KR

LM Guide Actuator Model KR

LM Guide + Ball Screw = Integral-structure Actuator

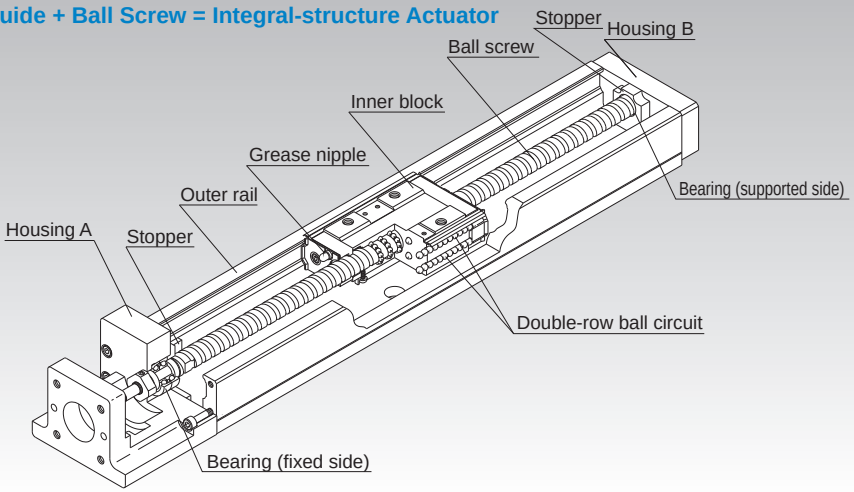


Fig.1 Structure of LM Guide Actuator Model KR

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, this model allows significant reduction of man-hours required for design and assembly, thus contributing to total cost cutting.

[4-way Equal Load]

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

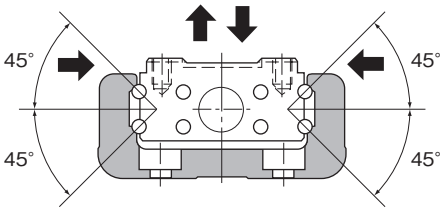


Fig.2 Load Capacity and Contact Angle of Model KR

[High Rigidity]

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

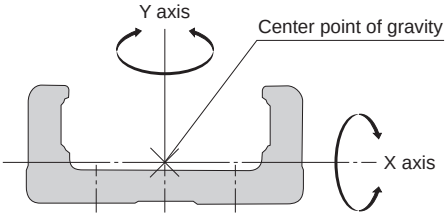


Fig.3 Cross Section of the Outer Rail

Table1 Cross-sectional Characteristics of the Outer rail Rail

Model No.	I_x[mm^4]	I_y[mm^4]	Mass[kg/m]
KR15	9.08×10^2	1.42×10^4	1.04
KR20	6.1×10^3	6.2×10^4	2.6
KR26	1.7×10^4	1.5×10^5	3.9
KR30H	2.7×10^4	2.8×10^5	5.0
KR33	6.2×10^4	3.8×10^5	6.6
KR45H	8.4×10^4	8.9×10^5	9.0
KR46	2.4×10^5	1.5×10^6	12.6
KR55	2.2×10^5	2.3×10^6	15.0
KR65	4.6×10^5	5.9×10^6	23.1

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.

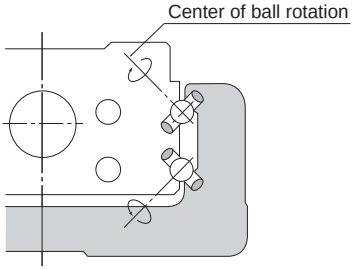


Fig.4 Contact Structure of Model KR

[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.

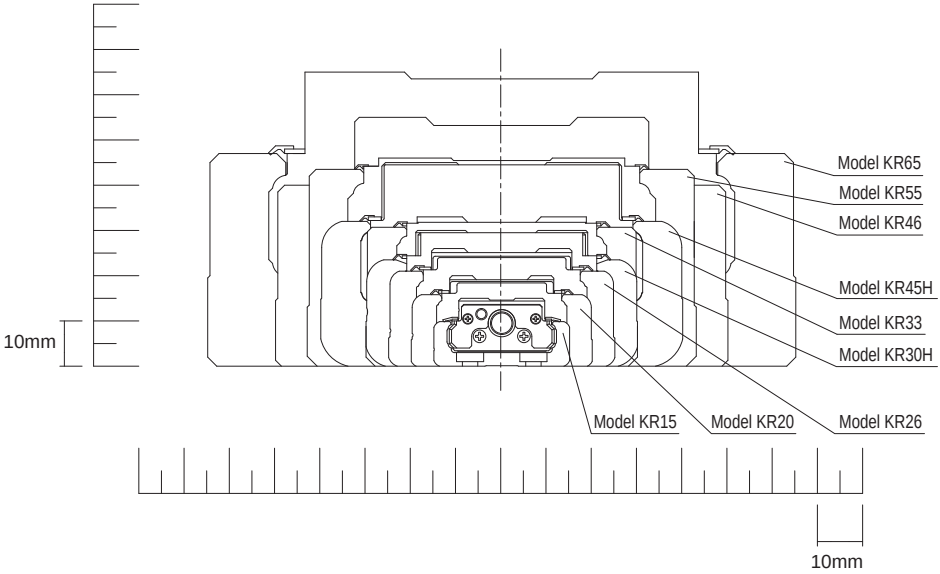


Fig.5 Cross Sectional Drawing

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

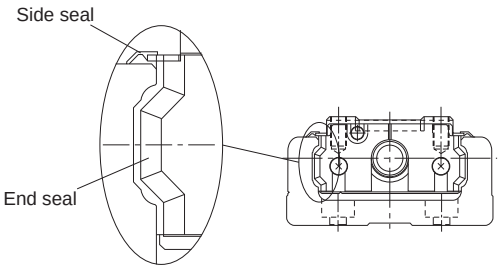


Table2 shows the rolling resistance and seal resistance per inner block (guide section).

Table2 Maximum Resistance Value Unit: N

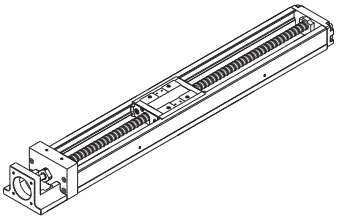
Model No.	Rolling resistance value	Seal resistance value	Total
KR15	0.2	0.7	0.9
KR20	0.5	0.7	1.2
KR26	0.6	0.8	1.4
KR30H	1.5	2.0	3.5
KR33	1.5	1.9	3.4
KR45H	2.5	2.6	5.1
KR46	2.5	2.5	5
KR55	5.0	3.8	8.8
KR65	6.0	4.1	10.1

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

Types and Features

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

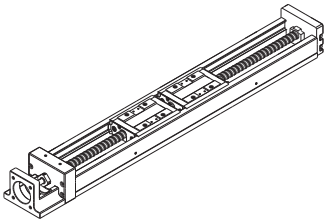
Representative model of KR.



Model KR-A

Model KR-B (with Two Long Type Blocks)

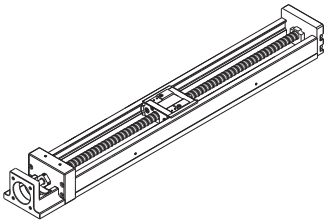
Equipped with two units of the inner block of model KR-A, this model achieves higher rigidity and higher load carrying capacity.



Model KR-B

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

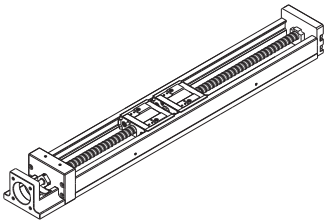
This model has a shorter overall length of the inner block and a longer stroke than model KR-A.
(Supported models: model KR30H, 33, 45H, 46)



Model KR-C

Model KR-D (with Two Short Type Blocks)

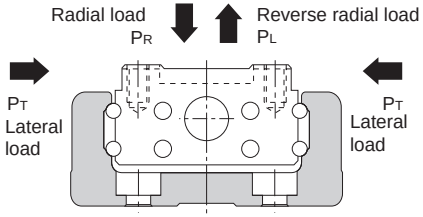
Equipped with two units of the inner block of model KR-C, this design allows a span between blocks that suits the equipment, thus to achieve high rigidity.
(Supported models: model KR30H, 33, 45H, 46)



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 four directions (radial, reverse radial and lateral directions). Its basic load ratings are equal in all four directions (radial, reverse radial and lateral directions), and their values are indicated in Table3 on **A2-80** and **A2-81**.

● **Ball Screw Unit**

Since the inner block is incorporated with a ball screw nut, model KR is capable of receiving an axial load. The basic load rating value is indicated in Table3 on **A2-80** and **A2-81**.

● **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 **A2-80** and **A2-81**.

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

Table3 Load Rating of Model KR

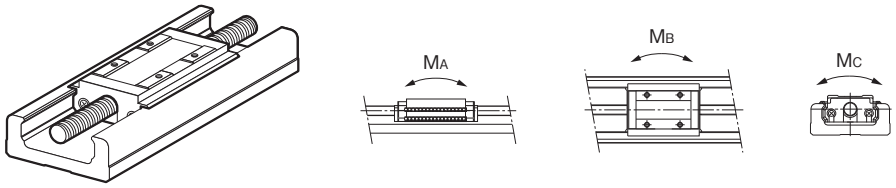
Model No.			KR15		KR20		KR26	
			KR1501	KR1502	KR2001	KR2006	KR2602	KR2606
LM guide unit	Basic dynamic load rating C (N)	Long type block	1930		3590		7240	
		Short type block	—		—		—	
	Basic static load rating C_0 (N)	Long type block	3450		6300		12150	
		Short type block	—		—		—	
	Radial clearance (mm)	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.

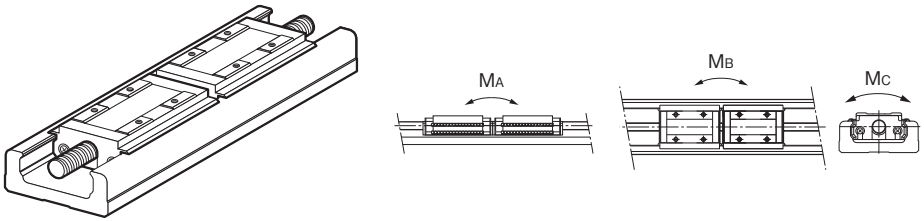
	KR30H		KR33		KR45H		KR46		KR55	KR65
	KR30H06	KR30H10	KR3306	KR3310	KR45H10	KR45H20	KR4610	KR4620		
	11600		11600		23300		27400		38100	50900
	4900		4900		11900		14000		—	—
	20200		20200		39200		45500		61900	80900
	10000		10000		19600		22700		—	—
	–0.004 to +0.002		–0.004 to +0.002		–0.006 to +0.003		–0.006 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)]

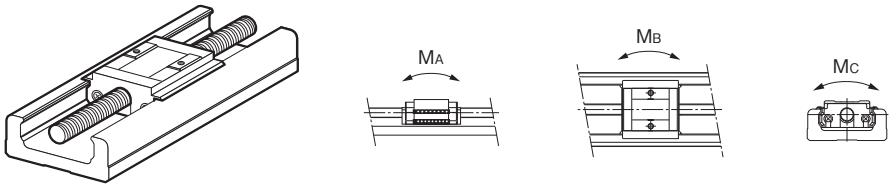
The Inner block is capable of receiving moment loads in all three (3) directions.
Table4 on **A2-83** shows static permissible moments in the M_A, M_B and M_C directions.



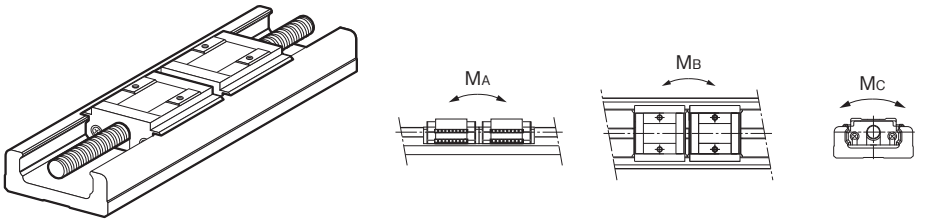
With a single long type block (Model KR-A)



With double long type blocks (Model KR-B)



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



With double short 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.
Note3) Static permissible moment is the maximum moment that can be permitted while the product is stationary.

Maximum Speeds with Different Strokes

Table5 Maximum speed

Model No.	Ball Screw lead (mm)	Stroke* (mm)		Outer rail length (mm)	Maximum speed (mm/s)					
					Precision grade	High accuracy grade	Normal grade	Precision grade	High accuracy grade	Normal grade
		Long type block	Short type block		Long type block			Short type block		
KR15	01	25	—	75	100	100		—		
		50	—	100	100	100		—		
		75	—	125	100	100		—		
		100	—	150	100	100		—		
		125	—	175	100	100		—		
		150	—	200	100	100		—		
	02	25	—	75	200	200		—		
		50	—	100	200	200		—		
		75	—	125	200	200		—		
		100	—	150	200	200		—		
		125	—	175	200	200		—		
		150	—	200	200	200		—		
KR20	01	30	—	100	100	100		—		
		80	—	150	100	100		—		
		130	—	200	100	100		—		
	06	30	—	100	600	600		—		
		80	—	150	600	600		—		
		130	—	200	600	600		—		
KR26	02	60	—	150	200	200		—		
		110	—	200	200	200		—		
		160	—	250	200	200		—		
		210	—	300	200	200		—		
	06	60	—	150	600	590		—		
		110	—	200	600	590		—		
		160	—	250	600	590		—		
		210	—	300	600	590		—		
KR30H	06	50	70	150	600	470		600	470	
		100	120	200	600	470		600	470	
		200	220	300	600	470		600	470	
		300	320	400	600	470		600	470	
		400	420	500	590	470		530	470	
		500	520	600	395	395		360	360	
	10	50	70	150	1000	790		1000	790	
		100	120	200	1000	790		1000	790	
		200	220	300	1000	790		1000	790	
		300	320	400	1000	790		1000	790	
		400	420	500	980	790		880	790	
		500	520	600	650	650		600	600	
KR33	06	50	75	150	600	470		600	470	
		100	125	200	600	470		600	470	
		200	225	300	600	470		600	470	
		300	325	400	600	470		600	470	
		400	425	500	590	470		530	470	
		500	525	600	395	395		360	360	
		600	625	700	280	280		260	260	
	10	50	75	150	1000	790		1000	790	
		100	125	200	1000	790		1000	790	
		200	225	300	1000	790		1000	790	
		300	325	400	1000	790		1000	790	
		400	425	500	980	790		880	790	
		500	525	600	650	650		600	600	
		600	625	700	470	470		430	430	

Model No.	Ball Screw lead (mm)	Stroke* (mm)		Outer rail length (mm)	Maximum speed (mm/s)					
					Precision grade	High accuracy grade	Normal grade	Precision grade	High accuracy grade	Normal grade
		Long type block	Short type block		Long type block			Short type block		
KR45H	10	200	230	340	740	520		740	520	
		300	330	440	740	520		740	520	
		400	430	540	740	520		740	520	
		500	530	640	740	520		740	520	
		600	630	740	730	520		640	520	
		700	730	840	—	520		—	490	
		800	830	940	—	430		—	380	
	20	200	230	340	1480	1050		1480	1050	
		300	330	440	1480	1050		1480	1050	
		400	430	540	1480	1050		1480	1050	
		500	530	640	1480	1050		1480	1050	
		600	630	740	1430	1050		1280	1050	
		700	730	840	—	1050		—	980	
		800	830	940	—	840		—	770	
KR46	10	190	220	340	740	520		740	520	
		290	320	440	740	520		740	520	
		390	420	540	740	520		740	520	
		490	520	640	740	520		740	520	
		590	620	740	730	520		650	520	
		690	720	840	—	520		—	490	
		790	820	940	—	430		—	390	
	20	190	220	340	1480	1050		1480	1050	
		290	320	440	1480	1050		1480	1050	
		390	420	540	1480	1050		1480	1050	
		490	520	640	1480	1050		1480	1050	
		590	620	740	1440	1050		1300	1050	
		690	720	840	—	1050		—	990	
		790	820	940	—	850		—	780	
KR55	20	800	—	980	1120	800		—		
		900	—	1080	900	800		—		
		1000	—	1180	740	740		—		
		1100	—	1280	—	620		—		
		1200	—	1380	—	530		—		
KR65	25	790	—	980	1120	800		—		
		990	—	1180	1120	800		—		
		1190	—	1380	840	800		—		
		1490	—	1680	—	550		—		

*Indicates a stroke when one inner block is incorporated.
Note1) The maximum speed is restricted by the permissible rotation speed of the ball screw, the permissible speed of the guide or 6,000 min^{-1} of motor speed.
Note2) If you are considering using this product at the maximum travel speed of Table5 or faster, contact THK.

Lubrication

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

Table6 Types of standard grease and grease nipples used

Model No.	Standard grease	Grease nipple used
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

Static Safety Factor

LM Guide Actuator Model KR consists of an LM Guide, a Ball Screw and a support bearing. The static safety factor and the service life of each component can be obtained from the basic load rating indicated in “Rated load of model KR” (see Table3 on A2-80).

[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.

Service Life

[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 A2-90)
f_C : Contact factor (see Table7 on A2-90)

- 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 A2-90.

$$P_m = K \cdot M$$

P_m : Equivalent load (per inner block) (N)
K : Equivalent moment factor (see Table9 on A2-90)
M : Applied moment (N-mm)
(If planning to use the product with a wide inner 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, the service life time is obtained using the following equation (if the stroke length and the number of reciprocations per minute are constant).

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

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

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

● **Nominal Life**

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

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 load (N)
f_w : Load factor (see Table8 on A2-90)

● **Service Life Time**

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

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

L_h : Service life time (h)
ℓ_s : Stroke length (mm)
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 A**1-40**). 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.

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 difference as the measurement value and express the value of half the maximum difference with a "±" sign prefixed to the value.

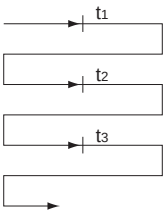


Fig.6 Positioning Repeatability

[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.

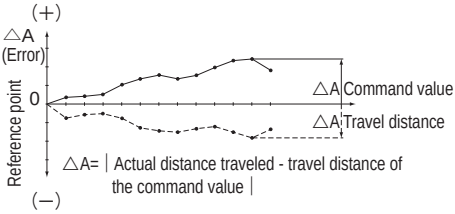


Fig.7 Positioning Accuracy

[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.

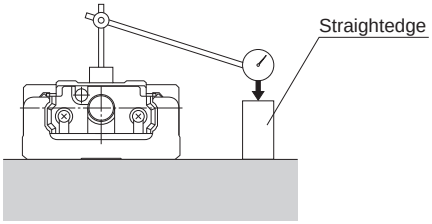


Fig.8 Running of Parallelism

[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.

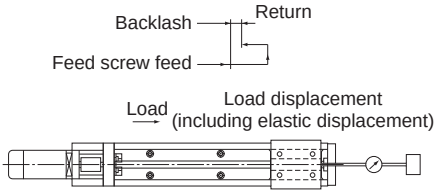


Fig.9 Backlash

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.	Stroke*	Outer rail length	Positioning Repeatability	Positioning Accuracy	Running Parallelism (Vertical Direction)	Backlash	Starting torque (N-cm)
KR20	30	100	±0.01	No standard defined	No standard defined	0.02	0.5
	80	150					
	130	200					
KR26	60	150	±0.01	No standard defined	No standard defined	0.02	1.5
	110	200					
	160	250					
	210	300					
KR30H	50	150	±0.01	No standard defined	No standard defined	0.02	7
	100	200					
	200	300					
	300	400					
	400	500					
	500	600					
KR33	50	150	±0.01	No standard defined	No standard defined	0.02	7
	100	200					
	200	300					
	300	400					
	400	500					
	500	600					
	600	700					
KR45H	200	340	±0.01	No standard defined	No standard defined	0.02	10
	300	440					
	400	540					
	500	640					
	600	740					
	700	840					
	800	940					
KR46	190	340	±0.01	No standard defined	No standard defined	0.02	10
	290	440					
	390	540					
	490	640					
	590	740					
	690	840					
	790	940					
KR55	800	980	±0.01	No standard defined	No standard defined	0.05	12
	900	1080					
	1000	1180					
	1100	1280					
	1200	1380					
KR65	790	980	±0.01	No standard defined	No standard defined	0.05	12
	990	1180					
	1190	1380					
	1490	1680	±0.012				15

*Indicates stroke length when one long-type inner block is incorporated.
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 accuracy information of units longer than the standard length.
Note6) Model KR15 is available in high accuracy grade (H) and precision grade (P) only.

Table11 High Accuracy Grade (H)

Unit: mm

Model No.	Stroke*	Outer rail length	Positioning accuracy repeatability	Positioning Accuracy	Running of Parallelism (Vertical direction)	Backlash	Starting torque (N-cm)
KR15	25	75	±0.004	0.04	0.02	0.01	0.4
	50	100					
	75	125					
	100	150					
	125	175					
	150	200					
KR20	30	100	±0.005	0.06	0.025	0.01	0.5
	80	150					
	130	200					
KR26	60	150	±0.005	0.06	0.025	0.01	1.5
	110	200					
	160	250					
	210	300					
KR30H	50	150	±0.005	0.06	0.025	0.02	7
	100	200					
	200	300					
	300	400					
	400	500		0.10	0.035		
	500	600					
KR33	50	150	±0.005	0.06	0.025	0.02	7
	100	200					
	200	300					
	300	400					
	400	500		0.10	0.035		
	500	600					
	600	700		0.14			
KR45H	200	340	±0.005	0.10	0.035	0.02	10
	300	440					
	400	540					
	500	640					
	600	740		0.12	0.04		
	700	840		0.15	0.05		
	800	940					
KR46	190	340	±0.005	0.10	0.035	0.02	10
	290	440					
	390	540					
	490	640					
	590	740		0.12	0.04		
	690	840		0.15	0.05		
	790	940					
KR55	800	980	±0.005	0.18	0.05	0.05	12
	900	1080					
	1000	1180		0.25			
	1100	1280					
	1200	1380					
KR65	790	980	±0.008	0.18	0.05	0.05	12
	990	1180		0.20			
	1190	1380					
	1490	1680		0.28	0.055		15

*Indicates stroke length when one long-type inner block is incorporated.

Table12 Precision Grade (P)

Unit: mm

Model No.	Stroke*	Outer rail length	Positioning accuracy repeatability	Positioning Accuracy	Running of Parallelism (Vertical direction)	Backlash	Starting torque (N-cm)
KR15	25	75	±0.003	0.02	0.01	0.002	0.8
	50	100					
	75	125					
	100	150					
	125	175					
	150	200					
KR20	30	100	±0.003	0.02	0.01	0.003	1.2
	80	150					
	130	200					
KR26	60	150	±0.003	0.02	0.01	0.003	4
	110	200					
	160	250					
	210	300					
KR30H	50	150	±0.003	0.02	0.01	0.003	15
	100	200					
	200	300					
	300	400					
	400	500		0.025	0.015		
	500	600					
KR33	50	150	±0.003	0.02	0.01	0.003	15
	100	200					
	200	300					
	300	400					
	400	500		0.025	0.015		
	500	600					
	600	700		0.03			
KR45H	200	340	±0.003	0.025	0.015	0.003	15
	300	440					
	400	540					
	500	640					17
	600	740		0.03	0.02		
KR46	190	340	±0.003	0.025	0.015	0.003	15
	290	440					
	390	540					
	490	640					17
	590	740		0.03	0.02		
	690	840	±0.005	0.035	0.025		
	790	940					
KR55	800	980	±0.005	0.035	0.025	0.003	17
	900	1080					
	1000	1180		0.04	0.03		20
KR65	790	980	±0.005	0.035	0.025	0.005	20
	990	1180					
	1190	1380		0.04	0.03		22

*Indicates stroke length when one long-type inner block is incorporated.
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 accuracy information of units longer than the standard length.

Model Number Coding

Model No.	Ball Screw Lead	Inner block type		Stroke		Accuracy
KR33	10	A	-	0200	-	P
①	②	③		④		⑤

①
KR15
KR20
KR26
KR30H
KR33
KR45H
KR46
KR55
KR65

②
01 : 1mm
02 : 2mm
06 : 6mm
10 : 10mm
20 : 20mm
25 : 25mm

③
A
B
C
D

④
0025 : 25mm
0050 : 50mm
≀
1490 : 1490mm

⑤
No symbol: normal grade
H : High accuracy grade
P : Precision Grade

If "2" (with Bellows) was selected for the cover ⑦, specify a stroke incorporating the bellows (→**A2-125**).

The available ball screw leads differ depending on the model.
KR15 : "01", "02"
KR20 : "01", "06"
KR26 : "02", "06"
KR30H : "06", "10"
KR33 : "06", "10"
KR45H : "10", "20"
KR46 : "10", "20"
KR55 : "20"
KR65 : "25"

	With/without a motor		Cover	Sensor	Housing A/ Intermediate Flange
	0	-	1	B	AQ
	⑥		⑦	⑧	⑨

⑥ With/without a motor
0: direct-coupled (without a motor)
1: direct-coupled (with a motor, specified by the customer)

⑦ Cover
0: without a cover
1: with a cover
2: with a bellows

⑧ Sensor
0: none
1
2
6
7
B
E
H
L
J
M

⑨ Housing A/ Intermediate Flange
10
20
30
40
50
60
A0
A5
A6
AM
AN
AP
AQ
AR
AS
AT
AU
AV
AY
AZ

If "0" is selected, a coupling is not attached. If a coupling is required, please indicate so.

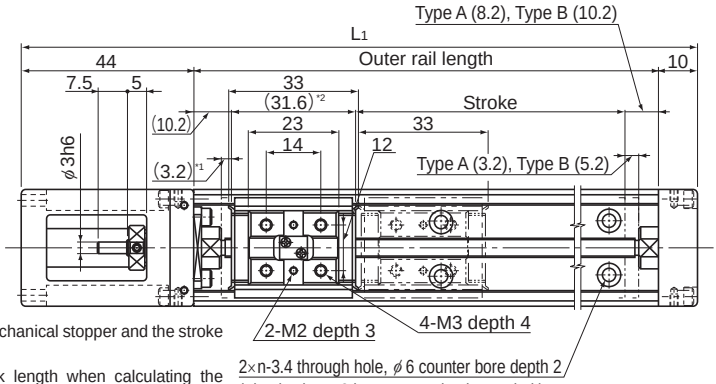
"1" means that a motor specified by the customer is mounted. For item ⑨, select a housing A/intermediate flange that matches the specified motor.

Several motors by different manufacturers can be mounted. Contact THK for details.

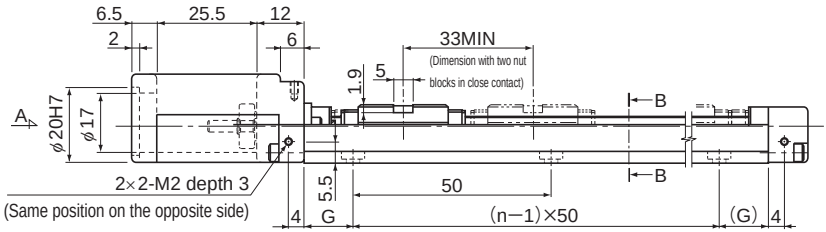
A type with a wrap-around housing A and a motor wrap-around type, which are not contained in the catalog, are also available. Contact THK for details.

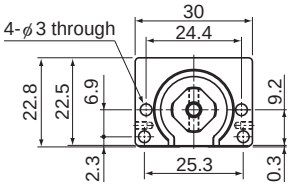
Model KR15 Standard Type

Model KR15□□A (with a Single Long Nut Block)
Model KR15□□B (with Two Long Nut Blocks)
For model number coding, see A2-96.

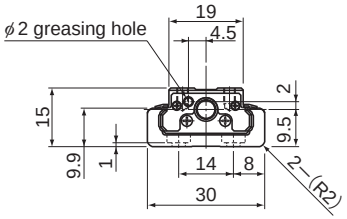


*1 Distance between the mechanical stopper and the stroke starting position.
*2 Indicates the inner block length when calculating the available stroke range. The length in model KR-B (with two long-type inner blocks) is 64.6 mm.





A arrow view



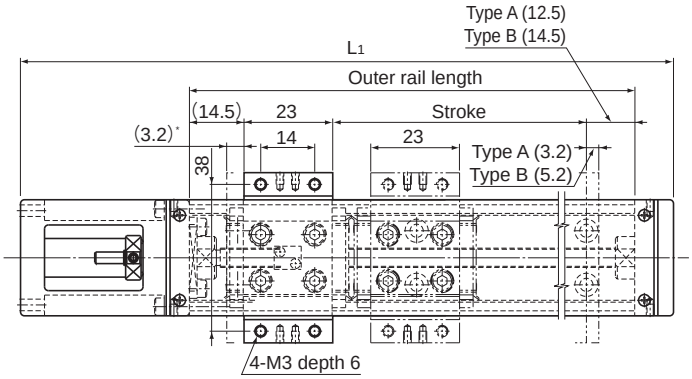
B-B cross section

Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L_1(mm)	G (mm)	n	Overall main unit mass (kg)	
Type A	Type B*					Type A	Type B
25(31.4)	—	75	129	12.5	2	0.19	—
50(56.4)	—	100	154	25	2	0.22	—
75(81.4)	40(48.4)	125	179	12.5	3	0.25	0.292
100(106.4)	65(73.4)	150	204	25	3	0.28	0.322
125(131.4)	90(98.4)	175	229	12.5	4	0.31	0.352
150(156.4)	115(123.4)	200	254	25	4	0.34	0.382

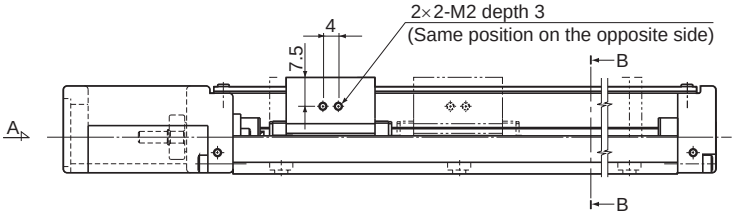
*Indicates a value when two inner blocks are in close contact with each other.

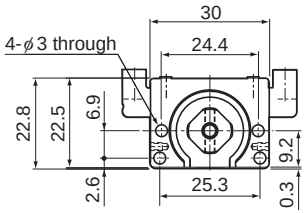
Model KR15 (with a Cover)

Model KR15□□A (with a Single Long Nut Block)
Model KR15□□B (with Two Long Nut Blocks)
For model number coding, see A2-96.

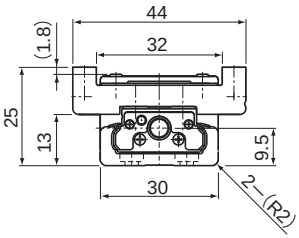


* Distance between the mechanical stopper and the stroke starting position.





A arrow view



B-B cross section

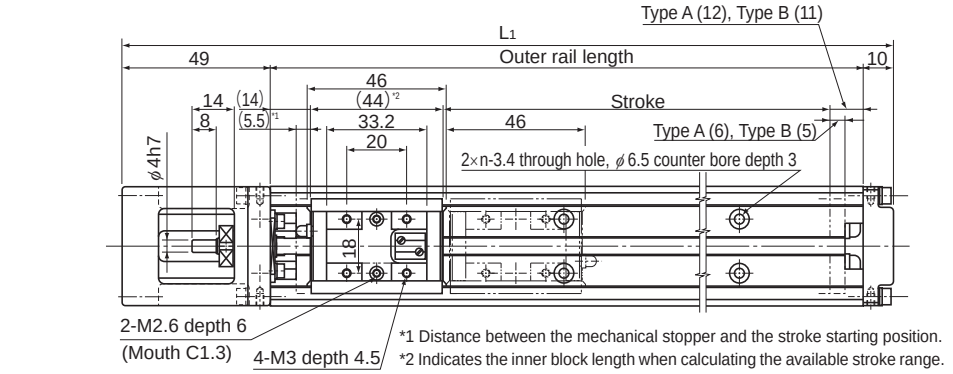
Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L_1(mm)	Overall main unit mass (kg)	
Type A	Type B*			Type A	Type B
25(31.4)	—	75	129	0.23	—
50(56.4)	—	100	154	0.26	—
75(81.4)	40(48.4)	125	179	0.3	0.364
100(106.4)	65(73.4)	150	204	0.33	0.394
125(131.4)	90(98.4)	175	229	0.36	0.424
150(156.4)	115(123.4)	200	254	0.4	0.464

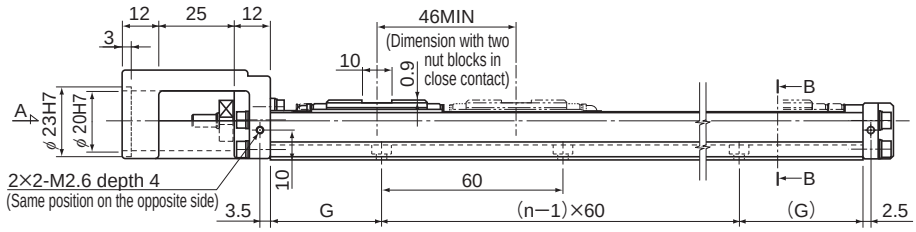
*Indicates a value when two inner blocks are in close contact with each other.

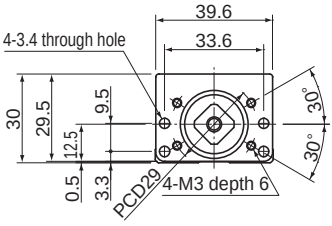
Options⇒A2-125

Model KR20 Standard Type

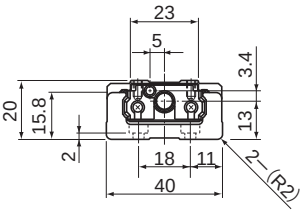
Model KR20□□A (with a Single Long Nut Block)
Model KR20□□B (with Two Long Nut Blocks)
For model number coding, see A2-96.





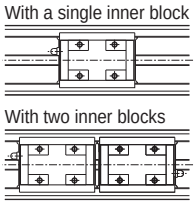


A arrow view



B-B cross section

Nipple orientation

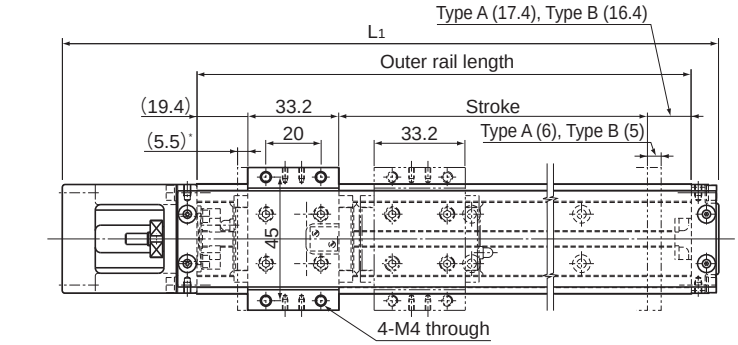


Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L_1(mm)	G (mm)	n	Overall main unit mass (kg)	
Type A	Type B*					Type A	Type B
30(41.5)	—	100	159	20	2	0.45	—
80(91.5)	35(45.5)	150	209	15	3	0.58	0.655
130(141.5)	85(95.5)	200	259	40	3	0.72	0.795

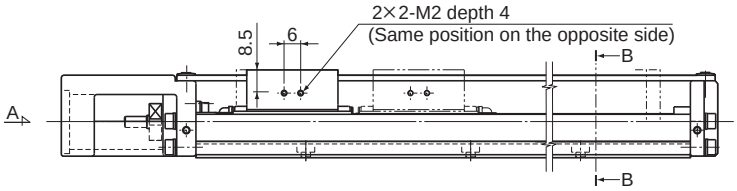
*Indicates a value when two inner blocks are in close contact with each other.

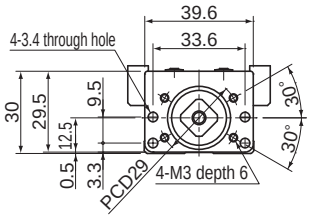
Model KR20 (with a Cover)

Model KR20□□A (with a Single Long Nut Block)
Model KR20□□B (with Two Long Nut Blocks)
For model number coding, see A2-96.

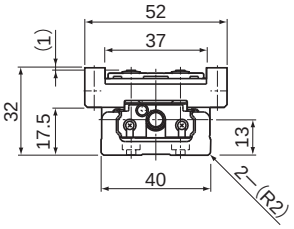


* Distance between the mechanical stopper and the stroke starting position.





A arrow view



B-B cross section

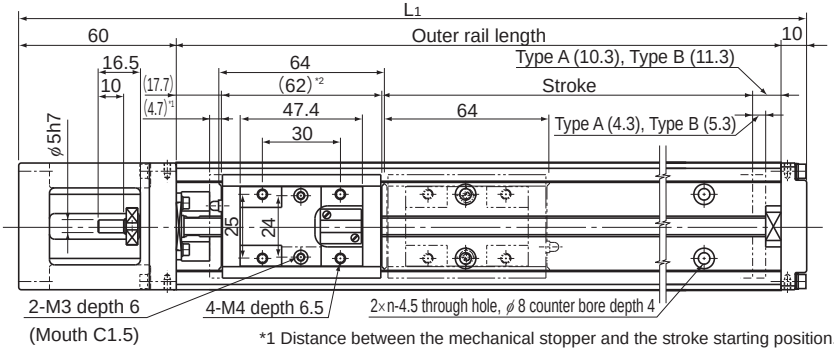
Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L1(mm)	Overall main unit mass (kg)	
Type A	Type B*			Type A	Type B
30(41.5)	—	100	159	0.51	—
80(91.5)	35(45.5)	150	209	0.66	0.78
130(141.5)	85(95.5)	200	259	0.8	0.92

*Indicates a value when two inner blocks are in close contact with each other.

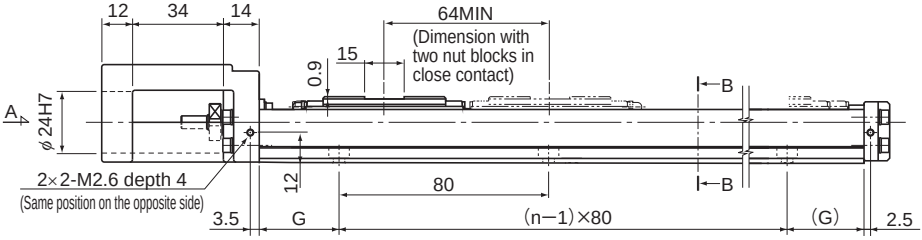
Options⇒A2-125

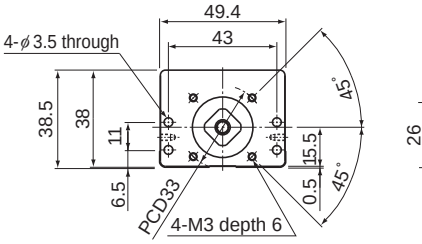
Model KR26 Standard Type

Model KR26□□A (with a Single Long Nut Block)
Model KR26□□B (with Two Long Nut Blocks)
For model number coding, see A2-96.

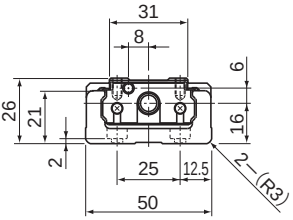


*1 Distance between the mechanical stopper and the stroke starting position.
*2 Indicates the inner block length when calculating the available stroke range. The length in model KR-B (with two long-type inner blocks) is 126 mm.





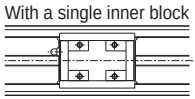
A arrow view



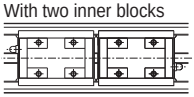
B-B cross section

Nipple orientation

With a single inner block



With two inner blocks

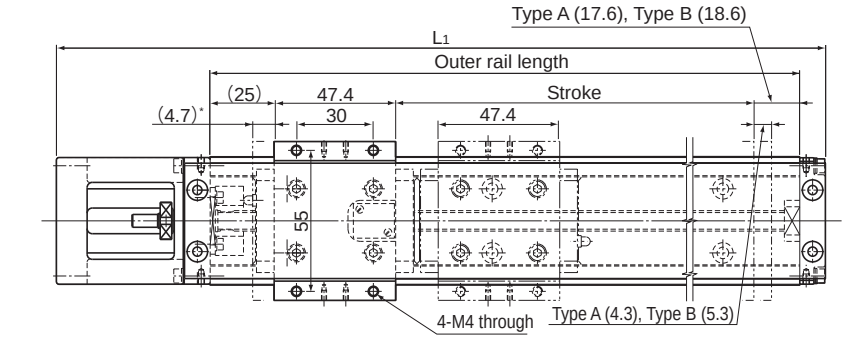


Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L_1(mm)	G (mm)	n	Overall main unit mass (kg)	
Type A	Type B*					Type A	Type B
60(69)	—	150	220	35	2	0.99	—
110(119)	45(55)	200	270	20	3	1.2	1.38
160(169)	95(105)	250	320	45	3	1.41	1.59
210(219)	145(155)	300	370	30	4	1.62	1.8

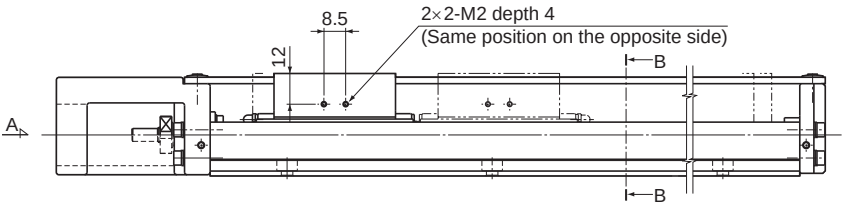
*Indicates a value when two inner blocks are in close contact with each other.

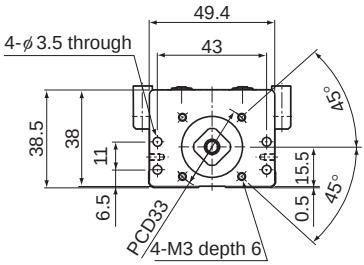
Model KR26 (with a Cover)

Model KR26□□A (with a Single Long Nut Block)
Model KR26□□B (with Two Long Nut Blocks)
For model number coding, see A2-96.

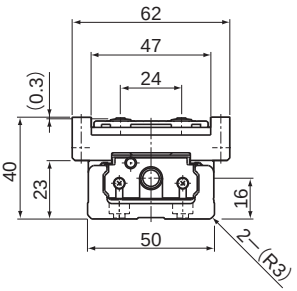


* Distance between the mechanical stopper and the stroke starting position.





A arrow view



B-B cross section

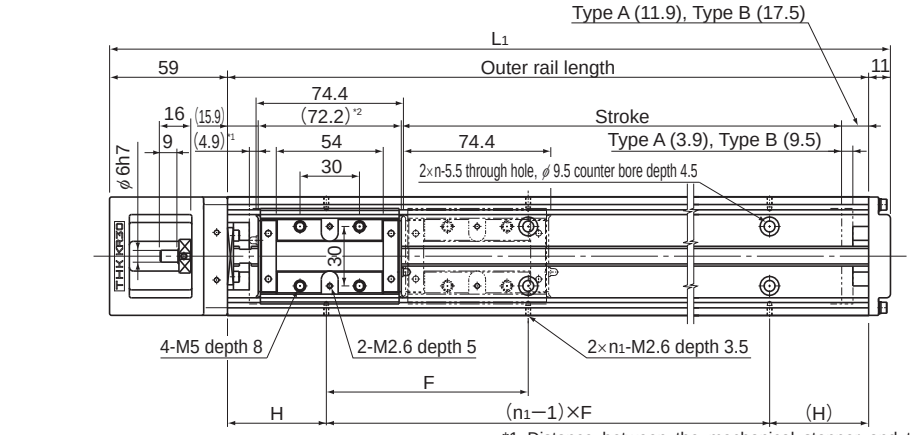
Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L1(mm)	Overall main unit mass (kg)	
Type A	Type B*			Type A	Type B
60(69)	—	150	220	1.12	—
110(119)	45(55)	200	270	1.34	1.605
160(169)	95(105)	250	320	1.56	1.825
210(219)	145(155)	300	370	1.78	2.045

*Indicates a value when two inner blocks are in close contact with each other.

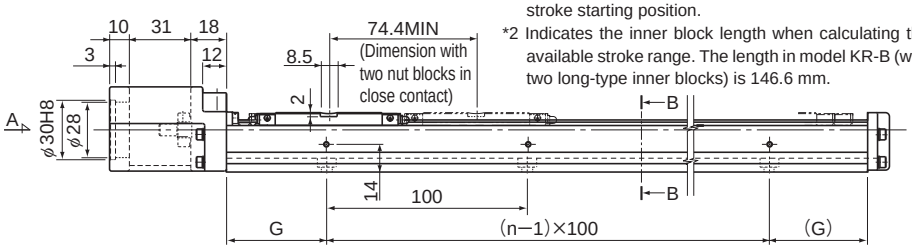
Options⇒A2-125

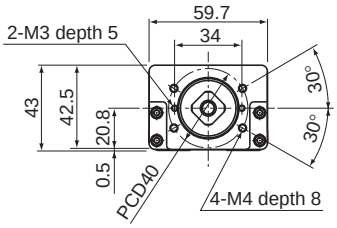
Model KR30H Standard Type

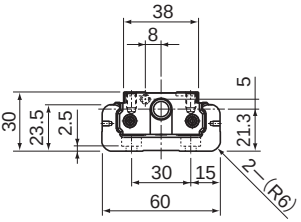
Model KR30H□□A (with a Single Long Nut Block)
Model KR30H□□B (with Two Long Nut Blocks)
For model number coding, see A2-96.



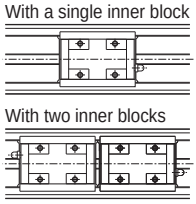
*1 Distance between the mechanical stopper and the stroke starting position.
*2 Indicates the inner block length when calculating the available stroke range. The length in model KR-B (with two long-type inner blocks) is 146.6 mm.







Nipple orientation



A arrow view

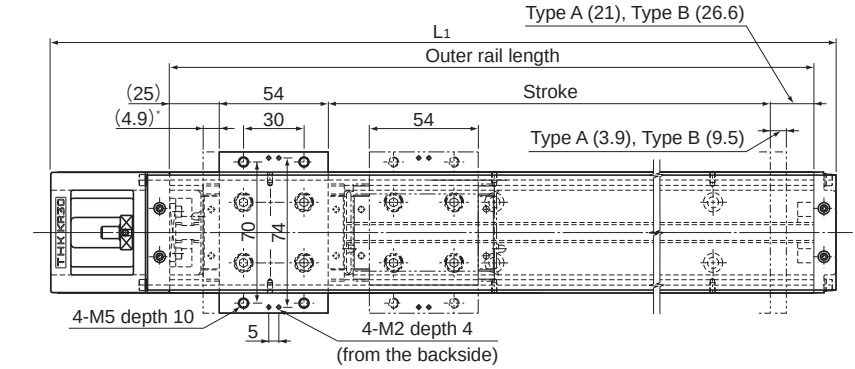
B-B cross section

Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L1(mm)	H (mm)	G (mm)	F (mm)	n	n1	Overall main unit mass (kg)	
Type A	Type B*								Type A	Type B
50(58.8)	—	150	220	25	25	100	2	2	1.4	—
100(108.8)	—	200	270	50	50	100	2	2	1.6	—
200(208.8)	120(134.4)	300	370	50	50	200	3	2	2.2	2.5
300(308.8)	220(234.4)	400	470	100	50	200	4	2	2.7	3
400(408.8)	320(334.4)	500	570	50	50	200	5	3	3.2	3.5
500(508.8)	420(434.4)	600	670	100	50	200	6	3	3.8	4.1

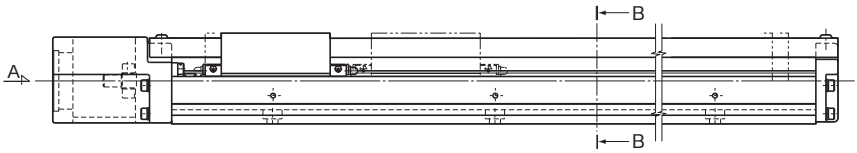
*Indicates a value when two inner blocks are in close contact with each other.

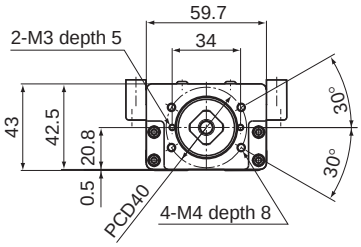
Model KR30H (with a Cover)

Model KR30H□□A (with a Single Long Nut Block)
Model KR30H□□B (with Two Long Nut Blocks)
For model number coding, see A2-96.

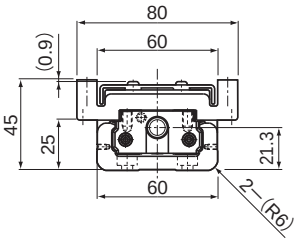


* Distance between the mechanical stopper and the stroke starting position.





A arrow view



B-B cross section

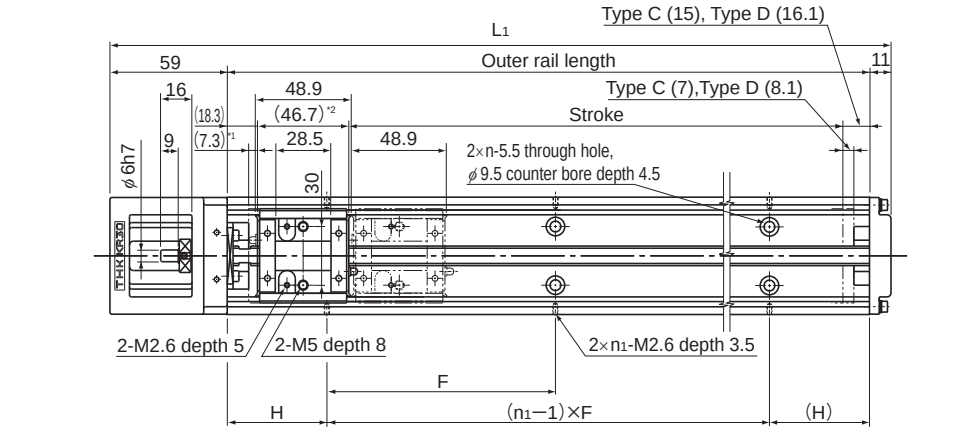
Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L_1(mm)	Overall main unit mass (kg)	
Type A	Type B*			Type A	Type B
50(58.8)	—	150	220	1.6	—
100(108.8)	—	200	270	1.8	—
200(208.8)	120(134.4)	300	370	2.4	2.83
300(308.8)	220(234.4)	400	470	3	3.43
400(408.8)	320(334.4)	500	570	3.5	3.93
500(508.8)	420(434.4)	600	670	4.1	4.53

*Indicates a value when two inner blocks are in close contact with each other.

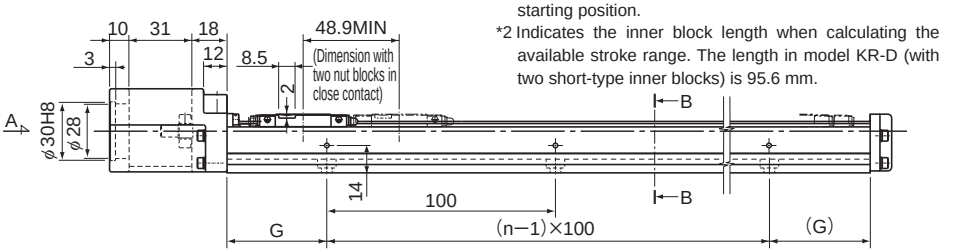
Options⇒A2-125

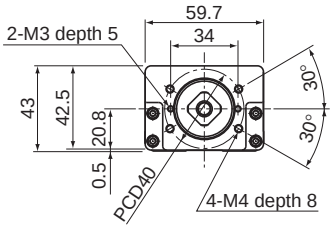
Model KR30H Standard Type

Model KR30H□□C (with a Single Short Nut Block)
Model KR30H□□D (with Two Short Nut Blocks)
For model number coding, see A2-96.

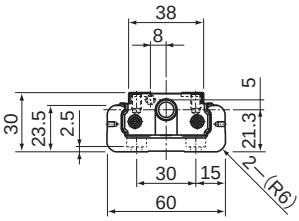


*1 Distance between the mechanical stopper and the stroke starting position.
*2 Indicates the inner block length when calculating the available stroke range. The length in model KR-D (with two short-type inner blocks) is 95.6 mm.

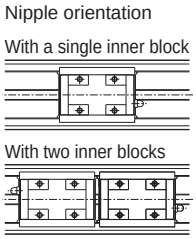




A arrow view



B-B cross section

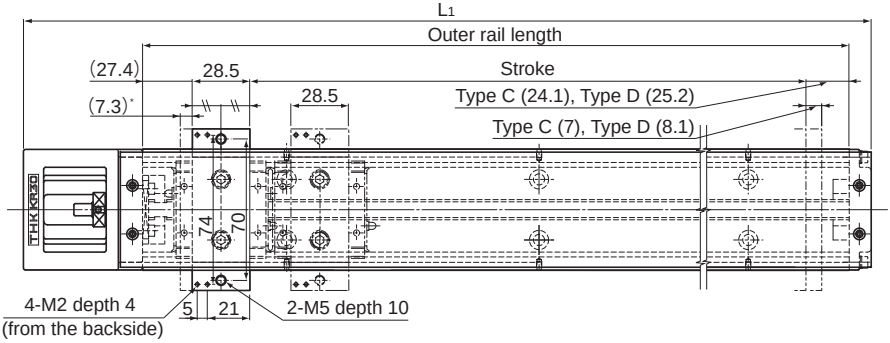


Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L1(mm)	H (mm)	G (mm)	F (mm)	n	n1	Overall main unit mass (kg)	
Type C	Type D*								Type C	Type D
70(84.3)	20(35.4)	150	220	25	25	100	2	2	1.3	1.47
120(134.3)	70(85.4)	200	270	50	50	100	2	2	1.5	1.67
220(234.3)	170(185.4)	300	370	50	50	200	3	2	2.1	2.27
320(334.3)	270(285.4)	400	470	100	50	200	4	2	2.6	2.77
420(434.3)	370(385.4)	500	570	50	50	200	5	3	3.1	3.27
520(534.3)	470(485.4)	600	670	100	50	200	6	3	3.7	3.87

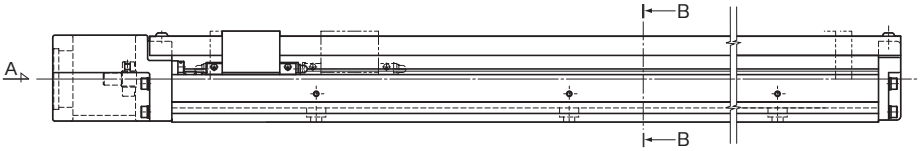
*Indicates a value when two inner blocks are in close contact with each other.

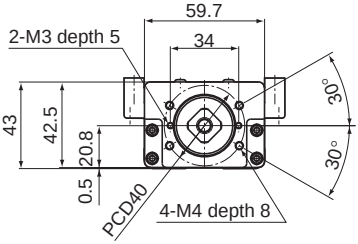
Model KR30H (with a Cover)

Model KR30H□□C (with a Single Short Nut Block)
Model KR30H□□D (with Two Short Nut Blocks)
For model number coding, see A2-96.

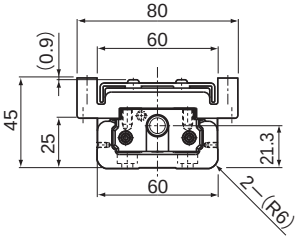


* Distance between the mechanical stopper and the stroke starting position.





A arrow view



B-B cross section

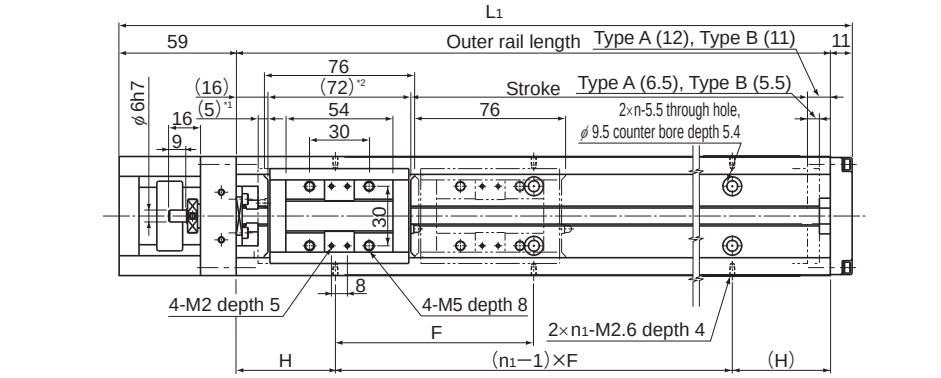
Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L_1(mm)	Overall main unit mass (kg)	
Type C	Type D*			Type C	Type D
70(84.3)	20(35.4)	150	220	1.4	1.64
120(134.3)	70(85.4)	200	270	1.6	1.84
220(234.3)	170(185.4)	300	370	2.2	2.44
320(334.3)	270(285.4)	400	470	2.8	3.04
420(434.3)	370(385.4)	500	570	3.3	3.54
520(534.3)	470(485.4)	600	670	3.9	4.14

*Indicates a value when two inner blocks are in close contact with each other.

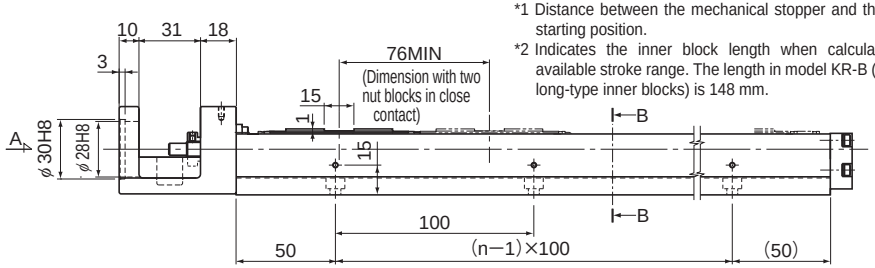
Options⇒A2-125

Model KR33 Standard Type

Model KR33□□A (with a Single Long Nut Block)
Model KR33□□B (with Two Long Nut Blocks)
For model number coding, see A2-96.

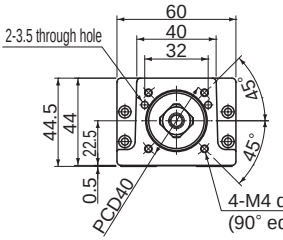


*1 Distance between the mechanical stopper and the stroke starting position.
*2 Indicates the inner block length when calculating the available stroke range. The length in model KR-B (with two long-type inner blocks) is 148 mm.

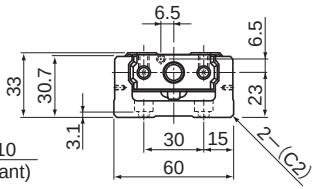


(For an outer rail length of 150: 25)

(For an outer rail length of 150: 25)



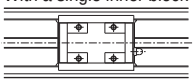
A arrow view



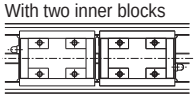
B-B cross section

Nipple orientation

With a single inner block



With two inner blocks

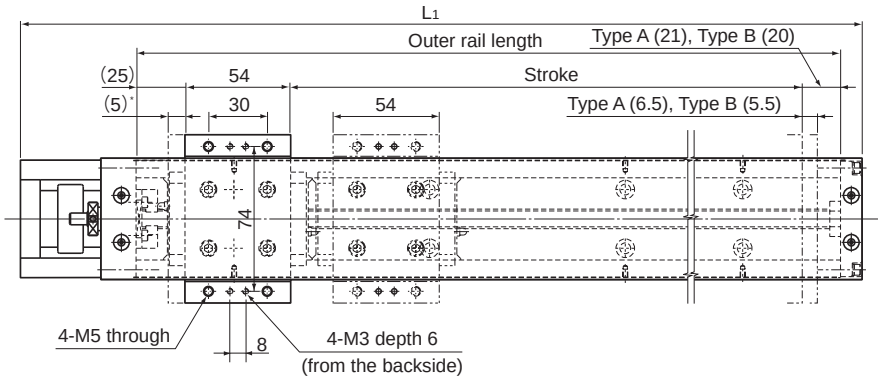


Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L1(mm)	H (mm)	F (mm)	n	n1	Overall main unit mass (kg)	
Type A	Type B*							Type A	Type B
50(61.5)	—	150	220	25	100	2	2	1.7	—
100(111.5)	—	200	270	50	100	2	2	2	—
200(211.5)	125(135.5)	300	370	50	200	3	2	2.6	2.95
300(311.5)	225(235.5)	400	470	100	200	4	2	3.2	3.55
400(411.5)	325(335.5)	500	570	50	200	5	3	3.9	4.25
500(511.5)	425(435.5)	600	670	100	200	6	3	4.5	4.85
600(611.5)	525(535.5)	700	770	50	200	7	4	5.5	5.85

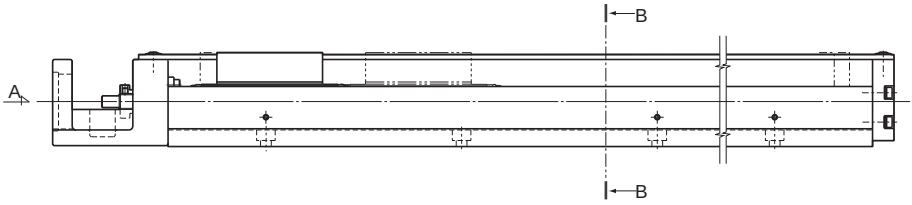
*Indicates a value when two inner blocks are in close contact with each other.

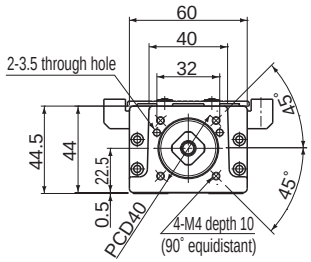
Model KR33 (with a Cover)

Model KR33□□A (with a Single Long Nut Block)
Model KR33□□B (with Two Long Nut Blocks)
For model number coding, see A2-96.

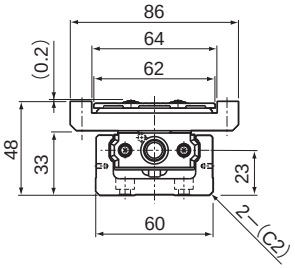


* Distance between the mechanical stopper and the stroke starting position.





A arrow view



B-B cross section

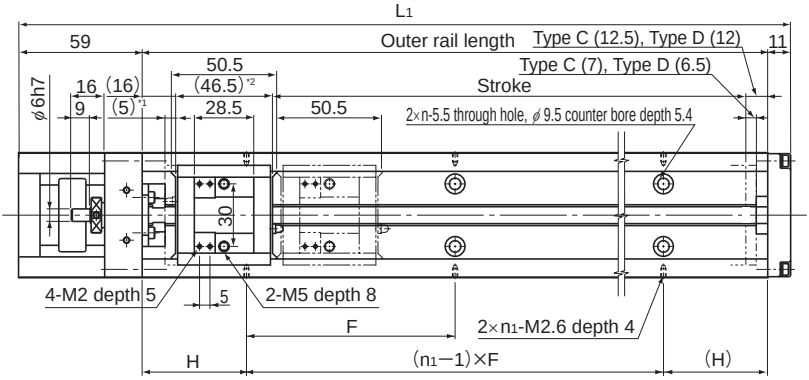
Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L1(mm)	Overall main unit mass (kg)	
Type A	Type B*			Type A	Type B
50(61.5)	—	150	220	1.9	—
100(111.5)	—	200	270	2.2	—
200(211.5)	125(135.5)	300	370	2.8	3.28
300(311.5)	225(235.5)	400	470	3.5	3.98
400(411.5)	325(335.5)	500	570	4.2	4.68
500(511.5)	425(435.5)	600	670	4.8	5.28
600(611.5)	525(535.5)	700	770	5.9	6.38

*Indicates a value when two inner blocks are in close contact with each other.
Note) It must be noted that the cover-mounting bolt is 0.2 mm higher than the top face of the top table.

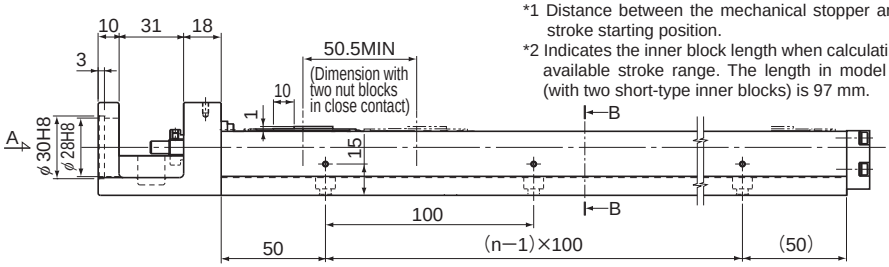
Options⇒A2-125

Model KR33 Standard Type

Model KR33□□C (with a Single Short Nut Block)
Model KR33□□D (with Two Short Nut Blocks)
For model number coding, see A2-96.

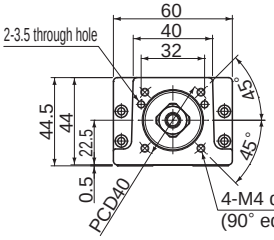


*1 Distance between the mechanical stopper and the stroke starting position.
*2 Indicates the inner block length when calculating the available stroke range. The length in model KR-D (with two short-type inner blocks) is 97 mm.

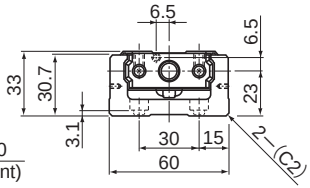


(For an outer rail length of 150: 25)

(For an outer rail length of 150: 25)



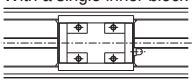
A arrow view



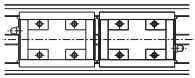
B-B cross section

Nipple orientation

With a single inner block



With two inner blocks

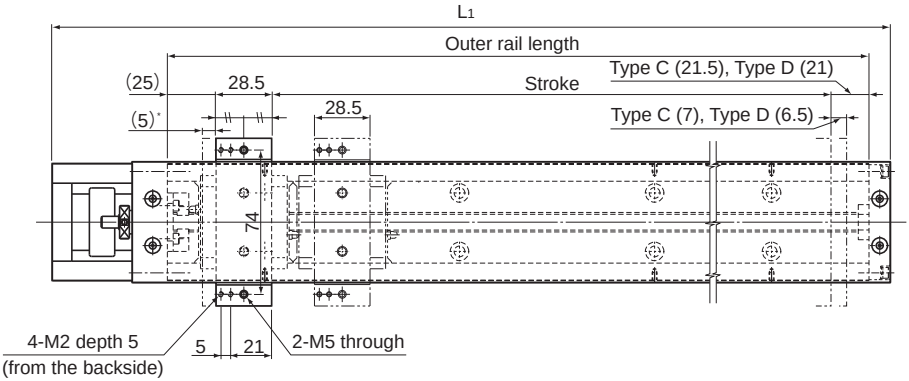


Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L1(mm)	H (mm)	F (mm)	n	n1	Overall main unit mass (kg)	
Type C	Type D*							Type C	Type D
75(87)	25(36.5)	150	220	25	100	2	2	1.6	1.83
125(137)	75(86.5)	200	270	50	100	2	2	1.9	2.13
225(237)	175(186.5)	300	370	50	200	3	2	2.5	2.73
325(337)	275(286.5)	400	470	100	200	4	2	3.1	3.33
425(437)	375(386.5)	500	570	50	200	5	3	3.8	4.03
525(537)	475(486.5)	600	670	100	200	6	3	4.4	4.63
625(637)	575(586.5)	700	770	50	200	7	4	5.4	5.63

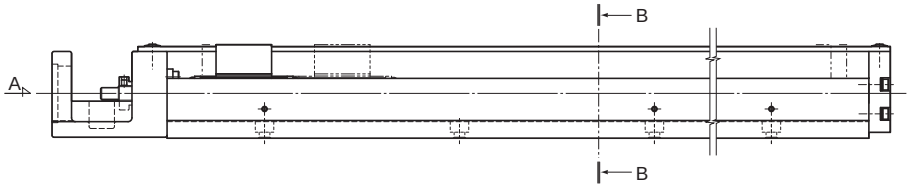
*Indicates a value when two inner blocks are in close contact with each other.

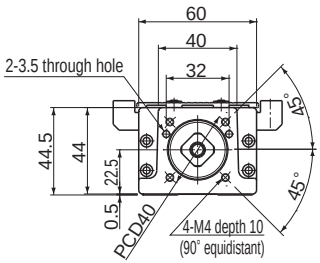
Model KR33 (with a Cover)

Model KR33□□C (with a Single Short Nut Block)
Model KR33□□D (with Two Short Nut Blocks)
For model number coding, see A2-96.

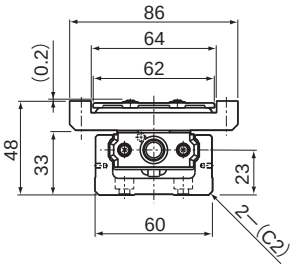


* Distance between the mechanical stopper and the stroke starting position.





A arrow view



B-B cross section

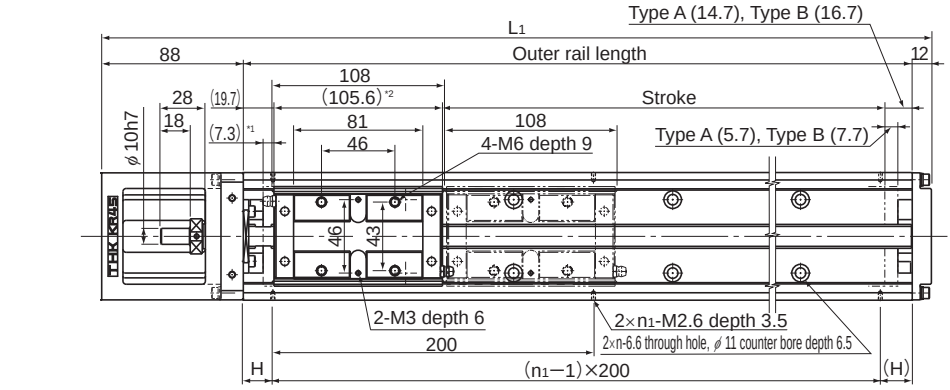
Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L1(mm)	Overall main unit mass (kg)	
Type C	Type D*			Type C	Type D
75(87)	25(36.5)	150	220	1.7	2
125(137)	75(86.5)	200	270	2.1	2.4
225(237)	175(186.5)	300	370	2.7	3
325(337)	275(286.5)	400	470	3.3	3.6
425(437)	375(386.5)	500	570	4	4.3
525(537)	475(486.5)	600	670	4.7	5
625(637)	575(586.5)	700	770	5.7	5.93

*Indicates a value when two inner blocks are in close contact with each other.
Note) It must be noted that the cover-mounting bolt is 0.2 mm higher than the top face of the top table.

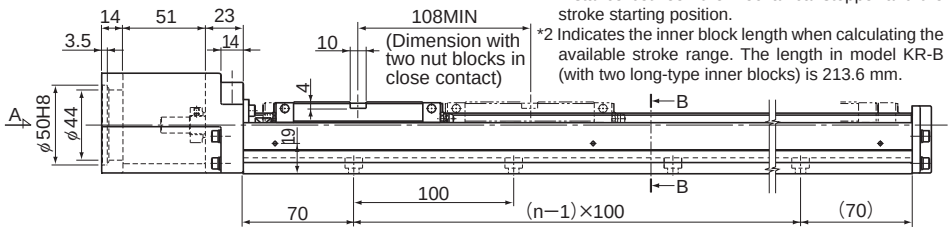
Options⇒A2-125

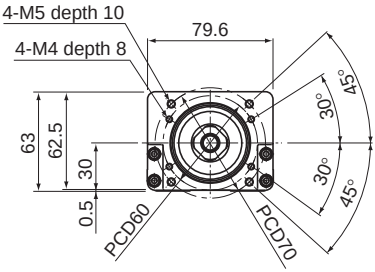
Model KR45H Standard Type

Model KR45H□□A (with a Single Long Nut Block)
Model KR45H□□B (with Two Long Nut Blocks)
For model number coding, see A2-96.

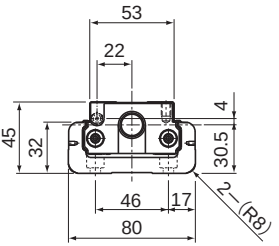


*1 Distance between the mechanical stopper and the stroke starting position.
*2 Indicates the inner block length when calculating the available stroke range. The length in model KR-B (with two long-type inner blocks) is 213.6 mm.





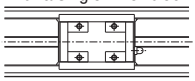
A arrow view



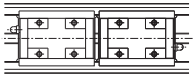
B-B cross section

Nipple orientation

With a single inner block



With two inner blocks

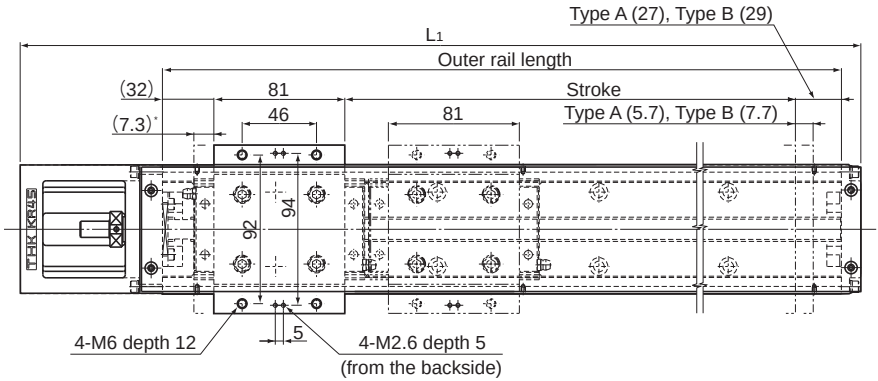


Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L1(mm)	H (mm)	n	n1	Overall main unit mass (kg)	
Type A	Type B*						Type A	Type B
200(213)	90(105)	340	440	70	3	2	5.1	6.05
300(313)	190(205)	440	540	20	4	3	6.1	7.05
400(413)	290(305)	540	640	70	5	3	7.1	8.05
500(513)	390(405)	640	740	20	6	4	8.1	9.05
600(613)	490(505)	740	840	70	7	4	9.1	10.05
700(713)	590(605)	840	940	20	8	5	10.1	11.05
800(813)	690(705)	940	1040	70	9	5	11.2	12.15

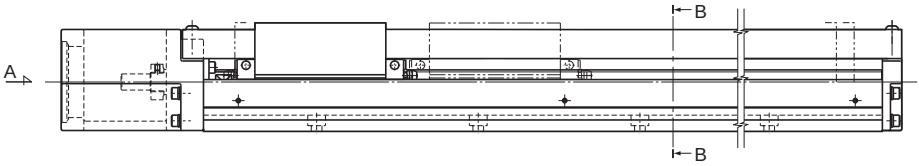
*Indicates a value when two inner blocks are in close contact with each other.

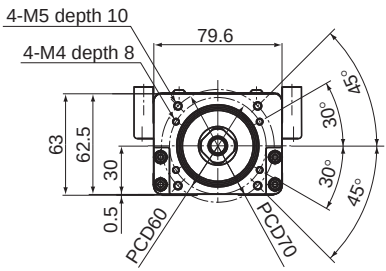
Model KR45H (with a Cover)

Model KR45H□□A (with a Single Long Nut Block)
Model KR45H□□B (with Two Long Nut Blocks)
For model number coding, see A2-96.

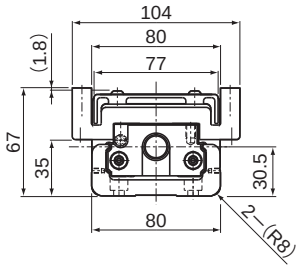


* Distance between the mechanical stopper and the stroke starting position.





A arrow view



B-B cross section

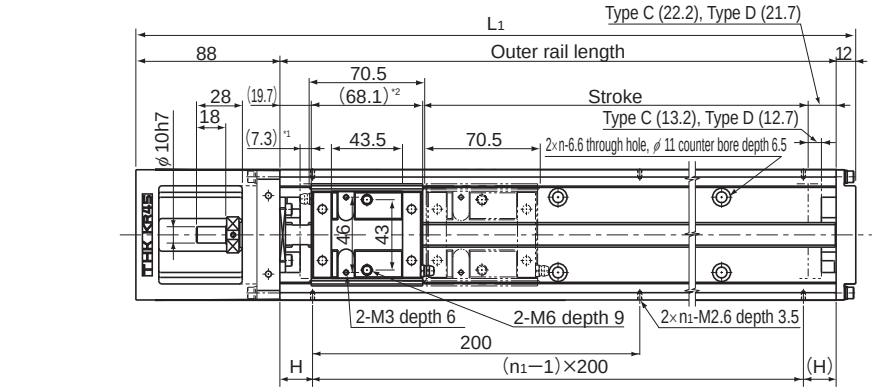
Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L1(mm)	Overall main unit mass (kg)	
Type A	Type B*			Type A	Type B
200(213)	90(105)	340	440	5.7	7.01
300(313)	190(205)	440	540	6.8	8.11
400(413)	290(305)	540	640	7.9	9.21
500(513)	390(405)	640	740	9	10.31
600(613)	490(505)	740	840	10.1	11.41
700(713)	590(605)	840	940	11.2	12.51
800(813)	690(705)	940	1040	12.3	13.61

*Indicates a value when two inner blocks are in close contact with each other.

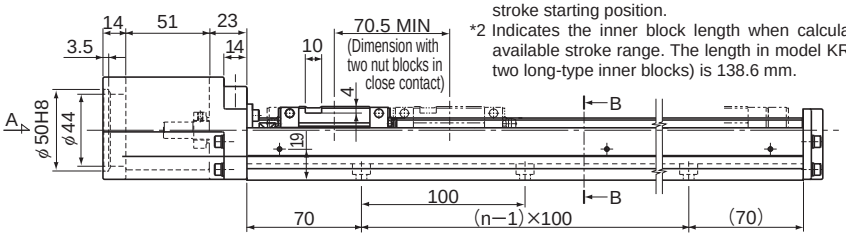
Options⇒A2-125

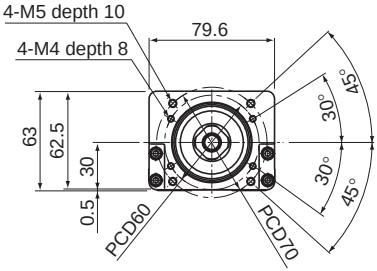
Model KR45H Standard Type

Model KR45H□□C (with a Single Short Nut Block)
Model KR45H□□D (with Two Short Nut Blocks)
For model number coding, see A2-96.

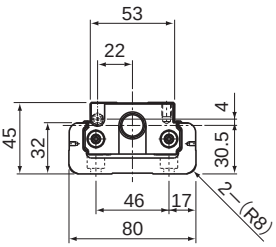


*1 Distance between the mechanical stopper and the stroke starting position.
*2 Indicates the inner block length when calculating the available stroke range. The length in model KR-D (with two long-type inner blocks) is 138.6 mm.





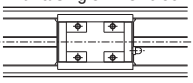
A arrow view



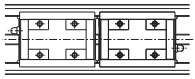
B-B cross section

Nipple orientation

With a single inner block



With two inner blocks

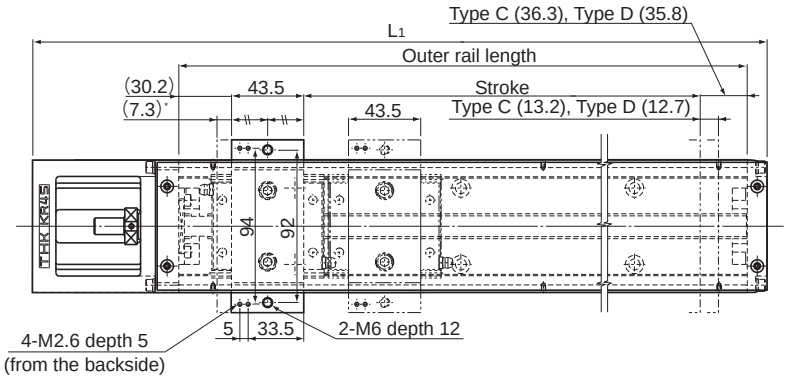


Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L1(mm)	H (mm)	n	n1	Overall main unit mass (kg)	
Type C	Type D*						Type C	Type D
230(250.5)	160(180)	340	440	70	3	2	4.7	5.23
330(350.5)	260(280)	440	540	20	4	3	5.7	6.23
430(450.5)	360(380)	540	640	70	5	3	6.7	7.23
530(550.5)	460(480)	640	740	20	6	4	7.7	8.23
630(650.5)	560(580)	740	840	70	7	4	8.7	9.23
730(750.5)	660(680)	840	940	20	8	5	9.7	10.23
830(850.5)	760(780)	940	1040	70	9	5	10.8	11.33

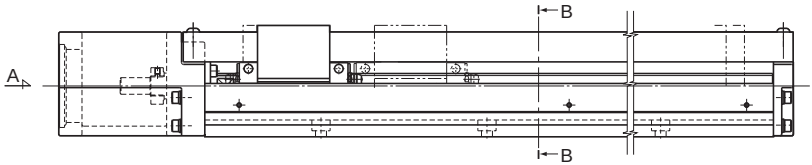
*Indicates a value when two inner blocks are in close contact with each other.

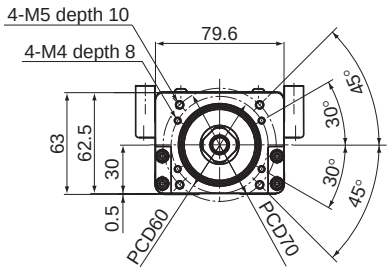
Model KR45H (with a Cover)

Model KR45H□□C (with a Single Short Nut Block)
Model KR45H□□D (with Two Short Nut Blocks)
For model number coding, see A2-96.

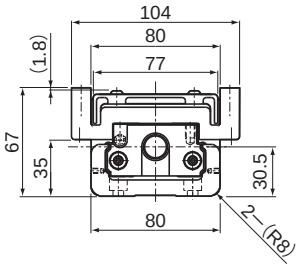


* Distance between the mechanical stopper and the stroke starting position.





A arrow view



B-B cross section

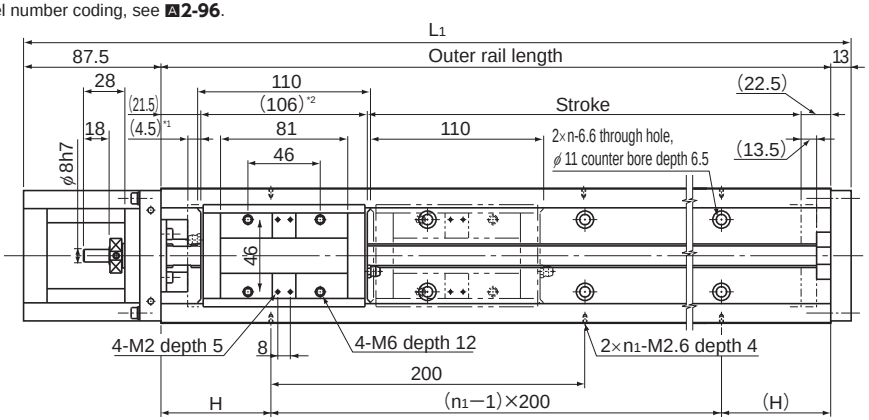
Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L_1(mm)	Overall main unit mass (kg)	
Type C	Type D*			Type C	Type D
230(250.5)	160(180)	340	440	5.1	5.82
330(350.5)	260(280)	440	540	6.2	6.92
430(450.5)	360(380)	540	640	7.3	8.02
530(550.5)	460(480)	640	740	8.4	9.12
630(650.5)	560(580)	740	840	9.5	10.22
730(750.5)	660(680)	840	940	10.6	11.32
830(850.5)	760(780)	940	1040	11.7	12.42

*Indicates a value when two inner blocks are in close contact with each other.

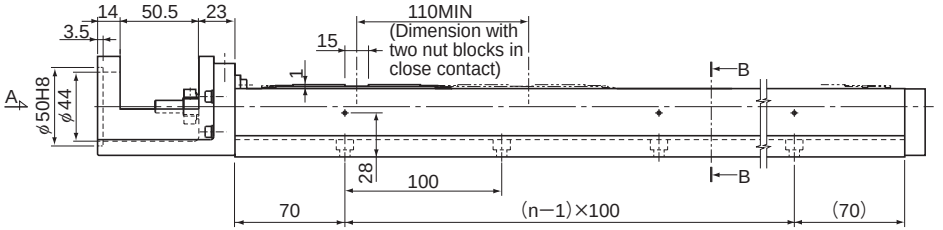
Options⇒A2-125

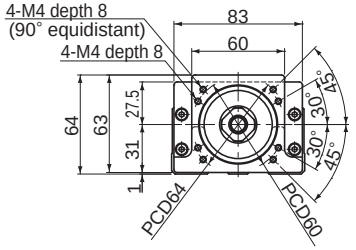
Model KR46 Standard Type

Model KR46□□A (with a Single Long Nut Block)
Model KR46□□B (with Two Long Nut Blocks)
For model number coding, see A2-96.

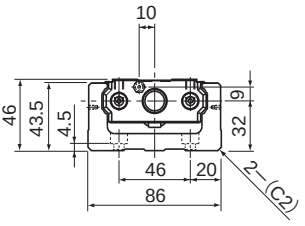


*1 Distance between the mechanical stopper and the stroke starting position.
*2 Indicates the inner block length when calculating the available stroke range. The length in model KR-B (with two long-type inner blocks) is 216 mm.

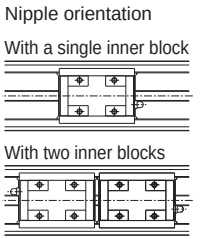




A arrow view



B-B cross section

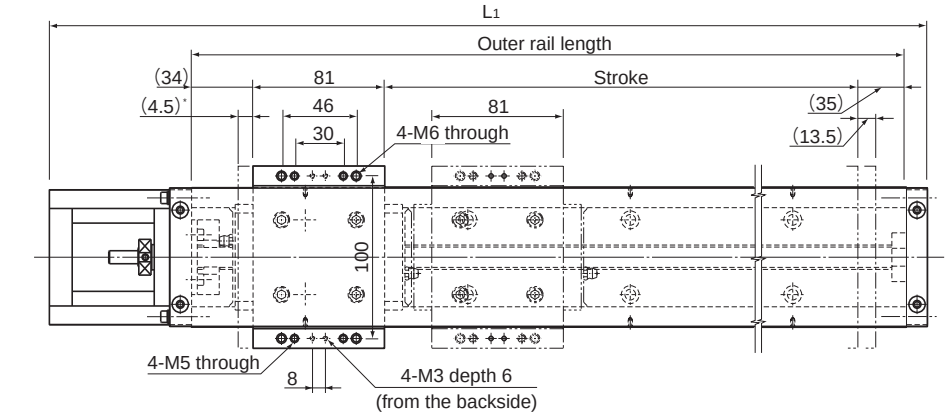


Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L_1(mm)	H (mm)	n	n_1	Overall main unit mass (kg)	
Type A	Type B*						Type A	Type B
190(208)	80(98)	340	440.5	70	3	2	7.7	8.9
290(308)	180(198)	440	540.5	20	4	3	9	10.2
390(408)	280(298)	540	640.5	70	5	3	10.3	11.5
490(508)	380(398)	640	740.5	20	6	4	11.6	12.8
590(608)	480(498)	740	840.5	70	7	4	12.8	14
690(708)	580(598)	840	940.5	20	8	5	14.1	15.3
790(808)	680(698)	940	1040.5	70	9	5	15.3	16.5

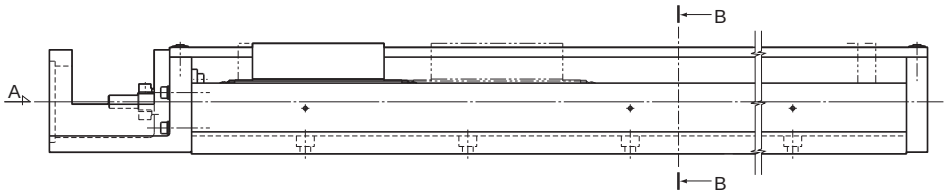
*Indicates a value when two inner blocks are in close contact with each other.

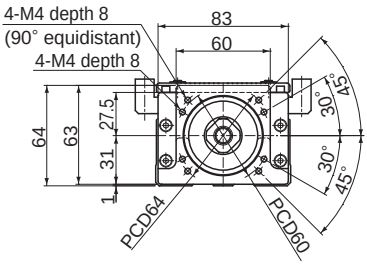
Model KR46 (with a Cover)

Model KR46□□A (with a Single Long Nut Block)
Model KR46□□B (with Two Long Nut Blocks)
For model number coding, see A2-96.

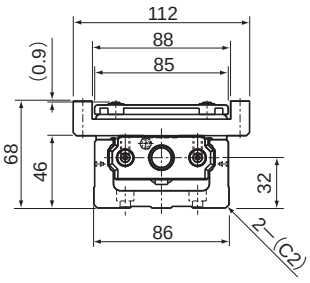


* Distance between the mechanical stopper and the stroke starting position.





A arrow view



B-B cross section

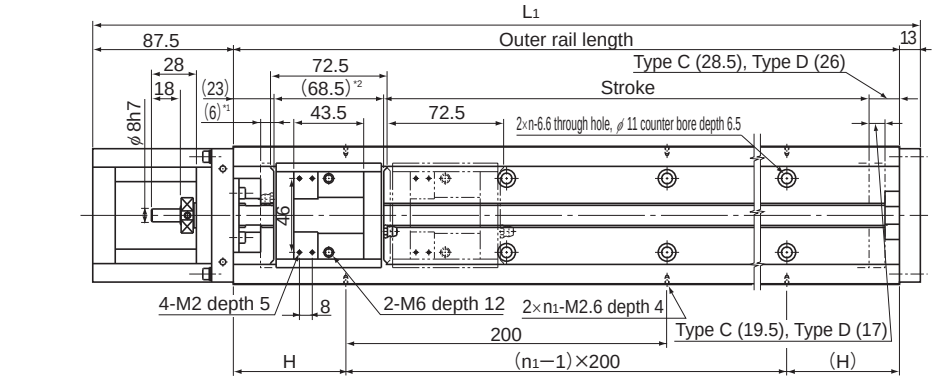
Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L1(mm)	Overall main unit mass (kg)	
Type A	Type B*			Type A	Type B
190(208)	80(98)	340	440.5	8.3	9.79
290(308)	180(198)	440	540.5	9.7	11.19
390(408)	280(298)	540	640.5	11	12.49
490(508)	380(398)	640	740.5	12.4	13.89
590(608)	480(498)	740	840.5	13.7	15.19
690(708)	580(598)	840	940.5	15	16.49
790(808)	680(698)	940	1040.5	16.3	17.79

*Indicates a value when two inner blocks are in close contact with each other.

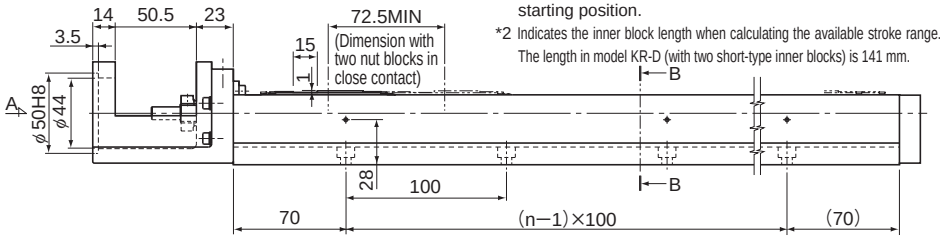
Options⇒A2-125

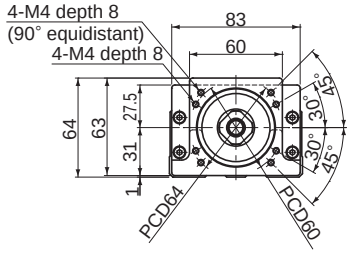
Model KR46 Standard Type

Model KR46□□C (with a Single Short Nut Block)
Model KR46□□D (with Two Short Nut Blocks)
For model number coding, see A2-96.

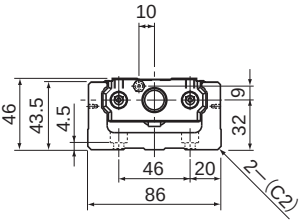


*1 Distance between the mechanical stopper and the stroke starting position.
*2 Indicates the inner block length when calculating the available stroke range. The length in model KR-D (with two short-type inner blocks) is 141 mm.





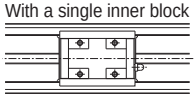
A arrow view



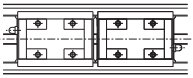
B-B cross section

Nipple orientation

With a single inner block



With two inner blocks

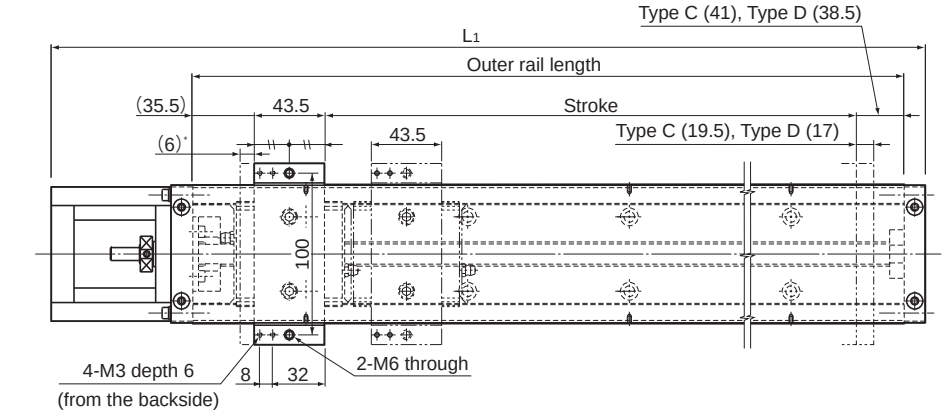


Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L1(mm)	H (mm)	n	n1	Overall main unit mass (kg)	
Type C	Type D*						Type C	Type D
220(245.5)	150(173)	340	440.5	70	3	2	7.3	8.1
320(345.5)	250(273)	440	540.5	20	4	3	8.6	9.4
420(445.5)	350(373)	540	640.5	70	5	3	9.9	10.7
520(545.5)	450(473)	640	740.5	20	6	4	11.2	12
620(645.5)	550(573)	740	840.5	70	7	4	12.4	13.2
720(745.5)	650(673)	840	940.5	20	8	5	13.7	14.5
820(845.5)	750(773)	940	1040.5	70	9	5	14.9	15.7

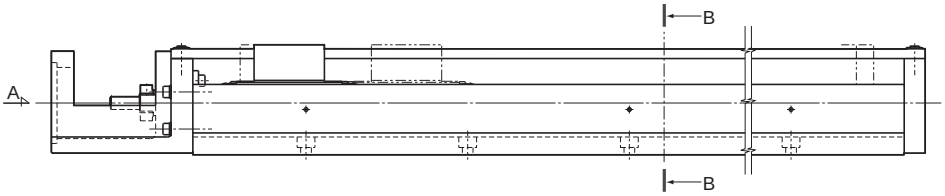
*Indicates a value when two inner blocks are in close contact with each other.

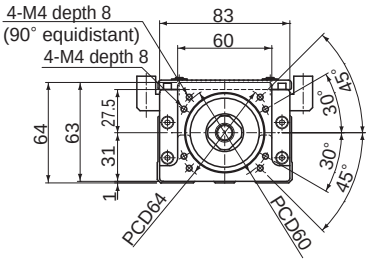
Model KR46 (with a Cover)

Model KR46□□C (with a Single Short Nut Block)
Model KR46□□D (with Two Short Nut Blocks)
For model number coding, see A2-96.

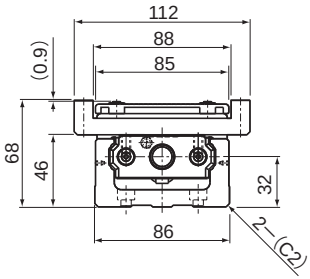


* Distance between the mechanical stopper and the stroke starting position.





A arrow view



B-B cross section

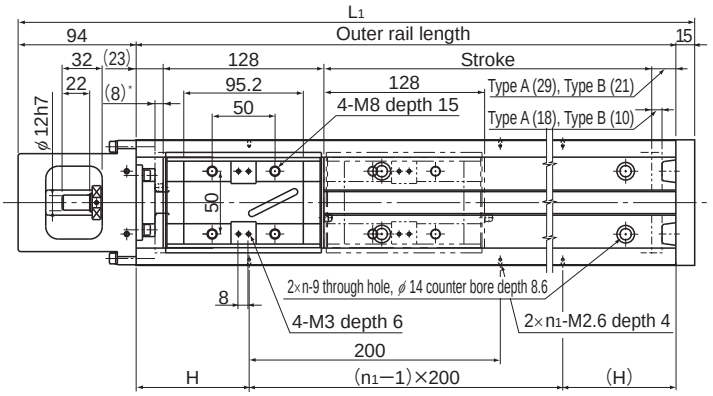
Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L1(mm)	Overall main unit mass (kg)	
Type C	Type D*			Type C	Type D
220(245.5)	150(173)	340	440.5	7.8	8.79
320(345.5)	250(273)	440	540.5	9.1	10.09
420(445.5)	350(373)	540	640.5	10.5	11.49
520(545.5)	450(473)	640	740.5	11.9	12.89
620(645.5)	550(573)	740	840.5	13.2	14.19
720(745.5)	650(673)	840	940.5	14.5	15.49
820(845.5)	750(773)	940	1040.5	15.8	16.79

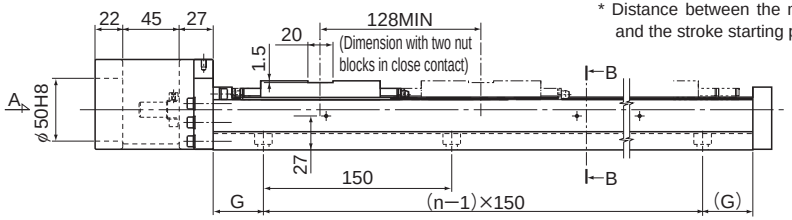
*Indicates a value when two inner blocks are in close contact with each other.

Options⇒A2-125

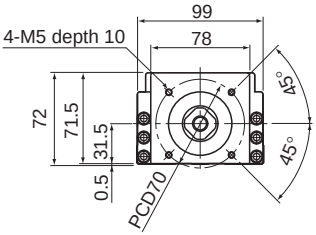
Model KR55 Standard Type

Model KR5520A (with a Single Long Nut Block)
Model KR5520B (with Two Long Nut Blocks)
For model number coding, see A2-96.

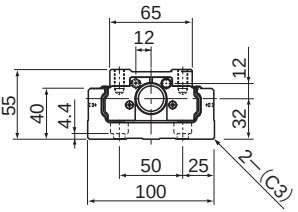




* Distance between the mechanical stopper and the stroke starting position.



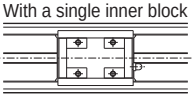
A arrow view



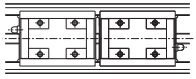
B-B cross section

Nipple orientation

With a single inner block



With two inner blocks

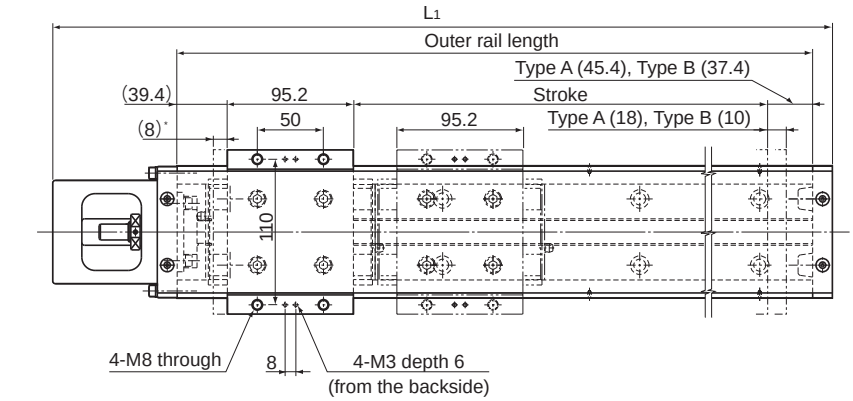


Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L1(mm)	H (mm)	G (mm)	n	n1	Overall main unit mass (kg)	
Type A	Type B*							Type A	Type B
800(826)	680(698)	980	1089	90	40	7	5	19.9	21.6
900(926)	780(798)	1080	1189	40	15	8	6	21.7	23.4
1000(1026)	880(898)	1180	1289	90	65	8	6	23.4	25.1
1100(1126)	980(998)	1280	1389	40	40	9	7	25.1	26.8
1200(1226)	1080(1098)	1380	1489	90	15	10	7	26.9	28.6

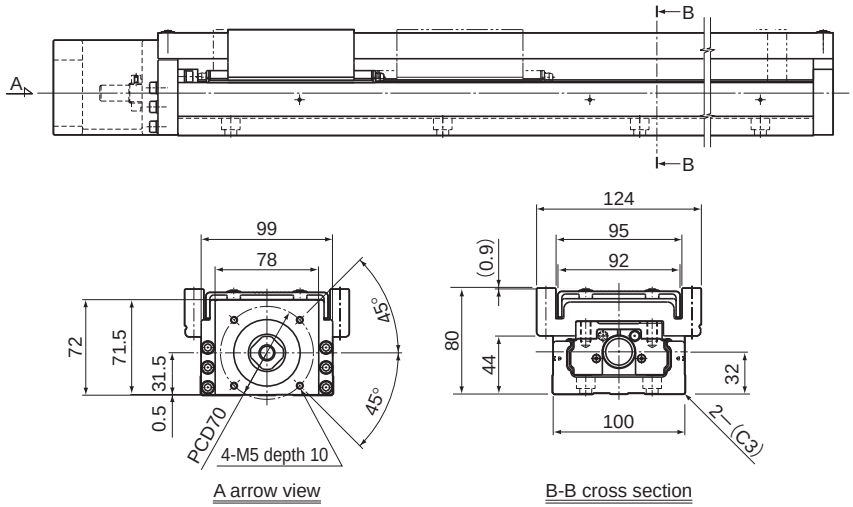
*Indicates a value when two inner blocks are in close contact with each other.

Model KR55 (with a Cover)

Model KR5520A (with a Single Long Nut Block)
Model KR5520B (with Two Long Nut Blocks)
For model number coding, see A2-96.



* Distance between the mechanical stopper and the stroke starting position.



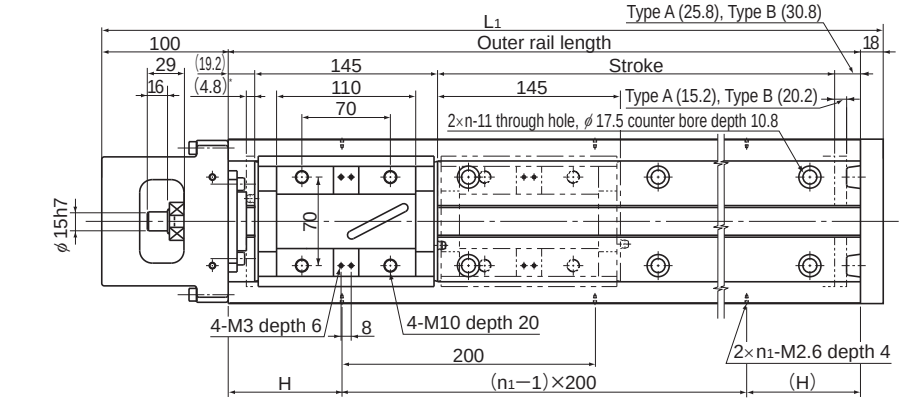
Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L_1(mm)	Overall main unit mass (kg)	
Type A	Type B*			Type A	Type B
800(826)	680(698)	980	1089	22.7	26.2
900(926)	780(798)	1080	1189	24.6	28.1
1000(1026)	880(898)	1180	1289	26.4	29.9
1100(1126)	980(998)	1280	1389	28.1	31.6
1200(1226)	1080(1098)	1380	1489	30	33.5

*Indicates a value when two inner blocks are in close contact with each other.

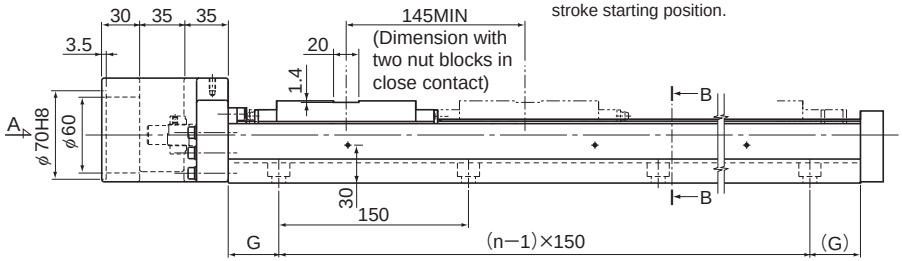
Options⇒A2-125

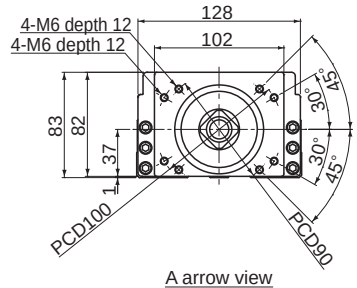
Model KR65 Standard Type

Model KR6525A (with a Single Long Nut Block)
Model KR6525B (with Two Long Nut Blocks)
For model number coding, see A2-96.

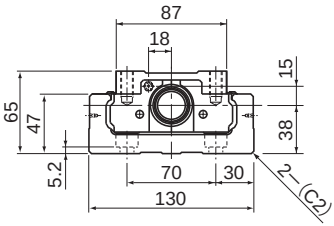


* Distance between the mechanical stopper and the stroke starting position.





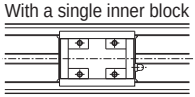
A arrow view



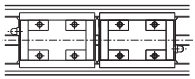
B-B cross section

Nipple orientation

With a single inner block



With two inner blocks

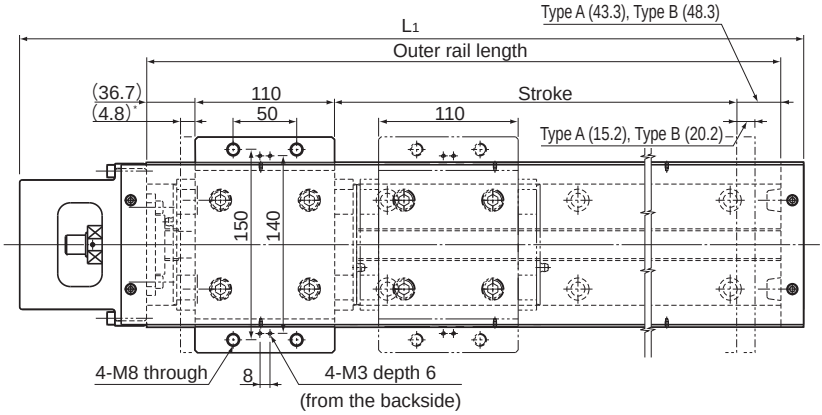


Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L1(mm)	H (mm)	G (mm)	n	n1	Overall main unit mass (kg)	
Type A	Type B*							Type A	Type B
790(810)	640(665)	980	1098	90	40	7	5	31.6	34.6
990(1010)	840(865)	1180	1298	90	65	8	6	37	40
1190(1210)	1040(1065)	1380	1498	90	90	9	7	42.4	45.4
1490(1510)	1340(1365)	1680	1798	40	90	11	9	50.5	53.5

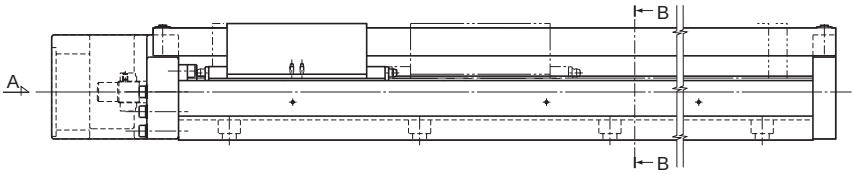
*Indicates a value when two inner blocks are in close contact with each other.

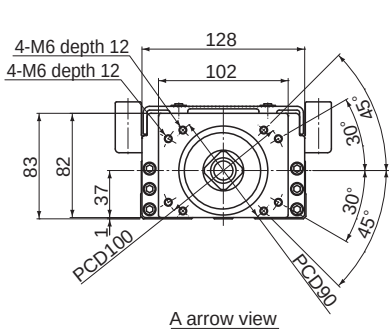
Model KR65 (with a Cover)

Model KR6525A (with a Single Long Nut Block)
Model KR6525B (with Two Long Nut Blocks)
For model number coding, see A2-96.

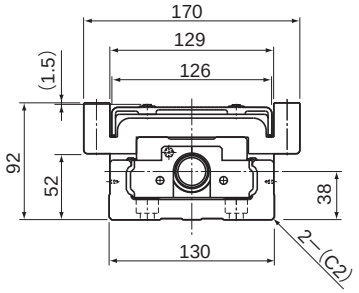


* Distance between the mechanical stopper and the stroke starting position.





A arrow view



B-B cross section

Stroke (mm) (stroke between mechanical stoppers)		Outer rail length (mm)	Overall length L_1(mm)	Overall main unit mass (kg)	
Type A	Type B*			Type A	Type B
790(810)	640(665)	980	1098	36.3	43
990(1010)	840(865)	1180	1298	42	48.7
1190(1210)	1040(1065)	1380	1498	47.6	54.3
1490(1510)	1340(1365)	1680	1798	56.1	62.8

*Indicates a value when two inner blocks are in close contact with each other.

Options⇒A2-125

Mass of Moving Element

Table13 shows the mass of the inner block and top table of model KR.

Table13 Mass of the Inner Block and Top table of KR

Unit: kg

Model No.	Long nut block types (A)		Short nut block types (C)	
	Inner block	Top table	Inner block	Top 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	—	—