Integral-V Technology
Linear Guide System

For the Most Accurate Ordering Information, Access Our Online Configurator at pbclinear.com

+1.815.389.5600 • pbclinear.com
What Makes Integral-V Technology Different?

INSTALLATION STEPS*
1. Drill and tap machine plate for Integral-V
2. Securely fasten Integral-V to machining plate

ADVANTAGES OF IVT
• Fewer components: Hardened stainless steel v-raceways embedded into durable anodized aluminum rails eliminate fasteners and reduce mounting components by 40%
• High speeds: Max speed of 10 m/s
• High accuracy: The SIMO® process provides qualified rail surfaces—resulting in extremely high accuracy without misalignments and added installation time.
• Standard lengths up to 3650 mm (consult factory for longer continuous length or joinable rails)
• “Roll-in” style t-nut - mounts rail to structural t-slot framing

BILL OF MATERIAL
<table>
<thead>
<tr>
<th>Qty</th>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2 m IVT Rail</td>
<td>$291.00</td>
</tr>
<tr>
<td>1</td>
<td>Carriage Assembly</td>
<td>$230.00</td>
</tr>
<tr>
<td></td>
<td>30 minutes of labor to assemble @ $36.00/hr</td>
<td>$18.00</td>
</tr>
</tbody>
</table>
**TOTAL COST** $539.00

*Based on 2 meter general linear guide application

INSTALLATION STEPS
1. Drill and tap base plate holes along profile rail for installation
2. Clean and align rail with reference surface
3. Loosely secure profile rail to base plate surface
4. Tighten fasteners while continuously checking straightness and alignment
5. Repeat processes 1-3 for second profile rail, also checking for parallelism
6. Install four runner-block sliders (two per rail)
7. Align runner blocks to corresponding mate (check for parallelism)
8. Install carriage plate onto carriages, check alignment
9. Attach carriage plate to carriage with fasteners

BILL OF MATERIAL
<table>
<thead>
<tr>
<th>Qty</th>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>82</td>
<td>Fasteners</td>
<td>$28.00</td>
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<tr>
<td>2</td>
<td>15 mm Rails (2 m long)</td>
<td>$528.00</td>
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<tr>
<td>4</td>
<td>15 mm Carriages</td>
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<tr>
<td>1</td>
<td>Base Plate</td>
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<tr>
<td>1</td>
<td>Carriage Plate</td>
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<tr>
<td></td>
<td>2 hours of labor to assemble @ $36.00/hr</td>
<td>$72.00</td>
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</table>
**TOTAL COST** $1162.00

FLEXIBILITY TO MEET APPLICATION REQUIREMENTS
• SIMO machined for precision qualified rail surfaces within .050 mm (.002")
• Handles radial bearing loads up to 10020 N (2252 lbs)
• Multiple configurations provide pre-aligned, high performance v-wheel guidance for a wide range of applications (see application examples on pages 3-7)
What Makes Integral-V Technology Different?

EASY INSTALLATION

Integral-V runs along a pre-aligned, precision-machined anodized aluminum rail with high performance, hardened steel v-wheel cam rollers—eliminating mounting components and dramatically cutting assembly time.

INSTALLATION AND MOUNTING FEATURES

- Features t-slots for:
  - Rack and pinion mounting without drilled and tapped holes
  - Mounting of gussets in the corners
  - Accessory mounting such as sensors, wire ties, etc.
- End mounting features (AAG and ABK): use of lag bolts from the ends
- Lubrication, rail scraper, and wheel cover options available
- Applications requiring stainless rollers should consult factory

SIMULTANEOUS INTEGRAL MILLING OPERATION

PBC Linear has revolutionized traditional machining with the SIMO® or Simultaneous Integral Milling Operation, process. 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!

MACHINED PRECISION AT EXTRUSION PRICES

- Rigid, accurate, repeatable
- Low cost
- Machined rail edges can be used as a reference when mounting

COMPARE SIMO VS. STANDARD ALUMINUM EXTRUSION

<table>
<thead>
<tr>
<th></th>
<th>Standard Aluminum Extrusion</th>
<th>SIMO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Straightness (Camber)</td>
<td>.0125 in/ft (1 mm/m)</td>
<td>6 TIMES BETTER</td>
</tr>
<tr>
<td>Twist</td>
<td>1/2° per ft (1.5° per m)</td>
<td>2 TIMES BETTER</td>
</tr>
<tr>
<td>Fatness</td>
<td>.004 in (.10 mm)</td>
<td>2 TIMES BETTER</td>
</tr>
</tbody>
</table>

Link to the SIMO process video.

Link to the Integral-V Technology overview video.
# Integral-V Technology

### IVT AAN

Page 8

### IVT AAW

Page 10

### IVT AAB

Page 12

### IVT AAE

Page 14

### IVT AAQ

Page 16

### IVT AAG

Page 18

### IVT ABK

Page 20

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**SIMO ENABLED SYSTEMS**

- Machined precision at extrusion prices
- Rigid, accurate, repeatable
- Low cost
- Machined rail edges can be used as a reference when mounting

---

**Static Load Ratings**

<table>
<thead>
<tr>
<th>SERIES</th>
<th>RADIAL Fy</th>
<th>AXIAL Fz</th>
<th>ROLL Mx</th>
<th>PITCH My</th>
<th>YAW My</th>
<th>RADIAL Fy</th>
<th>AXIAL Fz</th>
<th>ROLL My</th>
<th>YAW My</th>
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<th>Iz</th>
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<td>16</td>
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**Rail Moments of Inertia**

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**Conversions**

- newton (N) x 0.2248 = lbs.
- (mm) millimeter x 0.0397 = inch
- newton - meter (N-m) x 8.851 = in.-lbs.

Fd = Dynamic capacity (LC)
Fz = Axial capacity
Fy = Radial capacity
Mx, My, Mz = Moment capacities

*Weight may vary slightly depending on carriage options. **Load ratings are based on standard carriage.
Applications

PICK-AND-PLACE: Integral-V Technology utilizes PBC Linear’s SIMO® machining process for precise mounting and alignment on all critical sides—ensuring dimensional and rail form accuracy that is required in pick-and-place and other XYZ applications.

INK JET AND 3D PRINTING: The pre-aligned hardened stainless steel raceway and high performance v-wheels in Integral-V Technology are highly repeatable; making them an optimal choice in ink jet printing, label printing, and the 3D printing space.

Link to IVT vs. Profile Guide video.

RAIL CHOICE: AAN

RAIL CHOICE: AAW
Applications

INDUSTRIAL STOP GAUGE & PUSH FEED SYSTEM: The Integral-V Technology linear guide system provides accurate positioning for band saws, punches, bending machines, and brakes. It also reduces mounting components, while improving alignment and ease of installation.

KIOSK & AUTOMATED RETAIL: The low profile design and high repeatability make Integral-V Technology linear guides an ideal solution for the tight spaces found in automated dispensing applications.
## Applications

<table>
<thead>
<tr>
<th>SMALL TO MEDIUM IVT</th>
<th>MEDIUM TO LARGE IVT</th>
<th>LARGE TO EXTRA-LARGE IVT</th>
</tr>
</thead>
</table>

### AUDIO/VISUAL DISPLAY MOUNTS:
Whether the linear motion system is mounted vertically or horizontally, Integral-V Technology linear guides provide the strength and versatility necessary to ensure smooth motion. Also, fewer parts means less installation time and less money.

### MEDICAL ASSIST:
Hardened stainless steel races eliminate fasteners and reduce mounting components, while Integral-V Technology carriages are equipped with sealed rollers creating a clean, low maintenance solution for medical tables and emergency vehicles.

### ERGONOMIC ASSIST:
The Integral-V Technology linear guide system handles moment loads and provides smooth, low friction motion for hand tools in manufacturing and assembly operations.

**Link to ergonomic application video.**

**Link to architectural design video.**
Applications

SMALL TO MEDIUM IVT | MEDIUM TO LARGE IVT | LARGE TO EXTRA-LARGE IVT

**POLAR ROBOT:** Integral-V Technology linear guides can be used in vertically or horizontally oriented applications. The polar robot shown here provides repeatable motion and high accuracy in the laboratory automation space.

V-wheel bearings provide smooth travel and provide structural support

**RAIL CHOICE: AAG**

The ABK rail is a strong structural element that handles high loads

**DEPALLETIZER & HEAVY-DUTY LIFT SYSTEMS:**
The ABK rail is designed for strength as a structural element of a machine’s design; while providing rigidity, high moment capacities, and consistent linear motion.
Applications

**SMALL TO MEDIUM IVT**

**MEDIUM TO LARGE IVT**

**LARGE TO EXTRA-LARGE IVT**

**CUTTING OPERATIONS:** ABK rail provides rigid and smooth motion for long length cutting operations such as metals, textiles, and other materials.

**RAIL CHOICE: ABK**

**XYZ GANTRY SYSTEMS:** The ABK rail is ideal as a structural element and linear guide system for XYZ gantry applications such as plasma cutters, water jet machines, routers, etchers, pick-and-place automation and other fabrication equipment.

[Link to product related video.]

[Link to application story.]
AAN Linear Guide

RAIL
1:1 SCALE

![RAIL Diagram]

CARRIAGE

![CARRIAGE Diagram]

ACCESSORIES
PATENTED PRELOAD ADJUSTMENT
Standard
Side (CAM) Adjustable

![ACCESSORIES Diagram]

RECOMMENDED MOUNTING FRAME
(when mounted to aluminum extrusion)

<table>
<thead>
<tr>
<th>SCREW LENGTH*</th>
<th>FRAME SIZE (TYP)</th>
<th>FRAME T-SLOT SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>M6 x 10 mm SHCS T-Nut Part No. 6100435</td>
<td>25 x 25</td>
<td>6</td>
</tr>
</tbody>
</table>

*Recommended screw length when bolting IVT rail to structural framing via a t-nut.

UNIT DIMENSIONS

![UNIT DIMENSIONS Diagram]
# AAN Linear Guide

## SPECIFICATIONS

<table>
<thead>
<tr>
<th>SERIES</th>
<th>NUMBER OF ROLLERS</th>
<th>CARRIAGE WEIGHT</th>
<th>STATIC LOAD RATINGS</th>
<th>DYNAMIC LOAD RATINGS</th>
<th>MOMENTS OF INERTIA</th>
<th>RAIL LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>RADIAL Fy</td>
<td>AXIAL Fz</td>
<td>ROLL Mx</td>
<td>PITCH My</td>
</tr>
<tr>
<td>IVTAAN</td>
<td>4</td>
<td>0.35</td>
<td>1960</td>
<td>1200</td>
<td>16</td>
<td>36</td>
</tr>
</tbody>
</table>

*Weight may vary slightly depending on carriage options.

Fz = Axial capacity  
Fy = Radial capacity  
Mx, My, Mz = Moment capacities

**Conversions**  
- newton (N) x 0.2248 = lbs.  
- (mm) millimeter x 0.0397 = inch  
- newton - meter (N-m) x 8.851 = in.-lbs.

## ORDERING INFORMATION

### RAIL

**Example:** IVTAANR-3000-000 Y=MM*

- Specify Y-dimension (hole to end) at time of order.
- Specify length at time of order.

Ex: IVTAANR-3000-000 Y=MM*

**CARRIAGE**

**Example:** IVTAANC-20A20A0

- Specify carriage type (A0 = Flat plate with taps, 2 = Sealed)
- Specify preload type (A = Side (CAM) Adjustable, 0 = No Lubrication)
- Specify lubrication options (0 = No Lubrication)

Consult Factory • 800-962-8979  

Note: Lubrication is highly recommended for IVT.
AAW Linear Guide

RAIL
1:1 SCALE

CARRIAGE

ACCESSORIES
PATENTED PRELOAD ADJUSTMENT
Standard
Side (CAM) Adjustable

LUBRICATION ACCESSORIES
1. Lube Holder
2. Wheel Cover

RECOMMENDED MOUNTING FRAME
(when mounted to aluminum extrusion)

<table>
<thead>
<tr>
<th>SCREW LENGTH*</th>
<th>FRAME SIZE (TYP)</th>
<th>FRAME T-SLOT SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>M6 x 25 mm SHCS</td>
<td>30 x 30</td>
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*Recommended screw length when bolting IVT rail to structural framing via a t-nut.

UNIT DIMENSIONS

MAX 3650
AAW Linear Guide

SPECIFICATIONS

<table>
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<th>SERIES</th>
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<td>N</td>
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<td>N-M</td>
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newton (N) x 0.2248 = lbs.
(mm) millimeter x 0.0397 = inch
newton - meter (N-m) x 8.851 = in.-lbs.

ORDERING INFORMATION

RAIL

IVT AAW R - XXXX - 0 00

Identifier
R = Rail

End Treatment
0 = Saw cut and deburr
B = Butt Joint Machining

Version
00 = Standard

Rail Length
XXXX = Enter Length of Rail in Millimeters (3657 mm maximum)

Example: IVTAWR-3000-000 Y-MM*
Specify Y-dimension (hole to end) at time of order. Specify length at time of order.

CARRIAGE

IVT AAW C - A 2 0 A 0

Identifier
C = Carriage

Carriage Type
A = Flat plate with taps

Preload Type
A = Side (CAM) Adjustable

Lubrication Options
0 = No Lubrication
1 = Lube Holder
2 = Wheel Cover

Roller Type
2 = Sealed

Consult Factory • 800-962-8979

Note: Lubrication is highly recommended for IVT.

*Weight may vary slightly depending on carriage options.
AAB Linear Guide

**RAIL**

1:1 SCALE

---

**CARRIAGE**

---

**ACCESSORIES**

**PATENTED PRELOAD ADJUSTMENT**

- Standard
- Side (CAM) Adjustable

**LUBRICATION ACCESSORIES**

1. Lube Holder
2. Wheel Cover
3. Wheel Cover and Lube Holder

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**UNIT DIMENSIONS**

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*Recommended screw length when bolting IVT rail to structural framing via a t-nut.*
**AAB Linear Guide**

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<td>N N N N M M N M M</td>
<td>N M M M M M M M</td>
<td>kg/m mm</td>
<td>5 25.4 2.77 3048</td>
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**ORDERING INFORMATION**

**RAIL**

Ex: IVTAAB-R-3000-000 Y-MM*

Specify Y-dimension (hole to end) at time of order.
Specify length at time of order.

**CARRIAGE**

Consult Factory • 800-962-8979

Note: Lubrication is highly recommended for IVT.
AAE Linear Guide

**RAIL**

1:1 SCALE

**CARRIAGE**

**ACCESSORIES**

**PATENTED PRELOAD ADJUSTMENT**

Standard
Side (CAM) Adjustable

**LUBRICATION ACCESSORIES**

1. Lube Holder
2. Wheel Cover
3. Wheel Cover and Lube Holder

1. Polymer Lubricator IVT3LHA-KIT
2. Rail Scraper (Removable) IVT3WCA-KIT
3. Wheel Cover and Lube Holder

**UNIT DIMENSIONS**

*Recommended screw length when bolting IVT rail to structural framing via a t-nut.*
## AAE Linear Guide

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>SERIES</th>
<th>NUMBER OF ROLLERS</th>
<th>CARRIAGE WEIGHT</th>
<th>STATIC LOAD RATINGS</th>
<th>DYNAMIC LOAD RATINGS</th>
<th>MOMENTS OF INERTIA</th>
<th>RAIL LENGTH</th>
<th>MAX RAIL WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>IVTAAE</td>
<td>4</td>
<td>3.47 kg</td>
<td>8900 N</td>
<td>5560 N</td>
<td>Fz 8900 N</td>
<td>3.47 kg</td>
<td>8900 mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RADIAL Fy</th>
<th>Axial Fz</th>
<th>Roll Mx</th>
<th>Pitch My</th>
<th>Yaw Mz</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>N</td>
<td>N-M</td>
<td>N-M</td>
<td>N-M</td>
</tr>
<tr>
<td>10020 N</td>
<td>6150 N</td>
<td>282 N-M</td>
<td>538 N-M</td>
<td>877</td>
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<table>
<thead>
<tr>
<th>instal</th>
<th>Roll</th>
<th>Pitch</th>
<th>Yaw</th>
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<tbody>
<tr>
<td>Mx</td>
<td>My</td>
<td>Mz</td>
<td></td>
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<tr>
<td>6.0</td>
<td>74.8</td>
<td>2.74</td>
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</tbody>
</table>

*Weight may vary slightly depending on carriage options.

Fz = Axial capacity
Fy = Radial capacity
Mx, My, Mz = Moment capacities

### ORDERING INFORMATION

**RAIL**

Configure Online

Ex: IVTAAER-3000-000 Y=MM*

Specify Y-dimension (hole to end) at time of order.
Specify length at time of order.

**CARRIAGE**

Configure Online

Ex: IVTAAEC-2000-000 Y=MM*

Specify Y-dimension (hole to end) at time of order.
Specify length at time of order.

### Conversions

- newton (N) x 0.2248 = lbs.
- (mm) millimeter x 0.0397 = inch
- newton - meter (N-m) x 8.851 = in.-lbs.

**Roller Type**
- 2 - Sealed

**Preload Type**
- A - Side (CAM) Adjustable

**Lubrication Options**
- 0 - No Lubrication
- 1 - Lube Holder
- 2 - Wheel Cover
- 3 - Wheel Cover and Lube Holder

**Carriage Length**
- 0 - Standard Length
AAQ Linear Guide

RAIL

CARRIAGE

ACCESSORIES
PATENTED PRELOAD ADJUSTMENT
Standard
Side (CAM) Adjustable

LUBRICATION ACCESSORIES
1. Lube Holder
2. Wheel Cover
3. Wheel Cover and Lube Holder

UNIT DIMENSIONS

<table>
<thead>
<tr>
<th>RECOMMENDED MOUNTING FRAME (when mounted to aluminum extrusion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCREW LENGTH*</td>
</tr>
<tr>
<td>M8 x 15 mm SHCS</td>
</tr>
<tr>
<td>T-Nut Part No. 6100429</td>
</tr>
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</table>

*Recommended screw length when bolting IVT rail to structural framing via a t-nut.
SPECIFICATIONS

<table>
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<th>DYNAMIC LOAD RATINGS</th>
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<th>RAIL WEIGHT</th>
<th>MAX RAIL LENGTH</th>
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<td>3.06 3657</td>
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</table>

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Fz = Axial capacity
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Conversions
- newton (N) x 0.2248 = lbs.
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- newton - meter (N-m) x 8.851 = in.-lbs.

ORDERING INFORMATION

RAIL

Ex: IVTAQQR-3000-000 Y=MM*
Specify Y-dimension (hole to end) at time of order.
Specify length at time of order.

CARRIAGE

Consult Factory • 800-962-8979

Note: Lubrication is highly recommended for IVT.
# AAG Linear Guide

## RAIL

![Rail Diagram]

### ACCESSORIES

**PATENTED PRELOAD ADJUSTMENT**
- Standard
- Side (CAM) Adjustable

### LUBRICATION ACCESSORIES
- 1. Lube Holder
- 2. Wheel Cover
- 3. Wheel Cover and Lube Holder

---

## CARRIAGE

![Carriage Diagram]

### RECOMMENDED MOUNTING FRAME

<table>
<thead>
<tr>
<th>SCREW LENGTH</th>
<th>FRAME SIZE (TYP)</th>
<th>FRAME T-SLOT SIZE</th>
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<tbody>
<tr>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**NO MOUNTING FRAME NECESSARY FOR AAG RAIL**

---

## UNIT DIMENSIONS

![Unit Dimensions Diagram]
**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>SERIES</th>
<th>NUMBER OF ROLLERS</th>
<th>CARRIAGE WEIGHT</th>
<th>STATIC LOAD RATINGS</th>
<th>DYNAMIC LOAD RATINGS</th>
<th>MOMENTS OF INERTIA</th>
<th>RAIL LENGTH</th>
<th>MAX RAIL LENGTH</th>
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| Fz = Axial capacity | Fy = Radial capacity | Mx, My, Mz = Moment capacities

<table>
<thead>
<tr>
<th><strong>Conversions</strong></th>
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</thead>
<tbody>
<tr>
<td>newton (N) x 0.2248 = lbs.</td>
</tr>
<tr>
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</tr>
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</tr>
</tbody>
</table>

*Weight may vary slightly depending on carriage options.*

**ORDERING INFORMATION**

**RAIL**

IVT AAG R | XXXX | 0 | 00

**Rail Type**

**Identifier**

**Rail Length**

XXX = Enter Length of Rail in Millimeters

(3657 mm maximum)

**Version**

00 = Standard

**End Treatment**

0 = Saw cut and deburr

B = Butt Joint Machining

Ex: IVTAAGR-3000-000

Specify length at time of order.

**CARRIAGE**

IVT AAG C | A | 20 | A0

**Carriage Length**

0 = Standard Length

**Preload Type**

A = Side (CAM) Adjustable

**Lubrication Options**

0 = No Lubrication

1 = Lube Holder

2 = Wheel Cover

3 = Wheel Cover and Lube Holder

**Roller Type**

2 = Sealed

**Note:** Lubrication is highly recommended for IVT.
ABK Linear Guide

FOR LARGE FORMAT APPLICATIONS & HEAVY LOADS

RAIL FEATURES & OPTIONS
- Precision-machined anodized aluminum rail with hardened embedded 420 stainless steel raceways
- SIMO® qualified surface and t-slot for optional mounting of profile rail
- Space for optional drive mechanism
  - Belt drive
  - Ball screw drive
  - Rack drive
- Space for thread forming screw (x4)

DRIVE OPTIONS (SEE PAGE 24 FOR DETAILS)
Belt Drive  Ball Screw  Rack Drive
BEARING OPTIONS

V-GUIDE BEARING SYSTEM (STANDARD)
- Embedded hardened stainless steel raceways reduce mounting components
- SIMO® machined for precision qualified rail surfaces
- High load capacity
- Optimized extrusion design provides a large scale structural member

PRE-ALIGNED PROFILE RAIL GUIDES
- SIMO machined for precision qualified rail surfaces at extrusion prices
  - Synchronized cutters eliminate built-in extrusion variances
  - Pre-aligned profile rail option eliminates mounting and alignment problems cutting assembly time in half
  - Machined rail edges can be used as a reference when mounting
- Optimized extrusion design provides a large scale structural member designed for high load capacities
- Recirculating ball bearing blocks provide rigid performance
- Accurate and repeatable with smooth and quiet operation
- Low cost
- Designed for 20 mm wide profile rail
- Consult factory for profile rail bearing options

Patented side adjust enables pre-load adjustment without removing the load from the carriage
**ABK Linear Guide**

**RAIL**

- Cam Roller Technology (CRT) v-guide bearing option shown
- Consult factory for Profile Rail option.

![Rail Diagram](image)

**CARRIAGE**

![Carriage Diagram](image)

**ACCESSORIES**

**PATENTED PRELOAD ADJUSTMENT**

- Standard Side (CAM) Adjustable

**LUBRICATION ACCESSORIES**

- 1. Lube Holder
- 2. Wheel Cover
- 3. Wheel Cover and Lube Holder

![Lubrication Accessory](image)

**UNIT DIMENSIONS**

![Unit Dimensions Diagram](image)

---

*Note: See pages 20 & 21 for bearing and drive options and mounting locations.*
### ABK Linear Guide

#### SPECIFICATIONS

<table>
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<td>Fy</td>
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<td>My</td>
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</table>

*Weight may vary slightly depending on carriage options.

Fz = Axial capacity  
Fy = Radial capacity  
Mx, My, Mz = Moment capacities

### ORDERING INFORMATION

**RAIL**

**IVTABKR-XXXX-000**  
- **IVT**: Integral-V Technology  
- **ABK**: Rail Type  
- **R**: Rail Identifier  
- **XXXX**: Rail Length (Enter Length of Rail in Millimeters (3657 mm maximum))  
- **00**: End Treatment  

**CARRIAGE**

**IVTABCA20A0**  
- **IVT**: Integral-V Technology  
- **ABK**: Rail Type  
- **C**: Carriage Identifier  
- **A**: Carriage Length (0 = Standard Length)  
- **20A0**: Preload Type (A = Side (CAM) Adjustable)  
- **Lubrication Options**  
  - 0 = No Lubrication  
  - 1 = Lube Holder  
  - 2 = Wheel Cover  
  - 3 = Wheel Cover and Lube Holder

**Conversions**  
- newton (N) x 0.2248 = lbs.  
- (mm) millimeter x 0.0397 = inch  
- newton - meter (N-m) x 8.851 = in.-lbs.

---

Note: Lubrication is highly recommended for IVT  
Consult factory for profile rail version.

Consult Factory • 800-962-8979

pbclinear.com | LINEAR MOTION SOLUTIONS 23
ABK Linear Guide Concepts

**DRIVEN SYSTEM CONCEPTUAL PLATFORMS**

**BELT DRIVE**
- Ideal for use with V-Guide wheel bearings in high-speed applications
- Performs well in contaminated environments
- Extrusion can support a variety of motor and idler end design configurations
- Supports a variety of motor mounts
- Belt type: ATL 5 - 12 mm wide compatibility

**BALL SCREW**
- Rigid ball nut performance in high-precision applications
- Ball screw diameters 16 - 25 mm
- Does well in Z-axis and high thrust applications
- Extrusion can support a variety of motor and idler end design configurations
- Supports a variety of motor mounts
- Lead screw with polymer nut option

**RACK DRIVE**
- Ideal for extended long length travel
- Extrusion is compatible with Martin sprocket and gear RA12 or equivalent

**BEARING OPTIONS FOR ALL DRIVE TYPES**
- Cam Roller Technology: V-Guide Bearings (standard)
- Profile Rail Technology: Profile Rail Guideways (customer installation)
Contact Factory about Custom Carriage Orders

CUSTOM-BUILD OPTIONS
- Belt Drive
- Ball Screw
- Rack Drive
- Mounting Brackets
- Motors
- Sensor Brackets
- Wheel Covers
- Lubrication Kits
- Cable Carriers

Note: Not all drives and accessories options are available as a part of the standard product. Please consult factory.

Rack Driven System
- Ideal for long travel

For Custom Integral-V Technology Carriages, Consult the Factory, 800-962-8979.