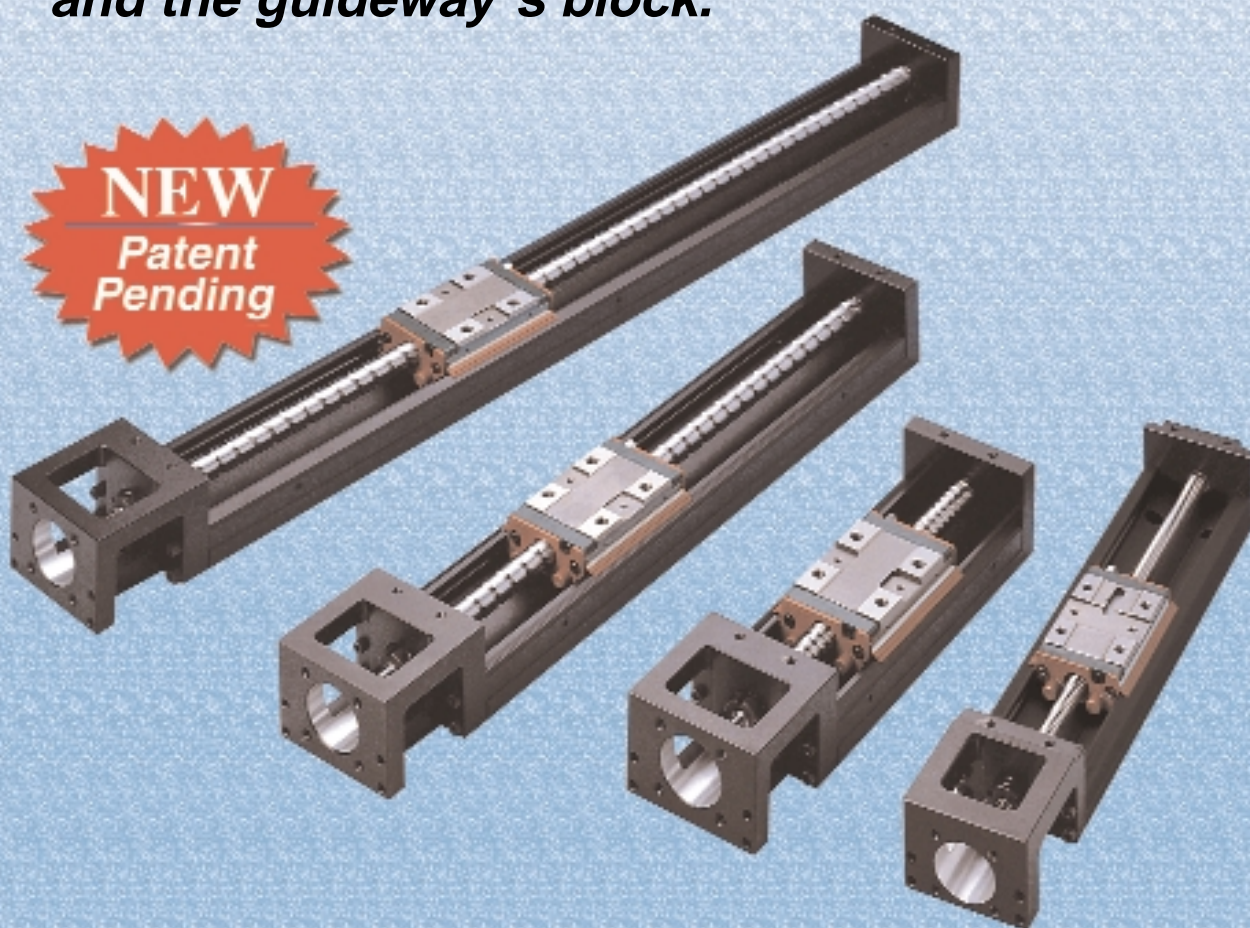


HIWIN®

Linear Stage ^{KK Type}

The Linear Stage KK is a slider actuated by a motor-driven ballscrew and guided by a linear guideway with a U-shape rail. The slider acts as the ballscrew's nut and the guideway's block.

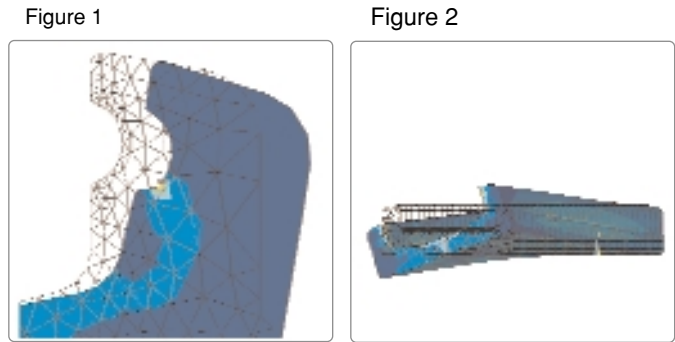
NEW
Patent
Pending



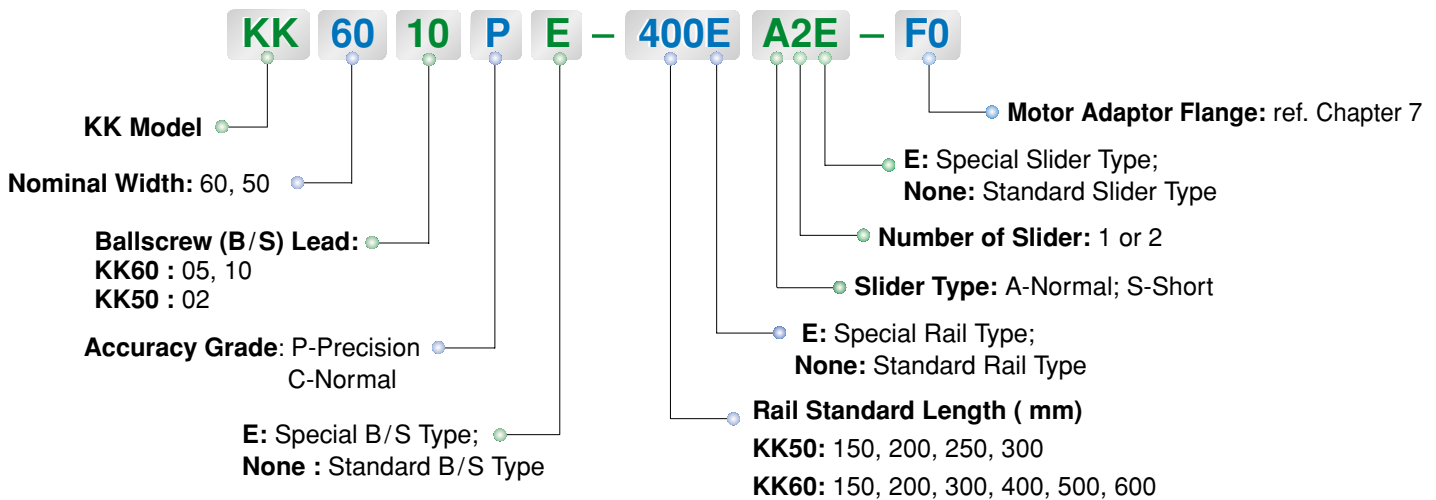
1. Features :

- Easy for system design, installation and maintenance
- Compact and light weight
- High accuracy
- High stiffness
- Well equipped with required accessories.
- Design Optimization:

The structure is designed for high stiffness and light weigh. The FEM analysis is shown beside.



2. Description of Serial Number :



Example: KK6010P-400A1-F0

**Accessories for below, cover and sensor, Please contact with HIWIN.*

3. Accuracy Grade :

Unit: mm

Table 1

Model	Rail Length	Repeatability		Accuracy		Running Parallelism		Starting Torque (N-cm)	
		Precision	Normal	Precision	Normal	Precision	Normal	Precision	Normal
KK50	150	±0.003	±0.01	0.02	—	0.01	—	4	1.5
	200	±0.003	±0.01	0.02	—	0.01	—		
	250	±0.003	±0.01	0.02	—	0.01	—		
	300	±0.003	±0.01	0.02	—	0.01	—		
KK60	150	±0.003	±0.01	0.02	—	0.01	—	15	7
	200	±0.003	±0.01	0.02	—	0.01	—		
	300	±0.003	±0.01	0.02	—	0.01	—		
	400	±0.003	±0.01	0.02	—	0.01	—		
	500	±0.003	±0.01	0.025	—	0.015	—		
	600	±0.003	±0.01	0.025	—	0.015	—		

4. Max. Speed Limit :

Table 2

Model	Ballscrew Lead (mm)	Rail Length (mm)	Speed (mm/sec)	
			Precision	Normal
KK50	02	150	270	200
		200	270	200
		250	270	200
		300	270	200
KK60	05	150	550	390
		200	550	390
		300	550	390
		400	550	390
		500	550	390
		600	340	340
	10	150	1100	790
		200	1100	790
		300	1100	790
		400	1100	790
		500	1100	790
		600	670	670

5. Specifications :

Table 3

		KK5002		KK6005		KK6010		
		Precision	Normal	Precision	Normal	Precision	Normal	
Ballscrew	Nominal Diameter (mm)	08		12				
	Lead (mm)	02		05		10		
	Basic Dynamic Load Rating (N)	2136		3744	3377	2410	2107	
	Basic Static Load Rating (N)	3489		6243	5625	3743	3234	
Guideway	Basic Dynamic Load Rating (N)	Block A	8007		13230			
		Block S	-		7173			
	Basic Static Load Rating (N)	Block A	12916		21462			
		Block S	-		11574			
	Allowable Static Moment M _x (pitching)(N-m)	Block A1	116		152			
		Block A2	278		348			
		Block S1	-		72			
		Block S2	-		205			
	Allowable Static Moment M _y (yawing)(N-m)	Block A1	116		152			
		Block A2	278		348			
		Block S1	-		72			
		Block S2	-		205			
	Allowable Static Moment M _o (rolling)(N-m)	Block A1	222		419			
		Block A2	444		838			
		Block S1	-		241			
		Block S2	-		482			

6. Service Life :

Three main components of the linear stage KK are guideway, ballscrew and bearing. The calculation formulas of their life are shown as follows:

Guideway:

$$L = \left(\frac{f_t}{f_w} \times \frac{C}{P_n} \right)^3 \times 50 \text{ km}$$

L : Life Rating (km)

f_t : Contact Coefficient (ref. Table 4) | C : Basic Dynamic Load Rating (N)

f_w : Loading Coefficient (ref. Table 5) | P_n : Calculating Loading (N)

Table 4

Block type	Contact Coefficient f_t
A1, S1	1.0
A2, S2	0.81

Ballscrew and Bearing:

$$L = \left(\frac{1}{f_w} \times \frac{C_a}{F_{a,n}} \right)^3 \times 10^6 \text{ rev.}$$

L : Life Rating (rev.)

f_w : Loading Coefficient (ref. Table 5) | C_a : Basic Dynamic Load Rating (N)

$F_{a,n}$: Axial Loading (N)

Table 5

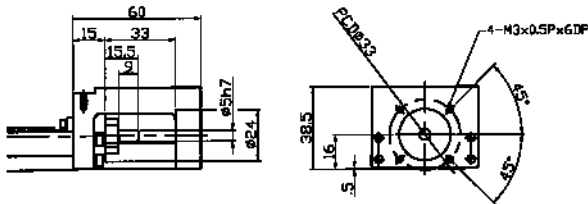
Operating Condition		Loading Coefficient f_w
Thrust and Vibration	Velocity (V)	
No Thrust	$V \leq 15$ m/min	1.0 ~ 1.5
Low Vibration	$15 < V \leq 60$ m/min	1.5 ~ 2.0
High Vibration	$V > 60$ m/min	2.0 ~ 3.5

7. Motor Adaptor Flange :

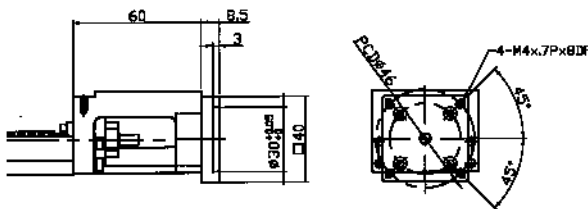
KK50 :

Motor Adaptor Flange of KK50:

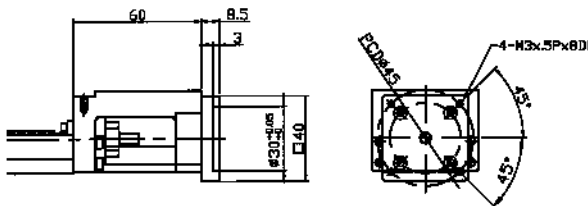
Motor Adaptor Flange



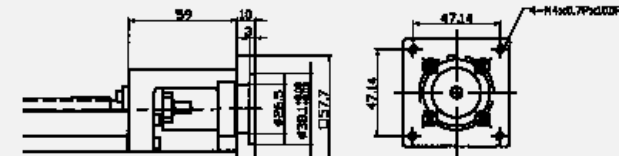
Motor Adaptor Flange F1



Motor Adaptor Flange F2



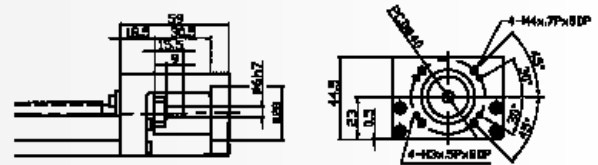
Motor Adaptor Flange F4



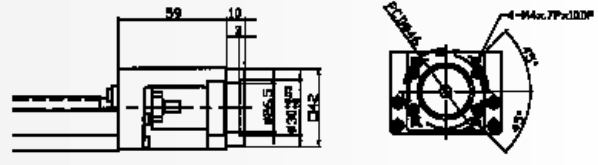
KK60 :

Motor Adaptor Flange of KK60:

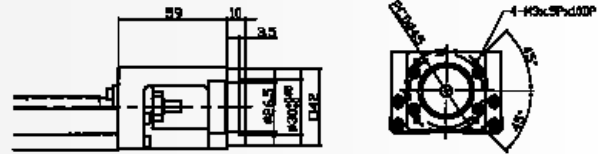
Motor Adaptor Flange F0



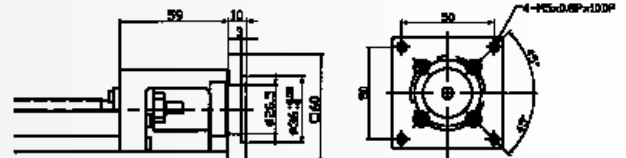
Motor Adaptor Flange F1



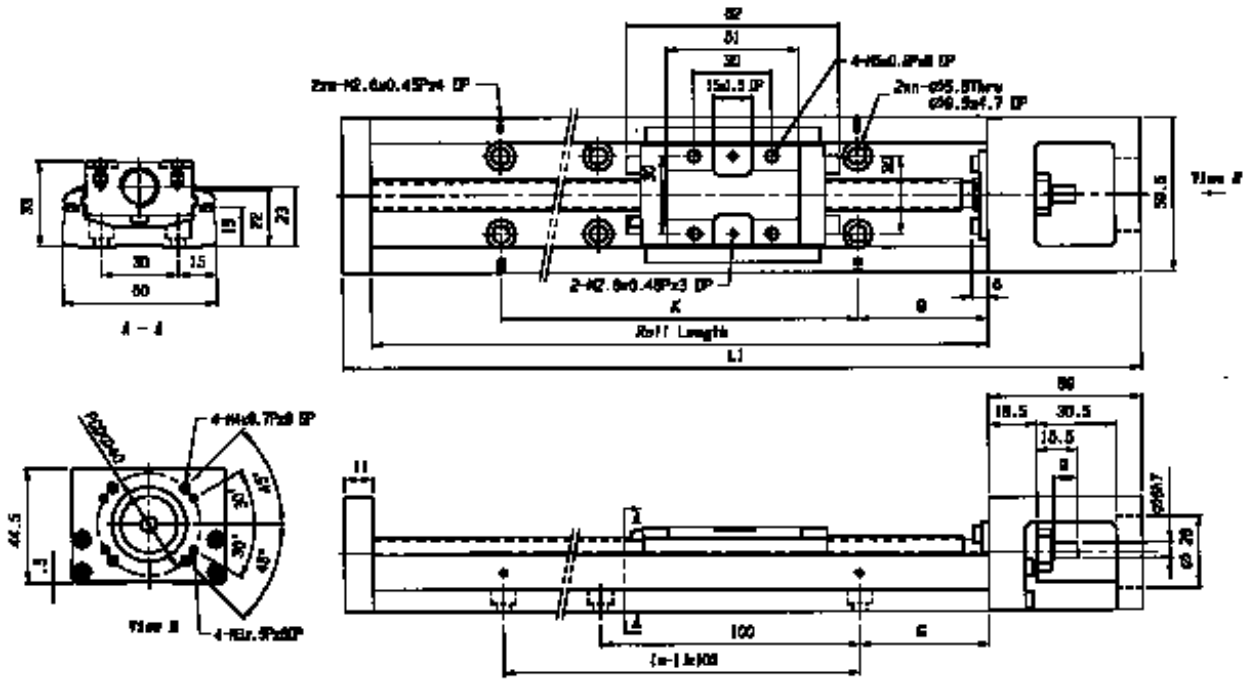
Motor Adaptor Flange F2



Motor Adaptor Flange F3

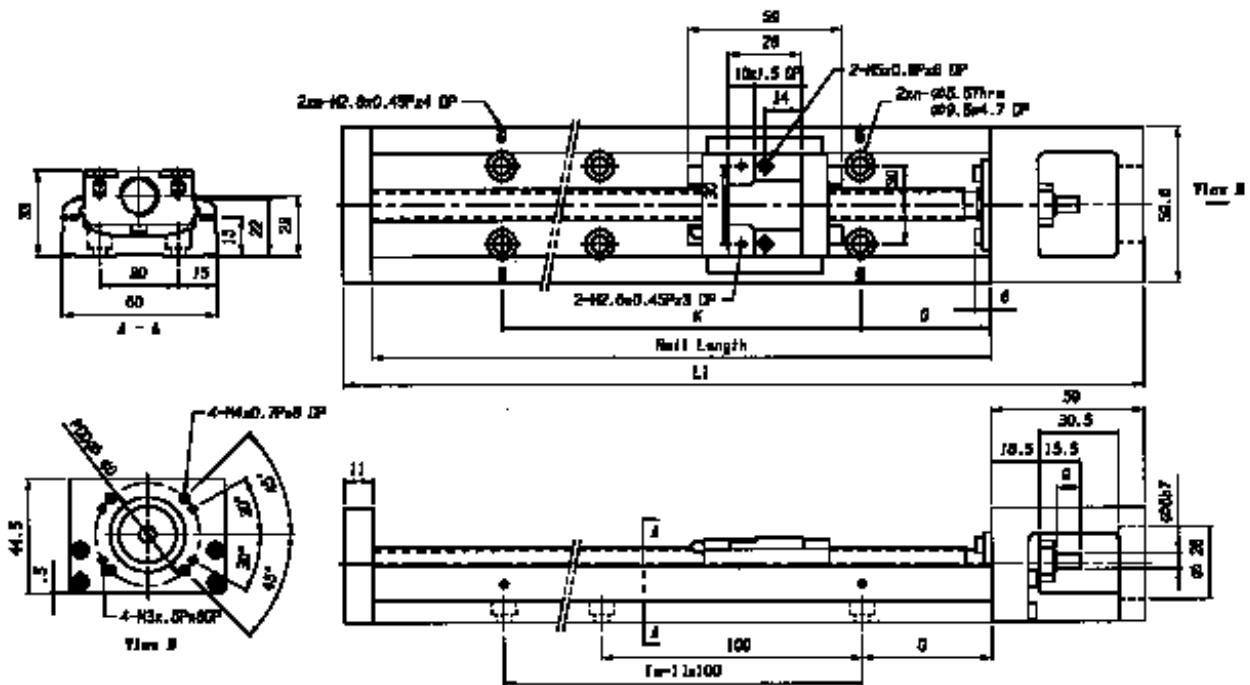


8. Dimension for KK60:



Unit: mm

Rail Length	Total Length L1	Maximum Stroke		G	K	n	m
		A1 Block	A2 Block				
150	220	60	-	25	100	2	2
200	270	110	-	50	100	2	2
300	370	210	135	50	200	3	2
400	470	310	235	50	100	4	3
500	570	410	335	50	200	5	3



Unit: mm

Rail Length	Total Length L1	Maximum Stroke		G	K	n	m
		S1 Block	S2 Block				
150	220	85	34	25	100	2	2
200	270	135	84	50	100	2	2
300	370	235	184	50	200	3	2
400	470	335	284	50	100	4	3
500	570	435	384	50	200	5	3

