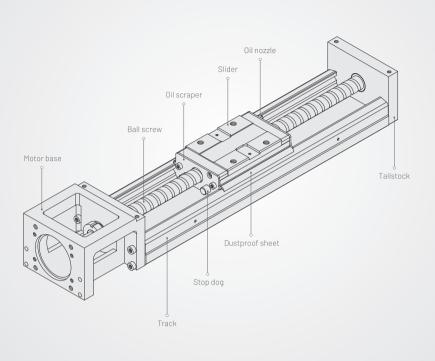
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KK module structure



Module introduction

The KK-type single-axis robot features a modular design that integrates a ball screw and linear guide, offering characteristics such as high precision, quick installation, flexible selection options, high rigidity, compact size, and space-saving efficiency. Utilizing a high-precision ball screw combined with an optimally designed U-shaped rail, it ensures both precision and rigidity requirements are fulfilled.

Characteristic



Easy to design and install



High rigidity



Small size and light Weight



Fully equipped



High precision



Optimal design

The rail structure has undergone finite element analysis to achieve the optimal balance between rigidity and weight, as shown in the figure below:





a Modularity

Compared to traditional linear platforms, the KK-type single-axis robot overcomes issues such as having multiple guiding and driving components, complex installation, and large size. It offers characteristics such as quick selection, easy installation, compact size, and high rigidity, significantly reducing the space and time required for client operations.

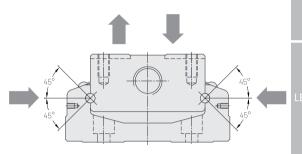
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b Four-way equal load

The ball and screw in the ball screw system have a 45° contact angle, enabling the KK-type single-axis robot to withstand equal loads in four directions.



Aluminum cover

C Optional accessories

To meet various needs, the KK-type single-axis robot can be optionally equipped with aluminum covers, telescopic sheath, motor connecting flanges, and limit switches.

① Aluminum cover and telescopic sheath

Prevents debris from entering the KK-type single-axis robot, protecting its lifespan, maintaining precision, and ensuring smooth operation.

② Motor connecting flange

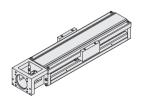
Allows different motor models to be mounted on the KK-type single-axis robot.

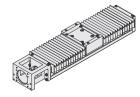
3 Limit switch

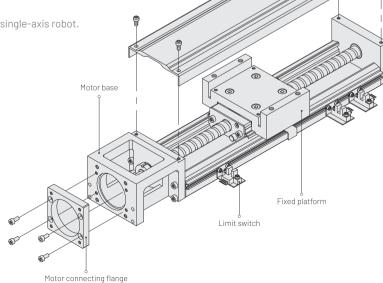
provides slider positioning, origin start, and prevents the slider from exceeding its maximum stroke.

Aluminum cover type

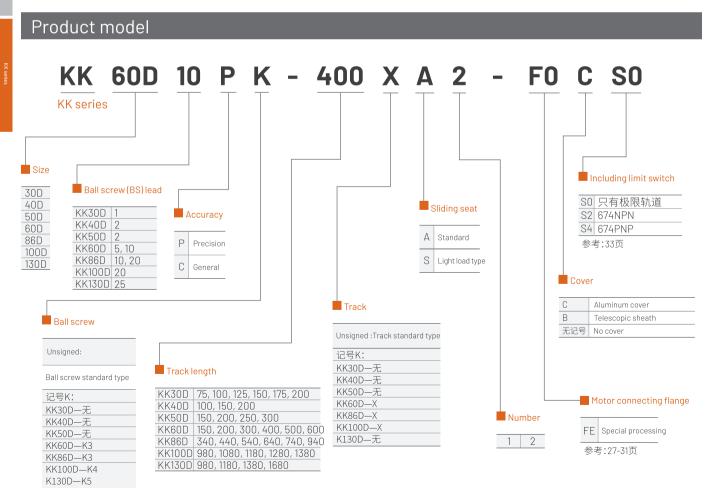
 \bullet Telescopic sheath type



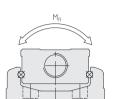


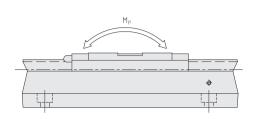


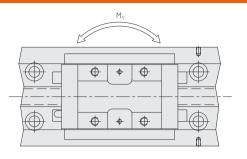




Load specification







																				Uni	t:mm
Model				Basic dynamic load rating									m)	Skew M _y (N-m)				Scroll M _R (N-m)			
						Slide A	Slide S		Slide S	Slide A1	Slide A2	Slide S1	Slide S2	Slide A1	Slide A2		Slide S2	Slide A1	Slide A2	Slide S1	Slide S2
KK30D01	Precision General	6	1	647 618	1088	2210	-	3510	-	14	73	-	-	14	73	-	-	41	82	-	-
	Precision			735	1538																
KK40D02	General	8	2 676	1284	3920	-	6468	-	33	182	-	-	33	182	-	-	81	162	-	-	
KK50D02	Precision	8	2	2136	3489	8007		12916		116	545			116	545			222	444		
NN30D02	General	0		1813	2910	0007		12310		110	343			110	040				444		
KK60D05	Precision General	12	5	3744	6243 5625	13230	7173	21462	11574	152	760	72	367	152	760	72	367	419	838	241	482
	Precision				3743																
KK60D10	General	12	10	2107	3234	13230	7173	21462	11574	152	760	72	367	152	760	72	367	419	838	241	482
KK86D10	Precision General	15	10		12642 11387	31458	21051	50674	29475	622	3050	228	1309	622	3050	228	1309	1507	3104	847	1694
KKOCDOO	Precision	10	20	4645	7655	71/ 50	01051	F007/	20/75	000	7050	220	1700	000	7050	220	1700	1507	710/	0/7	1007
KK86D20	General	15	20	4175	6889	31458	71091	000/4	29475	022	3UbU	228	1309	022	ა <u>ს</u> ხს	228	1309	1007	3104	δ4/	1094
KK100D20	Precision General	20	20	7046 4782	12544 9163	39200	-	63406	-	960	4763	-	-	960	4763	-	-	2205	4410	-	-
KK130D25		25	25		15931	48101	-	84829	-	1536	7350	-	-	1530	7350	-	-	3885	7770	-	_
General			7092	14352					, , ,												



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Accuracy class

	Track longth -	Location rep	oroducibility	Positionin	g accuracy	Walking p	arallelism	Maximum starting torque		
Model						Precision	General	Precision	General	
	75									
	100									
NNZOD	125	.0.007	10.007	10.020	10.070	.0.010	0.020	1.2	0.8	
KK30D	150	±0.003	±0.004	±0.020	±0.040	±0.010	0.020	1.2	0.0	
	175									
	200									
	100									
KK40D	150	±0.003	±0.005	±0.020	-	±0.010	-	1.2	0.8	
	200									
	150									
KK50D	200	.0.007	+0.00E	.0.020	_	.0.010	_	4	0	
KKOUD	250	±0.003	±0.005	±0.020	-	±0.010	-	4	2	
	300									
	150									
	200	.0.007	.0.005	.0.020		.0.010	-	15	7	
KK60D	300	±0.003	±0.005	±0.020	-	±0.010			7	
KKOOD	400									
	500	.0.007	+0 00E	10 02E		LO 01E		15	7	
	600	±0.003	±0.005	±0.025	-	±0.015	-	15	7	
	340									
	440	.0.007	10 00E	10 02E		±0.015	_	15	10	
KK86D	540	±0.003	±0.005	±0.025	-		_	15	10	
NV90D	640									
	740	±0.003	±0.005	±0.030	-	±0.020	-	17	10	
	940	±0.003	±0.005	±0.040	-	±0.030	-	25	10	
	980	+0.005	±0.01	+0.075		+0 005		17	10	
	1080	±0.005	±0.01	±0.035	=	±0.025	-	17	12	
KK100D	1180	±0.005	±0.01	±0.040	-	±0.030	-	20	12	
	1280	+0.005	±0.01	±0.045		±0.035		23	1F	
	1380	±0.005	±0.01	±0.05	_	±0.040	_	25	15	
	980			±0.035		±0.025		25	15	
VV170D	1180	±0.005	±0.01	10.070	-	10.07	-	25	15	
KK130D	1380			±0.040		±0.03		25	15	
	1680	±0.007	±0.012	±0.05	-	±0.04	-	27	18	

Maximum speed

Model	Ball screw lead	Track length L2	Velocity (mm /sec)
		75	160	160
		100	160	160
1/1/700	0.1	125	160	160
KK30D	01	150	160	160
		175	160	160
		200	160	160
		100	270	270
KK40D	02	150	270	270
		200	270	270
		150	270	270
1/1/500	0.0	200	270	270
KK50D	02	250	270	270
		300	270	270
		150	550	390
		200	550	390
	05	300	550	390
		400	550	390
		500	550	390
KK60D		600	340	340
		150	1100	790
		200	1100	790
	10	300	1100	790
		400	1100	790
		500	1100	790
		600	670	670
		340	740	520
		440	740	520
	10	540	740	520
	10	640	740	520
		740	740	520
KKOOD		940	610	430
KK86D		340	1480	1050
		440	1480	1050
	20	540	1480	1050
	ZU	640	1480	1050
		740	1480	1050
		940	1220	870
		980	1120	800
		1080	980	800
KK100D	20	1180	750	750
	ZU	1280	630	630
		1380	530	530
		980	1120	800
KK130D	25	1180	1120	800
VVIOUD	25	1380	830	800
		1680	550	550

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Lubrication

The KK-type single-axis robot, lacking proper lubrication, will experience increased friction in the rolling components, leading to a shortened lifespan. The functions of the lubricant primarily include:



reducing friction in the rolling parts to prevent burns and minimize wear



forming an oil film at the rolling interface to extend the fatigue life of the balls



preventing rust

Lubricating grease

It is recommended that users supplement the lubrication grease once every 100 km. This can be done using a grease gun through the oil nozzle on the slider to inject grease into the slider. The lubricant is suitable for applications where the speed does not exceed 60 m/min and where there are no cooling requirements.

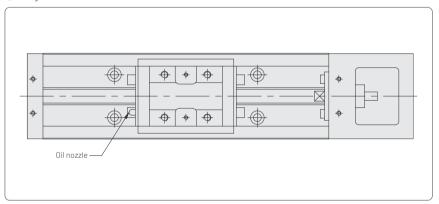
$$T = \frac{100 \times 1000}{\text{Ve } \times 60}$$

T: lubrication Interval (hour)

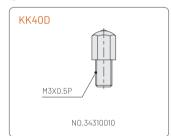
Ve: speed (m/min)

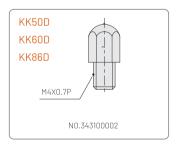
2 Nozzle configuration diagram

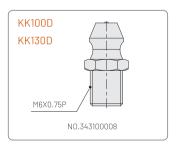
1 Single slider



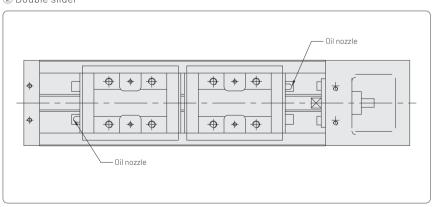
③ KK use nozzle







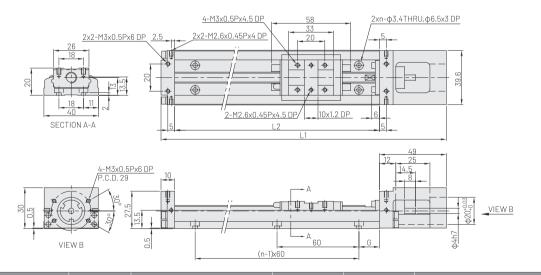
② Double slider



Single-axis robot KK type | Without cover

Track length	Length	Maximum s	troke(mm)	G(mm)		Weight (kg)		
L2(mm)			A2 Slide					
75	129	31	-	12.5	2	0.2	-	
100	154	56	-	25	2	0.23	-	
125	179	81	45	12.5	3	0.26	0.3	
150	204	106	70	25	3	0.29	0.33	
175	229	131	95	12.5	4	0.32	0.36	
200	254	156	120	25	4	0.35	0.39	

KK40D Unit:mm



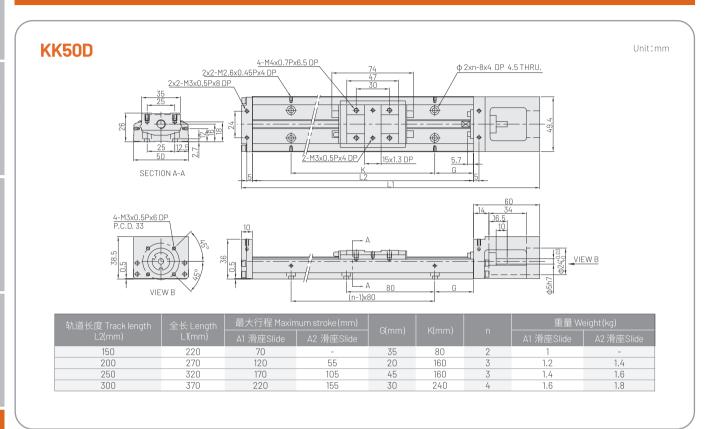
					vveight (kg)		
	A1 Slide	A2 Slide			A1 Slide	A2 Slide	
159	36	-	20	2	0.48	-	
209	86	34	15	3	0.6	0.67	
259	136	84	40	3	0.72	0.79	
	159 209	L1(mm) A1 Slide 159 36 209 86	L1(mm) A1 Slide A2 Slide 159 36 - 209 86 34	L1(mm) A1 Slide A2 Slide G(mm) 159 36 - 20 209 86 34 15	Length (mm) A1 Slide A2 Slide G(mm) n 159 36 - 20 2 209 86 34 15 3	L1(mm) A1 Slide A2 Slide G(mm) n A1 Slide 159 36 - 20 2 0.48 209 86 34 15 3 0.6	

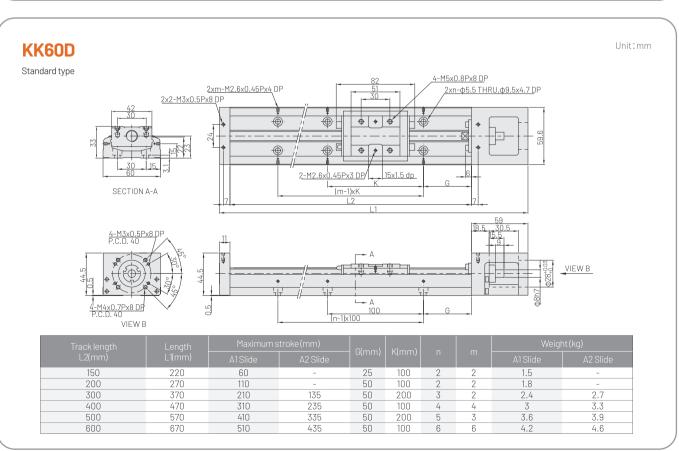
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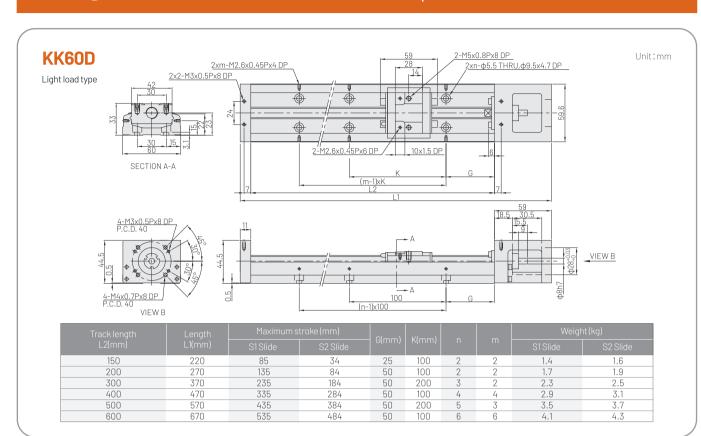
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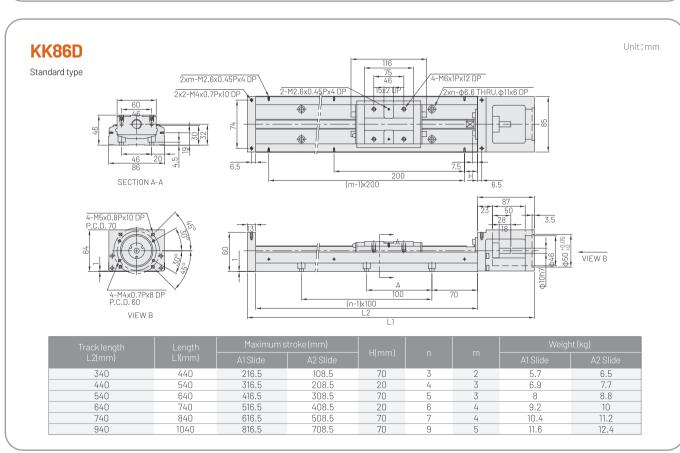
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KK







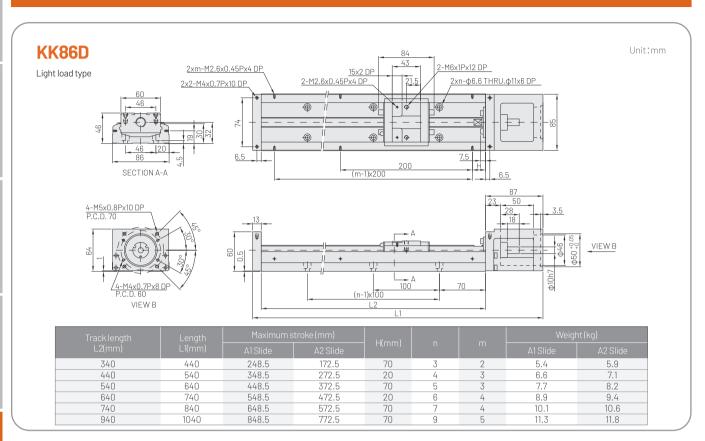


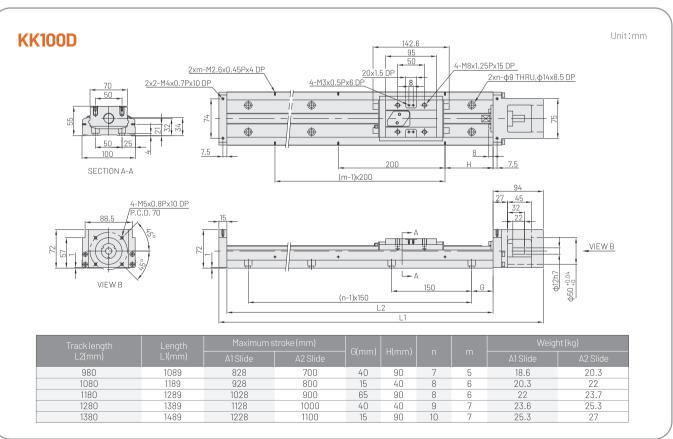
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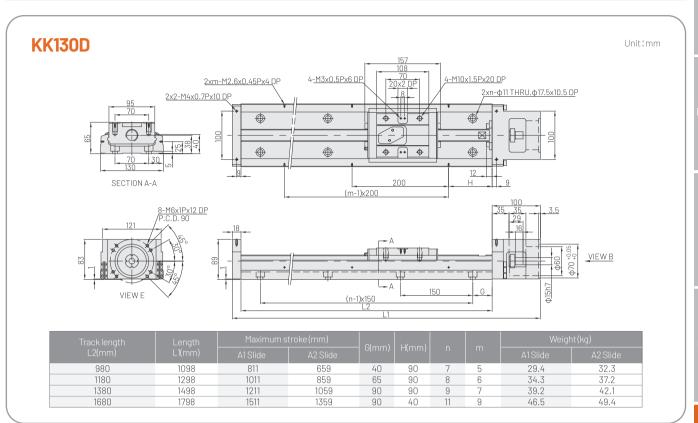
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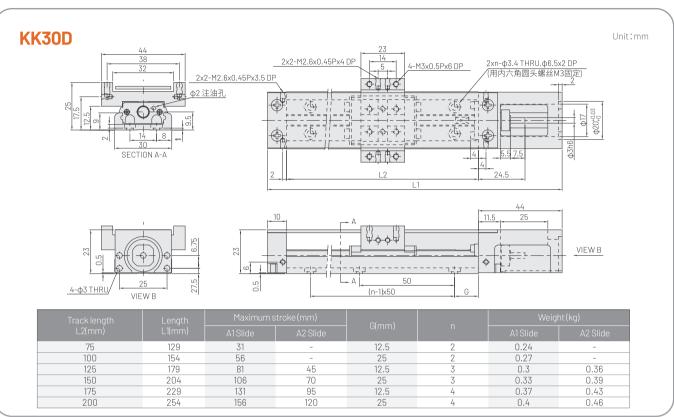


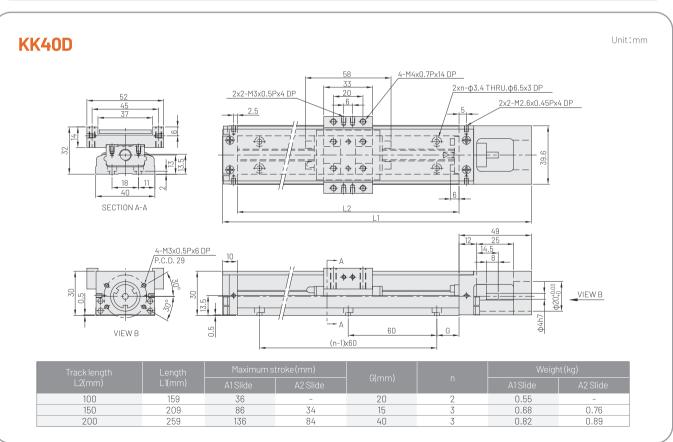
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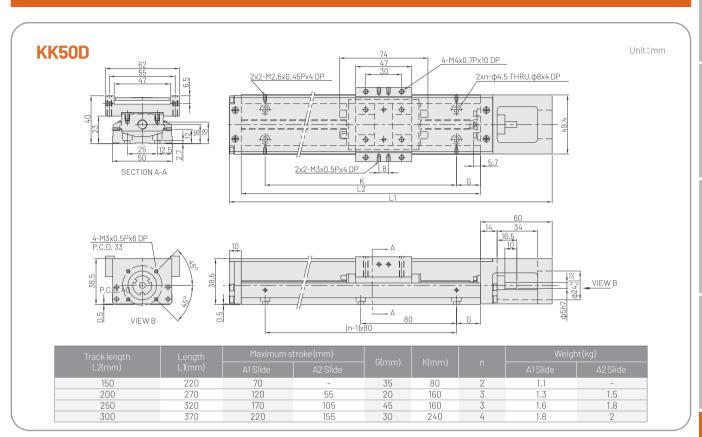
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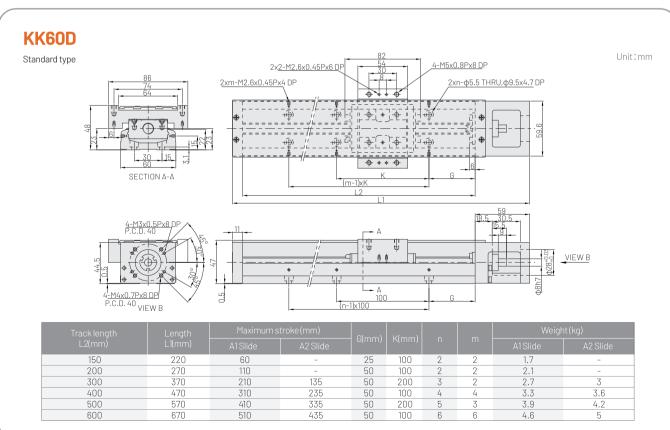
LECH 🖺

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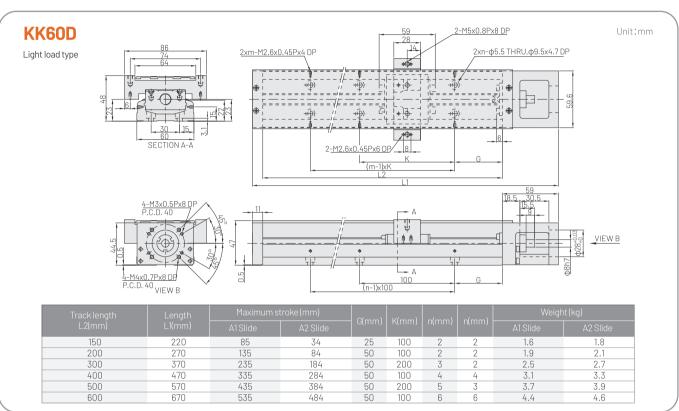


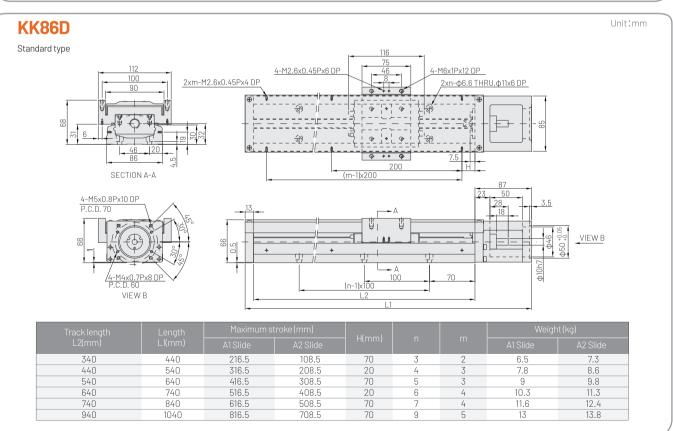
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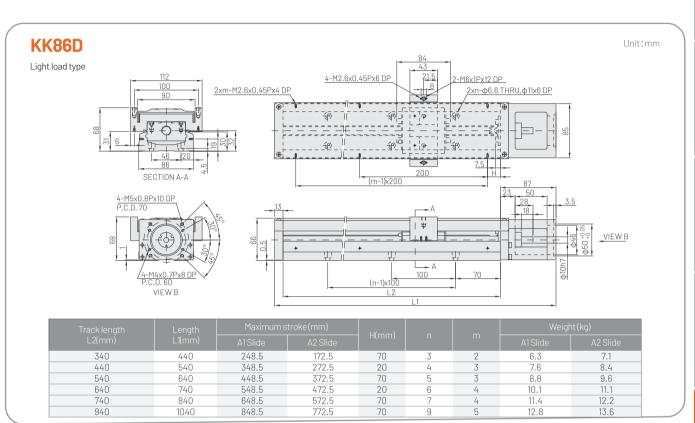
LETH Series

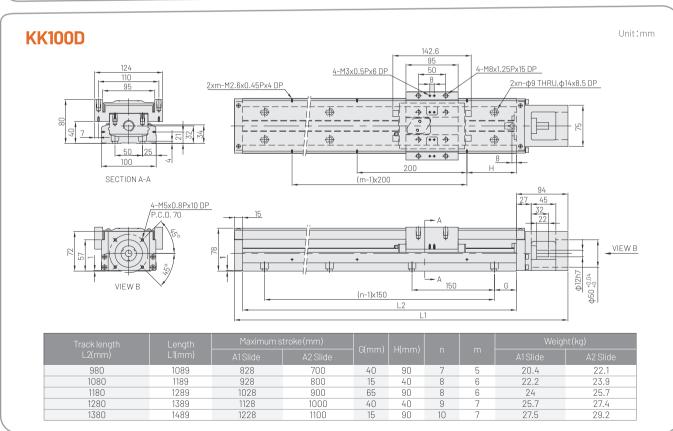
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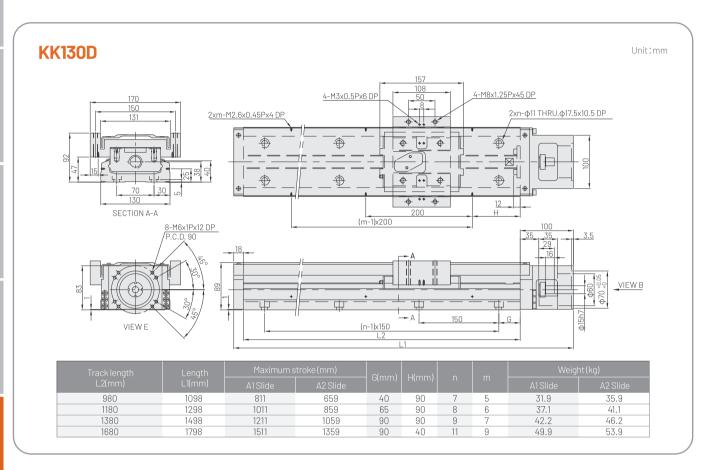


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Applicable motor comparison table

1 Mitsubishi servo motor

Output Motor	Weight			Арр	olicable fla	inge		Brake	Driver	Weight	Notes		
power		(kg)	KK30D	KK40D	KK50D	KK60D	KK86D	KK100D	KK130D	(kg)		(kg)	Mores
10W	HC-AQ0135D	0.19	F1	-	-	-	-	-	-	0.29	M2-JR-03A5	0.2	
20W	HC-AQ0235D	0.22	F1	-	-	-	-	-	-	0.32	M2-JR-03A5	0.2	
50W	HF-KP053	0.35	-	F1	F1	F1	F2	-	-	0.75	MR-J3S-10A	0.8	220V
100W	HF-KP13	0.56	-	F1	F1	F1	F2	-	-	0.89	MR-J3S-10A	0.8	220V
200W	HF-KP23	0.94	-	-	-	-	F0	FO	F1	1.6	MR-J3S-20A	0.8	220V
400W	HF-KP43	1.5	-	-	-	-	F0	F0	F1	2.1	MR-J3S-40A	1	220V
750W	HF-KP73	2.9	-	-	-	-	-	F1	F2	4	MR-J3S-70A	1.4	220V

2 Panasonic servo motor

Output Motor	Weight			Арр	olicable fla	ange		Brake	Daire	Weight	Notes		
power		(kg)	KK30D	KK40D	KK50D	KK60D	KK86D	KK100D	KK130D	(kg)		(kg)	Notes
50W	MSMD5AZP1	0.32	-	F2	F2	F2	F3	-	-	0.53	MADDT1105	0.8	110V
50W	MSMD5AZP1	0.32	-	F2	F2	F2	F3	-	-	0.53	MADDT1205	0.8	220V
100W	MSMD011 P1	0.47	-	F2	F2	F2	F3	-	-	0.68	MADDT1107	0.8	110V
100W	MSMD012P1	0.47	-	F2	F2	F2	F3	-	-	0.68	MADDT1205	0.8	220V
200W	MSMD021P1	0.82	-	-	-	-	F1	-	-	1.3	MADDT2110	1.1	110V
200W	MSMD022P1	0.82	-	-	-	-	F1	-	-	1.3	MADDT1207	0.8	220V
400W	MSMD041P1	1.2	-	-	-	-	F1	-	-	1.7	MADDT3120	1.5	110V
400W	MSMD042P1	1.2	-	-	-	-	F1	-	-	1.7	MADDT2210	1.1	220V
750W	MSMD082S1	2.3	-	-	-	-	F4	F2	F4	3.1	MADDT3520	1.5	220V

3 Yaskawa servo motor

Output	Motor				Арр	licable fla	ange	Brake	Driver	Weight	Notes		
power		(kg)	KK30D	KK40D	KK50D	KK60D	KK86D	KK100D	KK130D	(kg)		(kg)	110103
10W	SGMMV-A1A2A21	0.13	F2	-	-	-	-	-	-	0.215	SGDV-R90A01A	0.9	220V
20W	SGMMV-A2A2A21	0.17	F2	-	-	-	-	-	-	0.27	SGDV-R90A01A	0.9	220V
50W	SGMAV-A5ADA61	0.3	-	F1	F1	F1	F2	-	-	-	SGDV-R70A01A	0.9	有键
50W	SGMAV-A5ADA2C	0.3	-	F1	F1	F1	F2	-	-	-	SGDV-R70A01A	0.9	无键
50W	SGMAV-A5ADA21	0.3	-	F1	F1	F1	F2	-	-	0.75	SGDV-R70A01A	0.9	中惯量
100W	SGMAV-01ADA64	0.4	-	F1	F1	F1	F2	-	-	0.89	SGDV-R90A01A	0.9	
200W	SGMAV-02ADA65	0.9	-	-	-	-	F0	F0	F1	1.6	SGDV-1R6A01A	0.9	
400W	SGMAV-04ADA66	1.2	-	-	-	-	F0	F0	F1	2.1	SGDV-2R8A01A	1	
750W	SGMAV-08ADA67	2.6	-	-	-	-	-	F1	F2		SGDV-5R5A01A	1.5	

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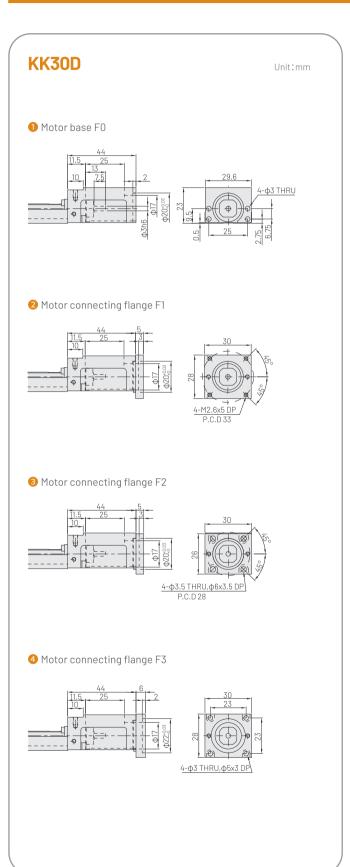
LETH E

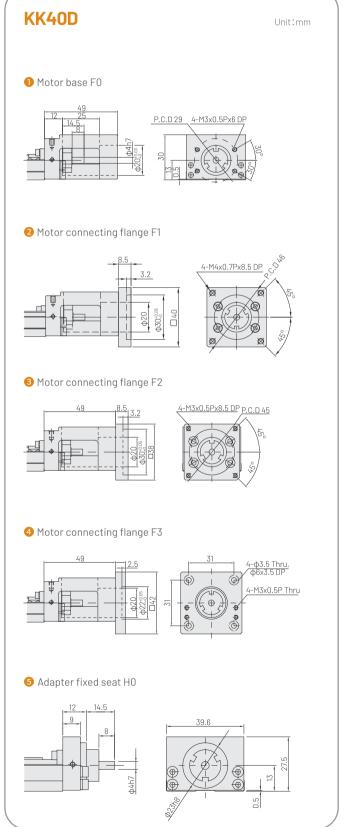
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KK

Single-axis robot KK type

Connecting flange between motor base and motor





Single-axis robot KK type

Connecting flange between motor base and motor

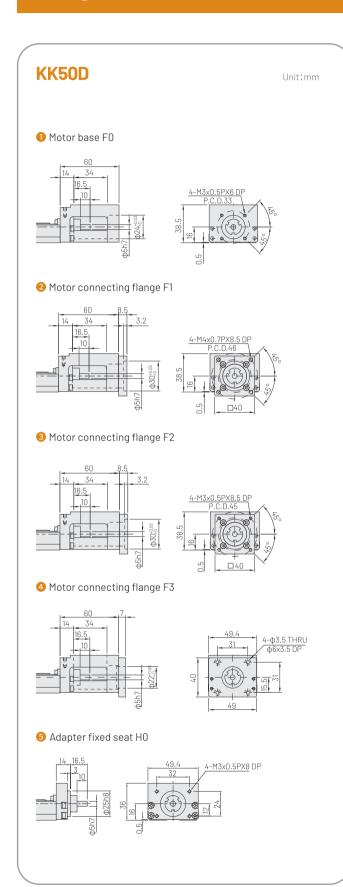


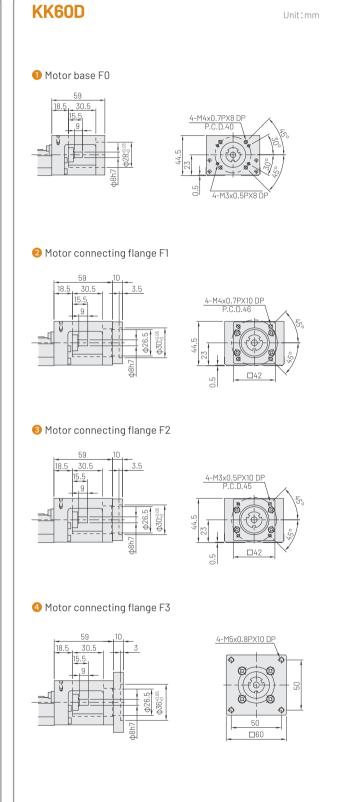
Series

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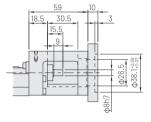
KK

Single-axis robot KK type

Connecting flange between motor base and motor

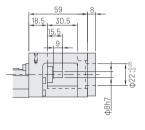
KK60D Unit:mm

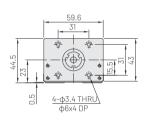
5 Motor connecting flange F4



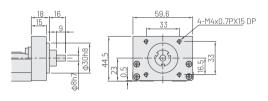


6 Motor connecting flange F5

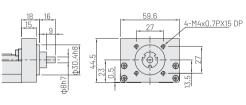




7 Adapter fixed seat H0



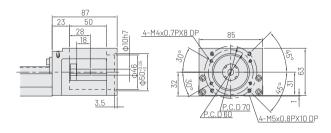
8 Adapter fixed seat H1



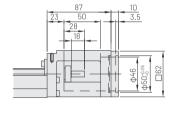


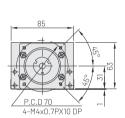
Unit:mm



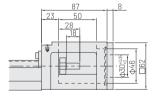


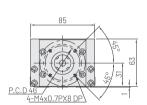
2 Motor connecting flange F1



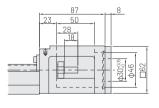


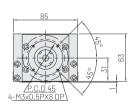
3 Motor connecting flange F2





4 Motor connecting flange F3





Single-axis robot KK type

Connecting flange between motor base and motor

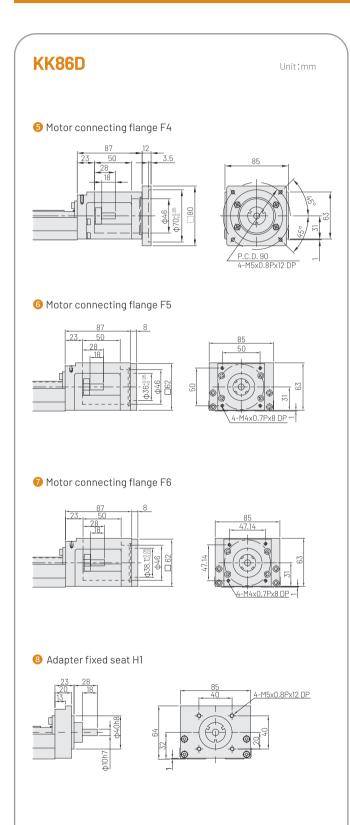
LGTH

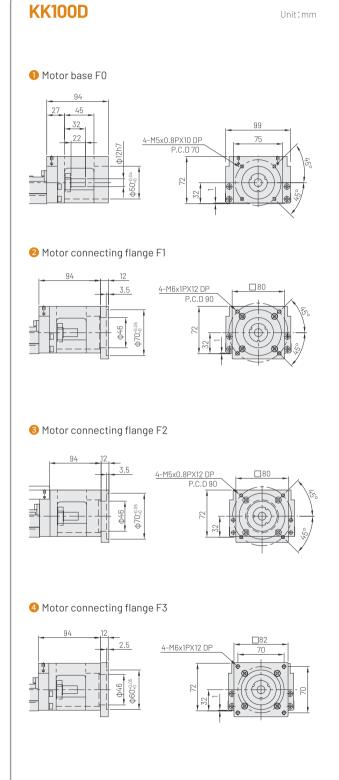
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Single-axis robot KK type

Connecting flange between motor base and motor

S Motor connecting flange F4

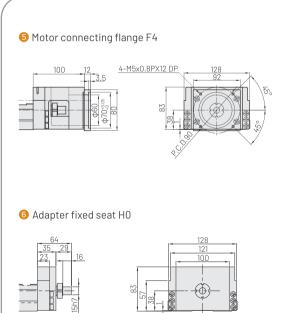
4-M6xIPX12 DP

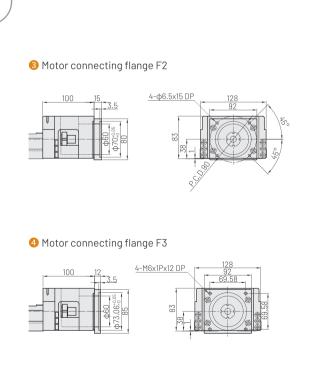
4-M6xI

• Motor base FO

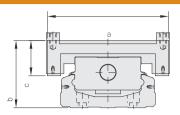
• Motor connecting flange F1

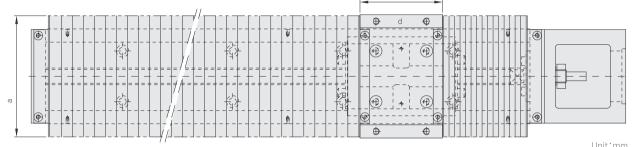
• Motor connecting flange F1





Telescopic sheath





		• •						Unit:n
	Track length	Maximum stroke	Minimum compression	Maximum elongation				
	75	22	15	37				
	100	37	20	57				
KK30D -	125	52	25	77	- 47	22.5	15.5	23
KKJUD -	150	67	30	97	47	22.5	10.0	23
	175	82	35	117				
	200	97	40	137				
	100	35	16	51				
KK40D	150	63	27	90	60	29.5	19	33
	200	93	37	130				
	150	60	21.5	81.5				
-	200	95	29	124	- 00	77	10	/7
KK50D —	250	130	36.5	166.5	- 62	37	19	47
	300	160	46.5	206.5				
	150	56	16	80				
-	200	106	20	126				
-	300	166	40	206		, E E	0.1	- /
KK60D	400	234	56	290	84	45.5	24	54
	500	306	70	376				
	600	366	90	456				
	340	188	36	224				
	440	260	50	310				
-	540	336	62	398	44.0	0.4		
KK86D -	640	408	76	484	- 110	61	32	75
	740	480	90	570				
	940	640	110	750				
	980	769	58	827				
-	1080	855	65	920				
KK100D	1180	945	70	1015	150	73	41	95
-	1280	1029	78	1107				
	1380	1115	85	1200				
	980	748	62	810				
	1180	916	78	994	100	0.0		405
KK130D -	1380	1084	94	1178	180	89	53	108
	1680	1346	113	1459				

LGCH

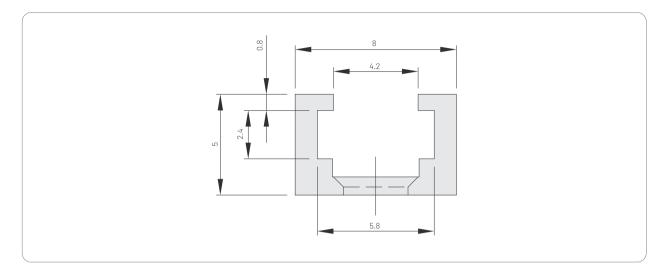
LETH

ECH

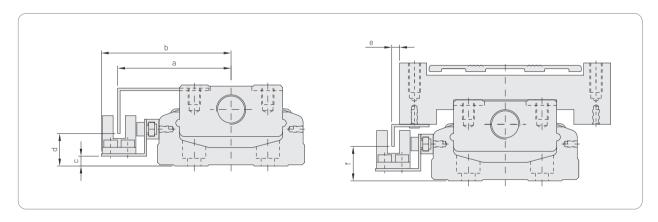
KK

Limit switch

1 Limit orbit Unit:mm



2 A sensor
Unit:mm

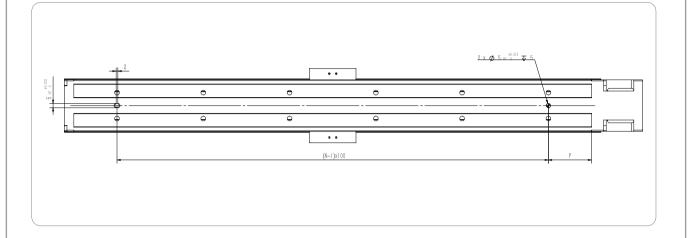


光电开关S2:674NPN Photoelectric switch											
尺寸 Size	а	b	С	d	е	f					
KK40D	36.5	44.3	1	9.8	10.5	12					
KK50D	41.3	48	1	10.5	10.2	11					
KK60D	46.2	52.8	4	14	3.2	13					
KK86D	59	65.7	8	18	3	18					
KK100D	66	73	10	20	4.2	20					
KK130D	80.8	87.5	14	23.5	-4.1	23.5					

Standard base pin

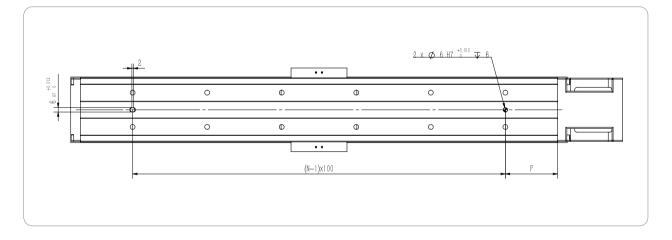


Unit:mm



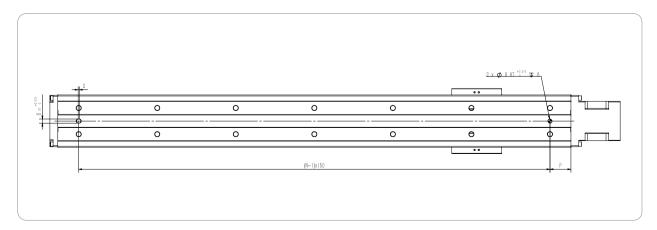
KK86D Base pin

Unit:mm



KK100D Base pin

Unit:mm



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