



versamove
Pallet Systems



Modular.
Flexible.
Versatile.

versamove

mk North America



Introduction to mk

Innovation

One basic technology, four business segments, thousands of products and constant engineering innovation: That is mk.

Modular

Everything you need for your factory, all available from a single source – profile technology, conveyor technology, linear motion technology and factory equipment – mk supplies the complete mechanical building kits for all of the essential basic functions of automation systems.

Excellence

With over 40 years of diverse industry know-how, mk North America offers;

- Application engineering excellence
- Fast shipping
- Competitive pricing

Along with a full line of best-in-class products to help you increase productivity, improve quality, cut costs and increase profits.

Global Reach

mk North America, Inc. is a member of mk Technology Group which is headquartered in Troisdorf, Germany. mk Technology Group is a leading worldwide manufacturer of structural aluminum framing systems, safety guarding, factory equipment, linear motion and modular conveyor systems. mk products have proven themselves world-wide in modular equipment for the automotive, machine building and integration, manufacturing, packaging, pharmaceutical, printing and food industries. This global reach and broad customer base allows us to stay current with the most innovative designs in the material handling industry.

mk VersaMove



versamove

versamove
+plus

versamove
ultra

Better products, better solutions

Versatility

At mk North America we believe in offering you better products and being your partner to better solutions. With three different VersaMove pallet system platforms, we offer a size to meet just about any loading requirements. Within each system we offer a variety of conveying solutions to further match the unique aspects of your individualized product line.

Adaptable

All of our VersaMove conveyors are fabricated out of our robust mk aluminum extrusion. This allows for easy expansion and redesign of the line as well as the ability to quickly and easily mount to the conveyor frame. The VersaMove, VersaMove Plus and VersaMove Ultra offer you flexibility and versatility; important qualities for the ever-changing demands in the automation industry.

Local

We realize how important it is to be local and provide our customers with timely support, so all of our conveyors are designed and assembled in the USA; with the highest quality products. We locally source the finest brands of belts, chains, motors and pneumatics in order to keep you up and running.

Distinct

The depth and versatility of the mk VersaMove pallet line offers you more solutions for your pallet handling needs; all from a single source. At mk North America we value you as our customer and strive to provide to you only the best. Better products and better solutions; that is the mk way.

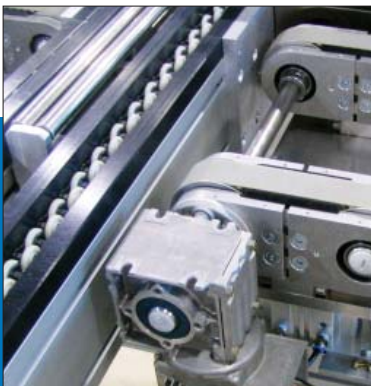
VersaMove System Overview

	versamove	versamove^{plus}	versamove^{ultra}
Pallet Size	160 x 160 mm up to 640 x 640 mm	240 x 240 mm up to 1040 x 1040 mm	400 x 400 mm up to 1200 x 1200 mm
Load Per Drive	Up to 3,000 lbs.	Up to 4,500 lbs.	Up to 6,000 lbs.
Pallet Load (per Pallet)	Up to 90 lbs.	Up to 250 lbs.	Up to 700 lbs.
Conveying Medium	Flat Top Chain Timing Belt Accumulating Roller Chain	Timing Belt Roller Chain Accumulating Roller Chain	Accumulating Roller Chain
Line Speed	30, 45, 60 or 80 fpm	30, 45, 60 or 80 fpm	30, 45, 60 or 80 fpm
Curves	✓ Yes	✗ No	✗ No

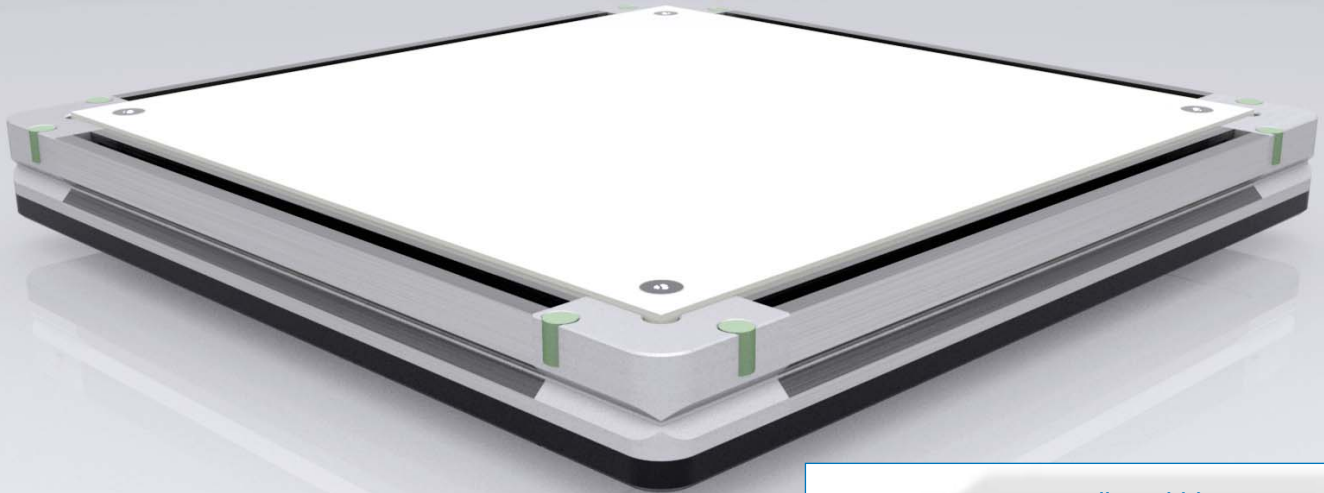
Versatile Conveyors, Versatile Options.

Our offerings include three different platforms and four different conveying mediums to best fit your pallet handling needs. This wide selection of pallet handling conveyors allows you to select the system that is best suited for your unique demands. Factors that influence this decision include:

- Product weight and size
- Environmental factors
- Space constraints
- Process flow
- Cycle times



Pallet Specifications



Sized for your application

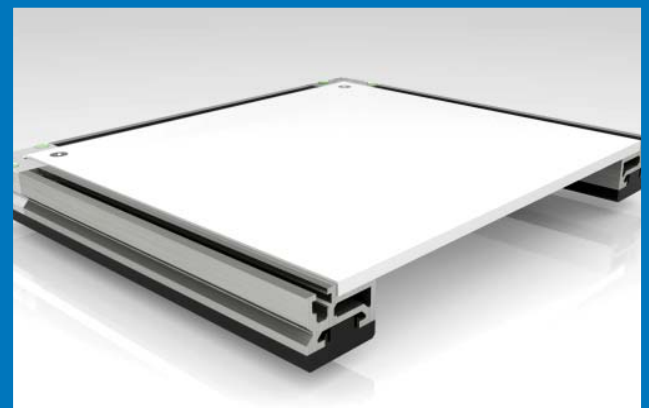
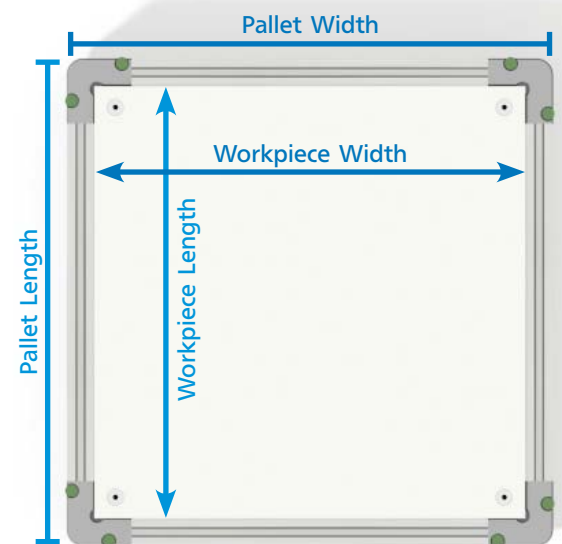
At mk North America we offer a diverse variety of pallets to fit just about every application. The pallet size chosen will help direct you to the ideal pallet conveying system for your needs. Our pallets offer removable workpieces; which allow for quick and easy changes to the pallet design. Constructed out of an aluminum extrusion frame with a top side accessible t-slot, UHMW-PE wear surface on the bottom and available in a wide variety of workpiece materials. The top side accessible t-slot offers yet another way to quickly change or alter your pallet as needed to keep you in production longer. Our versatile pallets are another way we offer you not only better products but better solutions.

Standard Pallet Features:

- Sizes ranging from 160 x 160 mm to 1200 mm x 1200 mm
- Rubber bumpers; which can easily be replaced as needed
- UHMW-PE wear surface on the bottom
- mk Profile construction, which features a top side t-slot
- Aluminum and steel workpieces available
- Workpieces available in a variety of thickness and measure 44 mm smaller than the pallet

Custom Pallet Features:

- Custom sizes
- Workpiece material modifications
- Workpiece material selection
- Available in solid material construction



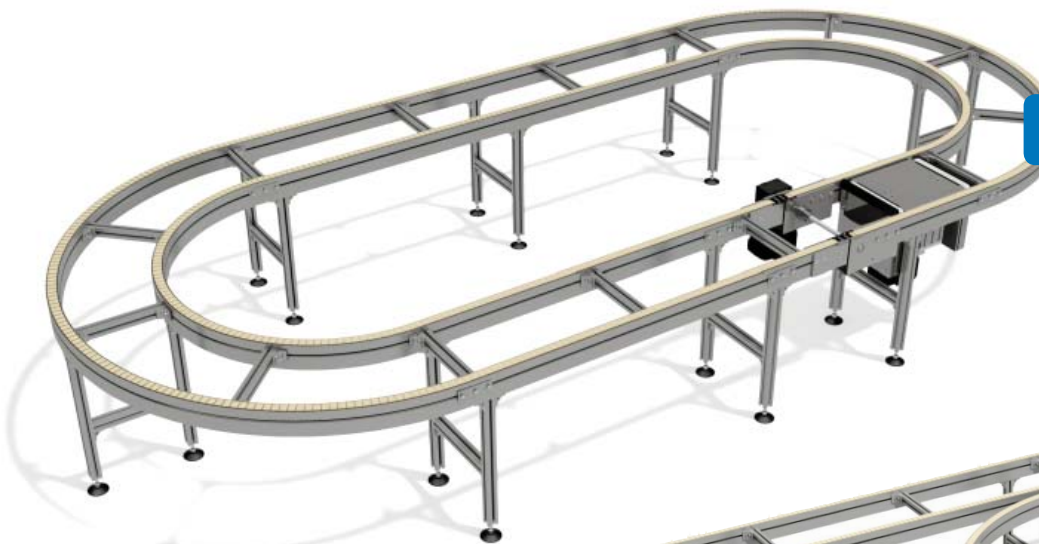
Configuration Examples

mk North America offers three different conveyor system platforms with four different types of conveying mediums; this allows you to design a system that makes the best use of your space while tailoring the system to meet your specific production criteria.

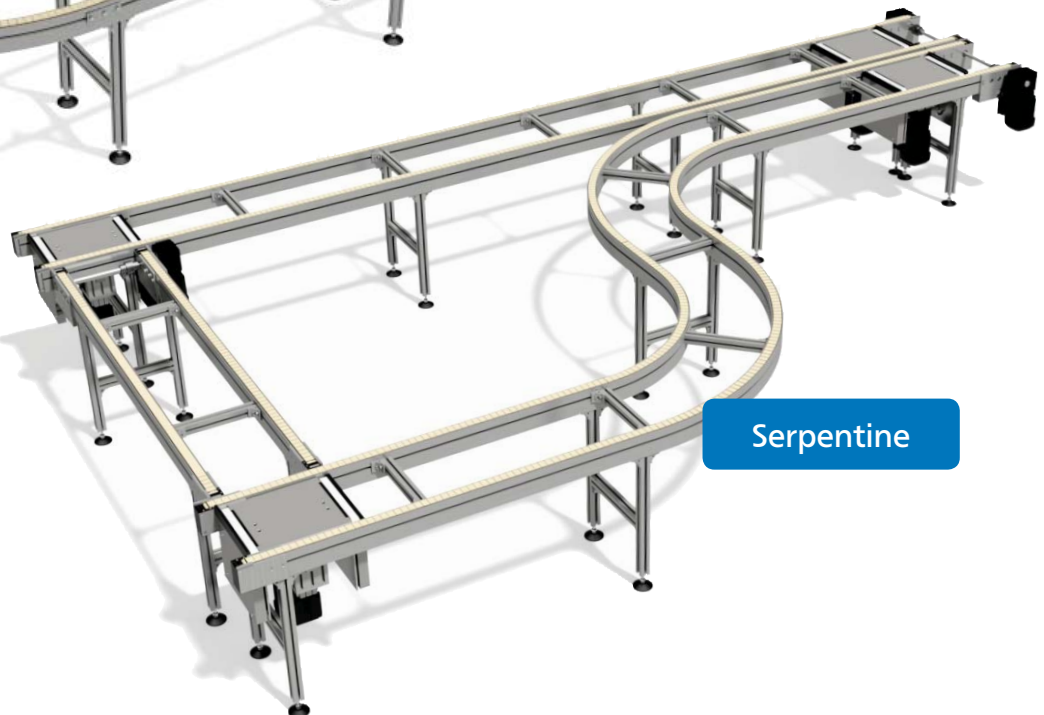
mk offers six standard configurations, as shown; however these configurations can be combined in order to maximize your production flow while utilizing a footprint that best fits your needs. Not only can you combine various configurations, but you can mix and match various conveying platforms to best suit your needs.



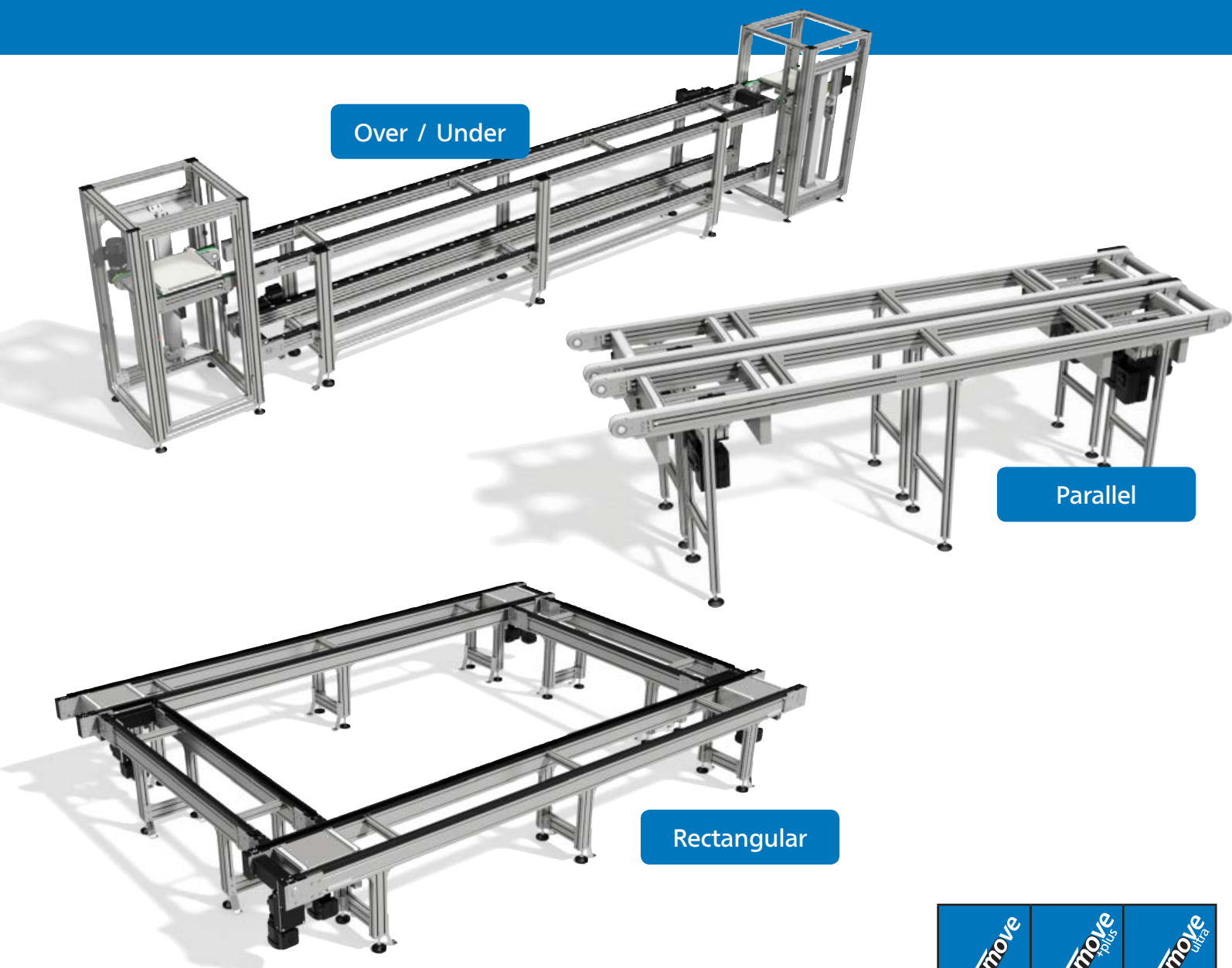
In-Line



Carousel

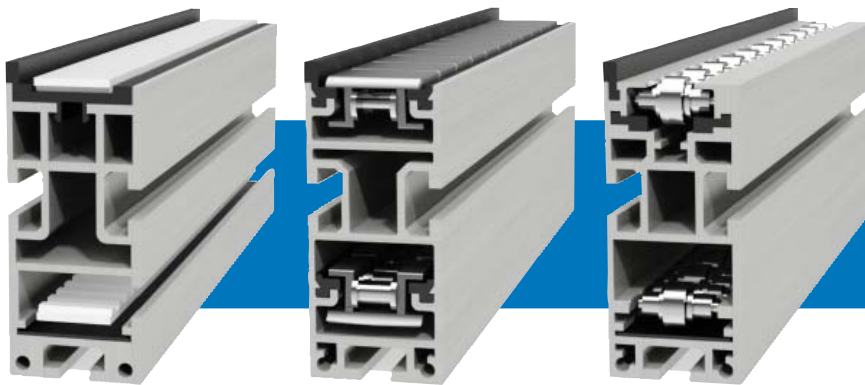


Serpentine



TYPE	CONFIGURATION DETAILS	<i>versa move</i>	<i>versa move^{plus}</i>	<i>versa move^{ultra}</i>
In-Line	<ul style="list-style-type: none"> Simple set-up in which product is moved in a straight line. 	✓	✓	✓
Carousel	<ul style="list-style-type: none"> Maintains leading edge by operating on the SFC-P 1010 platform Economical, single motor is required 	✓		
Serpentine	<ul style="list-style-type: none"> Ideal for moving around fixed obstructions Requires the use of the SFC-P 1010 platform 	✓		
Over / Under	<ul style="list-style-type: none"> Ideal when floor space is limited, pallet returns over or under the main-line. 	✓	✓	
Parallel	<ul style="list-style-type: none"> Ideal for operators on both sides of the line, compact and space spacing design. 	✓	✓	✓
Rectangular	<ul style="list-style-type: none"> Ideal in systems that have a more complex process, yet require flexibility. 	✓	✓	✓

The VersaMove is our latest pallet system development and was designed to round out our pallet system offering. The VersaMove is designed for conveying smaller, lighter pallets; but it is by no means a light duty system. Designed to complete and compliment our VersaMove Plus and Ultra Systems, this system features timing belt (ZRF-P 1010) and accumulating roller chain platforms (SRF-P 1010) in addition to a side-flexing flat top chain (SFC-P 1010). It is this side-flexing flat top chain that sets this system apart; as we are able to maintain the leading edge of pallets and incorporate curves into the line. As with all of our pallet handling conveyors the conveying medium returns within the aluminum extrusion (45 x 98 mm). This newest pallet handling line not only complements the mk pallet systems, but rounds out the versatility of the pallet system offerings from mk.



Cross Sections

Left to Right:
ZRF-P 1010 Timing Belt
SFC-P 1010 Flat Top Chain
SRF-P 1010 Accumulating Roller Chain

Product Highlights:

Pallet Load	Up to 90 lbs. each
Loading	Loading up to 3,000 lbs per drive
Pallet Size	160 x 160 mm to 640 x 640 mm

- Flat top chain, timing belt and accumulating roller chain platforms
- Pallet guides integrated into frame design
- Constructed out of aluminum extrusion with T-slots for quick assembly
- Conveying medium returns within the frame for a safer conveyor
- 90° and 180° bends are possible on the flat top chain platform (SFC-P 1010)

Application Examples:

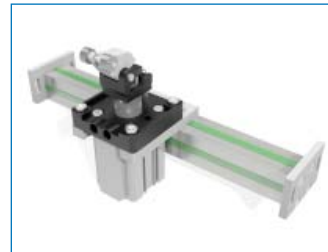
Electronics, automotive, medical, computer hardware, communications, personal healthcare and more!



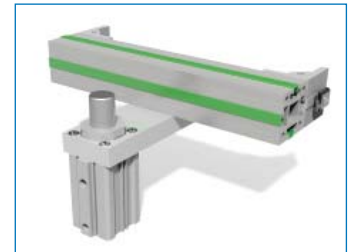
Accessories:

mk North America offers a wide variety of accessories to help you meet your product flow needs. These accessories add versatility to the product depth offered and allow for customized combinations of line layouts.

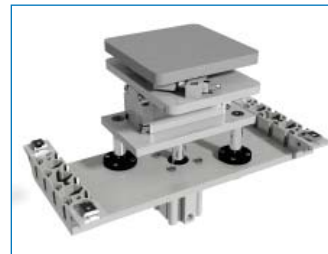
- Pneumatic Pallet Stop
- Pneumatic Pallet Soft Stop
- Pneumatic Lift & Locate
- Elevator / Lowerator
- Right Angle Lift & Transfer, single (pneumatic)
- Right Angle Lift & Transfer, dual (pneumatic)
- Adjustable side rails (See more details on page 20)
- Conveyor supports with your choice of leveling feet, lagging brackets or casters (See more details on page 20)



Soft Stop



Pin Stop



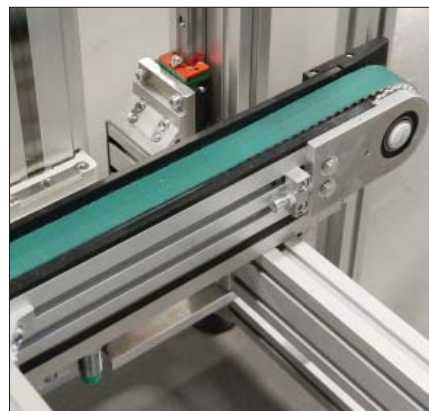
Lift & Rotate



Elevator



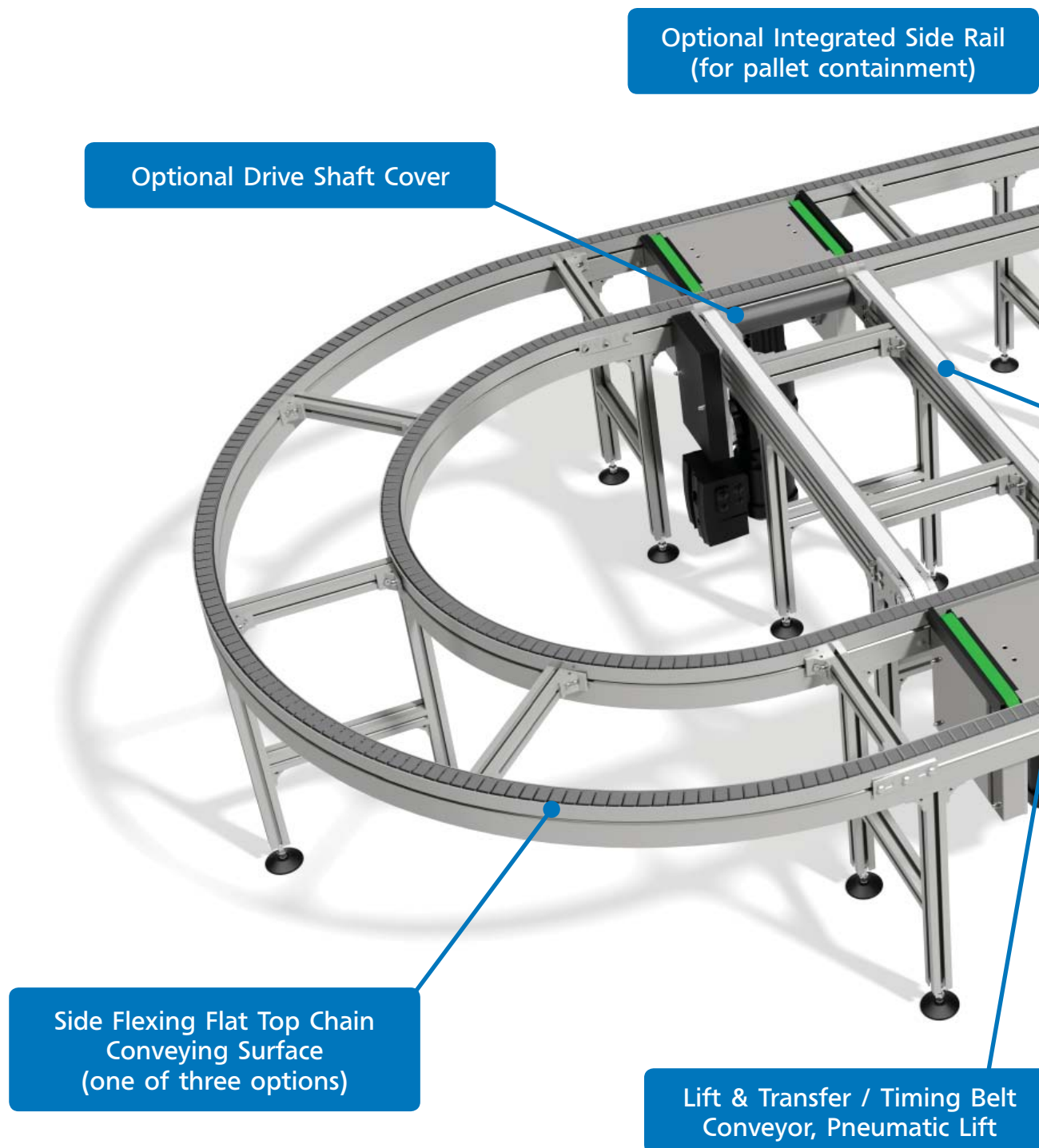
Pallet traveling on the SF-P 1010, side flexing flat top chain conveyor.

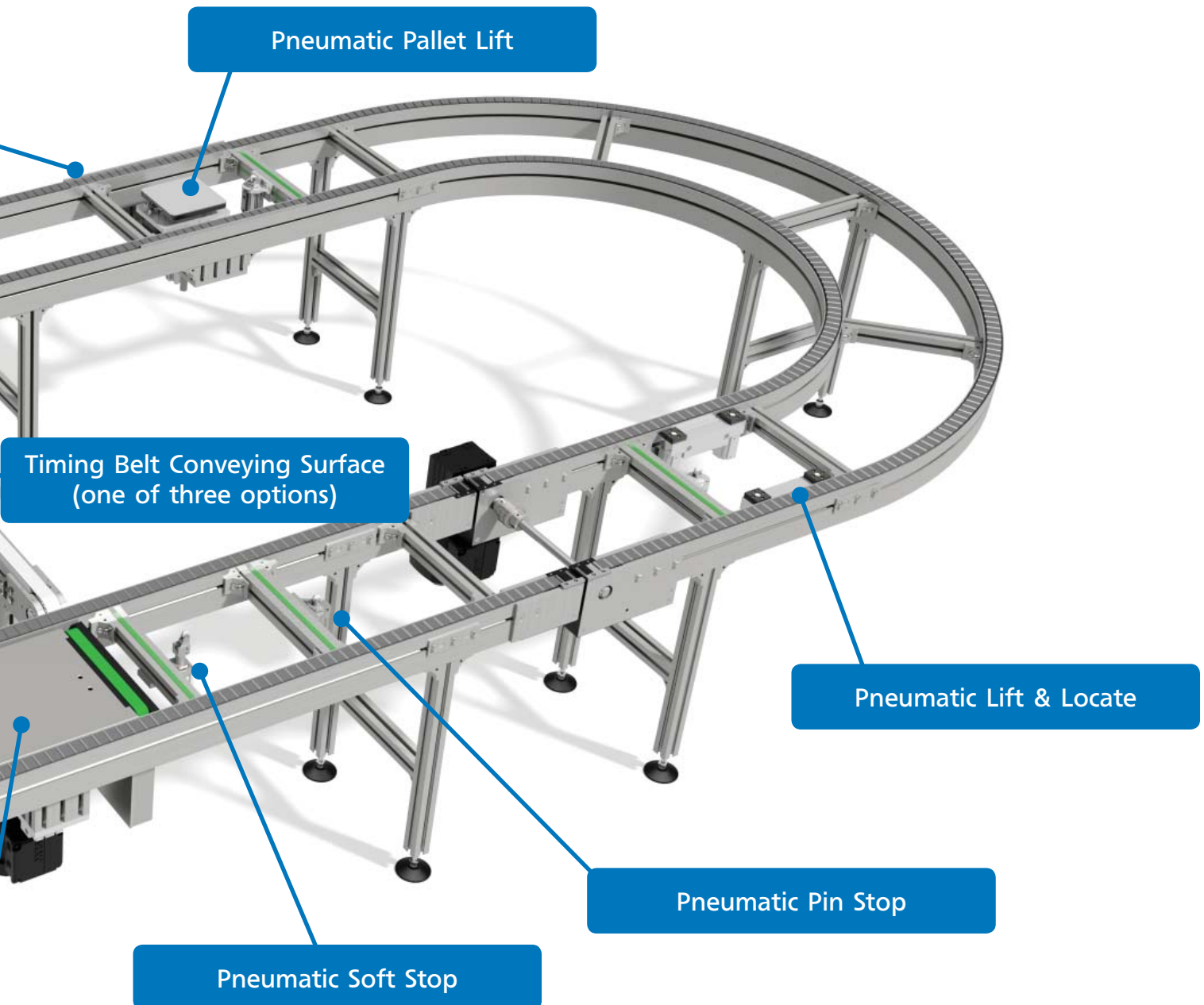


Timing belt conveyor within the Elevator. This elevator is compatible with the VersaMove and the VersaMove Plus.

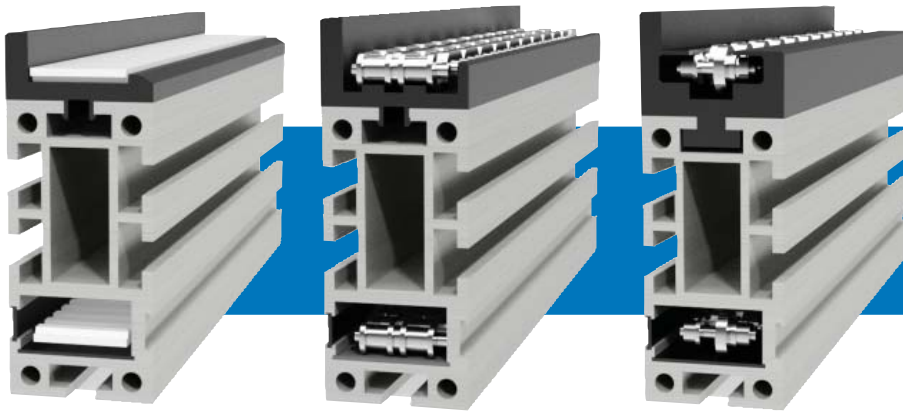


An example of a 180° curve for the SFC-P 1010, side flexing flat top chain conveyor.





The VersaMove Plus conveyor system allows for the widest range of pallet sizes. This versatility allows for product handling across many industries. The VersaMove Plus is based on our 2010 conveyor series platform which features our robust 2010 (50 x 100 mm) aluminum profile. We offer timing belt (ZRF-P 2010), chain (KTF-P 2010) and accumulating roller chain (SRF-P 2010) platforms for this pallet system. As with all of our pallet systems the conveying medium returns within the channel of the frame profile. This allows for a safer conveyor design. By combining the various conveying mediums you can design a system that allows for accumulating pallets as well as precise pallet location and marking. We offer a wide variety of accessories for use with this system, including but not limited to; Pallet Stops, Lift and Locate units, and Lift and Transfers. Our VersaMove Plus pallet system provides versatility that is unmatched in the market place.



Cross Sections

Left to Right:

ZRF-P 2010 Timing Belt

KTF-P 2010 Chain

SRF-P 2010 Accumulating Roller Chain

Product Highlights:

Pallet Load	Up to 250 lbs. each
Loading	Loading up to 4,500 lbs. per drive
Pallet Size	240 x 240 mm to 1040 x 1040 mm

- Timing belt, chain and accumulating roller chain platforms
- Pallet guides integrated into frame design
- Constructed out of a robust aluminum extrusion with T-slots for quick assembly
- Conveying medium returns within the frame for a safer conveyor

Application Examples:

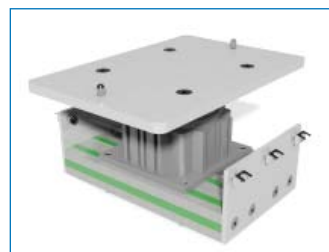
Automotive, household appliances, medical, computers, order fulfillment, defense, consumer goods and more!



Accessories:

mk North America offers a wide variety of accessories to help you meet your product flow needs. These accessories add versatility to the product depth offered and allow for customized combinations of line layouts.

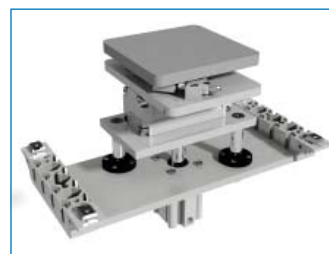
- Pneumatic Pallet Stop
- Pneumatic Pallet Soft Stop
- Pneumatic Lift & Locate
- Elevator / Lowerator
- Right Angle Lift & Transfer, single (pneumatic)
- Right Angle Lift & Transfer, dual (pneumatic)
- Life & Rotate (pneumatic)
- Adjustable side rails (See more details on page 20)
- Conveyor supports with your choice of leveling feet, lagging brackets or casters (See more details on page 20)



Lift & Locate



Elevator



Life & Rotate



Lift & Transfer



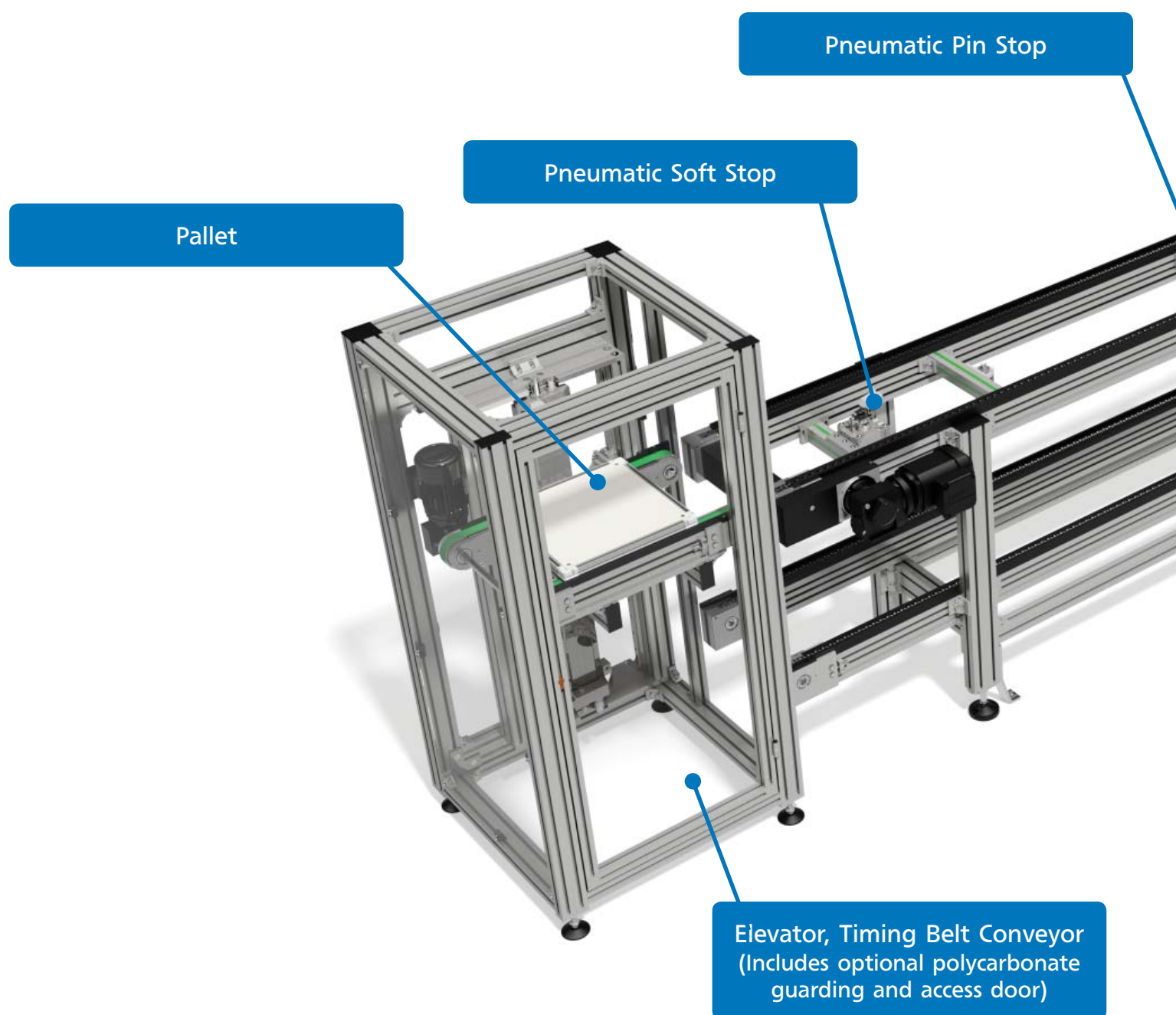
Example of high load Lift & Transfer mounted between the lanes of the VersaMove Plus SRF-P 2010 conveyor.

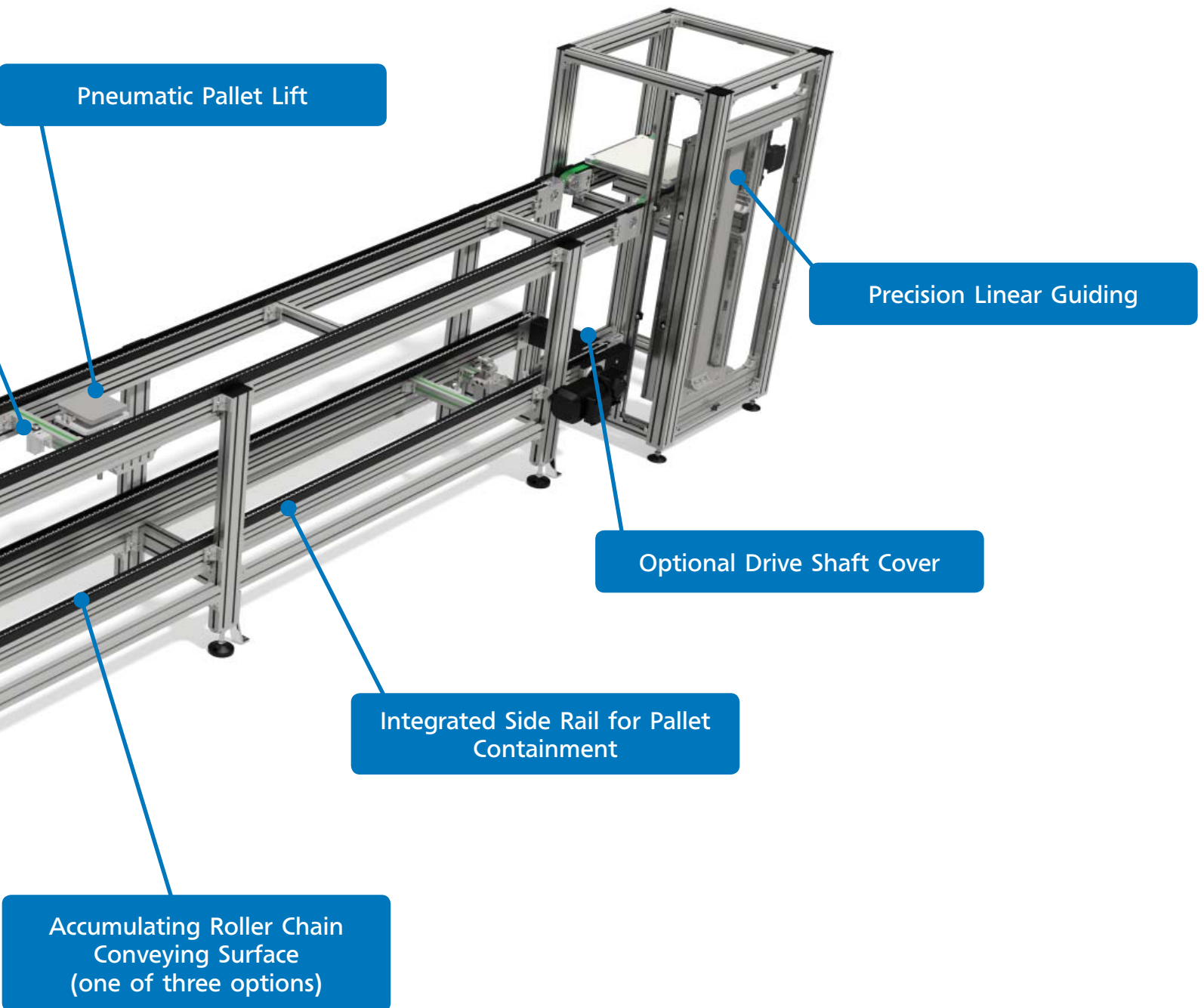


VersaMove Plus SRF-P 2010 conveyors with a pallet in position to be transferred. Example includes optional external side rails.



Timing belts are available with a wide variety of top surface coating. Shown above is a nylon for accumulation of pallets.





The VersaMove Ultra is our most robust and rugged pallet conveyor line. Built out of our heavy-duty mk 2012 (60 x 120 mm) aluminum extrusion, this system features our SRF-P 2012 conveyor, with an accumulating roller chain on a $\frac{3}{4}$ " pitch. The VersaMove Ultra is designed to carry the largest pallets with sizes up to 1200 x 1200 mm. These units are designed for high-load accumulating applications but can be used with lighter duty products as well. As with all of our pallet systems, the chain returns within the channel of the profile to provide a safer conveyor. We offer a wide variety of accessories for use with this system, including but not limited to: Pallet Stops, Lift and Locate units, and Lift and Transfers. VersaMove Ultra is one of the heaviest duty pallet conveyor systems in the market place and rounds out the versatility of the mk Pallet System line.



Cross Section
SRF-P 2012
Accumulating Roller Chain

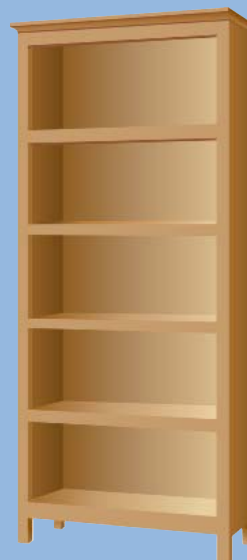
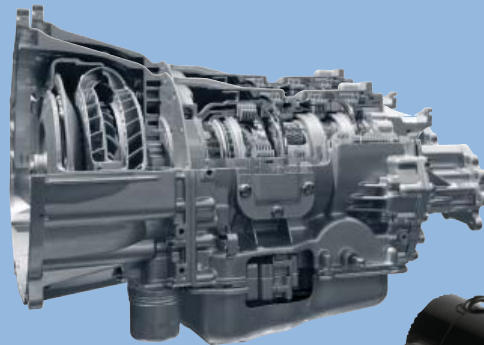
Product Highlights:

Pallet Load	Up to 700 lbs. each
Loading	Loading up to 6,000 lbs. per drive
Pallet Size	400 x 400 mm to 1200 x 1200 mm

- Accumulating roller chain platform
- Pallet guides integrated into frame design
- Constructed out of a rugged aluminum extrusion with T-slots for quick assembly
- Conveying medium returns within the frame for a safer conveyor

Application Examples:

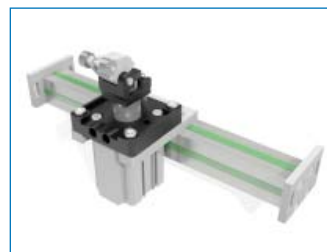
Automotive sub-assemblies, pressure testing, large appliances, motors and pump, defense, furniture and more!



Accessories:

mk North America offers a wide variety of accessories to help you meet your product flow needs. These accessories add versatility to the product depth offered and allow for customized combinations of line layouts.

- Pneumatic Pallet Stop
- Pneumatic Pallet Soft Stop
- Pneumatic Lift & Locate
- Right Angle Lift & Transfer, single (pneumatic)
- Right Angle Lift & Transfer, dual (pneumatic)
- Life & Rotate (pneumatic)
- Adjustable side rails (See more details on page 20)
- Conveyor supports with your choice of leveling feet, lagging brackets or casters (See more details on page 20)



Soft Stop



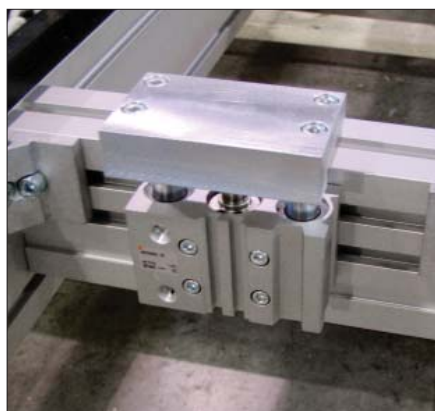
Pin Stop



Lift & Locate



Lift & Transfer



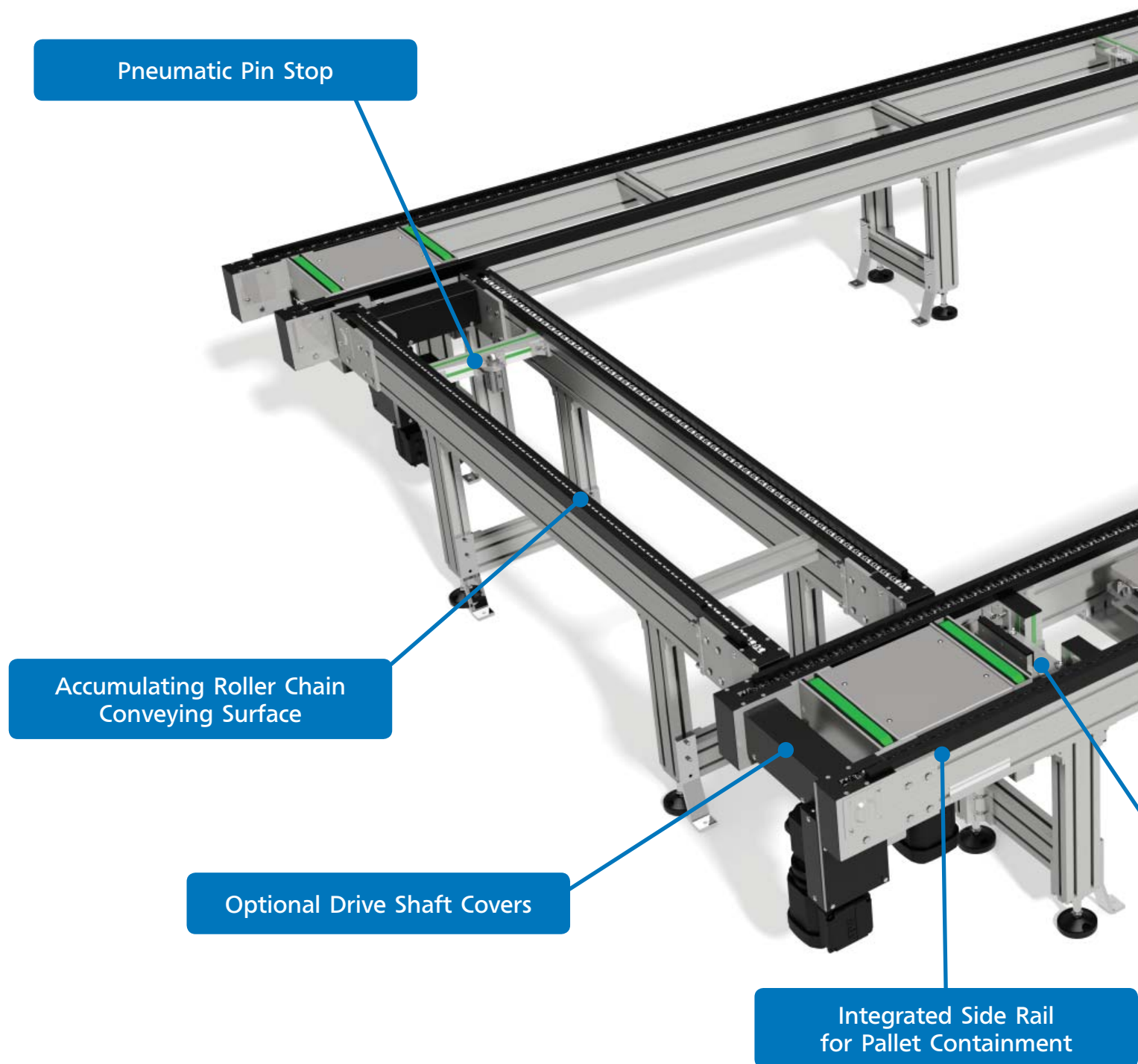
Customer defined pneumatic blade stop.

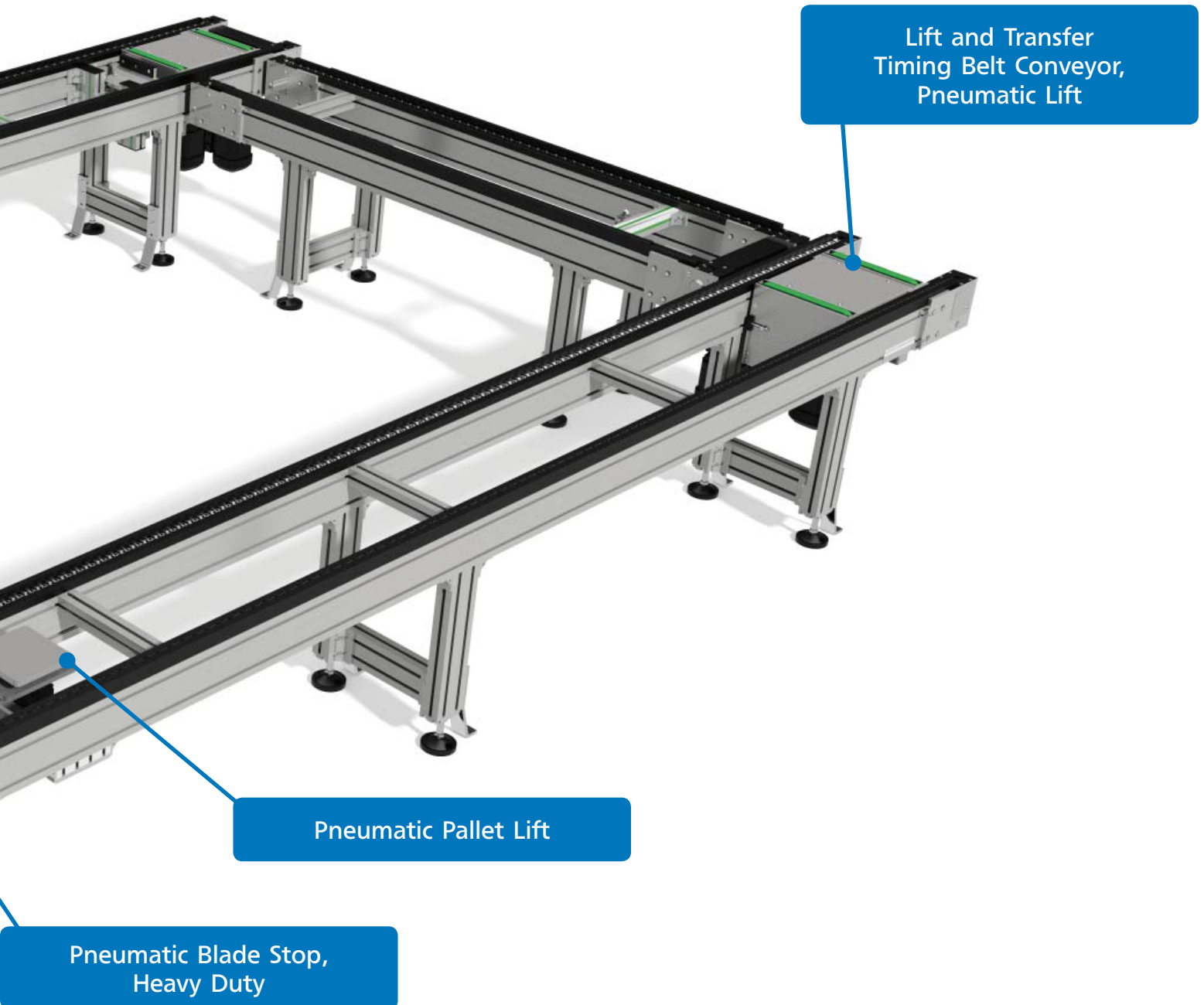


Wear strip modified per customer request to expose all of the chain. Gravity rollers added to aid in transfer.



Lift and transfer mounted between the lanes of a modified VersaMove Ultra.





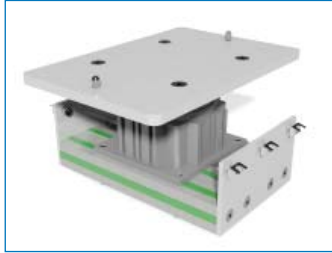
Accessories

Accessories

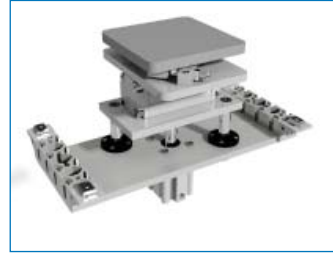
mk North America offers a wide variety of accessories to help you meet your needs. These accessories add versatility to the product depth offered and allow for customized combinations of line layouts.



Elevator



Lift & Locate



Lift & Rotate



Lift & Transfer
(dual version also available)



Pin Stop



Soft Stop

We also offer:

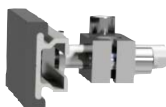
- Chain Maintenance Units
- Chain Lubrication Stations
- Custom Stops
- Custom Accessories to fit your needs

Stands and Side Rails

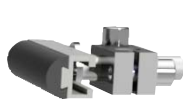
mk North America offers a wide variety of stands and side rails for use with the VersaMove pallet systems. All of the VersaMove pallet systems include an integrated side rail for pallet containment. Sometimes this rail needs to be removed or an additional external rail needs to be added based on particular process needs. Since the VersaMove is based on our standard conveyor platforms all of our standard side rail and stands are compatible. Below are examples of the most popular options used with the VersaMove conveyors.

Side Rails

Side rails HSF03, adjustable with type 21 rails. Also shown are rail options 22 and 23.



Option 22



Option 23

Stands

40 x 40 stands with leveling pads

40 x 80 stands w/ leveling pads and hold down brackets

40 x 80 stands with swivel locking casters





Customer Service and Support

mk North America prides itself on providing the highest level of customer service. From concept, through the quoting process, during the approval drawing process and right through the building, testing and shipping of your order – we keep YOU the customer in mind. We are dedicated to providing to you better products and better solutions, one pallet system at a time.

Customer service can be accessed via telephone, email or in person. Contact us today and we'll be happy to work with you in selecting and developing an mk conveyor pallet system for your factory.

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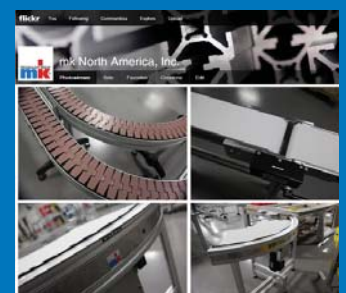
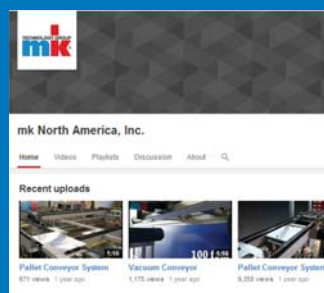
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Design Examples

Application Examples



High load Lift & Transfer between the lanes of a SRF-P 2010 (accumulating roller chain), feeding pallets 90° onto the traverse ZRF-P 2010 (timing belt) conveyor.



Example of a custom pallet on the VersaMove Plus System.



Elevator, fully guarded with clear polycarbonate panels for an Over/Under System.



Linking of production cells in automotive sector. Manual feeding of pallets, removal with customer-supplied handling system and robot.



Lift and transfer conveyor in parallel arrangement with support roller for bridging small gaps



Full assembly line designed using the mk VersaMove conveyor platforms.



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