Integral V Technology

Linear Guide System

IVT

INTEGRAL

PBC LINEAR
A PACIFIC BEARING CO.

SIMO ENABLED

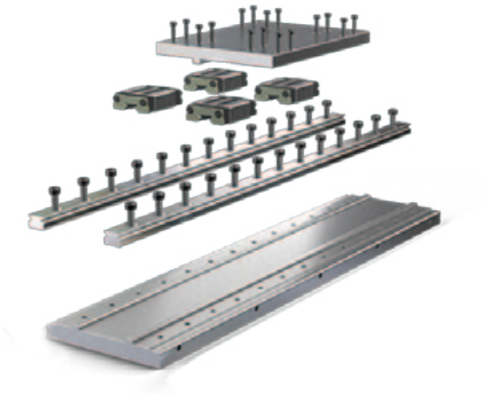
PBC Linear, a Pacific Bearing Company • 6402 East Rockton Road, Roscoe, IL 61073 USA • 1-800-962-8979 • www.pbclinear.com

SIMO ENABLED

What Makes IVT Different?

25 MINUTE INSTALLATION — **2** COMPONENTS — **71** COMPONENTS — **2 HOUR INSTALLATION**

Integral V vs. Profile Rail

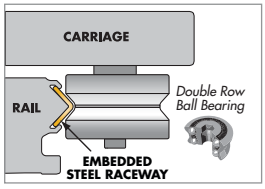


INSTALLATION STEPS*

1. Drill and tap machine plate for Integral V™
2. Securely fasten Integral V™ to machining plate

ADVANTAGES OF IVT

- **Fewer components**: Hardened 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 mis-alignments and added installation time.
- Standard lengths up to 3,650 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

Qty	Description	Cost
1	1 m IVT Rail	71.60
1	Carriage Assembly	113.17
25 minutes of labor to assemble @ $35.00/hr		8.75

TOTAL COST **$196.90**

* Based on 1 meter general linear guide applicaton

INSTALLATION STEPS

1. Drill and tap machine holes along profile rail for installation
2. Clean and align rail with reference surface
3. Loosely secure profile rail to machining 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 (4) runner-block sliders (2 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
64	Fasteners	7.38
2	15 mm Rails	99.75
4	15 mm Carriages	226.80
1	Carriage Plate	16.34
2 hours of labor to assemble @ $35.00/hr		70.00

TOTAL COST **$420.27**

FLEXIBILITY TO MEET APPLICATION REQUIREMENTS

- SIMO® machined for precision qualified rail surfaces, to within .050 mm (.002")
- Handles loads up to 10,020 N (2,252 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 visit www.pbclinear.com to read the IVT vs. Profile Rail whitepaper, *"A Technical Comparison Between Integral V Technology and Linear Re-circulating Ball Bearing and Guideway Assemblies (Profile Rail)"*

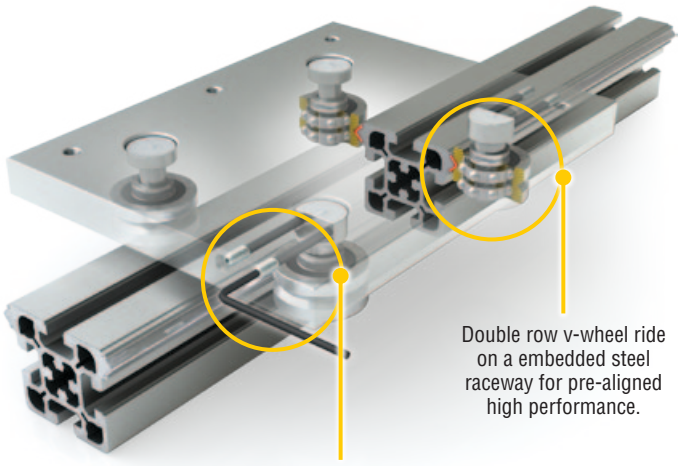
What Makes IVT Different?

EASY INSTALLATION

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

INSTALLATION AND MOUNTING FEATURES

- Feature 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



SIMULTANEOUS INTEGRAL MILLING OPERATION

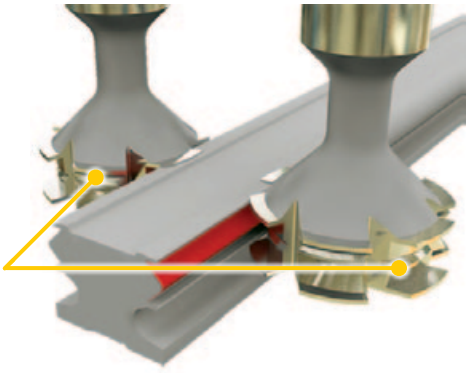
PBC Linear has revolutionized traditional machining with the patent pending SIMO® (Simultaneous Integral Milling Operation). The SIMO process uses synchronized cutters, eliminating built-in extrusion variances by machining all critical edges concurrently in one pass. This ensures tight tolerances, limited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

PATENT PENDING MACHINING PROCESS

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

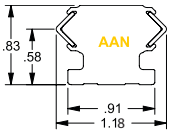


COMPARE SIMO VS. STANDARD ALUMINUM EXTRUSION

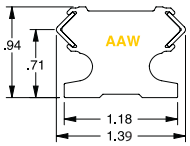
	Standard Aluminum Extrusion		SIMO
Straightness (Camber)	.0125 in/ft (1 mm/m)	⇨ 6 TIMES BETTER ⇨	± .002 in/ft (.166 mm/m)
Twist	1/2° per ft (1.5° per m)	⇨ 2 TIMES BETTER ⇨	< 1/4° per ft (.82° per m)
Flatness	.004 in (.10 mm)	⇨ 2 TIMES BETTER ⇨	.002 in (.0508 mm)

IVT Overview

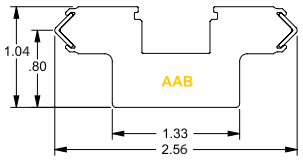
IVT AAN
Page 8



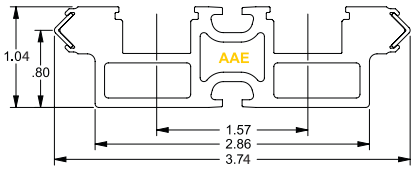
IVT AAW
Page 10



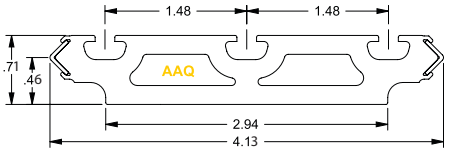
IVT AAB
Page 12



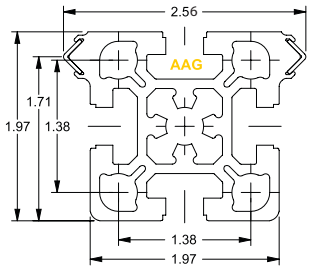
IVT AAE
Page 14



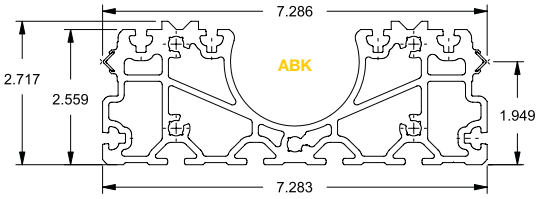
IVT AAQ
Page 16



IVT AAG
Page 18



IVT ABK
Page 20



MACHINED PRECISION AT EXTRUSION PRICES

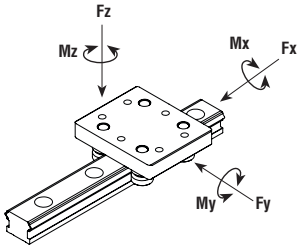
SIMO ENABLED

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

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

Conversions

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



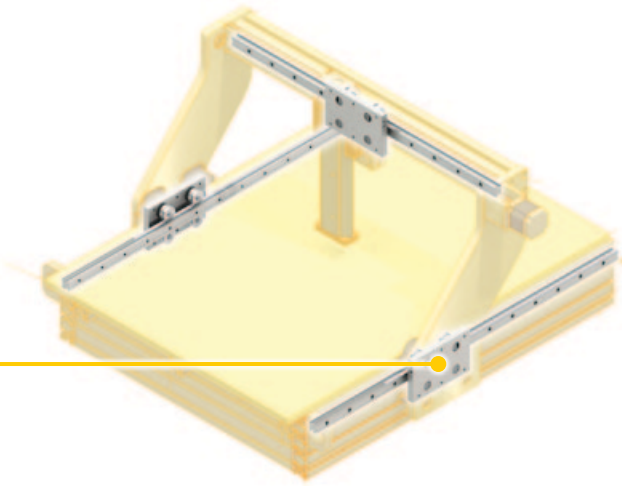
SERIES	Static Load Ratings**					Dynamic Load Ratings**					Rail Moments of Inertia		Rail Weight (kg/m)	Max Rail Length (mm)
	Radial F^{oy} (N)	Axial F^{oz} (N)	Roll M^{ox} (N-m)	Pitch M^{oy} (N-m)	Yaw M^{oz} (N-m)	Radial Fy (N)	Axial Fz (N)	Roll Mx (N-m)	Pitch My (N-m)	Yaw Mz (N-m)	L_Y (cm^4)	L_Z (cm^4)		
IVTAAN	1,960	1,200	16	36	59	2,480	1,490	20	45	74	1.7	2.1	1.30	3,657
IVTAAW	8,900	5,560	194	278	445	10,020	6,150	214	308	501	2.8	3.8	1.65	3,657
IVTAAB	8,900	5,560	171	348	556	10,020	6,150	190	384	626	5.5	25.4	2.77	3,048
IVTAAE	8,900	5,560	255	487	778	10,020	6,150	282	538	877	6.0	74.8	2.74	3,657
IVTAAQ	8,900	5,560	283	278	445	10,020	6,150	313	308	501	3.4	91.9	3.06	3,657
IVTAAG	8,900	5,560	171	348	556	10,020	6,150	190	384	626	29.7	34.9	3.36	3,657
IVTABK	8,900	5,560	599	390	1,154	10,020	6,150	662	431	1,300	175	1,300	10.1	3,657

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

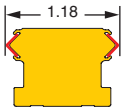
Examples **Application**

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

PICK-AND-PLACE: IVT utilizes PBC Linear's patented 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.

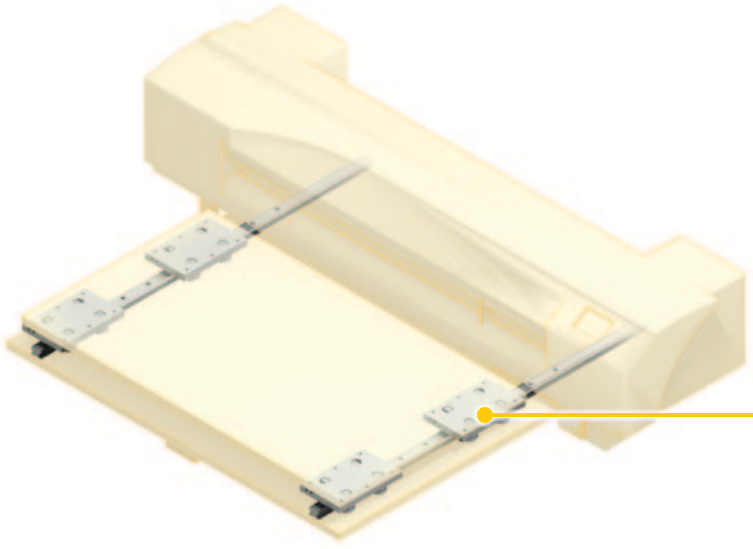


IVT RAIL CHOICE: AAN

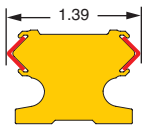


Link to IVT vs. Profile Guide video

INKJET AND 3D PRINTING: IVT's pre-aligned hardened steel raceway and high performance v-wheels are highly repeatable, making IVT an optimal choice in inkjet printing, label printing, and the 3D printing space.



IVT RAIL CHOICE: AAW



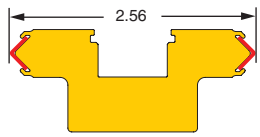
Application Examples

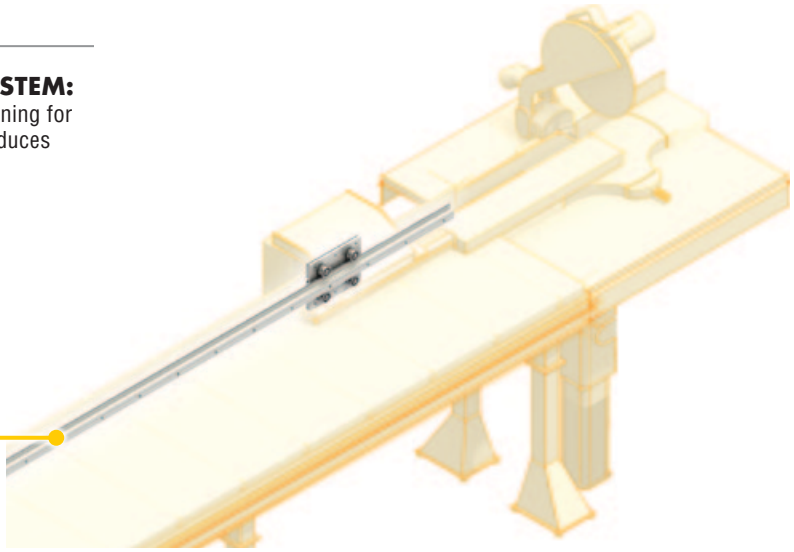
SMALL TO MEDIUM IVT | **MEDIUM TO LARGE IVT** | LARGE TO EXTRA-LARGE IVT

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

Link to material positioning video

IVT RAIL CHOICE: AAB

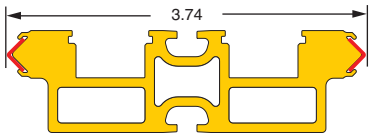




KIOSK & AUTOMATED RETAIL: IVT's low profile design and high repeatability make it an ideal solution for the tight spaces found in automated dispensing applications.

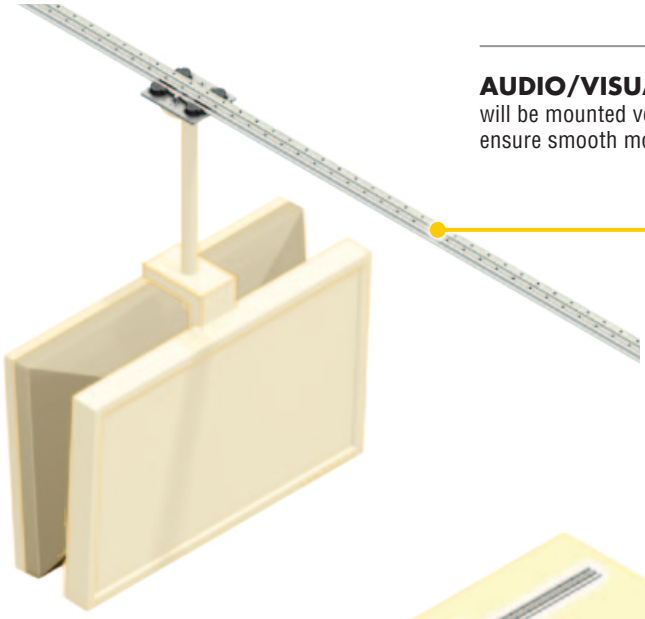
Link to kiosk & mechanical delivery systems video

IVT RAIL CHOICE: AAE



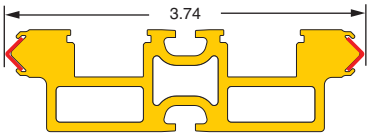
Examples **Application**

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

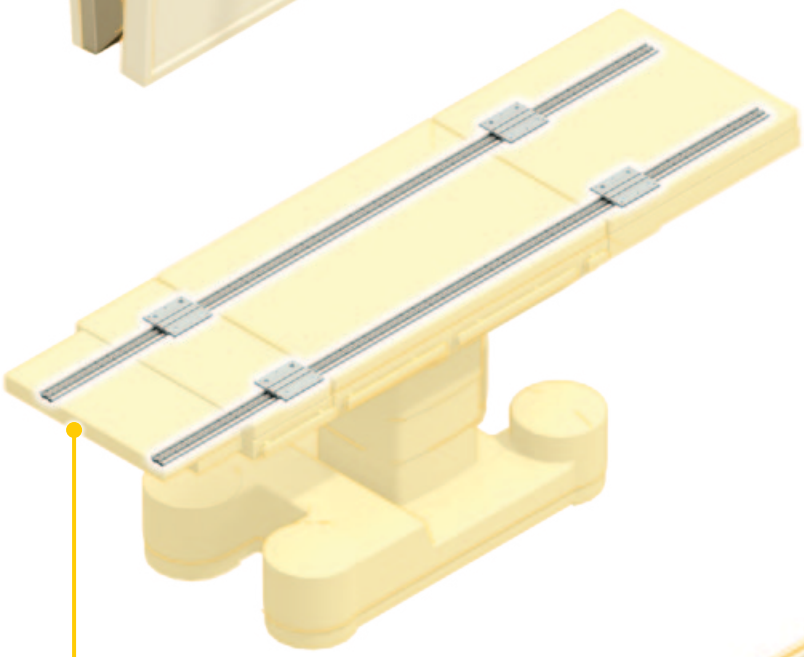


AUDIO/VISUAL DISPLAY MOUNTS: Whether the linear motion system will be mounted vertically or horizontally, IVT provides the strength and versatility to ensure smooth motion–plus, fewer parts means less installation time and less money.

IVT RAIL CHOICE: AAE

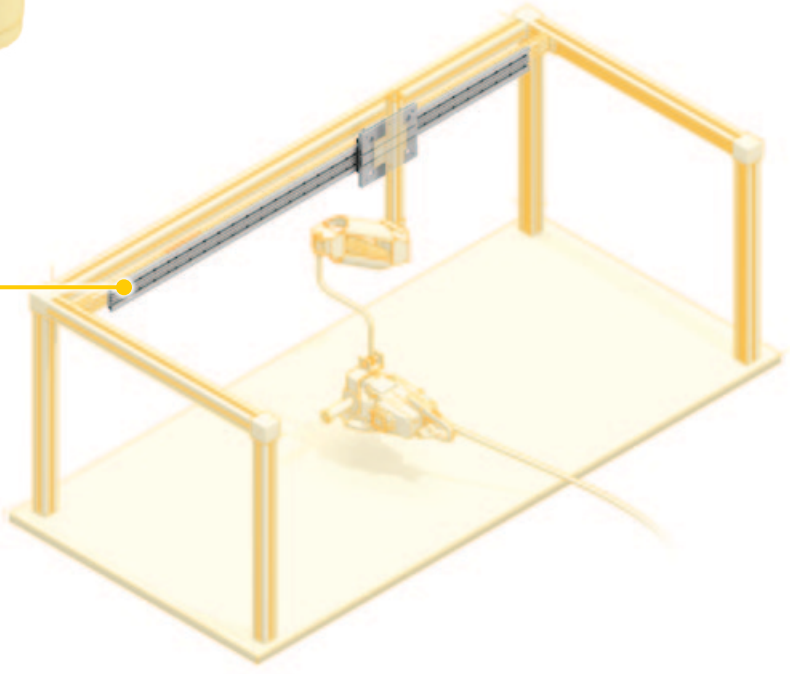


Link to architectural design video

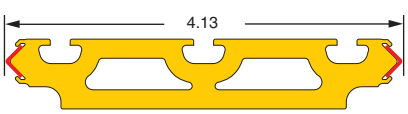


MEDICAL ASSIST: Hardened steel races eliminate fasteners and reduce mounting components, while IVT carriages are equipped with sealed rollers creating a clean, low maintenance solution for medical tables and emergency vehicles.

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



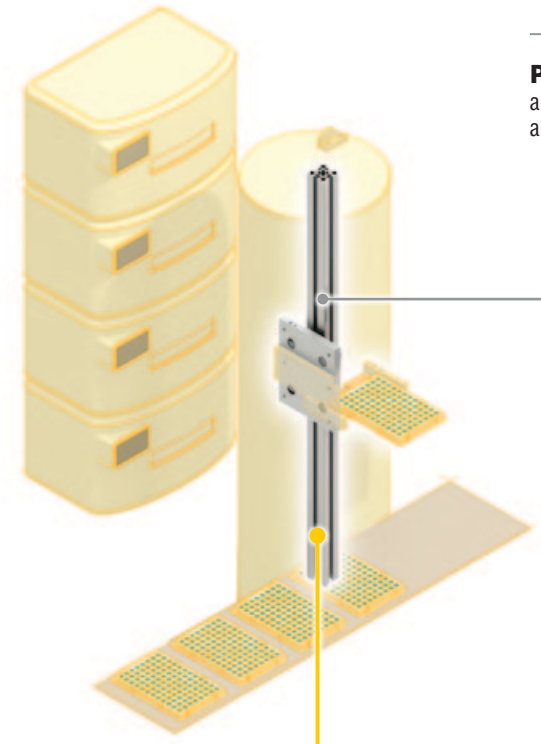
IVT RAIL CHOICE: AAQ



Link to ergonomic application video

Application Examples

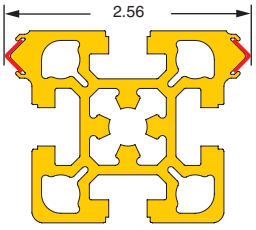
SMALL TO MEDIUM IVT | MEDIUM TO LARGE IVT | **LARGE TO EXTRA-LARGE IVT**

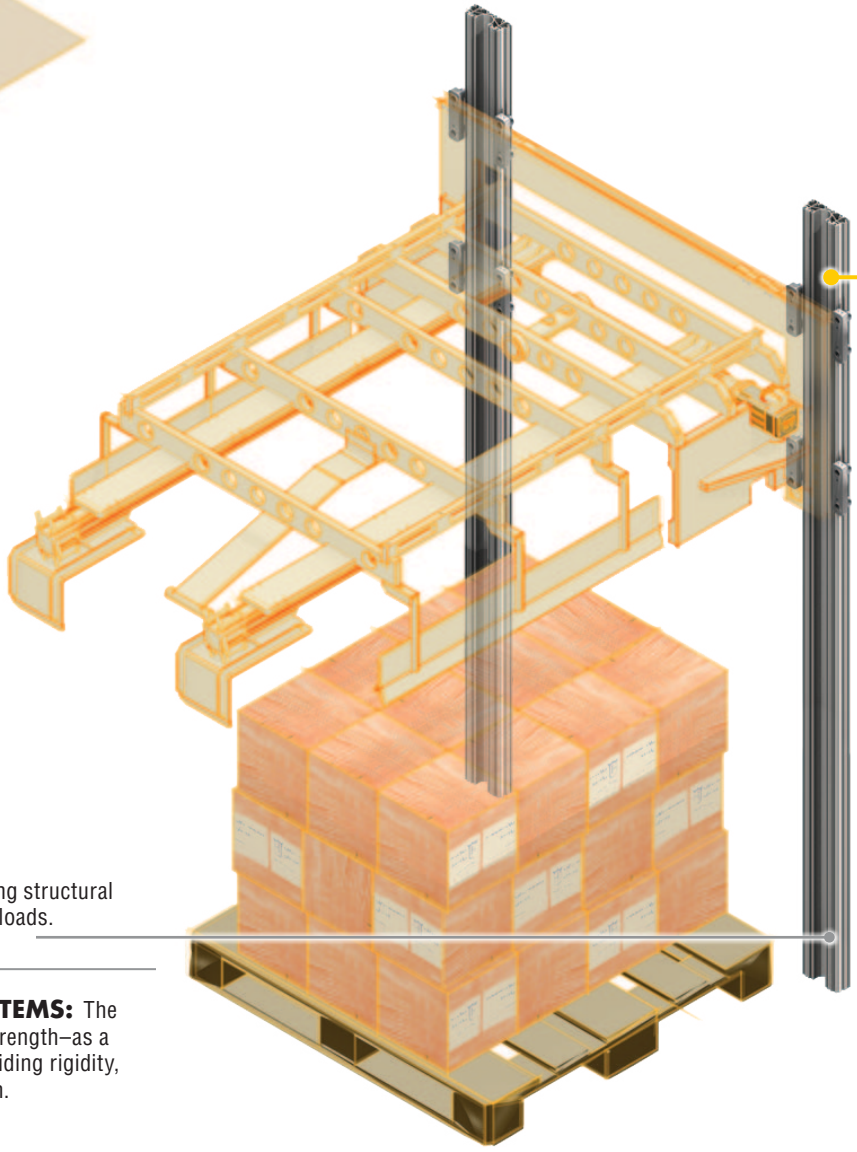


POLAR ROBOT: IVT can be used in vertically or horizontally oriented applications. The polar robot shown here provides repeatable motion and high accuracy in the laboratory automation space.

V-wheel bearings provide smooth travel and IVT AAG provides structural support

IVT RAIL CHOICE: AAG



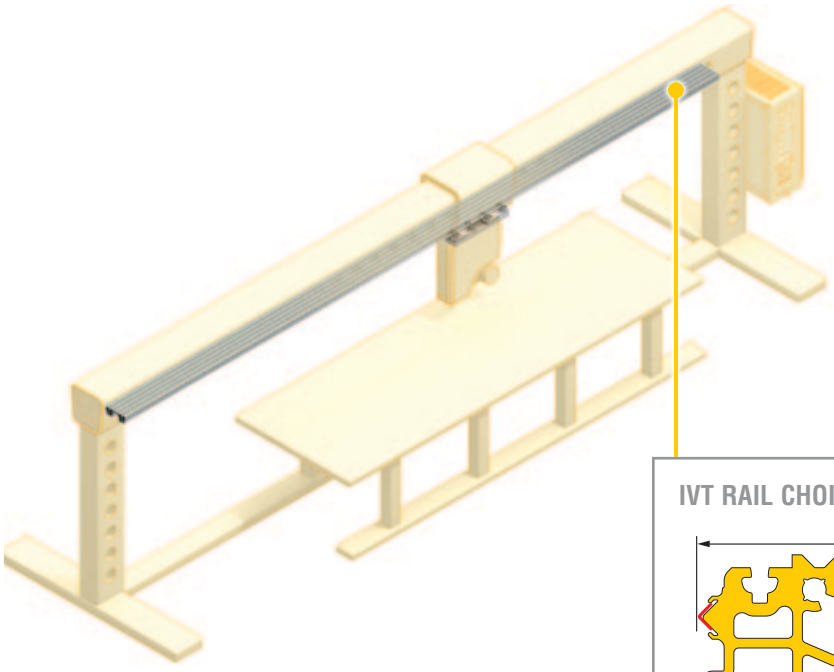


The new IVT ABK is a strong structural element that handles high loads.

DEPALLETIZER & HEAVY-DUTY LIFT SYSTEMS: The Integral V ABK aluminum extrusion is designed for strength–as a structural element–of a machine's design, while providing rigidity, high moment capacities, and consistent linear motion.

Examples **Application**

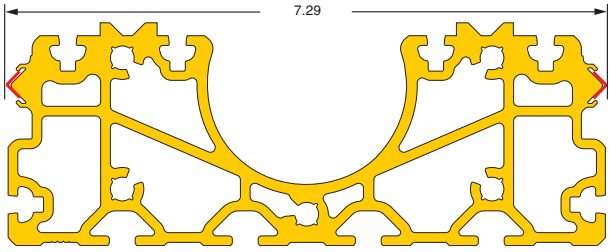
SMALL TO MEDIUM IVT | MEDIUM TO LARGE IVT | **LARGE TO EXTRA-LARGE IVT**

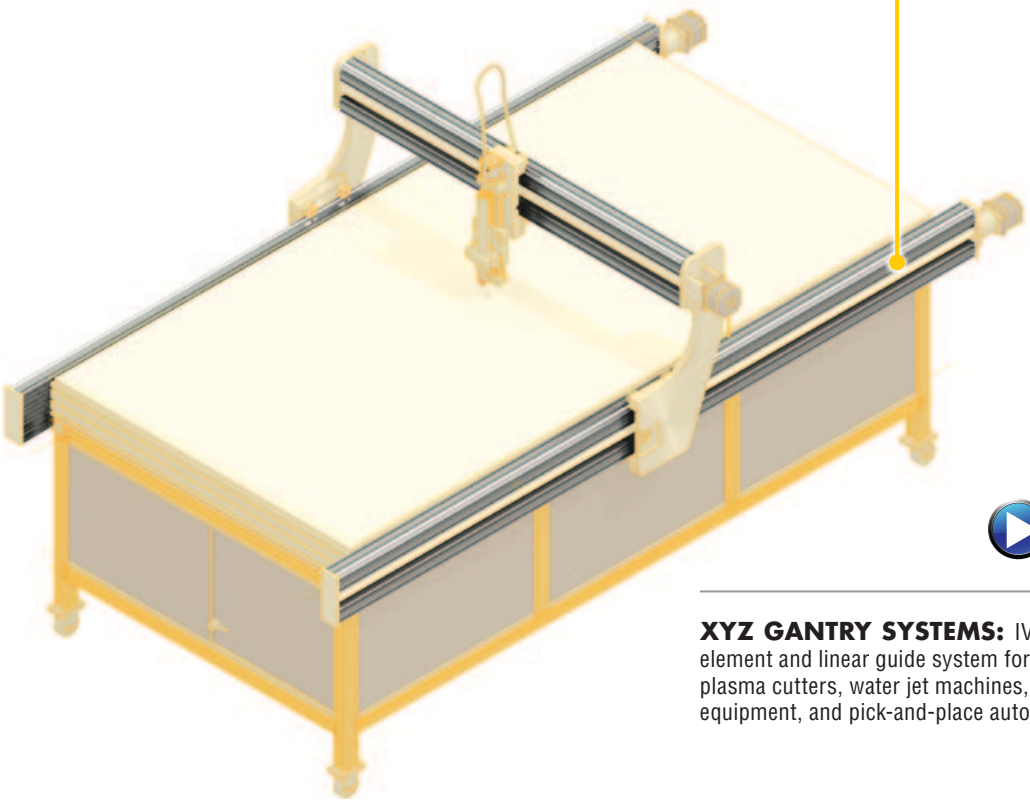


CUTTING OPERATIONS: IVT ABK provides rigid and smooth motion for long length cutting operations for metals, textiles, and other materials.

Link to application story

IVT RAIL CHOICE: ABK



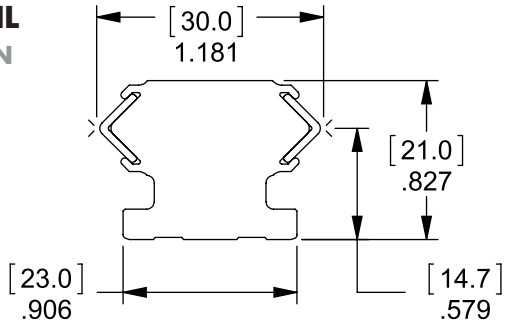


Link to product related video

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

IVT AAN

RAIL
AAN
1:1



RAIL ORDERING INFORMATION

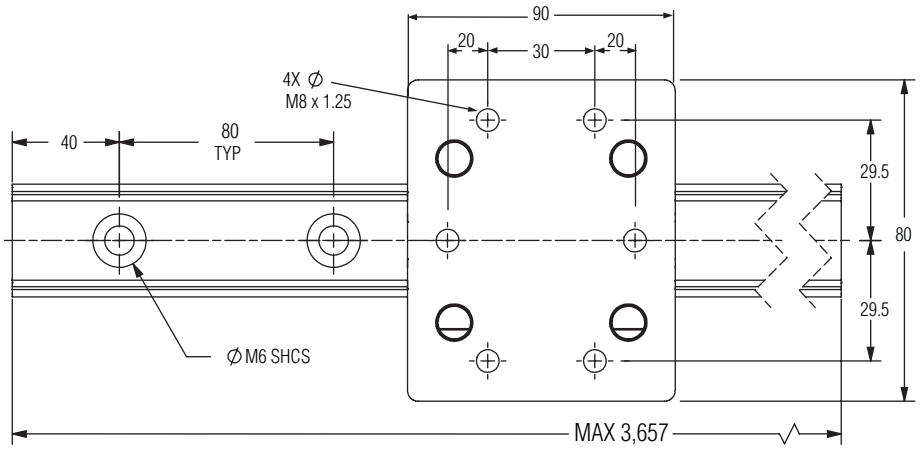
IVT	AAN	R	-	XXXX	-	0	00
Integral V Technology	Rail Type	Rail		Length (mm)		End Treatment	

00 - Standard Version

0 - Saw cut and deburr
*Other options such as joinable rails, consult factory

Ordering Example:
IVT AAN R - 1500 - 000; 1500 mm rail
IVT AAN R - 0500 - 000; 500 mm rail

RAIL LENGTHS TO 3,657 mm (12 ft)

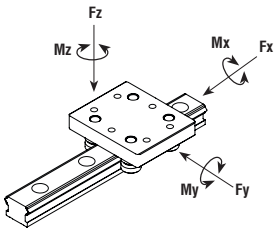


IVT AAN

SPECIFICATIONS

SERIES	# of Rollers	Carriage Weight (kg)*	Static Load Ratings					Dynamic Load Ratings					Rail Weight (kg/m)	Moments of Inertia		Max Rail Length (mm)
			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)		L_Y (cm^4)	L_Z (cm^4)	
IVTAAN	4	0.35	1,960	1,200	16	36	59	2,480	1,490	20	45	74	1.30	1.7	2.1	3,657

*Weight may vary slightly depending on carriage options.

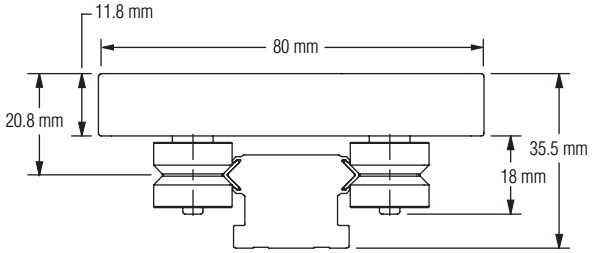


Fd = Dynamic capacity (LC)
Fz = Radial capacity
Fy = Axial capacity
Mx, My, Mz = Moment capacities

Conversions

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

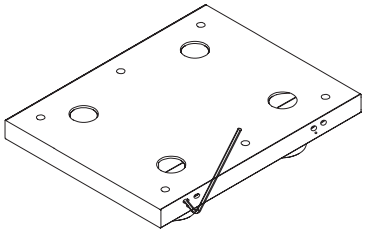
CARRIAGE



PRELOAD ADJUSTMENTS

Standard
Side (CAM) Adjustable

PATENTED



CARRIAGE ORDERING INFORMATION

IVT	AAN	C	-	A	2	0	A	0

Integral V Technology

Rail Type

Carriage

Carriage Type
A - Flat plate with taps

Roller Type
2 - Sealed

Lubrication Options
0 - No Lubrication (none available)

Preload Type
A - Side (CAM) Adjustable

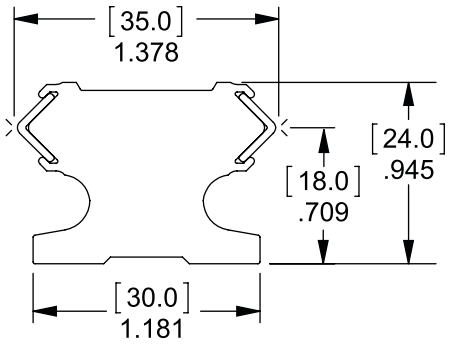
Carriage Length
0 - Standard Length

Note: Lubrication is highly recommended for IVT

Consult Factory • 800-962-8979

IVT AAW

RAIL
AAW
1:1



RAIL ORDERING INFORMATION

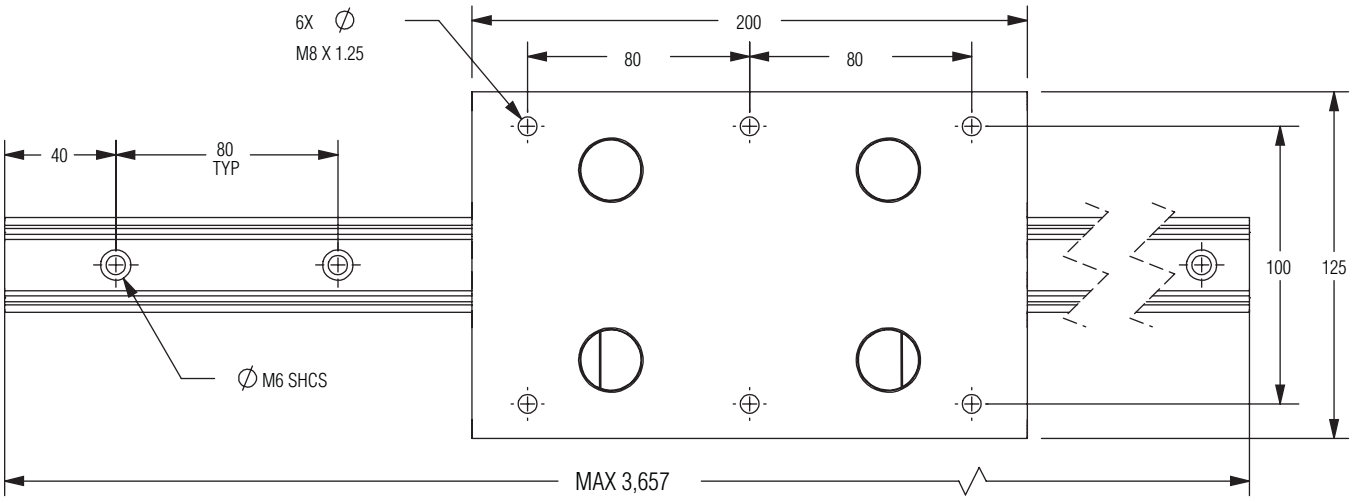
IVT	AAW	R	-	XXXX	-	O	OO

Integral V Technology — **Rail Type** — **Rail** — **Length (mm)** — **End Treatment** — **OO** - Standard Version

End Treatment
O - Saw cut and deburr
*Other options such as joinable rails, consult factory

Ordering Example:
IVT AAW R - 1500 - 000; 1500 mm rail
IVT AAW R - 0500 - 000; 500 mm rail

RAIL LENGTHS TO 3,657 mm (12 ft)

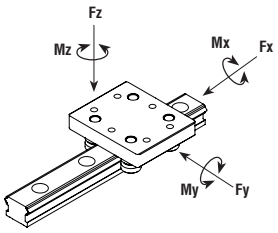


IVT AAW

SPECIFICATIONS

SERIES	# of Rollers	Carriage Weight (kg)*	Static Load Ratings					Dynamic Load Ratings					Rail Weight (kg/m)	Moments of Inertia		Max Rail Length (mm)
			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)		L_Y (cm^4)	L_Z (cm^4)	
IVTAAW	4	1.54	8,900	5,560	194	278	445	10,020	6,150	214	308	501	1.65	2.8	3.8	3,657

*Weight may vary slightly depending on carriage options.

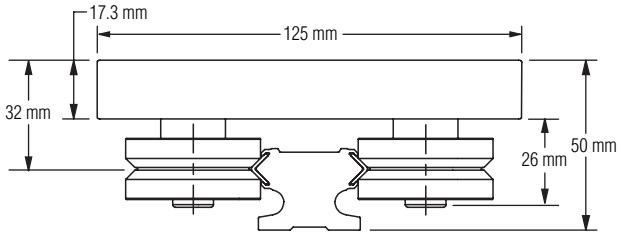


Fd = Dynamic capacity (LC)
Fz = Radial capacity
Fy = Axial capacity
Mx, My, Mz = Moment capacities

Conversions

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

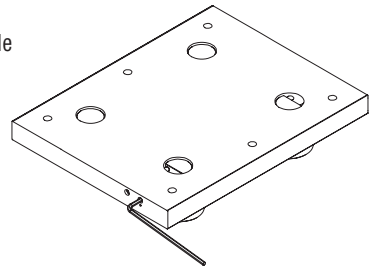
CARRIAGE



PRELOAD ADJUSTMENTS

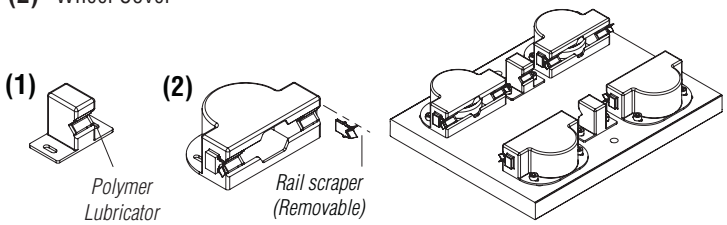
Standard
Side (CAM) Adjustable

PATENTED

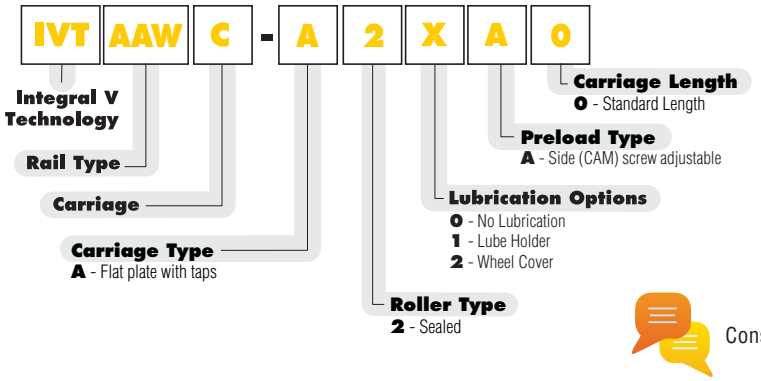


LUBRICATION ACCESSORIES

(1) Lube Holder
(2) Wheel Cover



CARRIAGE ORDERING INFORMATION



Note: Lubrication is highly recommended for IVT

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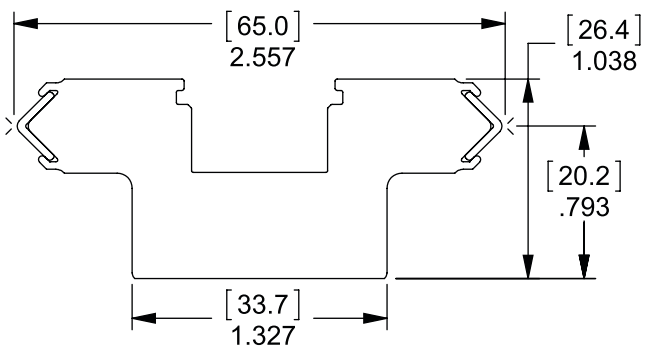
IVT AAB

RAIL
AAB
1:1



RAIL ORDERING INFORMATION

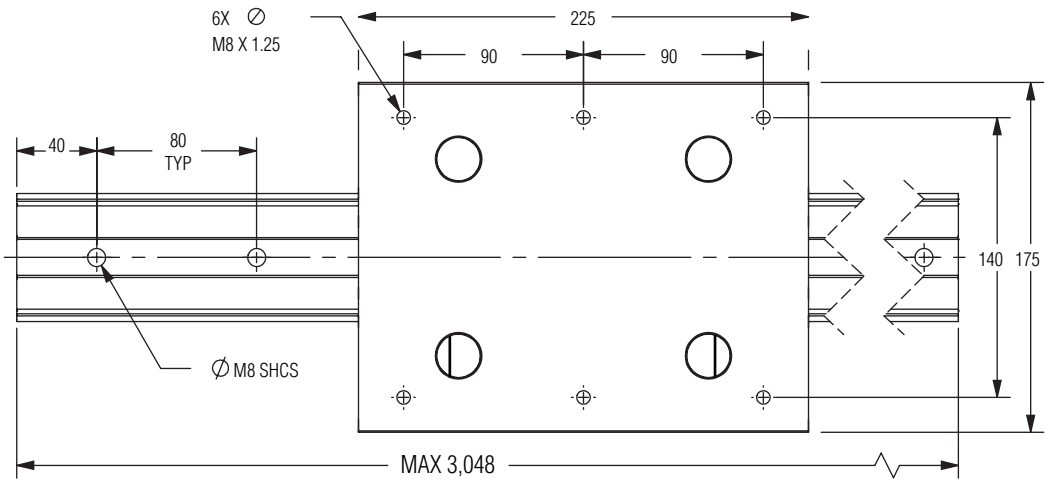
IVT	AAB	R	-	XXXX	-	O	OO
Integral V Technology	Rail Type	Rail		Length (mm)		End Treatment	

OO - Standard Version

O - Saw cut and deburr
*Other options such as joinable rails, consult factory

Ordering Example:
IVT AAB R - 1500 - 000; 1500 mm rail
IVT AAB R - 0500 - 000; 500 mm rail

RAIL LENGTHS TO 3,048 mm (10 ft)

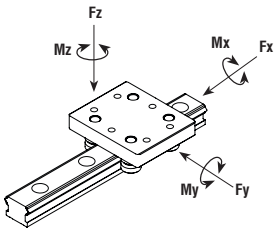


IVT AAB

SPECIFICATIONS

SERIES	# of Rollers	Carriage Weight (kg)*	Static Load Ratings					Dynamic Load Ratings					Rail Weight (kg/m)	Moments of Inertia		Max Rail Length (mm)
			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)		L_Y (cm^4)	L_Z (cm^4)	
IVTAAB	4	2.42	8,900	5,560	171	348	556	10,020	6,150	190	384	626	2.77	5.5	25.4	3,048

*Weight may vary slightly depending on carriage options.

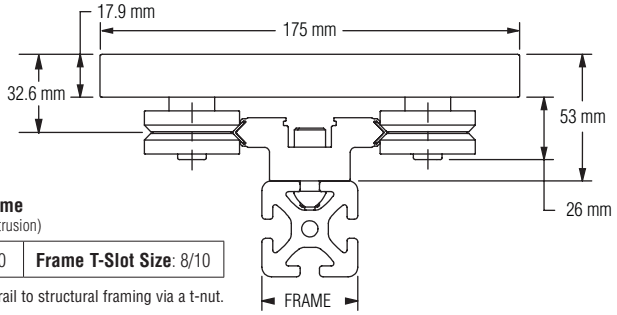


Fd = Dynamic capacity (LC)
Fz = Radial capacity
Fy = Axial capacity
Mx, My, Mz = Moment capacities

Conversions

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

CARRIAGE



Typical Mounting Frame
(when mounted to aluminum extrusion)

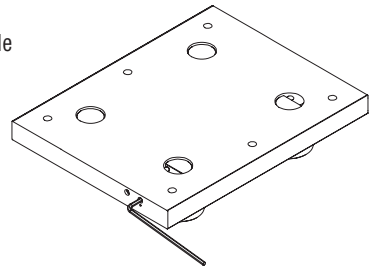
Screw Length*: 25	Frame Size (TYP): 40 x 40	Frame T-Slot Size: 8/10

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

PRELOAD ADJUSTMENTS

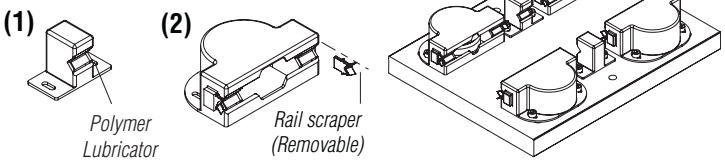
Standard
Side (CAM) Adjustable

PATENTED

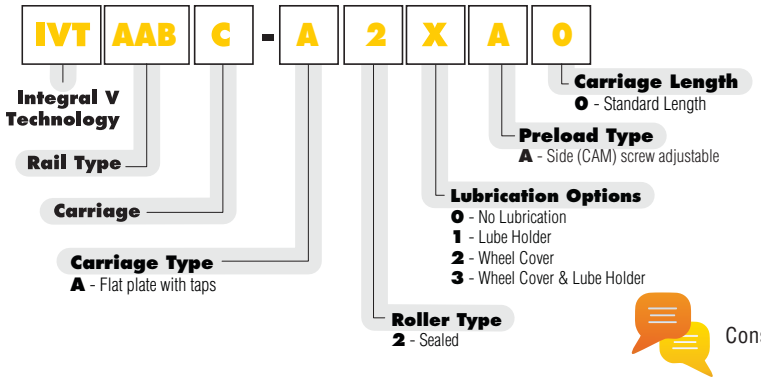


LUBRICATION ACCESSORIES

(1) Lube Holder
(2) Wheel Cover
(3) Wheel Cover & Lube Holder



CARRIAGE ORDERING INFORMATION



Note: Lubrication is highly recommended for IVT

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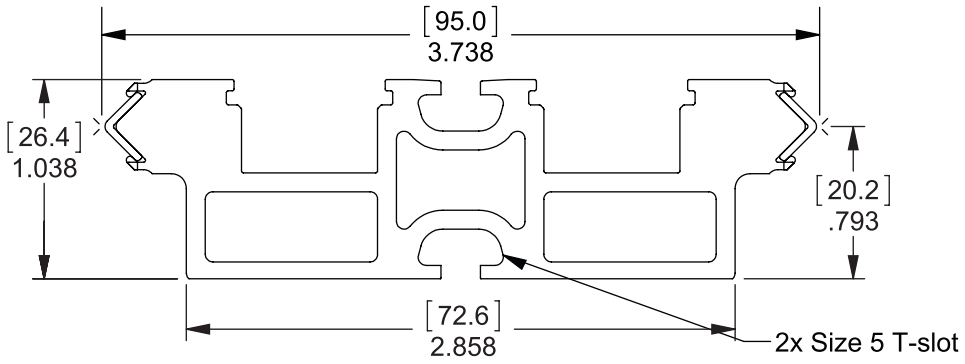
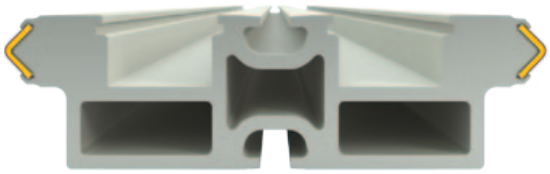
IVT AAE

RAIL

AAE

1:1





RAIL ORDERING INFORMATION

IVT	AAE	R	-	XXXX	-	O	OO
Integral V Technology	Rail Type	Rail		Length (mm)		End Treatment	

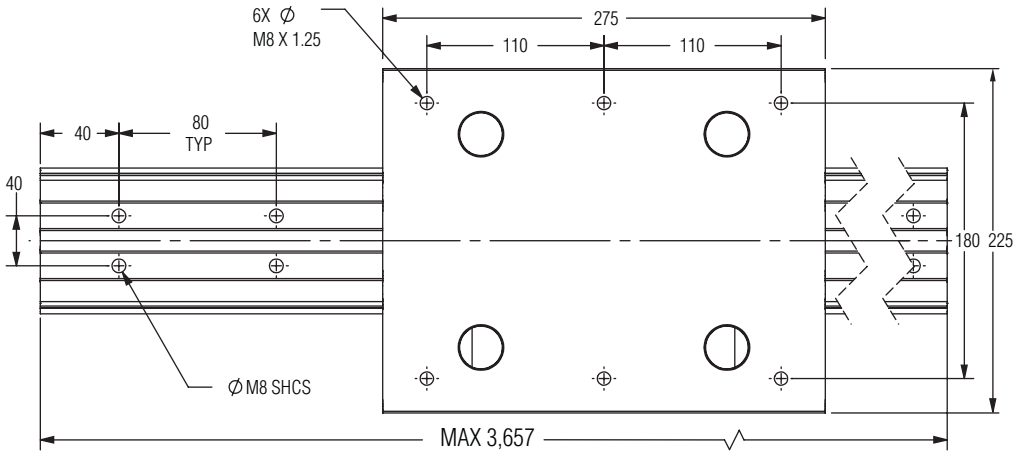
OO - Standard Version

O - Saw cut and deburr

*Other options such as joinable rails, consult factory

Ordering Example:
IVT AAE R - 1500 - 000; 1500 mm rail
IVT AAE R - 0500 - 000; 500 mm rail

RAIL LENGTHS TO 3,657 mm (12 ft)

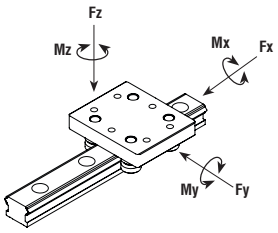


IVT AAE

SPECIFICATIONS

SERIES	# of Rollers	Carriage Weight (kg)*	Static Load Ratings					Dynamic Load Ratings					Rail Weight (kg/m)	Moments of Inertia		Max Rail Length (mm)
			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)		L_Y (cm^4)	L_Z (cm^4)	
IVTAAE	4	3.47	8,900	5,560	255	487	778	10,020	6,150	282	538	877	2.74	6.0	74.8	3,657

*Weight may vary slightly depending on carriage options.

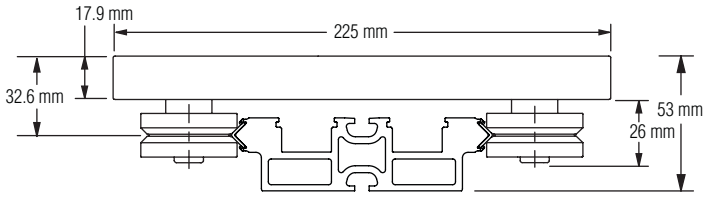


Fd = Dynamic capacity (LC)
Fz = Radial capacity
Fy = Axial capacity
Mx, My, Mz = Moment capacities

Conversions

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

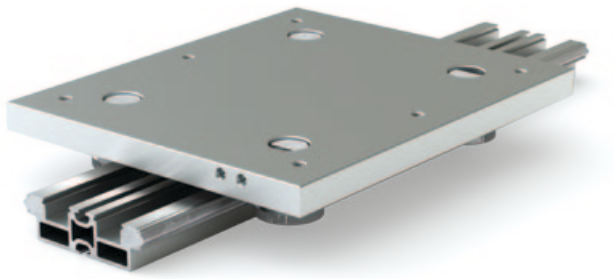
CARRIAGE



Typical Mounting Frame
(when mounted to aluminum extrusion)

Screw Length*: 25	**Frame Size (TYP)**: 40 x 80	**Frame T-Slot Size**: 8/10

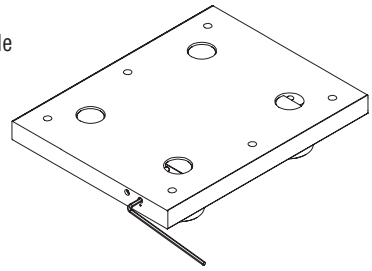
*Recommended screw length when bolting IVT rail to structural framing via a t-nut.



PRELOAD ADJUSTMENTS

Standard
Side (CAM) Adjustable

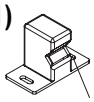
PATENTED



LUBRICATION ACCESSORIES

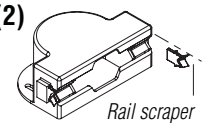
(1) Lube Holder
(2) Wheel Cover
(3) Wheel Cover & Lube Holder

(1)



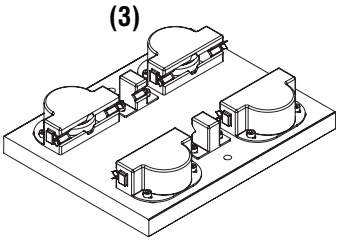
Polymer Lubricator

(2)



Rail scraper (Removable)

(3)



CARRIAGE ORDERING INFORMATION

IVT	AAE	C	-	A	2	X	A	0

Integral V Technology

Rail Type

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 & Lube Holder

Preload Type
A - Side (CAM) screw adjustable

Carriage Length
0 - Standard Length

Note: Lubrication is highly recommended for IVT

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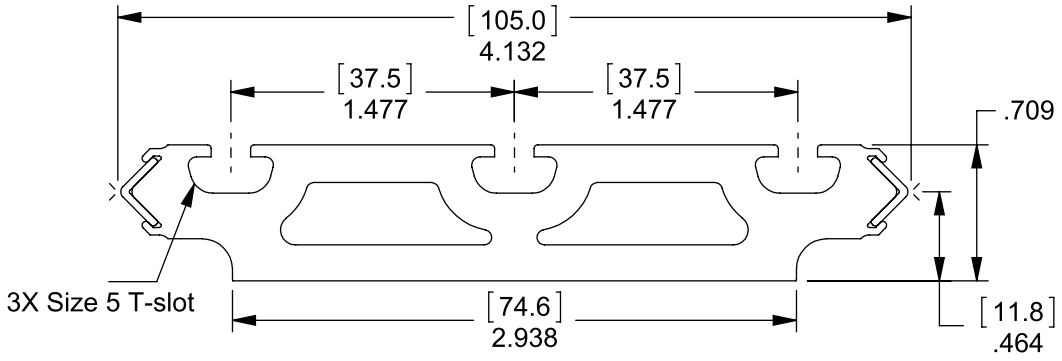
IVT AAQ

RAIL
AAQ
1:1



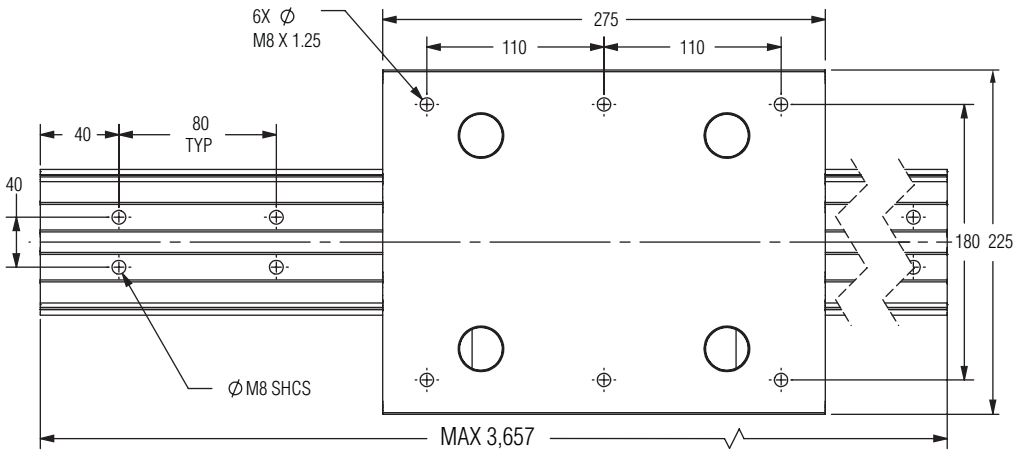
RAIL ORDERING INFORMATION

IVT	AAQ	R	-	XXXX	-	O	OO

Integral V Technology
Rail Type
Rail
Length (mm)
End Treatment
O - Saw cut and deburr
*Other options such as joinable rails, consult factory
OO - Standard Version

Ordering Example:
IVT AAQ R - 1500 - 000; 1500 mm rail
IVT AAQ R - 0500 - 000; 500 mm rail

RAIL LENGTHS TO 3,657 mm (12 ft)

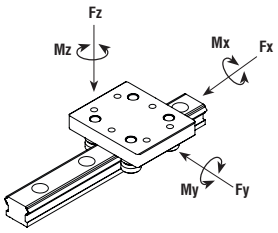


IVT AAQ

SPECIFICATIONS

SERIES	# of Rollers	Carriage Weight (kg)*	Static Load Ratings					Dynamic Load Ratings					Rail Weight (kg/m)	Moments of Inertia		Max Rail Length (mm)
			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)		L_Y (cm^4)	L_Z (cm^4)	
IVTAAQ	4	3.47	8,900	5,560	283	278	445	10,020	6,150	313	308	501	3.06	3.4	91.9	3,657

*Weight may vary slightly depending on carriage options.

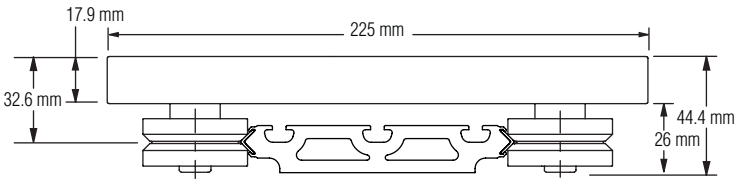


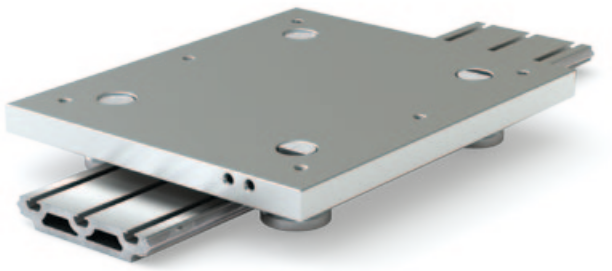
Fd = Dynamic capacity (LC)
Fz = Radial capacity
Fy = Axial capacity
Mx, My, Mz = Moment capacities

Conversions

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

CARRIAGE





Typical Mounting Frame
(when mounted to aluminum extrusion)

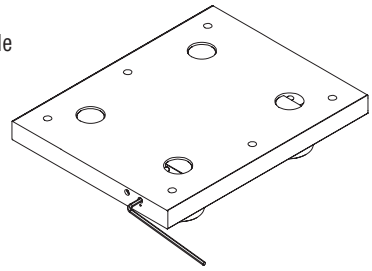
Screw Length*: 12	Frame Size (TYP): 40 x 80	Frame T-Slot Size: 8/10

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

PRELOAD ADJUSTMENTS

Standard
Side (CAM) Adjustable

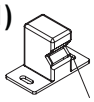
PATENTED



LUBRICATION ACCESSORIES

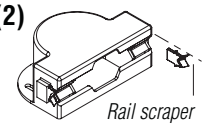
(1) Lube Holder
(2) Wheel Cover
(3) Wheel Cover & Lube Holder

(1)



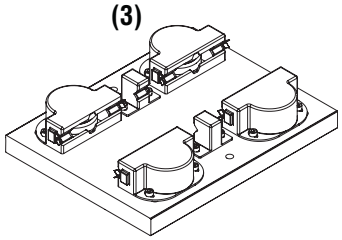
Polymer Lubricator

(2)



Rail scraper (Removable)

(3)



CARRIAGE ORDERING INFORMATION

IVT	AAQ	C	-	A	2	X	A	0

Integral V Technology

Rail Type

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 & Lube Holder

Preload Type
A - Side (CAM) screw adjustable

Carriage Length
0 - Standard Length

Note: Lubrication is highly recommended for IVT

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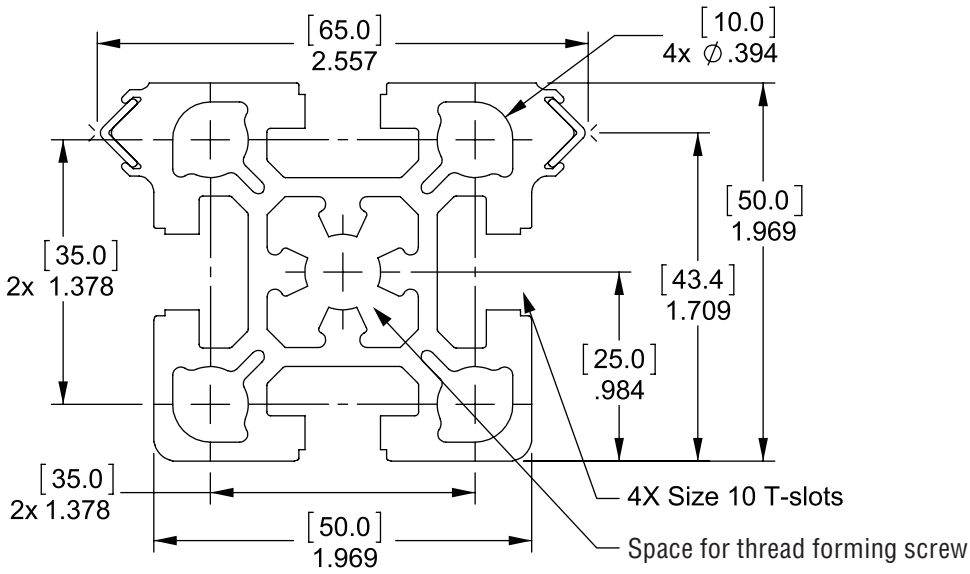
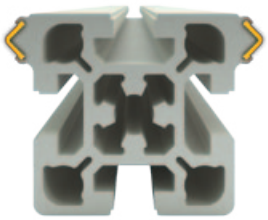
IVT AAG

RAIL

AAG

1:1





RAIL LENGTHS TO 3,657 mm (12 ft)

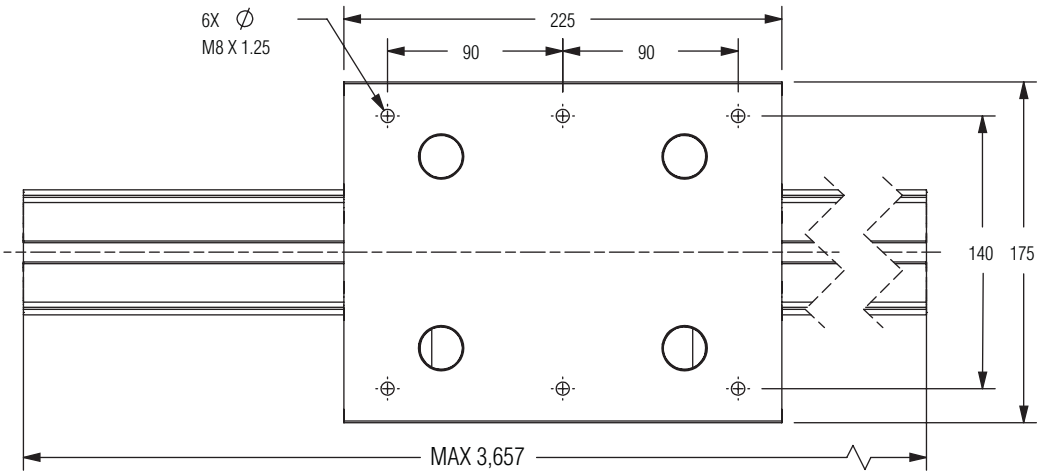
RAIL ORDERING INFORMATION

IVT	AAG	R	-	XXXX	-	0	00
Integral V Technology	Rail Type	Rail		Length (mm)		End Treatment	

00 - Standard Version

0 - Saw cut and deburr
*Other options such as joinable rails, consult factory

Ordering Example:
IVT AAG R - 1500 - 000; 1500 mm rail
IVT AAG R - 0500 - 000; 500 mm rail

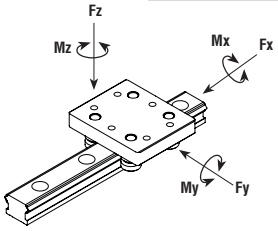


IVT AAG

SPECIFICATIONS

SERIES	# of Rollers	Carriage Weight (kg)*	Static Load Ratings					Dynamic Load Ratings					Rail Weight (kg/m)	Moments of Inertia		Max Rail Length (mm)
			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)		L_Y (cm^4)	L_Z (cm^4)	
IVTAAG	4	2.42	8,900	5,560	171	348	556	10,020	6,150	190	384	626	3.36	29.7	34.9	3,657

*Weight may vary slightly depending on carriage options.

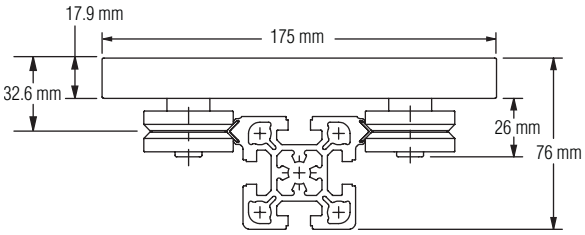


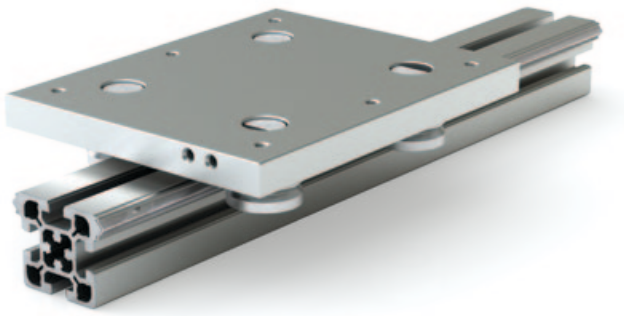
Fd = Dynamic capacity (LC)
Fz = Radial capacity
Fy = Axial capacity
Mx, My, Mz = Moment capacities

Conversions

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

CARRIAGE

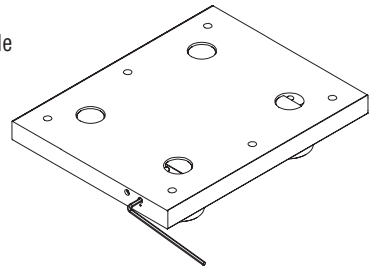




PRELOAD ADJUSTMENTS

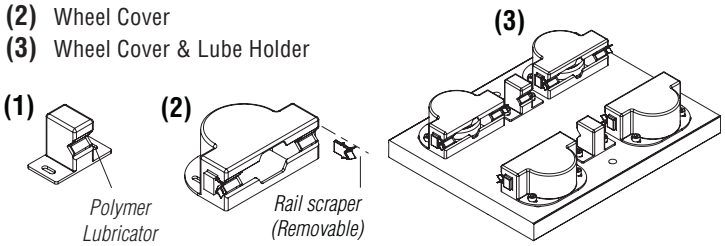
Standard
Side (CAM) Adjustable

PATENTED



LUBRICATION ACCESSORIES

(1) Lube Holder
(2) Wheel Cover
(3) Wheel Cover & Lube Holder



CARRIAGE ORDERING INFORMATION

IVT	AAG	C	-	A	2	X	A	0

Integral V Technology

Rail Type

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 & Lube Holder

Preload Type
A - Side (CAM) screw adjustable

Carriage Length
0 - Standard Length

Note: Lubrication is highly recommended for IVT

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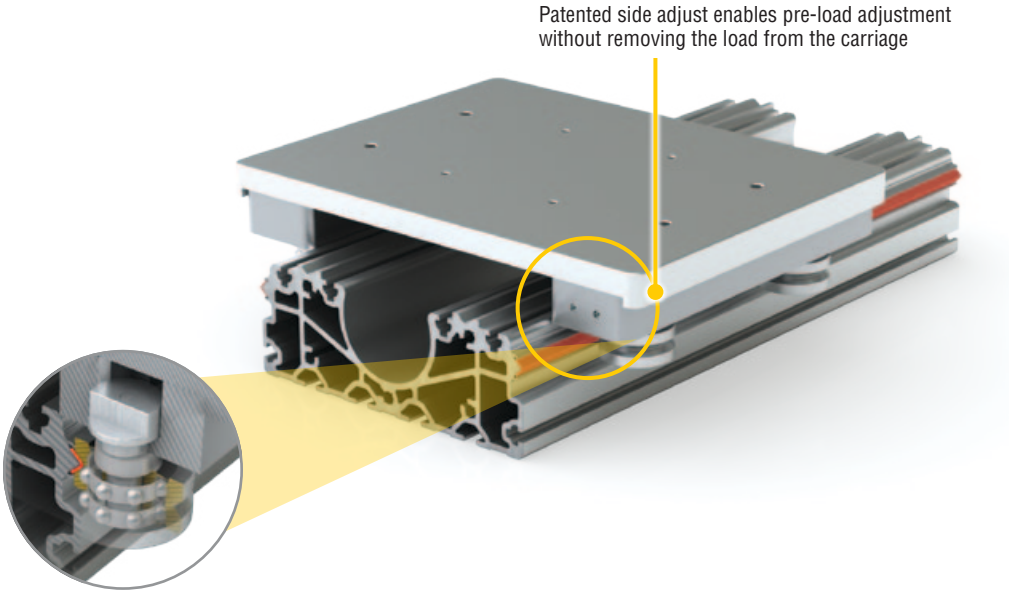
IVT ABK Features & Benefits

FOR LARGE FORMAT APPLICATIONS & HEAVY LOADS

COMPONENT OPTIONS

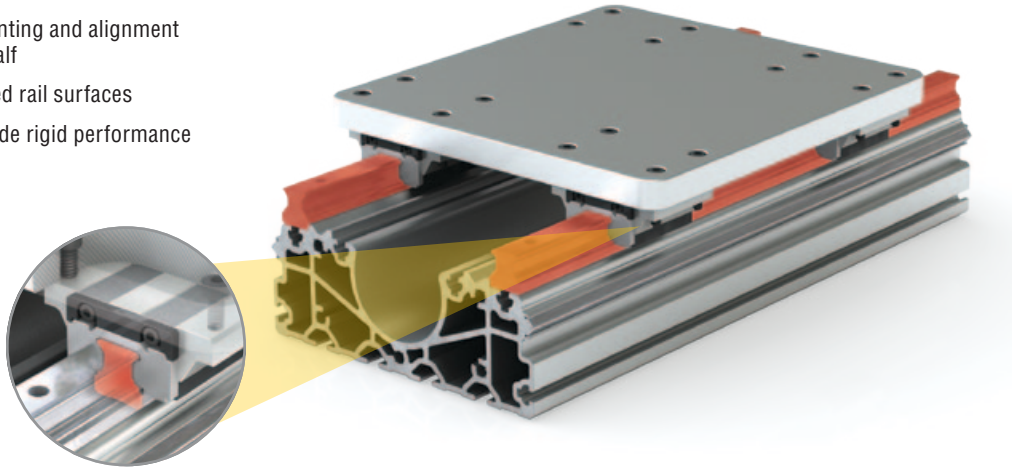
V-Guide Bearing System

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



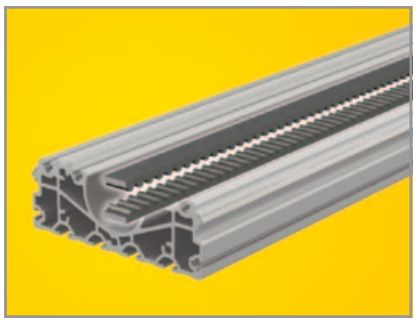
Profile Rail Guide System

- Pre-aligned profile rail eliminates mounting and alignment problems and cuts assembly time in half
- SIMO® machined for precision qualified rail surfaces
- Recirculating ball bearing blocks provide rigid performance
- Designed for 20 mm profile rail
- Smooth and quiet operation

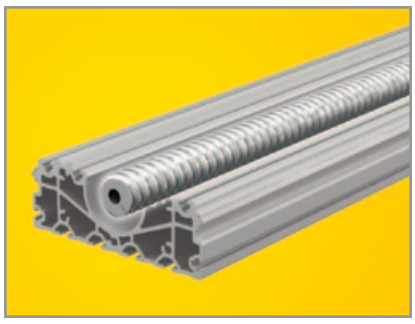


DRIVE OPTIONS (See page 24 for details)

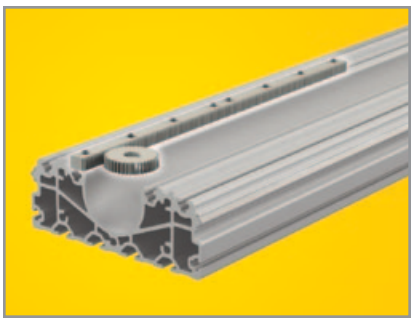
Belt Drive



Ball Screw

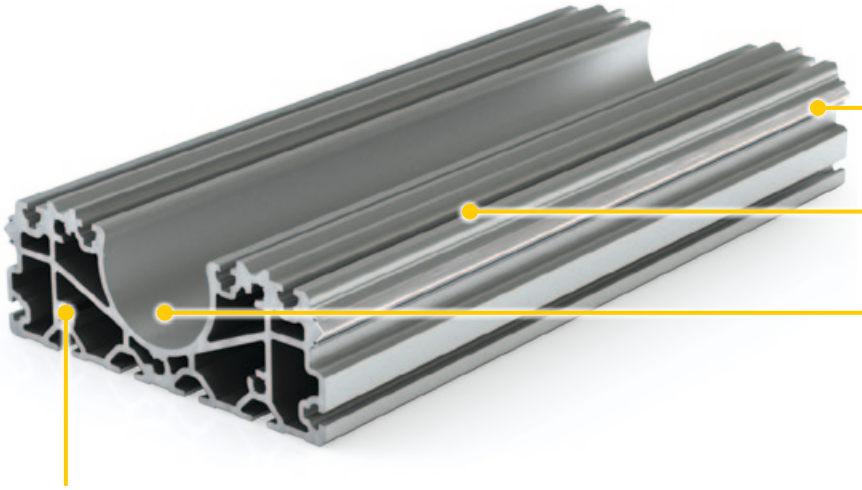


Rack Drive



Features & Benefits **IVT ABK**

RAIL FEATURES & OPTIONS

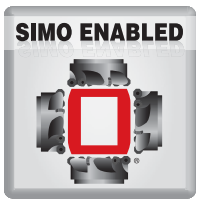


Precision machined anodized rail with hardened embedded steel races

SIMO® qualified surface and t-slot for mounting profile rail

Space for drive mechanism: belt, ball screw, or rack drive

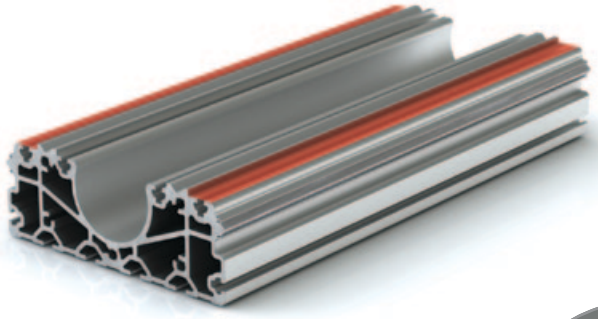
Space for thread forming screw (x 4)

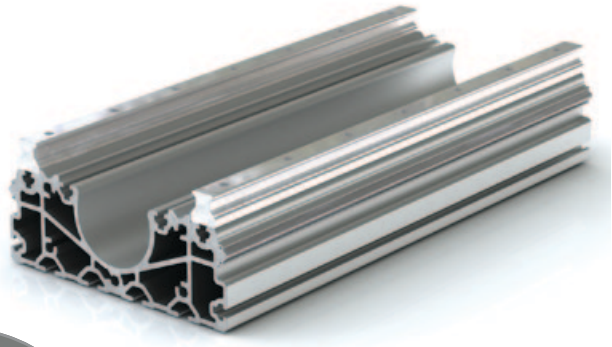


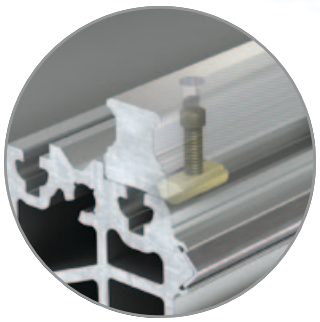
MACHINED PRECISION AT EXTRUSION PRICES

Pre-aligned Profile Rail Guides

- SIMO® machined for precision qualified rail surfaces
  —Syncronized cutters eliminate built-in extrusion variances
  —Machined rail edges can be used as a reference when mounting
- High load capacity
- Optimized extrusion design provides a large scale structural member
- Rigid, accurate, repeatable
- Low cost

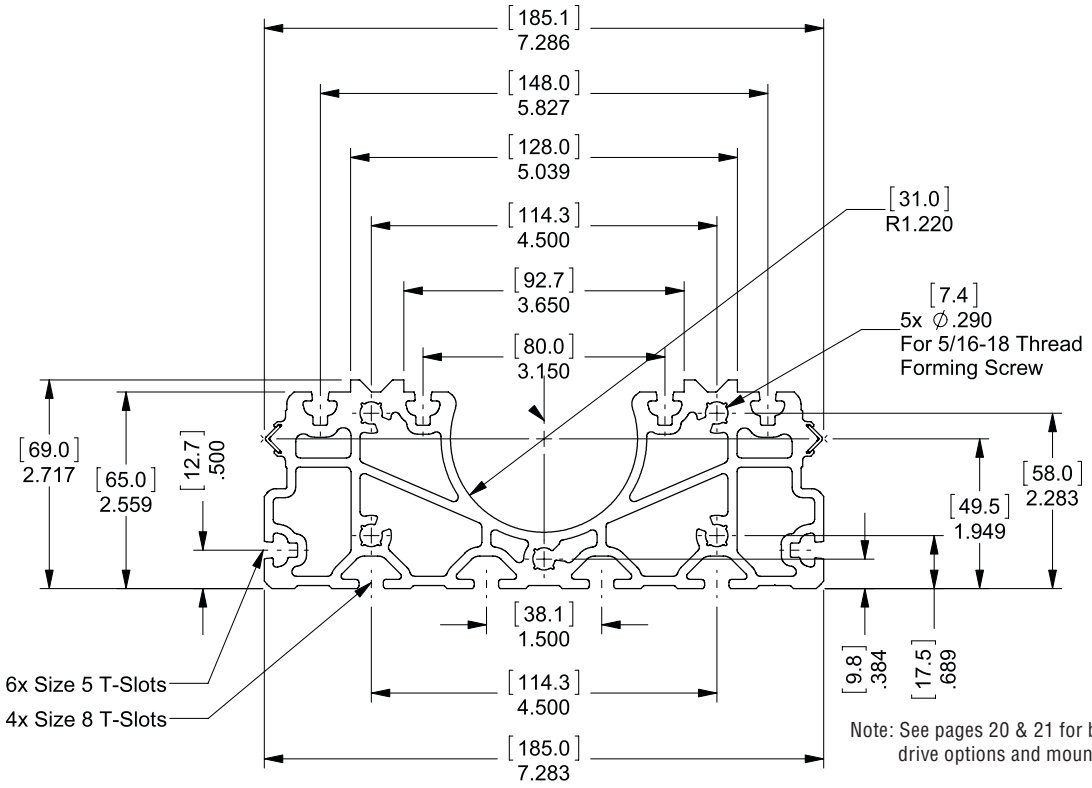






IVT ABK Rail & Carriage

RAIL



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

RAIL LENGTHS TO 3,657 mm (12 ft)

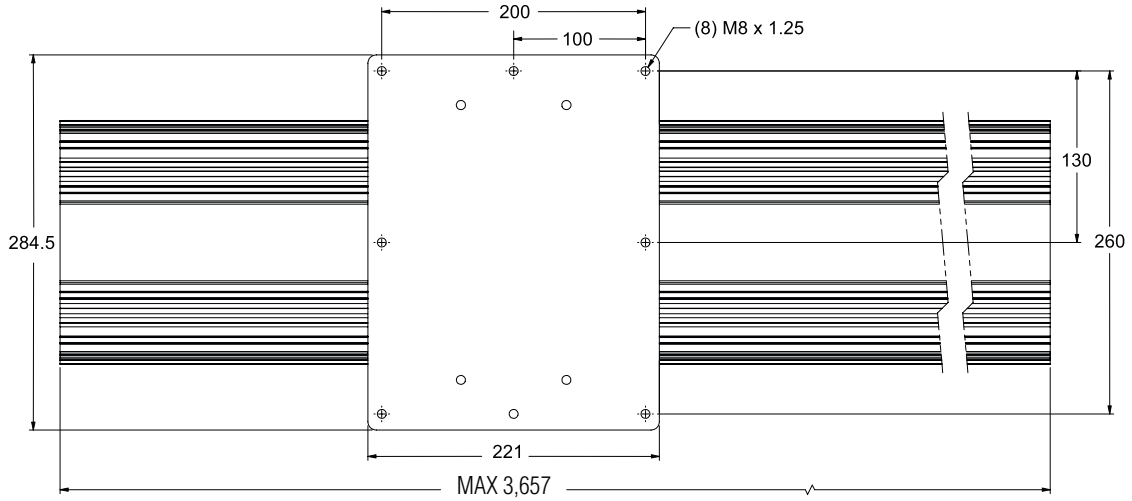
RAIL ORDERING INFORMATION

IVT	ABK	R	-	XXXX	-	0	00

IVT — **Integral V Technology**
ABK — **Rail Type**
R — **Rail**
XXXX — **Length (mm)**
0 — **End Treatment**
- **0** - Saw cut and deburr
*Other options such as joinable rails, consult factory

00 - Standard Version

Ordering Example:
IVT ABK R - 1500 - 000; 1500 mm rail
IVT ABK R - 0500 - 000; 500 mm rail

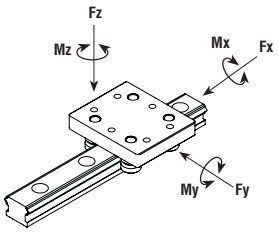


Rail & Carriage **IVT ABK**

SPECIFICATIONS

SERIES	# of Rollers	Carriage Weight (kg)*	Static Load Ratings					Dynamic Load Ratings					Rail Weight (kg/m)	Moments of Inertia		Max Rail Length (mm)
			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)		L_Y (cm^4)	L_Z (cm^4)	
IVTABK	4	4.3	8,900	5,560	599	390	1,154	10,020	6,150	662	431	1,300	10.1	175	1,300	3,657

*Weight may vary slightly depending on carriage options.



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

Conversions

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

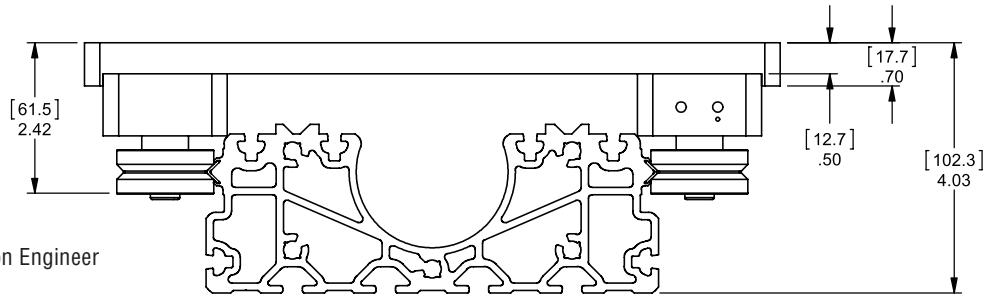
CARRIAGE

CRT

Cam Roller Technology
V-Guide Bearing
Option Shown

Consult factory for Profile Rail option.

Email an Application Engineer

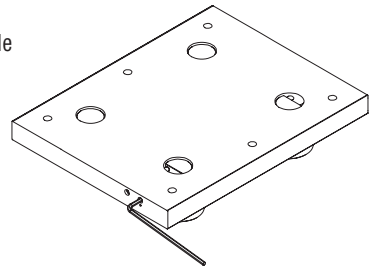


PRELOAD ADJUSTMENTS

Standard

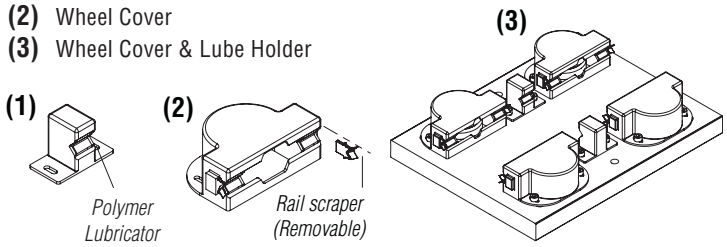
Side (CAM) Adjustable

PATENTED



LUBRICATION ACCESSORIES

(1) Lube Holder
(2) Wheel Cover
(3) Wheel Cover & Lube Holder



CARRIAGE ORDERING INFORMATION

IVT **ABK** **C** - **A** **2** **X** **A** **0**

Integral V Technology

Rail Type

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 & Lube Holder

Preload Type
A - Side (CAM) screw adjustable

Carriage Length
0 - Standard Length

Note: Lubrication is highly recommended for IVT

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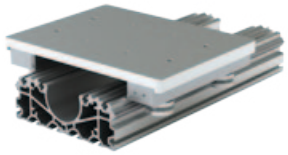
Consult factory for profile rail option.

IVT ABK Driven Systems

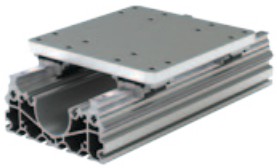
Bearing Options for All Drive Types

- Cam Roller Technology: V-Guide Bearings
- Profile Rail Technology: Profile Rail Guideways

CRT: V-Guide Bearings

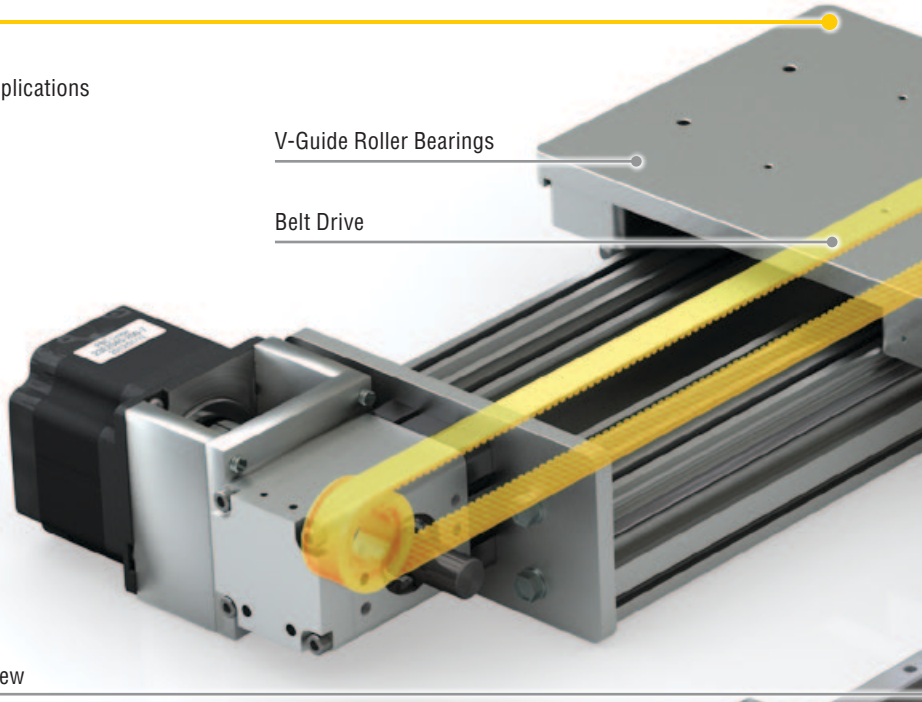


PRT: Profile Rail Guides



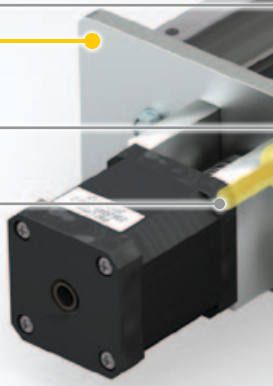
Belt Drive

- Ideal for use with V-Guide wheel bearings in high speed applications
- Performs well in contaminated environments
- PBC designed motor and idler ends
  – Can support a variety of design configurations
- Motor mount for Nema 23 and 34
  – Nema 34 motor shown
- Belt type: ATL 5 - 12 mm



Ball Screw

- Rigid ball nut performance in high-precision applications
  – Ball screw diameters 16 - 25 mm
- Good for Z-axis and high thrust applications
- PBC designed motor and idler ends
  – Can support a variety of design configurations
- Motor mount for Nema 23 and 34 (Nema 34 motor shown)
- Optional polymer cover
- Lead screw with polymer nut option available



Rack Drive

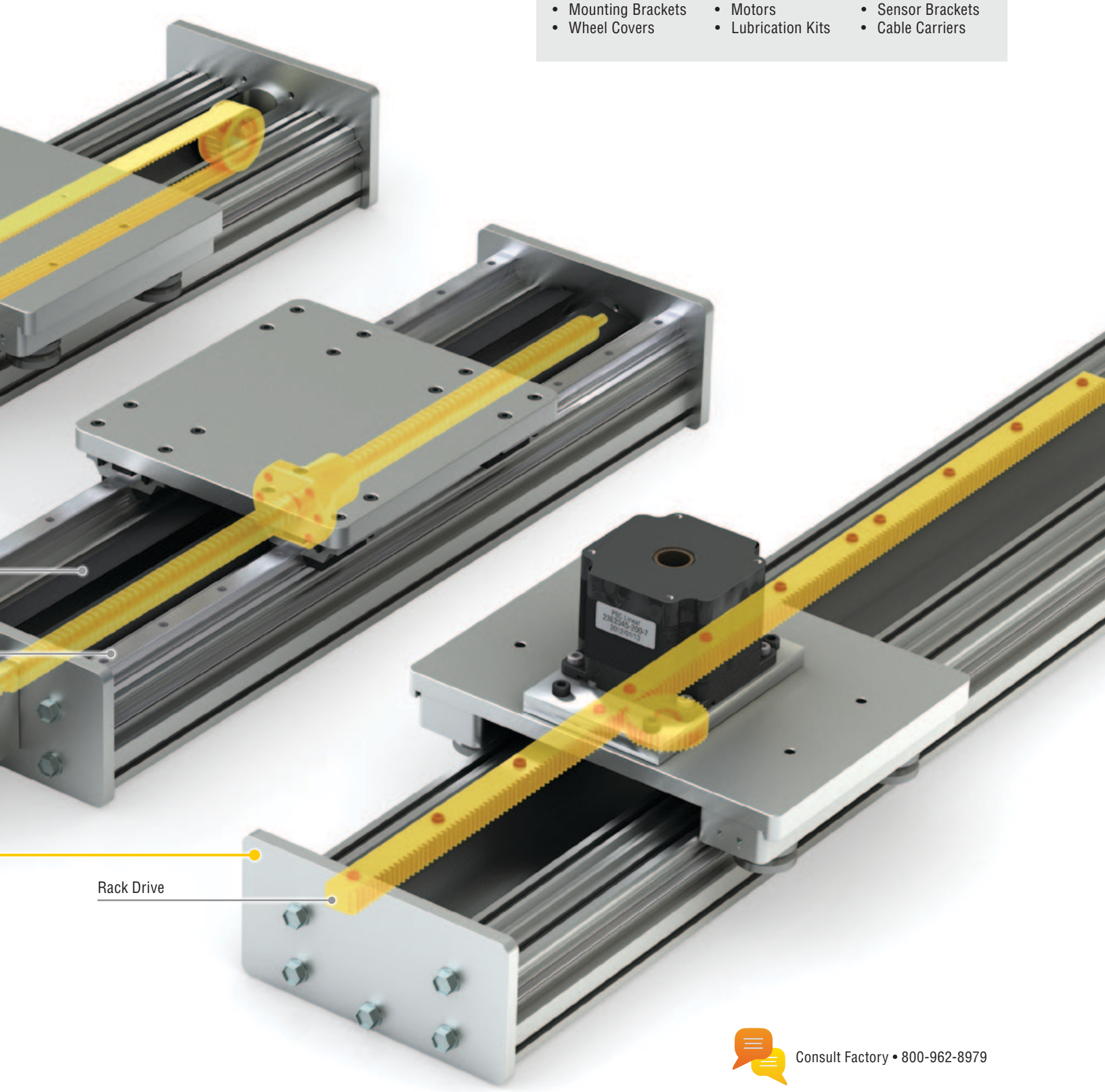
- Ideal for extended long length travel
- Typical rack: RA16

Email an Application Engineer

Driven Systems **IVT ABK**

Drives & Accessories

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



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LITIVT-013 [r12.2012]