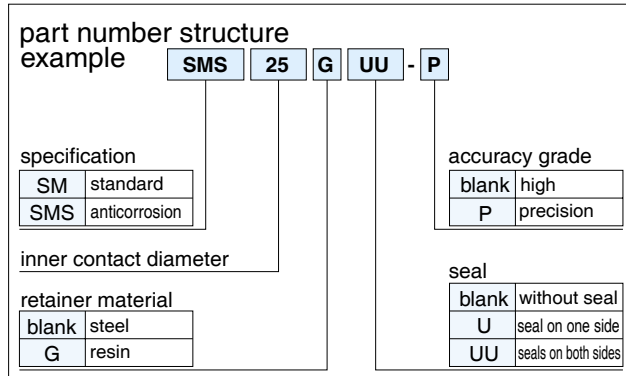


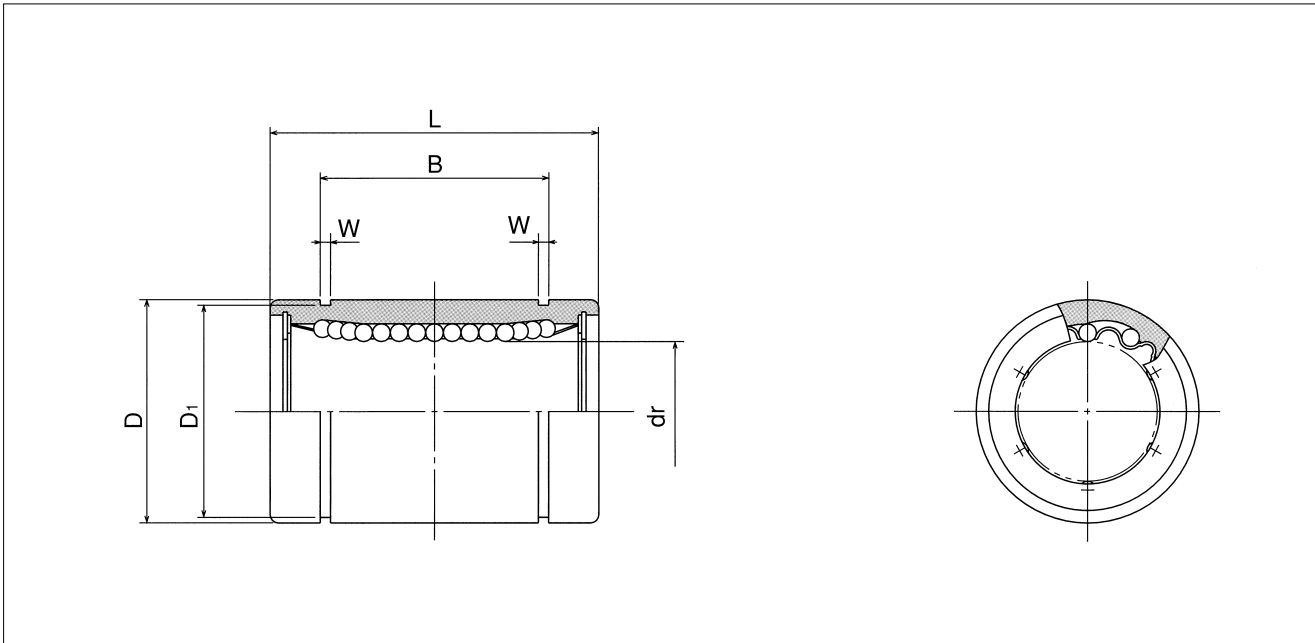
## SM TYPE

### – Standard Type –

This type is a metric dimension series widely used in Japan and other countries.



part number				number of ball circuits	dr mm	dr tolerance $\mu\text{m}$		D	
standard		anticorrosion				precision	high	mm	tolerance $\mu\text{m}$
steel retainer	resin retainer	stainless retainer	resin retainer						
SM 3	SM 3G	SMS 3	SMS 3G	4	3	0	0	7	0
SM 4	SM 4G	SMS 4	SMS 4G	4	4	- 5	- 8	8	- 9
SM 5	SM 5G	SMS 5	SMS 5G	4	5			10	
SM 6	SM 6G	SMS 6	SMS 6G	4	6			12	0
SM 8s	SM8sG	SMS8s	SMS8sG	4	8			15	- 11
SM 8	SM 8G	SMS 8	SMS 8G	4	8			15	
SM 10	SM10G	SMS10	SMS10G	4	10	0	0	19	
SM 12	SM12G	SMS12	SMS12G	4	12	- 6	- 9	21	0
SM 13	SM13G	SMS13	SMS13G	4	13			23	- 13
SM 16	SM16G	SMS16	SMS16G	4	16			28	
SM 20	SM20G	SMS20	SMS20G	5	20			32	
SM 25	SM25G	SMS25	SMS25G	6	25	0	0	40	0
SM 30	SM30G	SMS30	SMS30G	6	30	- 7	- 10	45	- 16
SM 35	SM35G	SMS35	SMS35G	6	35			52	0
SM 40	SM40G	SMS40	SMS40G	6	40	- 8	- 12	60	- 19
SM 50	SM50G	SMS50	SMS50G	6	50			80	
SM 60	SM60G	SMS60	SMS60G	6	60	0	0	90	0
SM 80	SM80G	-	-	6	80	- 9	- 15	120	- 22
SM100	-	-	-	6	100	0	0	150	0
SM120	-	-	-	8	120	- 10	- 20	180	- 25
SM150	-	-	-	8	150	0/- 13	0/- 25	210	0/- 29



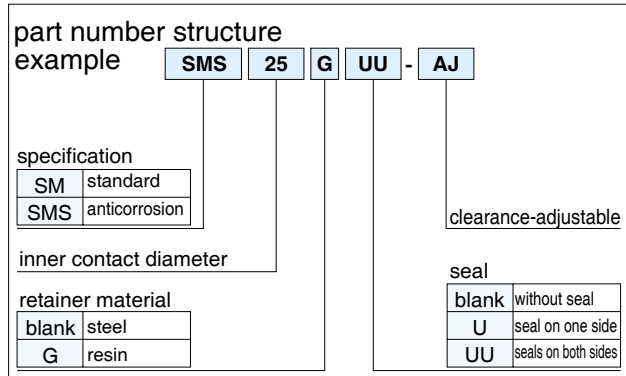
major dimensions						eccentricity		radial clearance (maximum) μm	basic load rating		mass g	shaft diameter mm
L	B	W	D <sub>1</sub>	precision	high	dynamic C	static Co					
mm	tolerance mm	mm	tolerance mm	mm	mm	μm	μm	μm	N	N	g	mm
10	0	—	—	—	—	4	8	- 3	69	105	1.4	3
12	-0.12	—	—	—	—				88	127	2.0	4
15	—	10.2	—	1.1	9.6				167	206	4.0	5
19	0	13.5	0	1.1	11.5	8	12		206	265	8.5	6
17		11.5		1.1	14.3				176	216	11	8
24		17.5		1.1	14.3				274	392	17	8
29		22		1.3	18			372	549	36	10	
30		-0.2		23	1.3			20	510	784	42	12
32	—	23	—	1.3	22	8	12	- 4	510	784	49	13
37	—	26.5	—	1.6	27			774	1,180	76	16	
42	—	30.5	—	1.6	30.5			882	1,370	100	20	
59	0	41	0	1.85	38	10	15	- 6	980	1,570	240	25
64		44.5		1.85	43			1,570	2,740	270	30	
70		49.5		2.1	49			1,670	3,140	425	35	
80		-0.3		60.5	2.1			57	2,160	4,020	654	40
100		—		74	—			2.6	76.5	3,820	7,940	1,700
110	—	85	—	3.15	86.5	17	25	- 13	4,700	10,000	2,000	60
140	—	105.5	—	4.15	116			- 20	7,350	16,000	4,520	80
175	0	125.5	0	4.15	145			14,100	34,800	8,600	100	
200	-0.4	158.6	-0.4	4.15	175	20	30	- 25	16,400	40,000	15,000	120
240	—	170.6	—	5.15	204			25	40	- 25	21,100	54,300

1N≐0.102kgf

## SM-AJ TYPE

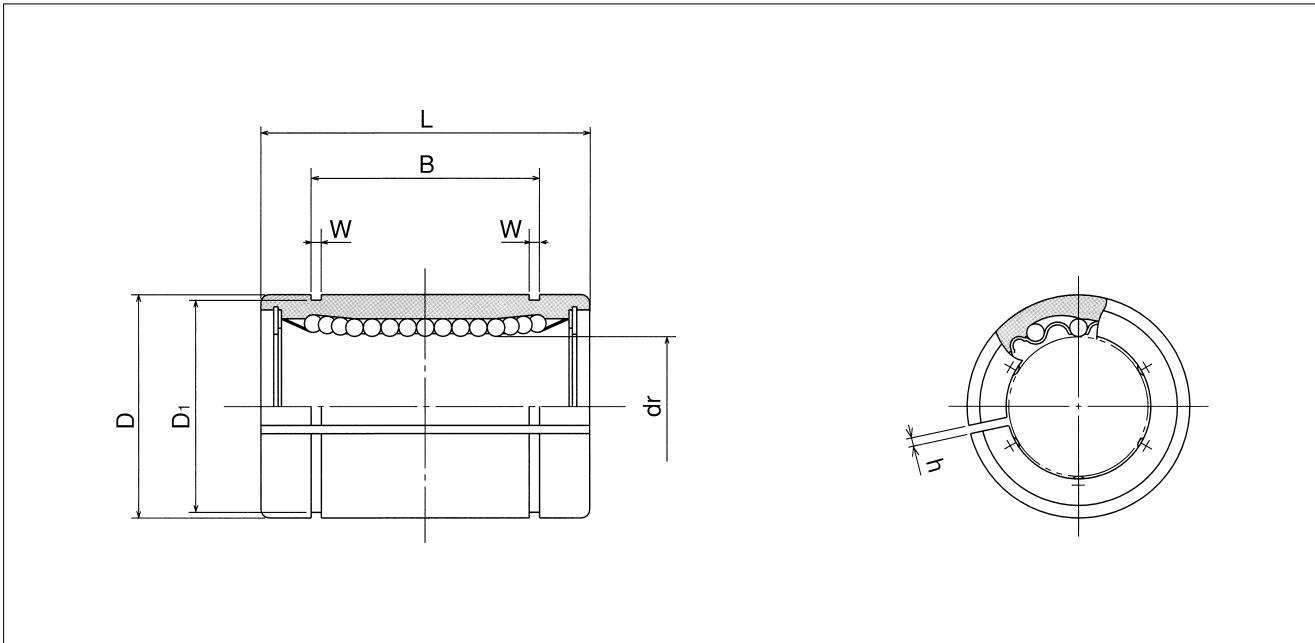
### — Clearance-Adjustable Type —

This type is a metric dimension series widely used in Japan and other countries.



part number				number of ball circuits	dr			
standard		anticorrosion			mm	tolerance* μm	D	
steel retainer	resin retainer	stainless retainer	resin retainer				mm	tolerance* μm
—	<b>SM 6G-AJ</b>	—	<b>SMS 6G-AJ</b>	4	6	0 - 9	12	0
—	<b>SM8sG-AJ</b>	—	<b>SMS8sG-AJ</b>	4	8		15	- 11
—	<b>SM 8G-AJ</b>	—	<b>SMS 8G-AJ</b>	4	8		15	
—	<b>SM10G-AJ</b>	—	<b>SMS10G-AJ</b>	4	10		19	0 - 13
<b>SM 12-AJ</b>	<b>SM12G-AJ</b>	<b>SMS12-AJ</b>	<b>SMS12G-AJ</b>	4	12	21		
<b>SM 13-AJ</b>	<b>SM13G-AJ</b>	<b>SMS13-AJ</b>	<b>SMS13G-AJ</b>	4	13	23		
<b>SM 16-AJ</b>	<b>SM16G-AJ</b>	<b>SMS16-AJ</b>	<b>SMS16G-AJ</b>	4	16	28	0 - 16	
<b>SM 20-AJ</b>	<b>SM20G-AJ</b>	<b>SMS20-AJ</b>	<b>SMS20G-AJ</b>	5	20	32		
<b>SM 25-AJ</b>	<b>SM25G-AJ</b>	<b>SMS25-AJ</b>	<b>SMS25G-AJ</b>	6	25	40		
<b>SM 30-AJ</b>	<b>SM30G-AJ</b>	<b>SMS30-AJ</b>	<b>SMS30G-AJ</b>	6	30	45	0 - 12	
<b>SM 35-AJ</b>	<b>SM35G-AJ</b>	<b>SMS35-AJ</b>	<b>SMS35G-AJ</b>	6	35	52		
<b>SM 40-AJ</b>	<b>SM40G-AJ</b>	<b>SMS40-AJ</b>	<b>SMS40G-AJ</b>	6	40	60		
<b>SM 50-AJ</b>	<b>SM50G-AJ</b>	<b>SMS50-AJ</b>	<b>SMS50G-AJ</b>	6	50	80	0 - 19	
<b>SM 60-AJ</b>	<b>SM60G-AJ</b>	<b>SMS60-AJ</b>	<b>SMS60G-AJ</b>	6	60	90		
<b>SM 80-AJ</b>	<b>SM80G-AJ</b>	—	—	6	80	120		
<b>SM100-AJ</b>	—	—	—	6	100	150	0	
<b>SM120-AJ</b>	—	—	—	8	120	180	- 25	
<b>SM150-AJ</b>	—	—	—	8	150	0/- 25	210	0/- 29

\* Accuracy is measured prior to machining clearance slot.



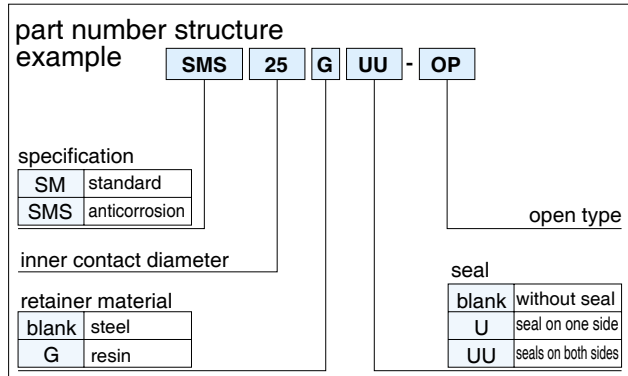
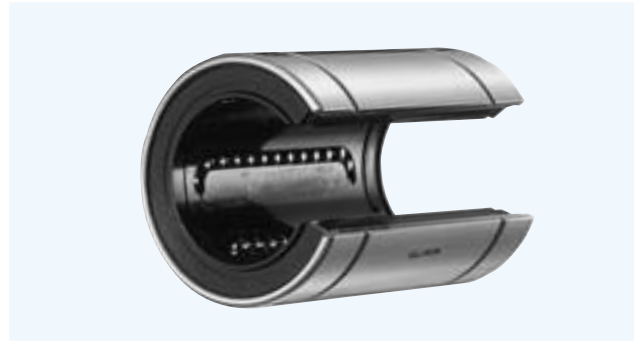
major dimensions							eccentricity* μm	basic load rating		mass g	shaft diameter mm		
mm	L	mm	B	mm	mm	mm		dynamic C N	static Co N				
	tolerance mm											tolerance mm	
19	0 -0.2	13.5	0 -0.2	1.1	11.5	1	12	206	265	7.5	6		
17		11.5		1.1	14.3	1		176	216			10	8
24		17.5		1.1	14.3	1		274	392			14.7	8
29		22		1.3	18	1		372	549			29	10
30		23		1.3	20	1.5		510	784			41	12
32		23		1.3	22	1.5		510	784			48	13
37		26.5		1.6	27	1.5		774	1,180			75	16
42		30.5		1.6	30.5	1.5		882	1,370			98	20
59	0 -0.3	41	0 -0.3	1.85	38	2	15	980	1,570	237	25		
64		44.5		1.85	43	2.5		1,570	2,740			262	30
70		49.5		2.1	49	2.5		1,670	3,140			420	35
80		60.5		2.1	57	3		2,160	4,020			640	40
100	-0.4	74	-0.4	2.6	76.5	3	20	3,820	7,940	1,680	50		
110		85		3.15	86.5	3		4,700	10,000			1,980	60
140		105.5		4.15	116	3		7,350	16,000			4,400	80
175	0 -0.4	125.5	0 -0.4	4.15	145	3	25	14,100	34,800	8,540	100		
200		158.6		4.15	175	3		16,400	40,000			14,900	120
240		170.6		5.15	204	3		21,100	54,300			20,150	150
									40				

1N≐0.102kgf

## SM-OP TYPE

### — Open Type —

This type is a metric dimension series widely used in Japan and other countries.



part number				number of ball circuits	dr			
standard		anticorrosion			mm	tolerance* μm	D	
steel retainer	resin retainer	stainless retainer	resin retainer				mm	tolerance* μm
—	<b>SM10G-OP</b>	—	<b>SMS10G-OP</b>	3	10		19	
<b>SM 12-OP</b>	<b>SM12G-OP</b>	<b>SMS12-OP</b>	<b>SMS12G-OP</b>	3	12	0	21	0
<b>SM 13-OP</b>	<b>SM13G-OP</b>	<b>SMS13-OP</b>	<b>SMS13G-OP</b>	3	13	-9	23	-13
<b>SM 16-OP</b>	<b>SM16G-OP</b>	<b>SMS16-OP</b>	<b>SMS16G-OP</b>	3	16		28	
<b>SM 20-OP</b>	<b>SM20G-OP</b>	<b>SMS20-OP</b>	<b>SMS20G-OP</b>	4	20		32	
<b>SM 25-OP</b>	<b>SM25G-OP</b>	<b>SMS25-OP</b>	<b>SMS25G-OP</b>	5	25	0	40	0
<b>SM 30-OP</b>	<b>SM30G-OP</b>	<b>SMS30-OP</b>	<b>SMS30G-OP</b>	5	30	-10	45	-16
<b>SM 35-OP</b>	<b>SM35G-OP</b>	<b>SMS35-OP</b>	<b>SMS35G-OP</b>	5	35		52	
<b>SM 40-OP</b>	<b>SM40G-OP</b>	<b>SMS40-OP</b>	<b>SMS40G-OP</b>	5	40	0	60	0
<b>SM 50-OP</b>	<b>SM50G-OP</b>	<b>SMS50-OP</b>	<b>SMS50G-OP</b>	5	50	-12	80	-19
<b>SM 60-OP</b>	<b>SM60G-OP</b>	<b>SMS60-OP</b>	<b>SMS60G-OP</b>	5	60	0	90	0
<b>SM 80-OP</b>	<b>SM80G-OP</b>	—	—	5	80	-15	120	-22
<b>SM100-OP</b>	—	—	—	5	100	0	150	0
<b>SM120-OP</b>	—	—	—	6	120	-20	180	-25
<b>SM150-OP</b>	—	—	—	6	150	0/-25	210	0/-29

\* Accuracy is measured prior to machining open slot.

# SLIDE BUSH

SLIDE GUIDE

BALL SPLINE  
ROTARY BALL SPLINE

TOPBALL® PRODUCTS

SLIDE BUSH

SLIDE UNIT

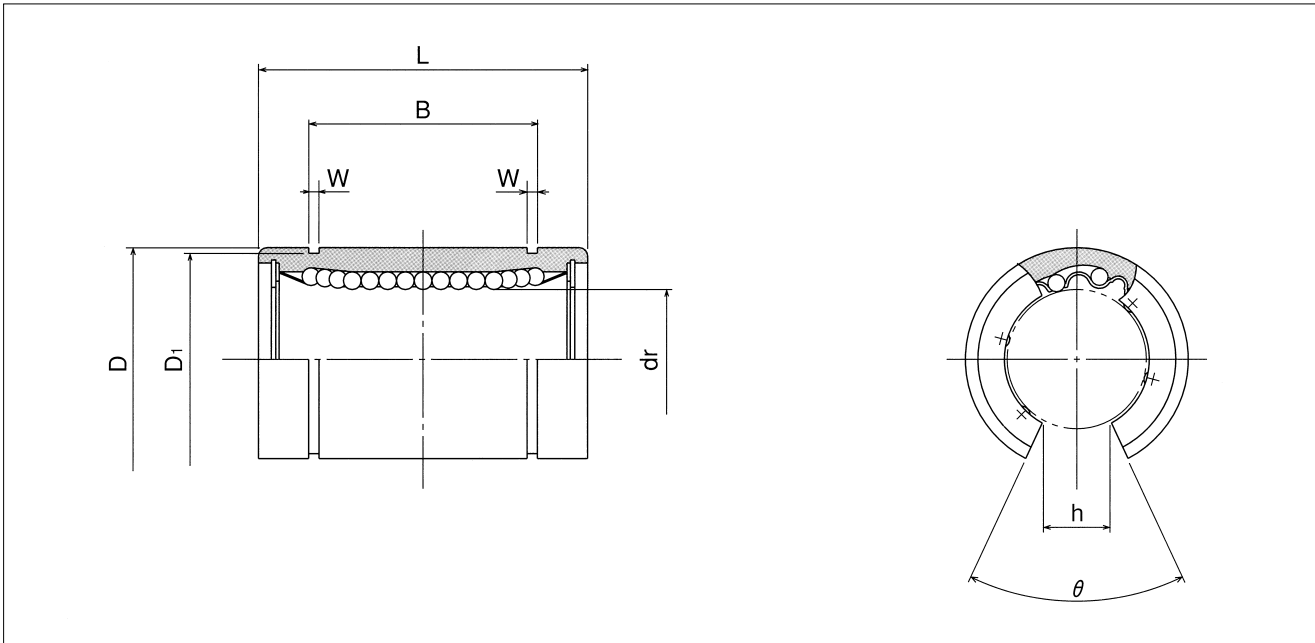
STROKE BUSH  
SLIDE ROTARY BUSH

SLIDE SHAFT

SLIDE WAY  
SLIDE TABLE  
GONIO WAY

ACTUATOR

SLIDE SCREW



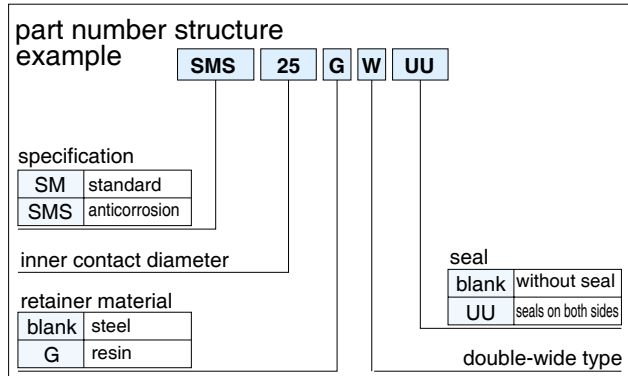
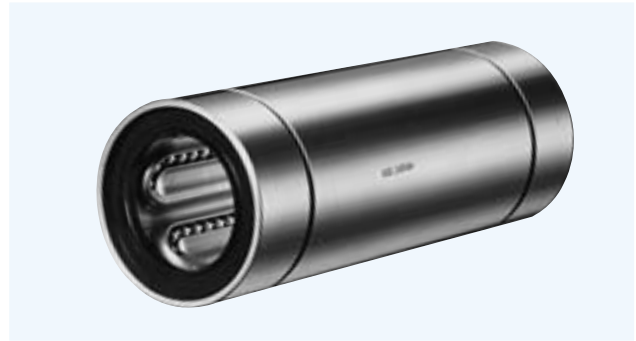
major dimensions								eccentricity* μm	basic load rating		mass g	shaft diameter mm
L mm	tolerance mm	B mm	tolerance mm	W mm	D <sub>1</sub> mm	h mm	θ		dynamic	static		
									C N	Co N		
29	0 -0.2	22	0 -0.2	1.3	18	6.8	80°	12	372	549	23	10
30		23		1.3	20	8	80°		510	784	32	12
32		23		1.3	22	9	80°		510	784	37	13
37		26.5		1.6	27	11	80°		774	1,180	58	16
42		30.5		1.6	30.5	11	60°		882	1,370	79	20
59	0 -0.3	41	0 -0.3	1.85	38	12	50°	15	980	1,570	203	25
64		44.5		1.85	43	15	50°		1,570	2,740	228	30
70		49.5		2.1	49	17	50°		1,670	3,140	355	35
80		60.5		2.1	57	20	50°		2,160	4,020	546	40
100		74		2.6	76.5	25	50°		3,820	7,940	1,420	50
110	0 -0.4	85	0 -0.4	3.15	86.5	30	50°	25	4,700	10,000	1,650	60
140		105.5		4.15	116	40	50°		7,350	16,000	3,750	80
175		125.5		4.15	145	50	50°		14,100	34,800	7,200	100
200		158.6		4.15	175	85	80°		16,400	40,000	11,600	120
240		170.6		5.15	204	105	80°		21,100	54,300	15,700	150

1N≐0.102kgf

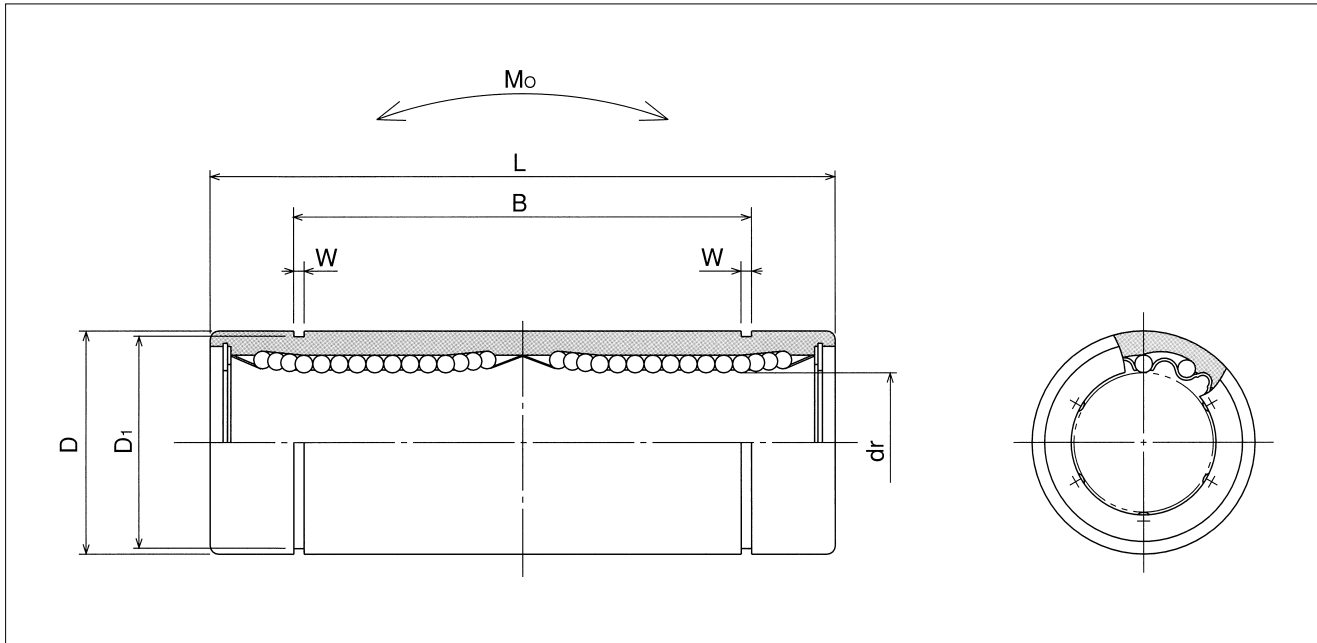
## SM-W TYPE

### – Double-Wide Type –

This type is a metric dimension series widely used in Japan and other countries.



part number				number of ball circuits	dr			
standard		anticorrosion			mm	tolerance $\mu\text{m}$	D	
steel retainer	resin retainer	stainless retainer	resin retainer				mm	tolerance $\mu\text{m}$
SM 5W	SM 5GW	SMS 5W	SMS 5GW	4	5	0 -10	10	0/-11
SM 6W	SM 6GW	SMS 6W	SMS 6GW	4	6		12	0
SM 8W	SM 8GW	SMS 8W	SMS 8GW	4	8		15	-13
SM10W	SM10GW	SMS10W	SMS10GW	4	10		19	0 -16
SM12W	SM12GW	SMS12W	SMS12GW	4	12		21	
SM13W	SM13GW	SMS13W	SMS13GW	4	13		23	
SM16W	SM16GW	SMS16W	SMS16GW	4	16	28	0 -19	
SM20W	SM20GW	SMS20W	SMS20GW	5	20	32		
SM25W	SM25GW	SMS25W	SMS25GW	6	25	40		
SM30W	SM30GW	SMS30W	SMS30GW	6	30	-12	45	-22
SM35W	SM35GW	SMS35W	SMS35GW	6	35		52	
SM40W	SM40GW	SMS40W	SMS40GW	6	40	0 -15	60	0
SM50W	SM50GW	SMS50W	SMS50GW	6	50		80	
SM60W	SM60GW	SMS60W	SMS60GW	6	60	0/-20	90	0/-25



major dimensions						eccentricity	basic load rating		allowable static moment $M_o$	mass	shaft diameter
	$L$	$B$		$W$	$D_1$		dynamic $C$	static $C_o$			
mm	tolerance mm	mm	tolerance mm	mm	mm	$\mu m$	N	N	$N \cdot m$	g	mm
28	0 -0.3	20.4	0 -0.3	1.1	9.6	10	265	412	1.38	11	5
35		27		1.1	11.5	15	323	530	2.18	16	6
45		35		1.1	14.3		431	784	4.31	31	8
55		44		1.3	18		588	1,100	7.24	62	10
57		46		1.3	20		813	1,570	10.9	80	12
61		46		1.3	22		813	1,570	11.6	90	13
70		53		1.6	27		1,230	2,350	19.7	145	16
80		61		1.6	30.5		1,400	2,740	26.8	180	20
112	0 -0.4	82	0 -0.4	1.85	38		20	1,560	3,140	43.4	440
123		89		1.85	43	2,490	5,490	82.8	480	30	
135		99		2.1	49	2,650	6,270	110	795	35	
151		121		2.1	57	25	3,430	8,040	147	1,170	40
192		148		2.6	76.5	6,080	15,900	397	3,100	50	
209		170		3.15	86.5	30	7,550	20,000	530	3,500	60

1N  $\approx$  0.102kgf 1N·m  $\approx$  0.102kgf·m