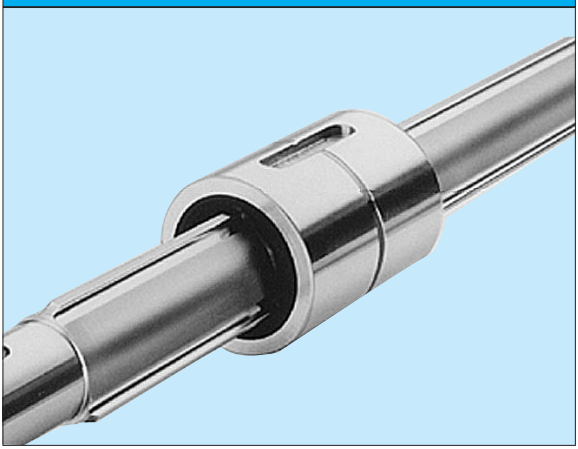
Types and Features

Cylindrical Ball Spline Type LBS



Cylindrical Ball Spline Type LBST

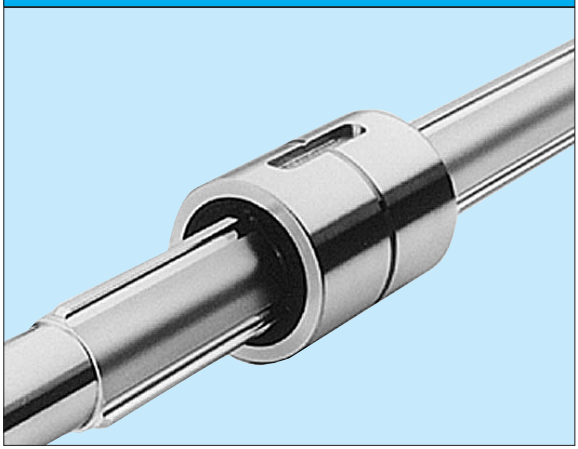


Table 6 LBS and LBST Standard Keys

Unit: mm

Model No.	Width b		Height h		Length l		R	C
		Tolerance (p7)		Tolerance (h9)		Tolerance (h12)		
LBS 15	3.5	+0.024 +0.012	3.5	0 −0.030	20	0 −0.210	1.75	0.5
LBS 20 LBST 20	4		4		26		2	
LBS 25 LBST 25	5		5		33	0 −0.250	2.5	
LBS 30 LBST 30	7	+0.030 +0.015	7	0 −0.036	41		3.5	
LBS 40 LBST 40	10		8		55	0 −0.300	5	0.8
LBS 50 LBST 50	15	+0.036 +0.018	10		60		7.5	
LBST 60 LBS 70 LBST 70	18		12	0 −0.043	68		9	1.2
LBS 85 LBST 85	20	+0.043 +0.022	13		80		10	
LBS 100 LBST 100	28		18		93	0 −0.350	14	
LBST 120	28		18		123	0 −0.400	14	
LBST 150	32	+0.051 +0.026	20	0 −0.052	157		16	2

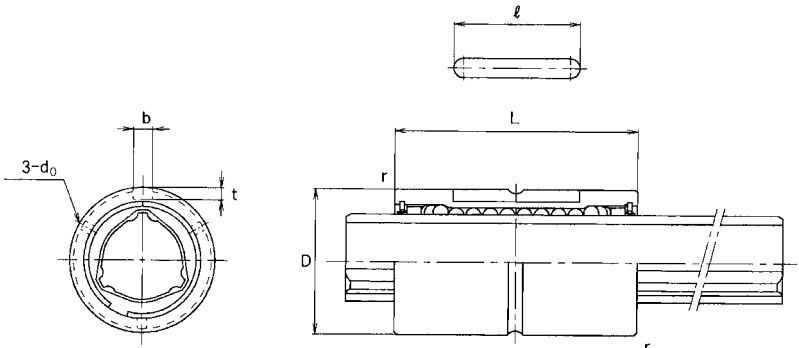
Type LBS

(medium-duty type)

Model No.	Spline-nut dimensions								
	Outer diameter D		Length L		Keyway dimensions				Oil hole
		Tolerance		Tolerance	b H8	t +0.05 0	l	r	d_0
LBS 15	23	0 −0.013	40	0 −0.2	3.5	2	20	0.5	2
LBS 20	30	0 −0.016	50		4	2.5	26	0.5	2
LBS 25	37		60	0 −0.3	5	3	33	0.5	2
LBS 30	45		70		7	4	41	1.0	3
LBS 40	60	0 −0.019	90		10	4.5	55	1.0	3
LBS 50	75		100		15	5	60	1.5	4
LBS 70	100	0 −0.022	110		18	6	68	2.0	4
LBS 85	120		140	0 −0.4	20	7	80	2.5	5
LBS 100	140	0 −0.025	160		28	9	93	3.0	5

Notes:

- In model numbers 15 through 70, the spline nut accommodates a retainer made of synthetic resin that generates low noise during operation. If your operating temperature exceeds 80°C, use a model with a metal retainer. When specifying such a model, append an "A" to the model number.
  Please note, however, that there is no high-temperature model for type LBS15.
  [Ex.] LBS20 A CL + 500LH
  High-temperature symbol
- If a model with seals is required, please specify.
- For model-number coding, see page B-56.



Spline nut

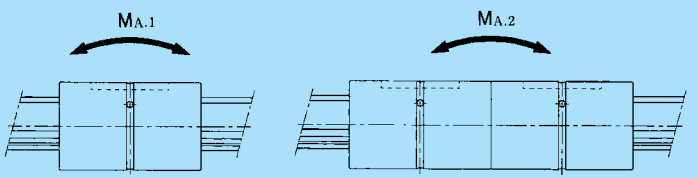
Unit: mm

Basic torque rating		Basic load rating (radial)		Static permissible moment		Mass	
C_T Nm	C_{0T} Nm	C kN	C_0 kN	$M_{A.1}$ 1) Nm	$M_{A.2}$ 2) Nm	Spline nut kg	Spline shaft kg/m
30.4	74.5	4.4	8.4	25.4	185	0.06	1.0
74.5	160	7.8	14.9	60.2	408	0.14	1.8
154	307	13.0	23.5	118	760	0.25	2.7
273	538	19.3	33.8	203	1270	0.44	3.8
599	1140	31.9	53.4	387	2640	1.0	6.8
1100	1940	46.6	73.0	594	4050	1.7	10.6
2190	3800	66.4	102	895	6530	3.1	21.3
3620	6360	90.5	141	2000	12600	5.5	32.0
5910	12600	126	237	3460	20600	9.5	45.0

Notes:

1) $M_{A.1}$ represents the permissible moment in the axial direction when a single spline nut is used, as shown below.

2) $M_{A.2}$ represents the permissible moment in the axial direction when two closely linked spline nuts are used, as shown below.
(As type LBS does not provide sufficiently stable accuracy when used with a single spline nut, we recommend type LBST for single-spline-nut use, or type LBS for closely linked double spline-nut use.)



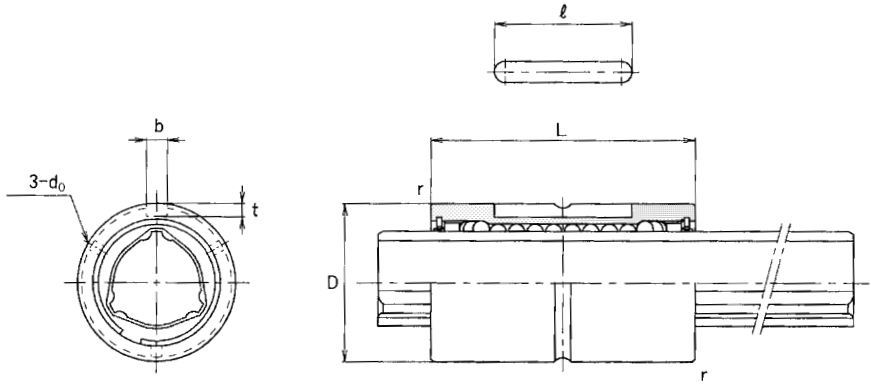
Type LBST

(heavy-duty type)

Model No.	Spline-nut dimensions								
	Outer diameter D		Length L		Keyway dimensions				Oil hole
		Tolerance		Tolerance	b H8	t +0.05 0	l	r	d_0
LBST 20	30	0 −0.016	60	0 −0.2	4	2.5	26	0.5	2
LBST 25	37		70	0 −0.3	5	3	33	0.5	2
LBST 30	45		80		7	4	41	1.0	3
LBST 40	60	0 −0.019	100		10	4.5	55	1.0	3
LBST 50	75		112		15	5	60	1.5	4
LBST 60	90	0 −0.022	127		18	6	68	1.5	4
LBST 70	100		135		18	6	68	2.0	4
LBST 85	120		155	0 −0.4	20	7	80	2.5	5
LBST 100	140	0 −0.025	175		28	9	93	3.0	5
LBST 120	160		200	0 −0.5	28	9	123	3.5	6
LBST 150	205	0 −0.029	250		32	10	157	3.5	6

Notes:

- In model numbers 20 through 70, the spline nut accommodates a retainer made of synthetic resin that generates low noise during operation. (There is no high-temperature model for type LBST70 or lower). If your operating temperature exceeds 80°C, use a model of type LBS accommodating a metal retainer (see page B-60).
- If a model with seals is required, please specify.
- For model-number coding, see page B-56.



Spline nut

Unit: mm

Basic torque rating		Basic load rating (radial)		Static permissible moment		Mass	
C_T Nm	C_{0T} Nm	C kN	C_0 kN	$M_{A.1}$ 1) Nm	$M_{A.2}$ 2) Nm	Spline nut kg	Spline shaft kg/m
90.2	213	9.4	20.1	103	632	0.17	1.8
176	381	14.9	28.7	171	1060	0.29	2.7
312	657	22.5	41.4	295	1740	0.50	3.8
696	1420	37.1	66.9	586	3540	1.1	6.8
1290	2500	55.1	94.1	941	5610	1.9	10.6
1870	3830	66.2	121	1300	8280	3.3	15.6
3000	6090	90.8	164	2080	11800	3.8	21.3
4740	9550	119	213	3180	17300	6.1	32.0
6460	14400	137	271	4410	25400	10.4	45.0
8380	19400	148	306	5490	32400	12.9	69.5
13900	32200	196	405	8060	55400	28.0	116.6

Notes:

1) $M_{A.1}$ represents the permissible moment in the axial direction when a single spline nut is used, as shown below.

2) $M_{A.2}$ represents the permissible moment in the axial direction when two closely linked spline nuts are used, as shown below.