

LM76

Linear Motion Bearings

**ROLLER BEARING
PILLOW BLOCKS**

PDF FILE

PDF FILE INDEX	PAGE
ADVANTAGES	1
DIMENSIONAL TABLES	
Single Pillow Blocks (SPB)	2
Double Pillow Blocks (DPB)	2
Twin Pillow Blocks (TWN)	3
Metric Single Pillow Blocks (MSPB)	3
Metric Double Pillow Blocks (MDPB)	4
Metric Twin Pillow Blocks (MTWN)	4
OPTIONS	
Scraper Option	5
Floating Option	5
Top Grease Option	6
Rebuild Kits	
ENGINEERING	
Bearing Type	7
Lubrication	7
Adjustments	7
Life	8

LM76 Linear Motion Bearings

140 Industrial Drive

E. Longmeadow, Ma 01028

1-800-628-8332 Fax: 413-525-3735

International: 413-525-4166

www.LM76.com

Designed to overcome the limitations of linear bearings with multiple re-circulating ball circuits and to provide a product with trouble free operation, **LM76 Roller Bearing Pillow Blocks** provide the following advantages:

ADVANTAGES:

ADJUSTMENT -

LM76 Roller Bearing Pillow Blocks constructed with an adjustable eccentric stud feature to allow easy radial clearance adjustment. The clearance is set at the factory for optimum shaft clearance for LM76 Bearings **60 RC** shaft tolerance "B". This shaft clearance can easily be adjusted to provide for "very loose" to "preload" conditions.

ALIGNMENT -

LM76 Single Roller Bearing Pillow Blocks are self aligning due to the unique design. This Roller Bearing Pillow Block has a higher tolerance to shaft deflection than the recirculating ball pillow block. In most applications, the double and twin models also either match or exceed the tolerances for misalignment offered by recirculating ball pillow block.

CORROSION RESISTANCE -

LM76 Roller Bearing Pillow Blocks are constructed with an aluminum body. The exposed surfaces of the rollers have a black oxide finish to resist corrosion. Special rollers of stainless steel or chrome plated are available in some sizes.

HIGHER SPEEDS -

The design of the **LM76 Roller Bearing Pillow Block** incorporates a larger "rolling" diameter than ball bushing pillow blocks. This allows operation at significantly higher speeds and acceleration than the equivalent size recirculating ball pillow blocks.

INTERCHANGEABILITY -

LM76 Roller Bearing Pillow Blocks mounting hole locations and shaft center to mounting surface dimensions are identical to all of the other popular linear pillow blocks of the same size.

LONGER LIFE AND SHAFT PROTECTION -

Unlike recirculating ball pillow blocks which create a point contact between the ball and the shaft, the main roller outer race of the **LM76 Roller Bearing Pillow Block** has a concave groove to match the shaft diameter. This creates a line contact versus a point contact. The point contact associated with recirculating ball bushings generates very high stress, is prone to shaft grooving, and premature shaft failure.

REBUILDABLE -

Each roller component can be easily replaced without replacing the entire pillow block. For information regarding rebuild kits see page 5.

LOW FRICTION -

LM76 Roller Bearing Pillow Blocks have a very low "rolling" dynamic coefficient of friction (0.004 on average) and a very low resistance to motion. Unlike ball bushing pillow blocks which require shaft seals for proper operation, the **LM76 Roller Bearing Pillow Blocks** have individually sealed rollers, and does not require shaft seals that generate resistance to motion.

LUBRICATION -

Each roller bearing is individually lubricated with a lithium base grease and sealed. This minimizes the need for periodic lubrication. Lithium base grease is preferred in this type of application because it has the ability to stand up under churning action in a confined space. This type of grease is also designed to run on an oiled shaft for optimum travel life. The bearings can run on a dry shaft, but a shorter travel life will result.

OPERATING TEMPERATURE -

The operating temperature of the **LM76 Roller Bearing Pillow Block** is determined by the temperature limit of the lubrication and seals. The normal operating temperature range is -60F to 250F.

SHAFT PARALLELISM -

The **LM76 Roller Bearing Pillow Blocks** feature a "Floating Option" will permit shafts to be out of parallelism. The **LM76 Roller Bearing Pillow Block** is the only linear motion pillow block with this patented option to compensate for non-parallel shafts.

For applications that exceed normal bearing requirements or for applications that are unusual or abnormal, please contact the factory.

LM76 Linear Bearings

Inch Sizes

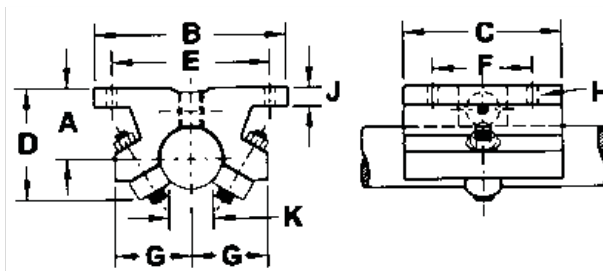


TABLE #1
DIMENSIONS & LOAD RATINGS FOR
SINGLE PILLOW BLOCKS

MODEL	SHAFT DIA	DYN. LOAD	WGT.	+0.003 A	B	C	D	E	F	G	BOLT HOLE	J	K	
JRS-8-OPN	1/2	400	0.4	0.687	2	1-1/2	1-5/32	1.688	1.000	1	#6	5/32	0.240	5/16
JRS-10-OPN	5/8	500	0.5	0.875	2-1/2	1-3/4	1-13/32	2.125	1.125	1-1/16	#8	3/16	0.270	3/8
JRS-12-OPN	3/4	600	0.6	0.937	2-3/4	1-7/8	1-9/16	2.375	1.250	1-1/16	#8	3/16	0.300	7/16
JRS-16-OPN	1	955	1.0	1.187	3-1/4	2-5/8	2	2.875	1.750	1-3/8	#10	7/32	0.360	11/16
JRS-20-OPN	1 1/4	1400	2.0	1.500	4	3-3/8	2-9/16	3.500	2.000	1-3/4	#10	7/32	0.424	13/16
JRS-24-OPN	1 1/2	1660	2.8	1.750	4-3/4	3-3/4	2-7/8	4.125	2.500	1-7/8	1/4	9/32	0.474	1-1/16
JRS-32-OPN	2	2400	5.0	2.125	6	4-3/4	3-1/2	5.250	3.250	2-1/2	3/8	13/32	0.600	1-3/8
JRS-48-OPN	3	6260	14.0	3.500	8-3/8	5-1/2	5-1/2	7.000	4.000	3-5/8	5/8	21/32	1.000	2-1/8
JRS-64-OPN	4	10500	31.0	4.500	10-1/4	6-1/4	7-1/2	8.875	4.500	5-1/8	3/4	25/32	1.125	2-3/4

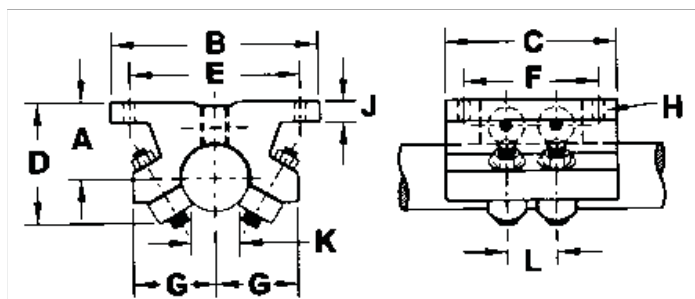


TABLE #2
DIMENSIONS & LOAD RATINGS FOR
DOUBLE PILLOW BLOCKS

MODEL #	SHAFT DIA	DYN. LOAD	WGT.	+0.003 A	B	C	D	E	F	G	BOLT HOLE	J	K	L	
JRD-8-OPN	1/2	800	0.50	0.69	2	2	1-5/32	1.688	1.625	1	#6	5/32	0.240	5/16	.562
JRD-10-OPN	5/8	1000	0.70	0.88	2-1/2	2-1/2	1-13/32	2.125	2	1-1/16	#8	3/16	0.270	3/8	0.562
JRD-12-OPN	3/4	1200	0.80	0.94	2-3/4	2-5/8	1-9/16	2.375	1.25	1-1/16	#8	3/16	0.300	7/16	0.562
JRD-16-OPN	1.0	1910	1.20	1.19	3-1/4	2-5/8	2	2.875	1.75	1-3/8	#10	7/32	0.360	11/16	0.720
JRD-20-OPN	1-1/4	2800	2.30	1.50	4	3-3/8	2-9/16	3.5	2	1-3/4	#10	7/32	0.424	13/16	0.937
JRD-24-OPN	1-1/2	3320	3.00	1.75	4-3/4	3-3/4	2-7/8	4.125	2.5	1-7/8	1/4	9/32	0.474	1-1/16	0.937
JRD-32-OPN	2.0	4800	5.50	2.13	6	4-3/4	3-1/2	5.25	3.25	2-1/2	3/8	13/32	0.600	1-3/8	1.187
JRD-48-OPN	3.0	12500	20.00	3.50	8-3/8	7-1/4	5-1/2	7	5.875	3-5/8	5/8	21/32	1.000	2-1/8	2.080
JRD-64-OPN	4.0	21000	51.00	4.50	10-1/4	9.0	7-1/2	8.875	7.25	5-1/8	3/4	25/32	1.125	2-3/4	2.600

CALL 800-513-3163

LM76 Linear Bearings

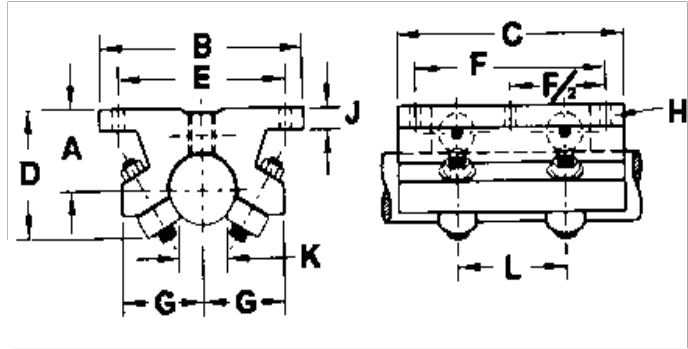


TABLE #3
DIMENSIONS & LOAD RATINGS FOR
TWIN PILLOW BLOCKS

MODEL #	SHAFT DIA.	DYN. LOAD	WGT.	+-.003 A	B	C	D	E	F	G	BOLT HOLE	J	K	L	
JRT-8-OPN	1/2	800	0.80	0.69	2	3-1/2	1-5/32	1.69	2.5	1	#6	5/32	0.24	5/16	1.500
JRT-10-OPN	5/8	1000	1.00	0.88	2-1/2	4	1-13/32	2.13	3	1-1/16	#8	3/16	0.27	3/8	2.125
JRT-12-OPN	3/4	1200	1.20	0.94	2-3/4	4-1/2	1-9/16	2.38	3.5	1-1/16	#8	3/16	0.30	7/16	2.500
JRT-16-OPN	1.0	1910	2.30	1.19	3-1/4	6	2	2.88	4.5	1-3/8	#10	7/32	0.36	11/16	3.750
JRT-20-OPN	1-1/4	2800	4.40	1.50	4	7-1/2	2-9/16	3.50	5.5	1-3/4	#10	7/32	0.42	13/16	4.625
JRT-24-OPN	1-1/2	3320	6.50	1.75	4-3/4	9	2-7/8	4.13	6.5	1-7/8	1/4	9/32	0.47	1-1/16	5.500
JRT-32-OPN	2.0	4800	12.40	2.13	6	12	3-1/2	5.25	10.5	2-1/2	3/8	13/32	0.60	1-3/8	8.250

Metric Sizes

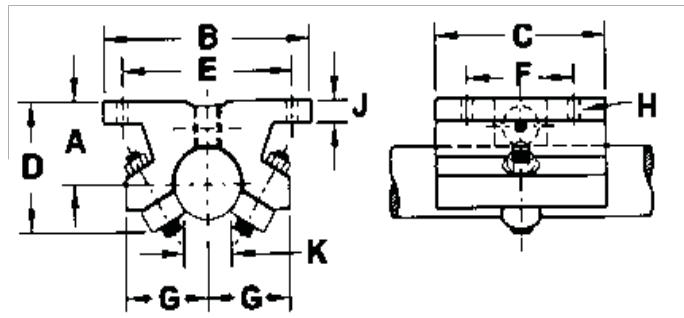


TABLE #4
DIMENSIONS & LOAD RATINGS FOR
METRIC SINGLE PILLOW BLOCKS

MODEL #	SHAFT DIA.	DYN. LOAD	WGT.	+-.003 A	B	C	D	E	F	G	BOLT HOLE	J	K	
JRMS-16-OPN	16 MM	500	0.50	0.877	2-1/2	1-3/4	1-13/32	2.125	1.125	15/16	#8	3/16	0.270	3/8
JRMS-20-OPN	20 MM	600	0.60	0.956	2-3/4	1-7/8	1-9/16	2.375	1.250	1-1/16	#8	3/16	0.300	7/16
JRMS-25-OPN	25 MM	955	1.00	1.179	3-1/4	2-5/8	2	2.875	1.750	1-3/8	#10	7/32	0.360	11/16
JRMS-30-OPN	30 MM	1400	2.00	1.465	4	3-3/8	2-9/16	3.500	2.000	1-3/4	#10	7/32	0.424	13/16

CALL 800-531-3163

LM76 Linear Bearings

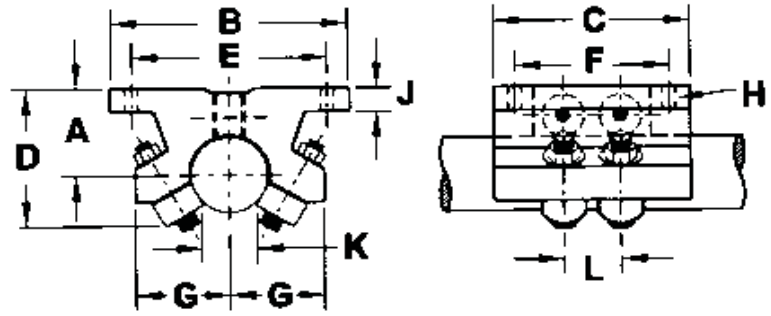


TABLE #5
DIMENSIONS & LOAD RATINGS FOR
METRIC DOUBLE PILLOW BLOCKS

MODEL #	SHAFT DIA.	DYN. LOAD	WGT.	A	B	C	D	E	F	G	BOLT HOLE		J	K	L
											#				
JRMD-16-OPN	16 MM	1000	0.7	0.877	2-1/2	2-1/2	1-13/32	2.125	2.000	15/16	#8	3/16	0.270	3/8	0.562
JRMD-20-OPN	20 MM	1200	0.8	0.956	2-3/4	2-5/8	1-9/16	2.375	1.250	1-1/16	#8	3/16	0.300	7/16	0.562
JRMD-25-OPN	25 MM	1910	1.2	1.179	3-1/4	2-5/8	2	2.875	1.750	1-3/8	#10	7/32	0.360	11/16	0.720
JRMD-30-OPN	30 MM	2800	3	1.465	4	3-3/8	2-9/16	3.500	2.000	1-3/4	#10	7/32	0.424	13/16	0.812

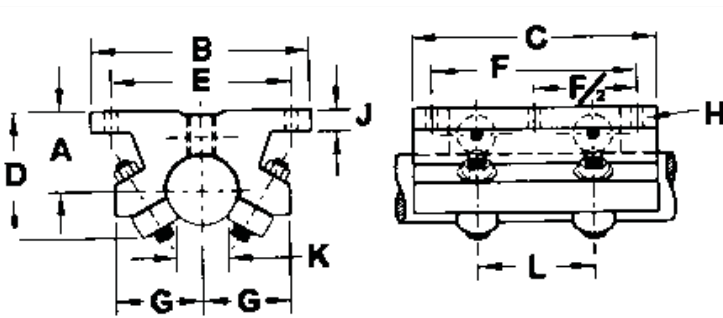


TABLE #6
DIMENSIONS & LOAD RATINGS FOR
METRIC TWIN PILLOW BLOCKS

MODEL #	SHAFT DIA.	DYN. LOAD	WGT.	A	B	C	D	E	F	G	BOLT HOLE		J	K	L
											#				
JRMT-16-OPN	16 MM	1000	1	0.877	2-1/2	4	1-13/32	2.125	3.000	15/16	#8	3/16	0.270	3/8	2.125
JRMT-20-OPN	20 MM	1200	1.2	0.956	2-3/4	4-1/2	1-9/16	2.375	3.500	1-1/16	#8	3/16	0.300	7/16	2.500
JRMT-25-OPN	25 MM	1910	2.3	1.179	3-1/4	6	2	2.875	4.500	1-3/8	#10	7/32	0.360	11/16	3.750
JRMT-30-OPN	30 MM	2800	4.4	1.465	4	7-1/2	2-9/16	3.500	5.500	1-3/4	#10	7/32	0.424	13/16	4.625

CALL 800-531-3163

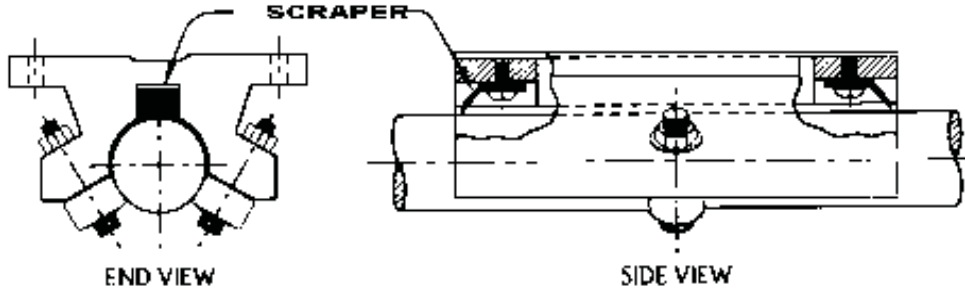
Roller Bearing Pillow Block Options

LM76 Linear Bearings

SCRAPER OPTION

When pillow blocks run in an environment where chips or sludge accumulate on the top of the linear shaft, select the “scraper option”. The scraper is made from spring steel – tempered phosphor bronze and conforms to the shaft diameter. A scraper is mounted to each end of the bearing assembly which cleans the top of the shaft in either direction.

The “scraper option” requires a specially machined pillow block, and cannot be added as a retrofit to a pillow block originally ordered without this option. This option may temporarily increase resistance to motion, but after a short break-in period this increase will be insignificant.



To order the “scraper option”, add the suffix “-S” after the pillow block model number.
For example SPB-16-OPN-S

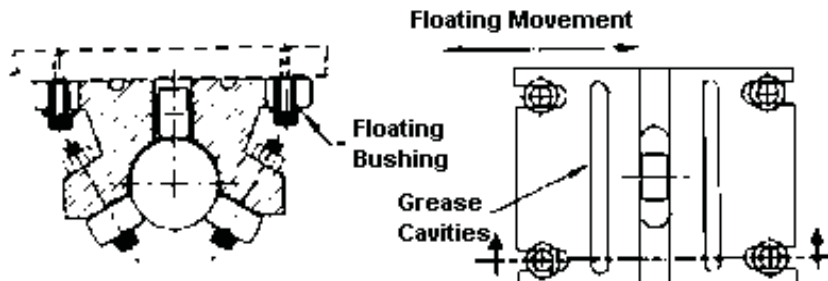
FLOATING OPTION

The floating option is available on all models of the **LM76 Roller Bearing Pillow Block**. This patented option is the only product on the market that provides a real solution for shafting that is out of parallel. This option is beneficial when trying to align long shafts, or when the system does not meet the required parallelism.

“Floating” pillow blocks should be used in conjunction with standard pillow blocks which ride on one shaft and the “floating” on the other shaft. On the top of each “floating” pillow block are two grooves which should be filled with the special grease that is supplied. When installing, care should be taken not to over tighten the mounting screws or bolts, causing the floating bushings to bind.

To order “floating” pillow blocks add the prefix “F” to the single, double, or twin bearing.
For example FSPB-16-OPN

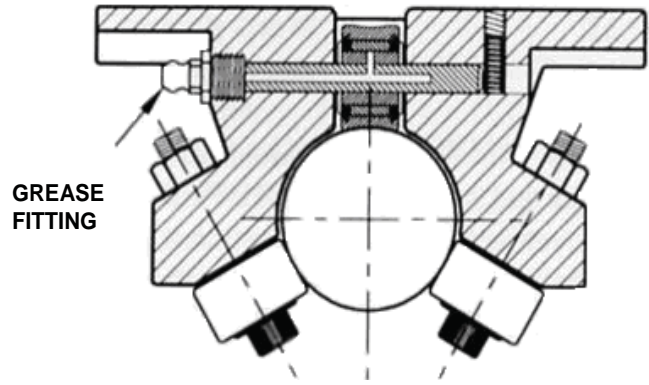
Pillow Block Size	8,10,12	16	20,24	32	48,64
Floating Movement	1/16"	3/32"	1/8"	5/32"	3/16"



CALL 800-531-3163

TOP GREASE OPTION

The **LM76 Roller Bearing Pillow Block** rollers are lubricated and sealed, but in some applications it is desired to re-grease the main support roller. The “top grease option” can help achieve full bearing life in applications that reduce or contaminate the grease inside the roller. Such Conditions may exist in applications where solvents or contaminants leach out the grease through the vents in the seals, or where contaminants are so fine or extreme that they must be purged out of the roller with fresh grease. The “top grease option” is also recommended when high speeds or extreme temperatures are present.



TOP GREASE OPTION DETAIL

To order the “top grease option”. Add the suffix “-TG” after the pillow block model number. For Example SPB-24-OPN-TG. Available in 1-1/4” Pillow Blocks and larger.

PILLOW BLOCK REBUILD KITS

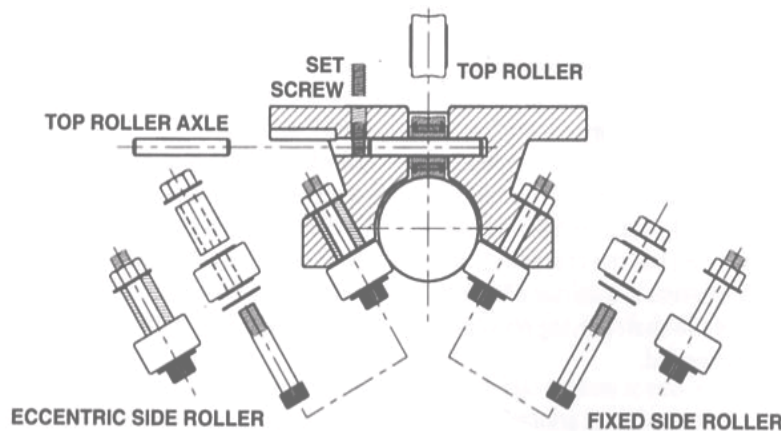
Rebuild kits for **LM76 Roller Bearing Pillow Blocks** are available with all the required parts to completely rebuild each unit. For single units order one kit. For Double or Twins, order two kits.

When ordering a rebuild kit, you must advise the factory of the run number that is stamped on the end face of the pillow block. This run number assures you will get the correct parts needed to rebuild your unit.

For example: #BK 16-1047.

This would be one kit for a 1” pillow block with a run number of 1047. Each kit contains one fixed side roller, one eccentric side roller, one top roller, one top roller axle and one set screw.

Individual Parts are also available. However, it is recommended when a pillow block is removed for parts replacement, all components should be replaced before the pillow block is re-installed.



REBUILD KIT	NOM DIA.	REBUILD KIT	NOM. DIA.
BK08	1/2"	BK20	1-1/4"
BK10	5/8"	BK24	1-1/2"
BK12	3/4"	BK32	2"
BK16	1"	BK48	3"

Engineering

The following information will aid in selecting the proper pillow block under normal conditions. For applications where unusual or abnormal conditions exist, such as misalignment, cantilever load, high temperature, corrosive or high contaminant environment, etc., consult the factory 1-800-513-3163.

BEARING TYPE

SINGLE PILLOW BLOCK -

This is the most widely used pillow block and is an excellent choice for standard linear movement or in applications where there is severe shaft deflection. The Single Pillow Block can handle severe misalignment applications and can even travel a radius.

DOUBLE PILLOW BLOCK -

The dynamic load rating of the Double Pillow Block is twice that of the Single Pillow Block. The Double Pillow Block can be mounted in place of the single pillow blocks in most applications due to the similar footprints. They also provide a solution for applications that were under engineered and now require a greater load capacity pillow block to fit into the same area or, in cases that require longer travel life.

TWIN PILLOW BLOCKS -

The twin pillow block load rating is the same as the Double Pillow Block and is a good choice when using only one pillow block or in applications subjected to cantilever load or moment. The twin model also offers an additional pair of mounting holes if needed.

SHAFT LUBRICATION

LM76 Roller Bearing Pillow Blocks are designed to run on a lubricated shaft. However, it is possible to run them on a dry shaft, but shorter travel life will result. The shortness of life will vary depending on speed, adjustment, and contaminant involved. The recommended oil for lubrication of the shaft would be a heavy weight oil similar to 600 weight cylinder oil. This type of oil has the characteristic to stay where placed, whereas the lighter oils tend to roll to the bottom of the shaft leaving no lubrication on top where it is needed.

ADJUSTMENTS

LM76 Roller Bearing Pillow Blocks are set at the factory for **RC60** linear shafting tolerance code "B". Adjustment is provided to either increase or decrease the clearance of the shaft by means of an adjustable eccentric cam follower.

The adjustable eccentric roller is located on the same side of the pillow block as the set screw holding the dowel pin for the main support roller. Adjusting the eccentric cam follower can be accomplished by the use of a feeler gauge between the shaft and eccentric roller (the fixed side must be in contact with the shaft) and a stubby allen wrench to turn the cam follower. A feeler gauge of .001" should be able to slide between the roller and shaft with little force. Pre-load is possible, but great care should be taken not to overload the roller. Never adjust rollers so tight that they can not turn freely.

CANTILEVER LOADS AND MOMENTS

If a system has a cantilever load and/or moment, the designer should avoid rigid connections to the bearing housing, and the use of recirculating ball pillow block bearings with the self aligning feature. Recirculating ball systems subjected to moment will rotate the bearing housing to the maximum deflection and concentrate the forces on a single ball, thus creating very high pressure on the point contact, considerably shortening the expected life of the recirculating ball pillow block and shaft. The Twin Roller Bearing Pillow Block and/or pivot floating design will provide for a more reliable system. A pivot floating design is one featuring a pin connection from the carriage to the pillow block, rather than a bolt connection, preventing the transmission of carriage moment to the bearing.

Pillow Blocks being used in a "pull-off" condition may have a shortened life due to mechanical failure and should be reviewed by the factory prior to design.

TURNING RADIUS

The Single Roller Bearing Pillow Block has the ability to turn a radius or run on a non-linear system. The radius track will vary from 6" to 60" depending on the size of the pillow block.

LM76 Linear Motion Bearings

1-800-513-3163

www.LM76.com

Technical information, specifications, and/or ratings within this publication are believed to be accurate and reliable and have been derived from industry tables. LM76 provides this information as a customer service and disclaims all implied and expressed warranties. LM76 assumes no responsibility for any technical or printing errors.