

Linear Bushings (Straight)

Short Type / Features of Low Temperature Black Chrome Plating

Linear Bushings (Straight) – Short Type	Type	Outer Cylinder			Balls	Retainer	Ambient Operating Temp.	Accessories
	Short	Material	Hardness	Surface Treatment	Material	Material		
	LMUT	52100 Bearing Steel	58 HRC min.	—	52100 Bearing Steel	Plastic (Duracon M90 Equivalent)	-20~80°C	Seal Material: Nitrile Rubber (-20~120°C)
	SLMUT	440C Stainless Steel Equivalent	56 HRC min.	—	440C Stainless Steel Equivalent			

kgf=Nx0.101972

Part Number	Type	dr	Tolerance	D		L		R	f	(r)	Eccentricity (Max.)	Rows of Balls	Basic Load Rating		Mass (g)
				Tolerance		Tolerance							C (Dynamic) N	Co (Static) N	
LMUT SLMUT	6	0	-0.009	12	0	16	0	1	0.3	0.4	0.012	4	113	155	6.6
	8			15	-0.011	20							155	226	14.7
	10			19	0	25							254	359	26.1
	12			21	0	25							317	407	28.6
	13			23	-0.013	30							320	413	36.3
	16			28	0	35							582	724	60.0
20	0	-0.010	32	0	-0.016	35	1.5	0.5	0.8	0.015	5	777	1034	81.6	

For short type linear bushings, hardened shafts with h5 tolerance are recommended. P.202-288 are recommended. For Precautions for Use, see P.369.

Part Number Example

Part Number

- LMUT10 (L Type Greased)
- LMUT10L (L Type Greased)
- LMUT10G (G Type Greased)
- LMUT10H (H Type Greased)

Alternative grease types available.

Application Example

Features

- The housing can be made more compact.
- The L dimensions are made to match MISUMI's standard plates.
- Short guiding section not suitable for applications where large moment loads apply.
- Setup to operate smoothly with hardened shafts with h5 tolerance.

Low Temperature Black Chrome Plating

Low temperature black chrome plating on linear bushings is 5µm of fluoropolymer layer chemically deposited as a black film, and it has a long-lasting rust prevention effect. Additionally, the coating is resistant to cracking from extreme and repeated bending. Low temperature black chrome plated shafts are suitable for places where rusting or reflection of light is undesirable. Fluorine compound is not chemically fused onto shafts. (Low Temperature Black Chrome plated linear shafts can be chosen from P.202-264, 268-273, 276-284)



Part Number Example

For details, refer to each page.

Sliding Test Conditions

Linear Bushings: LMUR12

Shafts: RSFJ12

50 km sliding test was conducted with a 412 N load on the linear bushing. No performance degradation after the test.

Linear Bushings Applicable to Low Temperature Black Chrome Plating

Straight	Applicable Inner Diameter	Page	Flanged Type	Applicable Inner Diameter	Page
Single LMUR	Ø3-Ø30	375	Single LHF_R	Ø6-Ø30	379
Double LMUWR	Ø5-Ø30		Double LHF_WR		

Note: No surface treatment is applied to inner diameter surface of low temperature black chrome plated linear bushings.

Linear Bushing (Straight)

Standard Type, Single / Double

Spacers and Fixing Plates for linear bushings can be selected from P.384.

Linear Bushings (Straight) – Single	Type	Outer Cylinder			Balls	Retainer	Ambient Operating Temp.	Accessories		
	Single	Double	Material	Hardness	Surface Treatment	Material	Material			
LMU-N LMU LMUF-N LMUF LMUR LMUWR LMUM LMUWM LMUMF LMUWMF SLMU SLMUW SLMUS	LMU-N	LMUW-N	52100 Bearing Steel	58 HRC min.	—	52100 Bearing Steel	Plastic (Duracon M90 Equivalent)	-20~80°C	*Seals Material Nitrile Rubber (-20~120°C)	
	LMU	LMUW					Stainless Steel (JIS SUS)	-20~110°C		
	LMUF-N	LMUWF					440C Stainless Steel Equivalent	Plastic (Duracon M9 Equivalent)		-20~80°C
	LMUF	LMUWF						Stainless Steel (JIS SUS)		-20~110°C
	LMUR	LMUWR					440C Stainless Steel Equivalent	Plastic (Duracon M90 Equivalent)		-20~80°C
	LMUM	LMUWM						Stainless Steel (JIS SUS)		-20~110°C
	LMUMF	LMUWMF					Plastic (Duracon M90 Equivalent)	-20~80°C		
	SLMU	SLMUW					440C Stainless Steel Equivalent	Plastic (Duracon M90 Equivalent)		-20~80°C
	SLMUS	SLMUWS						Stainless Steel (JIS SUS)		-20~120°C

Single For linear bushings, hardened shafts with g6 tolerance are recommended. P.202-288

kgf=Nx0.101972

Part Number	Type	dr	Tolerance	D Tolerance		L	B	W	D ₁	(r)	Eccentricity (Max.)	Rows of Balls	Basic Load Rating		Mass (g)	
				No Surface Treatment	Surface Treatment								C (Dynamic) N	Co (Static) N		
LMU-N (No Seal)	3	0	-0.008	7	0	10	—	—	—	—	0.3	4	69	105	1.4	
	4			8	-0.009	-0.015	12	—	—	—	—		0.4	88	127	2.0
	5			10	-0.011	-0.018	15	8	9.6	167	206		4.0			
LMU (No Seal)	6	0	-0.009	12	0	19	11.3	1.1	11.5	0.4	0.012	4	206	265	8.5	
	8			15	-0.011	-0.018	24	15.3	14.3	265			380	17		
	10			19	0	0	29	19.4	18	372			549	31		
	12			21	0	0	30	20.4	20	412			598	41		
	13			23	-0.013	-0.021	32	23.3	22	510			784	46		
	16			28	0	0	37	27.3	27	775			1180	73		
LMUW (No Seal)	20	0	-0.010	32	0	42	27.3	1.6	30.5	0.8	0.015	5	882	1370	98	
	25			40	-0.016	-0.025	59	37.3	38	980			1570	236		
	30			45	0	0	64	40.8	43	1570			2740	262		
	35			52	0	0	70	45.3	49	1670			3140	425		
	40			60	-0.019	-0.030	80	56.3	57	2160			4020	654		
	50			80	0	0	100	68.8	68.8	3820			7940	1700		

Double For linear bushings, hardened shafts with g6 tolerance are recommended. P.202-288

kgf=Nx0.101972

Part Number	Type	dr	Tolerance	D Tolerance		L	B	W	D ₁	(r)	Eccentricity (Max.)	Rows of Balls	Basic Load Rating		Allowable Static Moment (Nm)	Mass (g)		
				No Surface Treatment	Surface Treatment								C (Dynamic) N	Co (Static) N				
LMUW-N (No Seal)	3	0	-0.010	7	0	19	—	—	—	0.3	0.010	4	138	210	0.51	3.2		
	4			8	-0.011	-0.015	23	—	—	—			—	0.4	176	254	0.63	4.8
	5			10	0	0	28	18.2	9.6	263			412	1.38	11			
	6			12	0	0	35	24.8	11.5	324			529	2.18	16			
	8			15	-0.013	-0.018	45	32.8	14.3	431			784	4.31	31			
	10			19	0	0	55	41.4	18	588			1100	7.24	62			
LMUW (No Seal)	12	0	-0.010	21	0	57	43.4	1.3	20	0.8	0.015	4	657	1200	10.9	80		
	13			23	-0.016	-0.021	61	49.8	22	813			1570	11.6	90			
	16			28	0	0	70	57.8	27	1230			2350	19.7	145			
	20			32	0	0	80	57.8	30.5	1400			2740	26.8	180			
	25			40	-0.019	-0.025	112	78.3	38	1560			3140	43.4	440			
	30			45	0	0	123	85.3	43	2490			5490	82.8	480			
LMUW (No Seal)	35	0	-0.015	52	0	135	94.8	1.6	49	1.5	0.020	5	2650	6270	110	795		
	40			60	-0.022	-0.030	151	116.8	57	3430			8040	147	1170			
	50			80	0	0	192	142.8	68.8	6080			15900	397	3100			

No-Seal Type has lower sliding resistance (0.4-1.2N). For Precautions for Use, see P.369. Spacers and Fixing Plates for linear bushings can be selected from P.384.

Part Number Example

Part Number

- LMUR20 (No Seal)
- LMU-N20 (L Type Greased)
- LMUR20L (L Type Greased)
- LMUR20G (G Type Greased)
- LMUR20H (H Type Greased)

Alternative grease types available.

Application Example

Retaining Ring Housing

Linear Bushing Spacers (LBS P.384)

Housing

Fixing Plate (LMST P.384)