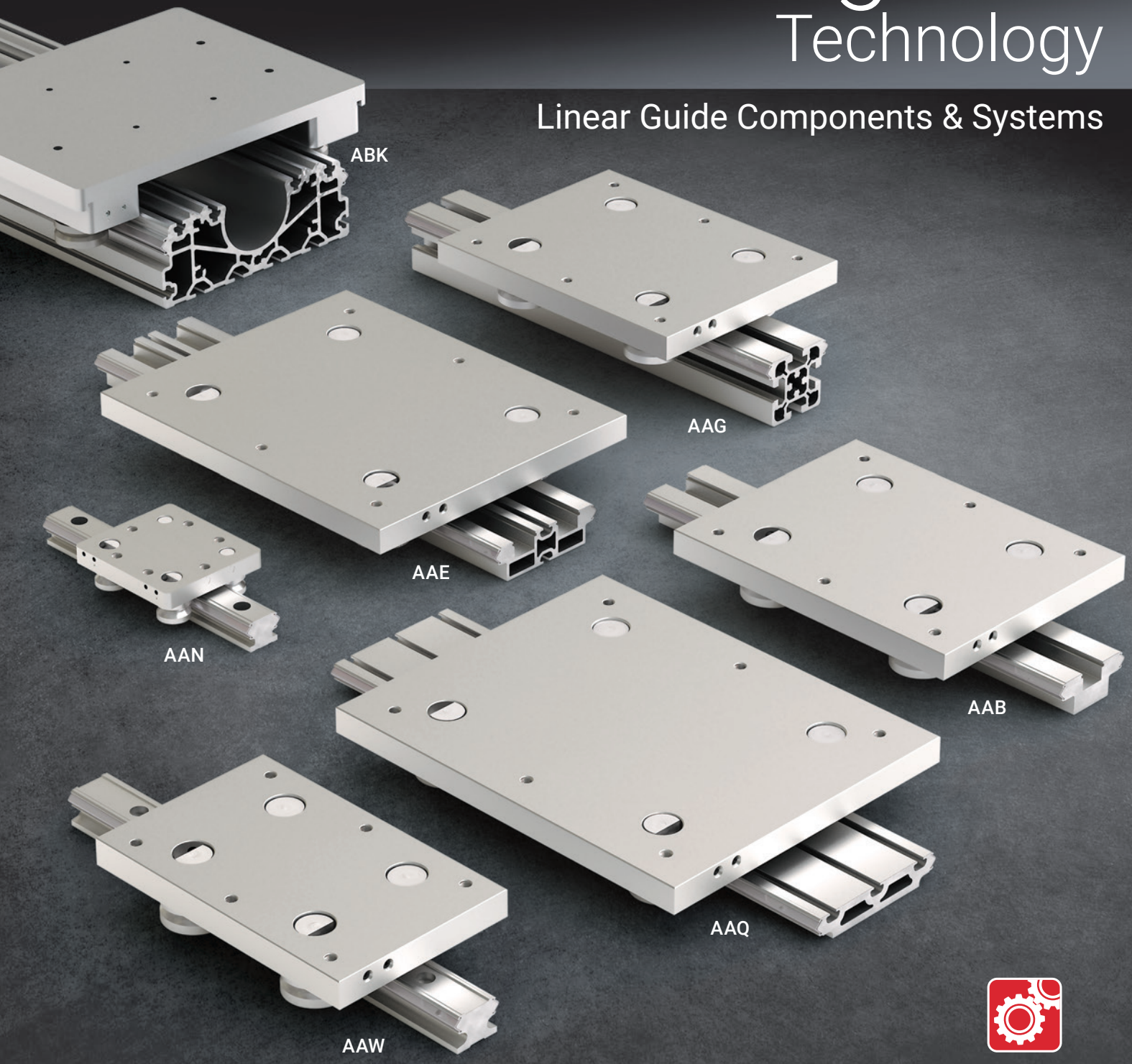
PBC Linear™

Integral-V Technology

Linear Guide Components & Systems



Configure Online at
pbclinear.com

1-800-962-8979

What Makes Integral-V Technology Different?

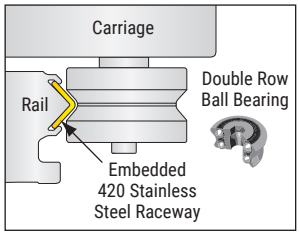
30 Minute Installation — 2 COMPONENTS — 90 COMPONENTS — 2 hour Installation

Integral-V vs. Profile Rail

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

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

Qty	Description	Cost
1	2 m IVT Rail	$291.00
1	Carriage Assembly	$230.00
30 minutes of labor to assemble @ $36.00/hr		$18.00
Total Cost		**$539.00**

*Based on 2 meter general linear guide application

Bill of Material

Qty	Description	Cost
82	Fasteners	$28.00
2	15 mm Rails (2 m long)	$528.00
4	15 mm Carriages	$184.00
1	Base Plate	$300.00
1	Carriage Plate	$50.00
2 hours of labor to assemble @ $36.00/hr		$72.00
Total Cost		**$1162.00**

Flexibility to Meet Application Requirements

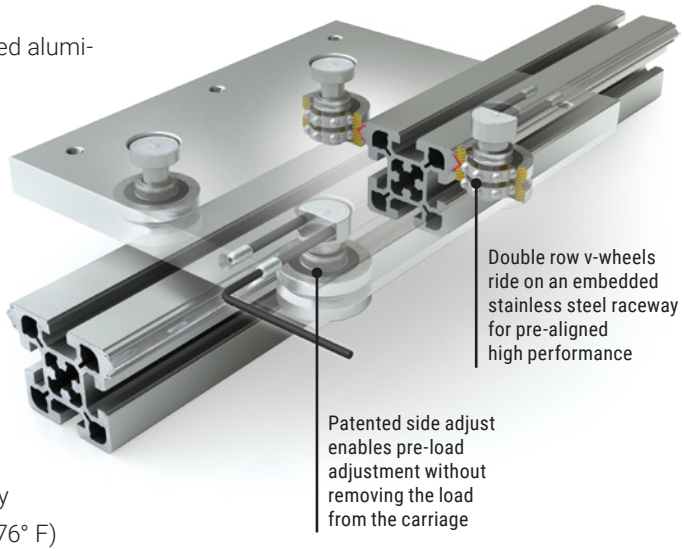
- SIMO machined for precision qualified rail surfaces within .050 mm (.002")
- Handles radial bearing loads up to 10020 N (2252 lbs)
- Multiple configurations provide pre-aligned, high performance v-wheel guidance for a wide range of applications (see application examples on pages 3-7)

Click here or to read the IVT vs. Profile Rail Whitepaper

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
- Operating temperature range from -20° C to 80° C (-4° F to 176° F)

Link to the Integral-V Technology overview video.

SIMO
SIMULTANEOUS INTEGRAL MILLING OPERATION

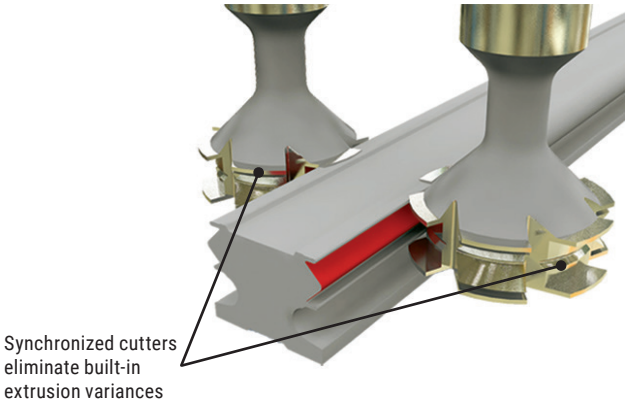
Simultaneous Integral Milling Operation

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

Link to the SIMO process video.

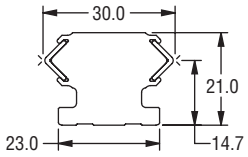


Compare SIMO vs. Standard Aluminum Extrusion

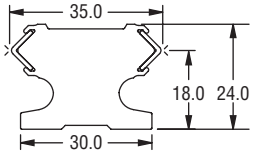
Standard Aluminum Extrusion			SIMO
Straightness (Camber)	.0125 in/ft (1 mm/m)	⇨ 6 TIMES BETTER ⇨	± .002 in/ft (.166 mm/m)
Twist	1/2° per ft (1.5° per m)	⇨ 2 TIMES BETTER ⇨	< 1/4° per ft (.82° per m)
Fatness	.004 in (.10 mm)	⇨ 2 TIMES BETTER ⇨	.002 in (.0508 mm)

Integral-V Technology

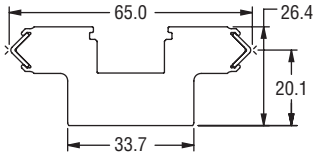
IVT AAN
Page 8



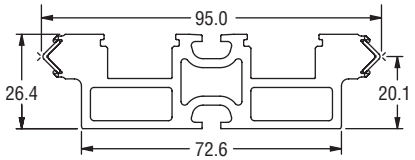
IVT AAW
Page 10



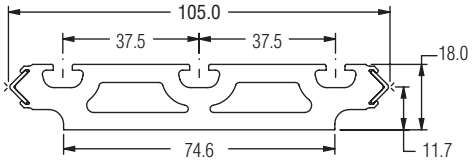
IVT AAB
Page 12



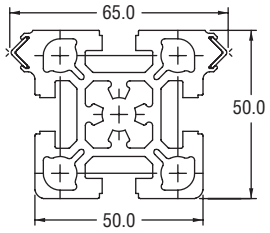
IVT AAE
Page 14



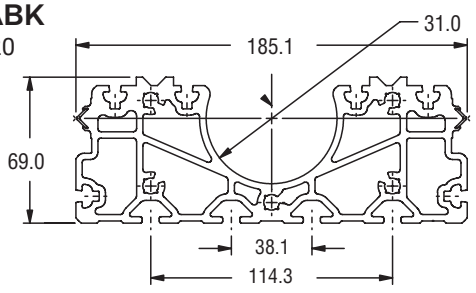
IVT AAQ
Page 16



IVT AAG
Page 18



IVT ABK
Page 20

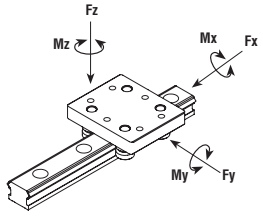


SIMO Enabled systems

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

Fd = Dynamic capacity (LC)
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.



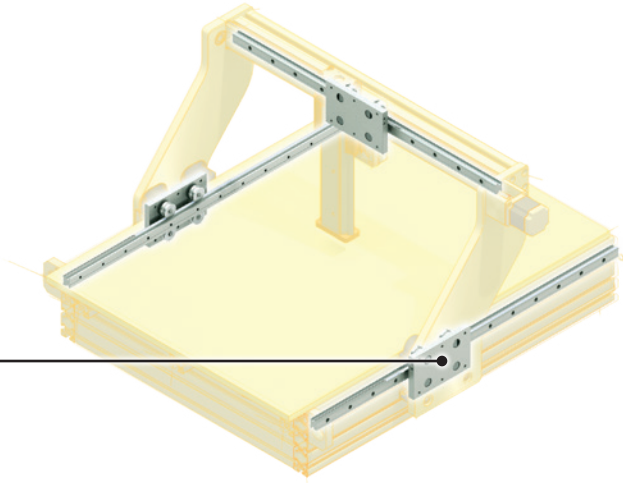
SERIES	STATIC LOAD RATINGS**					DYNAMIC LOAD RATINGS**					RAIL MOMENTS OF INERTIA		RAIL WEIGHT	MAX RAIL LENGTH
	Radial Foy N	Axial Foz N	Roll Mox N-M	Pitch Moy N-M	Yaw Moz N-M	Radial Fy N	Axial Fz N	Roll Mx N-M	Pitch My N-M	Yaw Mz N-M	Iy CM4	Iz CM4	KG/M	MM
IVTAAN	1960	1200	16	36	59	2480	1490	20	45	74	1.7	2.1	1.30	3657
IVTAAW	8900	5560	39	278	445	10020	6150	93	308	501	2.8	3.8	1.65	3657
IVTAAB	8900	5560	171	348	556	10020	6150	190	384	626	5.5	25.4	2.77	3048
IVTAAE	8900	5560	255	487	778	10020	6150	282	538	877	6.0	74.8	2.74	3657
IVTAAQ	8900	5560	283	487	778	10020	6150	313	538	877	3.4	91.9	3.06	3657
IVTAAG	8900	5560	171	348	556	10020	6150	190	384	626	29.7	34.9	3.36	3657
IVTABK	8900	5560	506	390	623	10020	6150	559	431	701	175	1300	10.1	3657

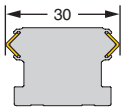
*Weight may vary slightly depending on carriage options. **Load ratings are based on standard carriage.

Applications

Small to Medium IVT | Medium to Large IVT | Large to Extra-Large IVT

Pick-and-Place: Integral-V Technology utilizes our SIMO® machining process for precise mounting and alignment on all critical sides. This ensures dimensional and rail form accuracy that is required in pick-and-place and other XYZ applications.

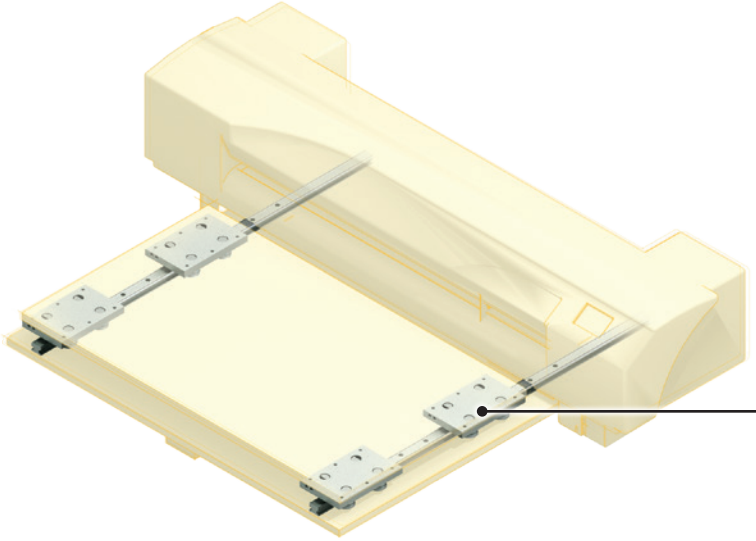


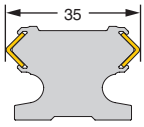


Rail Choice: AAN

Link to IVT vs. Profile Guide video.

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.





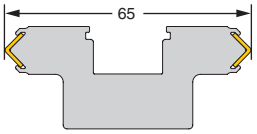
Rail Choice: AAW

Applications

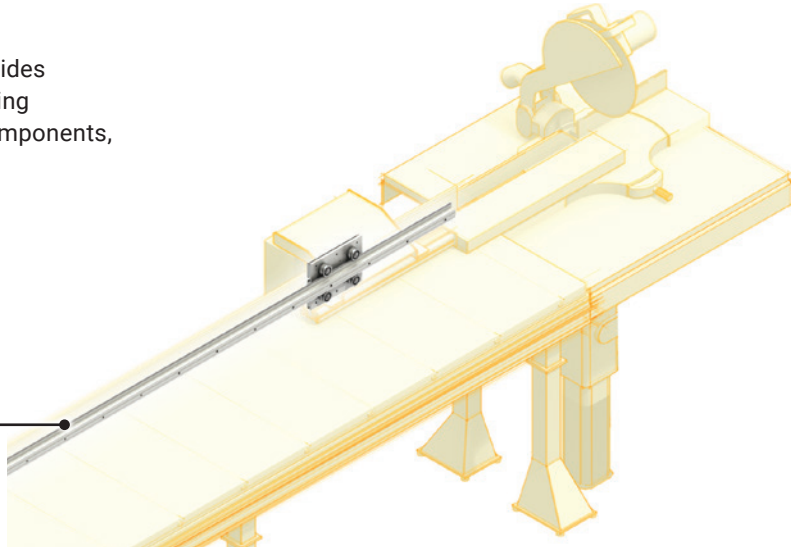
Small to Medium IVT | **Medium to Large IVT** | Large to Extra-Large IVT

Industrial Stop Gauge and 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.

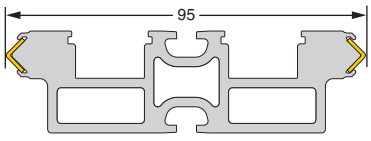
Link to material positioning video.



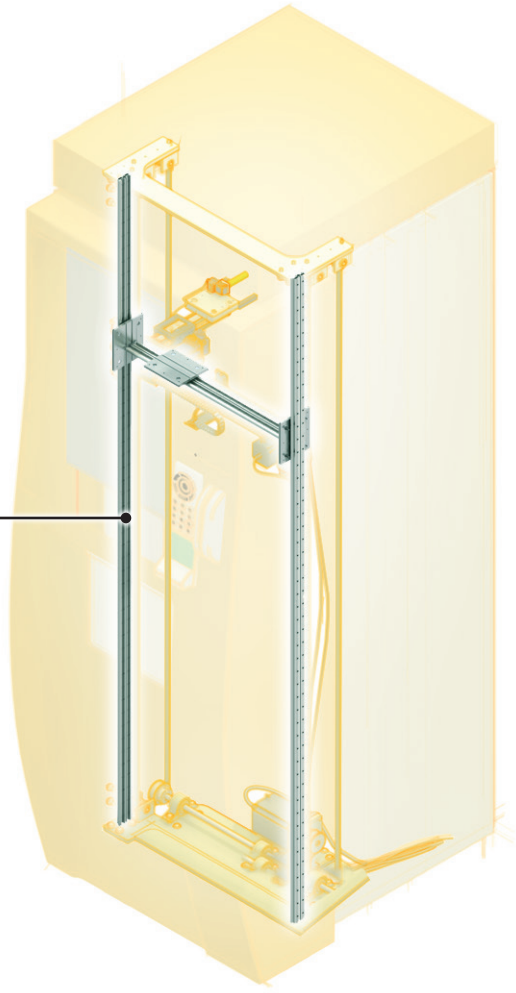
Rail Choice: AAB



Kiosk and 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.

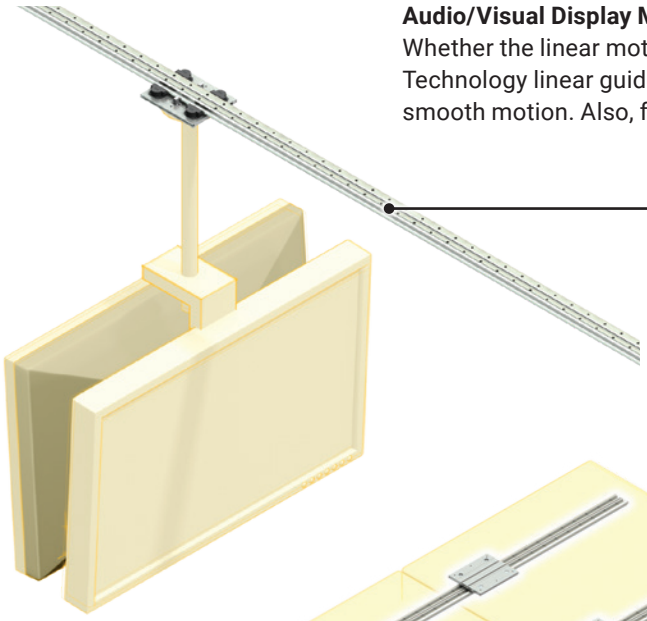


Rail Choice: AAE

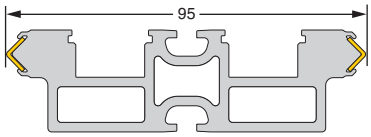


Applications

Small to Medium IVT | Medium to Large IVT | **Large to Extra-Large IVT**

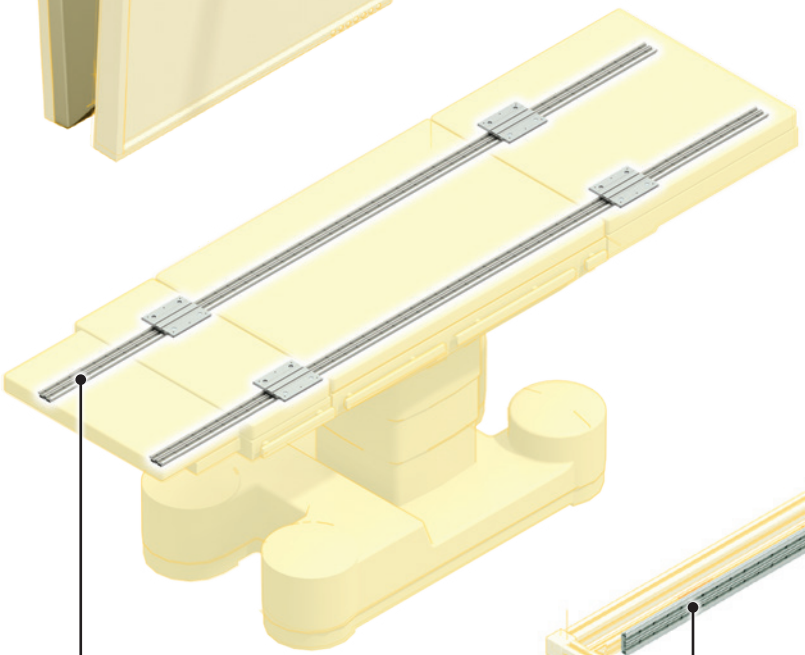


Audio/Visual Display Mounts:
Whether the linear motion system is mounted vertically or horizontally, Integral-V Technology linear guides provide the strength and versatility necessary to ensure smooth motion. Also, fewer parts means less installation time and less money.

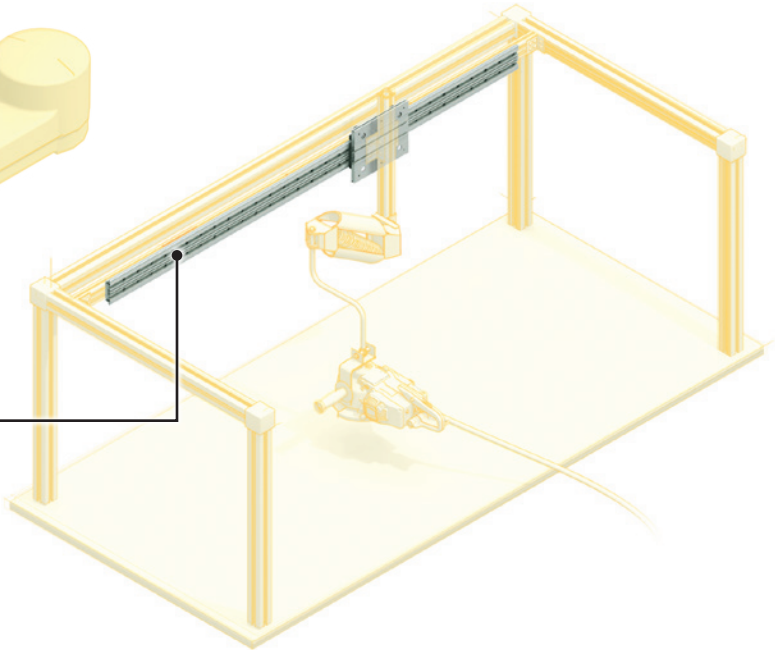


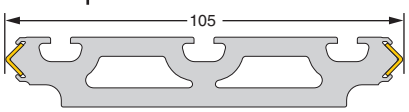
Rail Choice: AAE

Link to architectural design video.



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.





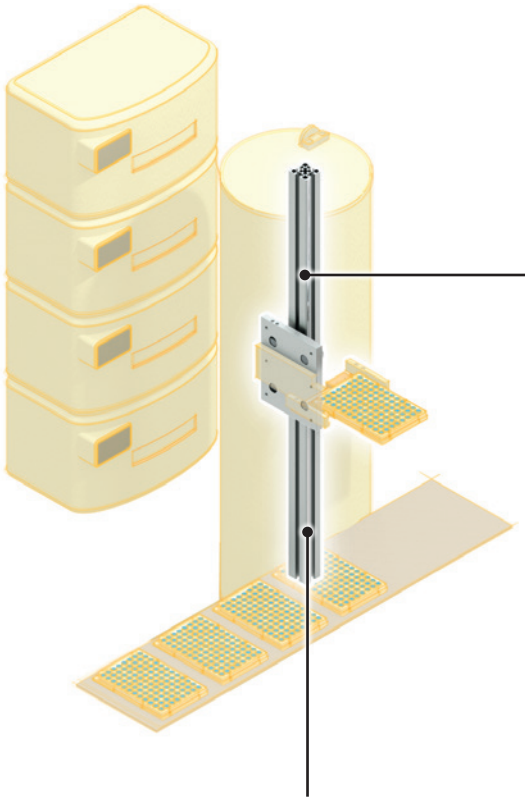
Rail Choice: AAQ

Link to ergonomic application video.

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.

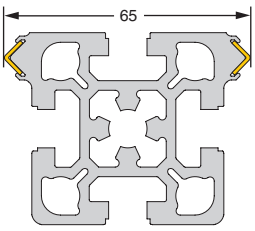
Applications

Small to Medium IVT	Medium to Large IVT	Large to Extra-Large IVT

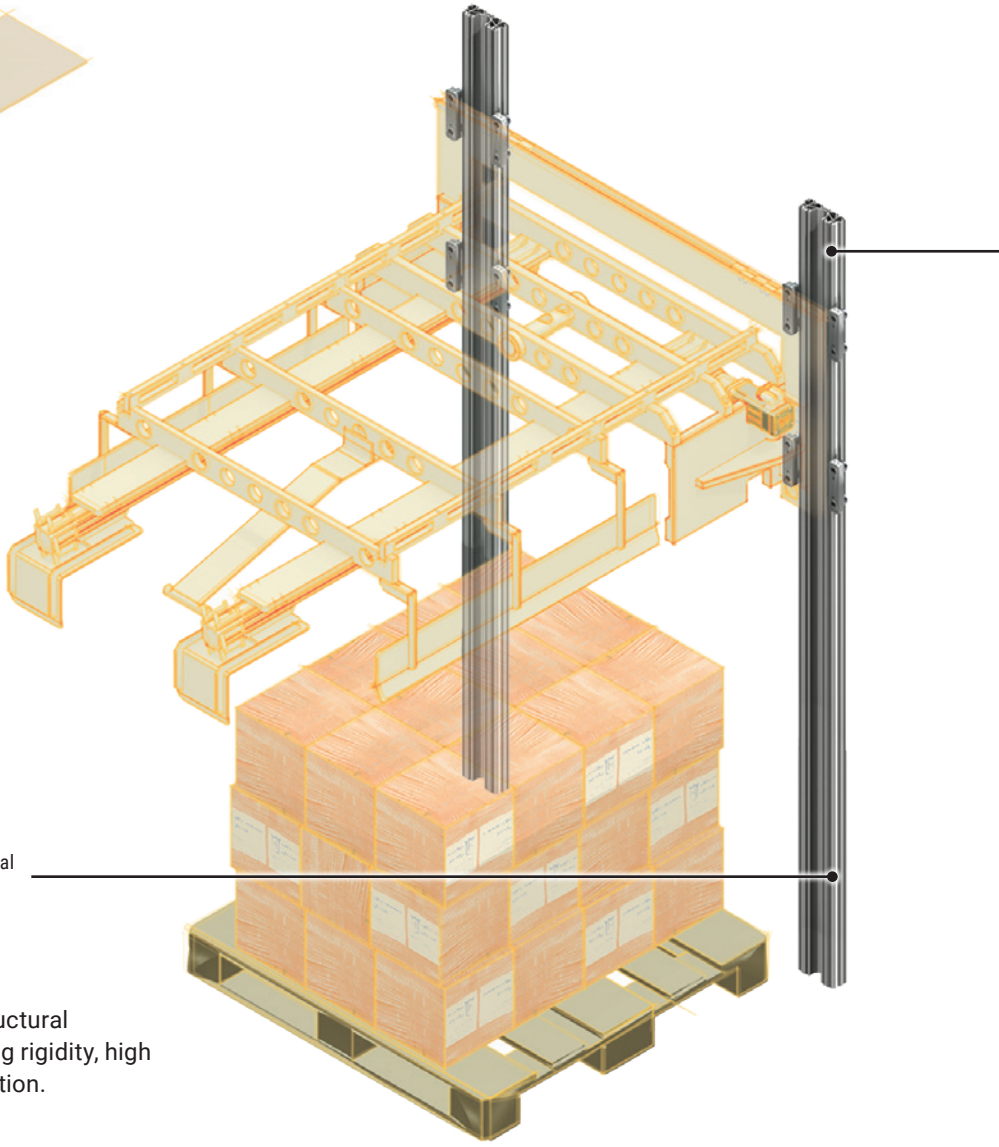


Polar Robot:
Integral-V Technology linear guides can be used in vertically or horizontally oriented applications. The polar robot shown here provides repeatable motion and high accuracy in the laboratory automation space.

V-Wheel bearings provide smooth travel and provide structural support



Rail Choice: AAG

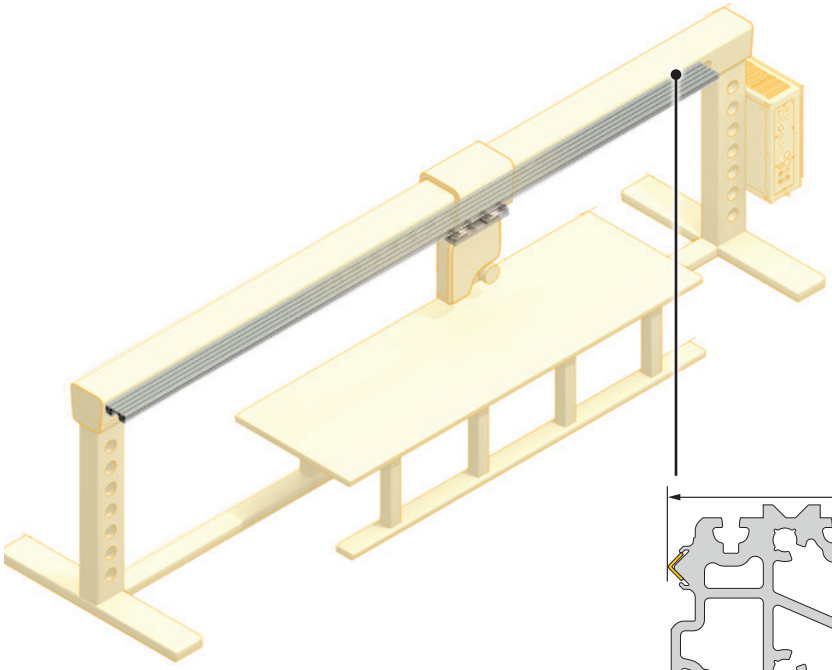


The ABK rail is a strong structural element that handles high loads

Depalletizer and 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.

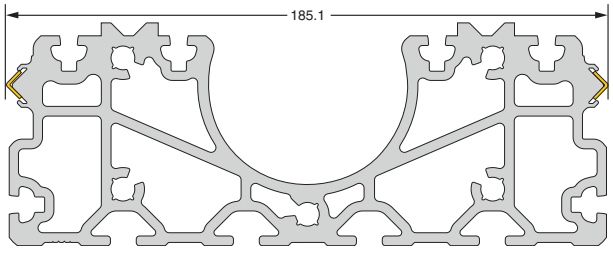
Applications

Small to Medium IVT | **Medium to Large IVT** | **Large to Extra-Large IVT**

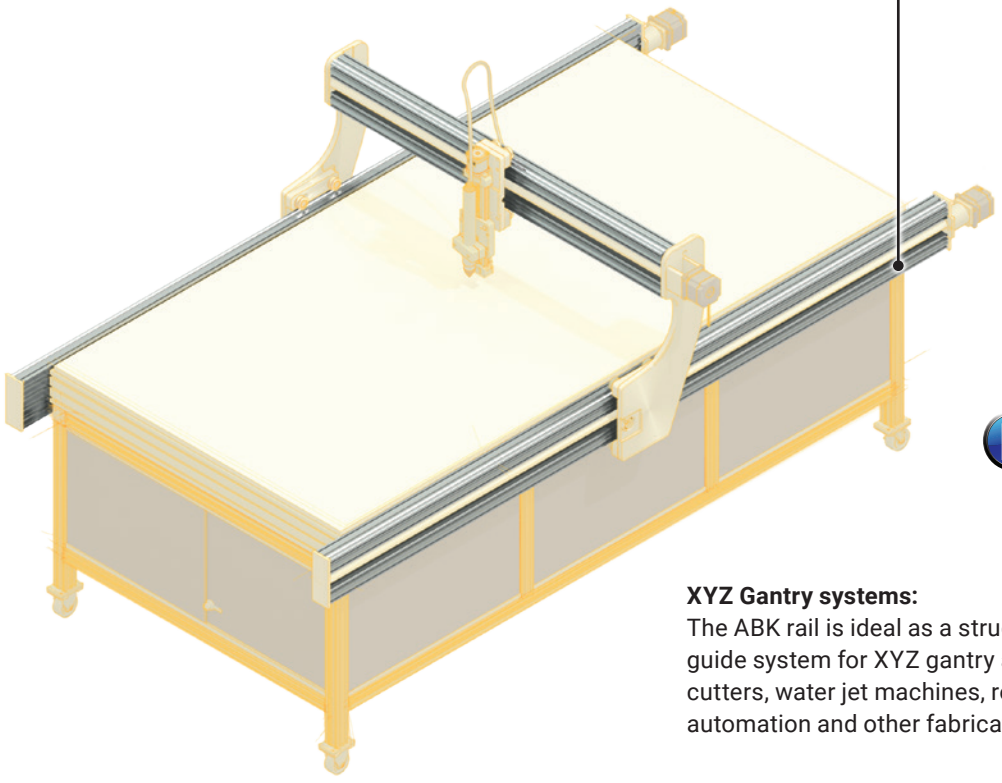


Cutting Operations:
ABK rail provides rigid and smooth motion for long length cutting operations such as metals, textiles, and other materials.

Link to application story.



Rail Choice: ABK



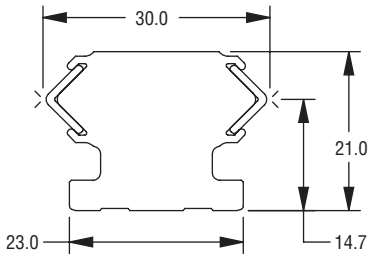
Link to product related video.

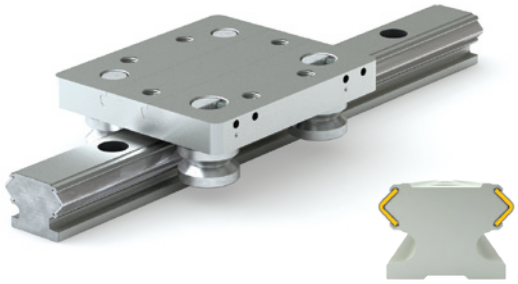
XYZ Gantry systems:
The ABK rail is ideal as a structural element and linear guide system for XYZ gantry applications such as plasma cutters, water jet machines, routers, etchers, pick-and-place automation and other fabrication equipment.

AAN Linear Guide

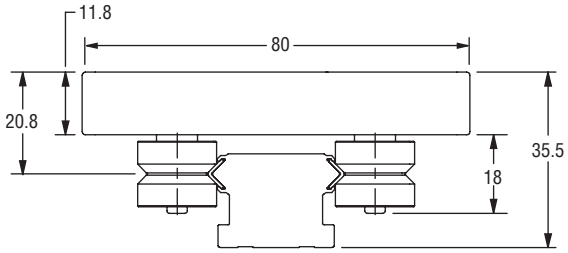
RAIL

1:1 Scale

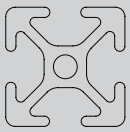




CARRIAGE



Recommended Mounting Frame (when mounted to aluminum extrusion)		
Screw Length*	**Frame Size (TYP)**	**Frame T-Slot Size**
M6 x 10 mm SHCS T-Nut Part No. 6100435	25 x 25	6



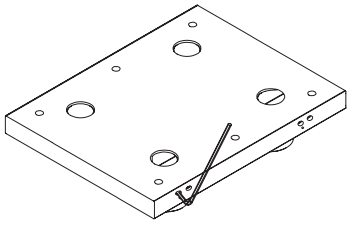
*Recommended screw length when bolting IVT rail to structural framing via a t-nut.

ACCESSORIES

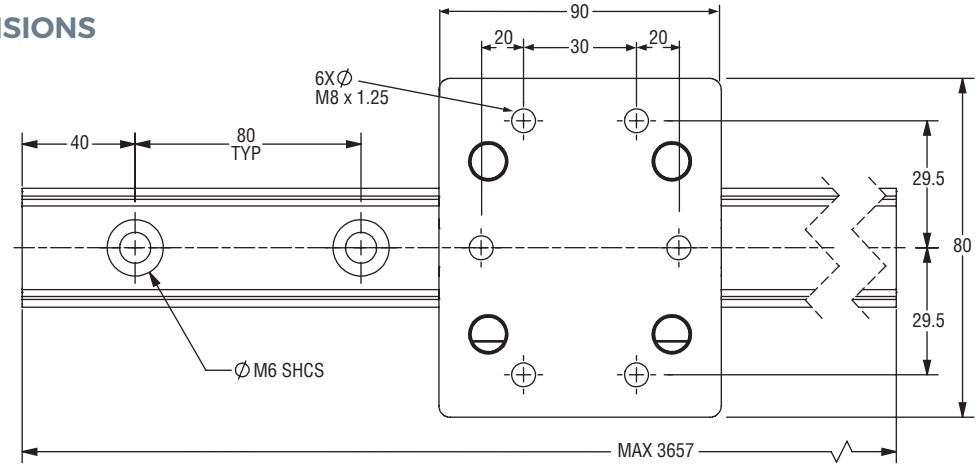
Patented Preload Adjustment

Standard

Side (CAM) Adjustable



UNIT DIMENSIONS

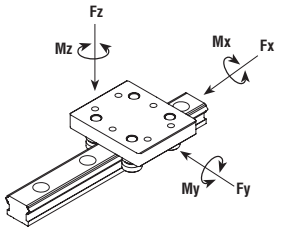


AAN Linear Guide

Specifications

Series	Number of Rollers	Carriage Weight	Static Load Ratings					Dynamic Load Ratings					Moments of Inertia		Rail Weight	Max Rail Length
			Radial Foy	Axial Foz	Roll Mox	Pitch Moy	Yaw Moz	Radial Fy	Axial Fz	Roll Mx	Pitch My	Yaw Mz	Iy	Iz		
		kg	N	N	N-M	N-M	N-M	N	N	N-M	N-M	N-M	CM4	CM4	kg/m	mm
IVTAAN	4	0.35	1960	1200	16	36	59	2480	1490	20	45	74	1.7	2.1	1.30	3657

*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.

Configure Online

Ordering Information

RAIL

IVT **AAN** **R** – **XXXX** – **0** **00**

Integral-V Technology

Rail Type

Identifier
R = Rail

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

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

Version
00 = Standard

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

CARRIAGE

IVT **AAN** **C** – **A** **2** **0** **A** **0**

Integral-V Technology

Rail Type

Identifier
C = Carriage

Carriage Type
A - Flat plate with taps

Roller Type
2 - Sealed

Lubrication Options
0 - No Lubrication

Preload Type
A - Side (CAM) Adjustable

Carriage Length
0 - Standard Length

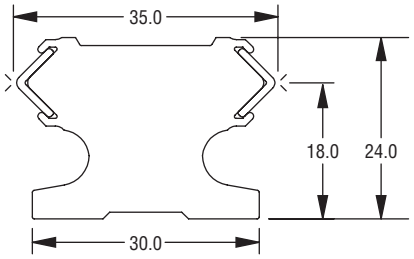
Consult Factory
800-962-8979

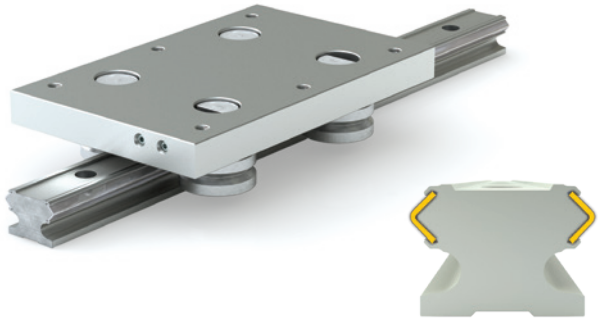
Note: Lubrication is highly recommended for IVT.

AAW Linear Guide

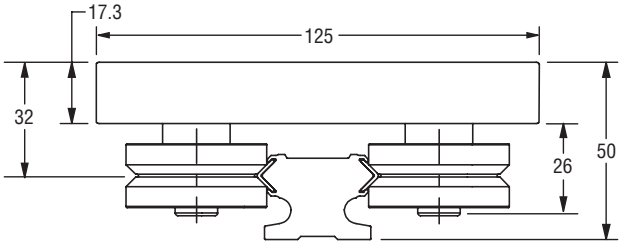
RAIL

1:1 Scale

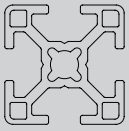




CARRIAGE



Recommended Mounting Frame (when mounted to aluminum extrusion)		
Screw Length*	**Frame Size (TYP)**	**Frame T-Slot Size**
M6 x 25 mm SHCS T-Nut Part No. 6100435	30 x 30	6



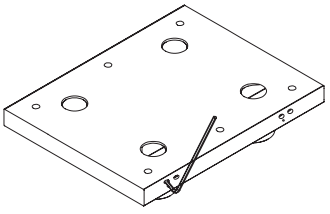
*Recommended screw length when bolting IVT rail to structural framing via a t-nut.

ACCESSORIES

Patented Preload Adjustment

Standard

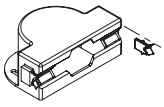
Side (CAM) Adjustable



Lubrication Accessories

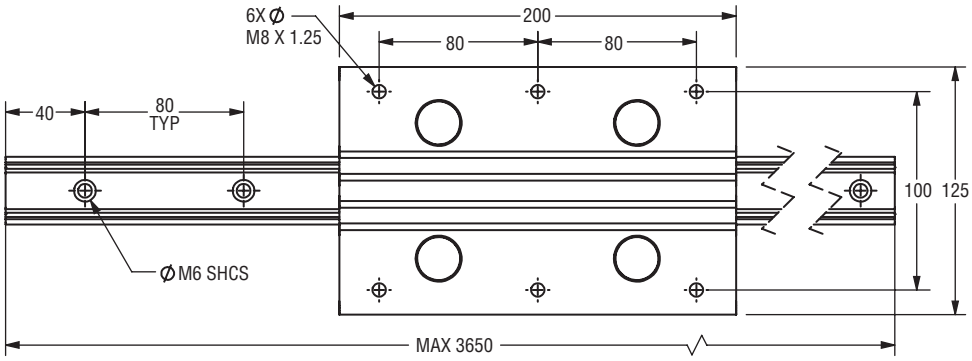
1. Lube Holder
2. Wheel Cover

1. Polymer Lubricator IVT3LHA-KIT



2. Rail Scraper (Removable IVT3WCA-KIT

UNIT DIMENSIONS

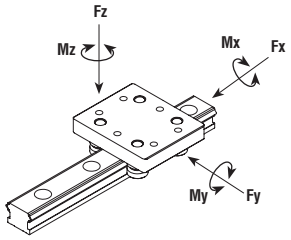


AAW Linear Guide

Specifications

Series	Number of Rollers	Carriage Weight	Static Load Ratings					Dynamic Load Ratings					Moments of Inertia		Rail Weight	Max Rail Length
			Radial Foy	Axial Foz	Roll Mox	Pitch Moy	Yaw Moz	Radial Fy	Axial Fz	Roll Mx	Pitch My	Yaw Mz	Iy	Iz		
		kg	N	N	N-M	N-M	N-M	N	N	N-M	N-M	N-M	CM4	CM4	kg/m	mm
IVTAAW	4	1.54	8900	5560	39	278	445	10020	6150	93	308	501	2.8	3.8	1.65	3657

*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.

Configure Online

Ordering Information

RAIL

IVT **AAW** **R** – **XXXX** – **0** **00**

Integral-V Technology

Rail Type

Identifier
R = Rail

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

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

Version
00 = Standard

Ex: IVTAAWR-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**

Integral-V Technology

Rail Type

Identifier
C = Carriage

Carriage Type
A - Flat plate with taps

Roller Type
2 - Sealed

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

Preload Type
A - Side (CAM) Adjustable

Carriage Length
0 - Standard Length

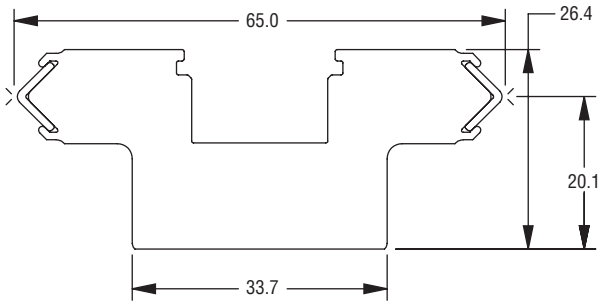
Consult Factory
800-962-8979

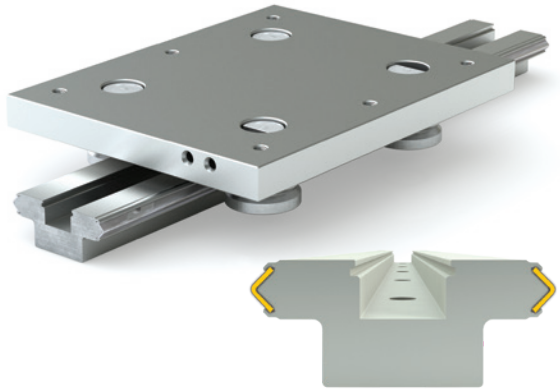
Note: Lubrication is highly recommended for IVT.

AAB Linear Guide

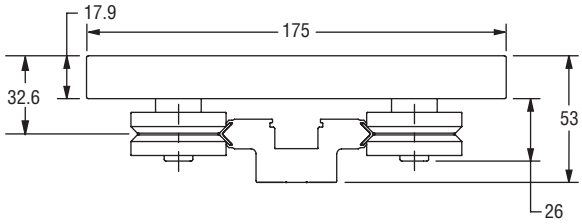
RAIL

1:1 SCALE

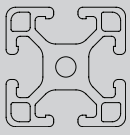




CARRIAGE



Recommended Mounting Frame (when mounted to aluminum extrusion)		
Screw Length*	Frame Size (TYP)	Frame T-Slot Size
M8 x 22 mm SHCS T-Nut Part No. 6100436	40 x 40	8



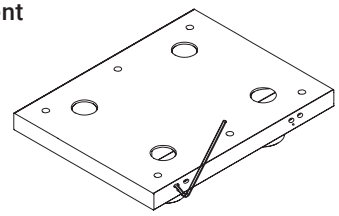
*Recommended screw length when bolting IVT rail to structural framing via a t-nut.

ACCESSORIES

Patented Preload Adjustment

Standard

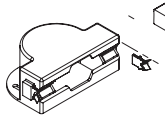
Side (CAM) Adjustable



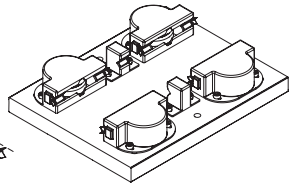
Lubrication Accessories

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

1. Polymer Lubricator IVT3LHA-KIT

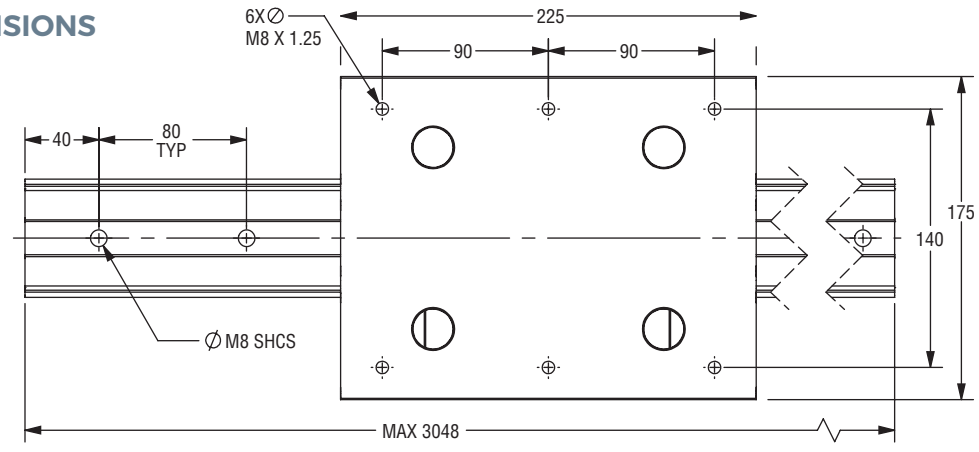


2. Rail Scraper (Removable) IVT3WCA-KIT



3. Wheel Cover and Lube Holder

UNIT DIMENSIONS

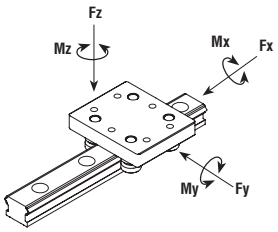


AAB Linear Guide

Specifications

Series	Number of Rollers	Carriage Weight	Static Load Ratings					Dynamic Load Ratings					Moments of Inertia		Rail Weight	Max Rail Length
			Radial Foy	Axial Foz	Roll Mox	Pitch Moy	Yaw Moz	Radial Fy	Axial Fz	Roll Mx	Pitch My	Yaw Mz	Iy	Iz		
		kg	N	N	N-M	N-M	N-M	N	N	N-M	N-M	N-M	CM4	CM4	kg/m	mm
IVTAAB	4	2.42	8900	5560	171	348	556	10020	6150	190	384	626	5.5	25.4	2.77	3048

*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.

Configure Online

Ordering Information

RAIL

IVT **AAB** **R** – **XXXX** – **0** **00**

Integral-V Technology

Rail Type

Identifier
R = Rail

Rail Length
XXXX = Enter Length of Rail in Millimeters
(3048 mm maximum)

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

Version
00 = Standard

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

CARRIAGE

IVT **AAB** **C** – **A** **2** **0** **A** **0**

Integral-V Technology

Rail Type

Identifier
C = Carriage

Carriage Type
A - Flat plate with taps

Roller Type
2 - Sealed

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

Preload Type
A - Side (CAM) Adjustable

Carriage Length
0 - Standard Length

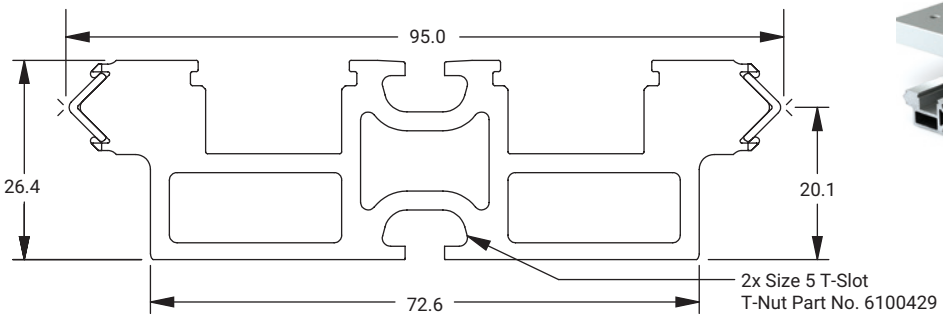
Consult Factory
800-962-8979

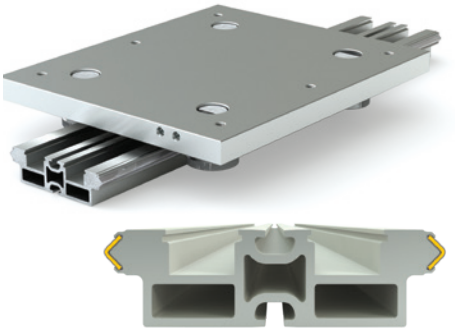
Note: Lubrication is highly recommended for IVT.

AAE Linear Guide

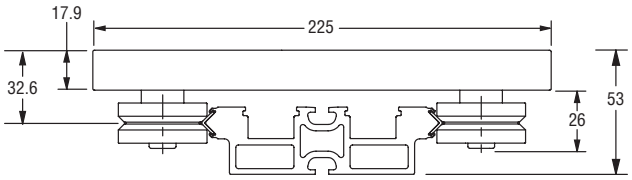
RAIL

1:1 SCALE

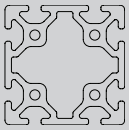




CARRIAGE



Recommended Mounting Frame (when mounted to aluminum extrusion)		
Screw Length*	**Frame Size (TYP)**	**Frame T-Slot Size**
M8 x 25 mm SHCS T-Nut Part No. 6100436	80 x 80	8



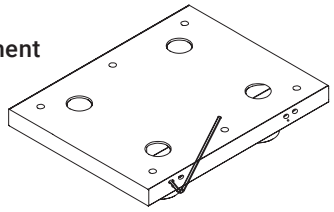
*Recommended screw length when bolting IVT rail to structural framing via a t-nut.

ACCESSORIES

Patented Preload Adjustment

Standard

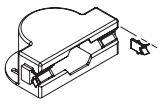
Side (CAM) Adjustable



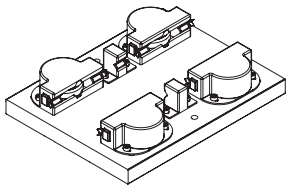
Lubrication Accessories

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

1. Polymer Lubricator IVT3LHA-KIT

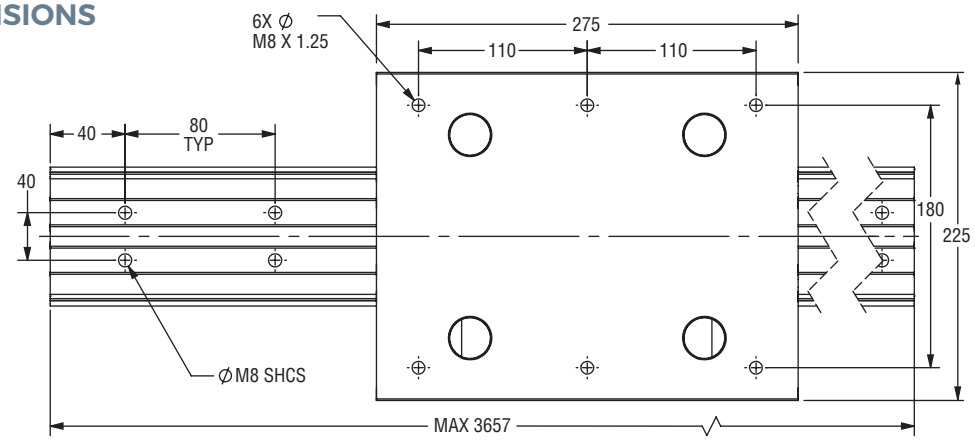


2. Rail Scraper (Removable) IVT3WCA-KIT



3. Wheel Cover and Lube Holder

UNIT DIMENSIONS

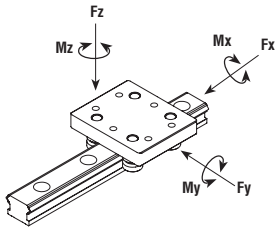


AAE Linear Guide

Specifications

Series	Number of Rollers	Carriage Weight	Static Load Ratings					Dynamic Load Ratings					Moments of Inertia		Rail Weight	Max Rail Length
			Radial Foy	Axial Foz	Roll Mox	Pitch Moy	Yaw Moz	Radial Fy	Axial Fz	Roll Mx	Pitch My	Yaw Mz	Iy	Iz		
		kg	N	N	N-M	N-M	N-M	N	N	N-M	N-M	N-M	CM4	CM4	kg/m	mm
IVTAAE	4	3.47	8900	5560	255	487	778	10020	6150	282	538	877	6.0	74.8	2.74	3657

*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.

Configure Online

Ordering Information

RAIL

IVT **AAE** **R** – **XXXX** – **0** **00**

Integral-V Technology

Rail Type

Identifier
R = Rail

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

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

Version
00 = Standard

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

CARRIAGE

IVT **AAE** **C** – **A** **2** **0** **A** **0**

Integral-V Technology

Rail Type

Identifier
C = Carriage

Carriage Type
A - Flat plate with taps

Roller Type
2 - Sealed

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

Preload Type
A - Side (CAM) Adjustable

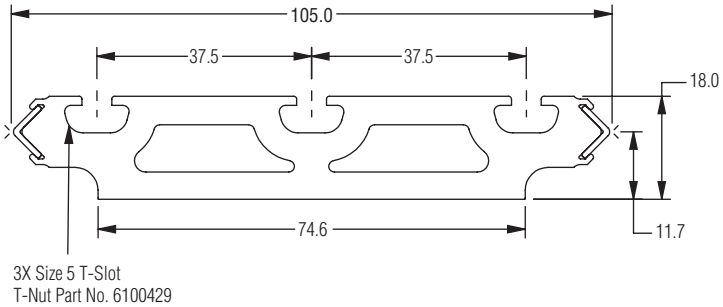
Carriage Length
0 - Standard Length

Note: Lubrication is highly recommended for IVT.

Consult Factory
800-962-8979

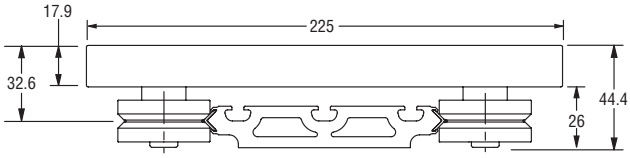
AAQ Linear Guide

RAIL

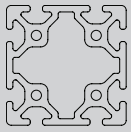


3X Size 5 T-Slot
T-Nut Part No. 6100429

CARRIAGE



Recommended Mounting Frame (when mounted to aluminum extrusion)		
Screw Length*	**Frame Size (TYP)**	**Frame T-Slot Size**
M8 x 15 mm SHCS T-Nut Part No. 6100429	80 x 80	8



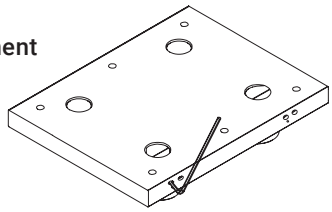
*Recommended screw length when bolting IVT rail to structural framing via a t-nut.

ACCESSORIES

Patented Preload Adjustment

Standard

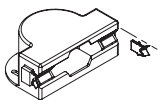
Side (CAM) Adjustable



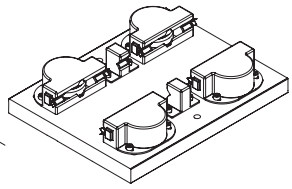
Lubrication Accessories

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

1. Polymer Lubricator IVT3LHA-KIT

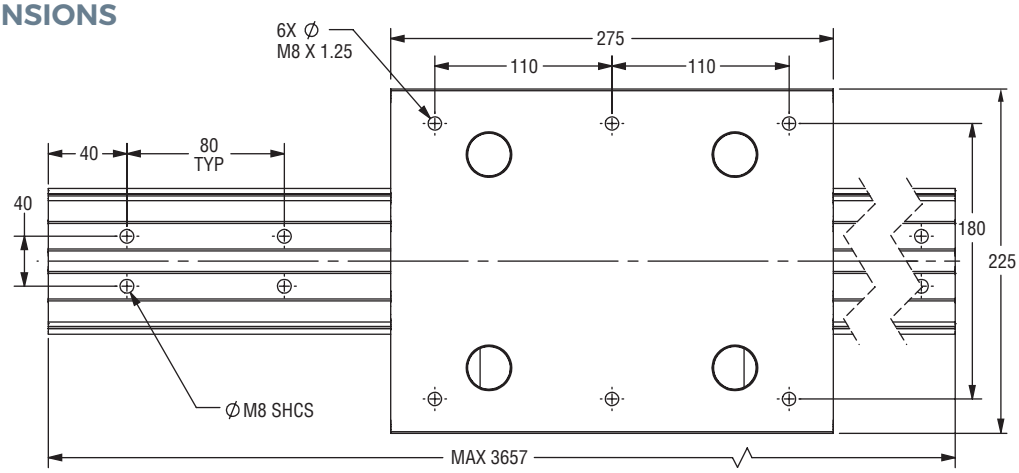


2. Rail Scraper (Removable) IVT3WCA-KIT



3. Wheel Cover and Lube Holder

UNIT DIMENSIONS

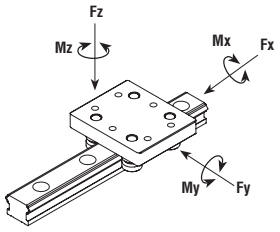


AAQ Linear Guide

Specifications

Series	Number of Rollers	Carriage Weight	Static Load Ratings					Dynamic Load Ratings					Moments of Inertia		Rail Weight	Max Rail Length
			Radial Foy	Axial Foz	Roll Mox	Pitch Moy	Yaw Moz	Radial Fy	Axial Fz	Roll Mx	Pitch My	Yaw Mz	Iy	Iz		
		kg	N	N	N-M	N-M	N-M	N	N	N-M	N-M	N-M	CM4	CM4	kg/m	mm
IVTAAQ	4	3.47	8900	5560	283	487	778	10020	6150	313	538	877	3.4	91.9	3.06	3657

*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.

Configure Online

Ordering Information

RAIL

IVT **AAQ** **R** – **XXXX** – **0** **00**

Integral-V Technology

Rail Type

Identifier
R = Rail

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

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

Version
00 = Standard

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

CARRIAGE

IVT **AAQ** **C** – **A** **2** **0** **A** **0**

Integral-V Technology

Rail Type

Identifier
C = Carriage

Carriage Type
A - Flat plate with taps

Roller Type
2 - Sealed

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

Preload Type
A - Side (CAM) Adjustable

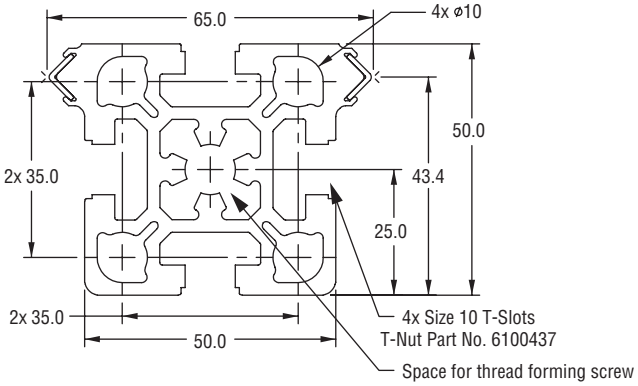
Carriage Length
0 - Standard Length

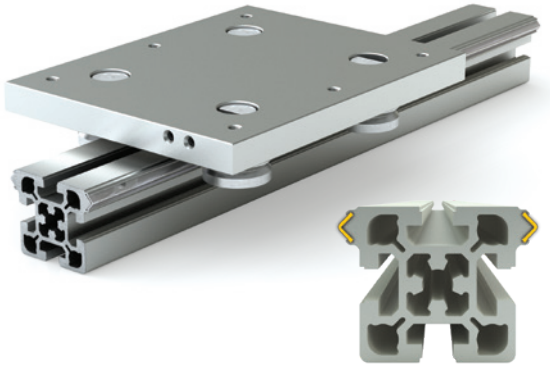
Note: Lubrication is highly recommended for IVT.

Consult Factory
800-962-8979

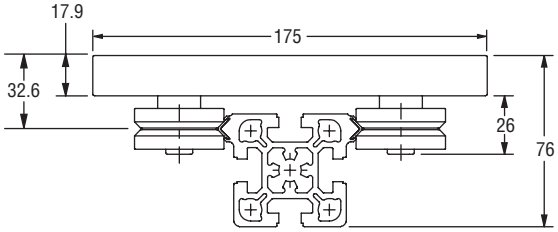
AAG Linear Guide

RAIL





CARRIAGE



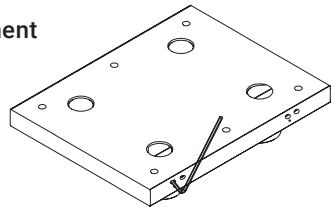
Recommended Mounting Frame (when mounted to aluminum extrusion)		
Screw Length*	Frame Size (TYP)	Frame T-Slot Size
N/A	N/A	N/A
No mounting frame necessary for AAG Rail		

ACCESSORIES

Patented Preload Adjustment

Standard

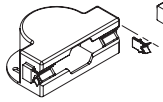
Side (CAM) Adjustable



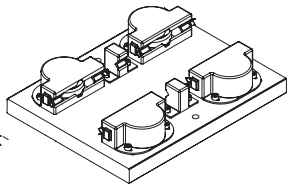
Lubrication Accessories

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

1. Polymer Lubricator IVT3LHA-KIT

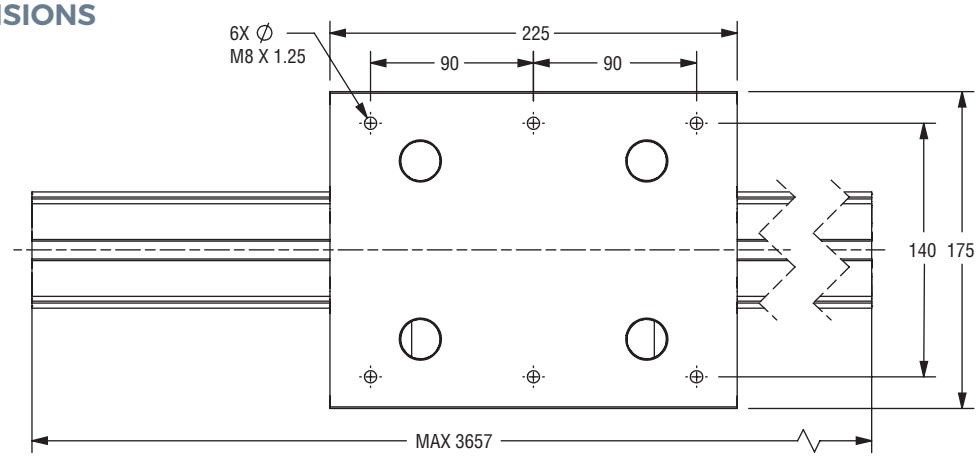


2. Rail Scraper (Removable) IVT3WCA-KIT



3. Wheel Cover and Lube Holder

UNIT DIMENSIONS

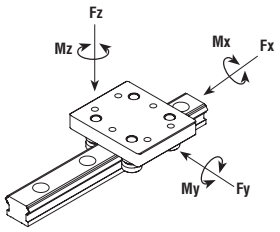


AAG Linear Guide

Specifications

Series	Number of Rollers	Carriage Weight kg	Static Load Ratings					Dynamic Load Ratings					Moments of Inertia		Rail Weight	Max Rail Length
			Radial F_{oy} N	Axial F_{oz} N	Roll M_{ox} N-M	Pitch M_{oy} N-M	Yaw M_{oz} N-M	RADIAL Fy N	AXIAL Fz N	ROLL Mx N-M	PITCH My N-M	YAW Mz N-M	Iy CM^4	Iz CM^4	kg/m	mm
IVTAAG	4	2.42	8900	5560	171	348	556	10020	6150	190	384	626	29.7	34.9	3.36	3657

*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.

Configure Online

Ordering Information

RAIL

IVT **AAG** **R** – **XXXX** – **0** **00**

- **IVT** — **Integral-V Technology**
- **AAG** — **Rail Type**
- **R** — **Identifier**: **R** = Rail
- **XXXX** — **Rail Length**: **XXXX** = Enter Length of Rail in Millimeters (3657 mm maximum)
- **0** — **End Treatment**: **0** - Saw cut and deburr; **B** - Butt Joint Machining
- **00** — **Version**: **00** = Standard

Ex: IVTAAGR-3000-000
Specify length at time of order.

CARRIAGE

IVT **AAG** **C** – **A** **2** **0** **A** **0**

- **IVT** — **Integral-V Technology**
- **AAG** — **Rail Type**
- **C** — **Identifier**: **C** = Carriage
- **A** — **Carriage Type**: **A** - Flat plate with taps
- **2** — **Roller Type**: **2** - Sealed
- **0** — **Lubrication Options**: **0** - No Lubrication; **1** = Lube Holder; **2** = Wheel Cover; **3** = Wheel Cover and Lube Holder
- **A** — **Preload Type**: **A** - Side (CAM) Adjustable
- **0** — **Carriage Length**: **0** - Standard Length

Consult Factory
800-962-8979

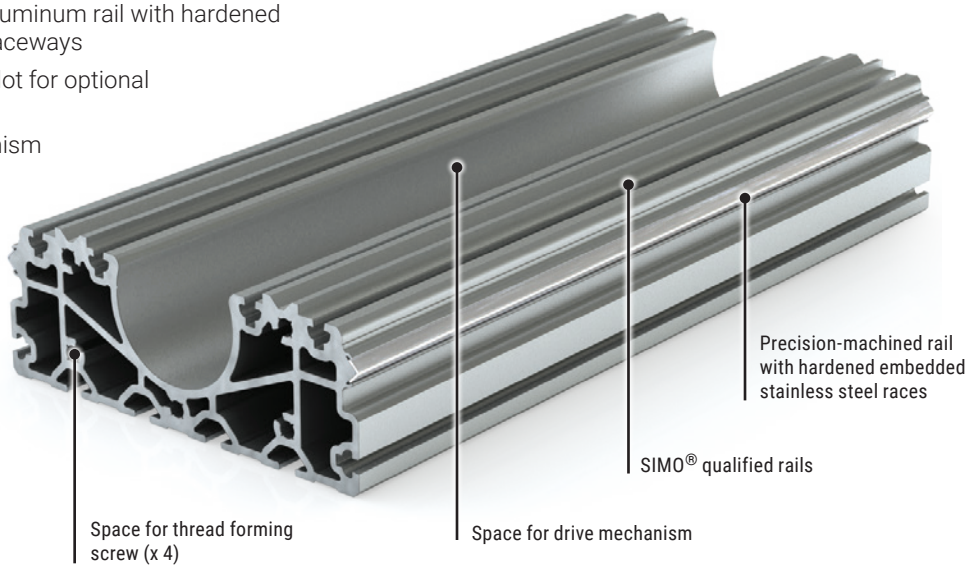
Note: Lubrication is highly recommended for IVT.

ABK Linear Guide

For Large Format Applications and Heavy Loads

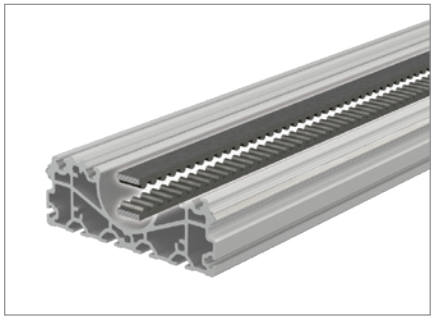
Rail Features and Options

- 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)

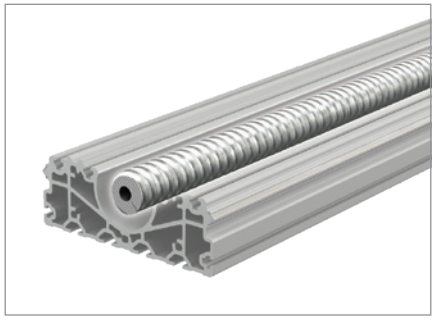


Drive Options (See page 24 for details)

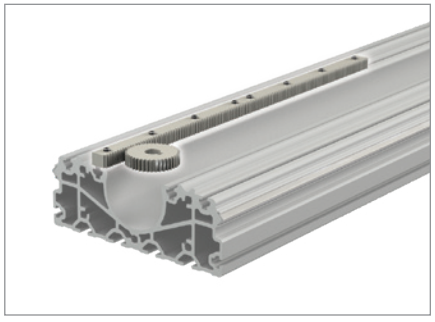
Belt Drive



Ball Screw



Rack Drive

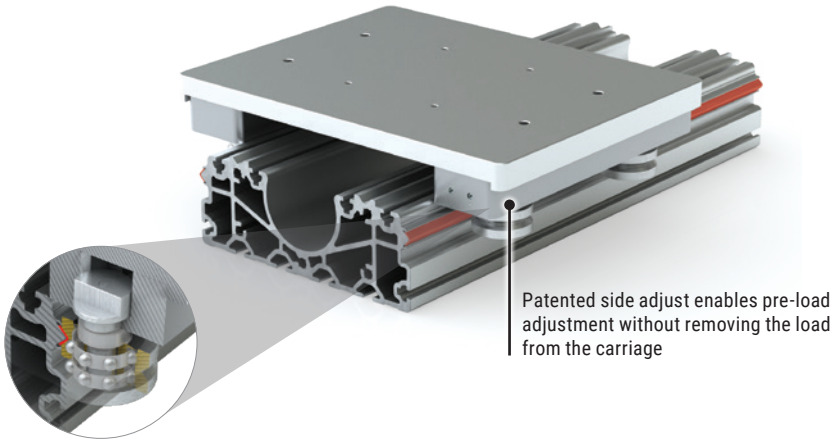


ABK Linear Guide

Bearing Options

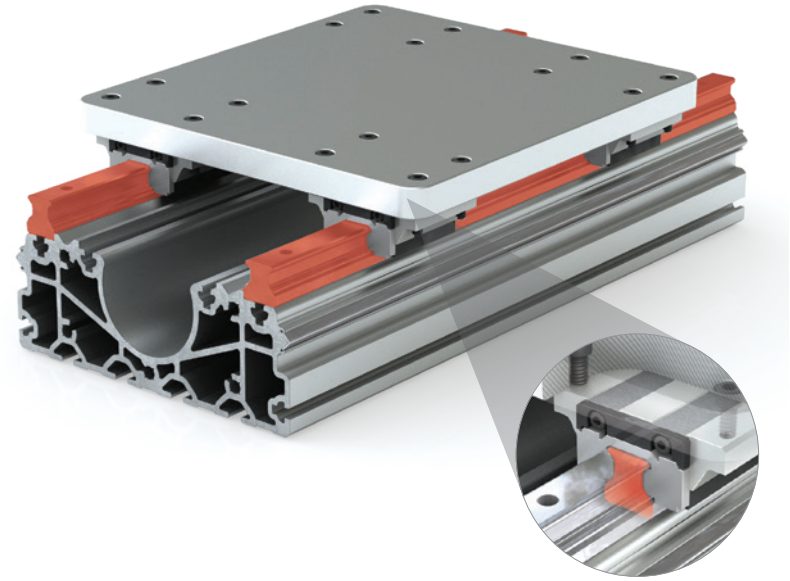
V-Guide Bearing System (Standard)

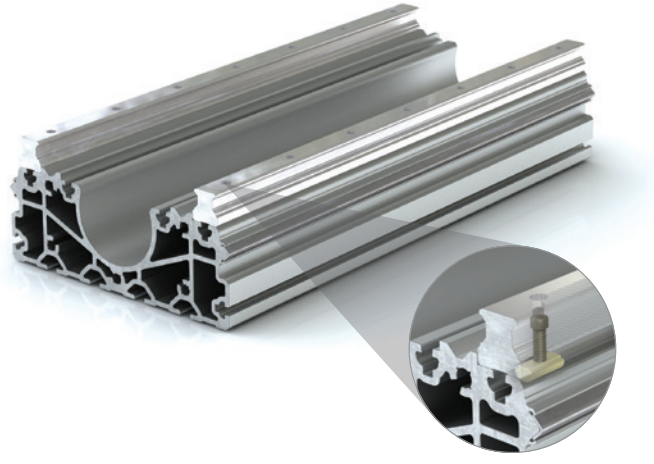
- Embedded hardened stainless steel raceways reduce mounting components
- SIMO® machined for precision qualified rail surfaces
- High load capacity
- Optimized extrusion design provides a large scale structural member

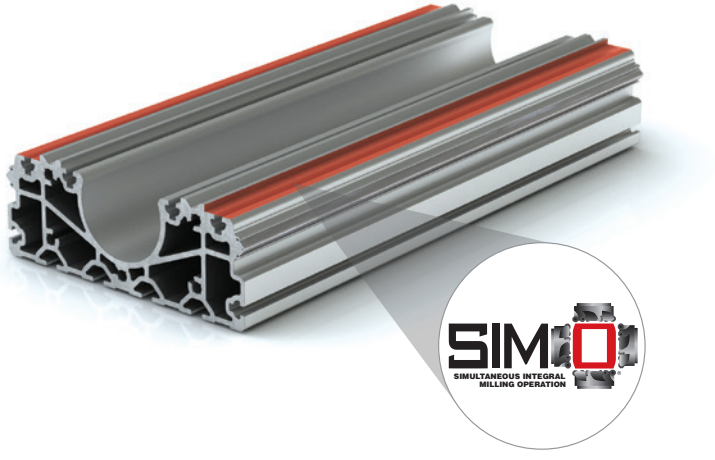


Pre-aligned Profile Rail Guides

- 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

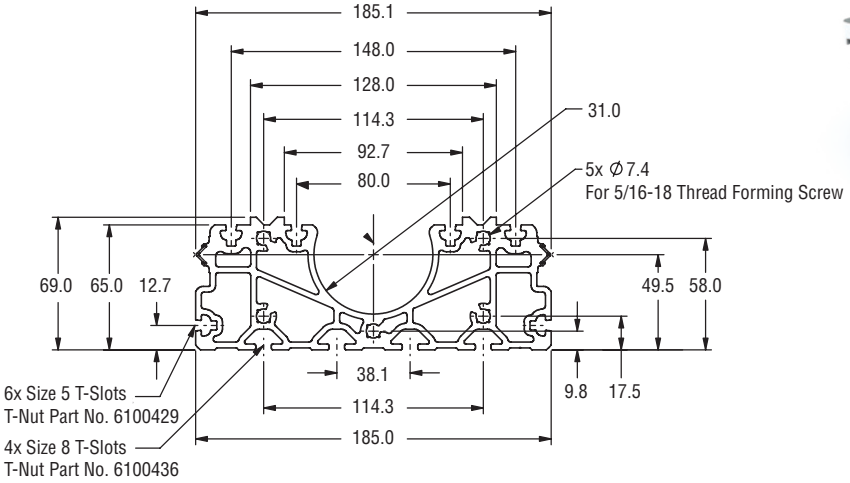


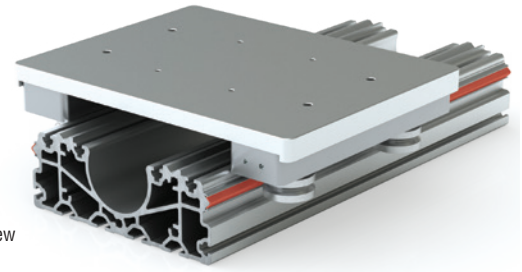




ABK Linear Guide

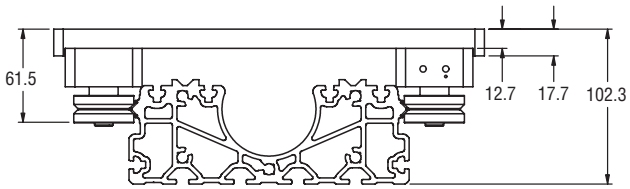
RAIL





CARRIAGE

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



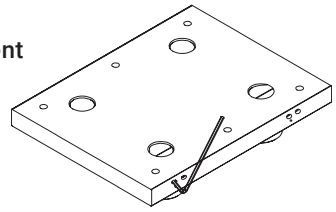
Recommended Mounting Frame (when mounted to aluminum extrusion)		
Screw Length*	Frame Size (TYP)	Frame T-Slot Size
N/A	N/A	N/A
No mounting frame necessary for ABK Rail		

ACCESSORIES

Patented Preload Adjustment

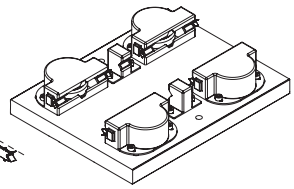
Standard

Side (CAM) Adjustable

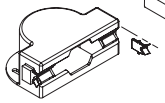


Lubrication Accessories

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



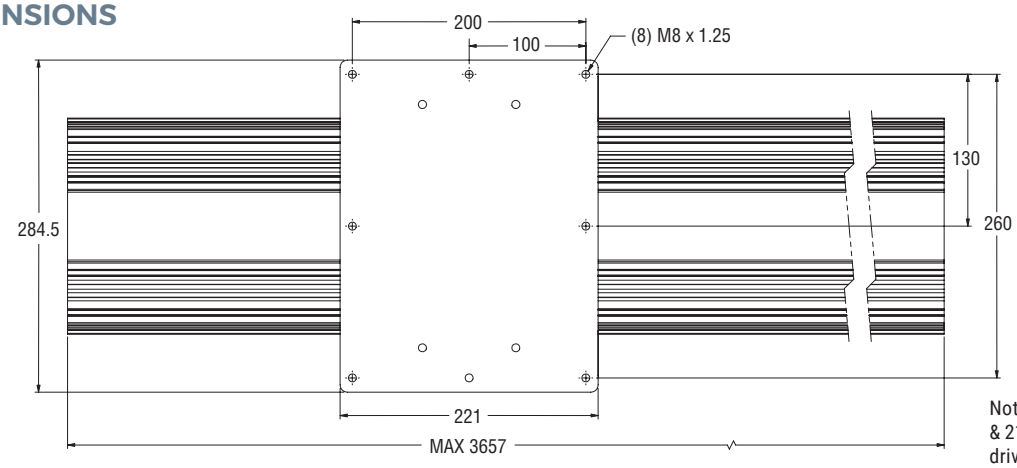
1. Polymer Lubricator IVT3LHA-KIT



2. Rail Scraper (Removable) IVT3WCA-KIT

3. Wheel Cover and Lube Holder

UNIT DIMENSIONS



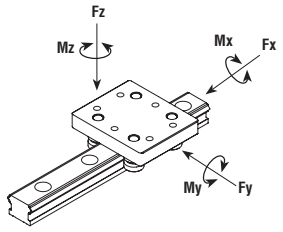
Note: See pages 20 & 21 for bearing and drive options and mounting locations.

ABK Linear Guide

Specifications

Series	Number of Rollers	Carriage Weight	Static Load Ratings					Dynamic Load Ratings					Moments of Inertia		Rail Weight	Max Rail Length
			Radial Foy	Axial Foz	Roll Mox	Pitch Moy	Yaw Moz	Radial Fy	Axial Fz	Roll Mx	Pitch My	Yaw Mz	Iy	Iz		
		kg	N	N	N-M	N-M	N-M	N	N	N-M	N-M	N-M	CM4	CM4	kg/m	mm
IVTABK	4	4.3	8900	5560	506	390	623	10020	6150	559	431	701	175	1300	10.1	3657

*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.

Configure Online

ORDERING INFORMATION

RAIL

IVT **ABK** **R** – **XXXX** – **0** **00**

Integral-V Technology

Rail Type

Identifier
R = Rail

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

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

Version
00 = Standard

Ex: IVTABKR-3000-000
Specify length at time of order.

CARRIAGE

IVT **ABK** **C** – **A** **2** **0** **A** **0**

Integral-V Technology

Rail Type

Identifier
C = Carriage

Carriage Type
A - Flat plate with taps

Roller Type
2 - Sealed

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

Preload Type
A - Side (CAM) Adjustable

Carriage Length
0 - Standard Length

Consult Factory
800-962-8979

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

ABK Linear Guide Concepts

Driven System Conceptual Platforms

Belt Drive

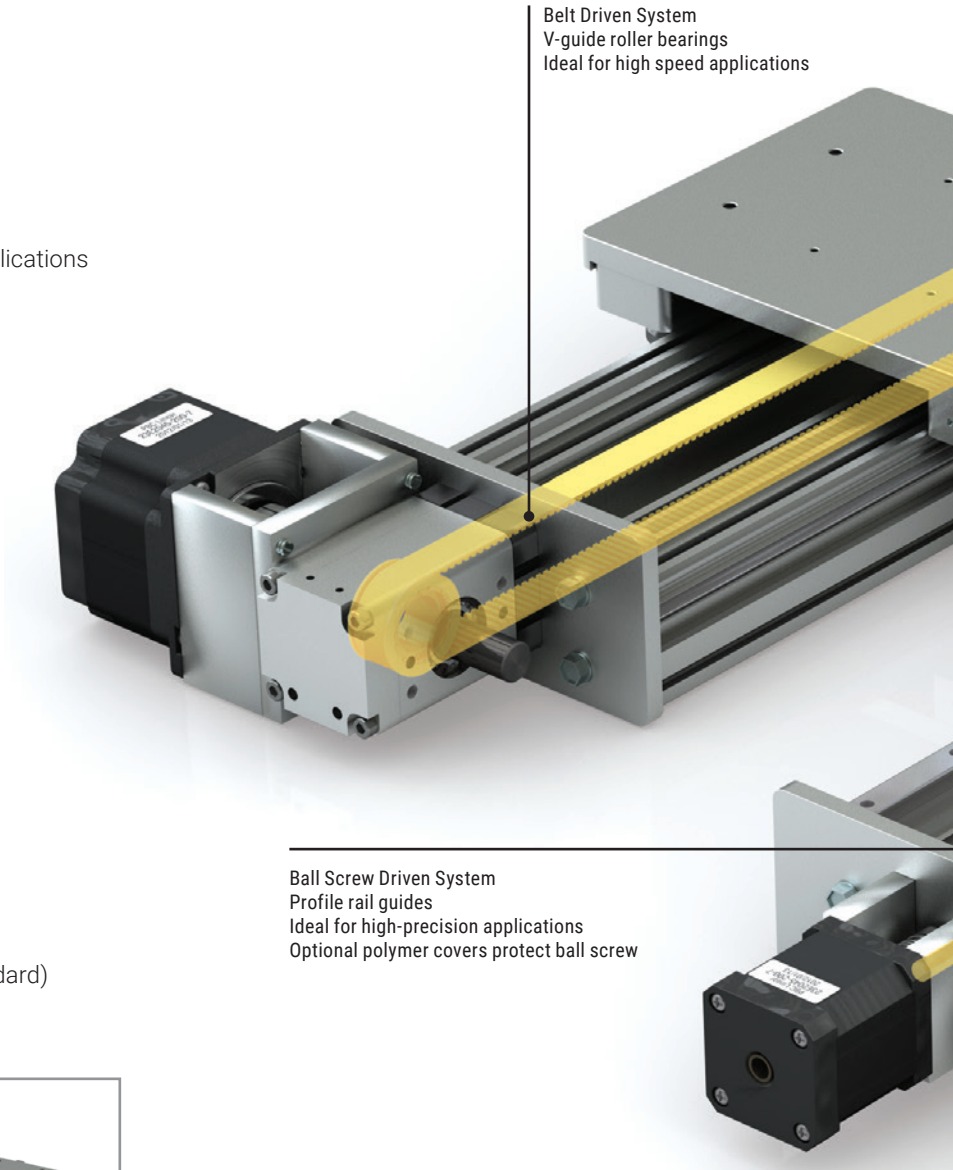
- Ideal for use with V-Guide wheel bearings in high-speed applications
- Performs well in contaminated environments
- Extrusion can support a variety of motor and idler end design configurations
- Supports a variety of motor mounts
- Belt type: ATL 5 - 12 mm wide compatibility

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

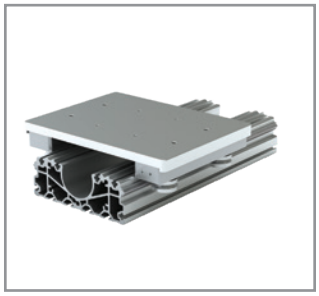


Belt Driven System
V-guide roller bearings
Ideal for high speed applications

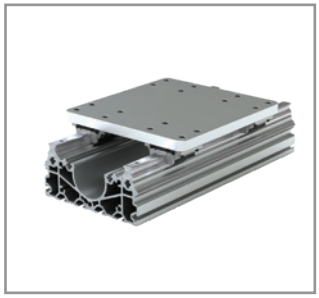
Ball Screw Driven System
Profile rail guides
Ideal for high-precision applications
Optional polymer covers protect ball screw

Bearing Options for All Drive Types

- Cam Roller Technology: V-Guide Bearings (standard)
- Profile Rail Technology: Profile Rail Guideways (customer installation)



Cam Roller Technology
V-Guide Bearings



Profile Rail Technology
Profile Rail Guides

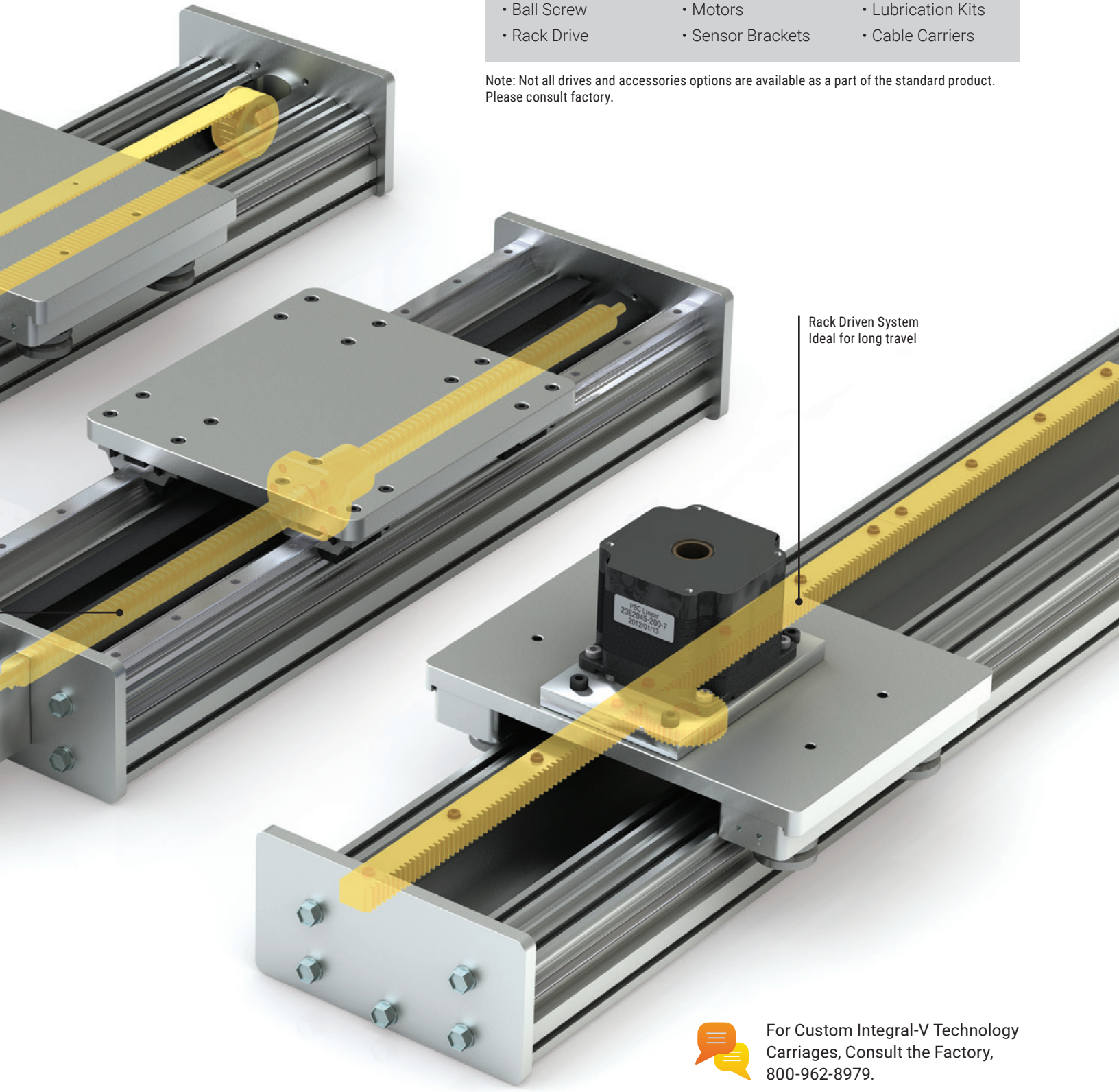
Email an Application Engineer.

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.



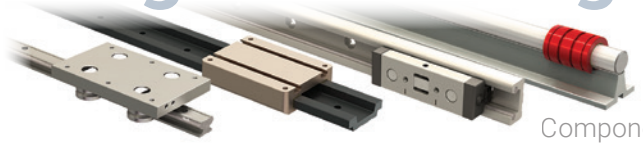
For Custom Integral-V Technology Carriages, Consult the Factory, 800-962-8979.

PBC Linear™

Engineering Your Linear Motion Solutions

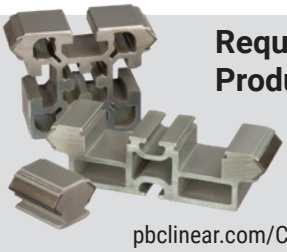
Global Footprint

Range of Offerings



Components

Mechatronics



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1" Rail Sections of
IVTAAN, IVTAAG, & IVTAAE

pbclinear.com/Contact-Us/Sample-Request

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LITIVT-013 v11 (06-2020)