

# Linear Ball Bearings, Shafting & Supports



## Overview

### Linear Ball Bearings, Shafting & Supports

New high performance linear ball bearings, shafting and shaft supports are now available from PTI. Available in Inch and Metric sizes with open and closed configurations that are fully industry standard and interchangeable. Available accessories include Pillow Blocks, Shafting and Shaft Support products to make using and interchanging quick and easy!

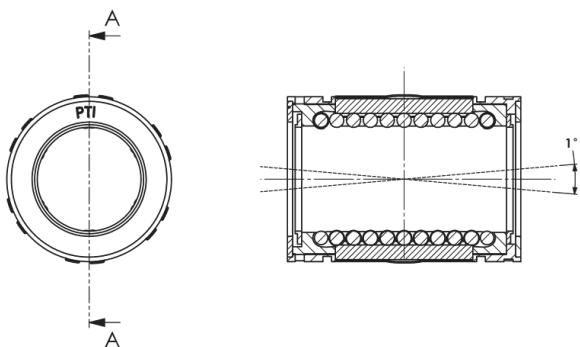
### Enhanced Cage Design Yields Long Life & Quiet Motion

The floating bearing plate/polymer cage design offers 3 times the load capacity or in excess of 27 times more travel life of conventional linear ball bearings. With a coefficient of friction less than .001, and a steady state speed in excess of 5m/second, they allow for reduced power consumption, compact size and lower costs. PTI Linear Bearing round rail linear bearing products are the high speed, cost effective, accurate and easier to install alternative to square/profile rail products. The PTI Advantage: Long Life, Smooth and Quiet Linear Motion!

### Precision Ground Raceways lead the Way

PTI grinds the heat treated bearing steel alloy bearing tracks, the way "precision bearings" are meant to be manufactured. This provides smooth linear motion and higher performance. The leading competitive bearing manufacturer coin stamps and then heat treats their bearing plates. This creates warped and distorted ball tracks resulting in the balls not being evenly loaded for less load/life and rougher operation.

PTI's precision ground bearing plates float in the outer retainer, allowing for easy adjustment of clearance between the bearing inner and outer race by controlling the bearing bore. This provides enhanced precision and assures even loading on all the load carrying balls for longer life.

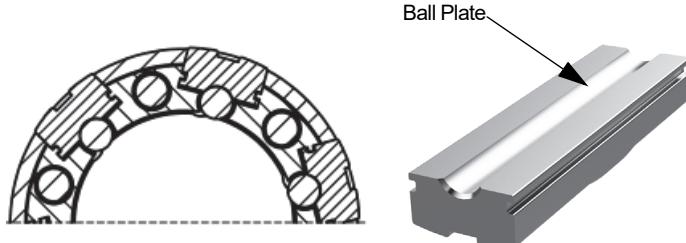
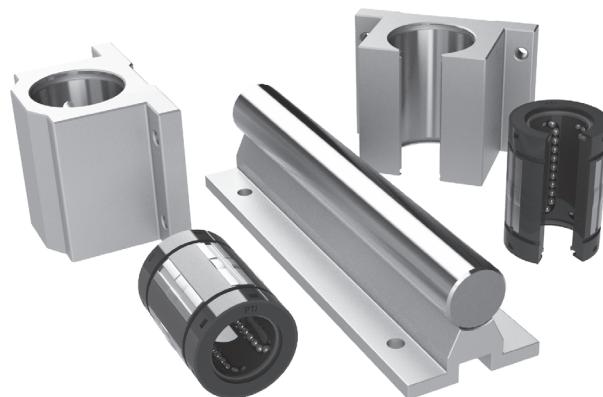


**Self Aligning Feature**

### Seals, Shafts & Supports

PTI's Integral floating seals keep lubrication in and dirt out of linear bearing. PTI industry standard anodized aluminum pillow block bearings come with lubrication ports,

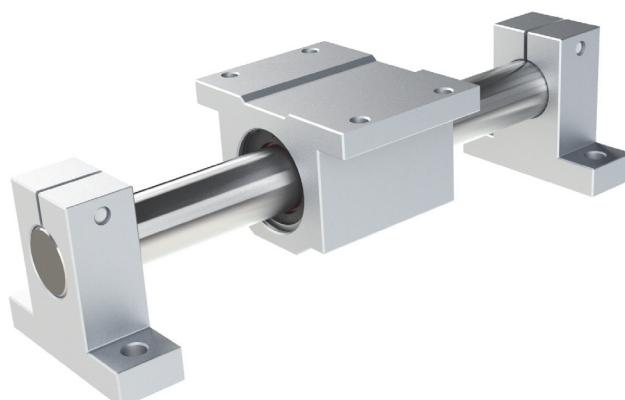
PTI Linear Shafting/Race is induction heat treated and precision ground to optimize Linear Ball Bearing loads and life. Available in induction case hardened high carbon steel or 400 series Stainless Steel they can be quickly customized for your application. Hard chrome or other platings are available.



**Linear Raceway Tracks are Precision Ground**

### Precision Molded Polymer Cage for Precise Linear Control

PTI employs a precision molded engineered polymer bearing cage that provides precise ball guidance, long life, integral lubrication, light weight, high speeds and super quiet operation. PTI's precision formed and ground bearing plate provides a  $\frac{1}{2}$  degree of built in self alignment by means of a unique convex shape of the housing side of the bearing plate, allowing the plate to rock and maintain accuracy. Self alignment compensates for inaccurate bearing bores or uneven bearing pillow block mounting surfaces providing maximum load and life.



# Selection Engineering



## Size Selection, Load Ratings and Service life

When selecting a bearing for a linear motion system, the load rating and desired life will need to be considered. Load ratings for each unit is listed with the product. Each system should consider what added service factor (or safety factor) should be applied to the formulas to best represent they type and frequency of the load. For instance sys-

tems that will experience heavy shock loads, would require a higher service factor than a gently operating systems where smaller units may operate effectively. Guidelines to determine this service factor will be reviewed and an example of selection will follow.

### Basic Static (Co) and Basic Dynamic (C) Load Rating

All bearings have 2 ratings. The Basic Static Load Rating or **Co**, is the bearings static load limit. Exceeding this load will damage the bearing and severely shorten life of the bearing. The Basic Dynamic Load Rating **C** is used to calculate travel life. For Bearings that rotate, this measure is in revolutions or hours at a known speed. For Linear Systems, the measure is travel length for the bearings before failure or wear out occurs. These ratings are listed in the product tables for each product.

### Normal Life L

The Service life of a linear motion system is a guideline represented in the following Life Formula. This calculation, similar to that for Ball Bearings in general, is the total running distance that 90% of identical linear systems can achieve this calculated life expectancy without

In a linear motion system, if a bearing receives an excessive load or an impact load above its rating, a permanent deformation may result on the raceway, rolling elements or on the shaft. This deformation can occur regardless whether the bearings is at rest or in motion. The Basic Static load rating refers to a load which causes a permanent deformation of rolling elements and/or raceway of 0.0001 of the rolling element diameter

### Basic Life Formula:

$$L = \left( \frac{C}{P} \right)^3 \times 50$$

$$L_{100} = \left( \frac{C_{100}}{P} \right)^3 \times 100$$

$$C_{100} = \left( \frac{C}{1.26} \right)$$

### Where

- L : Nominal life of 50km  
L<sub>100</sub> : Nominal life of 100km  
C : Basic dynamic load rating of 50km  
C<sub>100</sub> : Basic dynamic load rating of 100km  
P : Applied load

### Basic Life Formula with Service Factors

$$L = \left( \frac{f_H \times f_T \times f_C}{f_W} \times \frac{C}{P} \right)^3 \times 50$$

$$L_{100} = \left( \frac{f_H \times f_T \times f_C}{f_W} \times \frac{C_{100}}{P} \right)^3 \times 100$$

### Safety Factors ( fs, fw, fh, ft, fc )

**Where:** **fs** = Static Safety Factor, while equipment is at rest.

**ft** = Temperature Factor of environment

**fw** = Load Factor, while equipment is running.

**fc** = Contact Factor

**fh** = Hardness Factor of shafting

**Note: These factors must be included for proper life calculation.**

**Static Safety Factor (fs)** is a service factor applied to the basic static load rating to safeguard the bearings from an overload while it is in a stationary (static) position. The Simple Chart below is a guide of the various conditions.

### Normal Industrial Equipment

Smooth operating, no vibration or impact

**fs** = 1.0 to 1.3

Minor periodic light vibration or impact

**fs** = 2.0

### Machine Tools

Moderate vibration or impact

**fs** = 3.0

No vibration or impact

**fs** = 1.0 to 1.5

Moderate vibration or impact

**fs** = 2.5 to 7

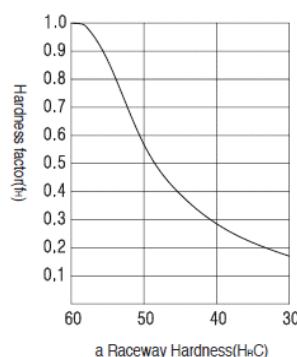
**Load Factor fw** is the typical application related factor based on impact or vibration. Use the following **Chart 2** as a Load Servicer factor guide

### Operating Conditions

Chart 1

Load Type	Speed	Load Factor fw
No vibration or impact	Below 15 m/min	1.0 to 1.5
Slight vibration or impact	Below 60m/min	1.5 to 2.0
Heavy vibration or impact	Above 60m/min	2.0 to 4.0

Chart 2  
Hardness Factor



### Hardness Safety Factor

(fh) is a service factor applied to the basic static load rating as a hardness factor and one that affect product life. The softer the shaft, the lower the resulting rating. For optimum life, the shaft should be 58 to 64 HRC.

**Chart 2 Hardness Factor (fh)** is a de-rate factor when a bearing is used on a softer than recommended shaft. The chart below will provide a guide for various Raceway (shaft) hardness. Shaft hardness of 58 to 64 HRC is recommended.

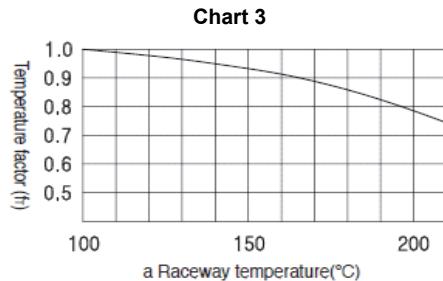
A softer shaft or raceway will result in shorter bearing life.

# Selection Engineering (Con't)



## Temperature Factor $f_T$

For Linear Bearings used above 100°C. Use Chart 3. For Ambient temps above 80°C, Seals, retainers, end plates must be changed to operated in higher temps. Use the derating chart 4 as a guide. Normal operating Temperature for Linear bearings is 20°C to 80°C.



## Contact Factor $f_C$

Is used when there are multiple linear bushings on one shaft, which makes it difficult to achieve uniform load distribution. Therefore use the  $f_C$  factor in chart 4 as a factor as a multiplier on the Basic Static or Dynamic Load rating for multiple units on a single shaft

## Chart 4: Contact factor

Number of Linear Bearings on Shaft	Contact Factor $f_C$
2	0.81
3	0.72
4	0.66
5	0.61
6	0.60
1 (Normal Use)	1.0

## Selection Example

The Load and travel life are the most important factors in determining a linear bearing size.

Use the following parameters to select a unit

Applied Load:  $P = 250 \text{ N}$  (Newtons) = 57 lbs

Number of strokes per minute:  $N = 60/\text{min}$

Operating speed: 30 meters per minute

Stroke:  $L = 250\text{mm}$

Shaft Hardness: 60HRC  $f_H = 1.0$

Slight Impact or Vibration: Choose  $f_W = 1.6$  Factor

Other Service Factors: Choose  $f_C$  and  $f_T$  as 1.0 Factor

Travel Life Desired: 15,000 Hours

Operating Speed  $V = 2 \times L \times N$

$$= 2 \times 250 \times 60 = 30,000\text{mm/min} \quad (\mathbf{f_W = 1.6})$$

Choose a unit size to determine travel life. Arbitrarily select **SUE-20MM-UU** with a C (Dynamic Rating) of 2580N. Use this rating in the formula for travel life shown below.

## Calculation of Travel Life

$$L = \left( \frac{f_H \times f_T \times f_C}{f_W} \times \frac{C}{P} \right)^3 \times 50 \quad L = \left[ \frac{1.0 \times 1.0 \times 1.0}{1.6} \times \frac{2,580}{250} \right]^3 \times 50 \quad L_h = \frac{13,417 \times 10^6}{2 \times 250 \times 60 \times 50} \\ \approx 13,417 \text{ km} \quad \approx 7,454 \text{ hours}$$

Based on our initial selection, this size would allow only 7454 hours, and the travel life desired is 15,000. So a larger size unit is necessary. The actual rating needed can also be calculated by using the 15,000 hours as a desired life and calculating to find the rating necessary to achieve this life.

Assuming design life of 15,000 hours,

calculate the needed bearing rating required.

$$L = 15,000 \times 2 \times 250 \times 10^{-6} \times 60 \times 60 = 27,000\text{km}$$

$$C = \frac{250 \times 1.6}{1.0 \times 1.0 \times 1.0} \times \sqrt[3]{\frac{27,000}{50}} = 3,257\text{N}$$

Size SUE-MM-UU has Basic Dynamic Load Rating of 3800N, which exceeds the calculated minimum rating of 3,275N needed.

# Selection Engineering Loads and Directions



The following schematics can be used as a guideline to help determine resulting loads, direction of loads and centers of gravity influence selection and size of bearing. No service factors on load type are included and must be part of any formal

load review for product sizing. Other application conditions can also influence selection requirements, seals, lubrication, temperature, severity of duty cycle, etc. For additional engineering support contact PTI.

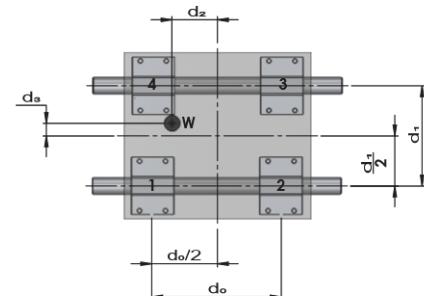
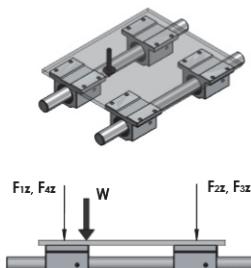
## Horizontal Application — Load Above Frame

$$F_{1Z} = \frac{W}{4} + \left( \frac{W}{2} \cdot \frac{d_2}{d_b} \right) - \left( \frac{W}{2} \cdot \frac{d_3}{d_1} \right)$$

$$F_{2Z} = \frac{W}{4} - \left( \frac{W}{2} \cdot \frac{d_2}{d_b} \right) - \left( \frac{W}{2} \cdot \frac{d_3}{d_1} \right)$$

$$F_{3Z} = \frac{W}{4} - \left( \frac{W}{2} \cdot \frac{d_2}{d_b} \right) + \left( \frac{W}{2} \cdot \frac{d_3}{d_1} \right)$$

$$F_{4Z} = \frac{W}{4} + \left( \frac{W}{2} \cdot \frac{d_2}{d_b} \right) + \left( \frac{W}{2} \cdot \frac{d_3}{d_1} \right)$$



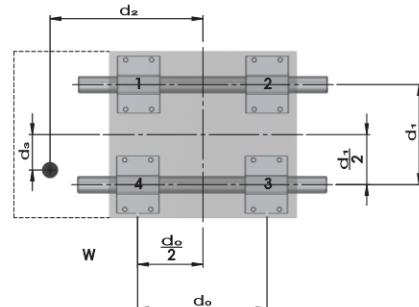
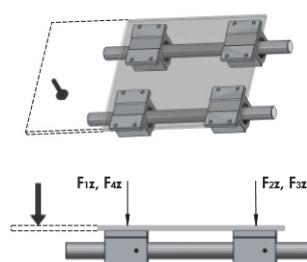
## Horizontal Application — Load Overhung from Frame

$$F_{1Z} = \frac{W}{4} + \left( \frac{W}{2} \cdot \frac{d_2}{d_b} \right) - \left( \frac{W}{2} \cdot \frac{d_3}{d_1} \right)$$

$$F_{2Z} = \frac{W}{4} - \left( \frac{W}{2} \cdot \frac{d_2}{d_b} \right) - \left( \frac{W}{2} \cdot \frac{d_3}{d_1} \right)$$

$$F_{3Z} = \frac{W}{4} - \left( \frac{W}{2} \cdot \frac{d_2}{d_b} \right) + \left( \frac{W}{2} \cdot \frac{d_3}{d_1} \right)$$

$$F_{4Z} = \frac{W}{4} + \left( \frac{W}{2} \cdot \frac{d_2}{d_b} \right) + \left( \frac{W}{2} \cdot \frac{d_3}{d_1} \right)$$

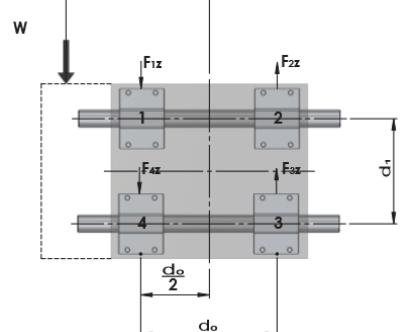
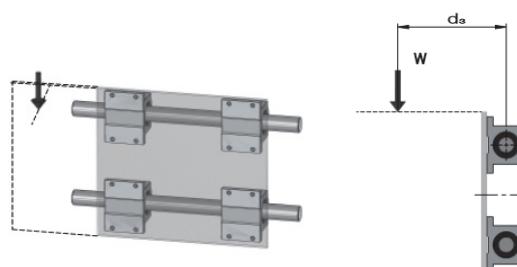


## Side Mounted Application — Load Overhung from Frame

$$F_{1Y} \sim F_{4Y} = \left( \frac{W}{2} \cdot \frac{d_3}{d_b} \right)$$

$$F_{1Z} = F_{4Z} = \frac{W}{4} + \left( \frac{W}{2} \cdot \frac{d_2}{d_b} \right)$$

$$F_{2Z} = F_{3Z} = \frac{W}{4} - \left( \frac{W}{2} \cdot \frac{d_2}{d_b} \right)$$



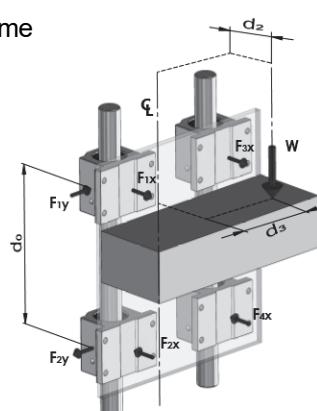
## Vertical Application — Load Overhung from Frame

$$F_{1X} \sim F_{4X} = \left( \frac{W}{2} \cdot \frac{d_2}{d_b} \right)$$

$$F_{1Y} \sim F_{4Y} = \left( \frac{W}{2} \cdot \frac{d_3}{d_b} \right)$$

$$F_{1X} + F_{4X} \sim F_{2X} + F_{3X}$$

$$F_{1Y} + F_{4Y} \sim F_{2Y} + F_{3Y}$$



**Technical Terms:** **do** = distance between units center line

**d2** = distance between shaft center line and load point

**W** = Load

**Fnx** = X-Axial force (N)

**d1** = distance LM shafts center line

**d3** = distance between shaft center line and load point

**Fny** = Y-Axial force (N)

**Fnz** = Z-Axial force (N)

# Linear Ball Bearing Interchange



## Super Type, Ball Bearing Bushing, Inch, Sealed, Closed



Shaft Size	PIT Part No.	Description	Thomson Super	Thomson "A"	Thomson Super Smart	NB	Bosch/Rexroth	INA Old	INA New
1/4"	SU-4-UU	SU Linear Brg, Closed, 1/4"	SUPER 4-DD	A4812-DD	N/A	TW 4UU	755 004 00	KNZ 04 PP	KX 04
3/8"	SU-6-UU	SU Linear Brg, Closed, 3/8"	SUPER 6-DD	A61014-DD	N/A	TW 6UU	755 006 00	KNZ 06 PP	KX 06
1/2"	SU-8-UU	SU Linear Brg, Closed, 1/2"	SUPER 8-DD	A81420-DD	SSU8WW	TW 8UU	755 008 00	KNZ 08 PP	KX 08
5/8"	SU-10-UU	SU Linear Brg, Closed, 5/8"	SUPER 10-DD	A101824-DD	SSU10WW	TW 10UU	755 010 00	KNZ 10 PP	KX 10
3/4"	SU-12-UU	SU Linear Brg, Closed, 3/4"	SUPER 12-DD	A122026-DD	SSU12WW	TW 12UU	755 012 00	KNZ 12 PP	KX 12
1"	SU-16-UU	SU Linear Brg, Closed, 1"	SUPER 16-DD	A162536-DD	SSU16WW	TW 16UU	755 016 00	KNZ 16 PP	KX 16
1-1/4"	SU-20-UU	SU Linear Brg, Closed, 1-1/4"	SUPER 20-DD	A203242-DD	SSU20WW	TW 20UU	755 020 00	KNZ 20 PP	KX 20
1-1/2"	SU-24-UU	SU Linear Brg, Closed, 1-1/2"	SUPER 24-DD	A243848-DD	SSU24WW	TW 24UU	755 024 00	KNZ 24 PP	KX 24
2"	SU-32-UU	SU Linear Brg, Closed, 2"	SUPER 32-DD	A324864-DD	N/A	TW 32UU	755 032 00	KNZ 32 PP	KX 32

## Super Type, Ball Bearing, Inch, Sealed, Open



Shaft Size	PIT Part No.	Description	Thomson Super	Thomson "A"	Thomson Super Smart	NB	Bosch/Rexroth	INA Old	INA New
1/2"	SU-8-UU-OPN	SU Linear Brg, Closed, 1/2"	SUPER 8 OPN-DD	OPN4812	SSU8OPNWW	TW 8UU-OP	756 008 00	KNZ 08 OP PP	KXO 08
5/8"	SU-10-UU-OPN	SU Linear Brg, Closed, 5/8"	SUPER 10 OPN-DD	OPN61014-DD	SSU10OPNWW	TW 10UU-OP	756 010 00	KNZ 10 OP PP	KXO 10
3/4"	SU-12-UU-OPN	SU Linear Brg, Closed, 3/4"	SUPER 12 OPN-DD	OPN81420-DD	SSU12OPNWW	TW 12UU-OP	756 012 00	KNZ 12 OP PP	KXO 12
1"	SU-16-UU-OPN	SU Linear Brg, Closed, 1"	SUPER 16 OPN-DD	OPN101824-DD	SSU16OPNWW	TW 16UU-OP	756 016 00	KNZ 16 OP PP	KXO 16
1-1/4"	SU-20-UU-OPN	SU Linear Brg, Closed, 1-1/4"	SUPER 20 OPN-DD	OPN122026-DD	SSU20OPNWW	TW 20UU-OP	756 020 00	KNZ 20 OP PP	KXO 20
1-1/2"	SU-24-UU-OPN	SU Linear Brg, Closed, 1-1/2"	SUPER 24 OPN-DD	OPN162536-DD	SSU24OPNWW	TW 24UU-OP	756 024 00	KNZ 24 OP PP	KXO 24
2"	SU-32-UU-OPN	SU Linear Brg, Closed, 2"	SUPER 32 OPN-DD	OPN203242-DD	N/A	TW 32UU-OP	756 032 00	KNZ 32 OP PP	KXO 32

## Super Type, Bearing, Metric, Sealed, Closed



Shaft Size	PIT Part No.	Description	Thomson Super	Thomson "Multi Trac"	Thomson Super Smart	NB	Bosch/Rexroth	INA Old	INA New
10MM	SUE-10MM-UU	SU ISO Linear Brg, Cl, 10MM	N/A	N/A	N/A	TK10UU	R0670 010 00	N/A	N/A
12MM	SUE-12MM-UU	SU ISO Linear Brg, Cl, 12MM	SP M12 WW	MAM12	N/A	TK12UU	R0670 012 00	KN 1236	KN 12B
16MM	SUE-16MM-UU	SU ISO Linear Brg, Cl, 16MM	SP M16 WW	MAM16	SSEM16	TK16UU	R0670 016 00	KN 1636	KN 16B
20MM	SUE-20MM-UU	SU ISO Linear Brg, Cl, 20MM	SP M20 WW	MAM20	SSEM20	TK20UU	R0670 020 00	KN 2045	KN 20B
25MM	SUE-25MM-UU	SU ISO Linear Brg, Cl, 25MM	SP M25 WW	MAM25	SSEM25	TK25UU	R0670 025 00	KN 2558	KN 25B
30MM	SUE-30MM-UU	SU ISO Linear Brg, Cl, 30MM	SP M30 WW	MAM30	SSEM30	TK30UU	R0670 030 00	KN 3068	KN 30B
40MM	SUE-40MM-UU	SU ISO Linear Brg, Cl, 40MM	SP M40 WW	MAM40	SSEM40	TK40UU	R0670 040 00	KN 4080	KN 40B
50MM	SUE-50MM-UU	SU ISO Linear Brg, Cl, 50MM	SP M50 WW	MAM50	N/A	TK50UU	R0670 050 00	KN50100	KN 50B

## Super Type, Ball Bearing, Metric, Sealed, Open



Shaft Size	PIT Part No.	Description	Thomson Super	Thomson "Multi Trac"	Thomson Super Smart	NB	Bosch/Rexroth	INA Old	INA New
12MM	SUE-12MM-UU-OPN	SU ISO Linear Brg, Op, 12MM	SP M12 OPN WW	MAM12OPN	N/A	TK12UU-OP	R0671 012 00	KNO 1236	KNO 12B
16MM	SUE-16MM-UU-OPN	SU ISO Linear Brg, Op, 16MM	SP M16 OPN WW	MAM16OPN	SSEM16OPN	TK16UU-OP	R0671 016 00	KNO 1636	KNO 16B
20MM	SUE-20MM-UU-OPN	SU ISO Linear Brg, Op, 20MM	SP M20 OPN WW	MAM20OPN	SSEM20OPN	TK20UU-OP	R0671 020 00	KNO 2045	KNO 20B
25MM	SUE-25MM-UU-OPN	SU ISO Linear Brg, Op, 25MM	SP M25 OPN WW	MAM25OPN	SSEM25OPN	TK25UU-OP	R0671 025 00	KNO 2558	KNO 25B
30MM	SUE-30MM-UU-OPN	SU ISO Linear Brg, Op, 30MM	SP M30 OPN WW	MAM30OPN	SSEM30OPN	TK30UU-OP	R0671 030 00	KNO 3068	KNO 30B
40MM	SUE-40MM-UU-OPN	SU ISO Linear Brg, Op, 40MM	SP M40 OPN WW	MAM40OPN	SSEM40OPN	TK40UU-OP	R0671 040 00	KNO 4080	KNO 40B
50MM	SUE-50MM-UU-OPN	SU ISO Linear Brg, Op, 50MM	SP M50 OPN WW	MAM50OPN	N/A	TK50UU-OP	R0671 050 00	KNO 50100	KNO 50B

## Super Type, Pillow Block Bearing, Inch, Closed



Shaft Size	PIT Part No.	Description	Thomson Super	Thomson "A"	Thomson Super Smart	NB	Bosch/Rexroth	INA Old	INA New
1/4"	SUPB-4-UU	SU Linear PB, Closed, 1/4"	SPB4	N/A	N/A	TWA 4UU	756 704 00	KGNZ 04 PP	N/A
3/8"	SUPB-6-UU	SU Linear PB, Closed, 3/8"	SPB6	N/A	N/A	TWA 6UU	757 706 00	KGNZ 06 PP	N/A
1/2"	SUPB-8-UU	SU Linear PB, Closed, 1/2"	SPB8	N/A	SS6UPBA8	TWA 8UU	758 708 00	KGNZ 08 PP	N/A
5/8"	SUPB-10-UU	SU Linear PB, Closed, 5/8"	SPB10	N/A	SS6UPBA10	TWA 10UU	759 710 00	KGNZ 10 PP	N/A
3/4"	SUPB-12-UU	SU Linear PB, Closed, 3/4"	SPB12	N/A	SS6UPBA12	TWA 12UU	760 712 00	KGNZ 12 PP	N/A
1"	SUPB-16-UU	SU Linear PB, Closed, 1"	SPB16	N/A	SS6UPBA16	TWA 16UU	761 716 00	KGNZ 16 PP	N/A
1-1/4"	SUPB-20-UU	SU Linear PB, Closed, 1-1/4"	SPB20	N/A	SS6UPBA20	TWA 20UU	762 720 00	KGNZ 20 PP	N/A
1-1/2"	SUPB-24-UU	SU Linear PB, Closed, 1-1/2"	SPB24	N/A	SS6UPBA24	TWA 24UU	763 724 00	KGNZ 24 PP	N/A
2"	SUPB-32-UU	SU Linear PB, Closed, 2"	SPB32	N/A	N/A	TWA 32UU	764 732 00	KGNZ 32 PP	N/A

## Super Type, Pillow Block Bearing, Inch, Open



Shaft Size	PIT Part No.	Description	Thomson Super	Thomson "A"	Thomson Super Smart	NB	Bosch/Rexroth	INA Old	INA New
1/2"	SUPB-8-UU-OPN	SU Linear PB, Open, 1/2"	SPB8OPN	N/A	SS6UPB08	TWD 8UU	757 708 00	KGNZ 08 OP PP	N/A
5/8"	SUPB-10-UU-OPN	SU Linear PB, Open, 5/8"	SPB10OPN	N/A	SS6UPB010	TWD 10UU	757 710 00	KGNZ 10 OP PP	N/A
3/4"	SUPB-12-UU-OPN	SU Linear PB, Open, 3/4"	SPB12OPN	N/A	SS6UPB012	TWD 12UU	757 712 00	KGNZ 12 OP PP	N/A
1"	SUPB-16-UU-OPN	SU Linear PB, Open, 1"	SPB16OPN	N/A	SS6UPB016	TWD 16UU	757 716 00	KGNZ 16 OP PP	N/A
1-1/4"	SUPB-20-UU-OPN	SU Linear PB, Open, 1-1/4"	SPB20OPN	N/A	SS6UPB020	TWD 20UU	757 720 00	KGNZ 20 OP PP	N/A
1-1/2"	SUPB-24-UU-OPN	SU Linear PB, Open, 1-1/2"	SPB24OPN	N/A	SS6UPB024	TWD 24UU	757 724 00	KGNZ 24 OP PP	N/A
2"	SUPB-32-UU-OPN	SU Linear PB, Open, 2"	SPB32OPN	N/A	N/A	TWD 32UU	757 732 00	KGNZ 32 OP PP	N/A

# Linear Ball Bearing Interchange



## Super Type, Pillow Block Bearing, Metric, Closed



Shaft Size	PIT Part No.	Description	Thomson Super	Thomson "A"	Thomson Super Smart	NB	Bosch/Rexroth	INA Old	INA New
10MM	SUEPB-10MM-UU	SU ISO Linear PB, Cl, 10MM	N/A	N/A	N/A	TKA10UU	N/A	N/A	N/A
12MM	SUEPB-12MM-UU	SU ISO Linear PB, Cl, 12MM	SPPB M12	N/A	N/A	TKA12UU	1035 612 00	KGN 12 BPP AS	N/A
16MM	SUEPB-16MM-UU	SU ISO Linear PB, Cl, 16MM	SPPB M16	N/A	SSEM16OPN	TKA16UU	1035 616 00	KGN 16 BPP AS	N/A
20MM	SUEPB-20MM-UU	SU ISO Linear PB, Cl, 20MM	SPPB M20	N/A	SSEM20OPN	TKA20UU	1035 620 00	KGN 20 BPP AS	N/A
25MM	SUEPB-25MM-UU	SU ISO Linear PB, Cl, 25MM	SPPB M25	N/A	SSEM25OPN	TKA25UU	1035 625 00	KGN 25 BPP AS	N/A
30MM	SUEPB-30MM-UU	SU ISO Linear PB, Cl, 30MM	SPPB M30	N/A	SSEM30OPN	TKA30UU	1035 630 00	KGN 30 BPP AS	N/A
40MM	SUEPB-40MM-UU	SU ISO Linear PB, Cl, 40MM	SPPB M40	N/A	SSEM40OPN	TKA40UU	1035 640 00	KGN 40 BPP AS	N/A

## Super Type, Pillow Block Bearing, Metric, Open



Shaft Size	PIT Part No.	Description	Thomson Super	Thomson "A"	Thomson Super Smart	NB	Bosch/Rexroth	INA Old	INA New
12MM	SUEPB-12MM-UU	SU ISO Linear PB, Op, 12MM	SPPBOM12	N/A	N/A	TKE12UU-OP	R103861220	KTNOS 12 BPP AS	N/A
16MM	SUEPB-16MM-UU	SU ISO Linear PB, Op, 16MM	SPPBOM16	N/A	SSEPB16OPN	TKE16UU-OP	R103861620	KTNOS 16 BPP AS	N/A
20MM	SUEPB-20MM-UU	SU ISO Linear PB, Op, 20MM	SPPBOM20	N/A	SSEPB20OPN	TKE20UU-OP	R103882020	KTNOS 20 BPP AS	N/A
25MM	SUEPB-25MM-UU	SU ISO Linear PB, Op, 25MM	SPPBOM25	N/A	SSEPB25OPN	TKE25UU-OP	R103882520	KTNOS 25 BPP AS	N/A
30MM	SUEPB-30MM-UU	SU ISO Linear PB, Op, 30MM	SPPBOM30	N/A	SSEPB30OPN	TKE30UU-OP	R103883020	KTNOS 30 BPP AS	N/A
40MM	SUEPB-40MM-UU	SU ISO Linear PB, Op, 40MM	SPPBOM40	N/A	SSEPB40OPN	TKE40UU-OP	R103885020	KTNOS 40 BPP AS	N/A

## Super Type, Twin Pillow Block Bearing, Inch, Closed



Shaft Size	PIT Part No.	Description	Thomson Super	Thomson "A"	Thomson Super Smart	NB	Bosch/Rexroth	INA Old	INA New
1/4"	SUTWNPB-4-UU	SU Twin PB, Closed, 1/4"	TWN4	N/A	N/A	TWA4WUU	1762 704 00	KTNZ04PP	N/A
3/8"	SUTWNPB-6-UU	SU Twin PB, Closed, 3/8"	TWN6	N/A	N/A	TWA6WUU	1762 706 00	KTNZ06PP	N/A
1/2"	SUTWNPB-8-UU	SU Twin PB, Closed, 1/2"	TWN8	N/A	SS6UTWN8	TWA8WUU	1762 708 00	KTNZ08PP	N/A
5/8"	SUTWNPB-10-UU	SU Twin PB, Closed, 5/8"	TWN10	N/A	SS6UTWN10	TWA10WUU	1762 710 00	KTNZ10PP	N/A
3/4"	SUTWNPB-12-UU	SU Twin PB, Closed, 3/4"	TWN12	N/A	SS6UTWN12	TWA12WUU	1762 712 00	KTNZ12PP	N/A
1"	SUTWNPB-16-UU	SU Twin PB, Closed, 1"	TWN16	N/A	SS6UTWN16	TWA16WUU	1762 716 00	KTNZ16PP	N/A
1-1/4"	SUTWNPB-20-UU	SU Twin PB, Closed, 1-1/4"	TWN20	N/A	SS6UTWN20	TWA20WUU	1762 720 00	KTNZ20PP	N/A
1-1/2"	SUTWNPB-24-UU	SU Twin PB, Closed, 1-1/2"	TWN24	N/A	SS6UTWN24	TWA24WUU	1762 724 00	KTNZ24PP	N/A
2"	SUTWNPB-32-UU	SU Twin PB, Closed, 2"	TWN32	N/A	N/A	TWA32WUU	1762 732 00	KTNZ32PP	N/A

## Super Type, Twin Pillow Block Bearing, Inch, Open



Shaft Size	PIT Part No.	Description	Thomson Super	Thomson "A"	Thomson Super Smart	NB	Bosch/Rexroth	INA Old	INA New
1/2"	SUTWNPB-8-UU-OPN	SU Linear PB, Open, 1/2"	TWN8OPN	N/A	SS6UTWN08	TWA8WUU	1762 708 00	KTNZ08PPP	N/A
5/8"	SUTWNPB-10-UU-OPN	SU Linear PB, Open, 5/8"	TWN10OPN	N/A	SS6UTWN10	TWA10WUU	1762 710 00	KTNZ10PPP	N/A
3/4"	SUTWNPB-12-UU-OPN	SU Linear PB, Open, 3/4"	TWN12OPN	N/A	SS6UTWN12	TWA12WUU	1762 712 00	KTNZ12PPP	N/A
1"	SUTWNPB-16-UU-OPN	SU Linear PB, Open, 1"	TWN16OPN	N/A	SS6UTWN16	TWA16WUU	1762 716 00	KTNZ16PPP	N/A
1-1/4"	SUTWNPB-20-UU-OPN	SU Linear PB, Open, 1-1/4"	TWN20OPN	N/A	SS6UTWN20	TWA20WUU	1762 720 00	KTNZ20PPP	N/A
1-1/2"	SUTWNPB-24-UU-OPN	SU Linear PB, Open, 1-1/2"	TWN24OPN	N/A	SS6UTWN24	TWA24WUU	1762 724 00	KTNZ24PPP	N/A
2"	SUTWNPB-32-UU-OPN	SU Linear PB, Open, 2"	TWN32OPN	N/A	N/A	TWA32WUU	1762 732 00	KTNZ32PPP	N/A

## Super Type, Twin Pillow Block Bearing, Metric, Closed



Shaft Size	PIT Part No.	Description	Thomson Super	Thomson "A"	Thomson Super Smart	NB	Bosch/Rexroth	INA Old	INA New
10MM	SUTWNEPB-10MM-UU	SU ISO Twin PB, Closed, 10MM	N/A	N/A	N/A	TKS10WUU	R103261020	N/A	N/A
12MM	SUTWNEPB-12MM-UU	SU ISO Twin PB, Closed, 12MM	SPTWN M12 WW	N/A	N/A	TKA12WUU	R103261220	KTN 12 BPP AS	N/A
16MM	SUTWNEPB-16MM-UU	SU ISO Twin PB, Closed, 16MM	SPTWN M16 WW	N/A	SSETWN16	TKA16WUU	R103261620	KTN 16 BPP AS	N/A
20MM	SUTWNEPB-20MM-UU	SU ISO Twin PB, Closed, 20MM	SPTWN M20 WW	N/A	SSETWN20	TKA20WUU	R103262020	KTN 20 BPP AS	N/A
25MM	SUTWNEPB-25MM-UU	SU ISO Twin PB, Closed, 24MM	SPTWN M24 WW	N/A	SSETWN24	TKA24WUU	R103262520	KTN 24 BPP AS	N/A
30MM	SUTWNEPB-30MM-UU	SU ISO Twin PB, Closed, 30MM	SPTWN M30 WW	N/A	SSETWN30	TKA30WUU	R103263020	KTN 30 BPP AS	N/A
40MM	SUTWNEPB-40MM-UU	SU ISO Twin PB, Closed, 40MM	SPTWN M40 WW	N/A	SSETWN40	TKA40WUU	R103265020	KTN 40 BPP AS	N/A

## Super Type, Twin Pillow Block Bearing, Metric, Open



Shaft Size	PIT Part No.	Description	Thomson Super	Thomson "A"	Thomson Super Smart	NB	Bosch/Rexroth	INA Old	INA New
12MM	SUTWNEPB-12MM-UU-OPN	SU ISO Twin PB, Open, 12MM	SPTWN M12 WW	N/A	N/A	TKA12WUU-OP	R103461220	KTN 12 BPP AS	N/A
16MM	SUTWNEPB-16MM-UU-OPN	SU ISO Twin PB, Open, 16MM	SPTWN M16 WW	N/A	SSETWN16OPN	TKA16WUU-OP	R103461620	KTN 16 BPP AS	N/A
20MM	SUTWNEPB-20MM-UU-OPN	SU ISO Twin PB, Open, 20MM	SPTWN M20 WW	N/A	SSETWN20OPN	TKA20WUU-OP	R103482020	KTN 20 BPP AS	N/A
25MM	SUTWNEPB-25MM-UU-OPN	SU ISO Twin PB, Open, 24MM	SPTWN M24 WW	N/A	SSETWN24OPN	TKA24WUU-OP	R103482520	KTN 24 BPP AS	N/A
30MM	SUTWNEPB-30MM-UU-OPN	SU ISO Twin PB, Open, 30MM	SPTWN M30 WW	N/A	SSETWN30OPN	TKA30WUU-OP	R103483020	KTN 30 BPP AS	N/A
40MM	SUTWNEPB-40MM-UU-OPN	SU ISO Twin PB, Open, 40MM	SPTWN M40 WW	N/A	SSETWN40OPN	TKA40WUU-OP	R103485020	KTN 40 BPP AS	N/A

# Linear Ball Bearing Bushings

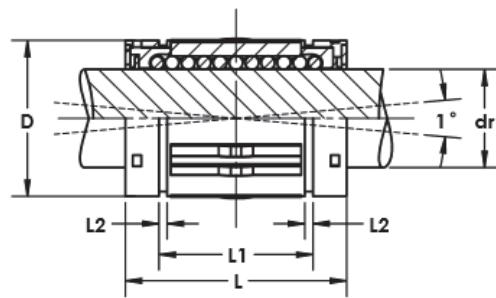
**PTI**

## Metric Sizes

Super Type  
Closed & Open  
Sealed



Models Available

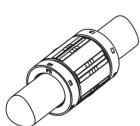


## Closed Series

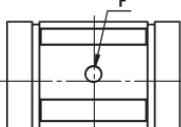
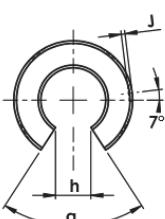
Part No. (2 Seals)	Shaft Size <i>d</i>	Ball Tracks	Dimension mm				Diametral Clearance		Basic Load Ratings		Wt. g	Shaft Part No. *
			D	L +/-0.2m	L <sub>1</sub> +/-0.2m	L <sub>2</sub> min	Shaft Size (mm)	Bore Tolerance (mm)	Dynamic C (N)	Static C <sub>0</sub> (N)		
SUE-10MM-UU	10	5	19	29	21.7	1.35	10	+0.008 +0.000	750	550	17	10MML
SUE-12MM-UU	12	5	22	32	22.7	1.35	12	+0.008 +0.000	1230	1100	23	12MML
SUE-16MM-UU	16	5	26	36	24.7	1.35	16	+0.009 +0.001	1550	1250	28	16MML
SUE-20MM-UU	20	6	32	45	31.3	1.65	20	+0.009 +0.001	2580	1670	61	20MML
SUE-25MM-UU	25	6	40	58	43.8	1.90	25	+0.0011 +0.002	3800	2750	122	25MML
SUE-30MM-UU	30	6	47	68	51.8	1.90	30	+0.0011 +0.002	4710	2800	185	30MML
SUE-40MM-UU	40	6	62	80	60.4	2.20	40	+0.0013 +0.002	6500	5720	360	40MML
SUE-50MM-UU	50	6	75	100	77.4	2.70	50	+0.0013 +0.002	11460	7940	580	50MML

Note: \*Pre-drilled shafting, shaft supports and end blocks available from stock.

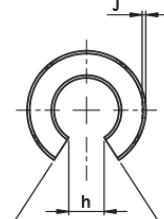
## Open Series



Models Available



12mm



16 & 20mm

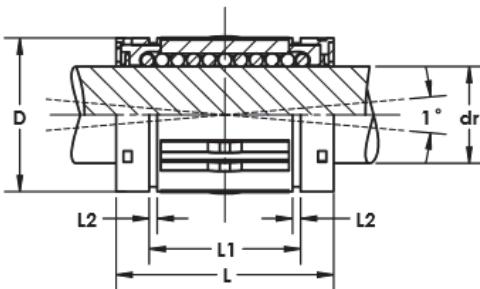
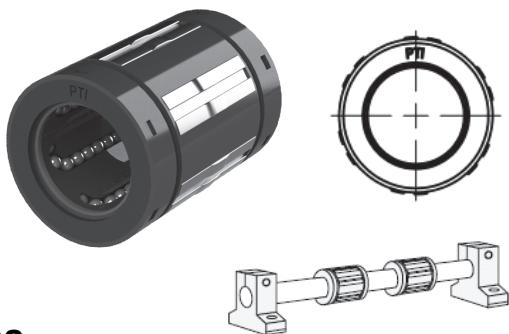
# Linear Ball Bearing Bushings

**PTI**

## Inch Sizes

**Super Type  
Closed & Open  
Sealed**

Models Available



### Closed Series

Part No. (2 Seals)	Shaft Size d	Ball Tracks	Dimension mm				Diameter Clearance		Basic Load Ratings		Wt. lbs	Shaft Part No. *
			D**	L	L <sub>1</sub>	L <sub>2</sub> min	Shaft Diameter	Shaft Tolerance	Dynamic C (lbf)	Static C <sub>0</sub> (lbf)		
SU-4-UU	1/4	4	0.5000	0.750/0.735	0.511/0.501	0.039	0.2500	+0.000/-0.0005	57	49	0.01	250L
SU-6-UU	3/8	4	0.6250	0.875/0.860	0.699/0.689	0.039	0.3750	+0.000/-0.0005	78	66	0.02	375L
SU-8-UU	1/2	4	0.8750	1.250/1.230	1.032/1.012	0.050	0.5000	+0.000/-0.0005	190	190	0.05	500L
SU-10-UU	5/8	5	1.1250	1.500/1.480	1.105/1.095	0.056	0.6250	+0.000/-0.0005	290	340	0.08	625L
SU-12-UU	3/4	6	1.2500	1.625/1.605	1.270/1.250	0.056	0.7500	+0.000/-0.0005	500	430	0.14	750L
SU-16-UU	1	6	1.5625	2.250/2.230	1.884/1.864	0.070	1.0000	+0.000/-0.0005	820	780	0.29	1000L
SU-20-UU	1-1/4	6	2.0000	2.625/2.600	2.004/1.982	0.068	1.2500	+0.000/-0.0006	1240	1270	0.4	1250L
SU-24-UU	1-1/2	6	2.3750	3.000/2.970	2.410/2.390	0.086	1.5000	+0.000/-0.0006	1510	1540	0.8	1500L
SU-32-UU	2	6	3.0000	4.000/3.690	3.193/3.960	0.105	2.0000	+0.000/-0.0008	2230	2580	1.4	2000L

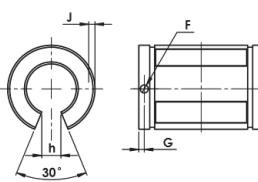
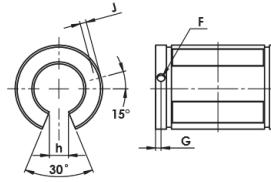
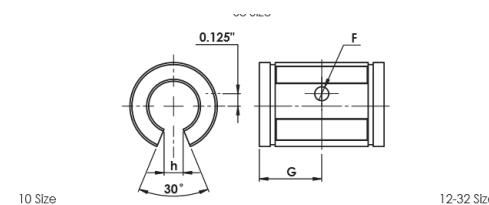
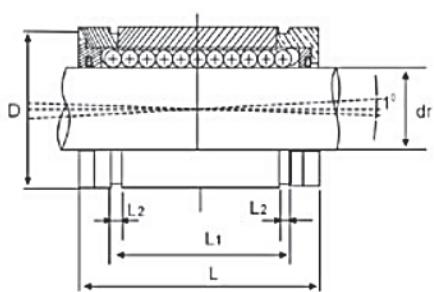
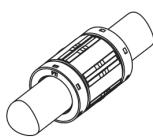
Note: \*Pre-drilled shafting, shaft supports and end blocks available from stock.

Note: \*\* - Based on Normal Housing Bore

### Open Series



Models Available



Part No. (2 Seals)	Shaft Size d	Ball Tracks	Dimension mm							Basic Load Ratings		Wt. lbs**	Shaft Part No. *
			D	F	G	h	J	L	L <sub>2</sub> min	Dynamic C (lbf)	Static C <sub>0</sub> (lbf)		
SU-8-UU-OPN	1/2	3	0.8750	0.14	0.63	0.32	THRU	1.250/1.230	0.050	210	190	0.03	500L
SU-10-UU-OPN	5/8	4	1.1250	0.11	0.13	0.38	0.039	1.500/1.480	0.056	320	340	0.06	625L
SU-12-UU-OPN	3/4	5	1.2500	0.14	0.13	0.43	0.059	1.620/1.605	0.056	510	430	0.11	750L
SU-16-UU-OPN	1	5	1.5625	0.14	0.13	0.56	0.047	2.250/2.230	0.070	830	780	0.21	1000L
SU-20-UU-OPN	1-1/4	5	2.0000	0.20	0.19	0.63	0.090	2.625/2.600	0.068	1250	1270	0.35	1250L
SU-24-UU-OPN	1-1/2	5	2.3750	0.20	0.19	0.75	0.090	3.000/2.970	0.086	1520	1540	0.67	1500L
SU-32-UU-OPN	2	5	3.0000	0.20	0.31	1.00	THRU	4.000/3.960	0.105	2250	2580	1.1	2000L

Note: \*Pre-drilled shafting, shaft supports and end blocks available from stock.

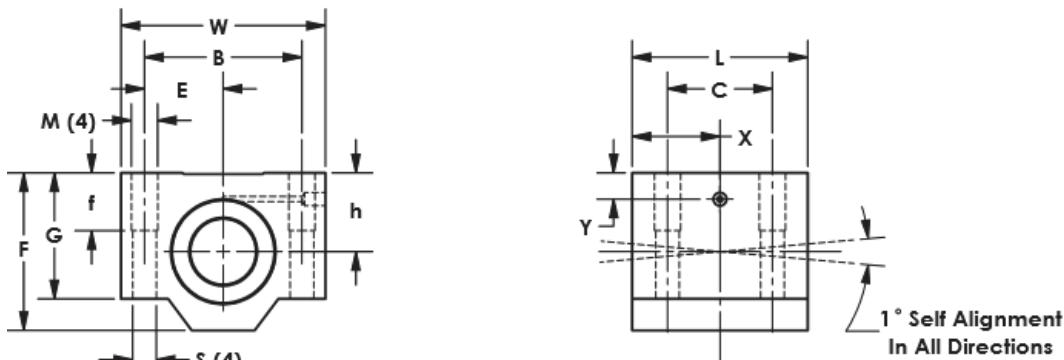
Note: \*\* - Based on Normal Housing Bore

# Linear Ball Bearing Block

**PTI**

## Metric Sizes

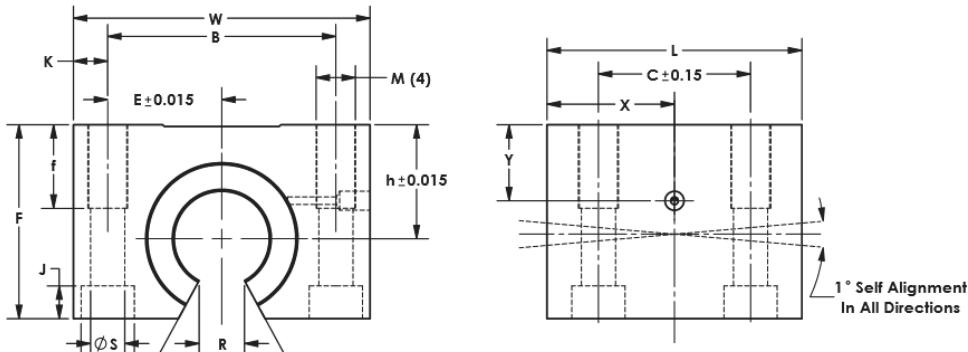
Super Type  
Closed & Open  
Sealed



## Closed Series

Part No. (2 Seals)	Shaft Size <i>d</i>	Dimension (mm)														Basic Load Ratings		Wt. g	Shaft Part No. *	
		B	C	E	f	F	G	h	K	L	M	S	T	W	X	Y	Dynamic C (N)	Static C <sub>0</sub> (N)		
SUEPB-10MM-UU	10	29	20	20.0	11	31.5	25	16	5.5	36	M5	1.35	5	40	—	—	750	935	90	10MML
SUEPB-12MM-UU	12	32	23	21.5	11	35.0	28	18	5.5	39	M5	1.35	5	43	—	—	1020	1290	116	12MML
SUEPB-16MM-UU	16	40	26	26.5	13	42.0	35	22	6.5	43	M6	1.35	5	53	—	—	1250	1550	205	16MML
SUEPB-20MM-UU	20	45	32	30.0	18	50.0	42	25	7.5	54	M8	1.65	5	60	19.0	9.0	2090	2630	326	20MML
SUEPB-25MM-UU	25	60	40	39.0	22	60.0	48	30	9.0	67	M10	1.90	7	78	22.5	10.0	3780	4720	624	25MML
SUEPB-30MM-UU	30	68	45	43.5	22	70.0	58	35	9.5	79	M10	1.90	8	87	26.0	11.5	5470	6810	980	30MML
SUEPB-40MM-UU	40	86	58	54.0	26	90.0	72	45	11.0	91	M12	2.20	10	108	26.5	14.0	6590	8230	1670	40MML
SUEPB-50MM-UU	50	108	50	66.0	34	105.0	85	50	12.0	113	M16	2.70	12	132	43.5	12.5	10800	13500	2950	50MML

Note: \*Pre-drilled shafting, shaft supports and end blocks available from stock.



## Open Series

Part No. (2 Seals)	Shaft Size <i>d</i>	Dimension mm														Basic Load Ratings		Wt. g	Shaft Part No. *		
		B	C	E	f	F	h	K	L	M	R	α	S	T	W	X	Y	Dynamic C (N)	Static C <sub>0</sub> (N)		
SUEPB-12MM-UU-OPN	12	32	23	21.5	11	28.0	18	5.5	39	M5	6.5	66°	4.3	5	43	14.5	7.5	1020	1290	99	12MML
SUEPB-16MM-UU-OPN	16	40	26	26.5	13	35.0	22	6.5	43	M6	9.0	68°	5.3	5	53	15.5	9.5	1250	1550	175	16MML
SUEPB-20MM-UU-OPN	20	45	32	30.0	18	42.0	25	7.5	54	M8	9.0	55°	6.6	5	60	19.0	9.0	2090	2630	275	20MML
SUEPB-25MM-UU-OPN	25	60	40	39.0	22	51.0	30	9.0	67	M10	11.5	57°	8.4	7	78	22.5	10.0	3780	4720	558	25MML
SUEPB-30MM-UU-OPN	30	68	45	43.5	22	60.0	35	9.5	79	M10	14.0	57°	8.4	8	87	26.0	11.5	5470	6810	860	30MML
SUEPB-40MM-UU-OPN	40	86	58	54.0	26	77.0	45	11.0	91	M12	19.5	56°	10.5	10	108	26.5	14.0	6590	8230	1490	40MML
SUEPB-50MM-UU-OPN	50	108	50	66.0	34	88.0	50	12.0	113	M16	22.5	54°	13.5	12	132	43.5	12.5	10800	13500	2500	50MML

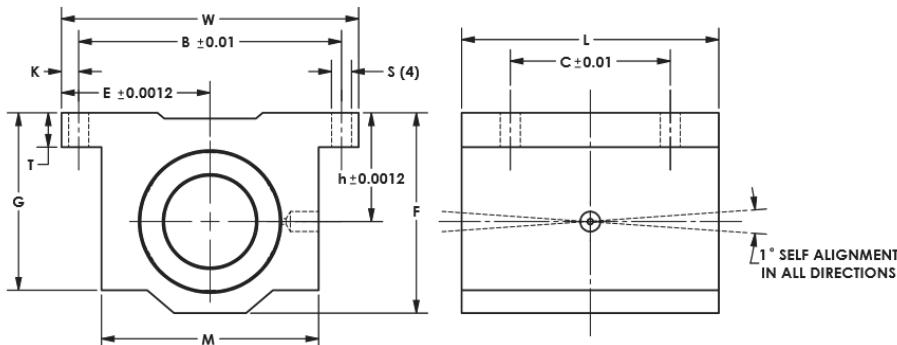
Note: \*Pre-drilled shafting, shaft supports and end blocks available from stock.

# Linear Ball Bearing Block

**PTI**

## Inch Sizes

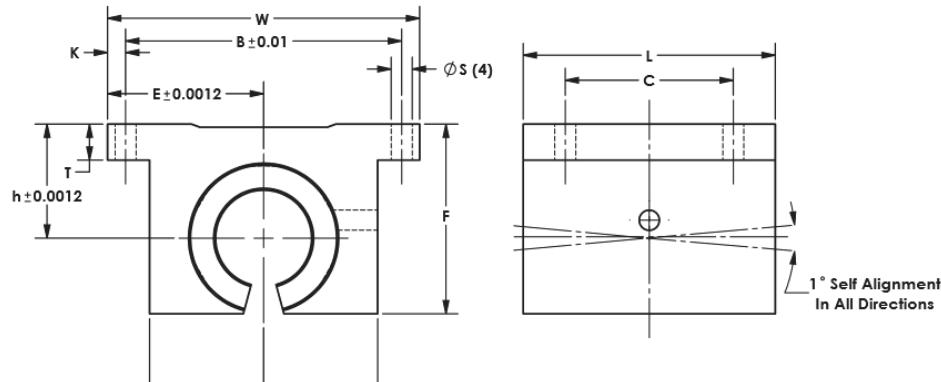
Super Type  
Closed & Open  
Sealed



## Closed Series

Part No. (2 Seals)	Shaft Size d	Dimension (mm)												Basic Load Ratings		Wt. lbs	Shaft Part No. *
		B	C	E	F	G	h	K	L	M	S	T	W	Dynamic C (lbf)	Static C <sub>0</sub> (lbf)		
SUPB-4-UU	1/4	1.312	0.750	0.8125	0.813	0.750	0.4370	0.156	1.188	1.000	0.156	0.188	1.625	57	49	0.1	250L
SUPB-6-UU	3/8	1.437	0.875	0.8750	0.938	0.875	0.5000	0.156	1.313	1.125	0.156	0.188	1.750	78	66	0.1	375L
SUPB-8-UU	1/2	1.688	1.000	1.0000	1.250	1.125	0.6870	0.156	1.688	1.375	0.156	0.250	2.000	190	190	0.2	500L
SUPB-10-UU	5/8	2.125	1.125	1.2500	1.625	1.437	0.8750	0.188	1.938	1.750	0.188	0.281	2.500	290	340	0.5	625L
SUPB-12-UU	3/4	2.375	1.250	1.3750	1.750	1.563	0.9370	0.188	2.063	1.875	0.188	0.313	2.750	500	430	0.6	750L
SUPB-16-UU	1	2.875	1.750	1.6250	2.188	1.938	1.1870	0.188	2.813	2.375	0.219	0.375	3.250	820	780	1.2	1000L
SUPB-20-UU	1-1/4	3.500	2.000	2.0000	2.813	2.500	1.5000	0.250	3.625	3.000	0.219	0.438	4.000	1240	1270	2.4	1250L
SUPB-24-UU	1-1/2	4.125	2.500	2.3700	3.250	2.875	1.7500	0.313	4.000	3.500	0.281	0.500	4.750	1510	1540	3.5	1500L
SUPB-32-UU	2	5.250	3.250	3.0000	4.063	3.625	2.1250	0.375	5.000	4.500	0.406	0.625	6.000	2230	2580	6.8	2000L

Note: \*Pre-drilled shafting, shaft supports and end blocks available from stock.



## Open Series

Part No. (2 Seals)	Shaft Size d	Dimension mm												Basic Load Ratings		Wt. lbs	Shaft Part No. *
		B	C	E	F	G	h	K	L	M	S	T	W	Dynamic C (lbf)	Static C <sub>0</sub> (lbf)		
SUPB-8-UU-OPN	1/2	1.688	1.000	1.0000	1.100	0.688	0.6870	0.156	1.500	0.860	0.156	0.250	2.000	230	290	0.2	500L
SUPB-10-UU-OPN	5/8	2.125	1.125	1.2500	1.405	0.875	0.8750	0.188	1.750	1.060	0.188	0.281	2.500	400	500	0.4	625L
SUPB-12-UU-OPN	3/4	2.375	1.250	1.3750	1.535	0.937	0.9370	0.188	1.875	1.120	0.188	0.313	2.750	470	590	0.5	750L
SUPB-16-UU-OPN	1	2.875	1.750	1.6250	1.975	1.188	1.1870	0.188	2.625	1.400	0.219	0.375	3.250	850	1060	1.0	1000L
SUPB-20-UU-OPN	1-1/4	3.500	2.000	2.0000	2.485	1.500	1.5000	0.250	3.375	1.880	0.219	0.438	4.000	1230	1530	2.0	1250L
SUPB-24-UU-OPN	1-1/2	4.125	2.500	2.3700	2.910	1.750	1.7500	0.313	3.750	2.120	0.281	0.500	4.750	1480	1850	3.0	1500L
SUPB-32-UU-OPN	2	5.250	3.250	3.0000	3.660	2.250	2.1250	0.375	4.750	2.700	0.406	0.625	6.000	2430	3040	5.8	2000L

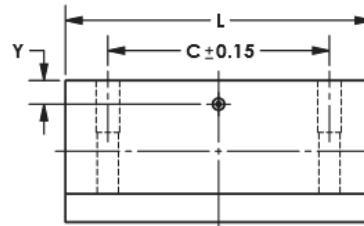
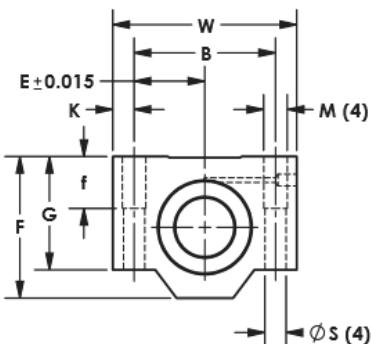
Note: \*Pre-drilled shafting, shaft supports and end blocks available from stock.

# Linear Ball Bearing Block-Wide

**PTI**

## Metric Sizes

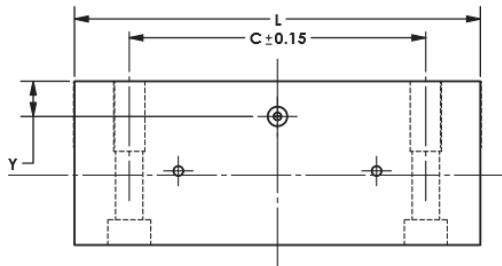
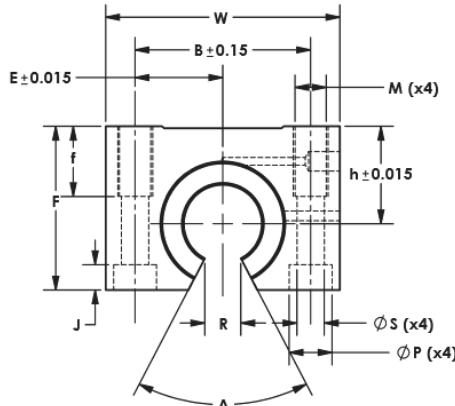
Super Type  
Closed & Open  
Sealed



## Closed Series

Part No. (2 Seals)	Shaft Size <i>d</i>	Dimension (mm)														Basic Load Ratings		Wt. g	Shaft Part No. *
		B	C	E	f	F	G	h	K	L	M	S	T	W	Y	Dynamic C (N)	Static C <sub>0</sub> (N)		
SUTWNEPB-10MM-UU	10	29	52	20.0	11	31.5	25	16	5.5	70	M5	4.3	5	40	7.0	1215	1870	175	10MML
SUTWNEPB-12MM-UU	12	32	56	21.5	11	35.0	28	18	5.5	76	M5	4.3	5	43	7.5	1652	2580	227	12MML
SUTWNEPB-16MM-UU	16	40	64	26.5	13	42.0	35	22	6.5	84	M6	5.3	5	53	9.5	2025	3100	390	16MML
SUTWNEPB-20MM-UU	20	45	76	30.0	18	50.0	42	25	7.5	104	M8	6.6	5	60	9.0	3390	5260	630	20MML
SUTWNEPB-25MM-UU	25	60	94	39.0	22	60.0	48	30	9.0	130	M10	8.4	7	78	10.0	6120	9440	1210	25MML
SUTWNEPB-30MM-UU	30	68	106	43.5	22	70.0	58	35	9.5	152	M10	8.4	8	87	11.5	8860	13620	1880	30MML
SUTWNEPB-40MM-UU	40	86	124	54.0	26	90.0	72	45	11.0	176	M12	10.5	10	108	14.0	10680	16460	3280	40MML

Note: \*Pre-drilled shafting, shaft supports and end blocks available from stock.



## Open Series

Part No. (2 Seals)	Shaft Size <i>d</i>	Dimension mm														Basic Load Ratings		Wt. g	Shaft Part No. *	
		B	C	E	f	F	h	K	L	M	R	α	S	T	W	Y	Dynamic C (N)	Static C <sub>0</sub> (N)		
SUTWNEPB-12MM-UU-OPN	12	32	56	21.5	11	28.0	18	5.5	76	M5	6.5	66°	4.3	5	43	7.5	1652	2580	190	12MML
SUTWNEPB-16MM-UU-OPN	16	40	64	26.5	13	35.0	22	6.5	84	M6	9.0	68°	5.3	5	53	9.5	2025	3100	312	16MML
SUTWNEPB-20MM-UU-OPN	20	45	76	30.0	18	42.0	25	7.5	104	M8	9.0	55°	6.6	5	60	9.0	3390	5260	506	20MML
SUTWNEPB-25MM-UU-OPN	25	60	94	39.0	22	51.0	30	9.0	130	M10	11.5	57°	8.4	7	78	10.0	6120	9440	1050	25MML
SUTWNEPB-30MM-UU-OPN	30	68	106	43.5	22	60.0	35	9.5	152	M10	14.0	57°	8.4	8	87	11.5	9440	13620	1630	30MML
SUTWNEPB-40MM-UU-OPN	40	86	124	54.0	26	77.0	45	11.0	176	M12	19.5	56°	10.5	10	108	14.0	10680	16460	2880	40MML

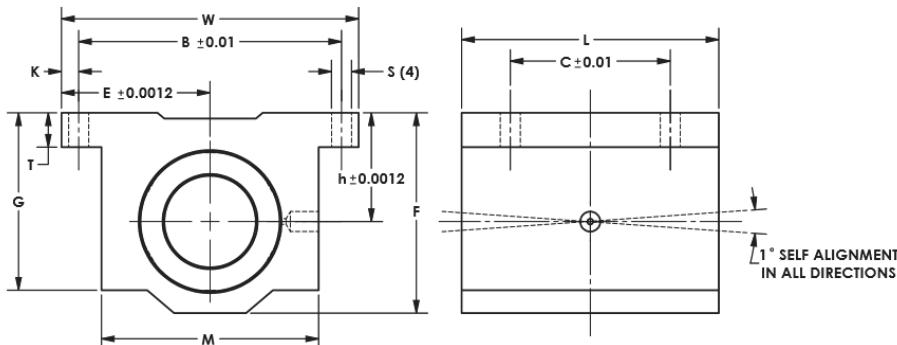
Note: \*Pre-drilled shafting, shaft supports and end blocks available from stock.

# Linear Ball Bearing Block

**PTI**

## Inch Sizes

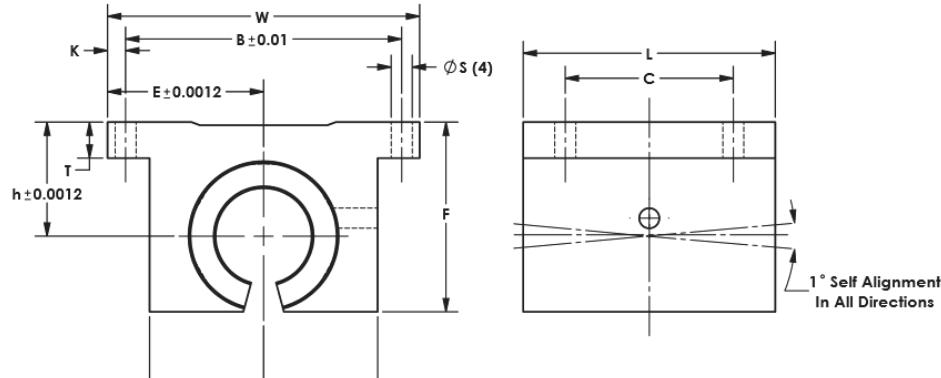
Super Type  
Closed & Open  
Sealed



## Closed Series

Part No. (2 Seals)	Shaft Size d	Dimension (mm)												Basic Load Ratings		Wt. lbs	Shaft Part No. *
		B	C	E	F	G	h	K	L	M	S	T	W	Dynamic C (lbf)	Static C <sub>0</sub> (lbf)		
SUPB-4-UU	1/4	1.312	0.750	0.8125	0.813	0.750	0.4370	0.156	1.188	1.000	0.156	0.188	1.625	57	49	0.1	250L
SUPB-6-UU	3/8	1.437	0.875	0.8750	0.938	0.875	0.5000	0.156	1.313	1.125	0.156	0.188	1.750	78	66	0.1	375L
SUPB-8-UU	1/2	1.688	1.000	1.0000	1.250	1.125	0.6870	0.156	1.688	1.375	0.156	0.250	2.000	190	190	0.2	500L
SUPB-10-UU	5/8	2.125	1.125	1.2500	1.625	1.437	0.8750	0.188	1.938	1.750	0.188	0.281	2.500	290	340	0.5	625L
SUPB-12-UU	3/4	2.375	1.250	1.3750	1.750	1.563	0.9370	0.188	2.063	1.875	0.188	0.313	2.750	500	430	0.6	750L
SUPB-16-UU	1	2.875	1.750	1.6250	2.188	1.938	1.1870	0.188	2.813	2.375	0.219	0.375	3.250	820	780	1.2	1000L
SUPB-20-UU	1-1/4	3.500	2.000	2.0000	2.813	2.500	1.5000	0.250	3.625	3.000	0.219	0.438	4.000	1240	1270	2.4	1250L
SUPB-24-UU	1-1/2	4.125	2.500	2.3700	3.250	2.875	1.7500	0.313	4.000	3.500	0.281	0.500	4.750	1510	1540	3.5	1500L
SUPB-32-UU	2	5.250	3.250	3.0000	4.063	3.625	2.1250	0.375	5.000	4.500	0.406	0.625	6.000	2230	2580	6.8	2000L

Note: \*Pre-drilled shafting, shaft supports and end blocks available from stock.



## Open Series

Part No. (2 Seals)	Shaft Size d	Dimension mm												Basic Load Ratings		Wt. lbs	Shaft Part No. *
		B	C	E	F	G	h	K	L	M	S	T	W	Dynamic C (lbf)	Static C <sub>0</sub> (lbf)		
SUPB-8-UU-OPN	1/2	1.688	1.000	1.0000	1.100	0.688	0.6870	0.156	1.500	0.860	0.156	0.250	2.000	230	290	0.2	500L
SUPB-10-UU-OPN	5/8	2.125	1.125	1.2500	1.405	0.875	0.8750	0.188	1.750	1.060	0.188	0.281	2.500	400	500	0.4	625L
SUPB-12-UU-OPN	3/4	2.375	1.250	1.3750	1.535	0.937	0.9370	0.188	1.875	1.120	0.188	0.313	2.750	470	590	0.5	750L
SUPB-16-UU-OPN	1	2.875	1.750	1.6250	1.975	1.188	1.1870	0.188	2.625	1.400	0.219	0.375	3.250	850	1060	1.0	1000L
SUPB-20-UU-OPN	1-1/4	3.500	2.000	2.0000	2.485	1.500	1.5000	0.250	3.375	1.880	0.219	0.438	4.000	1230	1530	2.0	1250L
SUPB-24-UU-OPN	1-1/2	4.125	2.500	2.3700	2.910	1.750	1.7500	0.313	3.750	2.120	0.281	0.500	4.750	1480	1850	3.0	1500L
SUPB-32-UU-OPN	2	5.250	3.250	3.0000	3.660	2.250	2.1250	0.375	4.750	2.700	0.406	0.625	6.000	2430	3040	5.8	2000L

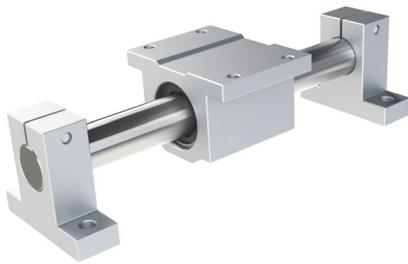
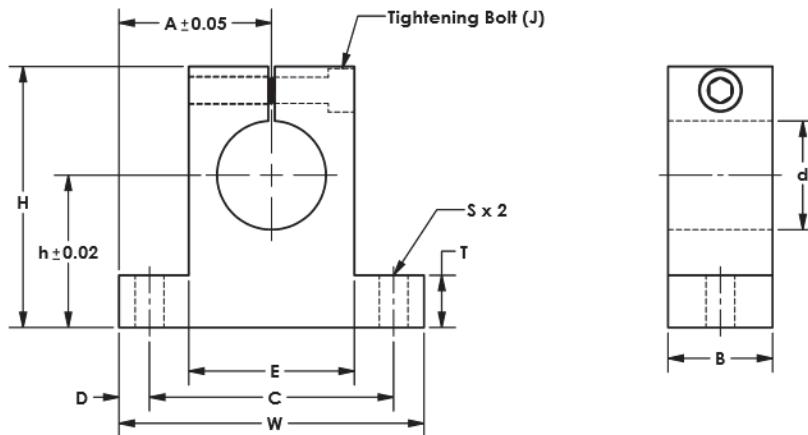
Note: \*Pre-drilled shafting, shaft supports and end blocks available from stock.

# Shaft Support Blocks

**PTI**

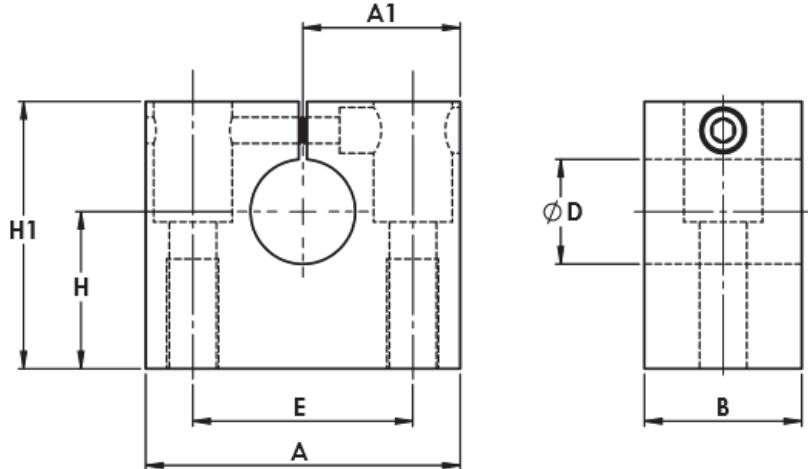
## Metric Sizes Standard Height

Use Shaft Support Blocks on shaft ends where loads are light and shaft deflection can be allowed. For no deflection, use shaft support rails. Supports are high strength Aluminum. Shimming recommended for high precision control of movement.



Part No.	Shaft Size d	Dimension (mm)											Wt. g
		A	B	C	D	E	h	H	J	S	T	W	
SBM08	8	21	14	32	5	18	20	32.8	M4	5.5	6	42	24
SBM10	10	21	14	32	5	18	20	32.8	M4	5.5	6	42	24
SBM12	12	21	14	32	5	20	23	38	M4	5.5	6	42	30
SBM16	16	24	16	38	5	25	27	44	M4	5.5	8	48	40
SBM20	20	30	20	45	7.5	30	31	51	M5	6.6	10	60	70
SBM25	25	35	24	56	7	38	35	60	M6	6.6	12	70	130
SBM30	30	42	28	64	10	44	42	70	M6	9	12	84	180
SBM40	40	57	36	90	12	60	60	96	M8	11	15	114	420

## Low Profile Support Block



Material: Aluminum Alloy

Part No.	Shaft Size d	Dimension mm								Wt. g
		A	A (=/- .012)	A1	B	E (+/- .012)	H (+/- .001)	H1	N3	
ASBM08	8	32	42	21	18	22	15	28	M4	40
ASBM12	12	43	42	21	20	30	20	36	M6	100
ASBM16	16	53	48	24	24	38	25	43	M8	150
ASBM20	20	60	60	30	30	42	30	51	M10	230
ASBM25	25	78	70	35	38	56	35	61	M12	410
ASBM30	30	87	84	42	40	64	40	71	M12	530
ASBM40	40	108	114	57	48	82	50	88	M16	990

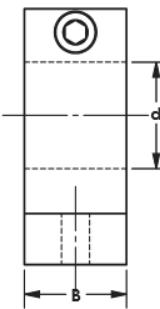
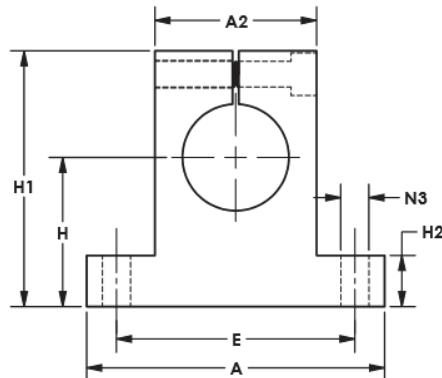
# Shaft Support Blocks



## Inch Sizes

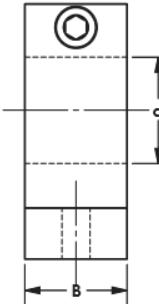
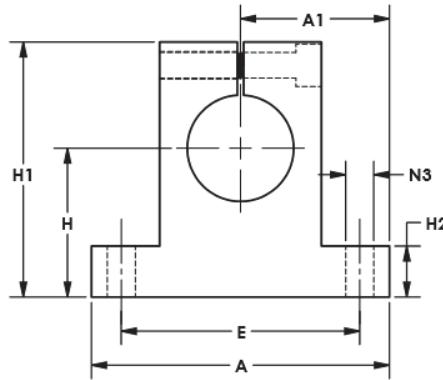
### Standard Height

Use Shaft Support Blocks on shaft ends where loads are light and shaft deflection can be allowed. For no deflection, use shaft support rails. Supports are high strength Aluminum. Shimming recommended for high precision control of movement.



Part No.	Shaft Size d	Dimension (in)							N3		Wt. lbs
		A	A2	B	E (+/- 0.10)	H (+/- .002)	H1	H2	Hole	Bolt	
SB-4	1/4	1.50	0.63	0.50	1.125	0.687	1.06	0.25	0.16	# 6	0.03
SB-6	3/8	1.63	0.69	0.56	1.250	0.750	1.19	0.25	0.16	# 6	0.1
SB-8	1/2	2.00	0.75	0.63	1.500	1.000	1.63	0.25	0.19	# 8	0.3
SB-10	5/8	2.50	0.88	0.69	1.875	1.000	1.75	0.31	0.22	# 10	0.4
SB-12	3/4	2.75	1.00	0.75	2.000	1.250	2.13	0.31	0.22	# 10	0.5
SB-16	1	3.25	1.38	1.00	2.500	1.500	2.56	0.38	0.28	1/4	1.0
SB-20	1-1/4	4.00	1.75	1.13	3.000	1.750	3.00	0.44	0.34	5/16	2.0
SB-24	1-1/2	4.75	2.00	1.25	3.500	2.000	3.50	0.50	0.34	5/16	2.6
SB-32	2	6.00	2.63	1.50	4.500	2.500	4.50	0.63	0.41	3/8	4.8

### Low Profile Support Block



Material: Aluminum Alloy

Part No.	Shaft Size d	Dimension (in)						N3		Wt. lbs
		A	A1	B	E (+/- 0.10)	H (+/- .002)	H1	Hole	Bolt	
SSB-4	1/4	1.50	0.750	0.50	1.12	0.500	0.89	0.16	#6	0.1
SSB-6	3/8	1.62	0.813	0.56	1.25	0.562	1.00	0.16	#6	0.1
SSB-8	1/2	2.00	1.000	0.63	1.50	0.875	1.48	0.19	#8	0.1
SSB-12	3/4	2.50	1.250	0.75	2.00	1.125	1.95	0.22	#10	0.2
SSB-16	1	3.25	1.625	1.00	2.50	1.375	2.48	0.28	1/4	0.4
SSB-32	2	4.75	2.375	1.25	3.50	2.000	3.50	0.34	5/16	1.2

# Support Rails & Assemblies

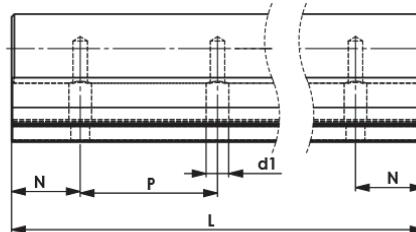
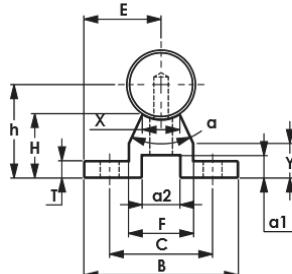
**PTI**

## SRM & LSRM Series - Metric Shafts

For Continuously Supported metric Shafting

Standard Support Rails (SRM) & Low Support Rails (LSRM)

Aluminum Alloy



### Standard Metric Support Rails (SRM)

Part No.	Shaft Size d	Dimension (in)															Wt. kg/m		
		a1	a2	B	C	a	d1	E	F	H	h	L max*	N	P	S1	T	X		
SRM16	16	6.0	9.5	40	30	80°	5.5	20.0	18.5	17.8	25	1390	20	150	Ø5.5	5	8.0	11.7	2.6
SRM20	20	6.5	11.0	45	30	50°	6.6	22.5	19.0	17.7	27	1390	20	150	Ø5.5	5	8.0	10.0	3.5
SRM25	25	6.5	11.0	55	35	50°	6.6	27.5	21.5	21.0	33	1850	25	200	Ø6.6	6	8.0	12.0	5.3
SRM30	30	8.5	14.0	60	40	50°	9.0	30.0	26.5	22.8	37	1850	25	200	Ø6.6	7	10.3	13.0	7.4
SRM40	40	8.5	14.0	75	55	50°	9.0	37.5	38.0	29.4	48	1860	30	200	Ø9.0	9	16.0	16.0	12.7

Note: \*Standard Shaft lengths in mm.

Part No.	Length
SRM16-190	190
SRM16-340	340
SRM16-640	640
SRM16-970	940
SRM16-1390	1390

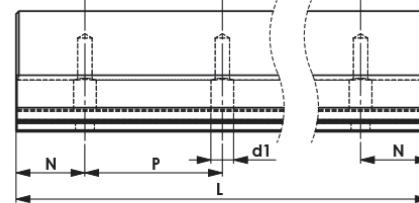
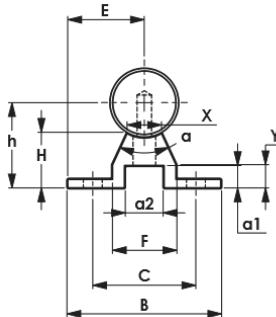
Part No.	Length
SRM20-340	340
SRM20-640	640
SRM20-940	940
SRM20-1240	1240
SRM20-1390	1390

Part No.	Length
SRM25-240	240
SRM25-450	450
SRM25-850	850
SRM25-1250	1250
SRM25-1850	1850

Part No.	Length
SRM30-450	450
SRM30-850	850
SRM30-1250	1250
SRM30-1450	1450
SRM30-1850	1850

Part No.	Length
SRM40-640	460
SRM40-660	660
SRM40-860	860
SRM40-1060	1060
SRM40-1260	1260
SRM40-1860	1860

### Metric Low Support Rails (LSRM)



Part No.	Shaft Size d	Dimension (in)															Wt. kg/m
		a1	a2	B	C	a	d1	E	F	H	h	L max*	N	P	S1	T	X
LSRM16	16	6.0	9.5	50	37	60°	5.5	25.0	14.84	22	1390	20.0	150.0	Ø5.5	6	8	2.6
LSRM20	20	6.5	11.0	55	40	50°	6.6	27.5	19.64	29	1390	20.0	150.0	Ø5.5	8	8	4.2
LSRM25	25	6.5	11.0	65	45	50°	6.6	32.5	20.00	32	1850	25.0	200.0	Ø6.6	10	8	5.8
LSRM30	30	8.5	14	75	55	50°	9.0	37.5	20.28	36.5	1850	25.0	200.0	Ø6.6	12	10.3	8.3

Note: \*Standard Shaft lengths in mm.

Part No.	Length
LSRM16-190	190
LSRM16-340	340
LSRM16-640	640
LSRM16-940	940
LSRM16-1390	1390

Part No.	Length
LSRM20-340	340
LSRM20-640	640
LSRM20-940	940
LSRM20-1240	1240
LSRM20-1390	1390

Part No.	Length
LSRM25-340	240
LSRM25-640	440
LSRM25-940	840
LSRM25-1250	1250
LSRM25-1850	1850

Part No.	Length
LSRM30-340	450
LSRM30-640	850
LSRM30-940	1250
LSRM30-1450	1450
LSRM30-1850	1850

# Support Rails & Assemblies

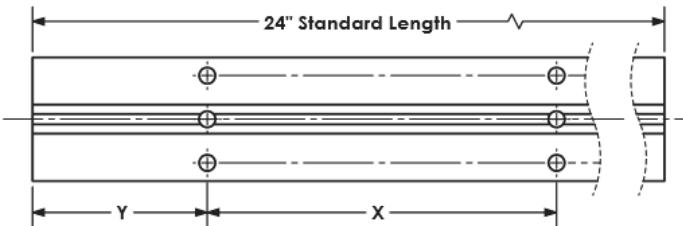
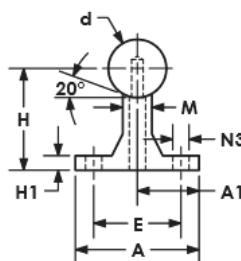
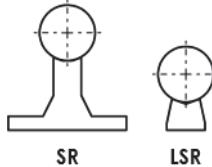


## SR & LSR Series - Inch Shafts

For Continuously Supported Inch Shafting

Standard Support Rails (SR) & Low Support Rails (LSR)

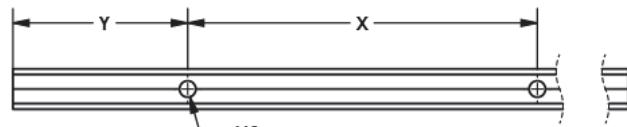
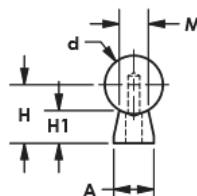
Aluminum Alloy



### Standard Inch Support Rails (SR)

Part No. (Without Holes)	Part No. (With Pre-Drilled Holes)	Shaft Size d	Dimension (in)					N3		Mounting Bolt for Pre-Drilled Shaft	X	Wt. lbs/ft
			H (+/-0.002")	H1	A	E	M	Hole	Bolt			
SR08	SR08-PD	1/2	1.125	0.19	1.50	1.00	0.25	0.17	# 6	6-32 UNF x .88	4	0.6
SR10	SR10-PD	5/8	1.125	0.25	1.63	1.13	0.31	0.19	# 8	8/32 UNF x .88	4	0.8
SR12	SR12-PD	3/4	1.500	0.25	1.75	1.25	0.38	0.22	# 10	10/32 UNF x 1.25	6	1.0
SR16	SR16-PD	1	1.750	0.25	2.13	1.50	0.50	0.28	1/4	1/4-20 UNC x 1.50	6	1.4
SR20	SR20-PD	1-1/4	2.125	0.31	2.50	1.88	0.56	0.34	5/16	5/16-18 UNC x 1.75	6	2.1
SR24	SR24-PD	1-1/2	2.500	0.38	3.00	2.25	0.69	0.34	5/16	3/8-16 UNC x 1.75	8	2.6
SR32	SR32-PD	2	3.250	0.50	3.75	2.75	0.88	0.40	3/8	1/2-13 UNC x 2.50	8	4.2

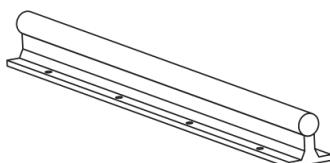
Note: Longer lengths available on request.



### Inch Low Support Rails (LSR)

Part No. (Without Holes)	Part No. (With Pre-Drilled Holes)	Shaft Size d	Dimension (in)					N2	N1	Bolt	Wt. lbs/ft
			H (+/-0.002")	H1	A	M	Hole				
LSR08	LSR08-PD	1/2	0.562	0.34	0.37	0.25	0.17	6-32 UNF	0.32		
LSR10	LSR10-PD	5/8	0.687	0.41	0.45	0.31	0.19	8/32 UNF	0.49		
LSR12	LSR12-PD	3/4	0.750	0.42	0.51	0.38	0.22	10/32 UNF	0.59		
LSR16	LSR16-PD	1	1.000	0.56	0.69	.50	0.28	1/4-20 UNC	1.01		
LSR20	LSR20-PD	1-1/4	1.187	0.63	0.78	0.56	0.34	5/16-18 UNC	1.27		
LSR24	LSR24-PD	1-1/2	1.375	0.70	0.93	0.69	0.41	3/8-16 UNC	1.68		
LSR32	LSR32-PD	2	1.750	1.18	1.18	0.88	0.53	1/2-13 UNC	2.59		

### Pre-Assembled Shaft Rail Assemblies



PTI can pre-assemble shafts and shaft supports. Consult Sales.

# Standard & Pre-Drilled Shafting



**Carbon Steel, 60 Rockwell**

**Inch & Metric Sizes**



## Inch Shafting - Class L

**Hardness:** 60 Rockwell C (min)

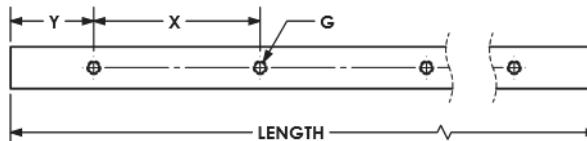
**Surface Finish:** 8 Ra Max

**Roundness:** 0.000080"

**Straightness:** 0.001" per foot Cumulative, 0.002" TIR

**Taper:** 0.0001"

### Pre- Drilled



Inch Standard			
Dimensions (in)			
Part No.	Shaft Diameter	Shaft Tolerance	Max Stock length L
250L	1/4	0.2490 / 0.2495	54
375L	3/8	0.3740 / 0.3745	166
500L	1/2	0.4990 / 0.4995	166
625L	5/8	0.6240 / 0.6245	202
750L	3/4	0.7490 / 0.7495	202
1000L	1	0.9990 / 0.9995	202
1250L	1-1/4	1.2490 / 1.2495	202
1500L	1-1/2	1.4989 / 1.4994	202
2000L	2	1.9987 / 1.9994	202

Note: Other shaft sizes available on request.

Inch Pre-Drilled					
Dimensions (in)					
Part No.	Shaft Diameter	Shaft Tolerance	Max Stock length L	G Thd	X (+/- 1/64)
—	—	—	—	—	—
—	—	—	—	—	—
500LPD	1/2	0.4990 / 0.4995	166	# 6-32 UNF	4
625LPD	5/8	0.6240 / 0.6245	202	# 8/32 UNF	4
750LPD	3/4	0.7490 / 0.7495	202	# 10/32 UNF	6
1000LPD	1	0.9990 / 0.9995	202	1/4-20 UNC	6
1250LPD	1-1/4	1.2490 / 1.2495	202	5/16-18 UNC	6
1500LPD	1-1/2	1.4989 / 1.4994	202	3/8-16 UNC	8
2000LPD	2	1.9987 / 1.9994	202	1/2-13 UNC	8

Note: Y = distance from 1st tapped hole to shaft end. Each end will be the same unless specified.

## Metric Shafting - Class MM

**Hardness:** 60 Rockwell C (min)

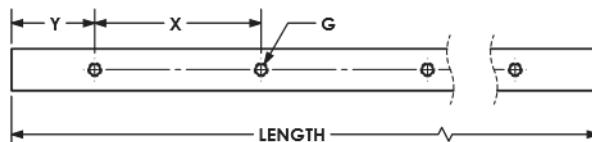
**Surface Finish:** 8 Ra Max

**Roundness:** 0.002mm

**Straightness:** 0.0254mm per foot Cumulative, 0.051mm TIR

**Taper:** 0.0025mm

### Pre- Drilled



Metric Standard				Metric Pre-Drilled							
Dimensions (mm)				PD1		PD2		Dimensions (mm)			
Part No.	Shaft Diameter	Shaft Tolerance	Max Stock length L	Part No.	X (PD1)	Part No.	x (PD2)	Shaft Diameter	Shaft Tolerance	Max Stock length L	G Thd
10MML	10	9.99 / 10.00	4216	—	—	—	—	—	—	—	—
12MML	12	11.99 / 12.00	4216	12MMLPD1	75	12MMLPD2	120	12	11.99 / 12.00	4216	M4
16MML	16	15.99 / 16.00	4521	16MMLPD1	100	16MMLPD2	150	16	15.99 / 16.00	4521	M5
20MML	20	19.99 / 20.00	4521	20MMLPD1	100	20MMLPD2	150	20	19.99 / 20.00	4521	M6
25MML	25	24.99 / 25.00	4521	25MMLPD1	120	25MMLPD2	200	25	24.99 / 25.00	4521	M8
30MML	30	29.99 / 30.00	4521	30MMLPD1	150	30MMLPD2	200	30	29.99 / 30.00	4521	M10
40MML	40	39.99 / 40.00	4521	40MMLPD1	200	40MMLPD2	300	40	39.99 / 40.00	4521	M10

Note: Other shaft sizes available on request.

Note: Y = distance from 1st tapped hole to shaft end. Each end will be the same unless specified.

# Stainless & Pre-Drilled Stainless Shafting

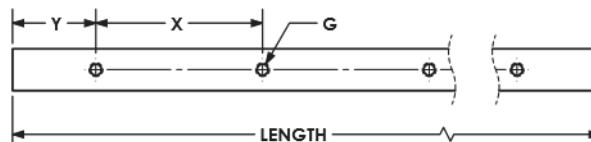


440 Stainless Steel, 50 Rockwell C (min)

Inch & Metric Sizes



Pre- Drilled



Inch Stainless			
Dimensions (in)			
Part No.	Shaft Diameter	Shaft Tolerance	Max Stock length L
250LSS	1/4	0.2490 / 0.2495	94
375LSS	3/8	0.3740 / 0.3745	178
500LSS	1/2	0.4990 / 0.4995	178
625LSS	5/8	0.6240 / 0.6245	178
750LSS	3/4	0.7490 / 0.7495	178
1000LSS	1	0.9990 / 0.9995	178
1250LSS	1-1/4	1.2490 / 1.2495	178
1500LSS	1-1/2	1.4989 / 1.4994	178
2000LSS	2	1.9987 / 1.9994	178

Note: Other shaft sizes available on request.

Inch Pre-Drilled					
Dimensions (in)					
Part No.	Shaft Diameter	Shaft Tolerance	Max Stock length L	G Thd	X (+/- 1/64)
—	—	—	—	—	—
—	—	—	—	—	—
500LPDSS	1/2	0.4990 / 0.4995	166	# 6-32 UNF	4
625LPDSS	5/8	0.6240 / 0.6245	178	# 8/32 UNF	4
750LPDSS	3/4	0.7490 / 0.7495	178	# 10/32 UNF	6
1000LPDSS	1	0.9990 / 0.9995	178	1/4-20 UNC	6
1250LPDSS	1-1/4	1.2490 / 1.2495	178	5/16-18 UNC	6
1500LPDSS	1-1/2	1.4989 / 1.4994	178	3/8-16 UNC	8
2000LPDSS	2	1.9987 / 1.9994	178	1/2-13 UNC	8

Note: Y = distance from 1st tapped hole to shaft end. Each end will be the same unless specified.

## Stainless Metric Shafting - Class MM

Hardness: 50 Rockwell C (min)

Surface Finish: 8 Ra Max

Roundness: 0.002mm

Straightness: 0.0254mm per foot Cumulative, 0.051mm TIR

Taper: 0.0025mm

Metric Stainless			
Dimensions (mm)			
Part No.	Shaft Diameter	Shaft Tolerance	Max Stock length L
10MMLSS	10	9.99 / 10.00	4216
12MMLSS	12	11.99 / 12.00	4216
16MMLSS	16	15.99 / 16.00	4521
20MMLSS	20	19.99 / 20.00	4521
25MMLSS	25	24.99 / 25.00	4521
30MMLSS	30	29.99 / 30.00	4521
40MMLSS	40	39.99 / 40.00	4521

Note: Other shaft sizes available on request.