



1 General Information

1-1 Structure

The LIMON linear motion bearing consists of an outer cylinder, ball retainer, balls and two end rings.

The ball retainer which holds the balls in the recirculating trucks is held inside the outer cylinder by end rings.

Those parts are assembled to optimize their required functions. The outer cylinder is maintained sufficient hardness by heat treatment, therefore it ensures the bearings projected travel life and satisfactory durability.

The ball retainer is made from steel or synthetics resin. The steel retainer has high rigidity.

The synthetics resin retainer can reduce running noise. The user can select the optimum type for meeting the user's service conditions.

1-2 Features

1-2-1 High precision and rigidity

The LIMON linear motion bearing is produced from a solid steel outer cylinder and incorporates an industrial strength resin retainer.

1-2-2 Easy of assembly

The standard type of LIMON linear motion bearing can be loaded from any direction. Precision control is possible using only the shaft supporter, and the mounting surface can be machined easily.

1-2-3 Easy of replacement

LIMON linear motion bearings of each type are completely interchangeable because of their standardized dimensions and strict precision control. Replacement because of wear or damage is therefore easy and accurate.

1-2-4 Variety of types

LIMON offers a full line of linear motion bearings: the standard, integral single retainer closed types and the open, double retainer, and flanged types. The user can choose from among these according to the application requirements to be met.

Linear Bushing

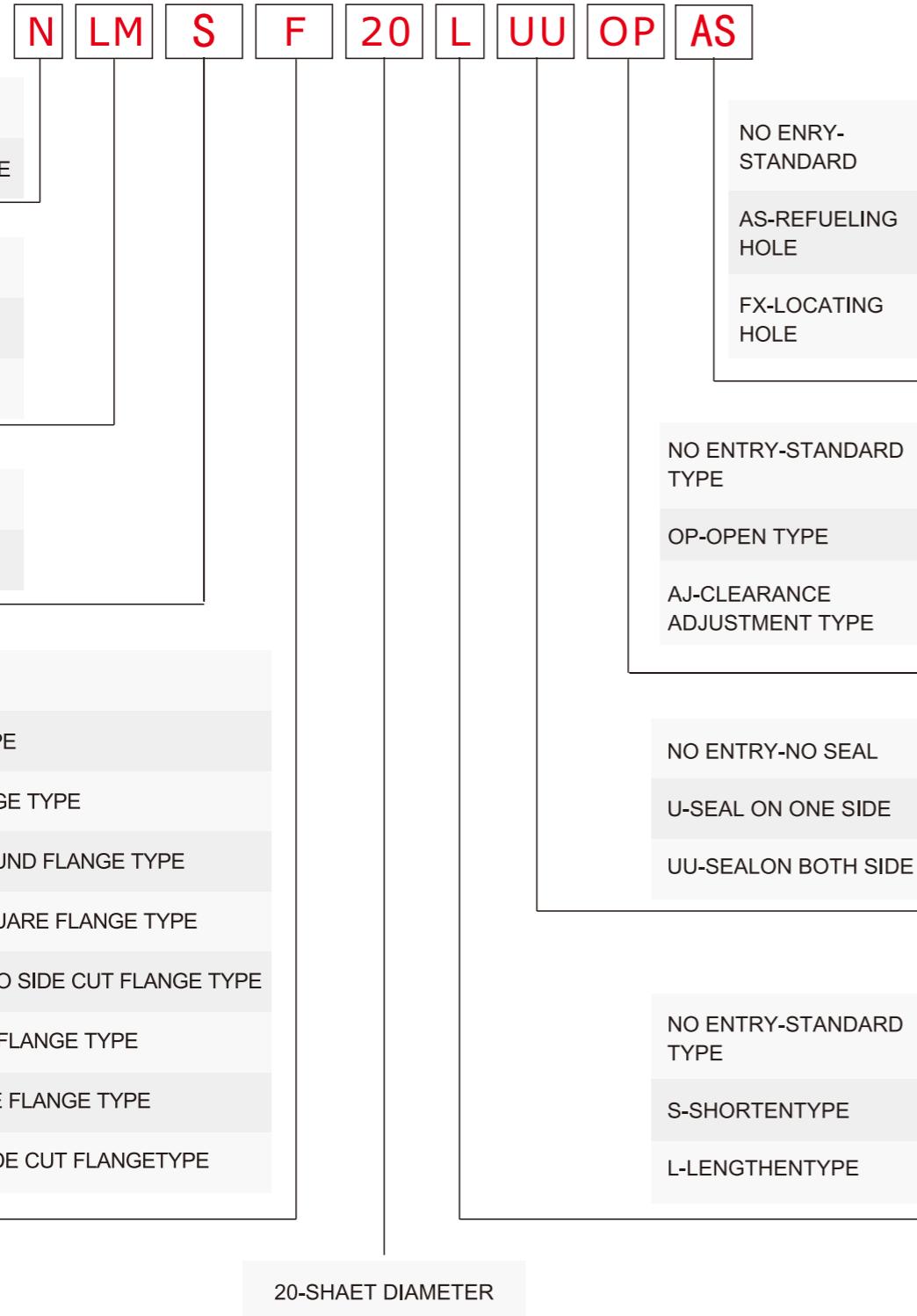


Linear Bushing

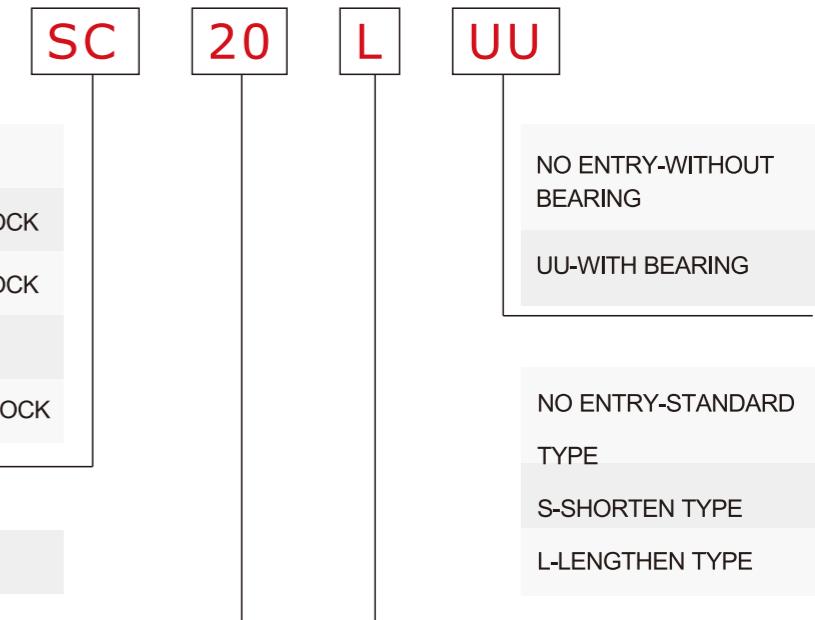


1-3 Type Number Format

1-3-1 Linear Motion Bearing



1-3-2 Slide Unit



1-4 Load

1-4-1 Basic Dynamic Load Rating(C)

This term is arrived at based on an evaluation of a number of identical linear systems individually run in the same conditions, if 90% of them can run with the load (with a constant value in a constant direction) for a distance of 50 km without damage caused by rolling fatigue. This is the basis of the rating

1-4-2 Basic Static Load Rating(Co)

This term defines a static load such that, at the contacting position where the stress is exercised, the sum of the permanent deformation of the rolling elements and that of the rolling plane is 0. 0001 time of the diameter of the rolling elements

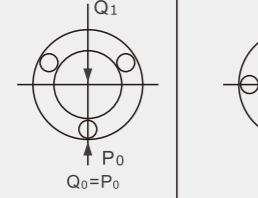
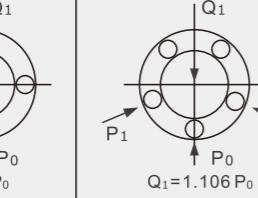
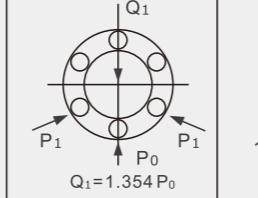
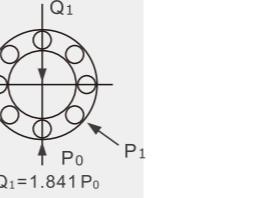
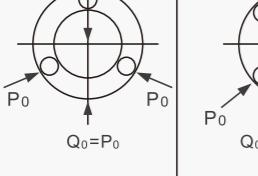
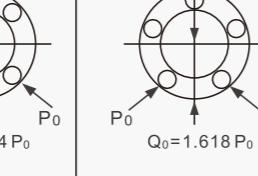
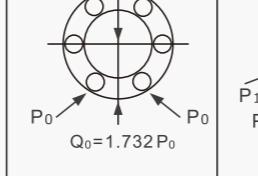
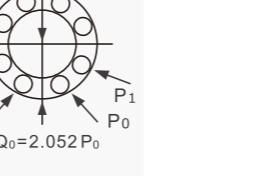
Linear Bushing

1-4-3 Relation Between Ball Circuits and Load Rating

The LIMON linear motion bearing includes ball circuits that are spaced equally and circumferentially. The load rating varies according to the loaded position on the circumference. The value in the dimension table indicates the load rating when the

load is placed on top of one ball circuit. If the LIMON linear bearing is used with two ball circuits loaded uniformly, the load rating will be greater, the following table shows the values by the number of ball circuits in such cases:

Table 1

Number of rows Row position load ratio	3	4	5	6	8
Row position					
Row position					
Load ratio	$Q_0/Q_1 = 1$	$Q_0/Q_1 = 1.414$	$Q_0/Q_1 = 1.463$	$Q_0/Q_1 = 1.280$	$Q_0/Q_1 = 1.115$

1-5 Life Expectancy

1-5-1 Calculation Formula

The life(L) of a linear motion bearing can be obtained from the following equating with the basic dynamic load rating and the load applied to the bearing:

$$L = \left(\frac{f_H \cdot f_T \cdot f_C}{f_W} \cdot \frac{C}{P} \right)^3 \cdot 50 \quad (1)$$

L : Rated life(km)
C : Basic dynamic load rating(N)
P : Working load(N)
f_W : Load coefficient
f_H : Hardness factor
f_T : Temperature coefficient
f_C : Contact coefficient



Linear Bushing

The lifespan(L_h) of a linear motion bearing in hours can be obtained by calculating the traveling distance per unit time. The lifespan can be obtained from the following equation if the stroke length and the number of strokes are constant:

1-5-2 Sample Calculations

Obtaining the rated life L and lifespan L_h of the LIMON linear motion bearing used in the following conditions:

linear motion bearing L_{m20}
 stroke length 50mm
 number of strokes per minute 50(cpm)
 load per bearing 490N

The basic dynamic load rating of the linear motion bearing is 882N from the dimension table. From equation, therefore the rated life L is obtained as follows :

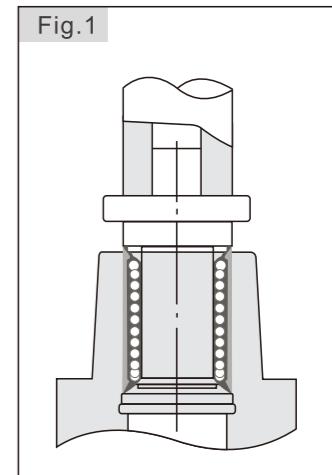
$$L = \left(\frac{f_H \cdot f_T \cdot f_C}{f_W} \cdot \frac{C}{P} \right)^3 \cdot 50 \quad F_H = f_T = f_C = f_W = 1.0 \\ = \left(\frac{882}{490} \right)^3 \cdot 50 = 292 \text{ km}$$

The lifespan L_h is obtained as follows:

$$L_h = \frac{L \times 10^3}{2 \times e \times n \times L_h} = \frac{292 \times 10^3}{2 \times 0.05 \times 50 \times 60} = 973 \text{ hr}$$

1-6 Mounting

When inserting the linear bearing into the housing, do not hit the linear bearing on the linear bearing ring holding the retainer but apply the cylinder circumference with a proper jig and push the linear bearing into the housing by hand or lightly knock it in. (See Fig. 1) In inserting the shaft after mounting the bearing, be careful not to shock the balls. Note that if two shafts are used in parallel, the parallelism is the most important factor to assure the smooth linear movement. Take care in setting the shafts.



Linear Bushing

$$L_h = \left(\frac{L \cdot 10^3}{2 \cdot s \cdot n_i \cdot 60} \right) \quad (2)$$

L_h: Lifespan(hr)
L: Rated life(km)
s: Stroke length(m)
n_i: Number of strokes per minute(CPM)

Selecting the linear motion bearing type satisfying the following conditions:

number of linear motion bearing used 4
 Stroke length 1m
 number of strokes per minute 5 (cpm)
 lifespan 10000(hr)
 Total load 980N

Assume the following with a pair of shafts each with two bearings. From equation, the basic dynamic load rating is obtained ad follow:

$$L = 2 \times e \times n \times L_h = 6,000 \text{ km} \\ C = \sqrt[3]{\frac{L}{50}} \cdot \left(\frac{f_W}{f_H \cdot f_T \cdot f_C} \right) \cdot p = 1492 \text{ N}$$

As a result. LM30 is selected from the dimension table as the LIMON linear motion bearing type satisfying the value of C.

Linear Bushing

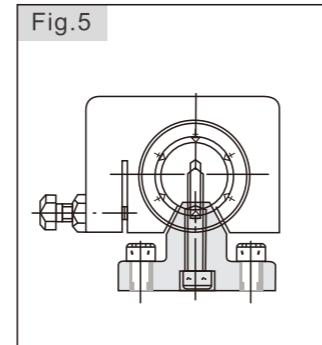
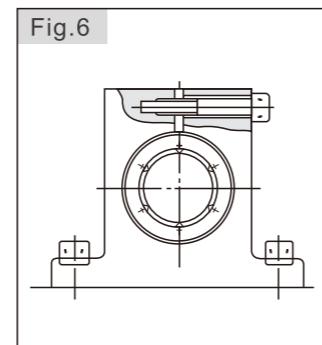
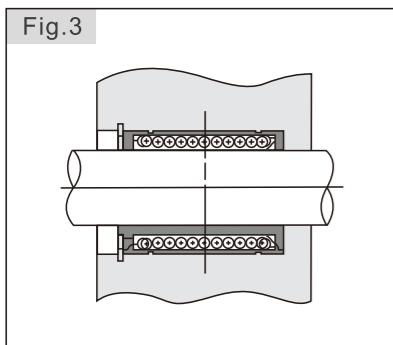
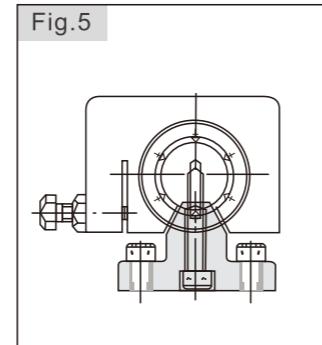
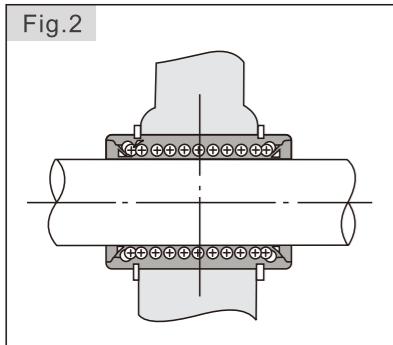


Linear Bushing - KH Series

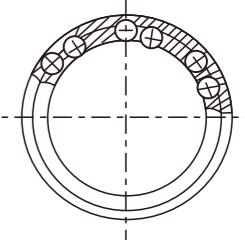
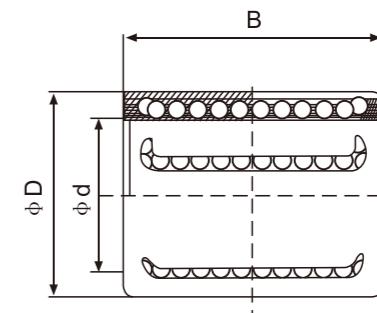
1-6-1 Examples Of Mounting

The popular way to mount a linear bearing is to operate it with an appropriate interference. It is recommended, however, to make a loose fit in principle because otherwise precision is apt to be minimized.

The following examples(Figs. 2 to 6)show assembling of the inserted bearing in terms of designing and mounting, for reference.



2 Linear Motion Ball Bearind 2-1 KH Series



Part No.	Main Dimensions			Basic Load Rating		Weight (g)
	ϕd	ϕD	B	C N	C o N	
KH-0622	6	12	22	400	239	7
KH-0824	8	15	24	435	280	12
KH-1026	10	17	26	500	370	14.5
KH-1228	12	19	28	620	510	18.5
KH-1428	14	21	28	620	520	20.5
KH-1630	16	24	30	800	620	27.5
KH-2030	20	28	30	950	790	32.5
KH-2540	25	35	40	1990	1670	66
KH-3050	30	40	50	2800	2700	95
KH-4060	40	52	60	4400	4450	182
KH-5070	50	62	70	5500	6300	252

1-7 Lubrication and Dust Prevention

Using LIMON linear systems without lubrication increases the abrasion of the rolling elements, shortening the lifespan, the LIMON linear systems therefore require appropriate lubrication. For lubrication LIMON recommends turbine oil conforming to ISO Standards G32 to G68 or lithium base soap grease NO.2. Some LIMON linear systems are sealed to block dust out and seal lubricant in. If used in a harsh or corrosive environment, however apply a protective cover to the part involving linear motion.

Type number format

KH 20 30 PP

P: Seal one side
PP: Seal both sides

KH:Pressing bush linear bearing

20: Shaft diameter

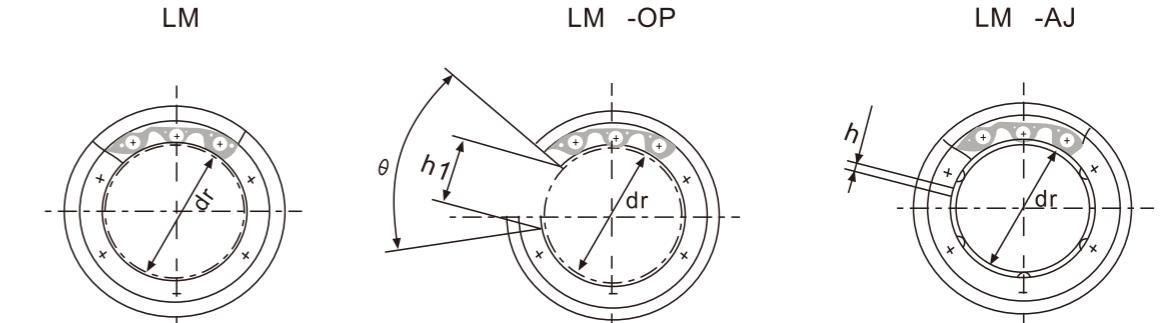
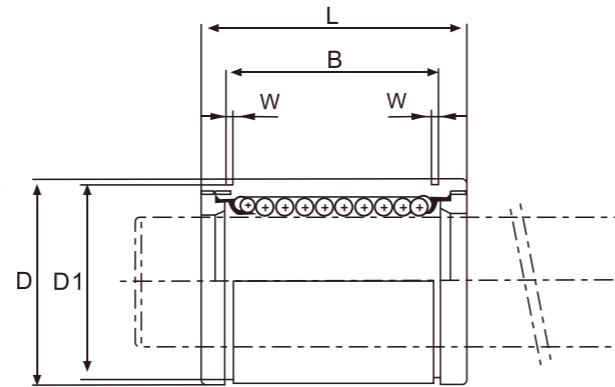
30: Length dimension

Linear Bushing -LM Series



Linear Bushing - LM Series

2-2 LM Series



Part No.						Main Dimensions and Tolerance				
Seal Type	Ball Circuit	Open Type	Ball Circuit	Adjustable Type	Ball Circuit	dr (mm)	Tolerance (μm)	D (mm)	Tolerance (μm)	
LM4	4	—	—	—	—	4	0 -9	8	0 -9	
LM5UU	4	—	—	—	—	5		10		
LM6UU	4	—	—	LM6UUAJ	4	6		12		
LM8SUU	4	—	—	LM8SUUAJ	4	8		15	0 -11	
LM8UU	4	—	—	LM8UUAJ	4	8		15		
☆ LM10UU	4	—	—	☆LM10UUAJ	4	10		19	0 -13	
☆ LM12UU	4	LM12UU-OP	3	☆LM12UUAJ	4	12		21		
LM13UU	4	LM13UU-OP	3	LM13UUAJ	4	13		23		
☆ LM16UU	5	LM16UU-OP	4	☆LM16UUAJ	5	16		28		
☆ LM20UU	5	LM20UU-OP	4	☆LM20UUAJ	5	20	0 -10	32	0 -16	
☆ LM25UU	6	LM25UU-OP	5	☆LM25UUAJ	6	25		40		
☆ LM30UU	6	LM30UU-OP	5	☆LM30UUAJ	6	30		45		
LM35UU	6	LM35UU-OP	5	LM35UUAJ	6	35	0 -12	52	0 -19	
☆ LM40UU	6	LM40UU-OP	5	☆LM40UUAJ	6	40		60		
LM50UU	6	LM50UU-OP	5	LM50UUAJ	6	50		80	0 -22	
LM60UU	6	LM60UU-OP	5	LM60UUAJ	6	60	0/-15	90		

Main Dimensions and Tolerance									Eccentricity (max) μm	Radial Clearance (max) μm	Basic Load Rating C N	Weight g
L (mm)	Tolerance (μm)	B (mm)	Tolerance (μm)	W (mm)	D1 (mm)	h (mm)	h1 (mm)	θ				
12	0 -120	10.2	0 -200	-	-	-	-	-	8	88 127 2	167 206 4	206 265 8.5
15				1.1	9.6	-	-	-				
19				1.1	11.5	1.0	-	-		-3	176 216 11	274 392 17
17				1.1	14.3	1.0	-	-				
24				1.1	14.3	1.0	-	-				
29				1.3	18	1.0	-	-		12	372 549 36	412 598 42
30				1.3	20	1.5	8	80°				
32				1.3	22	1.5	9	80°				
37				1.6	27	1.5	11	80°				
42				1.6	30.5	1.5	11	60°	-6	774 1180 76	882 1370 100	980 1570 240
59				1.85	38	2	12	50°				
64				1.85	43	2.5	15	50°	-8	1570 2740 270	1670 3140 425	2160 4020 654
70				2.1	49	2.5	17	50°				
80				2.1	57	3	20	50°	-10	3820 7940 1700	4700 10000 2000	4700 10000 2000
100				2.6	76.5	3	25	50°				
110				3.15	86.5	3	30	50°				

Note : ☆ means steel retainer is available.

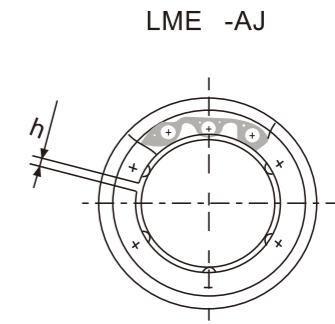
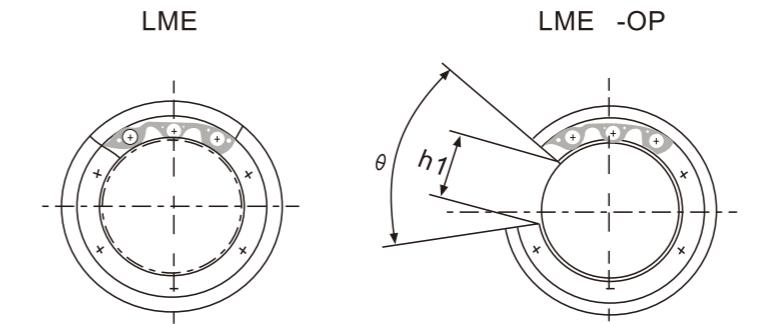
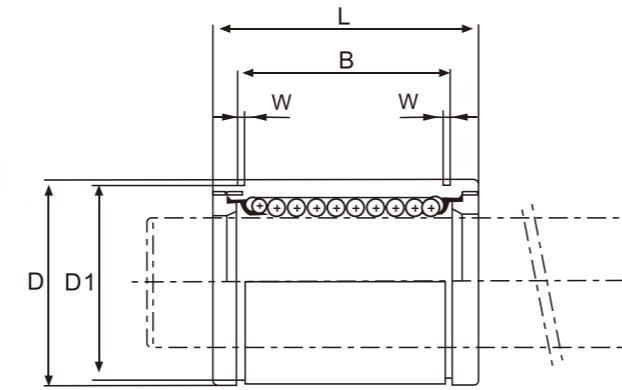
Linear Bushing - LME Series



Linear Bushing - LME Series



2-2 LME Series



Part No.						Main Dimensions and Tolerance			
Seal Type	Ball Circuit	Open Type	Ball Circuit	Adjustable Type	Ball Circuit	dr (mm)	Tolerance (μm)	D (mm)	
LME5UU	4	-	-	LME5UUAJ	4	5	+8 0	12	
LME8UU	4	-	-	LME8UUAJ	4	8		16	
☆ LME12UU	4	LME12UU-OP	3	☆LME12UUAJ	4	12		22	
☆ LME16UU	5	LME16UU-OP	4	☆LME16UUAJ	5	16	+9 -1	26	
☆ LME20UU	5	LME20UU-OP	4	☆LME20UUAJ	5	20		32	
☆ LME25UU	6	LME25UU-OP	5	☆LME25UUAJ	6	25	+11 -1	40	
☆ LME30UU	6	LME30UU-OP	5	☆LME30UUAJ	6	30		47	
☆ LME40UU	6	LME40UU-OP	5	☆LME40UUAJ	6	40	+13 -2	62	
LME50UU	6	LME50UU-OP	5	LME50UUAJ	6	50		75	
LME60UU	6	LME60UU-OP	5	LME60UUAJ	6	60		90	

Main Dimensions and Tolerance										Eccentricity (max) μm	Radial Clearance (max) μm	Basic Load Rating C N	Weight g	
Tolerance (μm)	L (mm)	Tolerance (μm)	B (mm)	Tolerance (μm)	W (mm)	D1 (mm)	h (mm)	h1 (mm)	θ					
0 -8	22	0 -200	14.5	0 -300	1.1	11.5	1	-	-	12	-3	206	265	11
	25		16.5		1.1	15.2	1	-	-			265	402	22
	32		22.9		1.3	21	1.5	7.5	78°		-4	510	784	45
0 -9	36	0 -300	24.9		1.3	24.9	1.5	10	78°			775	1180	60
	45		31.5		1.6	30.3	2	10	60°	15	-6	862	1370	102
	58		44.1	0 -400	1.85	37.5	2	12.5	60°			980	1570	235
0 -11	68	0 -300	52.1		1.85	44.5	2	12.5	50°	17	-8	1570	2740	360
	80		60.6		2.15	59	3	16.8	50°			2160	4020	770
	100		77.6		2.65	72	3	21	50°			3820	7940	1250
0/-15	125	(0/-400)	101.7		3.15	86.5	3	27.2	54°	20		4700	9800	2220

Note : ☆ means steel retainer is available.

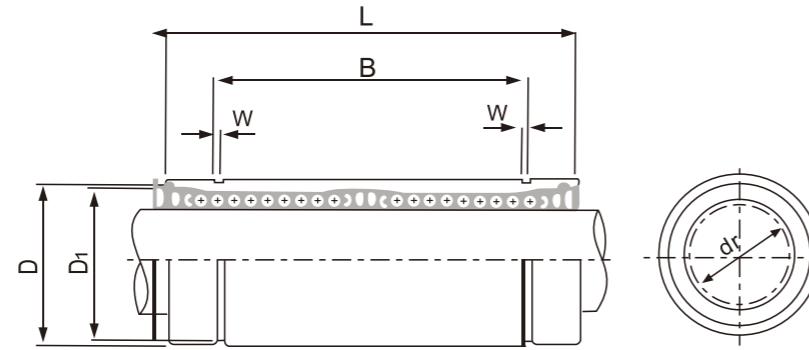
Linear Bushing - LM_L Series



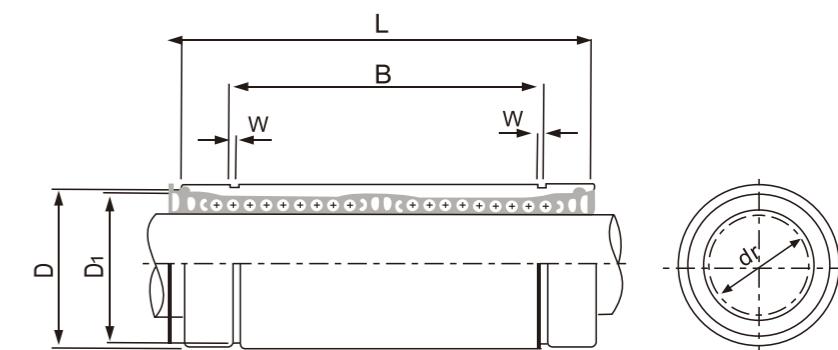
Linear Bushing - LM_L Series



2-3 LML Series



2-4 LMEL Series



Linear Guideways

Ball Screw

Support

Linear Bushing

Linear Guideways

Ball Screw

Support

Linear Bushing

Part No.		Main Dimensions and Tolerance										Basic Load Rating		Eccen-	Weight	
Seal Type	Ball Circuit	dr (mm)	Tolerance (μm)	D (mm)	Tolerance (μm)	L (mm)	Tolerance (μm)	B (mm)	Tolerance (μm)	W (mm)	D1 (mm)	C N	Co N	ricticity	(g)	
★	LM6LUU	4	6	0 -10	0 -13	12	0 -300	35	0 -400	27	15	1.1	11.5	323	530	16
	LM8LUU	4	8			15		45		35		1.1	14.3	431	784	31
	LM10LUU	4	10			19		55		44		1.3	18	588	1100	62
	LM12LUU	4	12			21		57		46		1.3	20	813	1570	80
	LM13LUU	4	13			23		61		46		1.3	22	813	1570	90
	LM16LUU	5	16			28		70		53		1.6	27	1230	2350	145
	LM20LUU	5	20			32		80		61		1.6	30.5	1400	2740	180
	LM25LUU	6	25			40		112		82		1.85	38	1560	3140	240
	LM30LUU	6	30			45		123		89		1.85	43	2490	5490	580
	LM35LUU	6	35	0 -15	0 -22	52	0 -400	135	0 -500	99	25	2.1	49	2650	6270	795
	LM40LUU	6	40			60		151		121		2.1	57	3430	8040	1170
	LM50LUU	6	50			80		192		148		2.6	76.5	6080	15900	3100
	LM60LUU	6	60			90		209		170		3.15	86.5	7550	20000	3500

Note : ★ means steel retainer is available.

Part No.		Main Dimensions and Tolerance										Eccen-	Basic Load Rating	Weight		
Seal Type	Ball Circuit	dr (mm)	Tolerance (μm)	D (mm)	Tolerance (μm)	L (mm)	Tolerance (μm)	B (mm)	Tolerance (μm)	W (mm)	D1 (mm)	C N	Co N	ricticity	(g)	
★	LME8LUU	4	8	0 -11	+9 -1	16	0 -300	0/-9	46	15	33	1.1 0 -400	15.2	421 813 921 1370 1570 2500 3430 6080 20000	40	
	LME12LUU	4	12			22		0	61		45.8		21		1.3	80
	LME16LUU	5	16			26		-11	68		49.8		24.9		1.3	115
	LME20LUU	5	20			32		0	80		61		30.5		1.6	180
	LME25LUU	6	25			40		-13	112		82		38		1.85	430
	LME30LUU	6	30			47		0	123		104.2		44.5		1.85	615
	LME40LUU	6	40	0 -400	+16 -4	62	0 -500	0	151	121.2 155.2	121.2	2.15 2.65	59	20	3430	1400
	LME50LUU	6	50			75		-15	192		155.2		72		2.65	2320
	LME60LUU	6	60			90		0/-20	209		170		3100		3.15	3900

Note : ★ means steel retainer is available.

Linear Bushing - LMF/K/H Series

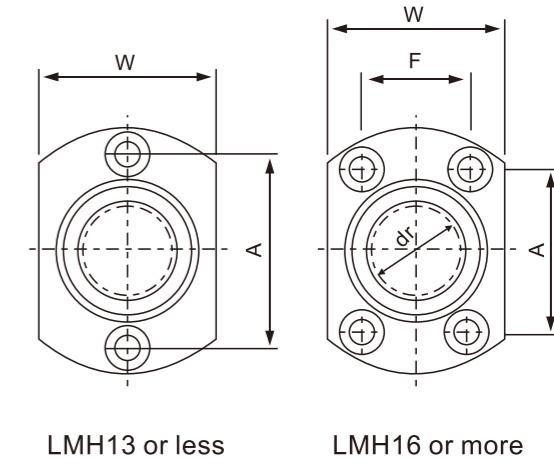
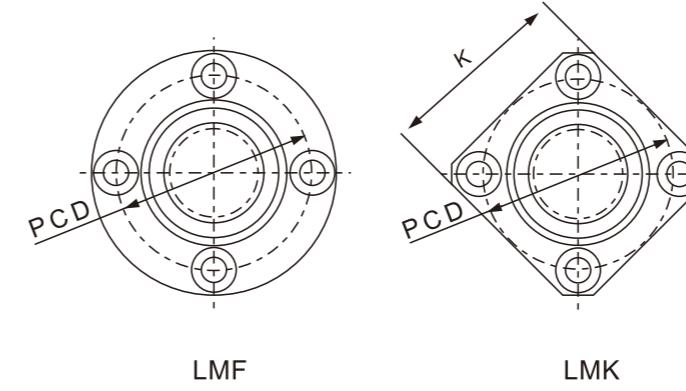
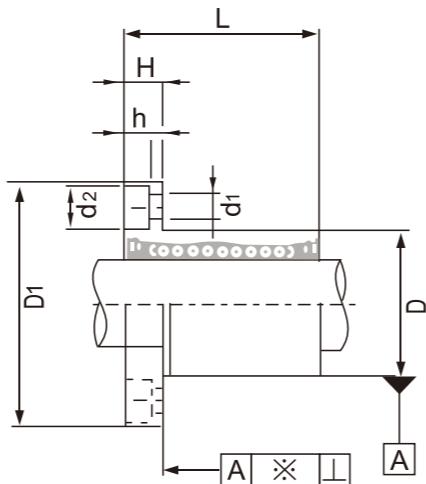


Linear Bushing - LMF/K/H Series



3 Flanged Linear Motion Ball Bearing

3-1 LMF/K/H Series



Part No.			Main Dimensions and Tolerance														
Seal Type			Ball Circuit	dr (mm)	Tolerance (μm)	D (mm)	Tolerance (μm)	L (mm)	Tolerance (μm)	D1 (mm)	H (mm)	PCD (mm)	K (mm)	W (mm)	A (mm)		
LMF6UU	LMK6UU	LMH6UU	4	6		12	0	19		28	5	20	22	18	20		
LMF8UU	LMK8UU	LMH8UU	4	8		15	-11	24	± 300	32	5	24	25	21	24		
☆ LMF10UU	☆LMK10UU	☆LMH10UU	4	10		19		29		40	6	29	30	25	29		
☆ LMF12UU	☆LMK12UU	☆LMH12UU	4	12		21	0	30		42	6	32	32	27	32		
LMF13UU	LMK13UU	LMH13UU	4	13		23		32	-200	43	6	33	34	29	33		
☆ LMF16UU	☆LMK16UU	☆LMH16UU	5	16		28		37		48	6	38	37	34	31		
☆ LMF20UU	☆LMK20UU	☆LMH20UU	5	20		32		42		54	8	43	42	38	36		
☆ LMF25UU	☆LMK25UU	☆LMH25UU	6	25		40	0	59		62	8	51	50	46	40		
☆ LMF30UU	☆LMK30UU	☆LMH30UU	6	30		45	-16	64		74	10	60	58	51	49		
LMF35UU	LMK35UU	LMK35UU	6	35		52		70	-300	82	10	67	64	60	55		
☆ LMF40UU	☆LMK40UU	LMK40UU	6	40		60	0	80		96	13	78	75	70	64		
LMF50UU	LMK50UU	—	6	50		80		100		116	13	98	92	—	—		
LMF60UU	LMK60UU	—	6	60	0/-15	90	0/-22	110	-400	134	18	112	106	—	—		

Note : ☆ means steel retainer is available.

F (mm)	d1xd2xh (mm)	Eccentricity (max) μm	Radial Clearance (max) μm	Basic Load Rating		Weight (g)
				C N	Co N	
12	3.5x6x3.1	-3	206	265	24	
	3.5x6x3.1		274	392	37	
	4.5x7.5x4.1		372	549	72	
	4.5x7.5x4.1	-4	510	784	76	
	4.5x7.5x4.1		510	784	88	
	4.5x7.5x4.1		774	1180	120	
15	5.5x9x5.1	-6	882	1370	180	
	5.5x9x5.1		980	1570	340	
	6.6x11x6.1	-8	1570	2740	470	
	6.6x11x6.1		1670	3140	650	
20	9x14x8.1	-10	2160	4020	1060	
	9x14x8.1		3820	7940	2200	
	11x17x11.1	25	4700	10000	3000	

Linear Bushing - LMEF/K/H Series



Linear Bushing - LMEF/K/H Series



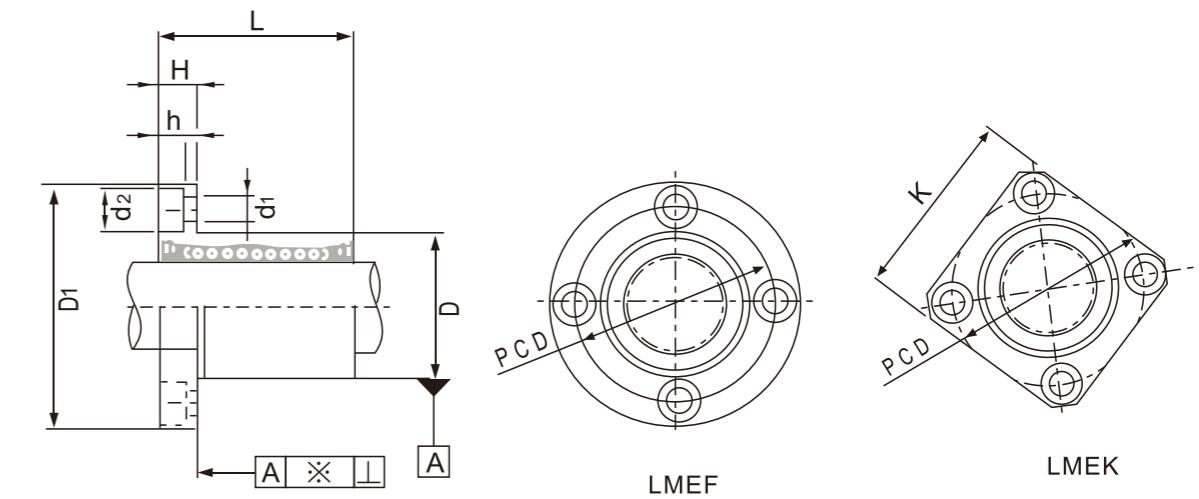
3-2 LMEF/K/H Series



LMEF



LMEK



Part No.			Main Dimensions and Tolerance								
Seal Type			Ball Circuit	dr (mm)	Tolerance (μm)	D (mm)	Tolerance (μm)	L (mm)	Tolerance (μm)	D1 (mm)	
★ LMEF8UU	LMEK8UU	LMEH8UU	4	8	+8 0	16	0/-11	25	±300	32	
	★LMEK12UU	★LMEH12UU	4	12		22	0 -13	32		42	
★ LMEF16UU	★LMEK16UU	★LMEH16UU	5	16	+9 -1	26		36	-200	46	
	★LMEK20UU	★LMEK20UU	★LMEH20UU	5	20	32		45		54	
★ LMEF25UU	★LMEK25UU	★LMEH25UU	6	25	+11 -1	40	0 -16	58		62	
	★LMEK30UU	★LMEK30UU	★LMEH30UU	6	30	47		68		76	
★ LMEF40UU	★LMEK40UU	★LMEH40UU	6	40	+13 -2	62	0 -19	80		98	
	LMEK50UU	LMEK50UU	LMEH50UU	6	50	75		100		112	
LMEF60UU	LMEK60UU	LMEH60UU	6	60		90	0/-22	125	-400	134	

Note : ★ means steel retainer is available.

Main Dimensions and Tolerance				Eccentricity (max) μm	Radial Clearance (max) μm	Basic Load Rating C N	Weight (g)
H (mm)	PCD (mm)	K (mm)	d1xd2xh (mm)				
5	24	25	3.5x6x3.1	12	-3	265	402
6	32	32	4.5x7.5x4.1		-4	510	784
6	36	35	4.5x7.5x4.1		578	892	103
8	43	42	5.5x9x5.1	15	-6	862	1370
8	51	50	5.5x9x5.1		980	1570	335
10	62	60	6.6x11x6.1		1570	2740	560
13	80	75	9x14x8.1	20	-8	2160	4020
13	94	88	9x14x8.1		3820	7940	1745
18	112	106	11x17x11.1		-13	4700	9800
				25			

Linear Bushing - LMF/K/H_L Series



Linear Bushing - LMF/K/H_L Series



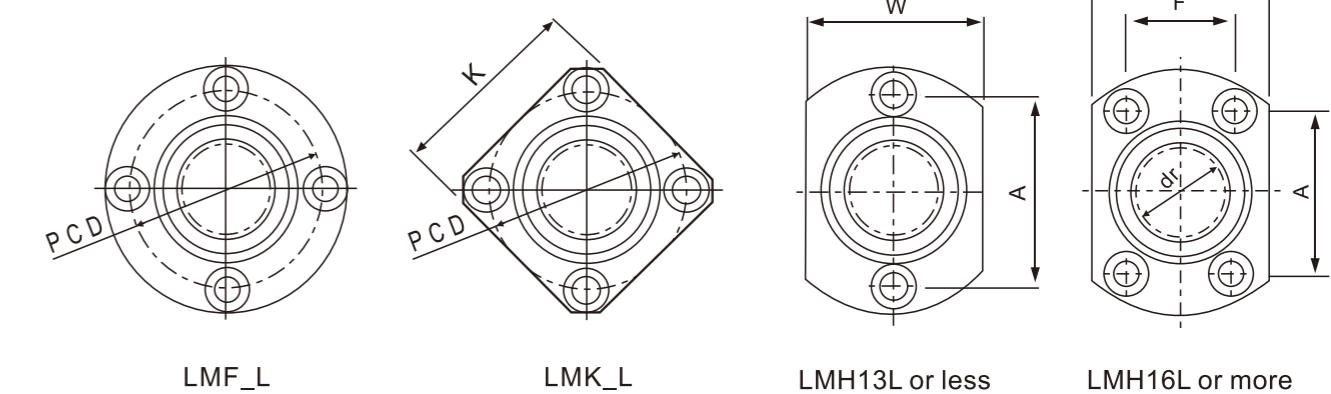
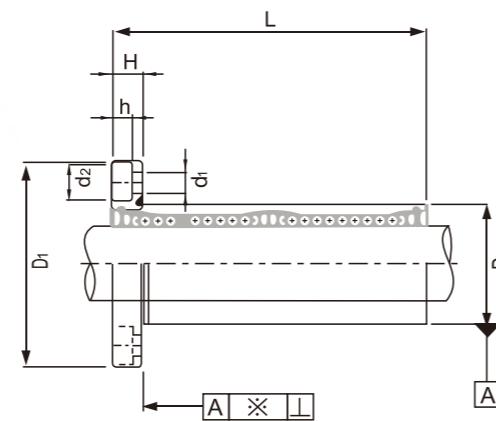
Linear Guideways

Ball Screw

Support

Linear Bushing

3-3 LMF/K/H_L Series



Part No.			Main Dimensions and Tolerance									
Seal Type			Ball Circuit	dr (mm)	Tolerance (μm)	D (mm)	Tolerance (μm)	L (mm)	Tolerance (μm)	D1 (mm)	H (mm)	
☆	LMF6LUU	LMK6LUU	LMH6LUU	4	6	0 -10	12	0 -13	35	±300	28	5
	LMF8LUU	LMK8LUU	LMH8LUU	4	8		15		45		32	5
	LMF10LUU	☆LMK10LUU	☆LMH10LUU	4	10		19	0 -16	55		40	6
	LMF12LUU	☆LMK12LUU	☆LMH12LUU	4	12		21		57		42	6
	LMF13LUU	LMK13LUU	☆LMH13LUU	4	13		23		61		43	6
	LMF16LUU	☆LMK16LUU	☆LMH16LUU	5	16		28		70		48	6
☆	LMF20LUU	☆LMK20LUU	☆LMH20LUU	5	20	0 -12	32	0 -19	80	-300	54	8
	LMF25LUU	☆LMK25LUU	☆LMH25LUU	6	25		40		112		62	8
	LMF30LUU	☆LMK30LUU	☆LMH30LUU	6	30		45		123		74	10
	LMF35LUU	LMK35LUU	LMH35LUU	6	35		52	0 -22	135		82	10
	LMF40LUU	LMK40LUU	—	6	40		60		151		96	13
	LMF50LUU	LMK50LUU	—	6	50		80		192		116	13
☆	LMF60LUU	LMK60LUU	—	6	60	0/-20	90	0/-25	209	-400	134	18

Note : ☆ means steel retainer is available.

Main Dimensions and Tolerance						Eccentricity (max) μm	Radial Clearance (max) μm	Basic Load Rating C N Co N	Weight (g)
PCD (mm)	K (mm)	W (mm)	A (mm)	F (mm)	d1xd2xh (mm)				
15	20	22	18	20	-	3.5x6x3.1		-3	323 529 31
	24	25	21	24	-	3.5x6x3.1		-3	431 784 51
	29	30	25	29	-	4.5x7.5x4.1		-4	588 1100 98
	32	32	27	32	-	4.5x7.5x4.1		-4	813 1570 110
	33	34	29	33	-	4.5x7.5x4.1		-4	813 1570 130
	38	37	34	31	22	4.5x7.5x4.1		-6	1230 2350 190
20	43	42	38	36	24	5.5x9x5.1		-6	1400 2740 260
	51	50	46	40	32	5.5x9x5.1		-6	1560 3140 540
	60	58	51	49	35	6.6x11x6.1		-8	2490 5490 680
	67	64	60	55	38	6.6x11x6.1		-8	2650 6270 1020
25	78	75	-	-	-	9x14x8.1		-10	3430 8040 1570
	98	92	-	-	-	9x14x8.1		-13	6080 15900 3600
	112	106	-	-	-	11x17x11.1		-13	7550 20000 4500

Linear Bushing - LMEF/K_L Series



Linear Bushing - LMEF/K_L Series



Linear Guideways

Ball Screw

Support

Linear Bushing

Linear Guideways

Ball Screw

Support

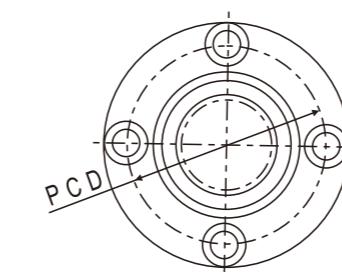
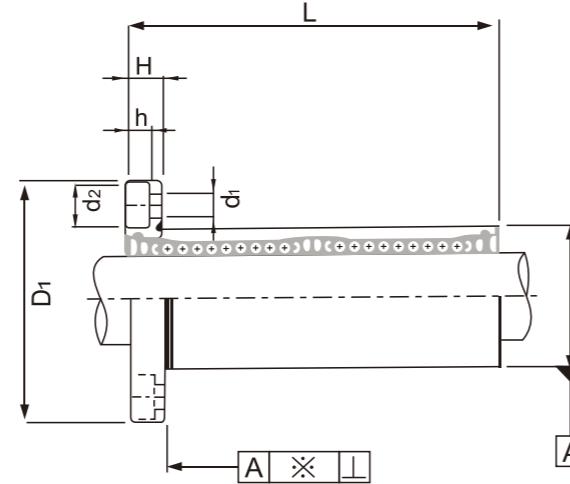
Linear Bushing

3-4 LMEF/K_L Series

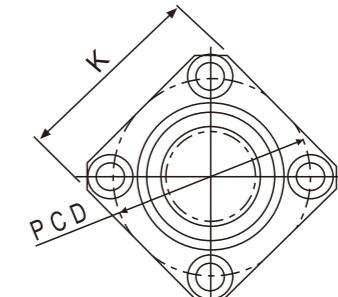


LMEF_L

LMEK_L



LMEF_L



LMEK_L

Part No.				Main Dimensions and Tolerance						
Seal Type		Ball Circuit (mm)	dr (mm)	Tolerance (μm)	D (mm)	Tolerance (μm)	L (mm)	Tolerance (μm)	D1 (mm)	H (mm)
LMEF8LUU	LMEK8LUU	4	8	+9 -1	16	0/-13	46	± 300	32	5
LMEF12LUU	☆ LMEK12LUU	4	12	+11 -1	22	0 -16	61	+300	42	6
☆ LMEF16LUU	☆ LMEK16LUU	5	16	+13 -2	26	0 -19	68	-300	46	6
☆ LMEF20LUU	☆ LMEK20LUU	5	20	+16 -4	32	0 -22	80	-400	54	8
☆ LMEF25LUU	☆ LMEK25LUU	6	25	+13 -2	40	0 -19	112	-400	62	8
☆ LMEF30LUU	☆ LMEK30LUU	6	30	+16 -4	47	0 -22	123	-400	76	10
☆ LMEF40LUU	☆ LMEK40LUU	6	40	+16 -4	62	0 -22	151	-400	98	13
LMEF50LUU	LMEK50LUU	6	50	+16 -4	75	0 -22	192	-400	112	13
LMEF60LUU	LMEK60LUU	6	60	+16 -4	90	0/-25	209	-400	134	18

Note : ☆ means steel retainer is available.

Main Dimensions and Tolerance			Eccentricity (max) μm	Radial Clearance (max) μm	Basic Load Rating C N	Basic Load Rating Co N	Weight (g)
PCD (mm)	K (mm)	d1xd2xh (mm)					
24	25	3.5x6x3.1	12	-3	365	402	41
32	32	4.5x7.5x4.1		-4	510	784	80
36	35	4.5x7.5x4.1		578	892	103	
43	42	5.5x9x5.1	15	862	1370	182	
51	50	5.5x9x5.1		980	1570	335	
62	60	6.6x11x6.1		1570	2740	560	
80	75	9x14x8.1	20	2160	4020	1175	
94	88	9x14x8.1		3820	7940	1745	
112	106	11x17x11.1		4700	9800	3220	

Linear Bushing - LMF/KP Series



Linear Bushing - LMHP Series



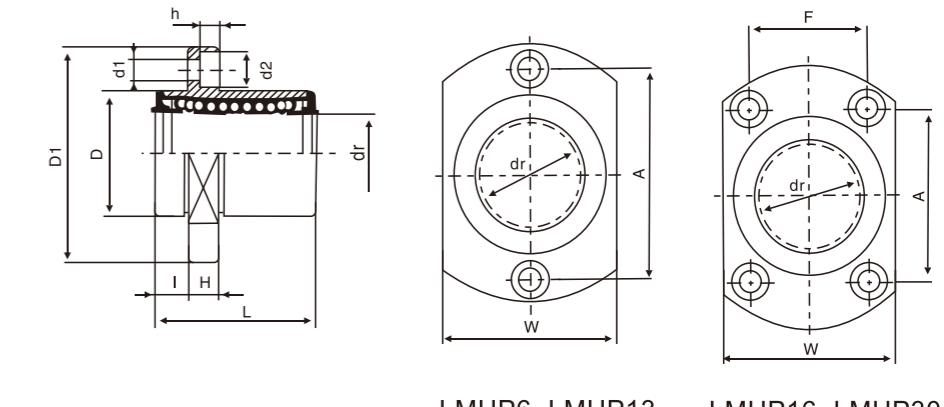
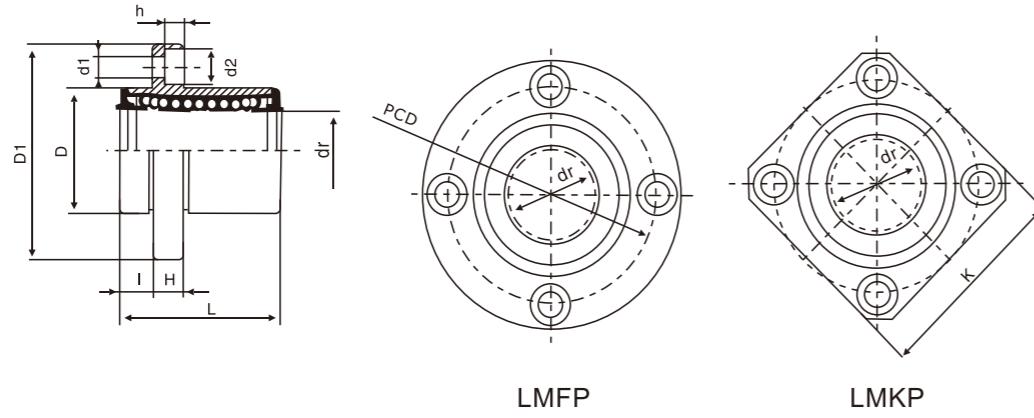
Linear Guideways

Ball Screw

Support

Linear Bushing

3-5 LMF/K/HP Series



Part No.		Main Dimensions and Tolerance												Eccen-	Basic Load Rating C N	Co N	Weight (g)	
Seal Type		Ball Circuit	dr (mm)	Tolerance (μm)	D (mm)	Tolerance (μm)	L (mm)	Tolerance (μm)	I (mm)	D1 (mm)	K (mm)	H (mm)	PCD (mm)	d1xd2x h (mm)				
LMFP6UU	LMKP6UU	4	6	0 -9	12	0 -13	19	±300	5	28	22	5	20	3.5x6x3.1	12	206	265	24
LMFP8UU	LMKP8UU	4	8		15		24		5	32	25	5	24	3.5x6x3.1		274	392	37
☆ LMFP10UU	☆LMKP10UU	4	10		19	0 -16	29	-200	6	40	30	6	29	4.5x7.5x4.1		372	549	72
☆ LMFP12UU	☆LMKP12UU	4	12		21		30		6	42	32	6	32	4.5x7.5x4.1		510	784	76
LMFP13UU	LMKP13UU	4	13		23		32		6	43	34	6	33	4.5x7.5x4.1		510	784	88
☆ LMFP16UU	☆LMKP16UU	5	16		28	0 -10	37	-300	6	48	37	6	38	4.5x7.5x4.1		774	1180	120
☆ LMFP20UU	☆LMKP20UU	5	20		32		42		8	54	42	8	43	5.5x9x5.1		882	1370	180
☆ LMFP25UU	☆LMKP25UU	6	25		40	0 -19	59		8	62	50	8	51	5.5x9x5.1		980	1570	340
☆ LMFP30UU	☆LMKP30UU	6	30		45		64		10	74	58	10	60	6.6x11x6.1		1570	2740	470
LMFP35UU	LMKP35UU	6	35		52	0 -12	70	20	10	82	64	10	67	6.6x11x6.1		1670	3140	650
☆ LMFP40UU	☆LMKP40UU	6	40		60		80		13	96	75	13	78	9x14x8.1		2160	4020	1060
LMFP50UU	LMKP50UU	6	50		80		100		13	116	92	13	98	9x14x8.1		3820	7940	2200
LMFP60UU	LMKP60UU	6	60	0 -15	90	0 -25	110		-400	18	134	106	18	122	11x17x11.1	25	4700	10000

Note : ☆ means steel retainer is available.

Part No.		Main Dimensions and Tolerance												Eccen-	Basic Load Rating C N	Co N	Weight (g)	
Seal Type	Ball Circuit	dr (mm)	Tolerance (μm)	D (mm)	Tolerance (μm)	L (mm)	Tolerance (μm)	I (mm)	D1 (mm)	W (mm)	H (mm)	A (mm)	F (mm)	D1xd2xh (mm)				
LMHP6UU	4	6	0 -9	12	0 -13	19	±300	5	28	18	5	20	-	3.5x6x3.1	12	206	265	21
LMHP8UU	4	8		15		24		5	32	21	5	24	-	3.5x6x3.1		274	392	33
☆ LMHP10UU	4	10		19	0 -16	29	-200	6	40	25	6	29	-	4.5x7.5x4.1		372	549	64
☆ LMHP12UU	4	12		21		30		6	42	27	6	32	-	4.5x7.5x4.1		510	784	68
LMHP13UU	4	13		23		32		6	43	29	6	33	-	4.5x7.5x4.1		510	784	81
☆ LMHP16UU	5	16		28	0 -10	37	-300	6	48	34	6	31	22	4.5x7.5x4.1		774	1180	112
☆ LMHP20UU	5	20		32		42		8	54	38	8	36	24	5.5x9x5.1		882	1370	167
☆ LMHP25UU	6	25		40	0 -19	59		8	62	46	8	40	32	5.5x9x5.1		980	1570	325
☆ LMHP30UU	6	30		45		64		10	74	51	10	49	35	6.6x11x6.1		1570	2740	388

Note : ☆ means steel retainer is available.

Linear Bushing - LMF/KP_L Series



Linear Bushing - LMHP_L Series



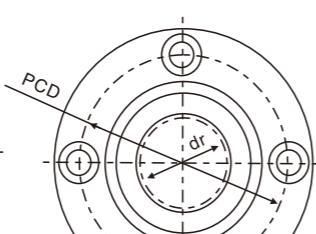
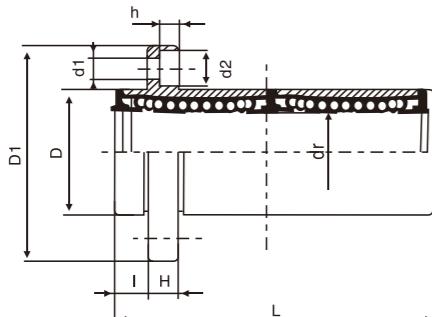
Linear Guideways

Ball Screw

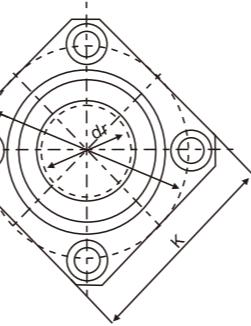
Support

Linear Bushing

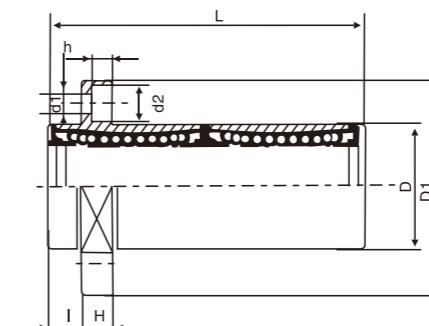
3-6 LMF/K/HP_L Series



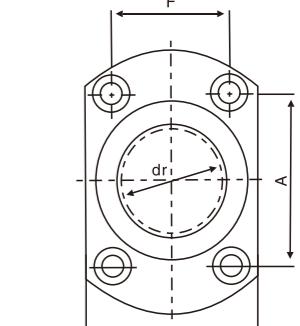
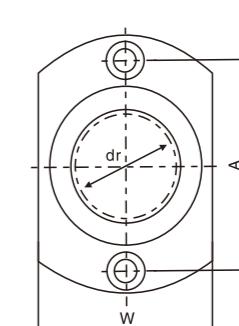
LMFP_L



LMKP_L



LMHP6L~LMHP13L



LMHP16L~LMHP30L

Part No.		Main Dimensions and Tolerance												Eccen-	Basic Load Rating C N	Weight (g)	
Seal Type	Ball Circuit	dr (mm)	Tolerance (μm)	D (mm)	Tolerance (μm)	L (mm)	Tolerance (μm)	I (mm)	D1 (mm)	K (mm)	H (mm)	PCD (mm)	d1xd2xh (mm)				
LMFP6LUU	LMKP6LUU	4	6	0 -10	12	35	0 -13	5	28	22	5	20	3.5x6x3.1	15	323	529	31
LMFP8LUU	LMKP8LUU	4	8					15	45	32	25	5	24	3.5x6x3.1	431	784	51
☆ LMFP10LUU	☆LMKP10LUU	4	10		19	55		6	40	30	6	29	4.5x7.5x4.1	588	1100	98	
☆ LMFP12LUU	☆LMKP12LUU	4	12		21	57	-200	6	42	32	6	32	4.5x7.5x4.1	813	1570	110	
LMFP13LUU	LMKP13LUU	4	13		23	61		6	43	34	6	33	4.5x7.5x4.1	813	1570	130	
☆ LMFP16LUU	☆LMKP16LUU	5	16		28	70		6	48	37	6	38	4.5x7.5x4.1	1230	2350	190	
☆ LMFP20LUU	☆LMKP20LUU	5	20		32	80		8	54	42	8	43	5.5x9x5.1	1400	2740	260	
☆ LMFP25LUU	☆LMKP25LUU	6	25		40	112	0 -19	8	62	50	8	51	5.5x9x5.1	1560	3140	540	
☆ LMFP30LUU	☆LMKP30LUU	6	30		45	123	-300	10	74	58	10	60	6.6x11x6.1	2490	5490	680	
LMFP35LUU	LMKP35LUU	6	35		52	135		10	82	64	10	67	6.6x11x6.1	2650	6270	1020	
☆ LMFP40LUU	☆LMKP40LUU	6	40		60	151	0 -15	13	96	75	13	78	9x14x8.1	25	3430	8040	1570
LMFP50LUU	LMKP50LUU	6	50		80	192		13	116	92	13	98	9x14x8.1		6080	15900	3600
LMFP60LUU	LMKP60LUU	6	60		90	209	0 -20	18	134	106	18	112	11x17.5x10.8		7550	20000	4500

Note : ☆ means steel retainer is available.

Part No.		Main Dimensions and Tolerance												Eccen-	Basic Load Rating C N	Weight (g)		
Seal Type	Ball Circuit	dr (mm)	Tolerance (μm)	D (mm)	Tolerance (μm)	L ±0.3 (mm)	Tolerance (μm)	I (mm)	D1 (mm)	W (mm)	H (mm)	A (mm)	F (mm)	d1xd2xh (mm)				
LMHP6LUU	4	6	0 -10	12	35	0 -13	±300	5	28	18	5	20	-	3.5x6x3.1	15	323	529	28
LMHP8LUU	4	8		15		45		5	32	21	5	24	-	3.5x6x3.1		431	784	47
☆ LMHP10LUU	☆LMHP10LUU	4	10	19	55		6	40	25	6	29	-	4.5x7.5x4.1	588		1100	90	
☆ LMHP12LUU	☆LMHP12LUU	4	12	21	57	-200	6	42	27	6	32	-	4.5x7.5x4.1	813		1570	102	
LMHP13LUU	LMHP13LUU	4	13	23	61		6	43	29	6	33	-	4.5x7.5x4.1	813		1570	123	
☆ LMHP16LUU	☆LMHP16LUU	5	16	28	70		6	48	37	6	38	4.5x7.5x4.1	1230	2350	182			
☆ LMHP20LUU	☆LMHP20LUU	5	20	32	80		8	54	42	8	43	5.5x9x5.1	1400	2740	247			
☆ LMHP25LUU	☆LMHP25LUU	6	25	40	112	0 -19	8	62	50	8	51	5.5x9x5.1	1560	3140	525			
☆ LMHP30LUU	☆LMHP30LUU	6	30	45	123	-300	10	74	58	10	60	6.6x11x6.1	2490	5490	645			
LMHP35LUU	LMHP35LUU	6	35	52	135		10	82	64	10	67	6.6x11x6.1	2650	6270	1020			
☆ LMHP40LUU	☆LMHP40LUU	6	40	60	151	0 -15	13	96	75	13	78	9x14x8.1	3430	8040	1570			
LMHP50LUU	LMHP50LUU	6	50	80	192		13	116	92	13	98	9x14x8.1	6080	15900	3600			
LMHP60LUU	LMHP60LUU	6	60	0 -20	90	209	0 -25	18	134	106	18	112	11x17.5x10.8	7550	20000	4500		

Note : ☆ means steel retainer is available.

Linear Bushing - LMF/KC Series



Linear Bushing - LMHC Series



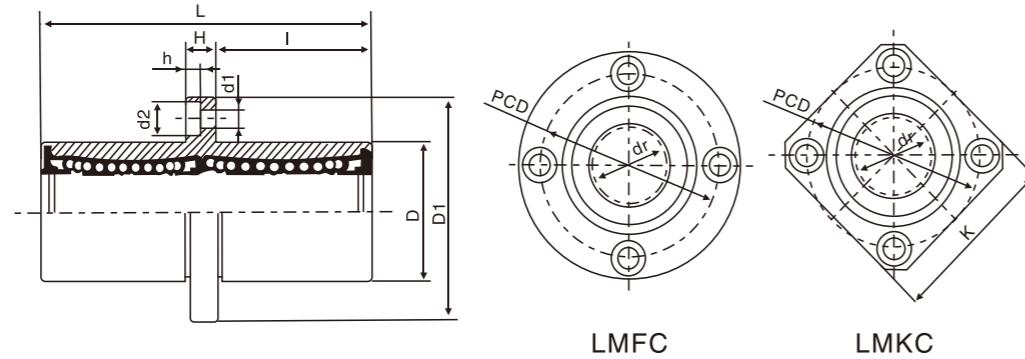
Linear Guideways

Ball Screw

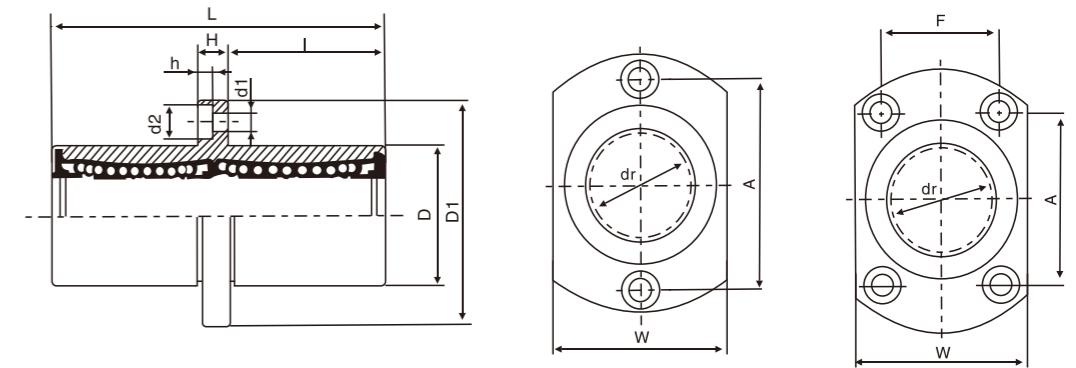
Support

Linear Bushing

3-7 LMF/KC Series



3-8 LMHC Series



Part No.		Main Dimensions and Tolerance												Eccen- tricity	Basic Load Rating C N	Weight (g)	
Seal Type	Ball Circuit	dr (mm)	Tolerance (μ m)	D (mm)	Tolerance (μ m)	L (mm)	Tolerance (μ m)	I (mm)	D1 (mm)	K (mm)	H (mm)	PCD (mm)	d1xd2xh (mm)				
LMFC6UU	LMKC6UU	4	6	0 -10	12	35	± 300	15	28	22	5	20	3.5x6x3.1	15	323	529	31
LMFC8UU	LMKC8UU	4	8		15	45		20	32	25	5	24	3.5x6x3.1		431	784	51
☆ LMFC10UU	☆LMKC10UU	4	10		19	55	-200	24.5	40	30	6	29	4.5x7.5x4.1		588	1100	98
☆ LMFC12UU	☆LMKC12UU	4	12		21	57		25.5	42	32	6	32	4.5x7.5x4.1		813	1570	110
LMFC13UU	LMKC13UU	4	13		23	61	-300	27.5	43	34	6	33	4.5x7.5x4.1		813	1570	130
LMFC16UU	LMKC16UU	5	16		28	70		32	48	37	6	38	4.5x7.5x4.1		1230	2350	190
☆ LMFC20UU	☆LMKC20UU	5	20		32	80	$0-12$	36	54	42	8	43	5.5x9x5.1		1400	2740	260
☆ LMFC25UU	☆LMKC25UU	6	25		40	112		52	62	50	8	51	5.5x9x5.1		1560	3140	540
☆ LMFC30UU	☆LMKC30UU	6	30		45	123		56.5	74	58	10	60	6.6x11x6.1		2490	5490	680
LMFC35UU	LMKC35UU	6	35	$0-45$	52	135	$0-22$	62.5	82	64	10	67	6.6x11x6.1	25	2650	6270	1020
LMFC40UU	☆LMKC40UU	6	40		60	151		69	96	75	13	78	9x14x8.1		3430	8040	1570
LMFC50UU	LMKC50UU	6	50		80	192	$0-25$	89.5	116	92	13	98	9x14x8.1		6080	15900	3600
LMFC60UU	LMKC60UU	6	60		90	209		95.5	134	106	18	112	11x17x11.1		7550	20000	4500

Note : ☆ means steel retainer is available.

Part No.		Main Dimensions and Tolerance													Eccen- tricity	Basic Load Rating C N	Weight (g)	
Seal Type	Ball Circuit	dr (mm)	Tolerance (μ m)	D (mm)	Tolerance (μ m)	L ± 0.3 (mm)	Tolerance (μ m)	I (mm)	D1 (mm)	W (mm)	H (mm)	A (mm)	F (mm)	d1xd2xh (mm)				
LMHC6UU	4	6	0 -10	12	35	± 300	± 300	15	28	18	5	20	-	3.5x6x3.1	15	323	529	28
LMHC8UU	4	8		15	45		± 300	20	32	21	5	24	-	3.5x6x3.1		431	784	47
LMHC10UU	4	10		19	55	-200	-200	24.5	40	25	6	29	-	4.5x7.5x4.1		588	1100	90
LMHC12UU	4	12		21	57		-200	25.5	42	32	6	32	-	4.5x7.5x4.1		813	1570	102
LMHC13UU	4	13		23	61	-300	-300	27.5	43	34	6	33	-	4.5x7.5x4.1		813	1570	123
LMHC16UU	5	16		28	70		-300	32	48	37	6	38	-	4.5x7.5x4.1		1230	2350	182
LMHC20UU	5	20		32	80	$0-12$	$0-19$	36	54	42	8	43	5.5x9x5.1	1400	2740	247		
LMHC25UU	6	25		40	112		$0-19$	52	62	50	8	51	5.5x9x5.1	1560	3140	525		
LMHC30UU	6	30		45	123		$0-19$	56.5	74	58	10	60	6.6x11x6.1	2490	5490	645		
LMHC35UU	6	35	$0-45$	52	135	$0-22$	$0-22$	62.5	82	64	10	67	6.6x11x6.1	25	2650	6270	1020	
LMHC40UU	6	40		60	151		$0-22$	69	96	75	13	78	9x14x8.1		3430	8040	1570	
LMHC50UU	6	50		80	192	$0-25$	$0-25$	89.5	116	92	13	98	9x14x8.1		6080	15900	3600	
LMHC60UU	6	60		90	209		$0-25$	95.5	134	106	18	112	11x17x11.1		7550	20000	4500	

Linear Bushing - SC_S Series



Linear Bushing - SC Series



Linear Guideways

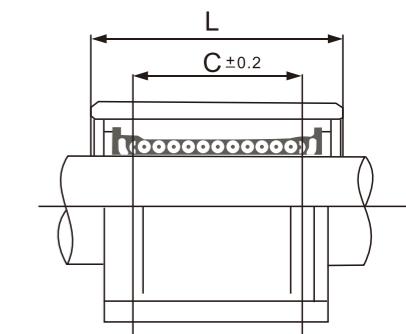
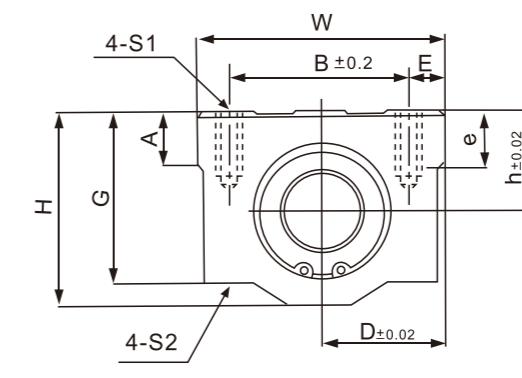
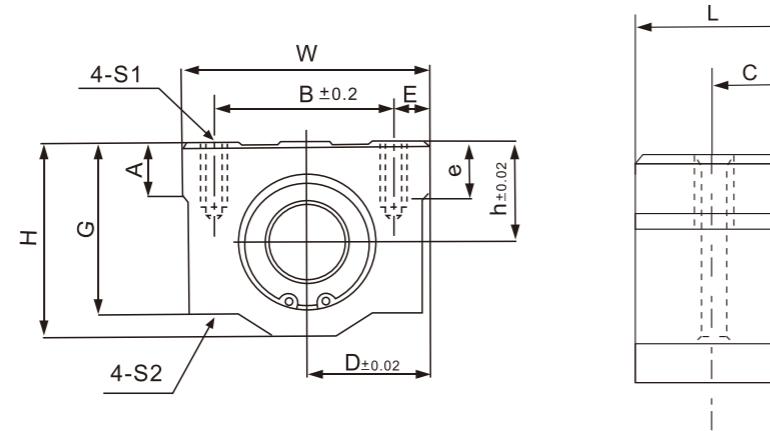
Ball Screw

Support

Linear Bushing

4 Slide Unit

4-1 SC Series



Part No.	Main Dimensions (mm)												Basic Load Rating C N	Co N	Weight (g)
	h	D	W	H	G	A	B	E	S1xe	S2	C	L			
SC8UU	11	17	34	22	18	6	24	5	M4X8	3.4	7.7	15.4	274	392	27
SC10SUU	13	20	40	26	21	8	28	6	M5X12	4.3	9.95	19.9	372	549	53
SC12SUU	15	21	42	28	24	8	30.5	5.75	M5X12	4.3	10.45	20.9	510	784	60
SC13SUU	15	22	44	30	24.5	8	33	5.5	M5X12	4.3	10.45	20.9	510	784	64
SC16SUU	19	25	50	38.5	32.5	9	36	7	M5X12	4.3	12	24	774	1180	110
SC20SUU	21	27	54	41	35	11	40	7	M6X12	5.2	14	28	882	1370	144
SC25SUU	26	38	76	51.5	42	12	54	11	M8X18	7	18.9	37.8	980	1570	340
SC30SUU	30	39	78	59.5	49	15	58	10	M8X18	7	20.65	41.3	1574	2740	424
SC35SUU	34	45	90	68	54	18	70	10	M8X18	7	22.65	45.3	1670	3140	626
SC40SUU	40	51	102	78	62	20	80	11	M10X25	8.7	28.15	56.3	2160	4020	1000
SC50SUU	52	61	122	102	80	25	100	11	M10X25	8.7	34.4	68.8	3820	7940	2100

Part No.	Main Dimensions (mm)												Basic Load Rating C N	Co N	Weight (g)
	h	D	W	H	G	A	B	E	S1xe	S2	C	L			
SC8UU	11	17	34	22	18	6	24	5	M4X8	3.4	18	30	274	392	52
SC10UU	13	20	40	26	21	8	28	6	M5X12	4.3	21	35	372	549	92
SC12UU	15	21	42	28	24	8	30.5	5.75	M5X12	4.3	26	36	510	784	102
SC13UU	15	22	44	30	24.5	8	33	5.5	M5X12	4.3	26	39	510	784	120
SC16UU	19	25	50	38.5	32.5	9	36	7	M5X12	4.3	34	44	774	1180	200
SC20UU	21	27	54	41	35	11	40	7	M6X12	5.2	40	50	882	1370	255
SC25UU	26	38	76	51.5	42	12	54	11	M8X18	7	50	67	980	1570	600
SC30UU	30	39	78	59.5	49	15	58	10	M8X18	7	58	72	1574	2740	735
SC35UU	34	45	90	68	54	18	70	10	M8X18	7	60	80	1670	3140	1100
SC40UU	40	51	102	78	62	20	80	11	M10X25	8.7	60	90	2160	4020	1590
SC50UU	52	61	122	102	80	25	100	11	M10X25	8.7	80	110	3820	7940	3340

Linear Guideways

Ball Screw

Support

Linear Bushing

Linear Bushing - SC_L Series



Linear Bushing - TBR Series



Linear Guideways

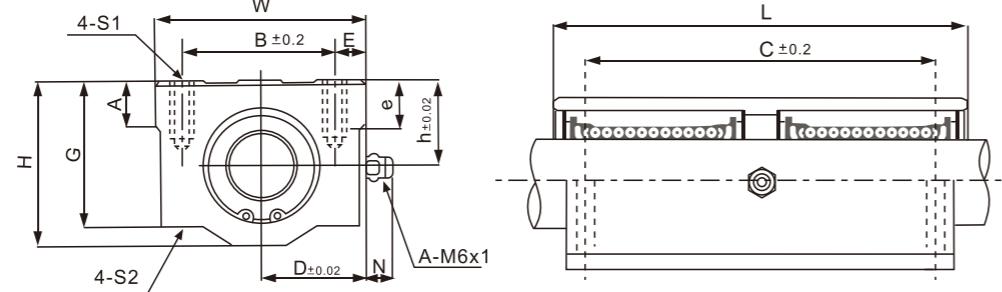
Ball Screw

Support

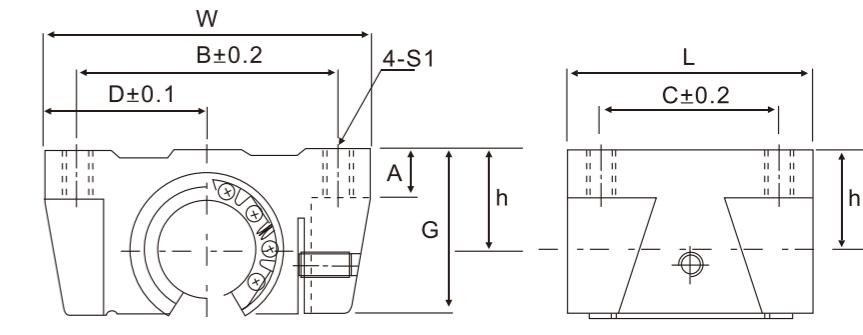
Linear Bushing



SC_L



TBR



4-2 TBR Series

Part No.	Main Dimensions (mm)												Basic Load Rating C N	Co N	Weight (g)	
	h	D	W	H	G	N	A	B	E	S1x1	S2	C	L			
SC8LUU	11	17	34	22	18	7	6	24	5	M4x8	3.4	42	58	431	784	102
SC10LUU	13	20	40	26	21	7	8	28	6	M5X12	4.3	46	68	588	1100	180
SC12LUU	15	21	42	28	24	6.5	8	30.5	5.75	M5X12	4.3	50	70	813	1570	250
SC13LUU	15	22	44	30	24.5	6.5	8	33	5.5	M5X12	4.3	50	75	813	1570	240
SC16LUU	19	25	50	38.5	32.5	6	9	36	7	M5X12	4.3	60	85	1230	2350	400
SC20LUU	21	27	54	41	35	7	11	40	7	M6X12	5.2	70	96	1410	2740	570
SC25LUU	26	38	76	51.5	42	4	12	54	11	M8X18	7	100	130	1610	3140	1200
SC30LUU	30	39	78	59.5	49	5	15	58	10	M8X18	7	110	140	2450	5490	1480
SC35LUU	34	45	90	68	54	5.5	18	70	10	M8X18	7	120	155	2650	6270	2200
SC40LUU	40	51	102	78	62	5	20	80	11	M10X25	8.7	140	175	3430	8040	3200
SC50LUU	52	61	122	102	80	5	25	100	11	M10X25	8.7	160	215	6080	15900	6700

Part No.	Main Dimensions (mm)										Basic Load Rating C N	Co N	Weight (g)
	W	G	A	L	B	D	C	h	S1				
TBR16UU	62	26	8	42	50	31	30	18	M5	392	490	180	
TBR20UU	68	31	10	51	54	34	37	21	M6	784	1176	300	
TBR25UU	82	41	12	65	65	41	50	28	M8	1568	2352	600	
TBR30UU	91	48	12	75	75	45.5	60	33.5	M8	1764	2940	900	

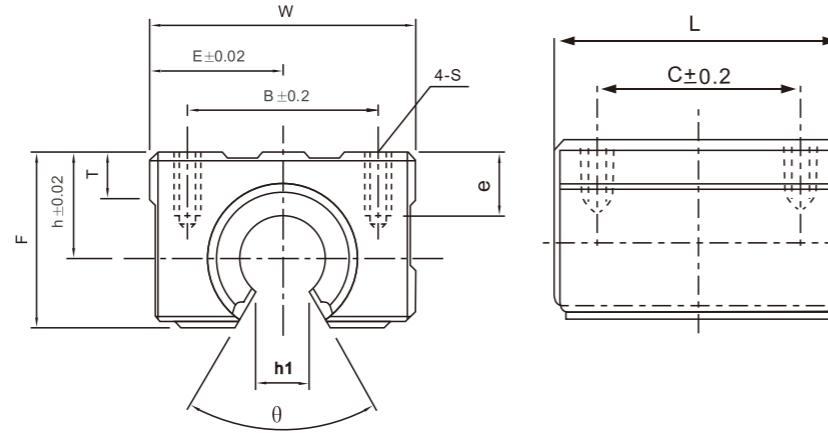
Linear Bushing - SME Series



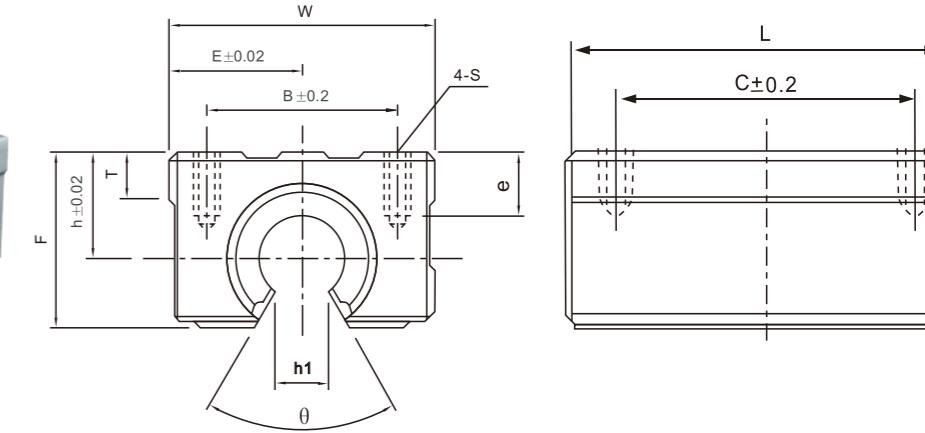
Linear Bushing - SME_L Series



SME



SME_L



Part No.	Main Dimensions (mm)												Slide Bush	Basic Load Rating C N Co N	Weight (g)
	h	D	W	L	F	T	h1	θ	B	C	Sxe				
SME16UU	20	22.5	45	45	33	9	10	80°	32	30	M5x12	LM16UU-OP	774	1180	150
SME20UU	23	24	48	50	39	11	10	60°	35	35	M6x12	LM20UU-OP	882	1370	200
SME25UU	27	30	60	65	47	14	11.5	50°	40	40	M6x12	LM25UU-OP	980	1570	450
SME30UU	33	35	70	70	56	15	14	50°	50	50	M8x18	LM30UU-OP	1570	2740	630
SME35UU	37	40	80	80	63	18	16	50°	55	55	M8x18	LM35UU-OP	1670	3140	925
SME40UU	42	45	90	90	72	20	19	50°	65	65	M10x20	LM40UU-OP	2160	4020	1330
SME50UU	53	60	120	110	92	25	23	50°	94	80	M10x20	LM50UU-OP	3820	7940	3000

Part No.	Main Dimensions (mm)												Slide Bush	Basic Load Rating C N Co N	Weight (g)
	h	D	W	L	F	T	h1	θ	B	C	Sxe				
SME16LUU	20	22.5	45	85	33	9	10	80°	32	60	M5x12	LM16UU-OPx2	1230	2350	300
SME20LUU	23	24	48	95	39	11	10	60°	35	70	M6x12	LM20UU-OPx2	1400	2740	400
SME25LUU	27	30	60	130	47	14	11.5	50°	40	90	M6x12	LM25UU-OPx2	1560	3140	900
SME30LUU	33	35	70	140	56	15	14	50°	50	100	M8x18	LM30UU-OPx2	2490	5490	1260

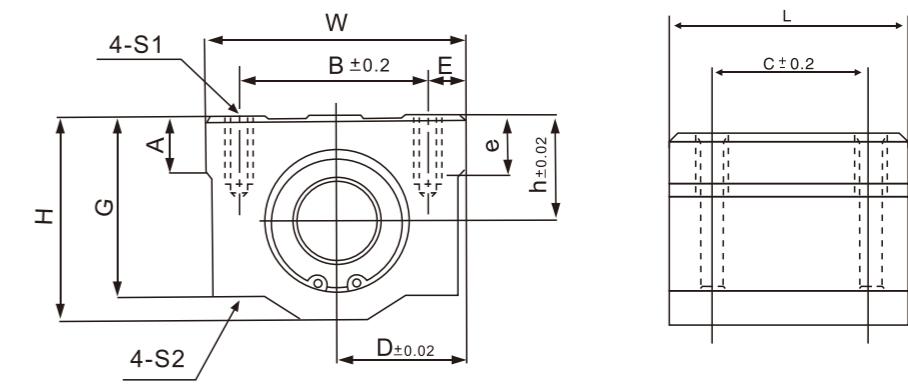
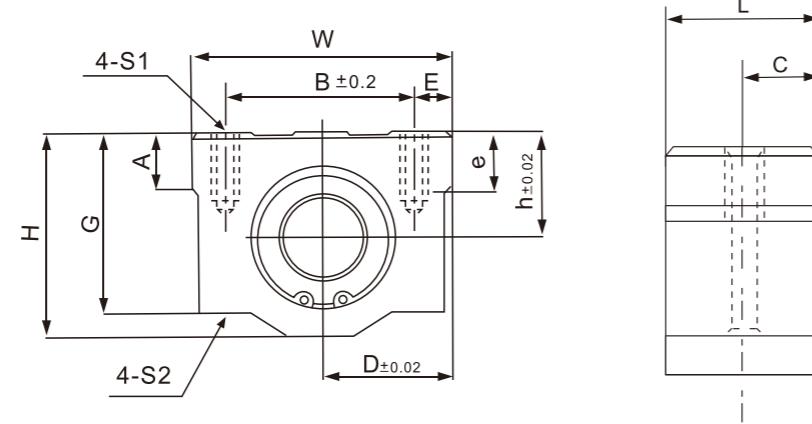
Linear Bushing - KBA_S Series



Linear Bushing - KBA Series



4-4 KBA Series



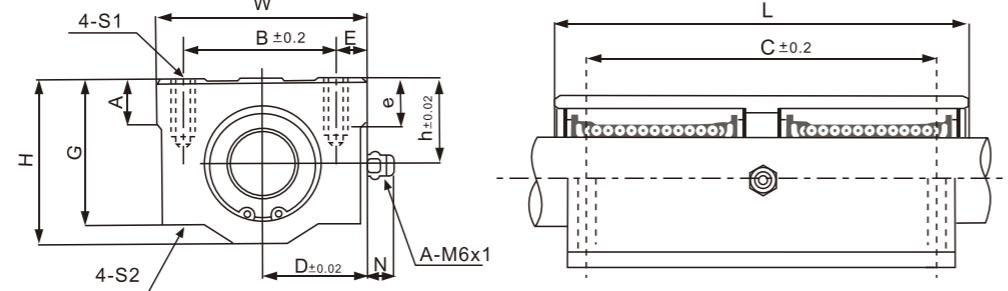
Part No.	Main Dimensions (mm)												Basic Load Rating C N	Co N	Weight (g)
	h	D	W	H	G	A	B	E	S1xe	S2	C	L			
KBA8SUU	11	17	34	22	18	6	24	5	M4X8	3.4	7.2	14.4	274	392	25
KBA12SUU	15	22	44	30	24.5	8	33	5.5	M5X12	4.3	10.4	20.8	510	784	65
KBA16SUU	19	25	50	38.5	32.5	9	36	7	M5X12	4.3	11.2	22.4	774	1180	100
KBA20SUU	21	27	54	41	35	11	40	7	M6X12	5.2	14.5	29	882	1370	148
KBA25SUU	26	38	76	51.5	42	12	54	11	M8X18	7	20.45	40.9	980	1570	368
KBA30SUU	30	39	78	59.5	49	15	58	10	M8X18	7	24.45	48.9	1574	2740	500
KBA40SUU	40	51	102	78	62	20	80	11	M10X25	8.7	28.2	56.4	2160	4020	1000
KBA50SUU	52	61	122	102	80	25	100	11	M10X25	8.7	36.2	72.4	3820	7940	2205

Part No.	Main Dimensions (mm)													Weight (g)
	Seal Type	Shaft Diameter	h	D	W	L	H	G	T	B	C	E	S1xe	S2
KBA10UU	10	13	20	40	35	26	21	8	28	21	6	M5x12	4.3	92
KBA12UU	12	15	22	44	39	30	24.5	8	33	26	5.5	M5x12	4.3	120
KBA16UU	16	19	25	50	44	38.5	32.5	9	36	34	7	M5x12	4.3	200
KBA20UU	20	21	27	54	53	41	35	11	40	40	7	M6x12	5.2	270
KBA25UU	25	26	38	76	67	51.5	42	12	54	50	11	M8x18	7	600
KBA30UU	30	30	39	78	76	59.5	49	15	58	58	10	M8x18	7	776
KBA40UU	40	40	51	102	90	78	62	20	80	60	11	M10x25	8.7	1590
KBA50UU	50	52	61	122	110	102	80	25	100	80	11	M10x25	8.7	3340
KBA60UU	60	58	66	132	137	114	94	30	108	90	12	M12x25	10.7	4800

Linear Bushing - KBA_L Series



KBA_L



Part No.		Main Dimensions (mm)													Weight (g)
Seal Type	Shaft Diameter	h	D	W	L	H	G	T	B	C	E	S1x1	S2		
KBA10LUU	10	13	20	40	68	26	21	8	28	46	6	M5x12	4.3	180	
KBA12LUU	12	15	22	44	77	30	24.5	8	33	64	5.5	M5x12	4.3	237	
KBA16LUU	16	19	25	50	89	38.5	32.5	9	36	79	7	M5x12	4.3	405	
KBA20LUU	20	21	27	54	100	41	35	11	40	90	7	M6x12	5.2	510	
KBA25LUU	25	26	38	76	136	51.5	42	12	54	119	11	M8x18	7	1220	
KBA30LUU	30	30	39	78	154	59.5	49	15	58	132	10	M8x18	7	1580	
KBA40LUU	40	40	51	102	180	78	62	20	80	150	11	M10x25	8.7	3180	
KBA50LUU	50	52	61	122	230	102	80	25	100	200	11	M10x25	8.7	6990	

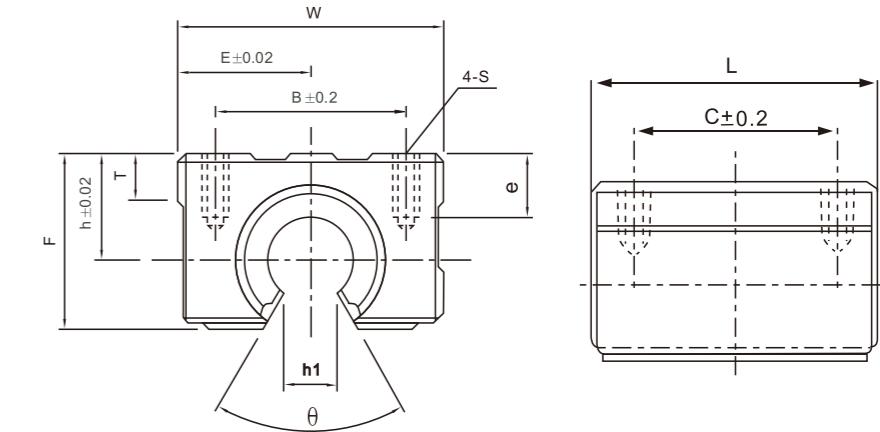


Linear Bushing - KBE Series

4-5 KBE Series



KBE



Part No.		Main Dimensions (mm)													Basic Load Rating C N	Basic Load Rating C o N	Weight (g)
Seal Type	Shaft Diameter	h	D	W	L	H	G	T	B	C	E	S1x1	S2				
KBE16UU	16	20	22.5	45	45	33	9	10	80°	32	30	M5x12	774	1180	150		
KBE20UU	20	23	24	48	50	39	11	10	60°	35	35	M6x12	882	1370	200		
KBE25UU	25	27	30	60	65	47	14	11.5	60°	40	40	M6x12	980	1570	450		
KBE30UU	30	33	35	70	70	56	15	14	60°	50	50	M8x18	1570	2740	630		
KBE40UU	40	42	45	90	90	72	20	19	60°	65	65	M10x20	2160	4020	1330		
KBE50UU	50	53	60	120	110	92	25	23	60°	94	80	M10x20	3820	7940	3000		

Linear Bushing - SK Series

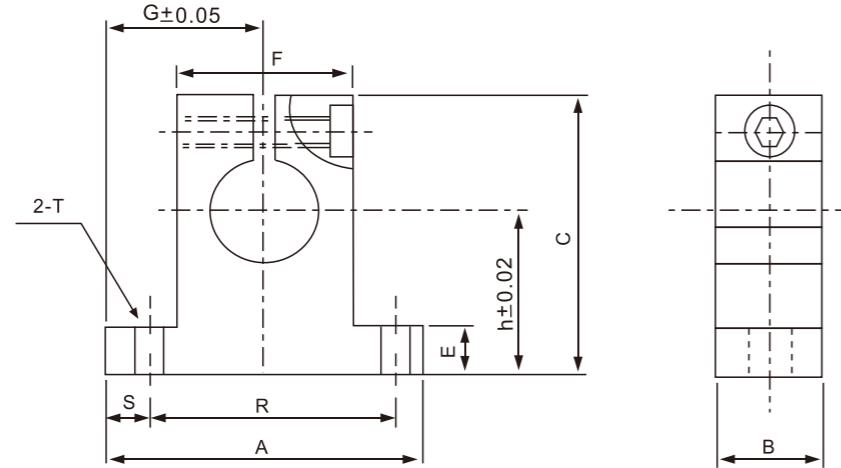


Linear Bushing - SHF Series



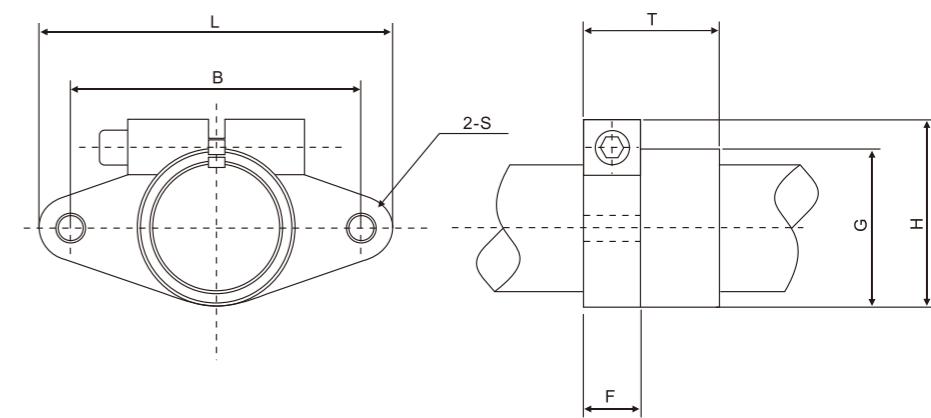
5 Shaft Support

5-1 SK Series



SK

5-2 SHF Series



SHF

Part No.	Shaft diameter	Main Dimensions (mm)												Clamping bolt designation	Mounting bolt designation	Weight (g)
		h	G	A	B	C	E	F	R	S	T					
SK-8	8	20	21	42	14	32.8	6	18	32	5	5.5	M4	M5	24		
SK-10	10	20	21	42	14	32.8	6	18	32	5	5.5	M4	M5	24		
SK-12	12	23	21	42	14	37.5	6	20	32	5	5.5	M4	M5	30		
SK-13	13	23	21	42	14	37.5	6	20	32	5	5.5	M4	M5	30		
SK-16	16	27	24	48	16	44	8	25	38	5	5.5	M4	M5	40		
SK-20	20	31	30	60	20	51	10	30	45	7.5	6.6	M5	M6	70		
SK-25	25	35	35	70	24	60	12	38	56	7	6.6	M6	M6	130		
SK-30	30	42	42	84	28	70	12	44	64	10	9	M6	M8	180		
SK-35	35	50	49	98	32	82	15	50	74	12	11	M8	M10	270		
SK-40	40	60	57	114	36	96	15	60	90	12	11	M8	M10	420		
SK-50	50	70	63	126	40	120	18	74	100	13	14	M12	M12	750		