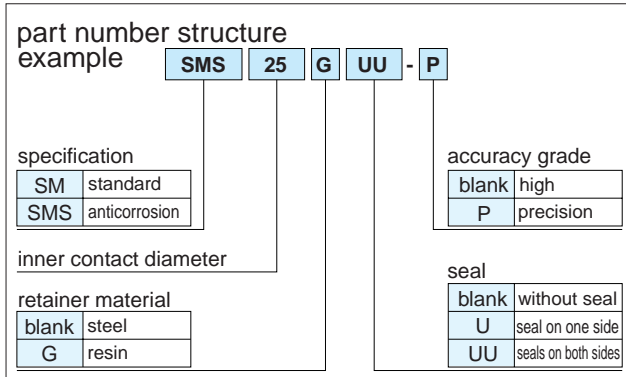


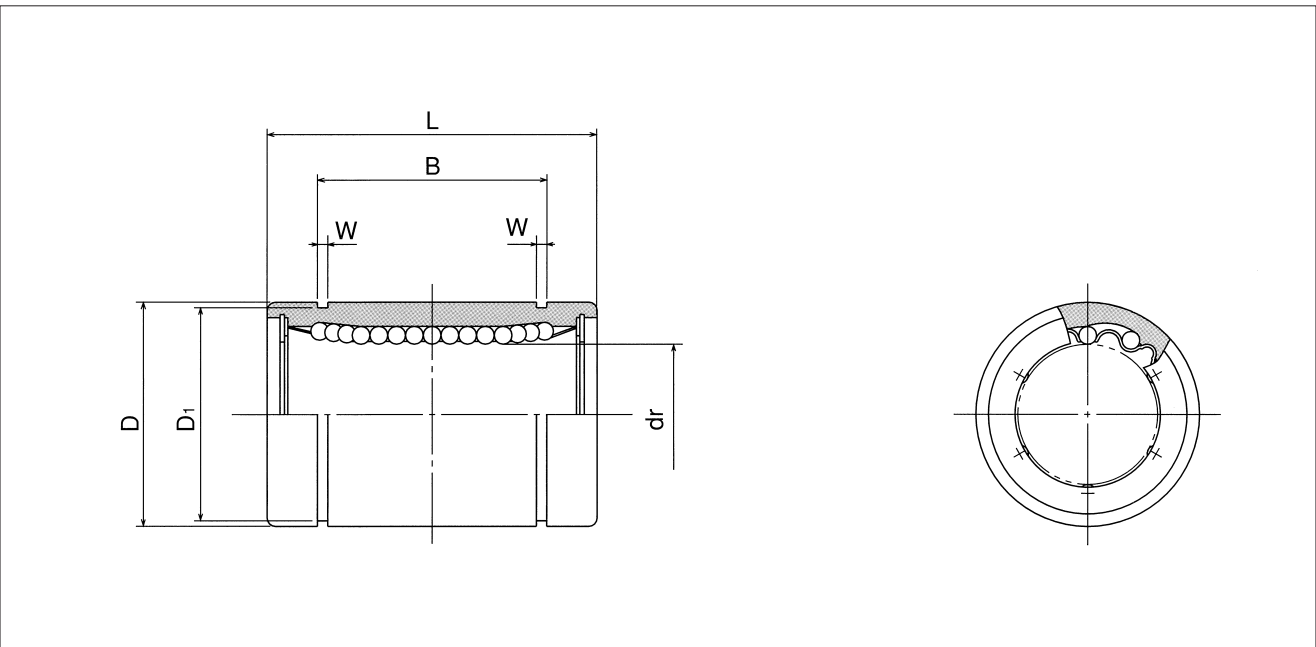
SM TYPE

— 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 μm		D	
standard		anticorrosion				precision	high	mm	tolerance μm
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	0	0	32	0
SM 25	SM25G	SMS25	SMS25G	6	25	- 7	- 10	40	- 16
SM 30	SM30G	SMS30	SMS30G	6	30			45	
SM 35	SM35G	SMS35	SMS35G	6	35	0	0	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	SMS80	SMS80G	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



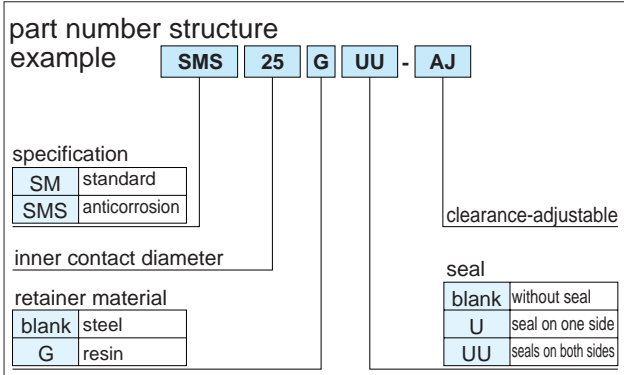
major dimensions						eccentricity		radial clearance (maximum) μm	basic load rating		mass g	shaft diameter mm					
L	B	W	D ₁	precision	high	dynamic C N	static C ₀ N										
mm	tolerance mm	mm	tolerance mm	mm	mm	μm	μm	μm	N	N	g	mm					
10	0	—	—	—	—	4	8	— 3	69	105	1.4	3					
12	-0.12	—	—	—	—				88	127	2.0	4					
15		10.2	—	—	—				167	206	4.0	5					
19	0	13.5	0	1.1	9.6	8	12	— 4	206	265	8.5	6					
17		11.5		1.1	11.5				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	510	784	49	13									
37	26.5		1.6	27	774	1,180	76	16									
42	0	30.5	0	1.6	30.5	10	15	— 6	882	1,370	100	20					
59		41		1.85	38				980	1,570	240	25					
64		44.5		1.85	43				1,570	2,740	270	30					
70	-0.3	49.5	0	2.1	49	12	20	— 8	1,670	3,140	425	35					
80		60.5		2.1	57				-10	2,160	4,020	654	40				
100		74		2.6	76.5				-13	3,820	7,940	1,700	50				
110	85	3.15	86.5	17	25	4,700	10,000	2,000		60							
140	0	105.5	0	4.15	116	20	30	-20	7,350	16,000	4,520	80					
175		125.5		4.15	145				14,100	34,800	8,600	100					
200		-0.4		158.6	-0.4				4.15	175	25	40	-25	16,400	40,000	15,000	120
240				170.6					5.15	204				21,100	54,300	20,250	150

1N ≙ 0.102kgf

SM-AJ TYPE

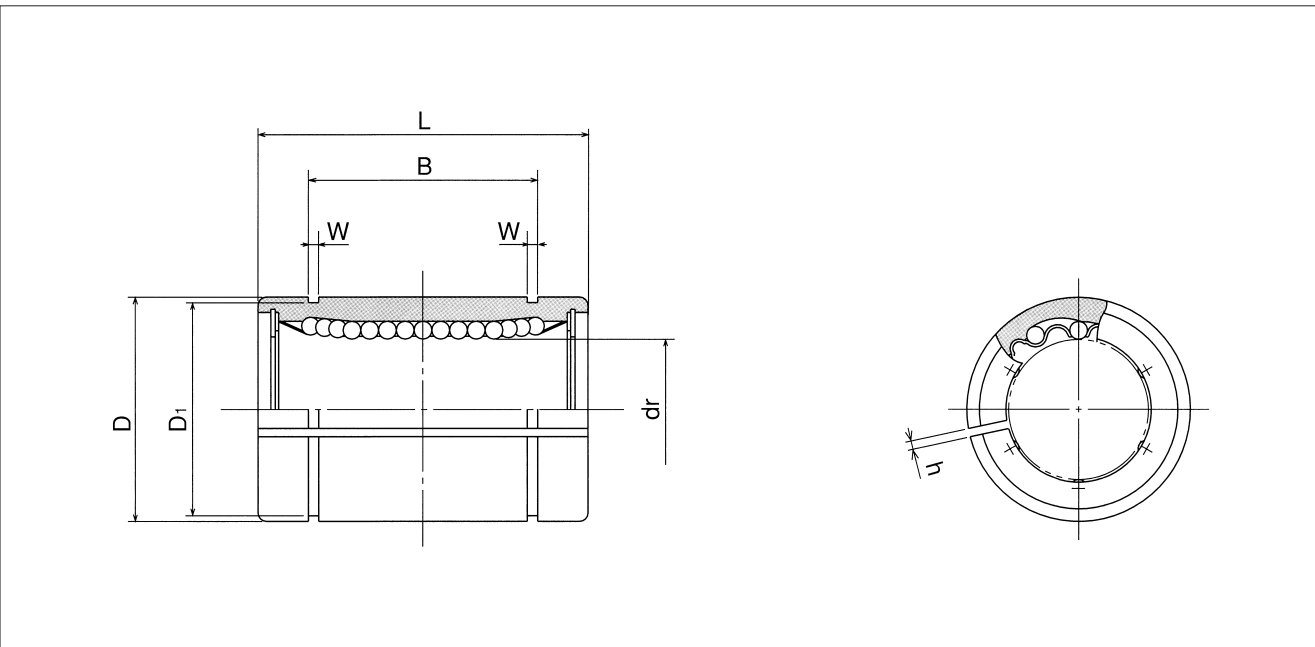
— Clearance-Adjustable Type —

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



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

* Accuracy is measured prior to machining clearance slot.



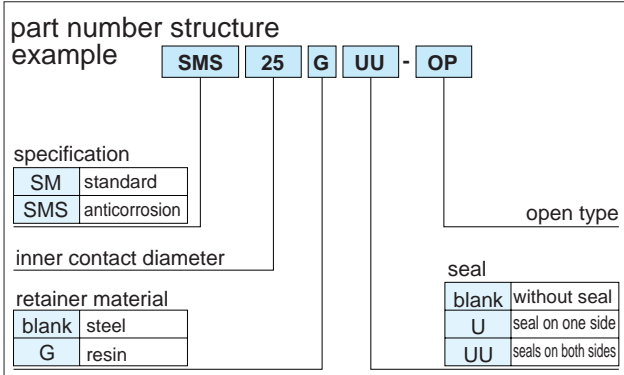
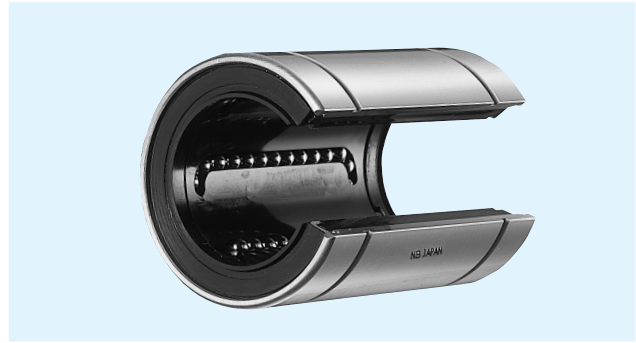
major dimensions							eccentricity* μm	basic load rating		mass g	shaft diameter mm		
L mm	tolerance mm	B mm	tolerance mm	W mm	D ₁ mm	h mm		dynamic	static				
								C N	C ₀ N				
19	0 -0.2	13.5	0 -0.2	1.1	11.5	1	12	206	265	7.5	6		
17		11.5		1.1	14.3	1		176	216			10	
24		17.5		1.1	14.3	1		274	392				
29		22		1.3	18	1		372	549			29	10
30		23		1.3	20	1.5		510	784				
32		23		1.3	22	1.5		510	784			48	13
37		26.5		1.6	27	1.5		774	1,180				
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				
80		60.5		2.1	57	3		2,160	4,020			640	40
100	74	2.6	76.5	3	3,820	7,940	1,680	50					
110	85	3.15	86.5	3	4,700	10,000			1,980	60			
140	0 -0.4	105.5	0 -0.4	4.15	116	3	25	7,350			16,000	4,400	80
175		125.5		4.15	145	3		14,100	34,800	8,540	100		
200		158.6		4.15	175	3		16,400	40,000				
240		170.6		5.15	204	3		21,100	54,300	20,150	150		

1N≐0.102kgf

SM-OP TYPE

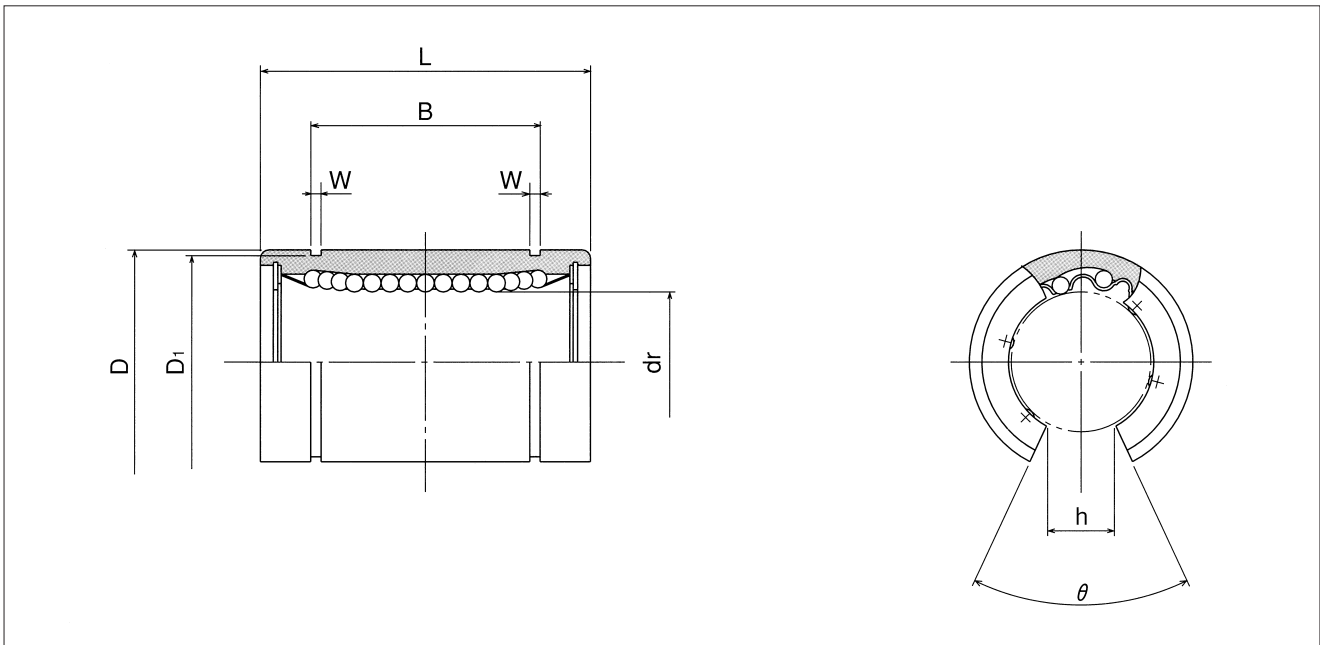
— Open Type —

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



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

* Accuracy is measured prior to machining open slot.



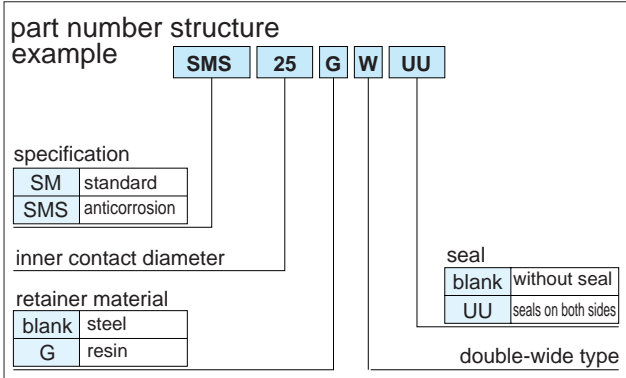
major dimensions								eccentricity*	basic load rating		mass g	shaft diameter mm
L	B	W	D_1	h	θ	dynamic C N	static C_0 N					
mm	tolerance mm	mm	tolerance mm	mm	mm	mm	μ m					
29	0 -0.2	22	0 -0.2	1.3	18	6.8	12	372	549	23	10	
30		23		1.3	20	8		80°	510	784	32	12
32		23		1.3	22	9		80°	510	784	37	13
37		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	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	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 \approx 0.102kgf

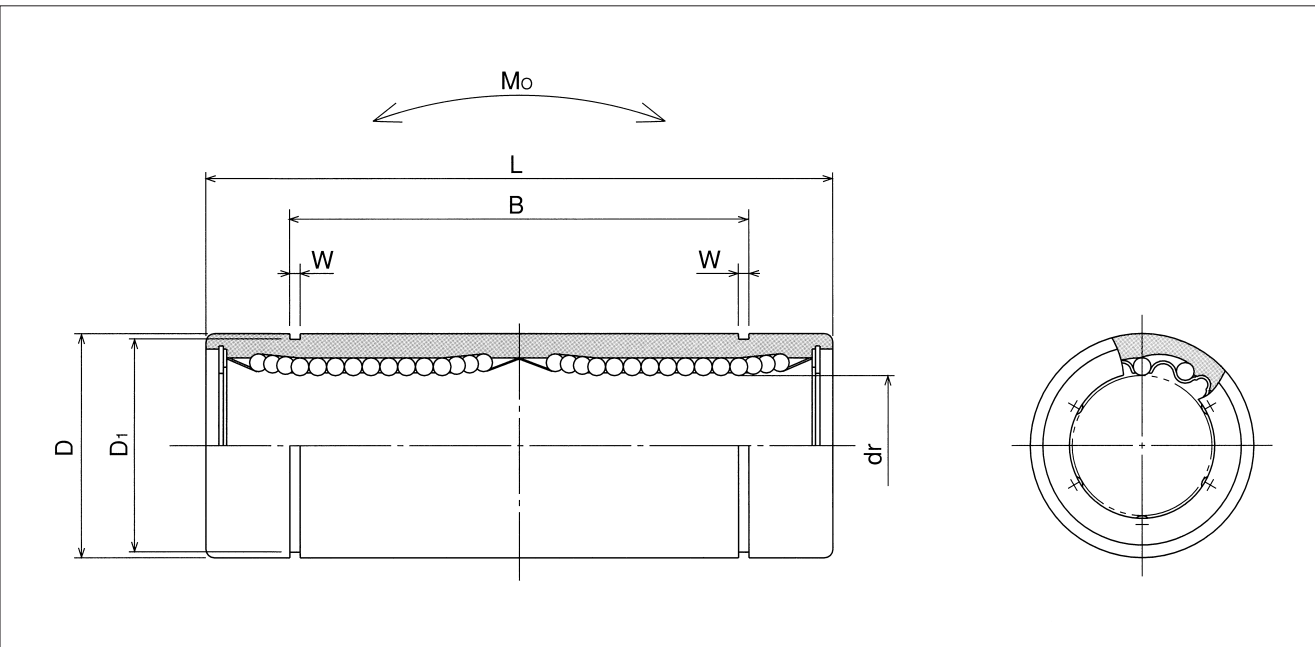
SM-W TYPE

— 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 μm	D	
steel retainer	resin retainer	stainless retainer	resin retainer				mm	tolerance μm
SM 3W	SM 3GW	SMS 3W	SMS 3GW	4	3	0 -10	7	0
SM 4W	SM 4GW	SMS 4W	SMS 4GW	4	4		8	-11
SM 5W	SM 5GW	SMS 5W	SMS 5GW	4	5		10	
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	
SM12W	SM12GW	SMS12W	SMS12GW	4	12		21	0
SM13W	SM13GW	SMS13W	SMS13GW	4	13		23	-16
SM16W	SM16GW	SMS16W	SMS16GW	4	16		28	
SM20W	SM20GW	SMS20W	SMS20GW	5	20		0	32
SM25W	SM25GW	SMS25W	SMS25GW	6	25	-12	40	-19
SM30W	SM30GW	SMS30W	SMS30GW	6	30		45	
SM35W	SM35GW	SMS35W	SMS35GW	6	35	0 -15	52	0
SM40W	SM40GW	SMS40W	SMS40GW	6	40		60	
SM50W	SM50GW	SMS50W	SMS50GW	6	50		80	
SM60W	SM60GW	SMS60W	SMS60GW	6	60	0/-20	90	0/-25



major dimensions						eccentricity μm	basic load rating		allowable static moment M_o $\text{N} \cdot \text{m}$	mass g	shaft diameter mm
L mm	tolerance mm	B mm	tolerance mm	W mm	D_1 mm		dynamic C N	static C_o N			
19		—	—	—	—	10	138	210	0.51	3.2	3
23		—	—	—	—		176	254	0.63	4.8	4
28		20.4		1.1	9.6		265	412	1.38	11	5
35	0 -0.3	27	0 -0.3	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	20	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		1,560	3,140	43.4	440	25
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	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 \cong 0.102kgf 1N·m \cong 0.102kgf·m