



High Precision and Rigidity

The ball bearing is produced from a solid steel outer cylinder and incorporates an industrial strength polymer retainer.

Ease of Assembly

The standard type of linear ball bearing can be loaded from any direction. Precision control is possible using only the shaft supporter, and the mounting surface can be machined easily.

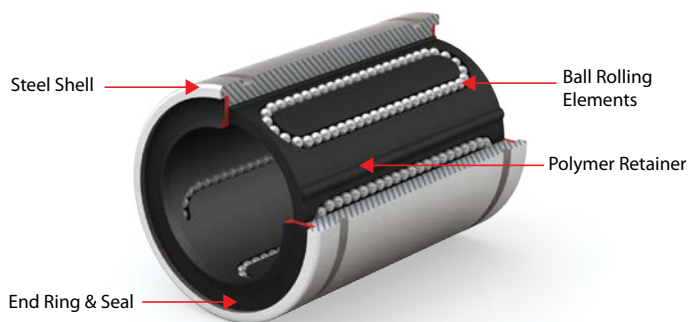
Ease of Replacement

Linear ball bearings of each type are completely interchangeable because of their standardized dimensions and strict precision control. Replacement because of wear or damage is therefore easy and accurate.

Materials

Ball bearings consist of an outer cylinder, ball retainer, balls, double seals, and two end rings. The ball retainer which holds the balls in the recirculating tracks is held inside the outer cylinder by end rings.

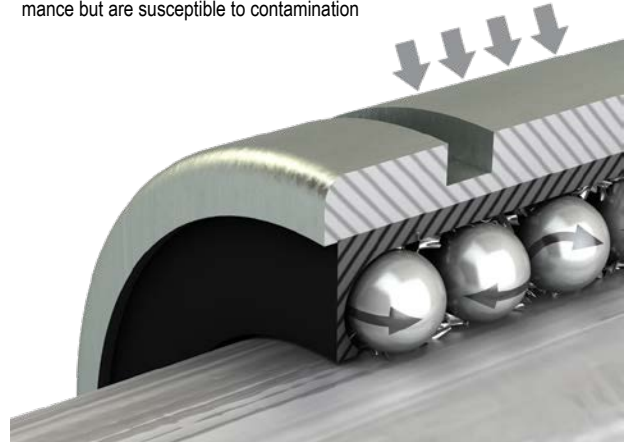
- Parts are assembled to optimize their required functions.
- The outer shell is heat treated to ensure long life.
- The ball retainer is molded from a durable polymer to ensure smooth and quiet motion.
- Double seals are standard.



PBC Linear Ball Bearings

Ball Bearing

Better performance for moment loading
Balls provide precise, low-friction performance but are susceptible to contamination



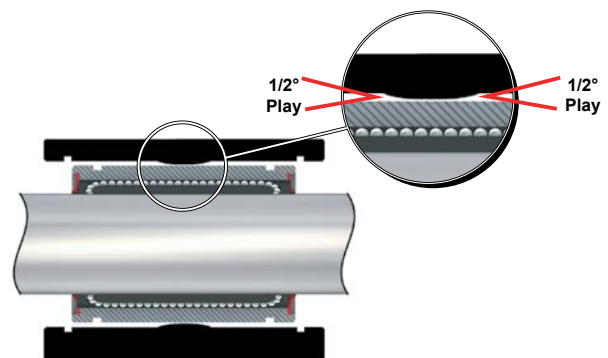
Pillow Blocks and Flange Mounts

- Made of aluminum alloy
- Clear anodized finish (Standard)
- Pillow blocks are interchangeable with industry standard ball bearing pillow blocks
- Critical centerline dimensions hold accuracy within ± 0.001 ".

Self-Alignment

Standard pillow blocks have built-in self-alignment in all directions:

- Standard pillow blocks have $1/2^\circ$ misalignment from centerline
- This feature is built into the housing with a spherical radius at the midpoint of the block
- This self-aligning capability will allow for some shaft deflection and misalignment





PBC Linear Ball Bearings

PBC Linear Ball Bearing Features

- For Linear, oscillating, rotary motion, or combination of all 3
- End Seals included
- Bearing Shell Material: GCr15 Steel, heat treated
- Bearing Material: GCr15 Steel
- Bearing Retainer Material: Polyoxymethylene polymer
- Lubrication required

Performance Ratings (for Linear Motion)

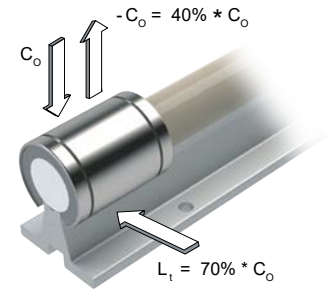
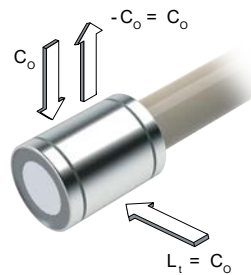
- Coefficient of friction: 0.05
- Maximum Speed (V_{max}): 590 ft/min
- IP04G-xx thru IP16G-xx ID tolerance: 0/-0.0005"
- IP20G-xx ID tolerance: 0/-0.0006"



Closed Bearing



Open Bearing



PBC Linear Ball Bearing								
Part Number	Price	Nominal ID	Bearing Form Factor	OD	Overall Length	Static Load Rating (C_o)	Dynamic Load Rating (C)	Drawing Links
IP04G	\$5#nu:	1/4 in	closed	1/2 in	3/4in	59 lbs	46 lbs	PDF
IP06G	\$5#n]:	3/8 in		5/8 in	7/8in	70 lbs	50 lbs	PDF
IP08G	\$5#n[:	1/2 in		7/8 in	1-1/4in	178 lbs	114 lbs	PDF
IP10G	\$5#n_:	5/8 in		1 1/8 in	1-1/2in	265 lbs	174 lbs	PDF
IP12G	\$5#n#:	3/4 in		1 1/4 in	1-5/8in	307 lbs	193 lbs	PDF
IP16G	\$5#n!:	1 in		1 9/16 in	2-1/4in	352 lbs	220 lbs	PDF
IP20G	\$5#o2:	1 1/4 in		2 in	2-5/8in	615 lbs	352 lbs	PDF
IP08G-OP	\$5#o9:	1/2 in	open	7/8 in	1-1/4in	178 lbs	114 lbs	PDF
IP10G-OP	\$5#oa:	5/8 in		1 1/8 in	1-1/2in	265 lbs	174 lbs	PDF
IP12G-OP	\$5#ob:	3/4 in		1 1/4 in	1-5/8in	307 lbs	193 lbs	PDF
IP16G-OP	\$5#oc:	1 in		1 9/16 in	2-1/4in	352 lbs	220 lbs	PDF
IP20G-OP	\$5#od:	1 1/4 in		2 in	2-5/8in	615 lbs	352 lbs	PDF



PBC Linear Ball-Bearing Pillow Blocks

PBC Linear Ball Bearing Pillow Block Features

- PBC Linear Ball Bearing Pre-installed
- Pillow Block Housing Material: Aluminum alloy with clear anodize finish
- Centerline tolerance: $\pm 0.001"$
- Internal self-aligning feature provides $\pm 1/2^\circ$ bearing movement in all directions allowing for some shaft deflection and misalignment
- IPP(x)04G thru IPP(x)16G ID tolerance: $0/-0.0005"$
- IPP(x)20G ID tolerance: $0/-0.0006"$

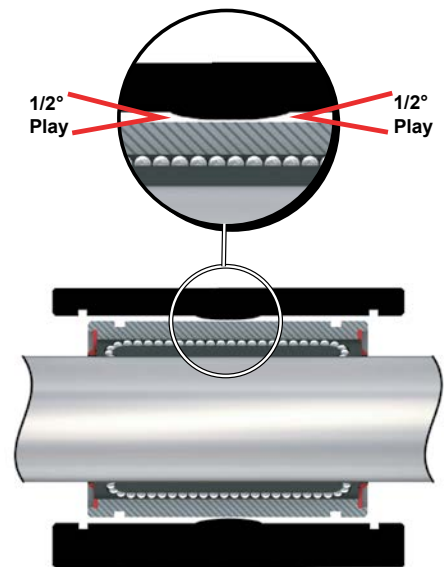


Closed Bearing



Open Bearing

PBC Ball Bearing Pillow Block							
Part Number	Price	Nominal ID	Installed Bearing	Form Factor	Static Load Rating (C_0)	Dynamic Load Rating (C)	Drawing Links
IPP04G	\$-5#:#:	1/4in	IP04G	closed type	59 lbs	48 lbs	PDF
IPP06G	\$;-5#:#:	3/8in	IP06G		70 lbs	50 lbs	PDF
IPP08G	\$-5#:#?	1/2in	IP08G		178 lbs	114 lbs	PDF
IPP10G	\$;-5#:#:	5/8in	IP10G		265 lbs	174 lbs	PDF
IPP12G	\$5#n0:	3/4in	IP12G		307 lbs	193 lbs	PDF
IPP16G	\$5#n1:	1in	IP16G		352 lbs	220 lbs	PDF
IPP20G	\$05#n2:	1-1/4in	IP20G		615 lbs	352 lbs	PDF
IPPN08G	\$5#n3:	1/2in	IP08G-OP	open type	178 lbs	114 lbs	PDF
IPPN10G	\$5#n4:	5/8in	IP10G-OP		265 lbs	174 lbs	PDF
IPPN12G	\$5#n5:	3/4in	IP12G-OP		307 lbs	193 lbs	PDF
IPPN16G	\$05#n6:	1in	IP16G-OP		352 lbs	220 lbs	PDF
IPPN20G	\$05#n7:	1-1/4in	IP20G-OP		615 lbs	352 lbs	PDF



Internal Self-aligning Feature



PBC Linear Simplicity® 60 Plus Linear Shaft Features

- Optimized surface finish for plain and ball bearings
- Straightness: 0.001"–0.002" per ft cumulative
- Length Tolerance: ± 0.030 "
- Surface Finish: 8-12Ra
- Hardness:
 - RC60-65 for 1060 Steel
 - RC50-55 for 440C Stainless Steel



In most applications, smoother is not better; in fact it means decreased performance and shortened life. PBC Linear has engineered the surface finish for optimum performance

PBC Linear Shafts (1060 Carbon Steel)					
Part Number	Price	Nominal Diameter	Length	Material	Drawing Links
NIL04-006.000-SL	\$-5#j:	1/4in	6.0 in	1060 steel	PDF
NIL04-012.000-SL	\$-5#j:		12.0 in		PDF
NIL06-006.000-SL	\$-5#j:	3/8in	6.0 in		PDF
NIL06-012.000-SL	\$-5#j:		12.0 in		PDF
NIL06-018.000-SL	\$-5#j:	1/2in	18.0 in		PDF
NIL08-012.000-SL	\$-5#j:		12.0 in		PDF
NIL08-024.000-SL	\$-5#j:	5/8in	24.0 in		PDF
NIL08-036.000-SL	\$-5#j:		36.0 in		PDF
NIL10-012.000-SL	\$-5#j:	3/4in	12.0 in		PDF
NIL10-024.000-SL	\$-5#j:		24.0 in		PDF
NIL10-036.000-SL	\$-5#j:	1in	36.0 in		PDF
NIL12-012.000-SL	\$-5#j:		12.0 in		PDF
NIL12-024.000-SL	\$-5#j:	1-1/4in	24.0 in		PDF
NIL12-036.000-SL	\$-5#j:		36.0 in		PDF
NIL16-012.000-SL	\$-5#j:	1-1/2in	12.0 in		PDF
NIL16-024.000-SL	\$-5#j:		24.0 in		PDF
NIL16-036.000-SL	\$-5#j:	1-3/4in	36.0 in		PDF
NIL20-012.000-SL	\$-5#j:		12.0 in		PDF
NIL20-024.000-SL	\$-5#j:	1-3/4in	24.0 in		PDF
NIL20-036.000-SL	\$-5#j:		36.0 in		PDF

PBC Linear Shafts (440C Stainless Steel)					
Part Number	Price	Nominal Diameter	Length	Material	Drawing Links
NIL06SS-006.000-SL	\$-5#j:	3/8in	6.0 in	440C stainless steel	PDF
NIL06SS-012.000-SL	\$-5#j:		12.0 in		PDF
NIL08SS-012.000-SL	\$5#k0:	1/2in	24.0 in		PDF
NIL08SS-024.000-SL	\$5#k1:		36.0 in		PDF
NIL10SS-012.000-SL	\$5#k3:	5/8in	12.0 in		PDF
NIL10SS-024.000-SL	\$5#k4:		24.0 in		PDF
NIL10SS-036.000-SL	\$05#k5:	3/4in	36.0 in		PDF
NIL12SS-012.000-SL	\$5#k6:		12.0 in		PDF
NIL12SS-024.000-SL	\$5#k7:	1in	24.0 in		PDF
NIL12SS-036.000-SL	\$05#k8:		36.0 in		PDF
NIL16SS-012.000-SL	\$5#k9:	1-1/4in	12.0 in		PDF
NIL16SS-024.000-SL	\$05#ka:		24.0 in		PDF
NIL16SS-036.000-SL	\$05#kb:	1-3/4in	36.0 in		PDF
NIL20SS-012.000-SL	\$5#kc:		12.0 in		PDF
NIL20SS-024.000-SL	\$05#kd:	1-3/4in	24.0 in		PDF
NIL20SS-036.000-SL	\$05#ke:		36.0 in		PDF

PBC Linear Shaft Support Features

- End support blocks can be used for end or intermediate shaft support
- Instant bolt-down installation
- Lightweight and strong.
- Can be used with all shaft types.
- Should be used where deflection between supports is not a problem.
- Material: Aluminum with anodize finish
- Center height tolerance: ± 0.001 "



PBC Shaft Support				
Part Number	Price	Nominal Diameter	Center Height	Drawing Links
NSB04	\$-5#7:	1/4 in	11/16 in	PDF
NSB06	\$-5#8:	3/8 in	3/4 in	PDF
NSB08	\$-5#9:	1/2 in	1 in	PDF
NSB10	\$-5#a:	5/8 in	1 in	PDF
NSB12	\$-5#b:	3/4 in	1-1/4 in	PDF
NSB16	\$-5#5:	1 in	1-1/2 in	PDF
NSB20	\$-5#6:	1-1/4 in	1-3/4 in	PDF



PBC Linear Supported Shafts

PBC Linear Simplicity® 60 Plus Supported Linear Shaft Features

- Optimized surface finish for plain and ball bearings
- Straightness: 0.001"–0.002" per ft cumulative
- Length Tolerance: ± 0.030 "
- Surface Finish: 8-12Ra
- Hardness:
 - RC60-65 for 1060 Steel
 - RC50-55 for 440C Stainless Steel
- Shaft support material: Aluminum
- Centerline tolerance: ± 0.002 "



Optimized shaft finish
for ball bearings



Optimized shaft finish
for plain bearings

In most applications, smoother is not better; in fact it means decreased performance and shortened life. PBC Linear has engineered the surface finish for optimum performance

PBC Supported Linear Shafts (1060 Carbon Steel)

Part Number	Price	Nominal Diameter	Length	Material	Drawing Links
SRA08-012.000-SL	\$05#kf:	1/2in	12.0 in	1060 steel	PDF
SRA08-024.000-SL	\$05#kg:		24.0 in		PDF
SRA08-036.000-SL	\$05#kh:		36.0 in		PDF
SRA10-012.000-SL	\$05#ki:	5/8in	12.0 in		PDF
SRA10-024.000-SL	\$05#kj:		24.0 in		PDF
SRA10-036.000-SL	\$05#kk:		36.0 in		PDF
SRA12-012.000-SL	\$05#kl:	3/4in	12.0 in		PDF
SRA12-024.000-SL	\$05#kn:		24.0 in		PDF
SRA12-036.000-SL	\$05#ko:		36.0 in		PDF
SRA16-012.000-SL	\$05#kp:	1in	12.0 in		PDF
SRA16-024.000-SL	\$05#kq:		24.0 in		PDF
SRA16-036.000-SL	\$05#ks:		36.0 in		PDF
SRA20-012.000-SL	\$05#kt:	1-1/4in	12.0 in		PDF
SRA20-024.000-SL	\$05#ku:		24.0 in		PDF
SRA20-036.000-SL	\$05#kv:		36.0 in		PDF

PBC Supported Linear Shafts (440C Stainless Steel)

Part Number	Price	Nominal Diameter	Length	Material	Drawing Links
SRA08SS-012.000-SL	\$05#kx:	1/2in	12.0 in	440C stainless steel	PDF
SRA08SS-024.000-SL	\$05#ky:		24.0 in		PDF
SRA08SS-036.000-SL	\$05#kz:		36.0 in		PDF
SRA10SS-012.000-SL	\$05#kj:	5/8in	12.0 in		PDF
SRA10SS-024.000-SL	\$05#kl:		24.0 in		PDF
SRA10SS-036.000-SL	\$05#km:		36.0 in		PDF
SRA12SS-012.000-SL	\$05#kn:	3/4in	12.0 in		PDF
SRA12SS-024.000-SL	\$05#ko:		24.0 in		PDF
SRA12SS-036.000-SL	\$05#kp:		36.0 in		PDF
SRA16SS-012.000-SL	\$05#kq:	1in	12.0 in		PDF
SRA16SS-024.000-SL	\$05#kr:		24.0 in		PDF
SRA16SS-036.000-SL	\$05#ks:		36.0 in		PDF
SRA20SS-012.000-SL	\$05#kt:	1-1/4in	12.0 in		PDF
SRA20SS-024.000-SL	\$05#ku:		24.0 in		PDF
SRA20SS-036.000-SL	\$05#kv:		36.0 in		PDF