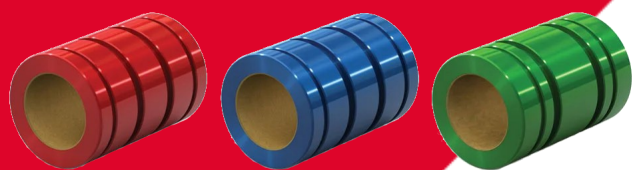




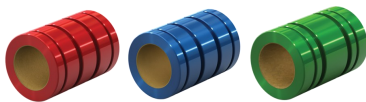
**Linear guides**



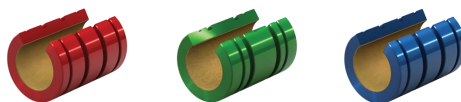


In 1985 PBC Linear® created the **Simplicity Linear Bearing, a self-lubricating linear bearing** that thrives in environments where linear ball bearings typically fail. These applications typically include dirt, vibration, shock loading, cleanrooms, welding, foundry, and washdown situations. **Simplicity Linear Bearings** are self-lubricating and maintenance-free. Ideal for tough environments thanks to their proprietary PTFE Frelon liner, these oil-free linear bearings offer low wear and reduced friction.

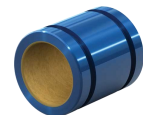
Simplicity Linear Plain Bearings exhibit real benefits thanks to the self-lubricating quality of the proprietary PTFE Frelon liner.



1. Closed Standard Linear Bearing



1. Open Standard Linear Bearing



1. Open Standard Linear Bearing

2. Closed Compensated Linear Bearing

2. Open Compensated Linear Bearing

2. Open Compensated Linear Bearing

3. Closed Self-Aligning Linear Bearing

## The FM series

Comprises ISO Metric Closed Plain Linear Bearings, characterized by their blue anodized aluminum shells. These bearings are designed to be interchangeable with linear ball bearings and certain bronze bushings.

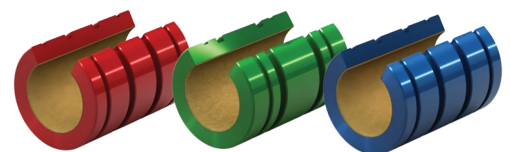
- Supports loads up to 271.9 kN
- Drop-in replacement for many linear ball bearings and bronze bushings.
- No rolling elements mean quieter performance and smoother linear motion.



## The FMN series

Features open-style, self-lubricating plain bearings designed for fully supported shafts. With a Frelon® liner for maintenance-free operation.

- Capable of supporting loads up to 271.9 kN
- Operates effectively between -240°C to 204°C
- Available with aluminum or stainless steel shells, providing durability in various environments.

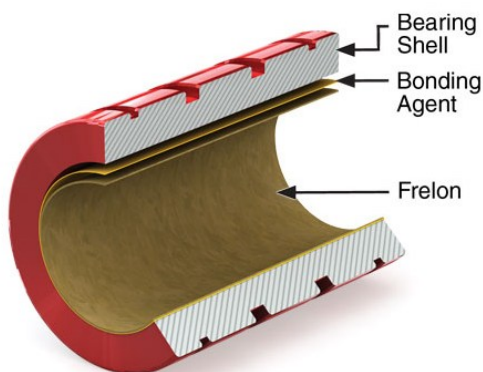
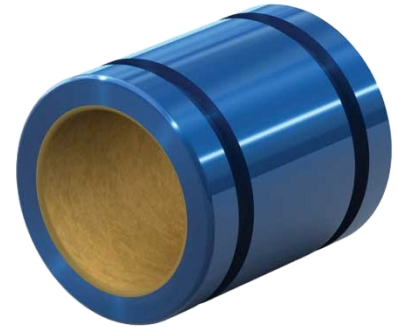




## The FG & FMT series

Same construction and smooth operation as the FM series but in a more compact package. Designed to be interchangeable with compact ball bearings and bronze bushings.

- ID sizes 6 mm thru 50 mm
- Static Load Capacities up to 72 kN
- Standard Shell Material is Aluminum. Stainless Steel bearing shells available
- FrelonGOLD® bearing liner standard. Frelon® J & Frelon® W optional
- Self Lubricating for oil free operation
- Custom modifications available



FrelonGOLD



Frelon J



Frelon W

## Lubricating Linear Bearing?

A self-lubricating linear bearing is characterized by its ability to transfer microscopic amounts of material to the mating surface. The interaction of the Frelon® liner 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 which creates the self-lubricating condition of Frelon riding on Frelon.* This transfer process creates a film that provides lubrication and reduces friction over the length of the rail or shaft.





## The SFPM & SFPMR series

Square (SFPM) Flange Mount Single Metric Plain Bearings are the ISO Metric single length versions. This flange bearing has a sturdy aluminum body with Frelon® liner bonded directly to the ID. The flange is located at one end of the bearing.

- Wide Size Range: Inner diameter sizes range from 8 mm to 80 mm
- Large Load Capacity: Static load capacities up to 284,765 N
- Standard Housing Material is Anodized Aluminum.
- Round Flanges also available.
- Three Different Liner Options: FrelonGOLD® is the standard bearing liner, but Frelon J & Frelon W are also available



## The DFPM & DFPMR series

The DFPM & DFPMR are the ISO Metric double length version of this type of bearing. This flange bearing has a sturdy aluminum body with a Frelon® liner bonded directly to the ID. The flange is located at one end of the bearing.

- Available in sizes 8 mm ID to 60 mm ID
- Static Load Capacities up to 188,000 N
- Standard Shell Material is Anodized Aluminum.
- Square Flanges also available.
- FrelonGOLD® is the standard bearing liner. Frelon J & Frelon W are optional
- Self Lubricating for oil free operation
- Wide temperature range: -240° C / 204° C
- Vibration Dampening





## The P series

A standard Simplicity® Linear Plain Bearing with a Self Aligning housing to create a Pillow Block. The closed bearing design allows for a lower cost installation by using end supported shafts.

- ID sizes range from 1/4" to 2"
- Static Load Capacities up to 111,000 N
- Self Lubricating for oil free operation
- Standard Shell Material is Aluminum. Stainless Steel bearing shells and housings available
- FrelonGOLD® bearing liner standard. Frelon® J & Frelon® W



## The PN series

The open design allows for fully supported shafts and support rail to be used for greater rigidity.

- ID sizes range from 1/2" to 2"
- Static Load Capacities up to 111,000 N
- Self Lubricating for oil free operation
- Standard Shell Material is Aluminum. Stainless Steel bearing shells and housings available
- Seal options in nitrile rubber, urethane, and viton



## The PW series

The closed bearing design allows for a lower cost installation by using end supported shafts.

- ID sizes range from 1/4" to 2"
- Static Load Capacities up to 222,000 N
- Standard Shell Material is Aluminum. Stainless Steel bearing shells and housings available
- Seal options in nitrile rubber, urethane, and viton





# Linear Shafting

**PBC Linear** shafting is exclusively optimized to match high-performance bearing technology providing long life, low maintenance, and reliable **linear motion**. **Linear shafting** is available in three different standard materials- Carbon Steel, **400 Series Stainless Steel** and Ceramic Coated Aluminum- for a wide range of applications. **300 Series Stainless Steel shafting** is also available at request. All types of shafting are offered either as bar stock or pre-drilled, available in standard lengths or as cut-to-length shafts, and with customizable machined ends.

## Key features

metric sizes of 4mm to 80mm diameters

0.025 mm to 0.051 mm per meter cumulative

Except on 3/8" (9.53 mm) diameters or smaller

End-joinable for longer travel lengths

End support blocks available

Cut to customer-specified length tolerances of:

3/16" to 1-1/4" shaft

1-3/8" to 2" shaft

2-1/2" to 4" shaft



### 1060 Carbon Steel

Our RC60+ Steel Shafting has a surface finish that is optimized to promote the self-lubricating performance of Frelon-lined bearings and retain lubrication for traditional linear ball bearings.

- Well suited for general industrial environments
- Surface finish: 8-12 RMS
- Diameter tolerance: Class L

### 400 Series Stainless Steel

440 Stainless Steel Shafting is case hardened to a minimum of RC50 and is suitable for use with Simplicity FrelonGOLD® lined bearings and linear ball bearings.

- Diameter tolerance is Class L
- Surface finish 8-12 RMS
- Good for harsh environments

### Ceramic Coated Aluminum

Hardened up to RC70, ceramic coated aluminum linear shafting is designed to be used with Simplicity FrelonGOLD® in contaminated applications. Ideal for use with environments containing:

- Weld Splatter
- Paints
- Contaminants

### 300 Series Stainless Steel

300 Series Stainless Steel shafting is extremely corrosive resistant and nonmagnetic and is usable only with non-rolling element bearings like Simplicity plain bearings.

- Includes 303, 304 and 316 Stainless Steel
- Ideal for harsh environments
- Reach out to factory for pricing and availability





## IVTAAB Linear Guide

**IVTAAB Linear Slide Rails** provide a wider base rail option for the IVT family that can easily integrate a variety of drive options. Composed of a precision machined aluminum anodized rail with embedded hardened stainless steel races

- Precision Machined Rails: Ensures high dimensional and form accuracy, facilitating precise mounting and alignment.
- Embedded Hardened Stainless Steel Races: Reduces mounting components by up to 50% and eliminates the need for additional fasteners, streamlining the assembly process.
- High Load Capacity: Capable of handling loads up to 8,900 N, suitable for a wide range of industrial applications.



## IVTAAG Linear Guide

**IVTAAG Linear Slide Rail** eliminates tolerance stack-up with precision qualified edges for high accuracy and quick alignment.

- Ensures high dimensional and form accuracy, facilitating precise mounting and alignment.
- Capable of handling loads up to 8,900 N, suitable for a wide range of industrial applications.
- Offers the flexibility to extend rail length for long-length applications, providing versatility in design.
- Achieves speeds up to 10 m/s (394 in/s), ensuring efficient operation in dynamic environments.



## IVTAAN Linear Guide

- The rail is machined for precise mounting and alignment on all critical sides—ensuring dimensional and rail form accuracy to within 0.05 mm
- Ensures high dimensional and form accuracy, facilitating precise mounting and alignment.
- Reduces mounting components by up to 50% and eliminates the need for additional fasteners, streamlining the assembly process.
- Capable of handling loads up to 8,900 N, suitable for a wide range of industrial applications.



## IVTAAQ Linear Guide

The **IVTAAQ Linear Slide Rail** allows for the integration of various drive options. It features a precision-machined, anodized aluminum rail with embedded hardened stainless steel races, making it lightweight yet strong. The embedded stainless steel races eliminate the need for fasteners, reducing mounting components. The rail is precisely machined on all critical sides for accurate mounting and alignment, ensuring dimensional and rail form accuracy. IVTAAQ carriages come with a wide range of accessory options to suit specific applications.

- Precision Machined Rails: Ensures high dimensional and form accuracy, facilitating precise mounting and alignment.
- Embedded Hardened Stainless Steel Races: Reduces mounting components by up to 50% and eliminates the need for additional fasteners, streamlining the assembly process.
- High Load Capacity: Capable of handling loads up to 8,900 N, suitable for a wide range of industrial applications.



## IVTAAW Linear Guide

**IVTAAW Linear Slide Rails** provide a cost-effective alternative to profile rail systems. Featuring a precision-machined, anodized aluminum rail with embedded hardened stainless steel races, the **IVTAAW Linear Slide Rail** is lightweight yet strong.

- Ensures high dimensional and form accuracy, facilitating precise mounting and alignment.
- Reduces mounting components by up to 50% and eliminates the need for additional fasteners, streamlining the assembly process.
- Capable of handling loads up to 8,900 N, suitable for a wide range of industrial applications.
- Offers the flexibility to extend rail length for long-length applications, providing versatility in design.
- Achieves speeds up to 10 m/s (394 in/s), ensuring efficient operation in dynamic environments.
- Minimizes maintenance and ensures long-term reliability.



# Simo Serie

The **SIMO® Series** enables multiple application requirements to be met with a single platform. Flexible with a uniform geometry as a base with a large number of selectable options in the basic design, drive type and type of guide. The mix and match platform within the same design environment allows configurations to be easily and quickly adjusted.

## Rail Heights Options:

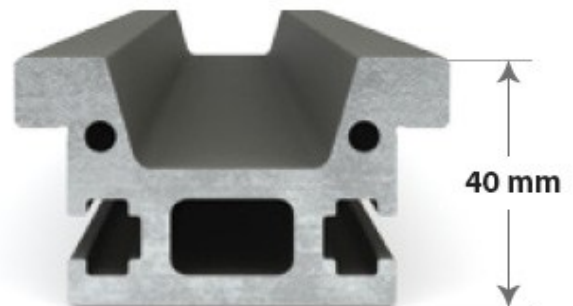
Each aluminum base rail is uniquely qualified with the SIMO process (Simultaneous Integral Milling Operation).

- **UGA** low profile for tight spaces
- **UGT** tall profile for greater structural integrity

**UGA LOW PROFILE RAIL**



**UGT - TALL RAIL**



## Gliding options:

- Self-lubricating, maintenance free **gliding system** (GST) which are ideally suited for contaminated environments
- **V-wheel roller bearings** (CRT) for high speed applications



## Stay in contact!

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