

## RoundWay® Linear Roller Bearing Products



### Thomson RoundWay Linear Roller Bearings offer:

- Up to 20 times the load capacity of conventional linear ball bearings. This dramatic increase allows for more compact machine designs with a reduction in hardware costs.
- A rigid design that provides high accuracy while tolerating the high shock loads common to machine tool applications.
- A coefficient of friction as low as .005. When replacing v-ways or flat-ways, RoundWay linear roller bearings allow for the use of smaller, less expensive drives, motors, belts, gears and ball screws.
- A self-aligning capability that reduces installation time and cost.
- An eccentric trunnion pin that adjusts bearing height to compensate for minor inaccuracies in mounting base flatness or machining accuracy. Installation is quicker and easier than old style, conventional way systems.
- Availability of an integral wiper that protects against contamination while retaining lubrication.
- Interchangeable components for quick, cost-effective machine maintenance. There is no need to scrap the entire way system, a problem with some linear guide products.
- The RoundRail Advantage, combined with the self-aligning feature, eliminates the need for derating factors commonly seen with linear guides.

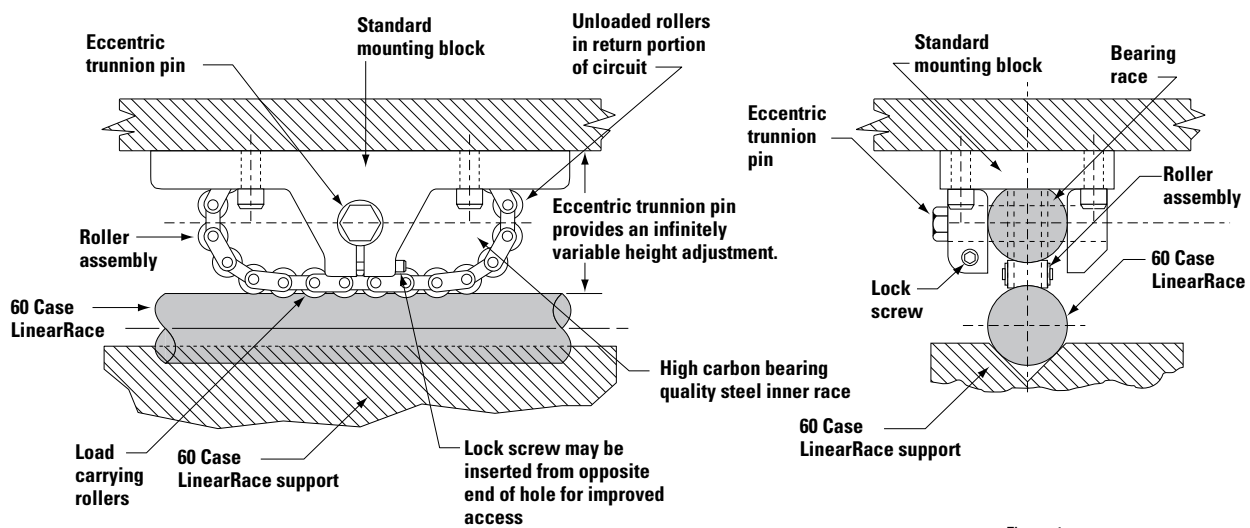


Figure 1

RoundWay Operating Principle

Thomson invented the RoundWay® linear roller bearing for use in high-load, heavy duty applications. Each RoundWay bearing combines the high load capacity of hardened and ground steel recirculating rollers with a rigid, malleable iron pillow block, providing extremely high load capacity with smooth linear travel. The RoundWay linear roller bearing comes in both a single and dual version. A single RoundWay linear roller bearing does not resist side loads and is, therefore, always used in conjunction with a dual version, unless used in a configuration as shown in Figures 2, 3 and 4 on page 99.

Each RoundWay linear roller bearing is designed for use on 60 Case® LinearRace®. The 60 Case LinearRace shaft can be continuously supported using type LSR, SR or XSR 60 Case LinearRace support rails or intermittently supported using the adjustable Waymount® LinearRace supports type WM.

The RoundWay linear roller bearing consists of four basic parts: the bearing race, the roller assembly, the eccentric trunnion pin and the mounting block. The rolling elements of a RoundWay linear roller bearing are a series of concave rollers interconnected and linked by a chain assembly. As load is applied to the mounting block, it is transferred through the bearing race and roller assembly to the supported 60 Case LinearRace. Connecting the mounting block to the RoundWay bearing and roller assembly is an eccentric trunnion pin that allows the height of the RoundWay linear roller bearing to be adjusted to compensate for variations in the mounting surfaces or the buildup of tolerances between component elements. The eccentric trunnion pin can also be used to preload the RoundWay bearing by eliminating internal bearing clearance. After the eccentric trunnion pin has been adjusted, it can be held in place by simply tightening the lock screw.

### Self-Aligning

The RoundWay single and dual bearings are designed with a built-in, self-aligning capability that absorbs misalignment caused by inaccuracies in carriage or base machining. The RoundWay single bearing has an additional built-in, self-aligning capability that allows it to absorb misalignment caused by two slightly out-of-parallel 60 Case LinearRace ways. This feature is realized when two RoundWay single bearings are mounted on one 60 Case LinearRace, and two dual RoundWay bearings are on a parallel 60 Case LinearRace (Figure 1 on page 99).

## RoundWay Linear Roller Bearing Mounting Configurations

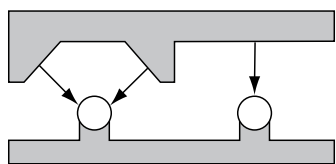


Figure 1

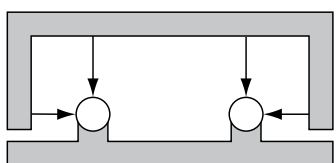


Figure 2

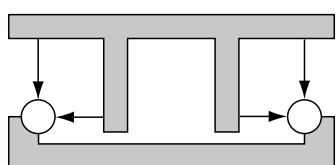


Figure 3

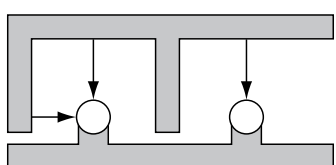


Figure 4

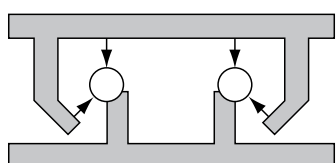


Figure 5

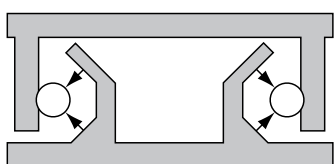


Figure 6

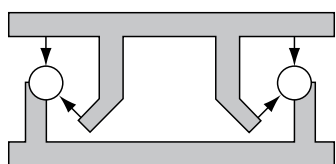


Figure 7

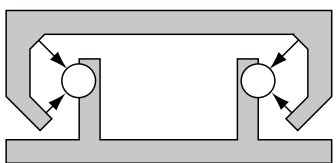


Figure 8

### RoundWay Bearing Mounting Arrangements

RoundWay bearings are available in single mounting blocks or dual V-blocks. The basic race and roller assembly can be purchased separately, along with the suitable type of trunnion pin for mounting directly in the carriage or other machine elements (see page 113). When using either type of cantilever mounting trunnion pin, deflection may be experienced under heavy loads.

The illustrations to the left are a few schematic suggestions for arrangements of RoundWay bearings and 60 Case LinearRace ways. The load directions of the bearings are indicated by arrows.

The first group (Figs. 1 through 4) depends on gravity to hold the carriage on the ways.

The second group shows arrangements that will carry loads in any direction. The first two figures (Figs. 5 and 6) are similar to the second two figures (Figs. 7 and 8), except for reverse orientation of horizontal, load-carrying bearings.

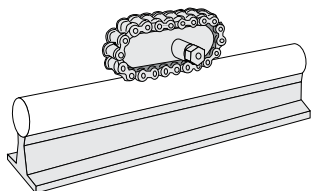
All schematics on this page can be pre-loaded except Fig. 1. In this arrangement, the maximum side load permitted is 50% of the applied vertical load on the Dual RoundWay bearing.

#### IMPORTANT!

A single RoundWay bearing does not resist side loads. Therefore, dual RoundWay bearings or the equivalent are always used in combination with single units.

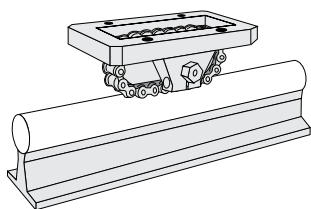


## RoundWay® Linear Roller Bearings for Continuously Supported Applications



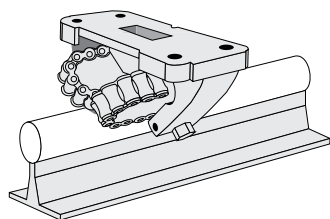
### RoundWay Linear Roller Bearing Type (Type A,B,C)

- Available in 1/2- through 4-inch diameters.
- Load capacity range between 970 and 24,000 lb<sub>f</sub>.
- Travel speeds up to 100 ft./s.
- Accelerations up to 450 ft./s<sup>2</sup>.
- Can be adjusted to compensate for variations in the mounting surface.
- Self aligning in all directions.
- Designed to compensate for two 60 Case® LinearRace® ways that are slightly out of parallel.
- Can be mounted in a custom housing.
- Available with a two-piece seal that retains lubrication while protecting the bearing from the ingress of dirt or contaminants.



### RoundWay Linear Roller Bearing (Single Type S)

- Available in 1/2- through 4-inch diameters.
- Load capacity range between 970 and 24,000 lb<sub>f</sub>.
- Travel speeds up to 100 ft./s.
- Accelerations up to 450 ft./s<sup>2</sup>.
- Can be adjusted to compensate for variations in the mounting surface.
- Self aligning in all directions.
- Designed to compensate for two 60 Case LinearRace ways that are slightly out of parallel.
- Should always be used in conjunction with RoundWay Dual version.
- Can be mounted in a custom housing.
- Available with a two-piece seal that retains lubrication while protecting the bearing from the ingress of dirt or contaminants.
- Easily mounted to carriage with four mounting bolts.

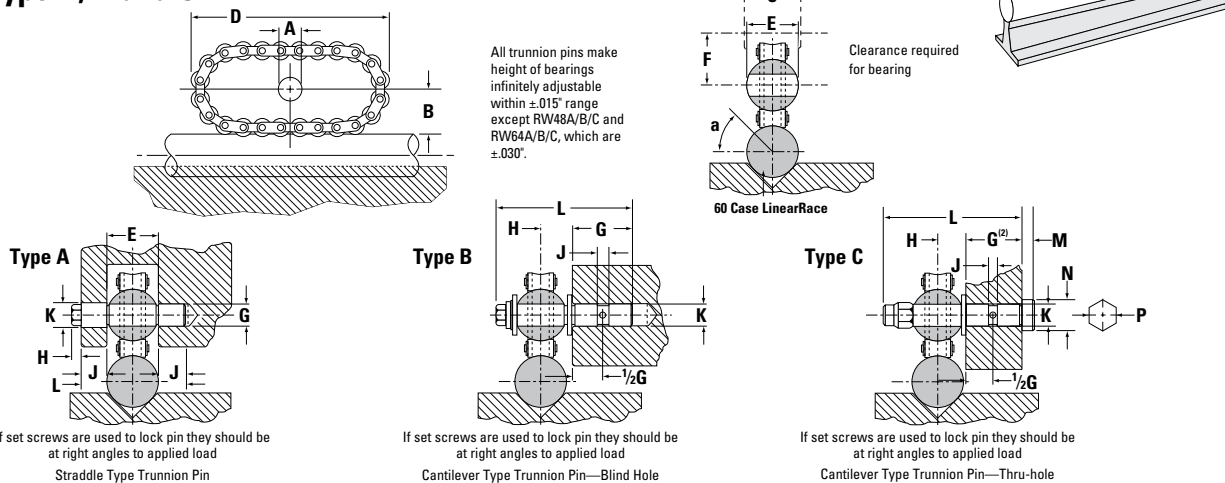


### RoundWay Linear Roller Bearing (Dual Type V)

- Available in 1/2- through 4-inch diameters.
- Load capacity range between 1370 and 35,000 lb<sub>f</sub>.
- Travel speeds up to 100 ft./s.
- Accelerations up to 450 ft./s<sup>2</sup>.
- Can be adjusted to compensate for variations in the mounting surface.
- Self aligning in all directions.
- Available with a two-piece seal that retains lubrication while protecting the bearing from the ingress of dirt or contaminants.
- Easily mounted to carriage with four mounting bolts.

Thomson RoundRail Linear Guides and Components

RoundWay Linear Roller Bearing  
Type A, B and C



RoundWay Linear Roller Bearing (Type A, B and C) and 60 Case LinearRace (Dimensions in inches)

Part Number				Nom. Dia.	A +.0005 -.0000	B	C	D	E ±.001	F	α deg	60 Case LinearRace Diameter d	Dynamic (1) Load Capacity lb <sub>f</sub>
Bearing Type A	Bearing Type B	Bearing Type C	60 Case LinearRace										
RW8A	RW8B	RW8C	1/2 L PD	.500	.2500	.45	.63	2.38	.502	.56	50	.4995/.4990	970
RW16A	RW16B	RW16C	1 L PD	1.000	.4688	.80	1.00	3.75	1.002	.94	50	.9995/.9990	3020
RW24A	RW24B	RW24C	1 1/2 L PD	1.500	.7188	1.15	1.50	5.38	1.502	1.38	55	1.4994/1.4989	6020
RW32A	RW32B	RW32C	2 L PD	2.000	.9688	1.50	2.00	7.38	2.002	1.75	55	1.9994/1.9987	12360
RW48A	RW48B	RW48C	3 L PD	3.000	1.5626	2.30	3.00	11.00	3.002	2.75	50	2.9992/2.9983	24000
RW64A	RW64B	RW64C	4 L PD	4.000	2.0626	3.00	4.00	14.88	4.002	3.50	50	3.9988/3.9976	48000

Trunion Type A

Trunion Type B

Trunion Type C

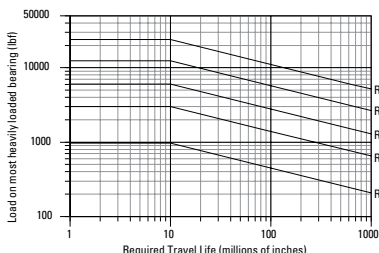
Round-Way Bearing Part Number	G +.0000 -.0005	H	J	K +.0000 -.0005	L	Bearing Mass lb	Round-Way Bearing Part Number	G	H	J	K +.000 -.001	L	Bearing Mass lb	Round-Way Bearing Part Number	G <sup>(2)</sup> +.060 -.000	H	J	K +.000 -.001	L	M	N	P Std. Hex across Flats	Bearing Mass lb
RW8A	.2187	.19	.31	.2812	1.13	.30	RW8B	.75	.31	.13	.3105	1.63	.30	RW8C	.719	.31	.13	.311	1.69	.22	.44	—	.30
RW16A	.4375	.25	.50	.5000	2.00	1.10	RW16B	1.25	.59	.19	.498	2.78	1.10	RW16C	1.188	.59	.19	.498	2.88	.31	.75	—	1.10
RW24A	.6875	.31	.63	.7500	2.75	3.10	RW24B	1.75	.88	.25	.748	3.94	3.10	RW24C	1.656	.88	.25	.748	4.13	.50	1.00	—	3.20
RW32A	.9375	.38	.75	1.0000	3.50	7.3	RW32B	2.25	1.13	.31	.998	5.06	7.70	RW32C	2.094	1.13	.31	.998	5.25	.63	1.31	—	7.90
RW48A	1.5000	.59	1.25	1.6250	5.53	24.0	RW48B	3.50	1.75	.50	1.623	8.00	24.80	RW48C	3.063	1.75	.50	1.623	7.25	1.00	—	2.25	25.60
RW64A	2.0000	.72	1.50	2.1250	7.03	58.0	RW64B	4.00	2.25	.50	2.123	9.75	61.60	RW64C	4.063	2.25	.50	2.123	9.38	1.63	—	3.00	63.20

(1) Dynamic Load Capacity is based on 10 million inches of travel.

(2) Thickness of mounting member.

Note: For RoundWay replacement parts, see page 130.

Load/Life Graph (Lines indicate limiting load for given RoundWay bearing)

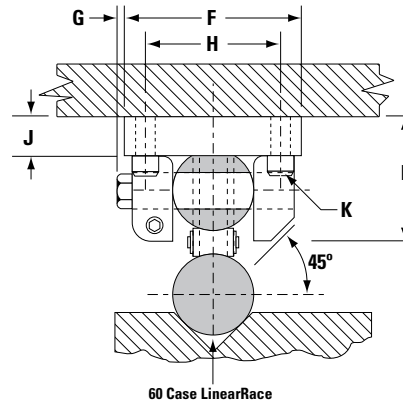
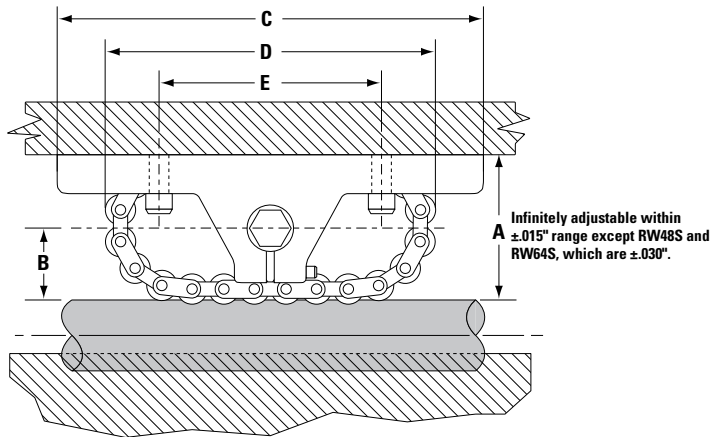
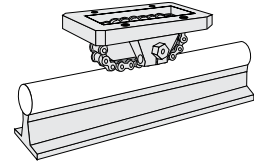


Determining RoundWay Bearing Size

The primary factors that influence the choice of bearing size are maximum load on a single RoundWay bearing and the required travel life. To determine the proper RoundWay bearing size, enter the chart with the maximum load of the most heavily loaded bearing and the required travel life. Mark where the two lines intersect. All RoundWay bearing sizes that pass through or above and to the right of this point may be suitable for this application.



# RoundWay® Linear Roller Bearing (Single Type)

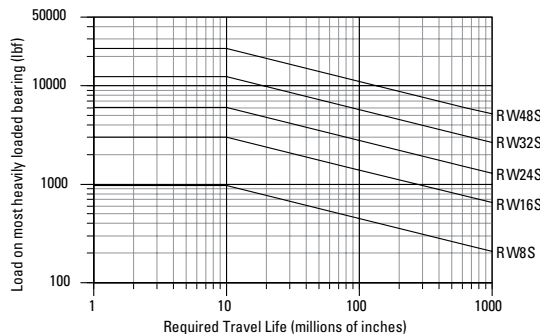


## RoundWay Linear Roller Bearing (Single Type) and 60 Case® LinearRace® (Dimensions in inches)

Part Number		Nom. Dia.	A	B	C	D	E	F	G	H	J	K		L	60 Case LinearRace Diameter d	Bearing Mass lb	Dynamic (1) Load Capacity lb <sub>i</sub>
RoundWay Bearing	60 Case LinearRace											Bolt	Hole				
RW8S	1/2 L PD	.500	1.00	.45	3.0	2.38	1.50	1.25	.19	.94	.31	#6	.16	.88	.4995/.4990	.50	970
RW16S	1 L PD	1.000	1.75	.80	5.0	3.75	2.50	2.13	.25	1.63	.50	#10	.25	1.50	.9995/.9990	2.20	3020
RW24S	1 1/2 L PD	1.500	2.50	1.15	6.5	5.38	3.50	2.88	.31	2.13	.63	5/16	.38	2.13	1.4994/1.4989	5.60	6020
RW32S	2 L PD	2.000	3.25	1.50	8.5	7.38	4.50	3.63	.38	2.75	.75	3/8	.44	2.88	1.9994/1.9987	12.40	12360
RW48S	3 L PD	3.000	5.00	2.30	13.0	11.00	7.00	6.00	.50	4.25	1.25	5/8	.69	4.25	2.9992/2.9983	48.00	24000
RW64S	4 L PD	4.000	6.50	3.00	17.0	14.88	9.00	7.75	.50	5.50	1.50	3/4	.81	5.88	3.9988/3.9976	105.00	48000

(1) Dynamic Load Capacity is based on 10 million inches of travel.  
 Note: For RoundWay replacement parts, see page 130.

## Load/Life Graph (Lines indicate limiting load for given RoundWay bearing)



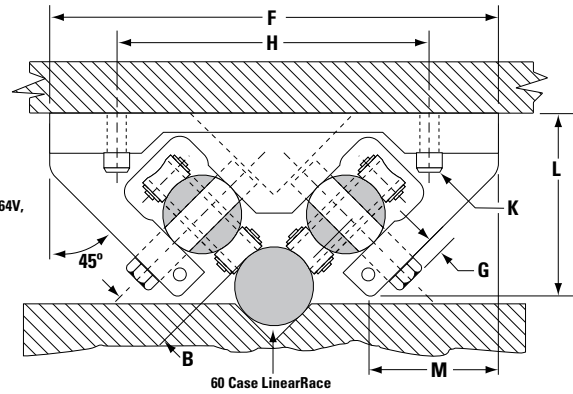
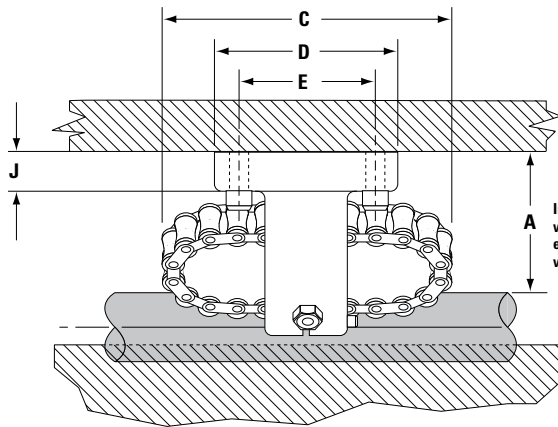
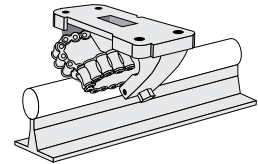
### Determining RoundWay Bearing Size

The primary factors that influence the choice of bearing size are maximum load on a single RoundWay bearing and the required travel life. To determine the proper RoundWay bearing size, enter the chart with the maximum load of the most heavily loaded bearing and the required travel life. Mark where the two lines intersect. All RoundWay bearing sizes that pass through or above and to the right of this point may be suitable for this application.



Thomson RoundRail Linear Guides and Components

# RoundWay Linear Roller Bearing (Dual Type)

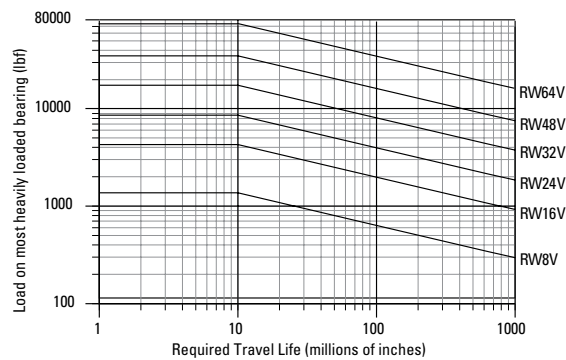


RoundWay Linear Roller Bearing (Dual Type) and 60 Case LinearRace (Dimensions in inches)

Part Number		Nom. Dia.	A	B	C	D	E	F	G	H	J	K		L	M	60 Case LinearRace Diameter d	Bearing Mass lb	Dynamic <sup>(1)</sup> Load Capacity lb <sub>f</sub>
RoundWay Bearing	60 Case LinearRace											Bolt	Hole					
RW8V	1/2 L PD	.500	1.00	.45	2.38	1.38	1.00	3.00	.19	2.25	.31	#8	.19	1.38	.69	.4995/.4990	1.10	1370
RW16V	1 L PD	1.000	1.75	.80	3.75	2.25	1.63	5.75	.25	4.0	.50	#10	.25	2.38	1.56	.9995/.9990	4.90	4300
RW24V	1 1/2 L PD	1.500	2.50	1.15	5.38	2.75	2.00	7.88	.31	6.0	.63	5/16	.38	3.38	2.13	1.4994/1.4989	11.70	8600
RW32V	2 L PD	2.000	3.25	1.50	7.38	3.50	2.50	9.75	.38	7.5	.75	3/8	.44	4.33	2.50	1.9994/1.9987	25.20	17500
RW48V	3 L PD	3.000	5.00	2.30	11.00	5.50	4.00	15.50	.63	12	1.25	5/8	.69	6.69	4.25	2.9992/2.9983	90.00	35000
RW64V	4 L PD	4.000	6.50	3.00	14.88	7.00	5.00	19.25	.75	15	1.50	3/4	.81	8.63	5.00	3.9988/3.9976	193.00	70000

(1) Dynamic Load Capacity is based on 10 million inches of travel.  
 Note: For RoundWay replacement parts, see page 130.

## Load/Life Graph (Lines indicate limiting load for given RoundWay bearing)



### Determining RoundWay Bearing Size

The primary factors that influence the choice of bearing size are maximum load on a single RoundWay bearing and the required travel life. To determine the proper RoundWay bearing size, enter the chart with the maximum load of the most heavily loaded bearing and the required travel life. Mark where the two lines intersect. All RoundWay bearing sizes that pass through or above and to the right of this point may be suitable for this application.



## Overhead Carriage for Log-Processing Machine

### Objective

Design overhead carriage system using RoundWay® linear roller bearings mounted on 60 Case® LinearRace® ways.

### Solution

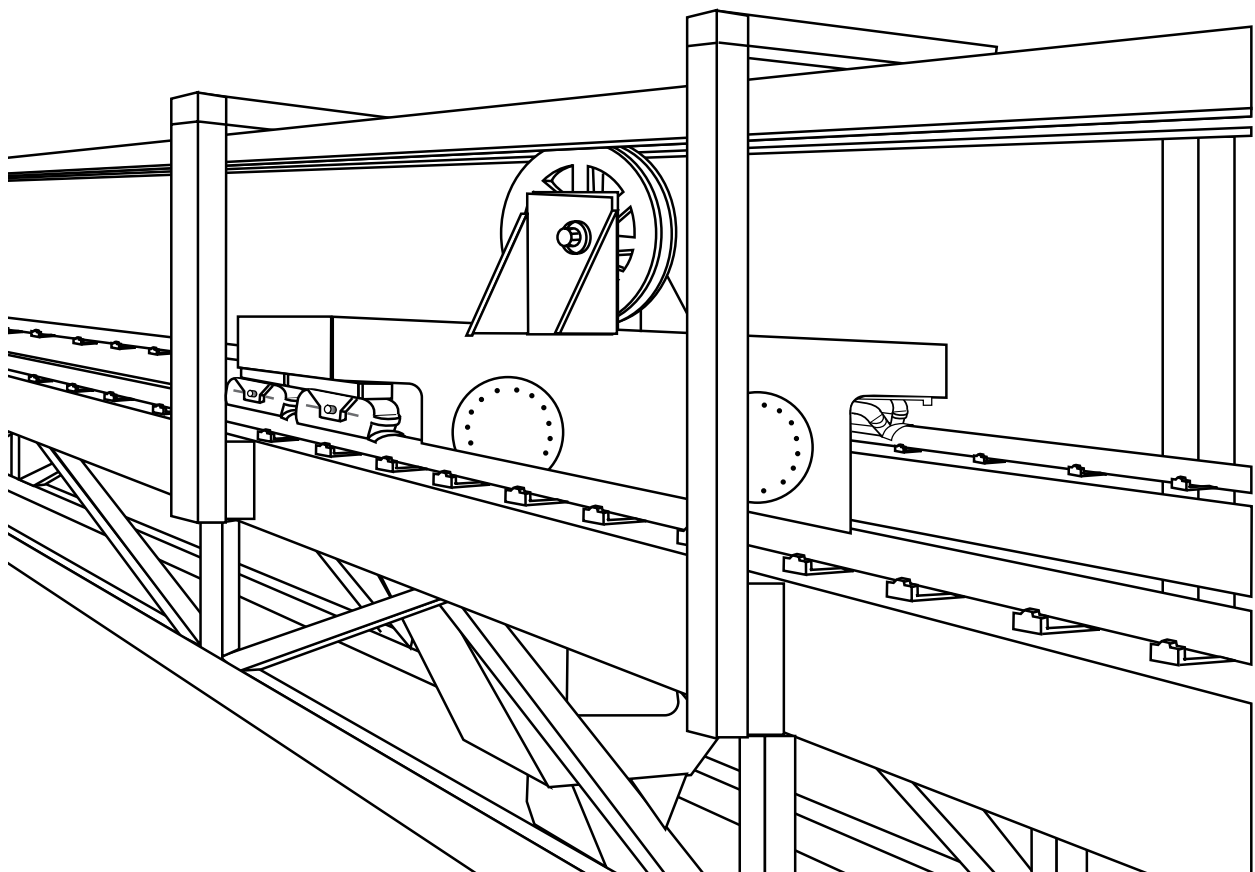
RoundWay linear roller bearings' high load capacity will be used to move heavy logs into and out of the band saws. The carriages shuttle back and forth on 100-foot-long 60 Case LinearRace ways until the final cut is made.

### Products specified

- 2 - RW32V (RoundWay Linear Roller bearing Dual Type)
- 2 - RW32S (RoundWay Linear Roller bearing Single Type)
- 2 - 2 L PD CTL x 100 ft (60 Case LinearRace)

### Benefits

RoundWay linear roller bearings provide operating speeds up to 100 ft./s, optimizing productivity and minimizing cost. The RoundWay bearings' low coefficient of friction allows the use of smaller, less expensive drive motors, belts, linkages and gears. The seal keeps out wood chips and other contaminants and maximizes bearing life.





## FluoroNyliner® Bushing® Bearings



### Thomson FluoroNyliner Bushing Bearings offer:

- High performance in contaminated, washdown or submerged environments.
- Proprietary, self-lubricating, composite bearing liner TEP 950.
- Low friction, ideally suited for linear and rotary motion.
- Precision-machined aluminum sleeve.
- Excellent performance in high-vibration and mechanical shock applications.
- Corrosion resistance.
- Product availability in industry standard sizes from 0.25" to 2.00".
- Eight bearing configurations, include closed, open, self-aligning, precision and compensated IDs.
- Load capacities up to 14,000 lb<sub>r</sub>.
- Closed, open, and flanged pillow blocks available in single or twin versions.
- Available from distributors worldwide.



## FluoroNyliner® Bushing® Bearings

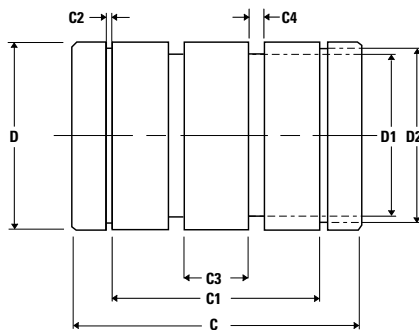
### Common Specifications

Nominal Bearing Diameter (in.)	60 Case LinearRace Shafting			Recommended Shaft Diameter (in.) <sup>(1)</sup>		Weight (lbs.)	Effective Surface Area (in <sup>2</sup> )	Max. Static Load (lb.) <sup>(2)</sup>
	Carbon Steel	316 Stainless Steel	Aluminum	Min.	Max.			
.250	1/4 L	1/4 L SS316	1/4 AL	.2490	.2495	.008	.19	300
.375	3/8 L	3/8 L SS316	3/8 AL	.3740	.3745	.013	.33	500
.500	1/2 L	1/2 L SS316	1/2 AL	.4990	.4995	.030	.63	970
.625	5/8 L	5/8 L SS316	5/8 AL	.6240	.6245	.072	.94	1450
.750	3/4 L	3/4 L SS316	3/4 AL	.7490	.7495	.090	1.22	1900
1.000	1 L	1 L SS316	1 AL	.9990	.9995	.190	2.25	3500
1.250	1 1/4 L	1 1/4 L SS316	-	1.2490	1.2495	.380	3.28	5100
1.500	1 1/2 L	1 1/2 L SS316	-	1.4989	1.4994	.610	4.51	7000
2.000	2 L	2 L SS316	-	1.9987	1.9994	1.230	8.01	12500

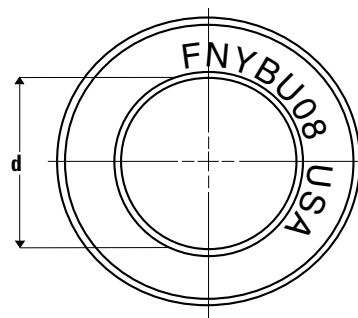
(1) Shown are Carbon Steel and 316 Stainless Steel Class L Diameter Tolerance. See page 183 for Inch Ultra Light Shafting Class AL Diameter Tolerance.

(2) Open bearings operating in shear should be derated by 40%. Open bearings operating in tension should be derated by 70%.

### Closed Bearing

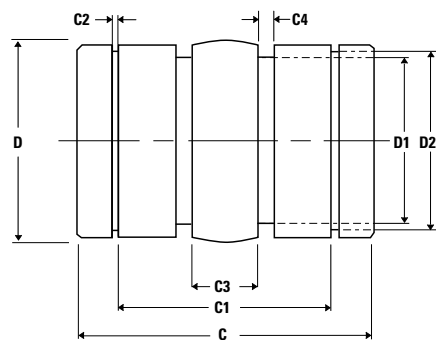


Side View



Front View

### Self-Aligning Bearing



Side View



Thomson RoundRail Linear Guides and Components

Standard Bearings

Precision I.D.			Compensated I.D. <sup>1</sup>			Closed Bearing Dimensions (in.)										
Part Number	d (in.)		Part Number	d (in.)		Nom. Bearing Dia.	D		D1	D2	C		C1 Min.	C2 Min.	C3	C4
	Min.	Max.		Min.	Max.		Min.	Max.			Min.	Max.				
FNYBU04	0.2505	0.2515	FNYBU04L	0.2530	0.2540	0.250	0.4990	0.5000	0.395	0.467	0.735	0.750	0.437	0.040	0.180	0.085
FNYBU06	0.3755	0.3765	FNYBU06L	0.3780	0.3780	0.375	0.6240	0.6250	0.520	0.587	0.860	0.875	0.562	0.040	0.260	0.085
FNYBU08	0.5005	0.5015	FNYBU08L	0.5030	0.5040	0.500	0.8740	0.8750	0.710	0.820	1.235	1.250	0.875	0.048	0.490	0.118
FNYBU10	0.6255	0.6265	FNYBU10L	0.6280	0.6290	0.629	1.1240	1.1250	0.958	1.060	1.485	1.500	1.000	0.058	0.550	0.118
FNYBU12	0.7508	0.7518	FNYBU12L	0.7540	0.7550	0.750	1.2490	1.2500	1.085	1.175	1.610	1.625	1.062	0.058	0.612	0.118
FNYBU16	1.0008	1.0018	FNYBU16L	1.0040	1.0050	1.000	1.5615	1.5625	1.395	1.467	2.235	2.250	1.625	0.070	1.180	0.118
FNYBU20	1.2508	1.2518	FNYBU20L	1.2550	1.2560	1.250	1.9990	2.0000	1.835	1.885	2.610	2.625	1.875	0.070	1.425	0.118
FNYBU24	1.5008	1.5002	FNYBU24L	1.5050	1.5062	1.500	2.3735	2.3750	2.210	2.238	2.980	3.000	2.250	0.090	1.670	0.118
FNYBU32	2.0012	2.0027	FNYBU32L	2.0050	2.0074	2.000	2.9985	3.0000	2.750	2.837	3.980	4.000	3.000	0.105	1.450	0.155

Standard Self-Aligning Bearings

Precision I.D.			Compensated I.D. <sup>1</sup>			Closed Bearing Dimensions (in.)										
Part Number	d (in.)		Part Number	d (in.)		Nom. Bearing Dia.	D		D1	D2	C		C1 Min.	C2 Min.	C3	C4
	Min.	Max.		Min.	Max.		Min.	Max.			Min.	Max.				
FNYBU04A	0.2505	0.2515	FNYBU04AL	0.2530	0.2540	0.250	0.4990	0.5000	0.395	0.467	0.735	0.750	0.437	0.040	0.180	0.085
FNYBU06A	0.3755	0.3765	FNYBU06AL	0.3780	0.3780	0.375	0.6240	0.6250	0.520	0.587	0.860	0.875	0.562	0.040	0.260	0.085
FNYBU08A	0.5005	0.5015	FNYBU08AL	0.5030	0.5040	0.500	0.8740	0.8750	0.710	0.820	1.235	1.250	0.875	0.048	0.490	0.118
FNYBU10A	0.6255	0.6265	FNYBU10AL	0.6280	0.6290	0.629	1.1240	1.1250	0.958	1.060	1.485	1.500	1.000	0.058	0.550	0.118
FNYBU12A	0.7508	0.7518	FNYBU12AL	0.7540	0.7550	0.750	1.2490	1.2500	1.085	1.175	1.610	1.625	1.062	0.058	0.612	0.118
FNYBU16A	1.0008	1.0018	FNYBU16AL	1.0040	1.0050	1.000	1.5615	1.5625	1.395	1.467	2.235	2.250	1.625	0.070	1.180	0.118
FNYBU20A	1.2508	1.2518	FNYBU20AL	1.2550	1.2560	1.250	1.9990	2.0000	1.835	1.885	2.610	2.625	1.875	0.070	1.425	0.118
FNYBU24A	1.5008	1.5002	FNYBU24AL	1.5050	1.5062	1.500	2.3735	2.3750	2.210	2.238	2.980	3.000	2.250	0.090	1.670	0.118
FNYBU32A	2.0012	2.0027	FNYBU32AL	2.0050	2.0074	2.000	2.9985	3.0000	2.750	2.837	3.980	4.000	3.000	0.105	1.450	0.155

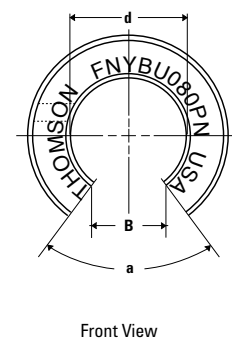
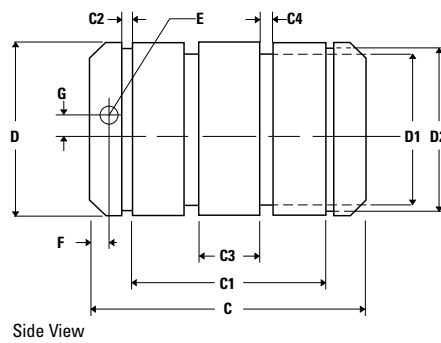
<sup>1</sup> Compensated I.D. bearings have additional running clearance, ideally suited for high speed and non-parallel shaft applications.



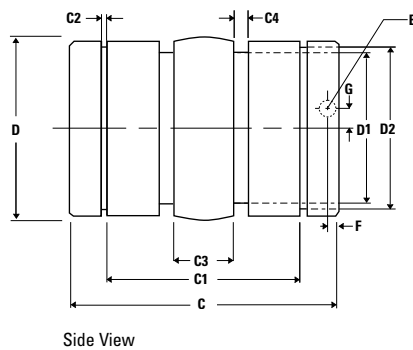
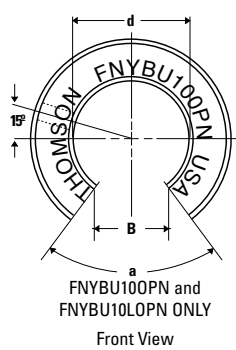
**Common Open Bearing Dimensions (in.)**

Nominal Bearing Diameter (in.)	E	F	G	B	a
.250	.094	.375	.125	.188	60
.375	.094	.438	.146	.250	60
.500	.136	.625	.000	.313	66
.625	.104	.125	.000	.375	60
.750	.136	.125	.000	.438	66
1.000	.136	.125	.000	.563	64
1.250	.201	.197	.000	.625	60
1.500	.201	.193	.000	.750	60
2.000	.265	.292	.000	1.000	60

**Open Bearing**



**Self-Aligning Open Bearing**



Thomson RoundRail Linear Guides and Components

Standard Open Bearings

Precision I.D.		Compensated I.D. <sup>1</sup>					Open Bearing Dimensions (in.)									
Part Number	d (in.)		Part Number	d (in.)		Nom. Bearing Dia.	D		D1	D2	C		C1 Min.	C2 Min.	C3	C4
	Min.	Max.		Min.	Max.		Min.	Max.			Min.	Max.				
FNYBU04OPN	0.2505	0.2515	FNYBU04LOPN	0.2530	0.2540	0.250	0.4990	0.5000	0.395	0.467	0.735	0.750	0.437	0.040	0.180	0.085
FNYBU06OPN	0.3755	0.3765	FNYBU06LOPN	0.3780	0.3780	0.375	0.6240	0.6250	0.520	0.587	0.860	0.875	0.562	0.040	0.260	0.085
FNYBU08OPN	0.5005	0.5015	FNYBU08LOPN	0.5030	0.5040	0.500	0.8740	0.8750	0.710	0.820	1.235	1.250	0.875	0.048	0.490	0.118
FNYBU10OPN	0.6255	0.6265	FNYBU10LOPN	0.6280	0.6290	0.629	1.1240	1.1250	0.958	1.060	1.485	1.500	1.000	0.058	0.550	0.118
FNYBU12OPN	0.7508	0.7518	FNYBU12LOPN	0.7540	0.7550	0.750	1.2490	1.2500	1.085	1.175	1.610	1.625	1.062	0.058	0.612	0.118
FNYBU16OPN	1.0008	1.0018	FNYBU16LOPN	1.0040	1.0050	1.000	1.5615	1.5625	1.395	1.467	2.235	2.250	1.625	0.070	1.180	0.118
FNYBU20OPN	1.2508	1.2518	FNYBU20LOPN	1.2550	1.2560	1.250	1.9990	2.0000	1.835	1.885	2.610	2.625	1.875	0.070	1.425	0.118
FNYBU24OPN	1.5008	1.5002	FNYBU24LOPN	1.5050	1.5062	1.500	2.3735	2.3750	2.210	2.238	2.980	3.000	2.250	0.090	1.670	0.118
FNYBU32OPN	2.0012	2.0027	FNYBU32LOPN	2.0050	2.0074	2.000	2.9985	3.0000	2.750	2.837	3.980	4.000	3.000	0.105	1.450	0.155

Standard Self-Aligning Open Bearings

Precision I.D.		Compensated I.D. <sup>1</sup>					Self-Aligning Bearing Dimensions (in.)									
Part Number	d (in.)		Part Number	d (in.)		Nom. Bearing Dia.	D		D1	D2	C		C1 Min.	C2 Min.	C3	C4
	Min.	Max.		Min.	Max.		Min.	Max.			Min.	Max.				
FNYBU04AOPN	0.2505	0.2515	FNYBU04ALOPN	0.2530	0.2540	0.250	0.4990	0.5000	0.395	0.467	0.735	0.750	0.437	0.040	0.180	0.085
FNYBU06AOPN	0.3755	0.3765	FNYBU06ALOPN	0.3780	0.3780	0.375	0.6240	0.6250	0.520	0.587	0.860	0.875	0.562	0.040	0.260	0.085
FNYBU08AOPN	0.5005	0.5015	FNYBU08ALOPN	0.5030	0.5040	0.500	0.8740	0.8750	0.710	0.820	1.235	1.250	0.875	0.048	0.490	0.118
FNYBU10AOPN	0.6255	0.6265	FNYBU10ALOPN	0.6280	0.6290	0.629	1.1240	1.1250	0.958	1.060	1.485	1.500	1.000	0.058	0.550	0.118
FNYBU12AOPN	0.7508	0.7518	FNYBU12ALOPN	0.7540	0.7550	0.750	1.2490	1.2500	1.085	1.175	1.610	1.625	1.062	0.058	0.612	0.118
FNYBU16AOPN	1.0008	1.0018	FNYBU16ALOPN	1.0040	1.0050	1.000	1.5615	1.5625	1.395	1.467	2.235	2.250	1.625	0.070	1.180	0.118
FNYBU20AOPN	1.2508	1.2518	FNYBU20ALOPN	1.2550	1.2560	1.250	1.9990	2.0000	1.835	1.885	2.610	2.625	1.875	0.070	1.425	0.118
FNYBU24AOPN	1.5008	1.5002	FNYBU24ALOPN	1.5050	1.5062	1.500	2.3735	2.3750	2.210	2.238	2.980	3.000	2.250	0.090	1.670	0.118
FNYBU32AOPN	2.0012	2.0027	FNYBU32ALOPN	2.0050	2.0074	2.000	2.9985	3.0000	2.750	2.837	3.980	4.000	3.000	0.105	1.450	0.155

<sup>1</sup> Compensated I.D. bearings have additional running clearance, ideally suited for high speed and non-parallel shaft applications.

Specialty Bearings

## FluoroNyliner® Bushing® Bearing Pillow Blocks



For the easiest installation, order pillow blocks with factory installed FluoroNyliner Bushing Bearings.

### Three Pillow Block Configurations



#### Closed Bearing Pillow Blocks

- For end-supported applications.
- Choose twin pillow blocks for twice the load capacity.
- Order with seals for heavily contaminated environments.
- Available as single or twin pillow blocks.



#### Open Bearing Pillow Blocks

- For continuously supported applications.
- Choose compensated I.D. bearings for non-parallel shafting.
- Order with seals for heavily contaminated environments.
- Available as single or twin pillow blocks.

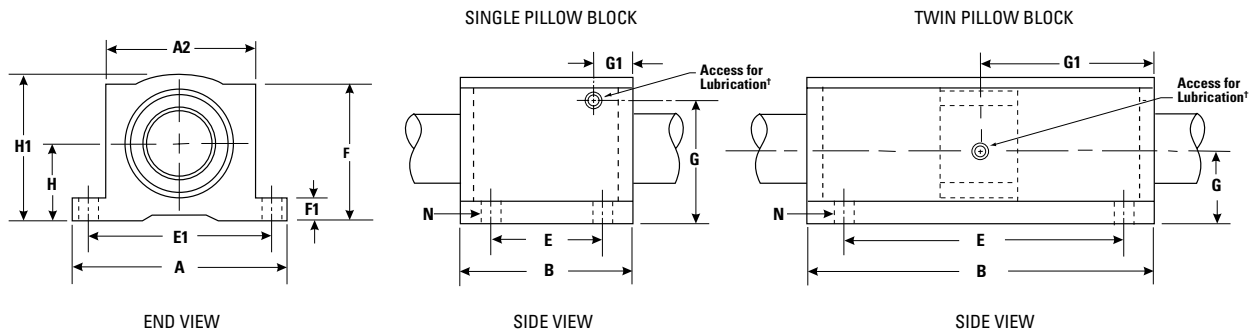


#### Flanged Pillow Blocks with Closed Bearings

- For low-profile applications such as packaging equipment.
- Choose precision I.D. bearings for precision fit-up.
- Available with self-aligning or compensated I.D. bearings.
- Available as single or twin pillow blocks.

Thomson RoundRail Linear Guides and Components

Closed Pillow Blocks with Self-Aligning Bearings



† Sizes .25, .375 and .500 have oil lubricant fitting. Sizes .625 and above have 1/4-28 access for lubrication.

Closed Single Pillow Blocks with Self-Aligning Bearings

Precision I.D.		Compensated I.D. <sup>1</sup>		Single Pillow Block Dimensions (in.)													
Part Number	Part Number	H ±.003	H1	A	A2	B	E ±.010	E1 ±.010	F	F1	G	G1	N		Pillow Block Mass (lb)	Max. Static Load (lb <sub>f</sub> )	
													Hole	Bolt			
FNYBUPB04ALS	FNYBUPB04ALLS	.437	.81	1.63	1.00	1.19	.750	1.313	.75	.19	.60	.41	.16	#6	.10	300	
FNYBUPB06ALS	FNYBUPB06ALLS	.500	.94	1.75	1.13	1.31	.875	1.438	.88	.19	.70	.41	.16	#6	.13	500	
FNYBUPB08ALS	FNYBUPB08ALLS	.687	1.25	2.00	1.38	1.69	1.000	1.688	1.13	.25	.97	.44	.16	#6	.40	970	
FNYBUPB10ALS	FNYBUPB10ALLS	.875	1.63	2.50	1.75	1.94	1.125	2.125	1.44	.28	1.17	.68	.19	#8	1.00	1450	
FNYBUPB12ALS	FNYBUPB12ALLS	.937	1.75	2.75	1.88	2.06	1.250	2.375	1.56	.31	.94	.72	.19	#8	1.20	1900	
FNYBUPB16ALS	FNYBUPB16ALLS	1.187	2.19	3.25	2.38	2.81	1.750	2.875	1.94	.38	1.20	.86	.22	#10	2.40	3500	
FNYBUPB20ALS	FNYBUPB20ALLS	1.500	2.81	4.00	3.00	3.63	2.000	3.500	2.50	.44	1.50	1.20	.22	#10	5.00	5100	
FNYBUPB24ALS	FNYBUPB24ALLS	1.750	3.25	4.75	3.50	4.00	2.500	4.125	2.88	.50	1.75	1.25	.28	1/4	7.80	7000	
FNYBUPB32ALS	FNYBUPB32ALLS	2.125	4.06	6.00	4.50	5.00	3.250	5.250	3.63	.63	1.30	1.25	.41	3/8	7.80	12500	

Closed Twin Pillow Blocks with Self-Aligning Bearings

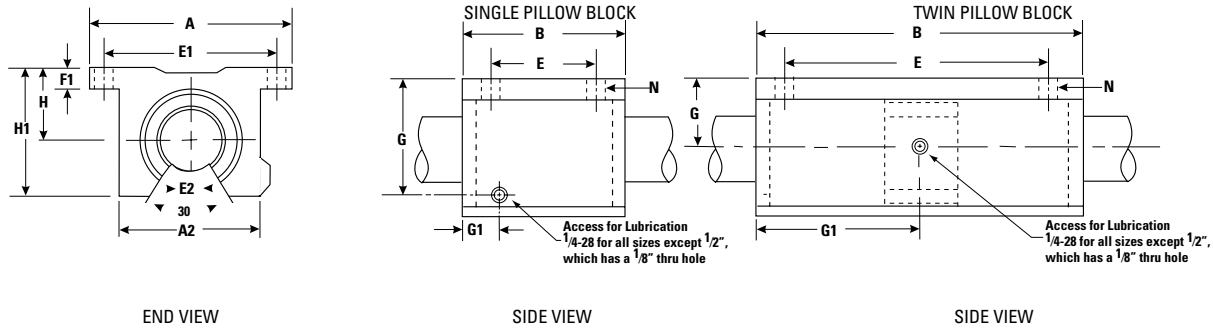
Precision I.D.		Compensated I.D. <sup>1</sup>		Twin Pillow Block Dimensions (in.)													
Part Number	Part Number	H ±.003	H1	A	A2	B	E ±.010	E1 ±.010	F	F1	G	G1	N		Pillow Block Mass (lb)	Max. Static Load (lb <sub>f</sub> )	
													Hole	Bolt			
FNYBUTWN04ALS	FNYBUTWN04ALLS	.437	.81	1.63	1.00	2.50	2.000	1.313	.75	.19	.60	.41	.16	#6	.19	600	
FNYBUTWN06ALS	FNYBUTWN06ALLS	.500	.94	1.75	1.13	2.75	2.250	1.438	.88	.19	.70	.41	.16	#6	.25	1000	
FNYBUTWN08ALS	FNYBUTWN08ALLS	.687	1.25	2.00	1.38	3.50	2.500	1.688	1.13	.25	.97	.44	.16	#6	.40	1940	
FNYBUTWN10ALS	FNYBUTWN10ALLS	.875	1.63	2.50	1.75	4.00	3.000	2.125	1.44	.28	1.17	.68	.19	#8	1.00	2900	
FNYBUTWN12ALS	FNYBUTWN12ALLS	.937	1.75	2.75	1.88	4.50	3.500	2.375	1.56	.31	.94	.72	.19	#8	1.20	3800	
FNYBUTWN16ALS	FNYBUTWN16ALLS	1.187	2.19	3.25	2.38	6.00	4.500	2.875	1.94	.38	1.20	.86	.22	#10	2.40	7000	
FNYBUTWN20ALS	FNYBUTWN20ALLS	1.500	2.81	4.00	3.00	7.50	5.500	3.500	2.50	.44	1.50	1.20	.22	#10	5.00	10200	
FNYBUTWN24ALS	FNYBUTWN24ALLS	1.750	3.25	4.75	3.50	9.00	6.500	4.125	2.88	.50	1.75	1.25	.28	1/4	7.80	14000	

<sup>1</sup> Compensated I.D. bearings have additional running clearance, ideally suited for high-speed and non-parallel shaft applications.  
 Note: For pillow block seals or non-self-aligning bearings, see Part Number Matrix on page 113.





### Open Pillow Blocks with Self-Aligning Bearings



### Open Single Pillow Blocks with Self-Aligning Bearings

Precision I.D.		Compensated I.D. <sup>1</sup>		Single Pillow Block Dimensions (in.)											
Part Number	Part Number	H ±.003	H1	A	A2	B	E ±.010	E1 ±.010	F1	G	G1	N		Pillow Block Mass (lb)	Max. Static Load (lb.) <sup>(2)</sup>
												Hole	Bolt		
FNYBUPB008ALS	FNYBUPB008ALLS	.687	1.13	2.00	1.38	1.50	1.000	1.688	.25	.69	.84	.16	#6	.20	970
FNYBUPB010ALS	FNYBUPB010ALLS	.875	1.44	2.50	1.75	1.75	1.125	2.125	.28	.70	.68	.19	#8	.50	1450
FNYBUPB012ALS	FNYBUPB012ALLS	.937	1.56	2.75	1.88	1.88	1.250	2.375	.31	.94	.72	.19	#8	.60	1900
FNYBUPB016ALS	FNYBUPB016ALLS	1.187	2.00	3.25	2.38	2.63	1.750	2.875	.38	1.20	.86	.22	#10	1.20	3500
FNYBUPB020ALS	FNYBUPB020ALLS	1.500	2.50	4.00	3.00	3.38	2.000	3.500	.44	1.50	1.20	.22	#10	2.50	5100
FNYBUPB024ALS	FNYBUPB024ALLS	1.750	2.94	4.75	3.50	3.75	2.500	4.125	.50	1.75	1.25	.28	1/4	3.80	7000
FNYBUPB032ALS	FNYBUPB032ALLS	2.125	3.63	6.00	4.50	4.75	3.250	5.250	.63	2.12	1.58	.41	3/8	7.00	12500

### Open Twin Pillow Blocks with Self-Aligning Bearings

Precision I.D.		Compensated I.D. <sup>1</sup>		Twin Pillow Block Dimensions (in.)											
Part Number	Part Number	H ±.003	H1	A	A2	B	E ±.010	E1 ±.010	F1	G	G1	N		Pillow Block Mass (lb)	Max. Static Load (lb.) <sup>(2)</sup>
												Hole	Bolt		
FNYBUTWNO08ALS	FNYBUTWNO08ALLS	.687	1.13	2.00	1.38	3.50	2.500	1.688	.25	.59	1.75	.16	#6	.40	1940
FNYBUTWNO10ALS	FNYBUTWNO10ALLS	.875	1.44	2.50	1.75	4.00	3.000	2.125	.28	.85	2.00	.19	#8	1.00	2900
FNYBUTWNO12ALS	FNYBUTWNO12ALLS	.937	1.56	2.75	1.88	4.50	3.500	2.375	.31	.94	2.25	.19	#8	1.20	3800
FNYBUTWNO16ALS	FNYBUTWNO16ALLS	1.187	2.00	3.25	2.38	6.00	4.500	2.875	.38	1.20	3.00	.22	#10	2.40	7000
FNYBUTWNO20ALS	FNYBUTWNO20ALLS	1.500	2.50	4.00	3.00	7.50	5.500	3.500	.44	1.50	3.75	.22	#10	5.00	10200
FNYBUTWNO24ALS	FNYBUTWNO24ALLS	1.750	2.94	4.75	3.50	9.00	6.500	4.125	.50	1.75	4.50	.28	1/4	7.80	14000

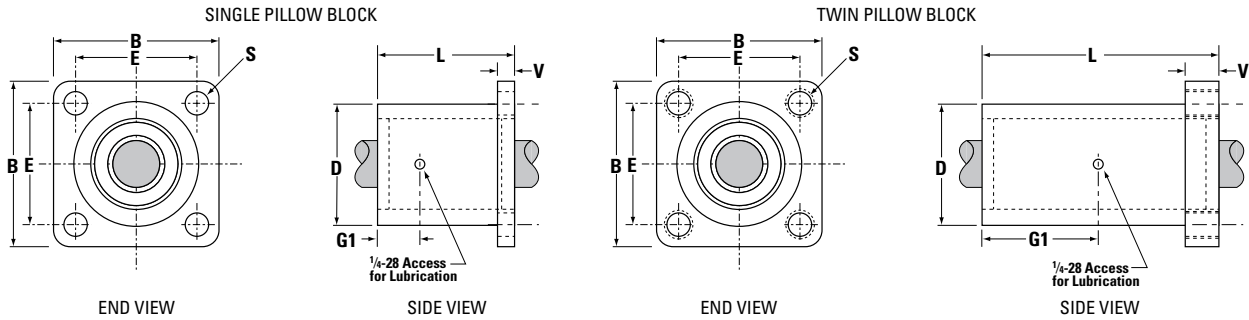
<sup>1</sup> Compensated I.D. bearings have additional running clearance, ideally suited for high speed and non-parallel shaft applications.

<sup>2</sup> Open bearings operating in shear should be derated by 40%. Open bearings operating in tension should be derated by 70%.

Note: For pillow block seals or non-self-aligning bearings, see Part Number Matrix on page 113.

Thomson RoundRail Linear Guides and Components

Flanged Pillow Blocks with Self-Aligning Bearings



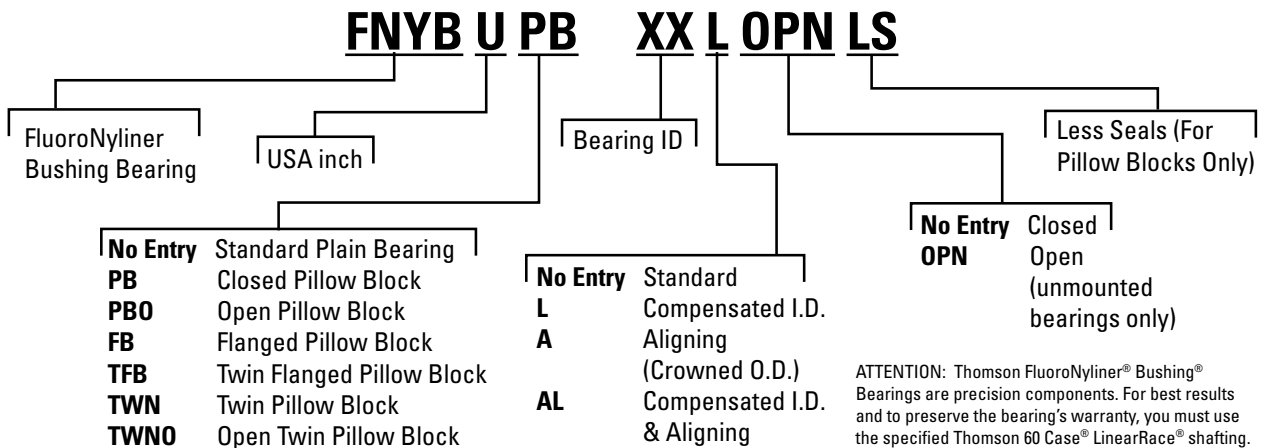
Flanged Single Pillow Blocks with Self-Aligning Bearings

Precision I.D.		Compensated I.D. <sup>1</sup>		Single Pillow Block Dimensions (in.)								60 Case LinearRace Shaft Diameter	
Part Number	Part Number	Nominal Bearing Diameter	B	E ±.010	L	D	V	G1 ±.010	S Shaft Hole Diameter	Min.	Max.		
FNYBUF08ALS	FNYBUF08ALLS	.500	1.63	1.250	1.69	1.25	.25	.72	.19	.4990	.4995		
FNYBUF12ALS	FNYBUF12ALLS	.750	2.38	1.750	2.06	1.75	.38	.89	.22	.7490	.7495		
FNYBUF16ALS	FNYBUF16ALLS	1.00	2.75	2.125	2.81	2.25	.50	1.27	.28	.9990	.9995		
FNYBUF20ALS	FNYBUF20ALLS	1.25	3.50	2.750	3.63	3.00	.63	1.67	.35	1.2490	1.2495		
FNYBUF24ALS	FNYBUF24ALLS	1.50	4.00	3.125	4.00	3.62	.75	1.86	.41	1.4989	1.4994		

Flanged Twin Pillow Blocks with Self-Aligning Bearings

Precision I.D.		Compensated I.D. <sup>1</sup>		Twin Pillow Block Dimensions (in.)								60 Case LinearRace Shaft Diameter	
Part Number	Part Number	Nominal Bearing Diameter	B	E ±.010	L	D	V	G1 ±.010	S Thread	Min.	Max.		
FNYBUTFB08ALS	FNYBUTFB08ALLS	.500	1.63	1.250	3.20	1.25	.90	1.48	1/4 - 20	.4990	.4995		
FNYBUTFB12ALS	FNYBUTFB12ALLS	.750	2.38	1.750	3.95	1.75	.90	1.98	1/4 - 20	.7490	.7495		
FNYBUTFB16ALS	FNYBUTFB16ALLS	1.00	2.75	2.125	5.33	2.25	.90	2.67	1/4 - 18	.9990	.9995		
FNYBUTFB20ALS	FNYBUTFB20ALLS	1.25	3.50	2.750	6.70	3.00	.90	3.35	5/16 - 18	1.2490	1.2495		
FNYBUTFB24ALS	FNYBUTFB24ALLS	1.50	4.00	3.125	7.50	3.62	1.00	3.75	5/16 - 16	1.4989	1.4994		

<sup>1</sup> Compensated I.D. bearings have additional running clearance, ideally suited for high speed and non-parallel shaft applications.  
 Note: For pillow block seals or non-self-aligning bearings, see Part Number Matrix below.



Not all options are available in all sizes.  
 See catalog pages or contact Thomson Customer Support for combination availability.  
 For additional information on bearing options, see page 263.

www.thomsonlinear.com



## Frictional Characteristics

I) Static: Tests performed on dry FNYBU16 bearings indicate that the force required to initiate motion is dependent upon the applied load according to the following equation:

$$F_f = 1.3 + 0.18 F_a$$

Where:

$F_f$  = Friction force, static (lb<sub>f</sub>)

$F_a$  = Applied force (lb<sub>f</sub>)

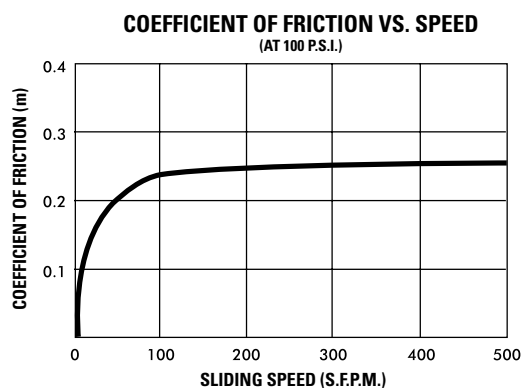
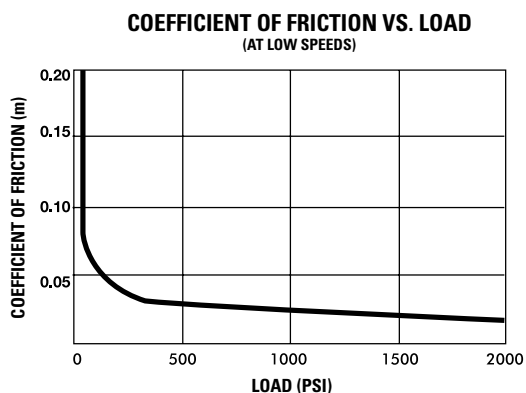
Characteristic	Limit
Linear Temperature Range	-400° F to 550° F (-240° C to 288° C)
Velocity, dry	140 ft/min. Continuous
Velocity, dry	400 ft/min. Intermittent
Velocity, Lubricated	400 ft/min. Continuous
Pressure	1500 psi
PV	10,000 psi ft/min

II) Dynamic: The coefficient of friction is dependent upon both the pressure and the velocity.

Pressure: Coefficient of friction decreases rapidly with increase in pressure.

Velocity: Coefficient of friction increases with an increase in velocity and quickly stabilizes.

For example, at 100 psi, the coefficient of friction is approximately 0.25 for velocities of 100 ft./min and higher.



## Wear Rates and Life Expectancy

I) Wear rates: The wear rates of a plain bearing are dependent upon a number of variables, including characteristics of the counter-face, velocity, lubrication, load and contamination. Tests conducted on FNYBU16 bearings operating in the linear mode at approximately 70 ft./min, and at a pressure of approximately 33 psi, demonstrated an average radial wear change of 0.0011 inches, after 80 million inches of travel. This yields the following formula:

$$W_R = 14 \times (10^{-6}) \times T$$

Where:

$W_R$  = Radial Wear (micro-inches)

T = Travel (inches)

II) Life expectancy: The life expectancy may be calculated from the wear rate. This is normally associated with the allowable radial clearance for a given application. The absolute wear limit is the bearing material thickness, which is 0.028 inches.

## Thomson RoundRail Linear Guides and Components

## FluoroNyliner Bushing Bearing Chemical Resistance Chart

Chemical	Rating **		
	Bearing Liner	Aluminum Bearing Shell	Standard Hard Ceramic Coating (on Aluminum Bearing Shell)
2-butanone	A		
Acetic Acid, 20%	A	B	A
Acetone	A	B	A
Acetylene	A		A
Alkalines	D		
Ammonia	D		A
Ammonia, Anhydrous		B	A
Ammonium Chloride, 10%		C	C
Ammonium Hydroxide, 10%		C	C
Amyl Chloride	A		
Aniline	A		A
Barium Hydroxide		C	C
Beer	A	B	A
Benzaldehyde	A		A
Benzenesulfonic Acid	A	A	
Boric Acid Solutions	A	B	A
Bromine	A		A
Butane		B	A
Calcium Chloride, 20%	A	B	C
Calcium Hydroxide, 10%	D	B	B
Calcium Hypochlorite	A	B	B
Carbon Bisulfide	A		A
Carbon Dioxide	A		A
Carbon Monoxide	A	B	A
Carbon Tetrachloride	A	B	B
Chloral Hydrate or Chloroacetic Acid	A		
Chlorine gas, dry	A	B	A
Chlorine gas, wet	A	C	C
Chloroform or Chlorosulfonic Acid	A		
Chromic Acid, 10%	A	B	B
Citric Acid, 5%	A	B	A
Concentrated Oxidizing Acids	A		
Creosote	A		A
Decalin or Dichlorobenzene	A		
Diethyl Ether or Dimethylamine	A		
Dimethyl Sulfoxide	A		
Ethyl Acetate	A		A (122°F/50°C)
Ethyl Alcohol	A	B	A
Ethylene Glycol	A	B	A
Ferric Chloride, 50%	A	C	C
Ferric Nitrate	A		
Ferric Sulfate	A		
Ferrous Sulfate	A		
Fluoboric Acid	D		
Fluorinating Agents, strong	D		
Fluorine > 140°F & dry gas > 250°F	D		
Fluosilicic Acid	D		
Gasoline	A	B	A
Hydrobromic Acid	A		

## \*\* Rating Key

A = Little to no effect    B = Minor to moderate effect    C = Severe effect    D = Not Recommended  
 Chemical effects are at room temperature unless otherwise noted.

All information contained herein is believed to be correct but is presented without any guaranty, warranty or representation of any kind, express or implied. Changes in temperature, concentration and/or combinations of chemicals may cause different results. Prior to use, it is recommended that the material be tested to determine its compatibility with a specific application. Contact Thomson applications engineers for more detailed information at 1-540-633-3549.

Chemical	Rating **		
	Bearing Liner	Aluminum Bearing Shell	Standard Hard Ceramic Coating (on Aluminum Bearing Shell)
Hydrochloric Acid, 20% or 35%	A	C	B
Hydrocyanic Acid	A	C	C
Hydrocyanic Acid, 10%		B	C
Hydrofluoric Acid	D	C	C
Hydrofluosilicic Acid	D		
Hydrogen Fluoride, dry > 250°F	D		
Hydrogen Peroxide - dilute	A	B	A
Hydrogen Sulfide, dry	A	B	A
Hydrogen Sulfide, moist	A		A
Hydroxides	D		
Kerosene		B	A
Lactic Acid, 10%	A	B	A
Magnesium Chloride, 50%	A	C	B
Mercury	A	C	C
Methyl Alcohol		B	A
Methylene Chloride	A	B	B
Methylethyl Ketone	A	B	A (122°F/50°C)
Mineral Oil	A	B	A
Molten Alkali Metals	D		
Molten Anhydrous Base	D		
Naptha	A	B	A
Nitric Acid, 70%	D	C	A
Nitro Benzene	A		A
Oleum	A		
Phosphoric Acid, 10%	A	C	C
Potassium Chlorate	D		
Potassium or Sodium Cyanide	A		
Potassium Dichromate	A		A
Potassium Hydroxide	D		C
Sea Water	A	B	A
Sodium Chlorate	A		
Sodium Chloride	A		A
Sodium Hydroxide, 20%	B	C	C
Sodium Hypochlorite, 20%	A	B	C
Sodium Peroxide, 10%		B	A
Stannous Chloride	A		
Sulfur Dioxide, dry	A	B	C
Sulfur Dioxide, 5% +H <sub>2</sub> O	A	C	C
Sulfuric Acid, 50%	A	C	C
Trichlorethylene	A		A
Toluene (122°F/50°C)	A	B	A
Trifluoroacetic Acid	A		
Turpentine	A	B	A
Water, demineralized	A	B	A
Water, distilled	A	C	A
Water, sewage		C	A
Xylene	A	B	A
Zinc Chloride solutions	A	C	B

## Food-Grade FluoroNyliner® Bushing® Bearings



### Description

Thomson Food-Grade FluoroNyliner Bushing Bearings are the first stainless steel, corrosion-resistant, self-lubricating Bushing Bearing with FDA-compliant liner materials. They are designed for use in food processing, pharmaceutical and medical applications.

The corrosion-resistant sleeve is stainless steel, while the self-lubricating liner is FDA and USDA compliant.

As the bearing does not utilize ball bearings, it can be run on soft shafting such as Thomson "corrosion proof" 316 Stainless Steel or Ultra Light Aluminum LinearRace® shafting, making the Food-Grade FluoroNyliner excel in washdown applications.

### Features and Benefits

- 303 Stainless Steel, corrosion-resistant shell will not rust or otherwise contaminate applications.
- Self-lubricating liner eliminates costly maintenance and labor.
- Non-magnetic and corrosion resistant.
- FDA, USDA and washdown compliant.
- Special machining options available.
- Available in open and closed types.

Thomson RoundRail Linear Guides and Components

Specialty Bearings

Maximum PV, continuous	10,000 psi ft/min
Maximum P, static	1,000 psi
Maximum V, no load	400 ft/min
Temperature Range	-400°F to 385°F / -240°C to 196°C
Shaft Finish, recommended	8-16 Ra microinch
Coefficient of Friction	.12 - .20

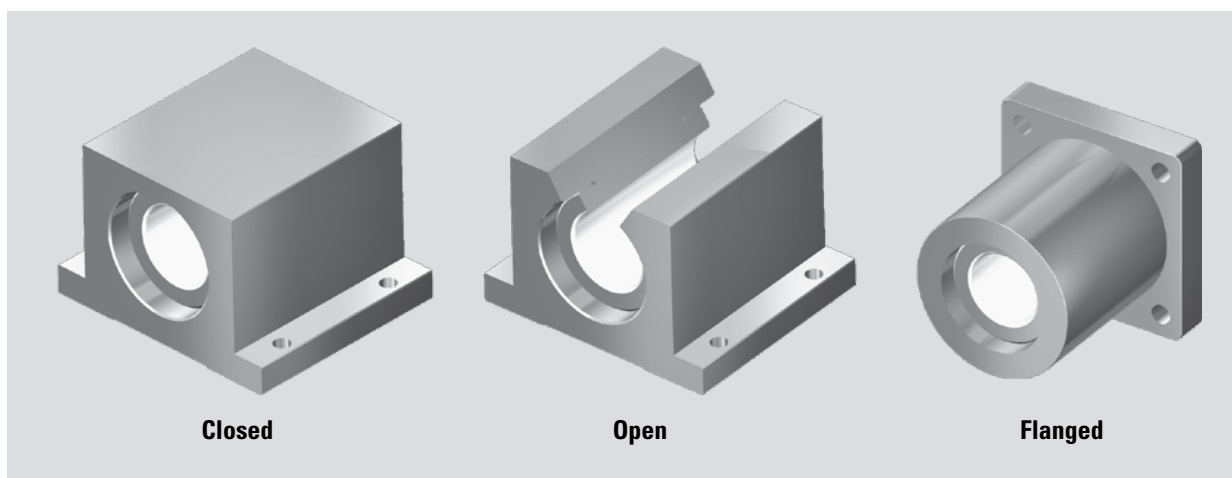
**FluoroNyliner LinearRace Options**

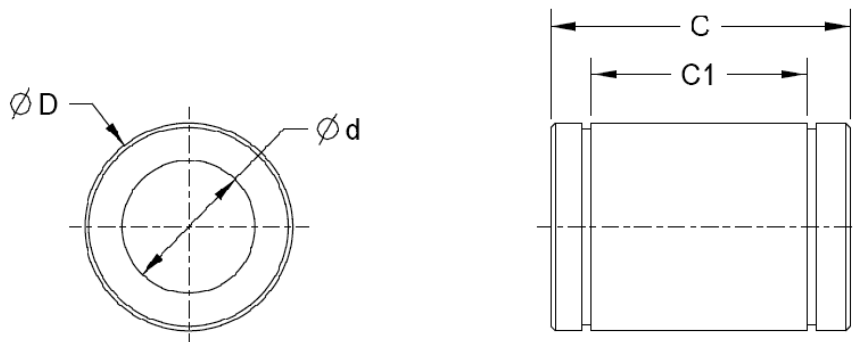
Food-Grade FluoroNyliner Bushing Bearings can be combined with a wide range of corrosion-resistant LinearRace options, depending on the application requirements:

- **440C Stainless Steel** Corrosion-resistant shafting with 50 HRC min case hardness
- **316 Stainless Steel** "Corrosion proof" shafting with no carbon content
- **Ultra Light Aluminum** Hard-anodized coated, lightweight aluminum shafting
- **Plated 60 Case® Options** Include Hard Chrome, Thin Dense Chrome and Black Oxide

**Pillow Block Options**

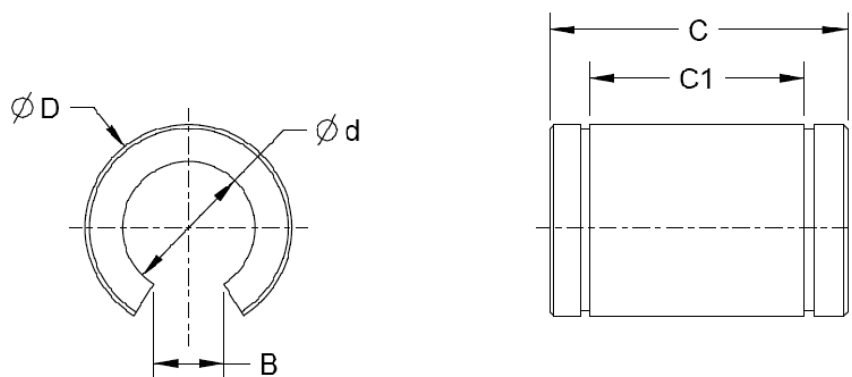
Stainless steel pillow block assemblies are also available per request in closed, open and flanged styles, all of which are available as single or twin styles. Minimum orders may apply.





**Closed Type** (Dimensions in inches)

Part Number	Nominal Bearing Diameter	Working Bore Diameter (d)	Outside Diameter (D)	Length (C)	Distance Between Retaining Rings (C1)	Bearing Weight (lbs)
FNYBU06F	3/8	.3765/.3755	.6250/.6240	.875/.860	.562	.016
FNYBU08F	1/2	.5015/.5005	.8750/.8740	1.250/1.235	.875	.041
FNYBU10F	5/8	.6265/.6255	1.1250/1.1240	1.500/1.485	1.000	.091
FNYBU12F	3/4	.7518/.7508	1.2500/1.2490	1.625/1.610	1.062	.109
FNYBU16F	1	1.0018/1.0008	1.5625/1.5615	2.250/2.235	1.625	.228
FNYBU20F	1 1/4	1.2518/1.2508	2.0000/1.9990	2.625/2.605	1.875	.459
FNYBU24F	1 1/2	1.5018/1.5008	2.3750/2.3735	3.000/2.980	2.250	.750



**Open Type** (Dimensions in inches)

Part Number	Nominal Bearing Diameter	Working Bore Diameter (d)	Outside Diameter (D)	Length (C)	Distance Between Retaining Rings (C1)	Slot Width Min (B)	Bearing Weight (lbs)
FNYBU06FOPN	3/8	.3765/.3755	.6250/.6240	.875/.860	.562	.156	.013
FNYBU08FOPN	1/2	.5015/.5005	.8750/.8740	1.250/1.235	.875	.312	.034
FNYBU10FOPN	5/8	.6265/.6255	1.1250/1.1240	1.500/1.485	1.000	.375	.072
FNYBU12FOPN	3/4	.7518/.7508	1.2500/1.2490	1.625/1.610	1.062	.438	.091
FNYBU16FOPN	1	1.0018/1.0008	1.5625/1.5615	2.250/2.235	1.625	.563	.184
FNYBU20FOPN	1 1/4	1.2518/1.2508	2.0000/1.9990	2.625/2.605	1.875	.625	.381
FNYBU24FOPN	1 1/2	1.5018/1.5008	2.3750/2.3735	3.000/2.980	2.250	.750	.630



## Polymer Bushing Bearings



### Description

Thomson polymer bushing bearings offer linear motion designers a reliable, yet economical, option for machines in which moment load is non-critical or where contamination is a concern. These bearings are also useful for applications that require shafting that is incompatible with Thomson Ball Bushing® Bearings such as aluminum or 316 stainless steel.

Handling loads up to 9000 N (2023 lbf), polymer bushing bearings provide a corrosion-resistant option for low-load, low-speed applications. When combined with round rail shafting, pillow blocks or other assembly components, polymer bushing bearings deliver a budget-friendly linear motion solution to a number of applications.

### Polymer Bushing Bearings Applications

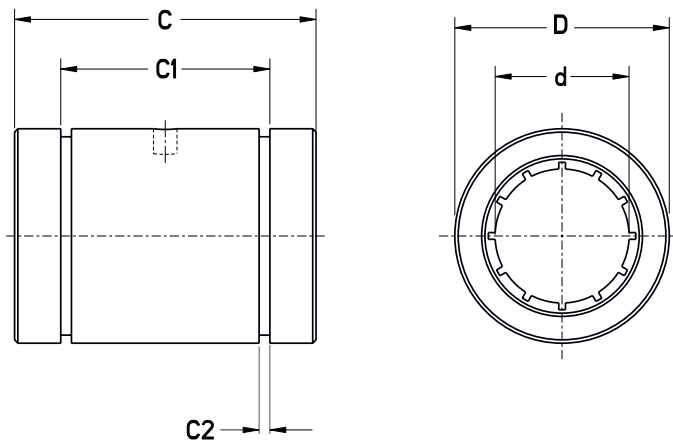
- Factory Automation
- Robotics
- Health and Fitness
- Medical Automation
- Woodworking
- Packaging
- Food and Beverage
- Vending

### Polymer Bushing Bearings Highlights

- Available in sizes of 6 to 50 mm (closed) and 10 to 50 mm (open)
- Maintenance-free operation
- Polymer liners reduce noise
- Dirt and dust resistant
- Anodized aluminum adapter
- Available with aluminum pillow blocks
- Operate in temperatures ranging from -50°C to 90°C (-58°F to 194°F)
- Available in open and closed types



**Polymer Bushing Bearings - Closed Type**



Dimensions	Projection
mm	

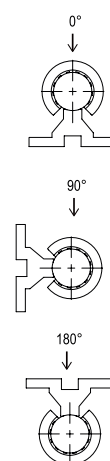
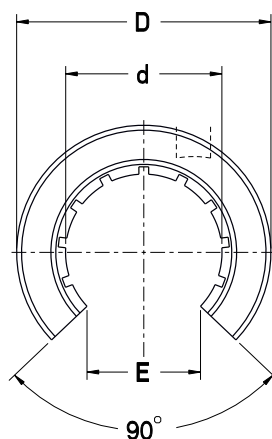
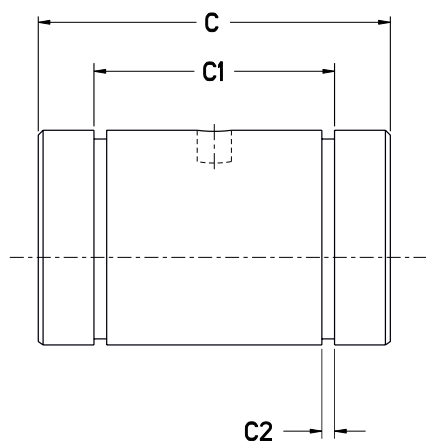
**Dimensions [mm]**

Part Number	Inside Diameter (d)	Inside Diameter Tolerance	Outside Diameter (D)	Length (C)	Retaining Rings Distance (C1)	Retaining Rings Groove Width (C2)
PLM06	6	+0.020/+0.068	12	22	14.2	1.1
PLM08	8	+0.025/+0.083	16	25	16.2	1.1
PLM10	10	+0.030/+0.088	19	29	21.6	1.3
PLM12	12	+0.030/+0.088	22	32	22.6	1.3
PLM16	16	+0.030/+0.088	26	36	24.6	1.3
PLM20	20	+0.030/+0.091	32	45	31.2	1.6
PLM25	25	+0.030/+0.091	40	58	43.7	1.85
PLM30	30	+0.040/+0.110	47	68	51.7	1.85
PLM40	40	+0.040/+0.115	62	80	60.3	2.15
PLM50	50	+0.050/+0.130	75	100	77.3	2.65

Part Number	Shaft Diameter	Dynamic Load F max. (N) P = 5 MPa	Static Load F max. (N) P = 35 MPa	Weight [kg]
PLM06	6	525	3675	5
PLM08	8	960	6720	9
PLM10	10	725	5075	12
PLM12	12	960	6720	20
PLM16	16	1440	10080	28
PLM20	20	2250	15750	50
PLM25	25	3625	25375	104
PLM30	30	5100	35700	163
PLM40	40	8000	56000	341
PLM50	50	9000	87500	589

Thomson RoundRail Linear Guides and Components

Polymer Bushing Bearings - Open Type



Dimensions	Projection
mm	

Specialty Bearings

Dimensions [mm]

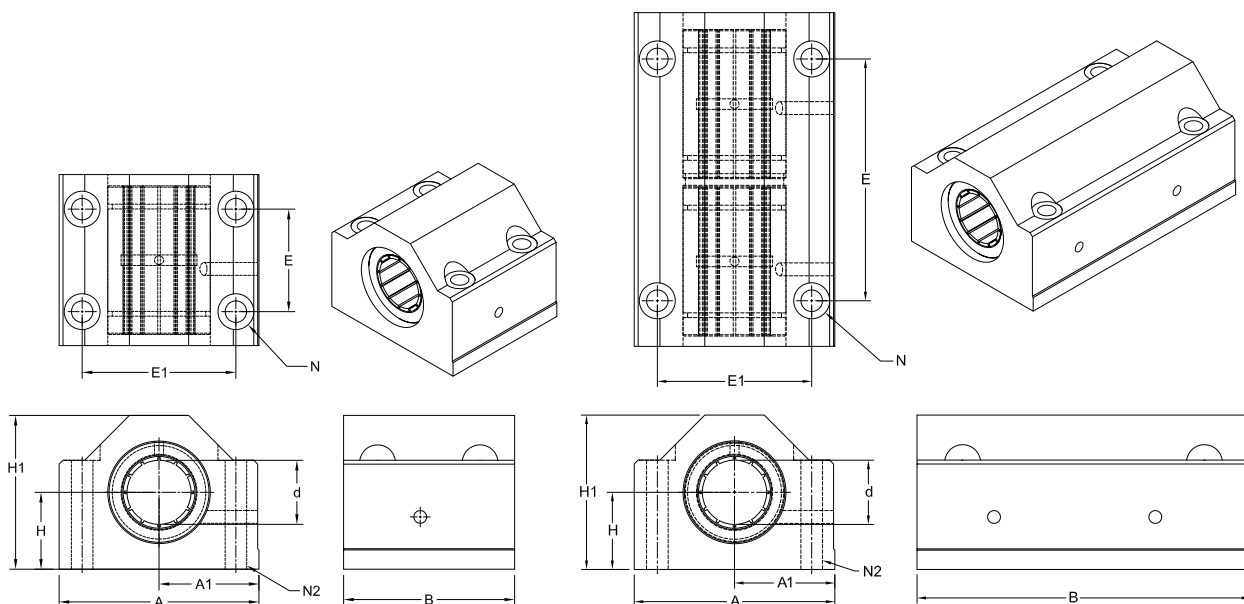
Part Number	Inside Diameter (d)	Inside Diameter Tolerance	Outside Diameter (D)	Length (C)	Retaining Rings Distance (C1)	Retaining Rings Groove Width (C2)	Opening Width (E)
PLM100PN	10	+0.030/+0.088	19	29	21.6	1.30	7.3
PLM120PN	12	+0.030/+0.088	22	32	22.6	1.30	9.0
PLM160PN	16	+0.030/+0.088	26	36	24.6	1.30	11.6
PLM200PN	20	+0.030/+0.091	32	45	31.2	1.60	12.0
PLM250PN	25	+0.030/+0.091	40	58	43.7	1.85	14.5
PLM300PN	30	+0.040/+0.110	47	68	51.7	1.85	16.6
PLM400PN	40	+0.040/+0.115	62	80	60.3	2.15	21.0
PLM500PN	50	+0.050/+0.130	75	100	77.3	2.65	25.5

Part Number	Shaft Diameter	Dynamic Load F max. (N) P = 5 MPa			Static Load F max. (N) P = 35 MPa			Weight [kg]
		0°	90°	180°	0°	90°	180°	
PLM100PN	10	725	500	196	5075	3500	1370	9
PLM120PN	12	960	635	240	6720	4445	1680	15
PLM160PN	16	1440	990	396	10080	6943	2772	21
PLM200PN	20	2250	1800	900	15750	12600	6300	37
PLM250PN	25	3625	2953	1523	25375	20670	10658	78
PLM300PN	30	5100	4250	2278	35700	29735	15948	122
PLM400PN	40	8000	6810	3800	56000	47660	26600	256
PLM500PN	50	12500	10750	6125	87500	75265	42875	442



**Polymer Bushing Bearings - Single and Twin Block Closed Type**

Dimensions	Projection
mm	



**Single Block Dimensions [mm]**

Part Number	Inside Diam. (d)	Center Height ± 0.02 (H)	Block Height (H1)	Block Width (A)	Center Width ± 0.02 (A1)	Block Length (B)	Hole Length ± 0.1 (E)	Hole Width ± 0.1 (E1)	Hole Diam. (N)	Thread Size × Length (N2)	Weight [kg]
PLBM12	12	18	35	43	21.5	39	23	32	4.3	M5 × 11	0.117
PLBM16	16	22	42	53	26.5	43	26	40	5.3	M6 × 13	0.180
PLBM20	20	25	50	60	30.0	54	32	45	6.6	M8 × 18	0.300
PLBM25	25	30	60	78	39.0	67	40	60	8.4	M10 × 22	0.571
PLBM30	30	35	71	87	43.5	79	45	68	8.4	M10 × 22	0.889
PLBM40	40	45	91	108	54.0	91	58	86	10.5	M12 × 26	1.638

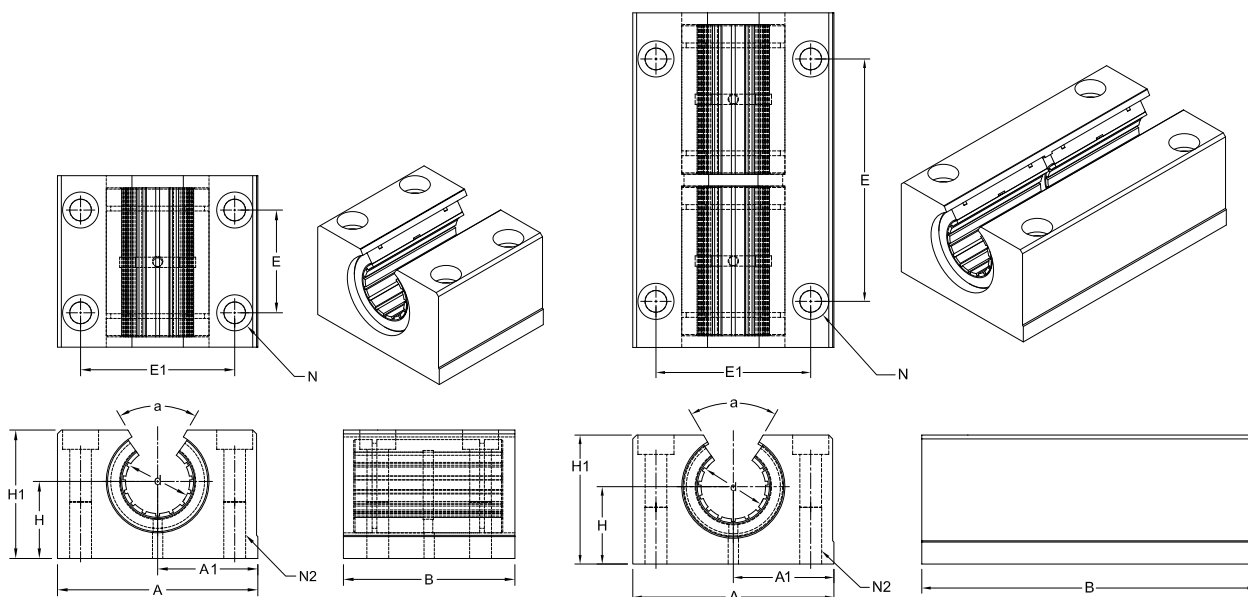
**Twin Block Dimensions [mm]**

Part Number	Inside Diam. (d)	Center Height ± 0.02 (H)	Block Height (H1)	Block Width (A)	Center Width ± 0.02 (A1)	Block Length (B)	Hole Length ± 0.1 (E)	Hole Width ± 0.1 (E1)	Hole Diam. (N)	Thread Size × Length (N2)	Weight [kg]	Dynamic Load [N]	Static Load [N]
PLTBM12	12	18	35	43	21.5	75	56	32	4.3	M5 × 11	0.232	1920	13440
PLTBM16	16	22	42	53	26.5	84	64	40	5.3	M6 × 13	0.361	2880	20160
PLTBM20	20	25	50	60	30.0	104	76	45	6.6	M8 × 18	0.608	4500	31500
PLTBM25	25	30	60	78	39.0	130	94	60	8.4	M10 × 22	1.143	7250	50750
PLTBM30	30	35	71	87	43.5	152	106	68	8.4	M10 × 22	1.757	10200	71400
PLTBM40	40	45	91	108	54.0	176	124	86	10.5	M12 × 26	3.256	16000	112000

Thomson RoundRail Linear Guides and Components

Polymer Bushing Bearings - Single and Twin Block Open Type

Dimensions	Projection
mm	



Single Block Dimensions [mm]

Part Number	Inside Diam. (d)	Center Height $\pm 0.02$ (H)	Block Height (H1)	Block Width (A)	Center Width $\pm 0.02$ (A1)	Block Length (B)	Hole Length $\pm 0.1$ (E)	Hole Width $\pm 0.1$ (E1)	Hole Diam. (N)	Thread Size $\times$ Length (N2)	Opening Angle (a) [°]	Weight [kg]
PLBM12PN	12	18	28	43	21.5	39	23	32	4.3	M5 $\times$ 11	66	0.097
PLBM16PN	16	22	35	53	26.5	43	26	40	5.3	M6 $\times$ 13	70	0.159
PLBM20PN	20	25	42	60	30.0	54	32	45	6.6	M8 $\times$ 18	50	0.253
PLBM25PN	25	30	51	78	39.0	67	40	60	8.4	M10 $\times$ 22	60	0.507
PLBM30PN	30	35	60	87	43.5	79	45	68	8.4	M10 $\times$ 22	55	0.797
PLBM40PN	40	45	77	108	54.0	91	58	86	10.5	M12 $\times$ 26	54	1.435

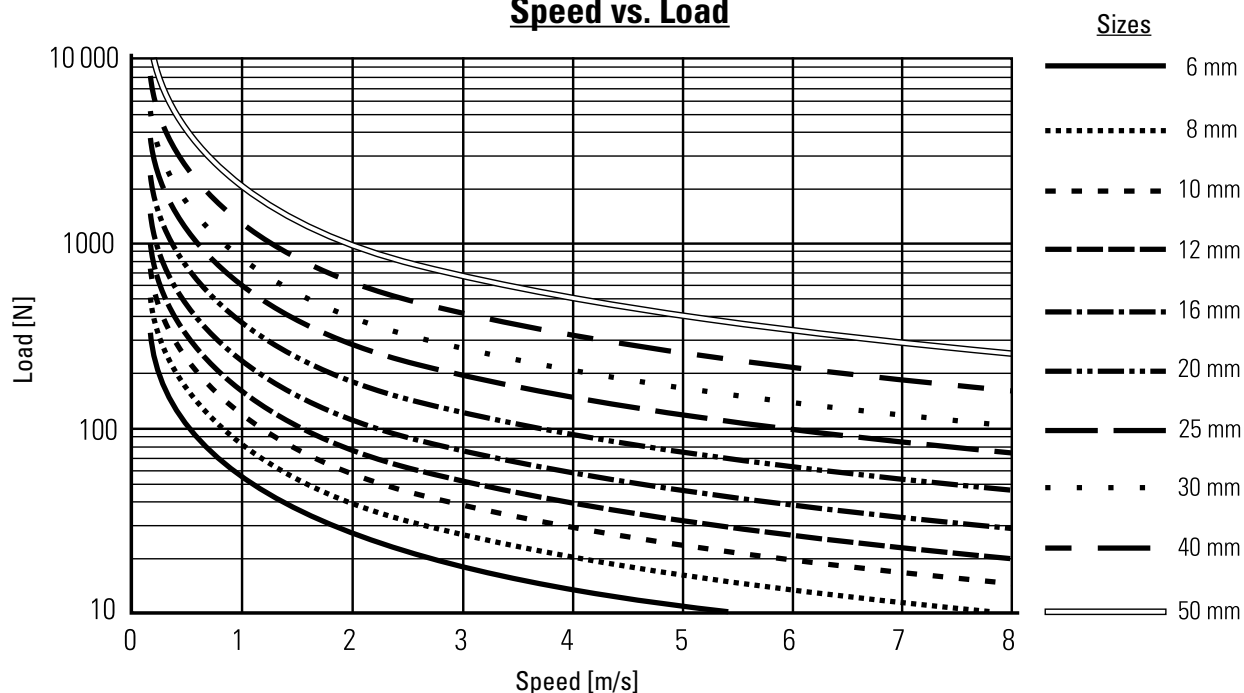
Twin Block Dimensions [mm]

Part Number	Inside Diam. (d)	Center Height $\pm 0.02$ (H)	Block Height (H1)	Block Width (A)	Center Width $\pm 0.02$ (A1)	Block Length (B)	Hole Length $\pm 0.1$ (E)	Hole Width $\pm 0.1$ (E1)	Hole Diam. (N)	Thread Size $\times$ Length (N2)	Opening Angle (a) [°]	Weight [kg]
PLTBM12PN	12	18	28	43	21.5	76	56	32	4.3	M5 $\times$ 11	66	0.197
PLTBM16PN	16	22	35	53	26.5	84	64	40	5.3	M6 $\times$ 13	70	0.323
PLTBM20PN	20	25	42	60	30.0	104	76	45	6.6	M8 $\times$ 18	50	0.508
PLTBM25PN	25	30	51	78	39.0	130	94	60	8.4	M10 $\times$ 22	60	1.028
PLTBM30PN	30	35	60	87	43.5	152	106	68	8.4	M10 $\times$ 22	55	1.588
PLTBM40PN	40	45	77	108	54.0	176	124	86	10.5	M12 $\times$ 26	54	2.879



**Polymer Bushing Bearings**

**Speed vs. Load**



Technical Specifications		
Max. load	[N (lbf)]	9000 (2023)
Max. speed	[m/s (in/sec)]	8 (315)
Bushing sizes closed type	[mm]	6, 8, 10, 12, 16, 20, 25, 30, 40, 50
Bushing sizes open type	[mm]	10, 12, 16, 20, 25, 30, 40, 50
Operating temperature limits	[°C (°F)]	- 50 – 90 (- 58 – 194)
Housing material		anodized aluminum
Pillow block material		aluminum

Ordering Key		
1	2	3
PL	M08	OPN
1. Type PL = Polymer Bushing PLB = Polymer bushing pillow block PLTB = Polymer bushing twin pillow block	2. Size M08 = 8mm M10 = 10mm M12 = 12mm M16 = 16mm M20 = 20mm M25 = 25mm M30 = 30mm M40 = 40mm M50 = 50mm	3. Configuration (blank) = Closed OPN = Open