

LINEAR COMPONENTS

Table of Contents

HIGH PRECISION AND PRECISION LEAD SCREWS

Technical Data	E 2
Anti-Backlash Lead Screw Assemblies	E 3
Lead Screws	E 4
Lead Screw Assemblies	E 5 - E 6

LINEAR SLIDES

Technical Data Linear Slides	E 7
Linear Ball Slides	E 8 - E 9
Linear Crossed Roller Slides	E 10
Rack Driven Ball Slides	E 11
Linear Tables	E 12

CROSS ROLLER BEARING RAIL SET

E 13

ULTRA-PRECISION CROSS ROLLER SLIDES

Lead Screw Driven Slide Assemblies	E 14 - E 15
------------------------------------	-------------

LINEAR BEARINGS

Flanged Type	E 16
Ball Bearings	E 17 - E 18, E 22 - E 23
Ball Bearings With Shaft Wipers	E 19
Self-Aligning - Barrel Style	E 20
Rotating (Set)	E 21
No Lube	E 24 - E 25

COMPOSITE BEARINGS

E 26

LOGLIFE BEARINGS

E 27

SHAFTING

E 28 - E 36

Case Hardened and Ground	E 28
Ground	E 29
Seals	E 30
Wiper - Retainer	E 31
Wipers	E 34 - E 35
Retainer Rings External	E 32
Retainer Rings Push In	E 33

E

For metric options, please see our metric catalog.

HIGH PRECISION & PRECISION LEAD SCREWS

TECHNICAL DATA Lead Screws and Components

Berg is a pioneer in the development of lead screws. Providing cost effective solutions to linear actuation problems. The close tolerance, free running nuts are ideal for miniature applications requiring rotary to linear or linear to rotary actuation.

For applications requiring precision positioning, Berg also manufactures Anti-Backlash Nuts. This device, consisting of only three components, utilizes the constant force of a compression spring to push two nut halves apart. This action eliminates any play (backlash) which exists between the internal thread of the nut and the external screw thread. To ensure accuracy and repeatability the nut can be fine tuned through the use of the many available spring constants, to meet any pre-load design requirements.

Lead Screw Specification

Lead Error
Repeatability
Straightness
Backlash
Temperature Range
Breakaway Torque

High Precision

+/- .006 in./ft.
.00005 in.
.003 in./ft.
.003 in. (zero when using Anti-Backlash nut)
-50°F to + 200°F
0-3 oz-in. (standard nut)



Figure 9.1



Figure 9.2



Figure 9.3



Figure 9.4

Load - In order to properly incorporate a lead screw into a design, load requirements must be taken into account. Maximum load values for the nuts are listed in the tables on the following pages. These numbers are based on the shear of the nuts and does not take shaft buckling into account (see Max. Column Load formula below). Wherever possible, nuts should be positioned so as to be put in tension, pulling the load. This eliminates the need for buckling considerations. Listed below are some helpful formulas to assist in proper lead screw selection.

$$\text{Maximum Column Load (F)} = K \times C \times 10^6 \times d^4 / D^2$$

Where:

K = End support factor

- .025 one end fixed, other free (Figure 9.1)
- 1.00 simple supports both ends (Figure 9.2)
- 2.00 one end fixed, one simple (Figure 9.3)
- 4.00 both ends fixed (Figure 9.4)

C = Material factor

13.4 for Stainless Steel screws

4.8 for Aluminum screws

d = Root diameter of the screw

D = Length between the nut and the support bearing

$$\text{Torque to Move a Load (T)} = (F \times L) / (2 \times \xi \times E)$$

Where:

F = Load

L = Lead

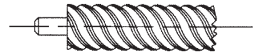
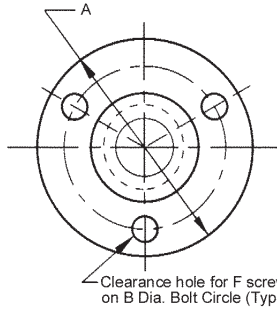
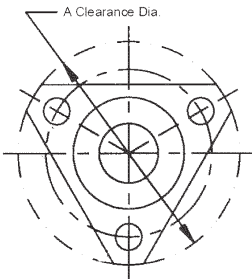
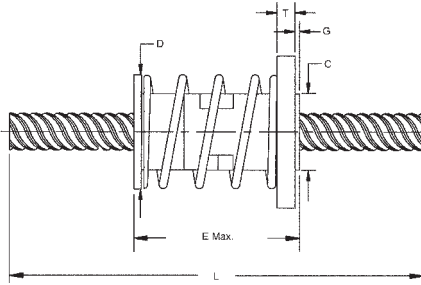
E = Efficiency (consult Berg Engineering Department for efficiency values)

$$\text{Horsepower (HP)} = \text{Torque (in. lbs.)} \times \text{RPM} / 63,025$$



ANTI-BACKLASH LEAD SCREW ASSEMBLIES

SERIES	MATERIAL
HIGH PRECISION	NUT - DELRIN, SPRING - STEEL PLATED ZINC, SCREW - STAINLESS STEEL



Special end configurations available on request.

E

Lead Screw Specifications

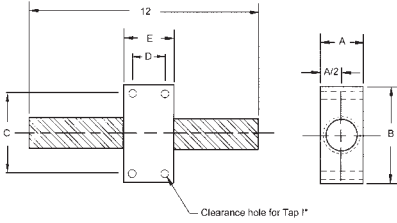
HIGH PRECISION LEAD SCREW SERIES	PITCH DIA.	LEAD	A	B ±.010	C ±.010	D	E	F	L	T	G
HTSP4ABS1-12	1/4	.0500	1.00	.750	.437	.582	1.13	#6-32	12	.19	.06
HTSP4ABS2-12		.0625									
HTSP4ABS4-12		.2500									
HTSP5ABS1-12	5/16	.0833	1.500	1.125	.625	.770	1.50	#10-24	24	.19	.06
HTSP5ABS2-12		.2500									
HTSP6ABS1-24	3/8	.1000	1.500	1.125	.625	.770	1.50	#10-24	24	.19	.06
HTSP6ABS2-24		.2500									
HTSP6ABS8-24		1.0000									
HTSP7ABS1-24	7/16	.2500									
HTSP8ABS4-24	1/2	.5000									
HTSP8ABS8-24		1.0000									
HTSP10ABS4-36*	5/8	.5000	1.750	1.375	.875	1.03	2.09	#10-24	36	.25	.08
HTSP12ABS4-36	3/4	.5000	2.180	1.800	1.18	1.58	2.50	#10	36	.25	.08

* Lead Screws can also be supplied in footage up to 5 ft.
Spare Nuts are also available on request
W. M. Berg rolling capabilities up to 2.00" dia. 16 d.p.

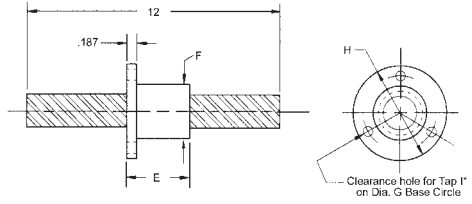
LEAD SCREWS

MATERIAL

NUT - DELRIN
SHAFT - ALUMINUM



LEAD SCREW WITH SQUARE NUT



LEAD SCREW WITH ROUND NUT

Lead Screw Specifications - With Rectangular Nut

LEAD SCREW PITCH DIA.	STOCK NUMBER	LEAD	STOCK NUMBER	LEAD	STOCK NUMBER	LEAD
	PRECISION		PRECISION		PRECISION	
3/16	HTP3KA2-12	.3750	HTP3KA3-12	.5625	HTP3KA4-12	.7500
1/4	HTP4KA2-12	.5000	HTP4KA3-12	.7500	HTP4KA4-12	1.0000
3/8	HTP6KA2-12	.7500	HTP6KA3-12	1.1250	HTP6KA4-12	1.5000
1/2	HTP8KA2-12	1.0000	HTP8KA3-12	1.5000	HTP8KA4-12	2.0000
5/8	HTP10KA2-12	1.2500	HTP10KA3-12	1.8750	HTP10KA4-12	2.5000

Lead Screw Specifications - With Round Nut

LEAD SCREW PITCH DIA.	STOCK NUMBER	LEAD	STOCK NUMBER	LEAD	STOCK NUMBER	LEAD
	PRECISION		PRECISION		PRECISION	
3/16	HTP3LA2-12	.3750	HTP3LA3-12	.5625	HTP3LA4-12	.7500
1/4	HTP4LA2-12	.5000	HTP4LA3-12	.7500	HTP4LA4-12	1.0000
3/8	HTP6LA2-12	.7500	HTP6LA3-12	1.1250	HTP6LA4-12	1.5000
1/2	HTP8LA2-12	1.0000	HTP8LA3-12	1.5000	HTP8LA4-12	2.0000
5/8	HTP10LA2-12	1.2500	HTP10LA3-12	1.8750	HTP10LA4-12	2.5000

Nut Specifications

LEAD SCREW PITCH DIA.	A	B	C	D	E	F	G	H	I*	LOAD
3/16	.500	1.250	1.000	#	.750	.437	.750	1.06	#6-32	16 Lbs.
1/4	.500	1.313	1.000	#	.750	.500	.812	1.12	#6-32	22 Lbs.
3/8	.625	1.750	1.313	#	.750	.625	1.000	1.37	#8-32	32 Lbs.
1/2	.750	1.813	1.437	.625	1.000	.750	1.125	1.50	#8-32	44 Lbs.
5/8	.875	1.937	1.562	.625	1.000	1.000	1.375	1.75	#8-32	55 Lbs.

Note: Special lengths, ends, diameters, or material available on request. Load ratings based on shear of nut does not account for buckling.

These items are supplied with one mounting hole @ E/2 on each side.

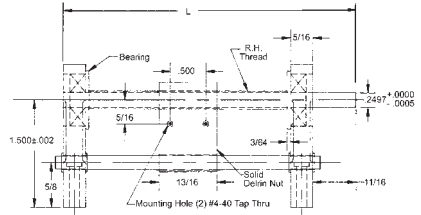
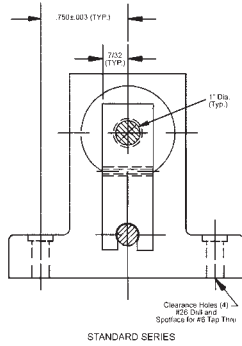
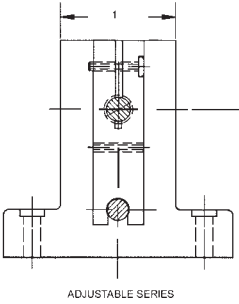
* Note: some clearance holes may be slotted to accept a range of sizes.

Spare nuts available on request.

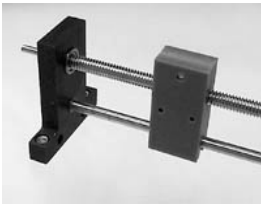
LEAD SCREW ASSEMBLY

MATERIAL

SHAFT HANGERS - ALUMINUM ANODIZED • LEAD SCREWS - HIGH HELIX - ALUMINUM (UNCUNF - STAINLESS)
SUPPORT SHAFT - STAINLESS STEEL • BEARINGS - STD. SERIES - TEFLON (ADJUSTABLE SERIES - CHROME STEEL)
• FOLLOWER NUT - DELRIN



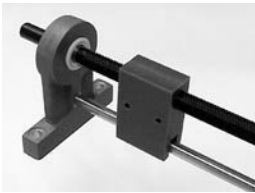
Non-Self-Locking
HIGH HELIX FAST LEAD



STANDARD SERIES STOCK NO.	ADJUSTABLE SERIES STOCK NO.	LEAD PER REV	L (Inch)	TOTAL TRAVEL
LS6A2-6	LS7A2-6	.500	6-1/8	3.79
LS6A2-12	LS7A2-12		12-1/8	9.79
LS6A2-18	LS7A2-18		18-1/8	15.79
LS6A3-6	LS7A3-6	.750	6-1/8	3.79
LS6A3-12	LS7A3-12		12-1/8	9.79
LS6A3-18	LS7A3-18		18-1/8	15.79
LS6A4-6	LS7A4-6	1.000	6-1/8	3.79
LS6A4-12	LS7A4-12		12-1/8	9.79
LS6A4-18	LS7A4-18		18-1/8	15.79

Units can also be used as linear to rotary drive.

Self-Locking
UNC/UNF THREAD



STANDARD SERIES STOCK NO.	ADJUSTABLE SERIES STOCK NO.	LEAD PER REV	L (Inch)	TOTAL TRAVEL
LS1-30	LS1-36	.0393	6-1/8	3.79
LS1-31	LS1-37		12-1/8	9.79
LS1-32	LS1-38		18-1/8	15.79
LS1-33	LS1-39	.0500	6-1/8	3.79
LS1-34	LS1-40		12-1/8	9.79
LS1-35	LS1-41		18-1/8	15.79

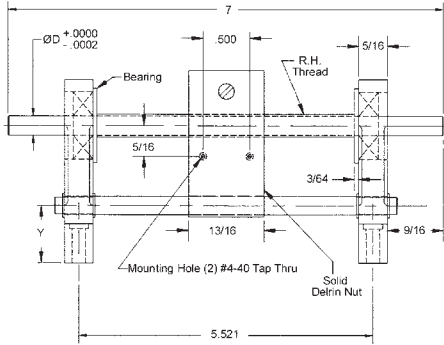
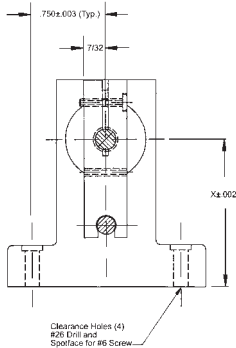
Parts can be reassembled with shaft on opposite end.

Left hand threads, other lengths, diameters, leads and shaft heights are available on request.

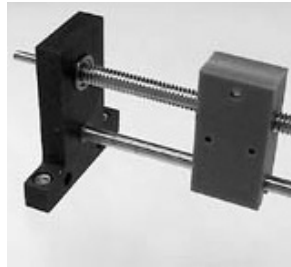
LEAD SCREW ASSEMBLY

MATERIAL

LEAD SCREW - 303 STAINLESS STEEL • SUPPORT SHAFT - 303 STAINLESS STEEL
SHAFT HANGER - ANODIZED ALUMINUM, FOLLOWER NUT-DELRIN



STOCK NO.	LEAD PER REV.	DIA. D SHAFT	X	Y	TYPE BEARING
LS1-8	.0500	.1247	1.500	.625	PRECISION BALL
LS1-9	.0394	.1247	1.500	.625	
LS1-3	.0500	.1872	1.500	.625	
LS1-4	.0357	.1872	1.500	.625	
LS1-12	.0500	.2497	2.000	1.125	
LS1-13	.0357	.2497	2.000	1.125	
LS1-20	.0500	.1247	1.500	.625	OIL-LESS BRONZE
LS1-21	.0357	.1247	1.500	.625	
LS1-22	.0500	.1872	1.500	.625	
LS1-23	.0357	.1872	1.500	.625	
LS1-24	.0500	.2497	2.000	1.125	
LS1-25	.0357	.2497	2.000	1.125	



• Minimum Backlash

Precision Ball Bearing Units or Oil-Less Bronze Bearing Units

Longer Lead screws and quantity discounts are available on request.

LINEAR SLIDES

TECHNICAL DATA

W. M. Berg, Inc. manufactures a complete line of off the shelf linear ball slides and linear crossed roller slide bearings. Made to the highest quality standards, components must pass strict inspection requirements at each stage of manufacturing. These Quality Control steps ensure precise, uniform, linear movement with low friction and minimum side-play.

Available in inch or metric sizes, and in travel lengths ranging from 1/2 inch to 24 inches, slides have flat, parallel, and smooth mounting surfaces. Equipped with mounting holes, they are shipped ready to install, with no need for modifications or adjustments.

Linear Ball Slides

W. M. Berg Inc. Linear Ball Slides are designed to provide precise linear movement for light to medium loads. Their construction, as shown in Figure 1, consists of precision Grade 5 balls rolling along ground wire ways. Since the rolling contact surface is a point, the bearing ways are self cleaning, expelling matter which may deposit on their surfaces.

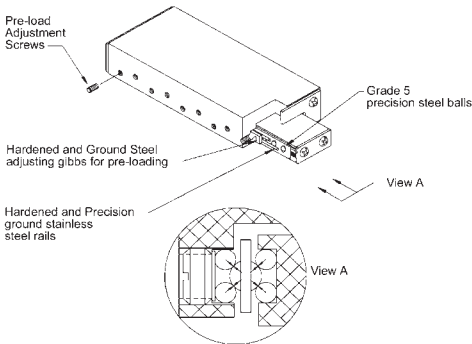


FIGURE 1

Linear Crossed Roller Slides

W. M. Berg Inc. Linear Crossed Roller Slides are designed to provide precise linear movement for medium to heavy loads. Their improved stiffness and rigidity mean long term reliability under the punishment of vibration and shock conditions. Their construction as shown in Figure 2 consists of precision rollers rolling along ground flat ways. Since the rolling contact surface is a line, they can support greater loads than the ball slides

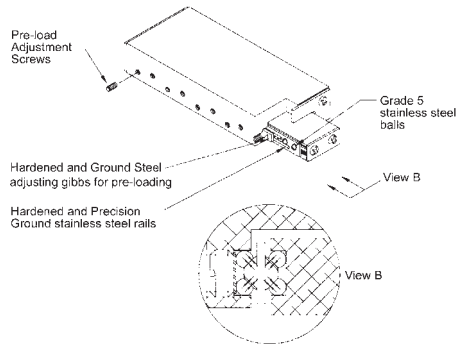


FIGURE 2

Straightness of Travel = Precision Series - .0005 in./in.

* Ultra-precision Series - .0004 in./in

Repeatability of Travel = Precision Series - .0001 in.

Ultra-precision Series - .00005 in.

Life = 10×10^6 in. of Travel at Safe Load Capacity

= 100×10^6 in. of Travel at 1/2 Safe Load Capacity

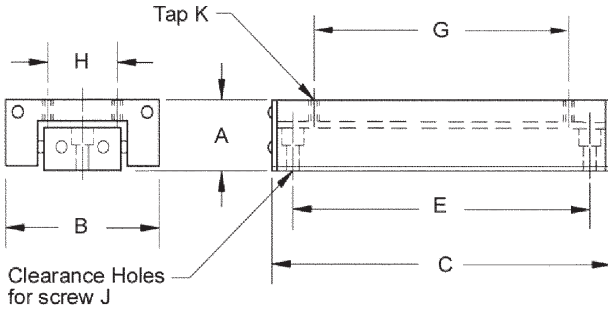
Coefficient of Friction - .003

$$\text{Safe Load Capacity} = \frac{\text{Rated Load Capacity}}{\text{Safety Factor (SF)}}$$

* Inspection Report Available for This Accuracy

ULTRA-PRECISION LINEAR BALL SLIDES

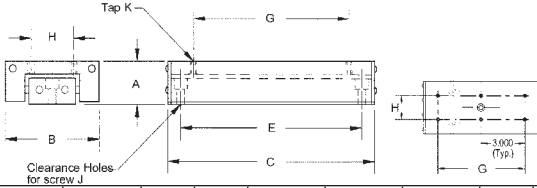
TRAVEL	MATERIAL
.50" TO 10.00"	ALUMINUM BLACK ANODIZED



STOCK NO.	TRAVEL	A	B	C	E	G	H	J	K	RATED LOAD (lbs.)
LPSB-5A	.5			1.56	1.250	1.250				10
LPSB-10A	1.0			2.56	2.250	2.250				15
LPSB-15A	1.5	.500	1.00	3.06	2.750	2.750	.437	#4	#6-32	20
LPSB-20A	2.0			3.56	3.250	3.250				30
LPSC-10A	1.0			2.00	1.625	1.375				25
LPSC-15A	1.5			2.75	2.250	2.126				30
LPSC-20A	2.0	.750	1.75	3.25	2.750	2.625	.875	#6	#6-32	35
LPSC-30A	3.0			4.00	3.500	3.375				40
LPSD-10A	1.0			2.62	2.125	2.125				70
LPSD-20A	2.0			4.00	3.375	3.000				90
LPSD-30A	3.0	1.000	2.62	5.00	4.375	4.000	1.250	#10	#10-32	110
LPSD-40A	4.0			6.00	5.375	5.000				130
LPSD-50A	5.0			8.00	7.375	7.000				180
LPSJ-20A	2.0			4.00	2.500	2.000				130
LPSJ-30A	3.0			5.75	4.250	3.750				180
LPSJ-50A	5.0	1.375	3.50	8.00	6.500	6.000	2.000	#10	#10-32	220
LPSJ-65A	6.5			10.25	8.750	8.250				280
LPSJ-90A	9.5			14.00	12.500	12.000				375
LPSK-50A	5.0			8.25	6.250	6.250				300
LPSK-70A	7.0	2.000	5.75	12.00	10.000	10.000	4.000	1/4	1/4-20	420
LPSK-100A	10.0			15.00	13.000	13.000				520

LINEAR BALL SLIDES

TRAVEL	MATERIAL
.50" TO 24.00"	ALUMINUM BLACK ANODIZED



STOCK NO	TRAVEL	A	B	C	E	G	H	J	K	RATED LOAD (lbs.)
LBSG-5	.5			.75	.375	.375				1.50
LBSG-10	1.0	.23	.38	1.25	.875	.875	.156	#2-56 TAP	#2-56*	1.50
LBSG-15	1.5			1.75	1.375	1.375				1.50
LBSA-5	.5			1.06	.750	.625				4
LBSA-10	1.0			2.06	1.375	1.625				8
LBSA-20	2.0			3.06	2.375	2.625				12
LBSA-30	3.0	.32	.56	4.06	3.375	3.625	.218	#2	#2-56	14
LBSA-40	4.0			5.06	3.500	4.625				16
LBSA-50	5.0			6.06	4.500	5.625				18
LBSE-5	.5			1.06	.750	.625				5
LBSE-10	1.0			2.06	1.375	1.625				9
LBSE-20	2.0			3.06	2.375	2.625				12
LBSE-30	3.0	.40	.75	4.06	3.375	3.625	.375	#4	#4-40	14
LBSE-40	4.0			5.06	3.500	4.625				16
LBSE-50	5.0			6.06	4.500	5.625				18
LBSB-5	.5			1.56	1.250	1.250				10
LBSB-10	1.0			2.56	2.250	2.250				15
LBSB-15	1.5			3.06	2.750	2.750				20
LBSB-20	2.0	.50	1.00	3.56	3.250	3.250	.437	4	#6-32	25
LBSB-30	3.0			4.56	4.250	4.250				30
LBSB-40	4.0			5.56	5.250	5.250				35
LBSB-50	5.0			6.56	6.250	3.250				40
LBSF-7	.8			1.56	1.125	1.250				10
LBSF-15	1.5			2.56	2.125	2.250				15
LBSF-20	2.0			3.56	3.125	3.250				20
LBSF-30	3.0	.53	1.06	4.56	3.250	4.000	.437	6	#6-32	25
LBSF-40	4.0			6.00	4.000	5.500				30
LBSF-60	6.0			8.00	5.000	7.500				35
LBSF-80	8.0			10.00	7.000	9.500				40
LBSH-10	1.0			2.00	1.500	1.375				15
LBSH-20	2.0			3.00	2.500	2.375				20
LBSH-30	3.0			4.00	3.500	3.375				25
LBSH-35	3.5	.62	1.50	5.00	3.500	4.375	.625	6	#6-32	30
LBSH-40	4.0			6.00	4.000	5.375				35
LBSH-60	6.0			8.00	5.000	7.375				45
LBSH-80	8.0			10.00	7.000	9.375				55
LBSC-10	1.0			2.00	1.625	1.375				25
LBSC-15	1.5			2.75	2.250	2.125				30
LBSC-20	2.0			3.25	2.750	2.625				35
LBSC-30	3.0	.75	1.75	4.00	3.500	3.375	.875	6	#6-32	40
LBSC-40	4.0			5.00	4.500	4.375				45
LBSC-60	6.0			7.00	6.500	6.375				55
LBSD-10	1.0			2.62	2.125	2.125				70
LBSD-20	2.0			4.00	3.000	3.000				90
LBSD-30	3.0			5.00	4.000	4.000				110
LBSD-40	4.0			6.00	5.000	5.000				130
LBSD-50	5.0			8.00	7.000	7.000				180
LBSD-60**	6.0	1.00	2.62	9.00	6.000	6.000	1.250	#10	#10-32	120
LBSD-90**	9.0			12.00	9.000	9.000				130
LBSD-120**	12.0			15.00	12.000	12.000				145
LBSD-150**	15.0			18.00	15.000	15.000				160
LBSD-180**	18.0			21.00	18.000	18.000				170
LBSD-210**	21.0			24.00	21.000	21.000				150
LBSD-240**	24.0			27.00	24.000	24.000				120

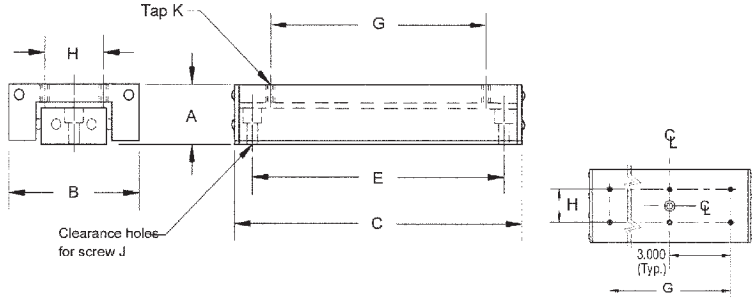
See Linear Slides Technical Data at beginning of this section for additional specifications.

* Tapped hole is supplied.

** Top Mounting hole configuration for slides LBSD-60 thru LBSD-240

LINEAR CROSSED ROLLER SLIDES

TRAVEL	MATERIAL
.50" TO 6.00"	ALUMINUM BLACK ANODIZED



STOCK NO.	TRAVEL	A	B	C	E	G	H	K	RATED CAPACITY(Lbs.)
LRSA-5	.50			1.06	.750	.625			32
LRSA-10	1.00	.32	.56	2.06	1.375	1.625	.218	#2-56	56
LRSA-20	2.00			3.06	2.375	2.625			68
LRSB-5	.50			1.06	.750	.625			50
LRSB-10	1.00	.40	.75	2.06	1.375	1.625	.375	#4-40	80
LRSB-20	2.00			3.06	2.375	2.625			100
LRSC-15	1.50			2.56	2.125	2.250			135
LRSC-20	2.00	.53	1.06	3.56	3.125	3.250	.437	#6-32	225
LRSC-30	3.00			4.56	3.250	4.000			265
LRSD-10	1.00			2.00	1.500	1.375			135
LRSD-20	2.00	.62	1.50	3.00	2.500	2.375	.625	#6-32	180
LRSD-30	3.00			4.00	3.500	3.375			180
LRSD-40	4.00			6.00	4.000	5.375			310
LRSE-10	1.00			2.00	1.625	1.375			180
LRSE-20	2.00	.75	1.75	3.25	2.750	2.625	.875	#6-32	210
LRSE-30	3.00			4.00	3.500	3.375			240
LRSE-40	4.00			6.00	4.000	5.500			310
LRSF-15	1.50			2.62	1.875	1.625			330
LRSF-20	2.00	1.00	2.62	4.00	3.375	3.000	1.250	#10-32	420
LRSF-30	3.00			5.00	4.375	4.000			450
LRSF-40	4.00			6.00	5.375	5.000			500
LRSF-60	6.00			9.00	7.000	6.000			705

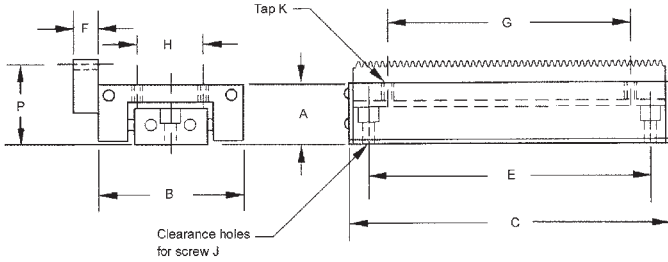
** Top mounting hole configuration for LRSF-60.

See Linear Slides Technical Data at beginning of this section for additional specifications.



RACK DRIVEN BALL SLIDES

TRAVEL	MATERIAL
.50" TO 18.00"	RACK - 416 STAINLESS STEEL



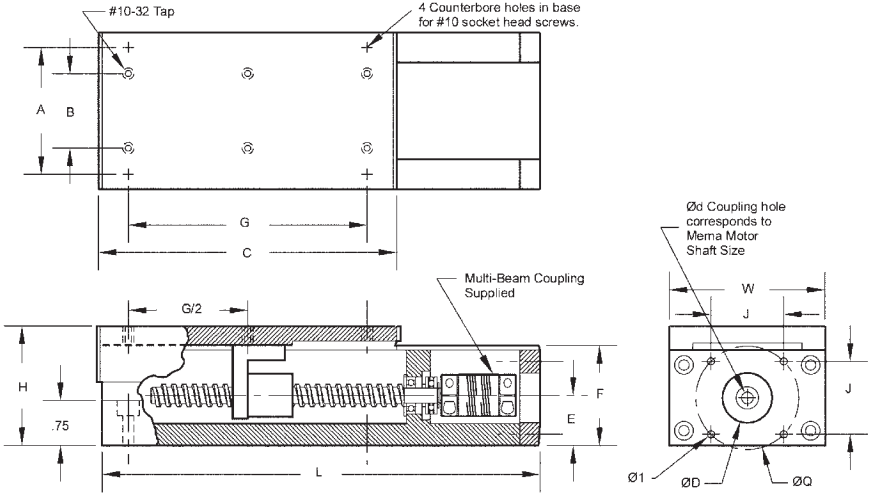
STOCK NO.	MAX TRAVEL (Inch)	A	B	C	E	G	H	J	K	P	F	RATED LOAD (lbs.)	DIAMETRAL PITCH
LRDB-5	0.5			1.56	1.250	1.250						5	1/20 20°PA
LRDB-10	1.0			2.56	2.250	2.250						10	
LRDB-15	1.5			3.06	2.750	2.750						15	
LRDB-20	2.0	.50	1.00	3.56	3.250	3.250	.437	#4	#6-32	.562		20	
LRDB-30	3.0			4.56	4.250	4.250						30	
LRDB-40	4.0			5.56	5.250	5.250						35	
LRDB-50	5.0			6.56	6.250	6.250						40	
LRDD-10	1.0			2.62	2.125	2.125						40	1/10 20°PA
LRDD-20	2.0			4.00	3.375	3.000					.230	60	
LRDD-30	3.0			5.00	4.375	4.000						90	
LRDD-40	4.0			6.00	5.375	5.000						116	
LRDD-50	5.0	1.00	2.62	8.00	7.375	7.000						120	
LRDD-60	6.0			9.00	7.000	6.000	1.250	#10	#10-32	1.093		120	
LRDD-90	9.0			12.00	10.000	9.000						130	
LRDD-120	12.0			15.00	13.000	12.000						145	
LRDD-150	15.0			18.00	16.000	15.000						160	
LRDD-180	18.0			21.00	19.000	18.000						170	

See Linear Slides Technical Data at beginning of this section for additional specifications.



LINEAR TABLES

TRAVEL	MATERIALS
3.00" TO 8.00"	CARRIAGE & BASE - BLACK ANODIZED ALUMINUM • NUT - DELRIN ROLLING ELEMENTS - HARDENED STAINLESS STEEL • ACME LEAD SCREW - 303 STAINLESS STEEL



ROLLER SERIES	BALL SERIES	TRAVEL	LOAD RATING (lbs.)		A	B	C	G	H	W	L	MOUNTING REFERENCE DATA						
			ROLLER SERIES	BALL SERIES								MOTOR SIZE	NEMA@ Ød	E	F	ØD	I	ØQ
TRSD-30	TBSD-30	3.00	450	110			5.00	4.000			7.34	17	5 mm H7	.840	1.675	22 mm H7	Ø.120 (1.73)	1.220
TRSD-40	TBSD-40	4.00	500	130	2.125	1.250	6.00	5.000	2.00	2.62	8.34							
TRSD-60	TBSD-60	6.00	700	120			9.00	6.000			11.34							
TRSK-40	TBSK-40	4.00	400	130			6.00	5.000			8.56	23	.2498 + .0005	1.140	2.260	1.502 + .001	#10-32	2.625 (1.86)
TRSK-60	TBSK-60	6.00	500	120	3.000	3.000	8.00	7.000	2.75	4.00	10.56							
TRSK-80	TBSK-80	8.00	620	140			10.00	9.000			12.56							

Travel = .0833 Inch per revolution

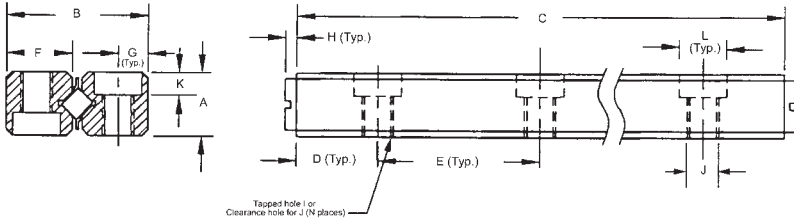
Lead Accuracy = .003 in./ft.

Other sizes and materials available on request.

CROSS ROLLER BEARINGS RAIL SET

MATERIAL

RAILS & ROLLERS - HARDENED & GROUND TOOL STEEL • RETAINERS - BRASS



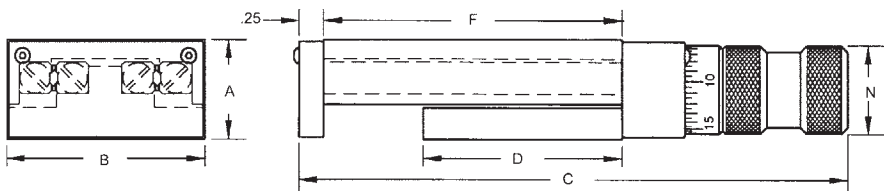
STOCK NO.	TRAVEL	A	B +0.000 -0.008	C	D	E	F	G	H	I	J	K	L	N	RATED CAPACITY (lbs.)
LR1-02	.94			1.968										2	232
LR1-03	1.33			2.952										3	348
LR1-04	1.33			3.936										4	464
LR1-05	1.33			4.920										5	638
LR1-06	2.12			5.904										6	696
LR1-07	2.11	.315	.707	6.888	.492	.984	.328	.137	.078	#8-32	#5	.133	.218	7	870
LR1-08	2.11			7.872										8	986
LR1-09	3.29			8.856										9	1044
LR1-10	4.08			9.840										10	1160
LR1-11	4.08			10.824										11	1276
LR1-12	4.07			11.808										12	1450
LR2-04	1.74			3.937										2	720
LR2-06	2.84			5.906										3	1200
LR2-08	3.95			7.875										4	1440
LR2-10	5.06			9.844										5	1920
LR2-12	6.16			11.813										6	2160
LR2-14	7.27			13.782										7	2640
LR2-16	8.37			15.751										8	2880
LR2-18	8.54			17.720										9	3360
LR2-20	8.70	.591	1.217	19.969	.984	1.969	.544	.239	.120	1/4-28	#10	.200	.375	10	3840
LR2-22	8.86			21.658										11	4320
LR2-24	9.02			23.627										12	4800
LR2-26	16.25			25.590										13	4320
LR2-28	17.36			27.559										14	4800
LR2-30	18.46			29.528										15	5040
LR2-32	19.57			31.496										16	5522
LR2-34	20.67			33.464										17	5760
LR2-36	22.72			35.433										18	6000

Part number represents two sets of parts shown in diagram.

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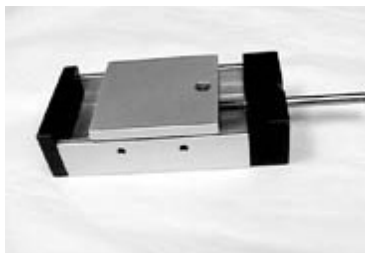
ULTRA-PRECISION CROSS ROLLER LEAD SCREW DRIVEN SLIDE ASSEMBLIES

STYLE	TRAVEL	MATERIAL
KNOB	1" TO 6"	RAILS & ROLLERS - HARDENED AND GROUND TOOL STEEL TOP CARRIAGE 6061-T6 ALUMINUM, CLEAR ANODIZED OR G2 CLOSE GRAIN CAST IRON • RETAINERS - BRASS



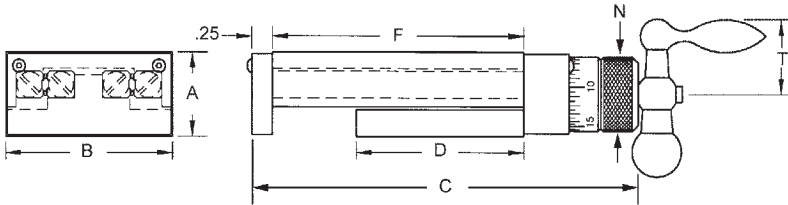
ALUMINUM STOCK NO.	CAST IRON STOCK NO.	TRAVEL	A	B	C KNOB STYLE	D	F	N	RATED CAPACITY (lbs.)
LDA-01K	LDS-01K	1			5.5	2	3		232
LDA-02K	LDS-02K	1	.98	2.00	6.5	3	4	7/8	348
LDA-03K	LDS-03K	2			7.5	4	6		464
LDA-04K	LDS-04K	1			6.87	3	4		348
LDA-05K	LDS-05K	1	1.25	3.00	7.87	4	5		522
LDA-06K	LDS-06K	2			8.87	4	6		464
LDA-07K	LDS-07K	1			8.87	5	6	1-3/32	638
LDA-08K	LDS-08K	2			10.87	6	8		754
LDA-09K	LDS-09K	2	1.44	4.00	12.87	8	10		1044
LDA-10K	LDS-10K	3			14.87	9	12		1102
LDA-11K	LDS-11K	2			11.37	6	8		1200
LDA-12K	LDS-12K	4	2.00	6.00	15.37	8	12	1-3/8	1440
LDA-13K	LDS-13K	6			19.37	10	16		1680

Mounting holes can be supplied at an additional cost, contact Customer Service.



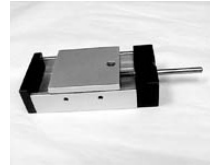
ULTRA-PRECISION CROSS ROLLER LEAD SCREW DRIVEN SLIDE ASSEMBLIES

STYLE	TRAVEL	MATERIAL
CRANK	1" TO 6"	RAILS & ROLLERS - HARDENED AND GROUND TOOL STEEL TOP CARRIAGE 6061-T6 ALUMINUM, CLEAR ANODIZED OR G2 CLOSE GRAIN CAST IRON • RETAINERS - BRASS



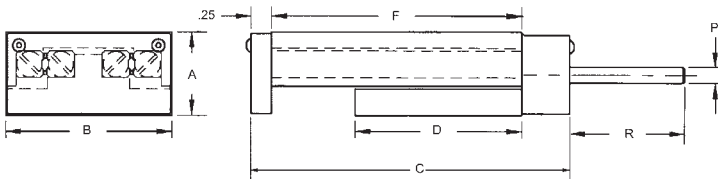
ALUMINUM STOCK NO.	CAST IRON STOCK NO.	TRAVEL	A	B	C CRANK STYLE	D	F	N	T	RATED CAPACITY (lbs.)
LDA-01C	LDS-01C	1	.98	2.00	6.12	2	3	7/8	1.00	232
LDA-02C	LDS-02C	1			7.12	3	4			348
LDA-03C	LDS-03C	2			8.12	4	6			464
LDA-04C	LDS-04C	1	1.25	3.00	7.25	3	4	1.00	348	
LDA-05C	LDS-05C	1			8.25	4	5		522	
LDA-06C	LDS-06C	2			9.25	4	6		464	
LDA-07C	LDS-07C	1	1.44	4.00	9.25	5	6	1-3/32	1.00	638
LDA-08C	LDS-08C	2			11.25	6	8			754
LDA-09C	LDS-09C	2			13.25	8	10			1044
LDA-10C	LDS-10C	3			15.25	9	12			1102
LDA-11C	LDS-11C	2	2.00	6.00	12.31	6	8	1-3/8	1.50	1200
LDA-12C	LDS-12C	4			16.31	8	12			1440
LDA-13C	LDS-13C	6			20.31	10	16			1680

Mounting holes can be supplied at an additional cost, contact Customer Service.



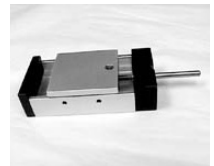
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STYLE	TRAVEL	MATERIAL
SHAFT	1" TO 6"	RAILS & ROLLERS - HARDENED AND GROUND TOOL STEEL TOP CARRIAGE 6061-T6 ALUMINUM, CLEAR ANODIZED OR G2 CLOSE GRAIN CAST IRON • RETAINERS - BRASS



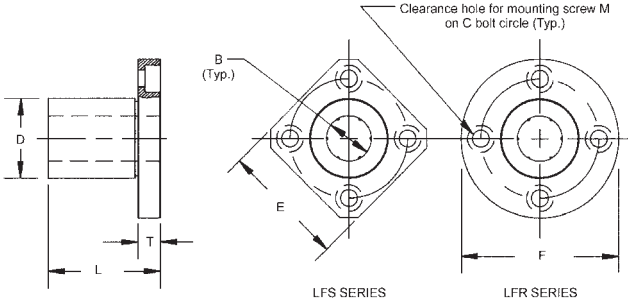
ALUMINUM STOCK NO.	CAST IRON STOCK NO.	TRAVEL	A	B	C SHAFT STYLE	D	F	R	P +.0000 -.0002	RATED CAPACITY (lbs.)
LDA-01S	LDS-01S	1	.98	2.00	5.25	2	3	1.38	.1873	232
LDA-02S	LDS-02S	1			6.26	3	4			348
LDA-03S	LDS-03S	2			7.25	4	6			464
LDA-04S	LDS-04S	1	1.25	3.00	6.50	3	4	1.50	.1873	348
LDA-05S	LDS-05S	1			7.50	4	5			522
LDA-06S	LDS-06S	2			8.50	4	6			464
LDA-07S	LDS-07S	1	1.44	4.00	8.50	5	6	1.50	.1873	638
LDA-08S	LDS-08S	2			10.50	6	8			754
LDA-09S	LDS-09S	2			12.50	8	10			1044
LDA-10S	LDS-10S	3			14.50	9	12			1102
LDA-11S	LDS-11S	2	2.00	6.00	11.00	6	8	2.13	.2498	1200
LDA-12S	LDS-12S	4			15.00	8	12			1440
LDA-13S	LDS-13S	6			19.00	10	16			1680

Mounting holes can be supplied at an additional cost, contact Customer Service.



FLANGED TYPE LINEAR BEARINGS

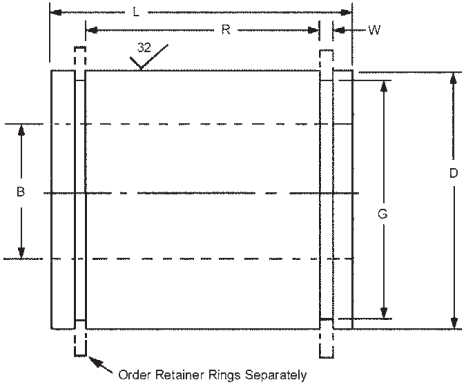
STYLE	MATERIAL
SQUARE OR ROUND FLANGE	HOUSING & BALLS - 52100 CHROME STEEL RETAINER - DELRIN



SQUARE FLANGE STOCK NO.	ROUND FLANGE STOCK NO.	WORKING BORE B	OUTSIDE DIA. D	L ±.012 MAX.	T	F	E	USE SHAFT SERIES	C	MOUNTING SCREW M	RADIAL LOAD RATING (lbs.)
LFS-1	LFR-1	.2500 -0.0004	.5000 -0.0005	.750	.22	1.250	1.00	LMS-4-36	.875	#6	6
LFS-2	LFR-2	.3750 -0.0004	.6250 -0.0005	.875	.25	1.500	1.25	LMS-6-36	1.062	#8	7
LFS-3	LFR-3	.5000 -0.0004	.8750 -0.0005	1.250	.25	1.750	1.37	LMS-8-36	1.312	#8	18
LFS-4	LFR-4	.7500 -0.0004	1.2500 -0.0007	1.625	.31	2.187	1.68	LMS-12-36	1.718	#10	31
LFS-5	LFR-5	1.0000 -0.0004	1.5625 -0.0007	2.250	.31	2.500	2.00	LMS-16-36	2.031	#10	36
LFS-6	LFR-6	1.2500 -0.0005	2.0000 -0.0008	2.625	.37	3.125	2.50	LMS-20-36	2.562	1/4	63
LFS-7	LFR-7	1.5000 -0.0005	2.3750 -0.0008	3.000	.50	3.750	3.00	LMS-24-36	3.062	5/16	92
LFS-8	LFR-8	2.0000 -0.0005	3.0000 -0.0009	4.000	.50	4.375	3.50	LMS-32-36	3.687	5/16	182

LINEAR BALL BEARINGS

SHAFT SIZE	MATERIAL
1/4" TO 2"	CHROME STEEL OUTER SLEEVE HARDENED & GROUND STEEL BALLS - HARDENED STEEL



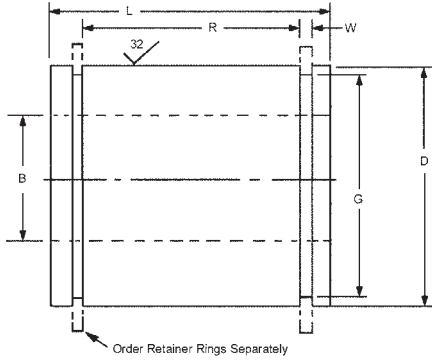
STOCK NO.	WORKING BORE B	OUTSIDE DIAMETER D	L	±.015 R	+.005 -.000 W	+.000 -.008 G	MAXIMUM SHAFT DIAMETER	USE SHAFT SERIES	REC. FITS		MAX ROLLING LOAD (lbs.)	RETAINER RING STOCK NO.
									NORM +.0005	PRESS +.0005		
LMB-1	.2500-.0005	.5000-.0004	3/4	.433	.039	.468	.2490	LMS-4-*	.5000	.4990	25	Q2-50-CP
LMB-2	.3750-.0005	.6250-.0004	7/8	.558	.039	.588	.3740	LMS-6-*	.6250	.6240	51	Q2-62-CP
LMB-3	.5000-.0005	.8750-.0004	1-1/4	.871	.046	.821	.4990	LMS-8-*	.8750	.8740	102	Q2-87-CP
LMB-4	.7500-.0005	1.2500-.0004	1-5/8	1.054	.056	1.176	.7490	LMS-12-*	1.2500	1.2490	205	Q2-125-CP
LMB-5	1.0000-.0005	1.5625-.0004	2-1/4	1.619	.068	1.468	.9990	LMS-16-*	1.5625	1.5615	385	Q2-156-CP
LMB-6	1.2500-.0006	2.0000-.0005	2-5/8	1.869	.068	1.886	1.2490	LMS-20-*	2.0000	1.9983	540	Q2-200-CP
LMB-7	1.5000-.0006	2.3750-.0005	3	2.240	.086	2.239	1.4989	LMS-24-*	2.3750	2.3733	750	Q2-237-CP
LMB-8	2.0000-.0008	3.0000-.0006	4	3.000	.103	2.838	1.9987	LMS-32-*	3.0000	2.99982	1080	Q2-300-CP

* Specify Length Required.



LINEAR BALL BEARINGS

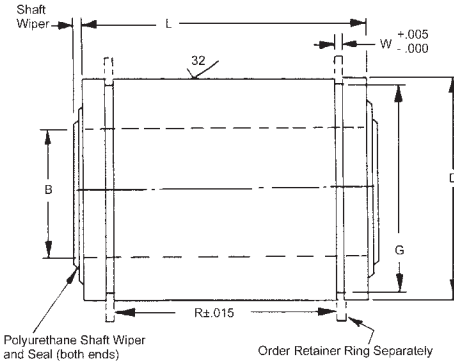
SHAFT SIZE	MATERIAL
1/8" TO 1"	STAINLESS STEEL OUTER SLEEVE HARDENED & GROUND STEEL BALLS - HARDENED STEEL



STOCK NO.	WORKING BORE B	OUTSIDE DIAMETER D	L	±.015 R	+.005 -.000 W	+.000 -.008 G	MAXIMUM SHAFT DIAMETER	USE SHAFT SERIES	REC. FITS		MAX ROLLING LOAD (lbs.)	RETAINER RING STOCK NO.
									NORM +.0005	PRESS +.0005		
LMB-125SS	.1250-.0003	.3125-.0004	1/2	.312	.029	.290	.1247	S1-8	.3125	.3115	7	Q2-31
LMB-187SS	.1875-.0003	.3750-.0004	9/16	.375	.029	.352	.1872	S1-11	.3750	.3740	9	Q2-37
LMB-1SS	.2500-.0005	.5000-.0004	3/4	.433	.039	.468	.2490	LMS-4-*	.5000	.4999	25	Q2-50
LMB-2SS	.3750-.0005	.6250-.0004	7/8	.558	.039	.588	.3740	LMS-6-*	.6250	.6240	51	Q2-62
LMB-3SS	.5000-.0005	.8750-.0004	1-1/4	.871	.046	.821	.4990	LMS-8-*	.8750	.8740	102	Q2-87
LMB-4SS	.7500-.0005	1.2500-.0004	1-5/8	1.054	.056	1.176	.7490	LMS-12-*	1.2500	1.2490	205	Q2-125
LMB-5SS	1.0000-.0005	1.5625-.0004	2-1/4	1.619	.068	1.468	.9990	LMS-16-*	1.5625	1.5615	385	Q2-156

LINEAR BALL BEARINGS WITH SHAFT WIPERS

SHAFT SIZE	MATERIAL
1/4" TO 1-1/2"	CHROME STEEL OUTER SLEEVE HARDENED & GROUND STEEL BALLS - HARDENED STEEL



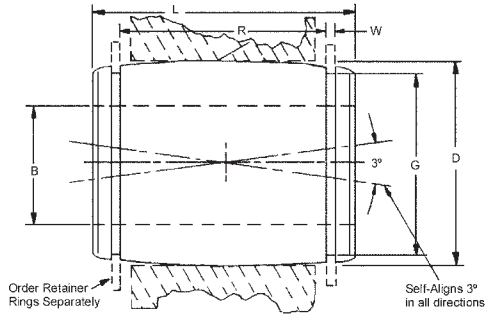
STOCK NO.	WORKING BORE B	HOUSING BORE D	L	±.015 R	+.005 -.000 W	+.000 -.008 G	MAX SHAFT SIZE	USE SHAFT SERIES	REC. FITS		RATED ROLLING LOAD (lbs.)	REPLACEMENT WHIPERS (2) REQ'D	RETAINER RING STOCK NO.
									NORM +.0005	PRESS +.0005			
LMB-1-W	.2500-.0005	.5000-.0004	3/4	.433	.039	.468	.2490	LMS-4-*	.5000	.4990	25	U-W1	Q2-50-CP
LMB-2-W	.3750-.0005	.6250-.0004	7/8	.558	.039	.588	.3740	LMS-6-*	.6250	.6240	51	U-W2	Q2-62-CP
LMB-3-W	.5000-.0005	.8750-.0004	1-1/4	.871	.046	.821	.4990	LMS-8-*	.8750	.8740	102	U-W3	Q2-87-CP
LMB-4-W	.7500-.0005	1.2500-.0004	1-5/8	1.054	.056	1.176	.7490	LMS-12-*	1.2500	1.2490	205	U-W4	Q2-125-CP
LMB-5-W	1.0000-.0005	1.5625-.0004	2-1/4	1.619	.068	1.468	.9990	LMS-16-*	1.5625	1.5615	385	U-W5	Q2-156-CP
LMB-6-W	1.2500-.0006	2.0000-.0005	2-5/8	1.869	.068	1.886	1.2490	LMS-20-*	2.0000	1.9983	540	U-W6	Q2-200-CP
LMB-7-W	1.5000-.0006	2.3750-.0005	3	2.240	.086	2.239	1.4989	LMS-24-*	2.3750	2.3733	750	U-W7	Q2-237-CP

- * Specify Length Required.
- Low coefficient of friction



LINEAR BALL BEARINGS SELF-ALIGNING-BARREL STYLE

SHAFT SIZE	MATERIAL
1/4" TO 1-1/2"	CHROME STEEL OUTER SLEEVE HARDENED & GROUND STEEL BALLS - HARDENED STEEL

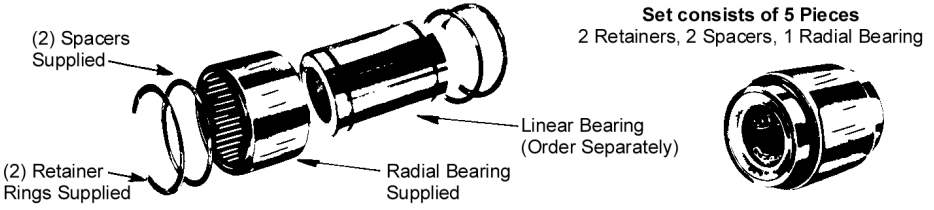


WORKING STOCK NO.	BORE B	HOUSING BORE D	L	$\pm .015$ R	$+ .005$ $- .000$ W	$+ .005$ $- .000$ G	MAX. SHAFT SIZE
LMB-1-B	.2500-.0005	.5000-.0004	3/4	.437	.039	.468	.2490
LMB-2-B	.3750-.0005	.6250-.0004	7/8	.562	.039	.588	.3740
LMB-3-B	.5000-.0005	.8750-.0004	1-1/4	.875	.046	.821	.4990
LMB-4-B	.7500-.0005	1.2500-.0004	1-5/8	1.062	.056	1.176	.7490
LMB-5-B	1.0000-.0005	1.5625-.0004	2-1/4	1.625	.068	1.468	.9990
LMB-6-B	1.2500-.0006	2.0000-.0005	2-5/8	1.875	.068	1.886	1.2490
LMB-7-B	1.5000-.0006	2.3750-.0005	3	2.250	.086	2.239	1.4989

Self-aligning barrel shape allows bearing to accommodate parallel misalignment of up to 3°.

ROTATING LINEAR BEARING SET

SHAFT SIZE	MATERIAL
1/8" TO 2"	CHROME STEEL OUTER SLEEVE HARDENED & GROUND STEEL BALLS - HARDENED STEEL

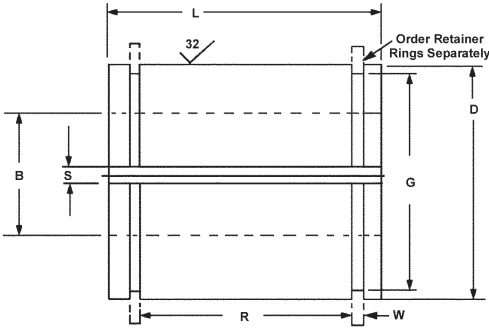


STOCK NO.	USE WITH LINEAR BRG. STOCK NO.	HOUSING BORE FOR PRESS FIT OF RADIAL BEARING	LENGTH OF RADIAL BEARING	LINEAR BRG. SHAFT SIZE
LMW-125	LMB-125SS	.4995	5/16	1/8
LMW-187	LMB-187SS	.5620	5/16	3/16
LMW-250	LMB-1	.6870	3/8	1/4
LMW-375	LMB-2	.8120	1/2	3/8
LMW-500	LMB-3	1.1245 +.001	3/4	1/2
LMW-750	LMB-4	1.4995 -.000	1	3/4
LMW-1000	LMB-5	2.1234	1-1/4	1
LMW-1250	LMB-6	2.3745	1-3/4	1-1/4
LMW-1500	LMB-7	3.7482	1-3/4	1-1/2
LMW-2000	LMB-8	3.7482	1-3/4	2

THIS PRODUCT HAS BEEN DISCONTINUED

LINEAR BALL BEARINGS

STYLE	SHAFT SIZE	MATERIAL
ADJUSTABLE DIAMETER SERIES	1/2" TO 2"	CHROME STEEL OUTER SLEEVE HARDENED & GROUND STEEL BALLS - HARDENED STEEL



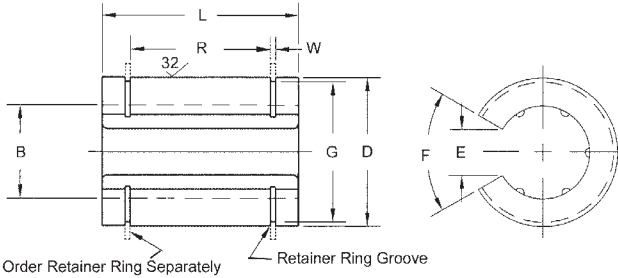
STOCK NO.	BORE B BEFORE ADJUSTMENT	HOUSING BORE BEFORE ADJUSTMENT D*	L	$\pm .015$ R	+ .005 .000 W	+ .005 -.000 G	MAX. SHAFT DIA.	USE SHAFT SERIES	MINIMUM SLOT WIDTH S	MAXIMUM ROLLING LOAD (lbs.)	RETAINER RING STOCK NO.
LMC-3	.5000±.0005	.8750+.0010	1-1/4	.875	.046	.821	.4995	LMS-9-*	1/16	102	Q2-87-CP
LMC-4	.7500±.0005	1.2500+.0010	1-5/8	1.062	.056	1.176	.7495	LMS-13-*	3/32	205	Q2-125-CP
LMC-5	1.0000±.0005	1.5625+.0010	2-1/4	1.625	.068	1.468	.9995	LMS-17-*	3/32	385	Q2-156-CP
LMC-6	1.2500±.0006	2.0000+.0010	2-5/8	1.875	.068	1.886	1.2495	LMS-21-*	3/32	540	Q2-200-CP
LMC-7	1.5000±.0006	2.3750+.0010	3	2.250	.086	2.239	1.4994	LMS-25-*	1/8	750	Q2-237-CP
LMC-8	2.0000±.0008	3.0000+.0010	4	3.000	.103	2.838	1.4994	LMS-33-*	1/8	1080	Q2-300-CP

• Use adjustable type housing to obtain optimum operating fit.

* Specify Length Required.

LINEAR BALL BEARINGS

STYLE	SHAFT SIZE	MATERIAL
OPEN	1/2" TO 2"	CHROME STEEL OUTER SLEEVE HARDENED & GROUND, BALLS - HARDENED STEEL, PLASTIC BALL RETAINER



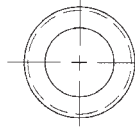
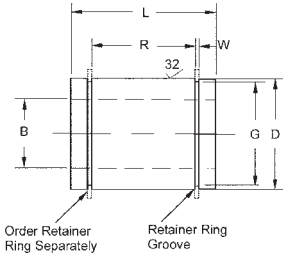
STOCK NO.	BORE B BEFORE ADJUSTMENT	HOUSING BORE BEFORE ADJUSTMENT D•	L	±.015 R	+.005 .000 W	+.005-.000 G	MAX. SHAFT DIA.	USE SHAFT SERIES	MINIMUM SLOT WIDTH S		RATED ROLLING LOAD (lbs.)	RETAINER RING STOCK NO.
									Width E	Angle F		
LMD-3	.5000±.0005	.8750+.0010	1-1/4	.875	.046	.821	.4995	LMS-9-*	9/32	60°	102	Q2-87-CP
LMD-4	.7500±.0005	1.2500+.0010	1-5/8	1.062	.056	1.176	.7495	LMS-13-*	13/32	60°	205	Q2-125-CP
LMD-5	1.0000±.0005	1.5625+.0010	2-1/4	1.625	.068	1.468	.9995	LMS-17-*	9/16	60°	385	Q2-156-CP
LMD-6	1.2500±.0006	2.0000+.0010	2-5/8	1.875	.068	1.886	1.2495	LMS-21-*	5/8	50°	540	Q2-200-CP
LMD-7	1.5000±.0006	2.3750+.0010	3	2.250	.086	2.239	1.4994	LMS-25-*	3/4	50°	750	Q2-237-CP
LMD-8	2.0000±.0008	3.0000+.0010	4	3.000	.103	2.838	1.4994	LMS-33-*	1	50°	1080	Q2-300-CP

• Use adjustable type housing to obtain optimum operating fit.

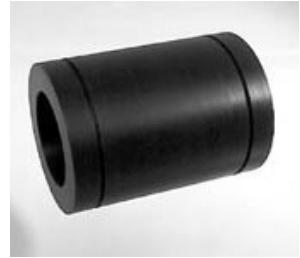
* Specify Length Required.

LINEAR "NO LUBE" BEARINGS

STYLE	SHAFT SIZE	MATERIAL
CLOSED	1/4" TO 1-1/4"	MOLYBDENUM DISULFIDE FILLED NYLON



May be used with either hard or soft ground shafting

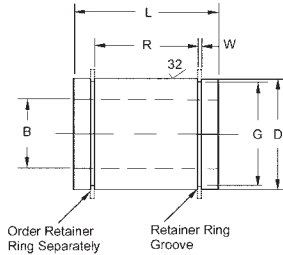


STOCK NO.	BORE B	HOUSING DIA. D	L	±.015 R	+0.10 -0.000 W	+0.10 -0.000 G	BEARING WEIGHT OZ.	USE WITH HARD SHAFTS	USE WITH SOFT S.S. SHAFTS	RETAINER RING
LMN-1	.250+.003	.500-.002	3/4	.437	.039	.468	0.10	LMS-4-*	S1-72	Q2-50-CP
LMN-2	.375+.003	.625-.002	7/8	.562	.039	.588	0.10	LMS-6-*	S1-74	Q2-62-CP
LMN-3	.500+.004	.875-.002	1-1/4	.875	.046	.821	0.40	LMS-8-*	S1-76	Q2-87-CP
LMN-4	.750+.004	1.250-.002	1-5/8	1.062	.056	1.176	0.80	LMS-12-*	S1-78	Q2-125-CP
LMN-5	1.000+.004	1.563-.003	2-1/4	1.625	.068	1.468	2.10	LMS-16-*	S1-80	Q2-156-CP
LMN-6	1.250+.006	2.000-.003	2-5/8	1.875	.068	1.886	3.30	LMS-20-*	S1-82	Q2-200-CP

- PV = 10,000 psi fpm
- Self-lubricating
- Interchangeable with all makes of linear ball bearings
- Good for linear and/or rotation motion

*Specify Lengths Required

STYLE	SHAFT SIZE	MATERIAL
ADJUSTABLE	1/4" TO 1-1/4"	MOLYBDENUM DISULFIDE FILLED NYLON



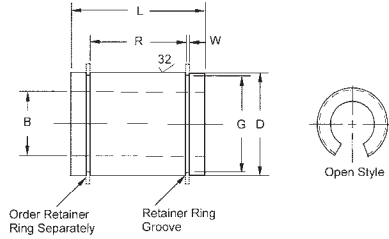
STOCK NO.	BORE B	HOUSING DIA. D	L	±.015 R	+0.10 -0.000 W	+0.10 -0.000 G	BEARING WEIGHT OZ.	USE WITH HARD SHAFTS	USE WITH SOFT S.S. SHAFTS	RETAINER RING
LMN-1-ADJ	.250+.003	.500-.002	3/4	.437	.039	.468	0.10	LMS-4-*	S1-72	Q2-50-CP
LMN-2-ADJ	.375+.003	.625-.002	7/8	.562	.039	.588	0.10	LMS-6-*	S1-74	Q2-62-CP
LMN-3-ADJ	.500+.004	.875-.002	1-1/4	.875	.046	.821	0.40	LMS-8-*	S1-76	Q2-87-CP
LMN-4-ADJ	.750+.004	1.250-.002	1-5/8	1.062	.056	1.176	0.80	LMS-12-*	S1-78	Q2-125-CP
LMN-5-ADJ	1.000+.004	1.563-.003	2-1/4	1.625	.068	1.468	2.10	LMS-16-*	S1-80	Q2-156-CP
LMN-6-ADJ	1.250+.006	2.000-.003	2-5/8	1.875	.068	1.886	3.30	LMS-20-*	S1-82	Q2-200-CP

- PV = 10,000 psi fpm
- Self-lubricating
- Interchangeable with all makes of linear ball bearings
- Good for linear and/or rotation motion

*Specify Lengths Required

LINEAR "NO LUBE" BEARINGS

STYLE	SHAFT SIZE	MATERIAL
OPEN	1/4" TO 1-1/4"	MOLYBDENUM DISULFIDE FILLED NYLON



STOCK NO.	BORE B	HOUSING DIA. D	L	$\pm .015$ R	+ .010 - .000 W	+ .010 - .000 G	BEARING WEIGHT OZ.	USE WITH HARD SHAFTS	USE WITH SOFT S.S. SHAFTS	RETAINER RING
LMN-1-OPN	.250+.003	.500-.002	3/4	.437	.039	.468	0.10	LMS-4-*	S1-72	Q2-50-CP
LMN-2-OPN	.375+.003	.625-.002	7/8	.562	.039	.588	0.10	LMS-6-*	S1-74	Q2-62-CP
LMN-3-OPN	.500+.004	.875-.002	1-1/4	.875	.046	.821	0.40	LMS-8-*	S1-76	Q2-87-CP
LMN-4-OPN	.750+.004	1.250-.002	1-5/8	1.062	.056	1.176	0.80	LMS-12-*	S1-78	Q2-125-CP
LMN-5-OPN	1.000+.004	1.563-.003	2-1/4	1.625	.068	1.468	2.10	LMS-16-*	S1-80	Q2-156-CP
LMN-6-OPN	1.250+.006	2.000-.003	2-5/8	1.875	.068	1.886	3.30	LMS-20-*	S1-82	Q2-200-CP

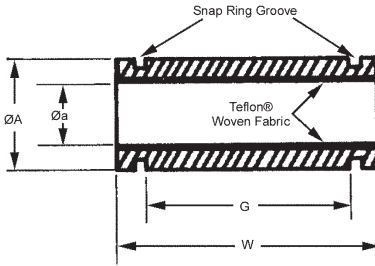
- PV = 10,000 psi fpm
- Self-lubricating
- Interchangeable with all makes of linear ball bearings
- Good for linear and/or rotation motion

*Specify Lengths Required

E

COMPOSITE BEARINGS

SHAFT SIZE	MATERIALS
1/4" TO 4"	TEFLON® / DURALON®

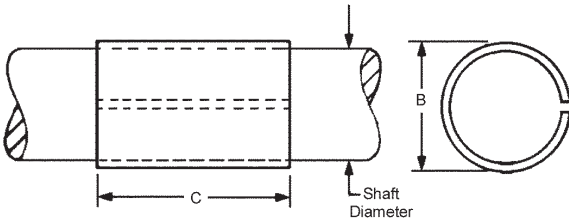


STOCK NO.	Øa	ØA +.000 -.001	W -.001 -.020	G	ØA-Øa CONCENTRICITY
701-66004-024	.2515 .2505	.5006	.750	.447 .427	.001 TIR
701-66006-028	.3765 .3755	.6256	.875	.572 .552	
701-66008-040	.5015 .5005	.8756	1.250	.885 .865	
701-66010-048	.6265 .6255	1.1256	1.500	1.010 .990	
701-66012-052	.7515 .7505	1.2506	1.625	1.072 1.052	
701-66016-072	1.0015 1.0005	1.5631	2.250	1.635 1.615	
701-66020-084	1.2515 1.2505	2.0006	2.625	1.890 1.860	
701-66024-096	1.5015 1.5005	2.3756	3.001	2.265 2.235	
701-66032-128	2.0015 2.0005	3.0006	4.000	3.015 2.985	
701-60040-160	2.5060 2.5050	3.7506	5.000	3.765 3.735	
701-60048-192	3.0070 3.0050	4.5006	6.000	4.515 4.485	
701-60064-256	4.0080 4.0050	6.0006	8.000	6.020 5.980	

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Duralon® is a registered trademark of Rexnord Corporation.

LONGLIFE® BEARINGS

SERIES	FOR SHAFT SIZES	MATERIAL
DRY UNLUBRICATED	1/8" TO 1"	STEEL BACKED POROUS BRONZE AND PTFE-LEAD



- Lasts up to 10x longer than oil impregnated porous bronze bearings
- High loads
- Runs cool - excellent heat dissipation
- Operates in extreme temperatures
- Reduce costs - lower maintenance, eliminate hardened shafting and expensive shaft preparations
- Excellent for rotating, sliding or oscillating motion and both thrust and radial loading
- In fully lubricated environments provides protection during dry starts and from lubrication system failure

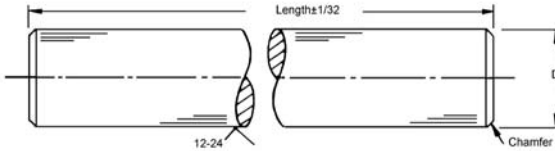
- Maximum Continuous Load:** 50,000 PV's Unlubricated
2,000,000 PV's Lubricated
PV Factor = psi x sfpm
- Maximum Continuous Speed:** 1,000 sfpm Unlubricated
2,000 sfpm Lubricated
- Temperature Range:** +536°F to -328°F
- Compressive Strength:** 44,000 psi

STOCK NO.	NOMINAL SHAFT SIZE	ACTUAL SHAFT DIA.	NOMINAL OUTSIDE DIA. B	HOUSING BORE	C	REC SHAFT
DU14-1 DU14-2	1/8	.1247/.1240	3/16	.1882/.1877	1/8 3/16	S1-8
DU14-5 DU14-6 DU14-7	3/16	.1872/.1865	1/4	.2510/.2504	3/16 1/4 3/8	S1-11
DU14-8 DU14-9	1/4	.2497/.2488	5/16	.3135/.3129	1/4 3/8	S1-14
DU14-10 DU14-11	5/16	.3122/.3113	3/8	.3760/.3754	3/8 1/2	S1-16
DU14-12 DU14-13 DU14-14 DU14-15 DU14-16 DU14-17	3/8	.3747/.3738	15/32	.4698/.4691	3/16 1/4 3/8 1/2 5/8 3/4	S1-18
DU14-18 DU14-19	7/16	.4372/.4362	17/32	.5323/.5315	1/2 3/4	-
DU14-21 DU14-22 DU14-23 DU14-24 DU14-25	1/2	.4997/.4987	19/32	.5948/.5941	1/4 3/8 1/2 5/8 7/8	S1-20
DU14-31 DU14-32 DU14-33	5/8	.6247/.6237	23/32	.7199/.7191	1/4 1/2 3/4	S1-22
DU14-38 DU14-39 DU14-40 DU14-41 DU14-42	3/4	.7497/.7485	7/8	.8761/.8753	3/8 1/2 5/8 3/4 1	S1-23
DU14-51 DU14-53 DU14-54	1	.9997/.9985	1-1/8	1.1261/1.1253	1/2 1 1-1/4	S1-24

LongLife® is a trademark of Glacier Metal Co.

CASE HARDENED & GROUND SHAFTS

FOR DIAMETER	MATERIAL
1/4" TO 2"	C1060 STEEL HARDENED C60-65 OR 440 STAINLESS STEEL HARDENED C50-55



C1060 STEEL		440 STAINLESS STEEL		NOM. DIA.	D DIAMETER	MAX. LENGTH AVAILABLE TO ORDER	
STOCK NO (36" long)	STOCK NO (12" long)	STOCK NO (36" long)	STOCK NO (36" long)				
LMS-4-36 LMS-5-36	- -	- -	- -	1/4	.2490-.0005 .2495-.0005	8 ft.	
LMS-6-36 LMS-7-36 LMS-46-36	- - LMS-46-12	- - -	- - -	3/8	.3740-.0005 .3745-.0005 .3750-.0005	11 ft	
LMS-8-36 LMS-9-36 LMS-48-36	- - LMS-48-12	LMT-8-36 LMT-9-36 -	- - -	1/2	.4990-.0005 .4995-.0005 .5000-.0005		
LMS-50-36	LMS-50-12	-	-	5/8	.6250-.0005		
LMS-12-36 LMS-13-36 LMS-52-36	- - LMS-52-12	LMT-12-36 LMT-13-36 -	- - -	3/4	.7490-.0005 .7495-.0005 .7500-.0005		
LMS-16-36 LMS-17-36 LMS-56-36	- - LMS-56-12	LMT-16-36 LMT-17-36 -	- - -	1	.9990-.0005 .9995-.0005 1.0000-.0005		12 ft.
LMS-20-36 LMS-21-36 LMS-60-36	- - LMS-60-12	- - -	- - -	1-1/4	1.2490-.0005 1.2495-.0005 1.2500-.0005		
LMS-24-36 LMS-25-36 LMS-64-36	- - LMS-64-12	- - -	- - -	1-1/2	1.4989-.0005 1.4994-.0005 1.5000-.0005		
LMS-32-36 LMS-33-36 LMS-72-36	- - LMS-72-12	- - -	- - -	2	1.9987-.0005 1.9994-.0007 2.0000-.0005	11 ft.	

Straightness

LMS-4, LMS-5 best efforts basis

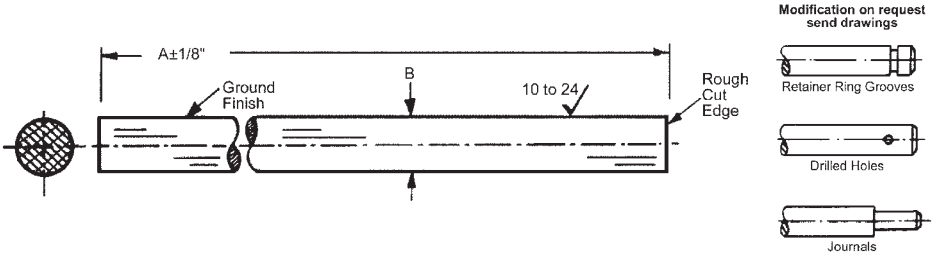
LMS-6 to LMS-72 within .001-.002/ft.

Note: Shafting available in other lengths. Specify by similar stock number and length required.

Example: LMS-21-56" (1.2495 Diameter 56" Long)

GROUND STOCK

FOR SHAFT SIZES	MATERIAL
1/8" TO 1-1/4"	303 STAINLESS STEEL ROCKWELL B75-90

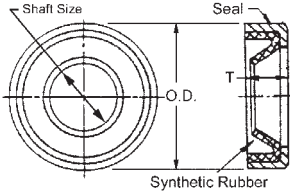


STOCK NO.	NOMINAL DIA.*	B	A	B TOL.
S1-8	1/8	.1247	24	+0.0000
S1-11	3/16	.1872	24	-0.0002
S1-72	1/4	.2490	36	
S1-73	1/4	.2495	36	+0.0000
S1-74	3/8	.3740	36	-0.0003
S1-75	3/8	.3745	36	
S1-76	1/2	.4990	36	
S1-77	1/2	.4995	36	
S1-78	3/4	.7490	36	
S1-79	3/4	.7495	36	+0.0000
S1-80	1	.9990	36	-0.0005
S1-81	1	.9995	36	
S1-82	1-1/4	1.2490	36	
S1-83	1-1/4	1.2495	36	

* Straightness: up to 3/16" diameter on best effort basis, 1/4" diameter and up .0004 in/in.

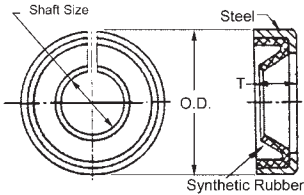
SHAFT SEALS

STYLE	FOR SHAFT SIZES
REGULAR	1/4" TO 2"



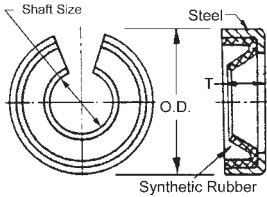
STOCK NO.	SHAFT SIZE	OUTSIDE DIA.	T
LMG-R-1	1/4	.504	.125
LMG-R-2	3/8	.629	.125
LMG-R-3	1/2	.879	.125
LMG-R-4	3/4	1.254	.125
LMG-R-5	1	1.567	.187
LMG-R-6	1-1/4	2.004	.375
LMG-R-7	1-1/2	2.379	.375
LMG-R-8	2	3.004	.375

STYLE	FOR SHAFT SIZES
ADJUSTABLE	1/2" TO 2"



STOCK NO.	SHAFT SIZE	OUTSIDE DIA.	T
LMG-A-3	1/2	.879	.125
LMG-A-4	3/4	1.254	.125
LMG-A-5	1	1.567	.187
LMG-A-6	1-1/4	2.004	.375
LMG-A-7	1-1/2	2.379	.375
LMG-A-8	2	3.004	.375

STYLE	FOR SHAFT SIZES
OPEN	1/2" TO 2"

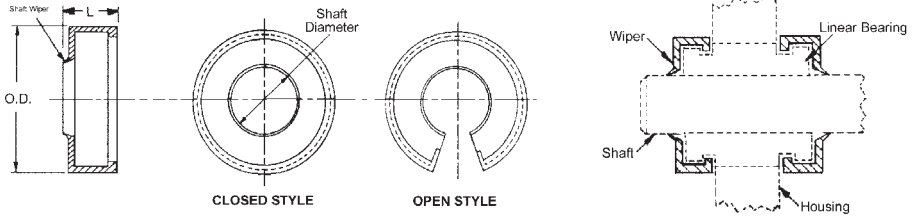


STOCK NO.	SHAFT SIZE	OUTSIDE DIA.	T
LMG-P-3	1/2	.879	.125
LMG-P-4	3/4	1.254	.125
LMG-P-5	1	1.567	.187
LMG-P-6	1-1/4	2.004	.375
LMG-P-7	1-1/2	2.379	.375
LMG-P-8	2	3.004	.375



LINEAR BEARING WIPER - RETAINER

TYPES	FOR SHAFT SIZES	MATERIAL
CLOSED AND OPEN	1/4" TO 1-1/4"	POLYURETHANE



STOCK NO.	SHAFT DIA.	STYLE	OUTSIDE DIA.	L	USE WITH LINEAR BEARING
LMZ-1	1/4	CLOSED	.63	.25	LMB-1
LMZ-2	3/8		.74	.24	LMB-2
LMZ-3	1/2		.99	.25	LMB-3 OR LMC-3
LMZ-4	3/4		1.37	.39	LMB-4 OR LMC-4
LMZ-5	1		1.68	.40	LMB-5 OR LMC-5
LMZ-6	1-1/4		2.12	.49	LMB-6 OR LMC-6
LMZ-13	1/2	OPEN	.99	.25	LMD-3
LMZ-14	3/4		1.37	.39	LMD-4
LMZ-15	1		1.68	.40	LMD-5
LMZ-16	1-1/4		2.12	.49	LMD-6

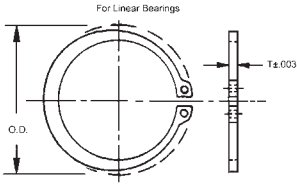


- Simple assembly
- Economical to use
- Quick and easy to replace, snap on design
- Eliminates the need for retainer ring and spacer
- Acts as a shaft wiper and bearing dust shield
- Fits all major brands of linear recirculating ball bearings

E

RETAINER RINGS EXTERNAL DESIGN

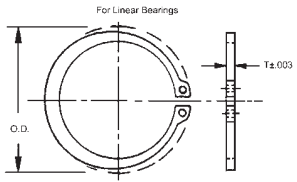
STYLE	FOR SHAFT SIZES	MATERIAL
CLOSED	1/2" TO 3"	CARBON STEEL PLATED



STOCK NO.	SHAFT DIA. (REF)	OUTSIDE DIA.	T	GROOVE DIA.	LINEAR BEARING
Q2-50-CP	1/2	.740	.035	.468	1/4
Q2-62-CP	5/8	.870	.035	.588	3/8
Q2-87-CP	7/8	1.160	.042	.821	1/2
Q2-112-CP	1-1/8	1.490	.050	1.059	5/8
Q2-125-CP	1-1/4	1.620	.050	1.176	3/4
Q2-156-CP	1-9/16	2.010	.062	1.468	1
Q2-200-CP	2	2.440	.062	1.886	1-1/4
Q2-237-CP	2-3/8	2.880	.078	2.239	1-1/2
Q2-300-CP	3	3.530	.093	2.838	2



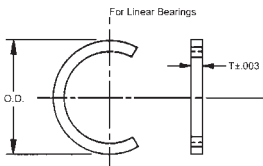
STYLE	FOR SHAFT SIZES	MATERIAL
CLOSED	1/2" TO 3"	STAINLESS STEEL



STOCK NO.	SHAFT DIA. (REF)	OUTSIDE DIA.	T	GROOVE DIA.	LINEAR BEARING
Q2-50	1/2	.740	.035	.468	1/4
Q2-62	5/8	.870	.035	.588	3/8
Q2-87	7/8	1.160	.042	.821	1/2
Q2-112	1-1/8	1.490	.050	1.059	5/8
Q2-125	1-1/4	1.620	.050	1.176	3/4
Q2-156	1-9/16	2.010	.062	1.468	1
Q2-200	2	2.440	.062	1.886	1-1/4
Q2-237	2-3/8	2.880	.078	2.239	1-1/2
Q2-300	3	3.530	.093	2.838	2

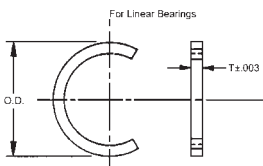


STYLE	FOR SHAFT SIZES	MATERIAL
OPEN	1/2" TO 2-3/8"	CARBON STEEL



STOCK NO.	SHAFT DIA. (REF)	OUTSIDE DIA.	T	GROOVE DIA.	LINEAR BEARING
Q5-50-CP	1/2	.550	.035	.468	1/4
Q5-62-CP	5/8	.673	.035	.588	3/8
Q5-87-CP	7/8	.923	.042	.821	1/2
Q5-112-CP	1-1/8	1.180	.050	1.059	5/8
Q5-125-CP	1-1/4	1.301	.050	1.176	3/4
Q5-156-CP	1-9/16	1.620	.062	1.468	1
Q5-200-CP	2	2.040	.062	1.886	1-1/4
Q5-237-CP	2-3/8	2.429	.078	2.239	1-1/2

STYLE	FOR SHAFT SIZES	MATERIAL
OPEN	1/2" TO 2-3/8"	STAINLESS STEEL

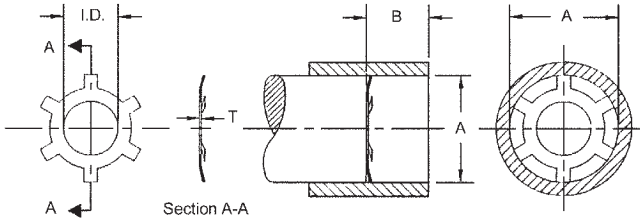


STOCK NO.	SHAFT DIA. (REF)	OUTSIDE DIA.	T	GROOVE DIA.	LINEAR BEARING
Q5-50	1/2	.550	.035	.468	1/4
Q5-62	5/8	.673	.035	.588	3/8
Q5-87	7/8	.923	.042	.821	1/2
Q5-112	1-1/8	1.180	.050	1.059	5/8
Q5-125	1-1/4	1.301	.050	1.176	3/4
Q5-156	1-9/16	1.620	.062	1.468	1
Q5-200	2	2.040	.062	1.886	1-1/4
Q5-237	2-3/8	2.429	.078	2.239	1-1/2

FOR ADDITIONAL RETAINER RINGS, SEE INDEX.

BEARING RETAINER - PUSH IN DESIGN

FOR SHAFT SIZES	MATERIAL
1/8" TO 2"	CARBON STEEL PLATED



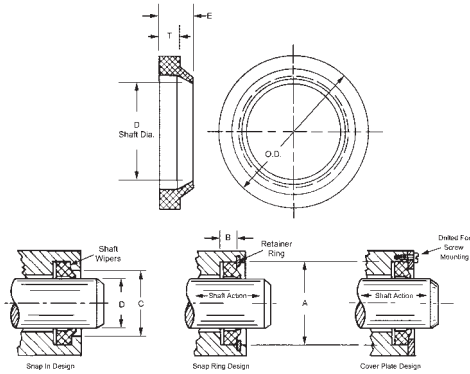
STOCK NO.	LINEAR SHAFT SIZE	A HOUSING BORE	B MINIMUM END SPACE	T±.002	I.D. REF. ONLY
Q6-37-CP	1/8	3/8	.040	.010	3/16
Q6-50-CP	1/4	1/2	.060	.010	1/4
Q6-62-CP	3/8	5/8	.060	.010	3/8
Q6-87-CP	1/2	7/8	.080	.010	5/8
Q6-125-CP	3/4	1-1/4	.080	.015	15/16
Q6-156-CP	1	1-9/16	.080	.015	1-3/16
Q6-200-CP	1-1/4	2	.080	.015	1-9/16
Q6-237-CP	1-1/2	2-3/8	.100	.015	1-7/8
Q6-300-CP	2	3	.100	.015	2-1/4



E

SHAFT WIPERS

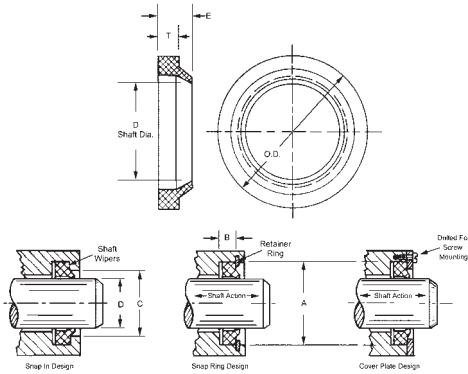
FOR SHAFT SIZES	MATERIAL	TEMPERATURE RANGE
1/2" TO 4"	POLYURETHANE 90A DURO	-40°F TO +190°F



STOCK NO	WIPER DIMENSIONS					HOUSING DIMENSIONS		
	SHAFT (REF.)	D (+.000/- .002)	O.D.	T	E (MAX)	A (+.004/- .000)	B (+/- .003)	C (+.005/- .000)
ANW-9	1/2	.498	.766	.104	.187	.760	.107	.647
ANW-10	9/16	.560	.829	.104	.187	.823	.107	.710
ANW-11	5/8	.623	.891	.104	.187	.885	.107	.772
ANW-12	11/16	.685	.954	.104	.187	.948	.107	.834
ANW-13	3/4	.748	1.016	.104	.187	1.010	.107	.897
ANW-14	13/16	.810	1.090	.104	.187	1.084	.107	.960
ANW-15	7/8	.873	1.153	.104	.187	1.147	.107	1.023
ANW-16	15/16	.935	1.215	.104	.187	1.209	.107	1.085
ANW-17	1	.998	1.278	.104	.187	1.272	.107	1.148
ANW-18	1-1/16	1.060	1.340	.104	.187	1.334	.107	1.210
ANW-19	1-1/8	1.123	1.403	.104	.187	1.397	.107	1.273
ANW-20	1-3/16	1.185	1.465	.104	.187	1.459	.107	1.335
ANW-21	1-1/4	1.248	1.528	.104	.187	1.522	.107	1.398
ANW-22	1-5/16	1.310	1.622	.104	.187	1.614	.107	1.480
ANW-23	1-3/8	1.373	1.685	.104	.187	1.677	.107	1.542
ANW-24	1-7/16	1.435	1.747	.104	.187	1.739	.107	1.605
ANW-25	1-1/2	1.498	1.810	.104	.187	1.802	.107	1.668
ANW-26	1-5/8	1.623	1.935	.104	.187	1.927	.107	1.793
ANW-27	1-3/4	1.748	2.060	.104	.187	2.052	.107	1.918
ANW-28	1-7/8	1.873	2.185	.104	.187	2.177	.107	2.043
ANW-29	2	1.998	2.310	.104	.187	2.302	.107	2.178
ANW-30	2-1/8	2.123	2.435	.104	.187	2.427	.107	2.303
ANW-31	2-1/4	2.248	2.560	.104	.187	2.552	.107	2.428
ANW-32	2-3/8	2.373	2.685	.104	.187	2.677	.107	2.553
ANW-33	2-1/2	2.498	2.810	.104	.187	2.802	.107	2.678
ANW-34	2-5/8	2.623	2.999	.119	.211	2.989	.122	2.834
ANW-35	2-3/4	2.748	3.124	.119	.211	3.114	.122	2.959
ANW-36	2-7/8	2.873	3.249	.119	.211	3.239	.122	3.084
ANW-37	3	2.997	3.374	.119	.211	3.364	.122	3.209
ANW-38	3-1/8	3.122	3.499	.119	.211	3.489	.122	3.334
ANW-39	3-1/4	3.247	3.624	.199	.211	3.614	.122	3.459
ANW-40	3-3/8	3.372	3.749	.199	.211	3.739	.122	3.584
ANW-41	3-1/2	3.497	3.874	.199	.211	3.864	.122	3.709
ANW-42	3-5/8	3.622	3.999	.199	.211	3.989	.122	3.834
ANW-43	3-3/4	3.747	4.124	.199	.211	4.114	.122	3.959
ANW-44	3-7/8	3.872	4.249	.199	.211	4.239	.122	4.084
ANW-45	4	3.997	4.439	.135	.238	4.427	.138	4.240

SHAFT WIPERS

FOR SHAFT SIZES	MATERIAL	TEMPERATURE RANGE
1/4" TO 4"	MOLYBDENUM DISULFIDE IMPREGNATED POLYURETHANE 90A DURO	-65°F TO +200°F



STOCK NO.	WIPER DIMENSIONS				HOUSING DIMENSIONS		
	D	O.D.	T	E (MAX)	A (+.004/- .000)	B (+/- .003)	C (+.005/- .000)
USW-4	1/4	1/2	1/8	.210	.497	.124	.410
USW-6	3/8	5/8	1/8	.210	.622	.124	.535
USW-8	1/2	3/4	1/8	.210	.747	.124	.660
USW-10	5/8	7/8	1/8	.210	.872	.124	.785
USW-12	3/4	1-1/8	3/16	.305	1.122	.187	.995
USW-14	7/8	1-1/4	3/16	.305	1.247	.187	1.120
USW-16	1	1-3/8	3/16	.305	1.372	.187	1.245
USW-18	1-1/8	1-1/2	3/16	.305	1.497	.187	1.370
USW-20	1-1/4	1-5/8	3/16	.305	1.622	.187	1.495
USW-22	1-3/8	1-3/4	3/16	.305	1.747	.187	1.620
USW-24	1-1/2	1-7/8	3/16	.305	1.872	.187	1.745
USW-26	1-5/8	2	3/16	.305	1.997	.187	1.870
USW-27	1-11/16	2-1/16	3/16	.305	2.060	.187	1.935
USW-28	1-3/4	2-1/8	3/16	.305	2.122	.187	1.995
USW-29	1-13/16	2-3/16	3/16	.305	2.185	.187	2.060
USW-30	1-7/8	2-1/4	3/16	.305	2.247	.187	2.120
USW-31	1-15/16	2-5/16	3/16	.305	2.310	.187	2.185
USW-32	2	2-1/2	1/4	.395	2.497	.249	2.327
USW-34	2-1/8	2-5/8	1/4	.395	2.622	.249	2.452
USW-36	2-1/4	2-3/4	1/4	.395	2.747	.249	2.577
USW-37	2-5/16	2-13/16	1/4	.395	2.810	.249	2.640
USW-38	2-3/8	2-7/8	1/4	.395	2.872	.249	2.702
USW-40	2-1/2	3	1/4	.395	2.997	.249	2.827
USW-42	2-5/8	3-1/8	1/4	.395	3.122	.249	2.952
USW-44	2-3/4	3-1/4	1/4	.395	3.247	.249	3.077
USW-45	2-13/16	3-5/16	1/4	.395	3.310	.249	3.140
USW-46	2-7/8	3-3/8	1/4	.395	3.372	.249	3.202
USW-48	3	3-1/2	1/4	.395	3.497	.249	3.327
USW-49	3-1/8	3-5/8	1/4	.395	3.622	.249	3.452
USW-50	3-1/4	3-3/4	1/4	.395	3.747	.249	3.577
USW-51	3-3/8	3-7/8	1/4	.395	3.872	.249	3.702
USW-52	3-1/2	4	1/4	.395	3.997	.249	3.827
USW-53	3-5/8	4-1/8	1/4	.395	4.122	.249	3.952
USW-54	3-3/4	4-1/4	1/4	.395	4.247	.249	4.077
USW-56	4	4-1/2	1/4	.395	4.497	.249	4.327

