YOSO
LINEAR MOTION

SINGLE AXIS ROBOT

About Us

Jingpeng Machinery Equipment (Shanghai) Co., Ltd. was established in 2015. Its main products include ball screws, linear guides, cross guides, precision ball screws/splines, single-axis actuators, medium and large bearings, racks, couplings, support units, servo motors and drivers, etc. In cooperation with the German YOSO company, Jingpeng has independent import and export rights. Jingpeng has completed trademark registration and continues to promote its use. Now YOSO is one of the world's well-known brands. The company's products are sold all over the world and exported to the United States, Spain, Turkey, Italy, Austria, Brazil and other countries. Jingpeng Machinery learns German production technology, combines European and Japanese design concepts, and has specially established an independent R&D center, introducing advanced manufacturing equipment and high-precision testing equipment at home and abroad, and has completed an annual output value of 1.5 million sets of screw guides.

The product application areas are as follows: Automation industry Robotics industry Semiconductor industry Industrial machinery Medical equipment Green energy industry Machine tools Automatic storage system products have outstanding performance in various industrial fields. Jingpeng Machinery integrates global resources, continues to innovate, and works tirelessly for the better welfare of mankind and a better working environment. In the field of transmission components, Jingpeng Machinery has become the best partner with high-quality professional manufacturing and solutions, and provides technical support and industry analysis to meet customer needs. At the same time, we have a solid business team to ensure the stability of the foreign trade sales system and strong market development capabilities, so that our products can be exported to all parts of the world at the fastest speed. Jingpeng Machinery is a global professional manufacturer of transmission control products and system technology products.

Content

Linear Module Without Cover

Linear Module With Cover

Connection Motor and Motor Bracket (Without Cover)

Comprehensive Explanation

Matters Needing Attention

This Hkk single axis robot series product belongs to mechanical and electrical equipment.In arder to maintain the safety of users,please read the relevant catalogue and the following precautions carefully before selecting the model and actually operating this product,and use it according to the instructions.If you do not use this product accordng to the precautions,we will not be responsible for any abnormal performance,damage or other accidents.

Life safety

- This product is suitable for industrial use,not for security components directly related to human life or personnel.
- During the operation of this product,the personnel should be kept outside the scope of mechanical action to avoid central injury or other industrial safety accidents.
- When this product is connected with a mobor and powered on,the device with a heart rate regulator should be kept at a distance one member to avoid interference
- This product should not be installed near fire souroe,inflammable material and combustible gas to prevent fire.

Storage and installation

- Avoid falling or collision during handling
- When storing the product it is recommended that it should be placed flat and properly packed to avoid exposure to high temperature,low temperature and humidity.
- Do not disassemble or refit this product by yourself,so as to avoid foreign matters entering or damaging the product,resulting in abnormal functions or industrial safety accidents.
- When installing the coupling and motor,select appropriate components,and pay attention to lock the screws after aligning with the shaft centerline.Do not force the installation.

Operation and use

- During operation,the rated conditions recorded in the catalogue,such as maximum speed load,etc.,shall be followed to avoid functional damage or industrial safety accident.
- Dust,chips and other foreign matters should be avoided to invade the ball ring system,resulting in damage,short life or abnormal function.
- The operating environment temperature should be below 80℃.If you need to use the products in high temperature places,please negotiate with YOSO.
- When the environment is special auch as strong vibration,vacuum chamber,dust-free chamber,corrosive chemicals,organic solvents or reagents,extremely high or low temperature wet splashing,oil droplets,oil mist high salinity,heavy load,vertical or cantilever installation,ete.,please confirm the product's use conditions.

Maintain

- Fill up the lubricating oil before the first use.Please pay attention to the type cf oil.Different lubricating oils should not be mixed.
- Under normal use,it is recommended to check the running condition of each 100km line once to "remove dirt"and add lubricating oil.The guide rail and lead screw should be kept lubricated.

Operation steps

The selection of single axis robot products,according to different conditions and restrictions,can refer to the following selection process.

1 Conditions of use

- Effective travel
- Space position limit (width,height,length)
- Installation mode (horizontal,vertical,side hanging)
- Position of load center of gravity
- Operating condions (lead,speed,acceleration and deceleration,duty cycle)
- Service environment (high temperature,vibration,oil,water, corrosion)

2 Accuracy required

- Position accuracy
- Reproduction accuracy
- Walking parallelism

3 Application form

- Uniaxial
- Two axes
- Multiaxial
- Special combination

4 Motor selection

- AC servo motor
- Stepper motor
- With or without brake (internal or external)

5 Motor load calculation

- Top speed
- Motor resolution
- Motor torque calculation

6 Operation analysis

- Acceleration
- Actual operation mode (V-T diagram)

7 Other accessories

- Selection of relevant accessories (limit switch,adapter plate,telescopic sheath,cable protection tube)

8 Final confirmation

- Reconfirmation of service conditions
- Price and delivery date
- Additional processing
- Special requirements

Accuracy

Precision includes accuracy and precision,as follows:

1.positioning accuracy(accuracy)

The maximum difference (absolute value)between the distance that the module moves along a certain direction from the reference point and the original set distance is called positioning accuracy.

2.repeatability of round trip position (precision)

Or the specified reproducibility,which means the position difference value measured at a set position during the round-trip movement of Hkk Huatai.The maximum value in the whole journey is called the round-trip position reproducibility.

2.Waking parallelism

1) It refers to the parallelism between the slide plane of Hkk module and the installation plane of module.The gauge is mounted in the center of the sliding table plane,and the pointer is placed on the installation plane,taking the maximum difference measured in the whole stroke.

2) It refers to the parallelism between the sliding table of Hkk module and the module installation reference plane.The gauge is mounted inthe center of the slide plane,and the pointer is placed on the side mounting reference plane of the module,and the maximum differencevalue measured in the whole stroke is taken.

Speed

1. Maximum linear velocity

The maximum linear speed(V)of Hkk slide is calculated by multiplying the maximum speed (s) of ball screw by the lead (L).
V(mm/sec)=S(rpm)÷60×L(mm)

2. Maximum speed

Indicates that the maximum alowable speed of the ball screw is determined by the critical speed.At the critical speed of the frying pan,reso-nance may occur.The critical speed is related to the length of the ball screw.Therefore,the critical speed of the ballscrew also determines theeffective stroke and total length
The maximum allowable rotation speed of ball screw is calculated as follows:

$$Np=0.8\times2.71\times10^{8}\times\frac{M_f d_r}{L_t^2}$$

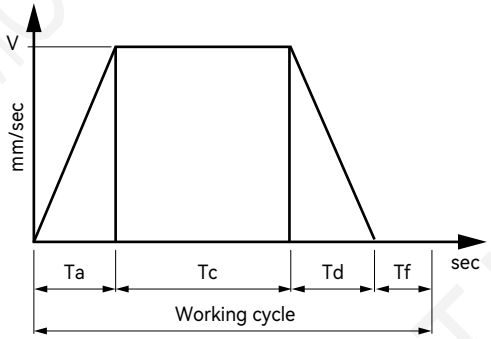
3. Acceleration and deceleration

The so-called speed refers to the operating speed set by the sliding table.The sliding table must start to accelerate from the stop state,maintain the speed to move to the destination after reaching the working speed,and start to decelerate and stop before reaching the destination.
The acceleration and deceleration are determined by the user according to the actual needs.In Hkk design,the acceleration is set as 0.15g for lead 5 or less,and 0.3g for other leads. 1G=9.8m/s²;0.36=2940mm/s²,The maximum removable mass of Hkk module depends on the acceleration

Note:the acceleration and deceleration will cause inertia load on the moving mass.The greater the acceleration and deceleration,the smaller the movable mass.Excessive acceleration and deceleration will produce large impact force,which should be avoided.

4. Acceleration and deceleration

The work cycle is decided by the customer according to the actual needs.Common work cycles are shown in the figure below,including acceleration time Ta,constant velocity time Tc,deceleration time Td and residence time Tt.



Acceleration=V/Ta
Deceleration=V/Td
Working period (sec)=Ta+Tc+Td+Tf
Working time =working cycle *times
Operation rate =working time /(working time+downtime)
The operation rate should be determined according to the motor load.It is not suitable to work continuously for a long time.It is suggestod that 0.5 should be taken as the standard.

Install

If the ball screw type is determined to be used in the vertical direction (Z-axis),please note that the vertical installation belongs to a special use state,and the load should be used within the maximum movable weight (vertical) listed in the table.In addition,the time gauge belt type is prohibited to be used in the vertical direction.

Note:in order to prevent the load from sliding,the motor with brake should be used when it is installed vertically.

Life

For horizontal installation,side hanging installation and inclined installation (the angle is less than 30 degrees),the service life of Hkk shall be subject to the service life of f linear guide rail; for vertical installation and inclined installation (the angle is more than 30 degrees),the service life of Hkk shall be subjec to the service life of lead screw or fixed end bearing (whichever is less).
The rated dynamic load listed in the table(FY,FZ,MX,my,MZ)is the service life of 10.000km relative to the module.If he load is less than the loadable condition listed in the table (FY/fyD+FZ/Fzd+MX/MXD+my/MyD≤ 1),otherwise,if the load is greater than the rated value listed in the table,the service life will be less than the rated value.In order to ensure the long-term use of Hkk,it is recommended to use it within the listed load range as far as possible.

Maintain

The maintenance parts of Hkk module incelude ball screw,U-shaped guide rail and related accessories.Every three months or every 100km,the lubricant must be added to the roller screw and linear guide,and pease check whether there is any dirt or debris in the system.If the grease becomes dirty,please change the grease.If you have any special maintenance problems,please contact us.

Product application

Hkk series products are widely used and can be used in general automation equipment.Examples are as follows:
Automatic tin welding machine,screw locking machine,material rack parts box taking and placing,small stack,adhesive coating,parts and accessories taking and placing and handling,CCD lens moving,automatic jet machine,automatic loading and unloading device,cutting machine,electronic component production equipment,small assemby line,small platen,spot welding machine,surface coating process,Automatic labeling machine,liquid filling and packing,parts and accessories inspection equipment,production line workpiece sorting,material filling device,packaging machine,engraving machine,conveyor belt displacement,workpiece cleaning device,etc.

Main Feature

Industrial Robot

- Modular design,smaller size
- U-shaped steel based track,overall quenching,hrc58 degree or above,high strength,high bearing capacity.
- Standardized production,fast delivery,lower cost.
- High versatility,complete specifications and models,to meet the needs of customers in various industries

Modular

Through the modular design of ball guide and U-shaped industrial screw,the robot can be integrated. Industrial robots can provide fast selection,installation,compact size,high rigidity and othor features,which can greatly reduce the use space of the client.

■ Single axis Robot HKK Type

Hkk single axis robot is mainly through modular design:bal screw an U-shaped guide rail ar integrated together,so it can provide high preci-sion,rapid instalation,selection,high rigidity,small volume,space saving and other characteristics.
By using high-precision ball screw as the transmission structure,and with the optimal design of U-shaped track as the guide structure,to ensure the accuracy and rigidity of the demand.

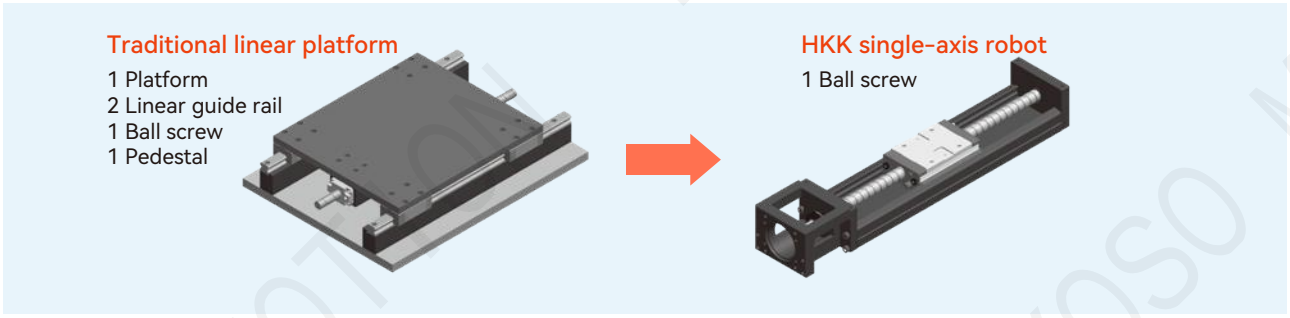
1.1 Characteristic

- → Easy to design and install.
- → Small size and light weight.
- → High-precision.
- → High rigidity.
- → It is fully equipped.
- → Optimization design.

The track structure is analyzed by finite element method to get the best rigidity and weight.The analysis is shown in the right figure.

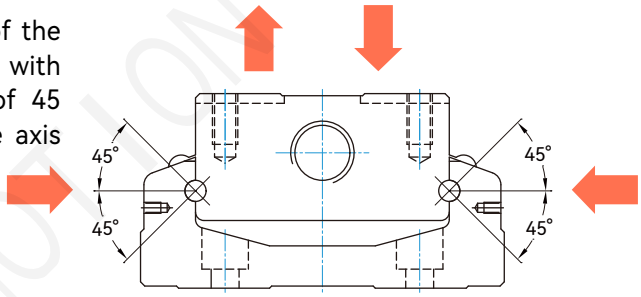
1.1.1 Modular

Through the modular design,Hkk single axis robot integrates ball screw and U-shaped guide rail,which can save the selection of guidance and driving parts for traditional braking platform,and greatly reduce the space and time of client.



1.1.2 Four direction equal load

The contact surface between the ball and the groove of the return system between the rail and the slider is designed with a 2-row Goethe profile, which has a contact angle of 45 degrees. The modified design can make the Hkk single axis robot bear the equal load in four directions.

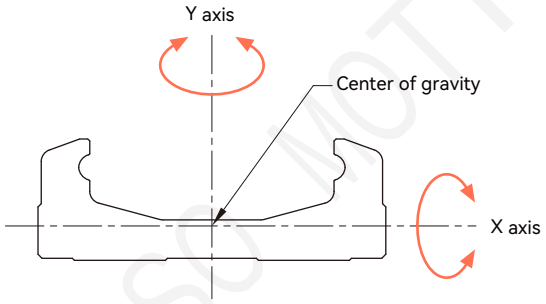


1.1.3 High rigidity

The track configuration adopts U-section,and through the design of finite element analysis software,the balance point between volume and rigidity is achieved,which makes the track have the characteristics of high rigidity,compact volume and light weight.

Moment of inertia Unit:mm⁴

Model	I_x	I_y
HKK40	3.533×10³	5.137×10⁴
HKK50	9.6×10³	1.34×10⁵
HKK60	5.056×10⁴	2.802×10⁵
HKK86	7.455×10⁴	1.134×10⁶
HKK100	1.296×10⁵	2.035×10⁶
HKK130	2.546×10⁵	5.073×10⁶



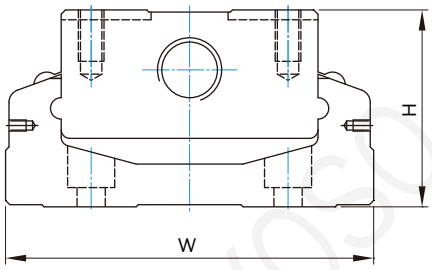
I_X : Moment of inertia computed about X axis

I_Y : Moment of inertia computed about Y axis

1.1.4 All specifications

According to different needs,we have developed the following Hkk single axis robots,which can be selected by customers according to their needs,space and load.

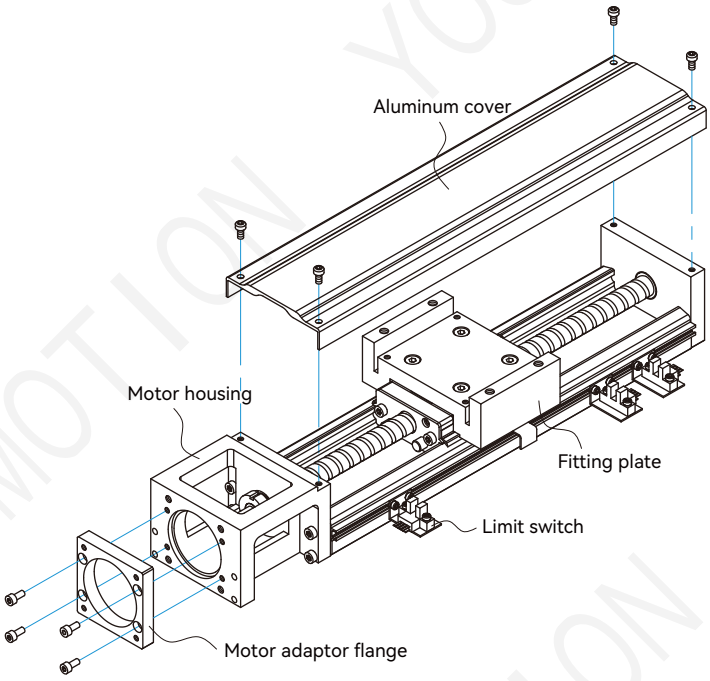
Model	W	H
HKK40	40	20
HKK50	50	26
HKK60	60	33
HKK86	86	46
HKK100	100	55
HKK130	130	65

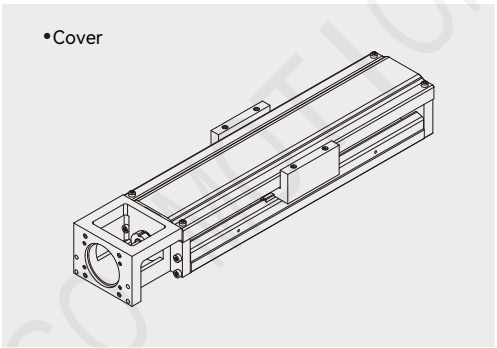


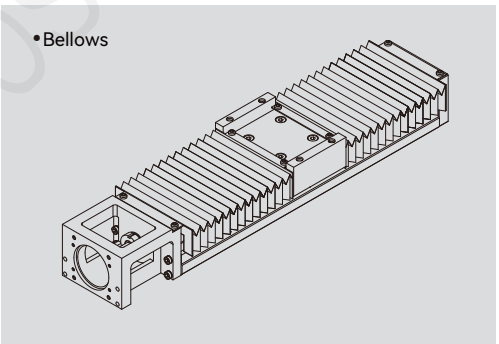
1.1.5 Shop accessories

In order to meet the needs of various applications,industrial robots can also choose aluminum cover, telescopic sheath, motor connecting flange and limit switch.

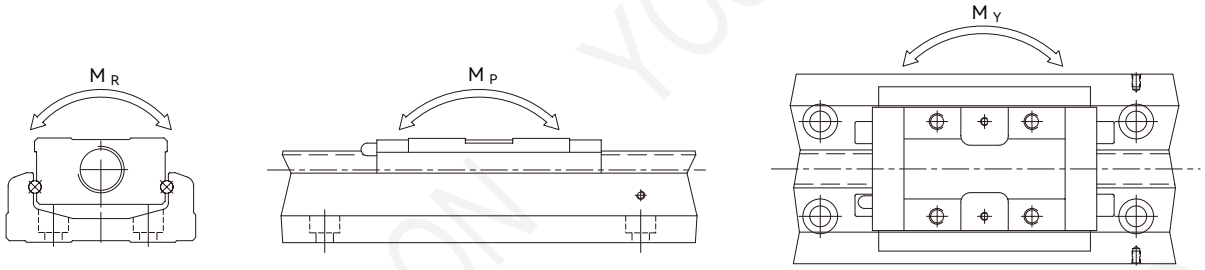
- Aluminum cover and telescopic sheath:it can prevent foreign matters and impurities from entering the interior of the industrial robot and affecting its service life,accuracy and smoothness.
- Motor connecting flange:various motors can be locked on the industrial robot.
- Limit switch:provide the safety mechanism of slider positioning,starting origin and preventing the stroke of slider frying pan.







1.1.6 Load Specification



Model No.		Ball screw				Linear Guide													
		Nominal outside diameter (mm)	Lead (mm)	Basic dynamic rated negative rating (N)	Basic net rated load (N)	Basic dynamic rated negative rating (N)		Basic net rated load (N)		Allowable static resistance									
										Pitch M_P(N-m)				Partial convergence M_Y(N-m)				Roll M_R(N-m)			
						Sliding seat A	Sliding seat S	Sliding seat A	Sliding seat S	Sliding seat A1	Sliding seat A2	Sliding seat S1	Sliding seat S2	Sliding seat A1	Sliding seat A2	Sliding seat S1	Sliding seat S2	Sliding seat A1	Sliding seat A2	Sliding seat S1	Sliding seat S2
HKK 4001	Precision	8	1	735	1538	3920	-	6468	-	33	182	-	-	33	182	-	-	81	162	-	-
	Normal			676	1284																
HKK 5002	Precision	8	2	2136	3468	8007	-	12916	-	116	545	-	-	116	545	-	-	222	444	-	-
	Normal			1813	2910																
HKK 6005	Precision	12	5	3744	6243	13230	7173	21462	11574	152	348	72	205	152	348	72	205	419	838	241	482
	Normal			3377	5625																
HKK 6010	Precision	12	10	2410	3743	13230	7173	21462	11574	152	348	72	205	152	348	72	205	419	838	241	482
	Normal			2107	3234																
HKK 8610	Precision	15	10	7144	12644	31458	21051	50764	29475	622	3050	166	1309	622	3050	166	1309	1507	3014	847	1694
	Normal			6429	11387																
HKK 8620	Precision	15	20	4645	7655	31458	21051	50764	29475	622	3050	166	1309	622	3050	166	1309	1507	3014	847	1694
	Normal			4175	6889																
	Normal			4782	9163																

1.1.7 Accuracy class

Unit : mm

Model	Rail Length	Repeatability		Accuracy		Running Parallelism		Starting Torque(N-cm)	
		Precision	Normal	Precision	Normal	Precision	Normal	Precision	Normal
HKK40	100	±0.003	±0.005	0.020	-	0.010	-	1.2	0.8
	150								
	200								
HKK50	150	±0.003	±0.005	0.020	-	0.010	-	4	2
	200								
	250								
	300								
HKK60	150	±0.003	±0.005	0.025	-	0.010	-	15	7
	200								
	300								
	400								
	500	±0.003	±0.005	0.025	-	0.015	-	15	7
	600								
HKK86	340	±0.003	±0.005	0.030	-	0.015	-	15	10
	440								
	540								
	640								
	740	±0.003	±0.005	0.040	-	0.020	-	17	10
	940	±0.003	±0.005	0.035	-	0.030	-	25	10
HKK100	980	±0.005	±0.01	0.035	-	0.025	-	17	12
	1080								
	1180	±0.005	±0.01	0.040	-	0.03	-	20	12
	1280	±0.005	±0.01	0.045	-	0.035	-	23	15
	1380			0.05		0.04		25	
HKK130	980	±0.005	±0.01	0.035	-	0.025	-	25	15
	1180			0.04		0.03		25	15
	1380								
	1680	±0.007	±0.012	0.05	-	0.04	-	27	18

1.1.8 Model Number of HKK Series

HKK series

Size:
30, 40, 50, 60,
86, 100,130

Ballscrew lead:

HKK40: 1
HKK50: 2
HKK60: 5, 10
HKK86: 10, 20
HKK100: 20
HKK130: 25

Precision grade:
P: Precision grade, C: General

E: Special processing of ball screw
No mark: Ball screw standard

Track length:

HKK40: 100, 150, 200
HKK50: 150, 200, 250, 300
HKK60: 150, 200, 300, 400, 500, 600
HKK86: 340, 440, 540, 640, 740, 940
HKK100: 980, 1080, 1180, 1280, 1380
HKK130: 980, 1180, 1380, 1680

E: Special processing of track
No mark:Standard for track screw

Block Type:
A:Standard type
S:Light load type

Number of sliding seats

E:Special processing of slider

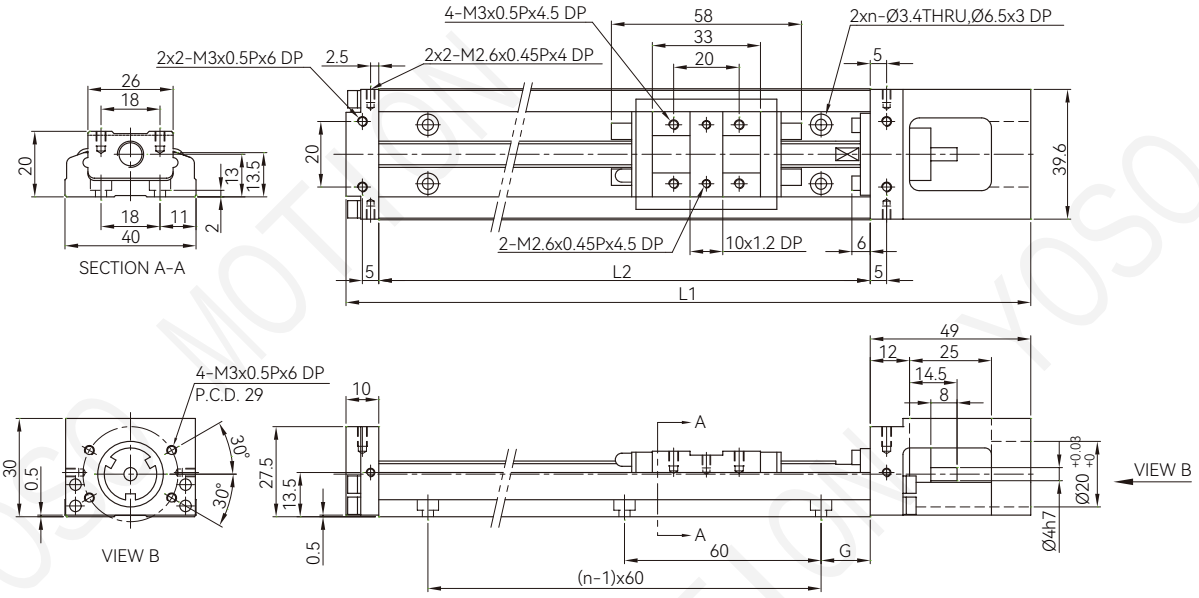
Motor connecting flange
FE: Special processing

C: Aluminum Cover
B: Plate
No mark: No Cover

Including limit switch:
S0: Only limit orbits
S1: Omron EE-SX671
S2: Omron EE-SX674
SE: Customer specified limit

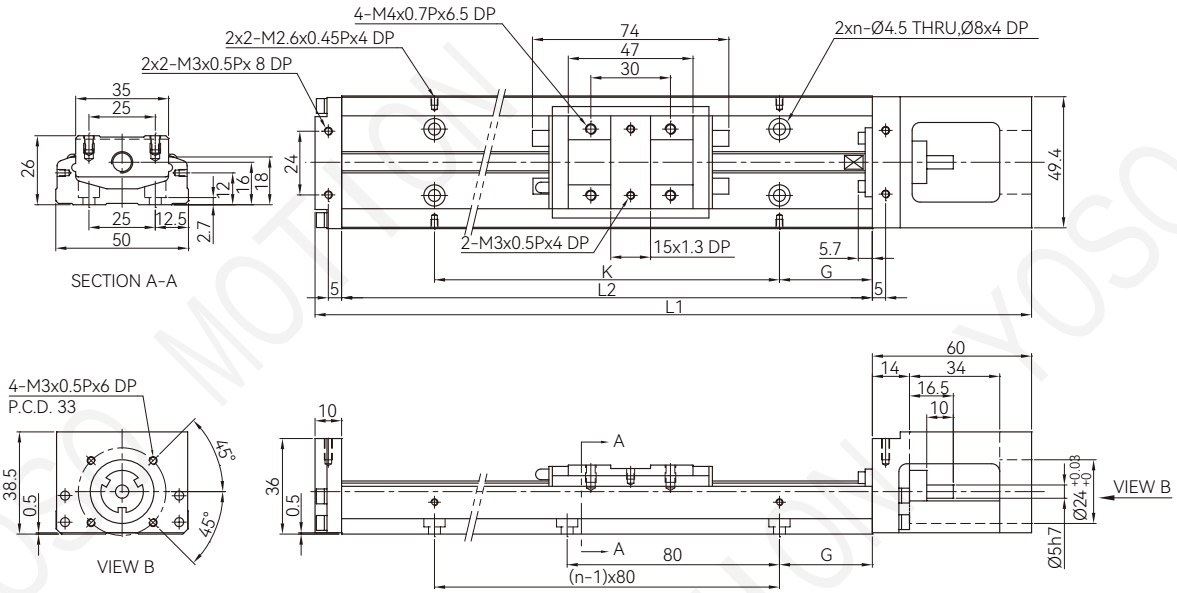
M:Attached motor

■ HKK40 (Without Cover)



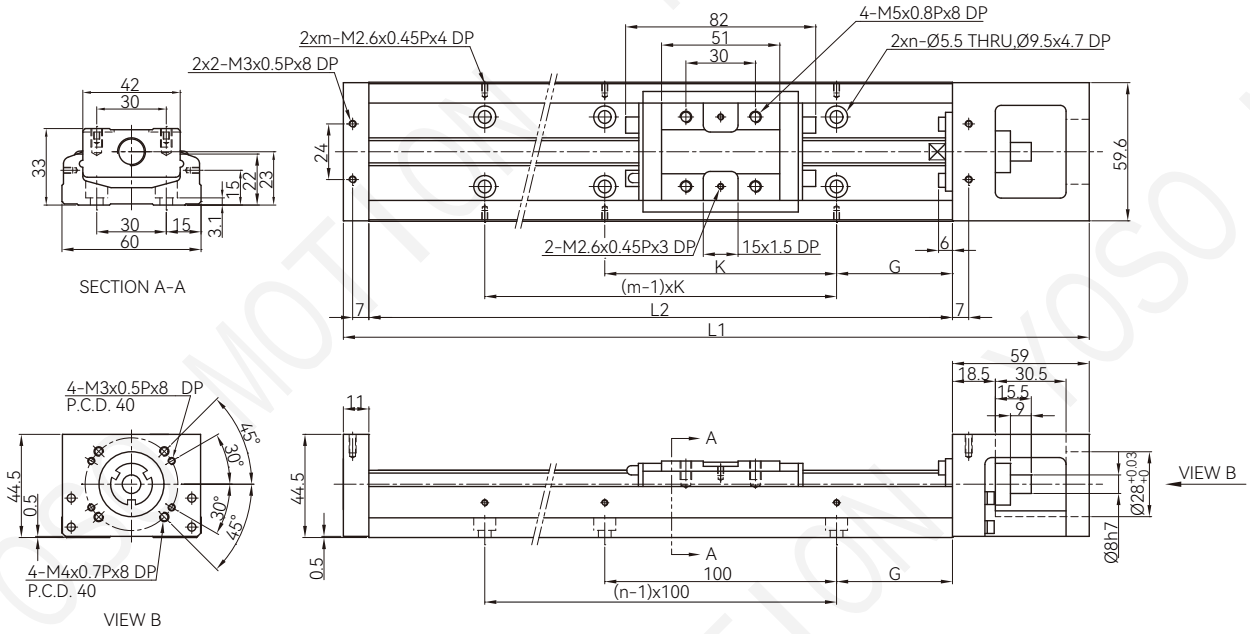
Track length (L2)	Overall length (L1)	Maximum Stroke (mm)		G (mm)	n	Weight(Kg)	
		A1 Sliding Seat	A2 Sliding Seat			A1 Sliding Seat	A2 Sliding Seat
100	159	36	-	20	2	0.48	-
150	209	86	34	15	3	0.6	0.67
200	259	136	84	40	3	0.72	0.79

■ HKK50 (Without Cover)



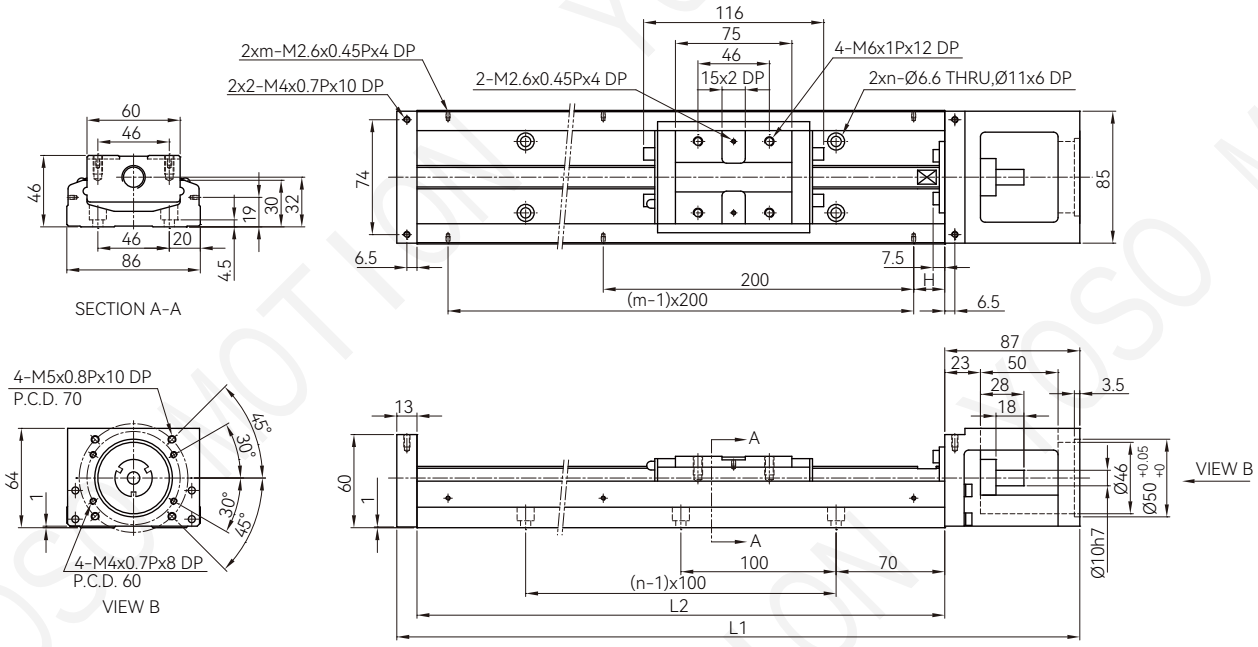
Track length (L2)	Overall length (L1)	Maximum Stroke (mm)		G (mm)	n	Weight(Kg)	
		A1 Sliding Seat	A2 Sliding Seat			A1 Sliding Seat	A2 Sliding Seat
150	220	70	-	80	2	1	-
200	270	120	55	160	3	1.2	1.4
250	320	170	105	160	3	1.4	1.6
300	370	220	155	240	4	1.6	1.8

■ HKK60 (Without Cover)



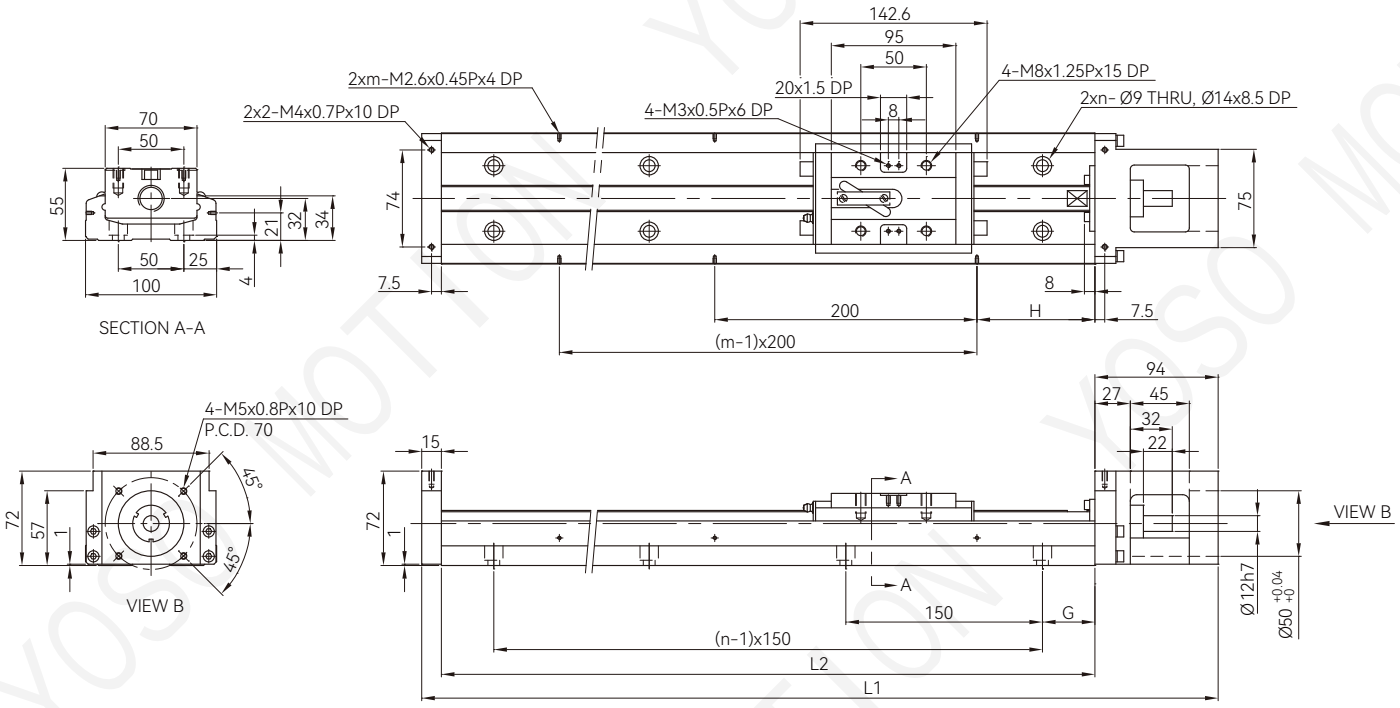
Track length (L2)	Overall length (L1)	Maximum Stroke (mm)		G (mm)	K (mm)	n	m	Weight(Kg)	
		A1 Sliding Seat	A2 Sliding Seat					A1 Sliding Seat	A2 Sliding Seat
150	220	60	-	25	100	2	2	1.5	-
200	270	110	-	50	100	2	2	1.8	-
300	370	210	135	50	200	3	3	2.4	2.7
400	470	310	235	50	100	4	4	3	3.3
500	570	410	335	50	200	5	5	3.6	3.9
600	670	510	435	50	100	6	6	4.2	4.6

■ HKK86 (Without Cover)



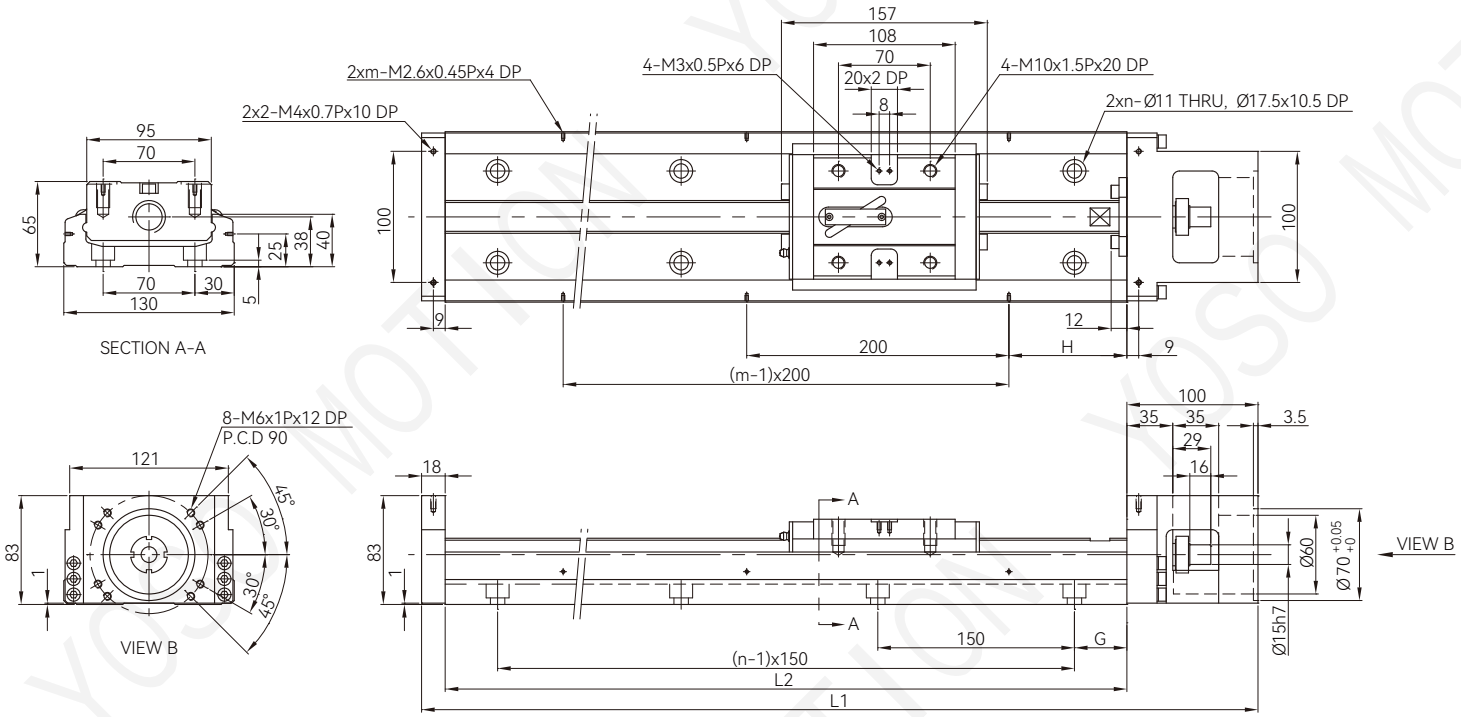
Track length (L2)	Overall length (L1)	Maximum Stroke (mm)		H (mm)	n	m	Weight(Kg)	
		A1 Sliding Seat	A2 Sliding Seat				A1 Sliding Seat	A2 Sliding Seat
340	440	216.5	108.5	70	3	2	5.7	6.5
440	540	316.5	208.5	20	4	3	6.9	7.7
540	640	416.5	308.5	70	5	3	8.0	8.8
640	740	516.5	408.5	20	6	4	9.2	10.0
740	840	616.5	508.5	70	7	4	10.4	11.2
940	1040	816.5	708.5	70	9	5	11.6	12.4

■ HKK100 (Without Cover)



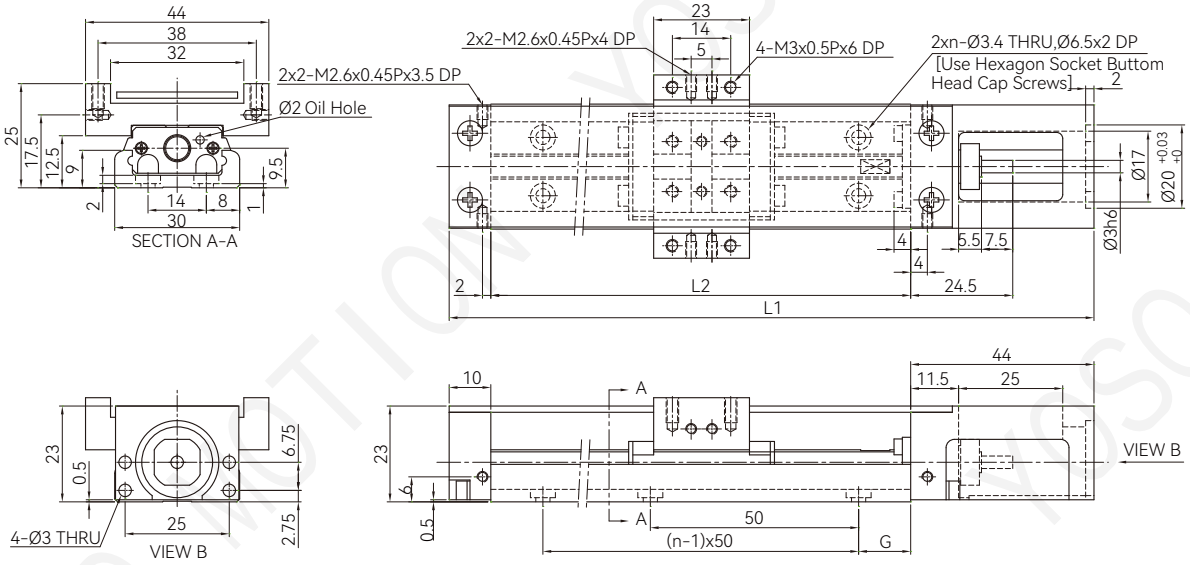
Track length (L2)	Overall length (L1)	Maximum Stroke (mm)		G (mm)	K (mm)	n	m	Weight(Kg)	
		A1 Sliding Seat	A2 Sliding Seat					A1 Sliding Seat	A2 Sliding Seat
980	1089	828	700	40	90	7	5	18.6	20.3
1080	1189	928	800	15	40	8	6	20.3	22.0
1180	1289	1028	900	65	90	8	6	22.0	23.7
1280	1389	1128	1000	40	40	9	7	23.6	25.3
1380	1489	1228	1100	15	90	10	7	25.3	27.0

■ HKK130 (Without Cover)



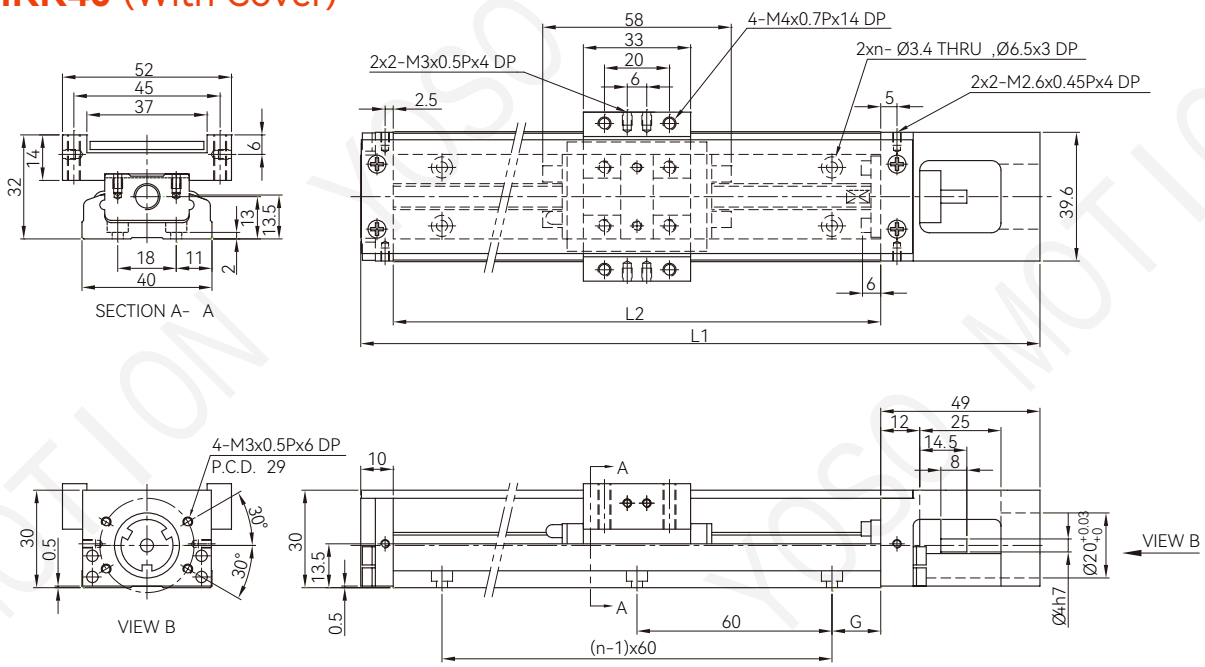
Track length (L2)	Overall length (L1)	Maximum Stroke (mm)		G (mm)	K (mm)	n	m	Weight(Kg)	
		A1 Sliding Seat	A2 Sliding Seat					A1 Sliding Seat	A2 Sliding Seat
980	1098	811	659	40	90	7	5	29.4	32.3
1180	1298	1011	859	65	90	8	6	34.3	37.2
1380	1498	1211	1059	90	90	9	7	39.2	42.1
1680	1798	1511	1359	90	40	11	9	46.5	49.4

■ HKK30 (With Cover)



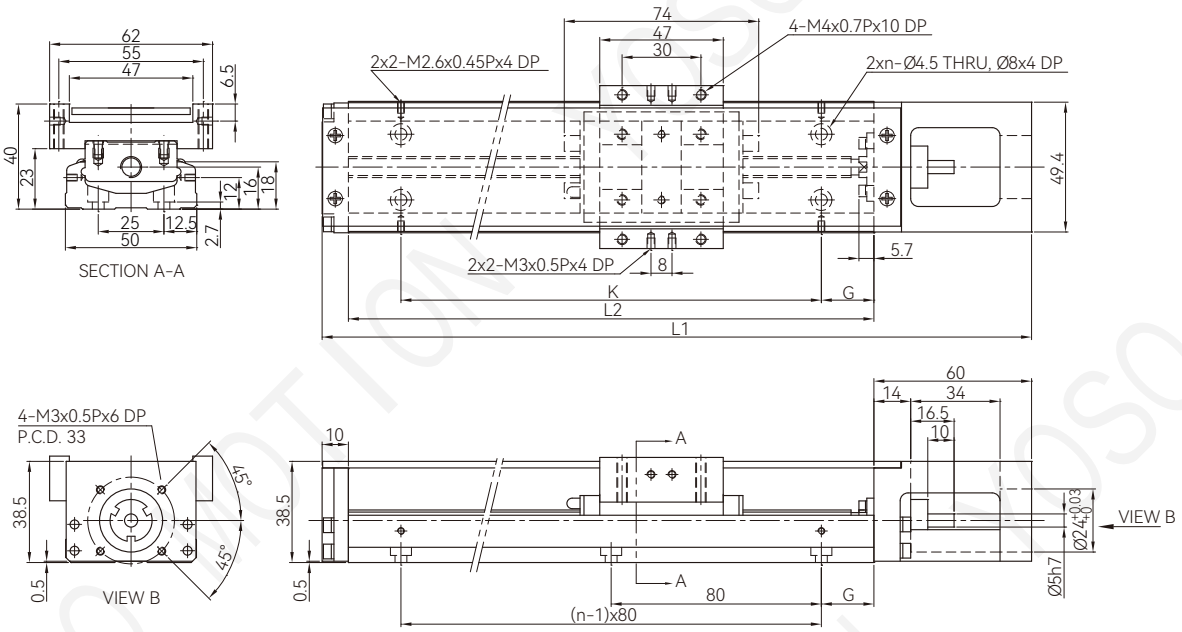
Rail Length L2 (mm)	Total Length L1 (mm)	Maximum Stroke (mm)		G (mm)	n	Mass (kg)	
		A1 Block	A2 Block			A1 Block	A2 Block
75	129	31	-	12.5	2	0.24	-
100	154	56	-	25	2	0.27	-
125	179	81	45	12.5	3	0.3	0.36
150	204	106	70	25	3	0.33	0.39
175	229	131	95	12.5	4	0.37	0.43
200	254	156	120	25	4	0.4	0.46

■ HKK40 (With Cover)



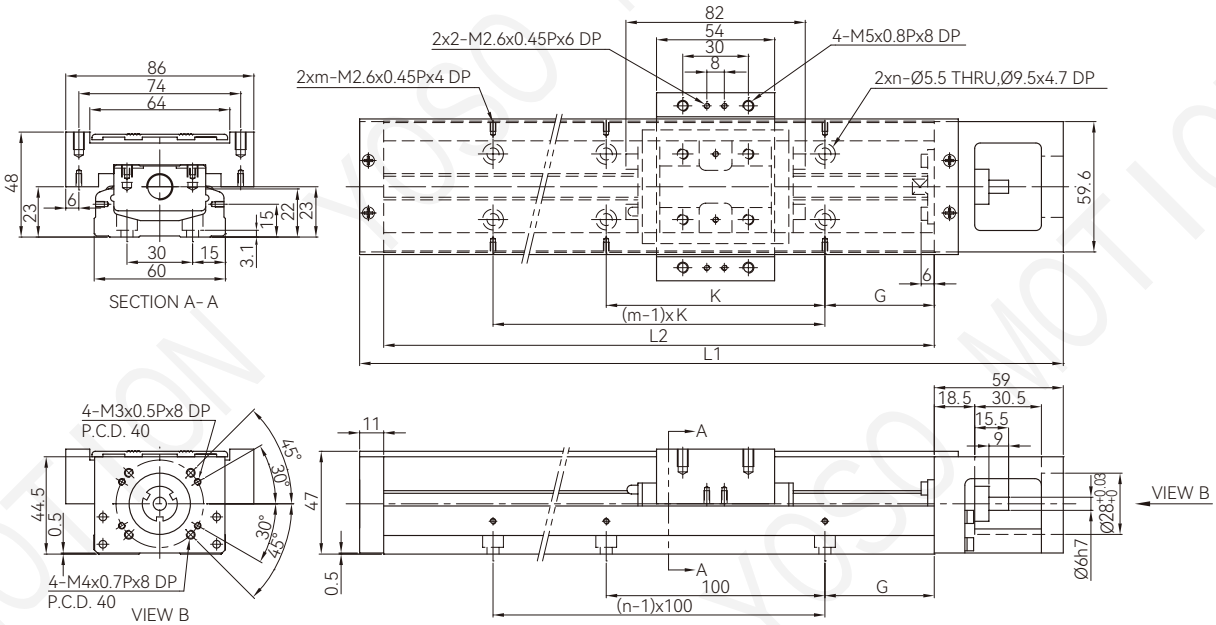
Rail Length L2 (mm)	Total Length L1 (mm)	Maximum Stroke (mm)		G (mm)	n	Mass (kg)	
		A1 Block	A2 Block			A1 Block	A2 Block
100	159	36	-	20	2	0.55	-
150	209	86	34	15	3	0.68	0.76
200	259	136	84	40	3	0.82	0.89

HKK50 (With Cover)



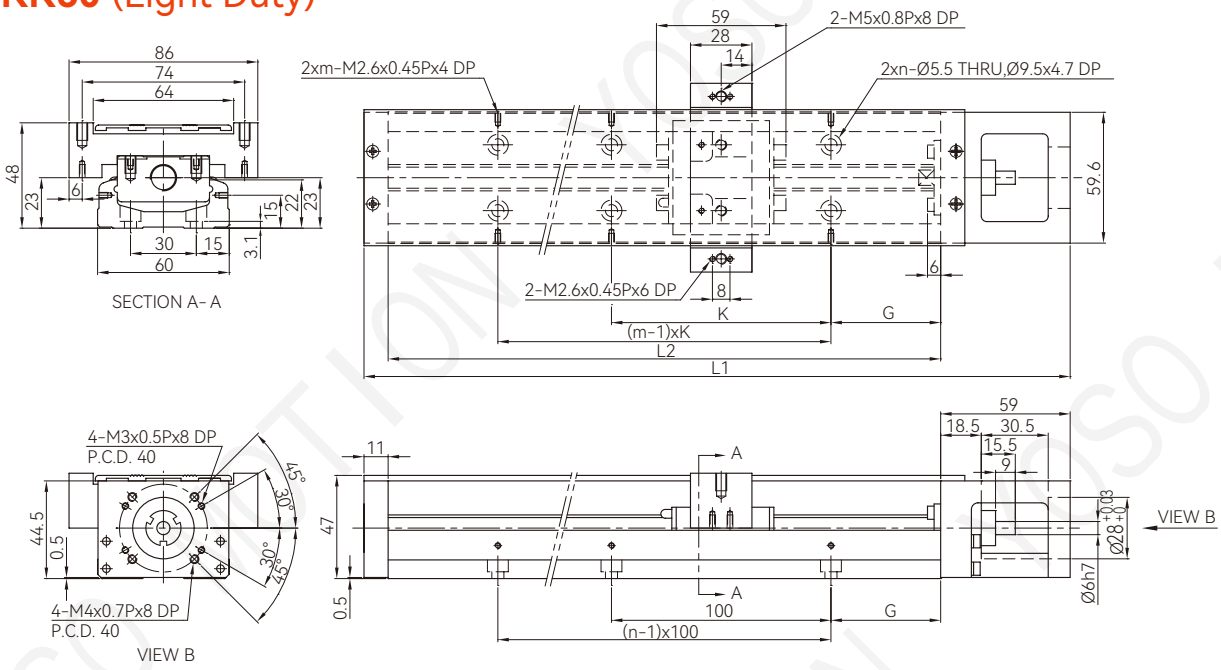
Rail Length L2 (mm)	Total Length L1 (mm)	Maximum Stroke (mm)		G (mm)	K (mm)	n	Mass (kg)	
		A1 Block	A2 Block				A1 Block	A2 Block
150	220	70	-	35	80	2	1.1	-
200	270	120	55	20	160	3	1.3	1.5
250	320	170	105	45	160	3	1.6	1.8
300	370	220	155	30	240	4	1.8	2.0

HKK60 (Standard)



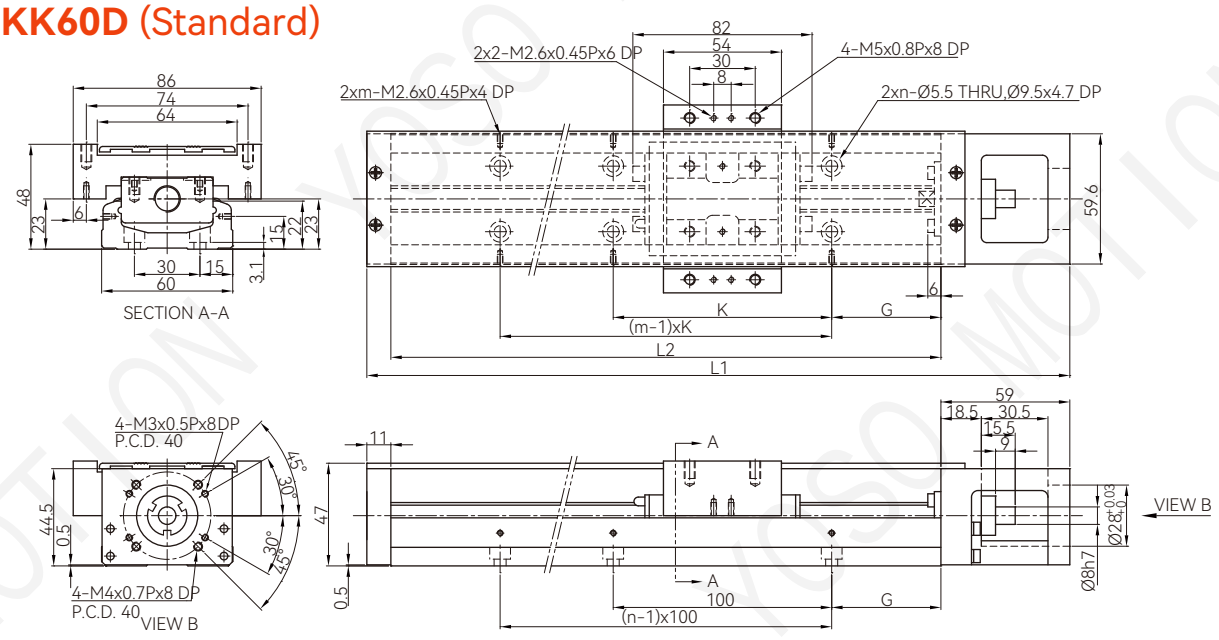
Rail Length L2 (mm)	Total Length L1 (mm)	Maximum Stroke (mm)		G (mm)	K (mm)	n	m	Mass (kg)	
		A1 Block	A2 Block					A1 Block	A2 Block
150	220	60	-	25	100	2	2	1.7	-
200	270	110	-	50	100	2	2	2.1	-
300	370	210	135	50	200	3	2	2.7	3.0
400	470	310	235	50	100	4	4	3.3	3.6
500	570	410	335	50	200	5	3	3.9	4.2
600	670	510	435	50	100	6	6	4.6	5.0

HKK60 (Light Duty)



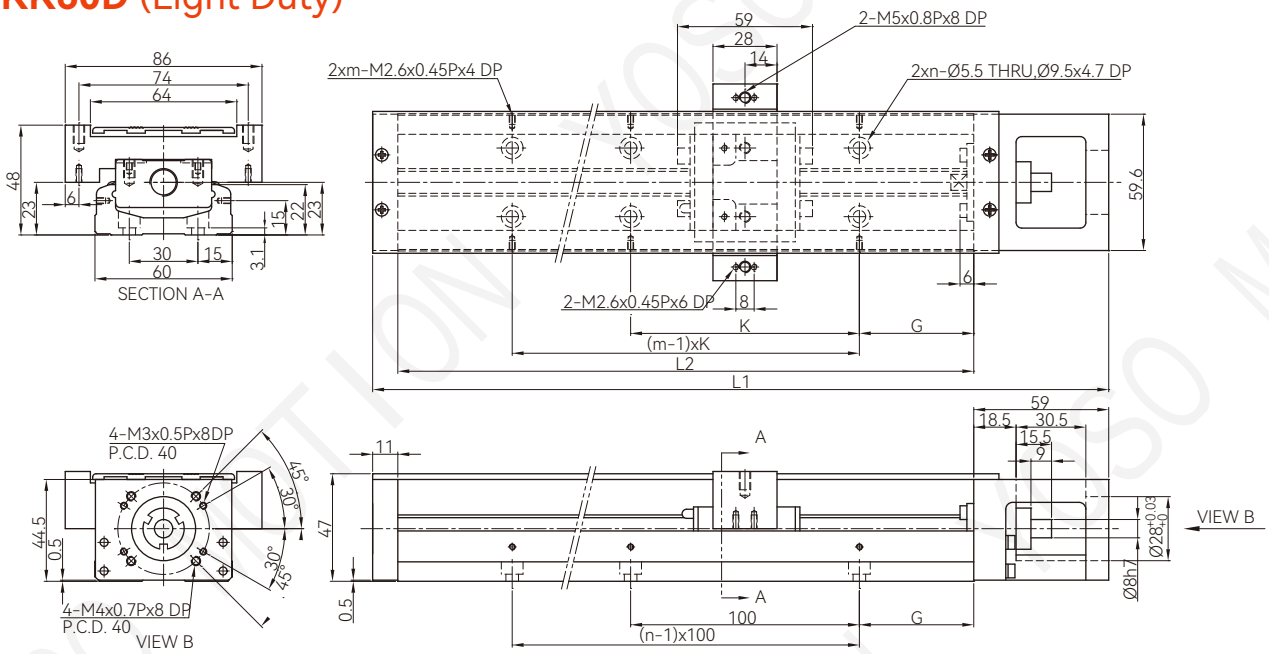
Rail Length L2 (mm)	Total Length L1 (mm)	Maximum Stroke(mm)		G (mm)	K (mm)	n	m	Mass (kg)	
		S1Block	S2 Block					S1 Block	S2 Block
150	220	85	34	25	100	2	2	1.6	1.8
200	270	135	84	50	100	2	2	1.9	2.1
300	370	235	184	50	200	3	2	2.5	2.7
400	470	335	284	50	100	4	4	3.1	3.3
500	570	435	384	50	200	5	3	3.7	3.9
600	670	535	484	50	100	6	6	4.4	4.6

HKK60D (Standard)



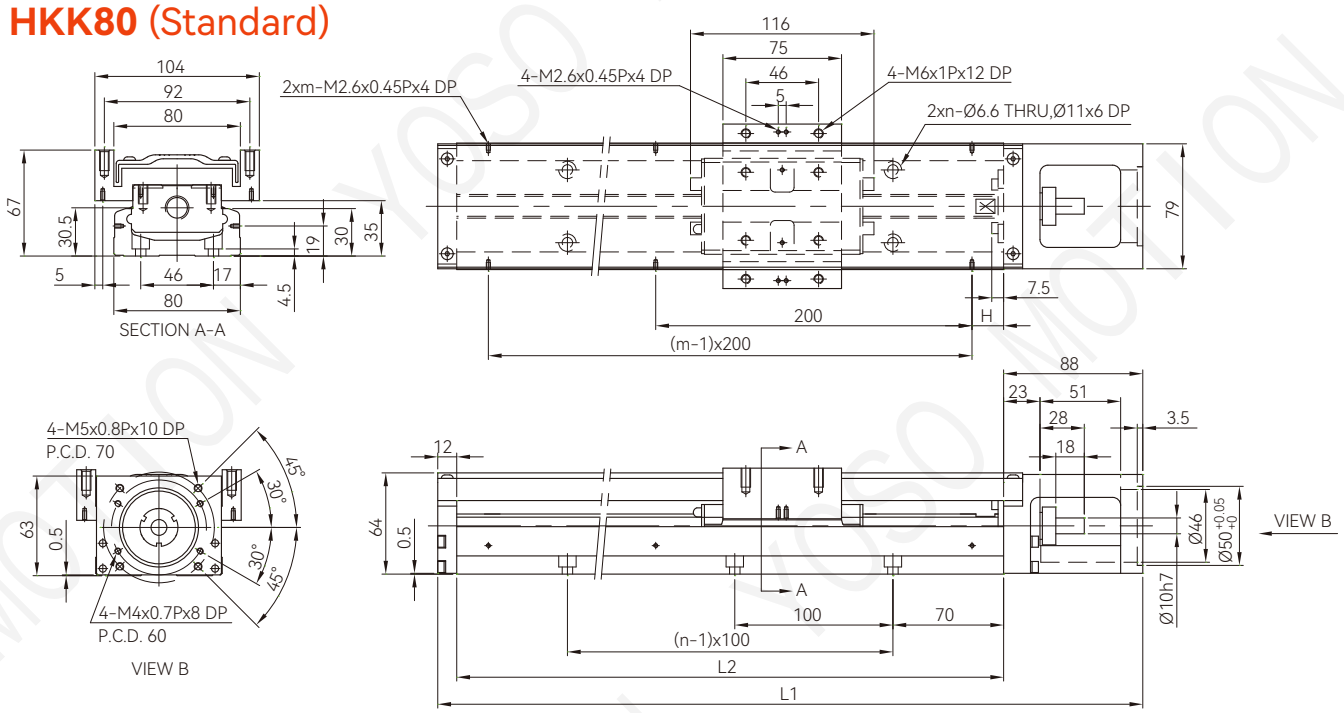
Rail Length L2 (mm)	Total Length L1 (mm)	Maximum Stroke (mm)		G (mm)	K (mm)	n	m	Mass (kg)	
		A1 Block	A2 Block					A1 Block	A2 Block
150	220	60	-	25	100	2	2	1.7	-
200	270	110	-	50	100	2	2	2.1	-
300	370	210	135	50	200	3	2	2.7	3.0
400	470	310	235	50	100	4	4	3.3	3.6
500	570	410	335	50	200	5	3	3.9	4.2
600	670	510	435	50	100	6	6	4.6	5.0

HKK60D (Light Duty)



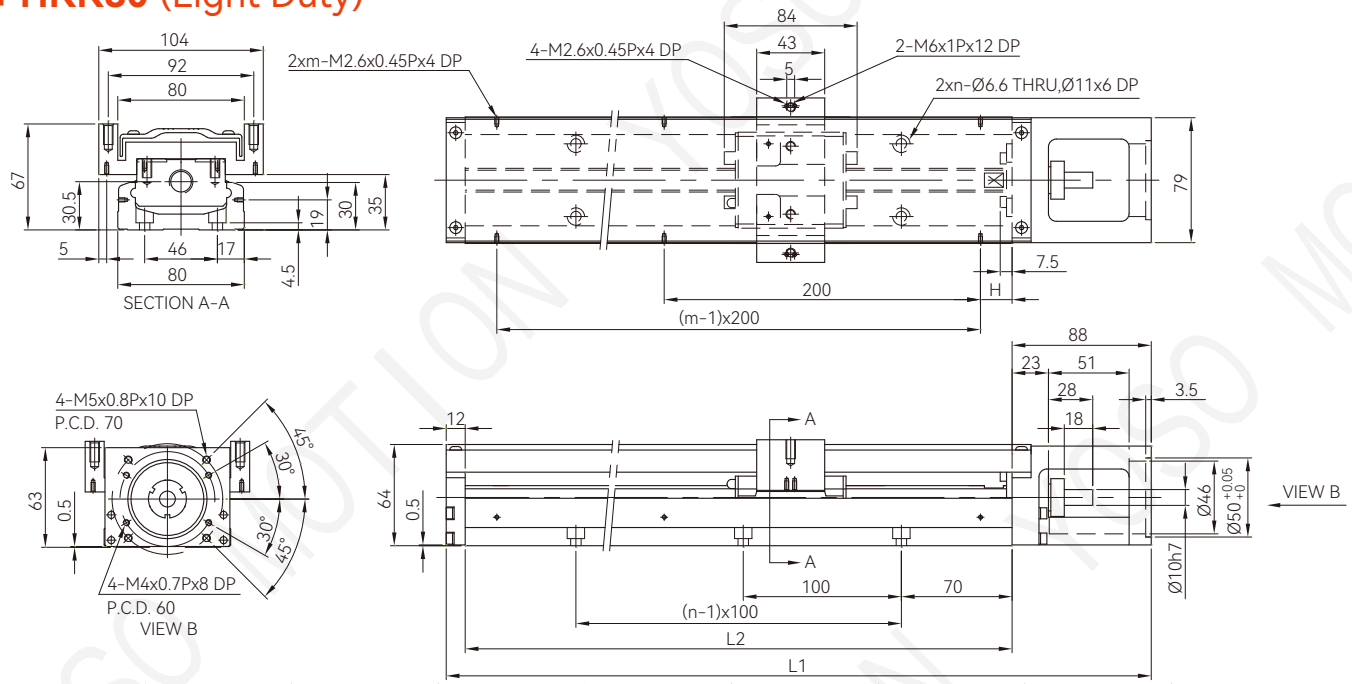
Rail Length L2 (mm)	Total Length L1 (mm)	Maximum Stroke(mm)		G (mm)	K (mm)	n	m	Mass (kg)	
		S1Block	S2 Block					S1 Block	S2 Block
150	220	85	34	25	100	2	2	1.6	1.8
200	270	135	84	50	100	2	2	1.9	2.1
300	370	235	184	50	200	3	2	2.5	2.7
400	470	335	284	50	100	4	4	3.1	3.3
500	570	435	384	50	200	5	3	3.7	3.9
600	670	535	484	50	100	6	6	4.4	4.6

HKK80 (Standard)



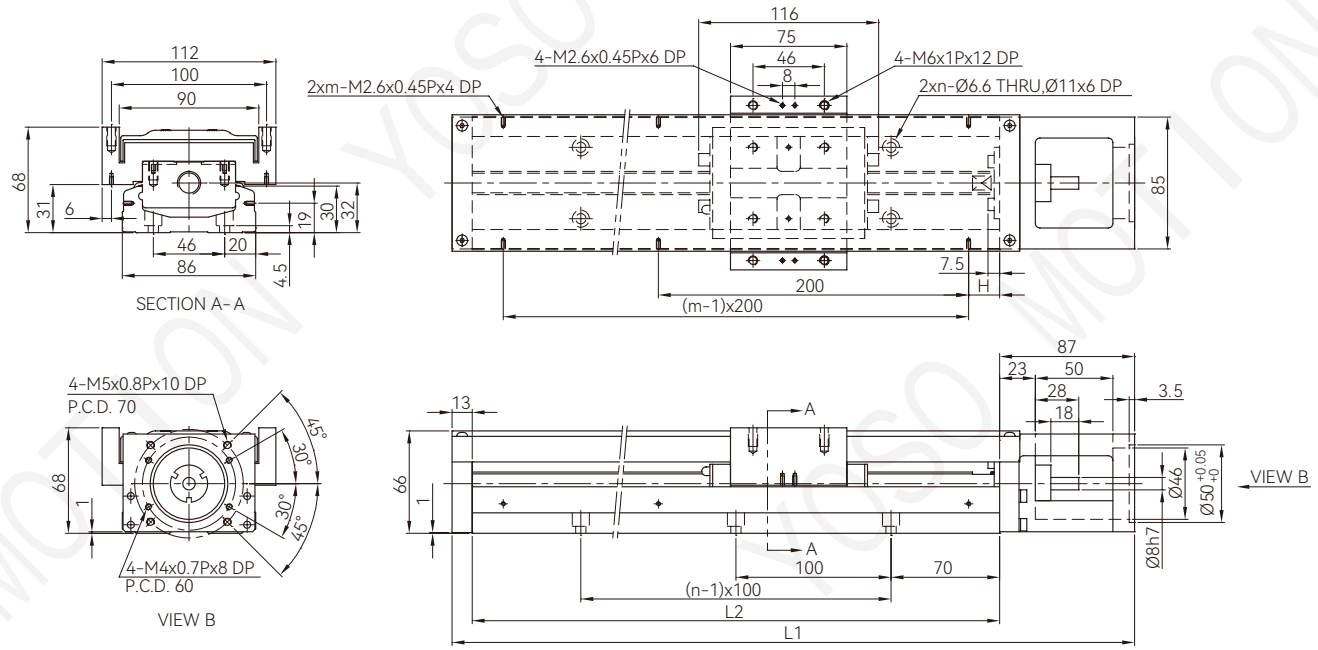
Rail Length L2 (mm)	Total Length L1 (mm)	Maximum Stroke (mm)		H (mm)	n	m	Mass (kg)	
		A1 Block	A2 Block				A1 Block	A2 Block
340	440	216.5	108.5	70	3	2	6	7.1
440	540	316.5	208.5	20	4	3	7.2	8.3
540	640	416.5	308.5	70	5	3	8.4	9.5
640	740	516.5	408.5	20	6	4	9.7	10.8
740	840	616.5	508.5	70	7	4	10.9	12
940	1040	816.5	708.5	70	9	5	13.5	14.6

HKK80 (Light Duty)



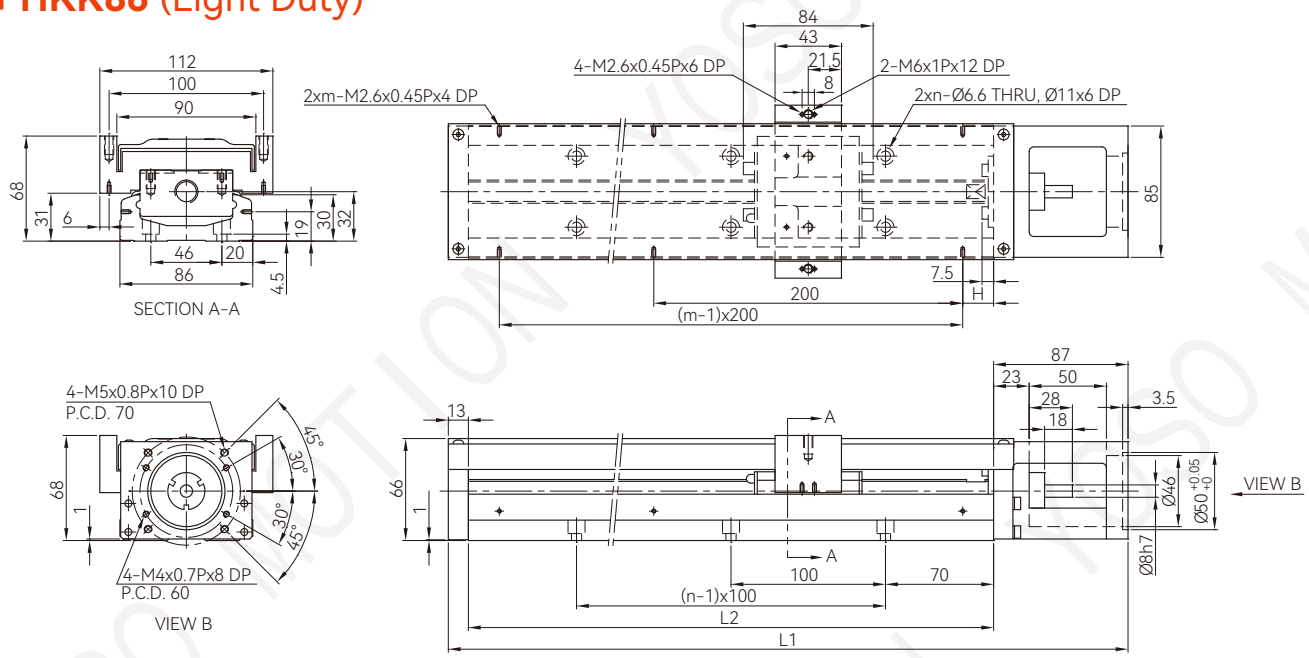
Rail Length L2 (mm)	Total Length L1 (mm)	Maximum Stroke (mm)		H (mm)	n	m	Mass (kg)	
		S1 Block	S2 Block				S1 Block	S2 Block
340	440	248.5	172.5	70	3	2	5.5	6.1
440	540	348.5	272.5	20	4	3	6.8	7.4
540	640	448.5	372.5	70	5	3	7.9	8.5
640	740	548.5	472.5	20	6	4	9.2	9.8
740	840	648.5	572.5	70	7	4	10.5	11.1
940	1040	848.5	772.5	70	9	5	13	13.6

HKK86 (Standard)



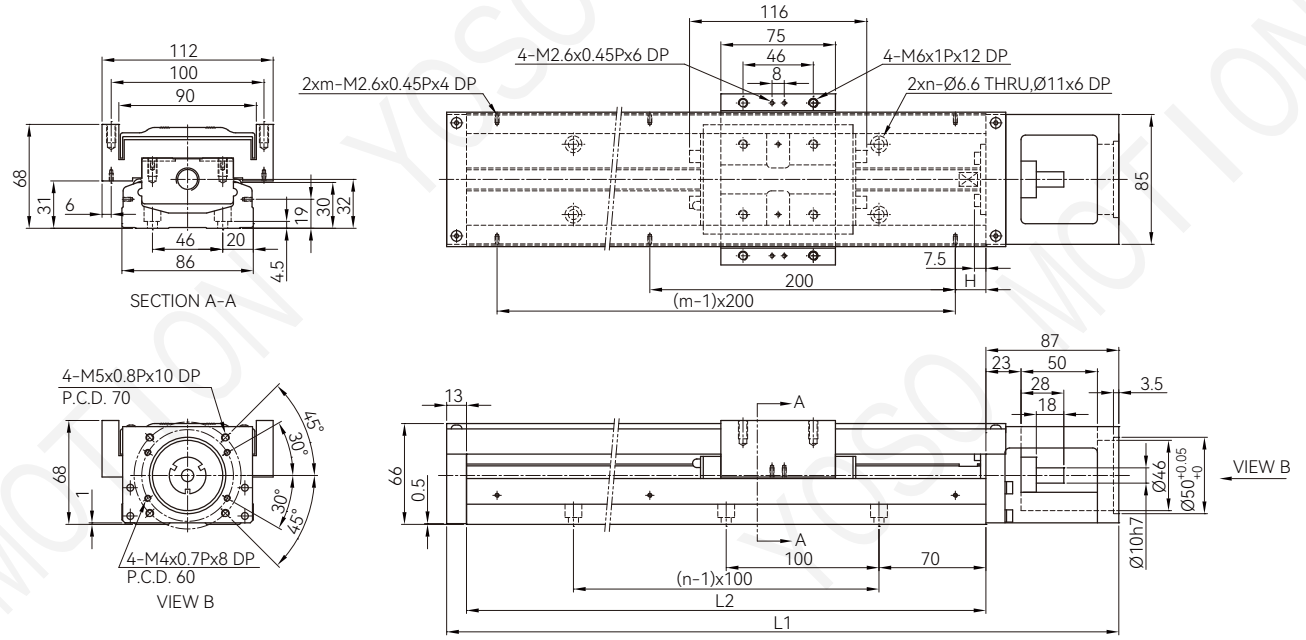
Rail Length L2 (mm)	Total Length L1 (mm)	Maximum Stroke (mm)		H (mm)	n	m	Mass (kg)	
		A1 Block	A2 Block				A1 Block	A2 Block
340	440	216.5	108.5	70	3	2	6.5	7.3
440	540	316.5	208.5	20	4	3	7.8	8.6
540	640	416.5	308.5	70	5	3	9.0	9.8
640	740	516.5	408.5	20	6	4	10.3	11.3
740	840	616.5	508.5	70	7	4	11.6	12.4
940	1040	816.5	708.5	70	9	5	13.0	13.8

HKK86 (Light Duty)



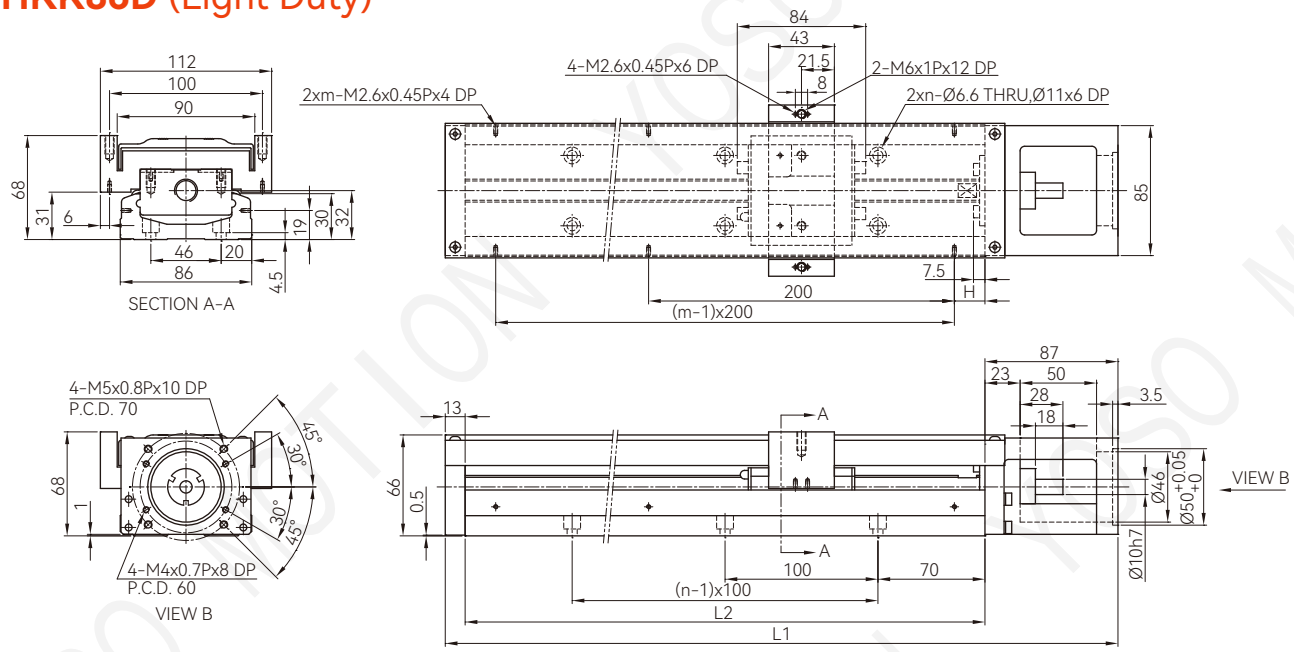
Rail Length L2 (mm)	Total Length L1 (mm)	Maximum Stroke (mm)		H (mm)	n	m	Mass (kg)	
		S1 Block	S2 Block				S1 Block	S2 Block
340	440	248.5	172.5	70	3	2	6.3	7.1
440	540	348.5	272.5	20	4	3	7.6	8.4
540	640	448.5	372.5	70	5	3	8.8	9.6
640	740	548.5	472.5	20	6	4	10.1	11.1
740	840	648.5	572.5	70	7	4	11.4	12.2
940	1040	848.5	772.5	70	9	5	12.8	13.6

HKK86D (Standard)



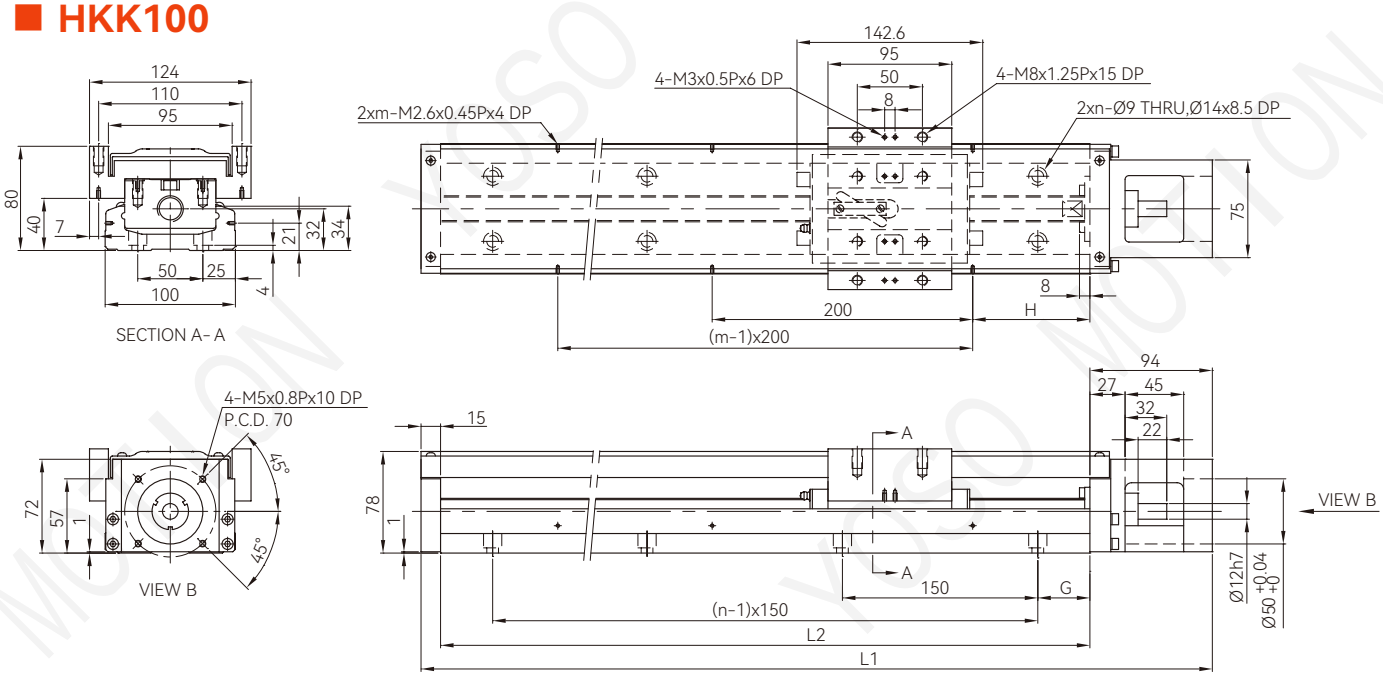
Rail Length L2 (mm)	Total Length L1 (mm)	Maximum Stroke (mm)		H (mm)	n	m	Mass (kg)	
		A1 Block	A2 Block				A1 Block	A2 Block
340	440	216.5	108.5	70	3	2	6.5	7.3
440	540	316.5	208.5	20	4	3	7.8	8.6
540	640	416.5	308.5	70	5	3	9.0	9.8
640	740	516.5	408.5	20	6	4	10.3	11.3
740	840	616.5	508.5	70	7	4	11.6	12.4
940	1040	816.5	708.5	70	9	5	13.0	13.8

HKK86D (Light Duty)



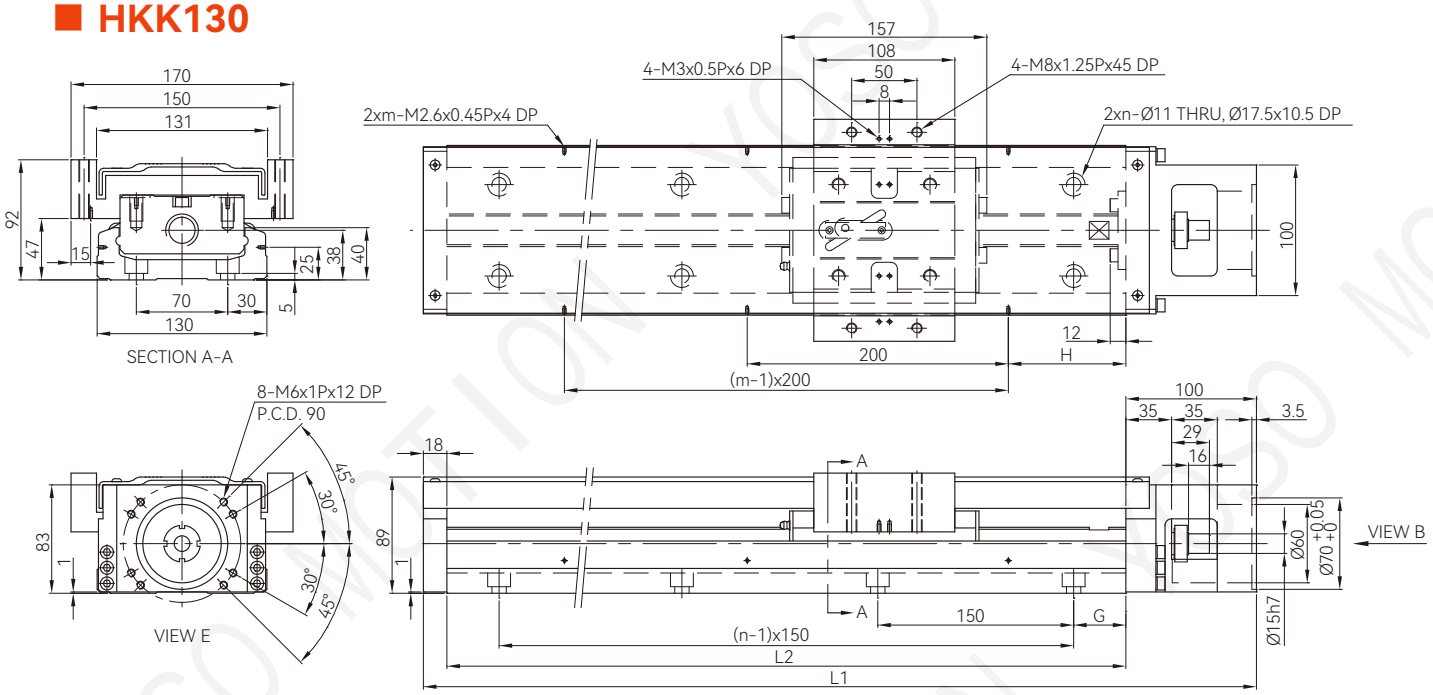
Rail Length L2 (mm)	Total Length L1 (mm)	Maximum Stroke (mm)		H (mm)	n	m	Mass (kg)	
		S1 Block	S2 Block				S1 Block	S2 Block
340	440	248.5	172.5	70	3	2	6.3	7.1
440	540	348.5	272.5	20	4	3	7.6	8.4
540	640	448.5	372.5	70	5	3	8.8	9.6
640	740	548.5	472.5	20	6	4	10.1	11.1
740	840	648.5	572.5	70	7	4	11.4	12.2
940	1040	848.5	772.5	70	9	5	12.8	13.6

HKK100



Rail Length L2 (mm)	Total Length L1 (mm)	Maximum Stroke (mm)		G (mm)	H (mm)	n	m	Mass (kg)	
		A1 Block	A2 Block					A1 Block	A2 Block
980	1089	828	700	40	90	7	5	20.4	22.1
1080	1189	928	800	15	40	8	6	22.2	23.9
1180	1289	1028	900	65	90	8	6	24.0	25.7
1280	1389	1128	1000	40	40	9	7	25.7	27.4
1380	1489	1228	1100	15	90	10	7	27.5	29.2

HKK130



Rail Length L2 (mm)	Total Length L1 (mm)	Maximum Stroke (mm)		G (mm)	H (mm)	n	m	Mass (kg)	
		A1 Block	A2 Block					A1 Block	A2 Block
980	1098	811	659	40	90	7	5	31.9	35.9
1180	1298	1011	859	65	90	8	6	37.1	41.1
1380	1498	1211	1059	90	90	9	7	42.2	46.2
1680	1798	1511	1359	90	40	11	9	49.9	53.9

■ Motor Housing and Motor Adaptor Flange

Mikrosystem Servo Motor

Motor Output	Motor	Weight (kg)	Flange Selection								+Brake Weight (kg)	Drive	Weight (kg)	Remarks
			HKK30	HKK40	HKK50	HKK60	HKK80	HKK86	HKK100	HKK130				
50W	FRLS052□□A4□	0.45	-	F2	F2	F2	F3	F3	-	-	0.58	D2T	1.25	220V
100W	FRLS102□□A4□	0.6	-	F2	F2	F2	F3	F3	-	-	0.76			220V
200W	FRLS202□□06□	1	-	-	-	-	F0	F0	F0	F1	1.5			220V
400W	FRLS402□□06□	1.45	-	-	-	-	F0	F0	F0	F1	1.86			220V
750W	FRMS752□□08□	2.66	-	-	-	-	-	-	F1	F2	3.32			220V

Mitsubishi Servo Motor

Motor Output	Motor	Weight (kg)	Flange Selection								+Brake Weight (kg)	Drive	Weight (kg)	Remarks
			HKK30	HKK40	HKK50	HKK60	HKK80	HKK86	HKK100	HKK130				
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	F2	-	-	0.75	MR-J3S-10A	0.8	220V
100W	HF-KP13	0.56	-	F1	F1	F1	F2	F2	-	-	0.89	MR-J3S-10A	0.8	220V
200W	HF-KP23	0.94	-	-	-	-	F0	F0	F0	F1	1.6	MR-J3S-20A	0.8	220V
400W	HF-KP43	1.5	-	-	-	-	F0	F0	F0	F1	2.1	MR-J3S-40A	1	220V
750W	HF-KP73	2.9	-	-	-	-	-	-	F1	F2	4	MR-J3S-70A	1.4	220V

Panasonic Servo Motor

Motor Output	Motor	Weight (kg)	Flange Selection								+Brake Weight (kg)	Drive	Weight (kg)	Remarks
			HKK30	HKK40	HKK50	HKK60	HKK80	HKK86	HKK100	HKK130				
50W	MSMD5AZP1	0.32	-	F2	F2	F2	F3	F3	-	-	0.53	MADDT1105	0.8	110V
50W	MSMD5AZP1	0.32	-	F2	F2	F2	F3	F3	-	-	0.53	MADDT1205	0.8	220V
100W	MSMD011P1	0.47	-	F2	F2	F2	F3	F3	-	-	0.68	MADDT1107	0.8	110V
100W	MSMD012P1	0.47	-	F2	F2	F2	F3	F3	-	-	0.68	MADDT1205	0.8	220V
200W	MSMD021P1	0.82	-	-	-	-	F1	F1	-	-	1.3	MADDT2110	1.1	110V
200W	MSMD022P1	0.82	-	-	-	-	F1	F1	-	-	1.3	MADDT1207	0.8	220V
400W	MSMD041P1	1.2	-	-	-	-	F1	F1	-	-	1.7	MADDT3120	1.5	110V
400W	MSMD042P1	1.2	-	-	-	-	F1	F1	-	-	1.7	MADDT2210	1.1	220V
750W	MSMD082S1	2.3	-	-	-	-	F4	F4	F2	F4	3.1	MADDT3520	1.5	220V

Yasukawa Servo Motor

Motor Output	Motor	Weight (kg)	Flange Selection								+Brake Weight (kg)	Drive	Weight (kg)	Remarks
			HKK30	HKK40	HKK50	HKK60	HKK80	HKK86	HKK100	HKK130				
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	F2	-	-		SGDV-R70A01A	0.9	with key
50W	SGMAV-A5ADA2C	0.3	-	F1	F1	F1	F2	F2	-	-		SGDV-R70A01A	0.9	no key
50W	SGMAV-A5ADA21	0.3	-	F1	F1	F1	F2	F2	-	-	0.75	SGDV-R70A01A	0.9	Mid inertia
100W	SGMAV-01ADA64	0.4	-	F1	F1	F1	F2	F2	-	-	0.89	SGDV-R90A01A	0.9	
200W	SGMAV-02ADA65	0.9	-	-	-	-	F0	F0	F0	F1	1.6	SGDV-1R6A01A	0.9	
400W	SGMAV-04ADA66	1.2	-	-	-	-	F0	F0	F0	F1	2.1	SGDV-2R8A01A	1	
750W	SGMAV-08ADA67	2.6	-	-	-	-			F1	F2	4	SGDV-5R5A01A	1.5	

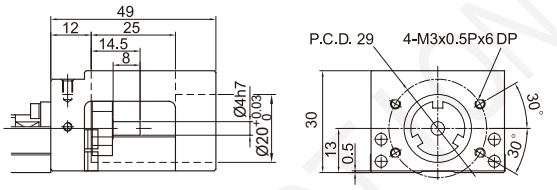
Oriental Step Motor

Series	Model	Flange Selection								Built in Motor	Weight (kg)	Built in Drive	Weight (kg)
		HKK30	HKK40	HKK50	HKK60	HKK80	HKK86	HKK100	HKK130				
CSK 2 phase	CSK243-AP	-	F3	F3	F5	-	-	-	-	PK243-01A	0.21	CSD2109-P	0.12
	CSK244-AP	-	F3	F3	F5	-	-	-	-	PK244-01A	0.27	CSD2112-P	0.12
	CSK245-AP	-	F3	F3	F5	-	-	-	-	PK245-01A	0.35	CSD2112-P	0.12
	CSK264-AP	-	-	-	F4	F6	F6	-	-	PK264-02A	0.45	CSD2120-P	0.12
	CSK266-AP	-	-	-	F4	F6	F6	-	-	PK266-02A	0.7	CSD2120-P	0.12
	CSK268-AP	-	-	-	F4	F6	F6	-	-	PK268-02A	1	CSD2120-P	0.12
	CSK296-AP	-	-	-	-	-	-	F4	F3	PK296-03A	1.7	CSD2145P	0.2
	CSK299-AP	-	-	-	-	-	-	F4	F3	PK299-03A	2.8	CSD2145P	0.2
	CSK2913-AP	-	-	-	-	-	-	F4	F3	PK2913-02A	3.8	CSD2140P	0.2
CSK 2 phase	CSK523-AP	F3	-	-	-	-	-	-	-	PK523A	0.1	SD5103P3	0.04
CFKII 5 phase micro stepping	CFK543AP2	-	F3	F3	F5	-	-	-	-	PK543NAW	0.21	DFC5107P	0.2
	CFK544AP2	-	F3	F3	F5	-	-	-	-	PK544NAW	0.27	DFC5107P	0.2
	CFK545AP2	-	F3	F3	F5	-	-	-	-	PK545NAW	0.35	DFC5107P	0.2
	CFK564AP2	-	-	-	-	F5	F5	-	-	PK564NAW	0.6	DFC5114P	0.2
	CFK566AP2	-	-	-	-	F5	F5	-	-	PK566NAW	0.8	DFC5114P	0.2
	CFK569AP2	-	-	-	-	F5	F5	-	-	PK569NAW	1.3	DFC5114P	0.2
	CFK566HAP2	-	-	-	-	F5	F5	-	-	PK566HNAW	0.8	DFC5128P	0.22
	CKF569HAP2	-	-	-	-	F5	F5	-	-	PK569HNAW	1.3	DFC5128P	0.22
	CFK596HAP2	-	-	-	-	-	-	F3	-	PK596HNAW	1.7	DFC5128P	0.22
	CFK599HAP2	-	-	-	-	-	-	F3	-	PK599HNAW	2.8	DFC5128P	0.22
	CFK5913HAP2	-	-	-	-	-	-	F3	-	PK5913HNAW	3.8	DFC5128P	0.22
UMK 2 phase	UMK243A	-	F3	F3	F5	-	-	-	-	PK243-01	0.21	UDK2109	0.47
	UMK244A	-	F3	F3	F5	-	-	-	-	PK244-01	0.27	UDK2112	0.47
	UMK245A	-	F3	F3	F5	-	-	-	-	PK245-01	0.35	UDK2112	0.47
	UMK264A	-	-	-	F4	F6	F6	-	-	PK264-02	0.45	UDK2120	0.47
	UMK266A	-	-	-	F4	F6	F6	-	-	PK266-02	0.7	UDK2120	0.47
	UMK268A	-	-	-	F4	F6	F6	-	-	PK268-02	1	UDK2120	0.47
RK 5 phase	RK543AA	-	F3	F3	F5	-	-	-	-	PK543W	0.25	RKD507-A	0.4
	RK544AA	-	F3	F3	F5	-	-	-	-	PK544W	0.3	RKD507-A	0.4
	RK545AA	-	F3	F3	F5	-	-	-	-	PK545W	0.4	RKD507-A	0.4
	RK566AA	-	-	-	-	F5	F5	-	-	PK566W	0.8	RKD514L-A	0.85
	RK569AA	-	-	-	-	F5	F5	-	-	PK569W	1.3	RKD514L-A	0.85
	RK596AA	-	-	-	-	-	-	F3	-	PK596W	1.7	RKD514H-A	0.85
	RK599AA	-	-	-	-	-	-	F3	-	PK599W	2.8	RKD514H-A	0.85
	RK5913AA	-	-	-	-	-	-	F3	-	PK5913W	3.8	RKD514H-A	0.85
ASC α-step	ASC34AK	F3	-	-	-	-	-	-	-	ASM34AK	0.15	ASD10A-K	0.25

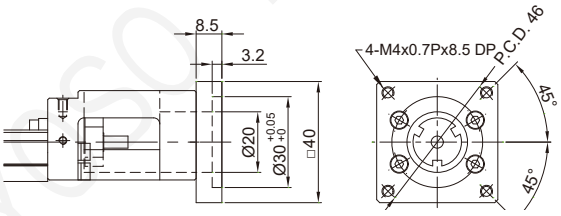
■ Connection Motor and Motor Bracket

→ HKK40 (Without)

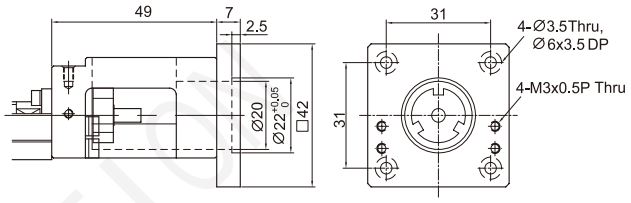
Motor Housing F0



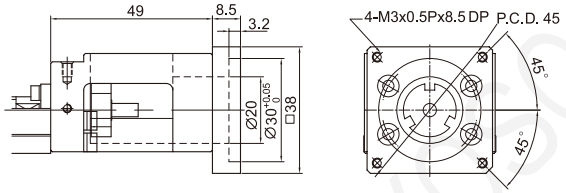
Motor Adaptor Flange F1



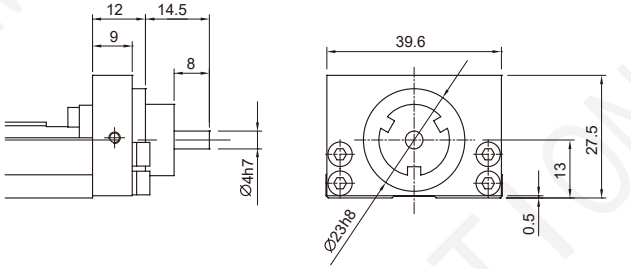
Motor Adaptor Flange F3



Motor Adaptor Flange F2



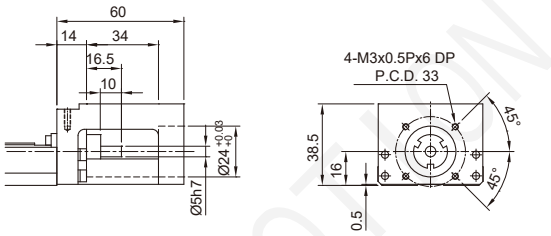
Mount Housing H0



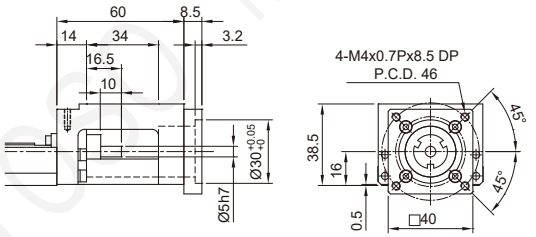
■ Connection Motor and Motor Bracket

→ HKK50 (Without)

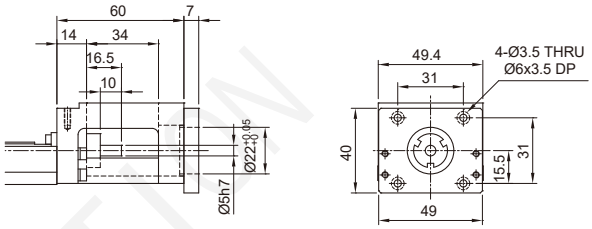
Motor Housing F0



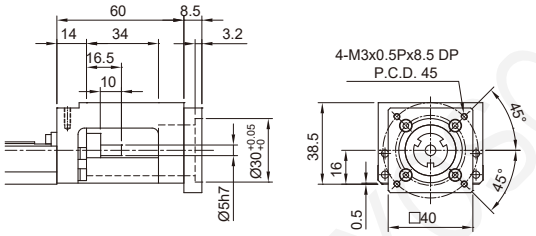
Motor Adaptor Flange F1



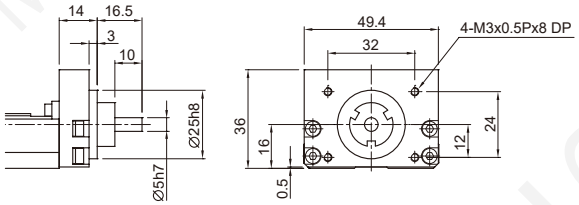
Motor Adaptor Flange F3



Motor Adaptor Flange F2



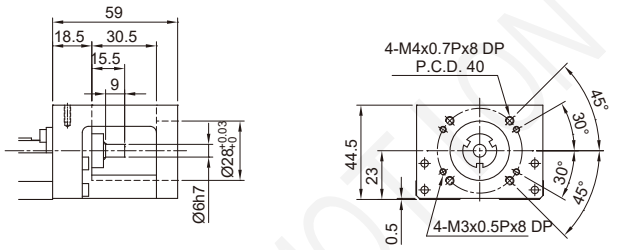
Mount Housing H0



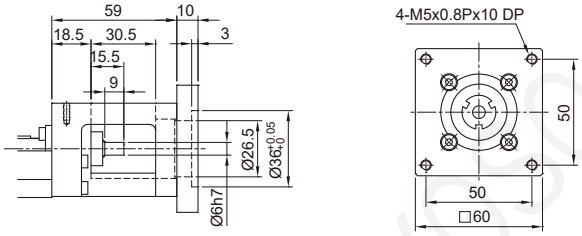
■ Connection Motor and Motor Bracket

→ HKK60 (Without)

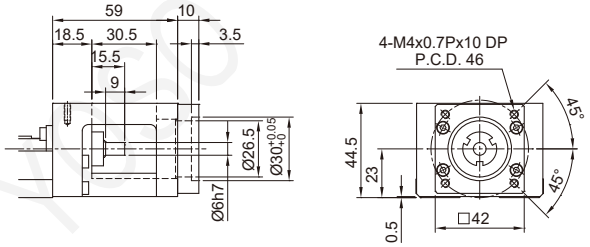
Motor Housing F0



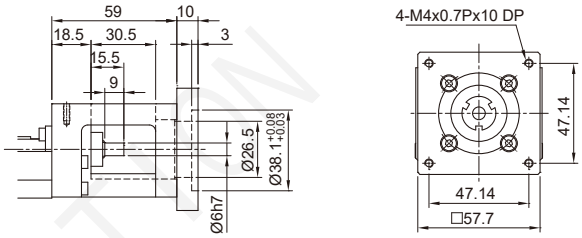
Motor Adaptor Flange F3



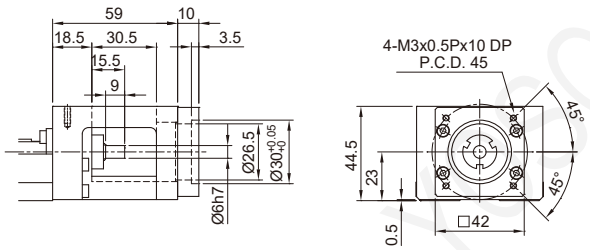
Motor Adaptor Flange F1



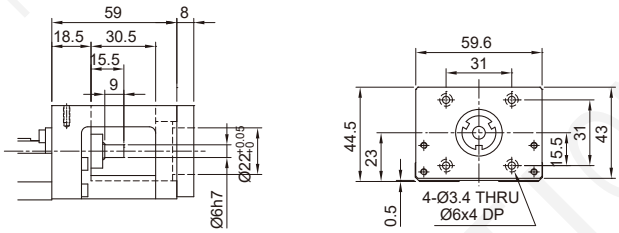
Motor Adaptor Flange F4



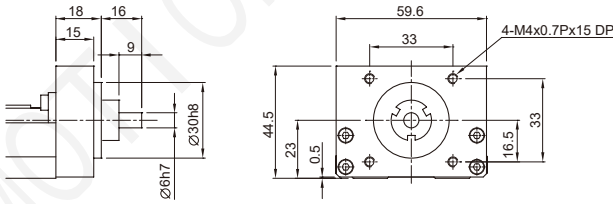
Motor Adaptor Flange F2



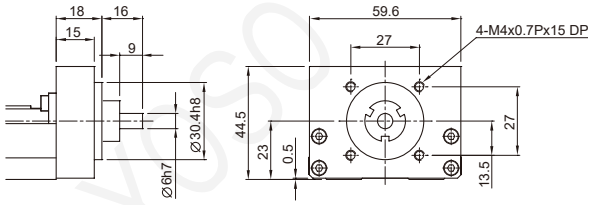
Motor Adaptor Flange F5



Mount Housing H0



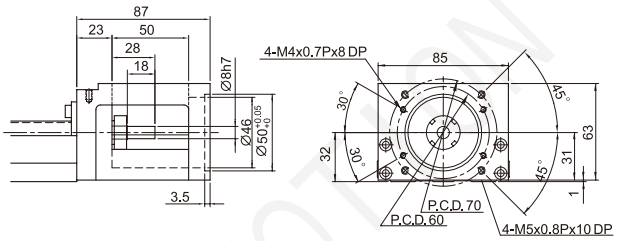
Mount Housing H1



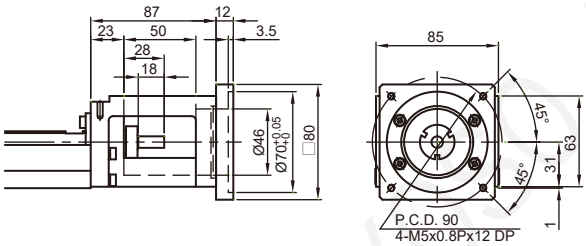
■ Connection Motor and Motor Bracket

→ HKK86 (Without)

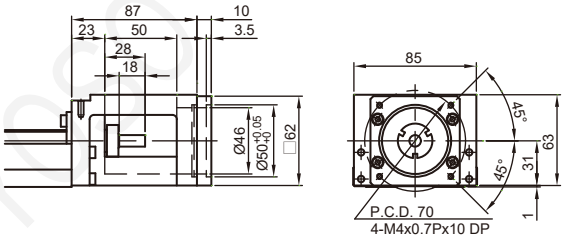
Motor Housing F0



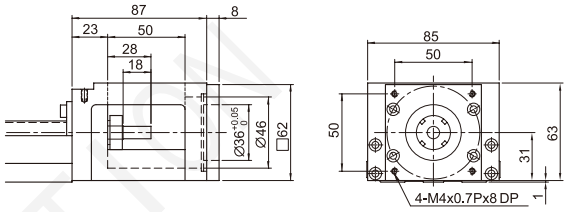
Motor Adaptor Flange F4



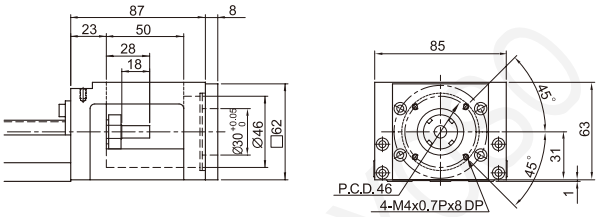
Motor Adaptor Flange F1



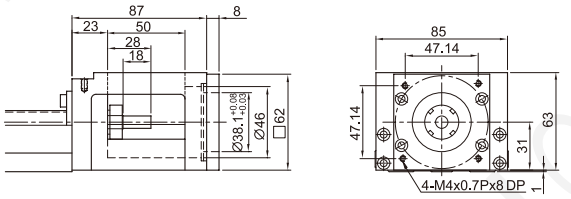
Motor Adaptor Flange F5



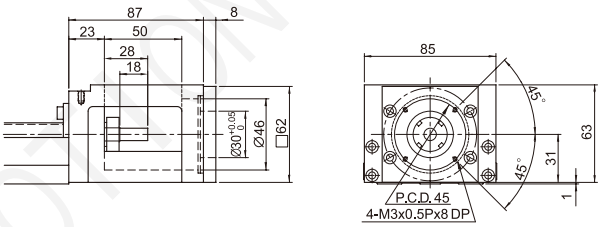
Motor Adaptor Flange F2



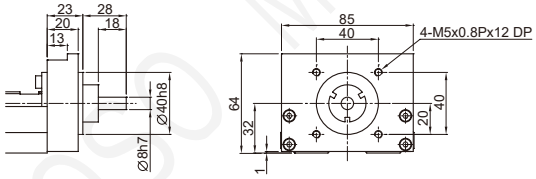
Motor Adaptor Flange F6



Motor Adaptor Flange F3



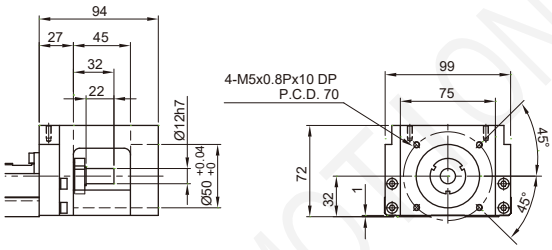
Mount Housing H0



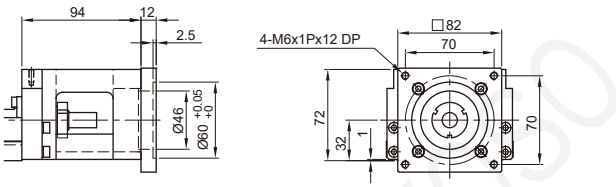
■ Connection Motor and Motor Bracket

→ HKK100 (Without)

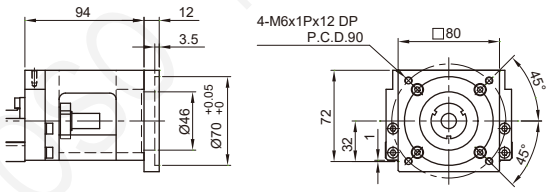
Motor Housing F0



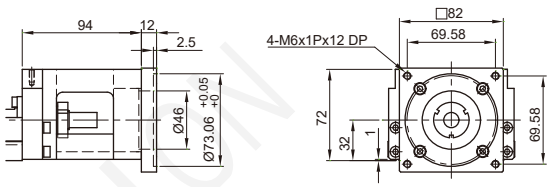
Motor Adaptor Flange F3



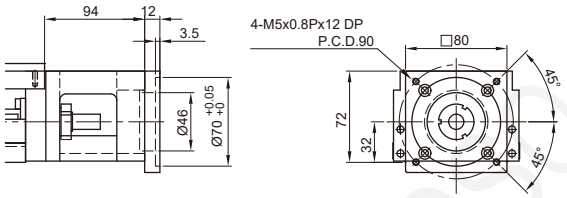
Motor Adaptor Flange F1



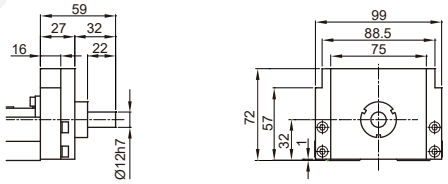
Motor Adaptor Flange F4



MotorAdaptor Flange F2



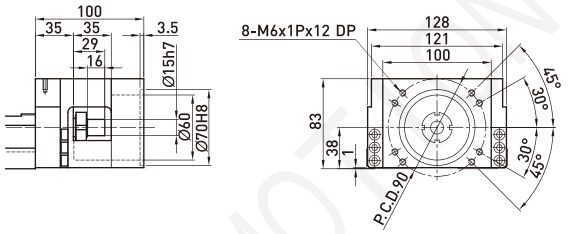
Mount Housing H0



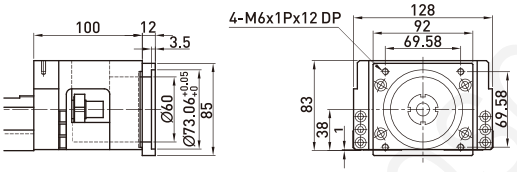
■ Connection Motor and Motor Bracket

→ HKK100 (Without)

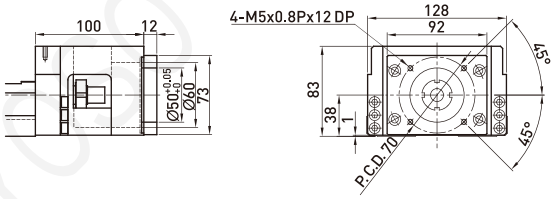
Motor Housing F0



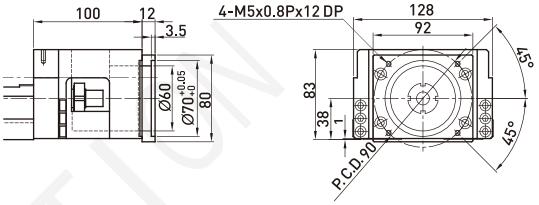
Motor Adaptor Flange F3



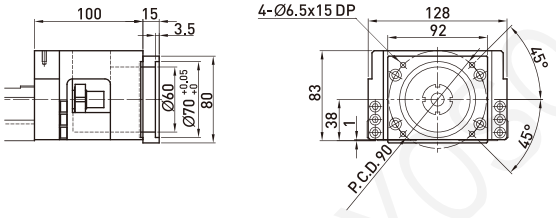
Motor Adaptor Flange F1



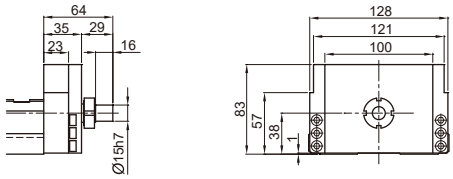
Motor Adaptor Flange F4



Motor Adaptor Flange F2



Mount Housing H0



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