5. KK/KF precision axes

5.1 Properties of KK/KF linear axes

HIWIN KK/KF linear axes are compact positioning axes with high feed forces. The high precision and rigidity is achieved by a linear guideway with a ball track built directly into the steel profile. the ballscrew integrated into the block makes the axis especially compact.
The axis is available in various sizes and lengths and can be adapted to the requirements of different applications with additional options such as an aluminium and bellows cover, a limit switch and additional blocks.

Advantages of KK axis
- Two-row type
- Vertical mounting position possible with suitable clamping or braking device
- Application with high precision
- Compact design

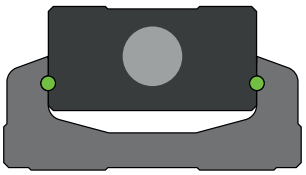


Fig. 5.1 **2-row KK linear axis**

Advantages of KF axis
- Four-row type
- Optimised synchronous performance
- Reduced running noise
- SynchMotion™ technology

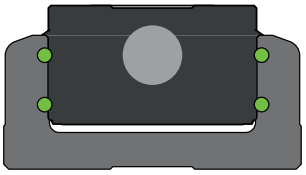


Fig. 5.2 **4-row KF linear axis**

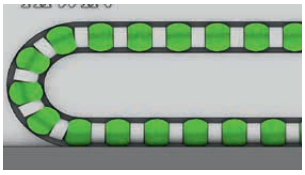


Fig. 5.3 **SynchMotion™ technology**

Linear guide
- Integrated into the steel profile
- High rigidity
- Prestressed (0.01 - 0.02 × C_{dyn})

Ballscrew
- Nut integrated into the block
- Rolled shaft
- Axial play:
  - Precision class P: 0.005 mm
  - Precision class C: 0.02 mm

5.2 Order code of KK/KF linear axes

Linear axis:
KK/KF

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

Lead [mm]:
KK 30: 01
KK 40: 01
KK 50: 02
KK/KF 60: 05, 10
KK/KF 86: 10, 20
KK 100: 20
KK 130: 25

Precision class:
C[1], P

Length of rail[2] [mm]:
KK 30: 75, 100, 125, 150, 175, 200
KK 40: 100, 150, 200
KK 50: 150, 200, 250, 300
KK/KF 60: 150, 200, 300, 400, 500, 600
KK/KF 86: 340, 440, 540, 640, 740, 940
KK 100: 980, 1080, 1180, 1280, 1380
KK 130: 980, 1180, 1380, 1680

Limit switches[3], [4]:
0: Without
S0: Sensor rail only
SA: One limit switch on sensor rail
SB: Two limit switches on sensor rail (length of rail 150 and up)
SC: Three limit switches on sensor rail (length of rail 300 and up)

Cover:
0: Without
B: Bellows cover (KK60, KK86)
C: Aluminium cover

Flange type[5]:
F0, F1, F2, F3, ...

Number of blocks:
1
2

Block type:
A: Standard
S: Short (KK60, KK86)[1]

[1] On request
[2] Shortened lengths available on request
[3] Not for type KK30
[4] Limit switches are NC contact, NO contact, available as accessories
[5] The matching flange type for adapting HIWIN EM1 servo motors can be found in section 5.17

5.3 Technical data for KK/KF linear axes

5.3.1 Technical data

Table 5.1 **Precision and maximum values of the KK/KF linear axes**

Model	Lead [mm]	L1 [mm]	v_{max} [mm/s]	a_{max} [m/s²]	Max. drive torque [Nm]	Positioning precision [mm]	Repeatability precision [mm]	Guide parallelism [mm]	Starting torque [Nmm]
KK3001P0075	1	129	160	5	0.05	0.020	± 0.003	0.010	12
KK3001P0100	1	154	160	5	0.05	0.020	± 0.003	0.010	12
KK3001P0125	1	179	160	5	0.05	0.020	± 0.003	0.010	12
KK3001P0150	1	204	160	5	0.05	0.020	± 0.003	0.010	12
KK3001P0175	1	229	160	5	0.05	0.020	± 0.003	0.010	12
KK3001P0200	1	254	160	5	0.05	0.020	± 0.003	0.010	12
KK4001P0100	1	159	190	5	0.20	0.020	± 0.003	0.010	12
KK4001P0150	1	209	190	5	0.20	0.020	± 0.003	0.010	12
KK4001P0200	1	259	190	5	0.20	0.020	± 0.003	0.010	12
KK5002P0150	2	220	270	5	0.61	0.020	± 0.003	0.010	40
KK5002P0200	2	270	270	5	0.61	0.020	± 0.003	0.010	40
KK5002P0250	2	320	270	5	0.61	0.020	± 0.003	0.010	40
KK5002P0300	2	370	270	5	0.61	0.020	± 0.003	0.010	40
KK/KF6005P0150	5	220	550	15	1.26	0.020	± 0.003	0.010	150
KK/KF6005P0200	5	270	550	15	1.26	0.020	± 0.003	0.010	150
KK/KF6005P0300	5	370	550	15	1.26	0.020	± 0.003	0.010	150
KK/KF6005P0400	5	470	550	15	1.26	0.020	± 0.003	0.010	150
KK/KF6005P0500	5	570	550	15	1.26	0.025	± 0.003	0.015	150
KK/KF6005P0600	5	670	340	15	1.26	0.025	± 0.003	0.015	150
KK/KF6010P0150	10	220	1,100	15	1.26	0.020	± 0.003	0.010	150
KK/KF6010P0200	10	270	1,100	15	1.26	0.020	± 0.003	0.010	150
KK/KF6010P0300	10	370	1,100	15	1.26	0.020	± 0.003	0.010	150
KK/KF6010P0400	10	470	1,100	15	1.26	0.020	± 0.003	0.010	150
KK/KF6010P0500	10	570	1,100	15	1.26	0.025	± 0.003	0.015	150
KK/KF6010P0600	10	670	670	15	1.26	0.025	± 0.003	0.015	150
KK/KF8610P0340	10	440	740	15	2.79	0.025	± 0.003	0.015	150
KK/KF8610P0440	10	540	740	15	2.79	0.025	± 0.003	0.015	150
KK/KF8610P0540	10	640	740	15	2.79	0.025	± 0.003	0.015	150
KK/KF8610P0640	10	740	740	15	2.79	0.025	± 0.003	0.015	150
KK/KF8610P0740	10	840	740	15	2.79	0.030	± 0.003	0.020	170
KK/KF8610P0940	10	1040	610	15	2.79	0.040	± 0.003	0.030	250
KK/KF8620P0340	20	440	1,480	15	2.79	0.025	± 0.003	0.015	150
KK/KF8620P0440	20	540	1,480	15	2.79	0.025	± 0.003	0.015	150
KK/KF8620P0540	20	640	1,480	15	2.79	0.025	± 0.003	0.015	150
KK/KF8620P0640	20	740	1,480	15	2.79	0.025	± 0.003	0.015	150
KK/KF8620P0740	20	840	1,480	15	2.79	0.030	± 0.003	0.020	170
KK/KF8620P0940	20	1,040	1,220	15	2.79	0.040	± 0.003	0.030	250
KK10020P0980	20	1,089	1,120	15	8.65	0.035	± 0.005	0.025	170
KK10020P1080	20	1,189	980	15	8.65	0.035	± 0.005	0.025	170
KK10020P1180	20	1,289	750	15	8.65	0.040	± 0.005	0.030	200
KK10020P1280	20	1,389	630	15	8.65	0.045	± 0.005	0.035	230
KK10020P1380	20	1,489	530	15	8.65	0.050	± 0.005	0.040	250
KK13025P0980	25	1,098	1,120	15	18.40	0.035	± 0.005	0.025	250
KK13025P1180	25	1,298	1,120	15	18.40	0.040	± 0.005	0.030	250
KK13025P1380	25	1,498	830	15	18.40	0.040	± 0.005	0.030	250
KK13025P1680	25	1,798	550	15	18.40	0.050	± 0.007	0.040	270

5.3.2 Load ratings and torques of KK/KF linear axes

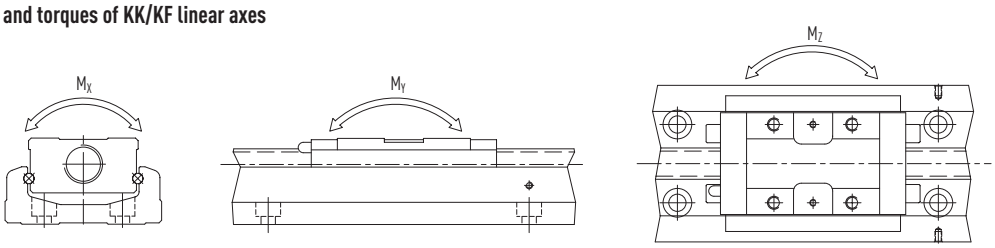


Table 5.2 **Load ratings of KK/KF linear axes: Linear guideway, standard block**

Model	C_{dyn} [N]	C_0 [N]	Static moment to of block A1			Static moment to of block A2		
			M_X [Nm]	M_Y [Nm]	M_Z [Nm]	M_X [Nm]	M_Y [Nm]	M_Z [Nm]
KK30	2,210	3,510	41	14	14	82	73	73
KK40	3,920	6,468	81	33	33	162	182	182
KK50	8,007	12,916	222	116	116	444	545	545
KK60	13,230	21,462	419	152	152	838	760	760
KF60	16,403	20,238	416	171	171	832	968	968
KK86	31,458	50,764	1,507	622	622	3,014	3,050	3,050
KF86	38,140	45,545	1,349	566	566	2,698	3,153	3,153
KK100	39,200	63,406	2,205	960	960	4,410	4,763	4,763
KK130	48,101	84,829	3,885	1,536	1,536	7,770	7,350	7,350

Table 5.3 **Load rating of KK linear axes: Linear guideway, short block**

Model	C_{dyn} [N]	C_0 [N]	Static moment to of block S1			Static moment to of block S2		
			M_X [Nm]	M_Y [Nm]	M_Z [Nm]	M_X [Nm]	M_Y [Nm]	M_Z [Nm]
KK60	7,173	11,574	241	72	72	482	367	367
KK86	21,051	29,475	847	166	166	1,694	1,309	1,309

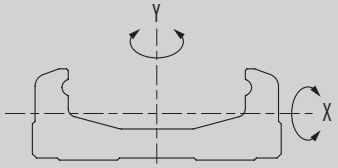
Table 5.4 **Load ratings of KK/KF linear axes: Ballscrew and fixed bearing**

Model	Shaft			Fixed bearing	
	Ø [mm]	C_{dyn} [N]	C_0 [N]	$C_{0\ axial}$ [N]	$F_{max\ axial}$ [N]
KK3001Pxxxx	6	647	1,088	–	–
KK4001Pxxxx	8	735	1,538	1,910	750
KK5002Pxxxx	8	2,136	3,489	1,910	1,500
KK/KF6005Pxxxx	12	3,744	6,243	4,480	3,120
KK/KF6010Pxxxx	12	2,410	3,743	4,480	1,870
KK/KF8610Pxxxx	15	7,144	12,642	9,240	6,320
KK/KF8620Pxxxx	15	4,645	7,655	9,240	3,825
KK10020Pxxxx	20	7,046	12,544	10,600	6,270
KK13025Pxxxx	25	7,897	15,931	18,485	7,950

Note: The load-bearing capacity of the linear guideway and ballscrew is often restricted – not by their load-bearing strength, but by the screw connection. We therefore recommend checking the screw connection's maximum permissible load-bearing capacity in accordance with VDI 2230.

Table 5.5 **Geometrical moment of inertia of the KK linear axes**

Model	Geometrical moment of inertia [mm⁴]	
	I_x	I_y
KK30	755	12,730
KK40	3,533	53,170
KK50	9,600	134,000
KK60	20,560	280,200
KK86	74,450	1,134,000
KK100	129,600	2,035,000
KK130	254,600	5,073,000



I_X: Moment of inertia, calculated around the X-axis
I_Y: Moment of inertia, calculated around the X-axis

5.4 KK30 linear axes

5.4.1 KK30 linear axes without cover

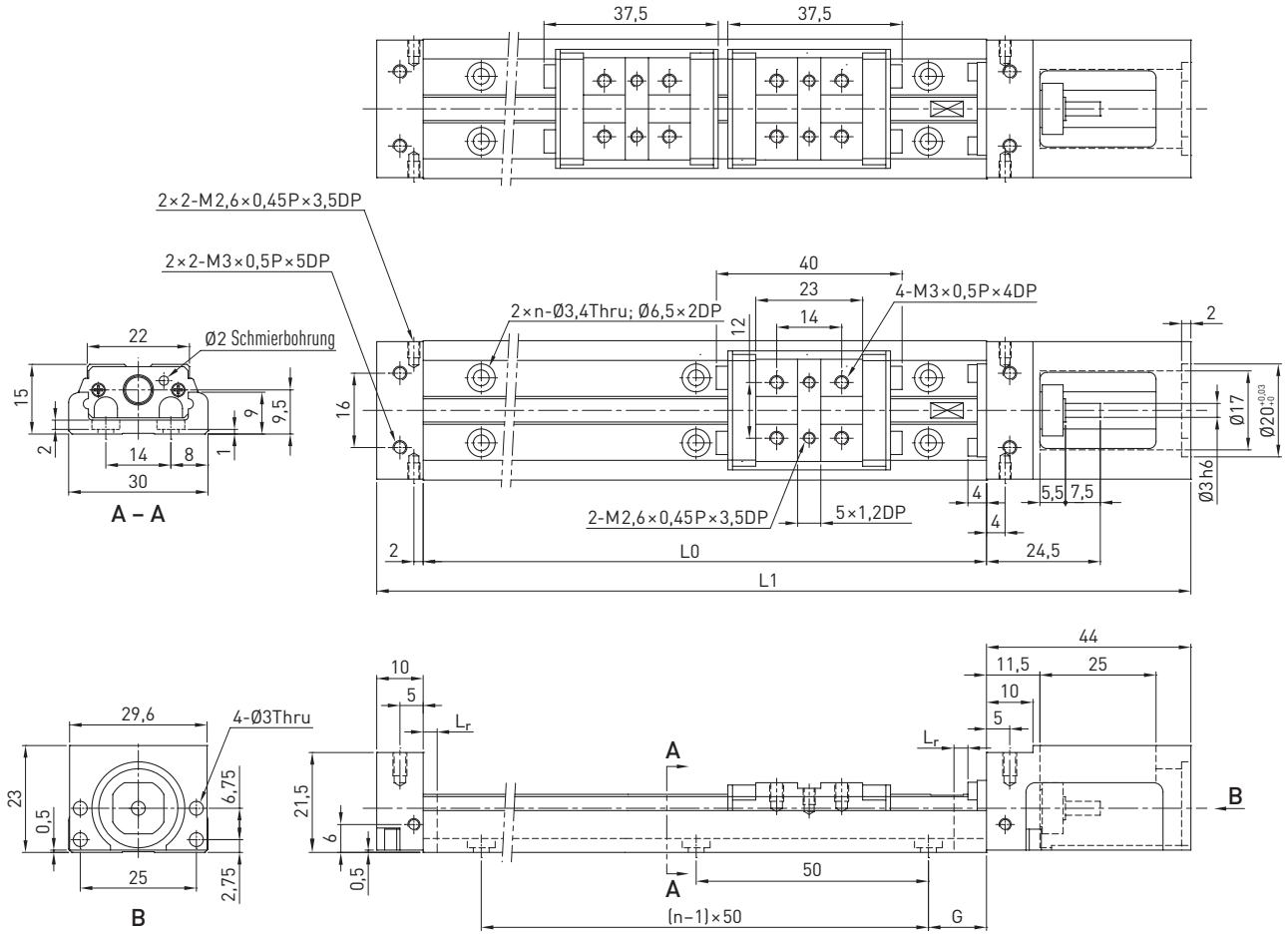


Table 5.6 **Dimensions and weights of KK30 linear axes without cover**

Model	Lead [mm]	L0 [mm]	L1 [mm]	Maximum travel distance [mm]		Reserve stroke L_r [mm]	G [mm]	n	Weight [kg]	
				Block A1	**Block A2**				**Block A1**	**Block A2**
KK3001P0075	1	75	129	25	—	3	12.5	2	0.20	—
KK3001P0100	1	100	154	50	—	3	25.0	2	0.23	—
KK3001P0125	1	125	179	75	39	3	12.5	3	0.26	0.30
KK3001P0150	1	150	204	100	64	3	25.0	3	0.29	0.33
KK3001P0175	1	175	229	125	89	3	12.5	4	0.32	0.36
KK3001P0200	1	200	254	150	114	3	25.0	4	0.35	0.39

Reference edge
Viewed from the motor flange, the reference edge is located on the left side of the linear axis.

5.4.2 KK30 linear axes with aluminium cover

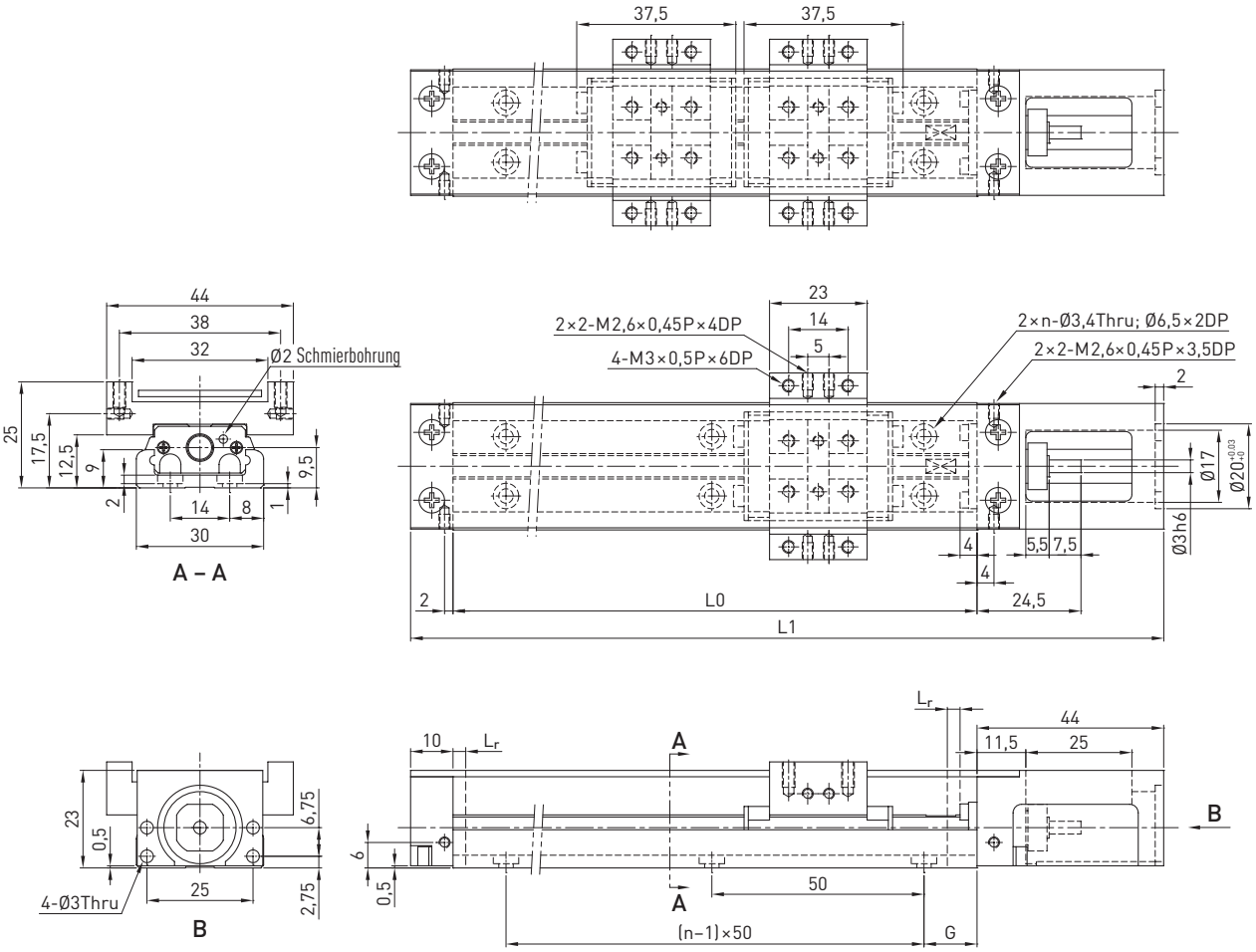


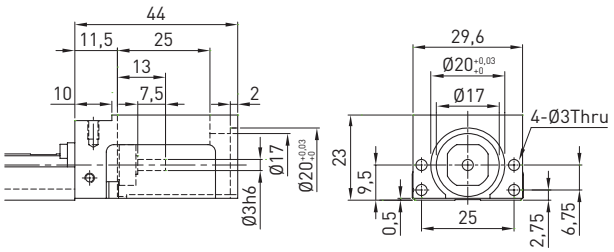
Table 5.7 **Dimensions and weights of KK30 linear axes with aluminium cover**

Model	Lead [mm]	L0 [mm]	L1 [mm]	Maximum travel distance [mm]		Reserve stroke L_r [mm]	G [mm]	n	Weight [kg]	
				Block A1	Block A2				Block A1	Block A2
KK3001P0075	1	75	129	25	—	3	12.5	2	0.24	—
KK3001P0100	1	100	154	50	—	3	25.0	2	0.27	—
KK3001P0125	1	125	179	75	39	3	12.5	3	0.30	0.36
KK3001P0150	1	150	204	100	64	3	25.0	3	0.33	0.39
KK3001P0175	1	175	229	125	89	3	12.5	4	0.37	0.43
KK3001P0200	1	200	254	150	114	3	25.0	4	0.40	0.46

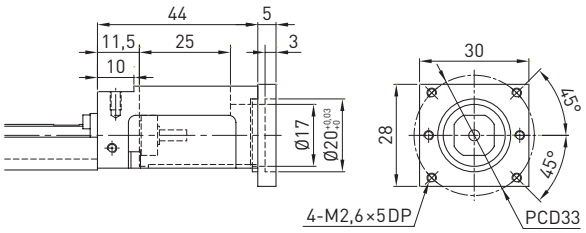
Reference edge
Viewed from the motor flange, the reference edge is located on the left side of the linear axis.

5.4.3 KK30 adapter flanges

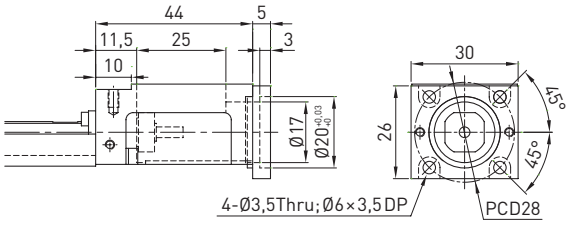
F0 motor adapter flange



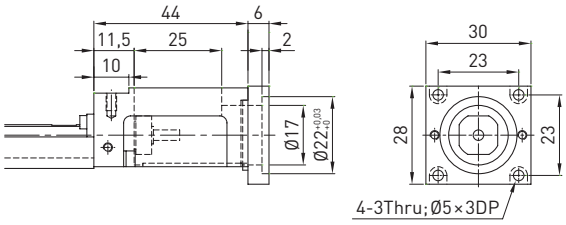
F1 motor adapter flange



F2 motor adapter flange



F3 motor adapter flange



5.5 KK40 linear axes

5.5.1 KK40 linear axes without cover

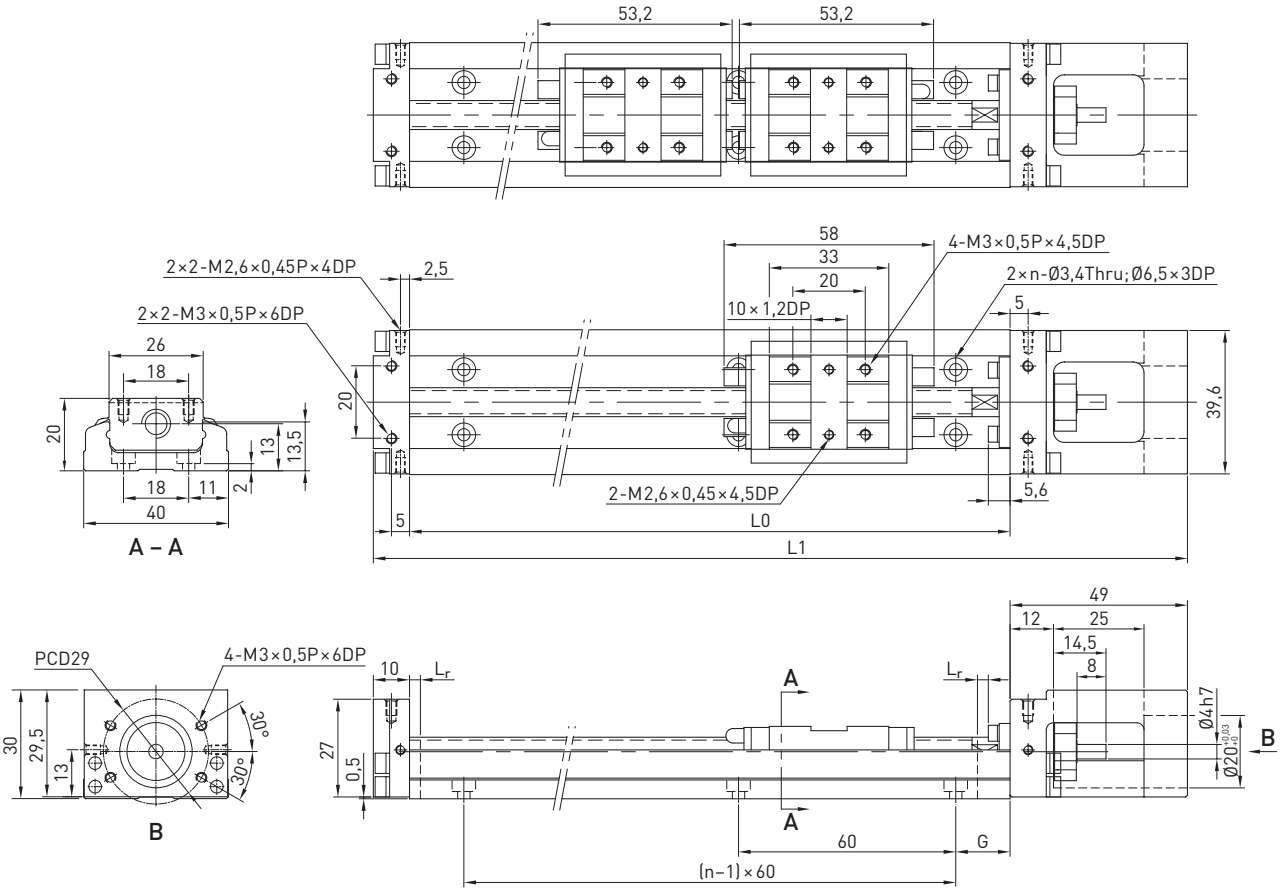


Table 5.8 **Dimensions and weights of KK40 linear axes without cover**

Model	Lead [mm]	L0 [mm]	L1 [mm]	Maximum travel distance [mm]		Reserve stroke L_r [mm]	G [mm]	n	Weight [kg]	
				Block A1	Block A2				Block A1	Block A2
KK4001P0100	1	100	159	30	—	3	20	2	0.48	—
KK4001P0150	1	150	209	80	28	3	15	3	0.60	0.67
KK4001P0200	1	200	259	130	78	3	40	3	0.72	0.79

Reference edge
Viewed from the motor flange, the reference edge is located on the left side of the linear axis.

5.5.2 KK40 linear axes with aluminium cover

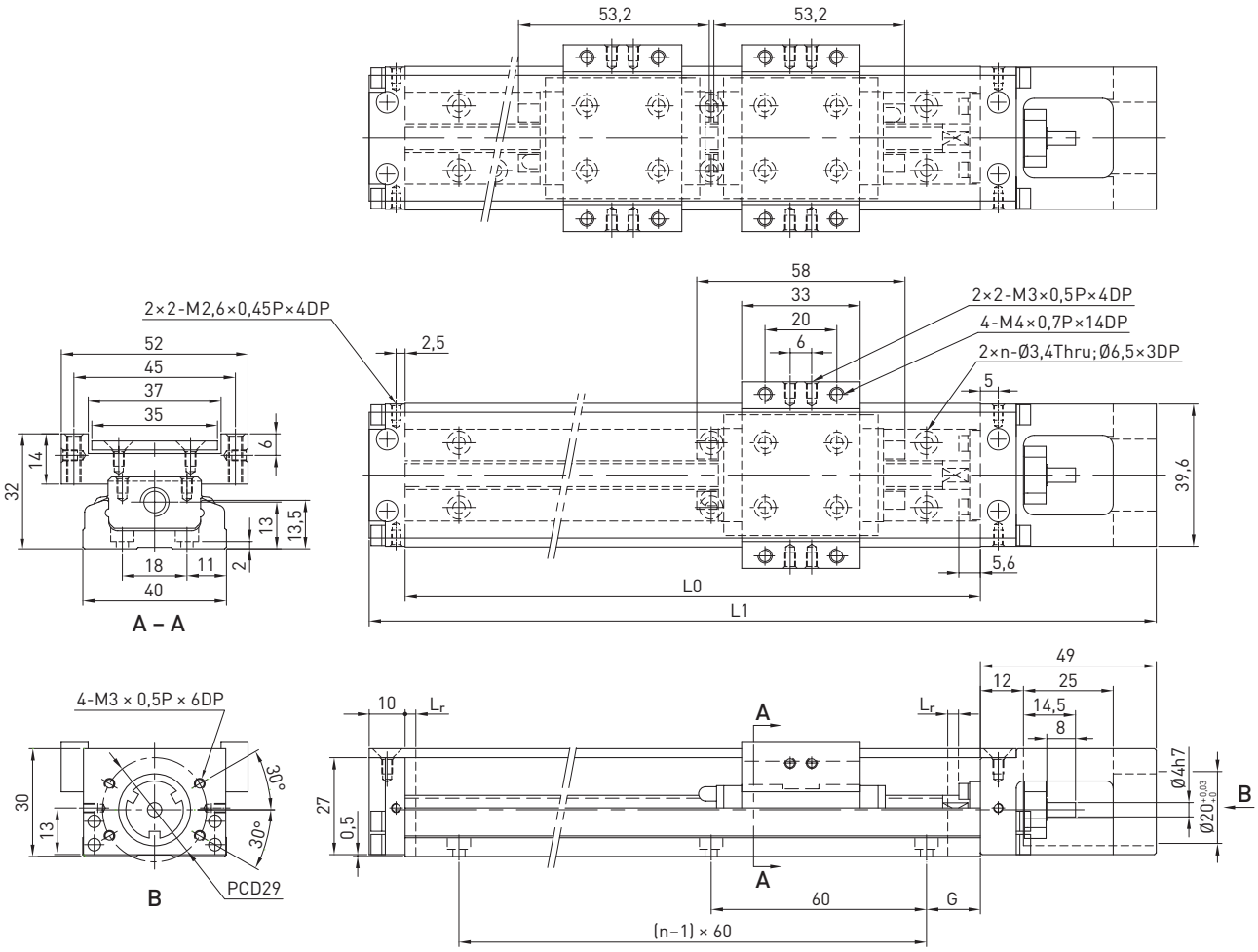


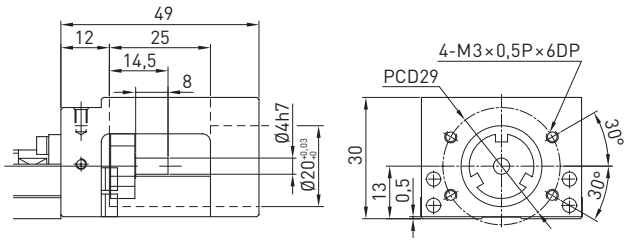
Table 5.9 **Dimensions and weights of KK40 linear axes with aluminium cover**

Model	Lead [mm]	L0 [mm]	L1 [mm]	Maximum travel distance [mm]		Reserve stroke L_r [mm]	G [mm]	n	Weight [kg]	
				Block A1	**Block A2**				**Block A1**	**Block A2**
KK4001P0100	1	100	159	30	—	3	20	2	0.55	—
KK4001P0150	1	150	209	80	28	3	15	3	0.68	0.76
KK4001P0200	1	200	259	130	78	3	40	3	0.82	0.89

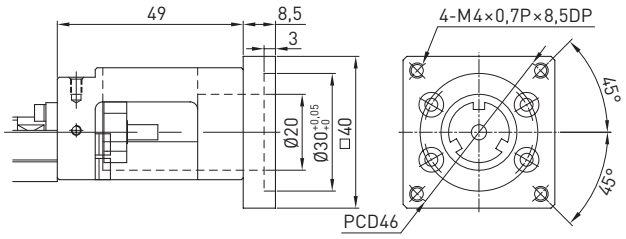
Reference edge
Viewed from the motor flange, the reference edge is located on the left side of the linear axis.

5.5.3 KK40 adapter flanges

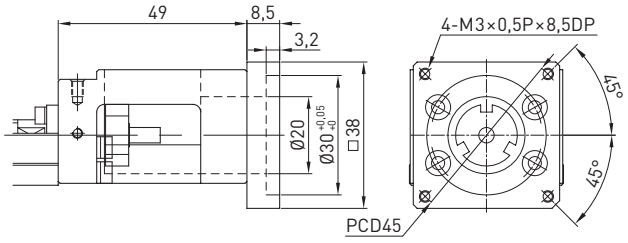
F0 motor adapter flange



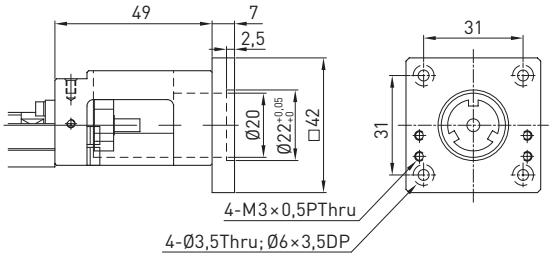
F1 motor adapter flange



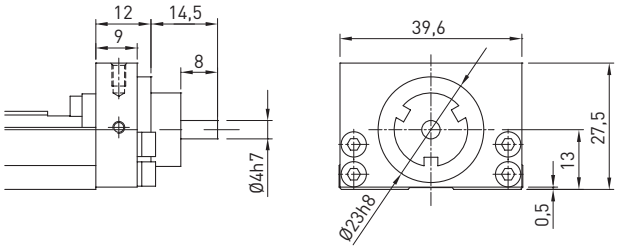
F2 motor adapter flange



F3 motor adapter flange



H0 motor adapter flange



5.6 KK50 linear axes

5.6.1 KK50 linear axes without cover

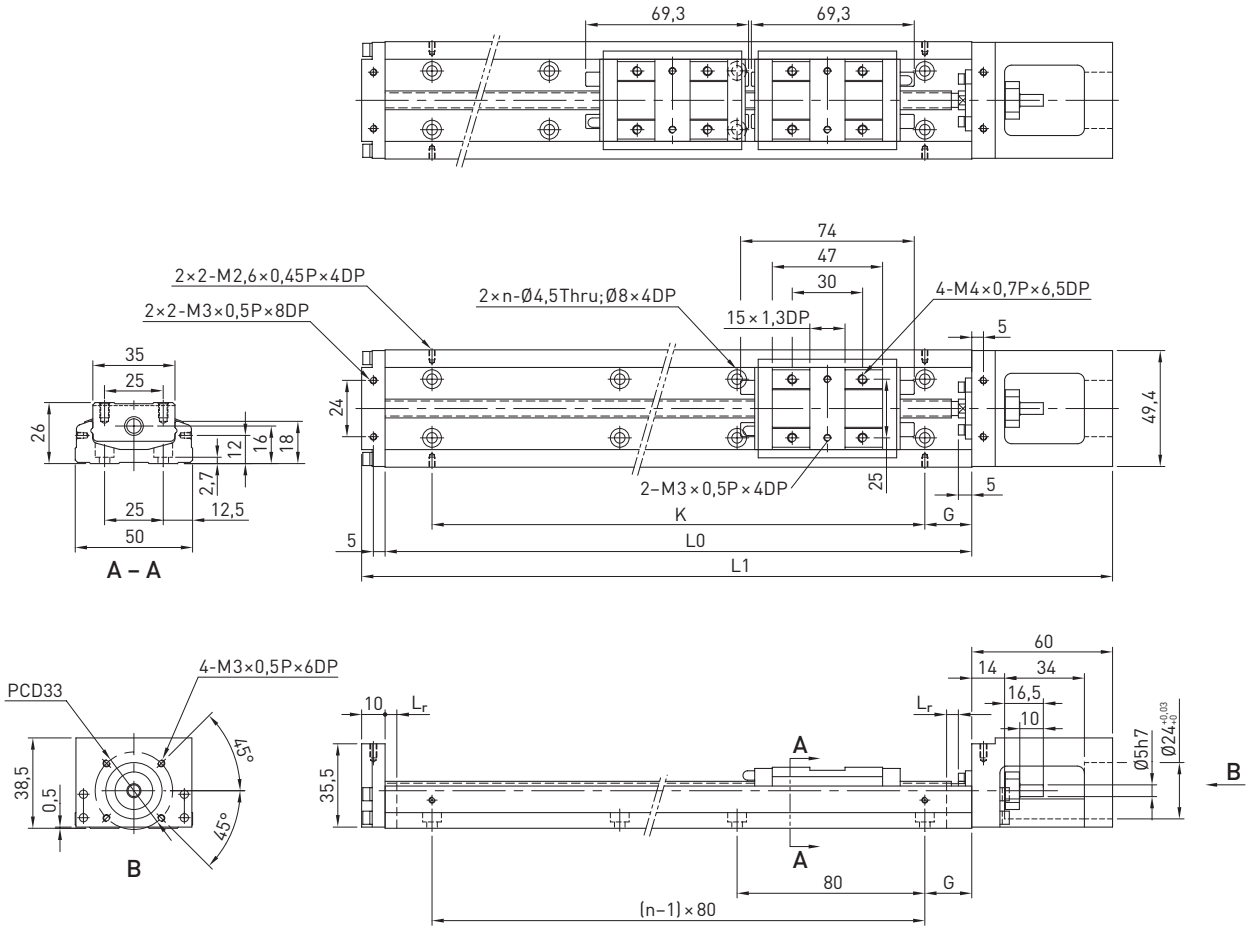


Table 5.10 **Dimensions and weights of KK50 linear axes without cover**

Model	Lead [mm]	L0 [mm]	L1 [mm]	Maximum travel distance [mm]		Reserve stroke L_r [mm]	G [mm]	K [mm]	n	Weight [kg]	
				Block A1	**Block A2**					**Block A1**	**Block A2**
KK5002P0150	2	150	220	60	—	5	35	80	2	1.0	—
KK5002P0200	2	200	270	110	45	5	20	160	3	1.2	1.4
KK5002P0250	2	250	320	160	95	5	45	160	3	1.4	1.6
KK5002P0300	2	300	370	210	145	5	30	240	4	1.6	1.8

Reference edge
Viewed from the motor flange, the reference edge is located on the left side of the linear axis.

5.6.2 KK50 linear axes with aluminium cover

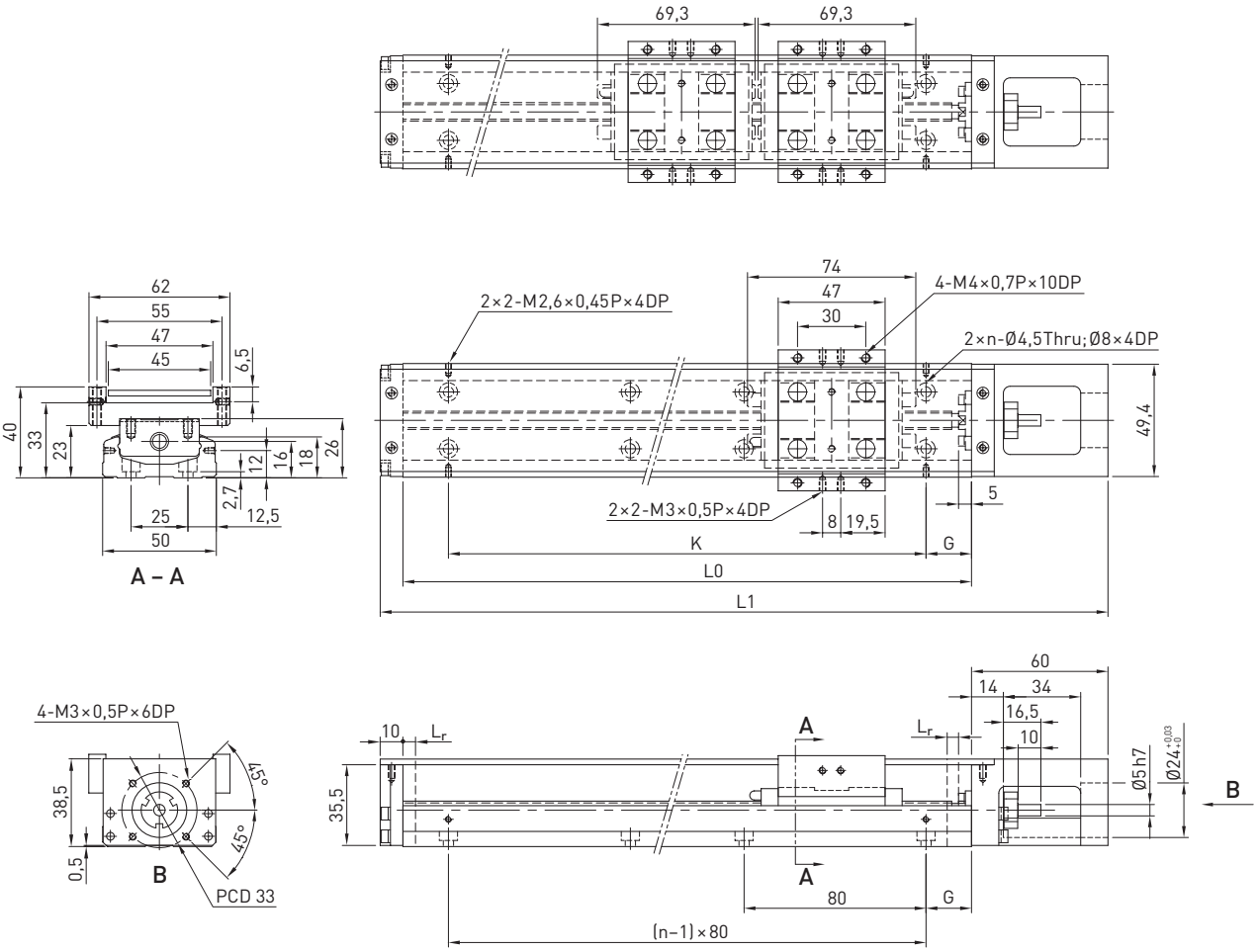


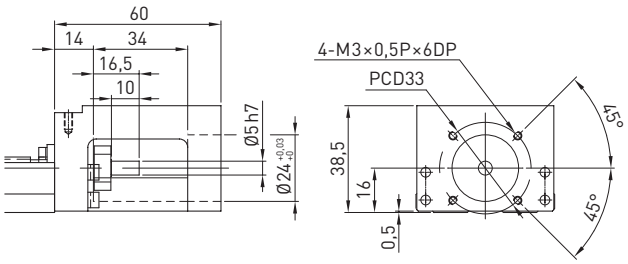
Table 5.11 **Dimensions and weights of KK50 linear axes with aluminium cover**

Model	Lead [mm]	L0 [mm]	L1 [mm]	Maximum travel distance [mm]		Reserve stroke L_r [mm]	G [mm]	K [mm]	n	Weight [kg]	
				Block A1	Block A2					Block A1	Block A2
KK5002P0150	2	150	220	60	—	5	35	80	2	1.1	—
KK5002P0200	2	200	270	110	45	5	20	160	3	1.3	1.5
KK5002P0250	2	250	320	160	95	5	45	160	3	1.6	1.8
KK5002P0300	2	300	370	210	145	5	30	240	4	1.8	2.0

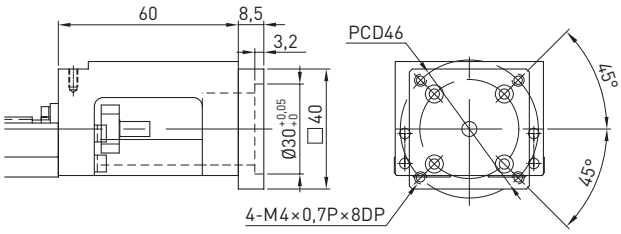
Reference edge
Viewed from the motor flange, the reference edge is located on the left side of the linear axis.

5.6.3 KK50 adapter flanges

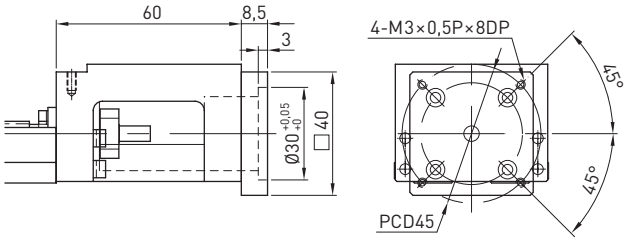
F0 motor adapter flange



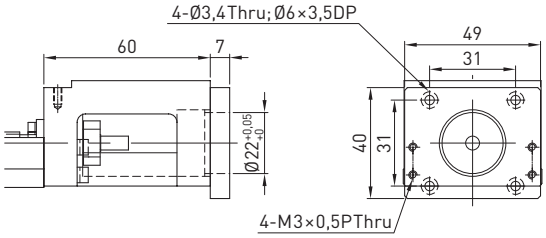
F1 motor adapter flange



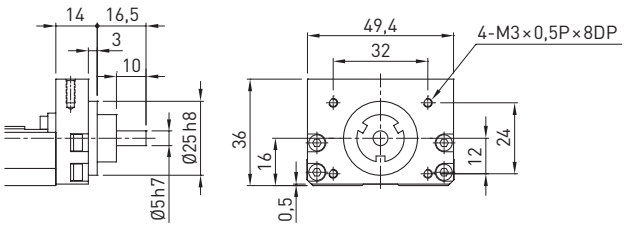
F2 motor adapter flange



F3 motor adapter flange



H0 motor adapter flange



5.7 KK60 linear axes

5.7.1 KK60 linear axes without cover, standard block

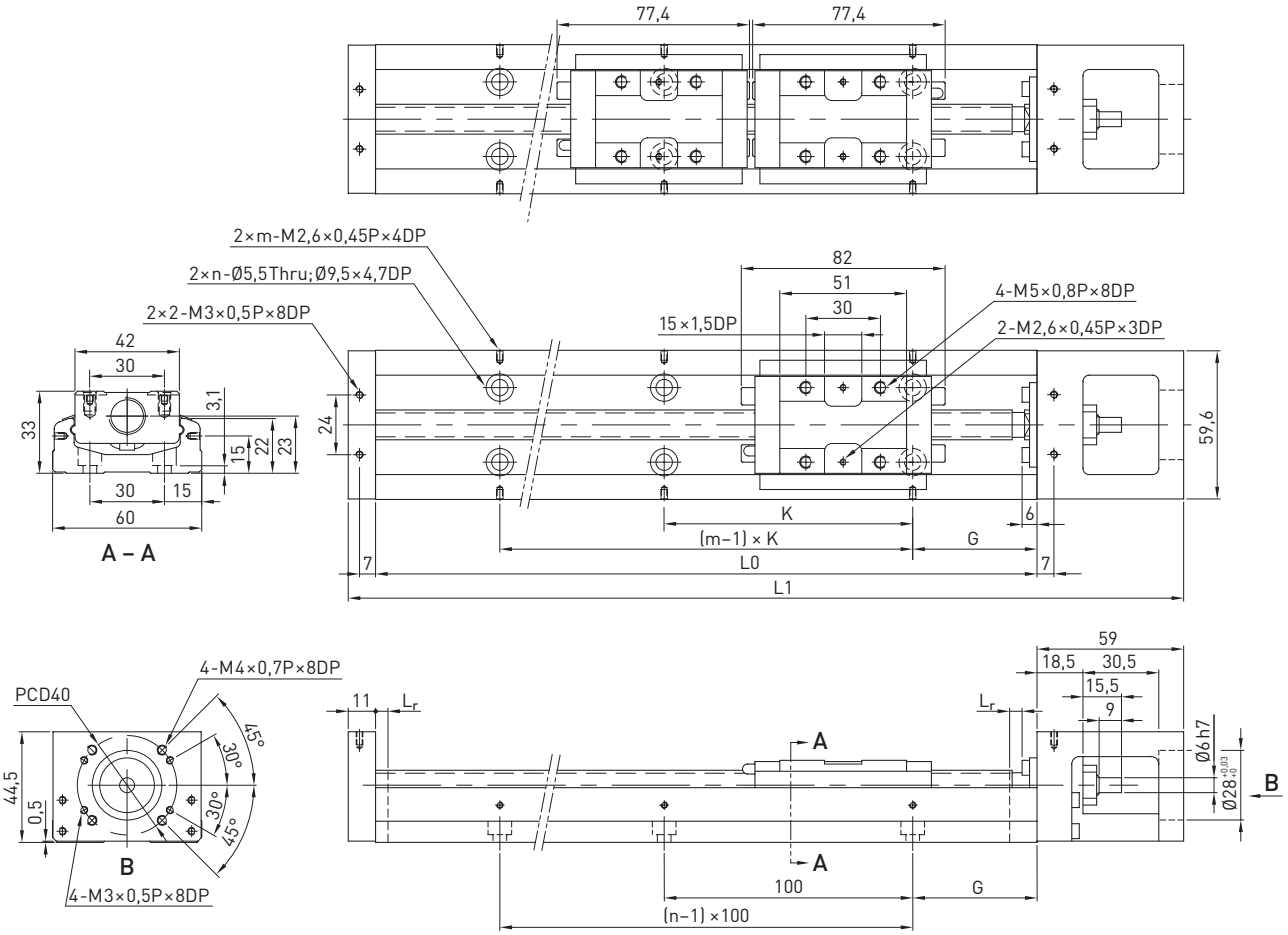


Table 5.12 **Dimensions and weights of KK60 linear axes without cover, standard block**

Model	Lead [mm]	L0 [mm]	L1 [mm]	Maximum travel distance [mm]		Reserve stroke L_r [mm]	G [mm]	K [mm]	n	m	Weight [kg]	
				Block A1	Block A2						Block A1	Block A2
KK6005P0150	5	150	220	50	—	5	25	100	2	2	1.5	—
KK6005P0200	5	200	270	100	—	5	50	100	2	2	1.8	—
KK6005P0300	5	300	370	200	125	5	50	200	3	2	2.4	2.7
KK6005P0400	5	400	470	300	225	5	50	100	4	4	3.0	3.3
KK6005P0500	5	500	570	400	325	5	50	200	5	3	3.6	3.9
KK6005P0600	5	600	670	500	425	5	50	100	6	6	4.2	4.6
KK6010P0150	10	150	220	50	—	5	25	100	2	2	1.5	—
KK6010P0200	10	200	270	100	—	5	50	100	2	2	1.8	—
KK6010P0300	10	300	370	200	125	5	50	200	3	2	2.4	2.7
KK6010P0400	10	400	470	300	225	5	50	100	4	4	3.0	3.3
KK6010P0500	10	500	570	400	325	5	50	200	5	3	3.6	3.9
KK6010P0600	10	600	670	500	425	5	50	100	6	6	4.2	4.6

Reference edge
Viewed from the motor flange, the reference edge is located on the left side of the linear axis.

5.7.2 KK60 linear axes without cover, short block
(available on request)

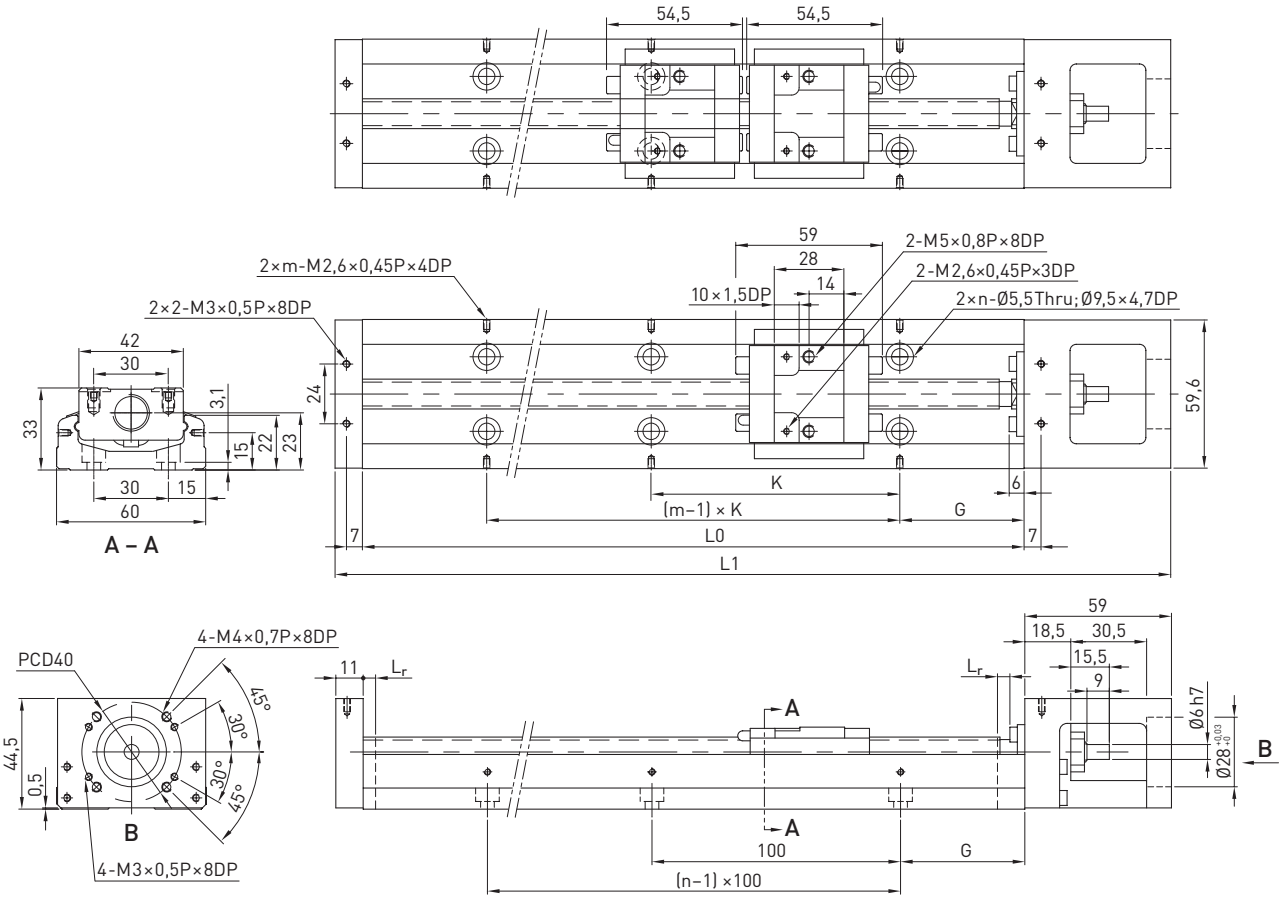


Table 5.13 **Dimensions and weights of KK60 linear axes without cover, short block**

Model	Lead [mm]	L0 [mm]	L1 [mm]	Maximum travel distance [mm]		Reserve stroke L_r [mm]	G [mm]	K [mm]	n	m	Weight [kg]	
				Block S1	**Block S2**						**Block S1**	**Block S2**
KK6005P0150	5	150	220	75	24	5	25	100	2	2	1.4	1.6
KK6005P0200	5	200	270	125	74	5	50	100	2	2	1.7	1.9
KK6005P0300	5	300	370	225	174	5	50	200	3	2	2.3	2.5
KK6005P0400	5	400	470	325	274	5	50	100	4	4	2.9	3.1
KK6005P0500	5	500	570	425	374	5	50	200	5	3	3.5	3.7
KK6005P0600	5	600	670	525	474	5	50	100	6	6	4.1	4.3
KK6010P0150	10	150	220	75	24	5	25	100	2	2	1.4	1.6
KK6010P0200	10	200	270	125	74	5	50	100	2	2	1.7	1.9
KK6010P0300	10	300	370	225	174	5	50	200	3	2	2.3	2.5
KK6010P0400	10	400	470	325	274	5	50	100	4	4	2.9	3.1
KK6010P0500	10	500	570	425	374	5	50	200	5	3	3.5	3.7
KK6010P0600	10	600	670	525	474	5	50	100	6	6	4.1	4.3

Reference edge
Viewed from the motor flange, the reference edge is located on the left side of the linear axis.

5.7.3 KK60 linear axes with aluminium cover, standard block

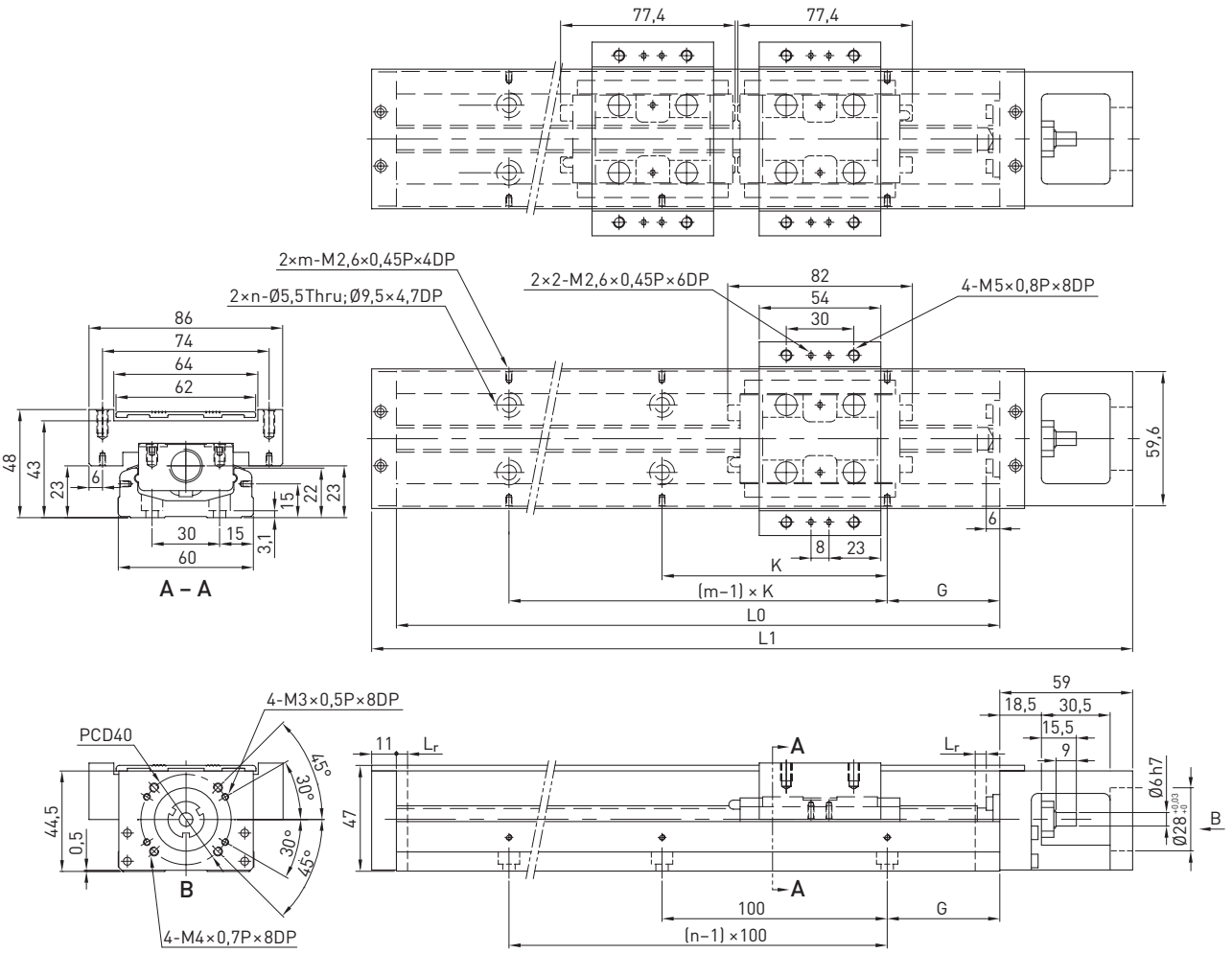


Table 5.14 **Dimensions and weights of KK60 linear axes with aluminium cover, standard block**

Model	Lead [mm]	L0 [mm]	L1 [mm]	Maximum travel distance [mm]		Reserve stroke L_r [mm]	G [mm]	K [mm]	n	m	Weight [kg]	
				Block A1	Block A2						Block A1	Block A2
KK6005P0150	5	150	220	50	—	5	25	100	2	2	1.7	—
KK6005P0200	5	200	270	100	—	5	50	100	2	2	2.1	—
KK6005P0300	5	300	370	200	125	5	50	200	3	2	2.7	3.0
KK6005P0400	5	400	470	300	225	5	50	100	4	4	3.3	3.6
KK6005P0500	5	500	570	400	325	5	50	200	5	3	3.9	4.2
KK6005P0600	5	600	670	500	425	5	50	100	6	6	4.4	5.0
KK6010P0150	10	150	220	50	—	5	25	100	2	2	1.7	—
KK6010P0200	10	200	270	100	—	5	50	100	2	2	2.1	—
KK6010P0300	10	300	370	200	125	5	50	200	3	2	2.7	3.0
KK6010P0400	10	400	470	300	225	5	50	100	4	4	3.3	3.6
KK6010P0500	10	500	570	400	325	5	50	200	5	3	3.9	4.2
KK6010P0600	10	600	670	500	425	5	50	100	6	6	4.4	5.0

Reference edge
Viewed from the motor flange, the reference edge is located on the left side of the linear axis.

5.7.4 KK60 linear axes with aluminium cover, short block
(available on request)

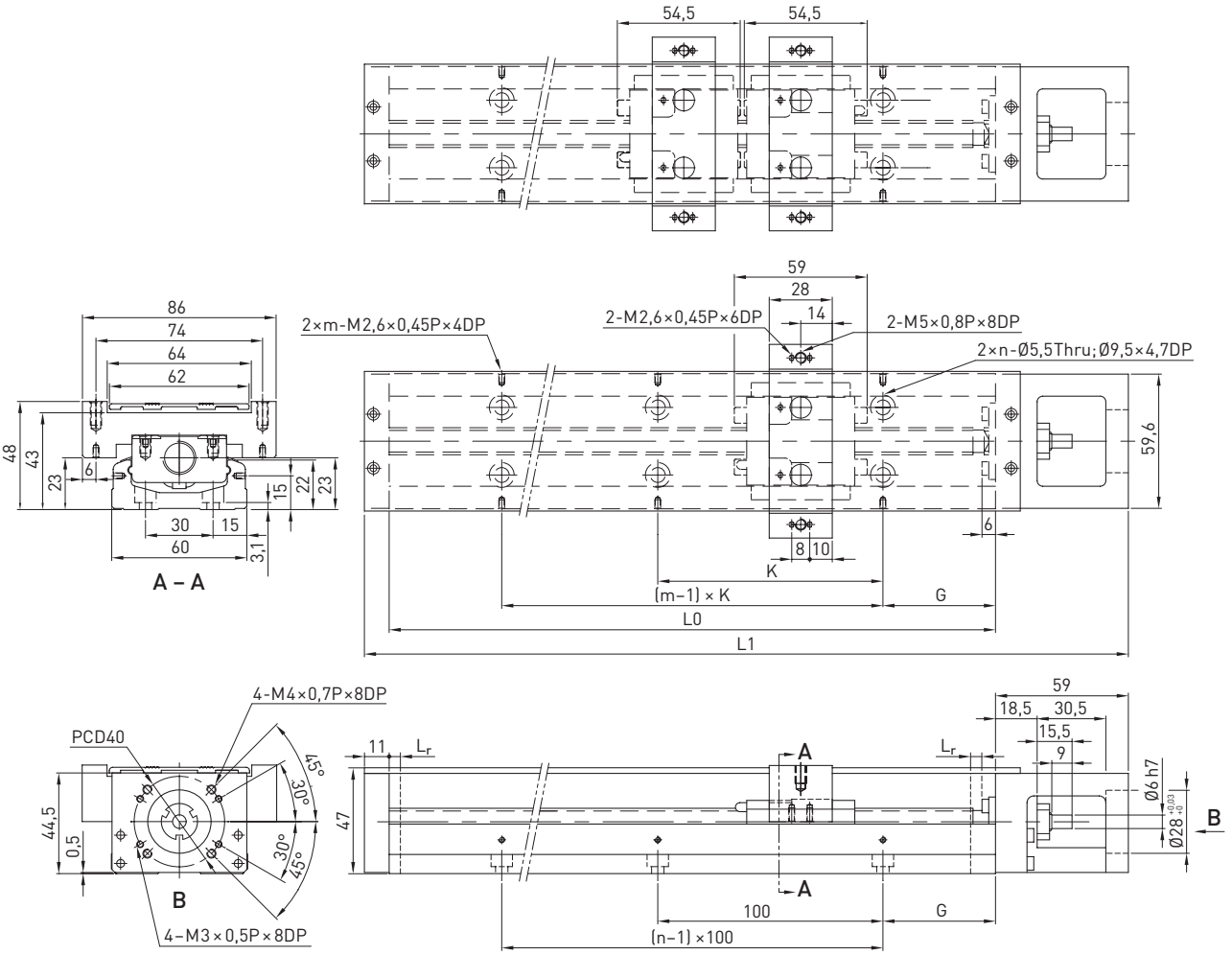


Table 5.15 **Dimensions and weights of KK60 linear axes with aluminium cover, short block**

Model	Lead [mm]	L0 [mm]	L1 [mm]	Maximum travel distance [mm]		Reserve stroke L_r [mm]	G [mm]	K [mm]	n	m	Weight [kg]	
				Block S1	**Block S2**						**Block S1**	**Block S2**
KK6005P0150	5	150	220	75	24	5	25	100	2	2	1.6	1.8
KK6005P0200	5	200	270	125	74	5	50	100	2	2	1.9	2.1
KK6005P0300	5	300	370	225	174	5	50	200	3	2	2.5	2.7
KK6005P0400	5	400	470	325	274	5	50	100	4	4	3.1	3.3
KK6005P0500	5	500	570	425	374	5	50	200	5	3	3.7	3.9
KK6005P0600	5	600	670	525	474	5	50	100	6	6	4.4	4.6
KK6010P0150	10	150	220	75	24	5	25	100	2	2	1.6	1.8
KK6010P0200	10	200	270	125	74	5	50	100	2	2	1.9	2.1
KK6010P0300	10	300	370	225	174	5	50	200	3	2	2.5	2.7
KK6010P0400	10	400	470	325	274	5	50	100	4	4	3.1	3.3
KK6010P0500	10	500	570	425	374	5	50	200	5	3	3.7	3.9
KK6010P0600	10	600	670	525	474	5	50	100	6	6	4.4	4.6

Reference edge
Viewed from the motor flange, the reference edge is located on the left side of the linear axis.

5.7.5 KK60 linear axes with bellows cover

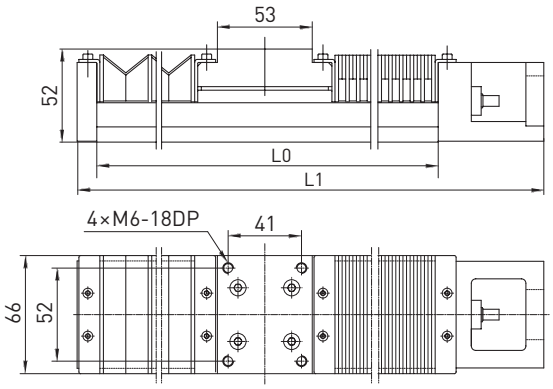


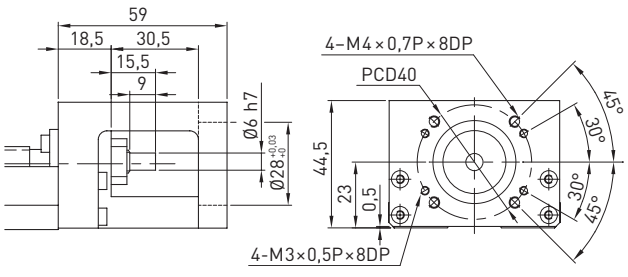
Table 5.16 **Dimensions and weights of KK60 linear axes with bellows cover**

Model	Lead [mm]	L0 [mm]	L1 [mm]	Maximum travel distance [mm]	Reserve stroke L_r [mm]	Weight [kg]
KK6005P0150	5	150	220	35	5	1.7
KK6005P0200	5	200	270	67	5	2.1
KK6005P0300	5	300	370	141	5	2.7
KK6005P0400	5	400	470	220	5	3.3
KK6005P0500	5	500	570	290	5	3.9
KK6005P0600	5	600	670	366	5	4.6
KK6010P0150	10	150	220	35	5	1.7
KK6010P0200	10	200	270	67	5	2.1
KK6010P0300	10	300	370	141	5	2.7
KK6010P0400	10	400	470	220	5	3.3
KK6010P0500	10	500	570	290	5	3.9
KK6010P0600	10	600	670	366	5	4.6

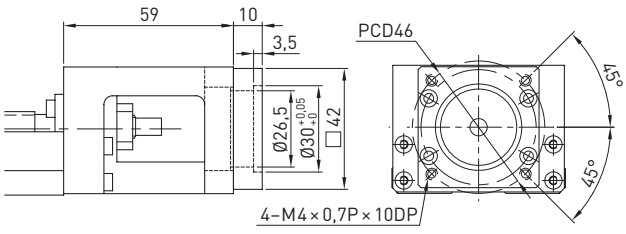
Reference edge
Viewed from the motor flange, the reference edge is located on the left side of the linear axis.

5.7.6 KK60 adapter flanges

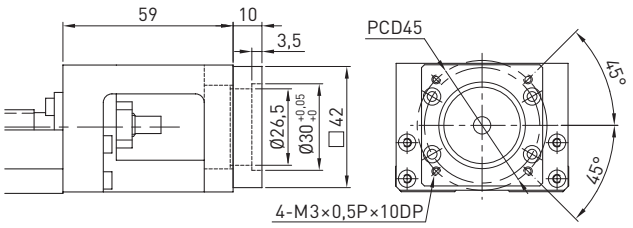
F0 motor adapter flange



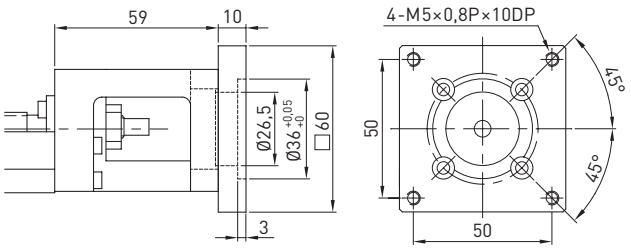
F1 motor adapter flange



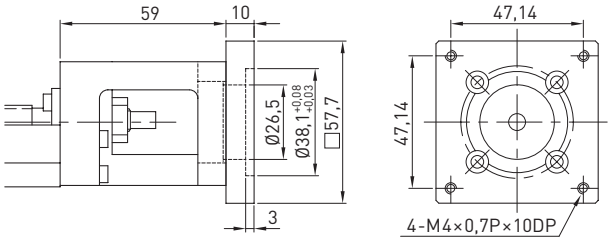
F2 motor adapter flange



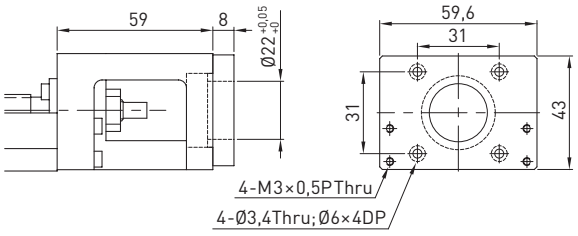
F3 motor adapter flange



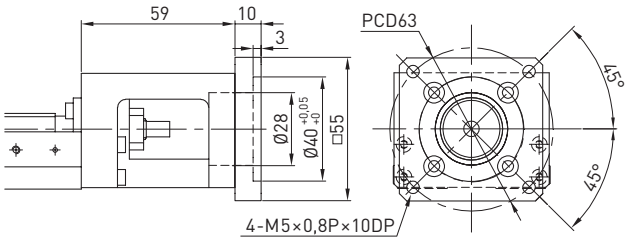
F4 motor adapter flange



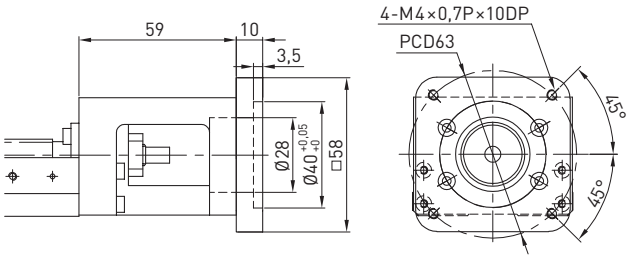
F5 motor adapter flange



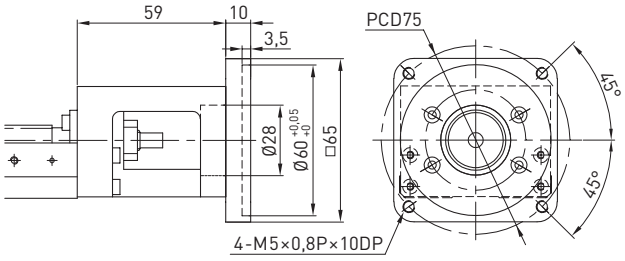
F6 motor adapter flange



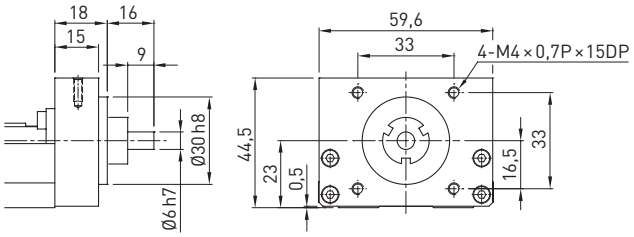
F8 motor adapter flange



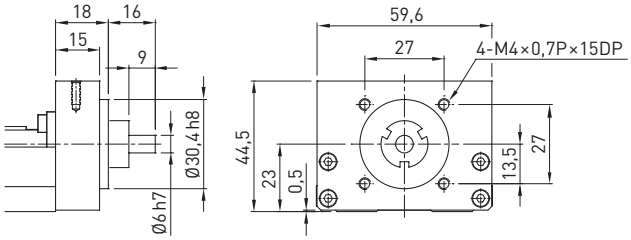
F10 motor adapter flange



H0 motor adapter flange



H1 motor adapter flange



5.8 KF60 linear axes

5.9 KF60 linear axes without cover, standard block

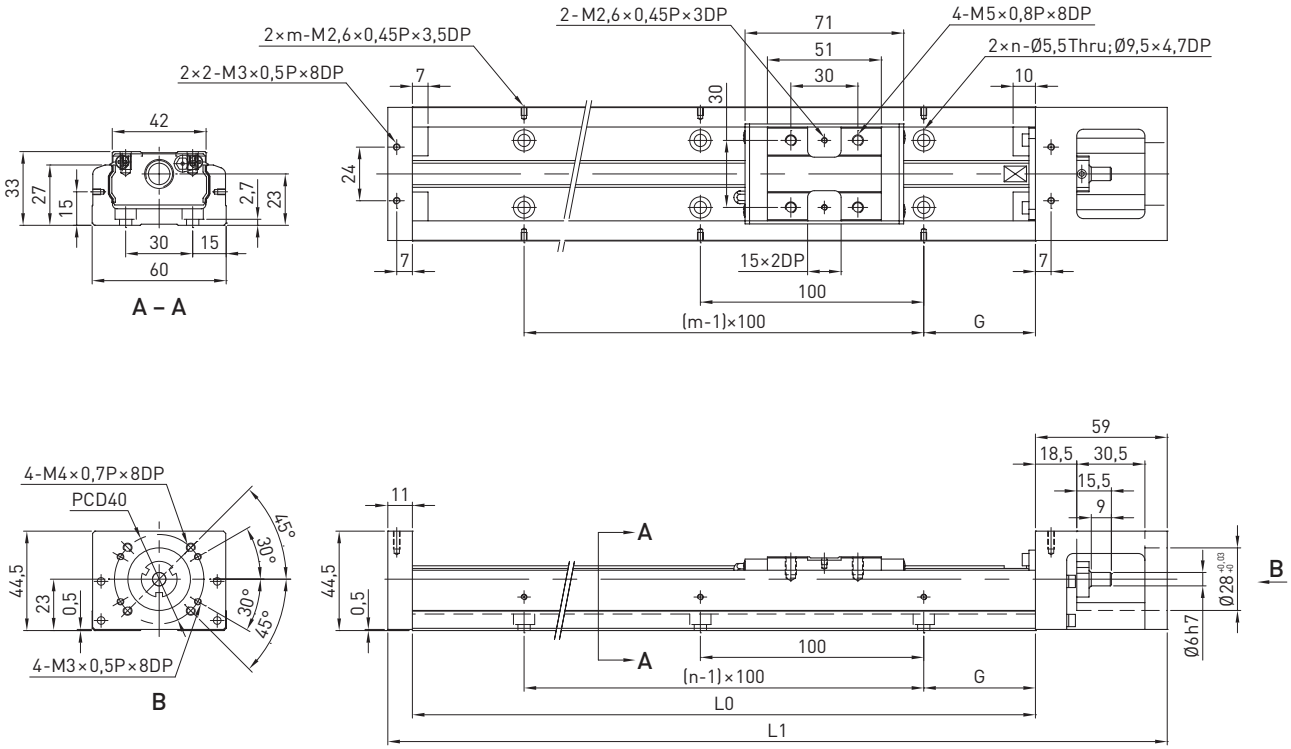


Table 5.17 **Dimensions and weights of KF60 linear axes without cover, standard block**

Model	Lead [mm]	L0 [mm]	L1 [mm]	Maximum travel distance [mm]		Reserve stroke L_r [mm]	G [mm]	n	m	Weight [kg]	
				Block A1	Block A2					Block A1	Block A2
KF6005P0150	5	150	220	52	—	5	25	2	2	1.6	—
KF6005P0200	5	200	270	102	—	5	50	2	2	1.9	—
KF6005P0300	5	300	370	202	129	5	50	3	3	2.6	2.9
KF6005P0400	5	400	470	302	229	5	50	4	4	3.2	3.5
KF6005P0500	5	500	570	402	329	5	50	5	5	3.9	4.2
KF6005P0600	5	600	670	502	429	5	50	6	6	4.5	4.8
KF6010P0150	10	150	220	52	—	5	25	2	2	1.6	—
KF6010P0200	10	200	270	102	—	5	50	2	2	1.9	—
KF6010P0300	10	300	370	202	129	5	50	3	3	2.6	2.9
KF6010P0400	10	400	470	302	229	5	50	4	4	3.2	3.5
KF6010P0500	10	500	570	402	329	5	50	5	5	3.9	4.2
KF6010P0600	10	600	670	502	429	5	50	6	6	4.5	4.8

Reference edge
Viewed from the motor flange, the reference edge is located on the left side of the linear axis.

5.9.1 KF60 linear axes with aluminium cover, standard block

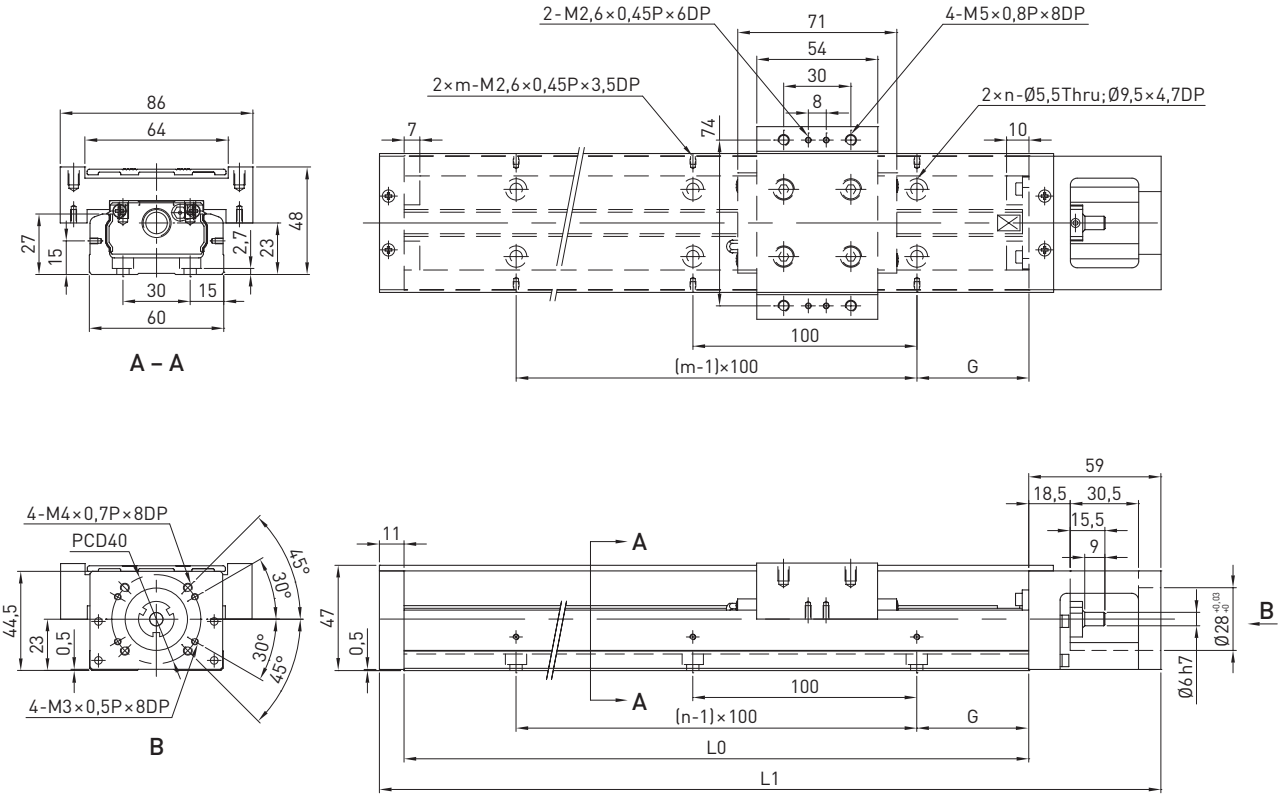


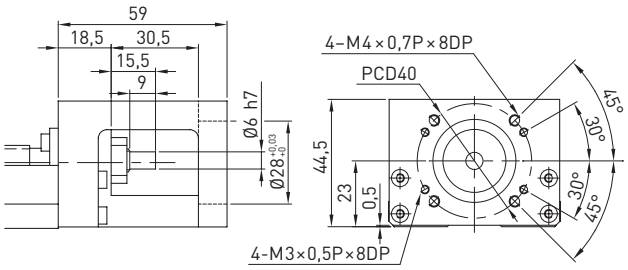
Table 5.18 **Dimensions and weights of KF60 linear axes with aluminium cover, standard block**

Model	Lead [mm]	L0 [mm]	L1 [mm]	Maximum travel distance [mm]		Reserve stroke L_r [mm]	G [mm]	n	m	Weight [kg]	
				Block A1	**Block A2**					**Block A1**	**Block A2**
KF6005P0150	5	150	220	52	—	5	25	2	2	1.8	—
KF6005P0200	5	200	270	102	—	5	50	2	2	2.2	—
KF6005P0300	5	300	370	202	129	5	50	3	3	2.9	3.2
KF6005P0400	5	400	470	302	229	5	50	4	4	3.5	3.8
KF6005P0500	5	500	570	402	329	5	50	5	5	4.2	4.5
KF6005P0600	5	600	670	502	429	5	50	6	6	4.9	5.2
KF6010P0150	10	150	220	52	—	5	25	2	2	1.8	—
KF6010P0200	10	200	270	102	—	5	50	2	2	2.2	—
KF6010P0300	10	300	370	202	129	5	50	3	3	2.9	3.2
KF6010P0400	10	400	470	302	229	5	50	4	4	3.5	3.8
KF6010P0500	10	500	570	402	329	5	50	5	5	4.2	4.5
KF6010P0600	10	600	670	502	429	5	50	6	6	4.9	5.2

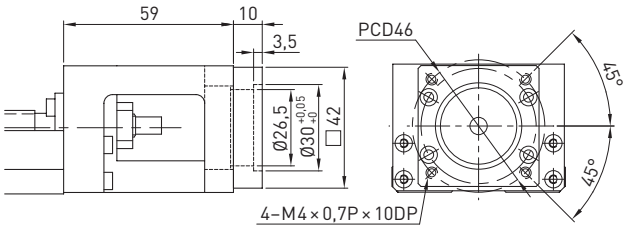
Reference edge
Viewed from the motor flange, the reference edge is located on the left side of the linear axis.

5.9.2 KF60 adapter flanges

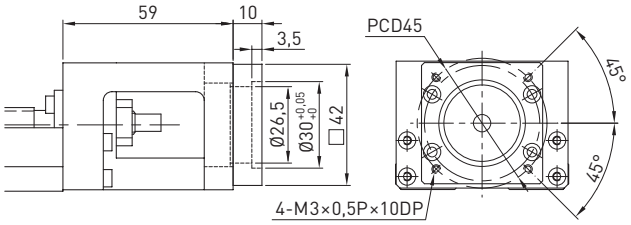
F0 motor adapter flange



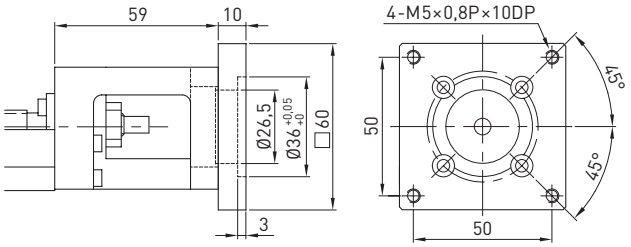
F1 motor adapter flange



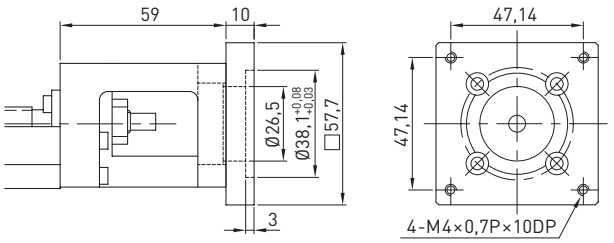
F2 motor adapter flange



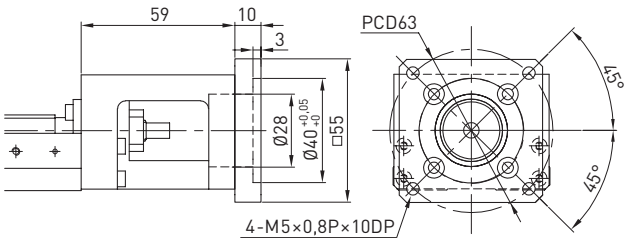
F3 motor adapter flange



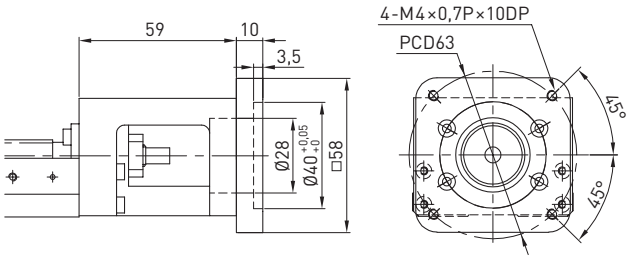
F4 motor adapter flange



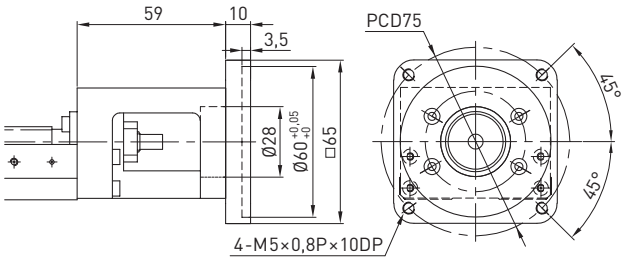
F6 motor adapter flange



F8 motor adapter flange



F10 motor adapter flange



5.10 KK86 linear axes

5.10.1 KK86 linear axes without cover, standard block

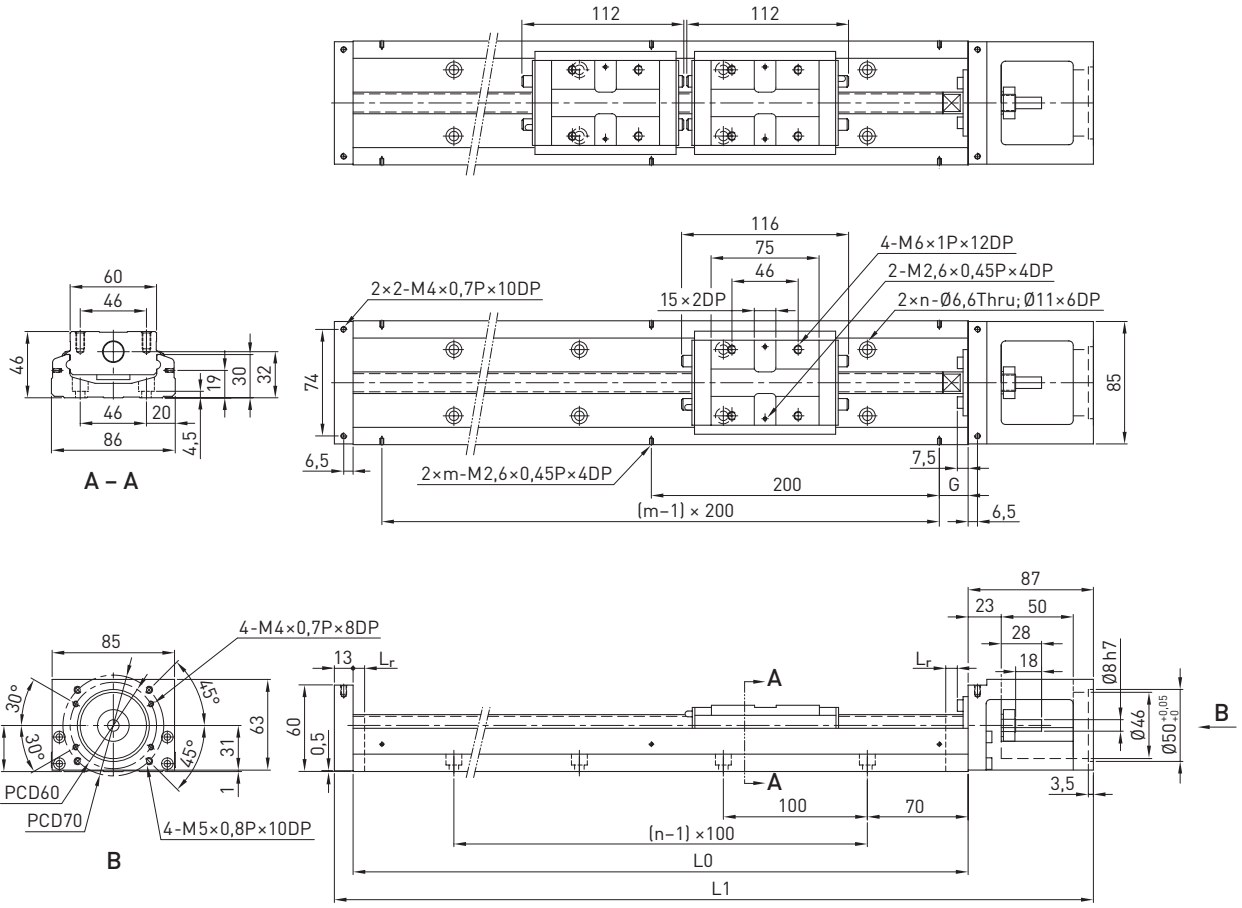


Table 5.19 **Dimensions and weights of KK86 linear axes without cover, standard block**

Model	Lead [mm]	L0 [mm]	L1 [mm]	Maximum travel distance [mm]		Reserve stroke L_r [mm]	G [mm]	n	m	Weight [kg]	
				Block A1	Block A2					Block A1	Block A2
KK8610P0340	10	340	440	194	84	8	70	3	2	5.7	6.5
KK8610P0440	10	440	540	294	184	8	20	4	3	6.9	7.7
KK8610P0540	10	540	640	394	284	8	70	5	3	8.0	8.8
KK8610P0640	10	640	740	494	384	8	20	6	4	9.2	10.0
KK8610P0740	10	740	840	594	484	8	70	7	4	10.4	11.2
KK8610P0940	10	940	1,040	794	684	8	70	9	5	11.6	12.4
KK8620P0340	20	340	440	194	84	8	70	3	2	5.7	6.5
KK8620P0440	20	440	540	294	184	8	20	4	3	6.9	7.7
KK8620P0540	20	540	640	394	284	8	70	5	3	8.0	8.8
KK8620P0640	20	640	740	494	384	8	20	6	4	9.2	10.0
KK8620P0740	20	740	840	594	484	8	70	7	4	10.4	11.2
KK8620P0940	20	940	1,040	794	684	8	70	9	5	11.6	12.4

Reference edge
Viewed from the motor flange, the reference edge is located on the left side of the linear axis.

5.10.2 KK86 linear axes without cover, short block

(available on request)

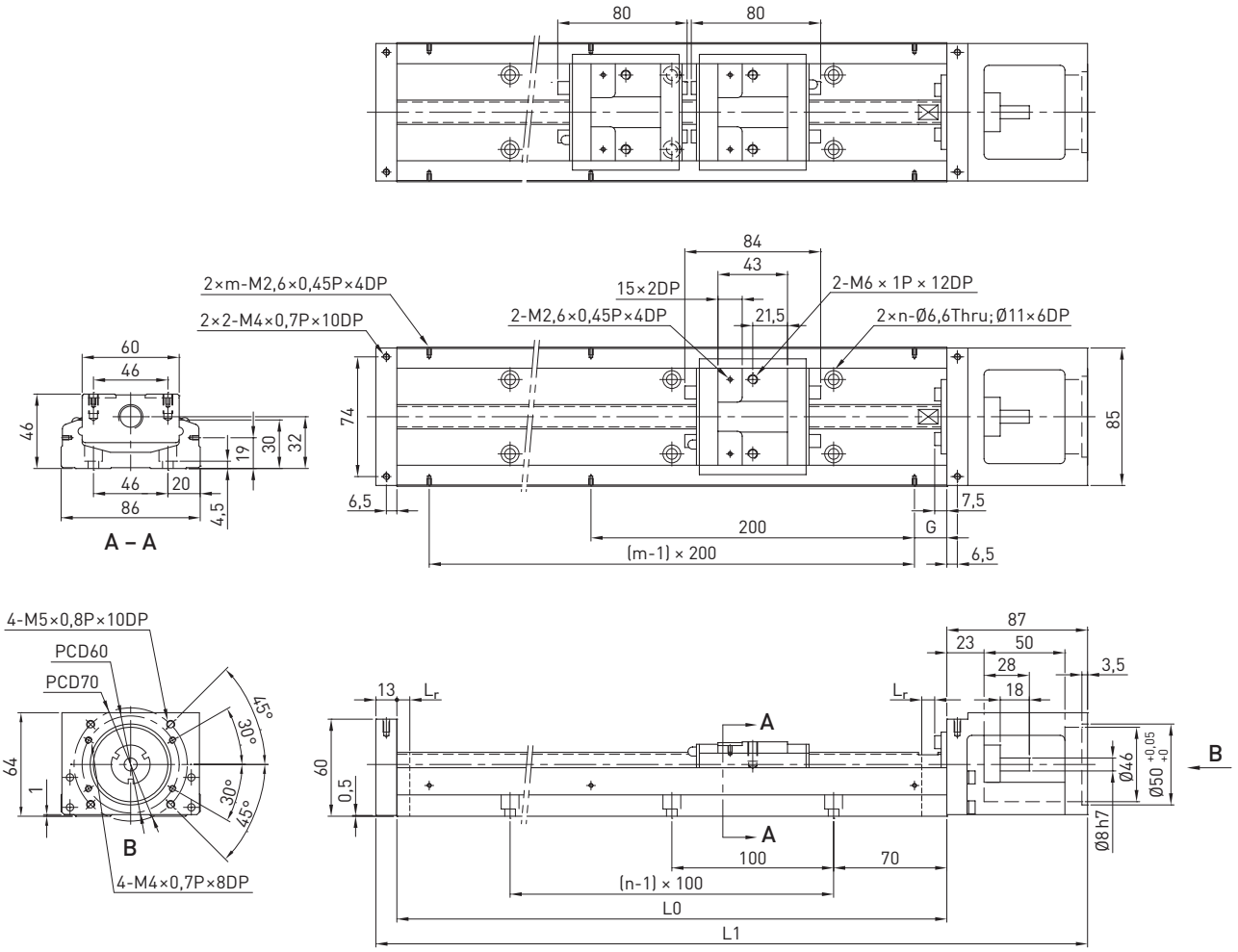


Table 5.20 **Dimensions and weights of KK86 linear axes without cover, short block**

Model	Lead [mm]	L0 [mm]	L1 [mm]	Maximum travel distance [mm]		Reserve stroke L_r [mm]	G [mm]	n	m	Weight [kg]	
				Block S1	Block S2					Block S1	Block S2
KK8610P0340	10	340	440	230	154	8	70	3	2	5.4	5.9
KK8610P0440	10	440	540	330	254	8	20	4	3	6.6	7.1
KK8610P0540	10	540	640	430	354	8	70	5	3	7.7	8.2
KK8610P0640	10	640	740	530	454	8	20	6	4	8.9	9.4
KK8610P0740	10	740	840	630	554	8	70	7	4	10.1	10.6
KK8610P0940	10	940	1,040	830	754	8	70	9	5	11.3	11.8
KK8620P0340	20	340	440	230	154	8	70	3	2	5.4	5.9
KK8620P0440	20	440	540	330	254	8	20	4	3	6.6	7.1
KK8620P0540	20	540	640	430	354	8	70	5	3	7.7	8.2
KK8620P0640	20	640	740	530	454	8	20	6	4	8.9	9.4
KK8620P0740	20	740	840	630	554	8	70	7	4	10.1	10.6
KK8620P0940	20	940	1,040	830	754	8	70	9	5	11.3	11.8

Reference edge

Viewed from the motor flange, the reference edge is located on the left side of the linear axis.

5.10.3 KK86 linear axes with aluminium cover, standard block

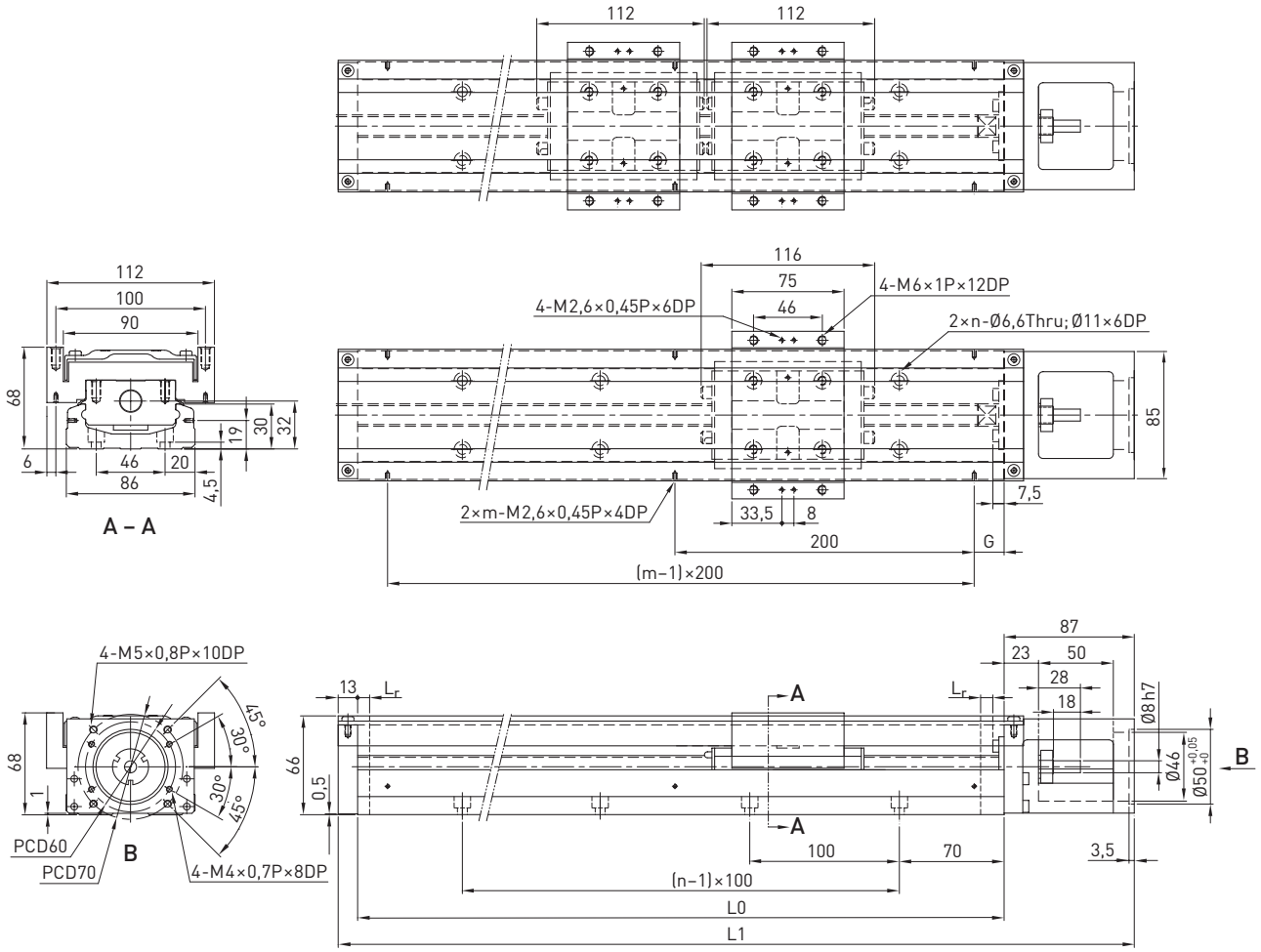


Table 5.21 **Dimensions and weights of KK86 linear axes with aluminium cover, standard block**

Model	Lead [mm]	L0 [mm]	L1 [mm]	Maximum travel distance [mm]		Reserve stroke L_r [mm]	G [mm]	n	m	Weight [kg]	
				Block A1	**Block A2**					**Block A1**	**Block A2**
KK8610P0340	10	340	440	194	84	8	70	3	2	6.5	7.3
KK8610P0440	10	440	540	294	184	8	20	4	3	7.8	8.6
KK8610P0540	10	540	640	394	284	8	70	5	3	9.0	9.8
KK8610P0640	10	640	740	494	384	8	20	6	4	10.3	11.3
KK8610P0740	10	740	840	594	484	8	70	7	4	11.6	12.4
KK8610P0940	10	940	1,040	794	684	8	70	9	5	13.0	13.8
KK8620P0340	20	340	440	194	84	8	70	3	2	6.5	7.3
KK8620P0440	20	440	540	294	184	8	20	4	3	7.8	8.6
KK8620P0540	20	540	640	394	284	8	70	5	3	9.0	9.8
KK8620P0640	20	640	740	494	384	8	20	6	4	10.3	11.3
KK8620P0740	20	740	840	594	484	8	70	7	4	11.6	12.4
KK8620P0940	20	940	1,040	794	684	8	70	9	5	13.0	13.8

Reference edge
Viewed from the motor flange, the reference edge is located on the left side of the linear axis.

5.10.4 KK86 linear axes with aluminium cover, short block

(available on request)

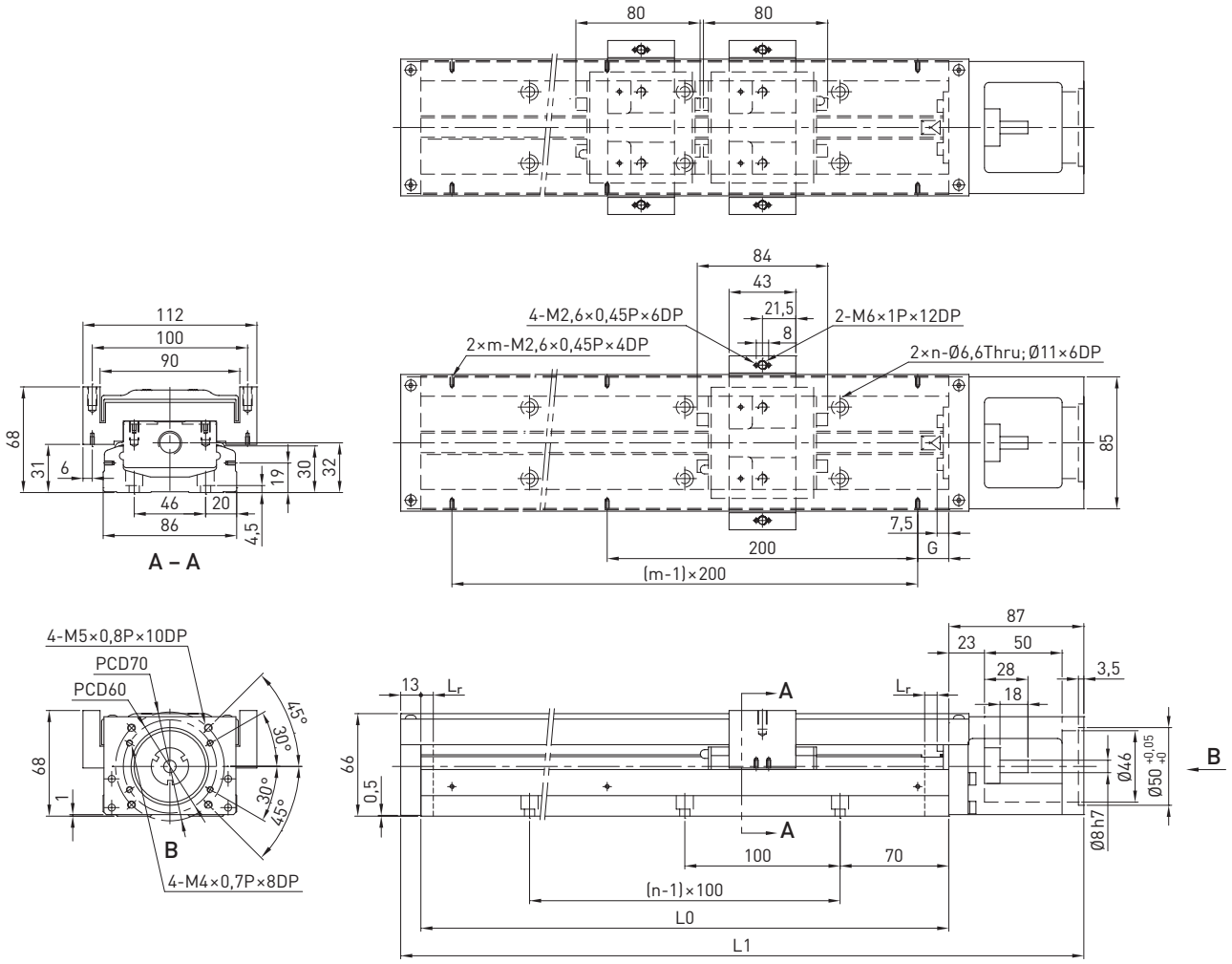


Table 5.22 **Dimensions and weights of KK86 linear axes with aluminium cover, short block**

Model	Lead [mm]	L0 [mm]	L1 [mm]	Maximum travel distance [mm]		Reserve stroke L_r [mm]	G [mm]	n	m	Weight [kg]	
				Block S1	Block S2					Block S1	Block S2
KK8610P0340	10	340	440	230	154	8	70	3	2	6.3	7.1
KK8610P0440	10	440	540	330	254	8	20	4	3	7.6	8.4
KK8610P0540	10	540	640	430	354	8	70	5	3	8.8	9.6
KK 8610P0640	10	640	740	530	454	8	20	6	4	10.1	11.1
KK8610P0740	10	740	840	630	554	8	70	7	4	11.4	12.2
KK8610P0940	10	940	1,040	830	754	8	70	9	5	12.8	13.6
KK8620P0340	20	340	440	230	154	8	70	3	2	6.3	7.1
KK8620P0440	20	440	540	330	254	8	20	4	3	7.6	8.4
KK8620P0540	20	540	640	430	354	8	70	5	3	8.8	9.6
KK8620P0640	20	640	740	530	454	8	20	6	4	10.1	11.1
KK8620P0740	20	740	840	630	554	8	70	7	4	11.4	12.2
KK8620P0940	20	940	1,040	830	754	8	70	9	5	12.8	13.6

Reference edge

Viewed from the motor flange, the reference edge is located on the left side of the linear axis.

5.10.5 KK86 linear axes with bellows cover

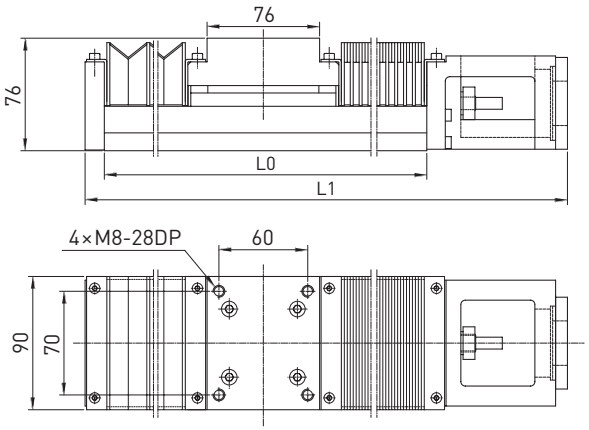


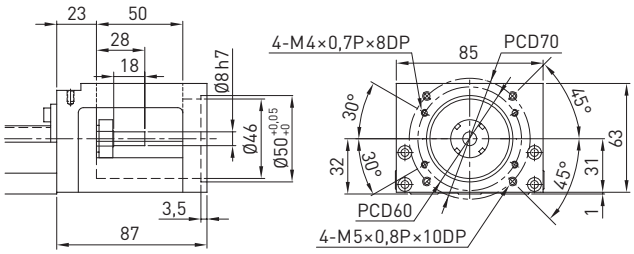
Table 5.23 **Dimensions and weights of KK86 linear axes with bellows cover**

Model	Lead [mm]	L0 [mm]	L1 [mm]	Maximum travel distance [mm]	Reserve stroke L_r [mm]	Weight [kg]
KK8610P0340	10	340	440	158	8	6.3
KK8610P0440	10	440	540	232	8	7.6
KK8610P0540	10	540	640	311	8	8.8
KK8610P0640	10	640	740	394	8	10.0
KK8610P0740	10	740	840	475	8	11.3
KK8610P0940	10	940	1,040	638	8	12.7
KK8620P0340	20	340	440	158	8	6.3
KK8620P0440	20	440	540	232	8	7.6
KK8620P0540	20	540	640	311	8	8.8
KK8620P0640	20	640	740	394	8	10.0
KK8620P0740	20	740	840	475	8	11.3
KK8620P0940	20	940	1,040	638	8	12.7

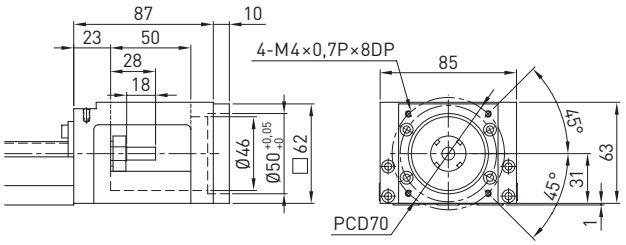
Reference edge
Viewed from the motor flange, the reference edge is located on the left side of the linear axis.

5.10.6 KK86 adapter flanges

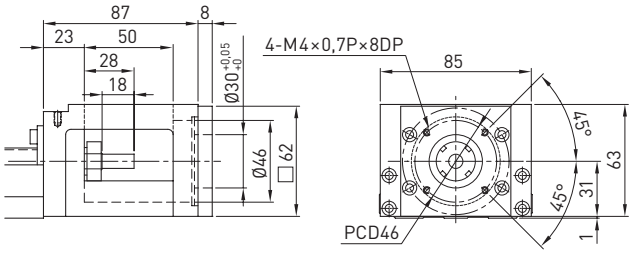
F0 motor adapter flange



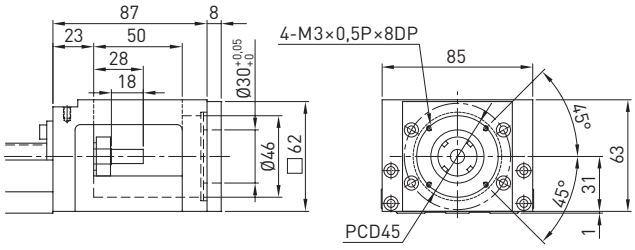
F1 motor adapter flange



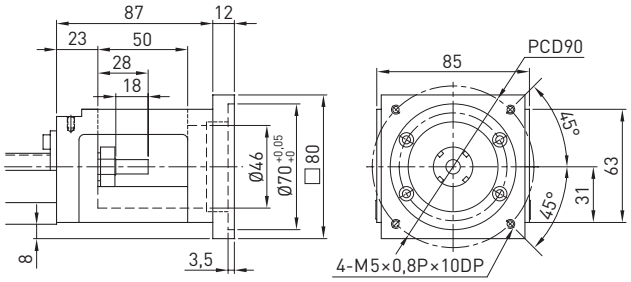
F2 motor adapter flange



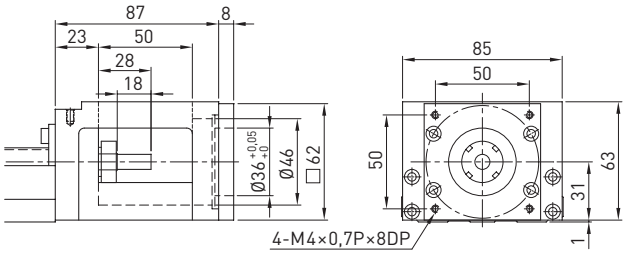
F3 motor adapter flange



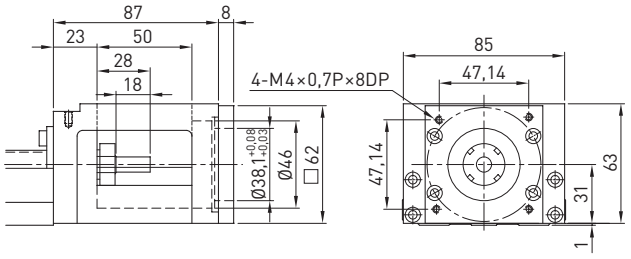
F4 motor adapter flange



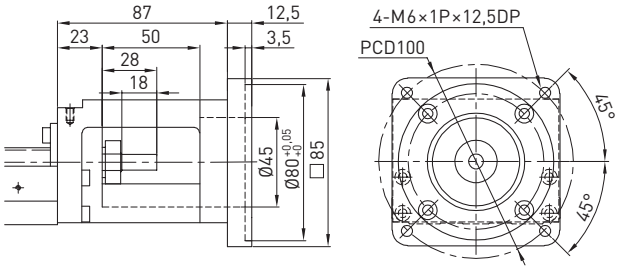
F5 motor adapter flange



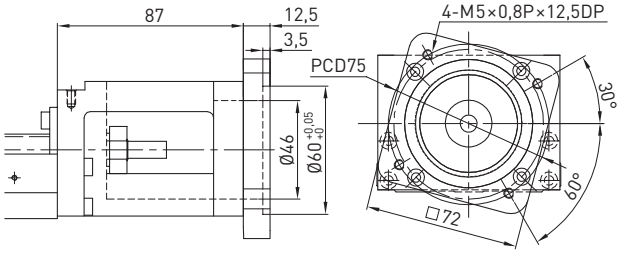
F6 motor adapter flange



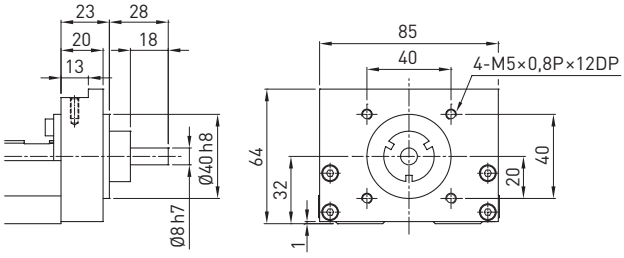
F7 motor adapter flange



F8 motor adapter flange



H0 motor adapter flange



5.11 KF86 linear axes

5.11.1 KF86 linear axes without cover, standard block

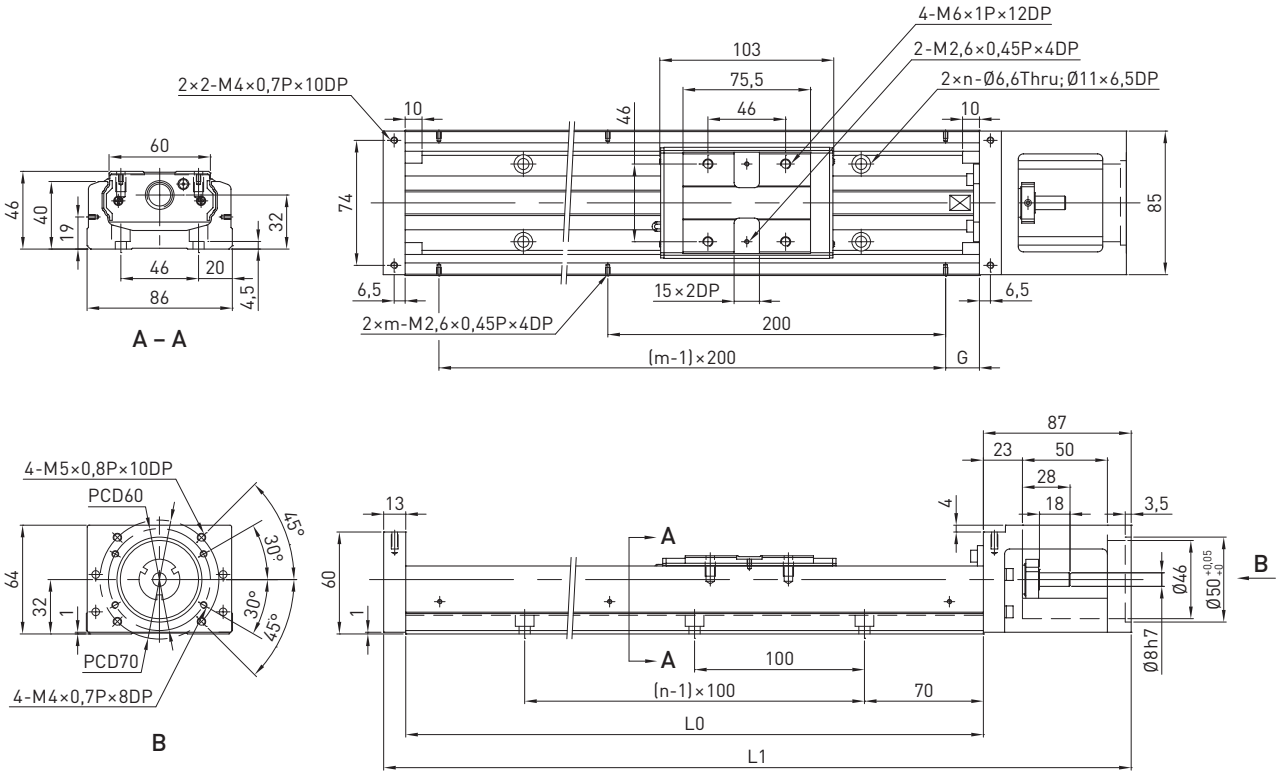


Table 5.24 **Dimensions and weights of KF86 linear axes without cover, standard block**

Model	Lead [mm]	L0 [mm]	L1 [mm]	Maximum travel distance [mm]		Reserve stroke L_r [mm]	G [mm]	n	m	Weight [kg]	
				Block A1	**Block A2**					**Block A1**	**Block A2**
KF8610P0340	10	340	440	201	98	8	70	3	2	6.2	7.0
KF8610P0440	10	440	540	301	198	8	20	4	3	7.5	8.3
KF8610P0540	10	540	640	401	298	8	70	5	3	8.8	9.6
KF8610P0640	10	640	740	501	398	8	20	6	4	10.1	10.9
KF8610P0740	10	740	840	601	498	8	70	7	4	11.4	12.2
KF8610P0940	10	940	1,040	801	698	8	70	9	5	14.0	14.8
KF8620P0340	20	340	440	201	98	8	70	3	2	6.2	7.0
KF8620P0440	20	440	540	301	198	8	20	4	3	7.5	8.3
KF8620P0540	20	540	640	401	298	8	70	5	3	8.8	9.6
KF8620P0640	20	640	740	501	398	8	20	6	4	10.1	10.9
KF8620P0740	20	740	840	601	498	8	70	7	4	11.4	12.2
KF8620P0940	20	940	1,040	801	698	8	70	9	5	14.0	14.8

Reference edge
Viewed from the motor flange, the reference edge is located on the left side of the linear axis.

5.11.2 KF86 linear axes with aluminium cover, standard block

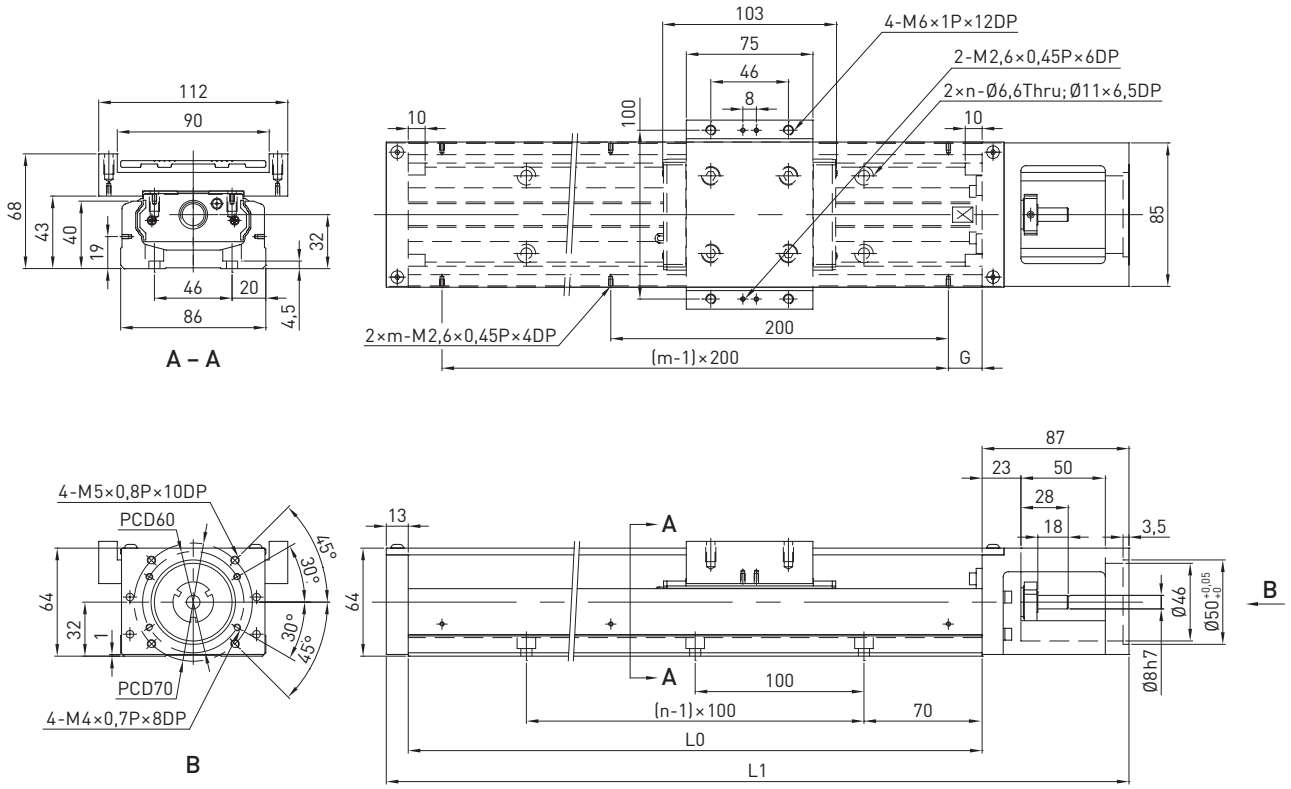


Table 5.25 **Dimensions and weights of KF86 linear axes with aluminium cover, standard block**

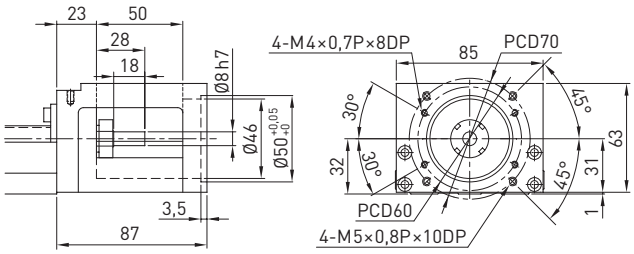
Model	Lead [mm]	L0 [mm]	L1 [mm]	Maximum travel distance [mm]		Reserve stroke L_r [mm]	G [mm]	n	m	Weight [kg]	
				Block A1	**Block A2**					**Block A1**	**Block A2**
KF8610P0340	10	340	440	201	98	8	70	3	2	7.0	7.8
KF8610P0440	10	440	540	301	198	8	20	4	3	8.4	9.2
KF8610P0540	10	540	640	401	298	8	70	5	3	9.8	10.6
KF8610P0640	10	640	740	501	398	8	20	6	4	11.2	12.0
KF8610P0740	10	740	840	601	498	8	70	7	4	12.6	13.4
KF8610P0940	10	940	1,040	801	698	8	70	9	5	15.4	16.2
KF8620P0340	20	340	440	201	98	8	70	3	2	7.0	7.8
KF8620P0440	20	440	540	301	198	8	20	4	3	8.4	9.2
KF8620P0540	20	540	640	401	298	8	70	5	3	9.8	10.6
KF8620P0640	20	640	740	501	398	8	20	6	4	11.2	12.0
KF8620P0740	20	740	840	601	498	8	70	7	4	12.6	13.4
KF8620P0940	20	940	1,040	801	698	8	70	9	5	15.4	16.2

Reference edge

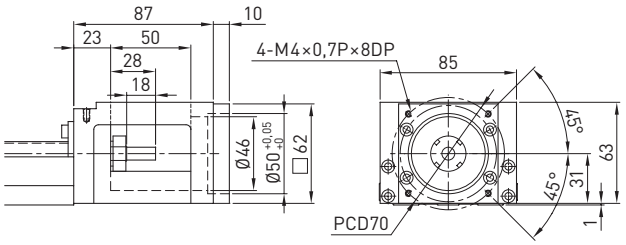
Viewed from the motor flange, the reference edge is located on the left side of the linear axis.

5.11.3 KF86 adapter flanges

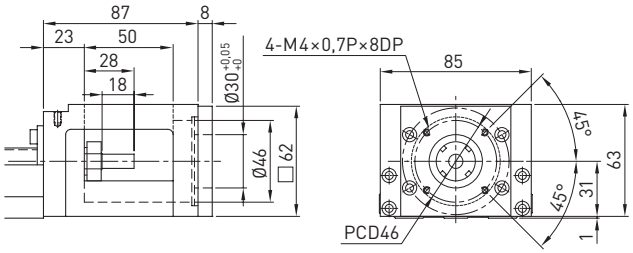
F0 motor adapter flange



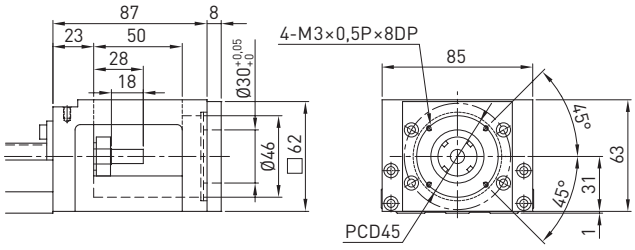
F1 motor adapter flange



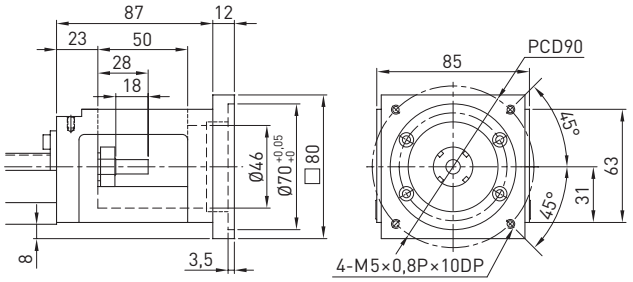
F2 motor adapter flange



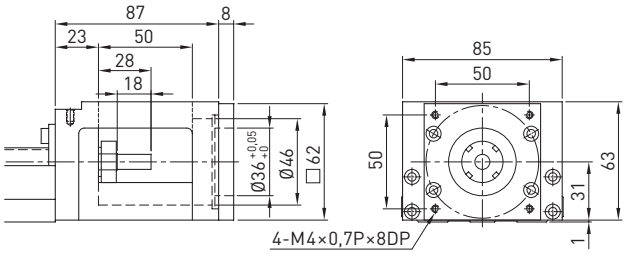
F3 motor adapter flange



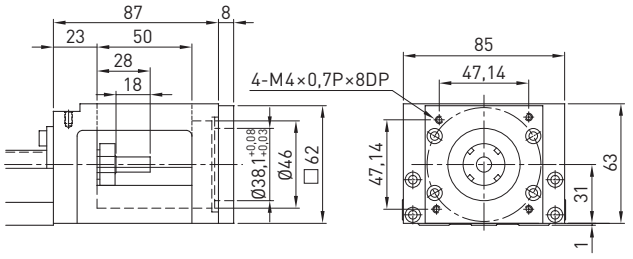
F4 motor adapter flange



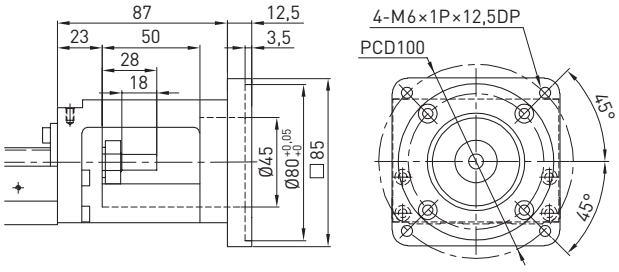
F5 motor adapter flange



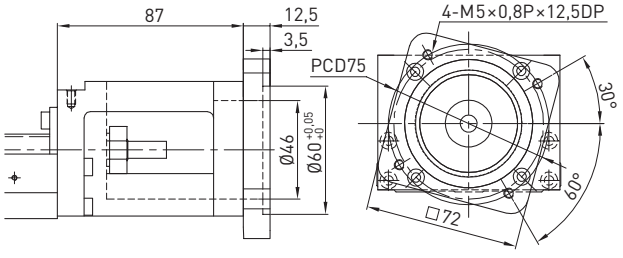
F6 motor adapter flange



F7 motor adapter flange



F8 motor adapter flange



5.12 KK100 linear axes

5.12.1 KK100 linear axes without cover

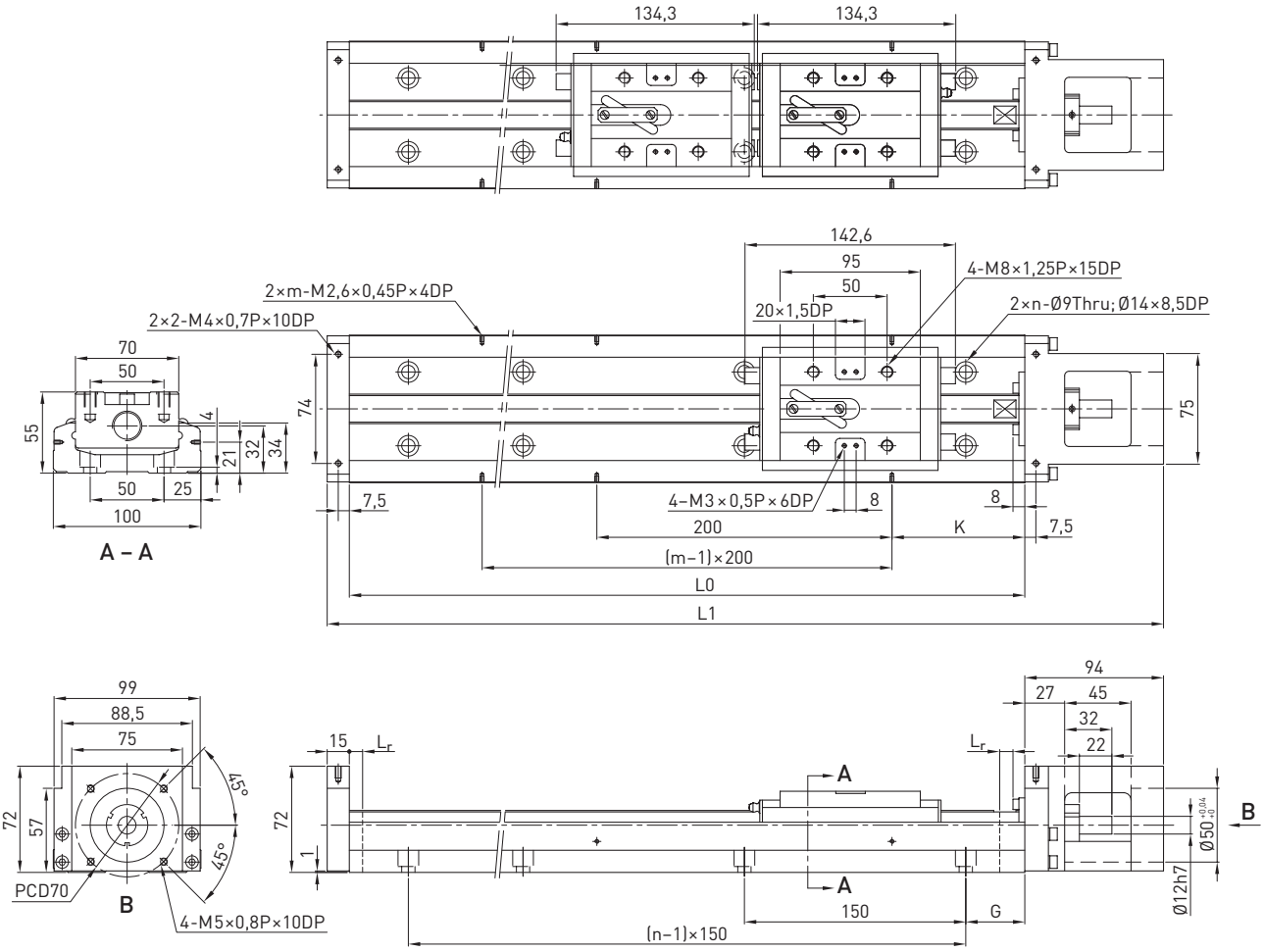


Table 5.26 **Dimensions and weights of KK100 linear axes without cover**

Model	Lead [mm]	L0 [mm]	L1 [mm]	Maximum travel distance [mm]		Reserve stroke L_r [mm]	G [mm]	K [mm]	n	m	Weight [kg]	
				Block A1	Block A2						Block A1	Block A2
KK10020P0980	20	980	1,089	810	682	9	40	90	7	5	18.6	20.3
KK10020P1080	20	1,080	1,189	910	782	9	15	40	8	6	20.3	22.0
KK10020P1180	20	1,180	1,289	1,010	882	9	65	90	8	6	22.0	23.7
KK10020P1280	20	1,280	1,389	1,110	982	9	40	40	9	7	23.6	25.3
KK10020P1380	20	1,380	1,489	1,210	1,082	9	15	90	10	7	25.3	27.0

Reference edge
Viewed from the motor flange, the reference edge is located on the left side of the linear axis.

5.12.2 KK100 linear axes with aluminium cover

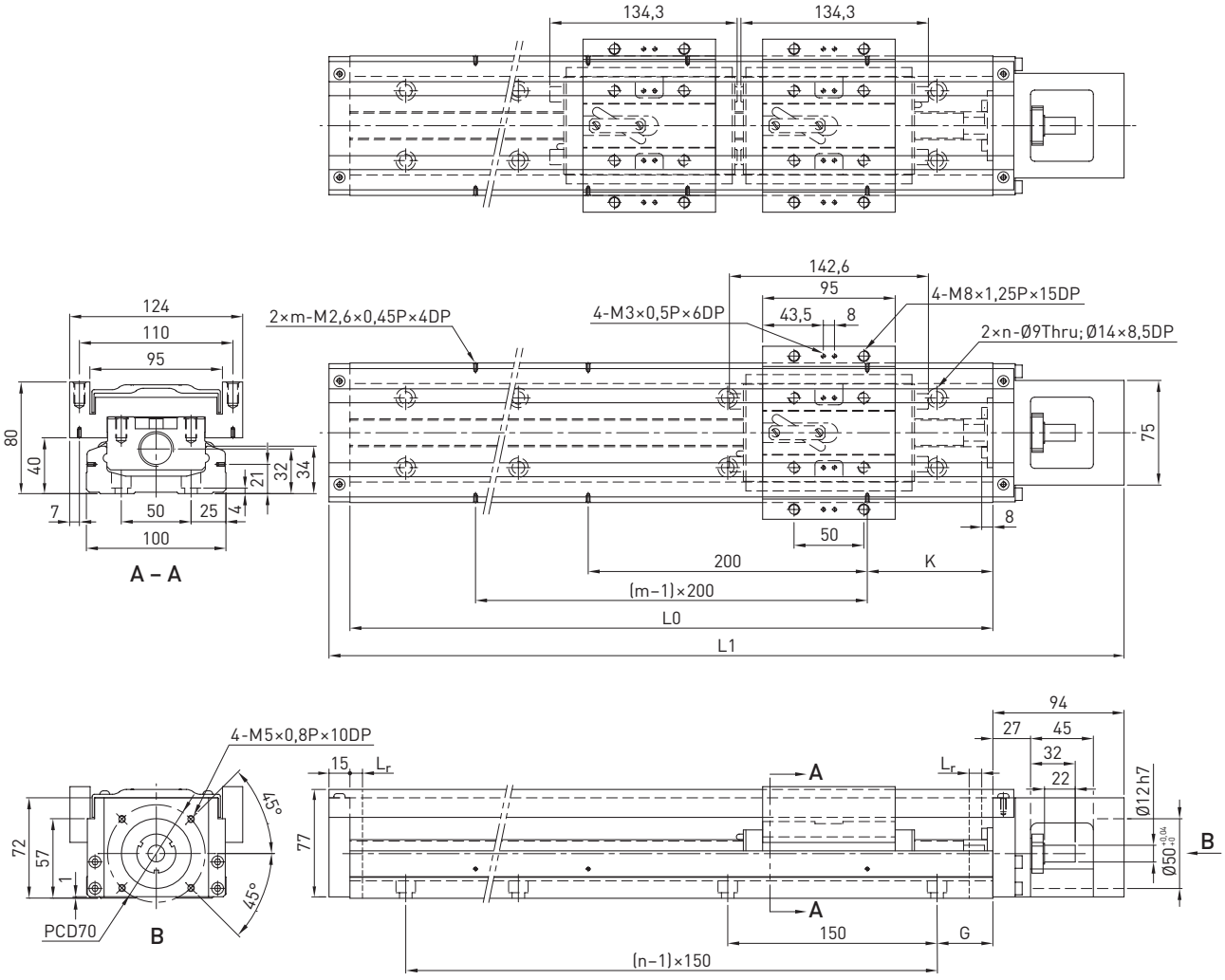


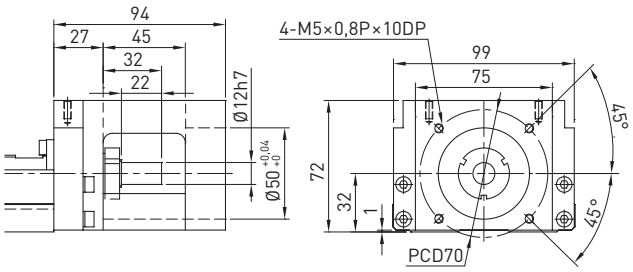
Table 5.27 **Dimensions and weights of KK100 linear axes with aluminium cover**

Model	Lead [mm]	L0 [mm]	L1 [mm]	Maximum travel distance [mm]		Reserve stroke L_r [mm]	G [mm]	K [mm]	n	m	Weight [kg]	
				Block A1	**Block A2**						**Block A1**	**Block A2**
KK10020P0980	20	980	1,089	810	682	9	40	90	7	5	20.4	22.1
KK10020P1080	20	1,080	1,189	910	782	9	15	40	8	6	22.2	23.9
KK10020P1180	20	1,180	1,289	1,010	882	9	65	90	8	6	24.0	25.7
KK10020P1280	20	1,280	1,389	1,110	982	9	40	40	9	7	25.7	27.4
KK10020P1380	20	1,380	1,489	1,210	1,082	9	15	90	10	7	27.5	29.2

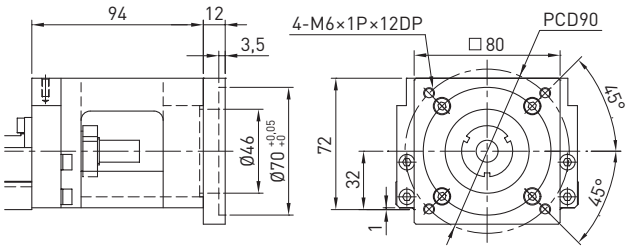
Reference edge
Viewed from the motor flange, the reference edge is located on the left side of the linear axis.

5.12.3 KK100 adapter flanges

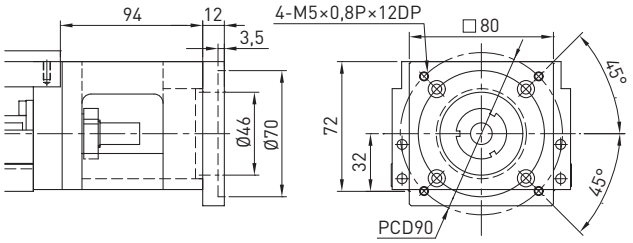
F0 motor adapter flange



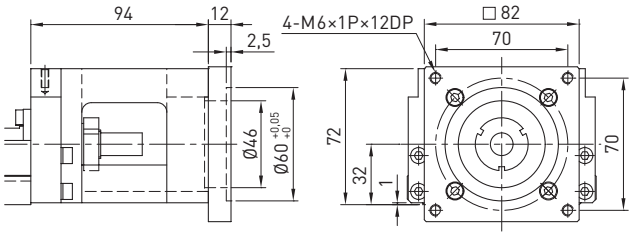
F1 motor adapter flange



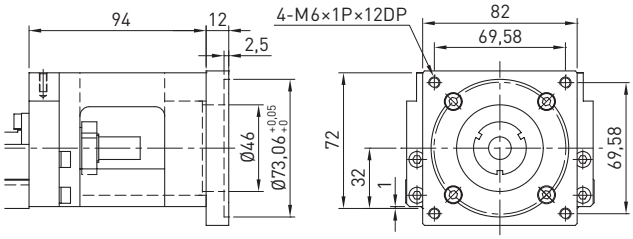
F2 motor adapter flange



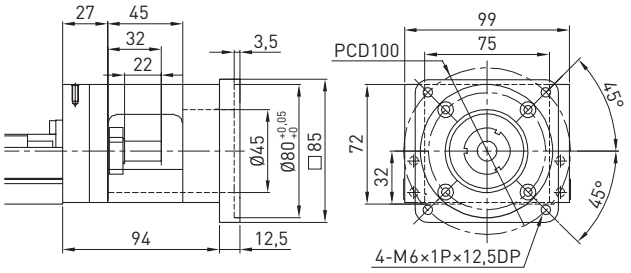
F3 motor adapter flange



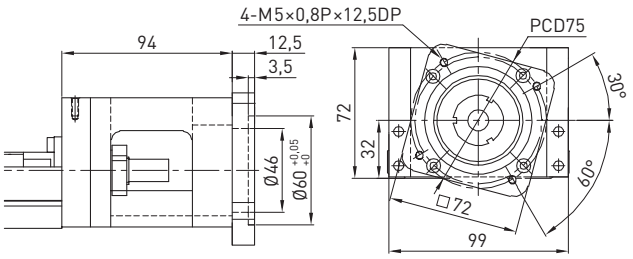
F4 motor adapter flange



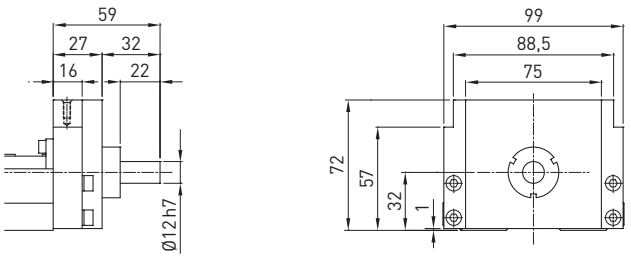
F5 motor adapter flange



F7 motor adapter flange



H0 motor adapter flange



5.13 KK130 linear axes

5.13.1 KK130 linear axes without cover

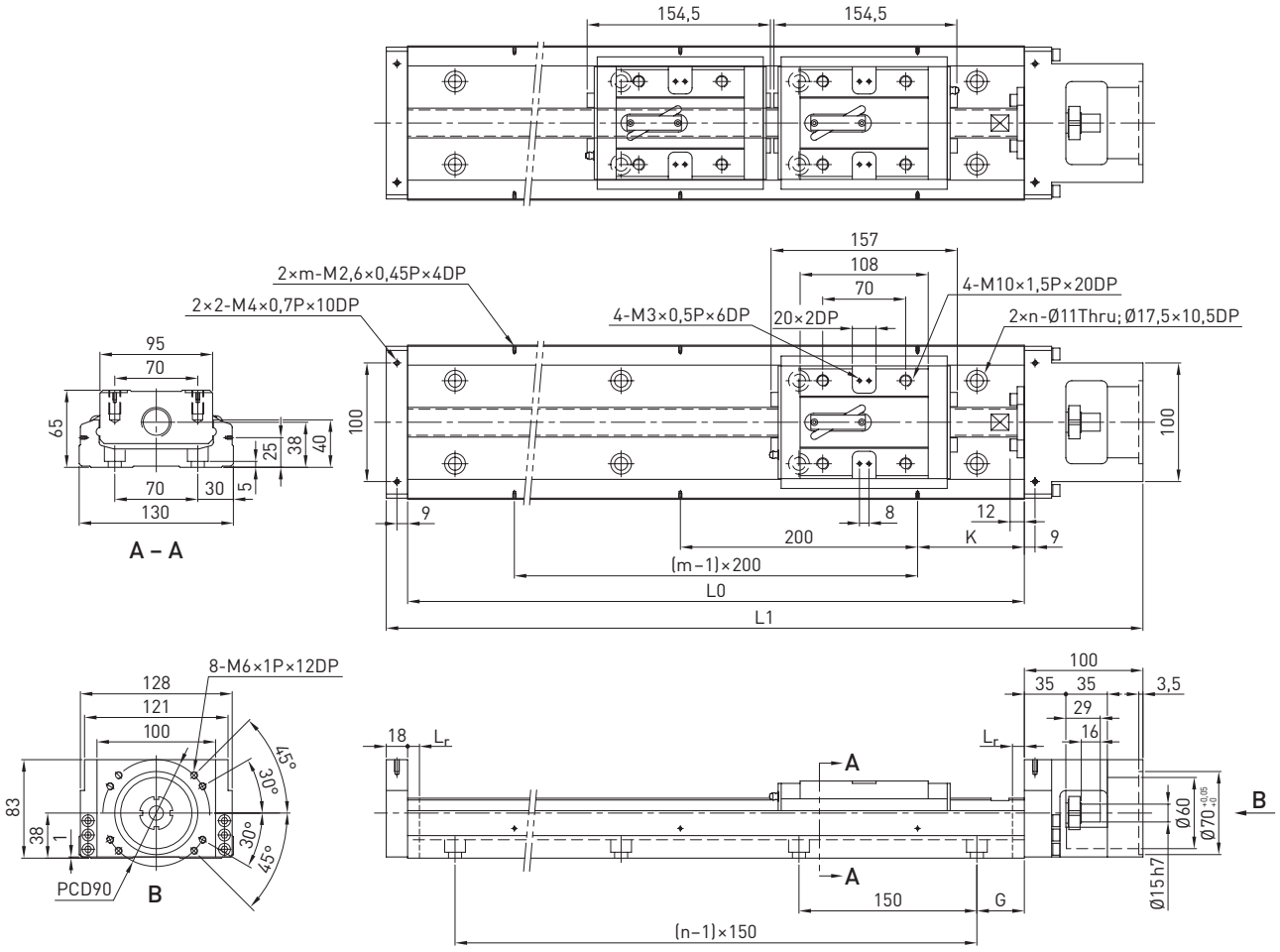


Table 5.28 **Dimensions and weights of KK130 linear axes without cover**

Model	Lead [mm]	L0 [mm]	L1 [mm]	Maximum travel distance [mm]		Reserve stroke L_r [mm]	G [mm]	K [mm]	n	m	Weight [kg]	
				Block A1	**Block A2**						**Block A1**	**Block A2**
KK13025P0980	25	980	1,098	791	639	10	40	90	7	5	29.4	32.3
KK13025P1180	25	1,180	1,298	991	839	10	65	90	8	6	34.3	37.2
KK13025P1380	25	1,380	1,498	1,191	1,039	10	90	90	9	7	39.2	42.1
KK13025P1680	25	1,680	1,798	1,491	1,339	10	90	40	11	9	46.5	49.4

Reference edge
Viewed from the motor flange, the reference edge is located on the left side of the linear axis.

5.13.2 KK130 linear axes with aluminium cover

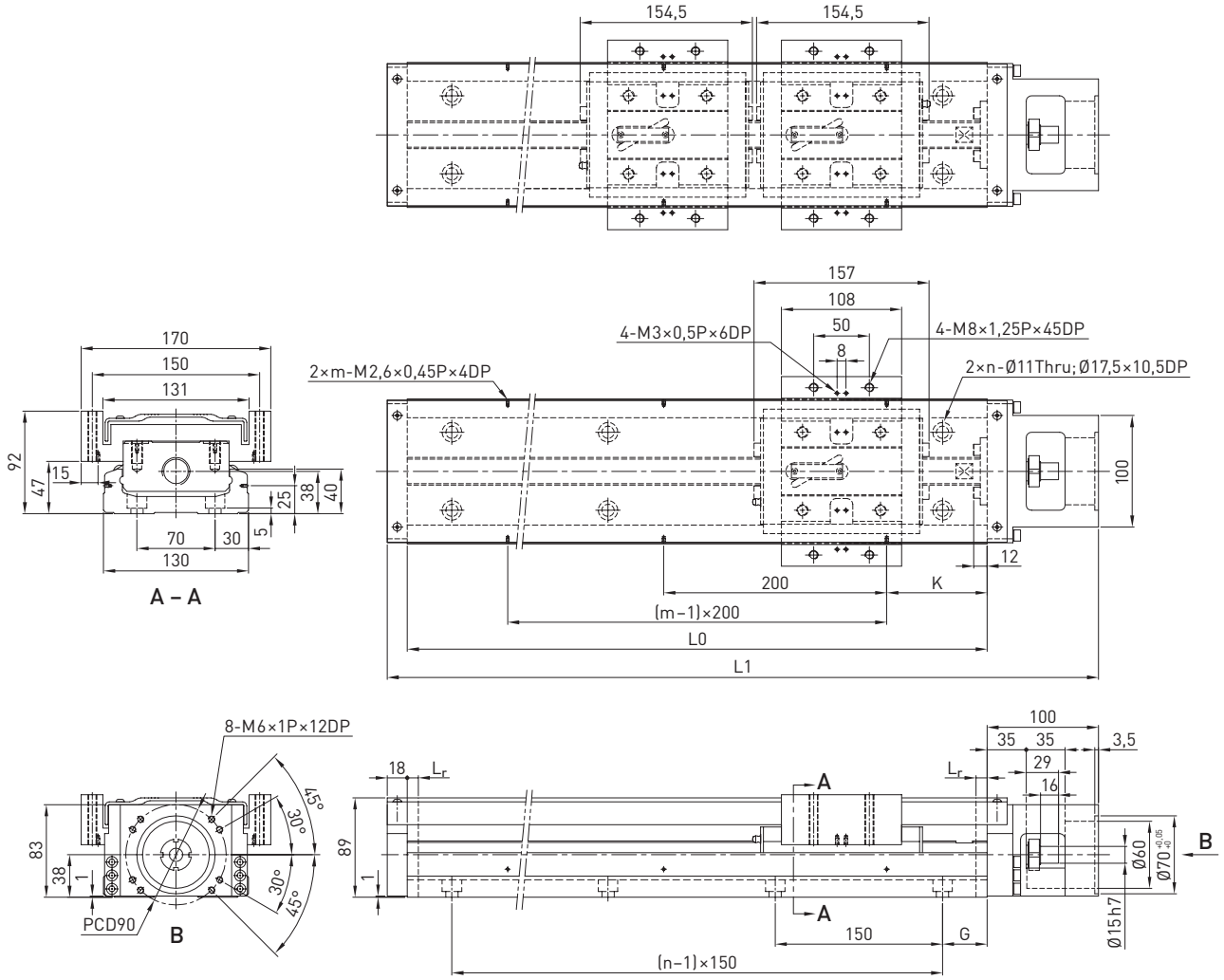


Table 5.29 **Dimensions and weights of KK130 linear axes with aluminium cover**

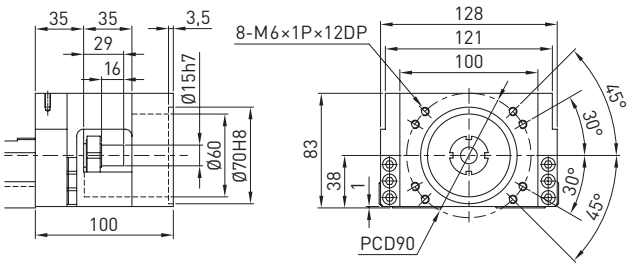
Model	Lead [mm]	L0 [mm]	L1 [mm]	Maximum travel distance [mm]		Reserve stroke L_r [mm]	G [mm]	K [mm]	n	m	Weight [kg]	
				Block A1	Block A2						Block A1	Block A2
KK13025P0980	25	980	1,098	791	639	10	40	90	7	5	31.9	35.9
KK13025P1180	25	1,180	1,298	991	839	10	65	90	8	6	37.1	41.1
KK13025P1380	25	1,380	1,498	1,191	1,039	10	90	90	9	7	42.2	46.2
KK13025P1680	25	1,680	1,798	1,491	1,339	10	90	40	11	9	49.9	53.9

Reference edge

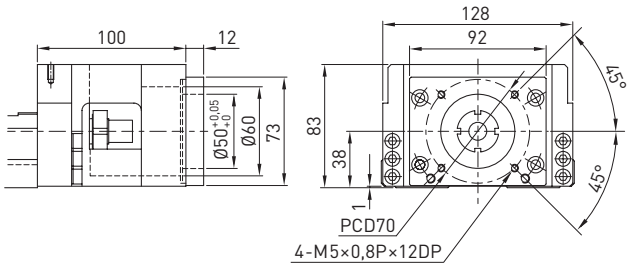
Viewed from the motor flange, the reference edge is located on the left side of the linear axis.

5.13.3 KK130 adapter flanges

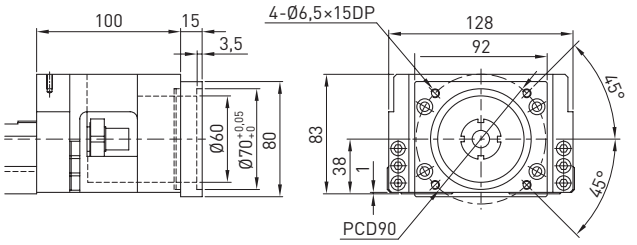
F0 motor adapter flange



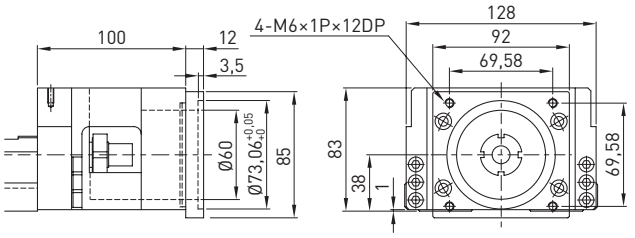
F1 motor adapter flange



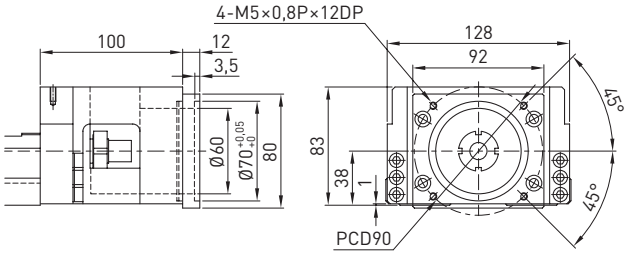
F2 motor adapter flange



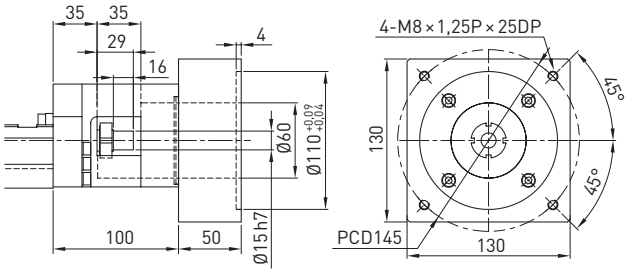
F3 motor adapter flange



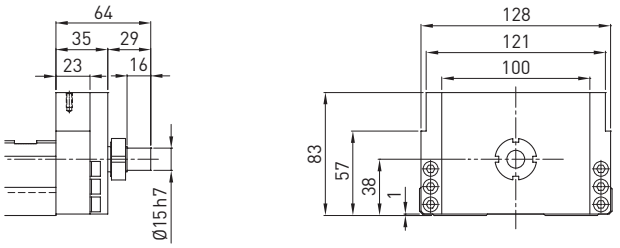
F4 motor adapter flange



F5 motor adapter flange



H0 motor adapter flange



5.14 Accessories for KK/KF precision axes

5.14.1 Sensor rail without limit switches

Linear axis KK/KF can optionally be ordered with up to three limit switches (inductive PNP proximity switches). The limit switches are mounted on the sensor rail and can be freely positioned on the rail. The limit switches are mounted on the sensor rail that is fastened onto the linear axis, delivered with open cable tails. More detailed information about the limit switches can be found in "Assembly Instructions for KK/KF Linear Axes" at hiwin.de.

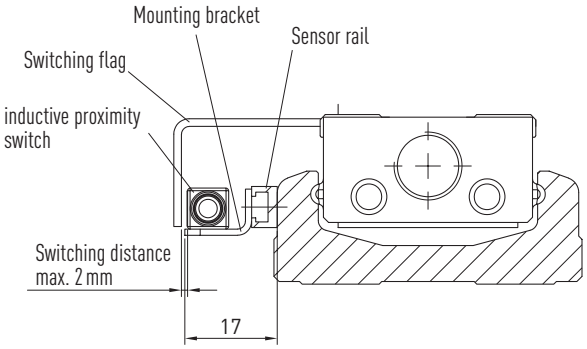


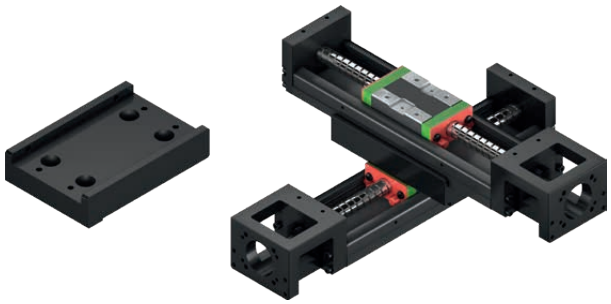
Table 5.30 **Available limit switches**

Article number	Function	Cable length
8-14-0040 [1]	NC contact	4 m
8-14-0010	NO contact	2 m

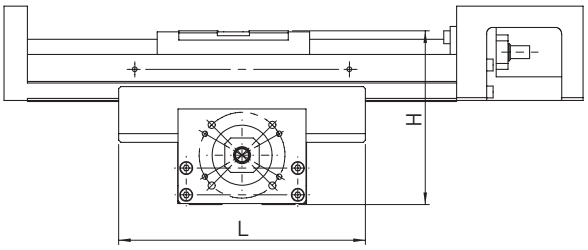
[1] Standard type

5.14.2 Cross table adapter

- Adapter for crosswise connection of two or more KK/KF linear axes to an X-Y system
- Adapter for KK/KF linear axes with and without aluminium cover
- Switching cam, adaptable for limit switches
- Surface black anodised
- Delivered in set including fastening material



5.14.3 Cross table adapter for KK linear axes without aluminium cover



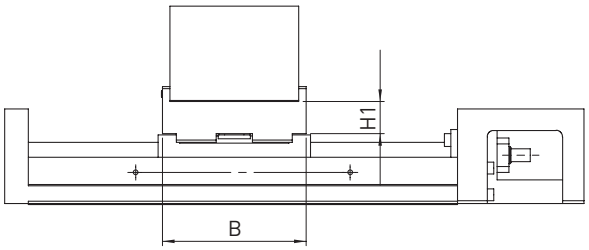


Table 5.31 **Dimensions of cross table adapter for linear axes without cover**

Article number	Lower axis	Upper axis	H	H1	L	B
10-000604	KK40	KK40	47	7	70	47
10-000606	KK50	KK40	56	10	70	47
10-000608	KK50	KK50	62	10	90	57
10-000610	KK/KF60	KK50	74	15	90	57
10-000612	KK/KF60	KK/KF60	81	15	115	67
10-000614	KK/KF86	KK/KF60	95	16	110	67
10-000616	KK/KF86	KK/KF86	108	16	120	97

Unit: mm

5.14.4 Cross table adapter for KK/KF linear axes with aluminium cover

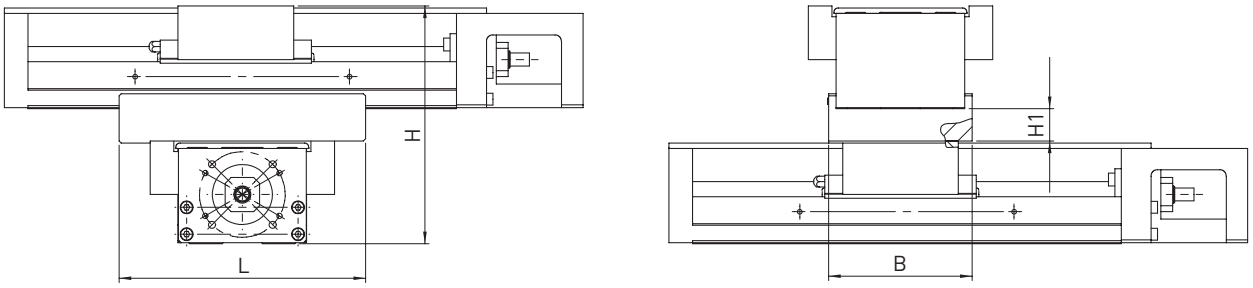


Table 5.32 **Dimensions of cross table adapter for linear axes with cover**

Article number	Lower axis	Upper axis	H	H1	L	B
10-000605	KK40	KK40	74	10	70	47
10-000607	KK50	KK40	82	10	70	47
10-000609	KK50	KK50	90	10	90	57
10-000611	KK/KF60	KK50	103	15	57	57
10-000613	KK/KF60	KK/KF60	111	15	115	67
10-000615	KK/KF86	KK/KF60	132	16	144	67
10-000617	KK/KF86	KK/KF86	152	16	144	97

Unit: mm

5.15 Covers

To protect the linear axes, they can be equipped with aluminium or bellows covers. The dimensions of KK linear axes with cover can be found in the sections of the respective size.

Table 5.33 **Available covers**

Model	Aluminium cover	Bellows cover
KK30	●	–
KK40	●	–
KK50	●	–
KK60	●	●
KF60	●	–
KK86	●	●
KF86	●	–
KK100	●	–
KK130	●	–

5.16 Grease nipple

Table 5.34 **Grease nipple for grease lubrication**

		
Art. no.: 20-000275 – M3 × 0.5 P KK40	**Art. no.: 20-000272 – M4 × 0.7 P** KK50, KK/KF60, KK/KF86	**Art. no.: 20-000273 – M6 × 0.75 P** KK100, KK130

5.17 HIWIN servo motors

HIWIN synchronous AC servo motors are available with power ratings of 50 W, 100 W, 200 W, 400 W, 750 W and 1000 W. The motors are equipped with a 23-bit encoder and are available with or without a motor brake.

Table 5.35 **Assignment of motor type – KK linear axis**

Motor type	Motor power [W]	Motor torque [Nm]								
		Nominal torque	**Peak torque**	**KK30**	**KK40**	**KK50**	**KK60/KF60**	**KK86/KF86**	**KK100**	**KK130**
EM1-C-M-05	50	0.16	0.59	–	F1	F1	F1	F2	–	–
EM1-C-M-10	100	0.32	1.18	–	F1	F1	F1	F2	–	–
EM1-C-M-20	200	0.64	2.24	–	–	–	–	F0	F0	F1
EM1-C-M-40	400	1.27	4.44	–	–	–	–	F0	F0	F1
EM1-C-M-75	750	2.39	8.36	–	–	–	–	–	F1	F2
EM1-C-M-1K	1,000	4.77	14.30							F5