



Round Shaft Technology

Linear Bearings & Shafting



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I INCH SERIES

I Simplicity® Linear Plain Bearings

20 Closed FL Open FLN



I Linear Precision Ball Bearings

34 Closed IP Adjustable IPxx-AJ Open IPxx-OP



I Linear Ball Bearings – Precision Plus Self-Aligning

35 Closed IPS Open IPSxx-OP



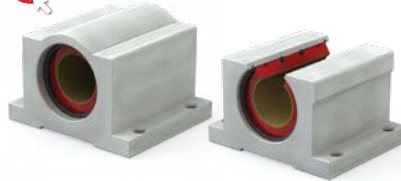
I Linear Ball Bearings – Double Wide

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I Simplicity Pillow Blocks

22 Closed P Open PN



I Simplicity Pillow Blocks – Twin

23 Closed PW Open PWN



I Linear Ball Bearing Pillow Blocks

36 Closed IPP Open IPPN



34 with Lubrication Port IPPS

I Linear Ball Bearing Pillow Blocks – Twin

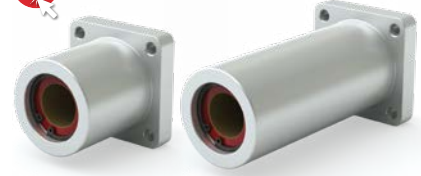
37 Closed IPPW Open IPPWN



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I Simplicity Flange Mounts

24 Single SFP Double DFP



I Die Set Flange Mounts

25 Single SDS Double DDS



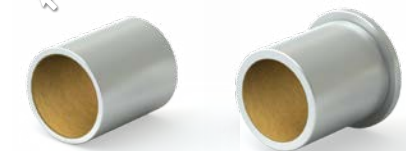
I Die Set Bushings

28 PAC

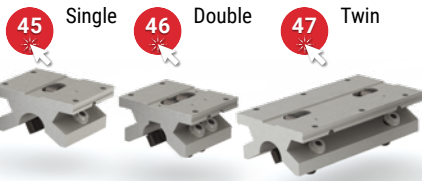


I Simplicity Sleeve Bearings

26 PS With Flange PSF



I Roller Pillow Block Bearings



I Shaft & Rail Systems



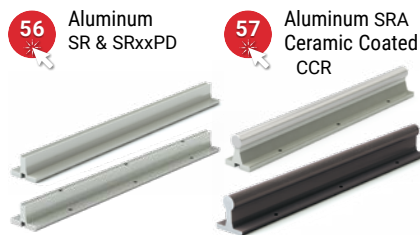
I Support Rail Systems



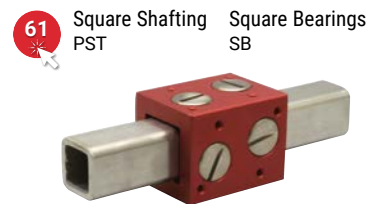
I Simplicity® 60 Plus® Shafting



I Support Rails & Assemblies

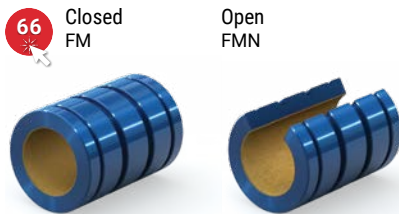


I Square Shafting, Bearings & Plugs



M ISO METRIC SERIES

M Simplicity Linear Plain Bearings



M Linear Ball Bearings – Precision Plus Self-Aligning



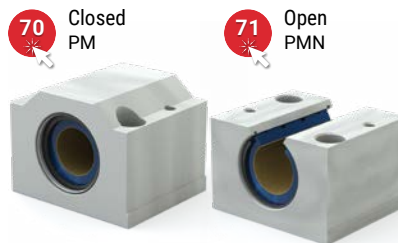
M Linear Precision Ball Bearings



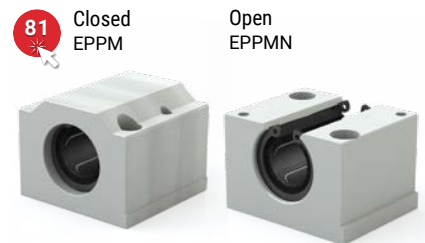
M Linear Ball Bearings – Double Wide



M Simplicity Pillow Blocks



M Linear Ball Bearing Pillow Blocks



M Thin Wall Ball Bearings



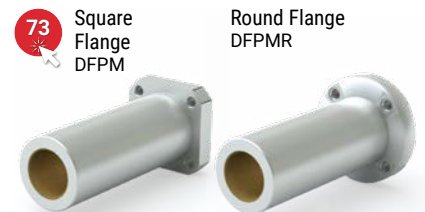
M Thin Wall Plain Bearings



M Simplicity Flange Bearings – Single



M Simplicity Flange Bearings – Double



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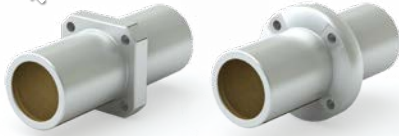
I Inch Series

M ISO Metric Series

J JIS Metric Series

M Simplicity Flange Bearings – Center Flange

- 74 Square Flange CFPM
- Round Flange CFPMR



M Linear Ball Bearings – Single

- 82 Square Flange EPK
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M Linear Ball Bearings – Double

- 84 Square Flange EPK-W
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M Linear Ball Bearings – Center Flange

- 86 Square Flange EPKC
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M Die Set Bushings

- 75 PACM



M Simplicity Sleeve Bearings

- 76 PSM
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M Roller Pillow Block Bearings

- 89 Single
- 89 Double
- 89 Twin



M Simplicity® 60 Plus® Shafting

- 91 RC60 Steel, Stainless Steel, NIM & NIMxxSS
- 92 Predrilled Shafts, Ceramic Coated, CCM & CCMDL



M Support Rails & Assemblies

- 93 Aluminum SRA, Ceramic Coated, CCR
- Aluminum SR & SRxxPD



J JIS METRIC SERIES

J Simplicity Linear Plain Bearings

- 95 Closed FJ
- Open FJN



J Linear Precision Ball Bearings

- 99 Closed JP
- Adjustable JPxx-AJ
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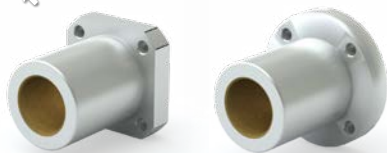
J Linear Ball Bearings – Double Wide

- 101 JP-W



J Simplicity Flange Bearings – Single

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- Round Flange SFPJR



J Simplicity Flange Bearings – Double

- 98 Square Flange DFPJ
- Round Flange DFPJR



J Simplicity Flange Bearings – Center Flange

- 99 Square Flange CFPJ
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J Linear Ball Bearings – Single

- 102 Square Flange JPK
- 103 Round Flange JPF



J Linear Ball Bearings – Double

- 104 Square Flange JPK-W
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J Linear Ball Bearings – Center Flange

- 106 Square Flange JPKC
- 107 Round Flange JPFC



INCH SERIES PLAIN BEARING & BALL BEARING LINEAR SLIDES

Ordering information found on product pages

I Simplicity Linear Slides

- 112 RS
- 114 Plate Supported RPS



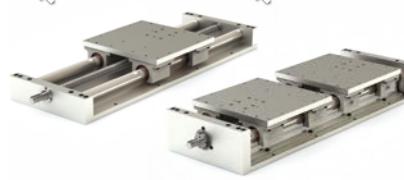
I Simplicity Linear Slides

- 118 Ball Screw Driven 2RPS
- 120 Low Profile LRPS



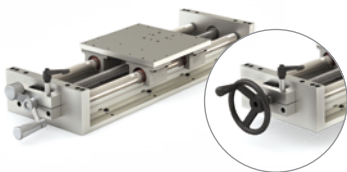
I Simplicity Linear Slides

- 122 Low Profile 2LRPS
- 124 Self Centering SC2RPS



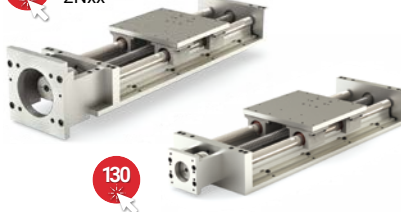
I Simplicity Linear Slides

- 126 Hand Crank 2HCR
- 127 Hand Wheel 2HWL



I Simplicity Linear Slides

- 128 NEMA Drive Kit 2Nxx
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@ Email an Application Engineer

TECHNICAL INFORMATION

Simplicity Linear Plain Bearings

- P138 - Ratings for Plain Bearings
- P139 - Types & Effects of Lubrication
- P140 - Load Capacity
- P141 - Wear Rate
- P142 - Coefficient of Friction

- P143 - Cantilevered Loads
- P145 - Shaft Deflection
- P147 - Installation
- P151 - Chemical Reaction Chart
- Linear Ball Bearings**
- P152 - Load Ratings

- P153 - Rating Life
- P155 - Clearance & Mounting
- Roller Pillow Block Bearings**
- P157 - Load & Sizing
- P158 - Adjustments & Curves
- P159 - Cross Reference Guide

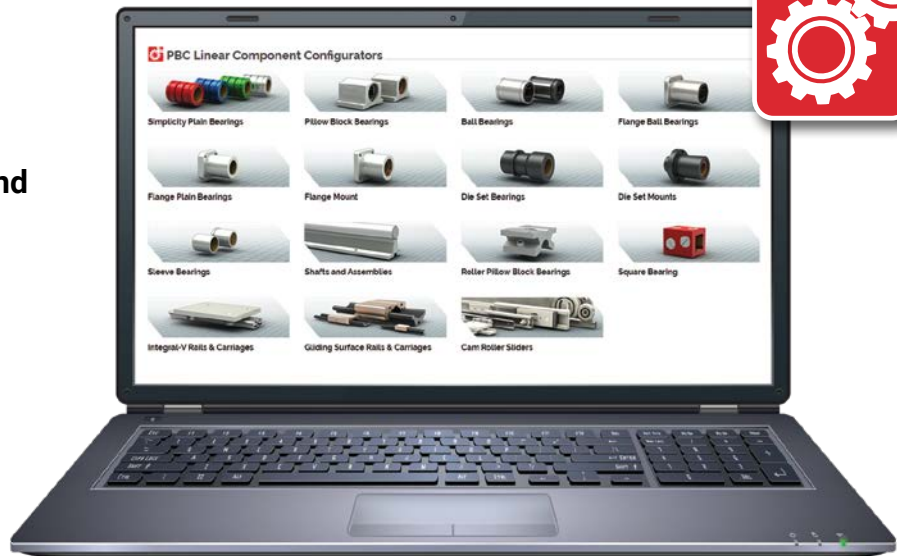
Check Out PBC Linear Configurators

Shafting • Roller Pillow Block • Support Rail Assembly

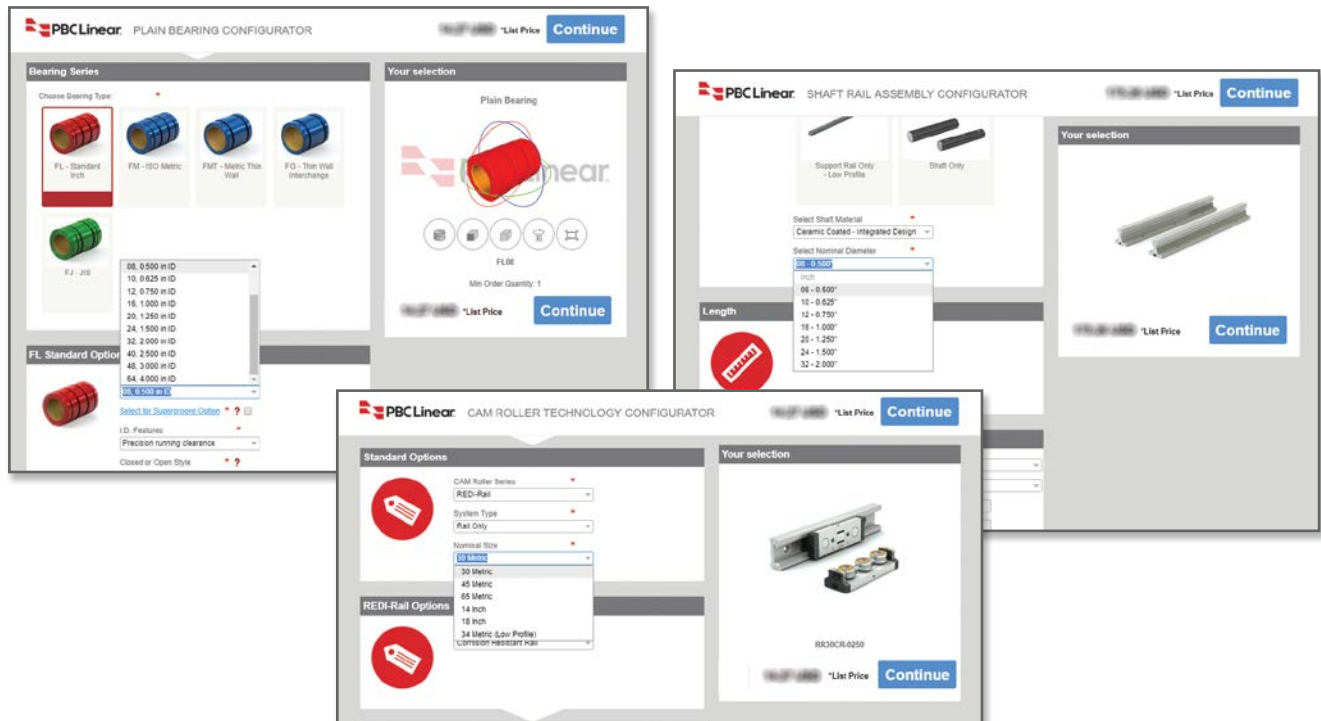
The PBC Linear configuration tools allow you to customize and configure linear components to exact specifications.



- Simple steps to configure and select product offerings
- Custom CAD file delivered in minutes
- Custom quote generated quickly and easily



- Visit pbclinear.com/Configure-Price-Quote and start designing!



Linear Shafting

Engineered for Maximum Linear Bearing Performance

simplicity
60 PLUS
S H A F T I N G



Optimized shaft finish
for ball bearings



Optimized shaft finish
for plain bearings.

Linear Ball Bearings

The right amount of microscopic surface texture holds lubrication for consistent smooth ball rotation minimizing the effects of metal-to-metal contact.

- **Excellent Rigidity:** providing smooth, quiet operation
- **Extremely Low Friction:** rolling elements provide consistent anti-friction movement
- **Outer Shell:** Available with steel jacket or self-aligning super bearing shell

Simplicity® Plain Bearings

The Frelon® break-in and transfer process operates at maximum efficiency with Simplicity 60 Plus Shafting resulting in true self-lubrication and the longest life possible.

- **Self-Lubricating:** maintenance-free, additional lubrication optional
- **Wide Temperature Ranges:** (-400°F/+400°F), (-240°C/+204°C)
- **Vibration Damping:** eliminates fretting corrosion



Only certified *Simplicity 60 Plus Shafting* provides maximum bearing performance.












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Product Selection Guide

I Inch Series

M ISO Metric Series

J JIS Metric Series

Shape	Sizes	Product Type & Description	Available In:			Found On Page		
			Open	Closed	Wide	I	M	J
Round Bearings	I	Plain Materials: aluminum alloy, stainless steel						
	M	 Self lubricating bearing with patented compound of PTFE developed for improved performance over other bearings. Standard sizes in stock.	●	●		20	66	95
	J							
	I	Ball Materials: steel and polymer						
	M	 Each ball bearing consists of an outer cylinder, ball retainer, balls, and double seals.	●	●	●	34	78	100
	J							
	M	Thin Wall Materials: aluminum alloy housing anodized or steel with polymer retainer			●		88	
Round Bearings with Housings	I	Sleeve & Sleeve with Flange Materials: aluminum alloy housing						
	M	 Replaces Oilite, bronze, and plastic bearings. Ideal for slow or moderate speeds for oscillating or rotary motion.		●		26	76	
	I	Roller Pillow Blocks Materials: aluminum and coated steel rollers						
	M	 Well suited for high loads and high speeds. Excels in contaminated environments and under high temperatures.	●			45	89	
	I	Open & Closed Pillow Blocks Materials: aluminum alloy housing with clear anodized coating						
	M	 Available with either plain or ball bearings. Self aligning for ease of mounting. Standard sizes in stock.	●	●	●	22	70	
Round Bearings with Housings	I	Flange Mount Materials: aluminum alloy housing with clear anodized coating and inner plain bearing						
	M	 Ease of mounting. Compact design.	●		●	24		
	J							
	M	Flange Bearing Materials: aluminum alloy housing with clear anodized coating or steel with polymer retainer						
	J	 Both plain and ball bearing available. Ease of mounting. Compact design.		●	●		72	97
Round Shafting	I	Die Set Flange Bushings Materials: aluminum housing with black anodized coating and inner plain bearing						
	M	 Mounting precision. Size interchangeable with industry standard die sets.		●	●	25	75	
	M							
Pre-Assembled Round Shaft	I	Round Shafting Materials: ceramic coated aluminum, hardened steel, 440 stainless steel						
	M	 Cut to length, random lengths, machined, pre-drilled, or tapped. Shaft assemblies and support rails also available.				52	91	
Square Bearings & Shafting	I	Linear Slide Assemblies Materials: alloy steel, 440 stainless steel, ceramic coated, or chrome plated 303 SST shafts, aluminum support rails, standard Simplicity pillowblocks						
	M	 Plain bearing and ball bearing slide assemblies. Standard components include mounting plate, pillow block assemblies, steel shafts, and support rails. Options include shaft materials, lead screws, ball screws, hand cranks, and motors.				109		
Square Bearings & Shafting	I	Square Bearings & Shafting Materials: aluminum alloy housing with red anodized coating and stainless steel square shafting						
	M	 Resists torque and eliminates extra costly components in parallel shafts.		●		61		

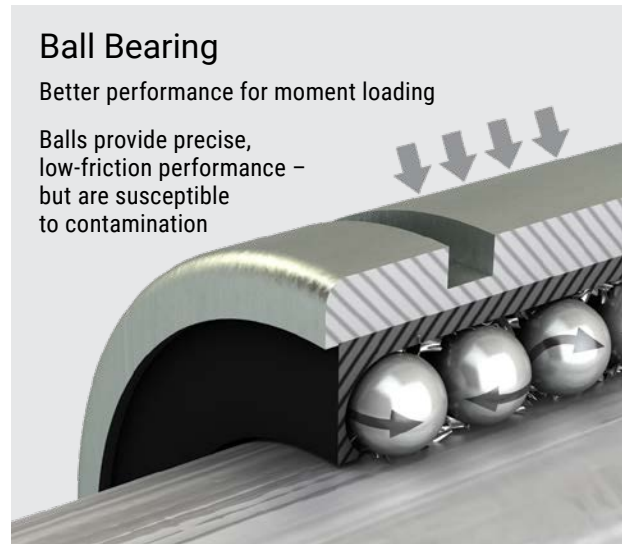
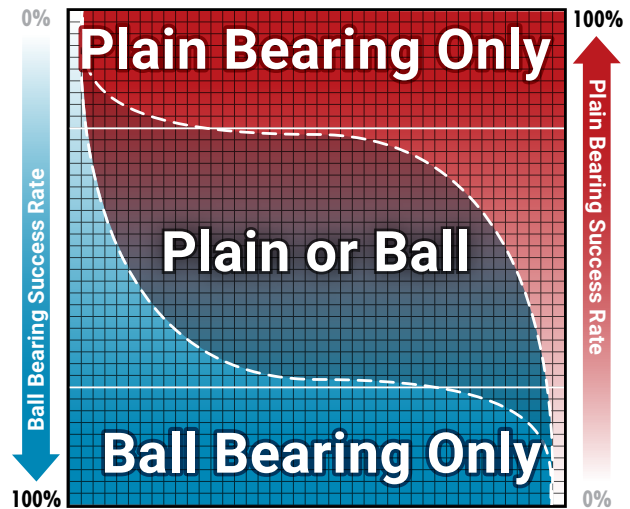
Simplicity Plain Bearing Product Overview

Linear Plain & Ball Bearings




Good engineering principles dictate that the best bearing design be utilized for any given bearing application. Each type of bearing has advantages and disadvantages. Strengths or limitations can make it a clear choice depending on the application environment. At other times, an engineer will have a choice because multiple types of bearings can meet the need.

In 1983, PBC Linear® created the self-lubricating Simplicity® linear bearing – a technology that solves problems in dirt, vibration, shock loading, cleanrooms, welding, foundry, and washdown situations where linear ball bearings regularly fail.

Today, PBC Linear provides a full range of linear motion solutions for both plain bearing and ball bearing applications – giving engineers the versatility to choose the right bearing for the application. Chart to the right here is intended to help guide in that decision making process.



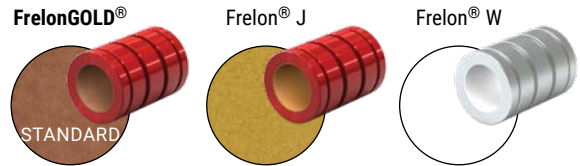
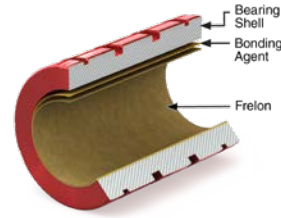
PERFORMANCE

Bearing Type	Load	Moment Loads	Linear Speed	Coefficient Of Friction	Precision	Environment
 <p>Plain</p>	Up to 20x ball bearings	Limited due to 2:1 ratio  Link to 2:1 Ratio	Up to 300 sfm (1.524 m/sec) dry running Up to 825 sfm (4.19 m/sec) with lubrication	FrelonGOLD® = 0.125 Consistent over life and in a variety of environments	Precision running clearance = 0.0005" (0.0127 mm) per side	Excels in contaminated, wet, dry, and clean room applications
 <p>Ball</p>	Limited due to point-to-point contact of balls to shaft	Moderate to good High moment loads can cause increased wear and shorten bearing life	Up to 3 m/sec (590 sfm) Always requires lubrication	Average = 0.05 Can change dramatically dependent on environmental conditions	Can be preloaded, virtually eliminating play This can shorten life	Will corrode and fail in contamination

Performance Benefits Simplicity® Plain Bearings

Frelon® + Precision Bearing Technology = Simplicity®

- The Frelon liner is bonded to the bearing shell at the molecular level, which transfers the load and dissipates heat buildup throughout the bearing
- Will not rust or corrode due to anodized aluminum or 316 stainless steel shell
- Patented self-aligning capabilities are standard
- Provides both linear, oscillating, rotary, or any combination of motions
- Maintenance free operation
- Smooth and quiet operation – plus long life
- Highly accurate – all critical surfaces are ground on precision bearing grinders
- Will not catastrophically fail or damage shaft

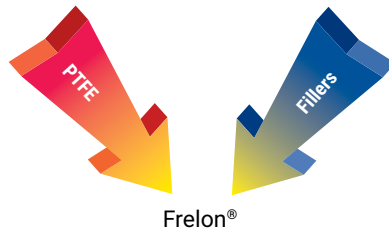


Frelon Bearing Liner Materials

The Frelon liners are compounds of PTFE and fillers developed for improved performance over other bearings. They provide low wear, low friction, self-lubrication, and high strength.

PTFE Features:

- Self-lubricating (runs without added lubricant)
- Embeddability of hard particulate
- Wide temperature range (-400°F to +400°F) (-240°C to +204°C)
- Chemically inert
- Vibration damping (no metal-to-metal contact)



Filler Benefits:

- High load capacity
- High strength
- Low wear rate vs. other materials

- FrelonGOLD® – dark gold high performance material compatible with RC60 hardened steel shafting, RC70 ceramic coated, and 440 stainless steel shafting.
- Frelon J – yellow material formulated to provide the optimum performance with 300 series stainless steel and softer shafting such as bare aluminum.
- Frelon W – white color, food-grade liner, FDA compliant, compatible with stainless steel and softer metal shafting.
- PBC Linear's unique bonding process facilitates the ability to provide solutions for applications with a range of additional bearing liner materials. Contact PBC Linear to discuss your specific application.



Email an Application Engineer

PERFORMANCE

Simplicity® 60 Plus® Shafting

The PBC Linear development team, working in close conjunction with engineers from Lee Linear®, have together formulated a linear shaft designed specifically for optimal bearing performance – *Simplicity 60 Plus Shafting*. Advanced process capabilities maintain the ideal surface finish resulting in the longest life and highest performing shaft-to-bearing combination.

Don't be misled—all shafting is not alike! Don't settle for below average performance. The smoothest shafting is NOT always the best for all situations. **In most applications, smoother does not equal better; in fact, it means decreased performance and shortened life.** A shaft surface finish of 8-12 Ra is the optimal smoothness for linear plain and ball bearings.

Simplicity 60 Plus Shafting provides maximum linear bearing performance and the following features:

- Optimized shaft surface finish for plain bearings
- Customizable length and machined features via the configurator with no minimum quantities
- Faster Made in the USA



Only certified Simplicity 60 Plus Shafting provides maximum linear bearing performance.

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Plain Bearings Simplicity®

Running Clearance

Simplicity bearings are available with two classes of running clearance:

PRECISION—"FL":

- Performs like a preloaded ball bearing
- Tightest running clearance approximately 0.001" (0.025 mm)
- Used in applications that require high precision

CAUTION Not recommended for all parallel shaft applications. Any misalignment can cause binding on the shaft. Recommend—"FLC" (see below).

COMPENSATED—"FLC":

- Performs like a standard ball bearing
- Additional clearance built into the I.D.—all other dimensions are the same as the precision bearings
- Ideally suited for parallel shaft applications

Note: Many parallel shaft applications will run "FL" precision on one rail and "FLC" compensation on the opposite rail to accommodate slight misalignments.

Bearing Shell

Simplicity bearings are available in a variety of configurations to help meet specific application needs:

- Standard is aluminum alloy with anodized finish
- 316 stainless steel (no plating)

MATERIALS:

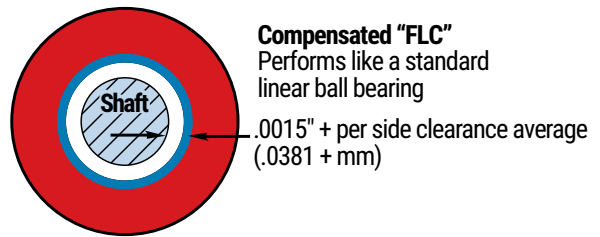
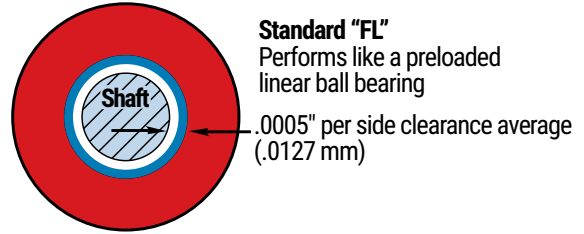
Aluminum Alloy – Is a heat treated and artificially aged aluminum with good strength and corrosion resistance.

316 Stainless Steel – Has an excellent corrosion resistance and is widely used by the paper, food, and other industries.

FINISHES:

Standard Anodized – A sulfuric bath anodizing with a nickel acetate seal that will stand up to 14 days exposure in a 5% salt spray solution at 96°F. It is applied at a 0.0002" thickness.

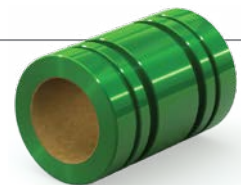
RUNNING CLEARANCE



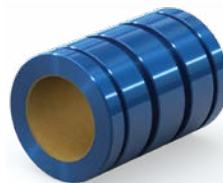
Standard



Inch Series

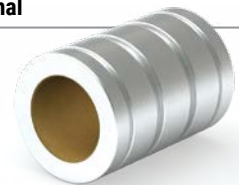


JIS Metric Series



ISO Metric Series

Optional



316 Stainless Steel

[Link to the Simplicity Video](#)

[More Information about Simplicity's Chemical Resistance](#)



Only certified Simplicity 60 Plus Shafting provides maximum linear bearing performance.

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Plain Bearings Simplicity®

Self-Alignment Feature

Simplicity bearings are available with a standard straight O.D. or a crowned self-aligning O.D.

FL – (Standard):

- Straight O.D.
- Standard pillow blocks have the self-aligning capability designed into the block using standard "FL" bearings for the final assembly

FLA – (Self-aligning O.D.):

- Has a crown on the O.D. allowing the bearing to re-align itself in binding situations
- Specifically designed to easily retrofit straight bore housings
- The bearing will allow 1/2° of misalignment capability from centerline (1° overall)
- O-rings are used on either side of the crown to cushion and eliminate clatter in operation

Pillow Blocks

- Made of aluminum alloy
- Pillow blocks are interchangeable with industry standard ball bearing pillow blocks
- Critical centerline dimensions hold accuracy within $\pm 0.001"$ on inch sizes and ± 0.015 mm on metric sizes

FINISHES:

- Clear anodized finish (Standard)

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

- Standard pillow blocks have 1/2° 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

Rigid or straight bore housings are available:

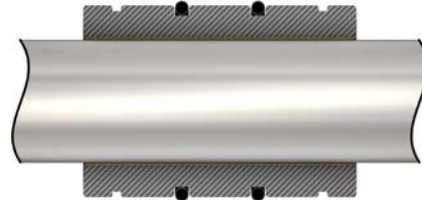
- This does not allow for any self-alignment and provides a very rigid assembly
- They are typically used in single shaft applications

Open Bearings Orientation

Simplicity bearings can operate in any orientation. Load capacities will vary on open bearings depending on the orientation in which they are being used.

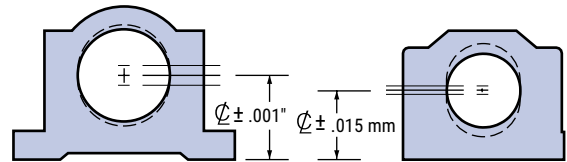
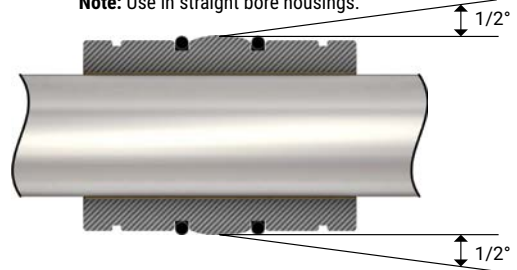
Standard FL – Straight O.D.

Note: Standard pillow blocks use FL bearings with self-alignment built into the I.D. of the block.

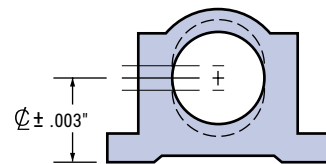


Self-Aligning FLA – Spherical O.D.

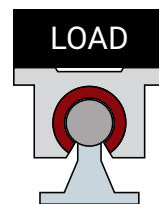
Note: Use in straight bore housings.



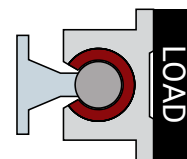
SIMPLICITY = TIGHTER TOLERANCES



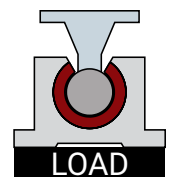
INDUSTRY STANDARD



100% Capacity



70% Capacity



40% Capacity

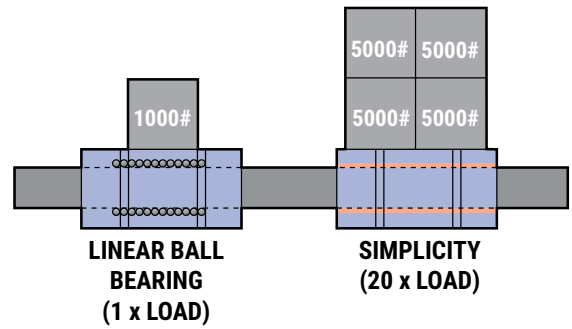
Plain Bearings Simplicity®

Load Capacity Of Liner

Simplicity bearings can carry from 4 to 20 times the load of a linear ball bearing.

Bearing Material	Static Load Capacity
FrelonGOLD®	3000 psi or 210.9 kgf/cm ²
Frelon® J / Frelon® W	1500 psi or 105.45 kgf/cm ²

- Allows the engineer to maintain performance in a smaller designed package
Example: Simplicity 1/2" I.D. = 1" I.D. linear ball bearing
- Shock loads and vibration are absorbed
- Metal-to-metal contact is eliminated providing a smoother, quieter running assembly

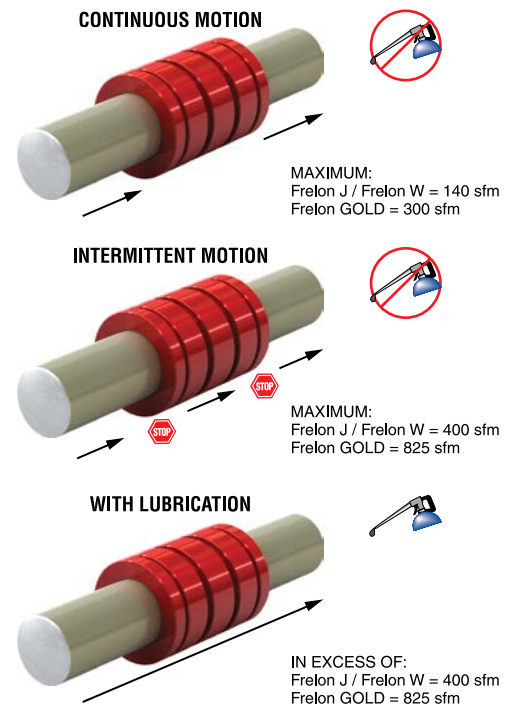


Speed Characteristics

Exceeding these speeds causes frictional heat and accelerates liner wear.

Bearing Material	No Lube Continuous Motion	No Lube Intermittent Motion	With Lubrication*
FrelonGOLD®	300 sfm	825 sfm	825 sfm
	60 in./sec.	165 in./sec.	165 in./sec.
	1.524 m/sec.	4.19 m/sec.	4.19 m/sec.
Frelon® J / Frelon® W	140 sfm	400 sfm	400 sfm
	28 in./sec.	80 in./sec.	80 in./sec.
	0.711 m/sec.	2.03 m/sec.	2.03 m/sec.

*Depending on the lubrication used, loads, and frequency of continuous or intermittent motion, speeds can be in excess of the numbers shown.



Performance Ratings (for Linear Motion)

Plain bearings are rated by their limiting PV, which is a combination of load over a given surface area and the velocity.

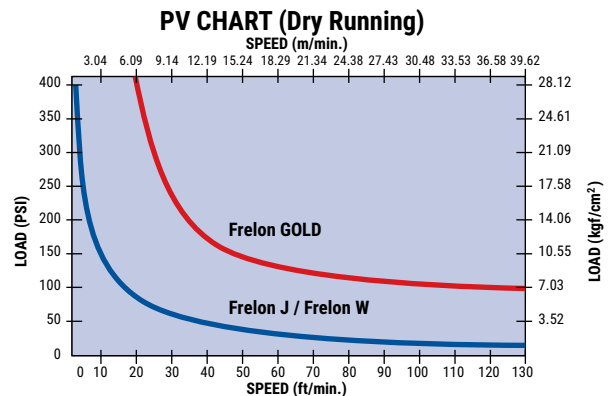
Bearing Material	MAX. "PV"	MAX. "P"	MAX. "V" (No Lubrication)
FrelonGOLD®	20000 (psi) x ft./min.)	3000 psi	300 sfm
	430 (kgf/cm ² x m/min.)	210.9 kgf/cm ²	91.44 m/min.
Frelon® J / Frelon® W	10000 (psi x ft./min.)	1500 psi	140 sfm
	215 (kgf/cm ² x m/min.)	105.45 kgf/cm ²	42.66 m/min.

PV = The performance measurement of plain bearings

PV = P x V where P = pressure (load) in psi (kgf/cm²)

V = velocity (speed) in sfm (m/min.)

Note: All three parameters must be met by an application for the bearing to perform properly.



PERFORMANCE

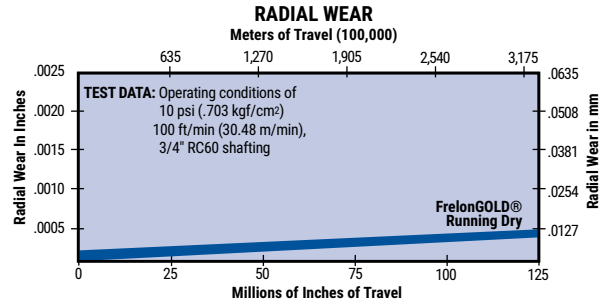
Plain Bearings Simplicity®

Wear Rate/Life Expectancy

The life expectancy of a Simplicity bearing is dependent on application parameters:

- Shaft hardness, surface finish, and preparation
- Length of travel
- Temperature
- Contamination
- Running clearance
- Lubrication
- Speed

The Radial Wear chart gives a guideline for a typical application at 10 psi (.703 kgf/cm²) traveling at 100 ft./min. (30.48 m/min.).



Factors Affecting Wear Rate/Life

Shafting requirements for Frelon® bearing materials include:

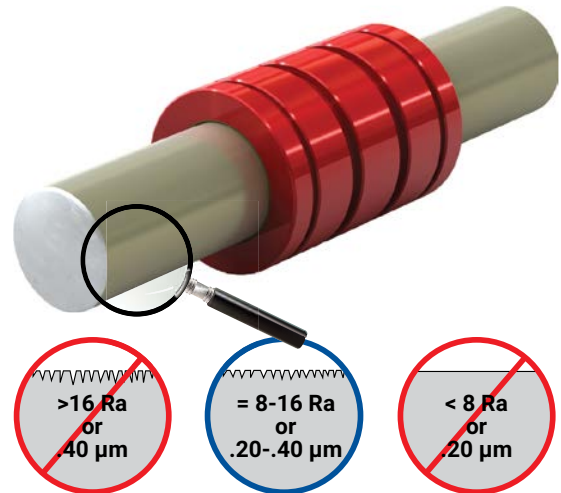
BEST PERFORMANCE:

- Finish of 8–12 Ra
- Hardness of RC 60

ACCEPTABLE PERFORMANCE:

- Finish of 8–16 Ra
- Hardness of RC 35
- Surface finish requirements apply to all Frelon bearing materials
- Rougher shafting can be used, but both bearing and shafting will wear at accelerated rates and binding may occur

Note: Consult factory if using chrome plated shafting that is polished to < 8 Ra.



PERFORMANCE

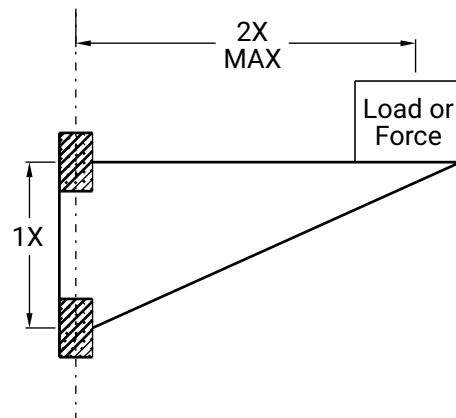
Cantilevered Loads

- Maximum 2:1 ratio
- 1x = bearing separation on same shaft
- 2x = distance from shaft to load or force

Example: If 2x equals 10" then 1x must be at least 5"

CAUTION Binding will occur if the 2:1 ratio is exceeded.

 **2:1 Ratio Information**



Plain Bearings Simplicity®

Transfer Process Of Liner To Shaft

The interaction of the Frelon® material and the shafting creates a natural, microscopic transfer of the Frelon to the running surface. A thin film is deposited on the shaft, and the valleys in the surface finish are filled in with Frelon material during the initial break-in period. This transfer creates the self-lubricating condition of Frelon riding on Frelon.

This break-in period varies depending on several criteria:

1. Preparation of the shafting prior to installation – it is best to clean the shafting with a 3-in-1 type oil before installing the bearings. This ensures that the surface will receive a full transfer of material.
2. Speed, load, and length of stroke specific to the application – typically the initial transfer process will take approximately 50-100 strokes of continuous operation. The running clearance on the bearing will increase an average of 0.0002" to 0.0005", depending on the length of the stroke and surface requiring the transfer.
3. How often the shafting is cleaned – if the shafting is cleaned regularly, increased wear will be seen in the bearings. This is due to the transfer process being performed over and over again.

CAUTION Do not repeatedly clean the shafting with alcohol. This will remove the previously transferred material entirely and increase the wear to the bearing liner.

CAUTION Do not use smooth chrome shafting with Frelon bearings. The surface finish is less than 8 Ra and does not maintain proper transfer of Frelon material. This will result in accelerated wear.

Lubrication

- Reduce friction up to 50%
- Minimize wear of liner
- Reduce heat buildup allowing greater speeds
Actual speeds achieved are dependent on type of lubricant and frequency of application
- Aid in cleaning the shafting for a proper transfer process
A minimum of initial lubrication of Simplicity bearings is strongly recommended

Chemical Resistance

Simplicity bearings stand up to harsh environments and provide excellent performance in a submerged condition.

FrelonGOLD® – the fillers in the material can be attacked by deionized water and other harsh chemicals

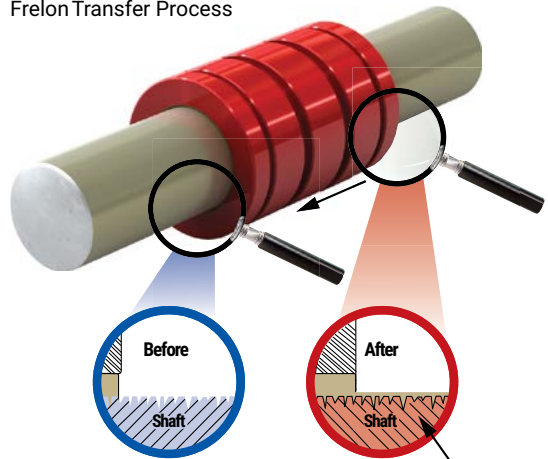
Frelon J – almost universal chemical inertness: Only molten sodium and fluorine at elevated temperatures and pressures show any signs of attack

Frelon W – A white colored food-grade liner that is FDA compliant

Anodized Aluminum Shell (Standard) – good chemical resistance in most industrial applications

316 Stainless Steel Shell (Optional) – excellent chemical and corrosion resistance in harsh environments

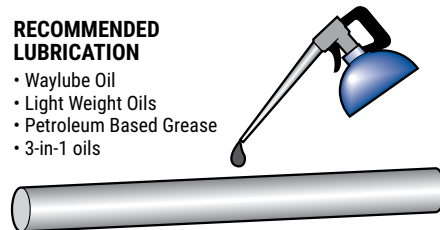
Frelon Transfer Process



At break-in, Frelon deposits a microscopic film on the shaft and fills the valleys in the surface finish creating a Frelon-on-Frelon running condition that is true self-lubrication.

RECOMMENDED LUBRICATION

- Waylube Oil
- Light Weight Oils
- Petroleum Based Grease
- 3-in-1 oils



NOT RECOMMENDED

- WD-40
- PTFE Sprays
- Fluorocarbons
- Silicon Oils, Grease or Spray

WD40® is a registered trademark of the WD40 company



More Information about Simplicity's Chemical Resistance

Plain Bearings Simplicity®

Temperature

Simplicity bearings can operate in a wide range of temperatures (-400°F to +400°F) (-240°C to +204°C). Depending on the materials housed in the pillow block and the size of bearing

- Maintains the same performance characteristics
- The thin liner allows heat to dissipate through the bearing shell

Thermal Expansion

The standard bearing I.D. options are designed for use in most industrial applications.

For temperatures below 0°F, the standard I.D. is recommended (FL series).

For extreme high temperatures, the Compensated I.D. bearing is recommended (FLC) for the increased running clearance.



It is always best to inspect actual size at extreme temperatures to ensure proper running clearance.

Rotary Applications

Simplicity bearings will operate very well in rotary applications if applied properly.

Stationary rotary applications do not allow the heat to be spread over an extended area. It is retained in the I.D. of the bearing limiting speed and load.

- MAX rotary speed (No lube/continuous motion)
- 40 sfm (12.2 m/min.) for standard precision I.D. clearances
- 140 sfm (42.6 m/min.) for compensated I.D. clearances

$$V(\text{sfm}) = 0.262 \times d \times \text{RPM}$$

d = shaft diameter (inches)
RPM = revolutions per minute

- Properly maintained lubrication can increase these speeds dramatically



It is always best to do specific testing for rotary applications above these limits where lubrication is to be used.

Vacuums/Outgassing/Cleanrooms

Due to self-lubrication, low outgassing, and a minimum of particulate (buildup), Simplicity bearings are excellent in clean rooms and vacuums.

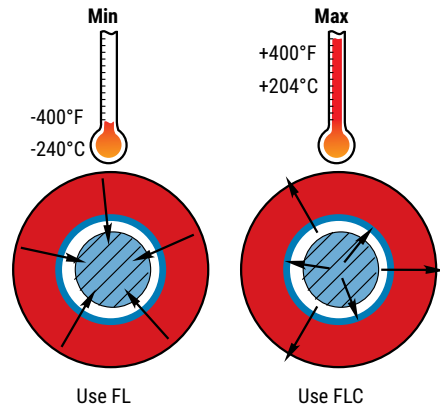
Testing has been done on the Frelon® materials in accordance with ASTM E-595-90 with acceptable maximums of 1.00% TML and 0.10% CVCM.

MATERIAL	%TML	%CVCM
FrelonGOLD®	0.00	0.00
Frelon J	0.18	0.01

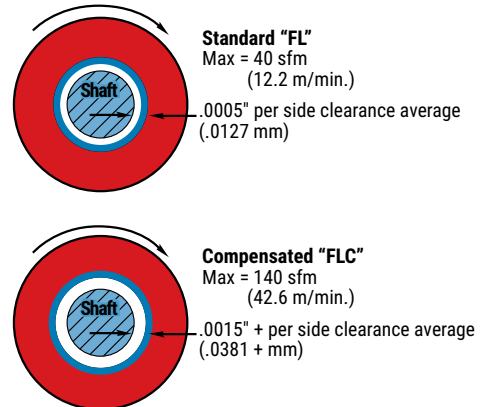
TML = Total Mass Loss

CVCM = Collected Volatile Condensable Materials

Temperature Extremes



Maximum Rotary Speeds



Submerged Applications

Simplicity bearings will provide excellent performance in a submerged condition.

The bearings will employ the fluid as a lubricant showing increased velocities and wear life. Oils and non-salt water are especially effective.

Note: Please contact factory before specifying FrelonGOLD for submerged applications.

Plain Bearings Simplicity®

O-Rings

Used in standard pillow blocks and with self-aligning bearings.

Nitrile Buna 70 (standard) – A good general purpose rubber that is used in 98% of applications (-65°F to 275°F (-54°C to 135°C)).

Viton (special – designate with “V”) – Used only in high temperature applications up to 400°F (up to 204°C).



Seals

Use only in the most contaminated environments.

Polymod® (standard) – A high performance polymer modified material that reduces friction of a standard buna material by 50% and increases wear life.

Polymod is a registered trademark of Polymod Technologies, Inc.

Temperature: -20°F to +212°F

Urethane (special - designate with “U”) – A moly-impregnated urethane scraper that is only for the severest applications - friction is greatly increased!

Temperature: -40 to +200°F

Viton™ (special - designate with “V”) – A brand of synthetic rubber and fluoropolymer elastomer used only in high temperature applications.

Temperature: Up to +400°F

Attention: 90% of applications do not require seals when using Simplicity bearings. The liner has a natural ability to wipe particles from the shafting. Any particulate (metal, sand, etc.) that does enter the bearing will embed itself into the soft liner not scoring the shafting or locking mechanical parts.

When ordering a bearing with any internal features (seals or internal lubrication), the bearing may or may not be shipped with extra internal grooves in addition to those needed for the ordered option. Low volume orders are more likely to have additional grooves. The extra grooves will not negatively impact the performance of the bearing.

Also, internal grooves are typically an anodized surface; however, in the interest of the quickest possible delivery, the internal grooves may not be anodized.

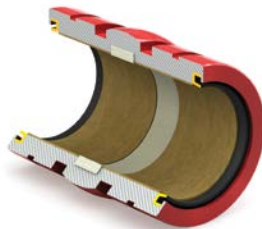
Lubrication System

Order with “JKM” modifier

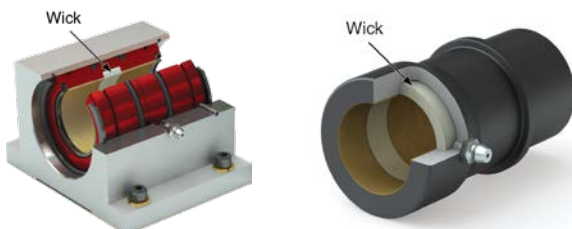
Lubrication system includes:

Felt wick – Retains oil lubricants (remove when using grease lubrication). Wicks are glued in place on open bearings while they just sit in place on closed bearings.

Zerk fitting – Installed into pillow block, other housing, or directly into die sets PAC, PACM. (Standard lube fitting with ¼-28 thread)



ZERK FITTING IN HOUSING



Bearing Alignment

Linear ball bearings will continue to operate in a misaligned condition, but can cause damage to the shafting and catastrophically fail.

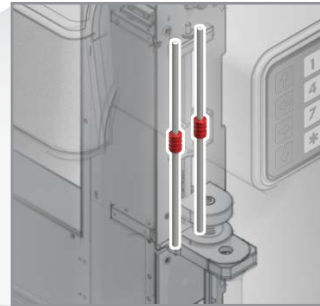
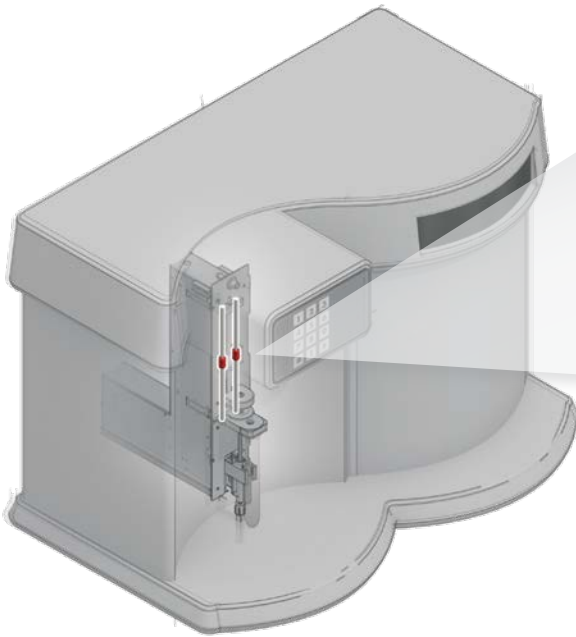
Simplicity bearings DO NOT tolerate misalignment. They simply stop moving without any damage to the shafting. Self-aligning housings aid in misalignment – up to 1/2° from centerline.

Note: Please refer to the tables in the installation section for possible solutions to misalignment.



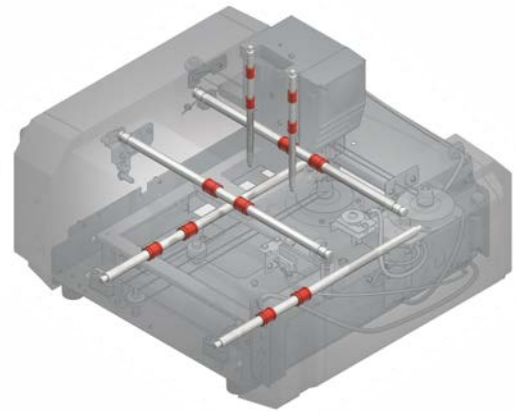
Misalignment Considerations—page 150

Applications

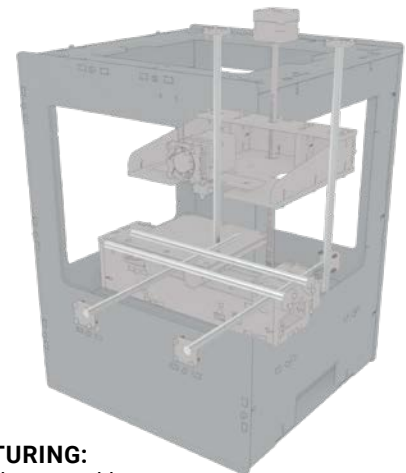
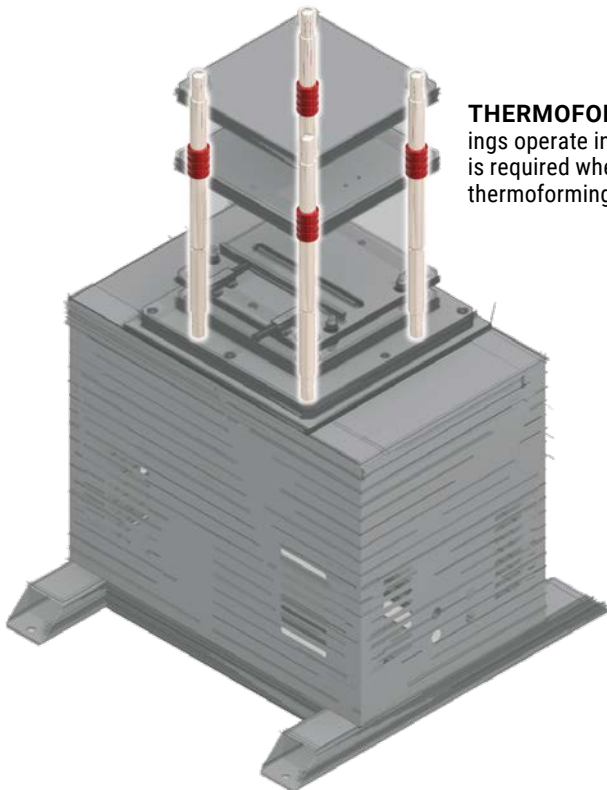


LAB EQUIPMENT: This blood analyzer utilizes Simplicity® plain bearings because they are self-lubricating and do not require additional grease, which can cause contamination.

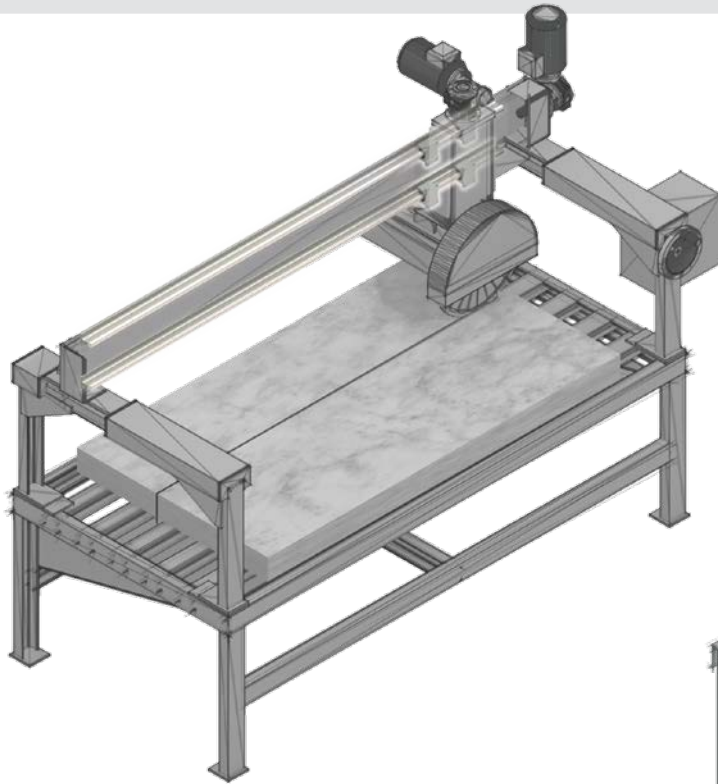
PRINTING: Commercial printers, 3D printers, laser printers, and deskjets all require smooth, precise, and quiet linear motion, which Simplicity linear plain bearings provide.



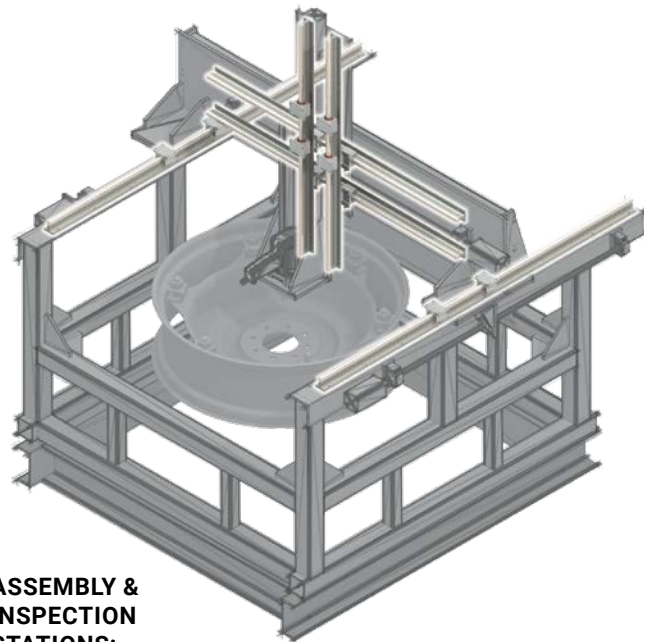
THERMOFORMING: Simplicity linear plain bearings operate in a wide range of temperatures, which is required when molding heated plastic sheeting in thermoforming machines.



ADDITIVE MANUFACTURING: 3D printers require smooth, repeatable linear motion, which is achieved with Frelon®-lined linear plain bearings.



STONE SAWS & HEAVY DUTY CUTTERS: Simplicity® linear plain bearings are self lubricating and excel in dirty or contaminated environments such as saws and cutters.

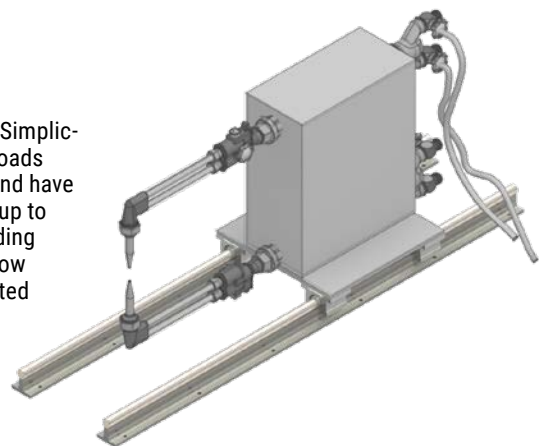


ASSEMBLY & INSPECTION STATIONS: Round Shaft Technology utilizes precision round shafting as a guideway and combines linear plain or ball bearings for movement – providing a low maintenance solution in assembly stations.

SEAT ADJUSTMENT & SHOCK ABSORPTION: Not all applications are easily accessible for maintenance or repair, including tough military vehicle seating. This is one reason Simplicity plain bearings, with Frelon® self-lubricating liner, is the best choice. Simplicity provides long-lasting linear motion that will not catastrophically fail.



WELDING MACHINES: Simplicity linear bearings handle loads over 700 kN (157,000 lb.) and have a high temperature range (up to 204°C). As required in welding applications, they require low maintenance in contaminated environments.



Ordering Information Plain Bearings



Configure
Online

Plain Bearings

Series

FL - Standard Inch Series
FLR - Supergroove Interchange
 Available only with **FL06, 08, 12, 16**

FM - ISO Metric Series
FMT - Compact ISO Metric Thin Wall Series
FG - "FAG™" Thin Wall Interchange

FJ - JIS Standard Series

PS - Inch Series Sleeve Bearings
PSF - Inch Series Flange Bearings

PSM - ISO Metric Series Sleeve Bearings
PSFM - ISO Metric Series Flange Bearings

O.D. Features

No Entry - Standard straight O.D. bearing
A - Crowned "self-aligning" O.D. bearing (closed only)
 Available only on **FL, FM, FJ** series

I.D. Features

No Entry - Standard precision running clearance on the I.D.
C - Compensated running clearance on the I.D.
 Does NOT apply to **PS, PSF, PSM, PSFM**

Closed or Open Style

No Entry - Standard closed bearing
N - Open series bearing (not available in **FLA, FMA, and FJA**)
 Available only on **FL, FM, FJ** series

Bearing Shell Material

Available ONLY on the **FL, FM, FMT, FG, FJ** series
No Entry - Standard aluminum alloy
***S** - 316 Stainless Steel
 *Made to order. No finish plating or anodize available.

Nominal Shaft Diameter

English units in 16ths of an inch
 Metric units in mm



Seal Options

D - Double seals of standard Polymod® material
DU - Double seals of moly impregnated urethane material
DV - Double seals of viton - high temperature material
 D, DU, and DV seals available with **FL08-FL32**
 DU seals available with **FM20-FM80, FJ20-FJ120**

Bearing Liner Material

No Entry - Standard Frelon GOLD® liner for hardened steel, ceramic coated, and 440 stainless steel shafting
***E** - Frelon J® liner for soft shafting (aluminum, 300 series stainless steel, etc.)
 * Limited availability may require special quote
W - Food grade liner (contact PBC Linear before ordering)

Internal Lubrication

No Entry - Standard bearing - No lube system
JKM - Thru hole, and internal felt wick to help lubrication retention and flow.
 JKM available with **FL08-FL64, FM12-FM80, FJ20-FJ150**

Special Modifications

No Entry - Standard Options
Q - Shipped Oil Free
 (contact PBC Linear before ordering)



Only certified Simplicity 60 Plus Shafting provides maximum linear bearing performance.

Inch Series—page 52 Metric Series—page 90

ORDERING

The data and specifications in this publication have been carefully compiled and are believed to be accurate and correct. However, it is the responsibility of the user to determine and ensure the suitability of PBC Linear® products for a specific application. PBC Linear's only obligation will be to repair or replace without charge, any defective components if returned promptly. No liability is assumed beyond such replacement. Specifications are subject to change without notice. Consult www.pbclinear.com for the latest technical updates.

Ordering Information Plain Bearings

Plain Bearings With Housings



Configure
Online

Series

- P** - Standard Inch Pillow Blocks (FL)
- PW** - Inch Twin Pillow Blocks (FL)
- PM** - ISO Metric Pillow Blocks (FM)
- SFP** - Inch Single Flange Mounts (FL)
- DFP** - Inch Double Flange Mounts (FL)
- SDSZ** - Single Flange Mount Die Set (FLA)
- DDSZ** - Double Flange Mount Die Set (FLA)
- PACZ** - Inch Die Set Bearings
- PACMZ** - ISO Metric Die Set Bearings
- SFPM** - ISO Metric Single Flange Bearings
- DFPM** - ISO Metric Double Flange Bearings
- CFPM** - ISO Metric Double Center Flange Bearings
- SFPJ** - JIS Metric Single Flange Bearings
- DFPJ** - JIS Metric Double Flange Bearings
- CFPJ** - JIS Metric Double Center Flange Bearings

Note: Standard Simplicity® bearings are installed in housings.

Metric flange bearings do not have bearing inserts

Closed or Open Style

- No Entry** - Standard Closed Series
- N** - Open Series

Available only on **P**, **PW**, **PM** series

Housing I.D. Features

No Entry - Standard spherical "self-aligning" I.D. in the housing. (Uses standard straight O.D. bearings.)

B - Straight I.D. housing. (For rigid fit use standard bearing. For self-alignment use FLA bearings.)

Available only on **P**, **PW**, **PM**, **SFP**, **DFP**, **SDS**, **DDS** series

No Entry - Standard Square Flange

R - Round Flange

Available only on **SFPM**, **DFPM**, **CFPM**, **SFPJ**, **DFPJ**, **CFPJ** series

Housings Only

- No Entry** - Housings with bearing included
- E** - Empty Housings with NO bearing included

Material

Z - Aluminum, Available only on **PAC/PACM** Diesets

Note: Steel no longer offered

S - SST Pillow Blocks (use **FLA** BRG, PB, Retainer)

Nominal Shaft Diameter

English units in 16ths of an inch
Metric units in mm



Bearing I.D. Features

- No Entry** - Standard Precision running clearance on the I.D.
- C** - Compensated running clearance on the I.D.

Seal Options

- D** - Double seals of standard Polymod® material
- DU** - Double seals of moly impregnated urethane material
- DV** - Double seals of viton - high temperature material

PAC and **PACM** available only as:

- S** - Single seals of standard Polymod® material
- SU** - Single seals of moly impregnated urethane material
- SV** - Single seals of viton - high temperature material

Bearing Liner Material

No Entry - Standard Frelon GOLD® liner for hardened steel or ceramic coated aluminum

***E** - Special Frelon J® liner for soft shafting (aluminum, 300 series stainless steel, etc.)

* Limited availability may require special quote

W - Food grade liner (contact PBC Linear before ordering)

Internal Lubrication

No Entry - Standard pillowblock assembly with no lubrication system

JKM - Thru holes and internal felt wick to help lubrication retention and flow 1/4-28 Zerk

Note: Zerk fitting installed into pillow block, other housing, or directly into die sets **PAC** & **PACM**.

Special Modifications

No Entry - Standard Options

Q - Shipped Oil Free

(contact PBC Linear before ordering)



Only certified Simplicity 60 Plus Shafting provides maximum linear bearing performance.

Inch Series—page 52 Metric Series—page 90

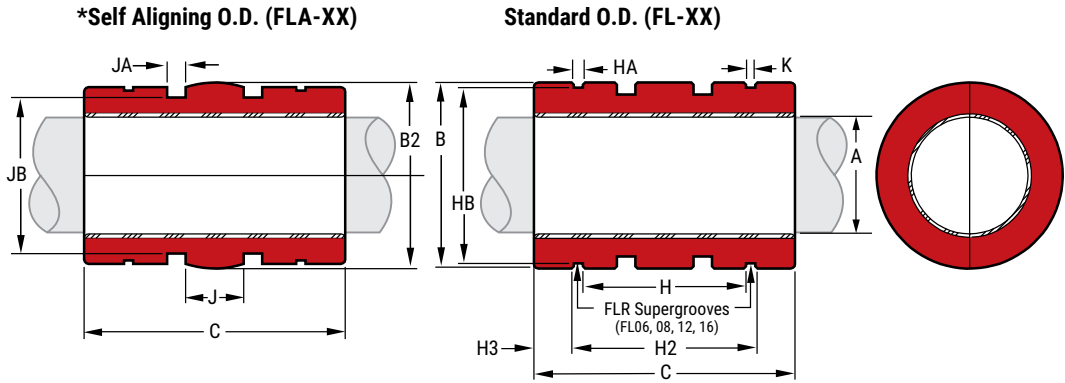
ORDERING

This catalog and part numbering system is designed to represent all possibilities which may not be standard parts. These are options only—combinations could lead to unavailable parts. Contact PBC Linear at 800-962-8979 for information.

Simplicity® Linear Plain Bearings

INCH

ISO METRIC



*Except for the O.D., bearings with the self-aligning feature have the same dimensions and tolerances as the standard bearing. There is a spherical crown on the O.D. to create the self-aligning feature. They are for use in a straight bore housing. Add an "A" to the part number for self-aligning bearings.

DIMENSIONAL INFORMATION

Precision I.D. Series Similar to Preloaded Ball Bearing				Compensated I.D. Series Allows additional Running Clearance				Nominal Size	B Standard O.D.		b2 Self-Aligning FLA Crown O.D.		C Length		Con-centric MAX.	Bearing Weight lb.	K FLR Ret. Ring Grv.
Part No.		A Bearing I.D.		Part No.		A Bearing I.D.			MIN.	MAX.	MIN.	MAX.	MIN.	MAX.			
Closed	Open	MIN.	MAX.	closed	open	MIN.	MAX.	in.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.			
FL 03	N/A	0.1877	0.1884	FLC 03	N/A	0.1897	0.1904	3/16	0.3740	0.3750	0.3725	0.3735	0.5470	0.5620	0.0010	0.0030	N/A
FL 04	FLN 04	0.2502	0.2511	FLC 04	FLCN 04	0.2522	0.2531	1/4	0.4990	0.5000	0.4975	0.4985	0.7350	0.7500	0.0010	0.0090	N/A
FL 06	FLN 06	0.3752	0.3761	FLC 06	FLCN 06	0.3772	0.3781	3/8	0.6240	0.6250	0.6225	0.6235	0.8600	0.8750	0.0010	0.0160	0.0720
FL 08	FLN 08	0.5002	0.5013	FLC 08	FLCN 08	0.5022	0.5033	1/2	0.8740	0.8750	0.8725	0.8735	1.2350	1.2500	0.0010	0.0410	0.0800
FL 10	FLN 10	0.6252	0.6263	FLC 10	FLCN 10	0.6272	0.6283	5/8	1.1240	1.1250	1.1225	1.1235	1.4850	1.5000	0.0010	0.0910	N/A
FL 12	FLN 12	0.7503	0.7516	FLC 12	FLCN 12	0.7533	0.7546	3/4	1.2490	1.2500	1.2475	1.2485	1.6100	1.6250	0.0010	0.1090	0.1710
FL 16	FLN 16	1.0003	1.0016	FLC 16	FLCN 16	1.0033	1.0046	1	1.5613	1.5625	1.5599	1.5609	2.2350	2.2500	0.0010	0.2280	0.1330
FL 20	FLN 20	1.2504	1.2519	FLC 20	FLCN 20	1.2544	1.2559	1-1/4	1.9988	2.0000	1.9974	1.9984	2.6100	2.6250	0.0010	0.4590	N/A
FL 24	FLN 24	1.5004	1.5019	FLC 24	FLCN 24	1.5044	1.5059	1-1/2	2.3738	2.3750	2.3724	2.3734	2.9850	3.0000	0.0010	0.7250	N/A
FL 32	FLN 32	2.0004	2.0022	FLC 32	FLCN 32	2.0054	2.0072	2	2.9986	3.0000	2.9973	2.9983	3.9850	4.0000	0.0010	1.4420	N/A
FL 40	FLN 40	2.5004	2.5022	FLC 40	FLCN 40	2.5054	2.5072	2-1/2	3.7484	3.7500	3.7472	3.7482	4.9850	5.0000	0.0013	2.8160	N/A
FL 48	FLN 48	3.0004	3.0022	FLC 48	FLCN 48	3.0064	3.0082	3	4.4980	4.5000	4.4970	4.4980	5.9850	6.0000	0.0015	4.9140	N/A
FL 64	FLN 64	4.0005	4.0026	FLC 64	FLCN 64	4.0065	4.0086	4	5.9980	6.0000	5.9970	5.9980	7.9850	8.0000	0.0020	11.8360	N/A

MOUNTING DIMENSIONS

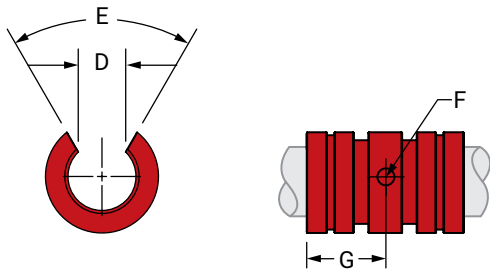
Part No.		Nominal Size in.	H	HA	HB	Truarc Ret. Ring Part No.	J	JA	JB	Parker O'Ring Part No.	H2	H3
Closed	Open		Between Ret. Rings	Ret. Ring Grv. Width	Ret. Ring Grv. Dia.		Between O'Ring Grvs.	O'Ring Grv. Width	O'Ring Grv. Dia.		FLR Between Rings	FLR Ring Edge
FL 03	N/A	3/16	0.375	0.030	0.352	N 5100-37	N/A	N/A	N/A	N/A	N/A	N/A
FL 04	FLN 04	1/4	0.437	0.041	0.467	N 5100-50	0.125	0.080	0.399	2-010	N/A	N/A
FL 06	FLN 06	3/8	0.562	0.041	0.587	N 5100-62	0.187	0.080	0.524	2-012	0.711/0.701	0.112
FL 08	FLN 08	1/2	0.875	0.048	0.820	N 5100-87	0.250	0.125	0.712	2-113	1.042/1.032	0.135
FL 10	FLN 10	5/8	1.000	0.058	1.060	N 5100-112	0.312	0.125	0.962	2-117	N/A	N/A
FL 12	FLN 12	3/4	1.062	0.058	1.177	N 5100-125	0.312	0.125	1.087	2-119	1.281/1.271	0.220
FL 16	FLN 16	1	1.625	0.070	1.471	N 5100-156	0.500	0.125	1.399	2-123	1.895/1.885	0.239
FL 20	FLN 20	1-1/4	1.875	0.070	1.889	N 5100-200	0.625	0.125	1.837	2-129	N/A	N/A
FL 24	FLN 24	1-1/2	2.250	0.089	2.241	N 5100-237	0.750	0.162	2.152	2-225	N/A	N/A
FL 32	FLN 32	2	3.000	0.105	2.839	N 5100-300	1.000	0.189	2.775	2-229	N/A	N/A
FL 40	FLN 40	2-1/2	3.750	0.123	3.553	N 5100-375	1.250	0.250	3.408	2-340	N/A	N/A
FL 48	FLN 48	3	4.500	0.123	4.309	N 5100-450	1.500	0.287	4.158	2-346	N/A	N/A
FL 64	FLN 64	4	6.000	0.145	5.748	N 5100-600	2.000	0.287	5.660	2-356	N/A	N/A

Note: FLR is only available on FL06, FL08, FL12 and FL16.

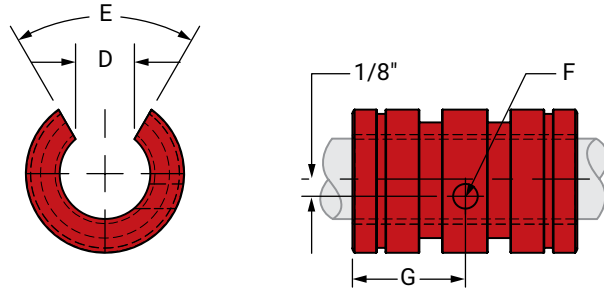
Simplicity® Linear Plain Bearings

Linear Plain Bearings FL & FLN

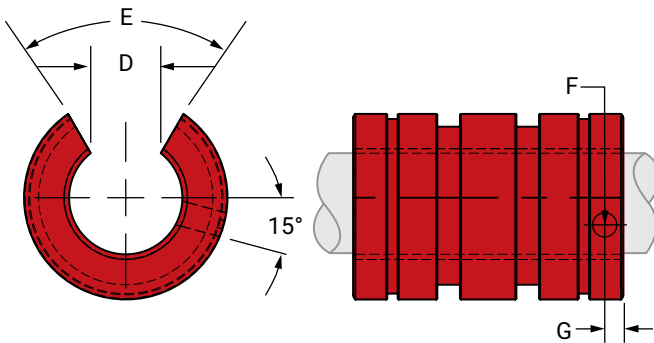
FLN 04 - FLN 06



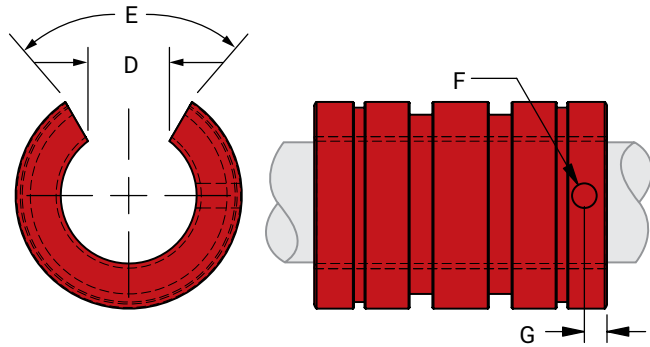
FLN 08



FLN 10



FLN 12 THRU FLN 64



OPEN DIMENSIONAL INFORMATION

Part No.		Nominal Size	D Slot Wide MIN.	E Slot Angle	F Retaining Hole Dia.	G Retaining Hole Locate	Bearing Weight
Precision	Compensated	in.				in.	lb.
FLN 04	FLCN 04	1/4	0.188	60°	0.094	3/8	0.008
FLN 06	FLCN 06	3/8	0.250	60°	0.094	7/16	0.013
FLN 08	FLCN 08	1/2	0.313	60°	0.136	5/8	0.034
FLN 10	FLCN 10	5/8	0.375	60°	0.136	1/8	0.072
FLN 12	FLCN 12	3/4	0.438	60°	0.136	1/8	0.091
FLN 16	FLCN 16	1	0.563	60°	0.136	1/8	0.184
FLN 20	FLCN 20	1-1/4	0.625	60°	0.201	3/16	0.381
FLN 24	FLCN 24	1-1/2	0.750	60°	0.201	3/16	0.603
FLN 32	FLCN 32	2	1.000	60°	0.265	5/16	1.192
FLN 40	FLCN 40	2-1/2	1.250	60°	0.265	5/16	2.334
FLN 48	FLCN 48	3	1.500	60°	0.265	5/16	4.080
FLN 64	FLCN 64	4	2.000	60°	0.265	5/16	9.870

Note: All other dimensions same as closed bearing. FrelonGOLD® and Frelon® J are registered trademarks of PBC Linear®.



Plain Bearing Accessories:
Retaining Rings, Seals, O-Rings—page 19



Only certified Simplicity 60 Plus Shafting provides maximum linear bearing performance.

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LOAD & SPEED DATA

Part No.	Effective Surface Area	MAX. Static Load lb.	
		Frelon GOLD	J & W
FL 03	0.110	220	100
FL 04	0.200	600	300
FL 06	0.340	1020	510
FL 08	0.650	1950	975
FL 10	0.980	2940	1470
FL 12	1.270	3810	1905
FL 16	2.350	7050	3525
FL 20	3.430	10830	5415
FL 24	4.700	14100	7050
FL 32	8.350	25050	12525
FL40	13.000	39000	19500
FL 48	18.800	56400	28200
FL 64	33.500	100500	50250

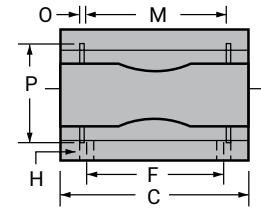
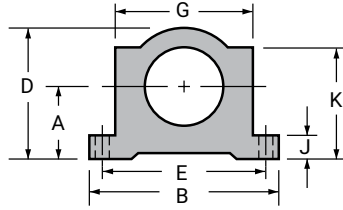
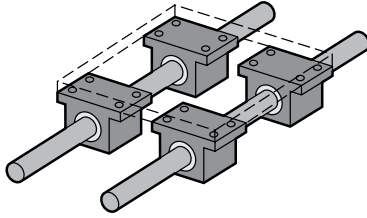
Note: MAX PV (ft./min. * psi)
FrelonGOLD = 20000 PV Frelon J = 10000 PV

MAX Speed Running Dry (ft./min.)
FrelonGOLD = 300 sfm Frelon J = 140 sfm

MAX Speed Running with Lubrication (ft./min.)
FrelonGOLD = 825 sfm Frelon J = 400 sfm

Simplicity® Pillow Blocks

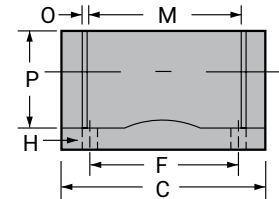
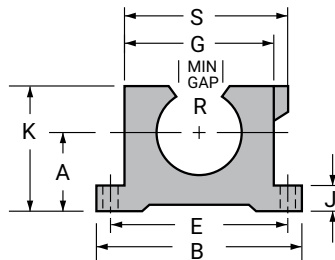
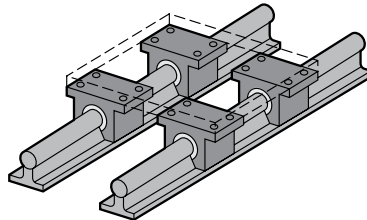
Plain Bearings – Closed Pillow Blocks P



Part No.		Nom. Brg. I.D.	A	B	C	D	E	F	G	H		J		M		O	P	Retaining Ring Part No.	MAX Static Load lb.		Assem. WT.
Precision	Compensated									Bolt	Hole	Thick	k	Space	Width				Dia.	FRELON®	
P 04	P 04C	1/4	0.437	1.625	1.19	0.813	1.312	0.750	1.000	#6	5/32"	0.188	0.750	0.750	0.039	0.532	6010026	600	300	0.099	
P 06	P 06C	3/8	0.500	1.750	1.31	0.938	1.437	0.875	1.125	#6	5/32"	0.188	0.875	0.875	0.039	0.665	6010027	1020	510	0.129	
P 08	P 08C	1/2	0.687	2.000	1.69	1.250	1.688	1.000	1.375	#6	5/32"	0.250	1.125	1.250	0.046	0.931	6010028	1950	975	0.250	
P 10	P 10C	5/8	0.875	2.500	1.94	1.625	2.125	1.125	1.750	#8	3/16"	0.281	1.438	1.500	0.056	1.197	6010029	2940	1470	0.500	
P 12	P 12C	3/4	0.937	2.750	2.06	1.750	2.375	1.250	1.875	#8	3/16"	0.313	1.563	1.625	0.056	1.330	6010030	3710	1905	0.580	
P 16	P 16C	1	1.187	3.250	2.81	2.188	2.875	1.750	2.375	#10	7/32"	0.375	1.938	2.250	0.068	1.671	6010031	7050	3525	1.000	
P 20	P 20C	1-1/4	1.500	4.000	3.63	2.813	3.500	2.000	3.000	#10	7/32"	0.438	2.500	2.625	0.068	2.122	6010032	10290	5145	2.000	
P 24	P 24C	1-1/2	1.750	4.750	4.00	3.250	4.125	2.500	3.500	1/4"	9/32"	0.500	2.875	3.000	0.086	2.519	6010033	14100	7050	3.000	
P 32	P 32C	2	2.125	6.000	5.00	4.063	5.250	3.250	4.500	3/8"	13/32"	0.625	3.625	4.000	0.103	3.182	6010034	25050	12525	6.500	

- Notes:** (1) Standard, pre-assembled pillow blocks include self-aligning housing and precision bearing.
 (2) All standard pillow blocks use standard FL series bearings.
 (3) Straight bore, pre-assembled pillow blocks use standard FL series bearings.

Plain Bearings – Open Pillow Blocks PN



Part No.		Nom. Brg. I.d.	A	B	C	E	F	G	H		J		M		O	P	R	Retaining Ring Part No.	MAX. Static Load lb.		Assem. WT.	S
Precision	Compensated								Bolt	Hole	Thick	Height	Space	Width					Dia.	Open		
PN 08	PN 08C	1/2	0.687	2.000	1.50	1.688	1.000	1.375	#6	5/32"	0.250	1.125	1.250	0.046	0.931	0.313	6010035	1950	975	0.250	1.438	
PN 10	PN 10C	5/8	0.875	2.500	1.75	2.125	1.125	1.750	#8	3/16"	0.281	1.438	1.500	0.056	1.197	0.375	6010036	2940	1470	0.500	1.750	
PN 12	PN 12C	3/4	0.937	2.750	1.88	2.375	1.250	1.875	#8	3/16"	0.313	1.563	1.625	0.056	1.330	0.438	6010037	3710	1905	0.580	1.938	
PN 16	PN 16C	1	1.187	3.250	2.63	2.875	1.750	2.375	#10	7/32"	0.375	1.938	2.250	0.068	1.671	0.563	6010038	7050	3525	1.000	2.438	
PN 20	PN 20C	1-1/4	1.500	4.000	3.38	3.500	2.000	3.000	#10	7/32"	0.438	2.500	2.625	0.068	2.122	0.625	6010039	10290	5145	2.000	3.125	
PN 24	PN 24C	1-1/2	1.750	4.750	3.75	4.125	2.500	3.500	1/4"	9/32"	0.500	2.875	3.000	0.086	2.519	0.750	6010040	14100	7050	3.000	3.625	
PN 32	PN 32C	2	2.125	6.000	4.75	5.250	3.250	4.500	3/8"	13/32"	0.625	3.625	4.000	0.103	3.182	1.000	6010041	25050	12525	6.500	4.688	

- Notes:** (1) Standard, pre-assembled pillow blocks include self-aligning housing and precision bearing.
 (2) All standard pillow blocks use standard FL series bearings.

 **Simplicity Linear Slides: Pre-Assembled Pillow Block, Shaft, and Support Rail—page 108**

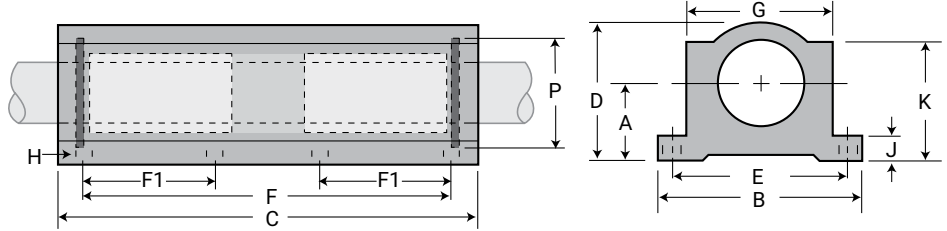


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Inch Series—page 52 Metric Series—page 90

Simplicity® Twin Pillow Blocks

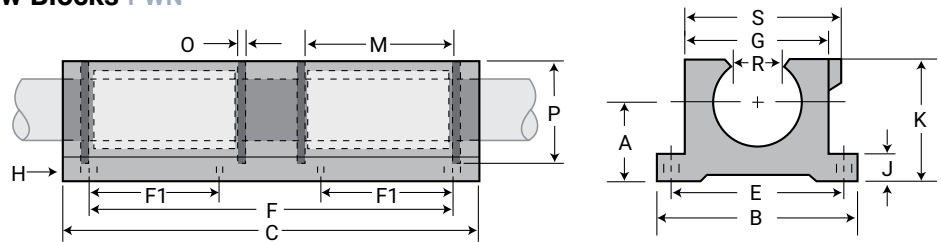
Plain Bearings – Closed Twin Pillow Blocks PW



Part No.		Nom. Brg. I.D.	A	B	C	D	E	F	F1	G	H		J		P	Retaining Ring Part No.	Max Static Load lb.		Assem. WT.
Precision	Compensated										Centerline	Width	Length	Height			+/- 0.010	+/- 0.010	
PW 04	PW 04C	1/4	0.437	1.625	2.500	0.813	1.3120	2.0000	0.750	1.000	#6	5/32"	0.188	0.750	0.532	6010026	1200	600	0.197
PW 06	PW 06C	3/8	0.500	1.750	2.750	0.938	1.4370	2.2500	0.875	1.125	#6	5/32"	0.188	0.875	0.665	6010027	2040	1020	0.258
PW 08	PW 08C	1/2	0.687	2.000	3.500	1.250	1.6880	2.5000	1.000	1.375	#6	5/32"	0.250	1.125	0.931	6010028	3900	1950	0.500
PW 10	PW 10C	5/8	0.875	2.500	4.000	1.625	2.1250	3.0000	1.125	1.750	#8	3/16"	0.281	1.438	1.197	6010029	5880	2940	1.000
PW 12	PW 12C	3/4	0.937	2.750	4.500	1.750	2.3750	3.5000	1.250	1.875	#8	3/16"	0.313	1.563	1.330	6010030	7620	3810	1.125
PW 16	PW 16C	1	1.187	3.250	6.000	2.188	2.8750	4.5000	1.750	2.375	#10	7/32"	0.375	1.938	1.671	6010031	14100	7050	2.188
PW 20	PW 20C	1-1/4	1.500	4.000	7.500	2.813	3.5000	5.5000	2.000	3.000	#10	7/32"	0.438	2.500	2.122	6010032	20580	10290	4.250
PW 24	PW 24C	1-1/2	1.750	4.750	9.000	3.250	4.1250	6.5000	2.500	3.500	1/4"	9/32"	0.500	2.875	2.519	6010033	28200	14100	6.375
PW 32	PW 32C	2	2.125	6.000	10.000	4.063	5.2500	8.2500	3.250	4.500	3/8"	13/32"	0.625	3.625	3.182	6010034	50100	25050	13.500

- Notes:** (1) Standard, pre-assembled pillow blocks include self-aligning housing and precision bearing.
 (2) All standard pillow blocks use standard FL series bearings.
 (3) Twin Closed Pillow Blocks use a spacer to separate the bearings.
 (4) Twin pillow blocks, closed, with no seal option: Use two standard bearings, based on compensated or standard option.
 (5) Twin pillow blocks, closed, with double seal option: Use two single seal bearings.

Plain Bearings – Open Twin Pillow Blocks PWN



Part No.		Nom. Brg. I.D.	A	B	C	E	F	F1	G	H		J	K	M	O	P	R	Retaining Ring Part No.	MAX. Static Load lb.		Assem. WT.	S
Precision	Compensated									Centerline	Width								Length	+/- 0.010		
PWN 08	PWN 08C	1/2	0.687	2.000	3.500	1.688	2.500	1.000	1.375	#6	5/32"	0.250	1.125	1.250	0.046	0.931	0.313	6010035	3900	1950	0.400	1.438
PWN 10	PWN 10C	5/8	0.875	2.500	4.000	2.125	3.000	1.125	1.750	#8	3/16"	0.281	1.438	1.500	0.056	1.197	0.375	6010036	5880	2940	0.910	1.813
PWN 12	PWN 12C	3/4	0.937	2.750	4.500	2.375	3.500	1.250	1.875	#8	3/16"	0.313	1.563	1.625	0.056	1.330	0.438	6010037	7620	3810	1.060	1.938
PWN 16	PWN 16C	1	1.187	3.250	6.000	2.875	4.500	1.750	2.375	#10	7/32"	0.375	1.938	2.250	0.068	1.671	0.563	6010038	14100	7050	1.970	2.438
PWN 20	PWN 20C	1-1/4	1.500	4.000	7.500	3.500	5.500	2.000	3.000	#10	7/32"	0.438	2.500	2.625	0.068	2.122	0.625	6010039	20580	10290	3.725	3.125
PWN 24	PWN 24C	1-1/2	1.750	4.750	9.000	4.125	6.500	2.500	3.500	1/4"	9/32"	0.500	2.875	3.000	0.086	2.519	0.750	6010040	28200	14100	5.800	3.625
PWN 32	PWN 32C	2	2.125	6.000	10.000	5.250	8.250	3.250	4.500	3/8"	13/32"	0.625	3.625	4.000	0.103	3.182	1.000	6010041	50100	25050	12.125	4.688

- Notes:** (1) Standard, pre-assembled pillow blocks include self-aligning housing and precision bearing.
 (2) All standard pillow blocks use standard FL series bearings.
 (3) Twin pillowblocks, open, with no seal option: Use two standard open bearings, based on compensated or standard option.
 (4) Twin pillowblocks, open, with double seal option: Use two double seal bearings.

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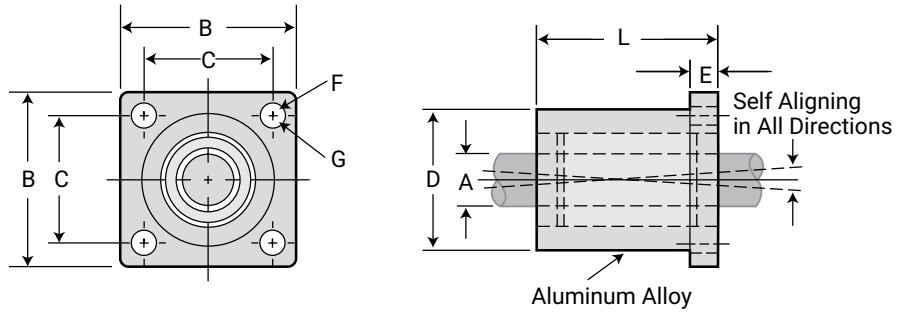
Simplicity® Flange Mounts

INCH

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Flange Mounts SFP

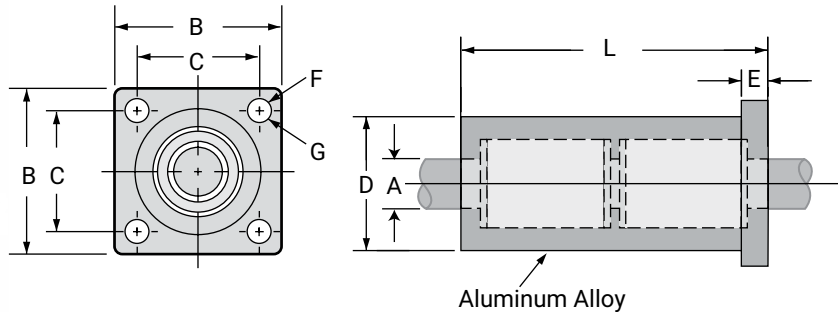
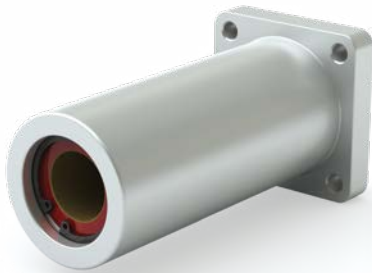


DIMENSIONAL INFORMATION

Part No.		A Nominal Bearing Size	B Flange Square	C Hole Spacing	D Barrel Dia.	E Flange Length	F Bolt Size	G Hole Size	L Length Overall	MAX Static Load lb. Frelon®		Assembly Weight lb.
Precision	Compensated									Gold	J & W	
SFP 06	SFP 06 C	3/8"	1.25	1.00	0.875	0.188	#4	0.125	1.31	1020	510	0.070
SFP 08	SFP 08 C	1/2"	1.63	1.25	1.25	0.250	#8	0.187	1.687	1950	975	0.175
SFP 12	SFP 12 C	3/4"	2.38	1.75	1.75	0.375	#10	0.219	2.067	2940	1470	0.463
SFP 16	SFP 16 C	1"	2.75	2.125	2.25	0.500	1/4"	0.281	2.812	3810	1905	1.206
SFP 20	SFP 20 C	1 1/4"	3.88	3.00	2.62	0.625	3/8"	0.386	3.625	10830	5415	1.830

Notes: (1) All standard, pre-assembled SFP assemblies include a self-aligning housing and standard FL bearings - allowing the bearing to self-align.
 (2) SFPB assemblies include a straight bore housing and standard FL bearings - allowing for a more rigid fit.

Flange Mounts DFP



DIMENSIONAL INFORMATION

Part No.		A Nominal Bearing Size	B Flange Square	C Hole Spacing	D Barrel Dia.	E Flange Length	F Bolt Size	G Hole Size	L Length Overall	MAX Static Load lb. Frelon®		Assembly Weight lb.
Precision	Compensated									Gold	J & W	
DFP 08	DFP 08 C	1/2"	1.63	1.25	1.25	0.250	#8	0.187	3.375	3900	1950	0.325
DFP 12	DFP 12 C	3/4"	2.38	1.75	1.75	0.375	#10	0.219	4.188	5880	2940	0.825
DFP 16	DFP 16 C	1"	2.75	2.125	2.25	0.500	1/4"	0.281	5.625	7620	3810	1.750

Notes: (1) All standard, pre-assembled DFP assemblies include a self-aligning housing and standard FL bearings - allowing the bearing to self-align.
 (2) Straight bore DFPB assemblies include a straight bore housing and standard FL bearings - allowing for a more rigid fit.

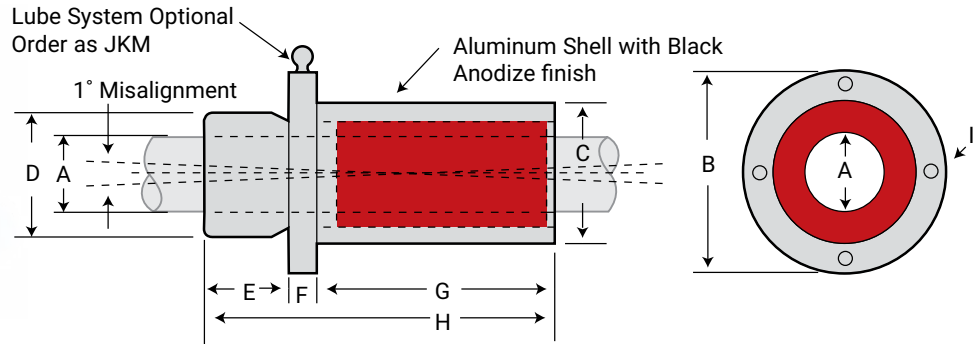


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Inch Series—page 52 Metric Series—page 90

Simplicity[®] Die Set Flange Mounts

Flange Mounts SDS



DIMENSIONAL INFORMATION

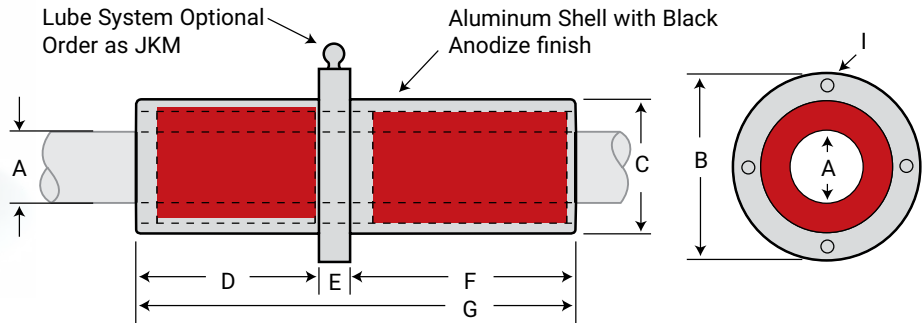
Part No.		A Nominal Bearing Size	B Flange O.D.	C Barrel Dia.		D Pilot Dia.		E Pilot Length	F Flange Length	G Head Length	H Overall Length	I Mounting Holes 4 Places			MAX Static Load lb. Frelon [®]		Assembly Weight
Precision	Compensated			MIN.	MAX.	MIN.	MAX.					Bolt Size	Hole Size	Circle	Gold	J & W	lb.
SDSZ16	SDSZ16C	1"	3.00	2.098	2.100	1.4995	1.500	0.875	0.562	2.500	3.927	1/4"	0.281	2.550	7050	3525	0.941
SDSZ20	SDSZ20C	1-1/4"	3.50	2.598	2.600	1.7495	1.750	1.125	0.750	3.000	4.875	1/4"	0.281	3.050	10290	5145	1.852
SDSZ24	SDSZ24C	1-1/2"	4.25	2.998	3.000	1.9990	2.000	1.375	1.000	3.500	5.875	3/8"	0.406	3.650	14100	7050	2.983
SDSZ32	SDSZ32C	2"	5.00	3.748	3.750	2.4990	2.500	1.625	1.000	4.500	7.125	3/8"	0.406	4.400	25050	12525	5.032

Notes: (1) Shell material is aluminum.

(2) All standard, pre-assembled SDS assemblies include a straight bore housing and standard FLA bearings - allowing the bearing to self-align.

(3) SDSB assemblies include a straight bore housing and standard FL bearings - allowing for a more rigid fit.

Flange Mounts DDS



DIMENSIONAL INFORMATION

Part No.		A Nominal Bearing Size	B Flange O.D.	C Barrel Dia.		D Length	E Flange Length	F Length	G Overall Length	I Mounting Holes 4 Places			MAX Static Load lb. Frelon [®]		Assembly Weight
Precision	Compensated			MIN.	MAX.					Bolt Size	Hole Size	Circle	Gold	J & W	lb.
DDSZ16	DDSZ16C	1"	3.00	2.098	2.100	2.5	0.562	3.500	6.563	1/4"	0.281	2.550	14100	7050	1.785
DDSZ20	DDSZ20C	1-1/4"	3.50	2.598	2.600	3	0.750	4.250	8.000	1/4"	0.281	3.050	20580	10290	3.203
DDSZ24	DDSZ24C	1-1/2"	4.25	2.998	3.000	3.5	1.000	5.000	9.500	3/8"	0.406	3.650	28200	14100	5.128
DDSZ32	DDSZ32C	2"	5.00	3.748	3.750	4.5	1.000	6.500	12.000	3/8"	0.406	4.400	50100	25050	9.015

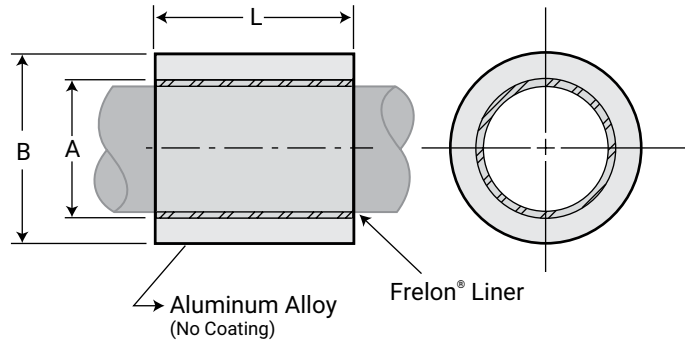
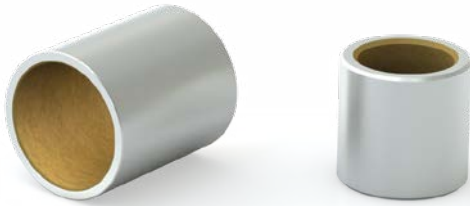
Notes: (1) Shell material is aluminum.

(2) All standard, pre-assembled DDS assemblies include a straight bore housing and standard FLA bearings - allowing the bearing to self-align.

(3) All straight bore, pre-assembled DDSB assemblies include a straight bore housing and standard FL bearings - allowing for a more rigid fit.

Simplicity® Sleeve Bearings

Sleeve Bearings PS



INCH

ISO METRIC

JIS METRIC

DIMENSIONAL INFORMATION

Part No.	Nominal Bearing Size			A Bearing I.D.		B O.D.		L Length		MAX. Static Load lb. Frelon®		Bearing Weight OZ.	Recommended Housing Bore			
	I.D.	O.D.	Length	MIN	MAX	MIN	MAX	MIN	MA.	GOLD	J & W		Slip Fit & Epoxy		Press Fit	
PS0305-02	3/16"	5/16"	1/4"	0.1890	0.1900	0.3135	0.3145	0.230	0.250	130	65	0.02	0.3145	0.3155	0.3125	0.3130
PS0305-04	3/16"	5/16"	1/2"	0.1890	0.1900	0.3135	0.3145	0.480	0.500	272	136	0.04	0.3145	0.3155	0.3125	0.3130
PS0406-02	1/4"	3/8"	1/4"	0.2515	0.2525	0.3760	0.3770	0.230	0.250	174	87	0.03	0.3770	0.3780	0.3750	0.3755
PS0406-03	1/4"	3/8"	3/8"	0.2515	0.2525	0.3760	0.3770	0.355	0.375	268	134	0.04	0.3770	0.3780	0.3750	0.3755
PS0406-04	1/4"	3/8"	1/2"	0.2515	0.2525	0.3760	0.3770	0.480	0.500	362	181	0.05	0.3770	0.3780	0.3750	0.3755
PS0610-04	3/8"	5/8"	1/2"	0.3765	0.3775	0.6260	0.6270	0.480	0.500	542	271	0.14	0.6270	0.6280	0.6250	0.6255
PS0610-06	3/8"	5/8"	3/4"	0.3765	0.3775	0.6260	0.6270	0.730	0.750	824	412	0.20	0.6270	0.6280	0.6250	0.6255
PS0710-06	7/16"	5/8"	3/4"	0.4390	0.4400	0.6260	0.6270	0.730	0.750	962	481	0.23	0.6270	0.6280	0.6250	0.6255
PS0812-04	1/2"	3/4"	1/2"	0.5015	0.5025	0.7510	0.7520	0.480	0.500	722	361	0.15	0.7520	0.7530	0.7500	0.7505
PS0812-06	1/2"	3/4"	3/4"	0.5015	0.5025	0.7510	0.7520	0.730	0.750	1098	549	0.25	0.7520	0.7530	0.7500	0.7505
PS0812-08	1/2"	3/4"	1"	0.5015	0.5025	0.7510	0.7520	0.980	1.000	1474	737	0.35	0.7520	0.7530	0.7500	0.7505
PS1014-06	5/8"	7/8"	3/4"	0.6265	0.6275	0.8760	0.8770	0.730	0.750	1372	686	0.30	0.8770	0.8780	0.8750	0.8755
PS1014-08	5/8"	7/8"	1"	0.6265	0.6275	0.8760	0.8770	0.980	1.000	1842	921	0.45	0.8770	0.8780	0.8750	0.8755
PS1216-08	3/4"	1"	1"	0.7515	0.7525	1.0010	1.0020	0.980	1.000	2210	1105	0.50	1.0020	1.0030	0.9995	1.0000
PS1216-10	3/4"	1"	1.25"	0.7515	0.7525	1.0010	1.0020	1.230	1.250	2777	1389	0.65	1.0020	1.0030	0.9995	1.0000
PS1620-12	1"	1-1/4"	1-1/2"	1.0015	1.0025	1.2510	1.2520	1.480	1.500	4446	2223	0.95	1.2520	1.2530	1.2490	1.2500
PS2024-16	1-1/4"	1-1/2"	2"	1.2515	1.2525	1.5010	1.5020	1.980	2.000	7434	3717	1.55	1.5020	1.5030	1.4990	1.5000
PS2428-16	1-1/2"	1-3/4"	2"	1.5015	1.5025	1.7510	1.7520	1.980	2.000	8918	4459	1.80	1.7520	1.7530	1.7490	1.7500
PS2832-24	1-3/4"	2"	3"	1.7515	1.7525	2.0010	2.0020	2.980	3.000	15658	7829	3.15	2.0020	2.0030	1.9990	2.0000
PS3236-24	2"	2-1/4"	3"	2.0015	2.0025	2.2510	2.2520	2.980	3.000	17894	8947	3.55	2.2520	2.2530	2.2490	2.2500
PS4044-24	2-1/2"	2-3/4"	3"	2.5015	2.5025	2.7510	2.7520	2.980	3.000	22364	11182	4.85	2.7520	2.7530	2.7490	2.7500
PS4852-28	3"	3-1/4"	3-1/2"	3.0015	3.0025	3.2510	3.2520	3.480	3.500	31336	15668	6.10	3.2520	3.2530	3.2485	3.2495

ORDERING INFORMATION

PS	12	16	08
Type	I.D.	O.D.	Length
PS: Precision Sleeve Bearing	I.D. in 1/16" Increments	O.D. in 1/16" Increments	Length in 1/8" Increments

Note: Lengths not listed above must be specially quoted.



Only certified Simplicity 60 Plus Shafting provides maximum linear bearing performance.

Inch Series—page 52 Metric Series—page 90

INSTALLATION INSTRUCTIONS

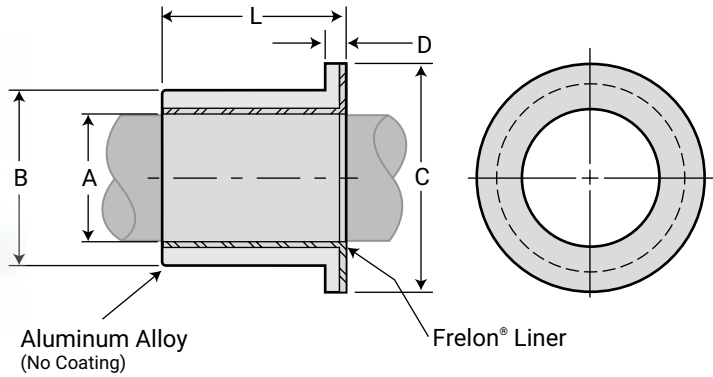
- Slip the bearing sleeve into the housing and epoxy into place with Loctite® or similar type bonding agent.

CAUTION Do NOT let any of the adhesive touch the bearing liner. It will harden and interfere with the running clearance.

- Freeze the bearings at 0°F (-17.75°C) for 30-45 minutes. Using gloves, remove the bearings from the freezer and slip them into the housing. As they heat to room temperature, full contact between the bearing and housing will be achieved. The greatest advantage to this technique over traditional pressing is greater accuracy in alignment.

Simplicity® Sleeve Bearings with Flange

Sleeve Bearings with Flange PSF



DIMENSIONAL INFORMATION

Part No.	Nominal Bearing Size			A Bearing I.D.		B O.D.		C Flange O.D.	D Flange Width	L Length		MAX. Static Load lb. Frelon®		Bearing Weight OZ.	Recommended Housing Bore			
	I.D.	O.D.	Length	MIN	MAX	MIN	MAX			MIN	MAX	GOLD	J & W		Slip Fit & Epoxy		Press Fit	
PSF0305-02	3/16"	5/16"	1/4"	0.1890	0.1900	0.3135	0.3145	0.4370	0.0625	0.230	0.250	130	65	0.023	0.3145	0.3155	0.3125	0.3130
PSF0305-04	3/16"	5/16"	1/2"	0.1890	0.1900	0.3135	0.3145	0.4370	0.0625	0.480	0.500	272	136	0.044	0.3145	0.3155	0.3125	0.3130
PSF0406-02	1/4"	3/8"	1/4"	0.2515	0.2525	0.3760	0.3770	0.5000	0.0625	0.230	0.250	174	87	0.031	0.3770	0.3780	0.3750	0.3755
PSF0406-03	1/4"	3/8"	3/8"	0.2515	0.2525	0.3760	0.3770	0.5000	0.0625	0.355	0.375	268	134	0.044	0.3770	0.3780	0.3750	0.3755
PSF0406-04	1/4"	3/8"	1/2"	0.2515	0.2525	0.3760	0.3770	0.5000	0.0625	0.480	0.500	362	181	0.055	0.3770	0.3780	0.3750	0.3755
PSF0610-04	3/8"	5/8"	1/2"	0.3765	0.3775	0.6260	0.6270	0.8750	0.1250	0.480	0.500	542	271	0.20	0.6270	0.6280	0.6250	0.6255
PSF0610-06	3/8"	5/8"	3/4"	0.3765	0.3775	0.6260	0.6270	0.8750	0.1250	0.730	0.750	824	412	0.25	0.6270	0.6280	0.6250	0.6255
PSF0710-06	7/16"	5/8"	3/4"	0.4390	0.4400	0.6260	0.6270	0.9375	0.1250	0.730	0.750	962	481	0.20	0.6270	0.6280	0.6250	0.6255
PSF0812-04	1/2"	3/4"	1/2"	0.5015	0.5025	0.7510	0.7520	1.0000	0.1250	0.480	0.500	722	361	0.25	0.7520	0.7530	0.7500	0.7505
PSF0812-06	1/2"	3/4"	3/4"	0.5015	0.5025	0.7510	0.7520	1.0000	0.1250	0.730	0.750	1098	549	0.30	0.7520	0.7530	0.7500	0.7505
PSF0812-08	1/2"	3/4"	1"	0.5015	0.5025	0.7510	0.7520	1.0000	0.1250	0.980	1.000	1474	737	0.40	0.7520	0.7530	0.7500	0.7505
PSF1014-06	5/8"	7/8"	3/4"	0.6265	0.6275	0.8760	0.8770	1.0000	0.1250	0.730	0.750	1372	686	0.35	0.8770	0.8780	0.8750	0.8755
PSF1014-08	5/8"	7/8"	1"	0.6265	0.6275	0.8760	0.8770	1.0000	0.1250	0.980	1.000	1842	921	0.45	0.8770	0.8780	0.8750	0.8755
PSF1216-08	3/4"	1"	1"	0.7515	0.7525	1.0010	1.0020	1.2500	0.1250	0.980	1.000	2210	1105	0.55	1.0020	1.0030	0.9995	1.0000
PSF1620-12	1"	1-1/4"	1-1/2"	1.0015	1.0025	1.2510	1.2520	1.5000	0.1250	1.480	1.500	4446	2223	1.05	1.2520	1.2530	1.2490	1.2500
PSF2024-16	1-1/4"	1-1/2"	2"	1.2515	1.2525	1.5010	1.5020	1.7500	0.1250	1.980	2.000	7434	3717	1.80	1.5020	1.5030	1.4990	1.5000
PSF2428-16	1-1/2"	1-3/4"	2"	1.5015	1.5025	1.7510	1.7520	2.0000	0.1250	1.980	2.000	8918	4459	2.16	1.7520	1.7530	1.7490	1.7500
PSF2832-24	1-3/4"	2"	3"	1.7515	1.7525	2.0010	2.0020	2.2500	0.1250	2.980	3.000	15658	7829	3.30	2.0020	2.0030	1.9990	2.0000
PSF3236-24	2"	2-1/4"	3"	2.0015	2.0025	2.2510	2.2520	2.5000	0.1250	2.980	3.000	17894	8947	3.75	2.2520	2.2530	2.2490	2.2500
PSF4044-24	2-1/2"	2-3/4"	3"	2.5015	2.5025	2.7510	2.7520	3.0000	0.1250	2.980	3.000	22364	11182	4.60	2.7520	2.7530	2.7490	2.7500
PSF4852-28	3"	3-1/4"	3-1/2"	3.0015	3.0025	3.2510	3.2520	3.5000	0.1250	3.480	3.500	31336	15668	6.30	3.2520	3.2530	3.2485	3.2495

ORDERING INFORMATION

PSF	12	16	08
Type	I.D.	O.D.	Length
PSF: Precision Sleeve Bearing with Flange	I.D. in 1/16" Increments	O.D. in 1/16" Increments	Length in 1/8" Increments

Note: Lengths not listed above must be specially quoted.



Only certified Simplicity 60 Plus Shafting provides maximum linear bearing performance.

Inch Series—page 52 Metric Series—page 90

INSTALLATION INSTRUCTIONS

1. Slip the bearing sleeve into the housing and epoxy into place with Loctite® or similar type bonding agent.

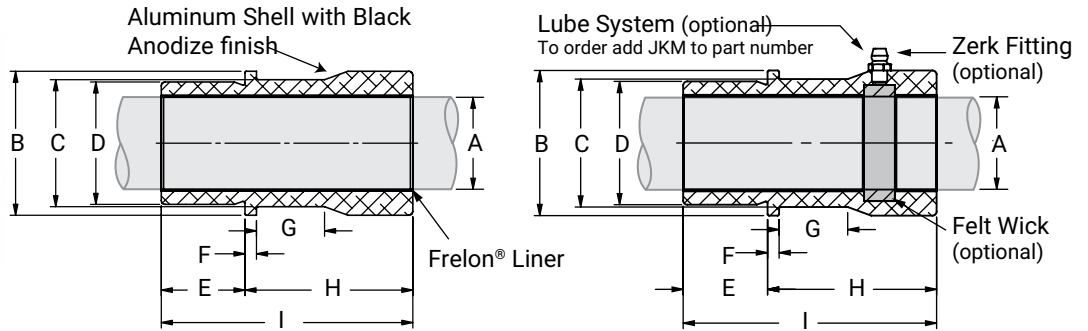


Do NOT let any of the adhesive touch the bearing liner. It will harden and interfere with the running clearance.

2. Freeze the bearings at 0°F (-17.75°C) for 30-45 minutes. Using gloves, remove the bearings from the freezer and slip them into the housing. As they heat to room temperature, full contact between the bearing and housing will be achieved. The greatest advantage to this technique over traditional pressing is greater accuracy in alignment.

Simplicity® Die Set Bushings

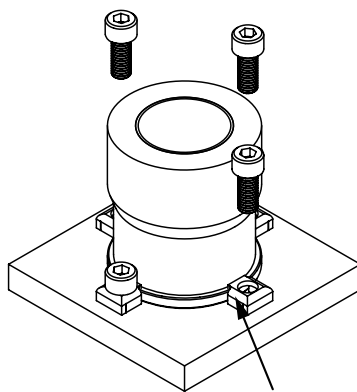
Die Set Bushings PAC



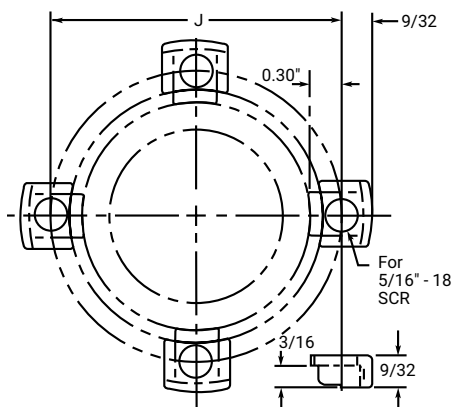
DIMENSIONAL INFORMATION

P = Precision C = Compensated	Part No.	Nominal Size in.	A Bearing I.D.		B Flange & Barrel O.D.		C Clamp Dia. MIN	D Pilot O.D.		E Pilot Length	F Flange Length	G Recess Length	H Head Length	I Overall Length	Effective Surface Area sq. in.	MAX Static Load lb.		Bearing Weight lb.
			MIN	MAX	MIN	MAX		MIN	MAX							Frelon® GOLD	J & W	
P	PACZ750	3/4	0.750	0.7510	1.285	1.300	1.012	1.1245	1.1250	0.812	0.188	0.712	2.000	2.812	2.209	6626	3313	0.625
C	PACZ750C		0.753	0.7540														
P	PACZ100	1	1.000	1.0010	1.723	1.738	1.450	1.4995	1.5000	0.875	0.188	0.812	2.250	3.125	3.272	9817	4909	1.000
C	PACZ100C		1.003	1.0040														
P	PACZ125	1-1/4	1.250	1.2510	2.097	2.112	1.825	1.7495	1.7500	1.125	0.188	0.812	2.375	3.500	4.581	13744	6872	1.500
C	PACZ125C		1.254	1.2550														
P	PACZ150	1-1/2	1.500	1.5012	2.346	2.361	2.075	1.9995	2.0000	1.375	0.188	1.112	2.750	4.125	6.480	19439	9719	2.000
C	PACZ150C		1.504	1.5050														
P	PACZ200	2	2.000	2.0014	3.095	3.110	2.825	2.4995	2.5000	1.625	0.188	1.112	3.000	4.625	9.687	29060	14530	4.188
C	PACZ200C		2.005	2.0064														
P	PACZ250	2-1/2	2.500	2.5016	3.595	3.610	3.325	2.9995	3.0000	1.875	0.188	1.112	3.500	5.375	14.072	42215	21108	6.000
C	PACZ250C		2.505	2.5065														
P	PACZ300	3	3.000	3.0020	4.345	4.360	4.075	3.6245	3.6250	1.875	0.188	1.112	4.000	5.875	18.457	55371	27685	10.000
C	PACZ300C		3.006	3.0080														

- Notes:** (1) Formula used for effective surface area is $(\pi * ID * L)/3$.
 (2) Shell material is aluminum.
 (3) For lubrication system add JKM, example: PACZ750JKM.
 (4) Max static load is effective surface area times max load for FrelonGOLD®.
 (5) - 3000 psi is the rating for FrelonGOLD®; 1500 psi is the rating for Frelon J & W.



4 PAC clamps are shipped with each die set.
 Extra clamps can be ordered using part # PACCLAMP.



Dimension for calculating bolt circle: $J = C + 0.60"$

Plain Bearings Accessories

Retaining Rings (External)

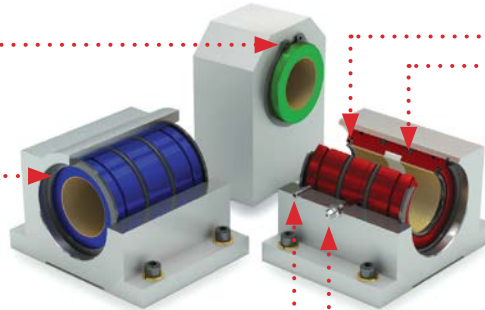
FL Series	Part No.
FL03	6010001
FL04	6010002
FL06	6010003
FL08	6010004
FL10	6010005
FL12	6010006
FL16	6010007
FL20	6010008
FL24	6010009
FL32	6010010
FL40	6010011
FL48	6010012
FL64	6010013
FM Series	Part No.
FM05	6010014
FM08	6010015
FM10	6010016
FM12	6010017
FM16	6010018
FM20	6010019
FM25	6010020
FM30	6010021
FM40	6010022
FM50	6010023
FM60	6010024
FM80	6010025

Seals

FL Series	Part No.		
	Polymod	Viton	Urethane
FL08	6030001	6030009	6030017
FL10	6030002	6030010	6030018
FL12	6030003	6030011	6030019
FL16	6030004	6030012	6030020
FL20	6030005	6030013	6030021
FL24	6030006	6030014	6030022
FL32	6030007	6030015	6030023
FL40	6030008	6030016	6030024
FL48	N/A	N/A	6030025
FL64	N/A	N/A	6030026
FM/FJ Series	Part No.		
FM20/FJ20	N/A	N/A	6030027
FM25/FJ25	N/A	N/A	6030028
FM30/FJ30	N/A	N/A	6030029
FJ35	N/A	N/A	6030030
FJ38	N/A	N/A	6030030
FM40/FJ40	N/A	N/A	6030031
FM50/FJ50	N/A	N/A	6030032
FM60/FJ60	N/A	N/A	6030033
FM80/FJ80	N/A	N/A	6030034
FJ100	N/A	N/A	6030052
FJ120	N/A	N/A	6030053

O-Rings

FL Series	Part No.	
	Nitrile buna 70	Viton
FL04	6000001	N/A
FL06	6000002	6000037
FL08	6000003	6000038
FL10	6000004	6000039
FL12	6000005	6000040
FL16	6000006	6000041
FL20	6000007	6000042
FL24	6000008	6000043
FL32	6000009	6000044
FL40	6000010	6000045
FL48	6000011	6000046
FL64	6000012	6000047
FM/FJ Series	Part No.	
FM08	6000014	N/A
FM10	6000015	N/A
FM12	6000016	N/A
FM16	6000017	N/A
FM20	6000018	N/A
FM25	6000019	N/A
FM30	6000020	N/A
FM40	6000021	N/A
FM50	6000022	N/A
FM60	6000023	N/A
FM80	6000024	N/A



Retaining Rings (Internal)

*Inch Open	Part No.		*Metric Open	Part No.	
	Steel	Stainless Steel		Steel	*Stainless Steel
PN08	6010035	6010064	PMN12	6010044	N/A
PN10	6010036	6010066	PMN16	6010045	6010107
PN12	6010037	6010068	PMN20	6010046	N/A
PN16	6010038	6010070	PMN25	6010047	N/A
PN20	6010039	6010072	PMN30	6010048	6010083
PN24	6010040	6010074	PMN40	6010049	N/A
PN32	6010041	6010076	PMN50	6010050	N/A
Closed	Part No.		Closed	Part No.	
P04	6010026	6010052	PM08	6010042	N/A
P06	6010027	6010053	PM10	6010043	N/A
P08	6010028	6010054	PM12	6010044	N/A
P10	6010029	6010055	PM16	6010045	6010107
P12	6010030	6010056	PM20	6010046	N/A
P16	6010031	6010057	PM25	6010047	N/A
P20	6010032	6010058	PM30	6010048	6010083
P24	6010033	6010059	PM40	6010049	N/A
P32	6010034	6010060	PM50	6010050	N/A

Zerk Fittings

Inch	Part No.
1/4-28" Steel	6050002
1/4-28" Stainless	6050003
Metric	Part No.
M8 x 1.0 Steel	6050001

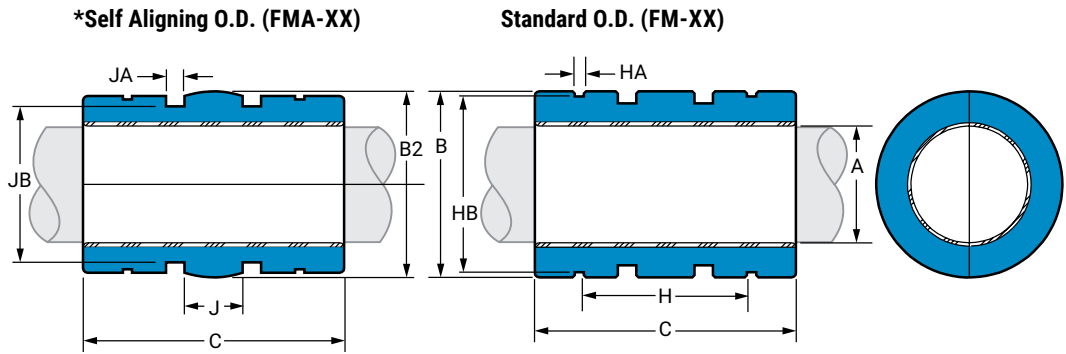
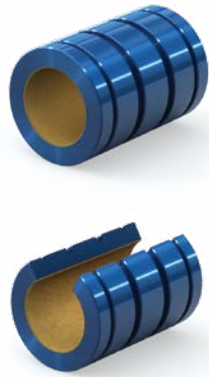
Roll Pin

Inch Open	Part No.
PN08	6060001
PN10	6060002
PN12	6060003
PN16	6060004
PN20	6060005
PN24	6060006
PN32	6060007
Metric Open	Part No.
PMN12	6060010
PMN16	6060009
PMN20	6060009
PMN25	6060010
PMN30	6060010
PMN40	6060012
PMN50	6060012

* Purchased retaining ring components (an accessory item listed above) are the custom's responsibility to trim/cut tabbed ends. When purchased as part of a PBC Linear complete pre-assembled open pillow block assembly, tabbed ends will be trimmed/cut at factory prior to shipment.



Simplicity® Linear Plain Bearings



*Except for the O.D., bearings with the self-aligning feature have the same dimensions and tolerances as the standard bearing. There is a spherical crown on the O.D. to create the self-aligning feature. They are for use in a straight bore housing. Add an "A" to the part number for self-aligning bearings.

DIMENSIONAL INFORMATION

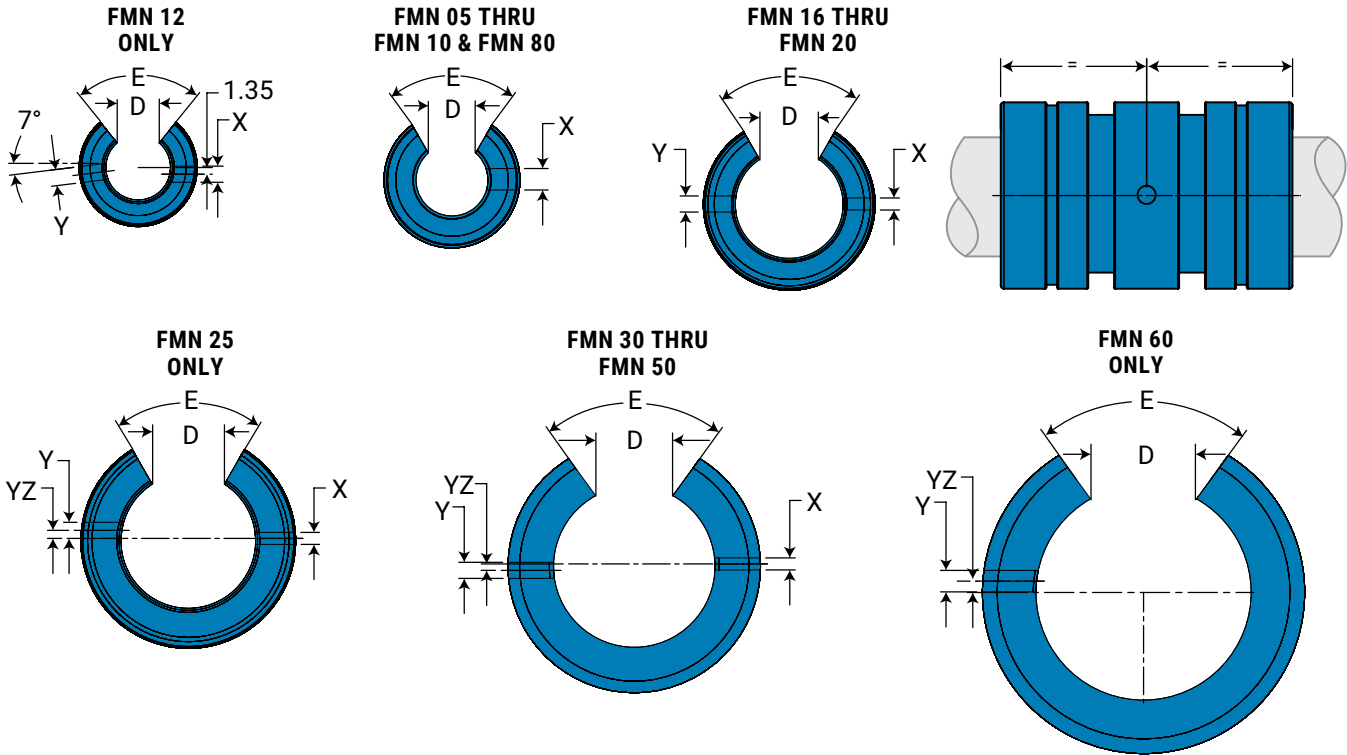
Precision I.D. Series Similar to Preloaded Ball Bearing					Compensated I.D. Series Similar to Standard Ball Bearing				B		B2		C Length		Concentric	Bearing Weight
Part No.		Nominal Size	A Bearing I.d. F8		Part No.		A Bearing I.d.		Standard O.d. H7		Self-Aligning O.D. FMA		MIN	MAX	MAX mm	Kg.
Closed	Open	mm	MIN	MAX	Closed	Open	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX		
FM 05	FMN 05	5	5.010	5.028	FMC 05	FMCN 05	5.060	5.078	11.982	12	11.941	11.966	21.619	22	0.0254	0.004
FM 08	FMN 08	8	8.013	8.035	FMC 08	FMCN 08	8.063	8.085	15.982	16	15.941	15.966	24.619	25	0.0254	0.009
FM 10	FMN 10	10	10.013	10.035	FMC 10	FMCN 10	10.063	10.085	18.979	19	18.938	18.964	28.619	29	0.0254	0.014
FM 12	FMN 12	12	12.016	12.043	FMC 12	FMCN 12	12.066	12.093	21.979	22	21.938	21.963	31.619	32	0.0254	0.017
FM 16	FMN 16	16	16.016	16.043	FMC 16	FMCN 16	16.066	16.093	25.979	26	25.938	25.964	35.619	36	0.0254	0.028
FM 20	FMN 20	20	20.020	20.053	FMC 20	FMCN 20	20.096	20.129	31.975	32	31.938	31.963	44.619	45	0.0254	0.054
FM 25	FMN 25	25	25.020	25.053	FMC 25	FMCN 25	25.096	25.129	39.975	40	39.936	39.962	57.619	58	0.0254	0.109
FM 30	FMN 30	30	30.020	30.053	FMC 30	FMCN 30	30.096	30.129	46.975	47	46.937	46.962	67.619	68	0.0254	0.176
FM 40	FMN 40	40	40.025	40.064	FMC 40	FMCN 40	40.127	40.166	61.970	62	61.935	61.961	79.619	80	0.0254	0.356
FM 50	FMN 50	50	50.025	50.064	FMC 50	FMCN 50	50.127	50.166	74.970	75	74.935	74.960	99.619	100	0.0254	0.628
FM 60	FMN 60	60	60.030	60.076	FMC 60	FMCN 60	60.182	60.228	89.965	90	89.931	89.957	124.619	125	0.0380	1.117
FM 80	FMN 80	80	80.030	80.076	FMC 80	FMCN 80	80.182	80.228	119.965	120	119.931	119.957	164.619	165	0.0510	2.679

MOUNTING DIMENSIONS

Part No.		Nominal Size	H	HA	HB	Ret. Ring Part No.	J	JA	JB	Metric O'ring Size
Closed	Open	mm	Between Ret. Rings	Ret. Ring GRV. Width	Ret. Ring GRV. Dia.	Din 471	Between O'ring GRVS.	O'ring GRV. Width	O'ring GRV. Dia.	
FM 05	FMN 05	5	12	1.14	11.5	12	5	2	9.86	9.7 x 1.3
FM 08	FMN 08	8	14	1.14	15.2	16	5.33	2	13.2	13 x 1.7
FM 10	FMN 10	10	19.4	1.32	18.0	19	5.63	2.44	15.7	15.5 x 2
FM 12	FMN 12	12	20	1.32	21.0	22	6	3.17	17.9	17.5 x 2.5
FM 16	FMN 16	16	22	1.32	24.9	26	8	3.17	21.9	21.5 x 2.5
FM 20	FMN 20	20	28	1.63	30.3	32	10	3.17	27.9	27.5 x 2.5
FM 25	FMN 25	25	40	1.90	37.5	40	12.5	3.17	35.9	35.5 x 2.5
FM 30	FMN 30	30	48	1.90	44.5	47	15	3.17	42.7	42.52 x 2.62
FM 40	FMN 40	40	56	2.20	59.0	62	20	4.1	56.3	56 x 3.5
FM 50	FMN 50	50	72	2.70	72.0	75	25	4.1	69.2	69 x 3.5
FM 60	FMN 60	60	95	3.20	86.4	90	30	7.1	81.7	81 x 5
FM 80	FMN 80	80	125	4.17	116.1	120	40	7.1	111.7	111 x 5

Simplicity® Linear Plain Bearings

Linear Plain Bearings FMN



INCH

ISO METRIC

JIS METRIC

OPEN DIMENSIONAL INFORMATION

Part No.	Nominal Size mm	D Slot Wide MIN	E Slot Angle	X Ret. Hole Dia.	Y Ret. Hole Dia.	Yz Ret. Hole Locate	Bearing Wt. Kg.
FMN 05	5	3.2	60	2.2	N/A	N/A	0.0034
FMN 08	8	5.1	60	3.0	N/A	N/A	0.0077
FMN 10	10	6.4	60	3.0	N/A	N/A	0.0119
FMN 12	12	7.6	78	3.0	3.0	7.0	0.0156
FMN 16	16	10.4	78	2.2	3.0	0	0.0213
FMN 20	20	10.8	60	2.2	3.0	0	0.0439
FMN 25	25	13.2	60	3.0	3.0	1.5	0.0893
FMN 30	30	14.2	72	3.0	3.0	2.0	0.1460
FMN 40	40	19.5	72	3.0	3.0	1.5	0.2948
FMN 50	50	24.0	72	3.0	5.0	2.5	0.5202
FMN 60	60	29.6	72	N/A	6.0	0	0.9199
FMN 80	80	39.0	72	N/A	8.0	0	2.2269

LOAD & SPEED DATA

Part No.	Effective Surface Area sq. in.	MAX Static Load lb. Frelon®		Effective Surface Area CM ²	MAX Static Load N Frelon	
		GOLD	J		GOLD	J & W
FMN 05	0.171	511	256	1.10	2276	1138
FMN 08	0.310	926	463	2.00	4120	2060
FMN 10	0.450	1345	672	2.90	5984	2992
FMN 12	0.589	1777	888	3.80	7907	3953
FMN 16	0.899	2667	1334	5.80	11870	5935
FMN 20	1.395	4167	2083	9.00	18541	9270
FMN 25	2.248	6715	3358	1.450	29881	14941
FMN 30	3.162	9444	4722	2.040	42026	21013
FMN 40	4.960	14814	7407	3.200	65923	32962
FMN 50	7.750	23147	11574	5.000	103005	51503
FMN 60	11.625	34721	17360	7.500	154508	77254
FMN 80	20.460	61120	30554	13.200	271933	135967

Note: MAX PV (m/min. * kg/sq. cm)

FrelonGOLD® = 430 PV

Frelon J = 215 PV

MAX Speed Running Dry (m/min.)

FrelonGOLD = 91.4

Frelon J = 42.6

MAX Speed Running

with Lubrication (m/min.)

FrelonGOLD = 251.5

Frelon J = 122

MAX PV (m/s. * N/mm²)

FrelonGOLD = 0.70 PV

Frelon J = 0.35 PV

MAX Speed Running Dry (m/s)

FrelonGOLD = 1.52

Frelon J = 0.71

MAX Speed Running

with Lubrication (m/s)

FrelonGOLD = 4.19

Frelon J = 2.03



Plain Bearing Accessories:
Retaining Rings, Seals, O-Rings—page 29

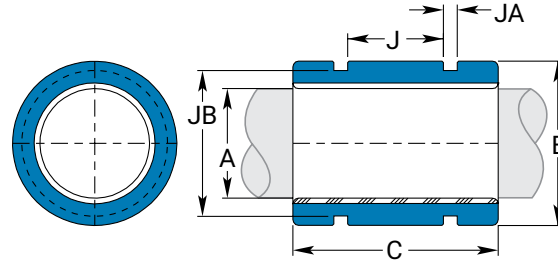
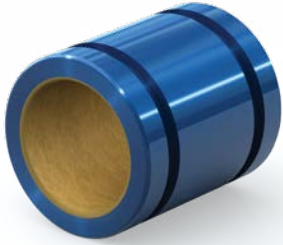


Only certified Simplicity 60 Plus Shafting provides maximum linear bearing performance.

Inch Series—page 52 Metric Series—page 90

Simplicity® Thin Wall Bearings

Plain Bearings – Compact Thin Wall FG



DIMENSIONAL INFORMATION

Precision I.D. Series Similar to Preloaded Ball Bearing				Compensated I.D. Series Similar to Standard Ball Bearing			B O.D. H7		C Length		Concentric	Bearing Weight
Part No. Closed	Nominal Size mm	A Bearing I.D. F8		Part No. Closed	A Bearing I.D.		MIN	MAX	MIN	MAX	MAX mm	Kg.
		MIN	MAX		MIN	MAX						
FG 06	6	6.010	6.028	FGC 06	6.060	6.078	11.98	12	17.619	18	0.0254	0.004
FG 08	8	8.013	8.035	FGC 08	8.063	8.085	14.98	15	19.619	20	0.0254	0.006
FG 10	10	10.013	10.035	FGC 10	10.063	10.085	16.98	17	21.619	22	0.0254	0.008
FG 12	12	12.016	12.043	FGC 12	12.066	12.093	21.98	22	26.619	27	0.0254	0.018
FG 15	15	15.016	15.043	FGC 15	15.066	15.093	24.98	25	27.619	28	0.0254	0.022
FG 16	16	16.016	16.043	FGC 16	16.066	16.093	25.98	26	29.619	30	0.0254	0.025
FG 18	18	18.020	18.053	FGC 18	18.096	18.129	27.98	28	29.619	30	0.0254	0.027
FG 20	20	20.020	20.053	FGC 20	20.096	20.129	31.98	32	34.619	35	0.0254	0.044
FG 25	25	25.020	25.053	FGC 25	25.096	25.129	39.98	40	44.619	45	0.0254	0.091
FG 30	30	30.020	30.053	FGC 30	30.096	30.129	44.98	45	53.619	54	0.0254	0.127
FG 35	35	35.025	35.064	FGC 35	35.127	35.166	51.98	52	61.619	62	0.0254	0.189
FG 40	40	40.025	40.064	FGC 40	40.127	40.166	59.98	60	71.619	72	0.0254	0.301
FG 50	50	50.025	50.064	FGC 50	50.127	50.166	74.98	75	89.619	90	0.0254	0.596

MOUNTING DIMENSIONS

Part No.		Nominal Size	J Between O-Ring GRVS.	Ja O-Ring GRV. Width	Jb O-Ring GRV. Dia.	O-Ring Size	O-Ring Part Number
Precision	Compensated						
FG 06	FGC 06	6	N/A	N/A	N/A	N/A	N/A
FG 08	FGC 08	8	8.0	2.032	12.201	12 x 1.7	6000025
FG 10	FGC 10	10	8.3	2.032	14.415	14 x 1.6	6000026
FG 12	FGC 12	12	12.0	3.175	17.907	17.5 x 2.5	6000016
FG 15	FGC 15	15	12.7	3.175	20.671	20 x 2.65	6000029
FG 16	FGC 16	16	12.7	3.175	21.882	21.5 x 2.5	6000017
FG 18	FGC 18	18	14.0	3.175	23.885	23.5 x 2.5	6000031
FG 20	FGC 20	20	17.0	3.175	27.864	27.5 x 2.5	6000018
FG 25	FGC 25	25	24.0	3.175	35.865	35.5 x 2.5	6000019
FG 30	FGC 30	30	30.0	3.175	40.895	40 x 2.5	6000034
FG 35	FGC 35	35	36.0	4.115	46.200	46 x 3.5	6000035
FG 40	FGC 40	40	37.3	4.115	54.255	53 x 3.5	6000036
FG 50	FGC 50	50	50	4.115	69.215	69 x 3.5	6000022

LOAD & SPEED DATA

Part No.	Effective Surface Area CM ²	Max Static Load lb. Frelon®		Effective Surface Area CM ²	MAX Static Load N Frelon	
		GOLD	J & W		GOLD	J & W
FG 06	1.1	498	249	1.10	2217	1109
FG 08	1.6	741	370	1.60	3296	1648
FG 10	2.2	1018	509	2.20	4532	2266
FG 12	3.2	1499	749	3.20	6671	3335
FG 15	4.2	1944	972	4.20	8652	4326
FG 16	4.8	2222	1111	4.80	9888	4944
FG 18	5.4	2500	1250	5.40	11125	5562
FG 20	7.0	3241	1620	7.00	14421	7210
FG 25	11.3	5207	2604	11.30	23171	11586
FG 30	16.2	7500	3750	16.20	33374	16687
FG 35	21.7	10048	5024	21.70	44714	22357
FG 40	28.8	13333	6666	28.80	59331	29665
FG 50	45.0	20833	10416	45.00	92705	46352

 **Plain Bearing Accessories: Retaining Rings, Seals, O-Rings**
page 29



Only certified Simplicity 60 Plus Shafting provides maximum linear bearing performance.

Inch Series—page 52 Metric Series—page 90

Note: MAX PV (m/min. * kg/sq. cm)

FrelonGOLD® = 430 PV

Frelon J = 215 PV

MAX Speed Running Dry (m/min.)

FrelonGOLD = 91.4

Frelon J = 42.6

MAX Speed Running
with Lubrication (m/min.)

FrelonGOLD = 251.5

Frelon J = 122

MAX PV (m/s. * N/mm²)

FrelonGOLD = 0.70 PV

Frelon J = 0.35 PV

MAX Speed Running Dry (m/s)

FrelonGOLD = 1.52

Frelon J = 0.71

MAX Speed Running

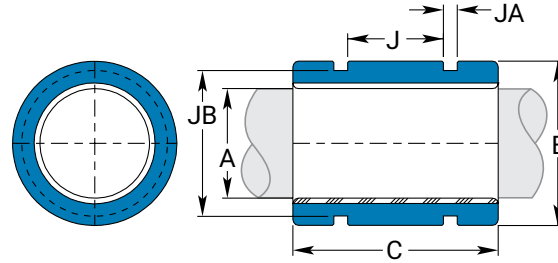
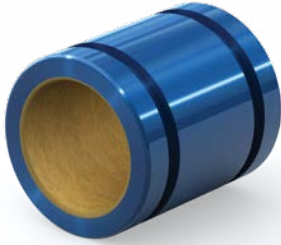
with Lubrication (m/s)

FrelonGOLD = 4.19

Frelon J = 2.03

Simplicity® Thin Wall Bearings

Plain Bearings – Compact Thin Wall FMT



DIMENSIONAL INFORMATION

Precision I.D. Series Similar to Preloaded Ball Bearing				Compensated I.D. Series Similar to Standard Ball Bearing			B O.D. H7		C Length		Concentric	Bearing Weight
Part No.	Nominal Size	A Bearing I.D. F8		Part No.	A Bearing I.D.		MIN	MAX	MIN	MAX	MAX mm	Kg.
Closed	mm	MIN	MAX	Closed	MIN	MAX						
FMT 06	6	6.010	6.028	FMTC 06	6.060	6.078	11.982	12	21.619	22	0.0254	0.0057
FMT 08	8	8.013	8.035	FMTC 08	8.063	8.085	14.982	15	23.619	24	0.0254	0.0071
FMT 10	10	10.013	10.035	FMTC 10	10.063	10.085	16.982	17	25.619	26	0.0254	0.0085
FMT 12	12	12.016	12.043	FMTC 12	12.066	12.093	18.979	19	27.619	28	0.0254	0.0113
FMT 14	14	14.016	14.043	FMTC 14	14.066	14.093	20.979	21	27.619	28	0.0254	0.0128
FMT 16	16	16.016	16.043	FMTC 16	16.066	16.093	23.979	24	29.619	30	0.0254	0.0184
FMT 20	20	20.020	20.053	FMTC 20	20.096	20.129	27.979	28	29.619	30	0.0254	0.0227
FMT 25	25	25.020	25.053	FMTC 25	25.096	25.129	34.975	35	39.619	40	0.0254	0.0439
FMT 30	30	30.020	30.053	FMTC 30	30.096	30.129	39.975	40	49.619	50	0.0254	0.0652
FMT 40	40	40.025	40.064	FMTC 40	40.127	40.166	51.970	52	59.619	60	0.0254	0.1233
FMT 50	50	50.025	50.064	FMTC 50	50.127	50.166	61.970	62	69.619	70	0.0254	0.1772

MOUNTING DIMENSIONS

Part No.		Nominal Size	J Between O-Ring GRVS.	JA O-Ring GRV. Width	JB O-Ring GRV. Dia.	O-Ring Size	O-Ring Part Number
Precision	Compensated						
FMT 06	FMTC 06	6	N/A	N/A	N/A	N/A	N/A
FMT 08	FMTC 08	8	10.0	2.000	12.200	12 x 1.7	6000025
FMT 10	FMTC 10	10	12.0	2.000	14.400	14 x 1.6	6000026
FMT 12	FMTC 12	12	14.0	2.000	16.600	16 x 1.5	6000027
FMT 14	FMTC 14	14	14.0	2.000	18.500	18 x 1.5	6000028
FMT 16	FMTC 16	16	14.0	2.000	21.300	21.1 x 1.6	6000030
FMT 20	FMTC 20	20	14.0	2.000	25.500	25 x 1.5	6000032
FMT 25	FMTC 25	25	22.0	3.200	30.900	30.5 x 2.5	6000033
FMT 30	FMTC 30	30	30.0	3.200	35.900	35.5 x 2.5	6000019
FMT 40	FMTC 40	40	40.0	4.100	46.200	46 x 3.5	6000035
FMT 50	FMTC 50	50	50.0	4.100	56.300	26 x 3.5	6000021

LOAD & SPEED DATA

Part No.	Effective Surface Area CM ²	Max Static Load lb. Frelon®		Effective Surface Area CM ²	MAX Static Load N Frelon	
		GOLD	J & W		GOLD	J & W
FMT 06	0.202	613	307	1.3	2727	1364
FMT 08	0.295	891	445	1.9	3963	1982
FMT 10	0.403	1204	602	2.6	5356	2678
FMT 12	0.527	1556	778	3.4	6926	3463
FMT 14	0.605	1816	908	3.9	8083	4042
FMT 16	0.744	2222	1111	4.8	9888	4944
FMT 20	0.930	2778	1389	6.0	12361	6180
FMT 25	1.550	4629	2315	10.0	20601	10301
FMT 30	2.325	6944	3472	15.0	30902	15451
FMT 40	3.720	11111	5555	24.0	49442	24721
FMT 50	5.425	16203	8102	35.0	72104	36052

Note: MAX PV (m/min. * kg/sq. cm)

FrelonGOLD® = 430 PV

Frelon J = 215 PV

MAX Speed Running Dry (m/min.)

FrelonGOLD = 91.4

Frelon J = 42.6

MAX Speed Running

with Lubrication (m/min.)

FrelonGOLD = 251.5

Frelon J = 122

MAX PV (m/s. * N/mm²)

FrelonGOLD = 0.70 PV

Frelon J = 0.35 PV

MAX Speed Running Dry (m/s)

FrelonGOLD = 1.52

Frelon J = 0.71

MAX Speed Running

with Lubrication (m/s)

FrelonGOLD = 4.19

Frelon J = 2.03



Plain Bearing Accessories: Retaining Rings, Seals, O-Rings
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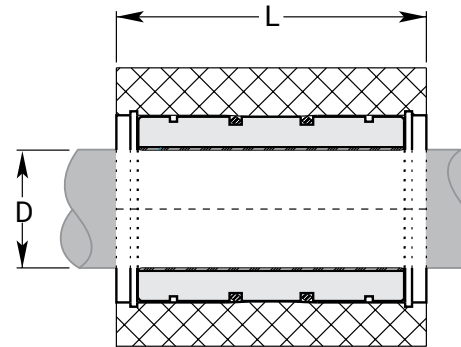
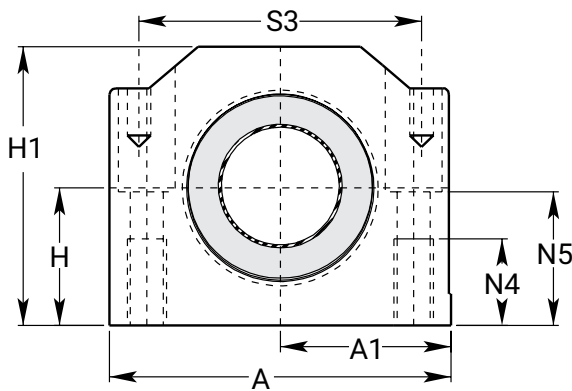
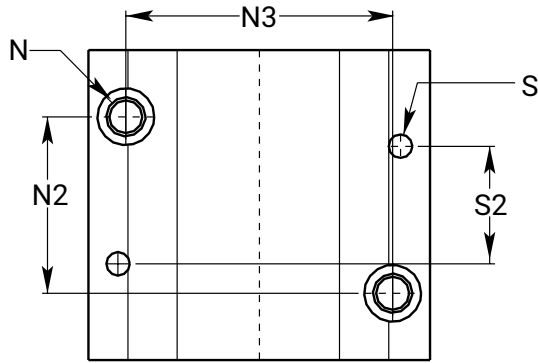


Only certified Simplicity 60 Plus Shafting provides maximum linear bearing performance.

Inch Series—page 52 Metric Series—page 90

Simplicity® Closed Pillow Blocks

Plain Bearings – Closed Pillow Blocks PM



DIMENSIONAL INFORMATION

Part No.	D Nom. Brg. I.D.	H Centerline	H1 Height	A Width	A1 0.013	L Length	N Bolt	N2	N3	N4	N5	S	S2	S3	Max Static Load lb.		Max Static Load N		Assem. WT. Kg.	
															Frelon® GOLD	J & W	Frelon GOLD	J & W		
PM 08	PM 08 C	8	15	28	35	17.5	32	M4 x 0.7	20	25	9	14.5	N/A	N/A	N/A	926	463	4120	2060	0.069
PM 10	PM 10 C	10	16	31.5	40	20	36	M5 x 0.8	20	29	11	15	4	29	31	1345	672	5984	2992	0.095
PM 12	PM 12 C	12	18	35	43	21.5	39	M5 x 0.8	23	32	11	16.5	4	32	34	1777	888	7907	3953	0.118
PM 16	PM 16 C	16	22	42	53	26.5	43	M6 x 1.0	26	40	13	21	4	35	42	2667	1334	11870	5935	0.200
PM 20	PM 20 C	20	25	50	59.3	30	54	M8 x 1.25	32	45	18	24	5	45	50	4167	2083	18541	9270	0.329
PM 25	PM 25 C	25	30	60	78	39	67	M10 x 1.5	40	60	22	29	6	20	64	6715	3358	29881	14941	0.655
PM 30	PM 30 C	30	35	71	87	43.5	79	M10 x 1.5	45	68	22	34	6	30	72	9444	4722	42026	21013	1.020
PM 40	PM 40 C	40	45	91	108	54	91	M12 x 1.75	58	86	26	44	8	35	90	14814	7407	65923	32962	1.846
PM 50	PM 50 C	50	50	105	132	66	113	M16 x 2.0	50	105	34	49	10	42	108	23147	11574	103005	51503	3.169

- Notes:** (1) Standard pillow block assembly includes self-aligning housing and precision bearing.
 (2) All standard metric pillow blocks use standard FM series bearings.
 (3) Straight bore pillow block assembly includes standard O.D. FM series bearing in straight bore housing.

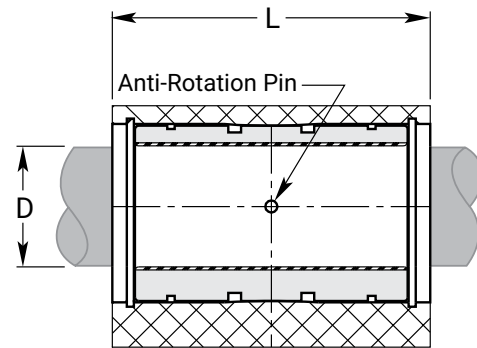
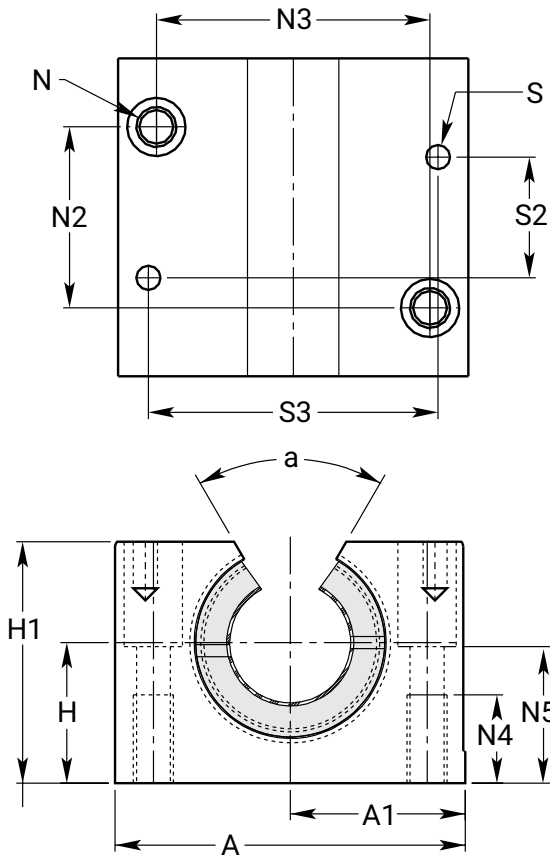


Only certified Simplicity 60 Plus Shafting provides maximum linear bearing performance.

Inch Series—page 52 Metric Series—page 90

Simplicity® Open Pillow Blocks

Plain Bearings – Open Pillow Blocks PMN



INCH

ISO METRIC

JIS METRIC

DIMENSIONAL INFORMATION

Part No.	D Nom. Brg. I.d.	H Centerline	H1 Height	A Width	A1 0.013	L Length	N Bolt	N2	N3	N4	N5	S	S2	S3	A mm	Max Static Load lb.		Max Static Load N		Assem. WT. Kg.	
																Frelon® GOLD	J & W	Frelon GOLD	J & W		
PMN 12 Open Precision	PMN 12C Compensated	12	18	28	43	21.5	39	M5 x 0.8	23	32	11	16.5	4	32	34	66	1777	888	7907	3953	0.096
PMN 16	PMN 16C	16	22	35	53	26.5	43	M6 x 1.0	26	40	13	21	4	35	42	68	2667	1334	11870	5935	0.162
PMN 20	PMN 20C	20	25	42	60	30	54	M8 x 1.25	32	45	18	24	5	45	50	60	4167	2083	18541	9270	0.267
PMN 25	PMN 25C	25	30	51	78	39	67	M10 x 1.5	40	60	20	29	6	20	64	60	6715	3358	29881	14941	0.536
PMN 30	PMN 30C	30	35	60	87	43.5	79	M10 x 1.5	45	68	22	34	6	30	72	60	9444	4722	42026	21013	0.831
PMN 40	PMN 40C	40	45	77	108	54	91	M12 x 1.75	58	86	26	44	8	35	90	60	14814	7407	65923	32962	1.499
PMN 50	PMN 50C	50	50	88	132	66	113	M16 x 2.0	50	105	34	49	10	42	108	60	23147	11574	103005	51503	2.539

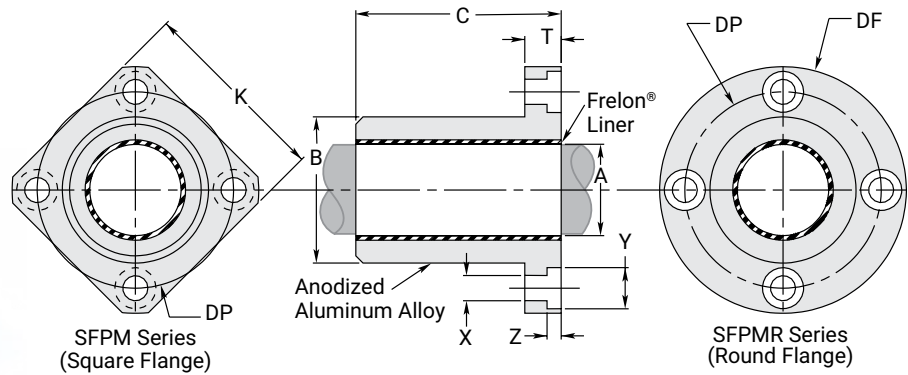


Only certified Simplicity 60 Plus Shafting provides maximum linear bearing performance.

Inch Series—page 52 Metric Series—page 90

Simplicity® Flange Bearings

Flange Bearings SFPM



DIMENSIONAL INFORMATION

Precision I.D. Series Similar to Preloaded Ball Bearing				Compensated I.D. Series Similar to Standard Ball Bearing				Nominal Size	B Body O.D. H7		C Length H13		Effective Surface Area CM ²	Max Static Load N	
Part No.		A Bearing I.D. F8		Part No.		A Bearing I.d.			MIN	MAX	MIN	MAX		Frelon®	
Square	Round	MIN	MAX	Square	Round	MIN	MAX		mm					GOLD	J & W
SFPM 08	SFPMR 08	8.013	8.035	SFPM 08C	SFPMR 08C	8.063	8.085	8	15.982	16	24.8	25	2.094	4316	2168
SFPM 12	SFPMR 12	12.016	12.043	SFPM 12C	SFPMR 12C	12.066	12.093	12	21.979	22	31.8	32	4.021	8280	4159
SFPM 16	SFPMR 16	16.016	16.043	SFPM 16C	SFPMR 16C	16.066	16.093	16	25.979	26	35.8	36	6.032	12429	6239
SFPM 20	SFPMR 20	20.020	20.053	SFPM 20C	SFPMR 20C	20.096	20.129	20	31.975	32	44.8	45	9.425	19414	9751
SFPM 25	SFPMR 25	25.020	25.053	SFPM 25C	SFPMR 25C	25.096	25.129	25	39.975	40	57.7	58	15.184	31284	15706
SFPM 30	SFPMR 30	30.020	30.053	SFPM 30C	SFPMR 30C	30.096	30.129	30	46.975	47	67.7	68	21.363	44008	22102
SFPM 40	SFPMR 40	40.025	40.064	SFPM 40C	SFPMR 40C	40.127	40.166	40	61.970	62	79.7	80	33.510	69033	34669
SFPM 50	SFPMR 50	50.025	50.064	SFPM 50C	SFPMR 50C	50.127	50.166	50	74.970	75	99.7	100	52.360	107871	54161
SFPM 60	SFPMR 60	60.030	60.076	SFPM 60C	SFPMR 60C	60.182	60.228	60	89.965	90	124.6	125	78.540	161796	81246
SFPM 80	SFPMR 80	80.030	80.076	SFPM 80C	SFPMR 80C	80.182	80.228	80	119.965	120	164.6	165	138.230	284765	142991

- Notes:** (1) Formula used for effective surface area is $(\pi * ID * L)/3$.
 (2) Max static load is effective surface area times MAX load for FrelonGOLD®.
 (3) - 210 kgf/cm² is the rating for FrelonGOLD; 105.45 kgf/cm² is the rating for Frelon J.

MOUNTING DIMENSIONS

Part No.		K Square	DF O.D.	T Length	Dp Bolt Circle	X Hole	Y C'Bore Depth	Z C'Bore Depth	Clamping Bolt	Concentricity	Squareness	SFPM Weight Kg.	SFPMR Weight Kg.
Square	Round	MAX.	MAX.	MAX.									
SFPM 08	SFPMR 08	25	32	8	24	3.5	6	3.1	M 3	0.012	0.012	0.018	0.022
SFPM 12	SFPMR 12	32	42	9	32	4.5	7.5	4.1	M 4	0.012	0.012	0.037	0.046
SFPM 16	SFPMR 16	35	46	9	36	4.5	7.5	4.1	M 4	0.012	0.012	0.047	0.058
SFPM 20	SFPMR 20	42	54	11	43	5.5	9	5.1	M 5	0.015	0.015	0.085	0.101
SFPM 25	SFPMR 25	50	62	11	51	5.5	9	5.1	M 5	0.015	0.015	0.156	0.172
SFPM 30	SFPMR 30	60	76	14	62	6.6	11	6.1	M 6	0.015	0.015	0.257	0.293
SFPM 40	SFPMR 40	75	98	18	80	9.0	14	8.1	M 8	0.017	0.017	0.500	0.595
SFPM 50	SFPMR 50	88	112	18	94	9.0	14	8.1	M 8	0.017	0.017	0.825	0.930
SFPM 60	SFPMR 60	106	134	24	112	11.0	17	11.1	M 10	0.020	0.020	1.506	1.697
SFPM 80	SFPMR 80	136	164	24	142	11.0	17	11.1	M 10	0.020	0.020	3.308	3.483

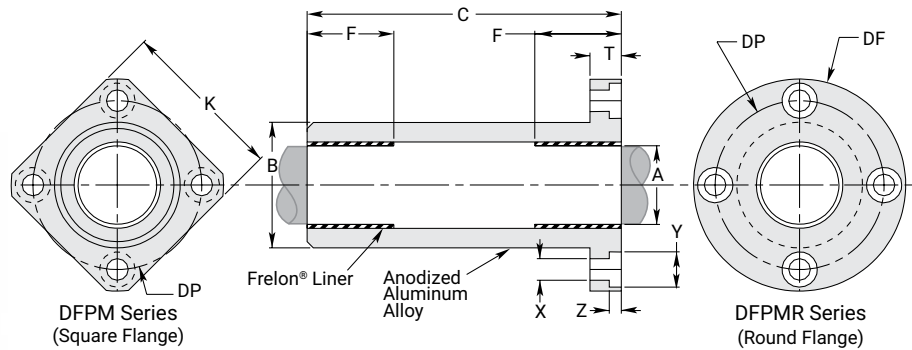


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Inch Series—page 52 Metric Series—page 90

Simplicity® Flange Bearings

Flange Bearings DFPM



DIMENSIONAL INFORMATION

Precision I.D. Series Similar to Preloaded Ball Bearing				Compensated I.D. Series Similar to Standard Ball Bearing				Nominal Size	B Body O.D. H7		C Length		F Length Each End	Effective Surface Area CM ²	MAX Static Load N	
Part No.		A Bearing I.D. F8		Part No.		A Bearing I.D.			MIN	MAX	MIN	MAX			Frelon® GOLd	J & W
Square	Round	MIN	MAX	Square	Round	MIN	MAX	MM	MIN	MAX	MIN	MAX				
DFPM 08	DFPMR 08	8.013	8.035	DFPM 08C	DFPMR 08C	8.063	8.085	8	15.982	16	44.7	45	12.1	2.027	4179	2099
DFPM 12	DFPMR 12	12.016	12.043	DFPM 12C	DFPMR 12C	12.066	12.093	12	21.979	22	56.7	57	15.4	3.870	7976	4002
DFPM 16	DFPMR 16	16.016	16.043	DFPM 16C	DFPMR 16C	16.066	16.093	16	25.979	26	69.7	70	20.4	6.836	14087	7073
DFPM 20	DFPMR 20	20.020	20.053	DFPM 20C	DFPMR 20C	20.096	20.129	20	31.975	32	79.7	80	22.1	9.257	19071	9575
DFPM 25	DFPMR 25	25.020	25.053	DFPM 25C	DFPMR 25C	25.096	25.129	25	39.975	40	111.6	112	33.1	17.331	35708	17933
DFPM 30	DFPMR 30	30.020	30.053	DFPM 30C	DFPMR 30C	30.096	30.129	30	46.975	47	122.6	123	35	21.991	45303	22749
DFPM 40	DFPMR 40	40.025	40.064	DFPM 40C	DFPMR 40C	40.127	40.166	40	61.970	62	150.6	151	44	36.861	75939	38131
DFPM 50	DFPMR 50	50.025	50.064	DFPM 50C	DFPMR 50C	50.127	50.166	50	74.970	75	191.6	192	69.5	72.780	149936	75282
DFPM 60	DFPMR 60	60.030	60.076	DFPM 60C	DFPMR 60C	60.182	60.228	60	89.965	90	208.6	209	73	91.735	188980	94892

- Notes:** (1) Formula used for effective surface area is $(\pi * ID * L)/3$.
 (2) MAX static load is effective surface area times MAX load for FrelonGOLD®.
 (3) - 210 kgf/cm² is the rating for FrelonGOLD®; 105.45 kgf/cm² is the rating for Frelon J.
 (4) Frelon pads in each end (F dimension).

MOUNTING DIMENSIONS

Part No.		K	DF	T	DP	X	Y	Z	Clamping Bolt	Concentricity	Squareness	DFPM Weight Kg.	DFPMR Weight Kg.
Square	Round	MAX	O.D. MAX	Length MAX	Bolt Circle	Hole	C'bore Depth	C'bore Depth					
DFPM 08	DFPMR 08	25	32	8	24	3.5	6	3.1	M 3	0.015	0.015	0.027	0.031
DFPM 12	DFPMR 12	32	42	9	32	4.5	7.5	4.1	M 4	0.015	0.015	0.055	0.064
DFPM 16	DFPMR 16	35	46	9	36	4.5	7.5	4.1	M 4	0.015	0.015	0.078	0.089
DFPM 20	DFPMR 20	42	54	11	43	5.5	9	5.1	M 5	0.017	0.017	0.133	0.149
DFPM 25	DFPMR 25	50	62	11	51	5.5	9	5.1	M 5	0.017	0.017	0.270	0.286
DFPM 30	DFPMR 30	60	76	14	62	6.6	11	6.1	M 6	0.017	0.017	0.413	0.450
DFPM 40	DFPMR 40	75	98	18	80	9.0	14	8.1	M 8	0.020	0.020	0.846	0.942
DFPM 50	DFPMR 50	88	112	18	94	9.0	14	8.1	M 8	0.020	0.020	1.450	1.556
DFPM 60	DFPMR 60	106	134	24	112	11.0	17	11.1	M 10	0.025	0.025	2.329	2.519

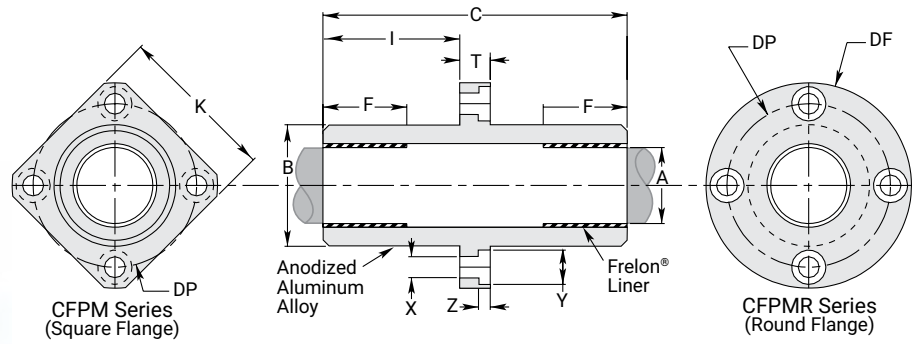


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Inch Series—page 52 Metric Series—page 90

Simplicity® Flange Bearings

Flange Bearings CFPM



DIMENSIONAL INFORMATION

Precision I.D. Series Similar to Preloaded Ball Bearing				Compensated I.D. Series Similar to Standard Ball Bearing				Nominal Size mm	B Body O.D. H7		C Length		I Length to Flng.	F Length Each End	Effective Surface Area CM ²	MAX Static Load N	
Part No.		A Bearing I.D. F8		Part No.		A Bearing I.D.			MIN	MAX	MIN	MAX				Frelon® GOLD	J & W
Square	Round	MIN	MAX	Square	Round	MIN	MAX										
CFPM 08	CFPMR 08	8.013	8.035	CFPM 08C	CFPMR 08C	8.063	8.085	8	15.982	16	45.7	46.3	19.0	12.1	2.027	4179	2099
CFPM 12	CFPMR 12	12.016	12.043	CFPM 12C	CFPMR 12C	12.066	12.093	12	21.979	22	60.7	61.3	26.0	15.4	3.870	7976	4002
CFPM 16	CFPMR 16	16.016	16.043	CFPM 16C	CFPMR 16C	16.066	16.093	16	25.979	26	67.7	68.3	29.5	20.4	6.836	14087	7073
CFPM 20	CFPMR 20	20.020	20.053	CFPM 20C	CFPMR 20C	20.096	20.129	20	31.975	32	79.7	80.3	34.5	22.1	9.257	19071	9575
CFPM 25	CFPMR 25	25.020	25.053	CFPM 25C	CFPMR 25C	25.096	25.129	25	39.975	40	111.7	112.3	50.5	33.1	17.331	35708	17933
CFPM 30	CFPMR 30	30.020	30.053	CFPM 30C	CFPMR 30C	30.096	30.129	30	46.975	47	122.7	123.3	54.5	35	21.991	45303	22749
CFPM 40	CFPMR 40	40.025	40.064	CFPM 40C	CFPMR 40C	40.127	40.166	40	61.970	62	150.7	151.3	66.5	44	36.861	75939	38131
CFPM 50	CFPMR 50	50.025	50.064	CFPM 50C	CFPMR 50C	50.127	50.166	50	74.970	75	191.7	192.3	87.0	69.5	72.780	149936	75282
CFPM 60	CFPMR 60	60.030	60.076	CFPM 60C	CFPMR 60C	60.182	60.228	60	89.965	90	208.7	209.3	92.5	73	91.735	188980	94892

- Notes:** (1) Formula used for effective surface area is $(\pi * ID * L)/3$.
 (2) MAX static load is effective surface area times MAX load for FrelonGOLD®.
 (3) - 210 kgf/cm² is the rating for FrelonGOLD®; 105.45 kgf/cm² is the rating for Frelon J.
 (4) Frelon pads in each end (F dimension).

MOUNTING DIMENSIONS

Part No.		K Square	DF O.D. MAX	T Length MAX	Dp Bolt Circle	X Hole	Y C'Bore Depth	Z C'Bore Depth	Clamping Bolt	Concentricity	Squareness	CFPM Weight Kg.	CFPMR Weight Kg.
Square	Round	MAX	MAX	MAX									
CFPM 08	CFPMR 08	25	32	8	24	3.5	6	3.1	M 3	0.015	0.015	0.027	0.031
CFPM 12	CFPMR 12	32	42	9	32	4.5	7.5	4.1	M 4	0.015	0.015	0.058	0.067
CFPM 16	CFPMR 16	35	46	9	36	4.5	7.5	4.1	M 4	0.015	0.015	0.077	0.088
CFPM 20	CFPMR 20	42	54	11	43	5.5	9	5.1	M 5	0.017	0.017	0.133	0.149
CFPM 25	CFPMR 25	50	62	11	51	5.5	9	5.1	M 5	0.017	0.017	0.270	0.286
CFPM 30	CFPMR 30	60	76	14	62	6.6	11	6.1	M 6	0.017	0.017	0.413	0.450
CFPM 40	CFPMR 40	75	98	18	80	9.0	14	8.1	M 8	0.020	0.020	0.846	0.942
CFPM 50	CFPMR 50	88	112	18	94	9.0	14	8.1	M 8	0.020	0.020	1.450	1.556
CFPM 60	CFPMR 60	106	134	24	112	11.0	17	11.1	M 10	0.025	0.025	2.329	2.519

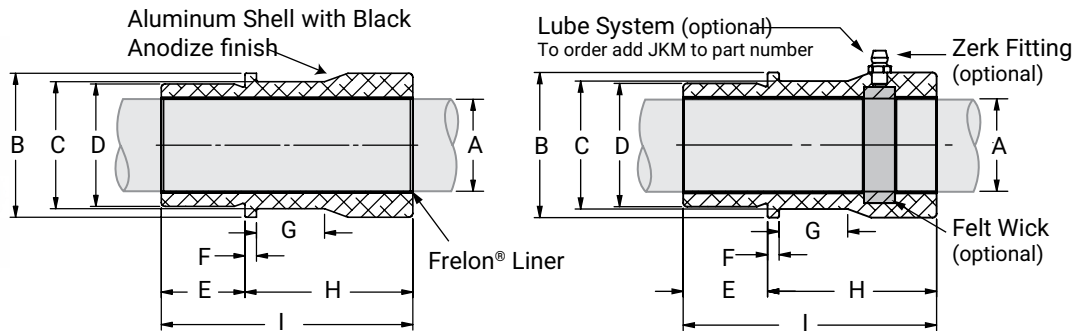


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Inch Series—page 52 Metric Series—page 90

Simplicity® Die Set Bushings

Die Set Bushings PACM



DIMENSIONAL INFORMATION

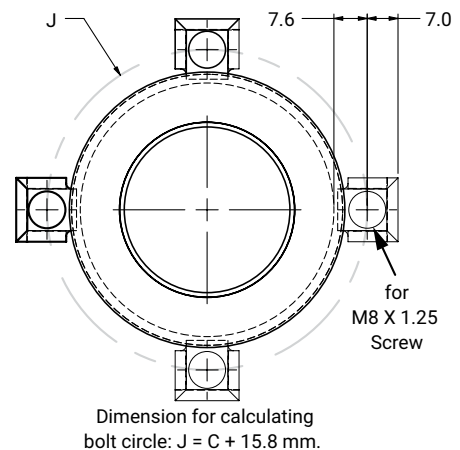
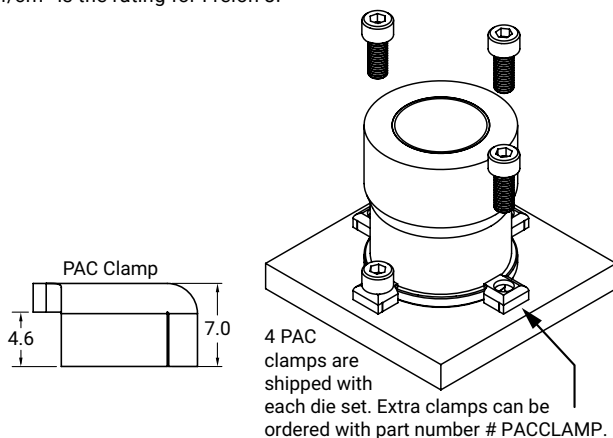
P = Precision C = Compensated	Part No.	Nominal Size mm	A Bearing I.D.		B Flange & Barrel O.D. H7		C Clamp Dia.	D Pilot O.D. H7	E Pilot Length	F Flange Length	G Recess Length	H Head Length	I Overall Length	Effective Surface Area CM ²	MAX Static Load N		Bearing Weight Kg.
			MIN	MAX	MIN	MAX	MIN	MIN	MAX	GOLD	J & W						
P	PACMZ19	19	19.020	19.053	33.975	34	29	27.979	28	18	18	52	70	13.928	28694	14411	0.282
C	PACMZ19C	19	19.096	19.129	33.975	34	29	27.979	28	18	18	52	70	13.928	28694	14411	0.282
P	PACMZ25	25	25.020	25.053	43.975	44	39	37.975	38	23	20	57	80	20.944	43144	21670	0.551
C	PACMZ25C	25	25.096	25.129	43.975	44	39	37.975	38	23	20	57	80	20.944	43144	21670	0.551
P	PACMZ32	32	32.020	32.053	52.970	53	48	44.975	45	26	20	64	90	30.159	62127	31196	0.834
C	PACMZ32C	32	32.096	32.129	52.970	53	48	44.975	45	26	20	64	90	30.159	62127	31196	0.834
P	PACMZ40	40	40.025	40.064	62.970	63	58	53.970	54	30	5	25	70	41.888	86289	43331	1.229
C	PACMZ40C	40	40.127	40.166	62.970	63	58	53.970	54	30	5	25	70	41.888	86289	43331	1.229
P	PACMZ50	50	50.025	50.064	78.970	79	74	64.970	65	35	25	75	110	57.596	118652	59576	2.055
C	PACMZ50C	50	50.127	50.166	78.970	79	74	64.970	65	35	25	75	110	57.596	118652	59576	2.055
P	PACMZ63	63	63.030	63.076	91.965	92	87	80.970	81	48	25	82	130	85.765	106056	88722	2.984
C	PACMZ63C	63	63.182	63.228	91.965	92	87	80.970	81	48	25	82	130	85.765	106056	88722	2.984
P	PACMZ80	80	80.030	80.076	110.965	111	106	99.965	100	48	25	102	150	125.664	258876	129992	4.772
C	PACMZ80C	80	80.182	80.228	110.965	111	106	99.965	100	48	25	102	150	125.664	258876	129992	4.772

- Notes: (1) Formula used for effective surface area is $(\pi * ID * L)/3$.
 (2) Shell material is aluminum..
 (3) For lubrication system add JKM, example: PACMZ750JKM.
 (4) MAX static load is effective surface area times max load for FrelonGOLD®.
 (5) - 210 kgf/cm² is the rating for FrelonGOLD;
 105.45 kgf/cm² is the rating for Frelon J.



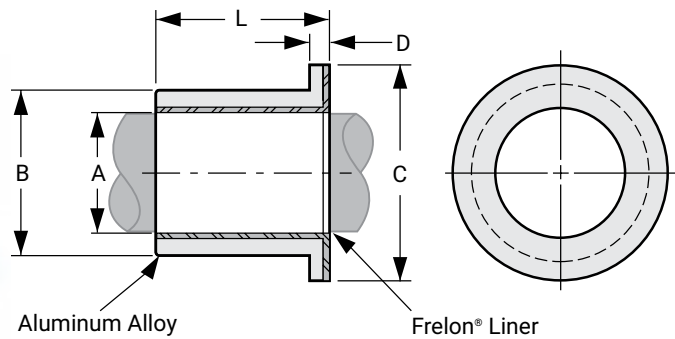
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Inch Series—page 42 Metric Series—page 80



Simplicity® Sleeve Bearings with Flange

Sleeve Bearings with Flange PSFM



DIMENSIONAL INFORMATION

Part No.	Nominal Bearing Size mm			A Bearing I.D.		B O.D. S7		C Flange O.D.	D Flange Width	L Length		MAX Static Load Kg.		MAX Static Load N		Bearing Weight Kg	Recommended Housing Bore			
	I.D.	O.D.	Length	MIN	MAX	MIN	MAX			MIN	MAX	Frelon® GOLD	J & W	Frelon GOLD	J & W		Slip Fit & Epoxy		Press Fit	
PSFM0610-06	6	10	6	6.028	6.058	10.023	10.038	14	2	5.75	6	76	38	745	373	0.00126	10.038	10.063	10.00	10.015
PSFM0610-10	6	10	10	6.028	6.058	10.023	10.038	14	2	9.75	10	126	63	1236	618	0.00182	10.038	10.063	10.00	10.015
PSFM0812-06	8	12	6	8.033	8.066	12.028	12.046	16	2	5.75	6	100	50	981	490	0.00153	12.046	12.071	12.00	12.018
PSFM0812-08	8	12	8	8.033	8.066	12.028	12.046	16	2	7.75	8	134	67	1314	657	0.00189	12.046	12.071	12.00	12.018
PSFM0812-12	8	12	12	8.033	8.066	12.028	12.046	16	2	11.75	12	202	101	1981	990	0.00259	12.046	12.071	12.00	12.018
PSFM1016-08	10	16	8	10.033	10.066	16.028	16.046	22	3	7.75	8	168	84	1647	824	0.00421	16.046	16.071	16.00	16.018
PSFM1016-10	10	16	10	10.033	10.066	16.028	16.046	22	3	9.75	10	210	105	2059	1030	0.00489	16.046	16.071	16.00	16.018
PSFM1016-16	10	16	16	10.033	10.066	16.028	16.046	22	3	15.75	16	336	168	3295	1647	0.00694	16.046	16.071	16.00	16.018
PSFM1218-08	12	18	8	12.034	12.070	18.028	18.046	24	3	7.75	8	202	101	1981	990	0.00478	18.046	18.071	18.00	18.018
PSFM1218-12	12	18	12	12.034	12.070	18.028	18.046	24	3	11.75	12	302	151	2961	1481	0.00636	18.046	18.071	18.00	18.018
PSFM1519-16	15	19	16	15.034	15.070	19.028	19.046	25	3	15.50	16	504	252	4942	2471	0.00647	19.046	19.071	19.00	19.018
PSFM1620-16	16	20	16	16.041	16.080	20.035	20.056	27	3	15.55	16	538	269	5276	2638	0.00718	20.056	20.081	20.00	20.021
PSFM1620-20	16	20	20	16.041	16.080	20.035	20.056	27	3	19.50	20	672	336	6590	3295	0.00844	20.056	20.081	20.00	20.021
PSFM1620-25	16	20	25	16.041	16.080	20.035	20.056	27	3	24.50	25	840	420	8237	4119	0.01002	20.056	20.081	20.00	20.021
PSFM2026-20	20	26	20	20.042	20.084	26.035	26.056	32	3	19.50	20	840	420	8237	4119	0.01432	26.056	26.081	26.00	26.021
PSFM2026-30	20	26	30	20.042	20.084	26.035	26.056	32	3	29.50	30	1260	630	12356	6178	0.02035	26.056	26.081	26.00	26.021
PSFM2530-20	25	30	20	25.042	25.084	30.035	30.056	39	3.5	19.50	20	1050	525	10296	5148	0.01672	30.056	30.081	30.00	30.021
PSFM2530-25	25	30	25	25.042	25.084	30.035	30.056	39	3.5	24.50	25	1312	656	12865	6433	0.01973	30.056	30.081	30.00	30.021
PSFM2530-32	25	30	32	25.042	25.084	30.035	30.056	39	3.5	31.50	32	1680	840	16474	8237	0.02394	30.056	30.081	30.00	30.021
PSFM3038-30	30	38	30	30.050	30.096	38.043	38.068	46	4	29.50	30	1890	945	18533	9267	0.04145	38.068	38.093	38.00	38.021
PSFM3545-35	35	45	35	35.052	35.102	45.043	45.068	55	5	34.50	35	2572	1286	25221	12611	0.07192	45.068	45.093	45.00	45.025
PSFM4050-40	40	50	40	40.052	40.102	50.043	50.068	60	5	39.50	40	3360	1680	32948	16474	0.09044	50.068	50.093	50.00	50.025
PSFM5060-50	50	60	50	50.062	50.133	60.053	60.099	70	5	49.50	50	5250	2625	51482	25741	0.13429	60.099	60.124	60.00	60.030

ORDERING INFORMATION

PSM	16	20	16
Type	I.D.	O.D.	Length
PSM: Precision Sleeve Bearing	I.D. in mm	O.D. in mm	Length in mm
PSFM: Precision Sleeve Bearing with Flange	I.D. in mm	O.D. in mm	Length in mm

Note: Lengths not listed above must be specially quoted.



Only certified Simplicity 60 Plus Shafting provides maximum linear bearing performance.

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INSTALLATION INSTRUCTIONS

1. Slip the bearing sleeve into the housing and epoxy into place with Loctite® or similar type bonding agent.

CAUTION Do NOT let any of the adhesive touch the bearing liner. It will harden and interfere with the running clearance.

2. Freeze the bearings at 0°F (-17.75°C) for 30-45 minutes. Using gloves, remove the bearings from the freezer and slip them into the housing. As they heat to room temperature, full contact between the bearing and housing will be achieved. The greatest advantage to this technique over traditional pressing is greater accuracy in alignment.