves high speed operation, lower noise and longer-term maintenance-free operation by using ball cages in the LM Guide units and the Ball Screw unit. (A ball cage is used only for the LM guide section of models SKR20 and SKR26 and the ball screws are fitted with QZ lubricators.)

[4-way Equal Load]

Each circuit of balls is arranged at a contact angle of 45° so that the rated load on the inner block is uniform in the all directions (radial, reverse radial and lateral directions). As a result, model SKR can be used in any mounting orientation.

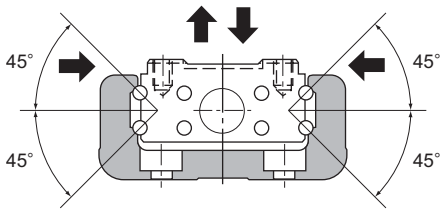


Fig.2 Load Capacity and Contact Angle of Model SKR

[High Rigidity]

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

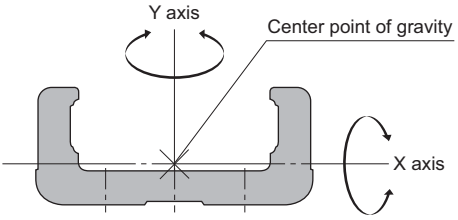


Fig.3 Cross Section of the Outer Rail

Table1 Cross-sectional Characteristics of the Outer rail Rail
Unit: mm⁴

Model No.	I_X	I_Y	Mass (kg/100mm)
SKR20	6.0×10^3	6.14×10^4	0.26
SKR26	1.66×10^4	1.48×10^5	0.39
SKR33	5.35×10^4	3.52×10^5	0.61
SKR46	2.05×10^5	1.45×10^6	1.26

I_X=geometrical moment of inertia around X axis
I_Y=geometrical moment of inertia around Y axis

[High Accuracy]

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

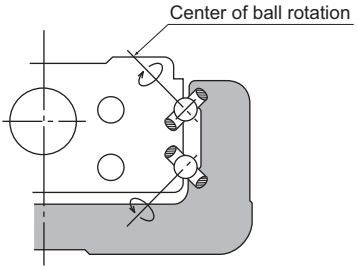


Fig.4 Contact Structure of SKR

[Space Saving]

Due to an integral structure where LM Guide units are placed on both side faces of the inner block and a Ball Screw unit is placed in the center of the inner block, a highly rigid and highly accurate actuator with a minimal space is achieved.

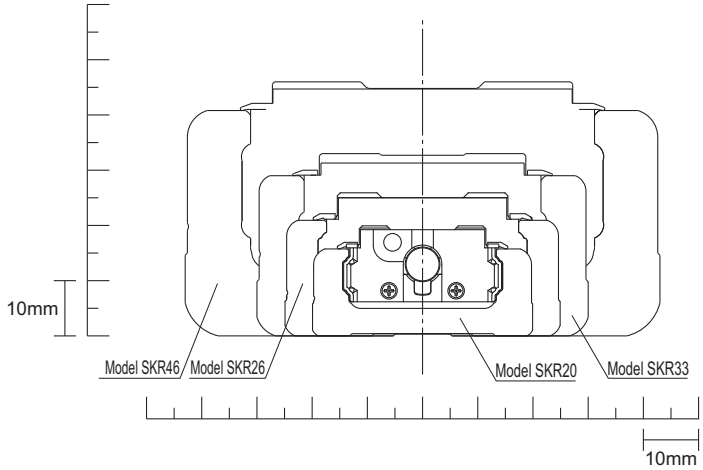


Fig.5 Cross Sectional Drawing

[High Speed]

Model SKR supports a latest high-rotation servomotor (6,000 min^{-1}) using a ball cage and is capable of operating at higher speed than the conventional model KR.

To achieve faster motion, leads of 6 mm and 10 mm were provided on the previous model KR33 ball screws, but model SKR33 includes types with a 20 mm lead.

Table2 Maximum Travel Speed

Model No.	Ball Screw lead (mm)	Outer rail length (mm)	Maximum travel speed (mm/s)		Maximum length(mm)
			Long type block	Short type block	
SKR20	1	100	100	—	250
		150	100	—	
		200	100	—	
	6	100	600	—	
		150	600	—	
		200	600	—	
SKR26	2	150	200	—	350
		200	200	—	
		250	200	—	
		300	200	—	
	6	150	600	—	
		200	600	—	
		250	600	—	
		300	600	—	
SKR33	6	150	600		700
		200	600		
		300	600		
		400	600		
		500	600		
		600	552	503	
		700	393	364	
	10	150	1000		
		200	1000		
		300	1000		
		400	1000		
		500	1000		
		600	920	839	
		700	656	607	
	20	150	2000	—	
		200	2000	—	
		300	2000	—	
		400	2000	—	
		500	2000	—	
		600	1780	—	
		700	1276	—	
SKR46	10	340	1000		940
		440	1000		
		540	1000		
		640	1000	914	
		740	736	667	
		940	431	400	
	20	340	2000		
		440	2000		
		540	2000		
		640	1988	1774	
		740	1433	1300	
		940	845	784	

Note1) The maximum travel speed for model KR is restricted by Ball Screw Shaft Critical Speed, DN Value, or the maximum rotational speed of the motor (6,000 min^{-1}).

Note2) If you require an outer rail that is longer than the standard length, restrictions apply to the maximum travel speed depending on the critical speed Table2. Contact THK for details.

Note3) When considering the use of this model at speed higher than the maximum speed indicated above, contact THK.

Note4) The maximum lengths are indicated in terms of outer rail length.

Caged Ball/Roller Technology

[High Lubricity]

Model SKR uses ball cages to eliminate friction between balls and significantly improve torque characteristics. As a result, the torque fluctuation is reduced and superb lubricity is achieved.

Item	Description
Shaft diameter/lead	ϕ13/10mm
Shaft rotation speed	60min^{-1}

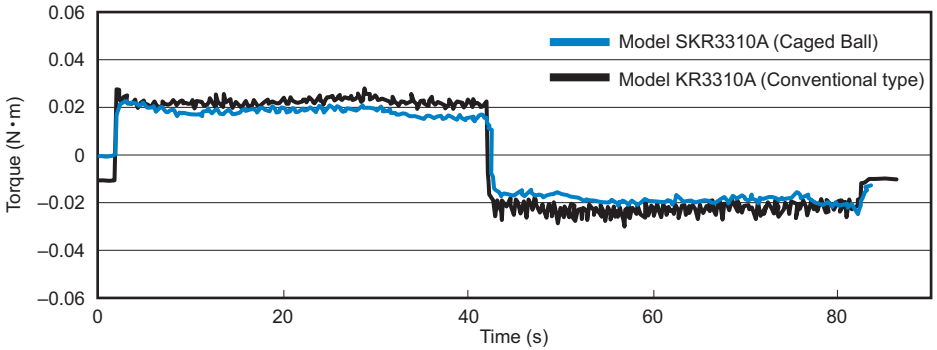


Fig.6 Comparison of Torque Fluctuation between Model SKR and Model KR

[Low Noise, Acceptable Running Sound]

In model SKR, the use of a ball cage in the LM guide section and ball screw section (SKR33 and 46 only) has eliminated collision noise between the balls. As a result, low noise and acceptable running sound are achieved.

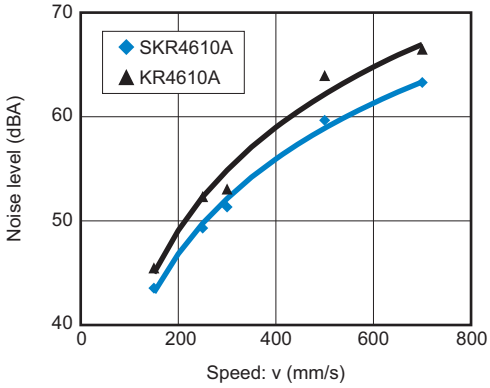


Fig.7 Comparison of Noise between Model SKR4610A and Model KR4610A

[Long-term Maintenance-free Operation]

With model SKR, the ball cage effect helps increase grease retention and achieve long-term maintenance-free operation.

[Long service life—3 times]

With model SKR, both the LM Guide unit and the Ball Screw unit have larger basic dynamic load ratings, and therefore a longer service life is achieved.

The rated service life is calculated from the following equation.

LM guide unit

$L=(C/P)^3\times 50$

L : Nominal life (km)

C : Basic dynamic load rating (N)

P : Applied load (N)

Ball screw unit

$L=(Ca/Fa)^3\times 10^6$

L : Nominal life (rev)

Ca : Basic dynamic load rating (N)

Fa : Applied axial load (N)

As indicated in the equation above, the greater the basic dynamic load rating, the longer the service life of both the LM Guide unit and the Ball Screw unit.

Table3 Comparison of Basic Dynamic Load Rating between Model SKR and Model KR Unit: N

Basic dynamic load rating		SKR20	KR20	SKR26	KR26	SKR3310	KR3310	SKR4620	KR4620
LM guide unit	Long type block	6010	3590	13000	7240	17000	11600	39500	27400
	Short type block	—	—	—	—	11300	4900	28400	14000
Ball screw unit		660	660	2350	2350	2700	1760	4240	3040

Note) On the SKR20/26, only the LM guide section features a ball cage.

[Seal]

Model SKR is equipped with end seals and side seals for dust prevention as standard.

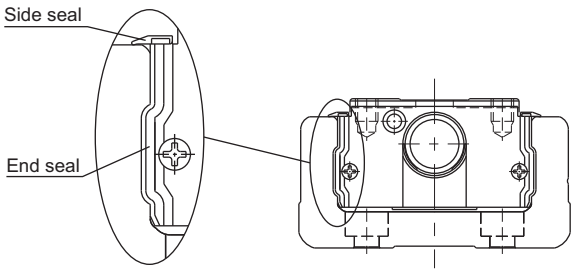


Table4 shows the rolling resistance and seal resistance per inner block (guide section).

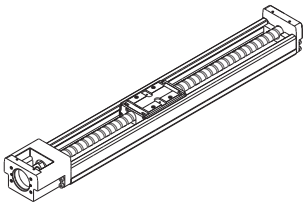
Table4 Maximum Resistance Value Unit: N

Model No.	Rolling resistance value	Seal resistance value	Total
SKR20	4.0	0.8	4.8
SKR26	4.5	1.2	5.7
SKR33	3.0	1.7	4.7
SKR46	6.0	2.1	8.1

Types and Features

Model SKR-A (with a Single Long Type Block)

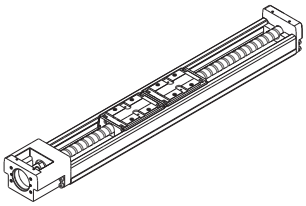
Representative model of SKR.



Model SKR-A

Model SKR-B (with Two Long Type Blocks)

Equipped with two units of the inner block of model SKR-A, this model achieves higher rigidity, higher load capacity and higher accuracy.

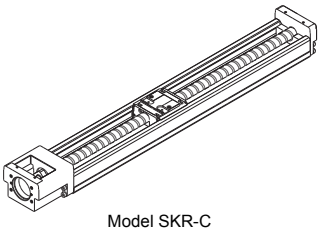


Model SKR-B

Model SKR-C (with a Single Short Type Block)

This model has a shorter overall length of the inner block and a longer stroke than model SKR-A.

* With model SKR3320, a short-block type is not available.

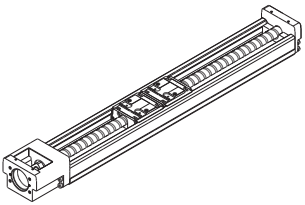


Model SKR-C

Model SKR-D (with Two Short Type Blocks)

Equipped with two units of the inner block of model SKR-C, this design allows a span between blocks that suits the equipment, thus to achieve high rigidity.

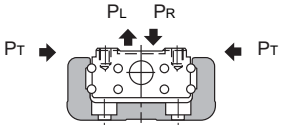
* With model SKR3320, a short-block type is not available.



Model SKR-D

Load Ratings in All Directions and Permissible Moment

[Load Rating]
Caged Ball LM Guide Actuator Model SKR consists of an LM Guide, a Ball Screw and a support bearing.



● **LM Guide Unit**
Model SKR is capable of receiving loads in all directions: radial, reverse radial and lateral directions. Its basic load ratings are equal in all directions (radial, reverse radial and lateral directions), and their values are indicated in Table5.

● **Ball Screw Unit**
Since the inner block is incorporated with a ball screw nut, model SKR is capable of receiving an axial load. The basic load rating value is indicated in Table5.

● **Bearing Unit (Fixed Side)**
Since housing A contains an angular bearing, model SKR is capable of receiving an axial load. The basic load rating value is indicated in Table5.

[Equivalent Load (LM Guide Unit)]
The equivalent load when the LM Guide unit of model SKR simultaneously receives loads in all directions is obtained from the following equation.

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

P_E	:	Equivalent load	(N)
		: Radial direction	
		: Reverse radial direction	
		: Lateral directions	
P_R	:	Radial load	(N)
P_L	:	Reverse radial load	(N)
P_T	:	Lateral load	(N)

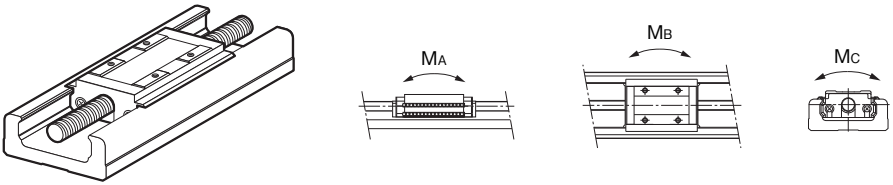
Table5 Load Rating of Model SKR

Model No.			SKR20		SKR26		SKR33			SKR46	
							SKR3306	SKR3310	SKR3320	SKR4610	SKR4620
LM guide unit	Basic dynamic load rating C (N)	Long type block	6010		13000		17000			39500	
		Short type block	—		—		11300			28400	
	Basic static load rating C_0 (N)	Long type block	8030		16500		20400			45900	
		Short type block	—		—		11500			28700	
	Radial clearance (mm)	Normal grade, high accuracy grade	−0.004 to 0		−0.006 to 0		−0.004 to 0			−0.006 to 0	
		Precision grade	−0.006 to −0.004		−0.007 to −0.006		−0.012 to −0.004			−0.016 to −0.006	
Ball screw unit	Basic dynamic load rating Ca (N)	Normal grade, high accuracy grade	660	860	2350	1950	4400	2700	2620	4350	4240
		Precision grade	660	1060	2350	2390					
	Basic static load rating C_0a (N)	Normal grade, high accuracy grade	1170	1450	4020	3510	6290	3780	3770	6990	7040
		Precision grade	1170	1600	4020	3900					
	Screw shaft out diameter (mm)		6		8		13			15	
	Lead (mm)		1	6	2	6	6	10	20	10	20
	Thread minor diameter (mm)		5.3	5.0	6.6	6.7	10.8			12.5	
	Ball center-to-center diameter (mm)		6.15	6.3	8.3	8.4	13.5			15.75	
Bearing unit (Fixed side)	Axial direction	Basic dynamic load rating Ca (N)	1150		2000		6250			6700	
		Static permissible load P_0a (N)	735		1230		2700			3330	

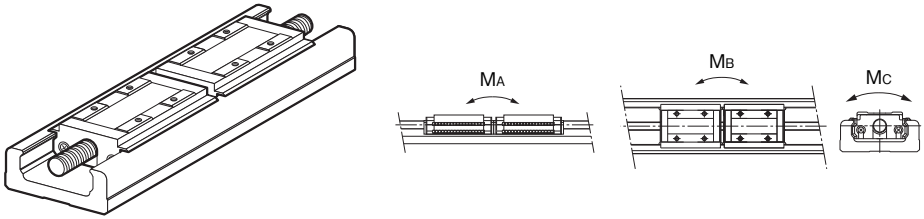
Note1) The load ratings in the LM Guide unit each indicate the load rating per inner block.
Note2) With model SKR3320, a short-block type is not available.

[Permissible Moment (LM Guide Unit)]

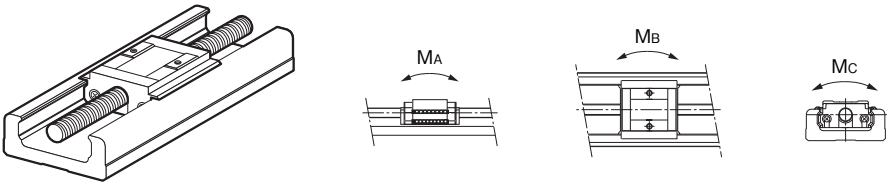
The Inner block is capable of receiving moment loads in all three (3) directions. A2-41 Table6 shows the permissible static moment in the M_A, M_B and M_C directions.



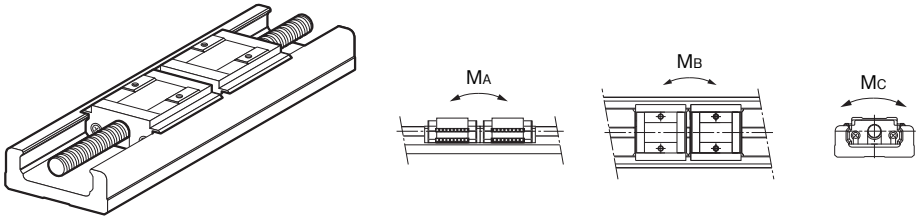
With a single long type block (Model SKR-A)



With double long type blocks (Model SKR-B)



With a single long type block (Model SKR-C)



With double long type blocks (Model SKR-D)

Table6 Static Permissible Moments of Model SKR Unit: N-m

Model No.	Static permissible moment		
	M_A	M_B	M_C
SKR20-A	38	38	98
SKR20-B	207	207	197
SKR26-A	117	117	265
SKR26-B	589	589	53
SKR33-A	173	173	424
SKR33-B	990	990	848
SKR33-C	58	58	240
SKR33-D	390	390	480
SKR46-A	579	579	1390
SKR46-B	3240	3240	2780
SKR46-C	236	236	870
SKR46-D	1460	1460	1740

Note1) Symbols A, B, C or D in the end of each model number indicates the inner block size and the number of inner blocks used.
A: With a single long type block
B: With double long type blocks
C: With a single short type block
D: With double short type blocks
Note2) The values for models SKR-B/D indicate the values when double inner blocks are used in close contact with each other.

Lubrication

Table7 shows standard greases used in model SKR and grease nipple types.

Table7 Standard greases and grease nipple types

Model No.	Standard grease	Grease nipple
SKR20	THK AFA Grease	PB107
SKR26	THK AFA Grease	PB107
SKR33	THK AFB-LF Grease	PB107
SKR46	THK AFB-LF Grease	A-M6F

Service Life

Caged Ball LM Guide Actuator Model SKR consists of an LM Guide, a Ball Screw and a support bearing. The service life of each component can be obtained using the basic dynamic load rating indicated in Table5 on A2-39 (Rated Load of Model KR).

[LM Guide Unit]

● **Nominal Life**

The nominal life (L) means the total travel distance that 90% of a group of units of the same LM Guide model can achieve without flaking (scale-like pieces on the metal surface) after individually running under the same conditions.

The nominal life of the LM Guide is obtained using the following equation.

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

L : Nominal life (km)
C : Basic dynamic load rating (N)
P_C : Calculated applied load (N)
f_W : Load factor (see Table8 on A2-43)
f_C : Contact factor (see Table9 on A2-44)

● If a moment is applied to model SKR-A/C or model SKR-B/D using two inner blocks in close contact with each other, calculate the equivalent load by multiplying the applied moment by the equivalent factor indicated in Table10 on A2-44.

$$P_m = K \cdot M$$

P_m : Equivalent load (per inner block) (N)
K : Equivalent moment factor
M : Applied moment (N-mm)
(If planning to use three or more Inner Blocks, or use with wider Block Span, contact THK.)
If moment Mc is applied to model SKR-B/D

$$P_m = \frac{K_C \cdot M_C}{2}$$

● If a radial load (P) and a moment are simultaneously applied to model SKR

$$P_E = P_m + P$$

P_E : Overall equivalent radial load (N)
Perform a nominal life calculation using the above data.

● **Service Life Time**

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

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

L_h : Service life time (h)
ℓ_s : Stroke length (mm)
n_1 : Number of reciprocations per minute (min^{-1})

[Ball Screw Unit/Bearing Unit(Fixed Side)]

● **Nominal Life**

The nominal life (L) means the total travel distance that 90% of a group of units of the same Ball Screw (bearing) can achieve without flaking after individually running under the same conditions.
The nominal life of the Ball Screw unit/bearing unit (fixed side) is obtained using the following equation.

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

L	:	Nominal life	(rev)
C_a	:	Basic dynamic load rating	(N)
F_a	:	Axial load	(N)
f_w	:	Load factor	(see Table8)

Table8 Load Factor (f_w)

Vibrations/impact	Speed(V)	f_w
Faint	Very low V≦0.25m/s	1 to 1.2
Weak	Slow 0.25<V≦1m/s	1.2 to 1.5
Medium	Medium 1<V≦2m/s	1.5 to 2
Strong	High V>2m/s	2 to 3.5

● Service Life Time

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

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

L_h : Service life time (h)
ℓ_s : Stroke length (mm)
n_1 : Number of reciprocations per minute (min^{-1})
ℓ : Ball Screw lead (mm)

■f_C: Contact Factor

If two inner blocks are used in close contact with each other with model SKR-B/D, multiply the basic load rating by the corresponding contact factor indicated in Table9.

Table9 Contact Factor (f_C)

Block type	Contact factor f_C
Model SKR-B Model SKR-D	0.81

■f_W: Load Factor

Table8 shows load factors.

■K: Moment Equivalent Factor (LM Guide Unit)

When model SKR travels under a moment, the distribution of load applied to the LM Guide is locally large. In such cases, calculate the load by multiplying the moment value by the corresponding moment equivalent factor indicated in Table10.

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

Table10 Equivalent moment factor(K)

Model No.	K_A	K_B	K_C
SKR20-A	2.34×10^{-1}	2.34×10^{-1}	8.07×10^{-2}
SKR20-B	4.38×10^{-2}	4.38×10^{-2}	8.07×10^{-2}
SKR26-A	1.59×10^{-1}	1.59×10^{-1}	6.17×10^{-2}
SKR26-B	3.18×10^{-2}	3.18×10^{-2}	6.17×10^{-2}
SKR33-A	1.42×10^{-1}	1.42×10^{-1}	5.05×10^{-2}
SKR33-B	2.47×10^{-2}	2.47×10^{-2}	5.05×10^{-2}
SKR33-C	2.39×10^{-1}	2.39×10^{-1}	5.05×10^{-2}
SKR33-D	3.54×10^{-2}	3.54×10^{-2}	5.05×10^{-2}
SKR46-A	9.51×10^{-2}	9.51×10^{-2}	3.46×10^{-2}
SKR46-B	1.70×10^{-2}	1.70×10^{-2}	3.46×10^{-2}
SKR46-C	1.46×10^{-1}	1.46×10^{-1}	3.46×10^{-2}
SKR46-D	2.36×10^{-2}	2.36×10^{-2}	3.46×10^{-2}

K_A: Moment equivalent factor in the M_A direction.
K_B: Moment equivalent factor in the M_B direction.
K_C: Moment equivalent factor in the M_C direction.
Note) The values for models SKR-B/D indicate the values when double inner blocks are used in close contact with each other.

Accuracy Standards

The accuracy standard of model SKR is defined in positioning repeatability, positioning accuracy, running parallelism (vertical direction) and backlash.

[Positioning Repeatability]

After repeating positioning to a given point in the same direction seven times, measure the halting point and obtain the value of half the maximum difference. Perform this measurement in the center and both ends of the travel distance, use the maximum value as the measurement value and express the value of half the maximum difference with symbol "±" as positioning repeatability.

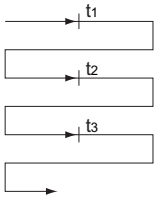


Fig.8 Positioning Repeatability

[Positioning Accuracy]

Using the maximum stroke as the reference length, express the maximum error between the actual distance traveled from the reference point and the command value in an absolute value as positioning accuracy.

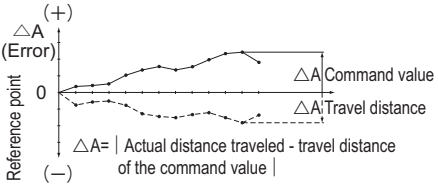


Fig.9 Positioning Accuracy

[Running of Parallelism (Vertical direction)]

Place a straightedge on the surface table where model SKR is mounted, measure almost throughout the travel distance of the inner block using a test indicator. Use the maximum difference among the readings within the travel distance as the running parallelism measurement.

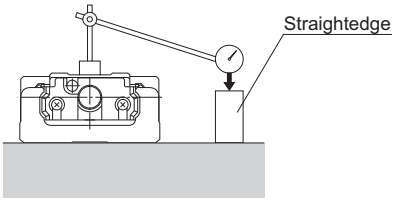


Fig.10 Running of Parallelism

[Backlash]

Feed and slightly move the inner block and read the measurement on the test indicator as the reference value. Subsequently, apply a load to the inner block from the same direction (table feed direction), and then release the inner block from the load. Use the difference between the reference value and the return as the backlash measurement.

Perform this measurement in the center and near both ends, and use the maximum value as the measurement value.

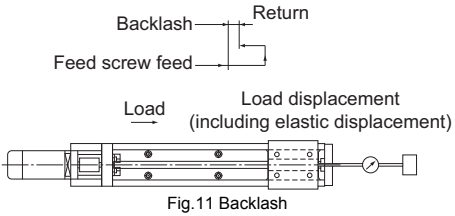


Fig.11 Backlash

The accuracies of model SKR are classified into normal grade (no symbol), high accuracy grade (H) and precision grade (P). Tables below show standards for all the accuracies.

Table11 Normal Grade (No Symbol) Unit: mm

Model No.	Outer rail length	Positioning Repeatability	Positioning Accuracy	Running Parallelism (Vertical direction)	Backlash	Starting torque (N・cm)
SKR20	100	±0.01	No standard defined	No standard defined	0.020	0.5
	150					
	200					
SKR26	150	±0.01	No standard defined	No standard defined	0.020	1.5
	200					
	250					
	300					
SKR33	150	±0.010	No standard defined	No standard defined	0.020	7
	200					
	300					
	400					
	500					
	600					
	700					
SKR46	340	±0.010	No standard defined	No standard defined	0.020	10
	440					
	540					
	640					
	740					
	940					

Table12 High Accuracy Grade (H) Unit: mm

Model No.	Outer rail length	Positioning Repeatability	Positioning Accuracy	Running of Parallelism (Vertical direc-tion)	Backlash	Starting torque (N・cm)
SKR20	100	±0.005	0.060	0.025	0.010	0.5
	150					
	200					
SKR26	150	±0.005	0.060	0.025	0.010	1.5
	200					
	250					
	300					
SKR33	150	±0.005	0.060	0.025	0.020	7
	200					
	300					
	400					
	500		0.100	0.035		
	600					
	700		0.120	0.040		
SKR46	340	±0.005	0.100	0.035	0.020	10
	440					
	540					
	640					
	740		0.120	0.040		
	940		0.150	0.050		

Table13 Precision Grade (P) Unit: mm

Model No.	Outer rail length	Positioning Repeatability	Positioning Accuracy	Running of Parallelism (Vertical direction)	Backlash	Starting torque (N・cm)
SKR20	100	±0.003	0.020	0.010	0.003	1.2
	150					
	200					
SKR26	150	±0.003	0.020	0.010	0.003	4.0
	200					
	250					
	300					
SKR33	150	±0.003	0.020	0.010	0.003	15
	200					
	300					
	400					
	500		0.025	0.015		
	600					
	700		0.030	0.020		
SKR46	340	±0.003	0.025	0.015	0.003	15
	440					
	540					
	640					17
	740		0.030	0.020		

Note1) The evaluation method complies with THK standards.
Note2) The starting torque represents the value when the following grease is used.
Models SKR20 and SKR26 : THK AFA Grease
Models SKR33 and SKR46 : THK AFB-LF Grease
Note3) If harder grease is used, such as vacuum/clean-room grease, the actual starting torque may exceed the values listed.
Note4) Contact THK for information on the accuracy for outer rails longer than the standard length.

Various types of options are available for models KR and SKR. Select an appropriate model according to your application.

Name		Reference page	Overview
Cover	Cover	A2-49	Serve as contamination protection accessories or the likes
	Bellows	B2-46	
Sensor	Proximity sensor	B2-53	Supporting manufacturer: Yamatake, SUNX
	Photo sensor	B2-54	Supporting manufacturer: Omron
	Sensor rail	B2-55	For mounting a sensor
Motor bracket	Housing	A2-52	For standard type model KR without a motor If the customer manufactures a motor braket For motor wrap type
	Table of Motors Used in Model KR and Corresponding Motor Brackets	B2-56	Supporting manufacturer: Yaskawa Electric, Mitsubishi Electric, Panasonic,.Sanyo Electric, Omron, Fanuc, Keyence and Oriental Motor
	Motor bracket dimensional table for model KR	B2-59	—
	Table of Motors Used in Model SKR and Corresponding Motor Brackets	B2-81	Supporting manufacturer: Yaskawa Electric, Mitsubishi Electric, Panasonic,.Sanyo Electric, Omron, Fanuc, Keyence and Oriental Motor
	Motor bracket dimensional table for model SKR	B2-83	—

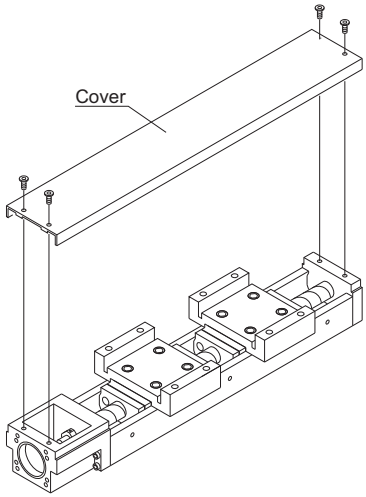
Table1 Table of Applicable Options

Model No.	Cover	Bellows	Proximity sensor	Photo sensor	Housing A for a Separate Motor	Turnaround Housing A	Intermediate Flange
KR15	○	○	○	—	—	—	○
KR20	○	○	○	○	—	—	○
KR26	○	○	○	○	—	—	○
KR30H	○	○	○	○	—	—	○
KR33	○	○	○	○	○	○	○
KR45H	○	○	○	○	—	—	○
KR46	○	○	○	○	○	○	○
KR55	○	○	○	○	—	○	○
KR65	○	○	○	○	—	○	○
SKR20	○	—	○	○	—	—	○
SKR26	○	—	○	○	—	—	○
SKR33	○	—	○	○	—	—	○
SKR46	○	—	○	○	—	—	○

Cover

For models KR and SKR, covers are available as an option.

[Example of Installation]



Model SKR33(with a Cover)

Bellows

●For dimensions of the bellows, see B2-46 to B2-51.

For model KR, bellows are available for contamination protection in addition to a cover.

Sensor

●For detailed dimensions, see B2-52 to B2-55.

Optional proximity sensors and photo sensors are available for models KR and SKR. Models equipped with a sensor are also provided with a dedicated sensor rail/sensor dog (detecting plate).

Some models with a short outer rail are attached with a sensor and sensor rail on both sides. See the table below.

[Installed Example]

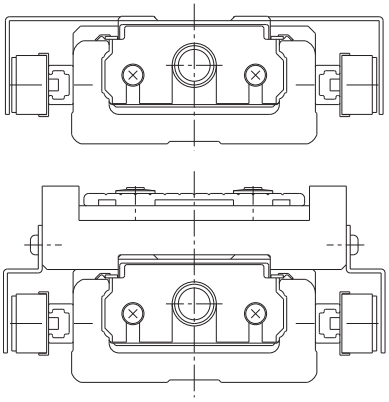


Table2 Outer rail lengths and model numbers with sensor rails mounted on both sides

Unit: mm

Model No.	Outer rail length
KR15A	75
	100
KR15B	125
KR20A, SKR20A	75
	100
	125
KR20B, SKR20B	125
	150
KR26A, SKR26A	100
	125
	150
KR26B, SKR26B	175
	200

Motor Bracket

●For detailed dimensions, see B2-56 to B2-95.

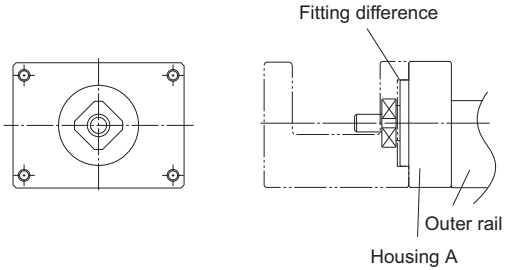
[Housing]

● **Housing A**

THK also offers Housing A for a separate motor and Turnaround Housing A as options in order to support a motor bracket or a turnaround section that the customer individually manufactures.

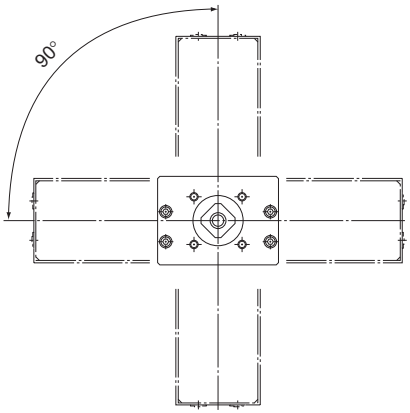
● **Housing A for a Separate Motor**

By using the fitting difference, the user can easily mount a separately manufactured motor bracket.



● **Turnaround Housing A**

Since the mounting holes are drilled in constant pitch, the user can select the motor bracket orientation.



Motor Wrap Type (for Reference)

Models KR and SKR are available in "Motor Wrap" types that allow the motor to be turned around in order to minimize the dimension in the longitudinal direction. Contact THK for details. (Pulley ratio: 1:1)
Contact THK for details.

XY Bracket (for Reference)

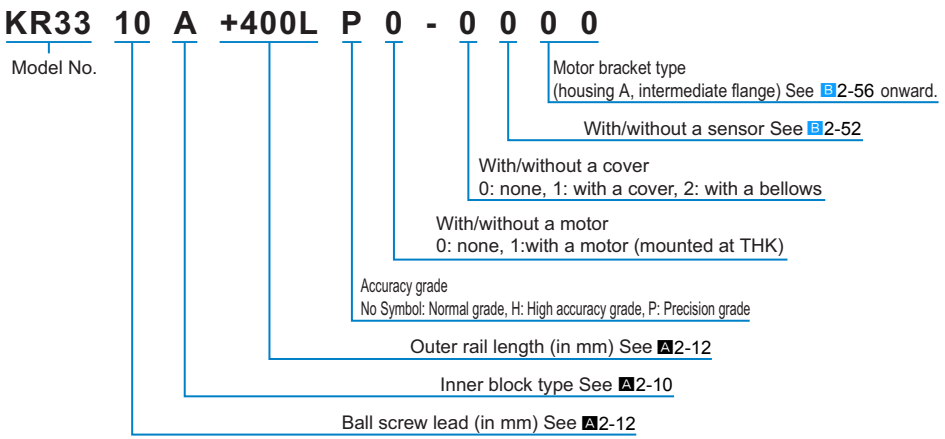
Brackets for installing models KR33 and 46 only are available. The brackets use aluminum to reduce the weights and keep the inertia as low as possible.

Model Number Coding

Model number configurations differ depending on the model features. Refer to the corresponding sample model number configuration.

[LM Guide Actuator]

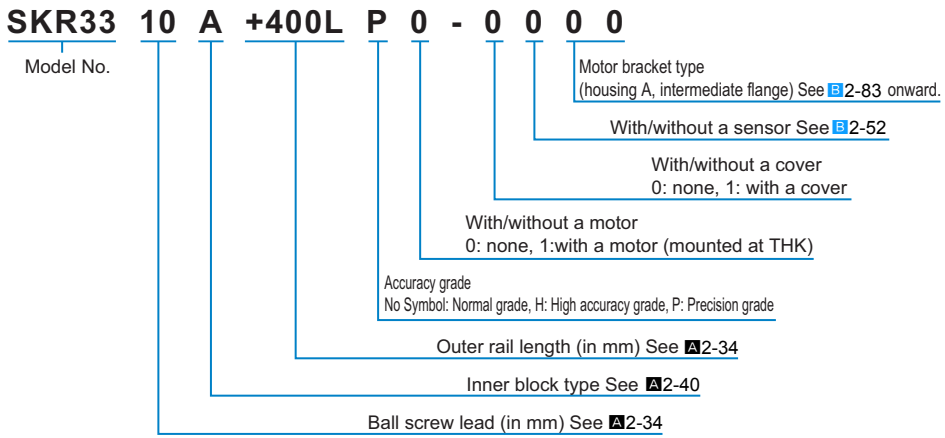
● **Model KR**



* "M" is appended to model KR15 because the inner block, the outer rail, the Ball Screw shaft and balls are stainless steel.
Example: KR1501AM+150LHM-0000

[Caged Ball LM Guide Actuator]

● **Model SKR**



[Handling]

(1) Do not disassemble this product unless absolutely necessary. This will cause dust to enter the product resulting in loss of functionality.
(2) Take care not to drop or strike this product. This could cause injury or product damage. Giving an impact to it could also cause damage to its function even if the product looks intact.
(3) Exceeding the dangerous speed may lead the components to be damaged or cause an accident. Be sure to use the product within the specification range designated by THK.
(4) Foreign material entering the product will cause damage to the ball circulation components and loss of functionality. Prevent foreign material, such as dust or cutting chips, from entering the system.
(5) When planning to use the product in an environment where the coolant penetrates the inner block, it may cause trouble to product functions depending on the type of the coolant. Contact THK for details.
(6) The service temperature range of this product is 0 to 40℃ (no freezing or condensation). If you consider using this product outside the service temperature range, contact THK.
(7) If the product will be used in location exposed to vibrations or in special environment such as vacuum/clean-room, and/or high/low temperatures, contact THK.
(8) If the product is operating or in the ready state, never touch a moving part. In addition, do not enter the operating area of the actuator.
(9) If two or more people are involved in the operation, confirm the procedures such as a sequence, signs and anomalies in advance, and appoint another person for monitoring the operation.

[Lubrication]

(1) Thoroughly remove the anti-rust oil before using the product.
(2) To maximize the performance of model KR/SKR, lubrication is required. Using the product without adequate lubrication may induce premature wear in rolling components and/or shorten the service life. Note the standard grease used in the product as follows.
Model KR15 : THK AFF Grease
Models KR20, KR26, SKR20 and SKR26 : THK AFA Grease
Models KR30H, KR33, KR45H, KR46,
KR55, KR65, SKR33 and SKR46 : THK AFA Grease
(3) Do not mix lubricants of different physical properties.
(4) Before selecting special lubricant, contact THK.
(5) When adopting oil lubrication method, contact THK.
(6) Because the intervals between greasing vary depending on the conditions of product use, it is recommended that the greasing interval be determined through an initial inspection.
(7) If the product will be used in location exposed to vibrations or in special environment such as vacuum/clean-room, and/or high/low temperatures, contact THK.

[Storage]

Models KR/SKR should be stored in a horizontal orientation in the THK wrapping and package, avoiding high or low temperatures and high levels of humidity.

[Instruction Manual]
You can download the "LM Guide Actuator Model KR/SKR -- Instruction Manual" from the THK technical support website.
Technical support website: https://tech.thk.com/

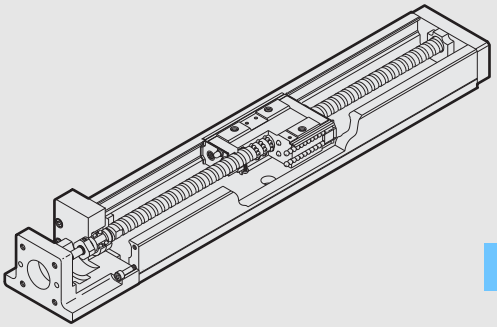
LM Guide Actuator

THK General Catalog

B Product Specifications

A Technical Descriptions of the Products (Separate)

* Please see the separate "A Technical Descriptions of the Products".



KR

LM Guide Actuator

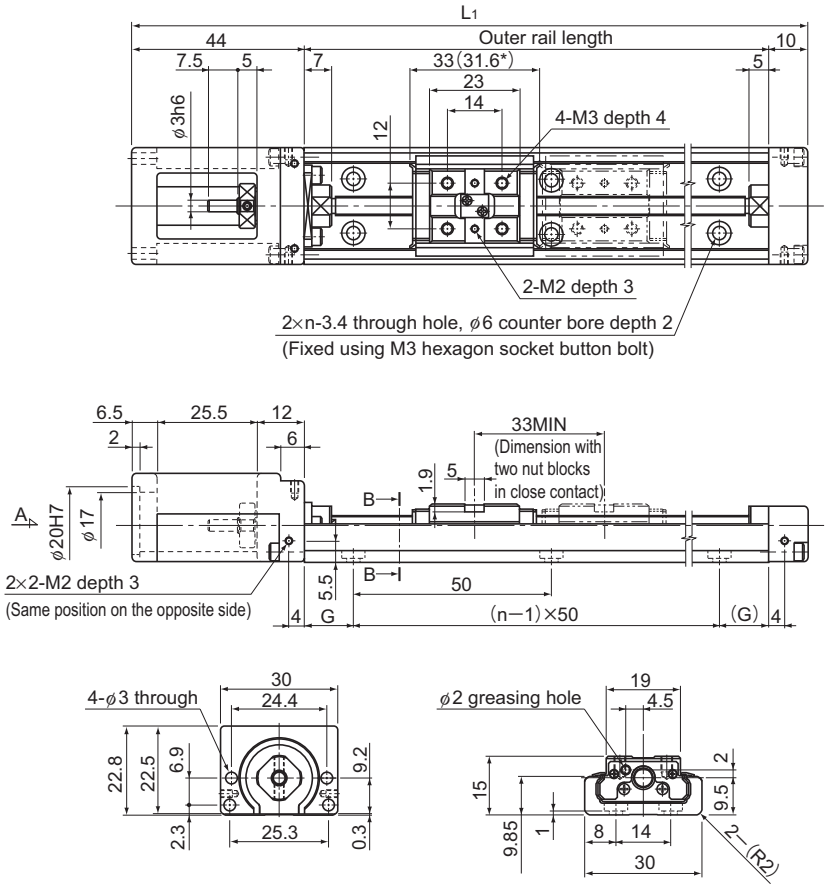
B Product Specifications

A Technical Descriptions of the Products (Separate)

* Please see the separate "A Technical Descriptions of the Products".

Model KR15 Standard Type

Model KR15□□A (with a Single Long Nut Block)
Model KR15□□B (with Two Long Nut Blocks)



A arrow view

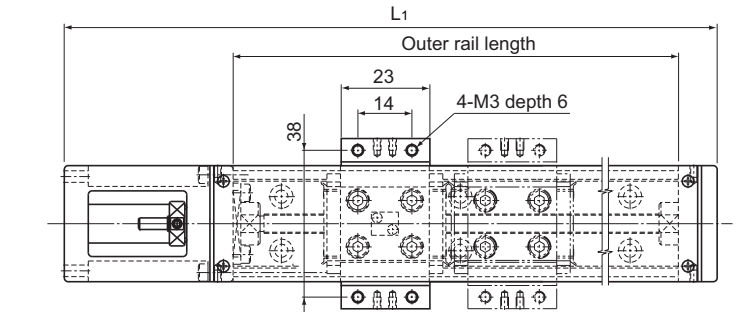
B-B cross section

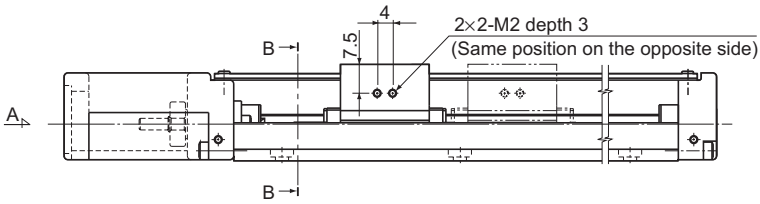
Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		G (mm)	n	Overall main unit mass (kg)	
		Type A	Type B			Type A	Type B
75	129	31.4	—	12.5	2	0.19	—
100	154	56.4	—	25	2	0.22	—
125	179	81.4	48.4	12.5	3	0.25	0.292
150	204	106.4	73.4	25	3	0.28	0.322
175	229	131.4	98.4	12.5	4	0.31	0.352
200	254	156.4	123.4	25	4	0.34	0.382

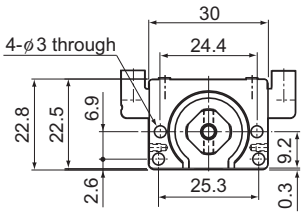
Note1) The available stroke range of model KR15□□B indicates the value when two inner blocks are used in close contact. For model number coding, see B2-30.
Note2) * indicates the inner block length when calculating the available stroke range. Model KR-B (with 2 long nut blocks) measures 64.6 mm.

Model KR15 (with a Cover)

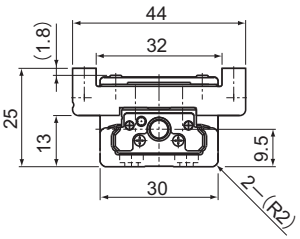
Model KR15□□A (with a Single Long Nut Block)
Model KR15□□B (with Two Long Nut Blocks)







A arrow view



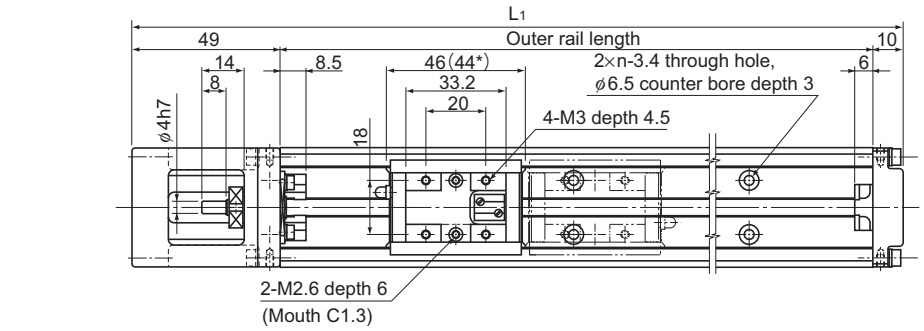
B-B cross section

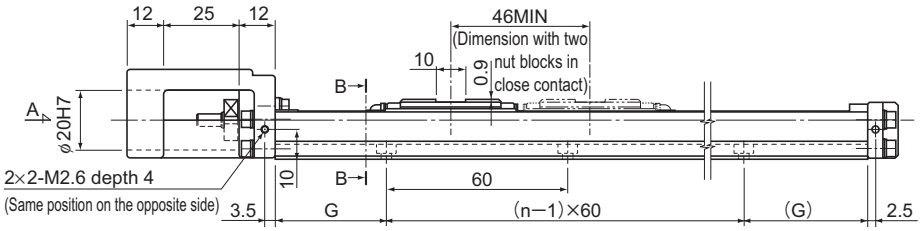
Outer rail length (mm)	Overall length L_1(mm)	Available stroke range (mm)		Overall main unit mass (kg)	
		Type A	Type B	Type A	Type B
75	129	31.4	—	0.23	—
100	154	56.4	—	0.26	—
125	179	81.4	48.4	0.3	0.364
150	204	106.4	73.4	0.33	0.394
175	229	131.4	98.4	0.36	0.424
200	254	156.4	123.4	0.4	0.464

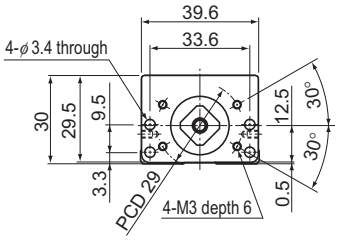
Note) The available stroke range of model KR15□□B indicates the value when two inner blocks are used in close contact.
For model number coding, see B2-30.

Model KR20 Standard Type

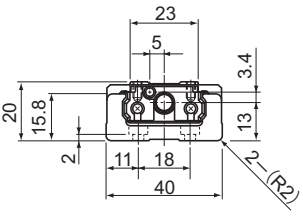
Model KR20□□A (with a Single Long Nut Block)
Model KR20□□B (with Two Long Nut Blocks)







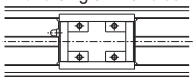
A arrow view



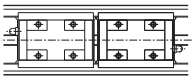
B-B cross section

Nipple orientation

With a single inner block



With two inner blocks

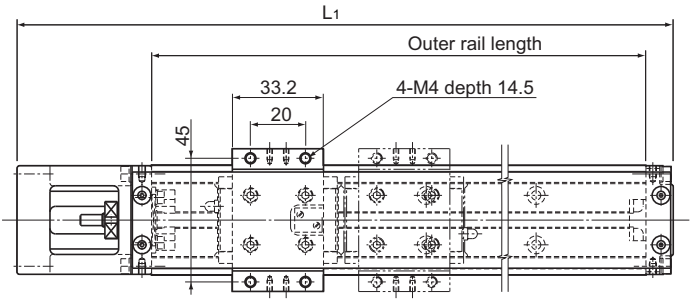


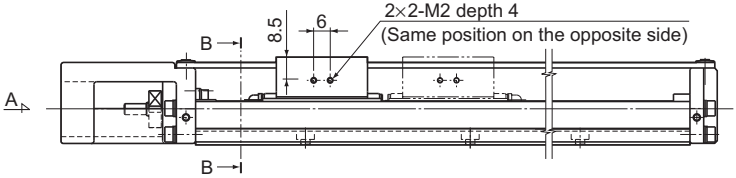
Outer rail length (mm)	Overall length L_1(mm)	Available stroke range (mm)		G (mm)	n	Overall main unit mass (kg)	
		Type A	Type B			Type A	Type B
100	159	41.5	—	20	2	0.45	—
150	209	91.5	45.5	15	3	0.58	0.655
200	259	141.5	95.5	40	3	0.72	0.795

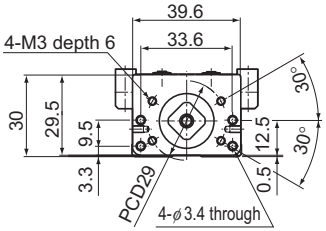
Note1) The available stroke range of model KR20□□B indicates the value when two inner blocks are used in close contact. For model number coding, see B2-30.
Note2) * indicates the inner block length when calculating the available stroke range. Model KR-B (with 2 long nut blocks) measures 90 mm.

Model KR20 (with a Cover)

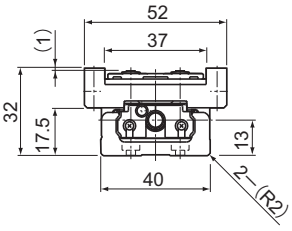
Model KR20□□A (with a Single Long Nut Block)
Model KR20□□B (with Two Long Nut Blocks)







A arrow view



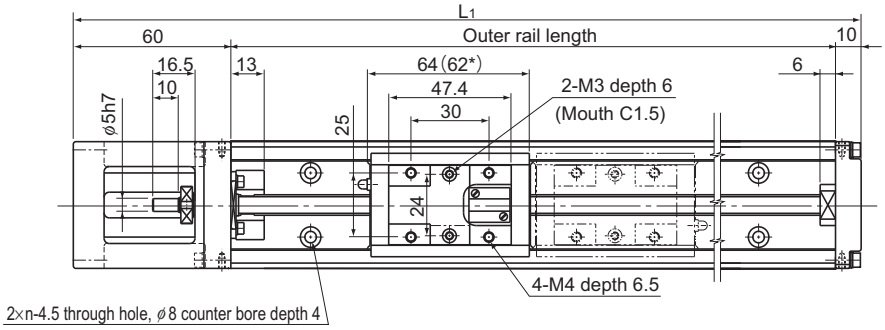
B-B cross section

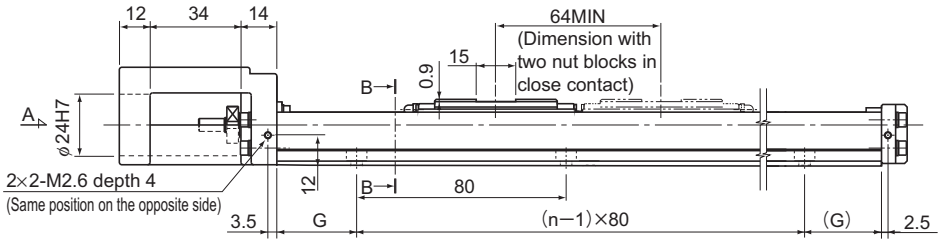
Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		Overall main unit mass (kg)	
		Type A	Type B	Type A	Type B
100	159	41.5	—	0.51	—
150	209	91.5	45.5	0.66	0.78
200	259	141.5	95.5	0.8	0.92

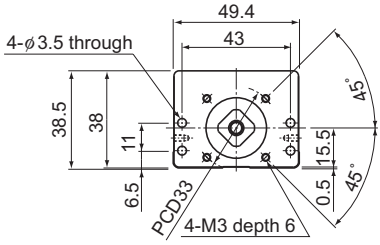
Note) The available stroke range of model KR20□□B indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-30.

Model KR26 Standard Type

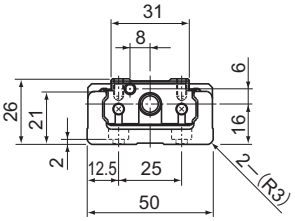
Model KR26□□A (with a Single Long Nut Block)
Model KR26□□B (with Two Long Nut Blocks)







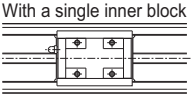
A arrow view



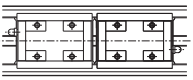
B-B cross section

Nipple orientation

With a single inner block



With two inner blocks

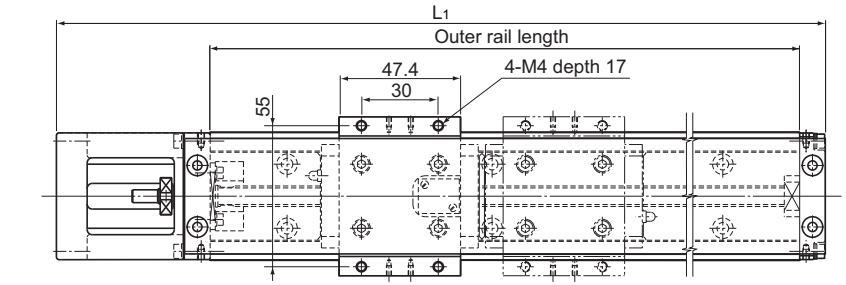


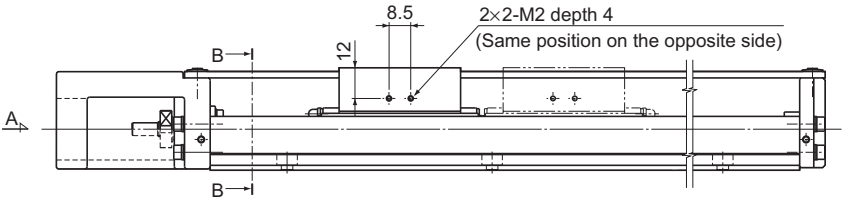
Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		G (mm)	n	Overall main unit mass (kg)	
		Type A	Type B			Type A	Type B
150	220	69	—	35	2	0.99	—
200	270	119	55	20	3	1.2	1.38
250	320	169	105	45	3	1.41	1.59
300	370	219	155	30	4	1.62	1.8

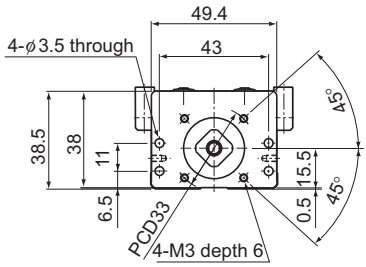
Note1) The available stroke range of model KR26 □□ B indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-30.
Note2) * indicates the inner block length when calculating the available stroke range. Model KR-B (with 2 long nut blocks) measures 126 mm.

Model KR26 (with a Cover)

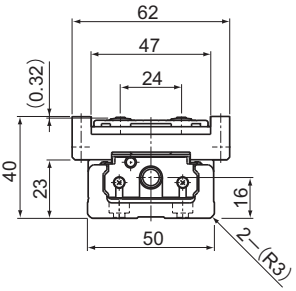
Model KR26□□A (with a Single Long Nut Block)
Model KR26□□B (with Two Long Nut Blocks)







A arrow view



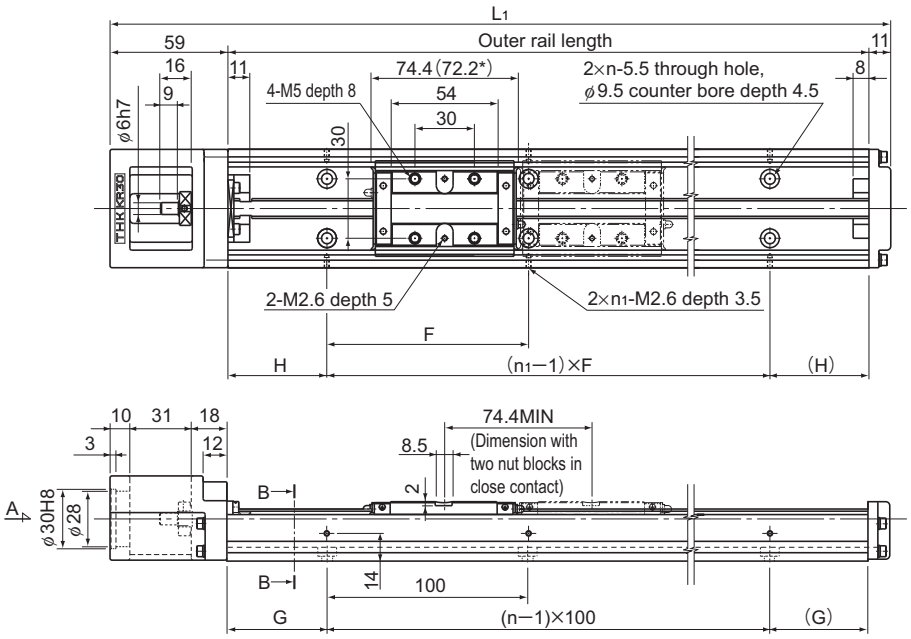
B-B cross section

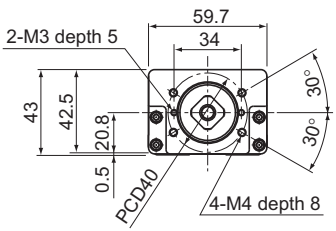
Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		Overall main unit mass (kg)	
		Type A	Type B	Type A	Type B
150	220	69	—	1.12	—
200	270	119	55	1.34	1.605
250	320	169	105	1.56	1.825
300	370	219	155	1.78	2.045

Note) The available stroke range of model KR26□□B indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-30.

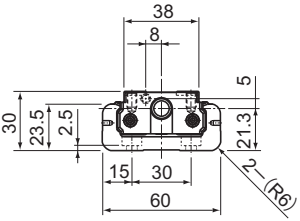
Model KR30H Standard Type

Model KR30□□A (with a Single Long Nut Block)
Model KR30H□□B (with Two Long Nut Blocks)

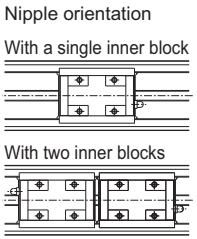




A arrow view



B-B cross section

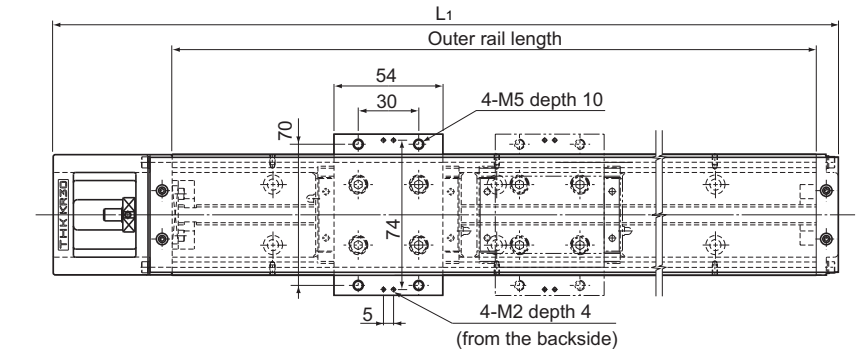


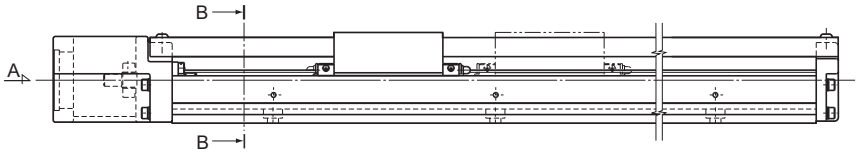
Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		H (mm)	G (mm)	F (mm)	n	n1	Overall main unit mass (kg)	
		Type A	Type B						Type A	Type B
150	220	58.8	—	25	25	100	2	2	1.4	—
200	270	108.8	—	50	50	100	2	2	1.6	—
300	370	208.8	134.4	50	50	200	3	2	2.2	2.5
400	470	308.8	234.4	100	50	200	4	2	2.7	3
500	570	408.8	334.4	50	50	200	5	3	3.2	3.5
600	670	508.8	434.4	100	50	200	6	3	3.8	4.1

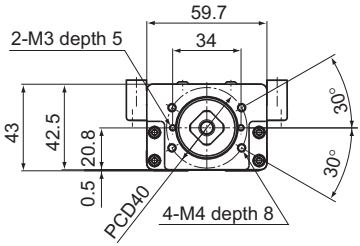
Note1) The available stroke range of model KR30H□□B indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-30.
Note2) * indicates the inner block length when calculating the available stroke range. Model KR-B (with 2 long nut blocks) measures 146.6 mm.

Model KR30H (with a Cover)

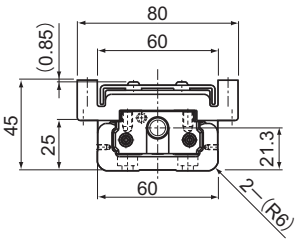
Model KR30□□A (with a Single Long Nut Block)
Model KR30H□□B (with Two Long Nut Blocks)







A arrow view



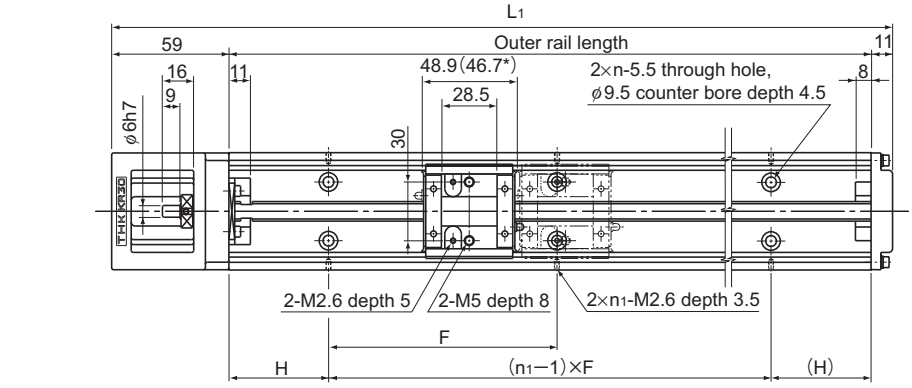
B-B cross section

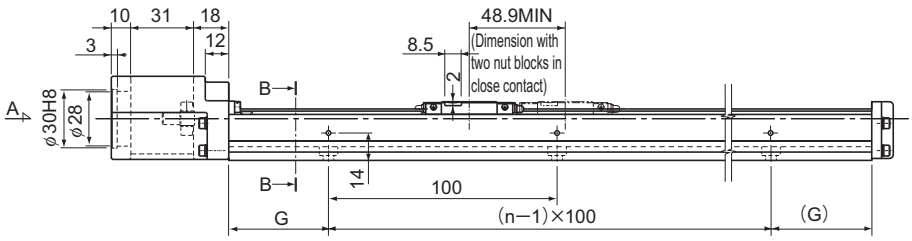
Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		Overall main unit mass (kg)	
		Type A	Type B	Type A	Type B
150	220	58.8	—	1.6	—
200	270	108.8	—	1.8	—
300	370	208.8	134.4	2.4	2.83
400	470	308.8	234.4	3	3.43
500	570	408.8	334.4	3.5	3.93
600	670	508.8	434.4	4.1	4.53

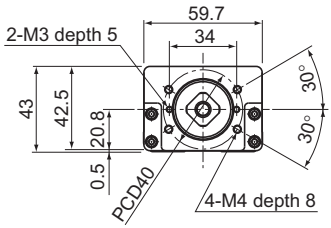
Note) The available stroke range of model KR30H □□ B indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-30.

Model KR30H Standard Type

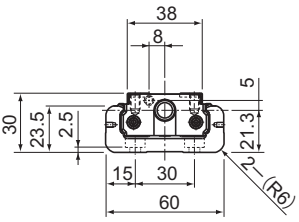
Model KR30H□□C (with a Single Short Nut Block)
Model KR30H□□D (with a Single Short Nut Block)



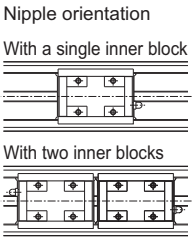




A arrow view



B-B cross section

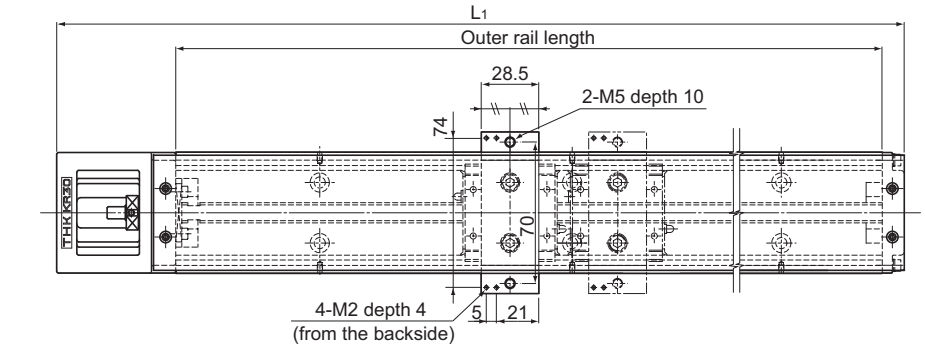


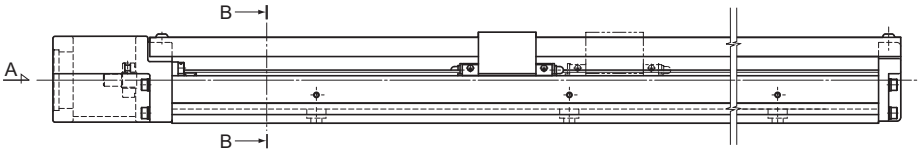
Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		H (mm)	G (mm)	F (mm)	n	n1	Overall main unit mass (kg)	
		Type C	Type D						Type C	Type D
150	220	84.3	35.4	25	25	100	2	2	1.3	1.47
200	270	134.3	85.4	50	50	100	2	2	1.5	1.67
300	370	234.3	185.4	50	50	200	3	2	2.1	2.27
400	470	334.3	285.4	100	50	200	4	2	2.6	2.77
500	570	434.3	385.4	50	50	200	5	3	3.1	3.27
600	670	534.3	485.4	100	50	200	6	3	3.7	3.87

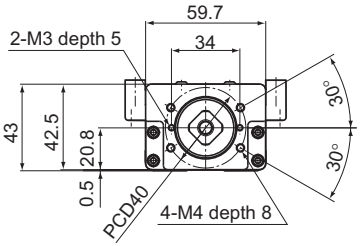
Note1) The available stroke range of model KR30H□□D indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-30.
Note2) * indicates the inner block length when calculating the available stroke range. Model KR-D (with 2 short nut blocks) measures 95.6 mm.

Model KR30H (with a Cover)

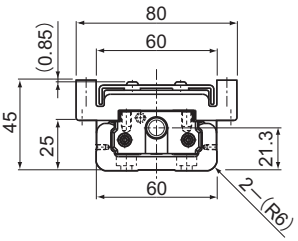
Model KR30H□□C (with a Single Short Nut Block)
Model KR30H□□D (with a Single Short Nut Block)







A arrow view



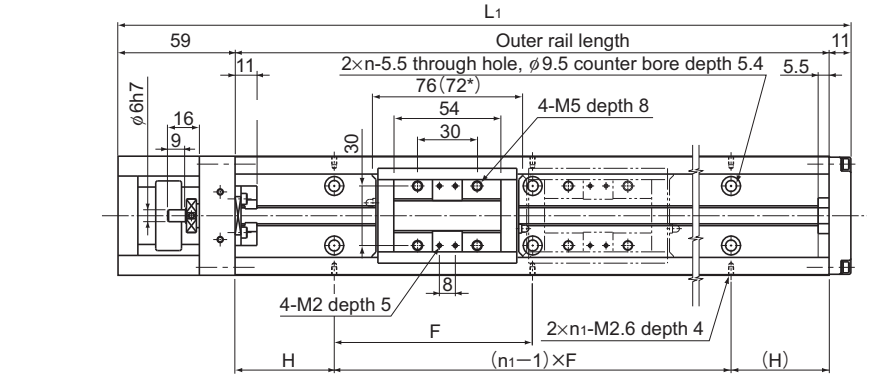
B-B cross section

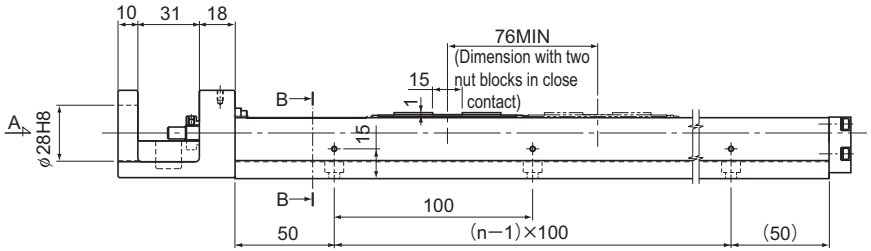
Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		Overall main unit mass (kg)	
		Type C	Type D	Type C	Type D
150	220	84.3	35.4	1.4	1.64
200	270	134.3	85.4	1.6	1.84
300	370	234.3	185.4	2.2	2.44
400	470	334.3	285.4	2.8	3.04
500	570	434.3	385.4	3.3	3.54
600	670	534.3	485.4	3.9	4.14

Note) The available stroke range of model KR30H□□D indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-30.

Model KR33 Standard Type

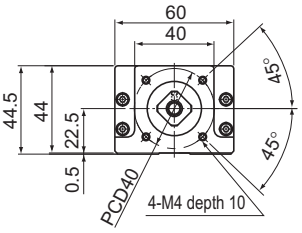
Model KR33□□A (with a Single Long Nut Block)
Model KR33□□B (with Two Long Nut Blocks)



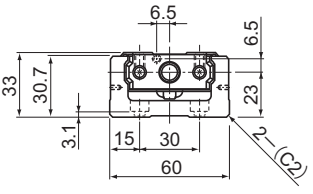


(For an outer rail length of 150: 25)

(For an outer rail length of 150: 25)



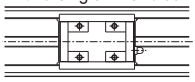
A arrow view



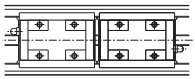
B-B cross section

Nipple orientation

With a single inner block



With two inner blocks

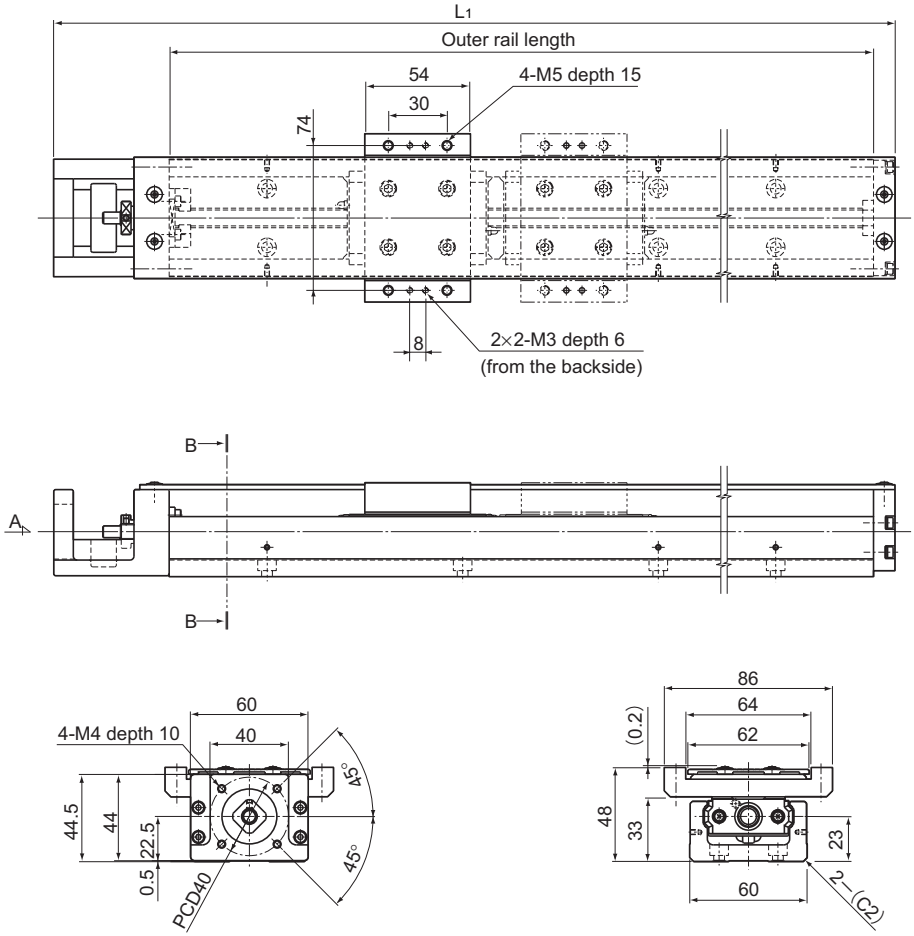


Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		H (mm)	F (mm)	n	n1	Overall main unit mass (kg)	
		Type A	Type B					Type A	Type B
150	220	61.5	—	25	100	2	2	1.7	—
200	270	111.5	—	50	100	2	2	2	—
300	370	211.5	135.5	50	200	3	2	2.6	2.95
400	470	311.5	235.5	100	200	4	2	3.2	3.55
500	570	411.5	335.5	50	200	5	3	3.9	4.25
600	670	511.5	435.5	100	200	6	3	4.5	4.85

Note1) The available stroke range of model KR33□□B indicates the value when two inner blocks are used in close contact. For model number coding, see B2-30.
Note2) * indicates the inner block length when calculating the available stroke range. Model KR-B (with 2 long nut blocks) measures 148 mm.

Model KR33 (with a Cover)

Model KR33□□A (with a Single Long Nut Block)
Model KR33□□B (with Two Long Nut Blocks)



A arrow view

B-B cross section

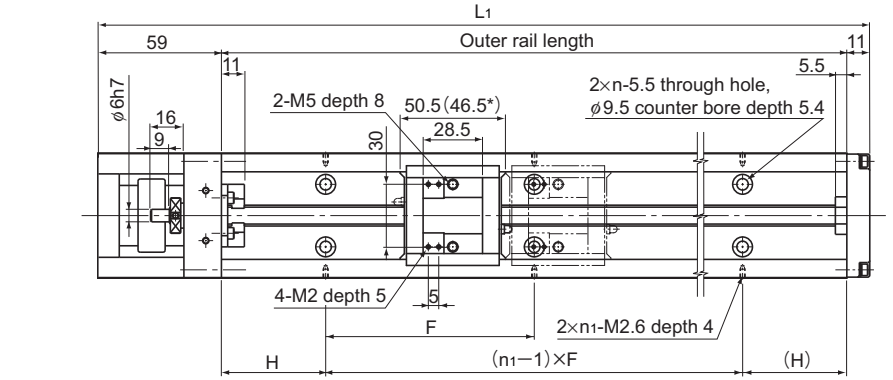
Outer rail length (mm)	Overall length L_1(mm)	Available stroke range (mm)		Overall main unit mass (kg)	
		Type A	Type B	Type A	Type B
150	220	61.5	—	1.9	—
200	270	111.5	—	2.2	—
300	370	211.5	135.5	2.8	3.28
400	470	311.5	235.5	3.5	3.98
500	570	411.5	335.5	4.2	4.68
600	670	511.5	435.5	4.8	5.28

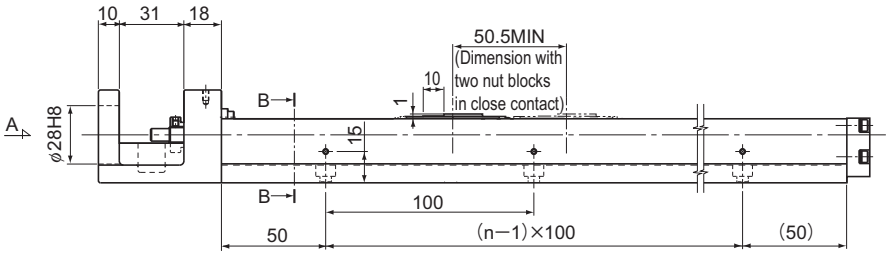
Note) The available stroke range of model KR33□□B indicates the value when two inner blocks are used in close contact with each other.
It must be noted that the cover-mounting bolt is 0.2 mm higher than the top face of the top table.
For model number coding, see B2-30.

Description of Each Option⇒A2-48 Dimensions⇒B2-45

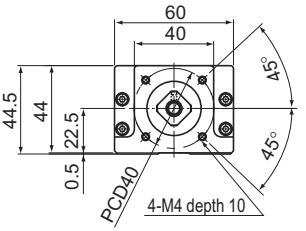
Model KR33 Standard Type

Model KR33□□C (with a Single Short Nut Block)
Model KR33□□D (with Two Short Nut Blocks)

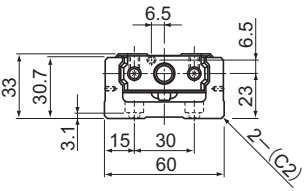




(For an outer rail length of 150: 25)　(For an outer rail length of 150: 25)

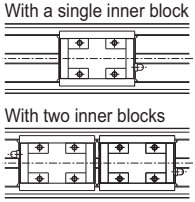


A arrow view



B-B cross section

Nipple orientation

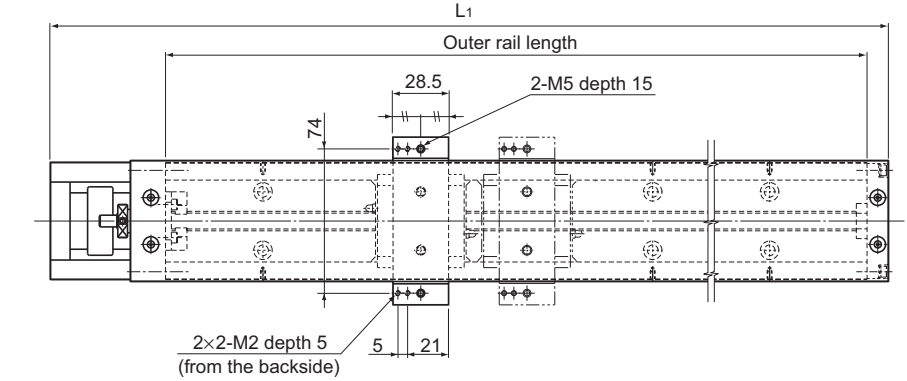


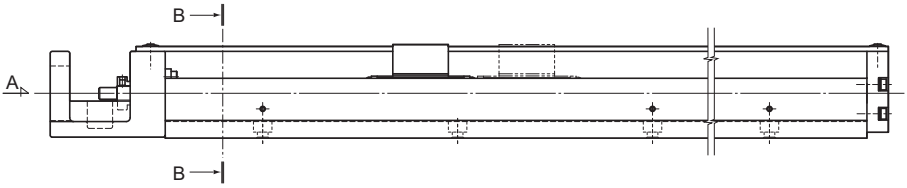
Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		H (mm)	F (mm)	n	n1	Overall main unit mass (kg)	
		Type C	Type D					Type C	Type D
150	220	87	36.5	25	100	2	2	1.6	1.83
200	270	137	86.5	50	100	2	2	1.9	2.13
300	370	237	186.5	50	200	3	2	2.5	2.73
400	470	337	286.5	100	200	4	2	3.1	3.33
500	570	437	386.5	50	200	5	3	3.8	4.03
600	670	537	486.5	100	200	6	3	4.4	4.63

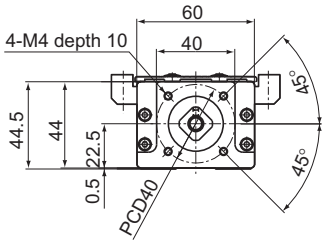
Note1) The available stroke range of model KR33 □□ D indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-30.
Note2) * indicates the inner block length when calculating the available stroke range. Model KR-D (with 2 short nut blocks) measures 97 mm.

Model KR33 (with a Cover)

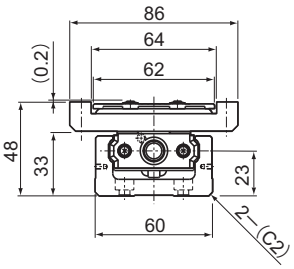
Model KR33□□C (with a Single Short Nut Block)
Model KR33□□D (with Two Short Nut Blocks)







A arrow view



B-B cross section

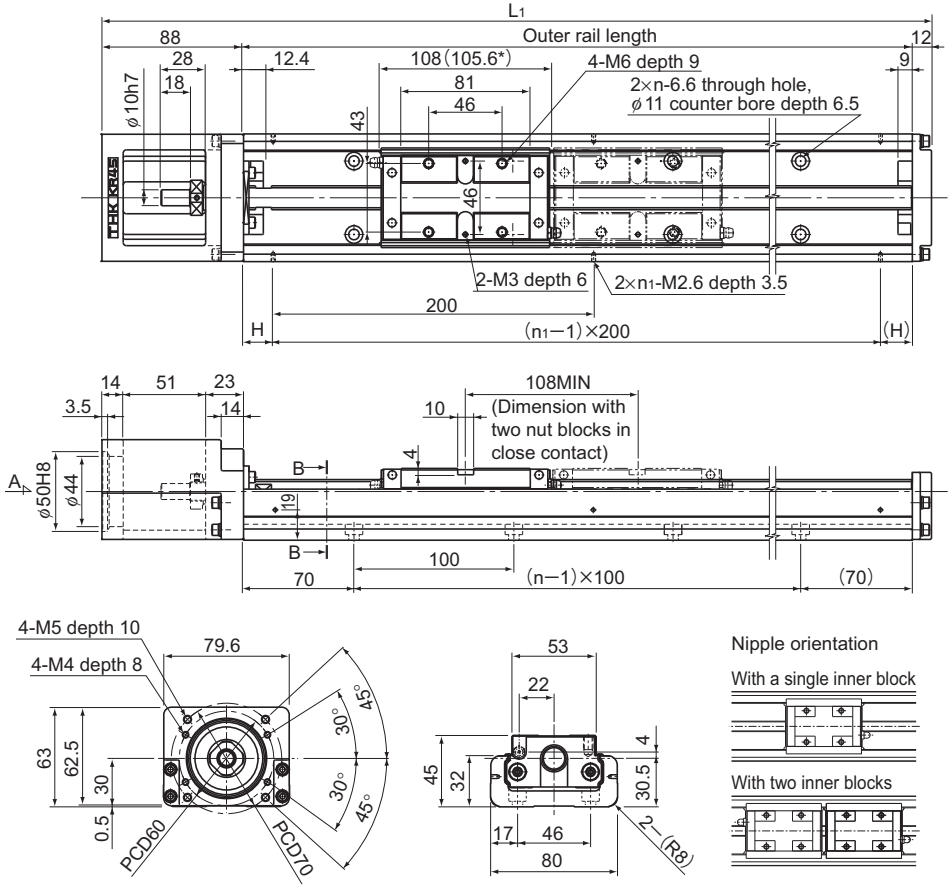
Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		Overall main unit mass (kg)	
		Type C	Type D	Type C	Type D
150	220	87	36.5	1.7	2
200	270	137	86.5	2.1	2.4
300	370	237	186.5	2.7	3
400	470	337	286.5	3.3	3.6
500	570	437	386.5	4	4.3
600	670	537	486.5	4.7	5

Note) The available stroke range of model KR33□□D indicates the value when two inner blocks are used in close contact with each other.
It must be noted that the cover-mounting bolt is 0.2 mm higher than the top face of the top table.
For model number coding, see B2-30.

Description of Each Option⇒A2-48 Dimensions⇒B2-45

Model KR45H Standard Type

Model KR45H□□A (with a Single Long Nut Block)
Model KR45H□□B (with Two Long Nut Blocks)



A arrow view

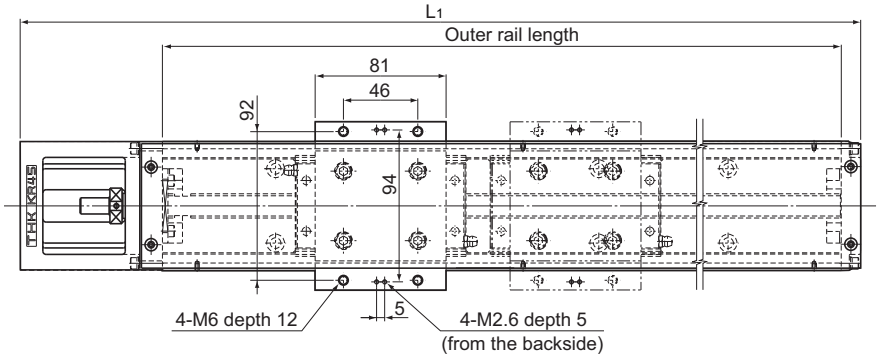
B-B cross section

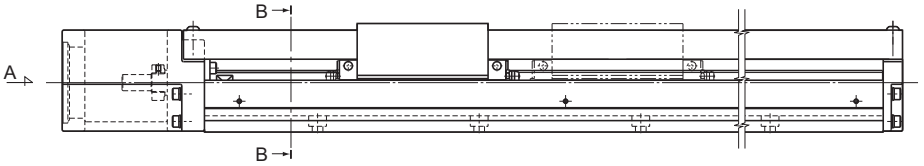
Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		H (mm)	n	n1	Overall main unit mass (kg)	
		Type A	Type B				Type A	Type B
340	440	213	105	70	3	2	5.1	6.05
440	540	313	205	20	4	3	6.1	7.05
540	640	413	305	70	5	3	7.1	8.05
640	740	513	405	20	6	4	8.1	9.05
740	840	613	505	70	7	4	9.1	10.05
840	940	713	605	20	8	5	10.1	11.05
940	1040	813	705	70	9	5	11.2	12.15

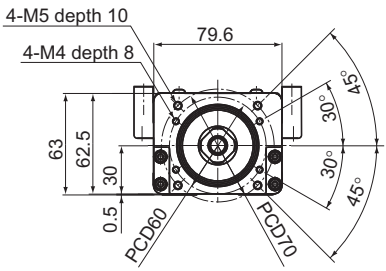
Note1) The available stroke range of model KR45H□□B indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-30.
Note2) * indicates the inner block length when calculating the available stroke range. Model KR-B (with 2 long nut blocks) measures 213.6 mm.

Model KR45H (with a Cover)

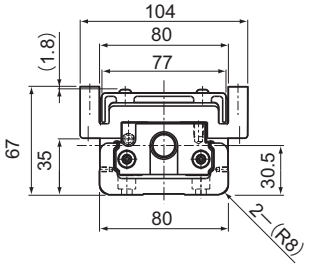
Model KR45H□□A (with a Single Long Nut Block)
Model KR45H□□B (with Two Long Nut Blocks)







A arrow view



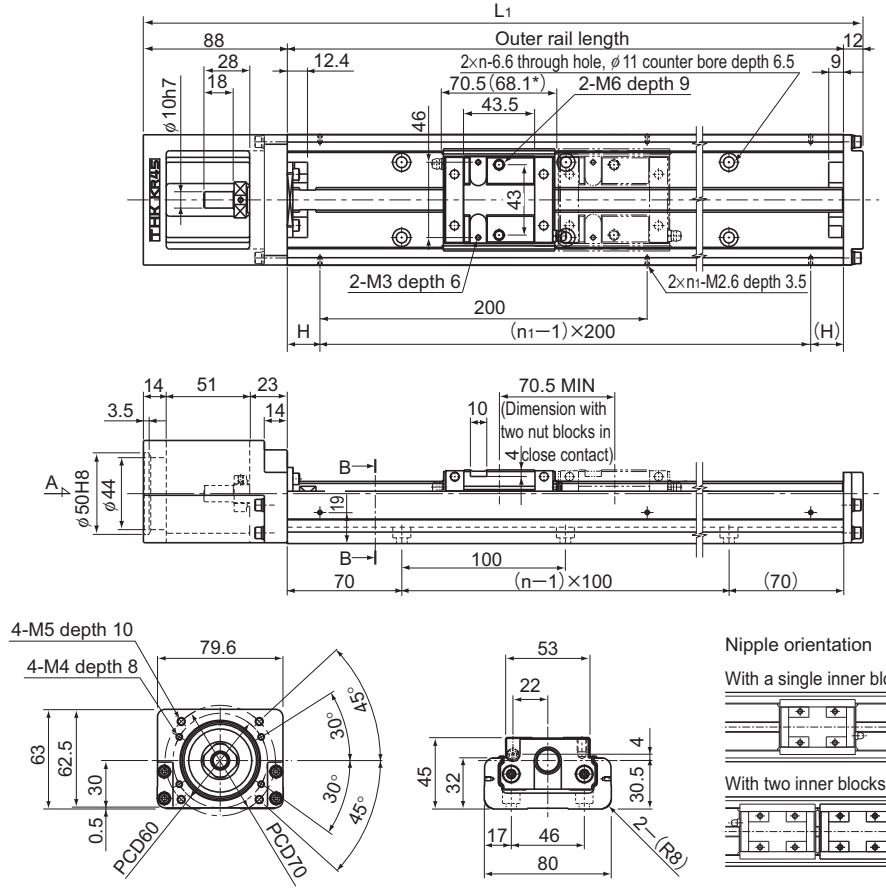
B-B cross section

Outer rail length (mm)	Overall length L_1(mm)	Available stroke range (mm)		Overall main unit mass (kg)	
		Type A	Type B	Type A	Type B
340	440	213	105	5.7	7.01
440	540	313	205	6.8	8.11
540	640	413	305	7.9	9.21
640	740	513	405	9	10.31
740	840	613	505	10.1	11.41
840	940	713	605	11.2	12.51
940	1040	813	705	12.3	13.61

Note) The available stroke range of model KR45H□□B indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-30.

Model KR45H Standard Type

Model KR45H□□C (with a Single Short Nut Block)
Model KR45H□□D (with Two Short Nut Blocks)



A arrow view

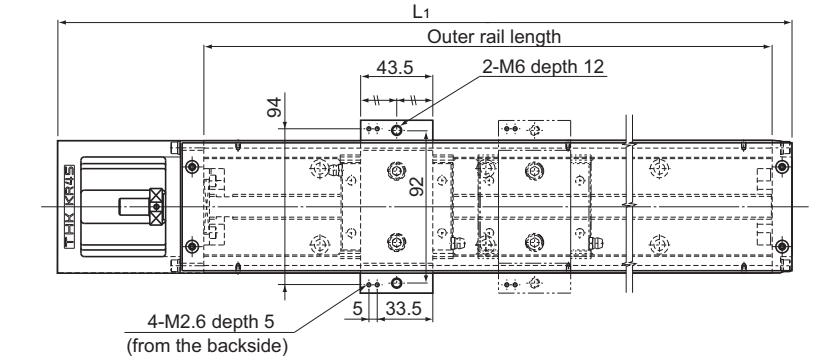
B-B cross section

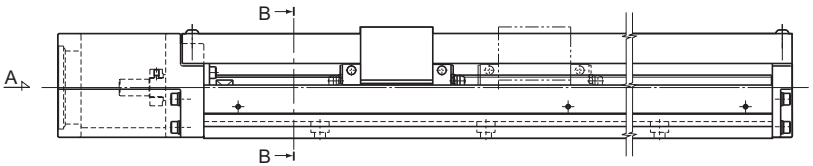
Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		H (mm)	n	n1	Overall main unit mass (kg)	
		Type C	Type D				Type C	Type D
340	440	250.5	180	70	3	2	4.7	5.23
440	540	350.5	280	20	4	3	5.7	6.23
540	640	450.5	380	70	5	3	6.7	7.23
640	740	550.5	480	20	6	4	7.7	8.23
740	840	650.5	580	70	7	4	8.7	9.23
840	940	750.5	680	20	8	5	9.7	10.23
940	1040	850.5	780	70	9	5	10.8	11.33

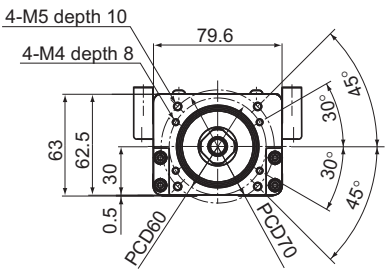
Note1) The available stroke range of model KR45H□□D indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-30.
Note2) * indicates the inner block length when calculating the available stroke range. Model KR-D (with 2 short nut blocks) measures 138.6 mm.

Model KR45H (with a Cover)

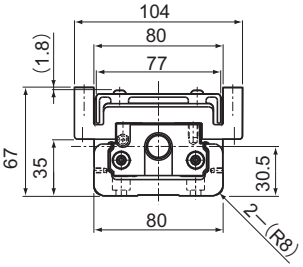
Model KR45H□□C (with a Single Short Nut Block)
Model KR45H□□D (with Two Short Nut Blocks)







A arrow view



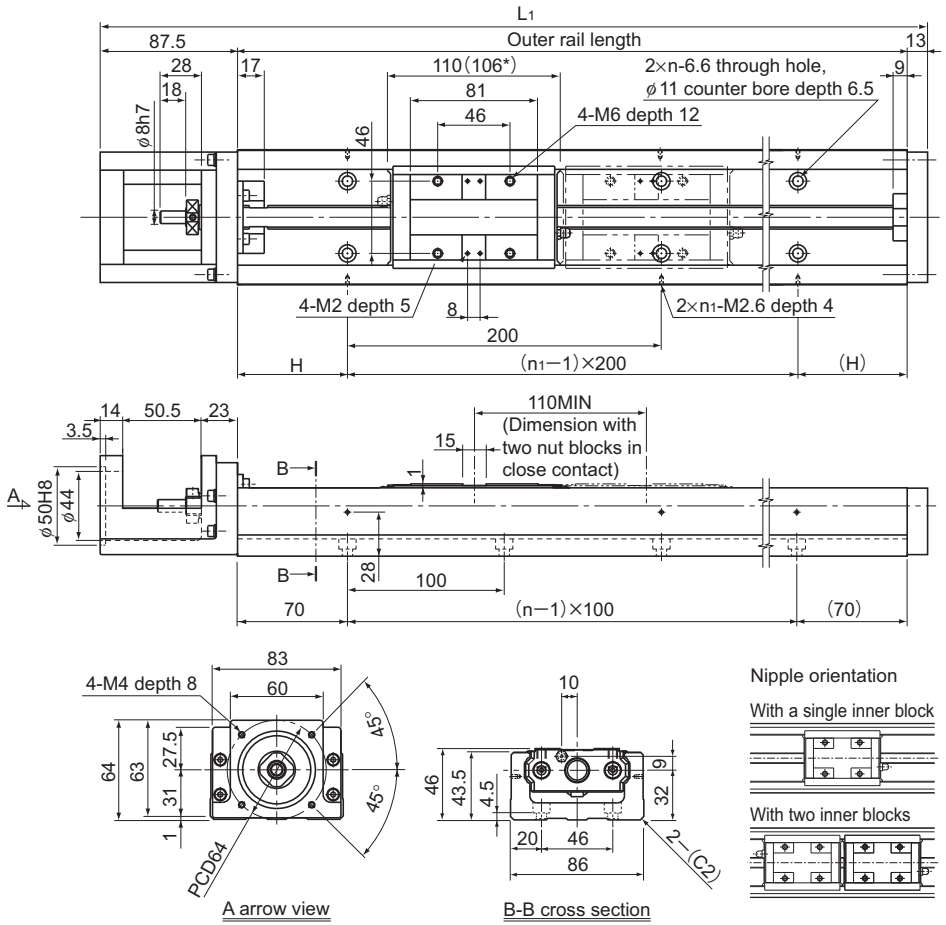
B-B cross section

Outer rail length (mm)	Overall length L_1(mm)	Available stroke range (mm)		Overall main unit mass (kg)	
		Type C	Type D	Type C	Type D
340	440	250.5	180	5.1	5.82
440	540	350.5	280	6.2	6.92
540	640	450.5	380	7.3	8.02
640	740	550.5	480	8.4	9.12
740	840	650.5	580	9.5	10.22
840	940	750.5	680	10.6	11.32
940	1040	850.5	780	11.7	12.42

Note) The available stroke range of model KR45H□□D indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-30.

Model KR46 Standard Type

Model KR46□□A (with a Single Long Nut Block)
Model KR46□□B (with Two Long Nut Blocks)

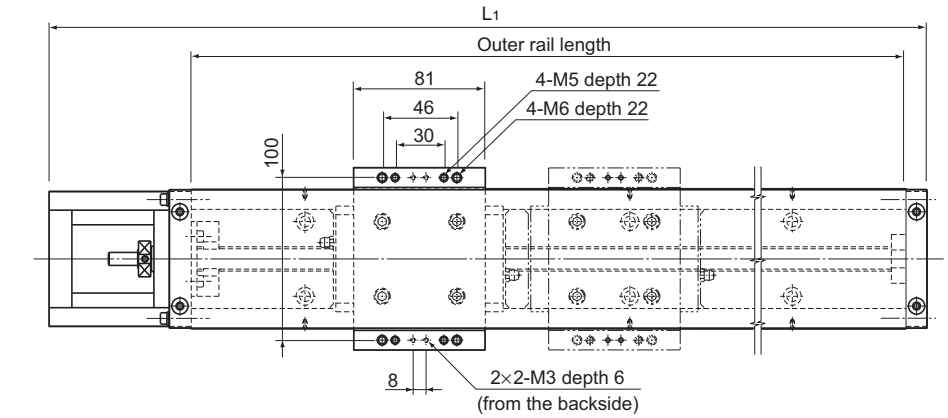


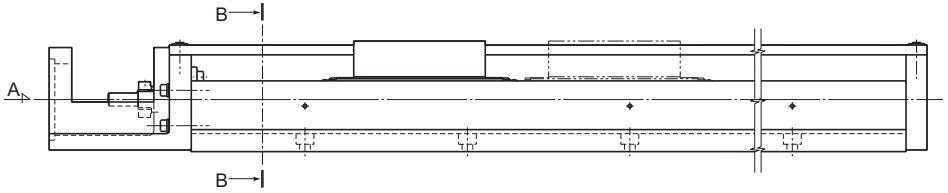
Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		H (mm)	n	n1	Overall main unit mass (kg)	
		Type A	Type B				Type A	Type B
340	440.5	208	98	70	3	2	7.7	8.9
440	540.5	308	198	20	4	3	9	10.2
540	640.5	408	298	70	5	3	10.3	11.5
640	740.5	508	398	20	6	4	11.6	12.8
740	840.5	608	498	70	7	4	12.8	14
840	940.5	708	598	20	8	5	14.1	15.3
940	1040.5	808	698	70	9	5	15.3	16.5

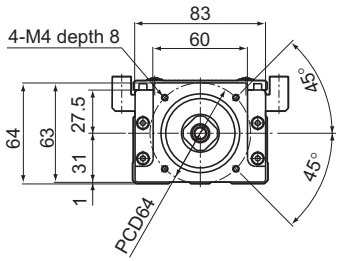
Note1) The available stroke range of model KR46 □□ B indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-30.
Note2) * indicates the inner block length when calculating the available stroke range. Model KR-B (with 2 long nut blocks) measures 216 mm.

Model KR46 (with a Cover)

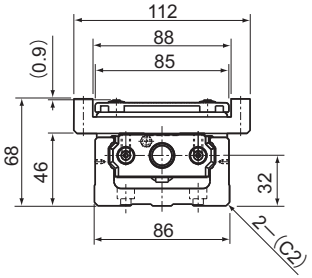
Model KR46□□A (with a Single Long Nut Block)
Model KR46□□B (with Two Long Nut Blocks)







A arrow view



B-B cross section

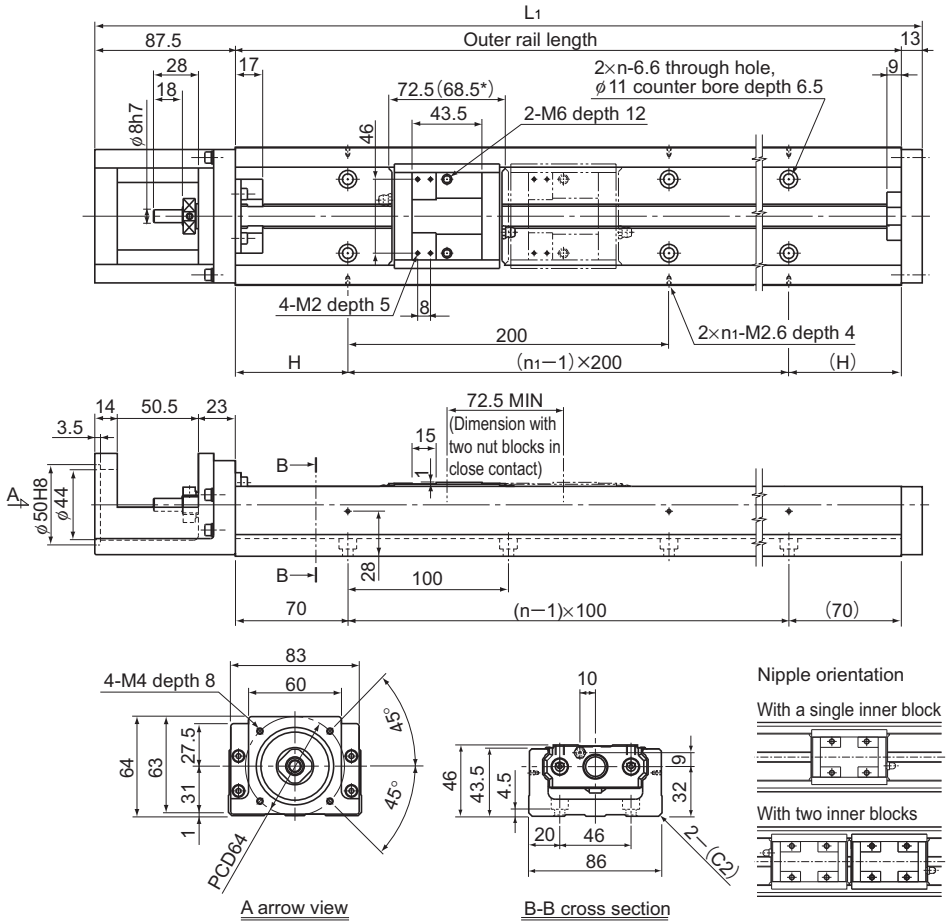
Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		Overall main unit mass (kg)	
		Type A	Type B	Type A	Type B
340	440.5	208	98	8.3	9.79
440	540.5	308	198	9.7	11.19
540	640.5	408	298	11	12.49
640	740.5	508	398	12.4	13.89
740	840.5	608	498	13.7	15.19
840	940.5	708	598	15	16.49
940	1040.5	808	698	16.3	17.79

Note) The available stroke range of model KR46□□B indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-30.

Description of Each Option⇒A2-48 Dimensions⇒B2-45

Model KR46 Standard Type

Model KR46□□C (with a Single Short Nut Block)
Model KR46□□D (with Two Short Nut Blocks)

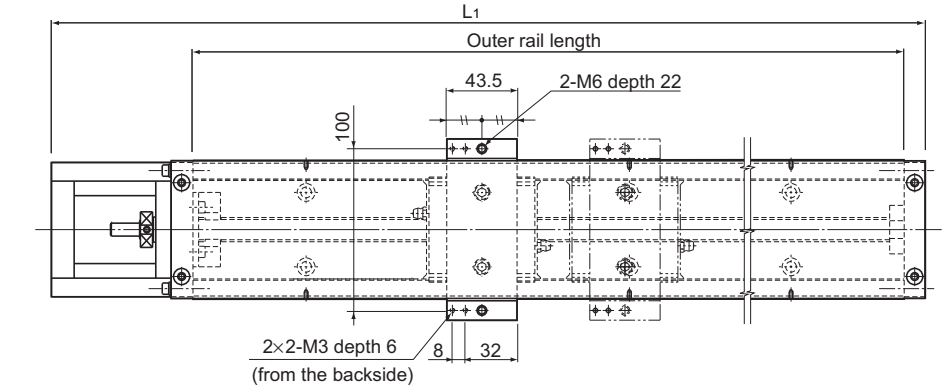


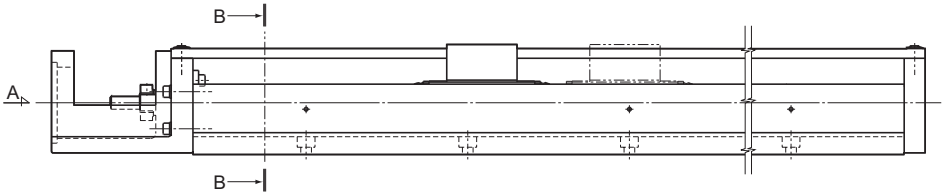
Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		H (mm)	n	n1	Overall main unit mass (kg)	
		Type C	Type D				Type C	Type D
340	440.5	245.5	173	70	3	2	7.3	8.1
440	540.5	345.5	273	20	4	3	8.6	9.4
540	640.5	445.5	373	70	5	3	9.9	10.7
640	740.5	545.5	473	20	6	4	11.2	12
740	840.5	645.5	573	70	7	4	12.4	13.2
840	940.5	745.5	673	20	8	5	13.7	14.5
940	1040.5	845.5	773	70	9	5	14.9	15.7

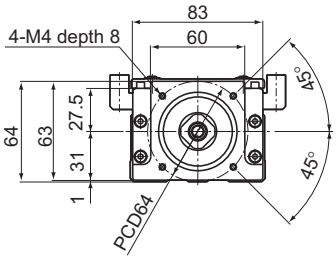
Note1) The available stroke range of model KR46 □□ D indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-30.
Note2) * indicates the inner block length when calculating the available stroke range. Model KR-D (with 2 short nut blocks) measures 141 mm.

Model KR46 (with a Cover)

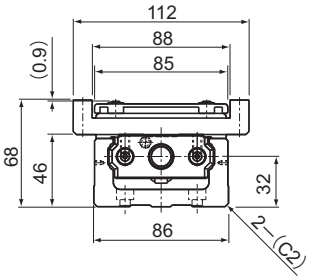
Model KR46□□C (with a Single Short Nut Block)
Model KR46□□D (with Two Short Nut Blocks)







A arrow view



B-B cross section

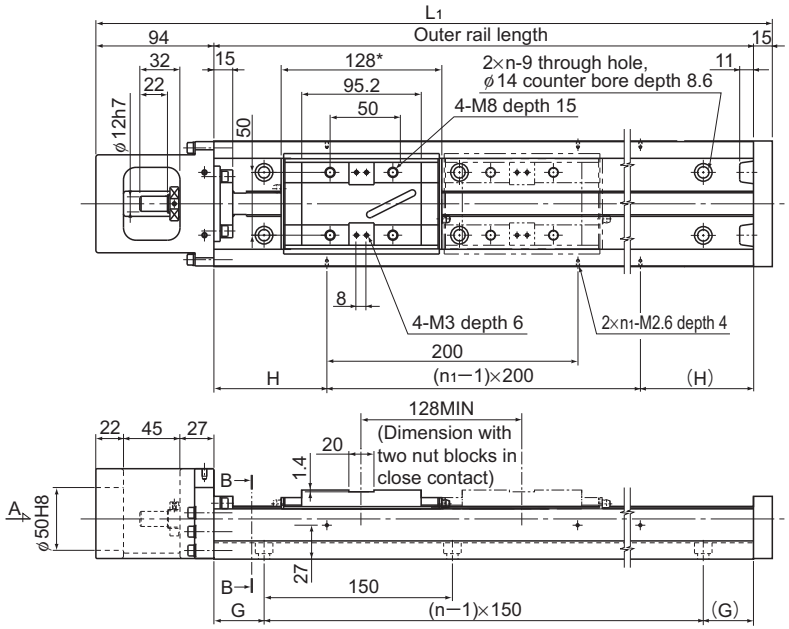
Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		Overall main unit mass (kg)	
		Type C	Type D	Type C	Type D
340	440.5	245.5	173	7.8	8.79
440	540.5	345.5	273	9.1	10.09
540	640.5	445.5	373	10.5	11.49
640	740.5	545.5	473	11.9	12.89
740	840.5	645.5	573	13.2	14.19
840	940.5	745.5	673	14.5	15.49
940	1040.5	845.5	773	15.8	16.79

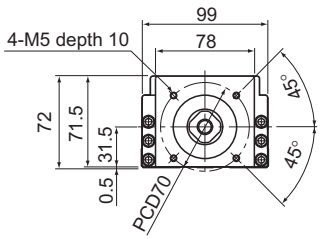
Note) The available stroke range of model KR46□□D indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-30.

Description of Each Option⇒A2-48 Dimensions⇒B2-45

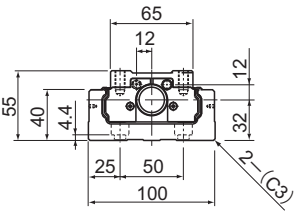
Model KR55 Standard Type

Model KR5520A (with a Single Long Nut Block)
Model KR5520B (with Two Long Nut Blocks)





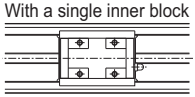
A arrow view



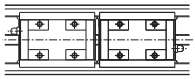
B-B cross section

Nipple orientation

With a single inner block



With two inner blocks

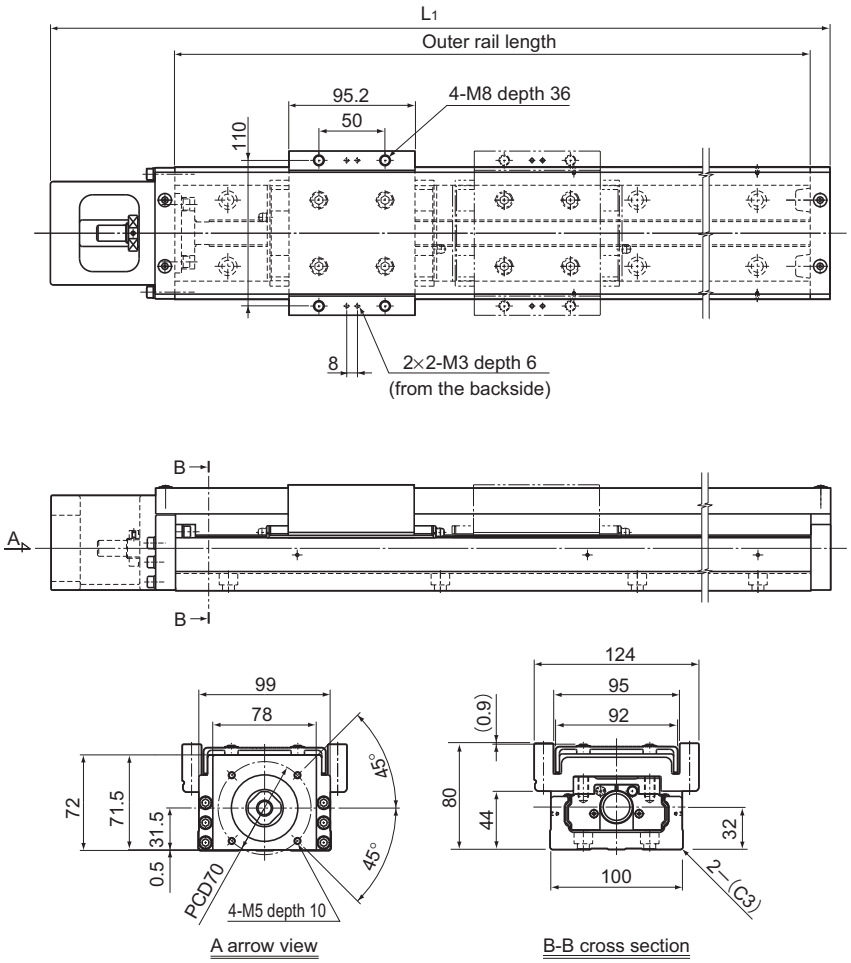


Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		H (mm)	G (mm)	n	n1	Overall main unit mass (kg)	
		Type A	Type B					Type A	Type B
980	1089	826	698	90	40	7	5	19.9	21.6
1080	1189	926	798	40	15	8	6	21.7	23.4
1180	1289	1026	898	90	65	8	6	23.4	25.1
1280	1389	1126	998	40	40	9	7	25.1	26.8
1380	1489	1226	1098	90	15	10	7	26.9	28.6

Note) The available stroke range of model KR5520B indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-30.

Model KR55 (with a Cover)

Model KR5520A (with a Single Long Nut Block)
Model KR5520B (with Two Long Nut Blocks)

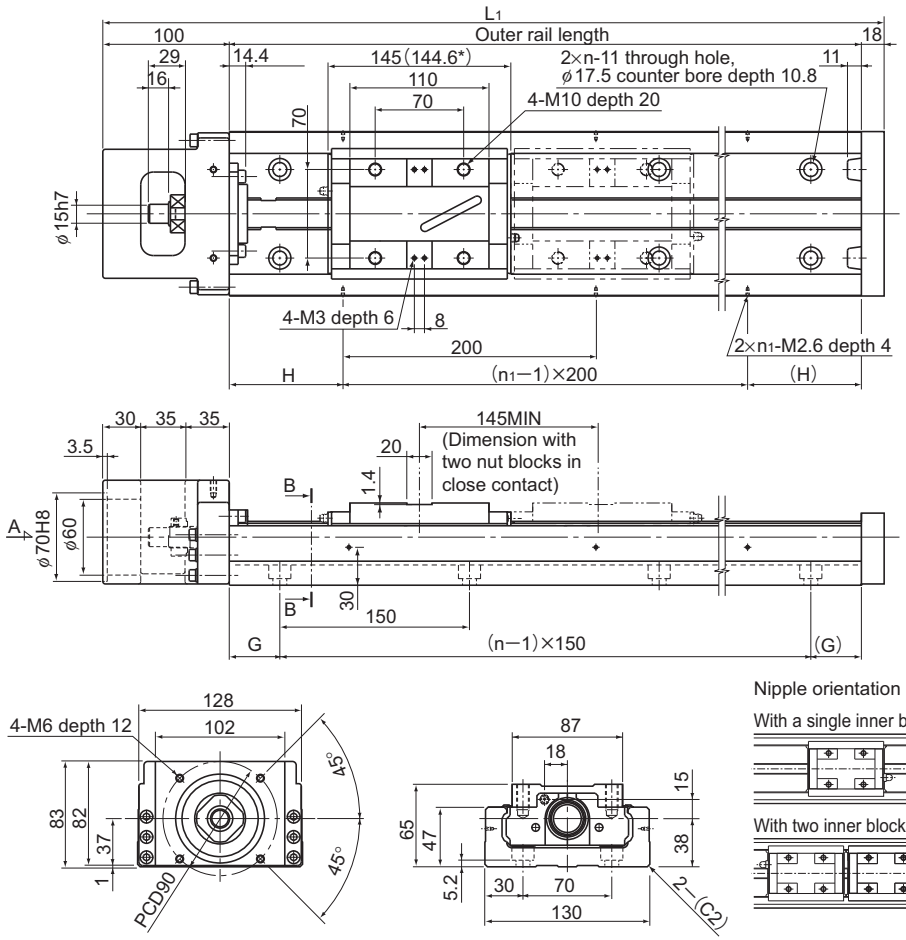


Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		Overall main unit mass (kg)	
		Type A	Type B	Type A	Type B
980	1089	826	698	22.7	26.2
1080	1189	926	798	24.6	28.1
1180	1289	1026	898	26.4	29.9
1280	1389	1126	998	28.1	31.6
1380	1489	1226	1098	30	33.5

Note) The available stroke range of model KR5520B indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-30.

Model KR65 Standard Type

Model KR6525A (with a Single Long Nut Block)
Model KR6525B (with Two Long Nut Blocks)



A arrow view

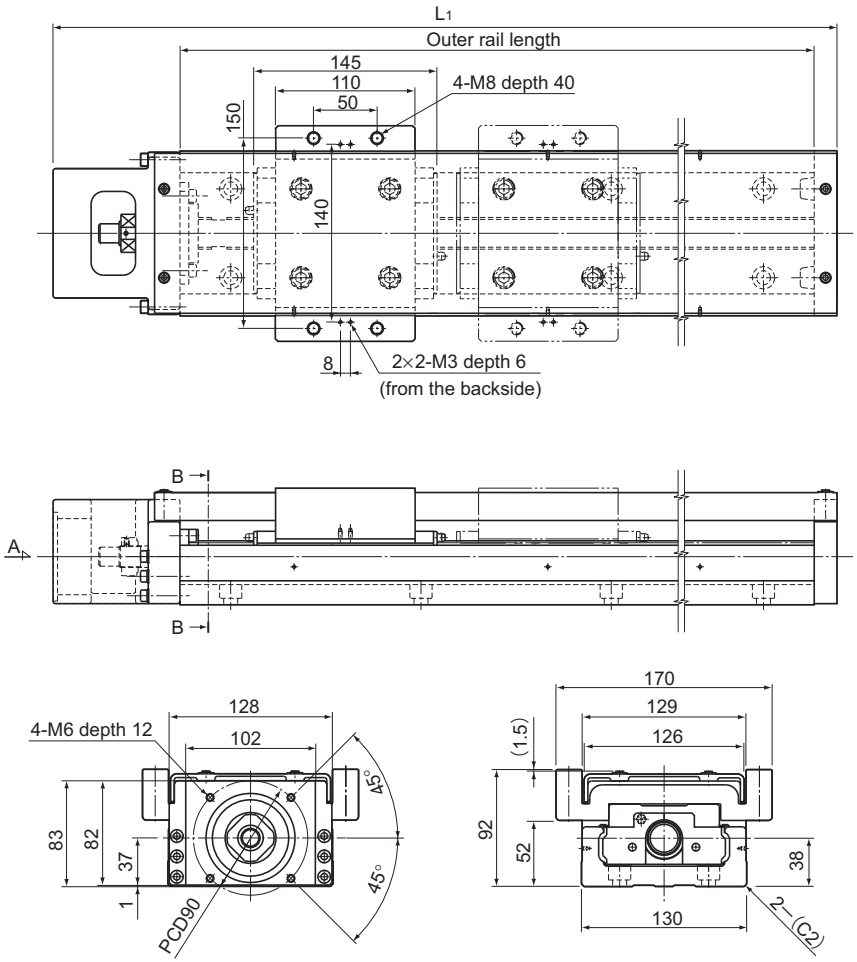
B-B cross section

Outer rail length (mm)	Overall length L_1(mm)	Available stroke range (mm)		H (mm)	G (mm)	n	n_1	Overall main unit mass (kg)	
		Type A	Type B					Type A	Type B
980	1098	810	665	90	40	7	5	31.6	34.6
1180	1298	1010	865	90	65	8	6	37	40
1380	1498	1210	1065	90	90	9	7	42.4	45.4
1680	1798	1510	1365	40	90	11	9	50.5	53.5

Note1) The available stroke range of model KR6525B indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-30.
Note2) * indicates the inner block length when calculating the available stroke range. Model KR-B (with 2 long nut blocks) measures 289.6 mm.

Model KR65 (with a Cover)

Model KR6525A (with a Single Long Nut Block)
Model KR6525B (with Two Long Nut Blocks)



A arrow view

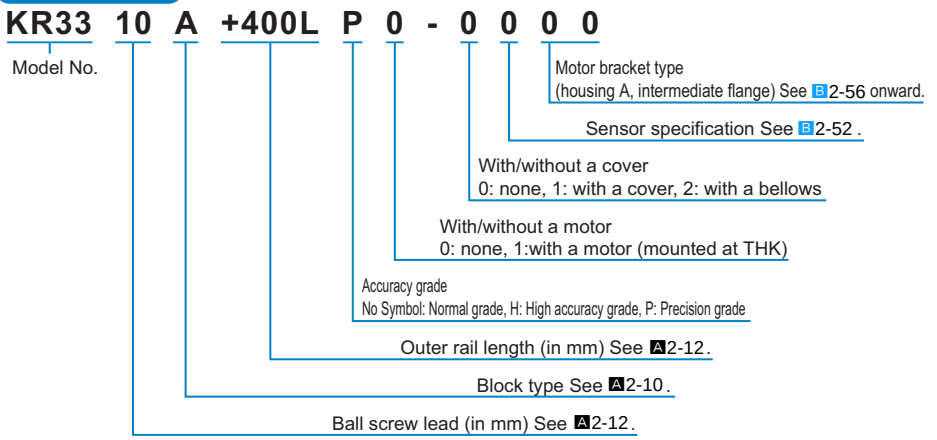
B-B cross section

Outer rail length (mm)	Overall length L_1(mm)	Available stroke range (mm)		Overall main unit mass (kg)	
		Type A	Type B	Type A	Type B
980	1098	810	665	36.3	43
1180	1298	1010	865	42	48.7
1380	1498	1210	1065	47.6	54.3
1680	1798	1510	1365	56.1	62.8

Note) The available stroke range of model KR6525B indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-30.

Model Number Coding

Model number coding



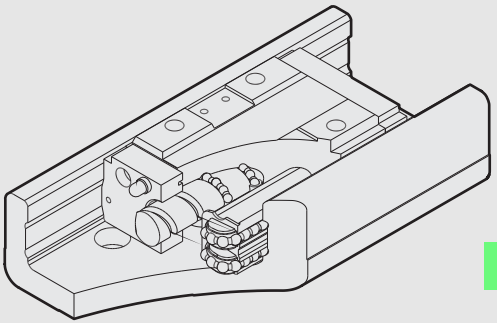
* "M" is required for model KR15 because the inner block, the outer rail, the Ball Screw shaft and balls are stainless steel.
Example: KR1501AM+150LHM-0000

Mass of Moving Element

Table1 shows the mass of the inner block and Sub table of model KR.

Table1 Mass of the Inner Block and Sub table of KR — Unit: kg

Model No.	Long nut block types (A)		Short nut block types (C)	
	Inner block	Sub table	Inner block	Sub table
KR15	0.042	0.022	—	—
KR20	0.075	0.045	—	—
KR26	0.180	0.085	—	—
KR30H	0.30	0.13	0.17	0.07
KR33	0.35	0.13	0.23	0.07
KR45H	0.95	0.36	0.53	0.19
KR46	1.20	0.29	0.80	0.19
KR55	1.70	1.80	—	—
KR65	3.00	3.70	—	—



SKR

Caged Ball LM Guide Actuator

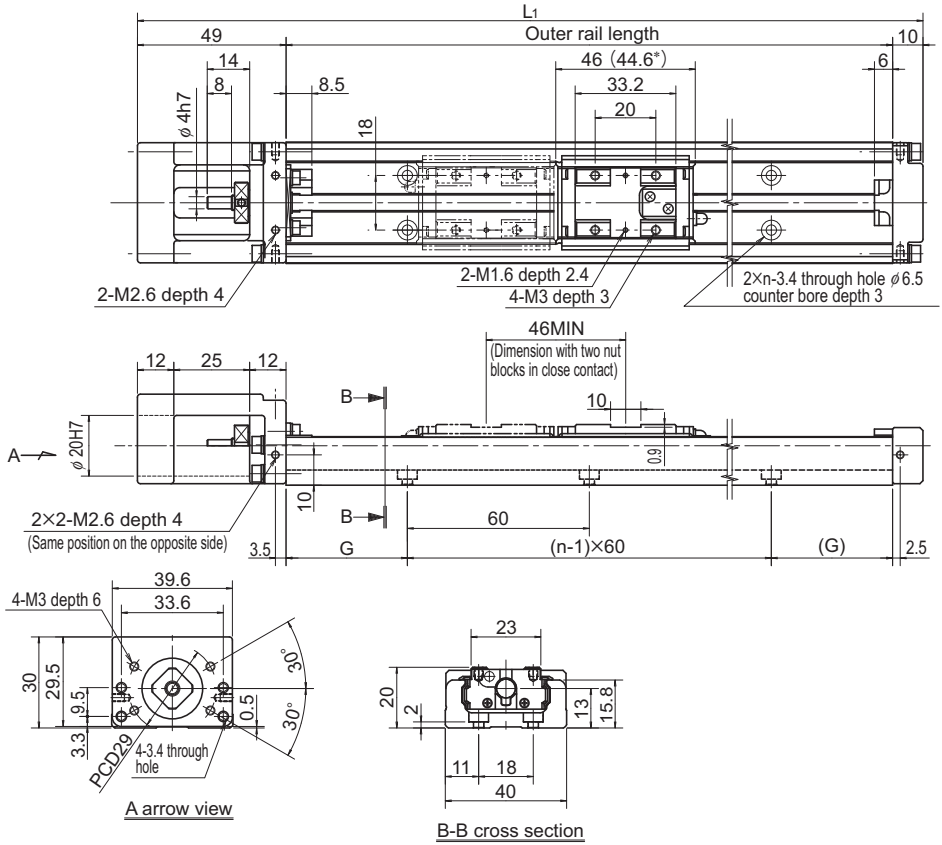
B Product Specifications

A Technical Descriptions of the Products (Separate)

* Please see the separate "A Technical Descriptions of the Products".

Model SKR20 Standard Type

Model SKR20□□A (with a Single Long Nut Block)
Model SKR20□□B (with Two Long Nut Blocks)

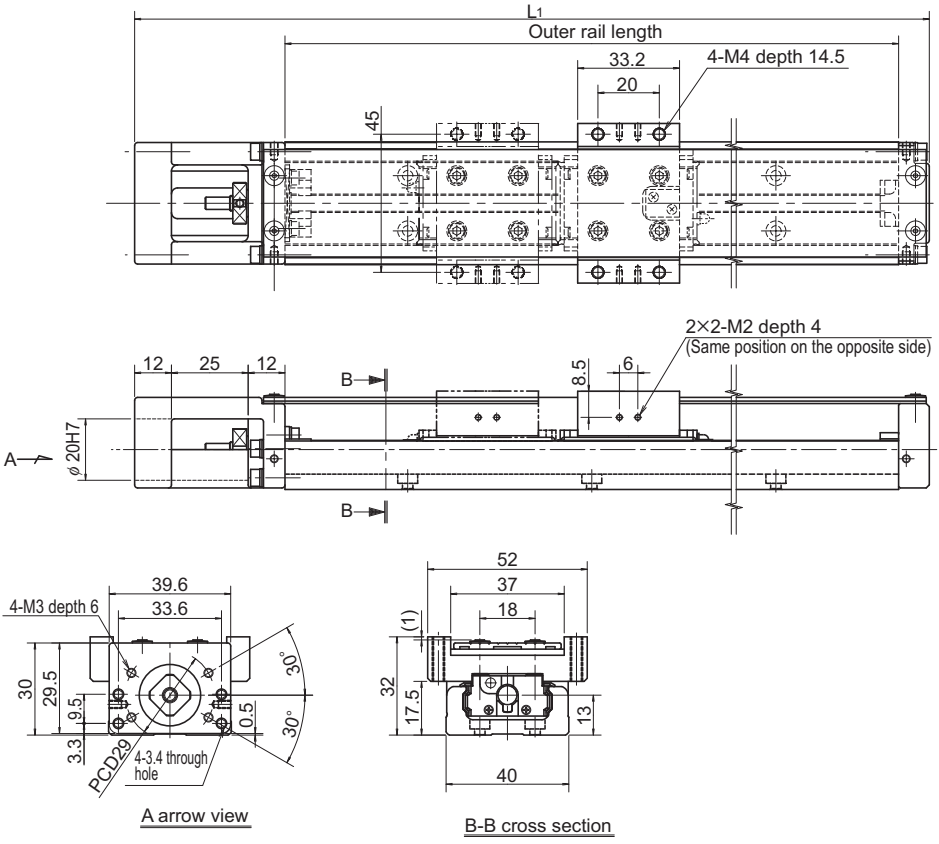


Outer rail length (mm)	Overall length L_1(mm)	Available stroke range (mm)		G (mm)	n	Overall main unit mass (kg)	
		Type A	Type B			Type A	Type B
100	159	40.9	—	20	2	0.45	—
150	209	90.9	44.9	15	3	0.58	0.66
200	259	140.9	94.9	40	3	0.72	0.8

Note1) The available stroke range of model SKR20□□B indicates the value when two inner blocks are used in close contact. For model number coding, see B2-44.
Note2) * indicates the inner block length when calculating the available stroke range. Model SKR-B (with 2 long nut blocks) measures 90.6 mm.

Model SKR20 (with a Cover)

Model SKR20□□A (with a Single Long Nut Block)
Model SKR20□□B (with Two Long Nut Blocks)

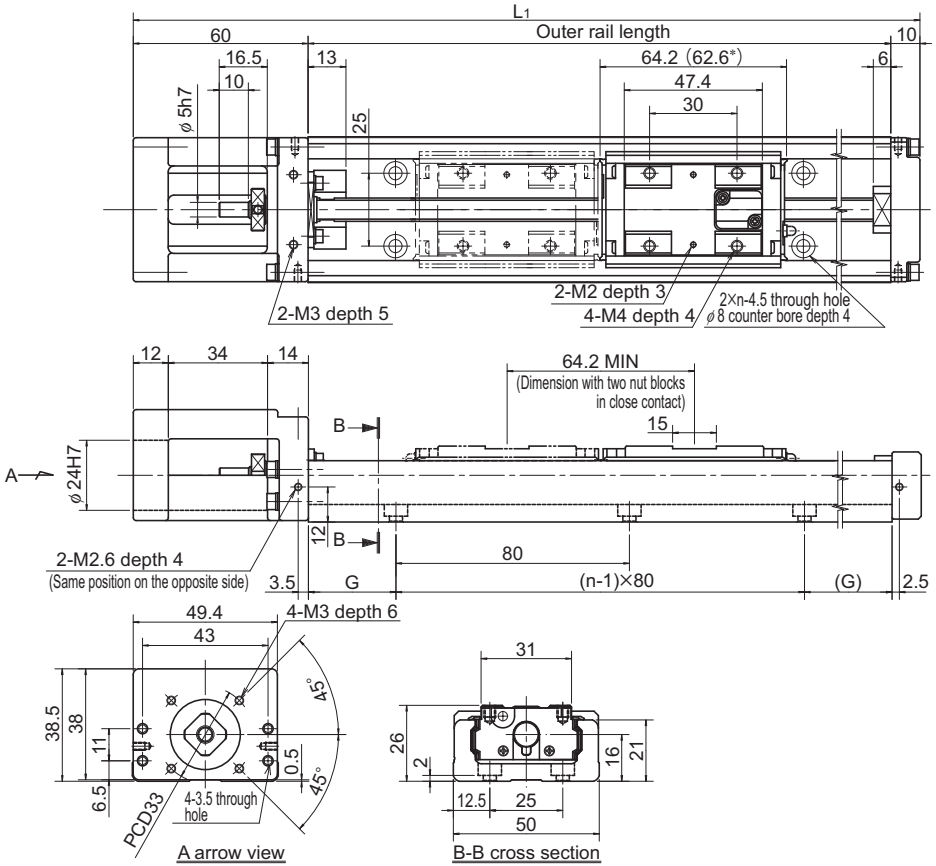


Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		G (mm)	n	Overall main unit mass (kg)	
		Type A	Type B			Type A	Type B
100	159	40.9	—	20	2	0.5	—
150	209	90.9	44.9	15	3	0.64	0.76
200	259	140.9	94.9	40	3	0.79	0.91

Note) The available stroke range of model SKR20□□B indicates the value when two inner blocks are used in close contact.
For model number coding, see B2-44.

Model SKR26 Standard Type

Model SKR26□□A (with a Single Long Nut Block)
Model SKR26□□B (with Two Long Nut Blocks)

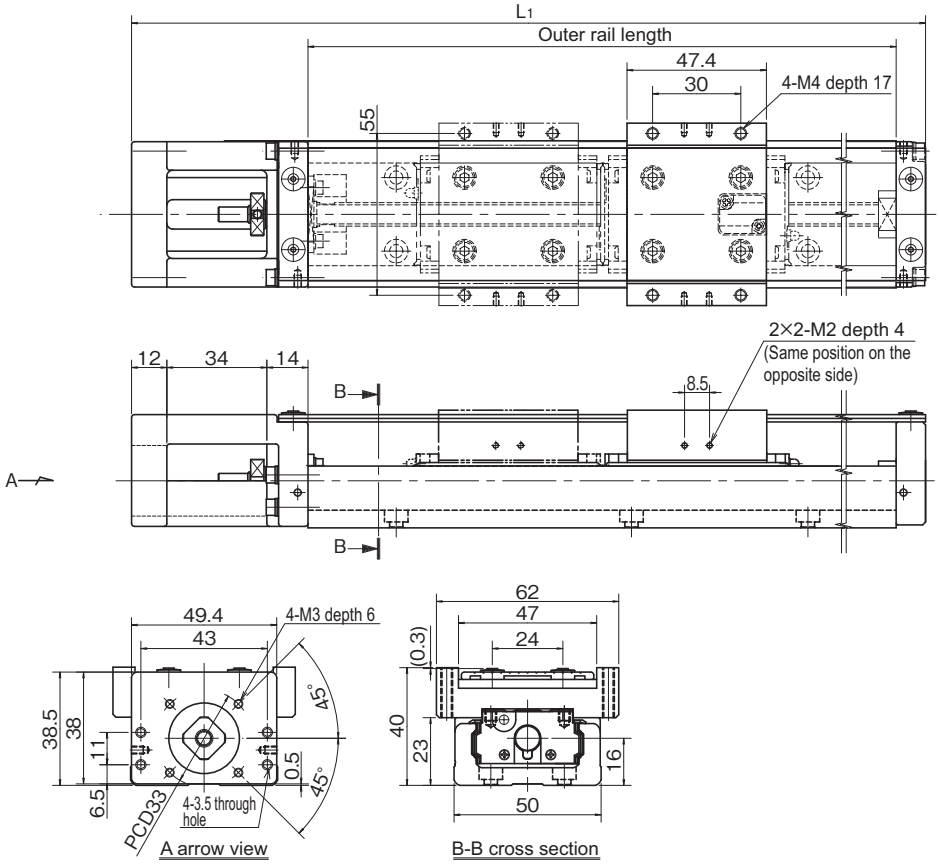


Outer rail length (mm)	Overall length L_1(mm)	Available stroke range (mm)		G (mm)	n	Overall main unit mass (kg)	
		Type A	Type B			Type A	Type B
150	220	68.4	—	35	2	0.99	—
200	270	118.4	54.2	20	3	1.2	1.38
250	320	168.4	104.2	45	3	1.41	1.59
300	370	218.4	154.2	30	4	1.62	1.8

Note1) The available stroke range of model SKR26□□B indicates the value when two inner blocks are used in close contact. For model number coding, see B2-44.
Note2) ∗ indicates the inner block length when calculating the available stroke range. Model SKR-B (with 2 long nut blocks) measures 126.8 mm.

Model SKR26 (with a Cover)

Model SKR26□□A (with a Single Long Nut Block)
Model SKR26□□B (with Two Long Nut Blocks)

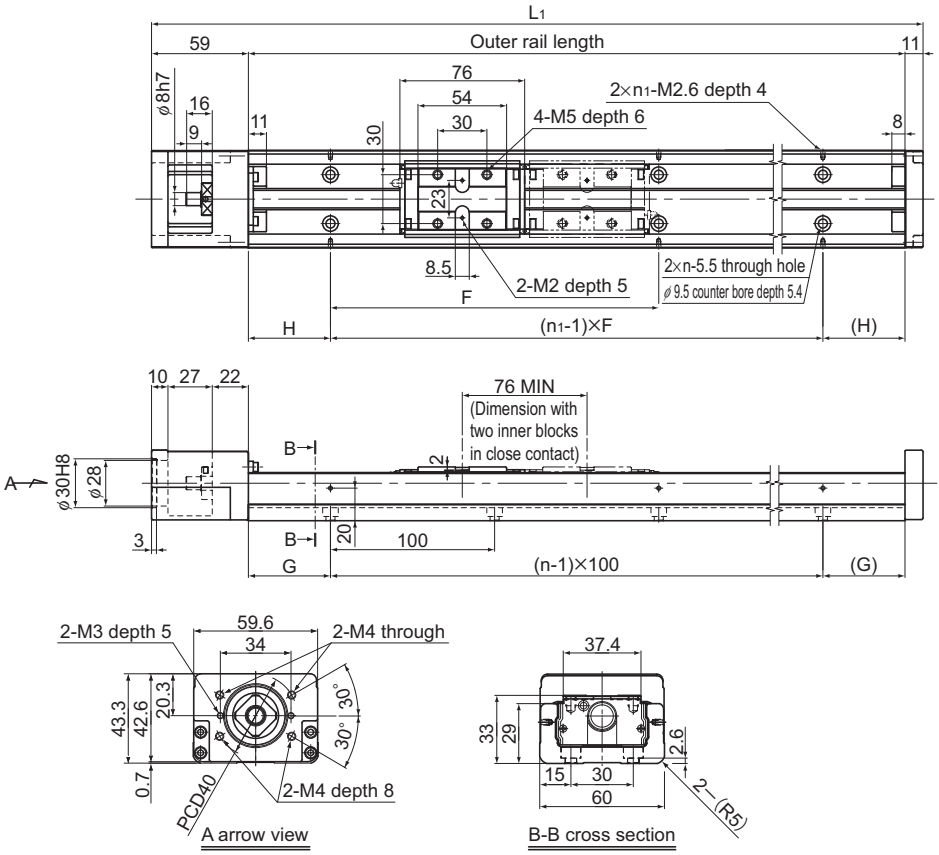


Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		G (mm)	n	Overall main unit mass (kg)	
		Type A	Type B			Type A	Type B
150	220	68.4	—	35	2	1.1	—
200	270	118.4	54.2	20	3	1.32	1.57
250	320	168.4	104.2	45	3	1.54	1.79
300	370	218.4	154.2	30	4	1.76	2.01

Note) The available stroke range of model SKR26□□B indicates the value when two inner blocks are used in close contact.
For model number coding, see B2-44.

Model SKR33 Standard Type

Model SKR33□□A (with a Single Long Nut Block)
Model SKR33□□B (with Two Long Nut Blocks)

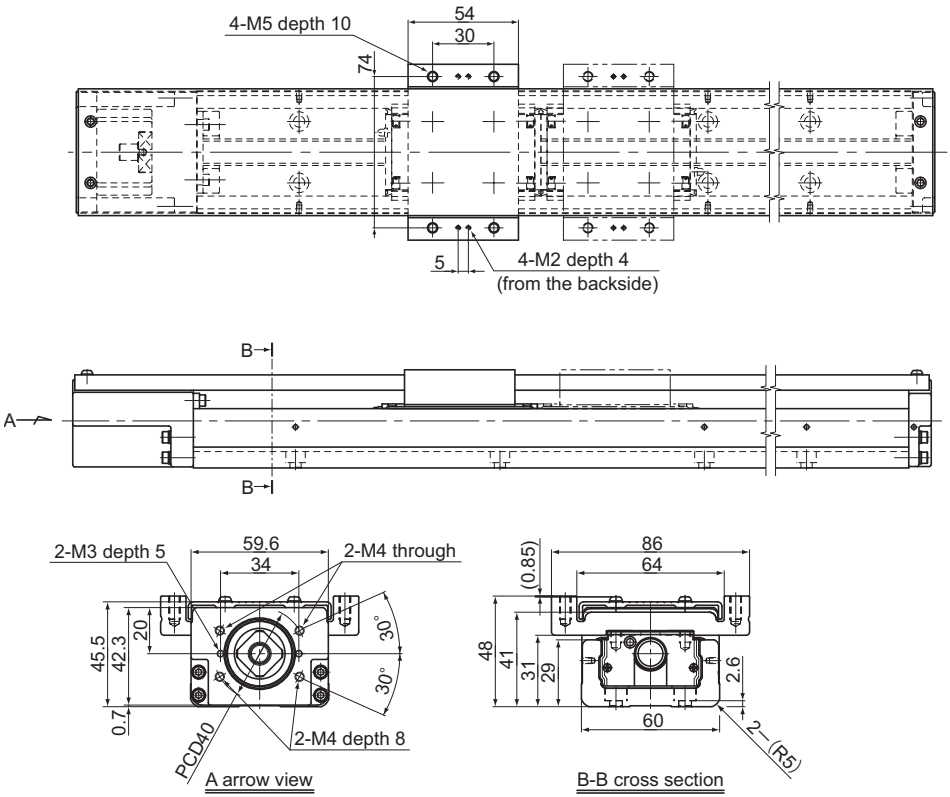


Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		H (mm)	G (mm)	F (mm)	n	n1	Overall main unit mass (kg)	
		Type A	Type B						Type A	Type B
150	220	55	—	25	25	100	2	2	1.7	—
200	270	105	—	50	50	100	2	2	2.1	—
300	370	205	129	50	50	200	3	2	2.8	3.1
400	470	305	229	100	50	200	4	2	3.5	3.8
500	570	405	329	50	50	200	5	3	4.2	4.5
600	670	505	429	100	50	200	6	3	5.0	5.3
700	770	605	529	50	50	200	7	4	5.7	6.0

Note) The available stroke range of model SKR33 □□ B indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-44.

Model SKR33 (with a Cover)

Model SKR33□□A (with a Single Long Nut Block)
Model SKR33□□B (with Two Long Nut Blocks)

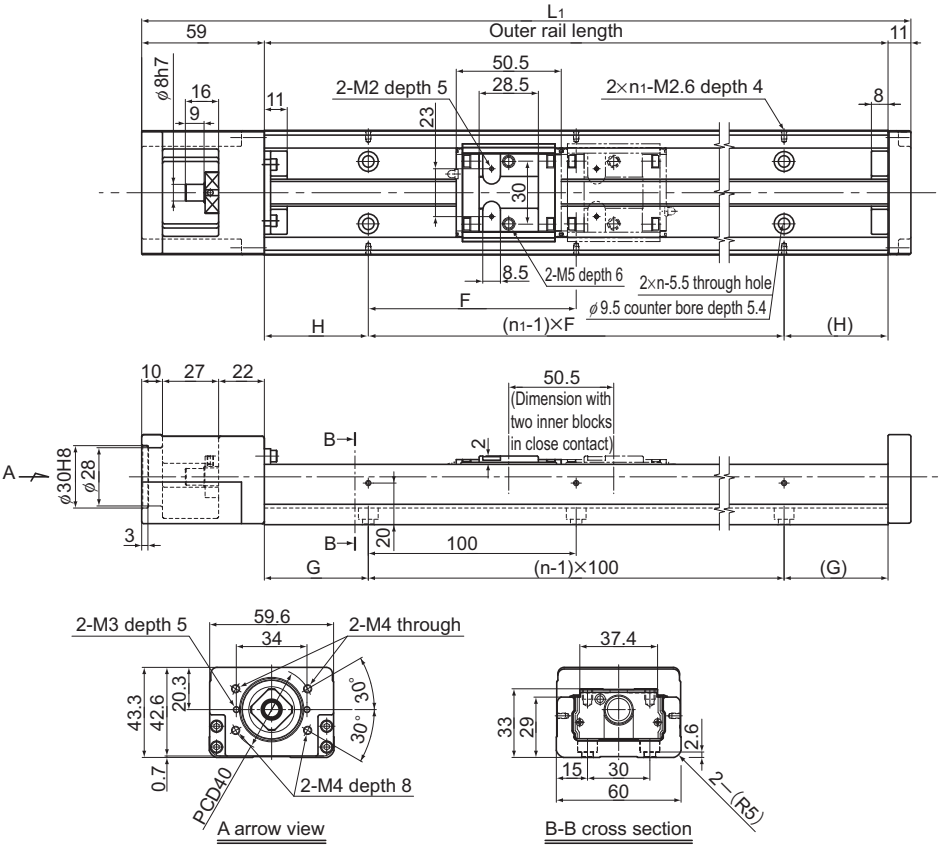


Outer rail length (mm)	Overall length L_1(mm)	Available stroke range (mm)		H (mm)	G (mm)	F (mm)	n	n_1	Overall main unit mass (kg)	
		Type A	Type B						Type A	Type B
150	220	55	—	25	25	100	2	2	1.9	—
200	270	105	—	50	50	100	2	2	2.3	—
300	370	205	129	50	50	200	3	2	3.1	3.5
400	470	305	229	100	50	200	4	2	3.8	4.2
500	570	405	329	50	50	200	5	3	4.6	5.0
600	670	505	429	100	50	200	6	3	5.3	5.7
700	770	605	529	50	50	200	7	4	6.1	6.5

Note) The available stroke range of model SKR33 □□ B indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-44.

Model SKR33 Standard Type

Model SKR33□□C (with a Single Short Nut Block)
Model SKR33□□D (with Two Short Nut Blocks)

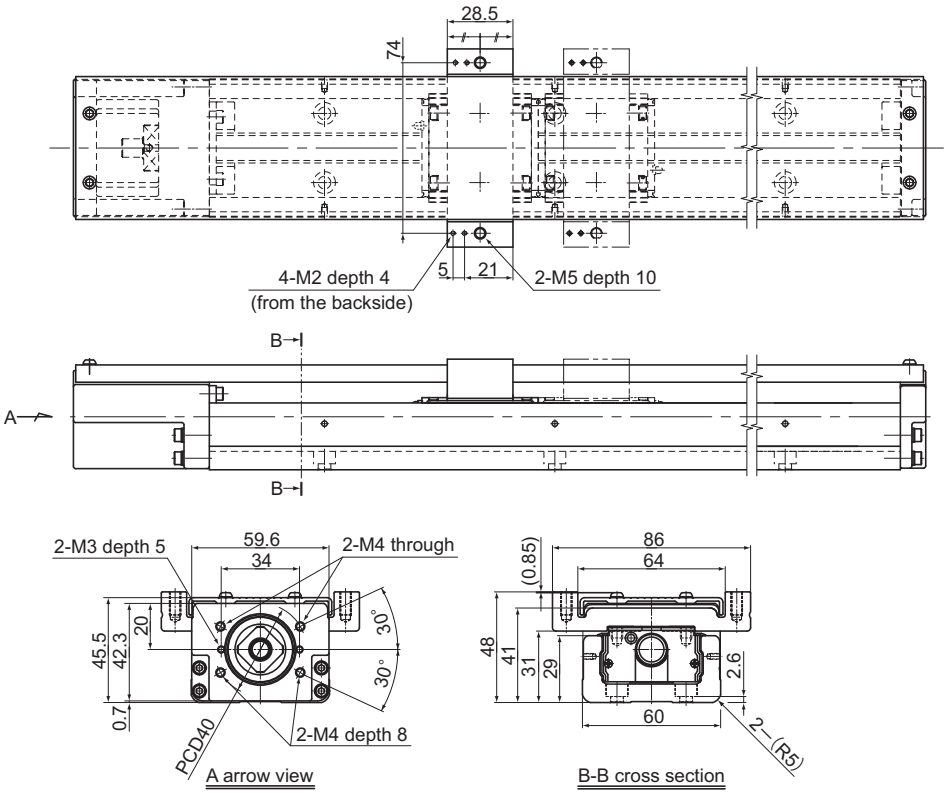


Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		H (mm)	G (mm)	F (mm)	n	n1	Overall main unit mass (kg)	
		Type C	Type D						Type C	Type D
150	220	80.5	30	25	25	100	2	2	1.6	1.8
200	270	130.5	80	50	50	100	2	2	2.0	2.1
300	370	230.5	180	50	50	200	3	2	2.7	2.8
400	470	330.5	280	100	50	200	4	2	3.4	3.6
500	570	430.5	380	50	50	200	5	3	4.1	4.3
600	670	530.5	480	100	50	200	6	3	4.8	5.0
700	770	630.5	580	50	50	200	7	4	5.5	5.7

Note) The available stroke range of model SKR33□□D indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-44.

Model SKR33 (with a Cover)

Model SKR33□□C (with a Single Short Nut Block)
Model SKR33□□D (with Two Short Nut Blocks)

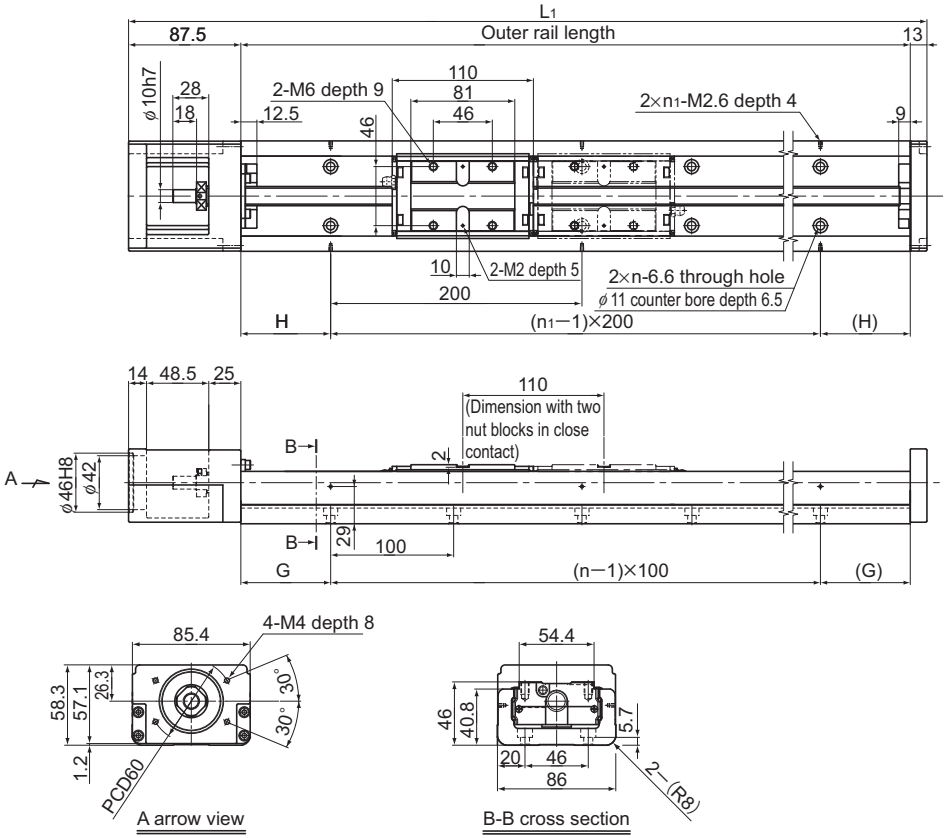


Outer rail length (mm)	Overall length L_1(mm)	Available stroke range (mm)		H (mm)	G (mm)	F (mm)	n	n_1	Overall main unit mass (kg)	
		Type C	Type D						Type C	Type D
150	220	80.5	30	25	25	100	2	2	1.8	2.0
200	270	130.5	80	50	50	100	2	2	2.2	2.3
300	370	230.5	180	50	50	200	3	2	2.9	3.1
400	470	330.5	280	100	50	200	4	2	3.7	3.8
500	570	430.5	380	50	50	200	5	3	4.4	4.6
600	670	530.5	480	100	50	200	6	3	5.2	5.3
700	770	630.5	580	50	50	200	7	4	5.9	6.1

Note) The available stroke range of model SKR33 □□ D indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-44.

Model SKR46 Standard Type

Model SKR46□□A (with a Single Long Nut Block)
Model SKR46□□B (with Two Long Nut Blocks)

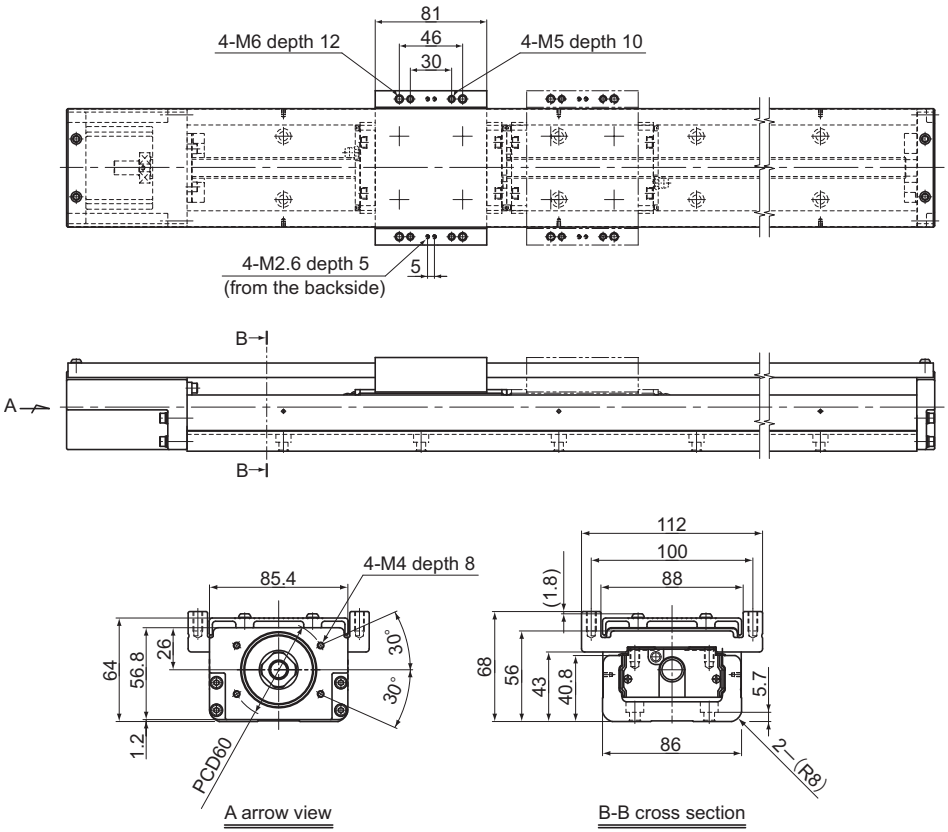


Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		H (mm)	G (mm)	n	n1	Overall main unit mass (kg)	
		Type A	Type B					Type A	Type B
340	440.5	208.5	98.5	70	70	3	2	6.4	7.4
440	540.5	308.5	198.5	20	70	4	3	7.8	8.7
540	640.5	408.5	298.5	70	70	5	3	9.2	10.1
640	740.5	508.5	398.5	20	70	6	4	10.6	11.5
740	840.5	608.5	498.5	70	70	7	4	12.0	12.9
940	1040.5	808.5	698.5	70	70	9	5	14.8	15.7

Note) The available stroke range of model SKR46 □□ B indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-44.

Model SKR46 (with a Cover)

Model SKR46□□A (with a Single Long Nut Block)
Model SKR46□□B (with Two Long Nut Blocks)

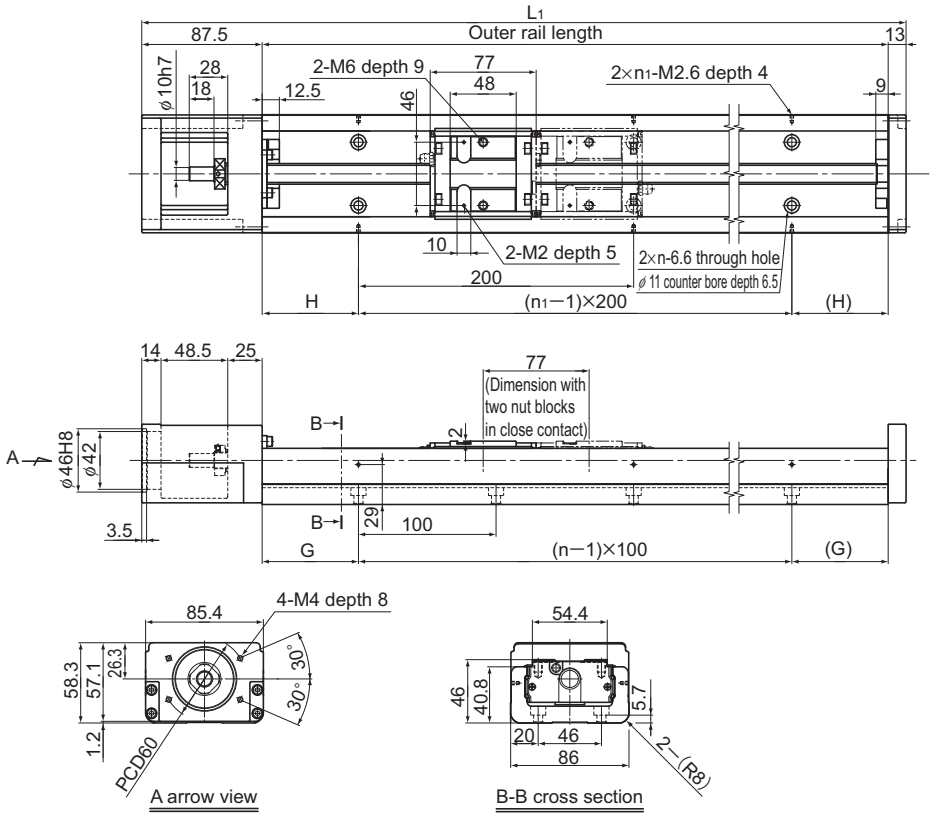


Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		H (mm)	G (mm)	n	n1	Overall main unit mass (kg)	
		Type A	Type B					Type A	Type B
340	440.5	208.5	98.5	70	70	3	2	7.1	8.3
440	540.5	308.5	198.5	20	70	4	3	8.6	9.8
540	640.5	408.5	298.5	70	70	5	3	10.0	11.3
640	740.5	508.5	398.5	20	70	6	4	11.5	12.7
740	840.5	608.5	498.5	70	70	7	4	13.0	14.2
940	1040.5	808.5	698.5	70	70	9	5	16.0	17.2

Note) The available stroke range of model SKR46 □□ B indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-44.

Model SKR46 Standard Type

Model SKR46□□C (with a Single Short Nut Block)
Model SKR46□□D (with Two Short Nut Blocks)

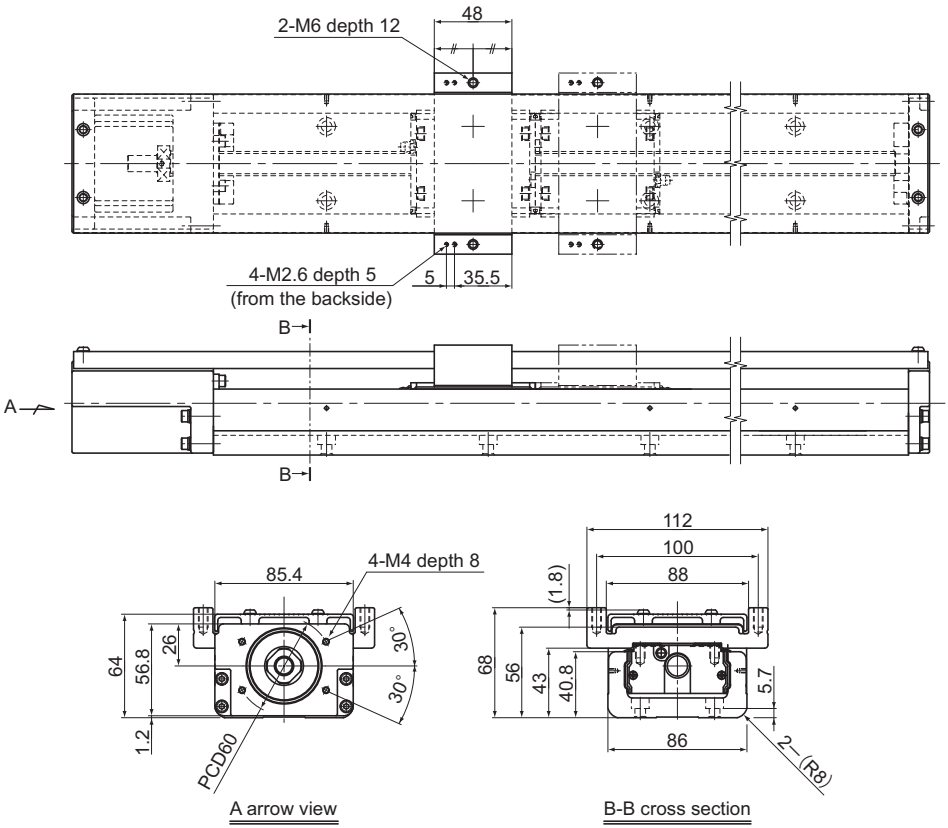


Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		H (mm)	G (mm)	n	n1	Overall main unit mass (kg)	
		Type C	Type D					Type C	Type D
340	440.5	241.5	164.5	70	70	3	2	6.1	6.7
440	540.5	341.5	264.5	20	70	4	3	7.5	8.1
540	640.5	441.5	364.5	70	70	5	3	8.9	9.5
640	740.5	541.5	464.5	20	70	6	4	10.3	10.8
740	840.5	641.5	564.5	70	70	7	4	11.7	12.2
940	1040.5	841.5	764.5	70	70	9	5	14.5	15.0

Note) The available stroke range of model SKR46 □□ D indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-44.

Model SKR46 (with a Cover)

Model SKR46□□C (with a Single Short Nut Block)
Model SKR46□□D (with Two Short Nut Blocks)



Outer rail length (mm)	Overall length L1(mm)	Available stroke range (mm)		H (mm)	G (mm)	n	n1	Overall main unit mass (kg)	
		Type C	Type D					Type C	Type D
340	440.5	241.5	164.5	70	70	3	2	6.6	7.4
440	540.5	341.5	264.5	20	70	4	3	8.1	8.9
540	640.5	441.5	364.5	70	70	5	3	9.6	10.3
640	740.5	541.5	464.5	20	70	6	4	11.0	11.8
740	840.5	641.5	564.5	70	70	7	4	12.5	13.3
940	1040.5	841.5	764.5	70	70	9	5	15.5	16.3

Note) The available stroke range of model SKR46 □□ D indicates the value when two inner blocks are used in close contact with each other.
For model number coding, see B2-44.

Model Number Coding

Model number coding

SKR33 10 A +400L P 0 - 0 0 0 0

Model No.

- Motor bracket type (housing A, intermediate flange) See B2-83 onward.
- Sensor specification See B2-52 .
- With/without a cover 0: none, 1: with a cover
- With/without a motor 0: none, 1:with a motor (mounted at THK)
- Accuracy grade No Symbol: Normal grade, H: High accuracy grade, P: Precision grade
- Outer rail length (in mm) See A2-34 .
- Block type See A2-40 .
- Ball screw lead (in mm) See A2-34 .

Mass of Moving Element

Table1 shows the mass of the inner block and carriage of model SKR.

Table1 Mass of the Inner Block and Carriage of SKR

Unit: kg

Model No.	Long nut block types (A)		Short nut block types (C)	
	Inner block	Carriage	Inner block	Carriage
SKR20	0.064	0.038	—	—
SKR26	0.153	0.074	—	—
SKR33	0.31	0.13	0.17	0.07
SKR46	0.91	0.34	0.57	0.20

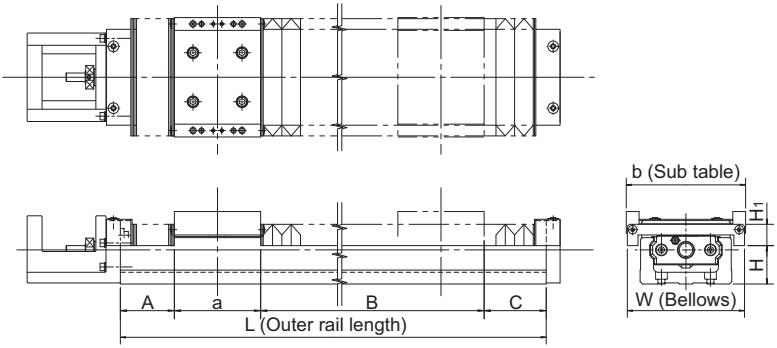
LM Guide Actuator

Options

Bellows

For model KR, bellows are available for contamination protection in addition to a cover.

[Model KR-A (with a Single Long Nut Block)]



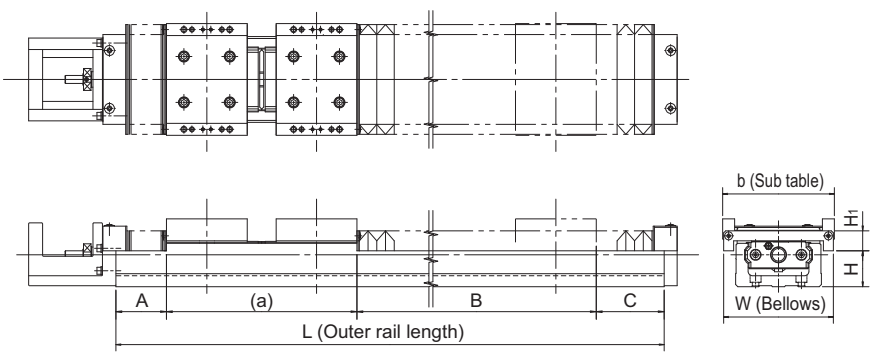
Unit: mm

Model No.	Outer rail length L	A	B (Stroke)	C	a	b	W	H	H_1
KR15	75	15.8	22.2	14	23	44	49	8	15.5
	100	20.8	37.2	19					
	125	25.8	52.2	24					
	150	30.8	67.2	29					
	175	35.8	82.2	34					
	200	40.8	97.2	39					
KR20	100	18.8	30.8	17.2	33.2	52	60	10	20
	150	25.3	67.8	23.7					
	200	37	93.6	36.2					
KR26	150	23.7	61.3	17.6	47.4	62	74	18	20
	200	32.8	91.6	28.2					
	250	40.8	125.6	36.2					
	300	40.8	175.6	36.2					
KR30H	150	28.5	42	25.5	54	80	80	21.5	17.5
	200	38.5	72	35.5					
	300	53.5	142	50.5					
	400	68.5	212	65.5					
	500	83.5	282	80.5					
	600	98.5	352	95.5					
KR33	150	28.4	42	25.6	54	86	84	24.5	20
	200	33.4	82	30.6					
	300	43.4	162	40.6					
	400	58.4	232	55.6					
	500	68.4	312	65.6					
	600	83.4	382	80.6					

Model No.	Outer rail length L	A	B (Stroke)	C	a	b	W	H	H_1
KR45H	340	41.1	177	40.9	81	104	104	28	28
	440	52.1	255	51.9					
	540	60.1	339	59.9					
	640	68.1	423	67.9					
	740	84.1	491	83.9					
	840	92.1	575	91.9					
	940	100.1	659	99.9					
KR46	340	52.9	155	51.1	81	112	110	36	20
	440	67.9	225	66.1					
	540	77.9	305	76.1					
	640	92.9	375	91.1					
	740	102.9	455	101.1					
	840	117.9	525	116.1					
	940	127.9	605	126.1					
KR55	980	84.6	719.6	80.6	95.2	124	154	37	40
	1080	89.6	809.6	85.6					
	1180	99.6	889.6	95.6					
	1280	104.6	979.6	100.6					
	1380	109.6	1069.6	105.6					
KR65	980	85.1	703.2	81.7	110	170	184	40	47
	1180	95.1	883.2	91.7					
	1380	110.1	1053.2	106.7					
	1680	130.1	1313.2	126.7					

Note) The bellows for KR55 and KR65 are only suitable for horizontal orientation. If the bellows is to be used in other orientations (vertical or wall-mounted), contact THK.

[Model KR-B (with Two Long Nut Blocks)]



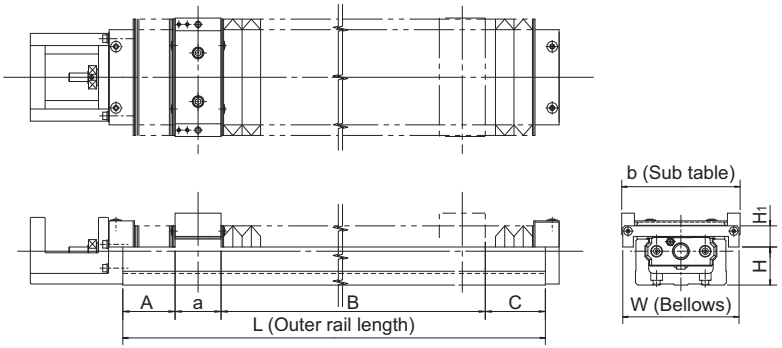
Unit: mm

Model No.	Outer rail length L	A	B (Stroke)	C	a	b	W	H	H_1
KR15	125	20.8	29.2	19	56	44	49	8	15.5
	150	25.8	44.2	24					
	175	30.8	59.2	29					
	200	35.8	74.2	34					
KR20	150	18.8	34.8	17.2	79.2	52	60	10	20
	200	25.3	71.8	23.7					
KR26	200	23.7	47.3	17.6	111.4	62	74	18	20
	250	32.8	77.6	28.2					
	300	32.8	127.6	28.2					
KR30H	300	38.5	97.6	35.5	128.4	80	80	21.5	17.5
	400	53.5	167.6	50.5					
	500	68.5	237.6	65.5					
	600	83.5	307.6	80.5					
KR33	300	38.4	96	35.6	130	86	84	24.5	20
	400	48.4	176	45.6					
	500	58.4	256	55.6					
	600	73.4	326	70.6					
KR45H	340	28.1	95	27.9	189	104	104	28	28
	440	41.1	170.5	39.4					
	540	52.1	247	51.9					
	640	60.1	331	59.9					
	740	68.1	415	67.9					
	840	84.1	483	83.9					
	940	92.1	567	91.9					
KR46	340	37.9	75	36.1	191	112	110	36	20
	440	52.9	145	51.1					
	540	62.9	225	61.1					
	640	77.9	295	76.1					
	740	87.9	375	86.1					
	840	102.9	445	101.1					
	940	112.9	525	111.1					

Model No.	Outer rail length L	A	B (Stroke)	C	a	b	W	H	H_1
KR55	980	74.6	612	70.6	222.8	124	154	37	40
	1080	84.6	692	80.6					
	1180	89.6	782	85.6					
	1280	94.6	872	90.6					
	1380	104.6	952	100.6					
KR65	980	75.1	578.6	71.7	254.6	170	184	40	47
	1180	90.1	748.6	86.7					
	1380	100.1	928.6	96.7					
	1680	120.1	1188.6	116.7					

Note) The bellows for KR55 and KR65 are only suitable for horizontal orientation. If the bellows is to be used in other orientations (vertical or wall-mounted), contact THK.

[Model KR-C (with a Single Short Nut Block)]

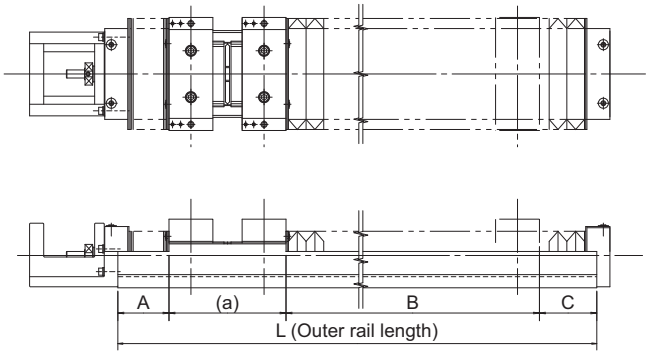


Unit: mm

Model No.	Outer rail length L	A	B (Stroke)	C	a	b	W	H	H_1
KR30H	150	33.5	57.5	30.5	28.5	80	80	21.5	17.5
	200	38.5	97.5	35.5					
	300	53.5	167.5	50.5					
	400	68.5	237.5	65.5					
	500	83.5	307.5	80.5					
	600	98.5	377.5	95.5					
KR33	150	28.4	67.5	25.6	28.5	86	84	24.5	20
	200	33.4	107.5	30.6					
	300	48.4	177.5	45.6					
	400	58.4	257.5	55.6					
	500	73.4	327.5	70.6					
	600	83.4	407.5	80.6					
KR45H	340	44.1	208.5	43.9	43.5	104	104	28	28
	440	52.1	292.5	51.9					
	540	68.1	360.5	67.9					
	640	76.1	444.5	75.9					
	740	84.1	528.5	83.9					
	840	100.1	596.5	99.9					
	940	108.1	680.5	107.9					
KR46	340	57.9	182.5	56.1	43.5	112	110	36	20
	440	72.9	252.5	71.1					
	540	82.9	332.5	81.1					
	640	97.9	402.5	96.1					
	740	107.9	482.5	106.1					
	840	122.9	552.5	121.1					
	940	132.9	632.5	131.1					

Note) The bellows for KR55 and KR65 are only suitable for horizontal orientation. If the bellows is to be used in other orientations (vertical or wall-mounted), contact THK.

[Model KR-D (with Two Short Nut Blocks)]



Unit: mm

Model No.	Outer rail length L	A	B (Stroke)	C	a	b	W	H	H_1
KR30H	150	23.5	28.6	20.5	77.4	80	80	21.5	17.5
	200	33.5	58.6	30.5					
	300	48.5	128.6	45.5					
	400	63.5	198.6	60.5					
	500	78.5	268.6	75.5					
	600	93.5	338.6	90.5					
KR33	150	23.4	27	20.6	79	86	84	24.5	20
	200	28.4	67	25.6					
	300	43.4	137	40.6					
	400	53.4	217	50.6					
	500	68.4	287	65.6					
	600	78.4	367	75.6					
KR45H	340	36.1	154	35.9	114	104	104	28	28
	440	44.1	238	43.9					
	540	60.1	306	59.9					
	640	68.1	390	67.9					
	740	76.1	474	75.9					
	840	92.1	542	91.9					
	940	100.1	626	99.9					
KR46	340	47.9	130	46.1	116	112	110	36	20
	440	62.9	200	61.1					
	540	72.9	280	71.1					
	640	87.9	350	86.1					
	740	97.9	430	96.1					
	840	112.9	500	111.1					
	940	122.9	580	121.1					

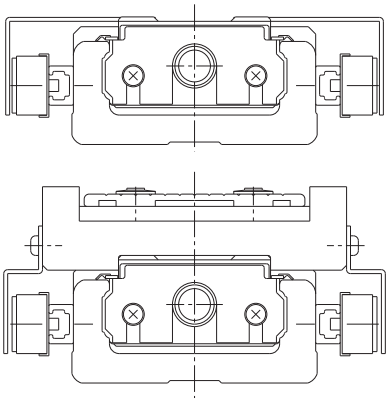
Note) The bellows for KR55 and KR65 are only suitable for horizontal orientation. If the bellows is to be used in other orientations (vertical or wall-mounted), contact THK.

Sensor

Optional proximity sensors and photo sensors are available for models KR and SKR. Models equipped with a sensor are also provided with a dedicated sensor rail/sensor dog (detecting plate).

Some KR models with a short outer rail are attached with sensor(s) and sensor rail(s) on both sides when applicable. See the table below.

[Example of Installation]



Unit: mm

Model No.	Outer rail length
KR15A	75
	100
KR15B	125
KR20A, SKR20A	75
	100
	125
KR20B, SKR20B	125
	150
KR26A, SKR26A	100
	125
	150
KR26B, SKR26B	175
	200

Table1 With/without a sensor

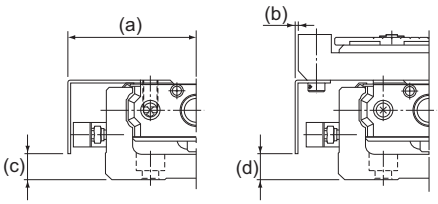
Symbol	Description	Type	Option
0	None	—	—
1	With sensor rail	—	Mounting Screws
2	Photo Sensor*	EE-SX671 (Omron Corp.)	Mounting screw/nut, detecting plate, sensor rail, mounting plate, connector (EE-1001)
4	Proximity Sensor N.O. (ON when close)	GL-12F (SUNX Ltd.)	Mounting screw/nut, detecting plate, sensor rail, fixture (MS-GL12)
5	Proximity Sensor N.O. (ON when close)	GXL-N12F (SUNX Ltd.)	Mounting screw/nut, detecting plate, sensor rail, fixture (MS-GX12)
6	Photo Sensor*	EE-SX674 (Omron Corp.)	Mounting screw/nut, detecting plate, sensor rail, mounting plate, connector (EE-1001)
7	Proximity Sensor N.O. (ON when close)	APM-D3A1-001 (Yamatake Corp.)	Mounting screw/nut, detecting plate, sensor rail
8	Proximity Sensor N.O. (ON when close)	GL-N12F (SUNX Ltd.)	Mounting screw/nut, detecting plate, sensor rail
9	Proximity Sensor N.C. (ON when away)	GL-N12FB (SUNX Ltd.)	Mounting screw/nut, detecting plate, sensor rail
A	Proximity Sensor N.C. (ON when away)	GXL-N12FB (SUNX Ltd.)	Mounting screw/nut, detecting plate, sensor rail, fixture (MS-GX12)
B	Proximity Sensor N.C. (ON when away)	APM-D3B1-003 (Yamatake Corp.)	Mounting screw/nut, detecting plate, sensor rail
C	Proximity sensors N.O.:(1), N.C.:(2)	GL-N12F (1 unit), GL-N12FB (2 units)	Mounting screw/nut, detecting plate, sensor rail
D	Proximity sensors N.O.:(1), N.C.:(2)	GXL-N12F (1 unit), GXL-N12FB (2 units)	Mounting screw/nut, detecting plate, sensor rail, fixture (MS-GX12)
E	Proximity sensors N.O.:(1), N.C.:(2)	APM-D3A1-001 (1 unit), APM-D3B1-003 (2 units)	Mounting screw/nut, detecting plate, sensor rail
F	Proximity sensors N.O.:(1), N.C.:(2) (PNP output)	GXL-N12F-P (1 unit), GXL-N12FB-P (2 units)	Mounting screw/nut, detecting plate, sensor rail, fixture (MS-GX12)

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

[Proximity Sensor]

APM-D3A1-001 (Yamatake Corp.)	3 units	GL-N12FB (SUNX Ltd.)	3 units
APM-D3B1-003 (Yamatake Corp.)	3 units	GXL-N12FB (SUNX Ltd.)	3 units
GL-12F (SUNX Ltd.)	3 units	GXL-N12F-P (SUNX Ltd.)	3 units
GXL-N12F (SUNX Ltd.)	3 units	GXL-N12FB-P (SUNX Ltd.)	3 units
GL-N12F (SUNX Ltd.)	3 units		

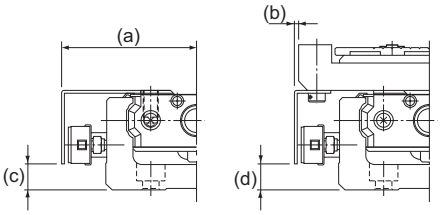
● **Proximity Sensor: APM-D3A1-001 APM-D3B1-003 (Yamatake Corp.)**



Unit: mm

Model No.	a	b	c	d
KR15	27.8	5.8	1.4	1.4
KR20	32.5	6.5	6	6
KR26	37.5	6.4	8	8
KR30H	43.3	3.3	8.8	9
KR33	42.5	−0.6	8.8	9
KR45H	53.2	1.2	14	14
KR46	55.4	−0.6	21.8	22
KR55	62.5	0.4	22	22
KR65	77	−8	25.1	25
SKR20	32.5	6.5	6	6
SKR26	38	6.5	8	8
SKR33	43.05	0.3	14.8	15
SKR46	56.2	0.2	26.8	22

● **Proximity Sensor: GL-12F GL-N12F(B) GXL-N12F(B) GXL-N12F(B)-P (SUNX Ltd.)**



Unit: mm

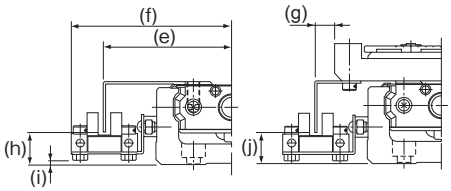
Model No.	a	b	c	d
KR20	34	8	3.6	4
KR26	39	7.9	6	6
KR30H	45	5	8.8	9
KR33	44.5	1.5	8.8	9
KR45H	54.8	2.8	14	14
KR46	57.5	1.5	21.8	22
KR55	64.5	2.5	22	22
KR65	79	−6	25.1	25
SKR20	34	8	3.6	4
SKR26	39.5	8	6	6
SKR33	44.7	2	13.8	14
SKR46	57.7	1.8	24.8	22

[Photo Sensor]

	EE-SX671 (Omron Corp.)	3 units
	EE-SX674 (Omron Corp.)	3 units
Connector	EE-1001 (Omron Corp.)	3 units

Note) The connector is a standard attachment to the photo sensor.

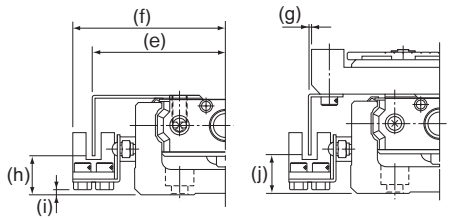
● Photo Sensor: EE-SX671 (Omron Corp.)



Unit: mm

Model No.	e	f	g	h	i	j
KR20	41	54	15	9.5	1	9.5
KR26	46	58.5	15	11.5	3	11.5
KR30H	51.3	63.9	11.3	14.5	1.4	15.5
KR33	50.8	63.7	7.8	12.8	1.6	13
KR45H	61.2	73.8	9.3	18.3	6.4	18.5
KR46	63.6	76.6	7.7	25.8	14.6	26
KR55	70.7	83.5	8.6	24.5	13.6	25
KR65	85.5	98.5	0.6	28.1	16.6	28
SKR20	41	54	15	9.4	1	9.5
SKR26	46.5	58.5	15	11.5	3	11.5
SKR33	51.1	63.6	8.3	18.8	7.4	19.5
SKR46	64.1	76.6	8.3	29.8	16.4	26.5

● Photo Sensor: EE-SX674 (Omron Corp.)

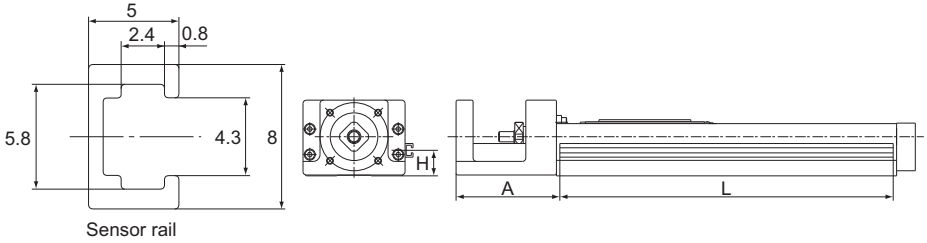


Unit: mm

Model No.	e	f	g	h	i	j
KR20	38.5	45	12.5	11	0.8	11
KR26	43.5	50	12.5	13	2.8	13
KR30H	46.2	52.3	6.3	14.5	1.1	14
KR33	44.5	50.7	0.9	12.8	1.1	13
KR45H	56.2	62.3	4.2	19	6.1	19
KR46	57.5	63.5	1.5	25.8	14.1	26
KR55	63.5	70.5	1.5	24.5	13.1	24
KR65	78.8	85.5	−6	28.6	16.1	28
SKR20	38.5	45	12.5	11	0.8	11
SKR26	44	50	12.5	13	2.8	13
SKR33	45.9	52.1	3.3	17.8	7.1	20
SKR46	58.9	65.1	3.2	28.8	16.1	27

[Sensor Rail]

The sensor rail can be attached alone.



Sensor rail

Unit: mm

Model No.	Outer rail length	H	A	L
KR15	75	5.5	37.5	88
	100			113
	125			138
	150			163
	175			188
	200			213
KR20	100	10	43	111
	150			161
	200			211
KR26	150	12	54	161
	200			211
	250			261
	300			311
KR30H	150	14	61	146
	200			196
	300			296
	400			396
	500			496
	600			596
KR33	150	15	61	146
	200			196
	300			296
	400			396
	500			496
	600			596
KR45H	340	19	90	336
	440			436
	540			536
	640			636
	740			736
	840			836
	940			936

Unit: mm

Model No.	Outer rail length	H	A	L
KR46	340	28	89.5	336
	440			436
	540			536
	640			636
	740			736
	840			836
	940			936
KR55	980	27	96	976
	1080			1076
	1180			1176
	1280			1276
	1380			1376
KR65	980	30	102	976
	1180			1176
	1380			1376
	1680			1676
SKR20	100	10	43	111
	150			161
	200			211
SKR26	150	12	54	161
	200			211
	250			261
	300			311
SKR33	150	20	61	146
	200			196
	300			296
	400			396
	500			496
	600			596
	700			696
SKR46	340	29	89.5	336
	440			436
	540			536
	640			636
	740			736
	940			936

Motor Bracket

[Motors Used in Model KR and Corresponding Motor Brackets]

For model KR, motor brackets are available that allow different motors to be attached. Each motor bracket model has an administration number according to the motor to be used. Specify the corresponding administration number when placing an order.

Table2 Table of Motors Used and Corresponding Motor Brackets

Motor type				Rated capacity	Dimension angle	KR15	KR20	KR26	KR30H	KR33	KR45H	KR46	KR55	KR65
AC servomotor	Yaskawa Electric	Σ-mini	SGMM-A1	10W	□25	0B	3N	0N	—	—	—	—	—	—
			SGMM-A2	20W		0B	3N	0N	—	—	—	—	—	—
			SGMM-A3	30W		—	3N	0N	—	—	—	—	—	—
		Σ-V	SGMJV-A5	50W	□40	—	0B	0B	0B	5H	0B	0F	—	—
			SGMAV-A5			—	0B	0B	0B	5H	0B	0F	—	—
			SGMJV-01	100W		—	—	—	0B	5H	0B	0F	—	—
			SGMAV-01			—	—	—	0B	5H	0B	0F	—	—
			SGMAV-C2	150W		—	—	—	—	—	0B	0F	—	—
			SGMJV-02	200W	□60	—	—	—	—	—	0D	40	00	0A
			SGMAV-02			—	—	—	—	—	0D	40	00	0A
			SGMJV-04	400W		—	—	—	—	—	0D	40	00	0A
			SGMAV-04			—	—	—	—	—	0D	40	00	0A
			SGMAV-06	550W		—	—	—	—	—	—	—	00	0A
			SGMJV-08	750W	□80	—	—	—	—	—	—	—	0B	0G
			SGMAV-08			—	—	—	—	—	—	—	0B	0G
		Σ-Ⅲ	SGMAS-A5	50W	□40	—	0B	0B	0B	5H	0B	0F	—	—
			SGMAS-01	100W		—	—	—	0B	5H	0B	0F	—	—
			SGMPS-01		□60	—	—	—	—	—	0D	40	00	0A
			SGMAS-02	200W		—	—	—	—	—	0D	40	00	0A
			SGMAS-04	400W		—	—	—	—	—	0D	40	00	0A
			SGMPS-02	200W	□80	—	—	—	—	—	—	—	0B	00
			SGMPS-04	400W		—	—	—	—	—	—	—	0B	00
			SGMAS-08	750W		—	—	—	—	—	—	—	0B	0G
		Σ-Ⅱ	SGMAH-A3	30W	□40	—	0B	0B	0B	5H	0B	0F	—	—
			SGMAH-A5	50W		—	0B	0B	0B	5H	0B	0F	—	—
			SGMAH-01	100W		—	—	—	0B	5H	0B	0F	—	—
			SGMPH-01		□60	—	—	—	—	—	0D	40	00	0A
			SGMAH-02	200W		—	—	—	—	—	0D	40	00	0A
			SGMAH-04	400W		—	—	—	—	—	0D	40	00	0A
			SGMPH-02	200W	□80	—	—	—	—	—	—	—	0B	00
			SGMPH-04	400W		—	—	—	—	—	—	—	0B	00
			SGMAH-08	750W		—	—	—	—	—	—	—	0B	0G

Motor type					Rated capacity	Dimension angle	KR15	KR20	KR26	KR30H	KR33	KR45H	KR46	KR55	KR65
AC servomotor	Mitsubishi Electric	MELSERVO	J2-Jr	HC-AQ013	10W	□28	0A	3M	0M	—	—	—	—	—	—
				HC-AQ023	20W		0A	3M	0M	—	—	—	—	—	—
				HC-AQ033	30W		—	3M	0M	—	—	—	—	—	—
			J3	HF-MP053	50W	□40	—	0B	0B	0B	5H	0B	0F	—	—
				HF-KP053			—	0B	0B	0B	5H	0B	0F	—	—
				HF-MP13	100W		—	—	—	0B	5H	0B	0F	—	—
				HF-KP13			—	—	—	0B	5H	0B	0F	—	—
				HF-MP23	200W	□60	—	—	—	—	—	0D	40	00	0A
				HF-KP23			—	—	—	—	—	0D	40	00	0A
				HF-MP43	400W		—	—	—	—	—	0D	40	00	0A
				HF-KP43			—	—	—	—	—	0D	40	00	0A
				HF-MP73	750W	□80	—	—	—	—	—	—	—	0B	0G
				HF-KP73			—	—	—	—	—	—	—	0B	0G
			J2 Super	HC-MFS053	50W	□40	—	0B	0B	0B	5H	0B	0F	—	—
				HC-KFS053			—	0B	0B	0B	5H	0B	0F	—	—
				HC-MFS13	100W		—	—	—	0B	5H	0B	0F	—	—
				HC-KFS13			—	—	—	0B	5H	0B	0F	—	—
				HC-MFS23	200W	□60	—	—	—	—	—	0D	40	00	0A
				HC-KFS23			—	—	—	—	—	0D	40	00	0A
				HC-MFS43	400W		—	—	—	—	—	0D	40	00	0A
				HC-KFS43			—	—	—	—	—	0D	40	00	0A
				HC-MFS73	750W	□80	—	—	—	—	—	—	—	0B	0G
				HC-KFS73			—	—	—	—	—	—	—	0B	0G
	Panasonic Corp.	MINAS	A4	MSMD5A	50W	□38	—	0A	0A	0A	5K	0A	0G	—	—
				MSMD01	100W		—	—	—	0A	5K	0A	0G	—	—
				MQMA01		□60	—	—	—	—	—	0C	30	—	—
				MSMD02	200W		—	—	—	—	—	0C	30	—	—
				MAMA02			—	—	—	—	—	0C	30	—	—
				MSMD04	400W		—	—	—	—	—	0C	30	—	—
				MAMA04			—	—	—	—	—	0C	30	—	—
				MSMD08	750W	□80	—	—	—	—	—	—	—	0A	2B
				MAMA08			—	—	—	—	—	—	—	0A	2B
			AⅢ	MSMA3A	30W	□38	—	0A	0A	0A	5K	0A	0G	—	—
				MSMA5A	50W		—	0A	0A	0A	5K	0A	0G	—	—
				MSMA01	100W		—	—	—	0A	5K	0A	0G	—	—
				MSMA02	200W	□60	—	—	—	—	—	0C	30	—	—
				MAMA02			—	—	—	—	—	0C	30	—	—
				MSMA04	400W		—	—	—	—	—	0C	30	—	—
				MAMA04			—	—	—	—	—	0C	30	—	—
				MSMA08	750W	□80	—	—	—	—	—	—	—	0A	2B
				MAMA08			—	—	—	—	—	—	—	0A	2B
			E	MUMA02	200W	□60	—	—	—	—	—	0C	30	—	—
				MUMA04	400W		—	—	—	—	—	0C	30	—	—

Motor type				Rated capacity	Dimension angle	KR15	KR20	KR26	KR30H	KR33	KR45H	KR46	KR55	KR65
AC servo motor	SANYO Electric	SANMOTION Q1	Q1AA04003D	30W	□40	—	0B	0B	0B	5H	0B	0F	—	—
			Q1AA04005D	50W		—	0B	0B	0B	5H	0B	0F	—	—
			Q1AA04010D	100W		—	—	—	0B	5H	0B	0F	—	—
			Q1AA06020D	200W	□60	—	—	—	—	—	0D	40	00	0A
			Q1AA06040D	400W		—	—	—	—	—	0D	40	00	0A
			Q1AA07075D	750W	□76	—	—	—	—	—	—	—	0A	2B
	Omron	OMNUC W	R88M-W03030	30W	□40	—	0B	0B	0B	5H	0B	0F	—	—
			R88M-W05030	50W		—	0B	0B	0B	5H	0B	0F	—	—
			R88M-W10030	100W		—	—	—	0B	5H	0B	0F	—	—
			R88M-WP10030		□60	—	—	—	—	—	0D	40	00	0A
			R88M-W20030	200W		—	—	—	—	—	0D	40	00	0A
			R88M-W40030	400W		—	—	—	—	—	0D	40	00	0A
			R88M-WP20030	200W	□80	—	—	—	—	—	—	—	0B	00
			R88M-WP40030	400W		—	—	—	—	—	—	—	0B	00
			R88M-W75030	750W		—	—	—	—	—	—	—	0B	0G
		SMARTSTEP A	R7M-A03030	30W	□40	—	0B	0B	0B	5H	0B	0F	—	—
			R7M-A05030	50W		—	0B	0B	0B	5H	0B	0F	—	—
			R7M-A10030	100W		—	—	—	0B	5H	0B	0F	—	—
			R7D-AP10030		□60	—	—	—	—	—	0D	40	00	0A
			R7M-A20030	200W		—	—	—	—	—	0D	40	00	0A
			R7M-A40030	400W		—	—	—	—	—	0D	40	00	0A
			R7D-AP20030	200W	□80	—	—	—	—	—	—	—	0B	00
			R7D-AP40030	400W		—	—	—	—	—	—	—	0B	00
			R7D-A75030	750W		—	—	—	—	—	—	—	0B	0G
	Fanuc	βis series	β0.2/6000is	50W	□40	—	0B	0B	0B	5H	0B	0F	—	—
			β0.3/6000is	100W		—	—	—	0B	5H	0B	0F	—	—
			β0.4/6000is	125W	□60	—	—	—	—	—	0D	40	00	0A
			β0.5/6000is	200W		—	—	—	—	—	0D	40	00	0A
			β1/6000is	400W		—	—	—	—	—	0D	40	00	0A
	Keyence Corporation	MV	MV-M05	50W	□40	—	0B	0B	0B	5H	0B	0F	—	—
			MV-M10	100W		—	—	—	0B	5H	0B	0F	—	—
			MV-M20	200W	□60	—	—	—	—	—	0D	40	00	0A
			MV-M40	400W		—	—	—	—	—	0D	40	00	0A
			MV-M75	750W	□76	—	—	—	—	—	—	—	0A	2B
Stepping motor	Oriental Motor	α Step	ASC3✻		□28	0D	0F	0F	—	—	—	—	—	—
			AS 46, ASC46, AR46		□42	—	0E	0E	1C	5I	—	—	—	—
			AS 6✻, ASC66, AR6✻		□60	—	—	—	0E	5G	0F	10	—	—
			AS 9✻		□85	—	—	—	—	—	—	—	0G	2F
		5 phase CSK Ⅱ	CSK52✻		□28	0D	0F	0F	—	—	—	—	—	—
			CSK54✻		□42	—	0E	0E	1C	5I	—	—	—	—
			CSK56✻		□60	—	—	—	0E	5G	0F	10	—	—
			CSK59✻		□85	—	—	—	—	—	—	—	0G	2F
		5 phase RK	RK54✻		□42	—	0E	0E	1C	5I	—	—	—	—
			RK56✻		□60	—	—	—	0E	5G	0F	10	—	—
			RK59✻		□85	—	—	—	—	—	—	—	0G	2F
		2 phase UMK	UMK24✻		□42	—	0E	0E	1C	5I	—	—	—	—
			UMK26✻		□56.4	—	—	—	0D	5F	—	—	—	—
		2 phase CSK	CSK24✻		□42	—	0E	0E	1C	5I	—	—	—	—
			CSK26✻		□56.4	—	—	—	0D	5F	—	—	—	—

Note1) The symbols in the table each indicate the last two digits of an administration number.
Note2) For motor coupling, contact THK.
Note3) Model KR15 has a limit in input torque. The permissible input torque for model KR1501 is 51 N-mm at a maximum and that for model KR1502 is 103 N-mm at a maximum. If the maximum torque of the motor mounted to model KR15 exceeds the permissible input torque, take a safety measure such as setting a torque limit.

[Motor Bracket Dimensional Table for Model KR]

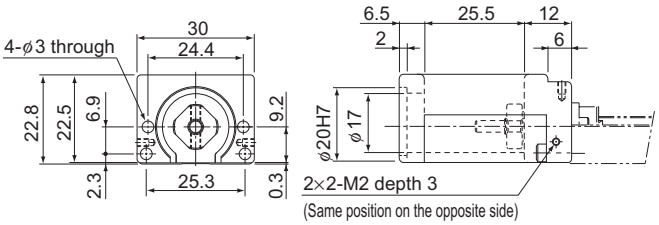
● **For Model KR15**

F□□-□	···Intermediate flange model number
□□	···Motor Bracket model number

Note) "-" for intermediate flange model number indicates that only housing A is attached.

■Housing A

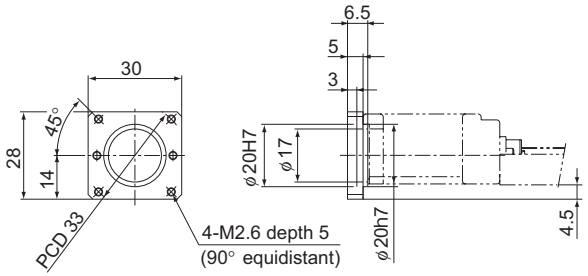
—
00



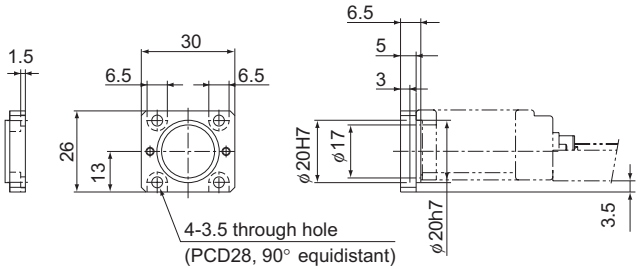
■Intermediate Flange

Each intermediate flange is made of steel and provided with THK AP-C treatment, a surface treatment for corrosion resistance.

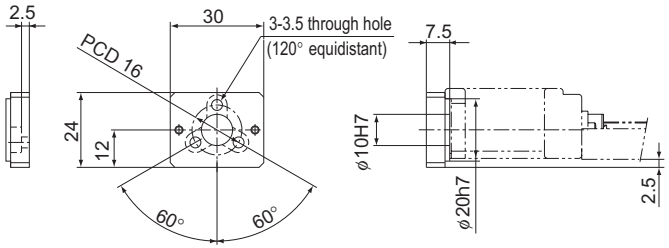
F15-A
0A



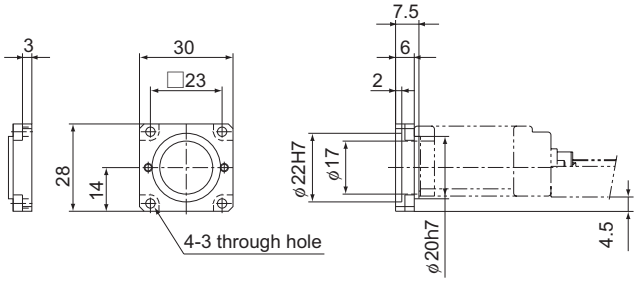
F15-B
0B



F15-C
0C



F15-D
0D



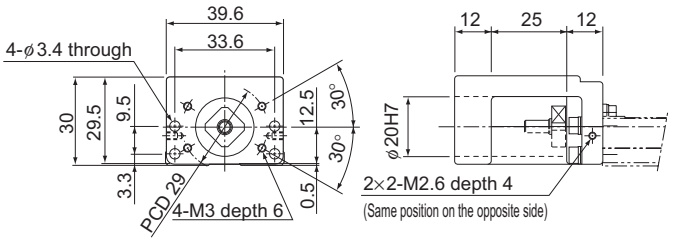
● For Model KR20

F□□-□	···Intermediate flange model number
□□	···Motor Bracket model number

Note) "-" for intermediate flange model number indicates that only housing A is attached.

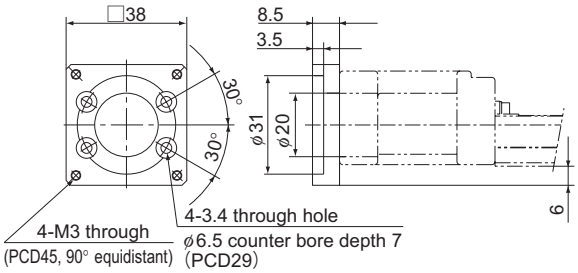
■Housing A

—
00

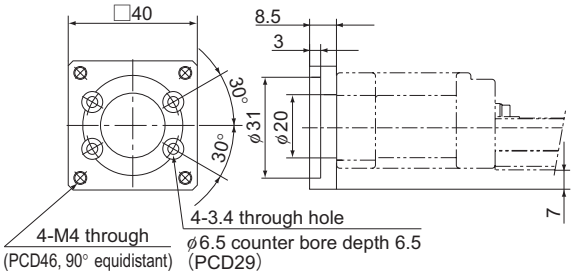


■Intermediate Flange

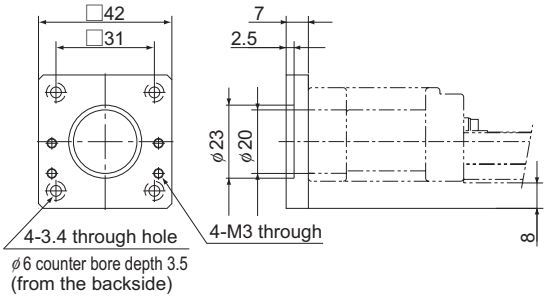
F20-A
0A



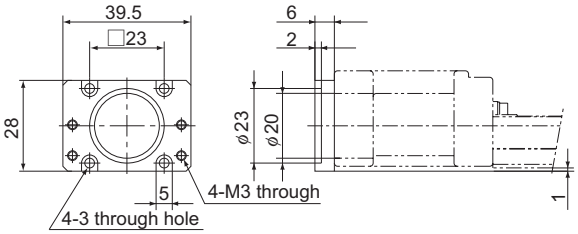
F20-B
0B



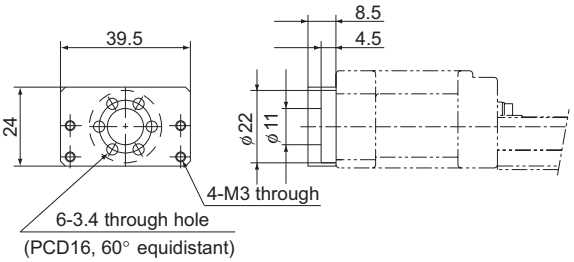
F20-E
0E



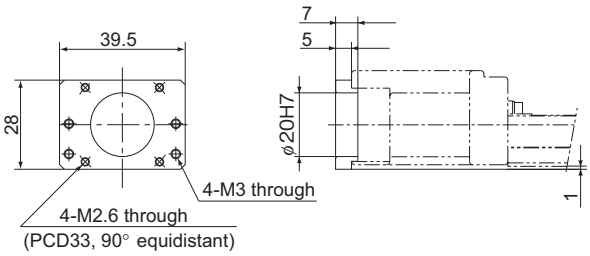
F20-F
0F



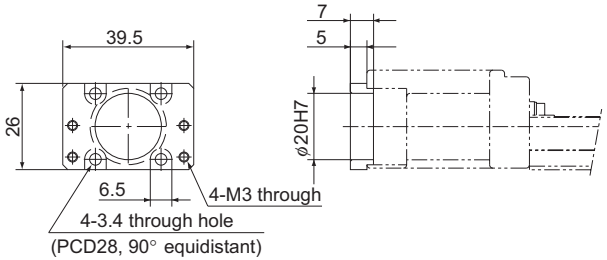
F20-G
0G



F20-M
3M



F20-N
3N


39.5
26
6.5
4-M3 through
4-3.4 through hole
(PCD28, 90° equidistant)
7
5
ø20H7

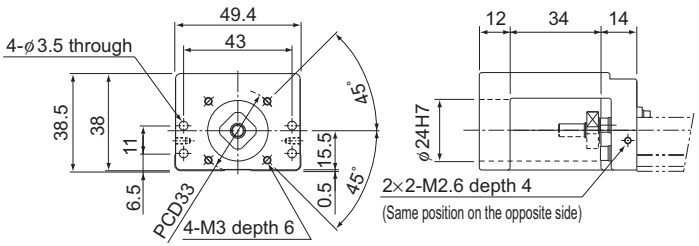
● For Model KR26

F□□-□	···Intermediate flange model number
□□	···Motor Bracket model number

Note) "-" for intermediate flange model number indicates that only housing A is attached.

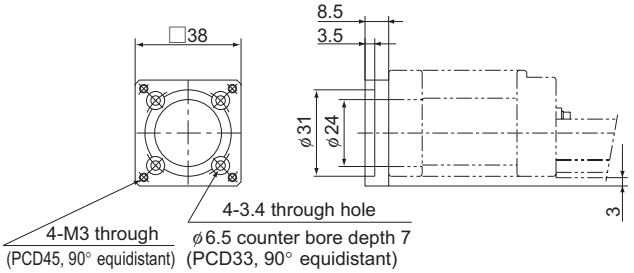
■Housing A

—
00

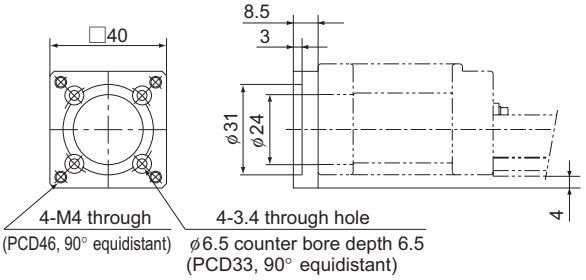


■Intermediate Flange

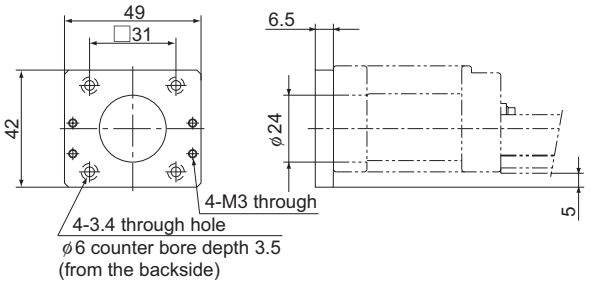
F26-A
0A



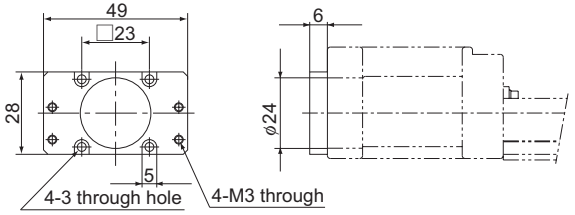
F26-B
0B



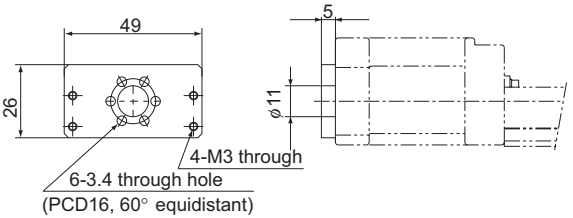
F26-E
0E



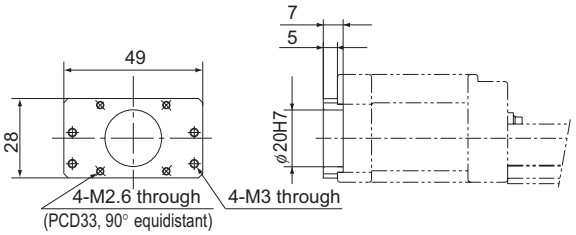
F26-F
0F



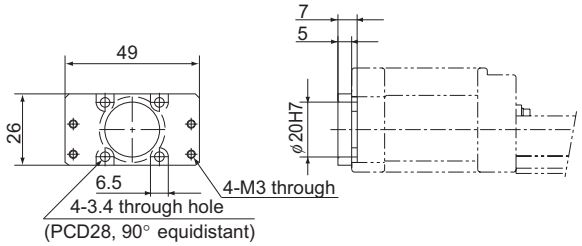
F26-G
0G



F26-M
0M



F26-N
0N


49
26
6.5
4-3.4 through hole
(PCD28, 90° equidistant)
4-M3 through
7
5
ø20H7

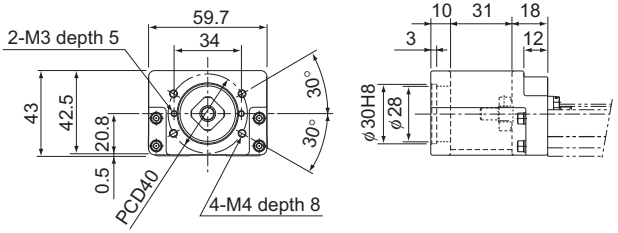
● For Model KR30H

F□□-□	···Intermediate flange model number
□□	···Motor Bracket model number

Note) "-" for intermediate flange model number indicates that only housing A is attached.

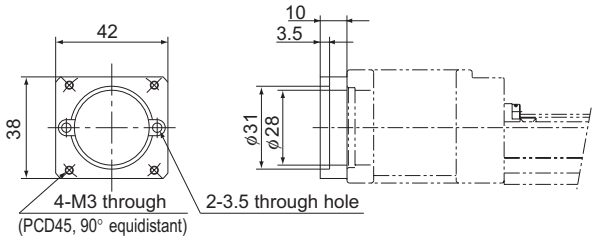
■Housing A

—
00

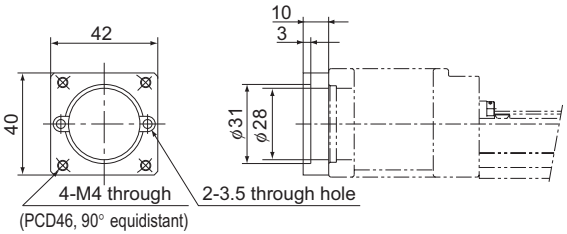


■Intermediate Flange

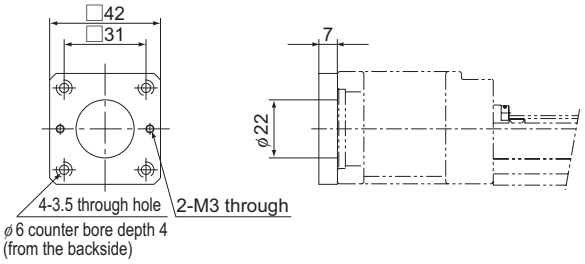
F30-A
0A



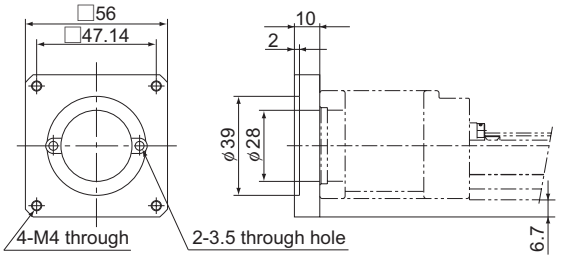
F30-B
0B



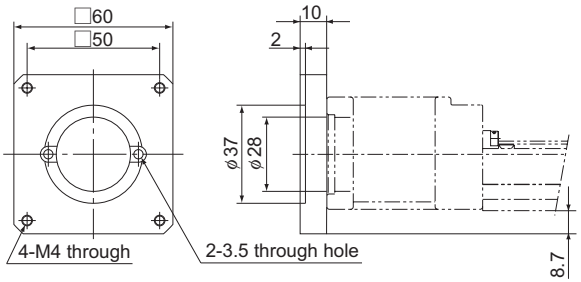
F30-C
1C



F30-D
0D



F30-E
0E



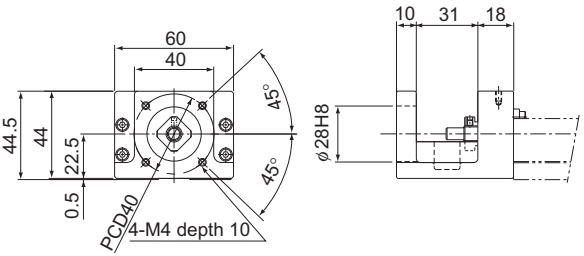
● For Model KR33

F□□-□	⋯Intermediate flange model number
□□	⋯Motor Bracket model number

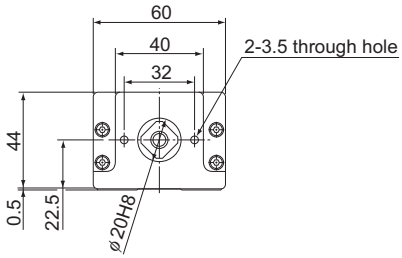
Note) "-" for intermediate flange model number indicates that only housing A is attached.

■Housing A

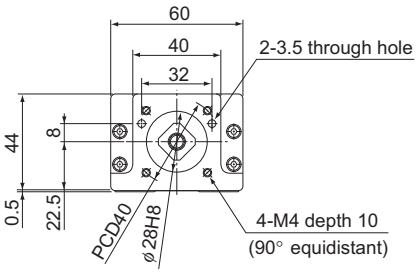
—
00



—
10

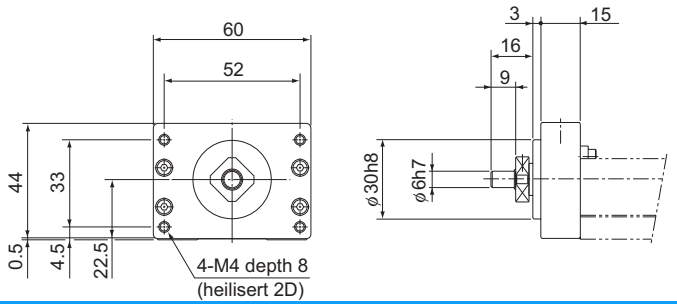


—
50



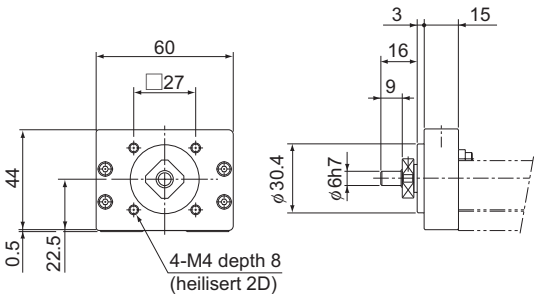
■Housing A for a Separate Motor

—
30



■Turnaround Housing A

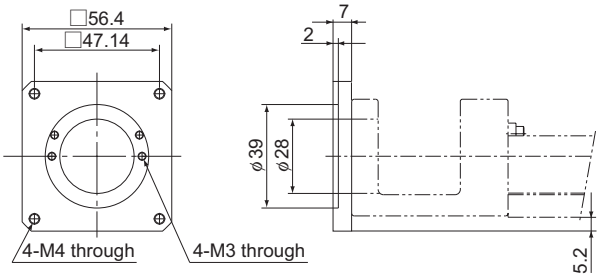
—
40



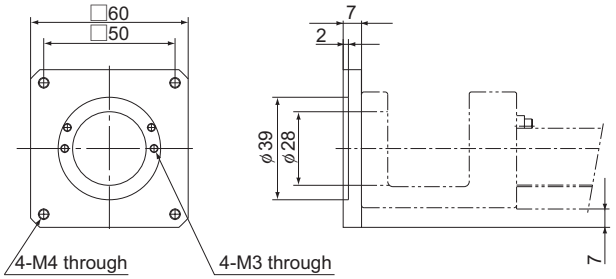
■Intermediate Flange

Each intermediate flange is made of steel and provided with THK AP-C treatment, a surface treatment for corrosion resistance.

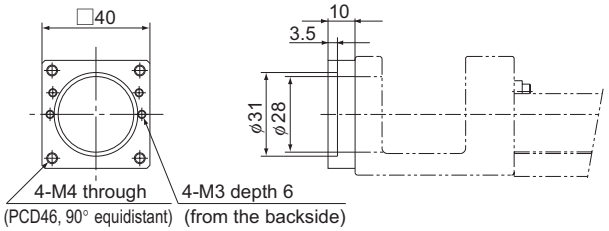
F33-F
5F



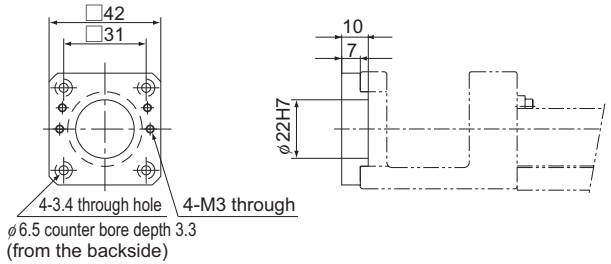
F33-G
5G



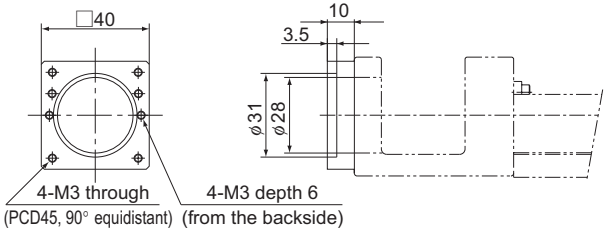
F33-H
5H



F33-I
5I



F33-K
5K



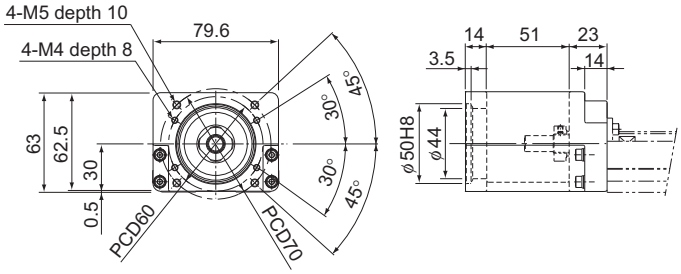
● For Model KR45H

F□□-□	⋯Intermediate flange model number
□□	⋯Motor Bracket model number

Note) "-" for intermediate flange model number indicates that only housing A is attached.

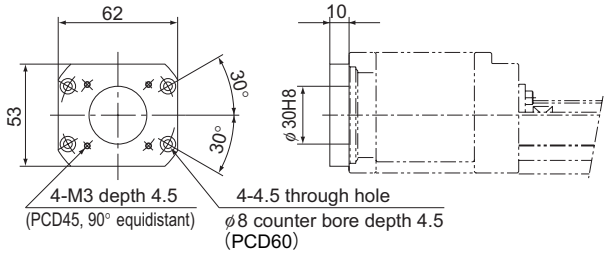
■Housing A

—
00

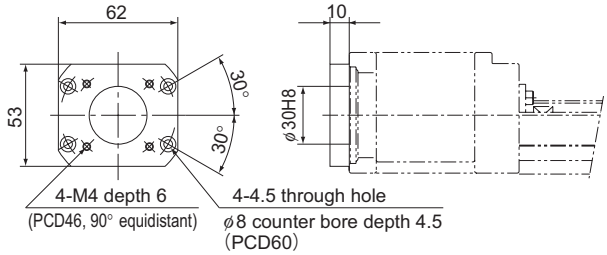


■Intermediate Flange

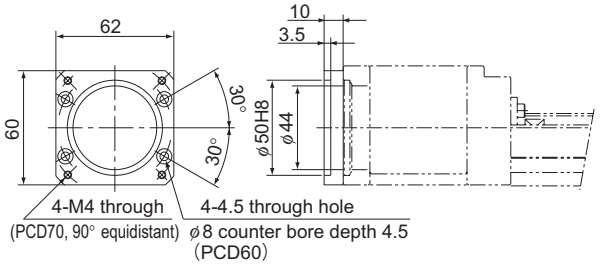
F45-A
0A



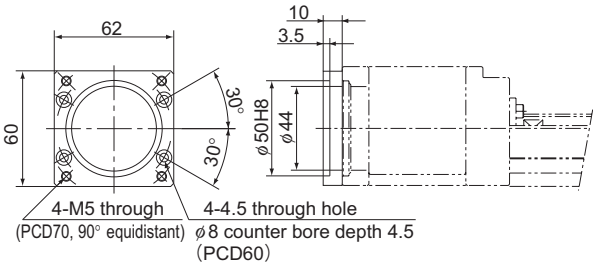
F45-B
0B



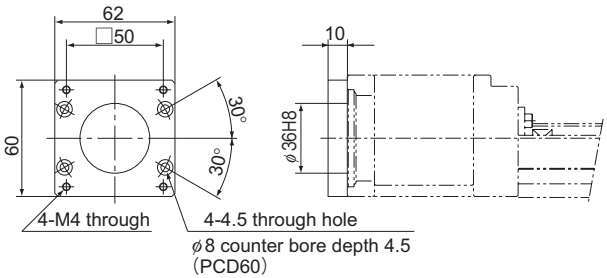
F45-C
0C



F45-D
0D



F45-F
0F



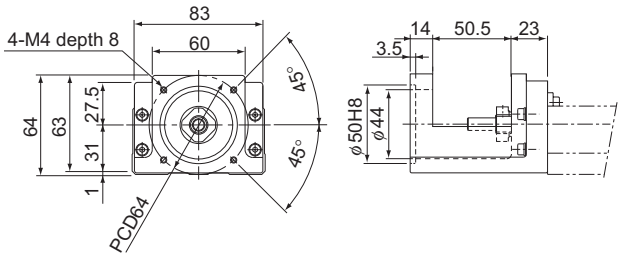
● For Model KR46

F□□-□	⋯Intermediate flange model number
□□	⋯Motor Bracket model number

Note) "-" for intermediate flange model number indicates that only housing A is attached.

■Housing A

—
00



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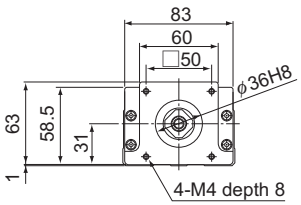
10



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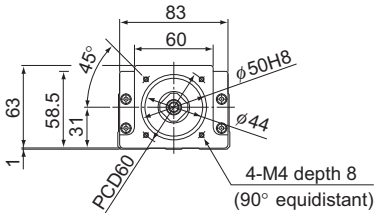
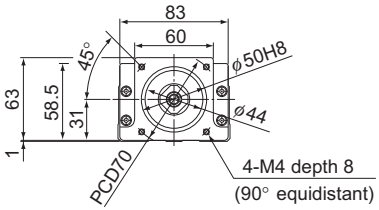
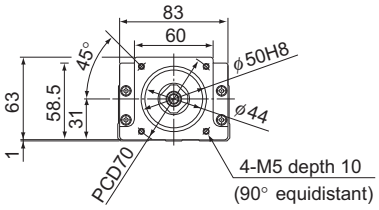
20



—
30

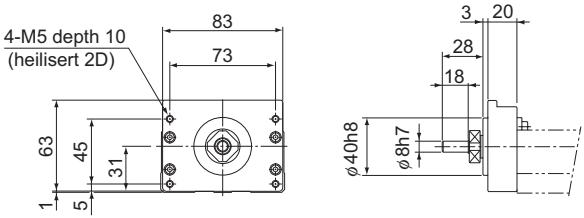


—
40



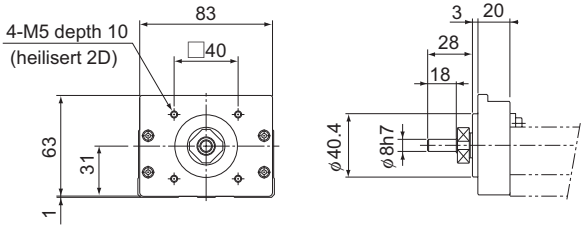
■Housing A for a Separate Motor

—
50



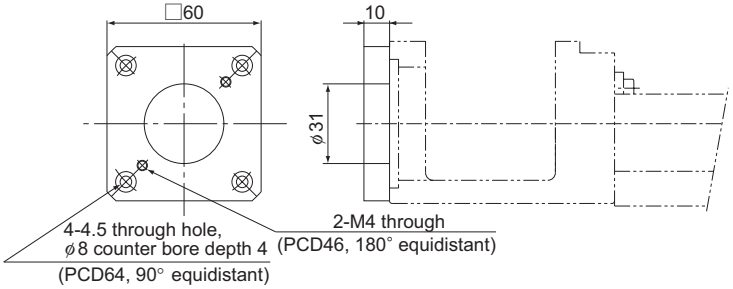
■Turnaround Housing A

—
60

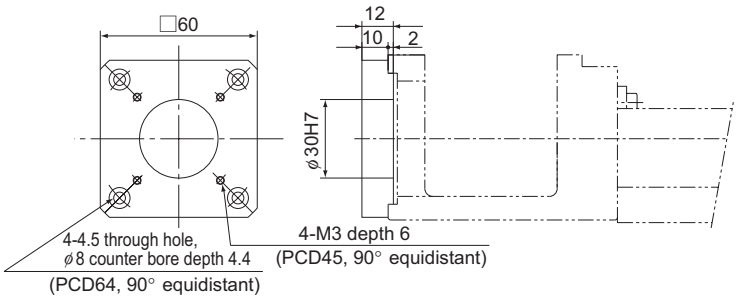


■Intermediate Flange

F46-F
0F



F46-G
0G



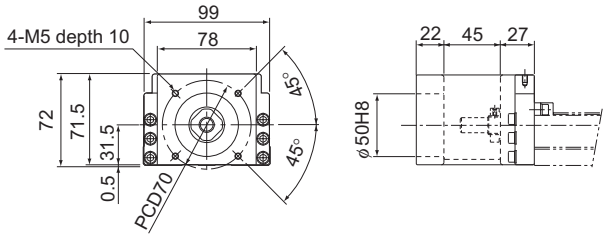
● For Model KR55

F□□-□	···Intermediate flange model number
□□	···Motor Bracket model number

Note) "-" for intermediate flange model number indicates that only housing A is attached.

■Housing A

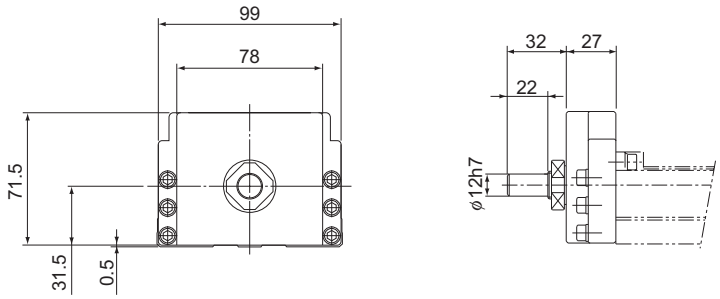
—
00



■Turnaround Housing A

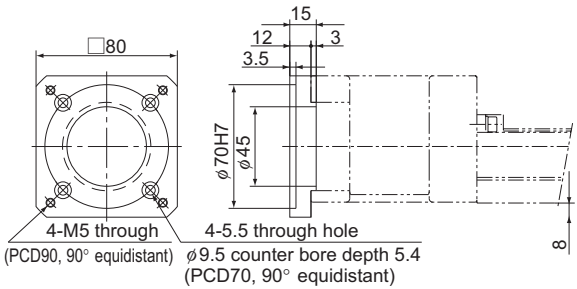
Note) Specify mounting holes when ordering.

—
10

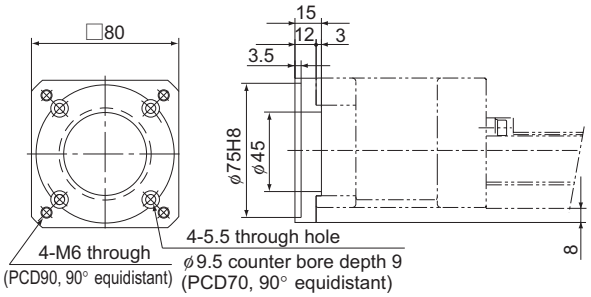


■Intermediate Flange

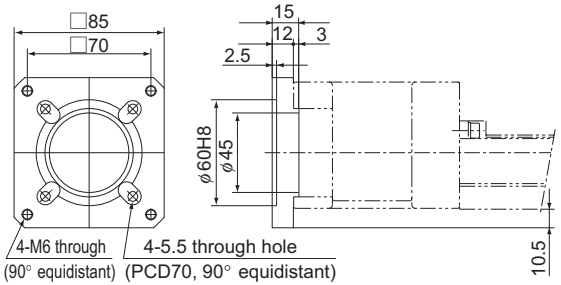
F55-A
0A



F55-B
0B



F55-G
0G



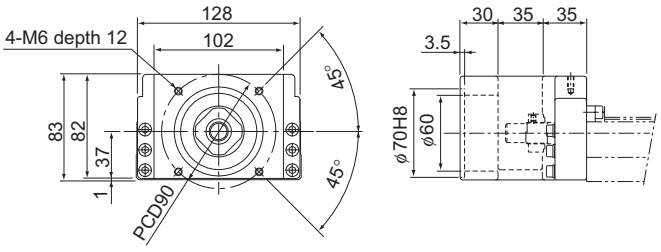
● For Model KR65

F□□-□	···Intermediate flange model number
□□	···Motor Bracket model number

Note) "-" for intermediate flange model number indicates that only housing A is attached.

■Housing A

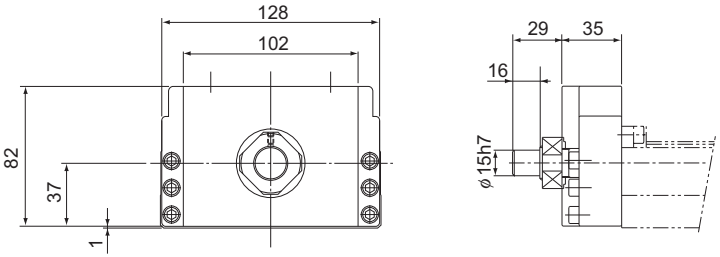
—
00



■Turnaround Housing A

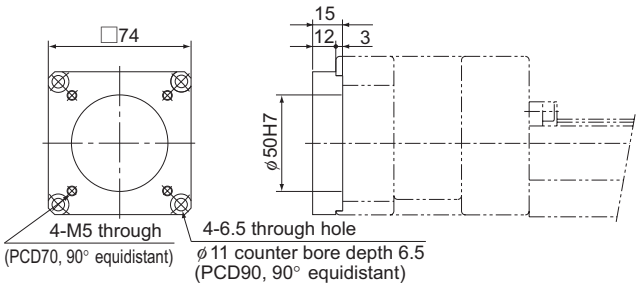
Note) Specify mounting holes when ordering.

—
10

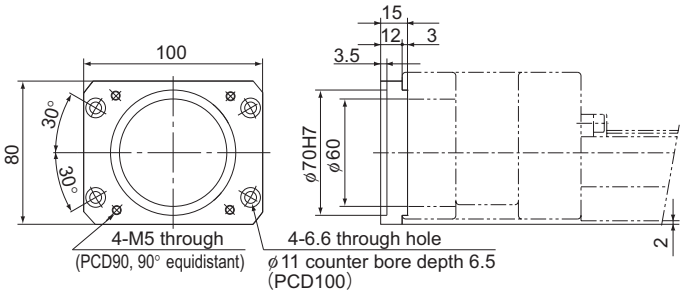


■Intermediate Flange

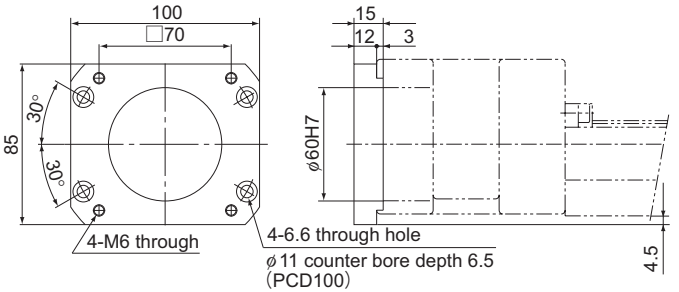
F65-A
0A



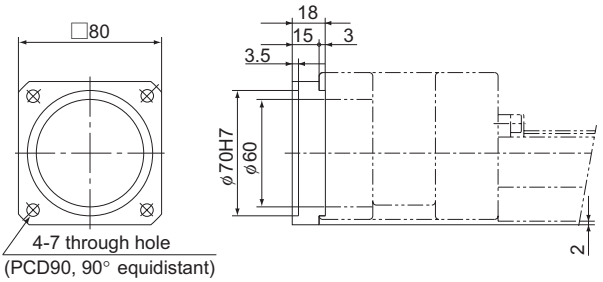
F65-B
2B



F65-F
2F

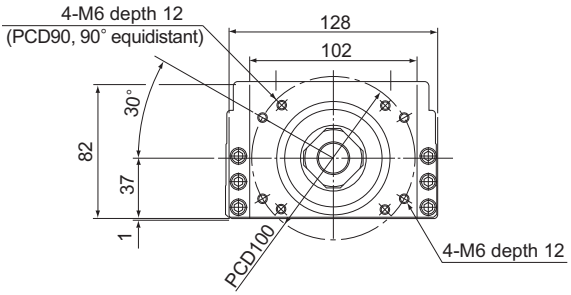


F65-G
0G



■Housing A

—
20



[Motors Used in Model SKR and Corresponding Motor Brackets]

Several types of intermediate flanges for mounting motors are available for model SKR. Each intermediate flange model has an administration number according to the motor to be used and to the actuator model number. Specify the corresponding administration number when placing an order.

Table3 Table of Motors Used and Corresponding Motor Brackets

Motor type					Rated capacity	Flange angle	SKR20	SKR26	SKR33	SKR46
AC servomotor	Yaskawa Electric	Σ-mini		SGMM-A1	10W	□25	3N	0N	—	—
				SGMM-A2	20W		3N	0N	—	—
				SGMM-A3	30W		3N	0N	—	—
		Σ-V		SGMJV-A5	50W	□40	0B	0B	0H	0F
				SGMAV-A5			0B	0B	0H	0F
				SGMJV-01	100W		—	—	0H	0F
				SGMAV-01			—	—	0H	0F
				SGMAV-C2	150W		—	—	—	0F
				SGMJV-02	200W	□60	—	—	—	04
				SGMAV-02			—	—	—	04
				SGMJV-04	400W		—	—	—	04
				SGMAV-04			—	—	—	04
		Σ-Ⅲ		SGMAS-A5	50W	□40	0B	0B	0H	0F
				SGMAS-01	100W		—	—	0H	0F
				SGMPS-01		□60	—	—	—	04
				SGMAS-02	200W		—	—	—	04
				SGMAS-04	400W		—	—	—	04
		Σ-Ⅱ		SGMAH-A3	30W	□40	0B	0B	0H	0F
				SGMAH-A5	50W		0B	0B	0H	0F
				SGMAH-01	100W		—	—	0H	0F
				SGMPH-01		□60	—	—	—	04
				SGMAH-02	200W		—	—	—	04
				SGMAH-04	400W		—	—	—	04
	Mitsubishi Electric	MELSERVO	J2-Jr	HC-AQ013	10W	□28	3M	0M	—	—
				HC-AQ023	20W		3M	0M	—	—
				HC-AQ033	30W		3M	0M	—	—
			J3	HF-MP053	50W	□40	0B	0B	0H	0F
				HF-KP053			0B	0B	0H	0F
				HF-MP13	100W		—	—	0H	0F
				HF-KP13			—	—	0H	0F
				HF-MP23	200W	□60	—	—	—	04
				HF-KP23			—	—	—	04
				HF-MP43	400W		—	—	—	04
				HF-KP43			—	—	—	04
			J2 Super	HC-MFS053	50W	□40	0B	0B	0H	0F
				HC-KFS053			0B	0B	0H	0F
				HC-MFS13	100W		—	—	0H	0F
				HC-KFS13			—	—	0H	0F
				HC-MFS23	200W	□60	—	—	—	04
				HC-KFS23			—	—	—	04
				HC-MFS43	400W		—	—	—	04
				HC-KFS43			—	—	—	04

Motor type					Rated capacity	Flange angle	SKR20	SKR26	SKR33	SKR46
AC servomotor	Panasonic Corp.	MINAS	A4	MSMD5A	50W	□38	0A	0A	0K	0G
				MSMD01	100W		—	—	0K	0G
				MQMA01		□60	—	—	—	03
				MSMD02	200W		—	—	—	03
				MAMA02			—	—	—	03
				MSMD04	400W		—	—	—	03
				MAMA04			—	—	—	03
			AⅢ	MSMA3A	30W	□38	0A	0A	0K	0G
				MSMA5A	50W		0A	0A	0K	0G
				MSMA01	100W		—	—	0K	0G
				MSMA02	200W	□60	—	—	—	03
				MAMA02			—	—	—	—
				MSMA04	400W		—	—	—	03
	SANYO Electric	SANMOTION Q1		Q1AA04003D	30W	□40	0B	0B	0H	0F
				Q1AA04005D	50W		0B	0B	0H	0F
				Q1AA04010D	100W		—	—	0H	0F
				Q1AA06020D	200W	□60	—	—	—	04
				Q1AA06040D	400W		—	—	—	04
	Omron	OMNUC W		R88M-W03030	30W	□40	0B	0B	0H	0F
				R88M-W05030	50W		0B	0B	0H	0F
				R88M-W10030	100W		—	—	0H	0F
				R88M-WP10030		□60	—	—	—	04
				R88M-W20030	200W		—	—	—	04
				R88M-W40030	400W		—	—	—	04
		SMARTSTEP A		R7M-A03030	30W	□40	0B	0B	0H	0F
				R7M-A05030	50W		0B	0B	0H	0F
				R7M-A10030	100W		—	—	0H	0F
				R7D-AP10030		□60	—	—	—	04
				R7M-A20030	200W		—	—	—	04
				R7M-A40030	400W		—	—	—	04
	Fanuc	βis series		β0.2/5000is	50W	□40	0B	0B	0H	0F
				β0.3/5000is	100W		—	—	0H	0F
				β0.4/5000is	125W	□60	—	—	—	04
				β0.5/5000is	200W		—	—	—	04
				β1/5000is	400W		—	—	—	04
	Keyence Corporation	MV		MV-M05	50W	□40	0B	0B	0H	0F
				MV-M10	100W		—	—	0H	0F
				MV-M20	200W	□60	—	—	—	04
				MV-M40	400W		—	—	—	04
Stepping motor	Oriental Motor	αStep		ASC 3∗		□28	0F	0F	—	—
				AS 46, ASC46, AR46		□42	0E	0E	0I	—
				AS 6∗, ASC66, AR6∗		□60	—	—	0G	01
		5 phase	CSKⅡ	CSK52∗		□28	0F	0F	—	—
				CSK54∗		□42	0E	0E	0I	—
				CSK56∗		□60	—	—	0G	01
			RK	RK54∗		□42	0E	0E	0I	—
				RK56∗		□60	—	—	0G	01
		2 phase	UMK	UMK24∗		□42	0E	0E	0I	—
				UMK26∗		□56.4	—	—	0F	—
			CSK	CSK24∗		□42	0E	0E	0I	—
				CSK26∗		□56.4	—	—	0F	—

Note1) The symbols in the table each indicate the last two digits of an administration number.
Note2) For motor coupling, contact THK.

[Motor bracket dimensional table for model SKR]

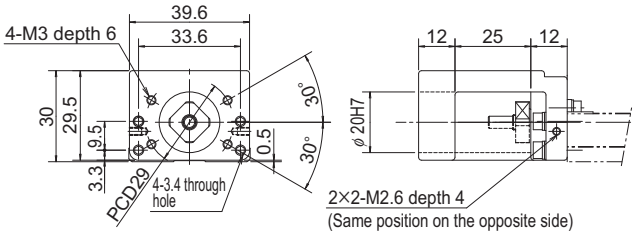
● For Model SKR20

F□□-□	···Intermediate flange model number
□□	···Motor Bracket model number

Note) "-" for intermediate flange model number indicates that only housing A is attached.

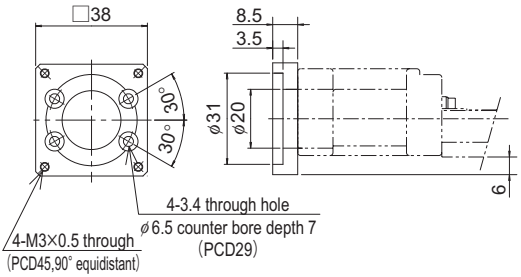
■Housing A

—
00

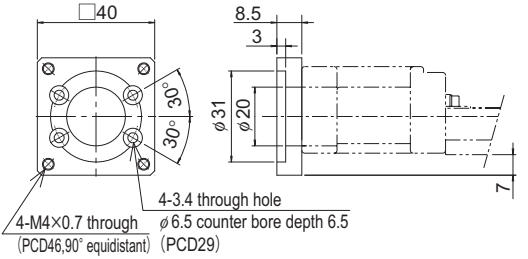


■Intermediate Flange

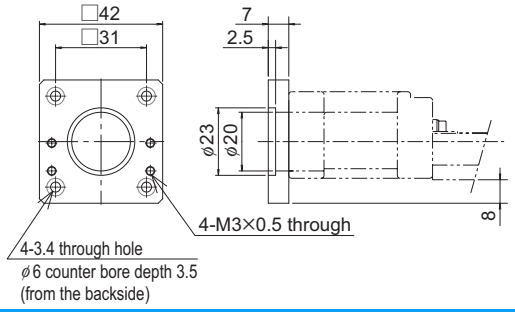
—
0A



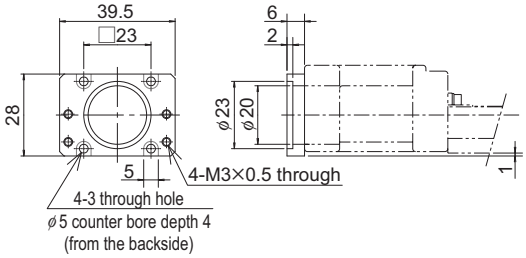
—
0B



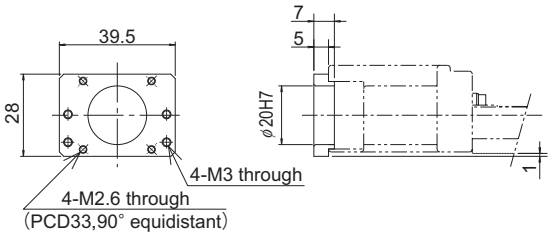
—
0E


□42
□31
7
2.5
ø23
ø20
8
4-M3×0.5 through
4-3.4 through hole
ø6 counter bore depth 3.5
(from the backside)

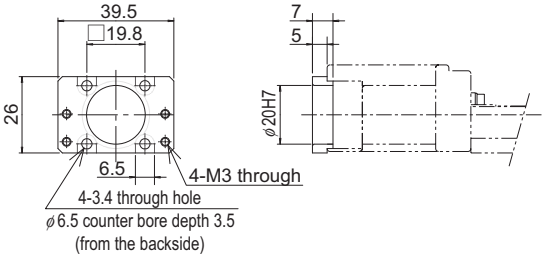
—
0F


39.5
□23
6
2
28
ø23
ø20
5
1
4-M3×0.5 through
4-3 through hole
ø5 counter bore depth 4
(from the backside)

—
3M


39.5
7
5
28
ø20H7
1
4-M3 through
4-M2.6 through
(PCD33,90° equidistant)

—
3N


39.5
□19.8
7
5
26
ø20H7
6.5
4-M3 through
4-3.4 through hole
ø6.5 counter bore depth 3.5
(from the backside)

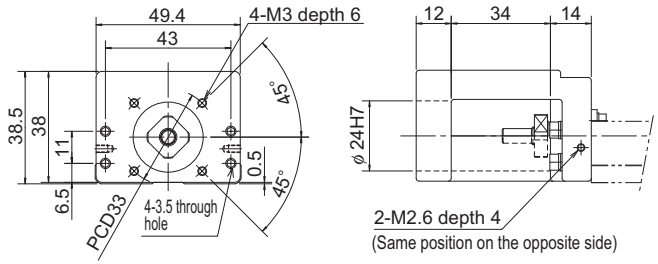
● For Model SKR26

F□□-□	⋯Intermediate flange model number
□□	⋯Motor Bracket model number

Note) "-" for intermediate flange model number indicates that only housing A is attached.

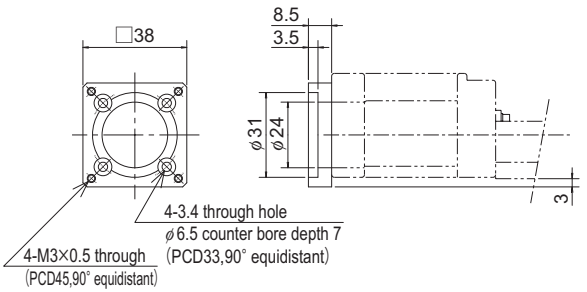
■Housing A

—
00



■Intermediate Flange

—
0A



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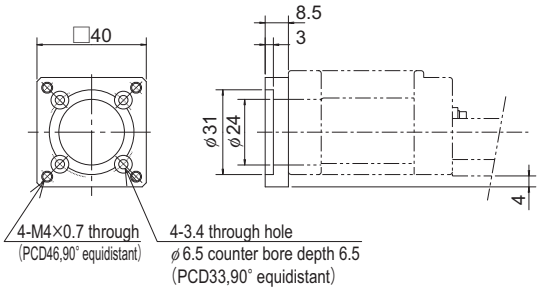
0B



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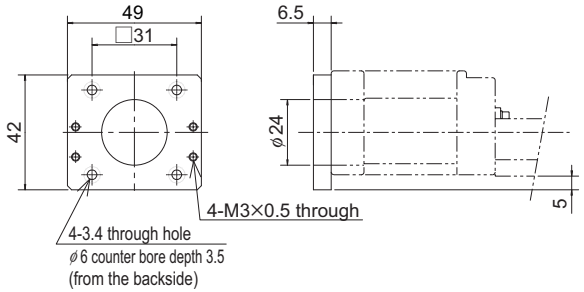
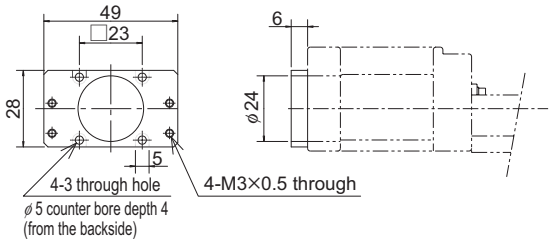
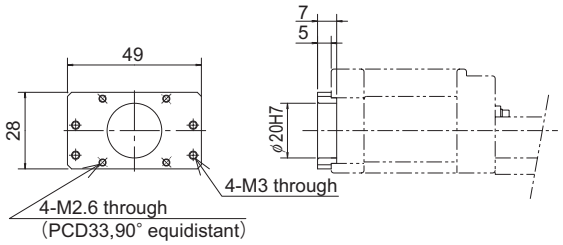
0E


49
□31
42
6.5
ø24
5
4-M3×0.5 through
4-3.4 through hole
ø6 counter bore depth 3.5
(from the backside)

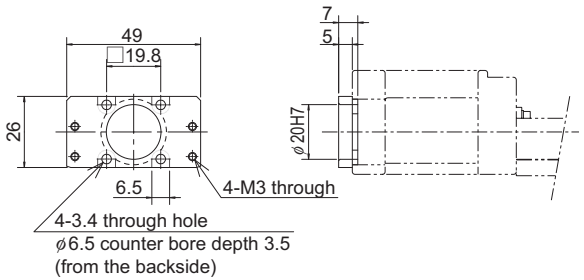
—
0F


49
□23
28
6
ø24
5
4-3 through hole
ø5 counter bore depth 4
(from the backside)
4-M3×0.5 through

—
0M


49
28
7
5
ø20H7
4-M3 through
4-M2.6 through
(PCD33,90° equidistant)

—
0N


49
□19.8
26
7
5
ø20H7
6.5
4-M3 through
4-3.4 through hole
ø6.5 counter bore depth 3.5
(from the backside)

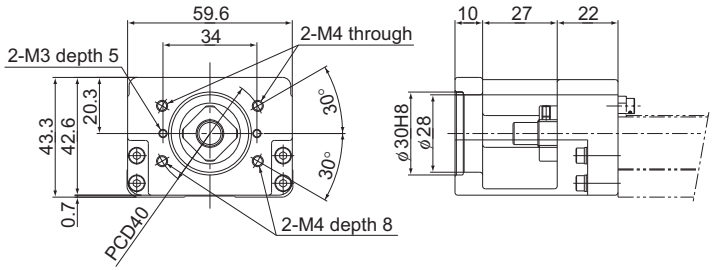
● For Model SKR33

F□□-□	···Intermediate flange model number
□□	···Motor Bracket model number

Note) "-" for intermediate flange model number indicates that only housing A is attached.

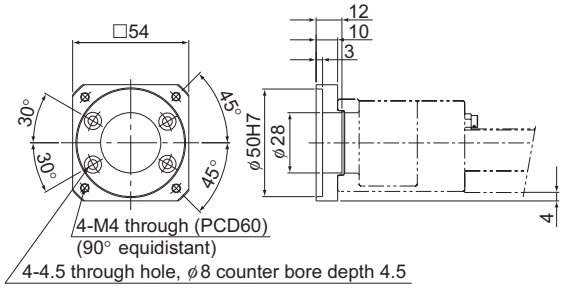
■Housing A

—
00

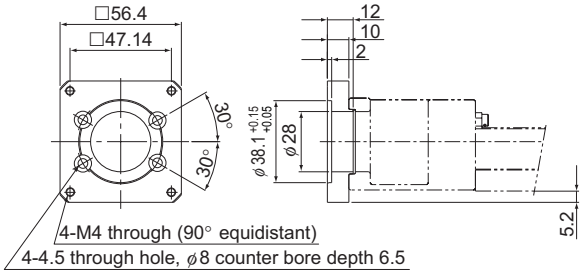


■Intermediate Flange

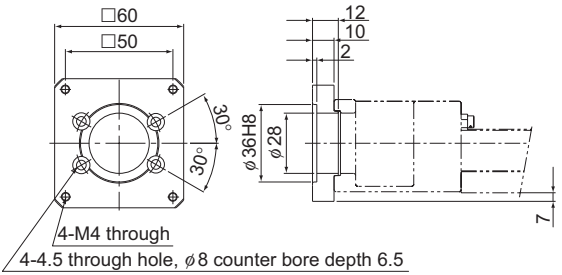
—
0B



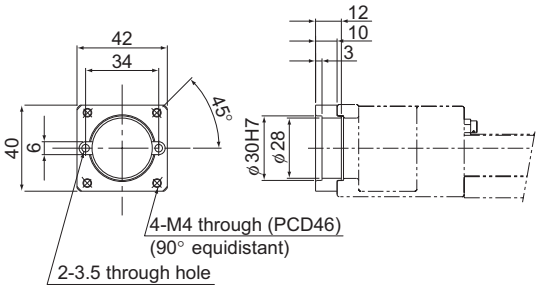
—
0F



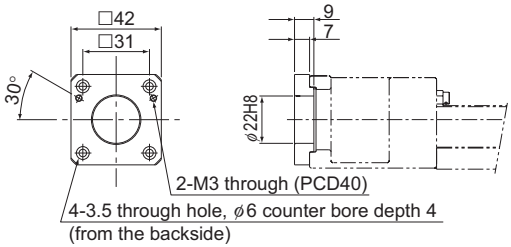
—
0G


□60
□50
30°
30°
12
10
2
ø36H8
ø28
7
4-M4 through
4-4.5 through hole, ø8 counter bore depth 6.5

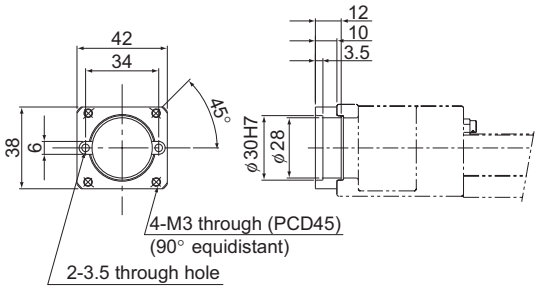
—
0H


42
34
45°
40
6
12
10
3
ø30H7
ø28
4-M4 through (PCD46)
(90° equidistant)
2-3.5 through hole

—
0I


□42
□31
30°
9
7
ø22H8
2-M3 through (PCD40)
4-3.5 through hole, ø6 counter bore depth 4
(from the backside)

—
0K


42
34
45°
38
6
12
10
3.5
ø30H7
ø28
4-M3 through (PCD45)
(90° equidistant)
2-3.5 through hole

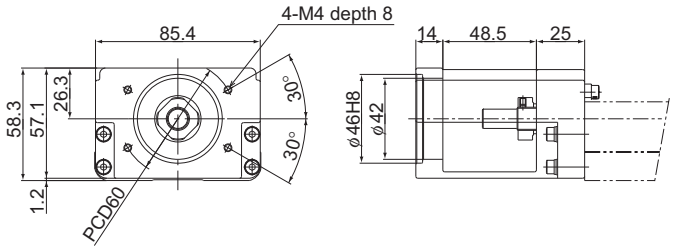
● For Model SKR46

F□□-□	···Intermediate flange model number
□□	···Motor Bracket model number

Note) "-" for intermediate flange model number indicates that only housing A is attached.

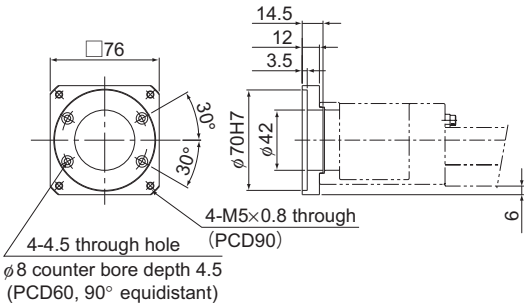
■Housing A

—
00



■Intermediate Flange

—
0A



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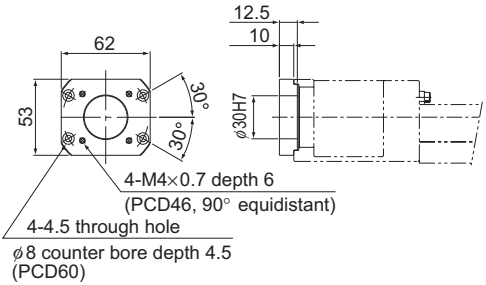
0F



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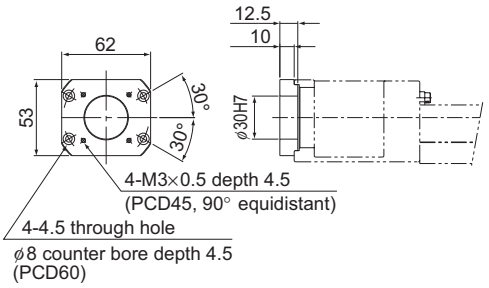
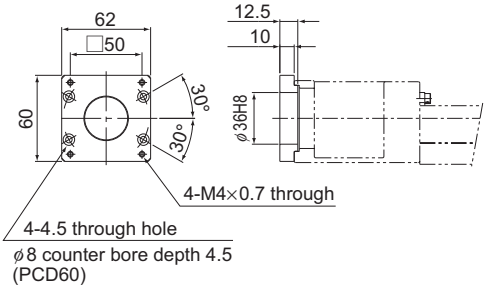
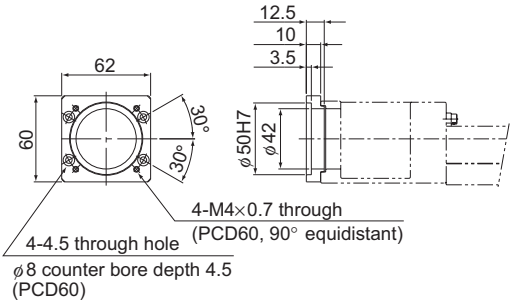
0G


62
53
30°
30°
12.5
10
ø30H7
4-M3×0.5 depth 4.5
(PCD45, 90° equidistant)
4-4.5 through hole
ø8 counter bore depth 4.5
(PCD60)

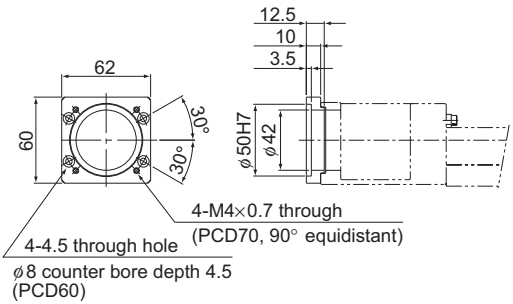
—
01


62
□50
60
30°
30°
12.5
10
ø36H8
4-M4×0.7 through
4-4.5 through hole
ø8 counter bore depth 4.5
(PCD60)

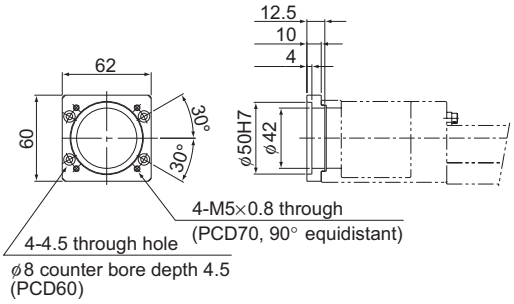
—
02


62
60
30°
30°
12.5
10
3.5
ø50H7
ø42
4-M4×0.7 through
(PCD60, 90° equidistant)
4-4.5 through hole
ø8 counter bore depth 4.5
(PCD60)

—
03


62
60
30°
30°
12.5
10
3.5
ø50H7
ø42
4-M4×0.7 through
(PCD70, 90° equidistant)
4-4.5 through hole
ø8 counter bore depth 4.5
(PCD60)

—
04


12.5
10
4
62
60
30°
30°
ø50H7
ø42
4-M5×0.8 through
(PCD70, 90° equidistant)
4-4.5 through hole
ø8 counter bore depth 4.5
(PCD60)

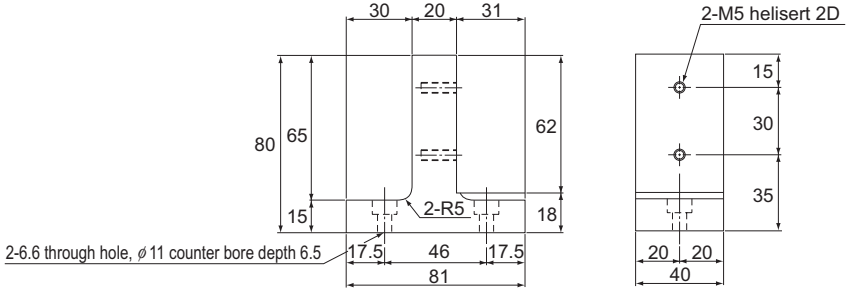
Motor Wrap Type

Models KR and SKR are available in "Motor Wrap" types that allow the motor to be turned around in order to minimize the dimension in the longitudinal direction. (Pulley ratio: 1:1)
Contact THK for details.

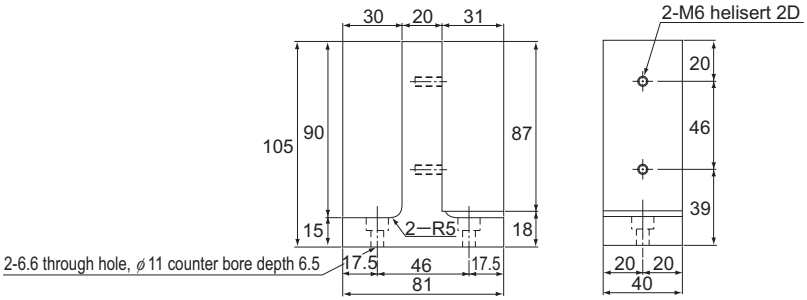
XY Bracket (for Reference)

Brackets are only available for models KR33 and 46. The brackets use aluminum to reduce weight and keep the inertia to a minimum.

[KR-008XS (for Model KR33, Single-Shaft Type)]

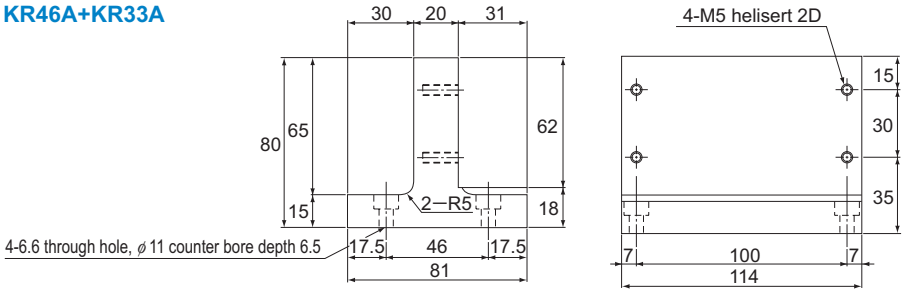


[KR-008XL (for Model KR46, Single-Shaft Type)]



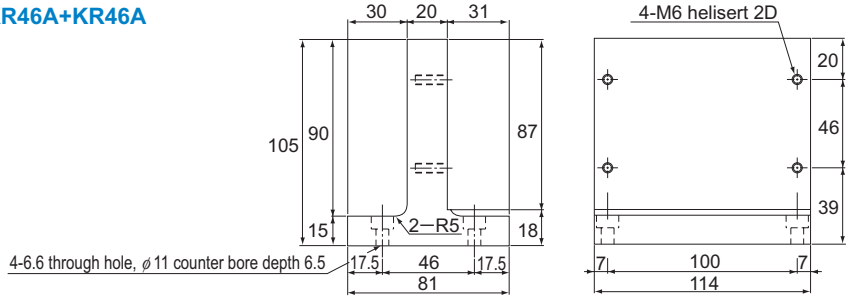
[KR-003XS (for Model KR33, Outer Rail Fixed)]

KR46A+KR33A



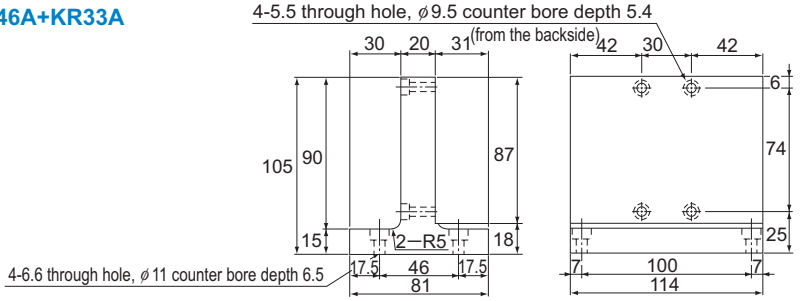
[KR-003XL (for Model KR46, Outer Rail Fixed)]

KR46A+KR46A

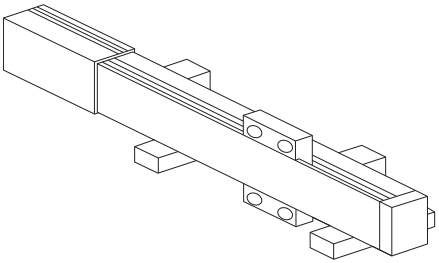


[KR-002XS (for Model KR33, Slider Fixed)]

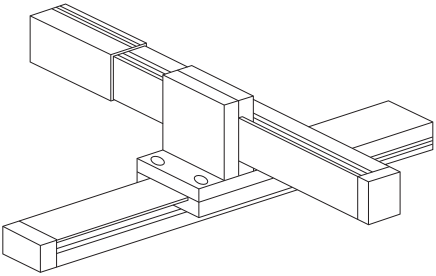
KR46A+KR33A



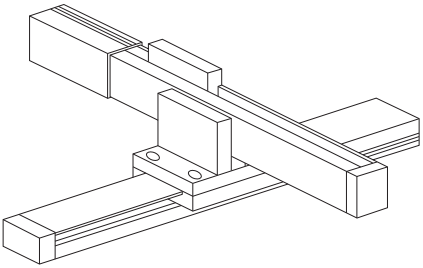
[Example of Combinations]



For single shaft



Slider fixed



Rail fixed