

LW76

Linear Shafting

A World Class, **Do-It-All** Supplier of
RC60 - 440C SS - 300 Series Stainless
Linear Shafting, Assemblies
& Linear Bearings



Linear Ball Bearings



Jet Rail Roller Blocks



PTFE Self-Lube Bearings





Machining Capabilities



Machining Over 200"



Long Shaft Assembly Testing



Fast Deliveries



Quality Control



High Production Support Rail Fixturing and Machining



Large Inventory

Linear Bearings that EXCEED the Challenge!



Linear Bearings, Shafting and Slides



HARDENED AND PRECISION GROUND LINEAR SHAFTING

1060 STEEL CASE HARDENED AND PRECISION GROUND LINEAR SHAFTING

NOMINAL DIA. (IN)	CLASS "L" DIA. (IN)	CLASS "S" DIA. (IN)	CLASS "D" DIA. (IN)	CLASS "N" DIA. (IN)	MIN. DEPTH OF 60-65 Rc (IN)	WEIGHT PER IN. (LBS/IN)	MAX LENGTH (FT)	NOMINAL DIA. (IN)
3/16	.1870/.1865	-	-	-	.027	.008	5	3/16
1/4	.2495/.2490	.2490/.2485	-	.2500/.2498	.027	.014	8	1/4
3/8	.3745/.3740	.3740/.3735	-	.3750/.3748	.027	.031	14	3/8
1/2	.4995/.4990	.4990/.4985	-	.5000/.4998	.040	.055	14	1/2
5/8	.6245/.6240	.6240/.6235	-	.6250/.6248	.040	.086	15	5/8
3/4	.7495/.7490	.7490/.7485	-	.7500/.7498	.060	.125	15 or 17*	3/4
7/8	.8745/.8740	-	-	.8750/.8748	.060	.170	15	7/8
1	.9995/.9990	.9990/.9985	1.0000/1.003	1.0000/.9998	.060	.222	15 or 17*	1
1-1/8	1.1245/1.1240	-	-	1.1250/1.1248	.080	.281	15	1-1/8
1-1/4	1.2495/1.2490	1.2490/1.2485	1.2500/1.2503	1.2500/1.2498	.080	.348	17	1-1/4
1-3/8	1.3745/1.3740	-	-	1.3750/1.3747	.080	.420	15	1-3/8
1-1/2	1.4994/1.4989	1.4989/1.4984	1.5000/1.5003	1.5000/1.4997	.080	.500	17	1-1/2
1-5/8	1.6245/1.6240	-	-	1.6250/1.6247	.080	.587	15	1-5/8
1-3/4	1.7495/1.7490	-	-	1.7500/1.7497	.100	.681	15	1-3/4
2	1.9994/1.9987	1.9987/1.9980	2.0000/2.0003	2.0000/1.9997	.100	.890	17	2
2-1/2	2.4993/2.4985	2.4985/2.4977	-	2.5000/2.4996	.100	1.391	17	2-1/2
3	2.9992/2.9983	2.9983/2.9974	-	3.0000/2.9996	.100	2.003	15 or 17*	3
3-1/2	3.4990/3.4980	-	-	-	.100	2.726	17	3-1/2
4	3.9988/3.9976	3.9976/3.9964	-	-	.100	3.560	17	4

440C STAINLESS STEEL CASE HARDENED AND PRECISION GROUND LINEAR SHAFTING

NOMINAL DIA. (IN)	CLASS "L" DIA. (IN)	CLASS "S" DIA. (IN)	MIN. DEPTH OF 50-60 Rc (IN)	WEIGHT PER IN. (LBS/IN)	MAX LENGTH (FT)	NOMINAL DIA. (IN)
1/4	.2495/.2490	.2490/.2485	.027	.014	5	1/4
3/8	.3745/.3740	.3740/.3735	.027	.031	14	3/8
1/2	.4995/.4990	.4990/.4985	.040	.055	14	1/2
5/8	.6245/.6240	.6240/.6235	.040	.086	14	5/8
3/4	.7495/.7490	.7490/.7485	.060	.125	15 or 17*	3/4
1	.9995/.9990	.9990/.9985	.080	.222	15 or 17*	1
1-1/4	1.2495/1.2490	1.2490/1.2485	.080	.348	17	1-1/4
1-1/2	1.4994/1.4989	1.4989/1.4984	.080	.500	17	1-1/2
2	1.9994/1.9987	1.9987/1.9980	.100	.890	17	2
2-1/2	2.4993/2.4985	2.4985/2.4977	.100	1.391	17	2-1/2

NOTES:

- (*) 17 FT. LENGTHS AVAILABLE IN CLASS "L" ONLY
- 303 AND 316 STAINLESS STEEL (UNHARDENED CLASS "L") AVAILABLE UPON REQUEST
- CUSTOM LINEAR SHAFTING INQUIRES CAN BE FAXED OR EMAILED TO: 413-525-3735 mquinn@LM76.com

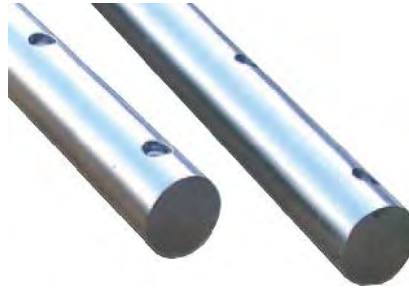
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HARDENED AND PRECISION GROUND PRE-DRILLED SHAFTING

1060 STEEL CASE HARDENED AND PRECISION GROUND PREDRILLED LINEAR SHAFTING								
NOMINAL DIA. (IN)	CLASS "L" DIA. (IN)	STANDARD THREAD SIZE	X (IN)	Y (IN)	MIN. DEPTH OF 60-65 Rc (IN)	WEIGHT PER IN. (LBS/IN)	MAX LENGTH (IN)	NOMINAL DIA. (IN)
1/2	.4995/.4990	#6-32	4	2	.040	.055	166	1/2
5/8	.6245/.6240	#8-32	4	2	.040	.086	178	5/8
3/4	.7495/.7490	#10-32	6	3	.060	.125	178	3/4
1	.9995/.9990	1/4-20	6	3	.080	.222	178	1
1-1/4	1.2495/1.2490	5/16-18	6	3	.080	.348	178	1-1/4
1-1/2	1.4994/1.4989	3/8-16	8	4	.080	.500	178	1-1/2
2	1.9994/1.9987	1/2-13	8	4	.100	.890	178	2

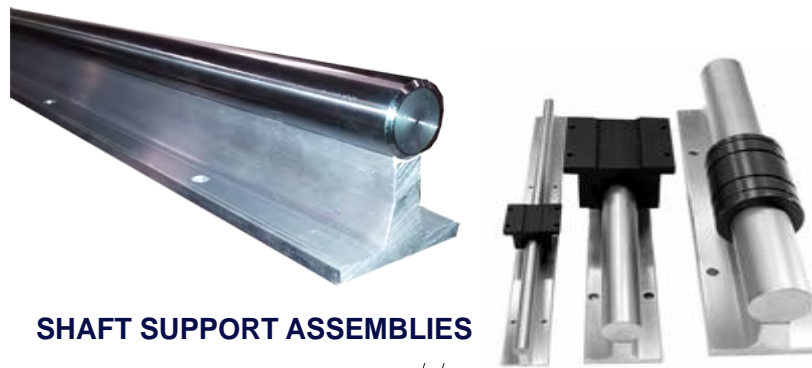
440C STAINLESS STEEL CASE HARDENED AND PRECISION GROUND PREDRILLED LINEAR SHAFTING								
NOMINAL DIA. (IN)	CLASS "L" DIA. (IN)	STANDARD THREAD SIZE	X (IN)	Y (IN)	MIN. DEPTH OF 50-60 Rc (IN)	WEIGHT PER IN. (LBS/IN)	MAX LENGTH (IN)	NOMINAL DIA. (IN)
1/2	.4995/.4990	#6-32	4	2	.040	.055	166	1/2
5/8	.6245/.6240	#8-32	4	2	.040	.086	178	5/8
3/4	.7495/.7490	#10-32	6	3	.060	.125	178	3/4
1	.9995/.9990	1/4-20	6	3	.080	.222	178	1
1-1/4	1.2495/1.2490	5/16-18	6	3	.080	.348	178	1-1/4
1-1/2	1.4994/1.4989	3/8-16	8	4	.080	.500	178	1-1/2
2	1.9994/1.9987	1/2-13	8	4	.100	.890	178	2

52100 STEEL CASE HARDENED AND PRECISION GROUND TUBULAR LINEAR SHAFTING							
NOMINAL DIA. (IN)	NOMINAL I.D. (IN)	CLASS "L" DIA. (IN)	CLASS "S" DIA. (IN)	MIN. DEPTH OF 58 Rc (IN)	WEIGHT PER IN. (LBS/IN)	MAX LENGTH (FT)	NOMINAL DIA. (IN)
3/4	.438 ± 5%	.7495/.7490	.7490/.7485	.060	.075	15	3/4
1	.599 ± 5%	.9995/.9990	.9990/.9985	.060	.158	15	1
1-1/2	.890 ± 5%	1.4994/1.4989	1.4989/1.4984	.080	.328	15	1-1/2
2	1.250 ± 5%	1.9994/1.9987	1.9987/1.9980	.100	.542	15	2
2-1/2	1.750 ± 5%	2.4993/2.4985	2.4985/2.4977	.100	.749	15	2-1/2
3	2.000 ± 10%	2.9992/2.9983	2.9983/2.9974	.100	1.112	15	3
4	3.000 ± 10%	3.9988/3.9976	3.9976/3.9964	.100	1.558	15	4

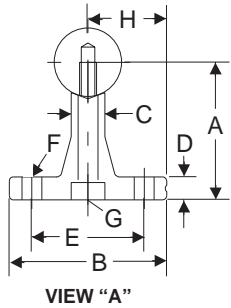
NOTES:

- CUSTOM PREDRILLED OR TUBULAR LINEAR SHAFTING INQUIRES CAN BE FAXED OR EMAILED TO: 413-525-3735 mquinn@LM76.com

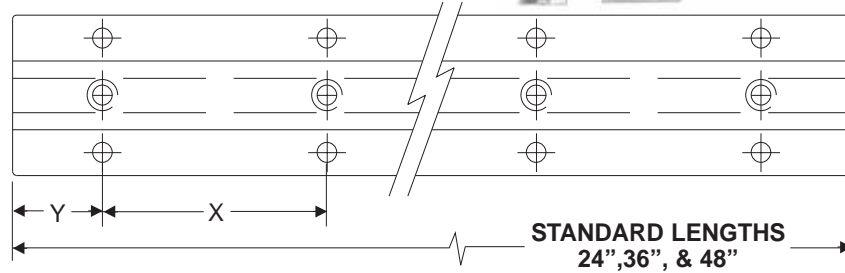
PRECISION LINEAR SHAFTING



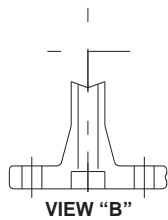
SHAFT SUPPORT ASSEMBLIES



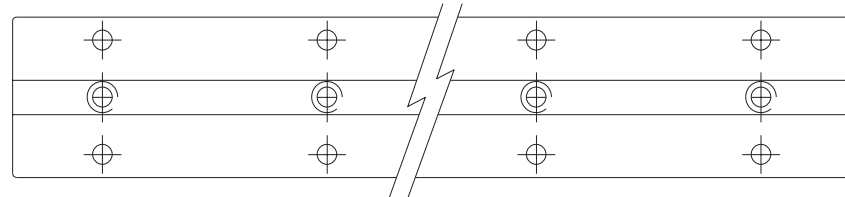
VIEW "A"



PREDRILLED SHAFT SUPPORT RAILS



VIEW "B"



SHAFT DIA.	SHAFT SUPPORT ASSEMBLY	PREDRILLED SHAFT SUPPORT RAIL	*PLAIN SHAFT SUPPORT RAIL	A +/- .001	B	C	D	E +/- .005
1/2	LMSA-8	SR-8-PD	SMR-8	1.125	1-1/2	1/4	3/16	1.000
5/8	LMSA-10	SR-10-PD	SMR-10	1.125	1-5/8	5/16	1/4	1.125
3/4	LMSA-12	SR-12-PD	SMR-12	1.500	1-3/4	3/8	1/4	1.250
1	LMSA-16	SR-16-PD	SMR-16	1.750	2-1/8	1/2	1/4	1.500
1-1/4	LMSA-20	SR-20-PD	SMR-20	2.125	2-1/2	9/16	5/16	1.875
1-1/2	LMSA-24	SR-24-PD	SMR-24	2.500	3	11/16	3/8	2.250
2	LMSA-32	SR-32-PD	SMR-32	3.250	3-3/4	7/8	1/2	2.750

SHAFT DIA.	F BOLT	F HOLE	G SCREW	G HOLE	H +/- .001	X	Y	WT/FT LBS
1/2	6	.169	6-32 x 7/8	.169	.750	4	2	.6
5/8	8	.193	8-32 x 7/8	.193	.812	4	2	.8
3/4	10	.221	10-32 x 1-1/4	.221	.875	6	3	1.0
1	1/4	.281	1/4-20 x 1-1/2	.281	1.062	6	3	1.4
1-1/4	5/16	.343	5/16-18 x 1-3/4	.343	1.250	6	3	2.1
1-1/2	5/16	.343	3/8-16 x 2	.406	1.500	8	4**	2.6
2	3/8	.406	1/2-13 x 2-1/2	.531	1.875	8	4**	4.2

NOTES:

- (*) DOES NOT INCLUDE ANY HOLES IN SHAFT SUPPORT
- (**) LMSA-24-PD-36" & SMR-32-PD-36" (Y=2")
- MANUFACTURED FROM EXTRUDED 6061-T6 ALUMINUM FOR ENGINEERED PERFORMANCE
- CUSTOM SHAFT SUPPORT AND ASSEMBLY INQUIRES CAN BE FAXED OR EMAILED TO: 413-525-3735 mquinn@LM76.com

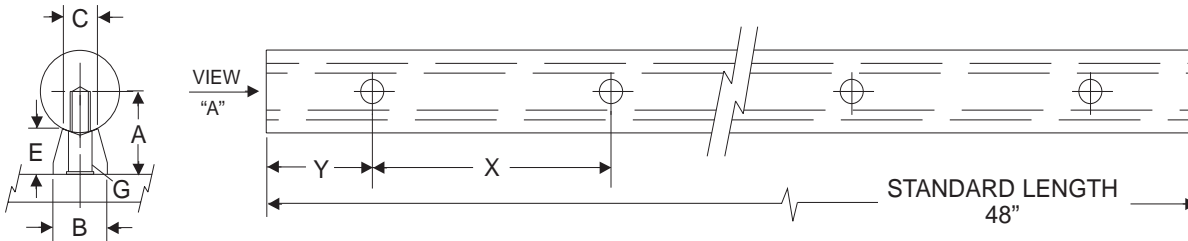
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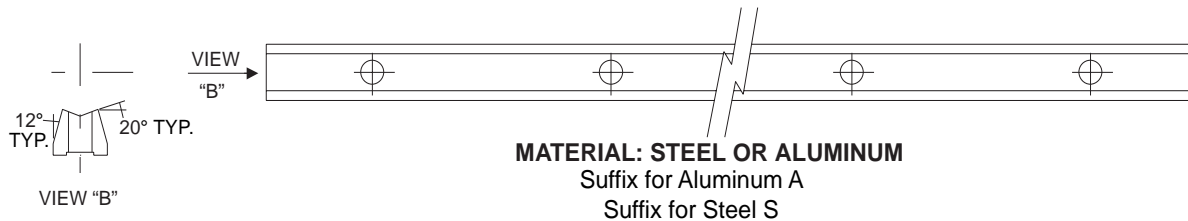
P R E C I S I O N L I N E A R S H A F T I N G



LOW SHAFT SUPPORT ASSEMBLIES



PRE-DRILLED LOW SHAFT SUPPORT RAILS



MATERIAL: STEEL OR ALUMINUM
 Suffix for Aluminum A
 Suffix for Steel S

SHAFT DIA.	SHAFT SUPPORT ASSEMBLY	PREDRILLED SHAFT SUPPORT RAIL	*PLAIN SHAFT SUPPORT RAIL	A +/- .001	B	C
1/2	LSRA-8	LSR-8-PD	LSR-8	.562	.370	1/4
5/8	LSRA-10	LSR-10-PD	LSR-10	.687	.450	5/16
3/4	LSRA-12	LSR-12-PD	LSR-12	.750	.510	3/8
1	LSRA-16	LSR-16-PD	LSR-16	1.000	.690	1/2
1-1/4	LSRA-20	LSR-20-PD	LSR-20	1.187	.780	9/16
1-1/2	LSRA-24	LSR-24-PD	LSR-24	1.375	.930	11/16
2	LSRA-32	LSR-32-PD	LSR-32	1.750	1.180	7/8

SHAFT DIA.	E (REF.)	G SCREW	G HOLE	X	Y	WT/FT LBS
1/2	.341	6-32	.169	4	2	.32
5/8	.412	8-32	.193	4	2	.49
3/4	.420	10-32	.221	6	3	.59
1	.560	1/4-20	.281	6	3	1.01
1-1/4	.626	5/16-18	.343	6	3	1.27
1-1/2	.703	3/8-16	.406	8	4	1.68
2	.845	1/2-13	.531	8	4	2.59

NOTES:

- (*) DOES NOT INCLUDE ANY HOLES IN SHAFT SUPPORT
- CUSTOM SHAFT SUPPORT AND ASSEMBLY INQUIRES CAN BE FAXED OR EMAILED TO: 413-525-3735 mquinn@LM76.com

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P R E C I S I O N L I N E A R S H A F T I N G



PRECISION LINEAR SHAFTING

HARDENED AND PRECISION GROUND METRIC LINEAR SHAFTING

1060 STEEL CASE HARDENED AND PRECISION GROUND METRIC LINEAR SHAFTING					
NOMINAL DIA. (MM)	TOLERANCES CLASS "M" (h6) (IN)	MIN. DEPTH OF 60-65 Rc (MM)	WEIGHT PER IN. (LBS/IN)	MAX LENGTH (MM)	NOMINAL DIA. (MM)
5	.1969/.1965	0.4	.008	3600	5
6	.2362/.2359	0.4	.012	4000	6
8	.3150/.3146	0.4	.022	4000	8
10	.3937/.3933	0.4	.034	4000	10
12	.4724/.4720	0.6	.050	6000	12
14	.5512/.5507	0.6	.068	6000	14
15	.5906/.5901	0.6	.076	6000	15
16	.6299/.6295	0.6	.088	6000	16
18	.7087/.7082	0.6	.111	6000	18
20	.7874/.7869	0.9	.137	6000	20
24	.9449/.9444	0.9	.198	6000	24
25	.9843/.9838	0.9	.214	6000	25
30	1.1811/1.1806	0.9	.308	6000	30
35	1.3780/1.3773	1.5	.419	6000	32
40	1.5748/1.5743	1.5	.548	6000	40
50	1.9685/1.9679	1.5	.855	6000	50
60	2.3622/2.3615	2.2	1.23	6000	60
80	3.1496/3.1489	2.2	2.19	6000	80

440C STAINLESS STEEL CASE HARDENED AND PRECISION GROUND METRIC LINEAR SHAFTING					
NOMINAL DIA. (MM)	TOLERANCES CLASS "M" (h6) (IN)	MIN. DEPTH OF 50-60 Rc (MM)	WEIGHT PER IN. (LBS/IN)	MAX LENGTH (MM)	NOMINAL DIA. (MM)
5	.1969/.1965	0.4	.008	3600	5
8	.3150/.3146	0.4	.022	4000	8
10	.3937/.3933	0.4	.034	4000	10
12	.4724/.4720	0.6	.050	6000	12
16	.6299/.6295	0.6	.088	6000	16
20	.7874/.7869	0.9	.137	6000	20
25	.9843/.9838	0.9	.214	6000	25
30	1.1811/1.1806	0.9	.308	6000	30
40	1.5748/1.5743	1.5	.548	6000	40
50	1.9685/1.9679	1.5	.855	6000	50
60	2.3622/2.3615	2.2	1.23	6000	60

NOTES:

- PREDRILLED AND ASSEMBLED METRIC LINEAR SHAFTING AVAILABLE UPON REQUEST
- CUSTOM METRIC LINEAR SHAFTING INQUIRES CAN BE FAXED OR EMAILED TO: 413-525-3735 mquinn@LM76.com

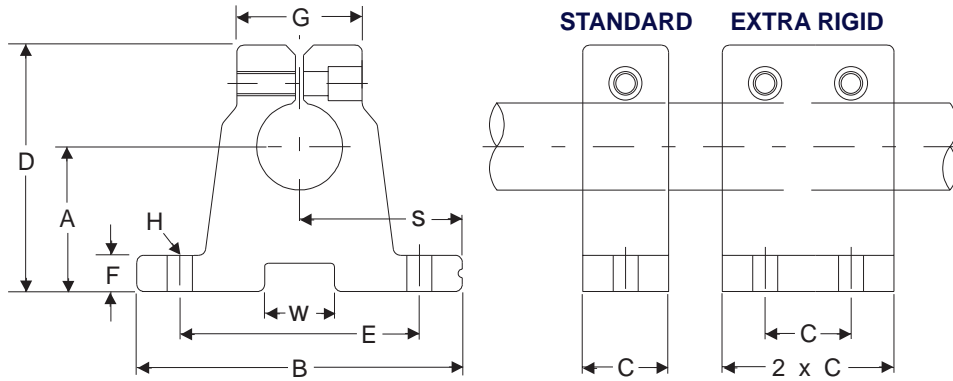


Aluminum = A



Steel = S

STANDARD AND EXTRA RIGID SHAFT END SUPPORTS



SHAFT DIA.	STANDARD SHAFT END SUPPORT	EXTRA RIGID SHAFT END SUPPORT	A +/- .001	B	C	D	E +/- .005
1/4	LMSB-4-A or S	RSB-4	.750	1-5/8	9/16	1-3/16	1.250
3/8	LMSB-6-A or S	RSB-6	.750	1-5/8	9/16	1-3/16	1.250
1/2	LMSB-8-A or S	RSB-8	1.000	2	5/8	1-5/8	1.500
5/8	LMSB-10-A or S	RSB-10	1.000	2-1/2	11/16	1-3/4	1.875
3/4	LMSB-12-A or S	RSB-12	1.250	2-3/4	3/4	2-1/8	2.000
1	LMSB-16-A or S	RSB-16	1.500	3-1/4	1	2-9/16	2.500
1-1/4	LMSB-20-A or S	RSB-20	1.750	4	1-1/8	3	3.000
1-1/2	LMSB-24-A or S	RSB-24	2.000	4-3/4	1-1/4	3-1/2	3.500
2	LMSB-32-A or B	RSB-32	2.500	6	1-1/2	4-1/2	4.500

SHAFT DIA.	F	G	H BOLT	H HOLE	S +/- .001	*W + .00/- .01	T
1/4	1/4	11/16	6	5/32	.812	1/4	1/8
3/8	1/4	11/16	6	5/32	.812	1/4	1/8
1/2	1/4	3/4	8	3/16	1.000	1/2	3/16
5/8	5/16	7/8	10	7/32	1.250	1/2	3/16
3/4	5/16	1	10	7/32	1.375	5/8	1/4
1	3/8	1-3/8	1/4	9/32	1.625	5/8	1/4
1-1/4	7/16	1-3/4	5/16	11/32	2.000	5/8	1/4
1-1/2	1/2	2	5/16	11/32	2.375	3/4	5/16
2	5/8	2-5/8	3/8	13/32	3.000	1	3/8

NOTES:

- (*) THE DIMENSION "W" IS NOT MACHINED (PROVISION CAN BE MADE FOR THIS DIMENSION TO BE MACHINED)
- MANUFACTURED FROM EXTRUDED 6061-T6 ALUMINUM FOR ENGINEERED PERFORMANCE
- CUSTOM SHAFT END SUPPORTS INQUIRES CAN BE FAXED OR EMAILED TO: 413-525-3735 mquinn@LM76.com

1-800-513-3163

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PRECISION LINEAR SHAFTEING

CERAMIC COATED ALUMINUM SHAFTING

CERAMIC COATED ALUMINUM SHAFTING - INCH			
Part Number	Shaft Diameter	OD Diameter Tolerance Min/Max	Weight Per Inch
CCS3 - xx	3/16"	0.1863/0.1871	0.003
CCS4 - xx	1/4"	0.2488/0.2496	0.005
CCS6 - xx	3/8"	0.3738/0.3746	0.010
CCS8 - xx	1/2"	0.4988/0.4996	0.019
CCS10- xx	5/8"	0.6238/0.6246	0.030
CCS12 - xx	3/4"	0.7488/0.7496	0.043
CCS16 - xx	1"	0.9988/0.9996	0.077
CCS20 - xx	1-1/4"	1.2488/1.2496	0.120
CCS24 - xx	1-1/2"	1.4987/1.4995	0.173
CCS32 - xx	2"	1.9985/1.9995	0.308

- Lightweight
- Non-magnetic
- FDA/USDA compliant
- Contaminants will not stick
- Designed to run with LM76 Composite bearings
- Welding slag, paints, inks will not stick

CERAMIC COATED ALUMINUM SHAFTING - METRIC	
Part Number	Shaft Diameter
CCSM8 - xx	8mm
CCSM10 - xx	10mm
CCSM12- xx	12mm
CCSM16 - xx	16mm
CCSM20- xx	20mm
CCSM25 - xx	25mm
CCSM30 - xx	30mm
CCSM40 - xx	40mm
CCSM50 - xx	50mm

**Pre-Drilled
Machining to Blue Print**

NOTE:

Cut-to-length shafting will not have coated ends. Fully coated specials are available upon request.



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Ceramic Coated Aluminum Fully Supported - Shafting

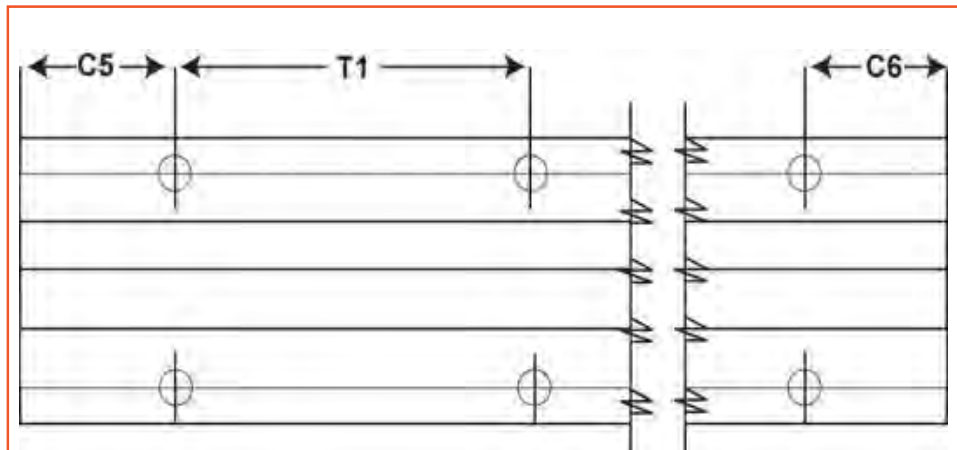
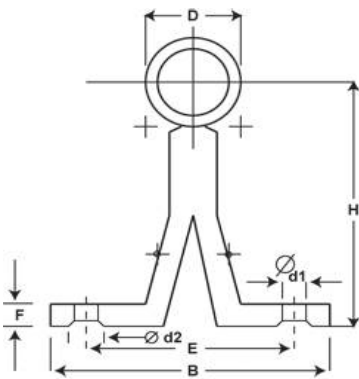


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P/N	D -.007	B	H ± .008	V	d1	d2	(°)	E	F	T1 Bore Spacing	C5 Min	C6 Max	Max Length	Weight (lbs/ft)
LMSC-08	.500	1.50	1.125	.190	.169	.271	30°	1.000	.200	4.00	1	2.95	144	.6
LMSC-12	.750	1.75	1.500	2.52	.220	.276	30°	1.250	.250	6.00	1	3.95	144	1.2
LMSC-16	1.000	2.126	1.750	.252	.280	.335	30°	1.500	.250	6.00	1	3.95	144	1.5



1-800-513-3163

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Minuteman PTFE composite linear bearings offer a tough, hard ceramic coated aluminum shell which does not chip, flake or generate debris. Bonded to the bearing shell ID is our Minuteman - Green - PTFE , self-lubricating liner which ranges from .025” - .035” thickness depending on bearing size. Minuteman’s self-lube PTFE liner is not filled with abrasive materials like glass or metallics that require hardened steel or 440c stainless shafting. Rather, our blend employs high load, non-abrasive polyimide fillers which are able to run on soft, 300 series stainless steels- 303, 304 and 316 SS. Our white, FDA linear is very similar but takes a lesser load.



PSI = 5000
 Max Velocity = 400 SFM
 Max PV = 30,000
 Required Shafting = Class L Rc60/440c
 300 SS (303, 304, 316)
 Coefficient of Friction = .09 - .12
Self-Lubricating

Minuteman FDA Compliant Self-Lube Bearings



PSI = 1000
 Max Velocity = 400 SFM
 Max PV = 10,000
 Shell: 300 SS
 Required Shafting = Class L Rc60/440c
 300 SS (303, 304, 316)
 Coefficient of Friction = .09 - .12
 Self-Lubricating



Black Racer Ceramic Coated Linear Bearings offer a 1 piece design employing a file hard (FDA Compliant) ceramic coating over an aluminum shell. Our ceramic coating is not a surface anodize like Black Oxide or Zinc. It has a depth of .001” penetration and a .001” surface build-up for a total of .002”. Our ceramic coating does not fracture, flake, chip or wash off in most chemical (see chemical resistance chart - Page 27) environments.

Black Racer requires lubrication and must be run on case hardened shafting: Rc60 Steel or 440c stainless.

Black Racer bearings were the “original” drop-in replacements for Linear Ball Bearings in 1976 and were hailed as a design innovation among mechanical engineers.



PSI = 5000
 Max Velocity = *Unlimited
 Max PV = 40,000
 Required Shafting = Class L Rc60/440c
Coefficient of Friction = .04 -.08 (Lower than PTFE)
Requires Lubrication

* To date, LM76 have not experienced a failure due to high acceleration or system speed when properly employed.



When you make LM76 your shafting supplier, you have several linear bearing choices:

Linear Ball Bearings

JET Rail Roller Blocks

Minuteman Self-Lube PTFE Linear Bearings.

More than that, you get the engineering support you need to ensure you have chosen the right shafting and bearings for your application.

ONE-STOP Product and Engineering Assistance





LM-Tarbell's modern facility in East Longmeadow Massachusetts
Home of the MINUTEMAN Linear/Rotary Bearing

LM-Tarbell is the combination of two internationally prominent manufacturers of sleeve bearings:

J.C. Tarbell Associates

Founded in 1938, J.C. Tarbell Associates was one of the first exclusive regional distributors for Chrysler's oil impregnated bronze bearing line - a technological innovation at the time. Over the past 60 years, Tarbell has engineered this material into every product conceivable from sewing machines to jet engines. Today, Tarbell supplies engineering expertise, standard products and machined specials to companies throughout the world.

LM76

Founded in 1976, LM76 found its genesis in combating traditional problems which plagued linear ball bushings: mechanical cage/ball failure and shaft brinelling or grooving. LM76's response was their ceramic coated, direct drop-in replacement linear bearing line which was hailed as a genuine innovation by engineers and maintenance personnel alike. LM76's latest product innovation is its **MINUTEMAN Self Lubricating Linear/Rotary bearing line**. This line offers outstanding load carrying capability coupled with a remarkably low coefficient of friction.

Add these two companies together and you get a singular wealth of sleeve bearing experience. Moreover, you can be confident that our recommendations/products are solid, proven and the best your company can purchase.

1-800-513-3163

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