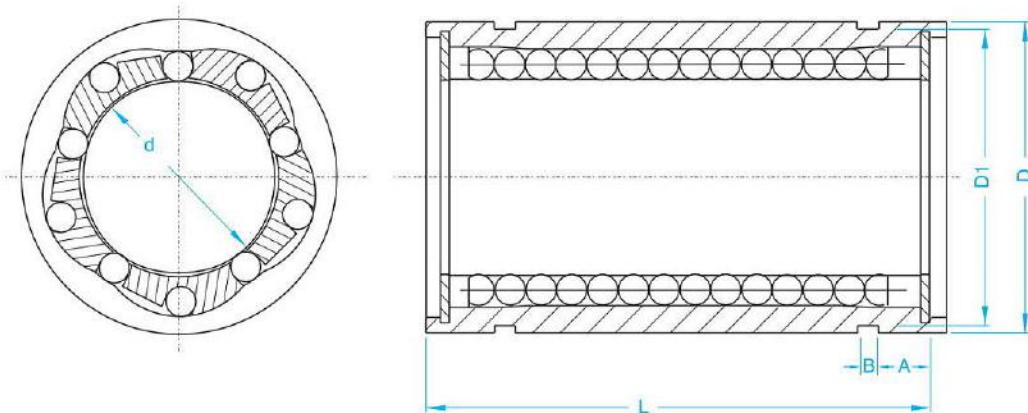




8.1 LM series (Standard Type)

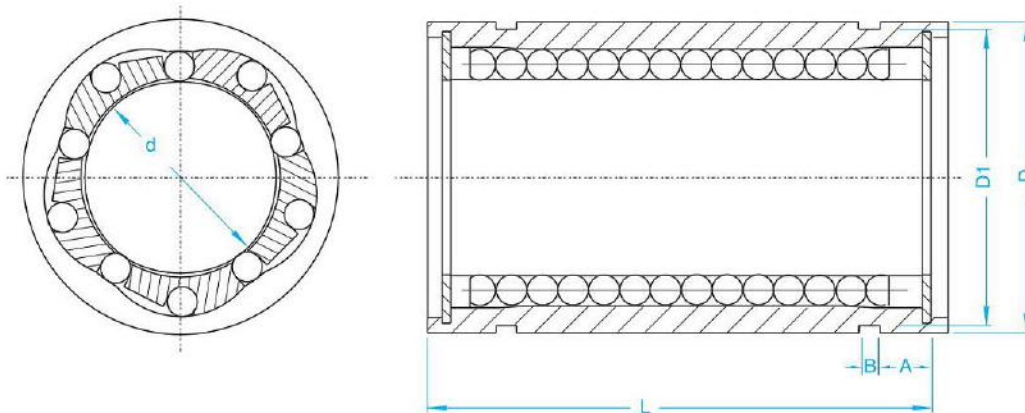


Unit : mm

Model No.	Basic Dimension								Eccentricity (max) μm	Radial Clearance (max) μm	(Kgf) Load		Weight (g)
	d	D	tolerance (μm)	L	tolerance (μm)	B	D1	A			Ca	Coa	
LM4UU	4	8	0	12	0	-	-	0	8	-5	9	13	2
LM6UU	6	12		19		1.1	11.5	2.75	12	-5	20	27	8
LM8UU	8	15	-11	24	-0.2	1.1	14.3	3.25	12	-5	27	41	16
LM10UU	10	19		29		1.3	18	3.5	12	-5	38	55	30
LM12UU	12	21	-13	30	0	1.3	20	3.5	12	-5	42	60	31.5
LM16UU	16	28	0	37		1.6	27	5.25	12	-7	78	119	69
LM20UU	20	32		42	1.6	30.5	5.75	15	-9	83	140	87	
LM25UU	25	40	-15	59	0	1.85	38	9	15	-9	100	159	220
LM30UU	30	45	-0.3	64		1.85	43	9.75	15	-9	159	279	250
LM40UU	40	60		0	80	2.1	57	9.75	20	-13	219	409	585
LM50UU	50	80	-19	100		2.6	76.5	13	20	-13	389	808	1580

Note : UU with oil seals in ends

8.2 LM-L series (Standard - Long Type)

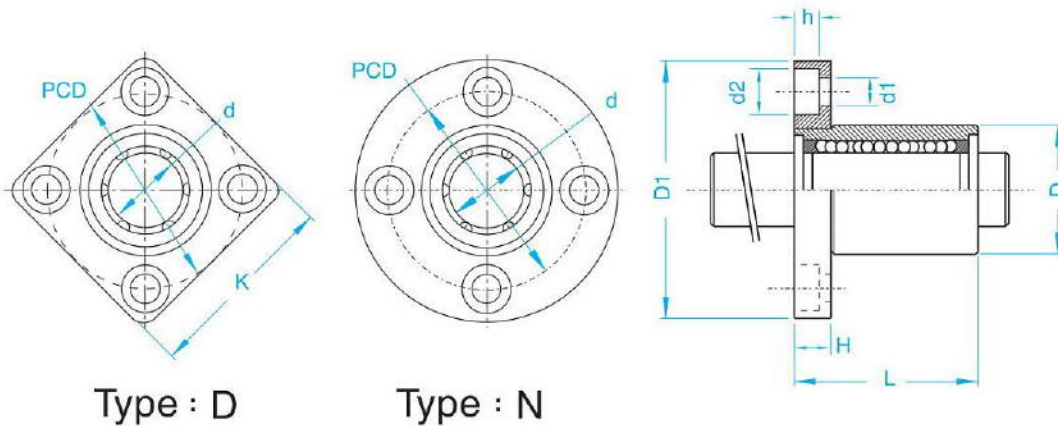


Unit : mm

Model No.	Basic Dimension								(Kgf) Load		Weight (g)
	d	D	tolerance (μm)	L	tolerance (μm)	B	A	D1	Ca	Coa	
LM6LUU	6	12	0	35	0	1.1	4	11.5	32	53	16
LM8LUU	8	15	-13	45		1.1	5	14.3	44	80	31
LM10LUU	10	19	0	55		-30	1.1	5.5	18	59	112
LM12LUU	12	21	-16	57	-40	1.3	5.5	20	66	122	80
LM16LUU	16	28	0	70		1.3	8.5	27	125	240	145
LM20LUU	20	32	-19	80		1.6	9.5	30.5	143	280	180
LM25LUU	25	40	0	112	0	1.85	15	38	159	320	440
LM30LUU	30	45	-19	123		1.85	17	43	254	560	580
LM40LUU	40	60	0	151		2.1	15	57	350	820	1170
LM50LUU	50	80	-22	192	2.6	22	76.5	620	1622	3100	

Note : UU with oil seals in ends

8.3 LF series (Flange Type)

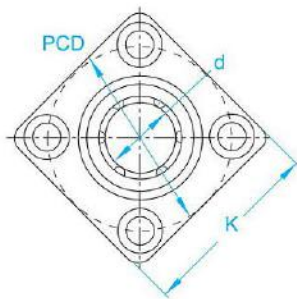


Unit : mm

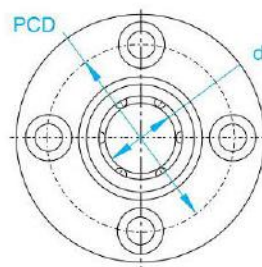
Model No.	Basic Dimension												Eccentricity (max) μm	Radial Clearance (max) μm	(Kgf) Load		Weight (g)			
	d	D	tolerance (μm)	L	tolerance (μm)	D1	tolerance (μm)	H	PCD	K	d1	d2			h	Ca		Coa		
LF6UU	6	12	0-11	19	0	28	-0.2	5	20	22	3.4	6.5	3.3	12	-5	200	206	26.5		
LF8UU	8	15	0	24		32		5	24	25	3.4	6.5	3.3	12	-5	260	400	40		
LF10UU	10	19		-13		29		40	6	29	30	4.5	8	4.4	12	-5	370	540	78	
LF12UU	12	21	-16	30		42		6	32	32	4.5	8	4.4	12	-5	410	290	76		
LF16UU	16	28		37		48		6	38	37	4.5	8	4.4	12	-7	770	1170	134		
LF20UU	20	32	0	42		54		8	43	42	5.5	9.5	5.4	15	-9	860	1370	180		
LF25UU	25	40	-16	59		62		8	51	50	5.5	9.5	5.4	15	-9	980	1560	340		
LF30UU	30	45		64		74		10	60	58	6.6	11	6.5	15	-9	1560	2740	460		
LF40UU	40	60	0	80		0		96	0	13	78	75	9	14	8.6	20	-13	2150	4010	1054
LF50UU	50	80	-19	100		-30		116	-0.3	13	98	92	9	14	8.6	20	-13	3820	7830	2200

ote : UU-with oil seals in ends

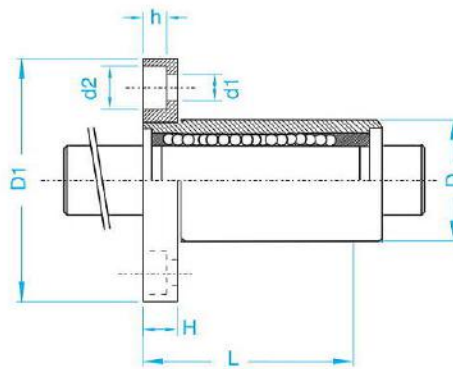
8.4 LF-L series (Flange Long Type)



Type : D



Type : N



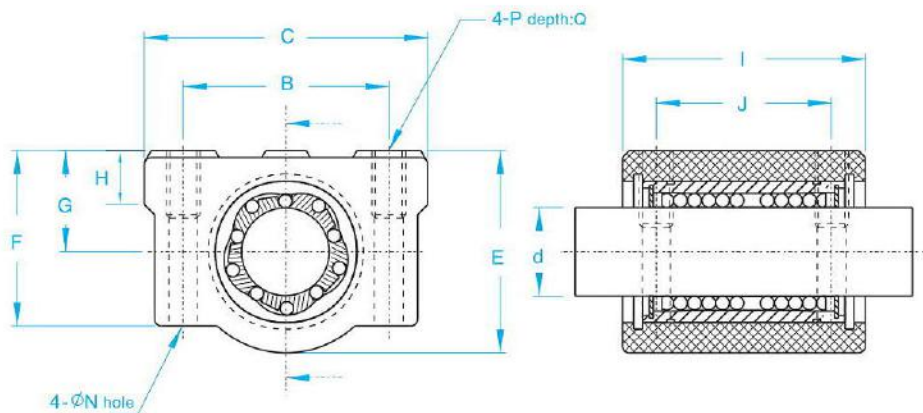
Unit : mm

Model No.	Basic Dimension												Eccentricity (max) μm	Radial Clearance (max) μm	(Kgf) Load		Weight (g)	
	d	D	tolerance (μm)	L	tolerance (μm)	D1	tolerance (μm)	H	PCD	K	d1	d2			h	Ca		Coa
LF6LUU	6	12	0	35		28		5	20	22	3.4	6.5	3.3	12	-5	200	206	26.5
LF8LUU	8	15	-13	45		32		5	24	25	3.4	6.5	3.3	12	-5	260	400	40
LF10LUU	10	19	0	55		40		6	29	30	4.5	8	4.4	12	-5	370	540	78
LF12LUU	12	21	0	57		42		6	32	32	4.5	8	4.4	12	-5	410	290	76
LF16LUU	16	28	-16	70	0	48	0	6	38	37	4.5	8	4.4	12	-7	770	1170	134
LF20LUU	20	32	0	80	-30	54	-0.2	8	43	42	5.5	9.5	5.4	15	-9	860	1370	180
LF25LUU	25	40	0	112		62		8	51	50	5.5	9.5	5.4	15	-9	980	1560	340
LF30LUU	30	45	-19	123		74		10	60	58	6.6	11	6.5	15	-9	1560	2740	460
LF40LUU	40	60	0	151	0	96	0	13	78	75	9	14	8.6	20	-13	2150	4010	1054
LF50LUU	50	80	-22	192	-40	116	-0.3	13	98	92	9	14	8.6	20	-13	3820	7830	2200

Note : UU-with oil seals in ends

8.5 LU/LP series (Housing Type)

LP: No Linear Ball Bearing (Housing Only)
 LU: With Linear Ball Bearing (LP+LM)

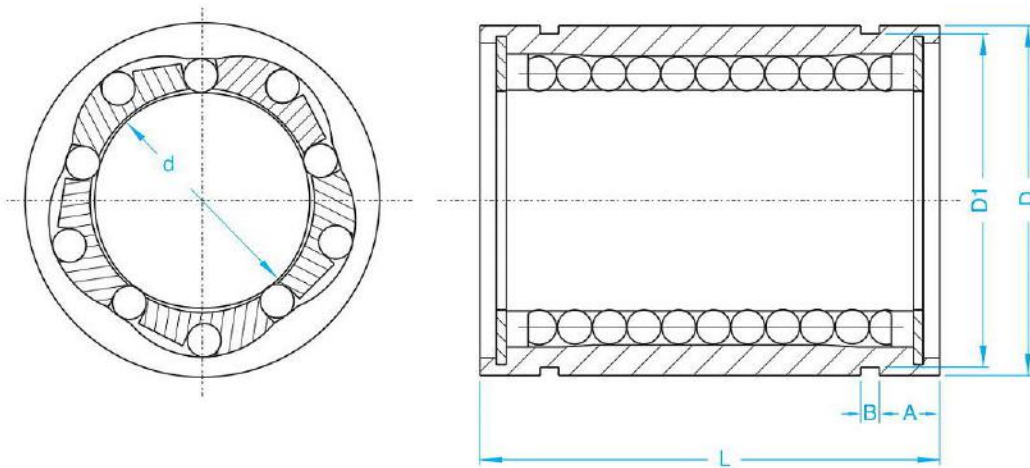


Material: Aluminum Alloy

Unit : mm

Model No.	Basic Dimension												weight (g)
	d	B	C	E	F	G±0.02	H	I	J	N	P	Q	
LU6UU LP6	6	20	30	18	15	9	6	25	15	M3	M4	8	34
LU8UU LP8	8	24	34	22	18	11	6	30	18	M3	M4	8	56
LU10UU LP10	10	28	40	26	21	13	8	35	21	M4	M5	12	90
LU12UU LP12	12	30.5	42	29	25	15	8	36	26	M4	M5	12	112
LU16UU LP16	16	36	50	38.5	35	19	9	44	34	M4	M5	12	189
LU20UU LP20	20	40	54	42	36	21	11	50	40	M5	M6	12	237
LU25UU LP25	25	54	76	51.5	41	26	12	67	50	M6	M8	18	555
LU30UU LP30	30	58	78	59.5	49	30	15	72	58	M6	M8	18	685
LU40UU LP40	40	80	102	78	62	40	20	90	60	M8	M10	25	1600
LU50UU LP50	50	100	122	102	80	52	25	110	80	M8	M10	25	3350

8.6 LME series (European Type)

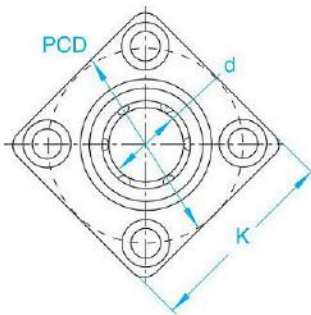


Unit : mm

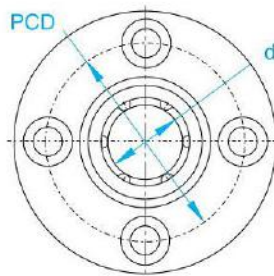
Model No.	Basic Dimension					Eccentricity (max) μm	Radial Clearance (max) μm	(Kgf) Load Ca Coa	Weight (g)				
	d	D	tolerance (μm)	L	tolerance (μm)								
LME8UU	8	16	0/-8	25		1.1	4.25	15.2	12	-5	27	41	20
LME12UU	12	22	0	32	0	1.3	4.55	21	12	-7	51	78	41
LME16UU	16	26	-9	36	-20	1.3	5.55	24.9	12	-7	58	91	57
LME20UU	20	32	0	45	-20	1.6	6.75	30.3	15	-9	88	139	91
LME25UU	25	40		58		1.85	6.95	37.5	15	-9	100	159	215
LME30UU	30	47	-11	68	0	1.85	7.95	44.5	15	-9	159	279	325
LME40UU	40	62	0	80	-30	2.15	9.7	59	17	-13	219	409	705
LME50UU	50	75	-13	100		2.65	11.2	72	17	-13	389	808	1130

Note : UU with oil seals in ends

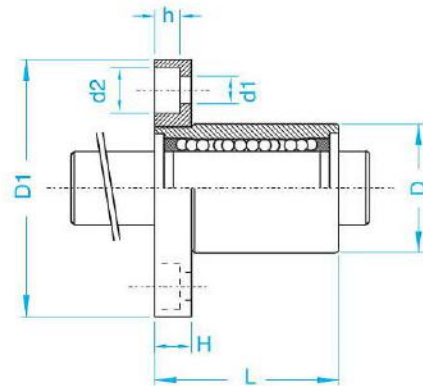
8.7 LFE series (European Flange Type)



Type : D



Type : N



Unit : mm

Model No.	Basic Dimension												Eccentricity (max) μm	Radial Clearance (max) μm	(Kgf) Load		Weight (g)	
	d	D	tolerance (μm)	L	tolerance (μm)	D1	tolerance (μm)	H	PCD	K	d1	d2			h	Ca		Coa
LFE8UU	8	16	0/-8	25		32		5	24	25	3.4	6.5	3.3	12	-5	260	400	44
LFE12UU	12	22	0	32		42		6	32	32	4.5	8	4.4	12	-5	500	770	86
LFE16UU	16	26	-9	36	0	46	0	6	36	35	4.5	8	4.4	12	-7	570	890	120
LFE20UU	20	32	0	45	-20	54	-0.2	8	43	42	5.5	9.5	5.4	15	-9	860	1370	184
LFE25UU	25	40		58		62		8	51	50	5.5	9.5	5.4	15	-9	980	1560	335
LFE30UU	30	47	-11	68		76		10	62	60	6.6	11	6.5	15	-9	1560	2740	545
LFE40UU	40	62		80	0	98	0	13	80	75	9	14	8.6	20	-13	2150	4010	1185
LFE50UU	50	75	-13	100	-30	112	-0.3	13	94	88	9	14	8.6	20	-13	3820	7830	1730

Note : UU with oil seals in ends



7.1 Characteristics

(1) Excellent Wear Resistance

Unlike linear ball bearing that requires running on high hardness heat treated shaft (SUJ2), Self-Lubricated Linear Bearing can be used with Hard Chrome Plated Shaft (S45C). Under correct use, the life expectancy is much higher than linear ball bearings.

(2) Interchangeability

Full range of ABBA Self-Lubricated Linear Bearings product line includes Standard, Thin Profile, Profile, and Flanged Type. All Self-Lubricated bearings are interchangeable with our Linear Ball Bearings products.

(3) Multi-Functions

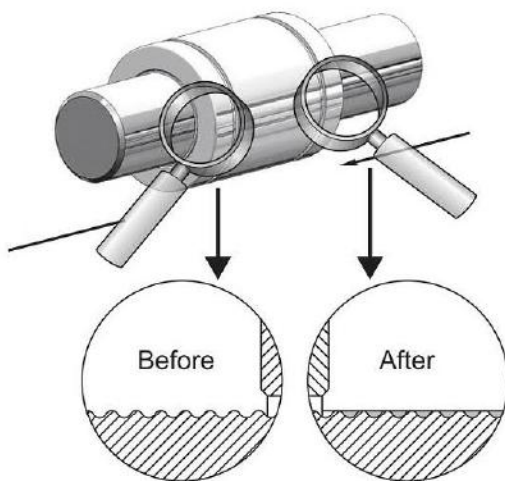
Suitable for either linear, rotary, or combination of both motions.

(4) High Impact Capability

Great capabilities of dampening high impacts, vibrations, and uneven loads while keeping the components from damaging.

(5) Self-Lubricating

Lubrications are not required; however, the use of adequate lubricants can minimize frictions and wear.



Slide shaft

(6) High Load Capacity

ABBA Self-Lubricating Linear Bearings can withstand average 3~4 times load capacity over linear ball bearings.

(7) Chemical and Corrosion Resistance

Great resistance to corrosion allows the bearing to be operating or submerging in alcohol, gasoline, water, oil, and stand up to harsh environments.

(8) Reliable

Reliable bearing dimensions due to the liner will not expand to water or oil unlike general industrial use plastic. Thermal expansion effect is also minimal to the bearing, and will not cause binding to the shaft.

(9) Low Friction

Low Coefficient of Friction eliminates oscillating, which is suitable for continuous and intermittent motions.

(10) Substitutability

In the case of the shaft had been scored by linear ball bearing, self-lubricated linear bearing can be installed to the damaged shaft after slight sanding the shaft by sand paper as emergency repair.

(11) Quiet Operation

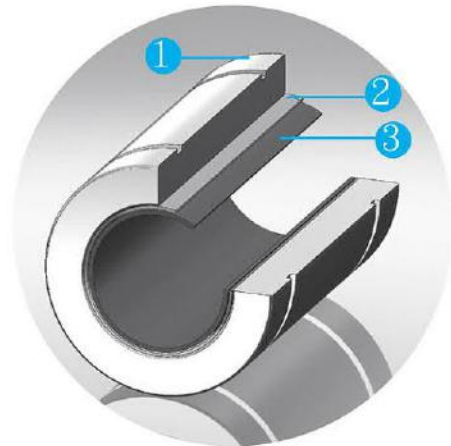
Quieter operation over linear ball bearing at any operating speed.

(12) Wide Range of Applications

Produces minimum particulates, which is suitable for vacuum and clean rooms applications. Applicable applications include Automation Machines, Transfer Equipment, Vice, Robotic Arms, Robots, Positioning Device, Automotive, Office Equipment, Semi-Conductor Manufacturing, Bio-Chemical Plant, Food Processing Plant, and Fabric Manufacturing related applications.

7.2 Structure Description

1. Anodized aluminum, 6061 T6
2. Water-proof Bonding Agent
3. Frelon thickness : 0.5mm



7.3 Size Selection

Use the formula below to calculate Maximum PV Value (Load x Velocity), then multiply its value by Safety Factor. Cross reference the value to dimension chart in our catalogue page to select bearing size. The size of bearing is proportional to the Load and Velocity.

Formula

- Maximum Load = $L / N \times F$
 - Load x Velocity = $L / N \times V \times F$
 - Axial Driving Force = $\mu \times L$
- L : Total Load Capacity (kgf)
 N : Number of Bearings
 F : Safety Factor 2~3
 V : Velocity (m/sec)
 μ : Coefficient of Friction : 0.15~0.25

Example 1

Assuming a sliding platform has a load of 100kg, uses 4 bearings, and velocity is 0.6 m/sec. Calculation of Bearing Size and required Axial Driving Force is shown below.

Where

- L = 100 kgf, N = 4, assume
 F = 2.5, $\mu = 0.2$, V = 0.6 m/sec
- Maximum Load = $L / N \times F = 100 / 4 \times 2.5 = 62.5$ kgf
 - Load x Velocity = $L / N \times V \times F = 100 / 4 \times 0.6 \times 2.5 = 37.5$ kgf · m/sec
 - Required Driving Force = $\mu \times L = 0.2 \times 100 = 20$ kgf

Cross reference the results to dimension chart, known TM 25 Bearing (Max. Load = 1000 kgf, Max. Load x Velocity = 52.8 kgf m/sec) is capable of this application.

Example 2

Assuming all values remains unchanged, except velocity increases to 1.0 m/sec. Calculation of Bearing Size is shown below.

Where

$$\text{Load} \times \text{Velocity} = L / N \times V \times F = 100 / 4 \times 1.0 \times 2.5 = 62.5 \text{ kgf} \times \text{m} / \text{sec}$$

According to the dimension chart, TM30 bearing (Max. Load x Velocity = 68.7 kgf·m/sec) is capable of this application.

7.4 Life Calculation

Bearing's Life Calculation is based on Maximum Allowable Amount of Wear. Once this value has been decided, bearing's Life can be calculated by using the formula below. Under constant load and velocity, Bearing's Life is proportional to Bearing Inner Diameter.

Formula

$$T = W / (K \times P \times V) \quad P = L / (A \times I \times N)$$

T : Sliding Time(hour)

W : Amount of Wear (mm)

K : Wearing Rate : 1×10^{-7}

A : Bearing Inner Diameter (cm)

V : Velocity (m/min)

I : Bearing Length (cm)

P : Pressure (kgf/cm²)

L : Total Load (kgf)

N : Number of Bearings

Example 3

To Calculate the life of TM25 Bearing from example1

Where

$$W = 0.05 \text{mm}, K = 1 \times 10^{-7}, A = 2.5$$

From Dimension Chart Known

$$I = 5.9, L = 100 \text{kgf}, V = 0.6 \times 60 = 36 \text{m/min}$$

$$P = L / (A \times I \times N)$$

$$= 100 / (2.5 \times 5.9 \times 4)$$

$$= 1.69 \text{ kgf/cm}^2$$

$$T = W / (K \times P \times V)$$

$$= 0.05 / (1 \times 10^{-7} \times 1.69 \times 36)$$

$$8218 \text{hours}$$

$$\text{Usage per day} = 6 \times 300 \times 8 / 3600 = 4 \text{hours}$$

$$\text{Total Life Time} = 8218 / 4 = 2054 \text{Days}$$

Note

Allowable Amount of Wear is proportional to Bearing's Life. For example, if allowable amount of wear = 0.1mm, Bearing's Life = 4108 Days.

7.5 Cantilevered Loads

In the instance of using cantilever system, binding of the bearing should be taken into account. General rule is, Maximum $X : Y = 2 : 1$

Example

When distance X equals to 100mm, minimum bearing separation Y must be at least 50mm.

Caution

- Binding of the bearing can occur when the ratio exceeds 2 : 1
- Adequate lubrications will help reduce friction and helps increase the 2 : 1 ratio.

In the case of holding more than 2:1 ratio, method of using counter weight could be use to prevent binding. Use the formula shown below.

Formula

$$M \times X = W \times Z$$

M = Mass of Load

X = Distance from Load to the Shaft

W = Mass of Counter weight

$Z = 1.5 \times (Y)$

Example

$$40 \times 200 = W \times Z (1.5 \times 50 = 75)$$

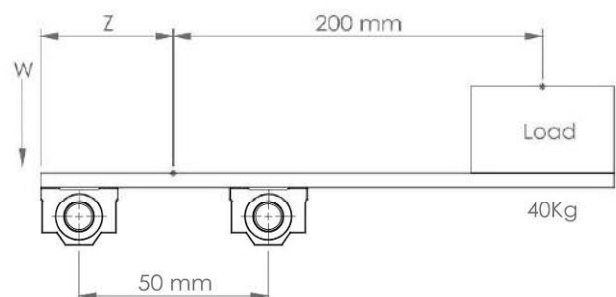
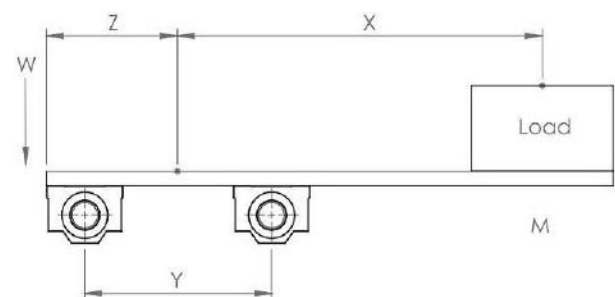
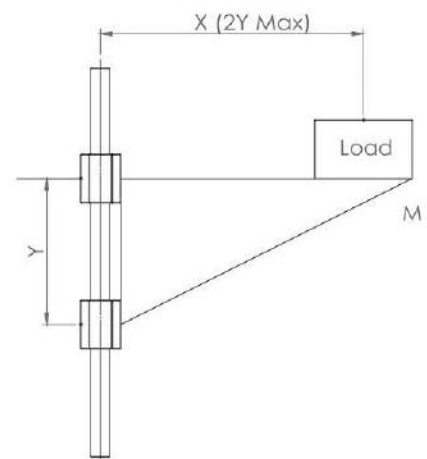
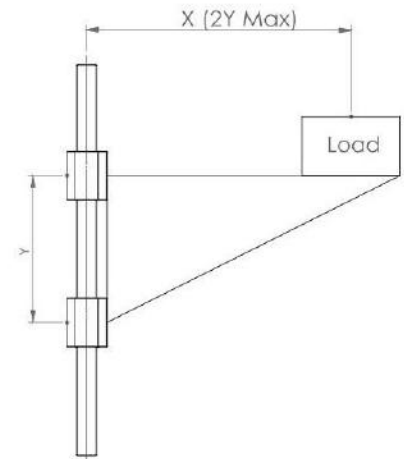
$$W = 40 \times 200 / 75 = 106.7 \text{Kg}$$

When W is calculated, load per bearing can be calculated.

$$M + W / \# \text{ of bearings}$$

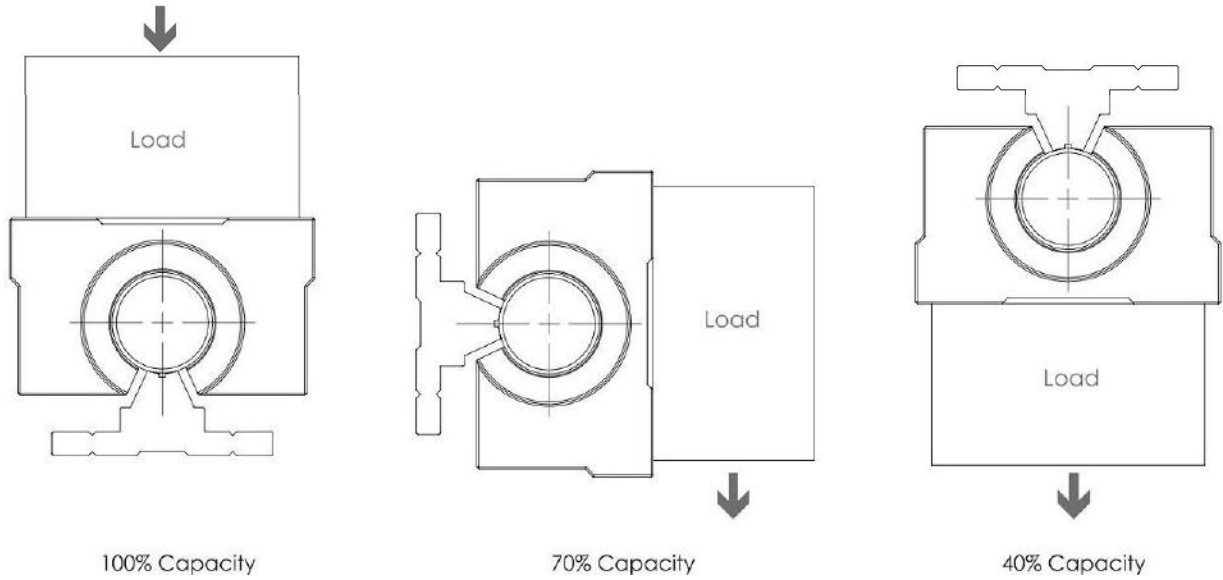
Example

$$40 + 106.7 / 4 = 36.7 \text{ Kg} / \text{ bearing}$$



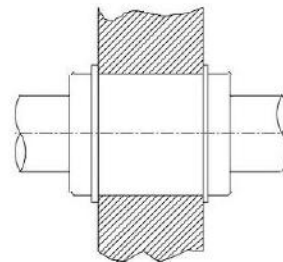
7.6 Open Type Bearing Mounting Configurations

Load capacities on open type self-lubricated linear bearings will vary depending on their mounting configurations.

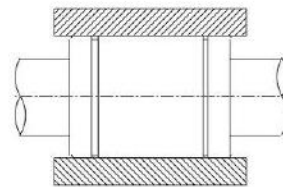


Example

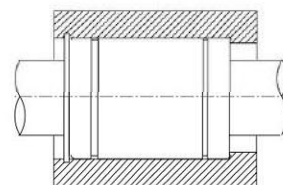
- SM Series bearing installed on the plate, and secured by two retaining rings.



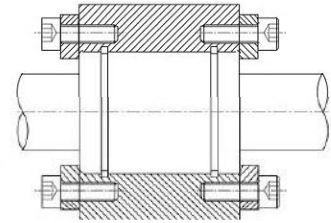
- SM Series bearing installed in the bore, and secured by two retaining rings.



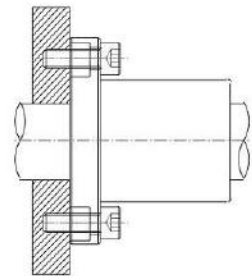
- SM Series bearing installed in the bore, and secured by one retaining ring.



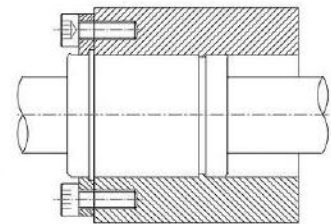
- SM Series bearing secured by two push plates.



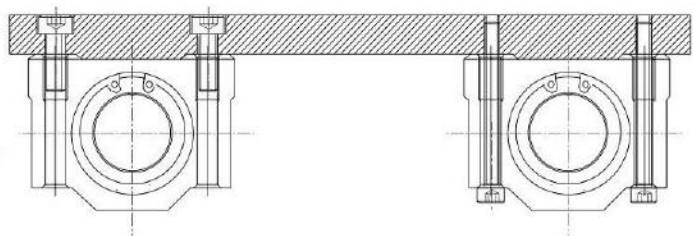
- Flanged type bearing bolted onto the plate; adjust the parallelism to other bearings via lashes given in the bolt hole on the flange.



- SM Series bearing installed by a retaining ring; a push plate is pressed against the ring to secure the bearing.



- When using SCM Series pillow block bearing, bolts can be installed either from top or below.

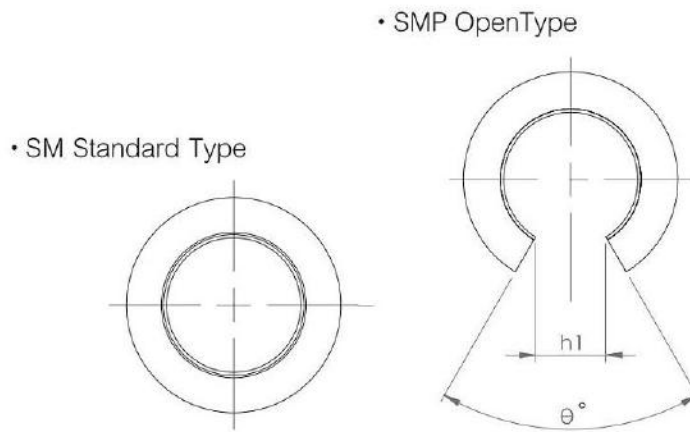
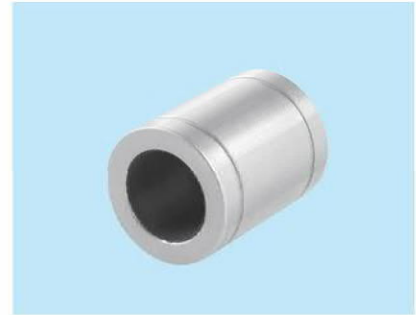


7.7 Round Profile Type

Ordering Key: **SM 20**
1 2

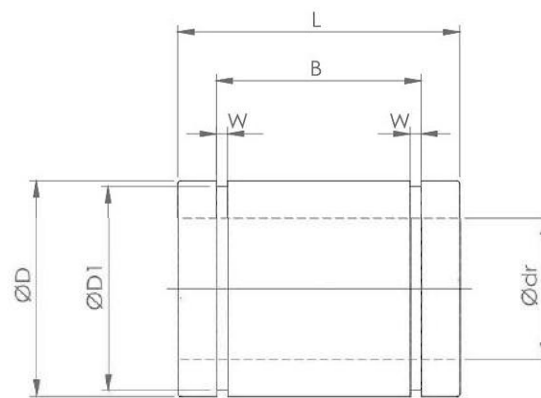
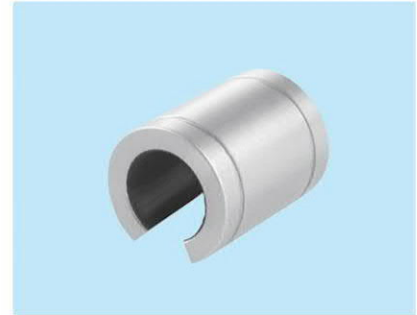
1 SM Standard Type Self-Lubricated Linear Bearing
 SMP Open Type Self-Lubricated Linear Bearing

2 Bearing Inner Diameter



Model No.		Inner Dia.	Dimensions						
Standard Type	Open Type		Ødr (F8)	ØD (h6)	L	B	W	ØD1	h1
SM 6	—	6	12	19	13.5	1.15	11.5	—	—
SM 8	—	8	15	24	17.5	1.15	14.3	—	—
SM 10	SMP 10	10	19	29	22.0	1.35	18.0	6.8	80°
SM 12	SMP 12	12	21	30	23.0	1.35	20.0	8	80°
SM 13	SMP 13	13	23	32	23.0	1.35	22.9	9	80°
SM 16	SMP 16	16	28	37	26.5	1.65	26.6	11	80°
SM 20	SMP 20	20	32	42	30.5	1.65	30.3	11	60°
SM 25	SMP 25	25	40	59	41.0	1.90	38.0	12	50°
SM 30	SMP 30	30	45	64	44.5	1.90	42.5	15	50°
SM 35	SMP 35	35	52	70	49.5	2.20	49.0	17	50°
SM 40	SMP 40	40	60	80	60.5	2.20	57.0	20	50°
SM 50	SMP 50	50	80	100	74.0	2.70	76.5	25	50°
SM 60	SMP 60	60	90	110	85.0	3.15	86.5	30	50°

(mm)



Model No.		Max. Static Load (kgf)	Max. PV (kgf * m/sec)	Max. Speed (m / sec)	Weight (g)	
Standard Type	Open Type				SM	SMP
SM 6	—	80	4.1	2	4.4	—
SM 8	—	130	6.9	2	8.3	—
SM 10	SMP 10	200	10.4	2	16.2	12.5
SM 12	SMP 12	250	12.9	2	19	13.9
SM 13	SMP 13	290	14.9	2	24.6	17.9
SM 16	SMP 16	410	21.2	2	41.7	30.0
SM 20	SMP 20	580	30.1	2	56	43.4
SM 25	SMP 25	1000	52.8	2	122.8	99.2
SM 30	SMP 30	1300	68.7	2	153.7	123.5
SM 35	SMP 35	1700	87.7	2	221	177.8
SM 40	SMP 40	2200	115.0	2	341.6	275.6
SM 50	SMP 50	3500	179.0	2	832.7	679.8
SM 60	SMP 60	4600	236.0	2	1057	860.8

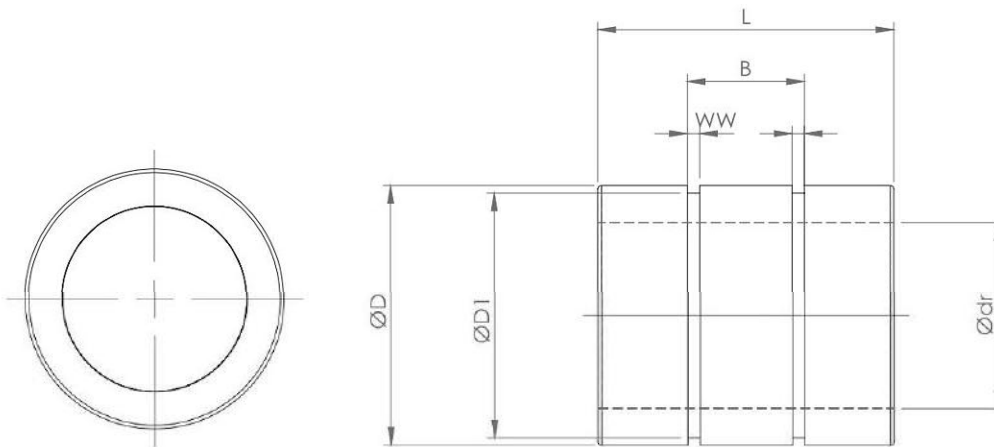
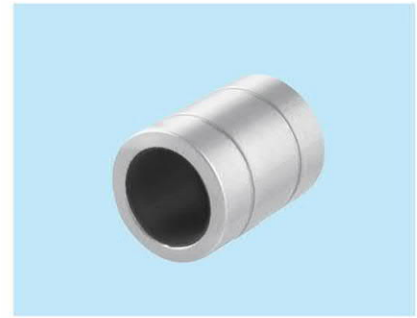
(mm)

7.8 SMT Thin Profile Type

Ordering Key: **SMT** **20**
1 2

1 SMT Thin Profile Self-Lubricated Linear Bearing

2 Bearing Inner Diameter



Model No.	Inner Dia.	Dimensions					Max. Static Load	Max. PV	Max. Speed	Weight
	Ødr (F8)	ØD (h6)	L	B	W	ØD1	(kgf)	(kgf * m/sec)	(m / sec)	(g)
SMT10	10	17	26	8.3	1.15	16.20	180	9.3	2	10.49
SMT12	12	19	28	8.7	1.35	18.00	230	12	2	12.97
SMT16	16	24	30	10.7	1.35	22.90	330	17.2	2	20.49
SMT20	20	28	30	13.3	1.65	26.60	420	21.5	2	24.59
SMT25	25	35	40	15.8	1.65	33.00	700	35.8	2	51.23
SMT30	30	40	50	18.8	1.90	38.00	1050	53.7	2	74.71
SMT40	40	52	60	24.4	2.20	49.00	1600	85.9	2	141.4
SMT50	50	62	70	29.4	2.20	59.00	2400	125	2	200.8

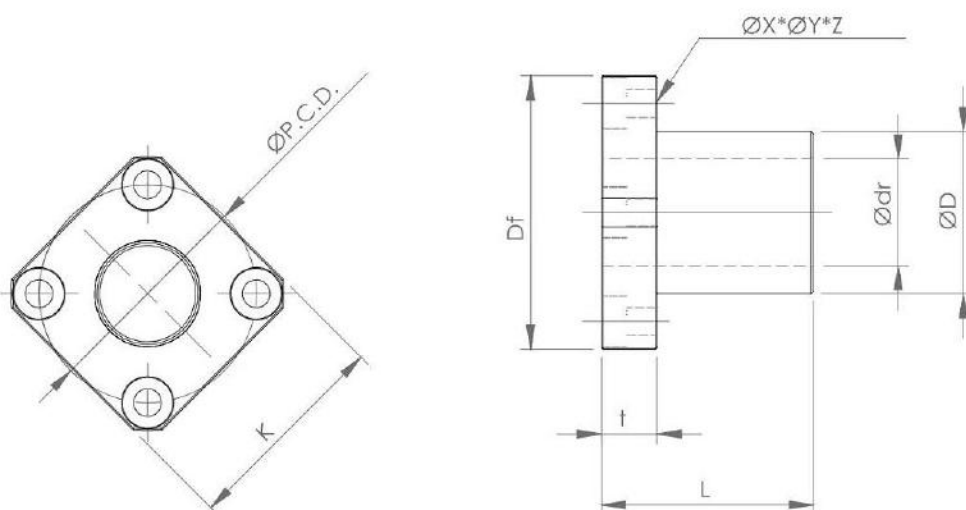
(mm)

7.9 SMK Square Flange Type

Ordering Key: **SMK** 20
1 2

1 SMK Square Flange Self-Lubricated Bearing

2 Bearing Inner Diameter



Model No.	Inner Dia.		Dimensions							
	Ødr (F8)	ØD (h6)	L	ØDf	K	t	P.C.D.	ØX	ØY	Z
SMK 10	10	19	29	40	30	9	29	4.5	7.5	4.1
SMK 12	12	21	30	42	32	9	32	4.5	7.5	4.1
SMK 13	13	23	32	43	34	9	33	4.5	7.5	4.1
SMK 16	16	28	37	48	37	9	38	4.5	7.5	4.1
SMK 20	20	32	42	54	42	11	43	5.5	9.0	5.1
SMK 25	25	40	59	62	50	11	51	5.5	9.0	5.1
SMK 30	30	45	64	74	58	14	60	6.6	11.0	6.1
SMK 35	35	52	70	82	64	14	67	6.6	11.0	6.1
SMK 40	40	60	80	96	75	18	78	9.0	14.0	8.1
SMK 50	50	80	100	116	92	20	98	9.0	14.0	8.1

(mm)

Model No.	Max. Static Load	Max. PV	Max. Speed	Weight (g)
	(kgf)	(kgf * m/sec)	(m / sec)	(g)
SMK 10	200	10.4	2	33
SMK 12	250	12.9	2	35
SMK 13	290	14.9	2	38
SMK 16	410	21.2	2	56
SMK 20	580	30.1	2	75
SMK 25	1000	52.8	2	149
SMK 30	1300	68.7	2	202
SMK 35	1700	87.7	2	296
SMK 40	2200	115.0	2	450
SMK 50	3500	179.0	2	1000

(mm)

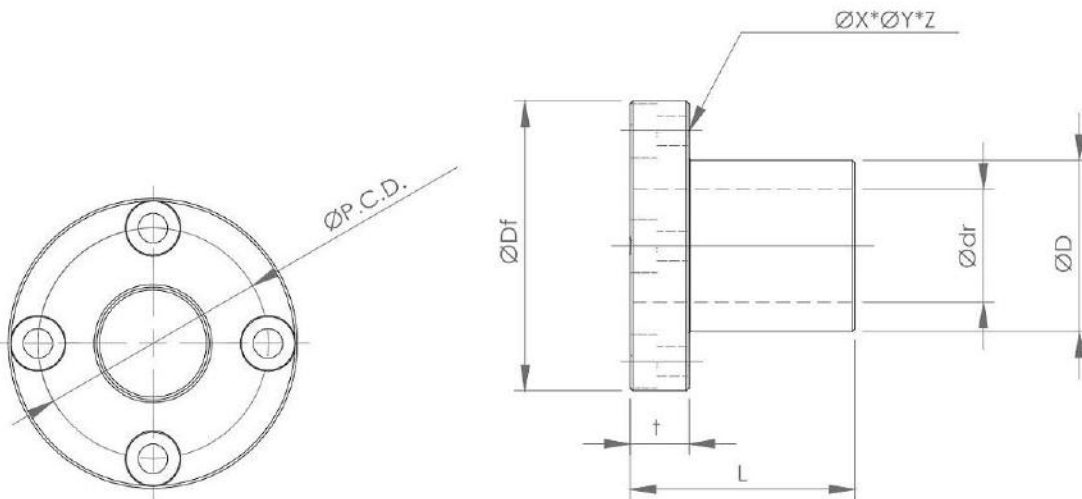
Linear Bearing

7.10 SMF Round Flange Type

Ordering Key: **SMF** **20**
1 2

1 SMF Round Flange Self-Lubricated Bearing

2 Bearing Inner Diameter



Model No.	Inner Dia.		Dimensions						
	Ødr (F8)	ØD (h6)	L	ØDf	t	P.C.D.	ØX	ØY	Z
SMF 6	6	12	19	28	8	20	3.5	6.0	3.1
SMF 8	8	15	24	32	8	24	3.5	6.0	3.1
SMF 10	10	19	29	40	9	29	4.5	7.5	4.1
SMF 12	12	21	30	42	9	32	4.5	7.5	4.1
SMF 16	16	28	37	48	9	38	4.5	7.5	4.1
SMF 20	20	32	42	54	11	43	5.5	9.0	5.1
SMF 25	25	40	59	62	11	51	5.5	9.0	5.1
SMF 30	30	45	64	74	14	60	6.6	11.0	6.1

(mm)

Model No.	Max. Static Load	Max. PV	Max. Speed	Weight
	(kgf)	(kgf * m/sec)	(m / sec)	(g)
SMF 6	80	4.1	2	12
SMF 8	130	6.9	2	14
SMF 10	200	10.4	2	36
SMF 12	250	12.9	2	38
SMF 16	410	21.2	2	60
SMF 20	580	30.1	2	80
SMF 25	1000	52.8	2	160
SMF 30	1300	68.7	2	212

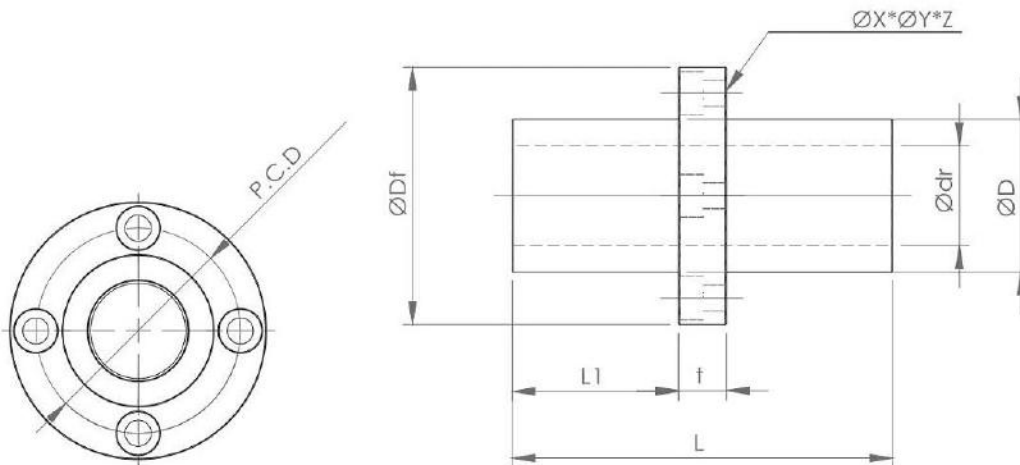
(mm)

7.11 SMFD Center Flange Type

Ordering Key: **SMFD** **20**
1 2

1 SMFD Center Flange Self-Lubricated Bearing

2 Bearing Inner Diameter



Model No.	Inner Dia.		Dimensions							
	Ødr (F8)	ØD (h6)	L	L1	ØDf	t	P.C.D	ØX	ØY	Z
SMFD 16	16	28	70	28.5	48	13	38	4.5	7.5	4.1
SMFD 20	20	32	80	32.5	54	15	43	5.5	9.0	5.1
SMFD 25	25	40	112	48.5	62	15	51	5.5	9.0	5.1
SMFD 30	30	45	123	51.5	74	20	60	6.6	11.0	6.1

(mm)

Model No.	Max. Static Load	Max. PV	Max. Speed	Weight
	(kgf)	(kgf * m/sec)	(m / sec)	(g)
SMFD 16	780	38.1	2	113
SMFD 20	1100	54.2	2	150
SMFD 25	1900	95	2	303
SMFD 30	2470	123.7	2	407

(mm)

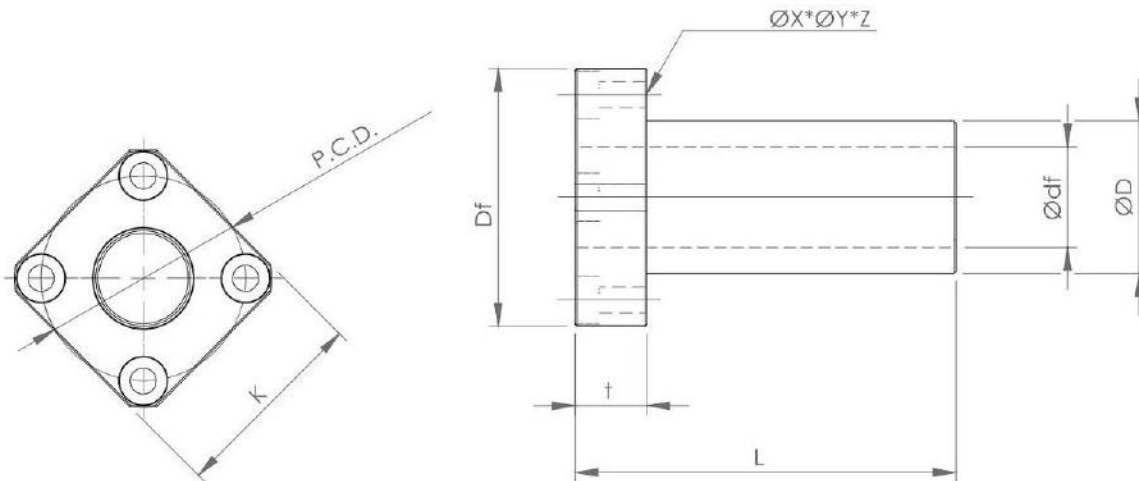
7.12 SMK-L Long Square Flange Type

Ordering Key: **SMK-L 20**

1 **2**

1 SMK-L Long Type Square Flange Self-Lubricated Bearing

2 Bearing Inner Diameter



Model No.	Inner Dia.		Dimensions							
	Ødr (F8)	ØD (h6)	L	ØDf	K	t	P.C.D.	ØX	ØY	Z
SMK10L	10	19	55	40	30	10	20	4.5	7.5	4.1
SMK12L	12	21	57	42	32	13	32	4.5	7.5	4.1
SMK16L	16	28	70	48	37	13	38	4.5	7.5	4.1
SMK20L	20	32	80	54	42	15	43	5.5	9.0	5.1
SMK25L	25	40	112	62	50	15	51	5.5	9.0	5.1
SMK30L	30	45	123	74	58	20	60	6.6	11.0	6.1
SMK35L	35	52	135	82	64	20	67	6.6	11.0	6.1
SMK40L	40	60	151	96	75	22	78	9.0	14.0	8.1

(mm)

Model No.	Max. Static Load	Max. PV	Max. Speed	Weight
	(kgf)	(kgf * m/sec)	(m / sec)	(g)
SMK10L	380	18.7	2	62
SMK12L	475	23.2	2	67
SMK16L	780	38.1	2	106
SMK20L	1100	54.2	2	143
SMK25L	1900	95.0	2	283
SMK30L	2470	123.7	2	388
SMK35L	3230	157.9	2	570
SMK40L	4180	207.0	2	849

(mm)

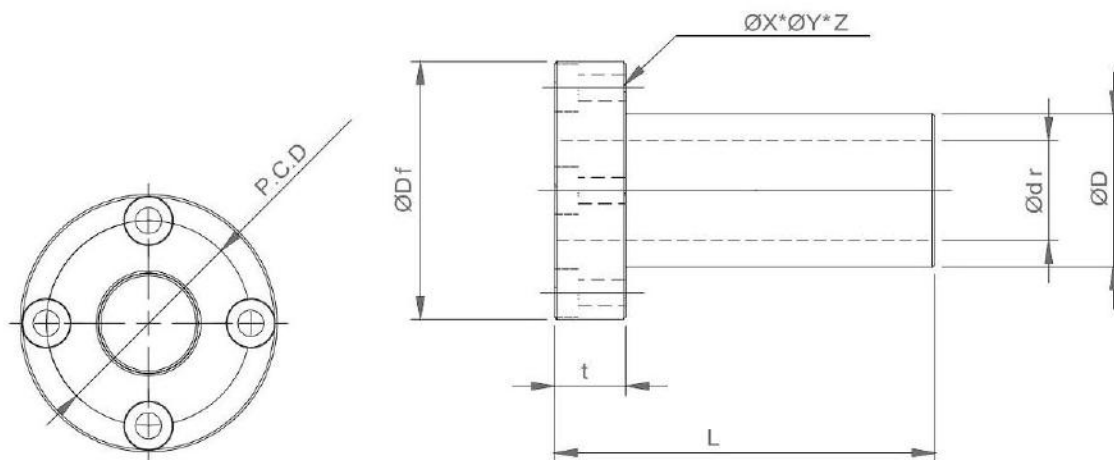
7.13 SMF-L Long Round Flange Type

Ordering Key: **SMF-L 20**

1 **2**

1 SMF-L Long Type Round Flange Self-Lubricated Bearing

2 Bearing Inner Diameter

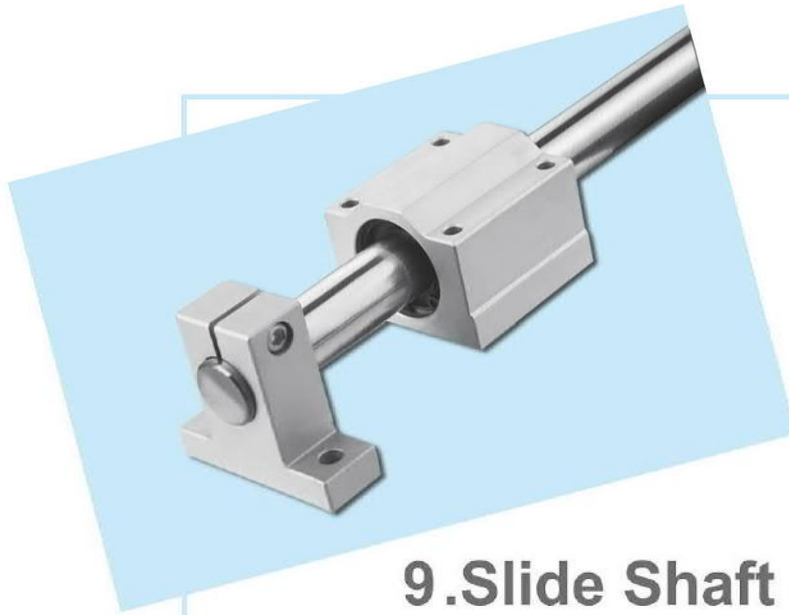


Model No.	Inner Dia.	Dimensions							
	Ødr (F8)	ØD (h6)	L	ØDf	t	P.C.D.	ØX	ØY	Z
SMF12L	12	21	57	42	13	32	4.5	7.5	4.1
SMF16L	16	28	70	48	13	38	4.5	7.5	4.1
SMF20L	20	32	80	54	15	43	5.5	9.0	5.1
SMF25L	25	40	112	62	15	51	5.5	9.0	5.1
SMF30L	30	45	123	74	20	60	6.6	11.0	6.1

(mm)

Model No.	Max. Static Load	Max. PV	Max. Speed	Weight
	(kgf)	(kgf * m/sec)	(m / sec)	(g)
SMF12L	475	23.2	2	72
SMF16L	780	38.1	2	113
SMF20L	1100	54.2	2	150
SMF25L	1900	95.0	2	303
SMF30L	2470	123.7	2	407

(mm)

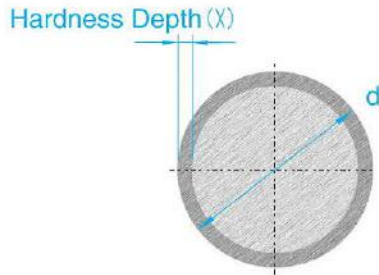


9.Slide Shaft & Slide Shaft Support

9.1 SF/Wv series (Slide Shaft)

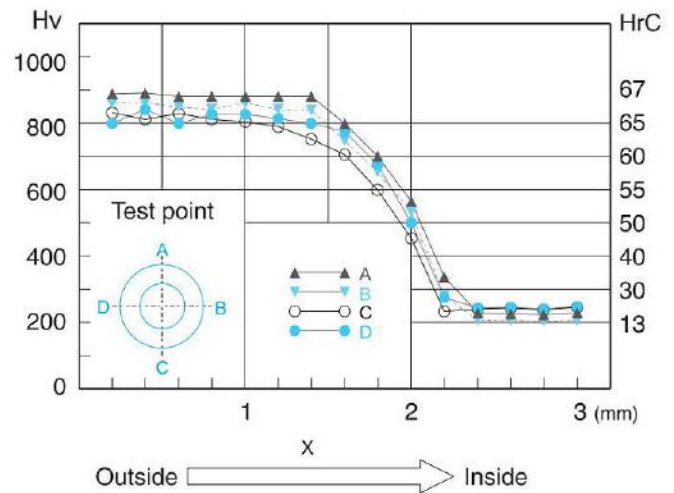
SF : Harden and ground

WV: Harden ground and Chromium plated



Specification:

1. Material : JIS(S55C)
2. Hardness : Hrc62±2.
3. Surface finish : Ra 0.2 - 0.4μm.
4. Shaft straightness : approx. 0.1~0.15 mm/m.
5. Shaft dia. tolerance : h7
If g6 or h6 tolerance is required, please advise.



Unit : mm

Model No.	d	Standard Length				Dia. tolerance h7	Hardness Depth (X)
		1500	2000	2500	3000		
★ SF6	6					0 / -0.012	1.0 ~ 1.5
★ SF8	8					0 / -0.015	1.0 ~ 1.5
★ SF10	10					0 / -0.015	1.0 ~ 1.5
★ SF12	12					0 / -0.018	1.0 ~ 1.5
★ SF16	16					0 / -0.018	1.8 ~ 2.2
★ SF20	20					0 / -0.021	1.8 ~ 2.2
★ SF25	25					0 / -0.021	1.8 ~ 2.2
★ SF30	30					0 / -0.021	1.8 ~ 2.2
★ SF32	32					0 / -0.025	1.8 ~ 2.2
★ SF40	40					0 / -0.025	1.8 ~ 2.2
★ SF50	50					0 / -0.025	1.8 ~ 2.2

Note: 1. With sign ★ can supply Chromium plated slide shaft (Model No:WV)

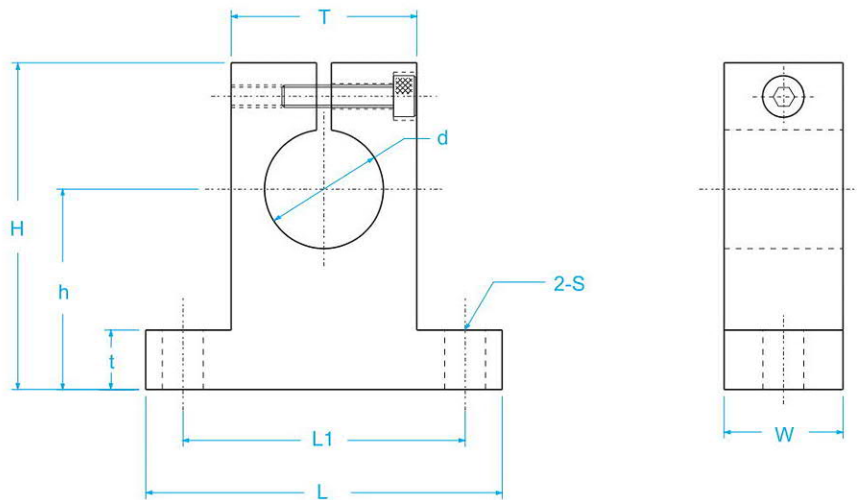
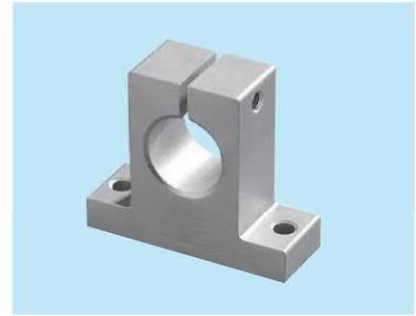
2. Hard Chrome thickness : 20μm.

9.2 SS series (Slide Shaft Support)

Ordering Key: **SS** **20**
1 **2**

1 6061-T6 Aluminum Alloy

2 Shaft Dia.



Unit : mm

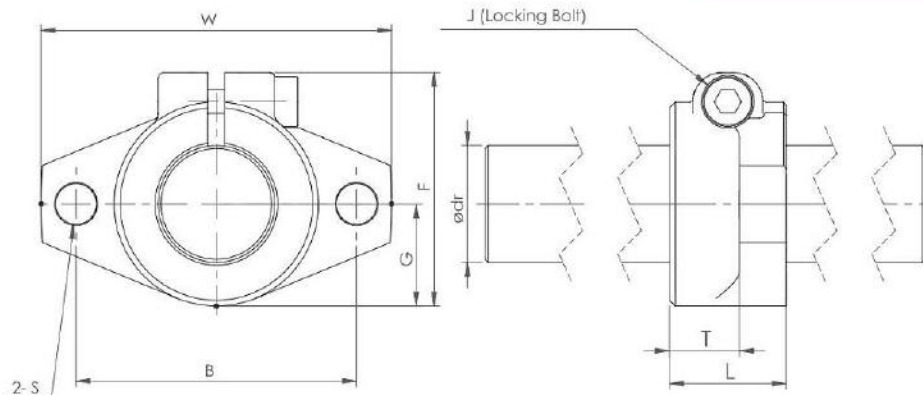
Model No.	Basic Dimension									Weight (g)
	d	h	L	W	H	t	T	L1	S	
SS4	4	20	42	14	32.8	6	18	32	5.5	24
SS6	6	20	42	14	32.8	6	18	32	5.5	24
SS8	8	20	42	14	32.8	6	18	32	5.5	24
SS10	10	20	42	14	32.8	6	18	32	5.5	24
SS12	12	23	42	14	37.5	6	20	32	5.5	30
SS16	16	27	48	16	44	8	25	38	5.5	40
SS20	20	31	60	20	51	10	30	45	6.6	70
SS25	25	35	70	24	60	12	38	56	6.6	130
SS30	30	42	84	28	70	12	44	64	9	180
SS40	40	60	114	36	96	15	60	90	11	420
SS50	50	70	126	40	120	18	74	100	14	750
SS60	60	80	148	45	136	18	90	120	14	1100

9.3 SHF series (Slide Shaft Support)

Ordering Key: **SHF** 20
1 2

1 S6061-T6 Aluminum Alloy

2 Shaft Dia.



Unit : mm

Model No.	Basic Dimension								
	dr	W	L	T	F	G	B	S	J
SHF 4	4	43	10	5	24	20.0	32	5.5	M4
SHF 5	5	43	10	5	24	20.0	32	5.5	M4
SHF 6	6	43	10	5	24	20.0	32	5.5	M4
SHF 8	8	43	10	5	24	20.0	32	5.5	M4
SHF 10	10	36	10	5	24	10.0	32	5.5	M4
SHF 12	12	47	13	7	28	12.5	36	5.5	M4
SHF 13	13	47	13	7	28	12.5	36	5.5	M4
SHF 16	16	50	16	8	31	14.0	40	5.5	M4
SHF 20	20	60	20	8	37	17.0	48	7.0	M5
SHF 25	25	70	25	10	42	20.0	56	7.0	M5
SHF 30	30	80	30	12	50	23.0	64	9.0	M6
SHF 35	35	92	35	14	58	25.0	72	12.0	M8
SHF 40	40	102	40	16	67	28.0	80	12.0	M10
SHF 50	50	122	50	19	83	35.0	96	14.0	M12
SHF 60	60	140	60	23	95	41.0	112	14.0	M12

