

PRODUCT SELECTION GUIDE

ROUND SHAFT TECHNOLOGY



- Self-lubricated PTFE linear plain bearings & rolling element ball bearings
- Round shafting - steel, stainless steel & ceramic coated aluminum

Food Processing
Heavy Industrial
Machine Tool
Military & Defense
Packaging

CAM ROLLER TECHNOLOGY



- Radial ball bearings of diverse profiles & engineering materials
- High speeds, acceleration & long travel lengths

Food Processing
Light Commercial
Machine Tool
Military & Defense
Packaging

INTEGRAL V™ TECHNOLOGY



- Durable anodized aluminum with an embedded hardened steel raceway
- Flexible & customizable fit
- Ideal for all types of t-slot aluminum framing

Ergonomic Designs
Food Processing
Heavy Industrial
Machine Tool
Packaging

GLIDING SURFACE TECHNOLOGY



- Low profile modular designs
- Self-lubricating PTFE liners & polymer inserts
- Tolerates washdowns & harsh environments

Digital Print & Scan
Food Processing
Machine Tool
Medical Precision
Packaging

LINEAR ACTUATOR TECHNOLOGY



- Linear modules with self-contained carriage, rail & frame
- Belt, acme, or ball screw driven
- Miniature linear actuators

Food Processing
Machine tool
Medical Precision
Packaging

PROFILE RAIL TECHNOLOGY



- High performance re-circulating ball bearings
- High load capacities & speeds
- Accurate & repeatable travel

Machine Tool
Medical Automation

TELESCOPIC GUIDING TECHNOLOGY



- Two rail system & an intermediate member designed to allow one rail to extend relative to the fixed rail while supporting a cantilevered load

Drawers
Racks
Shelving
Packaging
Mobile pop-outs

**Publication intended only for use in the Americas.*

To order call 1-800-962-8979
www.pbclinear.com

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**PBC
LINEAR**
A PACIFIC BEARING CO.



LITGEN120-E_D 3.12 10M

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www.pbclinear.com



simplicity® PLAIN BEARING

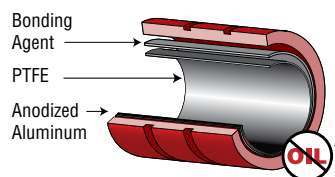
- Self-lubricating - maintenance-free, no external lubricants
- High strength - 20x more load capacity than a ball bearing
- Low wear & friction - patented PTFE liner Frelon®GOLD or J
- Wide temperatures range (-400°F / +400°F) (-240°C / +204°C)
- Corrosion-resistant - excels in dirty environments
- Prevents catastrophic failure

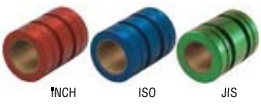


Frelon®GOLD is a dark gold colored high performance material with gold-colored fillers.



Frelon® J is a yellow colored material specially formulated to provide optimum performance.



PLAIN		PILLOW BLOCK	FLANGE
 1/4" INCH ISO JIS Self lubricating bearing with patented compound of PTFE developed for improved performance over other bearings. Standard sizes in stock.		 Self aligning & ease of mounting. Standard sizes in stock.	 Ease of mounting. Compact design.
OPEN	✓	✓	
CLOSED	✓	✓	✓
TWIN		✓	✓
FLANGE			✓
SIZES	Inch, ISO Metric, JIS		
MATERIAL	Anodized aluminum alloy steel or stainless steel housing with FrelonGOLD or Frelon J liner	Anodized aluminum alloy housing Inner plain bearing with FrelonGOLD or Frelon J liner	

DIE SET	SLEEVE	THIN WALL	SQUARE
 Mounting precision. Size interchangeable with ball-bearing version.	 Replaces oilite & plastic bearing. Ideal for slow or moderate speeds for oscillating or rotary motion.	 Interchangeable with all European metric sizes, including thin wall ball bushings	 Resists torque & eliminates extra costly components in parallel shafts.
✓	✓	✓	✓
✓			✓
✓	✓		
Inch, ISO Metric, JIS			Inch
Steel black oxide or aluminum housing with inner plain bearing (FrelonGOLD or Frelon J liner)	Aluminum alloy with FrelonGOLD or Frelon J liner	Anodized aluminum alloy housing with FrelonGOLD or Frelon J liner	Anodized aluminum alloy housing with (FrelonGOLD or Frelon J plug)

*NOTE: 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.

BALL BEARING



- Polymer cage fits more balls per track than steel cage
- Delivers quiet operation & higher load capacity
- Built-in double seals
- Industry interchangeable

CONFIGURATION:
Closed
Open

MATERIAL:
Steel

SIZES:
Inch
ISO Metric

SHAFTING



- Steel shafts are made of polished, case hardened steel & suitable for Simplicity plain & ball bearings
- Ceramic coated aluminum rails—non-magnetic, lightweight & chemical resistant

SHAFT ASSEMBLY & SUPPORT RAILS



- Support rails available in one or two-piece design with pre-assembled aluminum alloy support rails & steel shafting
- Lengths up to 4'
- End-joinable for longer travel lengths

MATERIAL:
RC60 steel
300/400 series
stainless steel
Ceramic coated aluminum

SIZES:
Inch
ISO Metric

SPECIAL MACHINING:
Solid
Pre-drilled
Tapped

SIMPLICITY LINEAR SLIDES

- Mounting plate
- Four (4) pillow block assemblies
- Two (2) steel shafts
- Two (2) aluminum support rails



redi-rail® LINEAR GUIDES

- Low cost precision
- Rail lengths up to 5,800 mm
- High load capacities
- Gothic arch rollers with double row bearings
- Ease of assembly & installation - patented side pre-load adjustment
- Corrosion-resistant - excels in dirty environments
- End-joinable for long travel lengths



SIZES:
Inch, ISO Metric

MATERIAL:
Aluminum alloy with hardened steel raceways

redi-rail® LOW PROFILE GUIDE

- Compact design - 19 & 24 mm height profile
- High load capacities - up to 510 N/115 lbs
- Sealed double row gothic arch rollers
- Lengths up to 3 m (10 ft)
- Carriage options for mounting application and flexibility
- Ideal for material transfer in unattended kiosks & applications requiring precise linear motion within a confined area.



SIZES:
ISO Metric

SYSTEM COMPONENTS:
Aluminum alloy rail with steel or stainless steel raceways

HARDENED CROWN ROLLERS, RAILS & BRACKETS

- Simple solution for point-to-point applications
- Rolling element bearing with 9/16 hex head
- Rollers, angle brackets & end stops sold separately
- Rails available up to 10' bare steel or black powder coated



Hevi-Rail® HIGH LOAD BEARING SYSTEM

Ideal for telescoping applications & heavy-duty material handling

- Handles loads up to 60 tons
- Fixed or adjustable bearings

Profile Rail

- Lengths up to 6 m
- U or I channel design
- Sandblasted or lightly oiled

Flange Plate

- Available pre-welded to bearing

Adjustable Clamp Flange

- Eliminates welding & straightening



V-GUIDE SYSTEM

Ideal for high speed requirements, accuracy & repeatability

V-Rails

- Simple mounting and alignment
- Induction hardened polished rail
- Rails available in (4) sizes

V-Guide Wheels

- Permanently lubricated
- Precision ground dual row bearing

Wheel Bushings

- Mount into v-guide wheels for fixed or adjustable applications



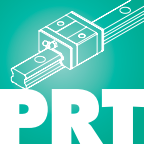
SIZES:
Inch, ISO Metric

MATERIALS:
Stainless steel or carbon steel

COMMERCIAL RAIL

- Low cost effective solution for automation or sliding door applications
- Speeds up to 1.5 m/s
- Three (3) rail sizes 20, 30 & 45 mm
- Rails available in hardened steel or stainless steel
- Aluminum alloy slider with optional chrome, stainless steel or polymer rollers
- Rollers lubricated for life & sealed against contamination
- Left or right hand mountable





PROFILE RAIL TECHNOLOGY LINEAR BALL GUIDES

BALL LINEAR GUIDES

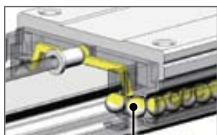
- Pre-loaded high performance re-circulating ball guideway
- Full range of profile sizes: miniature (MR) to standard (ARC/HRC): 3 mm - 30 mm
- Accurate & repeatable travel
- Precision options: normal (N), high (H), precise (P), super (SP)* & ultra (UP)*
- Dust proof design
- Internal Eco-lube system – for longer life
- Stainless steel reinforcement end-plates enable speeds up to 5 m/s

*Available in ARC/HRC series

COMPONENTS



IN COOPERATION WITH
cpc CHIEFTEK PRECISION CO., LTD.



Profile Rail with recirculating ball bearings

NEW – MS DRIVEN SERIES

- Sizes: 12 mm, 15 mm – Standard and wide versions
- Flexible design platforms
- High accuracy, high precision
- Low noise & coefficient of friction
- Rigid design: excellent for moment loads
- Lead screw mount: side
- Multiple leads available
- Ideal applications: medical sample transfer, precision tool adjustment, small format multi-axis positioning, vision applications

PATENT PENDING

DRIVEN SYSTEMS



4 DRIVE CONFIGURATIONS



Hand Knob
(Manual)



Motor Mount
(Attach Own Motor)



Motor & Coupler
(Omron or Fastech)



Integrated
Motor Screw



MINIATURE LINEAR GUIDE

COMPONENTS

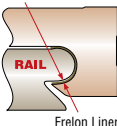
- Compact design, small footprint
- Self-lubricating Frelon® liner
- No rolling elements
- Available in five (5) sizes
- Lengths up to 3,600 mm
- Corrosion-resistant - ideal in harsh environments
- Optional running clearances for misalignments
 - Precision Series (Standard)
 - Compensated Precision Series
- Ideal applications: medical precision, automation, packaging, food processing, electronics, etc.



RUNNING CLEARANCE

Precision Series
.025 - .051 mm

Compensated
Precision Series
.064 - .089 mm



SIZES:

ISO Metric

MATERIAL:

Ceramic coated rail
Aluminum alloy
carriage with
Frelon liner

NEW – MR DRIVEN SERIES

- Sizes: 15 mm, 20 mm
- Lengths up to 640 mm
- 303 stainless steel screw with PTFE coating
- Pre-loaded polyacetal, anti-backlash nut
- Robust design
- Lead screw mount
15 mm-side; 20 mm-center
- Multiple leads available
- Optional hand knobs, brakes & motor mounts
- Smooth & quiet adjustment
ideal for cameras or sensors
- Plain bearings ideal for
contaminated environments

PATENT PENDING

DRIVEN SYSTEMS



4 DRIVE CONFIGURATIONS



Hand Knob
(Manual)



Motor Mount
(Attach Own Motor)



Motor & Coupler
(Omron or Fastech)



Integrated
Motor Screw

Uni-guide™

POSITIONING TABLES & SLIDES

- Two piece assembly - eliminates tolerance stack up
- Self-lubricating Frelon®GOLD liner
- Low friction & wear
- Optimal strength
- Easy drop in unit - no alignment
- T-slots for ease of installation
- Drive options - ball or lead screw



SIZES:

Inch & ISO Metric

MATERIAL:

Ceramic coated rail
Aluminum alloy
carriage with
Frelon® liner

SYSTEM

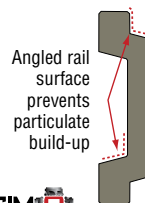
COMPONENTS:

(Optional)

- Motor Driven
- Hand Brake
- Hand Crank
- End Blocks

Uni-guide™ LOW PROFILE

- Compact design - 24 mm height profile
- Washdown optimized - angled rail prevents build-up of particulates & chemicals
- Frelon® liner provides low wear, low friction & is maintenance-free
- SIMO® precision machined surfaces
- Mounting flexibility - pre-drilled tapped holes & t-slots



SIZES: ISO Metric

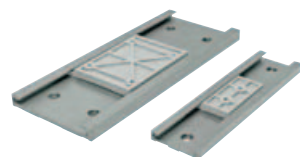
MATERIAL:

Hard anodized
aluminum rail
& carriage

Aluminum alloy
carriage with
Frelon® liner

LOW PROFILE MINI-RAIL (LPM)

- Low profile for small, compact spaces
- Available in five (5) sizes
- Economical polymer slider
- Molded SS threaded inserts - ease of installation
- Ideal in harsh environments



SIZES: ISO Metric

MATERIAL:

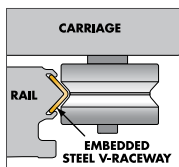
Anodized
aluminum rail
Polymer slider



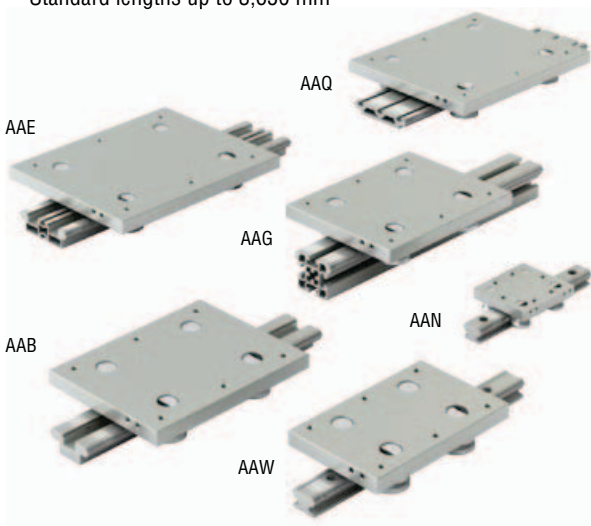
INTEGRAL V TECHNOLOGY LINEAR GUIDE SYSTEM

INTEGRAL

Integral V™ runs along a patent pending, precision machined anodized aluminum rail with high-speed v-wheel cam rollers—eliminating mounting components and cutting assembly time in half. IVT is ideal for contamination, high speed/acceleration applications.



- SIMO® machined for precision qualified rail surfaces, to within .050 mm (.002")
- Hardened steel races eliminate fasteners and reduce mounting components by 40%
- Handles loads up to 7,230 N (1,625 lbs)
- Standard lengths up to 3,650 mm



ADJUSTMENT & ACCESSORIES

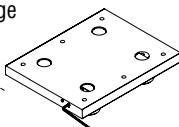
- Patented standard (CAM) adjustable carriage
- Lube holders
- Wheel covers



Polymer
Lubricator



Rail Scraper
(Removable)



Adjustable
Carriage

CUSTOM INTEGRAL V

PBC's engineers can design Integral V guides to fit your application requirements. Call an application engineer at 1-800-962-8979.



SIMO® SERIES LINEAR PLATFORM

Versatility. Flexibility. Value. Based on the patent pending SIMO® process, the new SIMO Series Linear Platform is built on either a low profile or tall base rail with configurable bearing and drive options that can be tailored to exceed performance requirements.

- Rail & carriage components
- Integrated drive mechanism
- Custom solutions



PBC Linear has revolutionized traditional machining with the patent pending **SIMO®** (Simultaneous Integral Milling Operation). The SIMO process uses synchronized cutters, eliminating built-in extrusion variances by machining all critical edges concurrently in one pass. This ensures tight tolerances, limited variance and a remarkably straight and repeatable surface at negligible additional cost!

Plain Bearing



V-Guide Bearings



Profile Rail Guideways

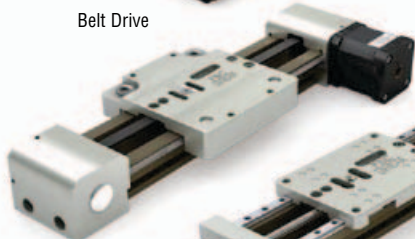


Uniform dimensioning gives the engineer great design flexibility, while the interchangeability offers a wide range of features and benefits—all within one platform.

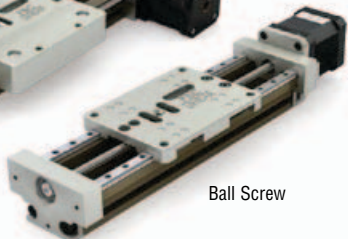
Lead Screw



Belt Drive



Ball Screw



SCREWS, NUTS, HYBRID LINEAR ACTUATORS

LEAD SCREWS

- 300 series stainless steel with PTFE coating
- 6, 10, 12, and 16 mm diameters
- 1, 2, 4, 5, 6, 8, 10, 12, 16, 25 mm leads
- Custom sizes, materials, and finishes



NUTS

- Constant Force screw & nut – Patent pending self-adjusting anti-backlash feature
- Patent pending coil spring adjustable nut
- Machined nut options
- Custom solutions available



Constant Force Nut



Coil Spring Adjustable Nut



Machined Fixed Nuts

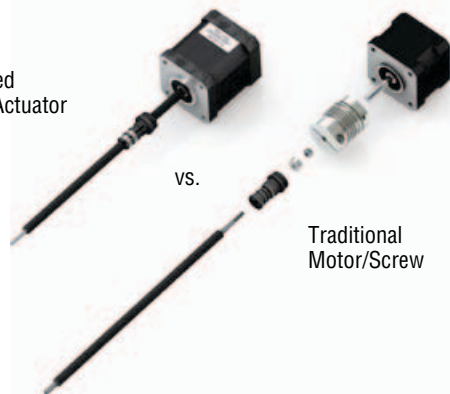


HYBRID LINEAR ACTUATORS

- Reduced number of components
- Eliminate component tolerance stack-up
- Improved rigidity and performance
- NEMA 17, 23, 34 flange sizes
- Single, double, triple stack stepper motors

COMPARE

PBC's Integrated Hybrid Linear Actuator



PL SERIES

BALL OR LEAD SCREW DRIVEN ACTUATOR

- High speed cam roller design creates smooth precision guidance
- Enclosed aluminum housing with Integral V™ raceway
- Sealed against contamination
- SIMO® precision machined surfaces
- Multiple accessories (servo & stepper motors, cable carriers, sensors, mounting brackets etc.)



PLA

INTEGRAL



MT SERIES

BELT DRIVEN LINEAR ACTUATOR

- High acceleration, speeds & rigidity
- Long travel lengths
- Fully enclosed aluminum housing
- Male & female drive shaft configurations
- Strong yet lightweight & corrosion-resistant
- SIMO® precision machined surfaces



MTB



MTC



MTD



MTE



MTF

ML SERIES

MINIATURE LINEAR ACTUATOR

- Compact profile 28 x 32 mm
- High speed precision, enhanced load capacities & precise repeatability
- Linear guide supports - increases load & moment capacities. Available in single or dual rails with runner blocks
- Long travel lengths - up to 650 mm
- SIMO® precision machined surfaces
- Designed to excel in biotech, medical and small-scale automation that requires compact space & precise motion



MLB



MLC



MLD

ACTUATOR ACCESSORIES

PBC Linear offers a full selection of actuators and actuator accessories, from single-axis to complete cartesian systems.

- Stepper Motors
- Servo Motors
- Motion Controllers/PLC
- Gearboxes
- Precision Couplings
 - Elastomer
 - Bellow
 - Line Shafts
 - Torque Limiters
- Mounting Supports
 - Dovetail Clamps
 - End & Mid Section Mounts
 - Fixed & Carriage Mounts
 - XY Plate Mounts
 - Riser Plates
- Cable Carrier Systems
- Position Sensors



Gearboxes



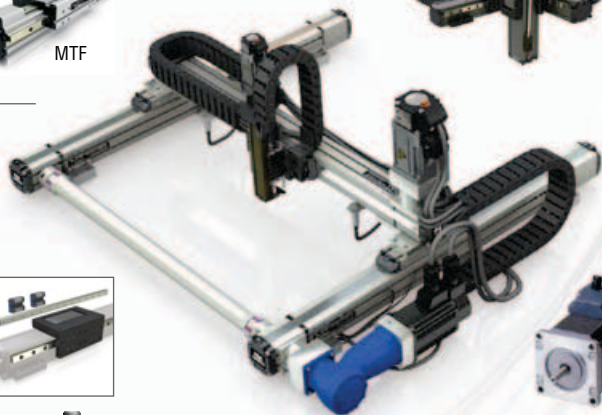
Couplings



Cable Carriers



Sensors



Motors



Controllers



For custom configurations,
call an application engineer
at 1-800-962-8979.



DESIGN ON A DIET™

PBC Linear maintains an uncompromising commitment to bring best-in-class linear motion solutions to market. Since 1985, with the creation of the Simplicity® self-lubricating linear bearing, PBC has delivered design solutions. That focus has grown to also include sub-assemblies as well as customized design solutions to meet customer needs.

Utilizing a breadth of resources in product knowledge, engineering expertise, and manufacturing capabilities, PBC aligns customers with game-changing solutions that provide a sustainable competitive market advantage.



vs.



SOLUTION

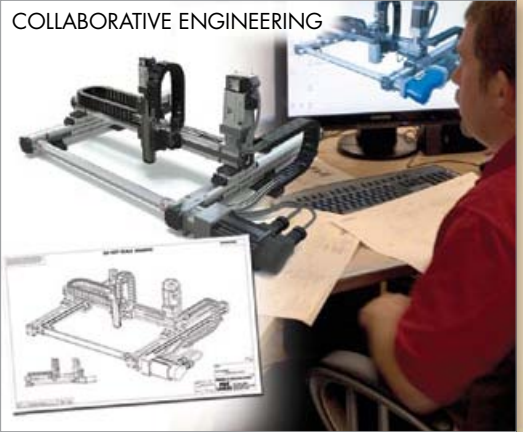
- Improve Life & Reliability
- Faster Time to Market
- Reduce Risks
- Enhanced Performance
- Lower Overall Costs
- Streamline Assembly



RANGE OF TECHNOLOGY



COLLABORATIVE ENGINEERING



MANUFACTURING AGILITY

