

# Linear Bushings

## Single

= For customers using industry standard products =  
 The part enclosed in the red frame is as per industry standard specifications (Outer cylinder EN 1.3505 Equiv. equivalent, Retainer resin).  
 Consider these specifications while selecting the product.

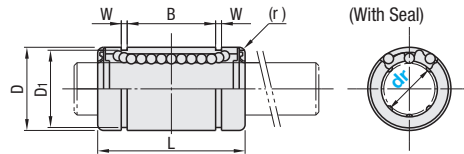
Features: The most popular Linear Bushing style.

### Industry Standard



RoHS 10

Type	Outer Cylinder			Balls	Retainer	Ambient Operating Temp.	Accessory	
	Material	Hardness	Surface Treatment	Material	Material			
LMU-N	EN 1.3505 Equiv.	58HRC~	-	EN 1.3505 Equiv.	Plastic (Duracon M90 Equiv.)	-20~ 80°C	Seal Material Nitrile Rubber (-20~120°C)	
LMU					Stainless Steel (Stainless Steel)	-20~110°C		
LMUF-N					EN 1.4125 Equiv.	Plastic (Duracon M90 Equiv.)		-20~ 80°C
LMUF						Stainless Steel (Stainless Steel)		-20~110°C
LMUR						Plastic (Duracon M90 Equiv.)		-20~ 80°C
LMUM						Stainless Steel (Stainless Steel)		-20~ 80°C
LMUMF	EN 1.4125 Equiv.	56HRC~	-	Plastic (Duracon M90 Equiv.)	-20~ 80°C			
SLMU				Stainless Steel (Stainless Steel)	-20~120°C			



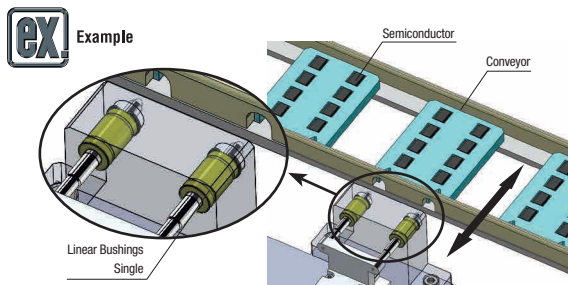
Part Number	D Tolerance		L Tolerance		B Tolerance		W	D1	(r)	Eccentricity (Max.)	Rows of Balls	Basic Load Rating		Mass (g)
	Type	dr	Tolerance	No Surface Treatment	Surface Treatment	Tolerance						Tolerance	C (Dynamic) N	
LMU-N (No Seal)	3	0	7	0	10	-	-	-	0.3	0.008	4	69	105	1.4
LMU	4	-0.008	8	-0.009	12	-	-	-	-	-		88	127	2.0
LMU (No Seal)	5	-	10	-	15	8	9.6	1.1	0.4	0.012	4	167	206	4.0
LMUF-N	6	-	12	0	19	11.3	11.5	1.1	0.4	0.012		4	206	265
LMUF (No Seal)	8	-	15	-0.011	-0.018	24	15.3	14.3	0.4	0.012	4		265	380
LMUF	10	0	19	0	29	19.4	18	1.3	0.8	0.015		4	372	549
LMUR	12	-0.009	21	0	30	20	20	1.3	0.8	0.015	4		412	598
LMUM	13	-	23	-0.013	-0.021	32	20.4	22	0.8	0.015		4	510	784
LMUMF	16	-	28	-	37	23.3	27	1.6	0.8	0.015	4		775	1180
LMUR	20	0	32	0	42	27.3	30.5	1.6	0.8	0.015		4	882	1370
LMUM	25	-0.010	40	-0.016	-0.025	59	37.3	38	1.5	0.020	5		980	1570
LMUMF	30	-	45	-	64	40.8	43	1.85	1.5	0.020		5	1570	2740
SLMU	35	0	52	0	70	45.3	49	2.1	1.5	0.020	6		1670	3140
SLMUS	40	-0.012	60	-0.019	-0.030	56.3	57	2.6	1.5	0.020		6	2160	4020
LMU	50	-	80	-	100	68.8	76.5	2.6	1.5	0.020	6		3820	7940

- 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 LTBC Plating, see P.304.
- Spacers and Stoppers for linear bushings can be selected from P.330.

kgf=Nx0.101972

dr	Unit Price									
	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 (LTBC Plating)  
 LMUR20L (L Type Greased)  
 LMUR20G (G Type Greased)  
 LMUR20H (H Type Greased)  
 Alternative grease types available.  
 For Days to Ship, Price and Performance, see P.304.



▲ Semiconductor conveyor tray locating mechanism

# Linear Bushings

## Double

= For customers using industry standard products =  
 The part enclosed in the red frame is as per industry standard specifications (Outer cylinder EN 1.3505 Equiv. equivalent, Retainer resin).  
 Consider these specifications while selecting the product.

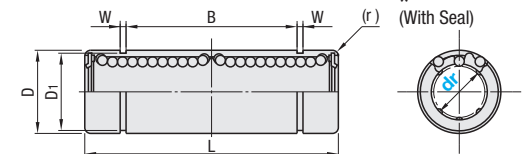
Features: Most common specification in Linear Bushings. Use Double Type in case moment load is to be applied.

### Industry Standard



RoHS 10

Type	Outer Cylinder			Balls	Retainer	Ambient Operating Temp.	Accessory	
	Material	Hardness	Surface Treatment	Material	Material			
LMUW-N	EN 1.3505 Equiv.	58HRC~	-	EN 1.3505 Equiv.	Plastic (Duracon M90 Equiv.)	-20~ 80°C	Seal Material Nitrile Rubber (-20~120°C)	
LMUW					Stainless Steel (Stainless Steel)	-20~110°C		
LMUWF					EN 1.4125 Equiv.	Plastic (Duracon M90 Equiv.)		-20~ 80°C
LMUWR						Stainless Steel (Stainless Steel)		-20~110°C
LMUWM						Plastic (Duracon M90 Equiv.)		-20~ 80°C
LMUWMF						Stainless Steel (Stainless Steel)		-20~ 80°C
SLMUW	EN 1.4125 Equiv.	56HRC~	-	Plastic (Duracon M90 Equiv.)	-20~ 80°C			
SLMUWS				Stainless Steel (Stainless Steel)	-20~120°C			



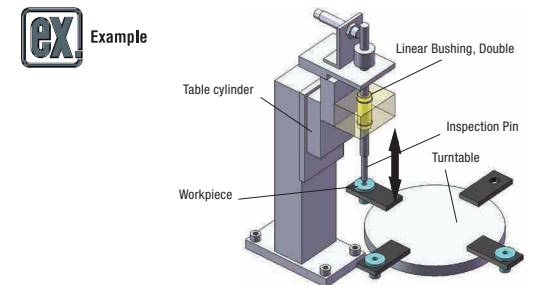
Part Number	D Tolerance		L Tolerance		B Tolerance		W	D1	(r)	Eccentricity (Max.)	Rows of Balls	Basic Load Rating		Allowable Static Moment (N·m)	Mass (g)
	Type	dr	Tolerance	No Surface Treatment	Surface Treatment	Tolerance						Tolerance	C (Dynamic) N		
LMUW-N (No Seal)	3	0	7	0	19	-	-	-	0.3	0.010	4	138	210	0.51	3.2
LMUW	4	-0.011	8	-0.011	0.015	23	9.6	1.1	0.4	0.015		4	176	254	0.63
LMUW (No Seal)	5	-	10	-	15	18.2	18.2	1.1	0.4	0.015	4		263	412	1.38
LMUWF	6	-	12	0	19	24.8	24.8	1.1	0.4	0.015		4	324	529	2.18
LMUWR	8	-	15	-0.013	-0.018	45	32.8	1.3	0.8	0.020	4		431	784	4.31
LMUWM	10	0	19	0	29	41.4	41.4	1.3	0.8	0.020		4	588	1100	7.24
LMUWMF	12	-0.010	21	0	30	43.4	43.4	1.3	0.8	0.020	4		657	1200	10.9
LMUWMF	13	-	23	-0.016	-0.021	61	49.8	1.6	0.8	0.020		4	813	1570	11.6
SLMUW	16	-	28	-	37	57.8	57.8	1.6	0.8	0.020	4		1230	2350	19.7
SLMUWS	20	0	32	0	42	78.3	78.3	1.6	0.8	0.020		4	1400	2740	26.8
LMUW	25	-0.012	40	-0.019	-0.025	112	85.3	1.85	1.5	0.025	5		1560	3140	43.4
LMUWM	30	-	45	-	64	123	85.3	1.85	1.5	0.025		5	2490	5490	82.8
LMUW	35	0	52	0	70	135	94.8	2.1	1.5	0.025	5		2650	6270	110
LMUWM	40	-0.015	60	-0.022	-0.030	151	116.8	2.1	1.5	0.025		5	3430	8040	147
LMUW	50	-	80	-	100	192	142.8	2.6	1.5	0.025	5		6080	15900	397

- 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 LTBC Plating, see P.304.
- Spacers and Stoppers for linear bushings can be selected from P.330.

kgf=Nx0.101972

dr	Unit Price									
	LMUW-N	LMUW	LMUWF	LMUWR	LMUWM	LMUWMF	SLMUW	SLMUWS		
3	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-
35	-	-	-	-	-	-	-	-	-	-
40	-	-	-	-	-	-	-	-	-	-
50	-	-	-	-	-	-	-	-	-	-

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



▲ Inspection instrument to confirm the precision of work piece hole