

# Linear Bushings

## Single

= For customers using industry standard products =  
 The part enclosed in the red frame is as per industry standard specifications (Outer cylinder SUJ2 equivalent, Retainer resin).  
 Consider these specifications while selecting the product.

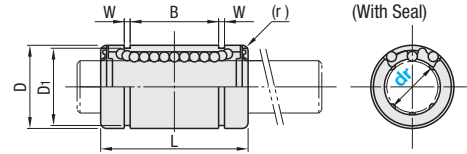
Features: The most popular Linear Bushing style.

### Industry Standard



RoHS

Type	Outer Cylinder			Balls	Retainer Material	Ambient Operating Temp.	Accessory			
	Material	Hardness	Surface Treatment							
LMU-N	SUJ2 Equivalent	58HRC~	-	SUJ2 Equivalent	Plastic (Duracon M90 Equivalent)	-20~ 80°C	Seal Material Nitrile Rubber (-20~120°C)			
LMU					Stainless Steel (SUS)	-20~110°C				
LMUF-N					SUS440C Equivalent	-		-	Plastic (Duracon M90 Equivalent)	-20~ 80°C
LMUF									Stainless Steel (SUS)	-20~110°C
LMUR									Plastic (Duracon M90 Equivalent)	-20~ 80°C
LMUM									Stainless Steel (SUS)	-20~110°C
LMUMF	SUS440C Equivalent	56HRC~	-	-	Plastic (Duracon M90 Equivalent)	-20~ 80°C				
SLMU					Stainless Steel (SUS)	-20~120°C				
SLMUS										



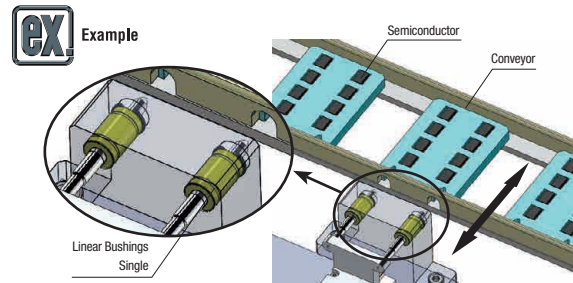
Part Number	Type	dr	D Tolerance		L Tolerance	B Tolerance	W	D1	(r)	Eccentricity (Max.)	Rows of Balls	Basic Load Rating		Mass (g)
			Tolerance	No Surface Treatment / Surface Treatment								C (Dynamic) N	Co (Static) N	
LMU-N (No Seal)	3	0	7	0	10	-	-	-	0.3	0.008	4	69	105	1.4
	4	-0.008	8	-0.009	12	-	-	-				88	127	2.0
	5		10		15	8	9.6					167	206	4.0
LMU (No Seal)	6	0	12	0	19	11.3	11.5	1.1	0.4		4	206	265	8.5
	8		15	-0.011	-0.018	24	15.3	14.3				265	380	17
	10		19			29	19.4	18				372	549	31
LMUF (No Seal)	12	-0.009	21	0	30	20	20	1.3	0.012		5	412	598	41
	13		23	-0.013	-0.021	32	20.4	22				510	784	46
	16		28			37	23.3	27				775	1180	73
LMUR	20	0	32	0	42	27.3	30.5	1.6	0.015		5	882	1370	98
LMUM	25	-0.010	40	0	59	37.3	38	1.85			6	980	1570	236
LMUMF	30		45	-0.016	-0.025	64	40.8	43	0.020			1570	2740	262
SLMU	35	0	52	0	70	45.3	49	2.1				1670	3140	425
SLMUS	40	-0.012	60	0	80	56.3	57	2.6				2160	4020	654
	50		80	-0.019	-0.030	68.8	68.8	2.6				3820	7940	1700

kgf=Nx0.101972

- For Precautions for Use, see P.303.
- For LMU-N and LMUF-N, dr=3/4.
- Products with dr=3, 4 are without seal. No-Seal Type has lower sliding resistance (0.4~1.2N). Separate dust-proofing measures are necessary to keep the dust entering into sliding parts.
- For Low Temperature Black Chrome Plating, see P.304.
- Spacers and Stoppers for linear bushings can be selected from P.330.

dr	LMU-N	LMU	LMUF-N	LMUF	LMUR	LMUM	LMUMF	SLMU	SLMUS
3									
4									
5									
6									
8									
10									
12									
13									
16									
20									
25									
30									
35									
40									
50									

- Ordering Example
- Part Number
- LMU20 (No Seal)
  - LMU-N20 (Low Temperature Black Chrome Plating)
  - LMUR20 (L Type Greased)
  - LMUR20L (G Type Greased)
  - LMUR20G (H Type Greased)
  - LMUR20H (Alternative grease types available)
- For Days to Ship, Price and Performance, see P.304.



▲Semiconductor conveyor tray locating mechanism

# Linear Bushings

## Double

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 The part enclosed in the red frame is as per industry standard specifications (Outer cylinder SUJ2 equivalent, Retainer resin).  
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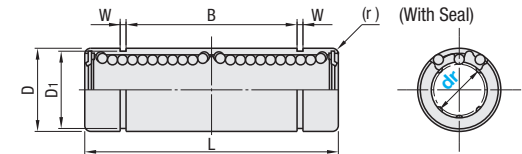
Features: Most common specification in Linear Bushings. Use Double Type in case moment load is to be applied.

### Industry Standard



RoHS

Type	Outer Cylinder			Balls	Retainer Material	Ambient Operating Temp.	Accessory			
	Material	Hardness	Surface Treatment							
LMUW-N	SUJ2 Equivalent	58HRC~	-	SUJ2 Equivalent	Plastic (Duracon M90 Equivalent)	-20~ 80°C	Seal Material Nitrile Rubber (-20~120°C)			
LMUW					Stainless Steel (SUS)	-20~110°C				
LMUWF					SUS440C Equivalent	-		-	Plastic (Duracon M90 Equivalent)	-20~ 80°C
LMUWR									Stainless Steel (SUS)	-20~110°C
LMUWM									Plastic (Duracon M90 Equivalent)	-20~ 80°C
LMUWMF									Stainless Steel (SUS)	-20~120°C
SLMUW	SUS440C Equivalent	56HRC~	-	-	Plastic (Duracon M90 Equivalent)	-20~ 80°C				
SLMUWS					Stainless Steel (SUS)	-20~120°C				



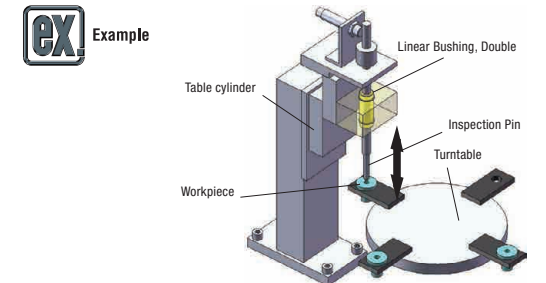
Part Number	Type	dr	D Tolerance		L Tolerance	B Tolerance	W	D1	(r)	Eccentricity (Max.)	Rows of Balls	Basic Load Rating		Allowable Static Moment (N·m)	Mass (g)
			Tolerance	No Surface Treatment / Surface Treatment								C (Dynamic) N	Co (Static) N		
LMUW-N (No Seal)	3	0	7	0	19	-	-	-	0.3	0.010	4	138	210	0.51	3.2
	4	-0.011	8	-0.011	-0.015	23	9.6					176	254	0.63	4.8
	5		10			28	18.2	11.5				263	412	1.38	11
LMUW	6	0	12	0	35	24.8	24.8	1.1	0.4		4	324	529	2.18	16
	8		15	-0.013	-0.018	45	32.8	14.3				431	784	4.31	31
LMUWF	10	-0.010	19	0	55	41.4	41.4	1.3	0.015		5	588	1100	7.24	62
LMUWR	12		21	0	57	43.4	43.4	1.6			6	657	1200	10.9	80
LMUWM	13		23	-0.016	-0.021	61	49.8	22				813	1570	11.6	90
LMUWMF	16		32		70	57.8	57.8	2.1	0.020		6	1230	2350	19.7	145
SLMUW	20	0	38	0	80	78.3	78.3	1.85			5	1400	2740	26.8	180
SLMUWS	25	-0.012	40	0	112	85.3	85.3	2.1	0.025		6	1560	3140	43.4	440
	30		45	-0.019	-0.025	123	94.8	43				2490	5490	82.8	480
LMUW	35	0	52	0	135	116.8	116.8	2.6	0.025		6	2650	6270	110	795
LMUWM	40	-0.015	60	0	151	142.8	142.8	2.6				3430	8040	147	1170
	50		80	-0.022	-0.030	192	192	2.6				6080	15900	397	3100

kgf=Nx0.101972

- For Precautions for Use, see P.303.
- dr=3, 4 are not available for LMUW-N and LMUWR
- Products with dr=3, 4 are without seal. No-Seal Type has lower sliding resistance (0.4~1.2N). Separate dust-proofing measures are necessary to keep the dust entering into sliding parts.
- For Low Temperature Black Chrome Plating, see P.304.
- Spacers and Stoppers for linear bushings can be selected from P.330.

dr	LMUW-N	LMUW	LMUWF	LMUWR	LMUWM	LMUWMF	SLMUW	SLMUWS
3								
4								
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6								
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12								
13								
16								
20								
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50								

- Ordering Example
- Part Number
- LMUW20 (No Seal)
  - LMUW-N20 (Low Temperature Black Chrome Plating)
  - LMUWR20 (L Type Greased)
  - LMUWR20L (G Type Greased)
  - LMUWR20G (H Type Greased)
  - LMUWR20H (Alternative grease types available)
- For Days to Ship, Price and Performance, see P.304.



▲Inspection instrument to confirm the precision of work piece hole