

Introduction

Welcome to the world of **Simpli-Flex**[®] conveying.

Simpli-Flex[®] Modular Conveyor from Simplimatic Automation is designed to automate package, parts or product handling production lines.

This unique system is designed to provide maximum system layout capability using a minimum number of modular components.

Simpli-Flex[®] quality is second to none. Simplimatic Automation employs standard component designs and the latest advances in aluminum extrusion, injection molding and metal forming manufacturing technologies.

Our comprehensive approach to conveyor design means you get fast system installation, reliable operation and a cost-effective system design that's flexible enough to adapt to your changing system needs.

Simpli-Flex[®] is designed and supported by Simplimatic Automation, a global supplier of materials handling products. Backed by an international network of authorized distributors, our experienced factory support staff is available for consultation on special application requirements or to provide technical assistance.

Simpli-Flex[®] modular components can be combined to provide customized product handling for a wide range of industry applications including those in health and beauty, product packaging, electronic assembly, automotive, pharmaceutical, and other industries.

This catalog is your reference and product selection guide. It is divided into component categories, and includes technical specifications. Instructions for designing conveyors are provided, but cover only a few of the many potential applications. New components are added regularly to make

Simpli-Flex[®] the most useful and flexible system possible. If you have applications or need any information not covered in this catalog, please consult your local authorized distributor.

The System Concept

Simpli-Flex® modular conveyor systems are the basis for a well-designed pallet and/or puck transportation system.

Our conveyor beam is extruded aluminum with a clear anodized finish. It features both internal and external T-slots, which are used for mounting turns, drives, idle ends, brackets, crossbeams, devices, and to splice additional lengths of beam.

A family of pre-engineered components makes Simpli-Flex® a very versatile conveyor system, allowing the greatest amount of layout capability achieved with the least amount of component variation. Simpli-Flex® components are designed to be used in multiple configurations to give the user unlimited options. Systems can be easily reconfigured to handle products or fixtures of different specifications.

Through standardization, and the use of precise manufacturing tolerances, all conveyor parts go together quickly. On-site modifications are simple. All of the system components can be easily assembled, disassembled and reassembled in far less time than conventional flat-top chain conveyors. Design simplicity allows components to be erected with simple hand tools.

Simplimatic Automation takes a system approach to automation. We begin with a design and engineering process, which is based on our commitment to find the most cost-effective solution for your production demands. We put together a fully integrated system of Simpli-Flex® modular conveyor components, metering and positioning devices, including electrical/mechanical and pneumatic controls.

Our patented 3.25" wide conveyor chain is made from a material that provides high strength and a low coefficient of friction, which allows long chain pulls and low horsepower requirements. The chain flexes in all directions, allowing it to be used in standardized 6", 24", 36" and 48" center line radius horizontal turns and 16" beam center line radius vertical turns.

Conveying a product means more than just letting it go for a ride on a conveyor chain. In most cases, conveying a pallet or puck also may require the ability to stop, position, elevate and accumulate product along the conveyor path. See the Pallet Design and Pallet Stops sections for more information on product control.

Simpli-Flex® conveyor systems are easily built in the form of a racetrack which allows several workstations to be placed along the path where workers or robotic devices help assemble, test and package the product.

Racetrack conveyor configurations frequently are constructed using Simpli-Flex® V-Beam, using top-only running conveyor chain. This type of system saves the cost of a return chain, while providing a system that lends itself to first in, first out assembly/inspection operations. Pallets and pucks for carrying product remain within this closed loop system and are normally accumulated empty at the beginning or product loading section of the conveyor system.

By including bar code identification and readers, or radio frequency tags and read/write devices, the products being conveyed can easily be tracked throughout the manufacturing process.

A company does not need a tremendously sophisticated inventory control system to track products through a system which reads information by electronic logic. Work-in-process figures can become relatively easy to obtain.

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Chain

Simpli-Flex® chain flexes in all directions, so it can be used in straight sections, horizontal turns or vertical turns. The patented free-tab link design provides retention and tracking through horizontal turns, vertical turns and chain returns and allows the chain to be lifted out of straight sections for easy cleaning and maintenance.

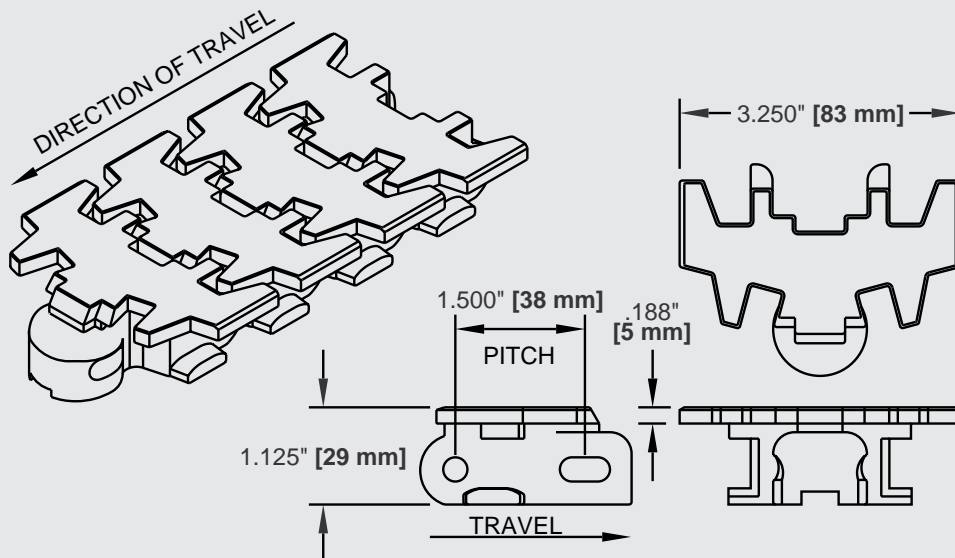
- The chain is molded from a patented blend of Acetal and Teflon for high pull strength and low coefficient of friction.
Result: reduced wear, less back line pressure, and longer conveyor runs (**fewer drives per unit length**).
- The chain is available in several materials: electrostatic dissipative (ESD), our standard Teflon impregnated Acetal, carbon impregnated Acetal for applications requiring control of static electricity (e.g., flammable vapors, powders, or electronic components), white Acetal (**29000003**) for use in Class 10,000 and below clean rooms, and chemical resistant for use in caustic environments.
- The chain surface is designed to mesh, providing tight turning radius and maximum surface contact for the product.
- Pivots use stainless steel connecting pins.
- Minimum turning radius for Simpli-Flex® chain is 6" (**152 mm**) on center line of chain.
- The patented chain and wearstrip components were designed concurrently, ensuring that peak performance and high reliability are standard on every Simpli-Flex® conveyor.
- All chain is shipped in 10' (**3 m**) lengths.

Please contact your Simplimatic Automation distributor for details on how Simpli-Flex® chain can benefit your particular operation.

Chain

Part No. 29000001 (Chain for Most Applications)
Part No. 29000002E (Chain - Electrostatic Dissipative)
Part No. 29000002A (Chain - Antistatic)
Part No. 29000003 (Chain - Clean Room)

Part No. 29000004 (Chain - Chemical Resistant)
Part No. 29000005 (Chain Abrasion Resistant)
Part No. 29000006 (Chain Polyester Chain)



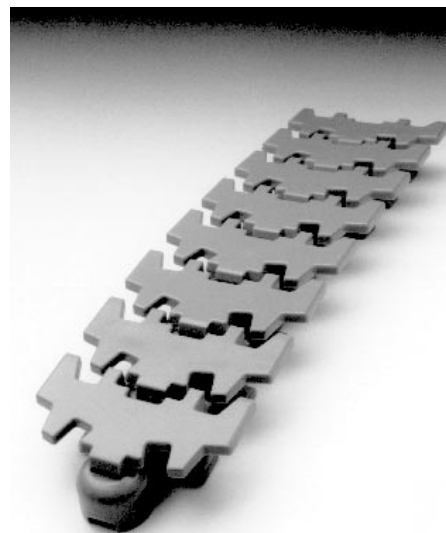
Standard Link Chain

Standard link chain (**29000001**) is primarily used in horizontal applications. May be used in inclines up to 5° depending on product characteristics (a typical alpine incline is 3°).

- Standard material is LF Acetal* (tan color).
- ESD (Electrostatic Dissipative) material is a carbon impregnated acetal polymer (black color).
- Clean room chain is made from low wear, low powder white Acetal. Maximum recommended speed is 15 fpm (white color).

- Chemical resistant chain is used when exposure to chemicals in the 4 to 10 pH range occurs, maximum temperature is 140° (gray color).
- Pivots use stainless steel connecting pins.

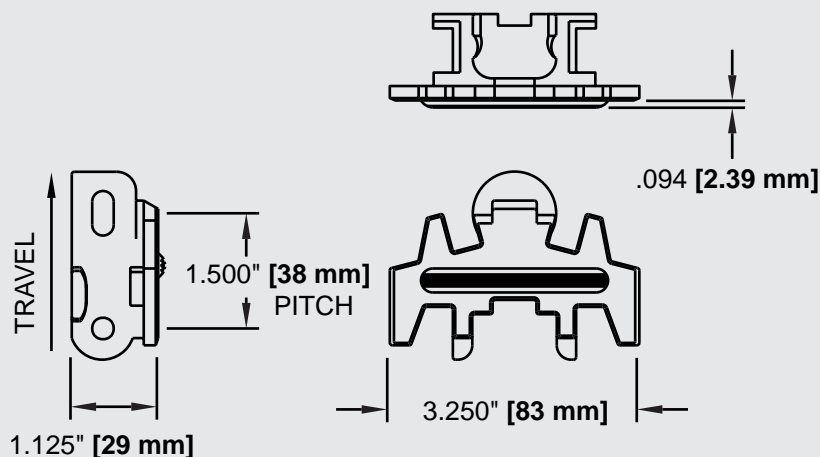
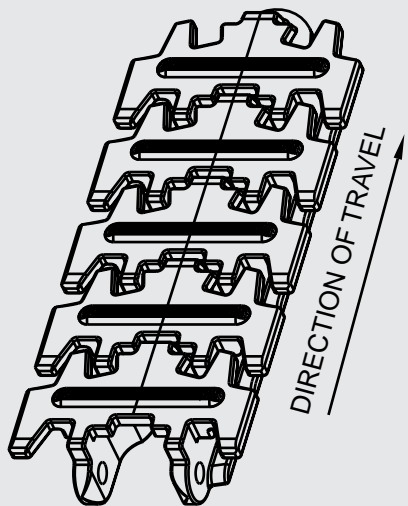
NOTE: Refer to page 1 of Appendix C for friction characteristics and chain pull calculation procedures. Refer to page 4 of Appendix C for chemical compatibility chart.



* Rexnord Corporation Patented Material

Chain

- Part No. 29000007** (Friction Link Chain – Every Link)
Part No. 29000008 (Friction Link Chain – Every Second Link)
Part No. 29000009 (Friction Link Chain – Every Third Link)
Part No. 29000010 (Friction Link Chain – Every Fourth Link)
Part No. 29000011 (Friction Link Chain – Every Fifth Link)
Part No. 29000012 (Friction Link Chain – Every Sixth Link)
Part No. 29000013 (Friction Link Chain – Every Seventh Link)
Part No. 29000014 (Friction Link Chain – Every Eighth Link)
Part No. 29000015 (Friction Link Chain-ESD – Every Link)



High Friction Link Chain

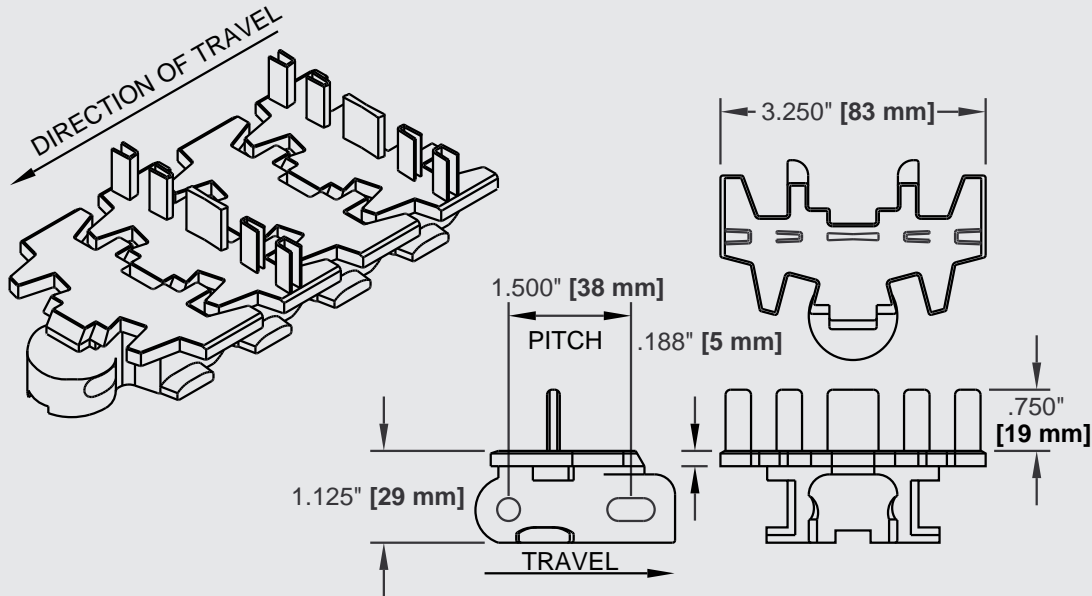
- The high friction link chain uses a radiused top urethane V-belt that is inserted into the dovetail slot in the top of the chain flight.
- Ideal for inclines or declines with 45° or less slope. (Note: High Friction Chain is not suited for accumulation).
- Useful in achieving fixed spacing between items conveyed, while allowing the product to pass over the link in the event of an obstruction in the conveyance path.
- Side transfers are acceptable.



Chain

Part No. 29000016 (3/4" Flighted Link Chain – Every Link)
Part No. 29000017 (3/4" Flighted Link Chain – Every Second Link)
Part No. 29000018 (3/4" Flighted Link Chain – Every Third Link)
Part No. 29000019 (3/4" Flighted Link Chain – Every Fourth Link)

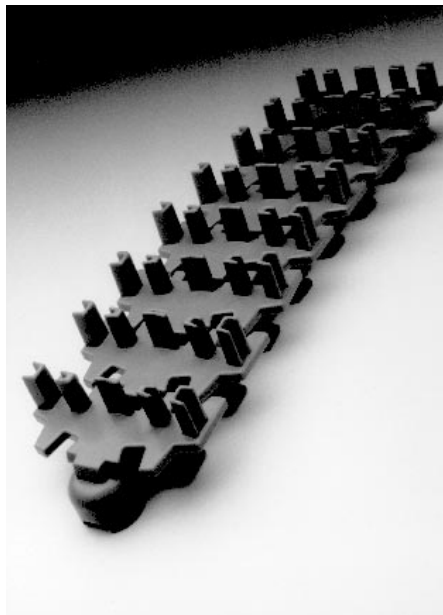
Part No. 29000020 (3/4" Flighted Link Chain – Every Fifth Link)
Part No. 29000021 (3/4" Flighted Link Chain – Every Sixth Link)
Part No. 29000022 (3/4" Flighted Link Chain – Every Seventh Link)
Part No. 29000023 (3/4" Flighted Link Chain – Every Eighth Link)



Flighted Link Chain

Flighted Link Chain delivers fixed spacing between products and acts as a pusher in horizontal or vertical planes.

- May be used in inclines up to 45° without overhead guide rails.
- May also be used in inclines up to 90° with overhead guide rails (depending on specific product characteristics).
- Can be ordered with a flight every link or on fixed spacing with alternate style links.
- Flight spacing based on standard 1.50" (38 mm) chain pitch.



Chain

Part No. 29000024 (3" Flighted Link Chain – Every Link)

Part No. 29000025 (3" Flighted Link Chain – Every Second Link)

Part No. 29000026 (3" Flighted Link Chain – Every Third Link)

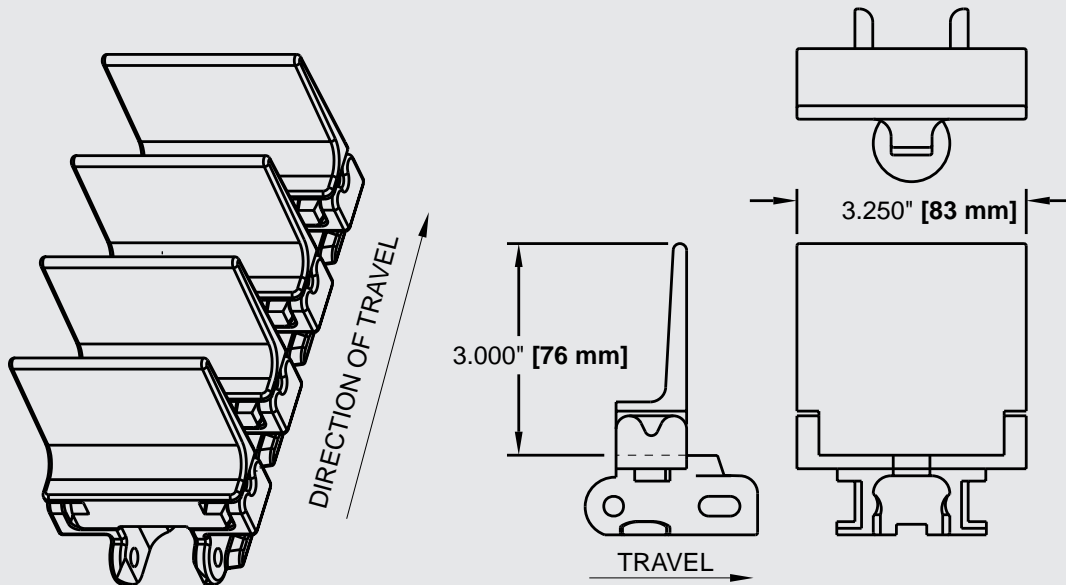
Part No. 29000027 (3" Flighted Link Chain – Every Fourth Link)

Part No. 27000028 (3" Flighted Link Chain – Every Fifth Link)

Part No. 27000029 (3" Flighted Link Chain – Every Sixth Link)

Part No. 27000030 (3" Flighted Link Chain – Every Seventh Link)

Part No. 27000031 (3" Flighted Link Chain – Every Eighth Link)



Flighted Link Chain

Flighted Link Chain delivers fixed spacing between products and acts as a pusher in horizontal or vertical planes.

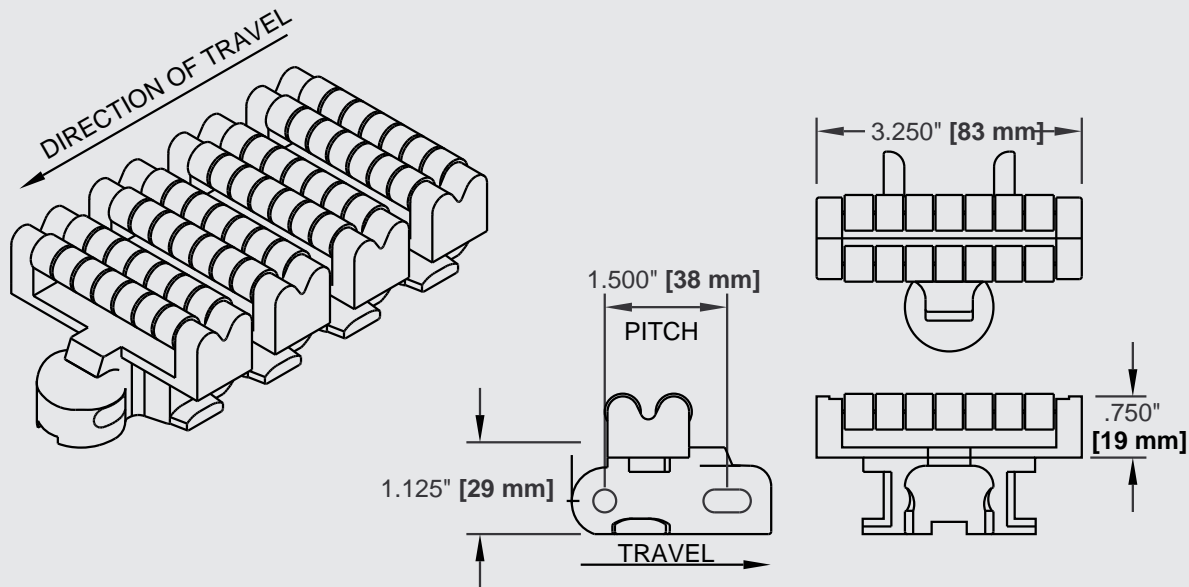
- May be used in inclines up to 45° without overhead guide rails.
- May also be used in inclines up to 90° with overhead guide rails (depending on specific product characteristics).
- Can be ordered with a flight every link or on fixed spacing with alternate style links.
- Flight spacing based on standard 1.50" (38 mm) chain pitch.



Chain

Part No. 29000032 (Low Back Pressure Chain)

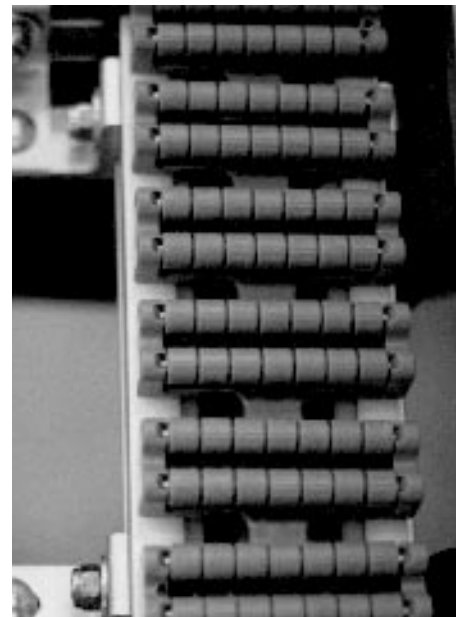
Part No. 29000033 (Low Back Pressure Chain – Electrostatic Dissipative)



Low Back Pressure Link Chain

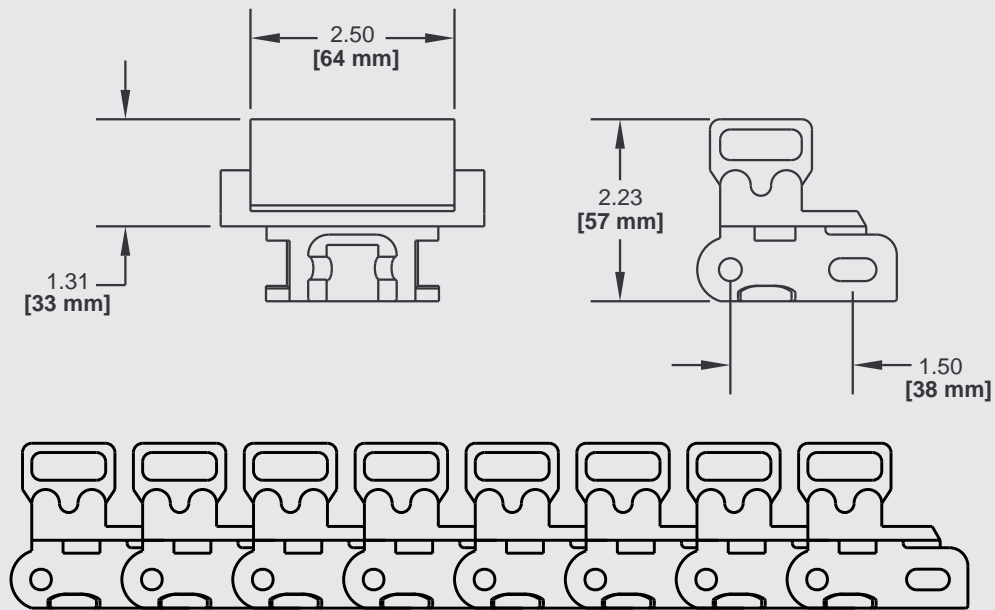
Low Back Pressure Chain is ideal for applications where reduced back line pressure is required between products being accumulated.

- Rolling chain surface under product reduces scuffing or marring of the surface.
- Each link consists of a base link and a pair of small shafts, each holding 7 independent thermoplastic rollers.
- Can be used as a pusher flight in inclines when combined with Standard Link Chain (**29000001**).
- Flight spacing based on standard 1.50" (**38 mm**) chain pitch with LBP links every link.



Chain

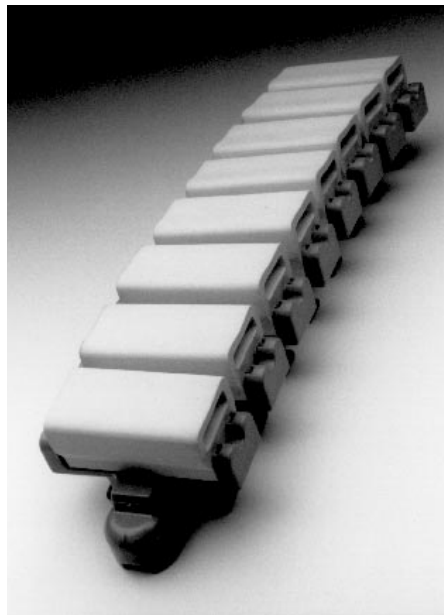
Part No. 29000034 (Mini Sure Grip)
Part No. 29000035 (Side Grip Chain)
Part No. 29000036 (Mini Sure Grip Chain Bubble Side Grip)



Elevator Chain

Simpli-Flex® also offers a side grip chain made for rinsers and elevators.

- Made from EDPM material with a hardness range of 50-80 Shore A.
- Available in white.
- FDA approved material.



Conveyor Beam

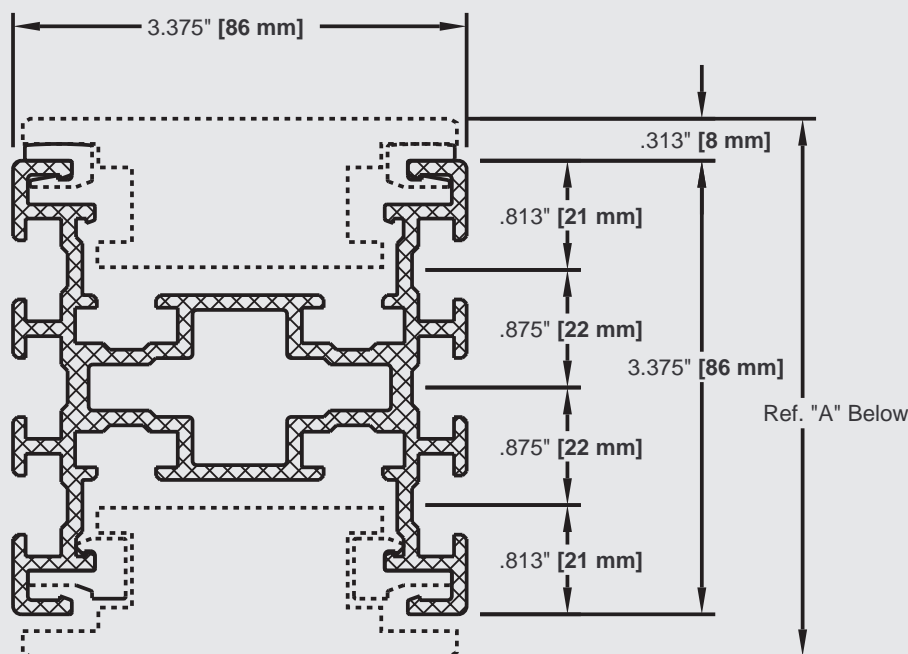


Simpli-Flex® offers a series of extruded aluminum beams for conveying. The Simpli-Flex® conveyor beams have been specially designed for strength and function. All of the aluminum extruded beams come with a clear anodized finish.

- **29000050 CBEAM** is the full profile structural conveyor beam that is used for most conveyors. It uses top and bottom running chain.
- **29000051 VBEAM** is the half profile beam that accepts top running chain only.
- **29000052 HBEAM** is the side profile of the **29000050 CBEAM**. This extrusion is used in conjunction with another **29000052 HBEAM** which will form a comparable section to the full profile conveyor beam.

Conveyor Beam

Part No. 29000050 (Conveyor Beam)

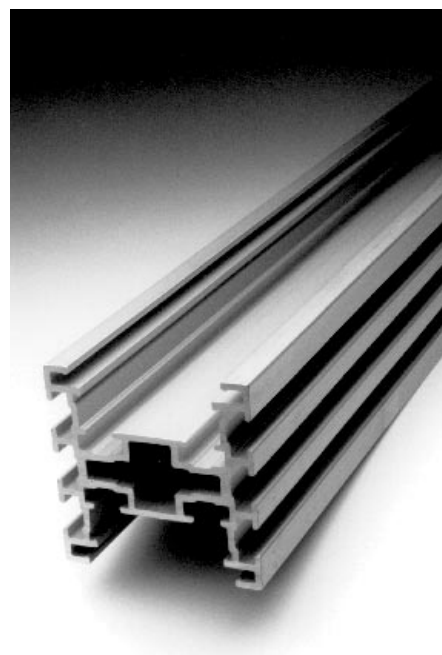


CONVEYOR BEAM

CONVEYOR BEAM is the full profile, structural conveyor beam used for most conveyor configurations **with top and bottom running chain**. It is well suited for top running chain layouts requiring a rigid structure.

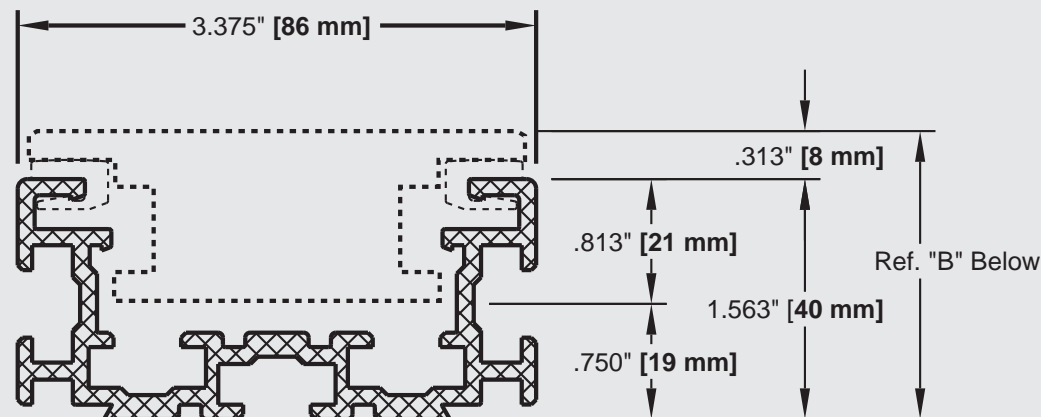
- T-SLOTS for mounting brackets, crossbeams, attachments, or other devices run the full length of beams.
- External T-SLOTS located on .875" (22 mm) centers.
- Internal T-SLOTS located on 1.688" (43 mm) centers.
- All T-SLOTS accept Simpli-Flex® T-BOLTS, JOINTERSTRIPS, square nuts, or T-SLOT covers as listed in Hardware section of this catalog.
- Standard length is 10' (3 m).

CHAIN TYPE	"A"	
29000001	4.00"	(102 mm)
29000007	4.188"	(106 mm)
29000016	5.5"	(140 mm)
29000032	5.15"	(131 mm)
29000035	5.13"	(130 mm)



Conveyor Beam

Part No. 29000051 (Conveyor Beam - Half Height)



HALF HEIGHT CONVEYOR BEAM

Half Height Conveyor Beam is the half profile of the **Standard Full Profile Conveyor Beam**, designed for the separation of top and bottom running chain.

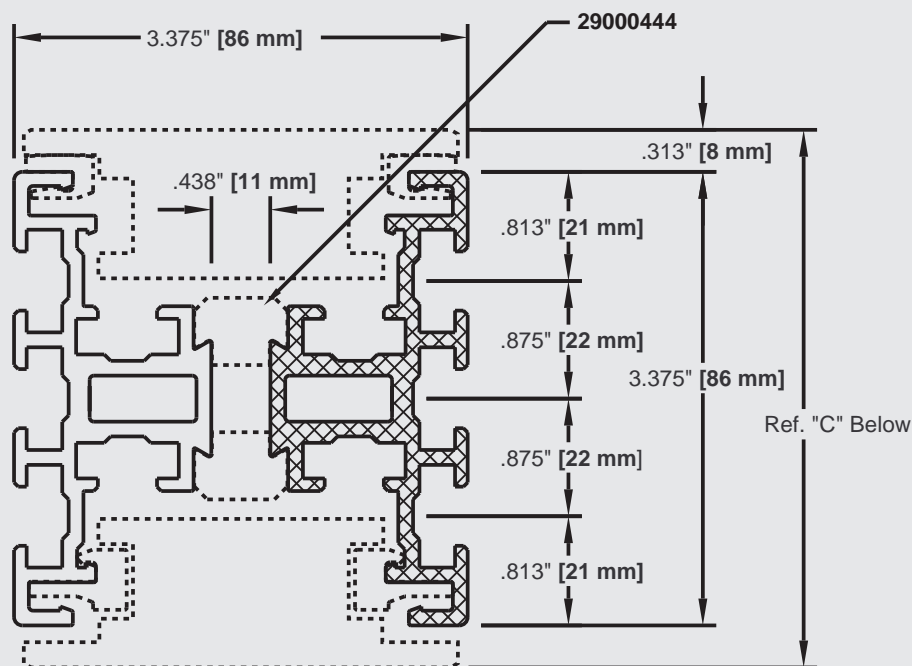
- Perfect for "racetrack" layouts with top running chain, low clearance alpenes, and other accumulators.
- Allows bypass return of the chain outside of the main carrying section of the beam.
- Standard length is 10' (3 m).

CHAIN TYPE	"B"	
29000001	1.88"	(48 mm)
29000007	1.974"	(50 mm)
29000016	2.63"	(67 mm)
29000032	2.35"	(60 mm)
29000035	3.00"	(76 mm)



Conveyor Beam

Part No. 29000052 (Conveyor Beam - Half Width)



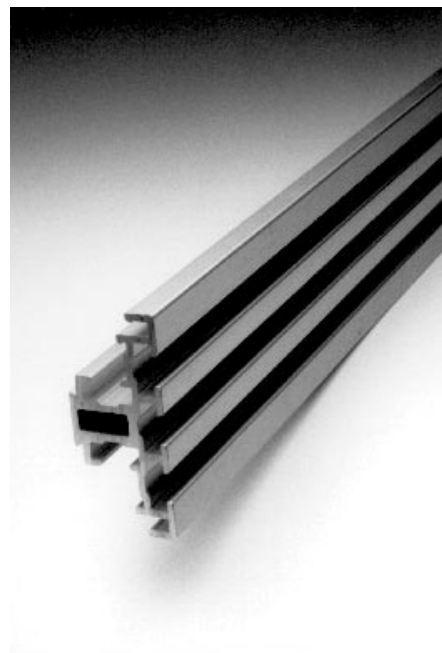
HALF WIDTH CONVEYOR BEAM

Joining two sections of **Half Width Conveyor Beam** together with dovetail clamps (**29000444**), on approximately 3' [1 m] centers produces a comparable section to the **Full Profile Conveyor Beam**.

This profile:

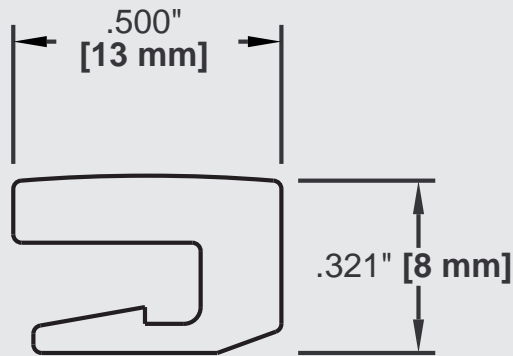
- Permits liquids, debris, or air to flow through the center of the beam.
- Used in horizontal plain turns and the outside profile of wheel turns.
- Standard length is 10' (3 m).

CHAIN TYPE	"C"	
29000001	4.00"	(102 mm)
29000007	4.188"	(106 mm)
29000016	5.5"	(140 mm)
29000032	5.15"	(131 mm)
29000035	5.13"	(130 mm)



Conveyor Beam

Part No. 29000053 (Wearstrip)
Part No. 29000054 (Wearstrip - Electrostatic Dissipative)
Part No. 29000055 (Wearstrip - Lubricated)
Part No. 29000056 (Wearstrip - Electrostatic Dissipative - Lubricated)



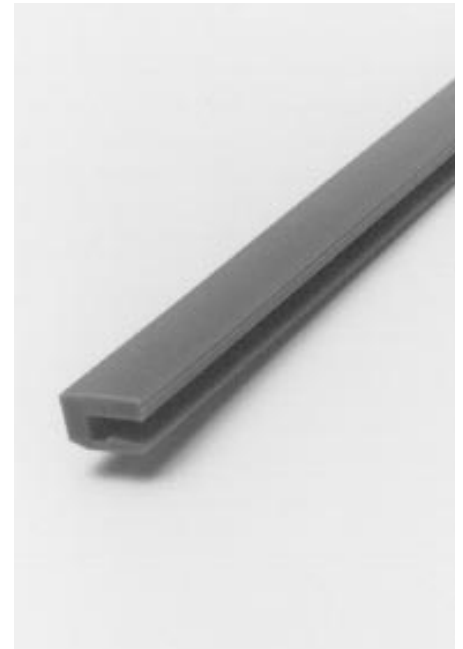
Wearstrip

Simpli-Flex® wearstrips provide a bearing surface for the moving chain. They deliver long wear and have low coefficients of friction, while being compatible with most operating environments.

- Ultrahigh molecular weight polyethylene (UHMW-PE) material.
- Resistant to most industrial solvents, cleaners, coolants, and water-based or soluble substances.
- Electrostatic dissipative material (**29000054**) available for applications requiring control of static electrical charge.

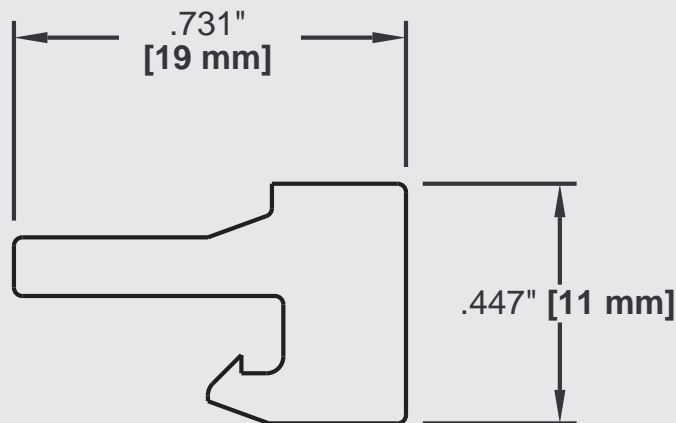
- Both the UHMW-PE and ESD wearstrips are available in prelubricated composite materials. Lubricated wearstrip uses food grade mineral oil lubricant.
- Provided in 20' (6 m) lengths.

NOTE: The standard configuration of Simpli-Flex® wearstrips using base materials is not well suited for applications involving broken glass, metal chips, or other foreign material that may imbed into the wearstrip surface and potentially cause premature wear to the chain. If your application involves abrasive materials, please consult Simplimatic Automation for application assistance.



Conveyor Beam

Part No. 29000057 (Retainer Strip)
Part No. 29000058 (Retainer Strip - Electrostatic Dissipative)
Part No. 29000059 (Retainer Strip - Lubricated)
Part No. 29000060 (Retainer Strip - Electrostatic Dissipative - Lubricated)




Retainer Strip

The unique patented design of the **Simpli-Flex®** retainer strip gives it multiple capabilities:

- It is used on return side of the chain beam to retain the chain within the frame between a drive and idle end.
- It is used on carrying side in conjunction with wearstrip to retain the chain in the frame of horizontal plain turns, wheel turns, or vertical inclines.
- Electrostatic dissipative material (**29000058**) is available for applications requiring control of static electrical charge.
- Lubricated retainer strip (**29000059**, **29000060**) is available.
- Provided in 20' (6 m) lengths.



Turns

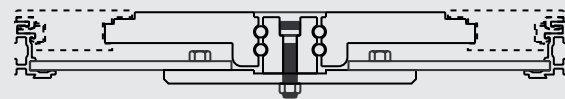
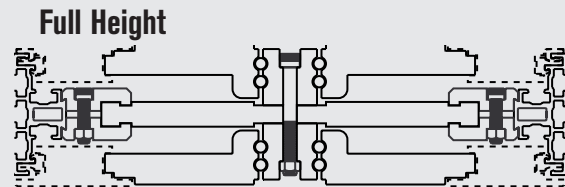
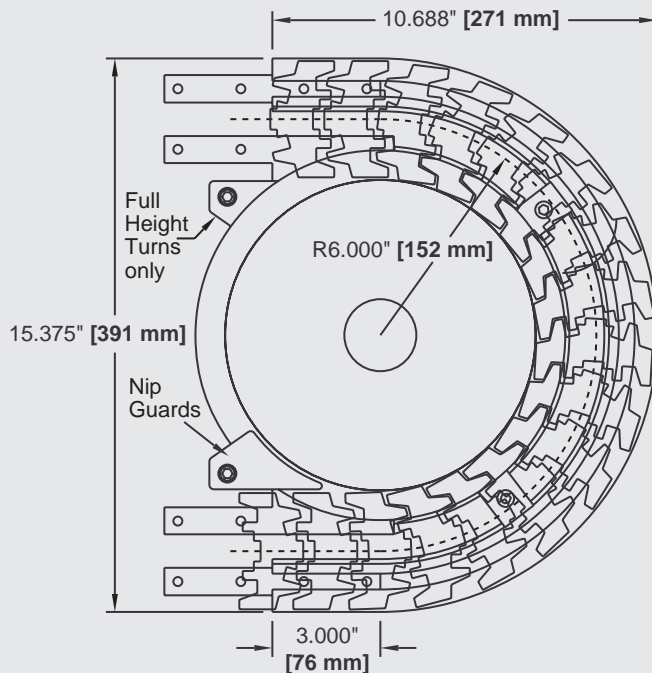


The **Simpli-Flex**® conveyor system has a variety of turns for a multitude of applications. These turns consist of the **wheel turn**, **half height wheel turn**, **horizontal turn**, **vertical wheel turn**, **vertical plain turn** and the **vertical mitered turn**.

- **Wheel turns** are used in applications where a small radius (6" - as measured from center post to center of chain) is required. This includes alpine, race track layouts, and confined areas where space is limited.
- **Half height wheel turns** are similar to the full wheel turns, however, chain only runs on the top side. These turns are used with wrap drives and routing refeed chain in alpine accumulation systems.
- **Horizontal turns** are used when a product requires a radius larger than 6".
- **Vertical wheel turns** are used to route return chain in alpine accumulation systems.
- **Vertical plain turns** come with a standard 16" radius and are used in applications where product must turn in the axis of travel.
- **Vertical mitered turns** come with 3° or 5° mitered cuts. They are used in alpine systems or wherever a 5/8" rise or 1" rise per foot is required.

Turns

To Specify Part No. See Chart Below



Half Height



Full Height Horizontal Wheel Turns

Horizontal wheel turns use freewheeling disks, mounted on a fixed shaft to guide the chain smoothly through horizontal turns. Each disk features two precision sealed bearings pressed in the center to keep chain friction through the turn to a minimum. The chain path follows a 6" (152 mm) centerline radius.

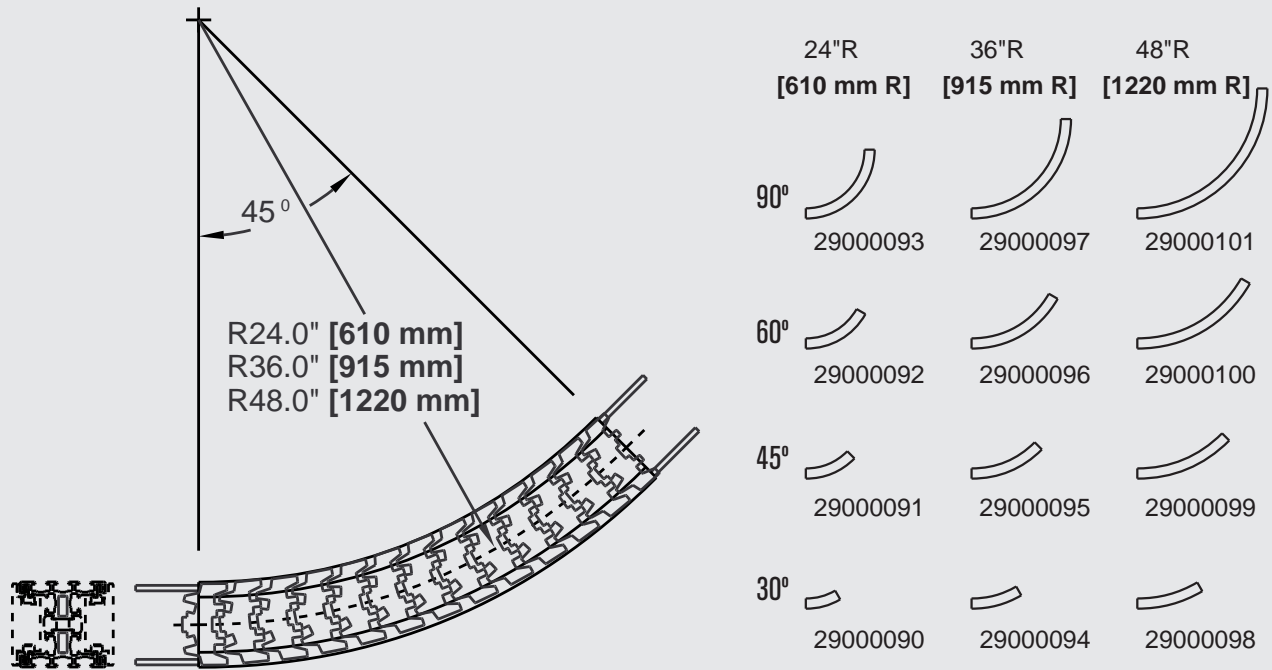
Wheel turns are available in full height and half height styles. The full height turn is used where the carrying and return chain is running within the same beam (29000050). Half height turns are used in applications such as racetrack layouts, alpenes, or returns outside the carrying side of the beam, where only top or bottom running chain is being used (29000051).

- All wheel turns use an injection molded glass-filled plastic wheel disc.
- Sealed, precision bearings **prevent** the high friction common in plain turns.
- All wheel turns come preassembled with joiner strips, wearstrips and retainer strips installed.
- A 3" (76 mm) tangent straight section at turn entry and exit allows for smooth chain transitions.
- Please specify left or right wheel turn nip guards. (Nip guards are required on all chain infeed sides of wheel turns.)

Part No.	Arc	Total Chain Length
29000070	30°	19.00" (483 mm)
29000071	45°	22.00" (559 mm)
29000072	60°	25.00" (635 mm)
29000073	90°	31.00" (788 mm)
29000074	180°	50.00" (1270 mm)
29000075	30°	10.00" (254 mm)
29000076	45°	11.00" (280 mm)
29000077	60°	13.00" (331 mm)
29000078	90°	16.00" (407 mm)
29000079	180°	25.00" (635 mm)
29000080	Wheel turn nip guard, left.	
29000081	Wheel turn nip guard, right.	

Turns

Typical Plain Turn – To Specify Part No. See Chart Below



Horizontal Plain Turns

When products conveyed will not negotiate the 6" radius of a horizontal wheel turn, Horizontal Plain Turns are the solution. They are also designed for use with parallel track conveyor layouts. Formed from the **Half Width** style of chain beam, each turn is supplied with joiner strips (29000440), wearstrips (29000053), and retainer strips (29000057).

Total chain lengths assume top and bottom running chain.

For special arcs or radii, please contact Simplimatic or your authorized distributor.

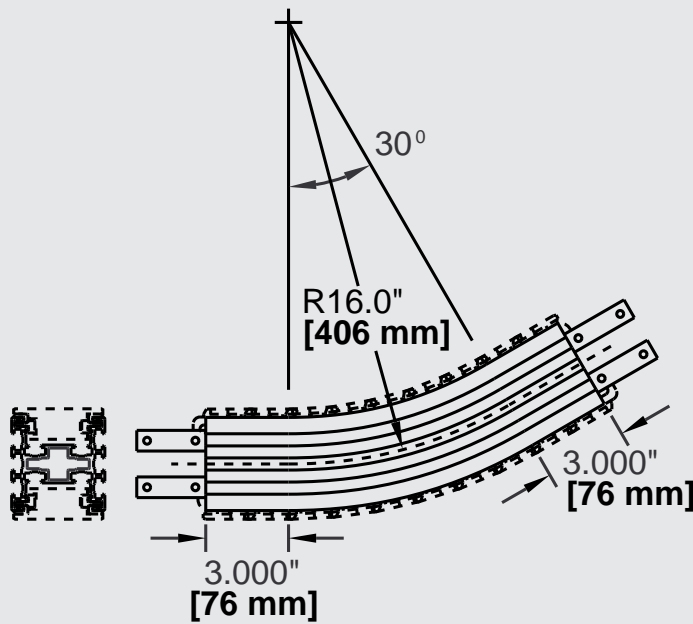
Part No.	Radius	Total Chain Required	
29000090	24" (610 mm)	26.00"	(661 mm)
29000091	24" (610 mm)	38.00"	(966 mm)
29000092	24" (610 mm)	51.00"	(1296 mm)
29000093	24" (610 mm)	76.00"	(1931 mm)
29000094	36" (915 mm)	38.00"	(966 mm)
29000095	36" (915 mm)	57.00"	(1448 mm)
29000096	36" (915 mm)	76.00"	(1931 mm)
29000097	36" (915 mm)	114.00"	(2896 mm)
29000098	48" (1220 mm)	51.00"	(1296 mm)
29000099	48" (1220 mm)	76.00"	(1931 mm)
29000100	48" (1220 mm)	101.00"	(2566 mm)
29000101	48" (1220 mm)	151.00"	(3836 mm)









NOTE: Guide Rails are not included as part of the plain turn assembly.

Guide rails must be specified and ordered separately.

Turns

Typical Vertical Turn – To Specify Part No. See Chart Below



3°	5°	15°
		
29000117	29000110	29000111
30°	45°	60°
		
29000112	29000113	29000114
90°	Special	
		
29000115	29000116	

Vertical Plain Turns

For vertical changes of direction, Simplimatic Automation offers a vertical plain turn. These follow a 16" (406 mm) centerline radius based on a full beam section.

Joiner strips are installed with each vertical plain turn. **(Wearstrips and retainer strips are field installed.)** They run continuous with the preceding and following straight chain beam sections.

Wearstrips and retainer strips are required on both sides of the chain of a vertical plain turn and must be ordered separately.

Standard Vertical Plain Turns Include:
(3° and 5° Arcs are Mitered Vertical Turns)

Part No.	Arc	Total Chain Required
29000117	3°	10.00" (254 mm)
29000110	5°	15.00" (381 mm)
29000111	15°	21.00" (534 mm)
29000112	30°	29.00" (737 mm)
29000113	45°	38.00" (966 mm)
29000114	60°	46.00" (1169 mm)
29000115	90°	63.00" (1601 mm)

Simplimatic Automation does not recommend combining vertical turns for angles not listed above.

Drives

Simpli-Flex® offers a variety of different drives for various applications.

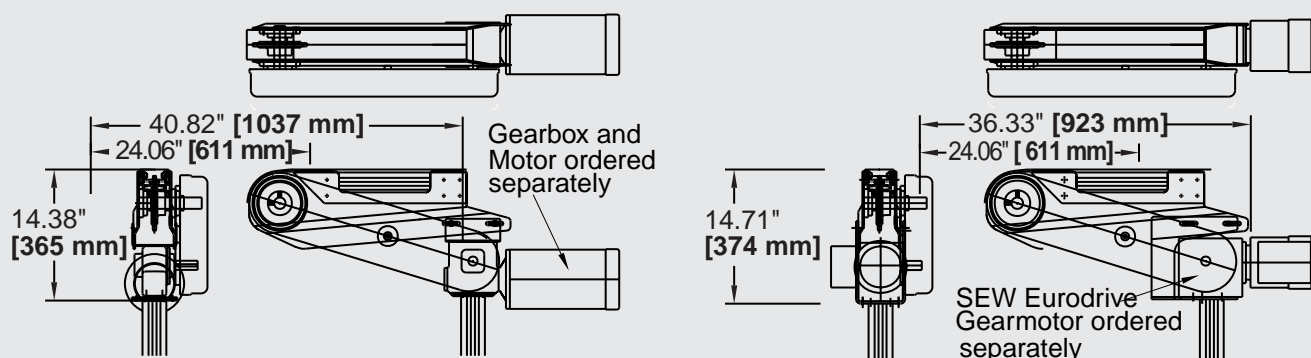
The drives consist of the **fixed short drive, adjustable short drive, end drive, extended fixed drive, mitered parallel transfer unit, overhead drive, intermediate drive**, and the **wrap drive**. The speed capability varies between the different drives. With the short drive (fixed and adjustable), end drive, extended fixed drive, mitered parallel transfer unit, and the overhead drive, the speed varies from 5 fpm to 300 fpm. The intermediate drive and the wrap drive speed varies from 5 fpm to 150 fpm.

- **End drives** are sprocket-to-sprocket driven drives. This drive is for applications in which exact line speed is needed. Almost any line speed can be achieved with sprocket variation. This is also a good drive for over the end transfers.
- **Intermediate drives** are sprocket-to-sprocket driven drives. This drive is a good fit when there are space restrictions at the discharge end of the conveyor because an end idler is used at each end.
- **Fixed Short Drives** are shaft driven drives that take a Winsmith or Eurodrive hollow bore gear reducer. The benefit of the shaft driven motor is that most of the cordal action is taken out of the line. This is recommended for applications for which a very unstable product is being conveyed. This is the shortest drive and the best choice for over the end transfers.
- **Adjustable short drives** are very similar to the fixed short drive, however, they have an adjustable shaft. This is helpful in high speed conveyor lines where the catenary is taken out, or in certain elevator applications.
- **Wrap drives** are unique drives that utilize top running chain only. They have an offset so product travels through the drive in a straight path. This is an ideal drive for loops, and reduces chain use up to 50%.
- **Overhead drives** are similar to the end drives, but they are situated above the conveyor line. They use two sprockets, like the end drive, so that speed of the conveyor can be closely set. This drive is ideal in situations where room is critical below the conveyor and in applications where the conveyor is used as a cooling line or is partially submerged.
- **Extended Fixed Drives** use the direct power transmission like the fixed short drive. The extended fixed drive is preferred for runs of 50' and greater.
- **Mitered Parallel Transfer Units** are an arrangement that allows products to transfer from one conveyor to another in a straight line. Products are guided straight through the transfer area with no guide rail bending required.

Drives

Part No. 29000120 (Standard Drive - Right Hand)

Part No. 29000121 (Standard Drive - Left Hand)



End Drive

The **Simpli-Flex**® end drive is designed to run with a chain catenary (normally about 5" deep) which accommodates chain stretch and helps eliminate chain surging. The end drive consists of a drive motor, worm gear reducer, 50B roller chain and sprockets.

Each end drive comes in either a right-handed (**29000120**) or left-handed (**29000121**) configuration. Right or left refers to the side of the conveyor on which the chain guard is mounted (**viewed in the direction of chain travel**).

Other important features include:

- Optional – Headshaft-mounted mechanical torque limiter (**29000180**) to provide overload protection for conveyor components.
- High impact polystyrene, safety yellow chain guard with overlapping two-piece design.

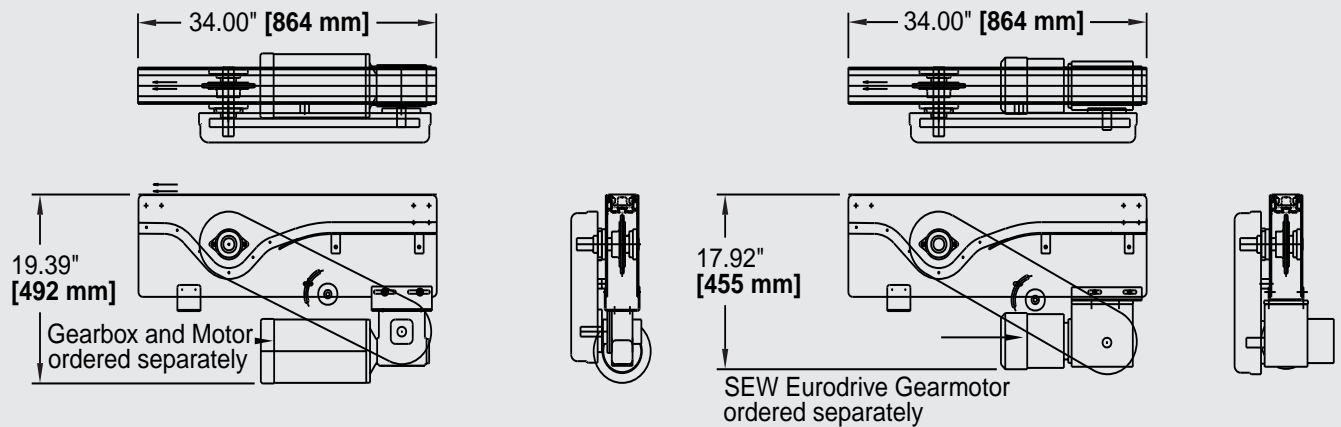
End drives provide two methods of transition between conveyors: parallel (side) transfer and over-the-end using a deadplate.

Total chain length for an end drive is 51" (1295 mm), including top and bottom running chain with a 5" (127 mm) deep catenary. Minimum top of chain elevation is 18" (457 mm).

Drives

Part No. 29000130 (Intermediate Drive - Bottom Driven - Right Hand)

Part No. 29000131 (Intermediate Drive - Bottom Driven - Left Hand)



Intermediate Drive

Intermediate drives use a center drive sprocket with formed chain guides to ensure the drive sprocket engages conveyor chain for maximum chain efficiency.

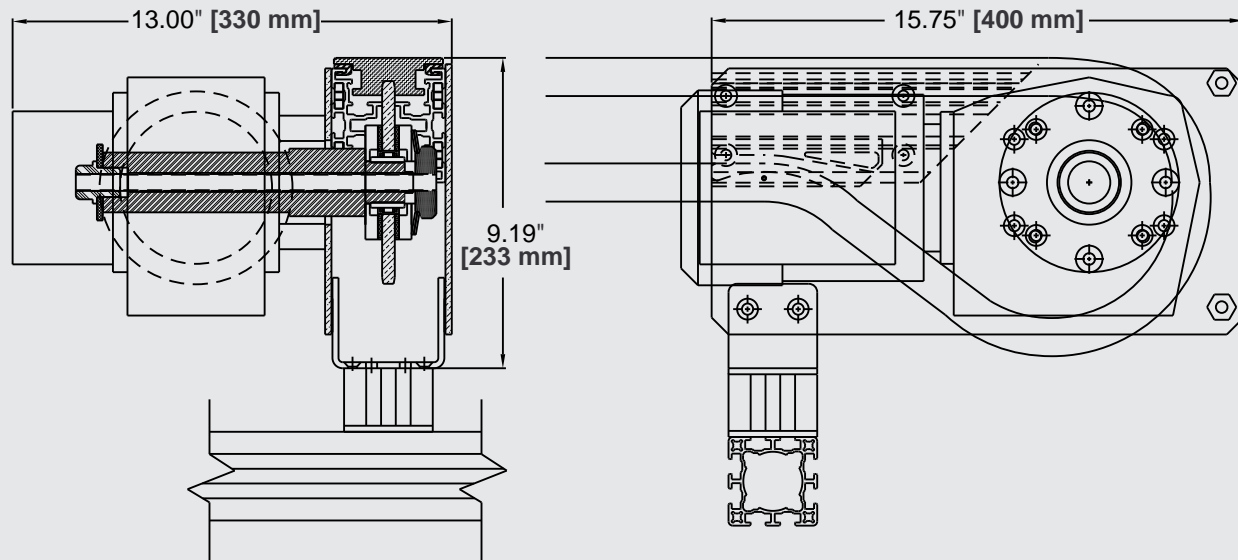
- Right-hand (**29000130**) or left-hand (**29000131**) configuration (denoted by the position of the chain guard when viewed in the direction of chain travel).

Intermediate drives may only be mounted as shown in the illustration. Total chain length is 78" (1,982 mm).

Drives

Part No. 29000140 (Fixed Short Drive - Right Hand)

Part No. 29000141 (Fixed Short Drive - Left Hand)



Short Drive (Fixed)

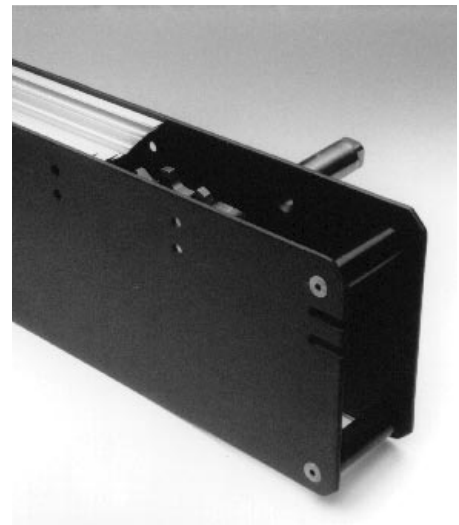
The fixed short drive uses the direct power transmission of a shaft mounted gearbox and drive motor.

Other features include:

- Allows gearmotor to be mounted in any orientation.
- Standard – Mechanical torque limiter mounted on the conveyor headshaft which can be adjusted outside the gearbox housing.
- Right-hand (**29000140**) or left-hand (**29000141**) configuration. (Viewed in the direction of chain travel.)

The preferred transition method with short drives is parallel or side transfer. Total chain length is 36" (**914 mm**) for top and bottom running chain with minimal catenary. **Minimum top of chain elevation for the conveyor is 12" (305 mm).**

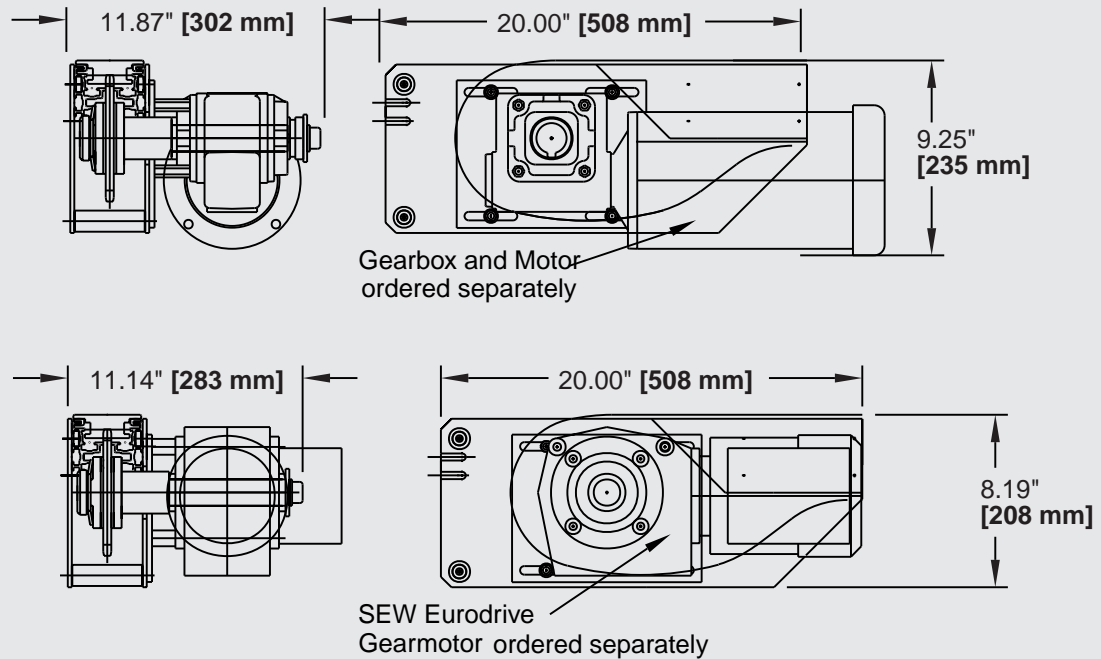
Because of the minimal catenary the fixed short drive is normally not a good choice for longer runs of conveyors 50' and above. Simplimatic Automation suggests use of the extended fixed drive for longer runs of conveyor.



Drives

Part No. 29000142 (Adjustable Short Drive - Right Hand)

Part No. 29000143 (Adjustable Short Drive - Left Hand)



Short Drive (Adjustable)

The adjustable short drive uses the direct power transmission like the fixed short drive but also has an adjustability feature.

Other features include:

- Adjustable gearbox to tension the chain.
- Standard – Mechanical torque limiter mounted on the conveyor headshaft which can be adjusted outside the gearbox housing.
- Right-hand (**29000142**) or left-hand (**29000143**) configuration. (Viewed in the direction of chain travel.)
- Allows gearmotor to be mounted in any orientation.

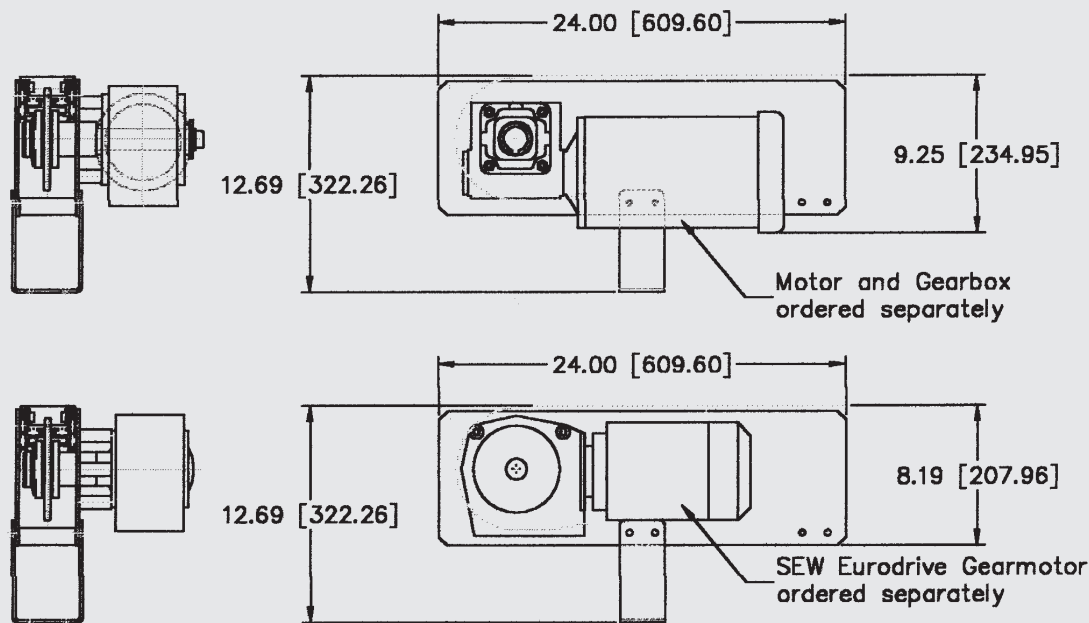


The preferred transition method with short drives is parallel or side transfer. Total chain length is 39" (991 mm) for top and bottom running chain with minimal catenary. Minimum top of chain elevation for the conveyor is 12" (305 mm).

Drives

Part No. 29000144 (Extended Fixed Drive - Right Hand)

Part No. 29000145 (Extended Fixed Drive - Left Hand)



Extended Fixed Drive

The extended fixed drive uses the direct power transmission like the fixed short drive. Simplimatic Automation suggests use of the Extended Fixed Drive for runs 50' and above.

Other features include:

- Standard – Mechanical torque limiter mounted on the conveyor headshaft which can be adjusted outside the gearbox housing.
- Right-hand (**29000144**) or left-hand (**29000145**) configuration. (Viewed in the direction of chain travel.)
- Allows gearmotor to be mounted in any orientation.

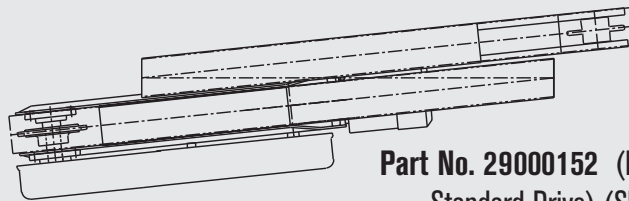
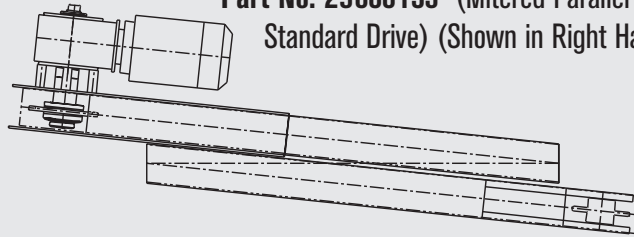
The preferred transition method with short drives is parallel or side transfer. Total chain length is 47" (**1,194 mm**) for top and bottom running chain with minimal catenary. Minimum top of chain elevation for the conveyor is 18" (**457 mm**).

Drives

Part No. 29000148 (Mitered Parallel Transfer Unit with Extended Fixed Drive - Left Hand)

Part No. 29000149 (Mitered Parallel Transfer Unit with Extended Fixed Drive - Right Hand)

Part No. 29000153 (Mitered Parallel Transfer
Standard Drive) (Shown in Right Hand)



Part No. 29000152 (Mitered Parallel Transfer
Standard Drive) (Shown in Left Hand)

Mitered Parallel Transfer Unit

This six-degree offset drive and idler arrangement allows products to transfer from one conveyor to another in a straight line. Products are guided straight through the transfer area with no guide rail bending required. The straight through transfer does not decelerate products.

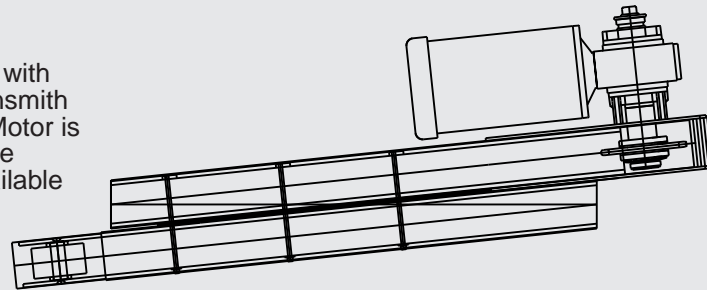
- Shown with Sew Eurodrive gear motor.
- Baldor motor and Winsmith reducer also available. Available in both right hand and left hand configurations.

Drives

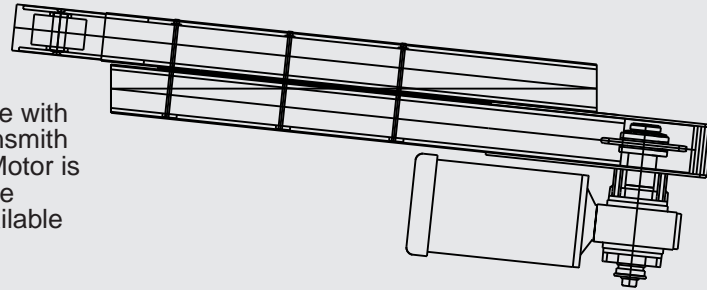
Part No. 29000150 (Wrap Drive - Right Hand)

Part No. 29000151 (Wrap Drive - Left Hand)

Left Hand Wrap Drive with Fixed Short Drive. Winsmith Reducer and Baldor Motor is shown, SEW Eurodrive Gearmotor is also available



Right Hand Wrap Drive with Fixed Short Drive. Winsmith Reducer and Baldor Motor is shown, SEW Eurodrive Gearmotor is also available



Wrap Drive

The wrap drive is used in top running chain applications (e.g., racetracks or loops). The wrap drive uses a modified short drive and special idle end in a 6° offset parallel transfer configuration. The chain catenary is guided to re-enter the idle end to return to the top side of the conveyor beam.

- The wrap drive guides the product straight through the side transfer area. No guide rail bending is required.
- Straight through product transfer does not decelerate product.
- Mechanical torque limiter – standard.
- Maximum chain speed is 150 fpm.

Drives

Ordering Information

Sprocket, gearbox and motor sizing are determined according to product weight, line speed and headshaft torque input requirements. Operating speeds range from 5 fpm (**1.5 mpm**) to 300 fpm (**92 mpm**) in 5 fpm (**1.5 mpm**) increments for end and short drives. Operating speeds for intermediate drives and wrap drives range from 5 fpm (**1.5 mpm**) to 150 fpm (**46 mpm**) in 5 fpm (**1.5 mpm**) increments.

Motor Brands: Baldor TEFC, Reliance TENV (High Efficiency)

Gearboxes: Winsmith – Worm Gear
SEW Eurodrive – Helical Worm

DCVSC: Baldor – DC Variable Speed Controller

VFC: Variable Frequency Controller

MVSC: SEW Eurodrive Varimot – Mechanical Variable Speed Controller

For instructions on specifying the proper drive, please see Appendix A or contact your authorized distributor. Be sure to specify product size (L x W x H), product weight and production or line speed. NOTE: Consult Simplimatic Automation for speeds above 220 fpm (**70 mpm**).

Standard motor power rating is 230/460 volt, 3 phase, 60 Hertz. Variable speed control is achieved through the use of either a panel mount DC speed control rheostat, a self-contained AC variable frequency controller, or a NEMA enclosed self-contained DC speed control. The upper speed limit of a variable speed drive package should be 20% above the maximum required conveyor line speed. For applications requiring speeds of less than 15 fpm, use of a motor speed controller is recommended. For intermittent speed control requirements, consult Simplimatic Automation.

Options:

- Catenary Tensioner
- Refeed Shoes

NOTE: Variable speed control applications should not exceed 5:1 ratio of minimum to maximum speed.

Part No.	Description
29000120	Standard Drive - Right Hand
29000121	Standard Drive - Left Hand
29000130	Intermediate Drive - Bottom Driven - Right Hand
29000131	Intermediate Drive - Bottom Driven - Left Hand
29000140	Fixed Short Drive - Right Hand
29000141	Fixed Short Drive - Left Hand
29000142	Adjustable Short Drive - Right Hand
29000143	Adjustable Short Drive - Left Hand
29000144	Extended Fixed Drive - Right Hand
29000145	Extended Fixed Drive - Left Hand
29000148	Mitered Parallel Transfer with Extended Drive - Left Hand
29000149	Mitered Parallel Transfer with Extended Drive - Right Hand
29000150	Wrap Drive - Right Hand
29000151	Wrap Drive - Left Hand
29000152	Mitered Parallel Transfer with Standard Drive - Left Hand
29000153	Mitered Parallel Transfer with Standard Drive-Right Hand

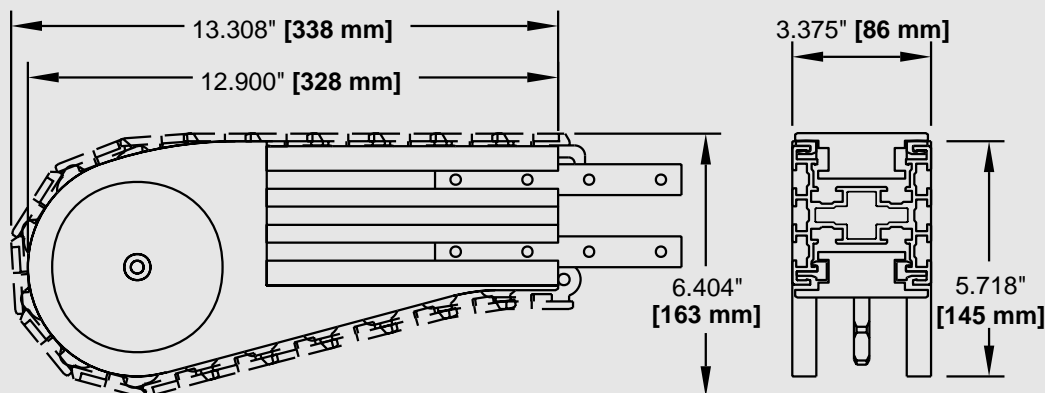
Idlers

End idlers carry chain from the return side of the conveyor around to the drive end of the conveyor. **Simpli-Flex®** offers end idlers with rollers with glass filled plastic injected molded sides or with stainless steel side plates.

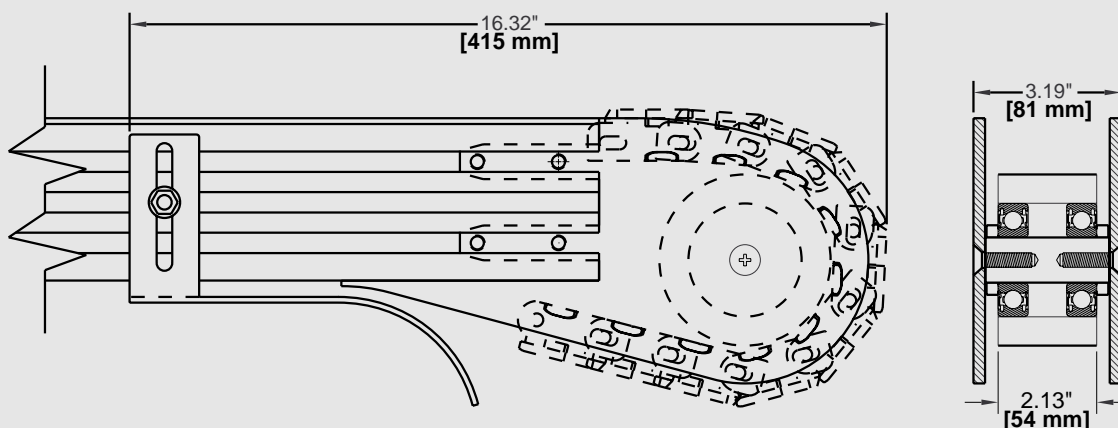
- **Rollers** eliminate the cordal action sometimes caused by a sprocket, thus making a smoother running conveyor. It is recommended for applications where unstable products are being conveyed, such as PET bottles. Injection molded plastic end idlers come with a cast urethane idle wheel. End idlers with stainless steel side plates normally come with stainless steel rollers.

Idlers

Part No. 29000290 (End Idler with Cast Urethane Idle Wheel)



Part No. 29000291 (End Idler - Clean Room)



End Idler

Each **Simpli-Flex**® idler features:

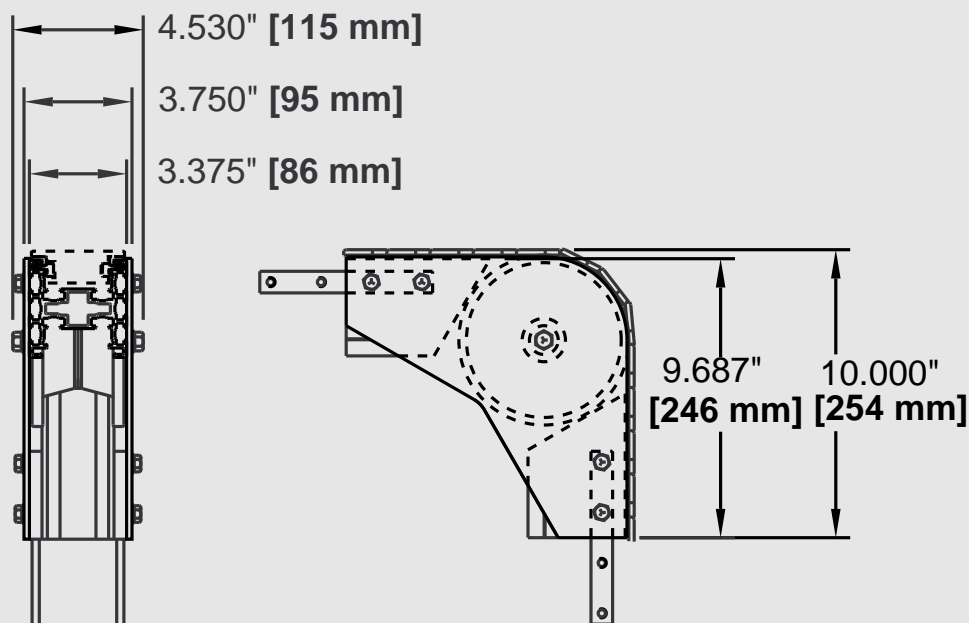
- End idler which uses transition chain beam with chain refeed blocks and a profile designed to eliminate product “kick up” caused by the chain returning to the top of the conveyor.
- Injection molded side frames. Two sealed, precision roller bearings.

- **(29000290)** has a fixed steel shaft with a cast urethane idle wheel.
- **(29000291)** uses stainless steel components and a sealed bearing roller.

Total chain length for the return and carrying side of the end idler is 30" (762 mm).

Idlers

Part No. 29000292 (Vertical Idler - 90°)



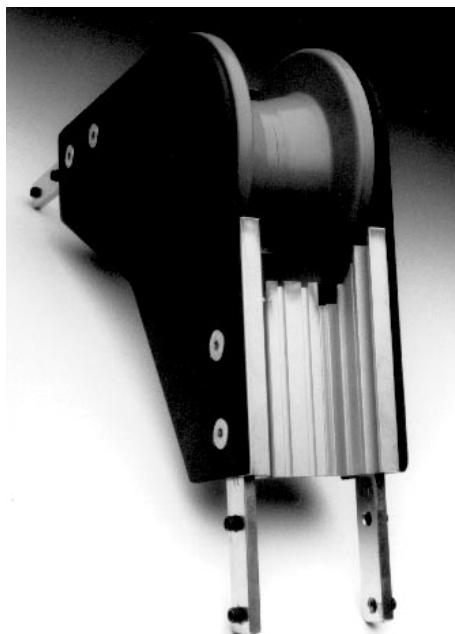
Vertical Idler

The vertical idler uses a free-wheeling idler wheel mounted on a fixed shaft to guide the chain through a 90° vertical curve. It is most often used for routing return chain. This makes it ideal for use with alpiners. In certain applications the vertical idler can be utilized for carrying product.


Benefits include:

- Avoids higher friction common with vertical plain turns.
- Supplied with joiner strips, wearstrips, and retainer strips already installed.

Total chain length for the vertical idler is 19.5" (495 mm).



Guide Rails

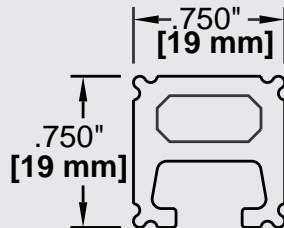


Simplimatic Automation offers three different guide rails. Each guide rail type is extruded aluminum that has been clear anodized. There are also guide rail covers for each of the different guide rail types. **Simpli-Flex®** has a multitude of guide rail sizes with covers that will meet any product needs.

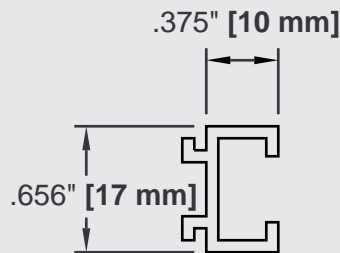
Guide Rails

Part No. 29000300 (Guide Rail – Aluminum – .75 x .75)

Part No. 29000301 (Guide Rail – UHMW-PE)



Part No. 29000302 (Guide Rail – Aluminum)



Fixed Guide Rails

The standard guide rail design employs an extruded aluminum rail (**29000300**) and a UHMW-PE plastic rail (**29000301**) mounted on a fixed guide bracket. Each rail measures .750" (19 mm) square and is positioned just above the top surface of the chain.

Simpli-Flex® guide rails are designed to be adaptable to virtually any production line requirement.

- Simplimatic Automation offers a UHMW-PE guide rail cover (**29000310**) to protect your products.

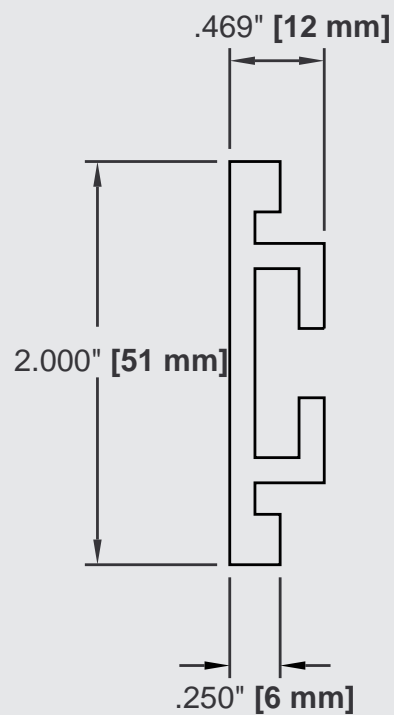
- Fixed guide rails can be roll formed for use on turns. The minimum diameter for a rolled guide rail (**29000300**) is 12" (305 mm).
- Plastic guide rail (**29000301**) (polyethylene) may be manually formed to fit your conveyor using an ordinary heat gun.

NOTE: For higher fixed rail positioning, use the adjustable guide rail brackets to mount the rail.



Guide Rails

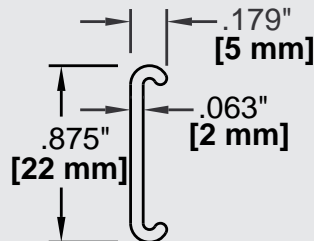
Part No. 29000303 (Guide Rail – Aluminum – GSBD)



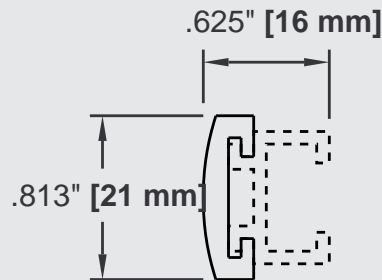
Guide Rails

Part No. 29000310 (Guide Rail Cover Plastic)

Part No. 29000311 (Guide Rail Cover Plastic ESD)



Part No. 29000312 (Guide Rail Cover Plastic – Convex)



Guide Rail Covers

Flat covers (**29000310**, **29000313**, and **29000314**) may be used in any application where the amount of surface area contacted on the product is not a concern. Convex covers (**29000312**) are recommended where surface friction needs to be minimal, such as with empty or unstable containers, or where the allowable contact area on the product is restricted. Width across the covers is listed below:

1. **29000310** cover - .875" (22 mm).
2. **29000312/313** cover - .813" (21 mm).
3. **29000314** cover - 2.25" (57 mm).

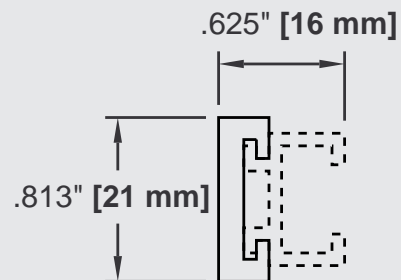
When using guide rail covers, it may be necessary to fasten the covers to the guide rails to prevent sliding. Fastening is easy using rivets or drive pins (**29000267**). Other mounting positions include: guide rail bracket as an outrigger to stabilize wide products, and overhead, as a hold down rail for inclines or declines.

NOTE: (29000442) JOINER STRIPS are may be used as a joiner for Aluminum Guide Rail (**29000302**). **JOINER STRIPS** are also used to join GSBD Aluminum Guide Rail (**29000303**).

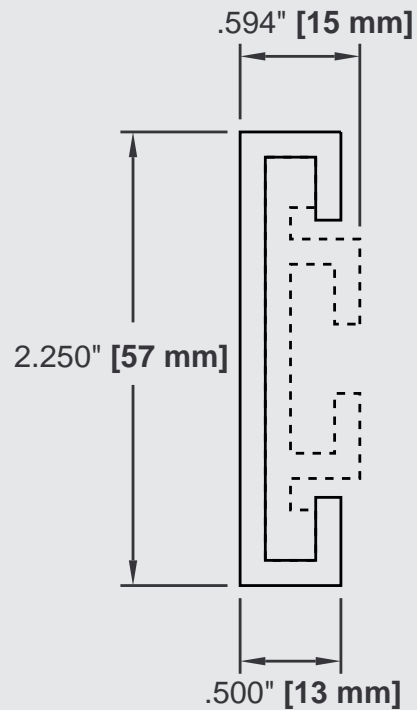


Guide Rails

Part No. 29000313 (Guide Rail Cover Plastic - Flat)

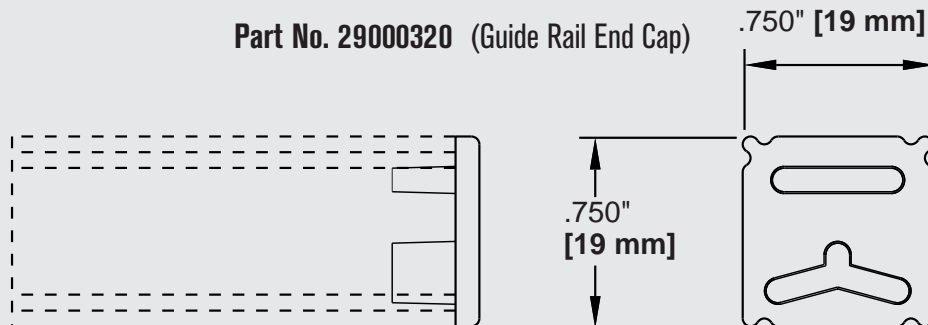


Part No. 29000314 (Guide Rail Cover Plastic - Flat)

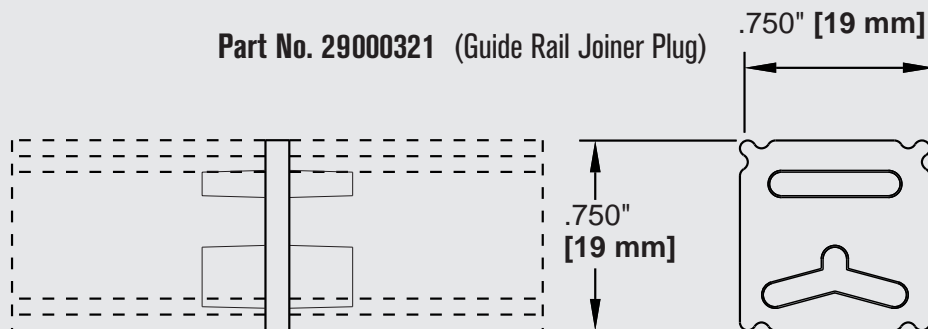


Guide Rails

Part No. 29000320 (Guide Rail End Cap)



Part No. 29000321 (Guide Rail Joiner Plug)



Fixed Guide Rail Accessories

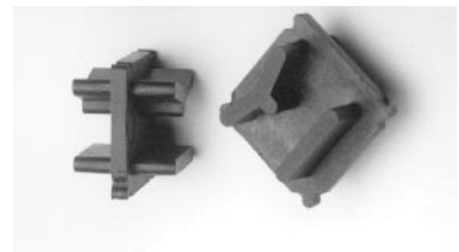
Adjacent sections of **(29000300)** or **(29000301)** are joined by a guide rail joiner plug **(29000321)**. The plug inserts into each end of the adjacent rails and the rails are pressed together until the connection is flush. A thermoplastic guide rail end cap **(29000320)** inserts and presses into the cut end of a guide rail as a finished end cover.

Wheel Turns:

- For layouts using wheel turns, a wheel turn disk guide may be used in place of the inside formed rail guide. Adjacent guide rails are mitered and turned in slightly to permit smooth movement of your product through the curve. The disk guide then attaches to the upper disk of the wheel turn.

NOTE: Disk guides are fabricated to order; please specify rail clearance and product geometry when you order.

- The wheel turn disk guide is made from white UHMW-PE.
- For both wheel turns and plain turns, the outside guide rail must be roll formed to the proper geometry. Please order turn guide rails using the example below.




EXAMPLE:

Wheel Turn Guide Rail

Plain Turn Guide Rail

Provide product geometry and direction of travel on the conveyor.

Guide Rails

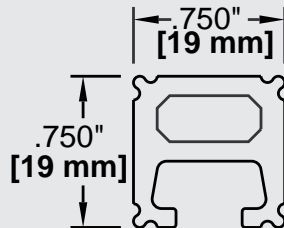


Simplimatic Automation offers three different guide rails. Each guide rail type is extruded aluminum that has been clear anodized. There are also guide rail covers for each of the different guide rail types. **Simpli-Flex®** has a multitude of guide rail sizes with covers that will meet any product needs.

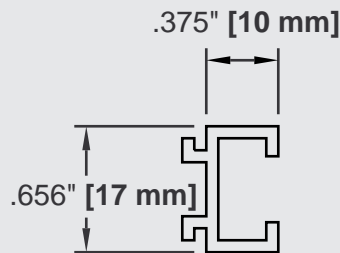
Guide Rails

Part No. 29000300 (Guide Rail – Aluminum – .75 x .75)

Part No. 29000301 (Guide Rail – UHMW-PE)



Part No. 29000302 (Guide Rail – Aluminum)



Fixed Guide Rails

The standard guide rail design employs an extruded aluminum rail (**29000300**) and a UHMW-PE plastic rail (**29000301**) mounted on a fixed guide bracket. Each rail measures .750" (**19 mm**) square and is positioned just above the top surface of the chain.

Simpli-Flex® guide rails are designed to be adaptable to virtually any production line requirement.

- Simplimatic Automation offers a UHMW-PE guide rail cover (**29000310**) to protect your products.

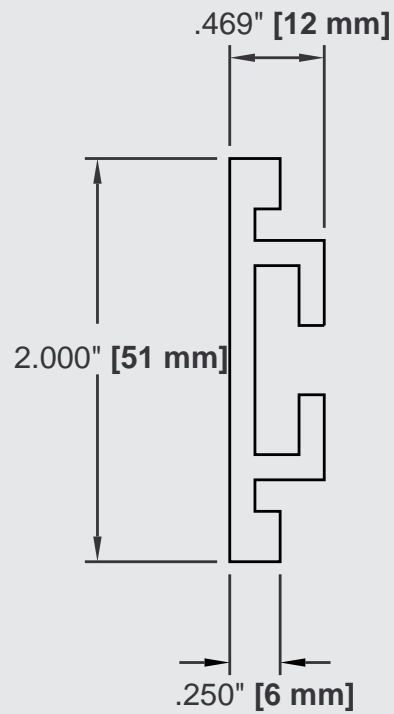
- Fixed guide rails can be roll formed for use on turns. The minimum diameter for a rolled guide rail (**29000300**) is 12" (**305 mm**).
- Plastic guide rail (**29000301**) (polyethylene) may be manually formed to fit your conveyor using an ordinary heat gun.

NOTE: For higher fixed rail positioning, use the adjustable guide rail brackets to mount the rail.



Guide Rails

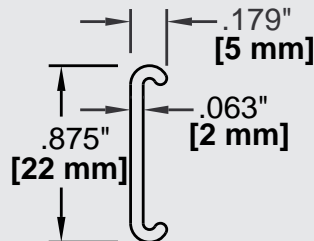
Part No. 29000303 (Guide Rail – Aluminum – GSBD)



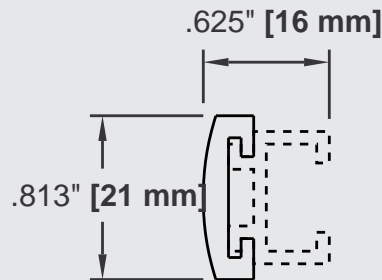
Guide Rails

Part No. 29000310 (Guide Rail Cover Plastic)

Part No. 29000311 (Guide Rail Cover Plastic ESD)



Part No. 29000312 (Guide Rail Cover Plastic – Convex)



Guide Rail Covers

Flat covers (**29000310**, **29000313**, and **29000314**) may be used in any application where the amount of surface area contacted on the product is not a concern. Convex covers (**29000312**) are recommended where surface friction needs to be minimal, such as with empty or unstable containers, or where the allowable contact area on the product is restricted. Width across the covers is listed below:

1. **29000310** cover - .875" (22 mm).
2. **29000312/313** cover - .813" (21 mm).
3. **29000314** cover - 2.25" (57 mm).

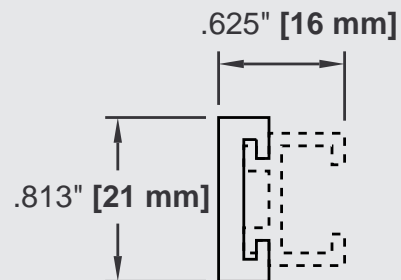
When using guide rail covers, it may be necessary to fasten the covers to the guide rails to prevent sliding. Fastening is easy using rivets or drive pins (**29000267**). Other mounting positions include: guide rail bracket as an outrigger to stabilize wide products, and overhead, as a hold down rail for inclines or declines.

NOTE: (29000442) JOINER STRIPS are may be used as a joiner for Aluminum Guide Rail (**29000302**). **JOINER STRIPS** are also used to join GSBD Aluminum Guide Rail (**29000303**).

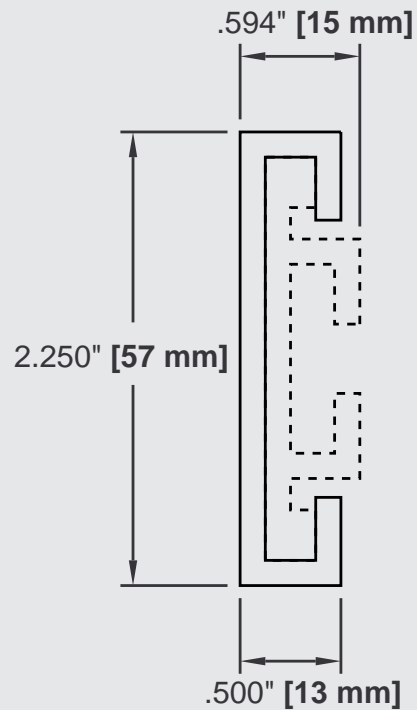


Guide Rails

Part No. 29000313 (Guide Rail Cover Plastic - Flat)

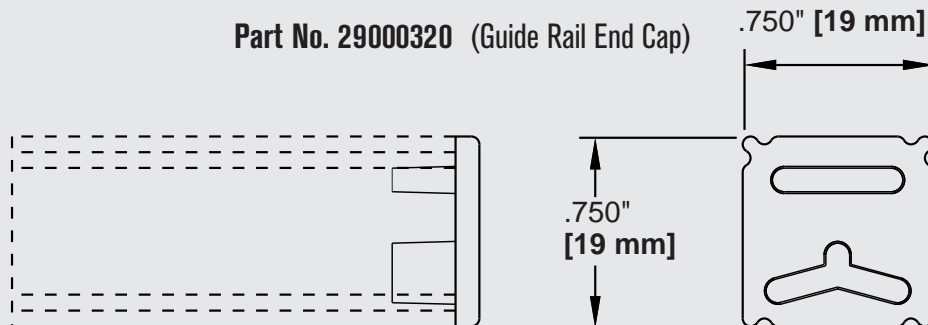


Part No. 29000314 (Guide Rail Cover Plastic - Flat)

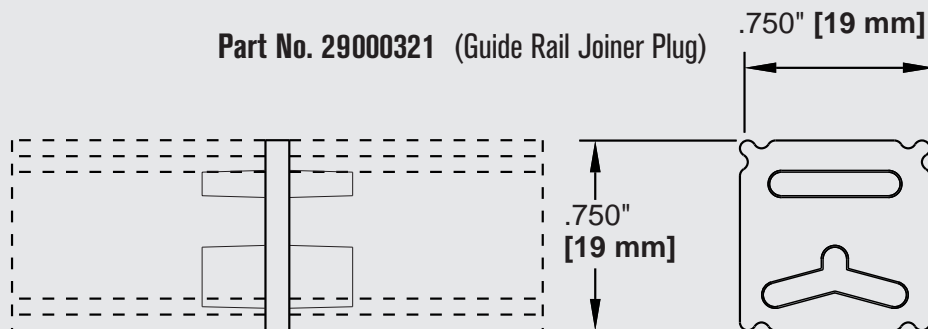


Guide Rails

Part No. 29000320 (Guide Rail End Cap)



Part No. 29000321 (Guide Rail Joiner Plug)



Fixed Guide Rail Accessories

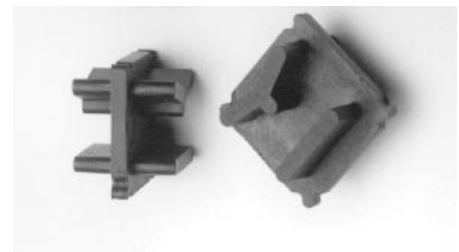
Adjacent sections of **(29000300)** or **(29000301)** are joined by a guide rail joiner plug **(29000321)**. The plug inserts into each end of the adjacent rails and the rails are pressed together until the connection is flush. A thermoplastic guide rail end cap **(29000320)** inserts and presses into the cut end of a guide rail as a finished end cover.

Wheel Turns:

- For layouts using wheel turns, a wheel turn disk guide may be used in place of the inside formed rail guide. Adjacent guide rails are mitered and turned in slightly to permit smooth movement of your product through the curve. The disk guide then attaches to the upper disk of the wheel turn.

NOTE: Disk guides are fabricated to order; please specify rail clearance and product geometry when you order.

- The wheel turn disk guide is made from white UHMW-PE.
- For both wheel turns and plain turns, the outside guide rail must be roll formed to the proper geometry. Please order turn guide rails using the example below.



EXAMPLE:

Wheel Turn Guide Rail

Plain Turn Guide Rail

Provide product geometry and direction of travel on the conveyor.

Fixed Guide Rail Brackets

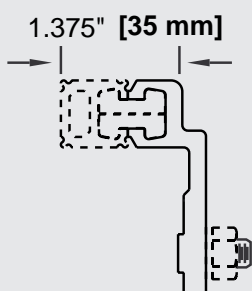


Simpli-Flex[®] fixed guide rail system offers the ability to use guide rail brackets with spacers to adjust the width for a specific product.

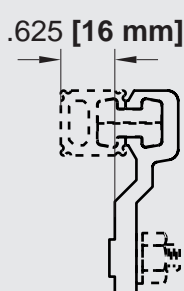
Fixed Guide Rail Brackets

Fixed Guide Rail Brackets (Fixed Guide Rail Brackets Are 1" [25 mm] Long)

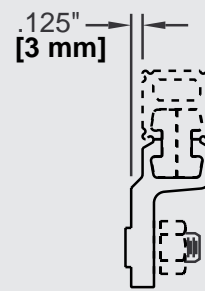
Part No. 29000380



Part No. 29000381



Part No. 29000382

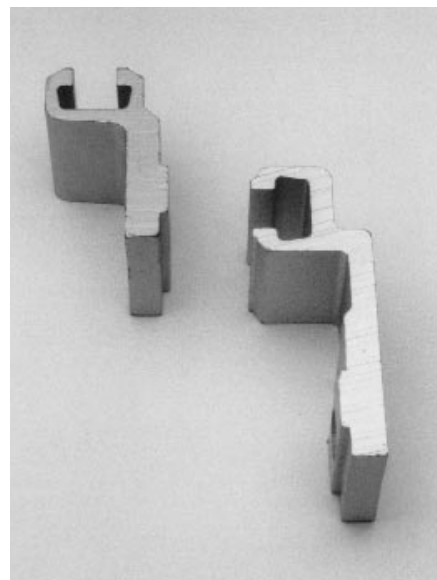


Fixed Guide Rail Brackets

- The fixed guide rail brackets allow 1/8" (3 mm) incremental guide rail width selection (when used in conjunction with spacers).
- An extruded aluminum bracket attaches to conveyor beam using one T-BOLT.
- Guide rail is attached using a pair of plastic wedges (no fastener).
- The guide rail bracket also retains a 5/16-18 (M8) hex head screw for additional mounting capability.

NOTE:

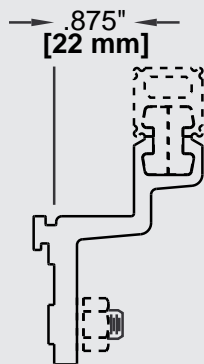
1. For systems using Flighted Chain (29000016 through 29000031), minimum clearance between the face of the guide rails is 3.25" (83 mm) to avoid hitting the chain flights.
2. For systems using Low Back Pressure Chain (29000032 and 29000033), brackets must be positioned high enough (.750"+) for the guide rail to clear the chain.



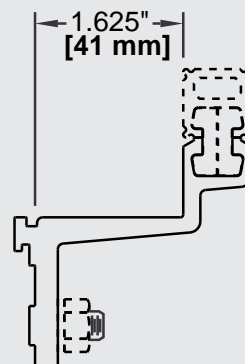
Fixed Guide Rail Brackets

Fixed Guide Rail Brackets (Fixed Guide Rail Brackets Are 1" [25 mm] Long)

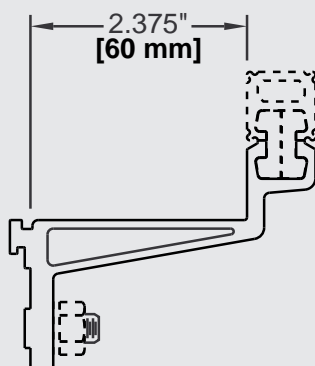
Part No. 29000383



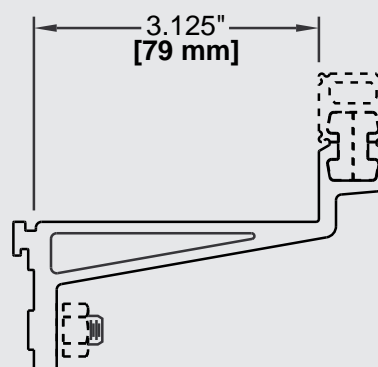
Part No. 29000384



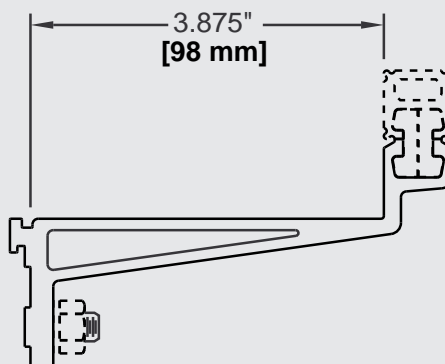
Part No. 29000385



Part No. 29000386

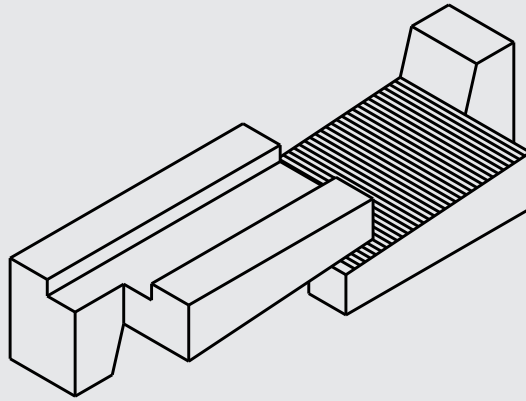


Part No. 29000387



Fixed Guide Rail Brackets

Part No. 29000388 (Guide Rail Wedge Blocks)



Fixed Guide Rail Bracket Hardware

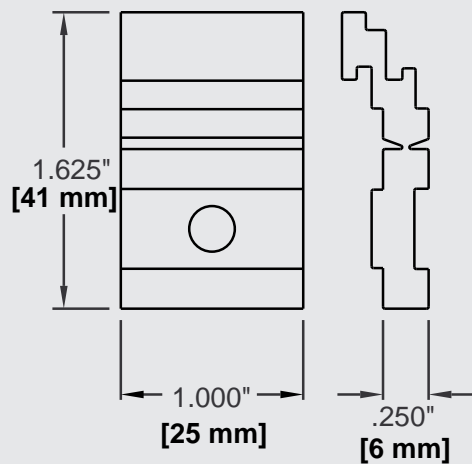
Fixed guide rail is mounted to the conveyor using a minimum number of fasteners. Each component is designed for quick, interlocked assembly.

- Guide rail wedge blocks (**29000388**) are used to attach the Aluminum Guide Rail (**29000300**) to the fixed guide rail brackets. Two Guide Rail Wedge Blocks (**29000388**) are required per bracket.
- Guide rail wedge blocks are molded with a serrated edge for secure connection. The wedge can be easily pried apart for disassembly.
- Extruded aluminum guide rail spacers (**29000390**, **29000391**) interlock with the conveyor beam.

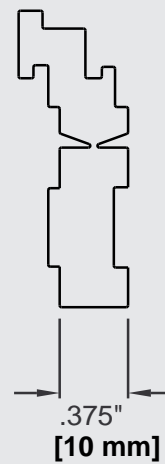
- The top of each spacer may be twisted off to mount the guide rail bracket in the top conveyor beam T-SLOT.



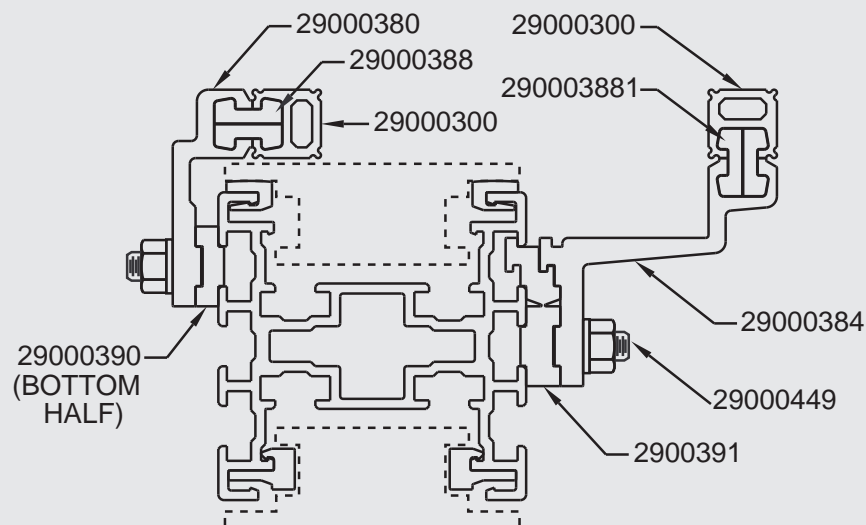
Fixed Guide Rail Brackets



Part No. 29000390
(Guide Rail Spacer)



Part No. 29000391
(Guide Rail Spacer)



EXAMPLE: Part No. 29000388 and SPACER Mounting

Fixed Guide Rail Brackets

<div>TOTAL PRODUCT CLEARANCE* 0.625" (16mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038029000380</div> <div>2900044529000445</div>	<div>TOTAL PRODUCT CLEARANCE* 0.75" (19mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>N/AN/A</div>	<div>TOTAL PRODUCT CLEARANCE* 0.875" (22mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038029000380 29000390</div> <div>2900044529000449</div>	<div>TOTAL PRODUCT CLEARANCE* 1.0" (25mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038029000380 29000391</div> <div>2900044529000453</div>
<div>TOTAL PRODUCT CLEARANCE* 1.125" (29mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038029000380 2900039029000390</div> <div>2900044929000449</div>	<div>TOTAL PRODUCT CLEARANCE* 1.25" (32mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038029000380 2900039029000391</div> <div>2900044929000453</div>	<div>TOTAL PRODUCT CLEARANCE* 1.375" (35mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038029000380 2900039129000391</div> <div>2900045329000453</div>	<div>TOTAL PRODUCT CLEARANCE* 1.5" (38mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038029000380 2900039129000390 2900039029000390 2900045329000453</div>
<div>TOTAL PRODUCT CLEARANCE* 1.625" (41mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038029000380 2900039029000390 2900039029000390 2900045329000453</div>	<div>TOTAL PRODUCT CLEARANCE* 1.75" (44mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038029000380 2900039029000390 2900039029000391 2900045329000457</div>	<div>TOTAL PRODUCT CLEARANCE* 1.875" (48mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038029000380 2900039029000390 2900039129000391 2900045729000457</div>	<div>TOTAL PRODUCT CLEARANCE* 2.0" (51mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038029000380 2900039029000390 2900039129000391 2900045729000445</div>
<div>TOTAL PRODUCT CLEARANCE* 2.125" (54mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038129000381</div> <div>2900044529000445</div>	<div>TOTAL PRODUCT CLEARANCE* 2.25" (57mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038029000381 2900039029000390 2900039129000391 2900045729000449</div>	<div>TOTAL PRODUCT CLEARANCE* 2.375" (60mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038129000381 2900039029000390</div> <div>2900044529000449</div>	<div>TOTAL PRODUCT CLEARANCE* 2.5" (64mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038129000381 2900039129000391</div> <div>2900044529000453</div>
<div>TOTAL PRODUCT CLEARANCE* 2.625" (67mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038129000381 2900039029000390</div> <div>2900044929000449</div>	<div>TOTAL PRODUCT CLEARANCE* 2.75" (70mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038129000381 2900039029000391</div> <div>2900044929000453</div>	<div>TOTAL PRODUCT CLEARANCE* 2.875" (73mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038129000381 2900039129000391</div> <div>2900045329000453</div>	<div>TOTAL PRODUCT CLEARANCE* 3.0" (76mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038129000381 2900039129000390 2900039029000390 2900045329000453</div>
<div>TOTAL PRODUCT CLEARANCE* 3.125" (79mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038129000381 2900039029000390 2900039029000390 2900045329000453</div>	<div>TOTAL PRODUCT CLEARANCE* 3.25" (83mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038129000381 2900039029000390 2900039029000391 2900045329000457</div>	<div>TOTAL PRODUCT CLEARANCE* 3.375" (86mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038129000381 2900039029000390 2900039129000391 2900045729000457</div>	<div>TOTAL PRODUCT CLEARANCE* 3.5" (89mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038129000382 2900039029000390 2900039129000391 2900045729000445</div>
<div>TOTAL PRODUCT CLEARANCE* 3.625" (92mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038229000382</div> <div>2900044529000445</div>	<div>TOTAL PRODUCT CLEARANCE* 3.75" (95mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038129000382 2900039029000390 2900039129000391 2900045729000449</div>	<div>TOTAL PRODUCT CLEARANCE* 3.875" (98mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038229000382 2900039029000390</div> <div>2900044529000449</div>	<div>TOTAL PRODUCT CLEARANCE* 4.0" (102mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div></div> <div>2900038229000382 2900039129000391</div> <div>2900044929000453</div>

*If Guide Rail Covers are to be used, please add 1/8" (3 mm) to total product clearance when selecting guide rail components.

Fixed Guide Rail Brackets

<div>TOTAL PRODUCT CLEARANCE* 4.125" (105mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000382 29000390</div><div>29000382 29000390</div></div> <div>2900044929000449</div>	<div>TOTAL PRODUCT CLEARANCE* 4.25" (108mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000382 29000390</div><div>29000382 29000391</div></div> <div>2900044929000453</div>	<div>TOTAL PRODUCT CLEARANCE* 4.375" (111mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000382 29000391</div><div>29000382 29000391</div></div> <div>2900045329000453</div>	<div>TOTAL PRODUCT CLEARANCE* 4.5" (114mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000382 29000391</div><div>29000382 29000390 29000390 29000453</div></div> <div>2900045329000453</div>
<div>TOTAL PRODUCT CLEARANCE* 4.625" (117mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000382 29000390 29000390 29000453</div><div>29000382 29000390 29000390 29000453</div></div> <div>2900045329000453</div>	<div>TOTAL PRODUCT CLEARANCE* 4.75" (121mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000382 29000390 29000390 29000453</div><div>29000382 29000390 29000391 29000457</div></div> <div>2900045729000457</div>	<div>TOTAL PRODUCT CLEARANCE* 4.875" (124mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000382 29000390 29000391 29000457</div><div>29000382 29000390 29000391 29000457</div></div> <div>2900045729000457</div>	<div>TOTAL PRODUCT CLEARANCE* 5.0" (127mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000382 29000390 29000391 29000457</div><div>29000383 29000445</div></div> <div>2900044529000445</div>
<div>TOTAL PRODUCT CLEARANCE* 5.125" (130mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000383 29000445</div><div>29000383 29000445</div></div> <div>2900044529000445</div>	<div>TOTAL PRODUCT CLEARANCE* 5.25" (133mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000382 29000390 29000391 29000457</div><div>29000383 29000390 29000449</div></div> <div>2900044929000449</div>	<div>TOTAL PRODUCT CLEARANCE* 5.375" (137mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000383 29000445</div><div>29000383 29000390 29000449</div></div> <div>2900044929000449</div>	<div>TOTAL PRODUCT CLEARANCE* 5.5" (140mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000383 29000445</div><div>29000383 29000391 29000443</div></div> <div>2900044329000443</div>
<div>TOTAL PRODUCT CLEARANCE* 5.625" (143mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000383 29000390 29000449</div><div>29000383 29000390 29000449</div></div> <div>2900044929000449</div>	<div>TOTAL PRODUCT CLEARANCE* 5.75" (146mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000383 29000390 29000449</div><div>29000383 29000391 29000453</div></div> <div>2900045329000453</div>	<div>TOTAL PRODUCT CLEARANCE* 5.875" (149mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000383 29000391 29000453</div><div>29000383 29000391 29000453</div></div> <div>2900045329000453</div>	<div>TOTAL PRODUCT CLEARANCE* 6.0" (152mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000383 29000391 29000453</div><div>29000383 29000390 29000390 29000453</div></div> <div>2900045329000453</div>
<div>TOTAL PRODUCT CLEARANCE* 6.125" (156mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000383 29000390 29000390 29000453</div><div>29000383 29000390 29000390 29000453</div></div> <div>2900045329000453</div>	<div>TOTAL PRODUCT CLEARANCE* 6.25" (159mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000383 29000390 29000390 29000453</div><div>29000383 29000390 29000391 29000457</div></div> <div>2900045729000457</div>	<div>TOTAL PRODUCT CLEARANCE* 6.375" (162mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000383 29000390 29000391 29000457</div><div>29000383 29000390 29000391 29000457</div></div> <div>2900045729000457</div>	<div>TOTAL PRODUCT CLEARANCE* 6.5" (165mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000383 29000390 29000391 29000457</div><div>29000384 29000445</div></div> <div>2900044529000445</div>
<div>TOTAL PRODUCT CLEARANCE* 6.625" (168mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000384 29000445</div><div>29000384 29000445</div></div> <div>2900044529000445</div>	<div>TOTAL PRODUCT CLEARANCE* 6.75" (171mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000383 29000390 29000391 29000457</div><div>29000384 29000390 29000459</div></div> <div>2900045929000459</div>	<div>TOTAL PRODUCT CLEARANCE* 6.875" (175mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000384 29000445</div><div>29000384 29000390 29000449</div></div> <div>2900044929000449</div>	<div>TOTAL PRODUCT CLEARANCE* 7.0" (178mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000384 29000445</div><div>29000384 29000391 29000453</div></div> <div>2900045329000453</div>
<div>TOTAL PRODUCT CLEARANCE* 7.125" (181mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000384 29000390 29000449</div><div>29000384 29000390 29000449</div></div> <div>2900044929000449</div>	<div>TOTAL PRODUCT CLEARANCE* 7.25" (184mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000384 29000390 29000449</div><div>29000384 29000391 29000453</div></div> <div>2900045329000453</div>	<div>TOTAL PRODUCT CLEARANCE* 7.375" (187mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000384 29000391 29000453</div><div>29000384 29000391 29000453</div></div> <div>2900045329000453</div>	<div>TOTAL PRODUCT CLEARANCE* 7.5" (190mm)</div> <div><div>LEFT SIDE</div><div>RIGHT SIDE</div><div>29000384 29000391 29000453</div><div>29000384 29000390 29000390 29000453</div></div> <div>2900045329000453</div>

*If Guide Rail Covers are to be used, please add 1/8" (3 mm) to total product clearance when selecting guide rail components.

Fixed Guide Rail Brackets

TOTAL PRODUCT CLEARANCE*	
7.625" (194mm)	
LEFT SIDE	RIGHT SIDE
29000384	29000384
29000390	29000390
29000390	29000390
29000453	29000453

TOTAL PRODUCT CLEARANCE*	
7.75" (197mm)	
LEFT SIDE	RIGHT SIDE
29000384	29000384
29000390	29000390
29000390	29000391
29000453	29000457

TOTAL PRODUCT CLEARANCE*	
7.875" (200mm)	
LEFT SIDE	RIGHT SIDE
29000384	29000384
29000390	29000390
29000391	29000391
29000457	29000457

TOTAL PRODUCT CLEARANCE*	
8.0" (203mm)	
LEFT SIDE	RIGHT SIDE
29000384	29000385
29000390	
29000391	
29000457	29000445

TOTAL PRODUCT CLEARANCE*	
8.125" (206mm)	
LEFT SIDE	RIGHT SIDE
29000385	29000385
29000445	29000445

TOTAL PRODUCT CLEARANCE*	
8.25" (210mm)	
LEFT SIDE	RIGHT SIDE
29000384	29000385
29000390	29000390
29000391	
29000457	29000449

TOTAL PRODUCT CLEARANCE*	
8.375" (213mm)	
LEFT SIDE	RIGHT SIDE
29000385	29000385
	29000390
29000445	29000449

TOTAL PRODUCT CLEARANCE*	
8.5" (216mm)	
LEFT SIDE	RIGHT SIDE
29000385	29000385
	29000391
29000445	29000453

TOTAL PRODUCT CLEARANCE*	
8.625" (219mm)	
LEFT SIDE	RIGHT SIDE
29000385	29000385
29000390	29000390
29000449	29000449

TOTAL PRODUCT CLEARANCE*	
8.75" (222mm)	
LEFT SIDE	RIGHT SIDE
29000385	29000385
29000390	29000391
29000449	29000453

TOTAL PRODUCT CLEARANCE*	
8.875" (225mm)	
LEFT SIDE	RIGHT SIDE
29000385	29000385
29000391	29000391
29000453	29000453

TOTAL PRODUCT CLEARANCE*	
9.0" (229mm)	
LEFT SIDE	RIGHT SIDE
29000385	29000385
29000391	29000390
	29000390
29000453	29000453

TOTAL PRODUCT CLEARANCE*	
9.125" (232mm)	
LEFT SIDE	RIGHT SIDE
29000385	29000385
29000390	29000390
29000390	29000390
29000453	29000453

TOTAL PRODUCT CLEARANCE*	
9.25" (234mm)	
LEFT SIDE	RIGHT SIDE
29000385	29000385
29000390	29000390
29000390	29000391
29000453	29000457

TOTAL PRODUCT CLEARANCE*	
9.375" (238mm)	
LEFT SIDE	RIGHT SIDE
29000385	29000385
29000390	29000390
29000391	29000391
29000457	29000457

TOTAL PRODUCT CLEARANCE*	
9.5" (241mm)	
LEFT SIDE	RIGHT SIDE
29000385	29000386
29000390	
29000391	
29000457	29000445

TOTAL PRODUCT CLEARANCE*	
9.625" (244mm)	
LEFT SIDE	RIGHT SIDE
29000386	29000386
29000445	29000445

TOTAL PRODUCT CLEARANCE*	
9.75" (248mm)	
LEFT SIDE	RIGHT SIDE
29000385	29000386
29000390	29000390
29000391	
29000457	29000449

TOTAL PRODUCT CLEARANCE*	
9.875" (251mm)	
LEFT SIDE	RIGHT SIDE
29000386	29000386
	29000390
29000445	29000449

TOTAL PRODUCT CLEARANCE*	
10.0" (254mm)	
LEFT SIDE	RIGHT SIDE
29000386	29000386
	29000391
29000445	29000453

TOTAL PRODUCT CLEARANCE*	
10.125" (257mm)	
LEFT SIDE	RIGHT SIDE
29000386	29000386
29000390	29000390
29000449	29000449

TOTAL PRODUCT CLEARANCE*	
10.25" (260mm)	
LEFT SIDE	RIGHT SIDE
29000386	29000386
29000390	29000391
29000449	29000453

TOTAL PRODUCT CLEARANCE*	
10.375" (264mm)	
LEFT SIDE	RIGHT SIDE
29000386	29000386
29000391	29000391
29000453	29000453

TOTAL PRODUCT CLEARANCE*	
10.5" (267mm)	
LEFT SIDE	RIGHT SIDE
29000386	29000386
29000391	29000390
	29000390
29000453	29000453

TOTAL PRODUCT CLEARANCE*	
10.625" (270mm)	
LEFT SIDE	RIGHT SIDE
29000386	29000386
29000390	29000390
29000390	29000390
29000453	29000453

TOTAL PRODUCT CLEARANCE*	
10.75" (273mm)	
LEFT SIDE	RIGHT SIDE
29000386	29000386
29000390	29000390
29000390	29000391
29000453	29000457

TOTAL PRODUCT CLEARANCE*	
10.875" (276mm)	
LEFT SIDE	RIGHT SIDE
29000386	29000386
29000390	29000390
29000391	29000391
29000457	29000457

TOTAL PRODUCT CLEARANCE*	
11.0" (279mm)	
LEFT SIDE	RIGHT SIDE
29000386	29000387
29000390	
29000391	
29000457	29000445

*If Guide Rail Covers are to be used, please add 1/8" (3 mm) to total product clearance when selecting guide rail components.

Fixed Guide Rail Brackets

TOTAL PRODUCT CLEARANCE*	
11.125" (283mm)	
LEFT SIDE	RIGHT SIDE
29000387	29000387
29000445	29000445

TOTAL PRODUCT CLEARANCE*	
11.25" (286mm)	
LEFT SIDE	RIGHT SIDE
29000386	29000487
29000390	29000390
29000457	29000449

TOTAL PRODUCT CLEARANCE*	
11.375" (289mm)	
LEFT SIDE	RIGHT SIDE
29000387	29000387
29000445	29000449

TOTAL PRODUCT CLEARANCE*	
11.5" (292mm)	
LEFT SIDE	RIGHT SIDE
29000387	29000387
29000445	29000453

TOTAL PRODUCT CLEARANCE*	
11.625" (295mm)	
LEFT SIDE	RIGHT SIDE
29000387	29000387
29000390	29000390
29000449	29000449

TOTAL PRODUCT CLEARANCE*	
11.75" (298mm)	
LEFT SIDE	RIGHT SIDE
29000387	29000387
29000390	29000391
29000449	29000453

TOTAL PRODUCT CLEARANCE*	
11.875" (302mm)	
LEFT SIDE	RIGHT SIDE
29000387	29000387
29000391	29000391
29000453	29000453

TOTAL CLEARANCE	
12.0" (305mm)	
LEFT SIDE	RIGHT SIDE
29000387	29000387
29000391	29000390
29000453	29000453

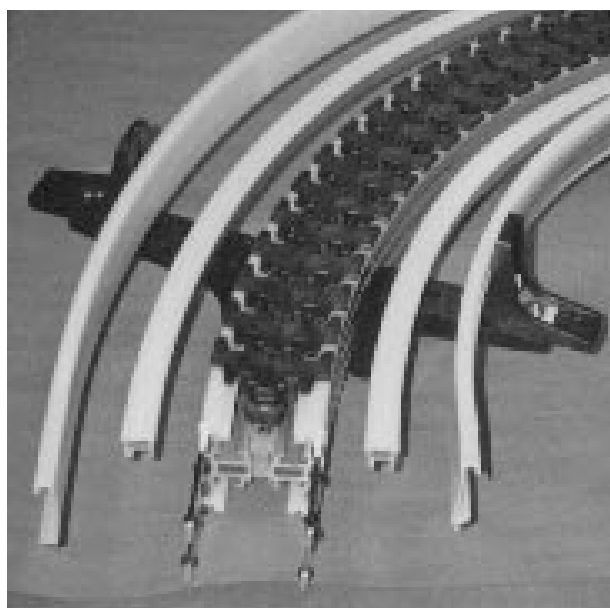
TOTAL PRODUCT CLEARANCE*	
12.125" (308mm)	
LEFT SIDE	RIGHT SIDE
29000387	29000387
29000390	29000390
29000390	29000390
29000453	29000453

TOTAL PRODUCT CLEARANCE*	
12.25" (311mm)	
LEFT SIDE	RIGHT SIDE
29000387	29000387
29000390	29000390
29000390	29000390
29000453	29000457

TOTAL PRODUCT CLEARANCE*	
12.375" (314mm)	
LEFT SIDE	RIGHT SIDE
29000387	29000387
29000390	29000390
29000391	29000391
29000457	29000457

TOTAL PRODUCT CLEARANCE*	
12.5" (318mm)	
LEFT SIDE	RIGHT SIDE
29000387	29000387
29000390	29000391
29000391	29000391
29000457	29000457

TOTAL PRODUCT CLEARANCE*	
12.625" (321mm)	
LEFT SIDE	RIGHT SIDE
29000387	29000387
29000391	29000391
29000391	29000391
29000457	29000457



*If Guide Rail Covers are to be used, please add 1/8" (3 mm) to total product clearance when selecting guide rail components.

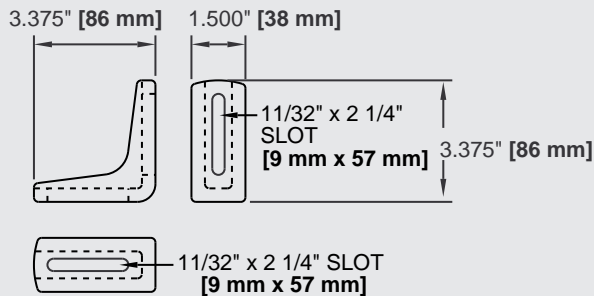
Adjustable Guide Rail Brackets



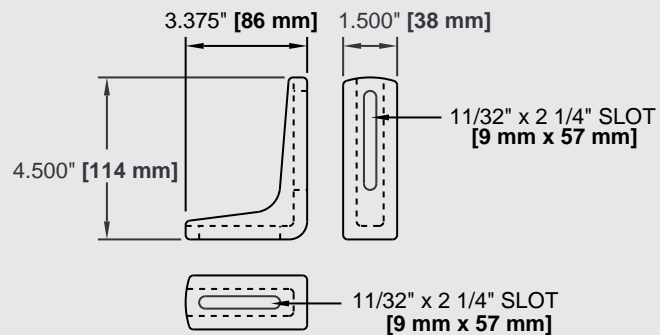
Simpli-Flex® adjustable guide rail system offers the ability to quickly adjust the distance between guide rails without tools. The adjustment rods make it easy to position the guide rails accurately. The universal cam lock bracket makes vertical height adjustments effortless without tools.

Adjustable Guide Rail Brackets

Part No. 29000400
(Adjustable Guide Rail Bracket)



Part No. 29000401
(Adjustable Guide Rail Bracket)



Adjustable Guide Rail Brackets

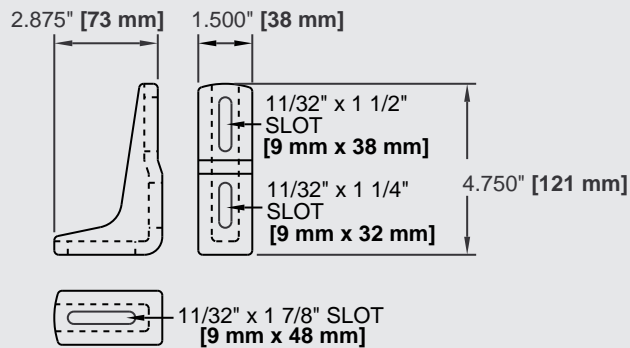
Simpli-Flex® adjustable guide rails can dramatically increase conveying flexibility. Adjustable guide rails safely transport products with different widths, shapes or heights along the same production line.

- Thermoplastic adjustable brackets provide sturdy support for all Simpli-Flex® guide rails.
- Minimum total clearance is 1".
Maximum total clearance is 12.25".

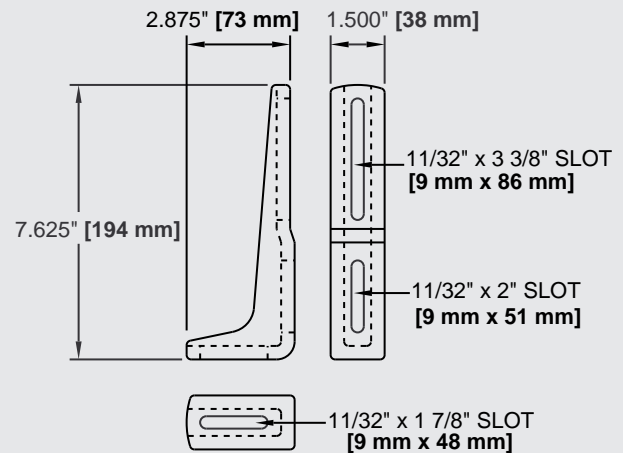


Adjustable Guide Rail Brackets

Part No. 29000402
(Adjustable Guide Rail Bracket)



Part No. 29000403
(Adjustable Guide Rail Bracket)



Adjustable Guide Rail Brackets

(29000402) and (29000403) are used to offset guide rails to convey lightweight or unstable products. (Refer to adjustable guide rail usage drawing on page 7-13.)

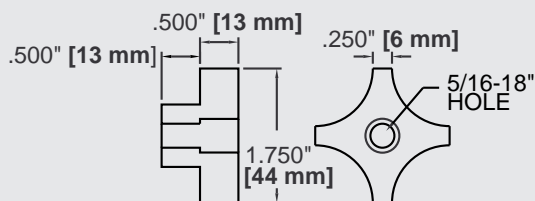
The (29000402) and (29000403) Adjustable guide rail brackets have a .125" (3 mm) setback on the upper portion of the bracket. This allows the lower positioned guide rail to be in primary contact with the product, minimizing surface friction. The upper rail then works as a stabilizer.

For multiple rail configurations, the position of the two rails should allow items to convey without toppling and falling off the conveyor.

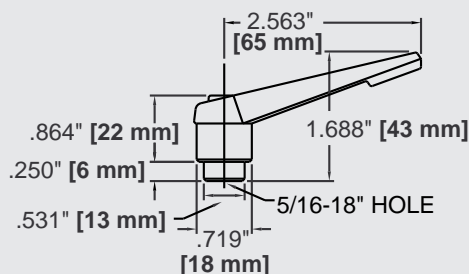


Adjustable Guide Rail Brackets

Part No. 29000404
(Adjustable Guide Rail Bracket Knob - Type A)



Part No. 29000405
(Adjustable Guide Rail Bracket Ratchet)



Guide Rail Bracket Accessories

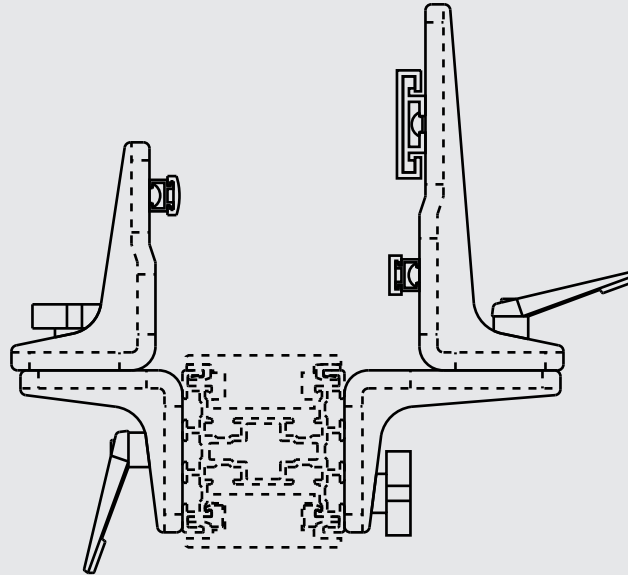
(29000404) Hand Knob uses a 5/16-18 socket head cap screw placed through the knob..

(29000405) is a guide turn ratchet handle used for fast adjustment of guide rails or brackets.



Adjustable Guide Rail Brackets

Usage (Adjustable Guide Rail Brackets)



Usage (Adjustable Guide Rail Brackets)

To attach rails to the adjustable guide rail brackets:

1. Use a 5/16-18 x 1" hex head bolt (29000482), with a flat washer (29000532) and locknut for the Guide Rail (29000302).
2. Use a 5/16-18 x 1" carriage bolt (29000472) with a flat washer and locknut for the Guide Rail (29000303).
3. Use nylon guide rail spacers as necessary to create offset rail positions.

Guide rail spacers come in two sizes: .125" (3 mm) wide (29000406), and .5" (13 mm) wide (29000407). Both are sized to accommodate 5/16" (M8) fasteners.

To connect adjacent sections of (29000302) Aluminum Guide Rail, insert a (29000442) joiner strip into the rail slots and tighten down the setscrews.







To connect adjacent sections of (29000303) GSB Aluminum Guide Rail, use the (29000440) joiner strips.

For special handling requirements or guide rail recommendations, please consult your authorized Simpli-Flex® distributor.



Adjustable Guide Rail Brackets

Bracket Bodies

Part No. 29000715						
		H in (mm)	H in (mm)	Material	Ø Rod d in (mm)	Max. Recommended Load lbs (N)
		—	—	PA RI	—	1560 (7000)

Accessories

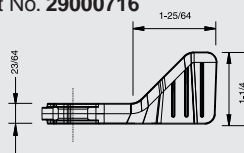


- PA = Polyamide (nylon)
 PA RI = Reinforced Polyamide (nylon)
 PP RI = Reinforced Polypropylene

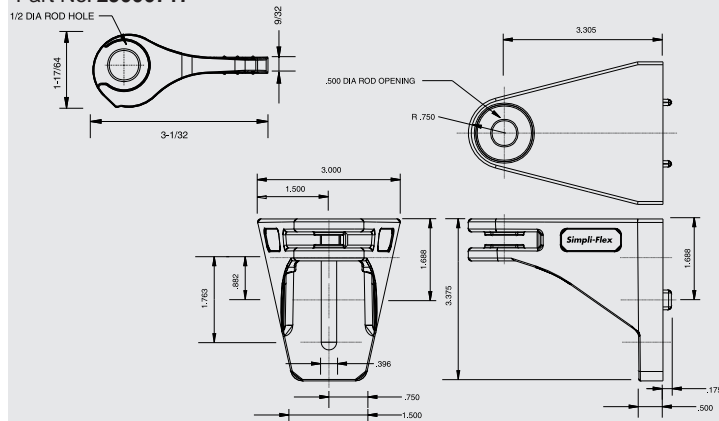
All tests are performed at maximum recommended hardware torque.

Universal Bracket

Part No. 29000716

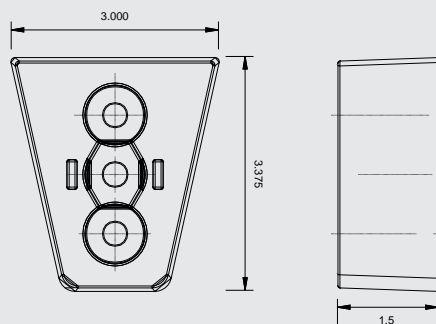


Part No. 29000717

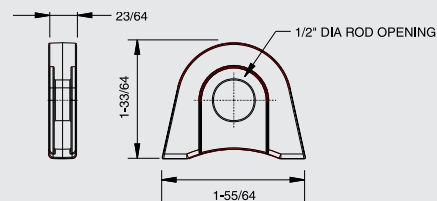


Universal Bracket Spacer

Part No. 29000718



Part No. 29000719

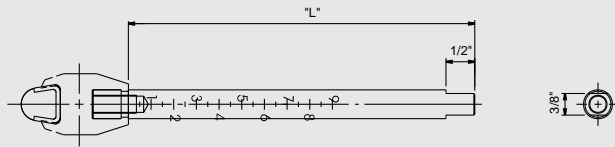


Adjustable Guide Rail Brackets

Type 1 Etched Adjusting Rods

Type	Diameter Ø D	Rod Length L - in	Part Number
1	1/2"	3	29000720
		6	29000721
		9	29000722

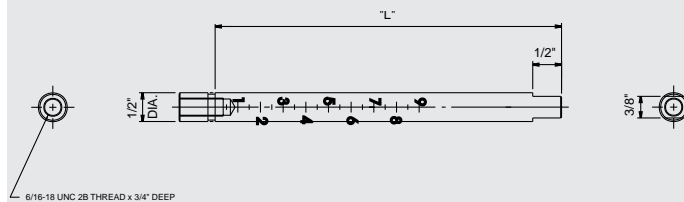
(with clamp)



Type 2 Etched Adjusting Rods

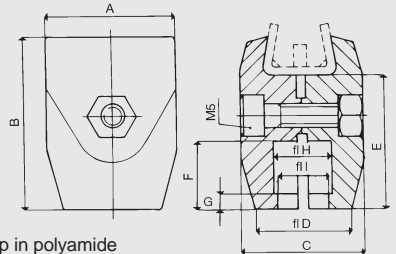
Type 2				Type 2	Type 3
Diameter Ø D	Thread Dia	Wrench Flat WF - in	Rod Length L - in	Part Number	Part Number
1/2"	5/16"-18	3/8"	3	29000724	-
			6	29000725	-
			9	29000726	-

(without clamp)



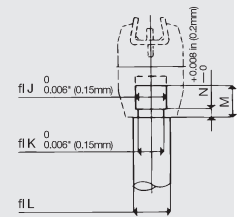
Guide Rail Clamps

Part No. 29000723



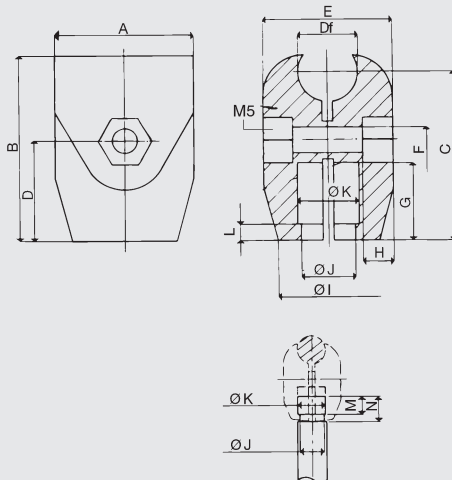
Material: guide rail clamp in polyamide (nylon). Screws in stainless steel. Nuts in nickel-plated brass.

Part No.	Code	Dim	in	mm
29000723	59941	A	1.06	27
		B	1.46	37
		C	1.06	27
		D	0.75	19
		E	1.12	28.5
		F	0.67	17
		G	0.12	3
		H	0.53	13.5
		I	0.45	11.5
		J	0.53	13.5
		K	0.45	11.5
		L	0.55	14
		M	0.47	12
		N	0.12	3



Guide Rail Clamps

Part No. 29000727

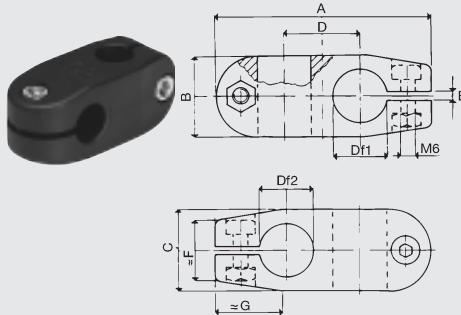


Part No.	Code	Dim	in	mm	Material: infoc Tightening scre Tightening nuts		
29000727		A	1.06	27			
		B	1.50	38			
		C	1.40	35.5			
		D	0.83	21			
		E	0.96	24.5			
		F	0.22	5.5			
		G	0.67	17			
		H	0.20	5			
		I	0.79	20			
		K	0.53	13.5			
		L	0.12	3			
		M	0.35	9			
		N	0.47	12			
		ØK		ØJ		Rail Dia. Df	
		in	mm	in	mm	in	mm
607251		0.53	13.5	0.45	11.5	1/2	12.0
66838		0.47	12.0	0.39	10.0	1/2	12.0
66848		0.47	12.0	0.39	10.0	5/8	14.0

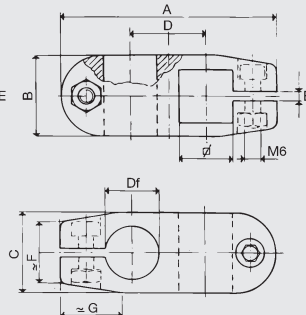
Material: reinforced polyamide (nylon). Tightening screws in stainless steel. Tightening nuts in nickel-plated brass.

Adjustable Guide Rail Brackets

Part No. **29000728** Type with round bores



Type with square bores

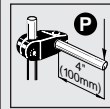


Part No.	Code	Dim	in	mm
29000728		A	2.87	73
		B	1.16	29.5
		C	1.16	29.5
		D	0.98	25
		E	0.12	3
		F	0.87	22
		G	0.91	23

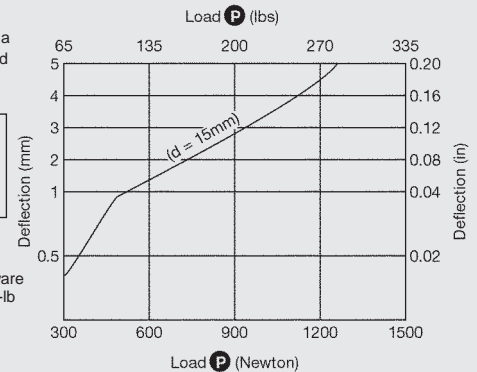
Material: clamp in reinforced polyamide (nylon). Nuts and bolts in stainless steel.

Ø Bore				Square Bore	
Rod dia. (Df1)		Rod dia. (Df2)		Rod (Df1)	
in	mm	in	mm	in	mm
1/2	12.7	1/2	12.7	—	—

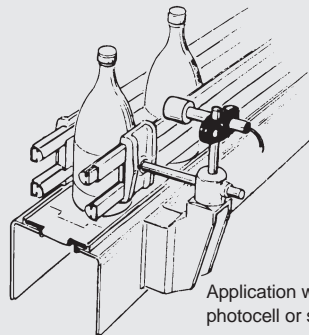
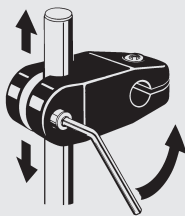
Resistible to deflection as a function of load applied.



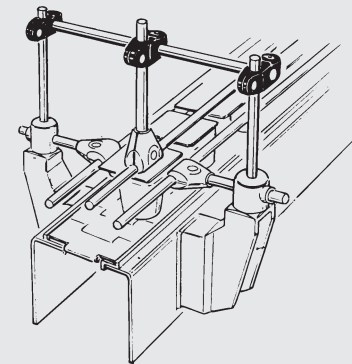
Applied hardware torque = 86 in-lb (1 kgm).



Part No.	Spindle d		Pull Out Load		Rotation Load		Applied Hardware Torque	
	in	(mm)	Lb	(N)	Lb/ft	(N/m)	in-lb	(Kg-m)
29000728	0.55	14	562	2500	0.89	13	86	1

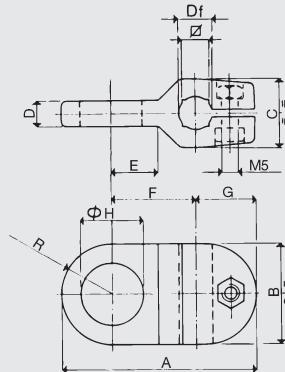


Application with a photocell or sensor.



Clamp for Photocells or Sensors

Part No. **29000729**



Part No. 29000729	Code	Dim	in	mm	
		A	2.30	58.5	
		B	1.18	30	
		C	0.83	21	
		D	0.31	8	
		E	0.55	14	
		F	0.98	25	
		G	0.73	18.5	
		H	0.75	19	
		R	0.59	15	
	Ø Bore				
	Rod Dia. (Df)		Square Bore		
	in	mm	in	mm	
68383	0.39	10	0.31	8	

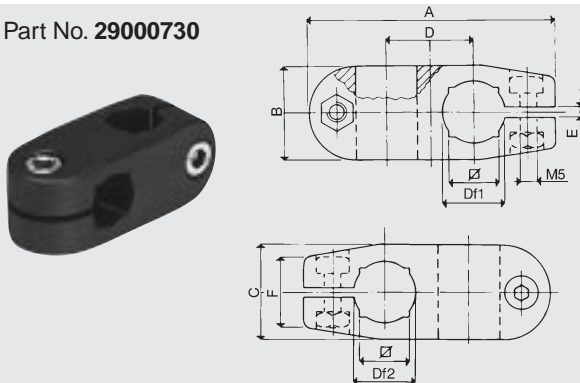
Material: clamp in reinforced polyamide (nylon). Nuts and bolts in stainless steel.

For pieces with other ØH, use part 29000729 and drill out to specified diameter.

Note: the Df bore allows assembly of both round and square sections.

Adjustable Guide Rail Brackets

Part No. 29000730

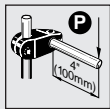


Part No.								
29000730	Code	Dim	in	mm				
		A	2.09	53				
		B	0.83	21				
		C	0.83	21				
		D	0.63	16				
		E	0.12	3				
		F	0.71	18				
		Ø Bore				Square Bore		
		Rod Dia. (Df1)		Rod Dia. (Df2)		Rod Dia.		
		in	mm	in	mm	in	mm	
	68373	0.39	10	0.39	10	5/16	8	

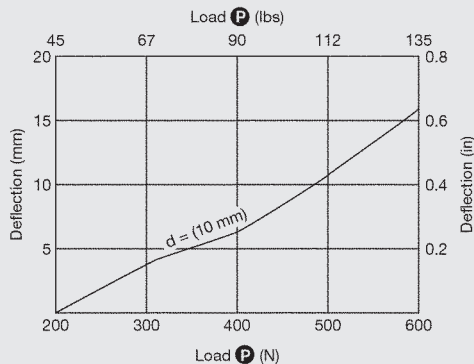
Material: clamp in reinforced polyamide (nylon). Nuts and bolts in stainless steel.

Note: the Df1 and Df2 bores allow assembly of both round and square sections.

Resistance to deflection as a function of load applied P



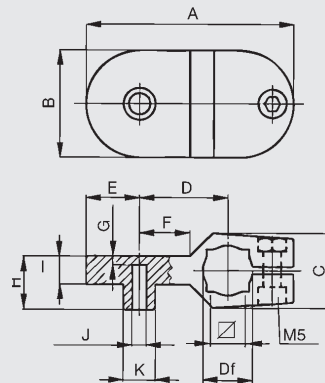
Applied hardware torque = 44 in lb (.5 kg m)



	Spindle d	Pull Out Load	Rotation Load	Applied Hardware Torque
Part No.	in (mm)	Lb (N)	Lb/ft (N/m)	in-lb (kg-m)
29000730	0.40 10	270 1200	0.34 5	43 0.5

Clamp for Reflectors

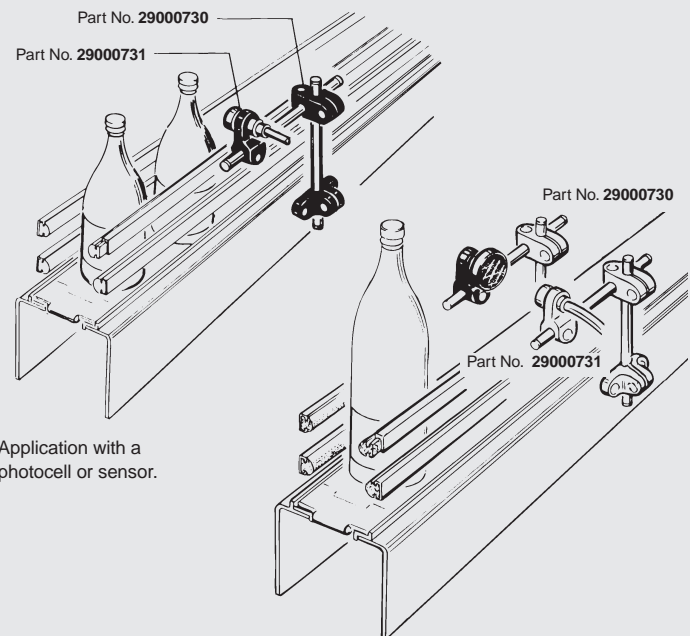
Part No. 29000731



Part No					
29000731	Code	Dim	in	mm	
		A	2.30	58.5	
		B	1.18	30	
		C	0.83	21	
		D	0.98	25	
		E	0.59	15	
		F	0.55	14	
		G	0.02	0.5	
		H	0.57	14.5	
		I	0.31	8	
		J	0.23	5.8	
		K	0.31	8	
		Ø Bore		Square Bore	
		Rod Dia. (Df)		Rod Dia.	
		in	mm	in	mm
	67215		0.39	10	5/16

Material: clamp in reinforced polyamide (nylon). Nuts and bolts in stainless steel.

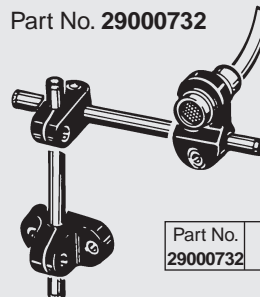
Color: black.



Application with a photocell or sensor.

Assembly Kit (for photocells or sensors)

Part No. 29000732



Part No.	Code
29000732	68923

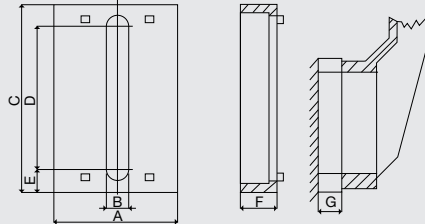
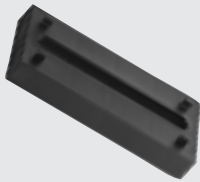
The kit consists of:

- 1 cross clamp Part No. 29000730.
- 1 T-clamp Part No. 29000733.
- 1 clamp for a photocell or sensor Part No. 29000731.
- 2 connecting rods with an outside diameter 0.39 in (10 mm) ; thickness 0.04 in (1 mm) ; length 5.9 in (150 mm), stainless steel.

Adjustable Guide Rail Brackets

Spacer

Part No. 29000734



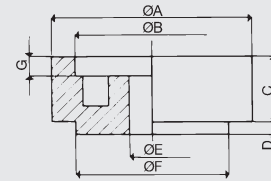
Part No.	Code	Dim	in	mm
29000734	6587	A	2.05	52
		B	0.41	10.5
		C	4.37	111
		D	3.39	86
		E	0.49	12.5
		F	0.59	15
		G	0.59	15

Material: reinforced polyamide (nylon).

- Allows application of Part 29000740 (drip tray support).
- Possibility of mounting several spacers together to obtain a wider bracket or guide rail distance.

Spacer (for supports and adjustable tops)

Part No. 29000735



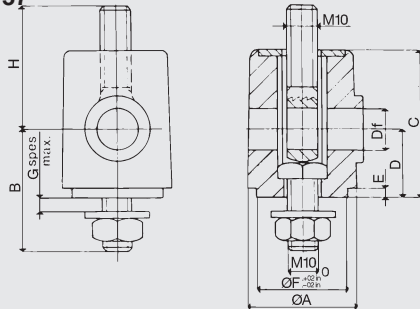
Material: reinforced polyamide (nylon).

- Allows an increase of 0.35" (9 mm) in height.

Part No.	Code	Dim	in	mm
29000735		A	1.42	36
		B	1.18	30
		C	0.35	9
		D	0.08	2
		E	0.41	10.5
		F	1.18	30
		G	0.10	2.5

Swivel Head

Part No. 29000737



Part No.	Code	Dim	in	mm
29000737		A	1.42	36
		B	1.69	43
		C	1.89	48
		D	0.89	22.5
		E	0.10	2.5
		F	1.18	30
		G	0.41	10.5
		H	1.77	45
		Rod Dia. (Df)		
		in	mm	
	64561	1/2	12	
	64581	5/8	16	

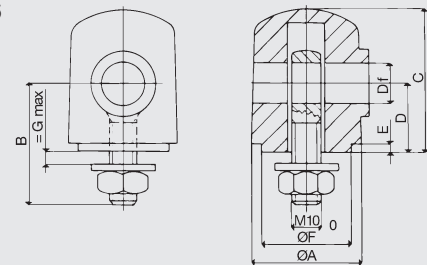
Material: reinforced polyamide (nylon) eyebolt, nuts and bolts in stainless steel.

- Can be fitted to support Part No. 29000739.

Accessories: spacer Part No. 29000735, code: 61931 (applicable to 1 or several spacers, by replacing standard screw with a longer one).

Swivel Head

Part No. 29000736



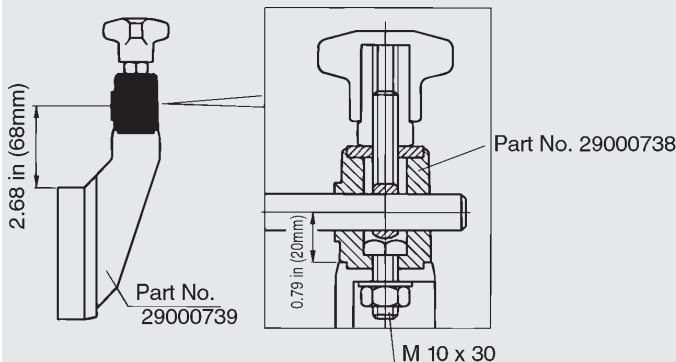
Part No.	Code	Dim	in	mm
29000736		A	1.42	36
		B	1.77	45
		C	1.83	46.5
		D	0.89	22.5
		E	0.10	2.5
		F	1.18	30
		G	0.49	12.5
		Rod Dia. (Df)		
		in	mm	
	6967	1/2	12	
	59041	5/8	16	

Material: reinforced polyamide (nylon) eyebolt, nuts and bolts in stainless steel.

- Can be fitted to support Part No. 29000739.

Accessories: spacer Part No. 29000739, code: 61931

- (Can be fitted to only one spacer.)



Adjustable Guide Rail Brackets

- Long-lasting, low-friction UHMWP profile
- Heavy duty 14 gauge stainless steel sheath
- Sanitary solid profile design seals out contaminants
- Standard 8', 10', 12', 20' lengths
- Other lengths cut to order
- Ready for immediate delivery

Round

Part No. 29000741



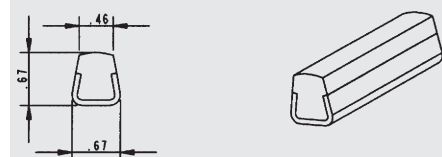
Flat

Part No. 29000745



Convex

Part No. 29000742



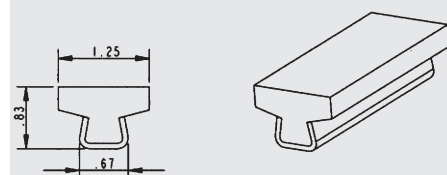
Neck Guide

Part No. 29000746



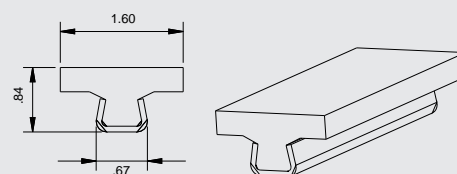
1 1/4" Tee

Part No. 29000743



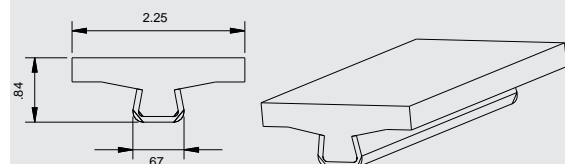
1.6" Tee

Part No. 29000747



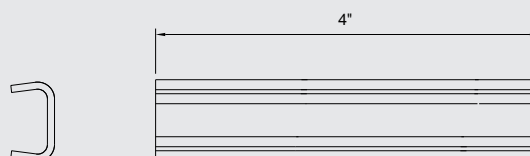
2 1/4" Tee

Part No. 29000744



Splice Sleeve

Part No. 29000748

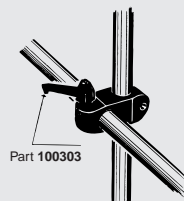
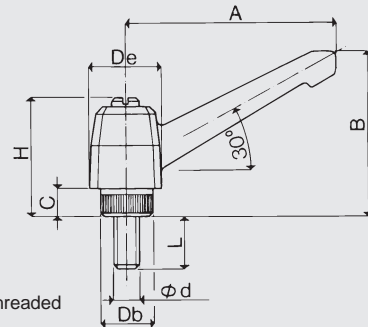
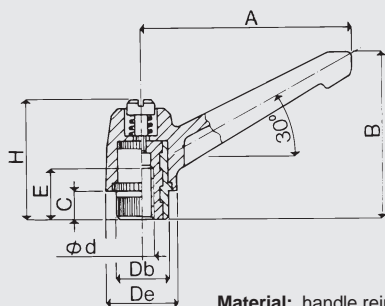


Adjustable Guide Rail Brackets

Ratchet Handles

Part No. 29000749

Part No. 29000750



Material: handle reinforced polyamide (nylon). Bushing with threaded bore: nickel plated brass. Threaded spindle: stainless steel.

Color: black.

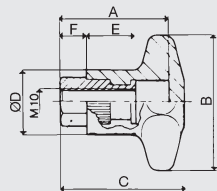
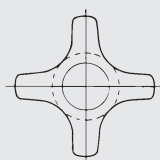
Application: to be used where limited space is available.

Function: after the handle has been turned, the handle can be pulled out and be turned back to the original start position.

Part			A		B		C		E		H		Db		De	
	Code	Ø d	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
29000749	60892	1/4"-20	1.57	40	1.57	40	0.28	7	0.47	12	1.14	29	0.43	11	0.63	16
	60852	5/16"-18	2.17	55	2.01	51	0.35	9	0.55	14	1.42	36	0.55	14	0.79	20
Part			A		B		C		L		H		Db		De	
	Code	Ø d	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
29000750	60912	1/4"-20	1.57	40	1.57	40	0.28	7	0.79	20	1.14	29	0.43	11	0.63	16
	60882	5/16"-18	2.17	55	2.01	51	0.35	9	0.98	25	1.42	36	0.55	14	0.79	20

Knobs

Part No. 29000751

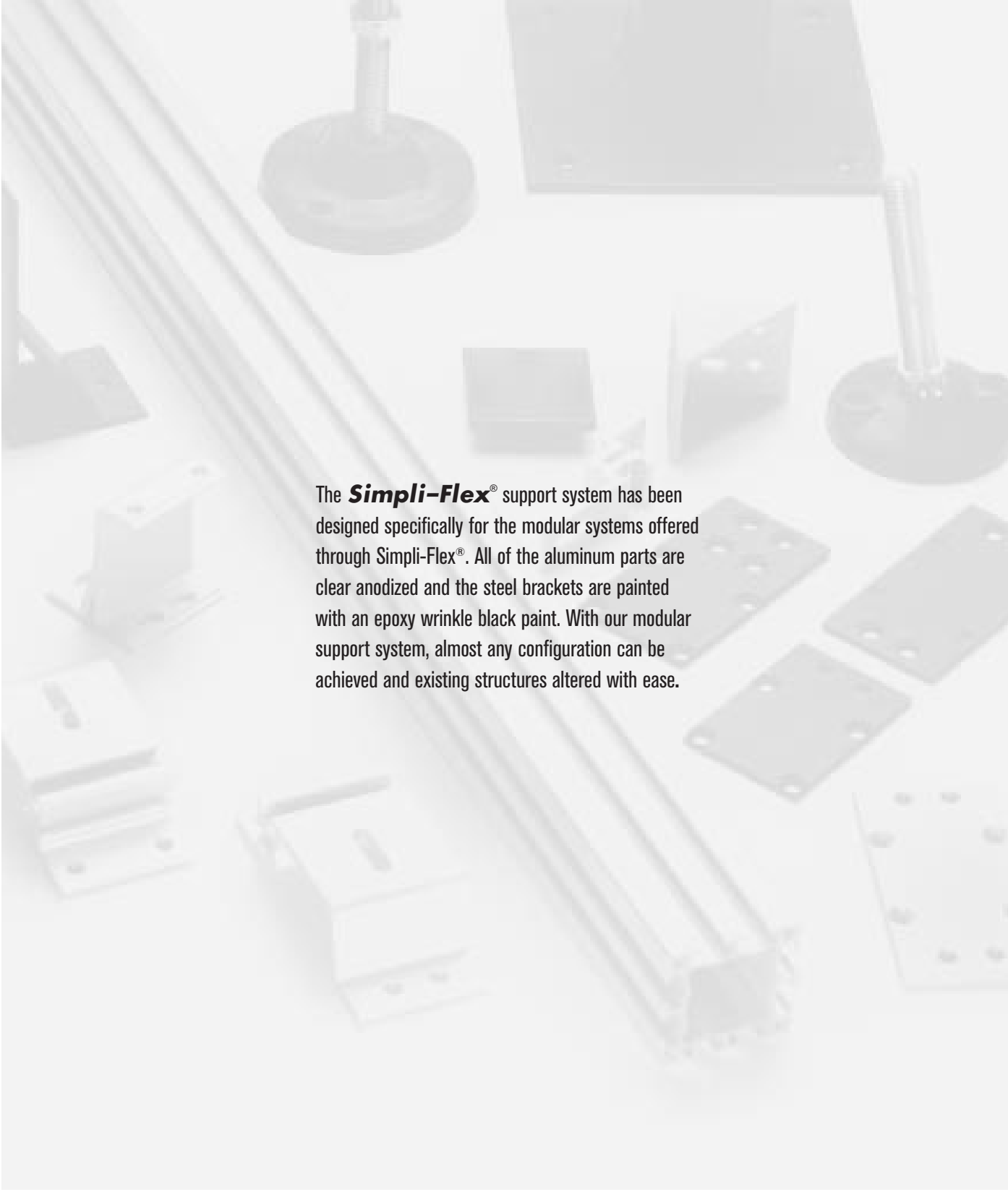


Part No.	Code	Dim	in	mm
29000751	54911	A	1.57	40
		B	1.97	50
		C	1.79	45.5
		D	0.91	23
		E	0.71	18
		F	0.39	10

Material: knob in reinforced polyamide (nylon). Metal insert in nickel-plated brass.

• Max. applicable torque on knob 215 in lb (2.5 kgm). For greater tightening, a wrench should be used on the nut.

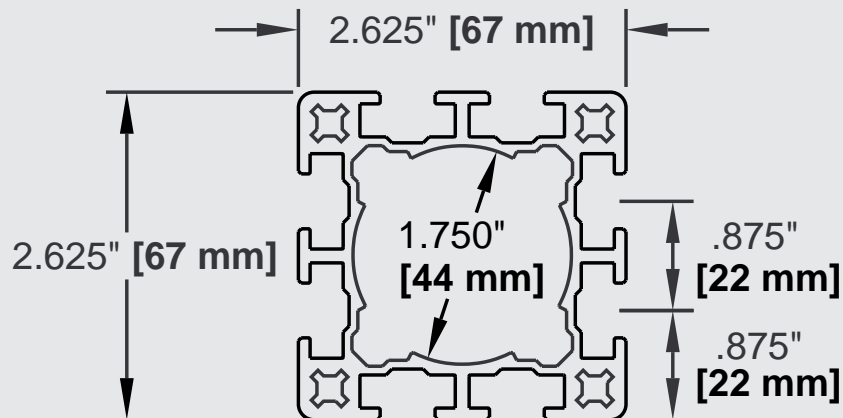
Support System



The **Simpli-Flex**® support system has been designed specifically for the modular systems offered through Simpli-Flex®. All of the aluminum parts are clear anodized and the steel brackets are painted with an epoxy wrinkle black paint. With our modular support system, almost any configuration can be achieved and existing structures altered with ease.

Support System

Part No. 29000410 (Support Beam)



Support Beam

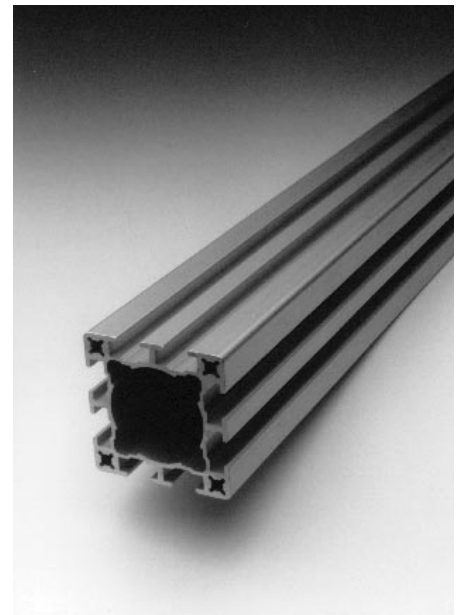
Simpli-Flex® (29000410) support beam is used to construct conveyor support legs, ceiling support hangers or basic frame structures. The beam is 2.625" (67 mm) square. The (29000410) beam features two standard T-BOLT slots per side and four pilot holes on each end to accept .250" (6 mm) Torx™ self-tapping bracket mounting screws (29000563).

The 1.75" (44 mm) diameter center cavity of the beam is sized to accept certain sizes of linear bearings, ball bearings or bushings. Extended lengths of support beam may be easily attached using joiner strips or support brackets.

Standard length is 10' (3 m)

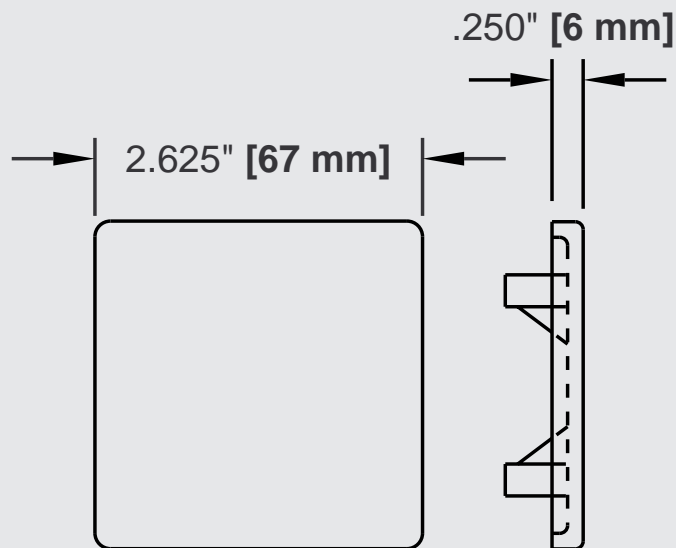
Please refer to common support leg styles at the end of this section.

Support Beam (29000410) can be ordered and supplied in pre-cut lengths.



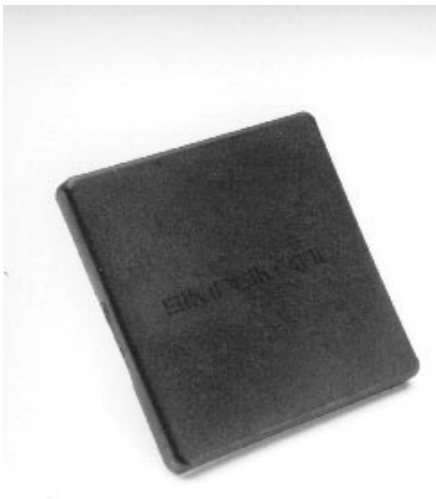
Support System

Part No. 29000411 (Support Beam - End Cap)



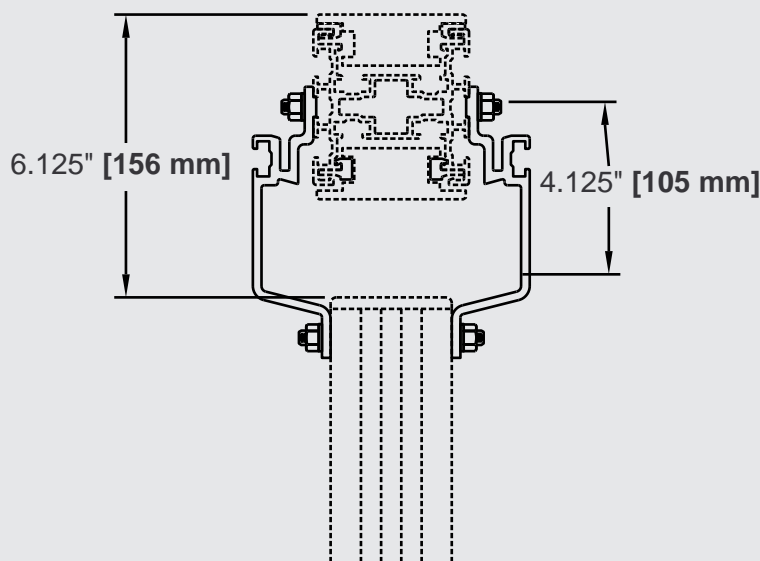
End Cap

The end cap is used to cover the cut end of the **(29000410)** support beam. The injection molded (ABS) thermo-plastic cap is manually pressed into the end of the support beam.



Support System

Part No. 29000420 (Straight Support Bracket)



Conveyor Support Brackets

Support brackets are used to attach any style chain beam to another structure or support member.

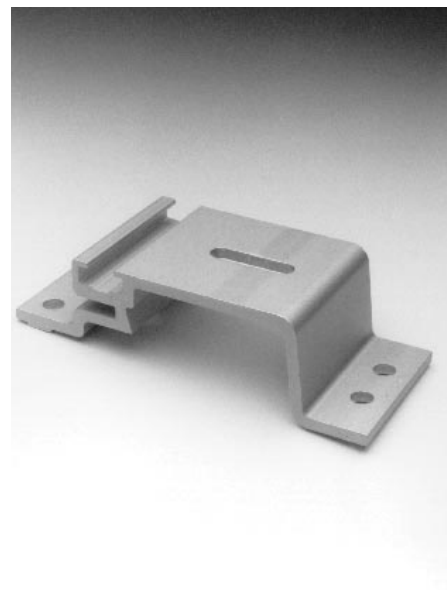
There are three types:

- The straight support bracket (29000420), for supporting a (29000050) full profile chain beam with a vertical (29000410) support beam.
- The foot support bracket (29000420), for attaching a chain beam to a horizontal support member.
- Buffer support brackets (29000422) provide alpine support or support for lightly loaded conveyors.
- All brackets are 2.5" wide.

The open design of these support brackets allows clearance for the return chain, drip catch system, electrical and pneumatic lines.

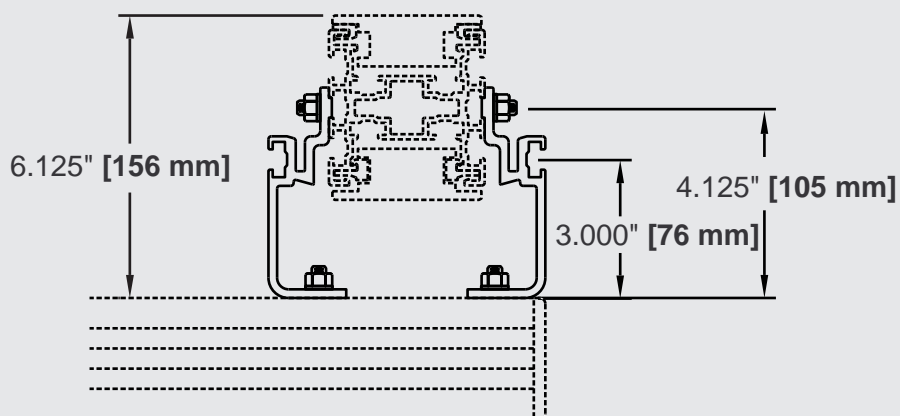
A .219" (5 mm) wide by .750" (19 mm) deep recess is provided just below the chain beam mounting holes for mounting drip wings or .1875" (5 mm) polycarbonate for point of operation guarding.

All brackets are made from 6063 anodized aluminum. They are mounted using a 8T-BOLT (29000445) and locknuts (29000512).

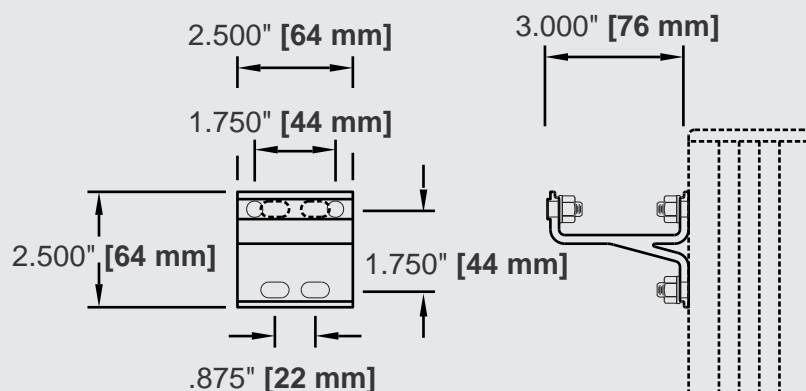


Support System

Part No. 29000421 (Foot Support Bracket)

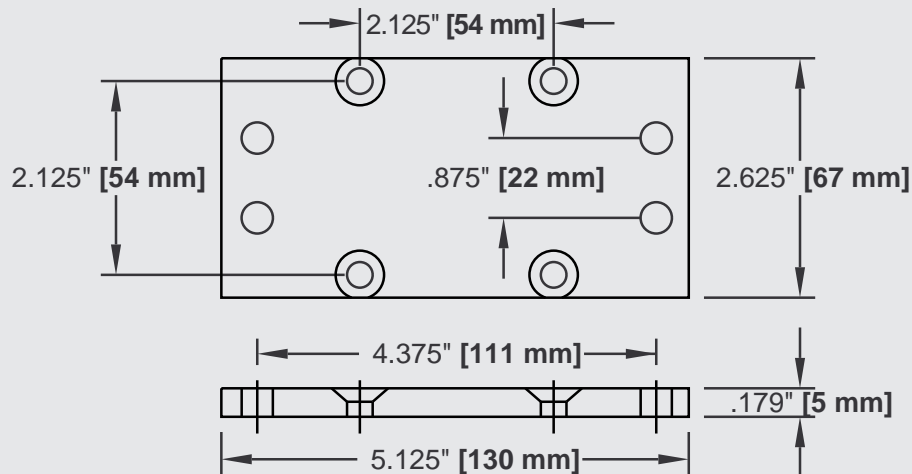


Part No. 29000422 (Buffer Support Bracket)



Support System

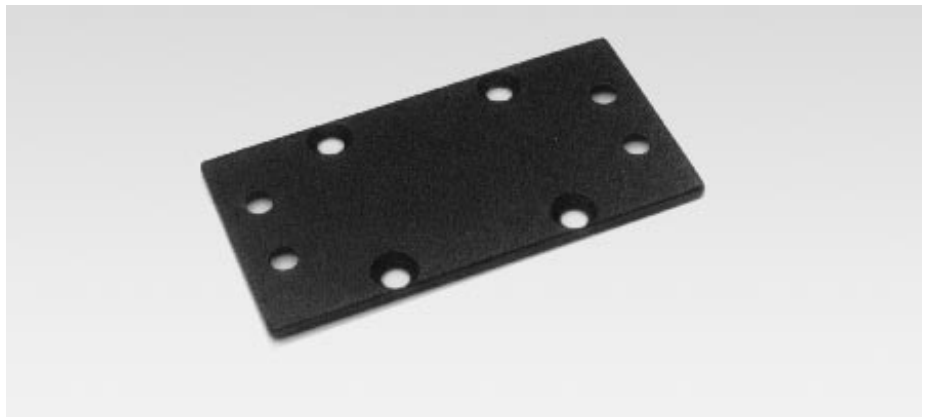
Part No. 29000423 (End Plate Bracket)



Support System Brackets

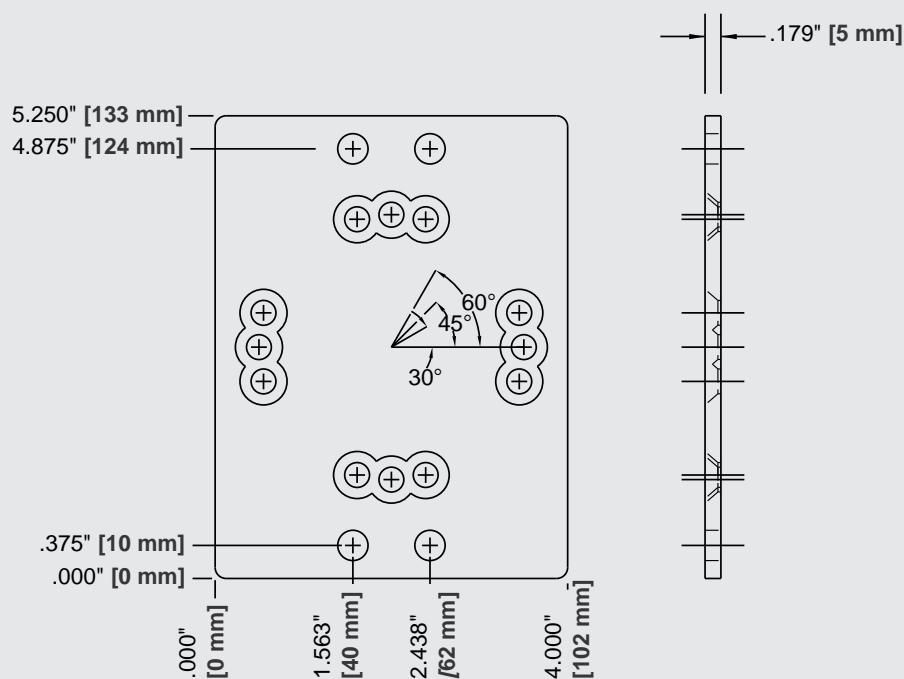
Two types of plate brackets are available to connect adjacent support beams:

1. End plate brackets (**29000423**) for perpendicular support beam connections.
2. Corner plate brackets (**29000425**) for outside corners and (**29000426**) for inside corners.



Support System

Part No. 29000424 (Multi-Mount End Plate Bracket)

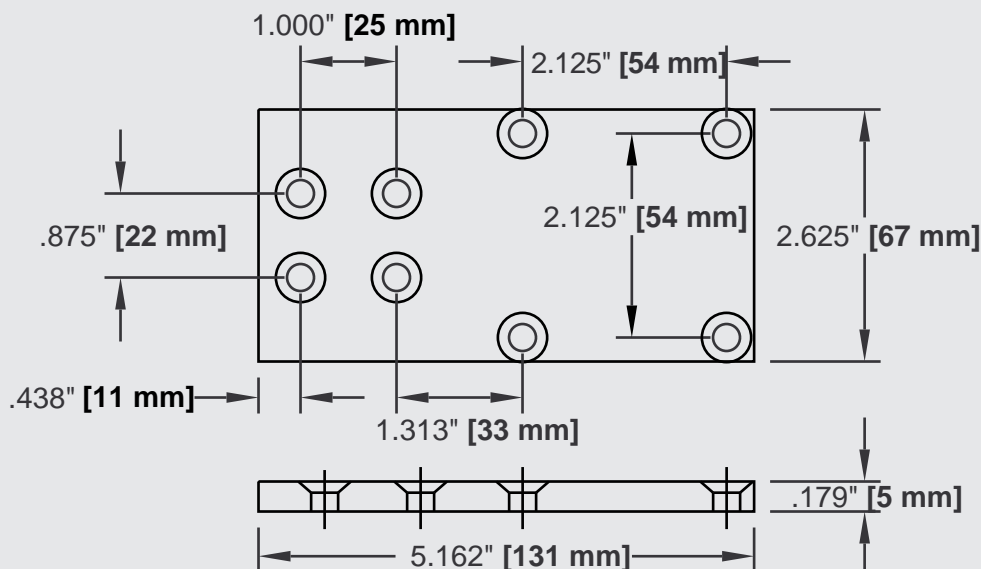


Support System Brackets

(29000424) – countersunk holes are provided to attach brackets to the ends of support beams using .250" x 1.25" (6 mm x 32 mm) Torx™ self-tapping screws (29000563). With this bracket, support beams can be mounted at 30°, 45°, and 60° angles. The remaining holes allow connection to the beam T-SLOTS using 6T-BOLT (29000445).

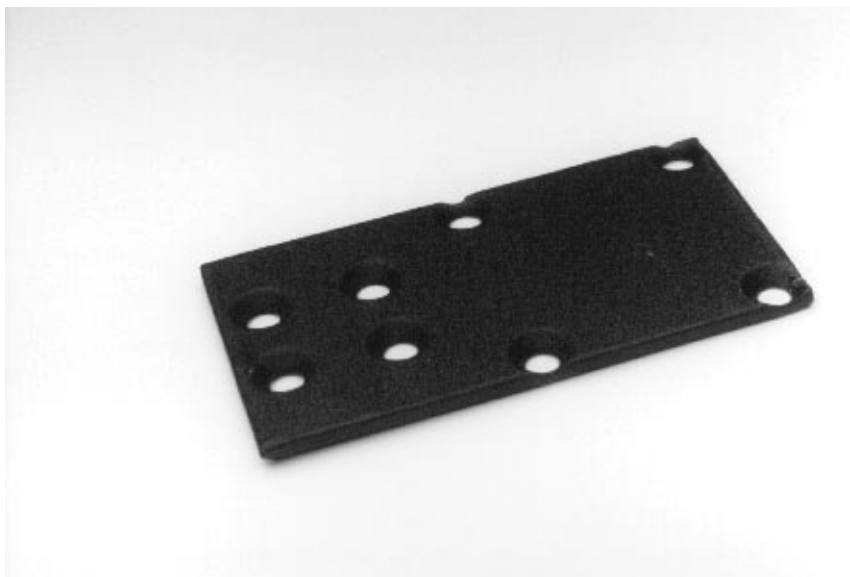
Support System

Part No. 29000425 (Outside Corner Plate Bracket)



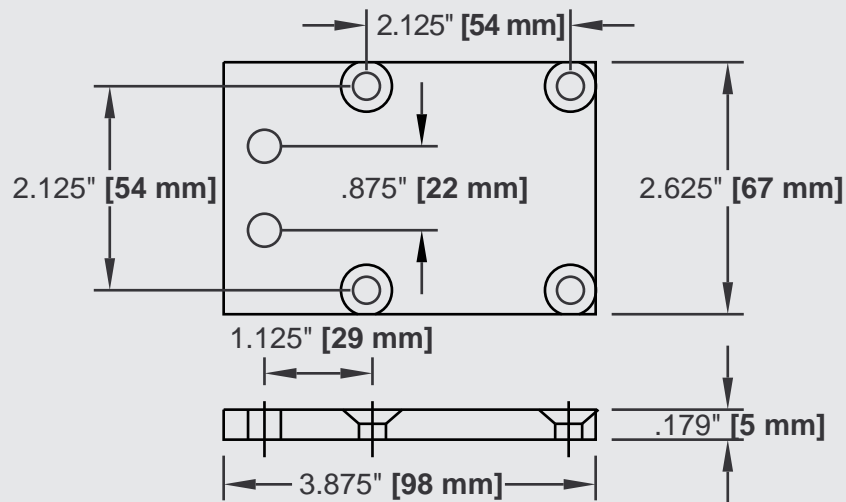
Support System Brackets

(29000425) – countersunk holes are provided to attach brackets to the ends of support beams using .250" x 1.25" (6 mm x 32 mm) Torx™ self-tapping screws (29000563). The remaining holes allow connection to the beam T-SLOTS using 1/4"-20 x 1/2" hex socket flat head Allen screws (29000551) and 1/4"-20 square nuts (29000490).



Support System

Part No. 29000426 (Inside Corner Plate Bracket)



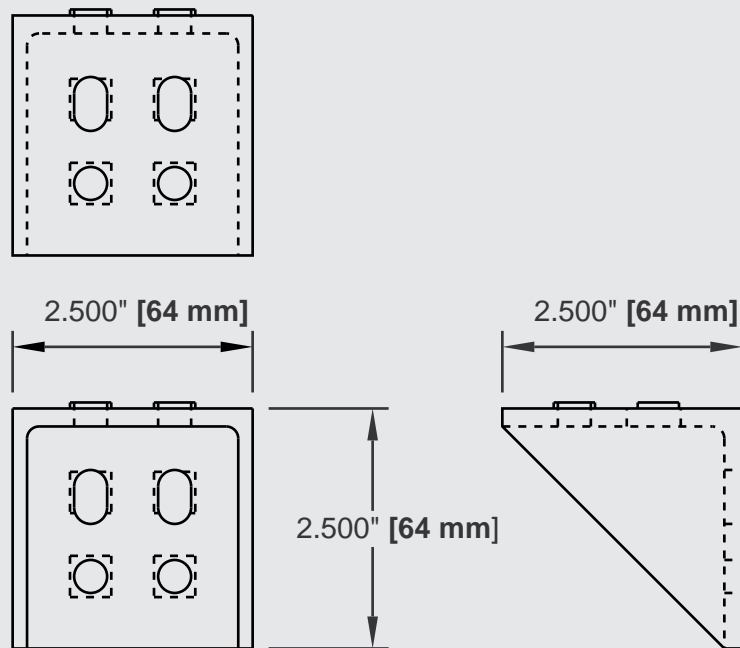
Support System Brackets

(29000426) – countersunk holes are provided to attach brackets to the ends of support beams using .250" x 1.25" (6 mm x 32 mm) Torx™ self-tapping screws (29000563). The remaining holes allow connection to the beam T-SLOTS using a 6T-BOLT (29000445).



Support System

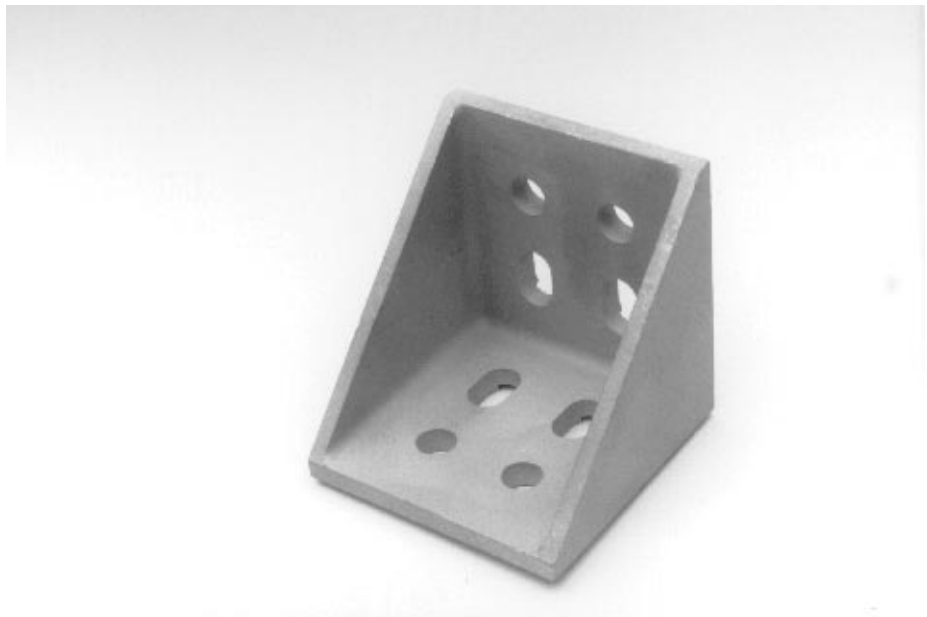
Part No. 29000427 (Full Web Bracket)



Full Web Bracket

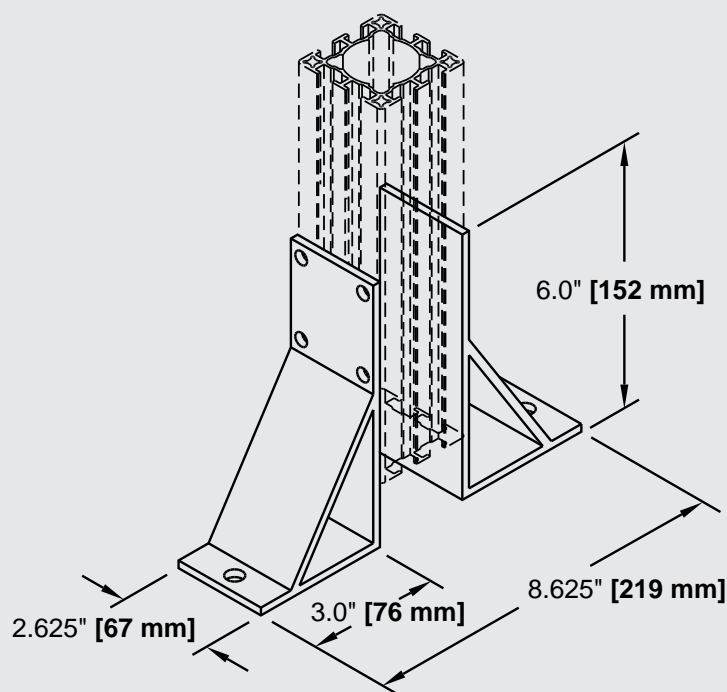
The full web bracket (29000427) is used on support members to attach or stabilize various types of structural members at 90° to one another. The brackets are precision cast from aluminum with a mating surface boss that positions in the support member T-SLOT. Exact bracket location is determined according to the needs of your application.

Fasten each with four 6T-BOLTS (29000445), staggered, washers and nuts.



Support System

Part No. 29000428 (Extruded Foot)



Extruded Foot

The **(29000428)** extruded foot is a one-piece extruded aluminum component which mounts to the side of a **(29000410)** support beam. Four 6T-BOLTS **(29000445)** and lock-nuts fasten the foot to the support beam.

To install, mount the support beam approximately 2" **(50 mm)** up from the base of the extruded foot to allow for minor conveyor height adjustment.

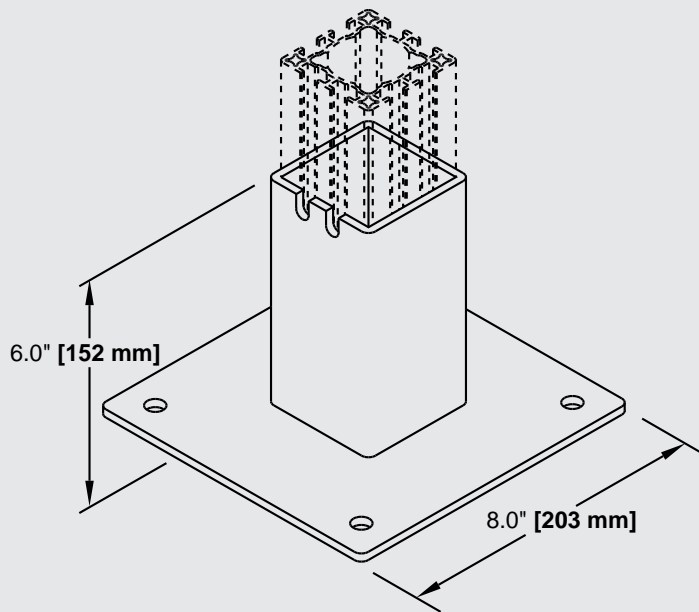
A clearance hole is provided to accept .375" **(10 mm)** anchor bolts. If larger anchor size hardware is needed, drill out a larger diameter clearance hole. Single or multiple feet may be used on each support, as required by your application.

Depending on the position of the guide rails and brackets being used, the extruded foot may also be used as a ceiling support bracket. Simply mount the foot directly to the side of a chain beam and drill out the clearance hole to accept threaded rod stringers.



Support System

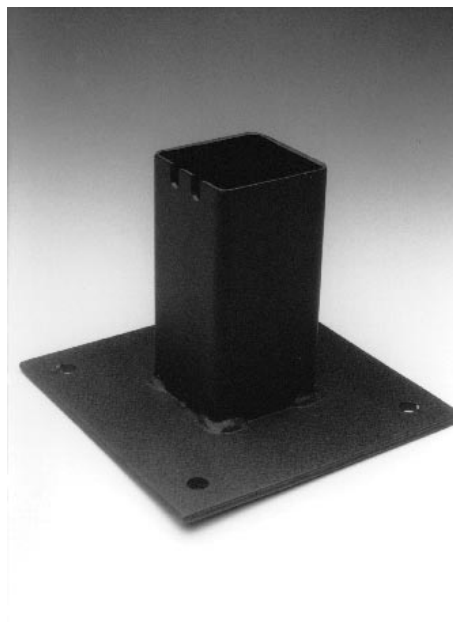
Part No. 29000431 (Platform Foot)



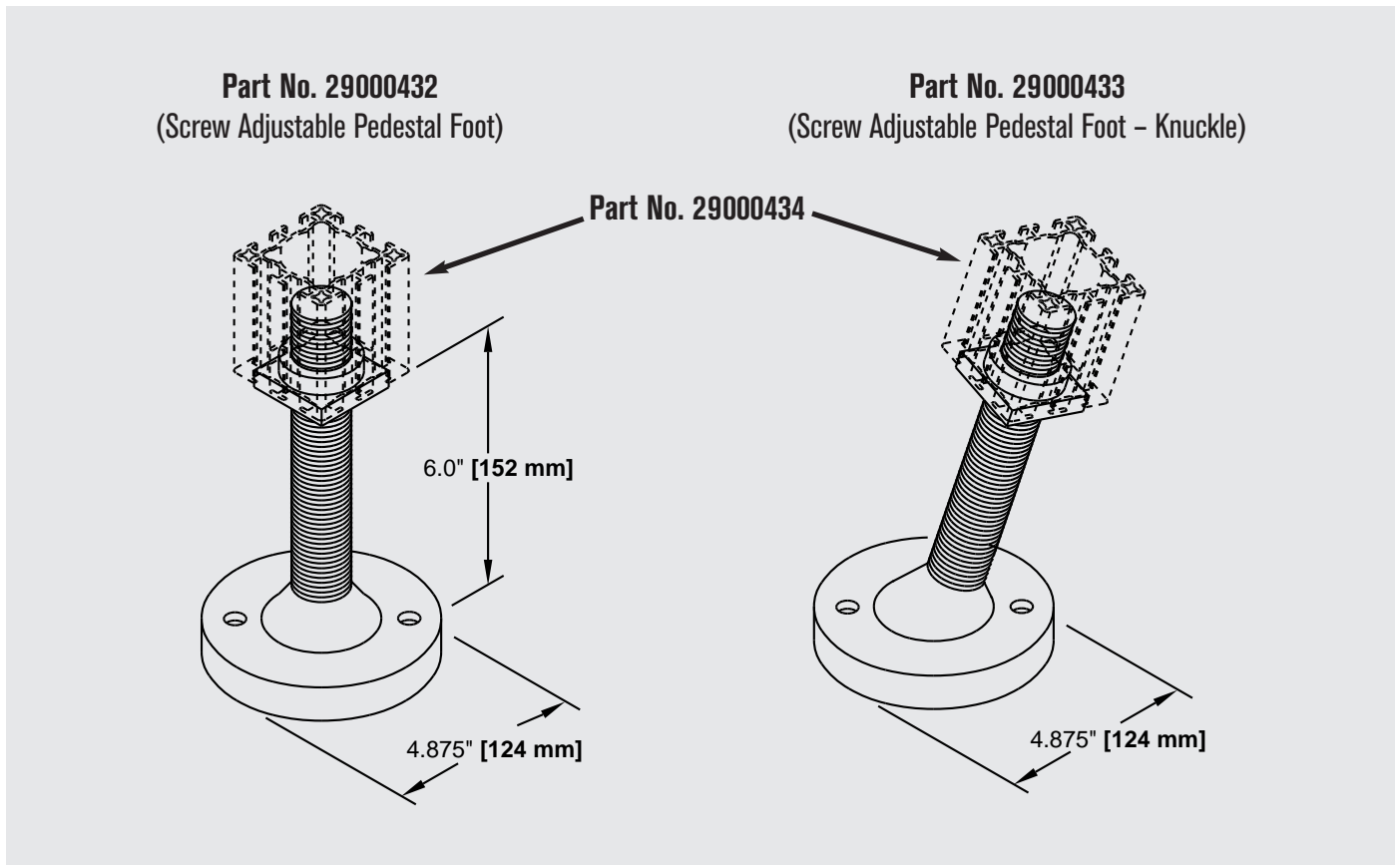
Platform Foot

The (29000431) platform foot is a steel weldment which provides a more rigid base. It has a .250" thick steel plate base with clearance holes on each corner to accept .375" (10 mm) anchor bolts.

The upright support tube uses two 6T-BOLTS (29000446) or two M8 TBOLTS (29000447), flat washers and locknuts to hold a (29000410) support leg to one sidewall. Two hex head bolts are provided on the opposite side and tightened down to hold the support leg rigid to the opposite side. The support beam mounts approximately 2" (50 mm) up from the base of the platform foot to allow for minor conveyor height adjustment.



Support System



Screw Adjustable Pedestal Foot

The base of the pedestal foot allows foot adjustment while the pedestal is fixed to the floor.

Pedestals come in two styles:

1. The fixed pedestal (**29000432**) has a fixed base for use where anchor bolts and floor inserts will attach the pedestal to the floor.
2. The knuckle pedestal (**29000433**) has a pivoting knuckle base for use where cast floor anchors, flat washers and nuts will be used to attach the pedestal to the floor.

Pedestal feet may also be attached with an epoxy adhesive or using .375" (10 mm) anchor bolts.

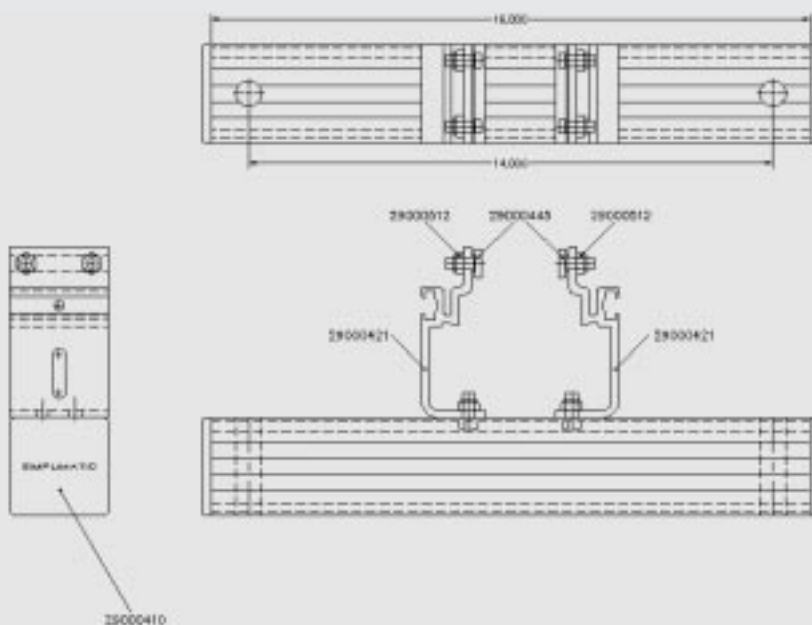
The pedestal foot is supplied with a thermoplastic insert which presses into the bottom of a (**29000410**) support beam leg. The insert accepts a center post with either a fixed or a knuckle-adjustable pedestal base.

NOTE: Required for use in "clean" manufacturing environments.



Support System

Part No. 29000429 (Ceiling Support Hanger)



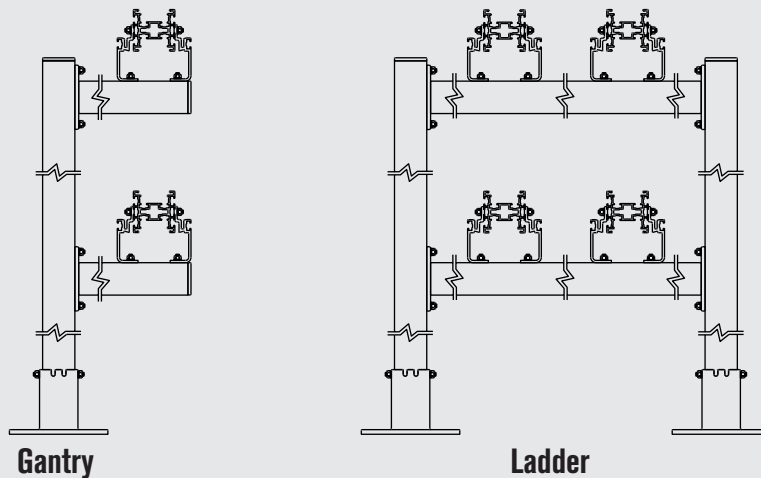
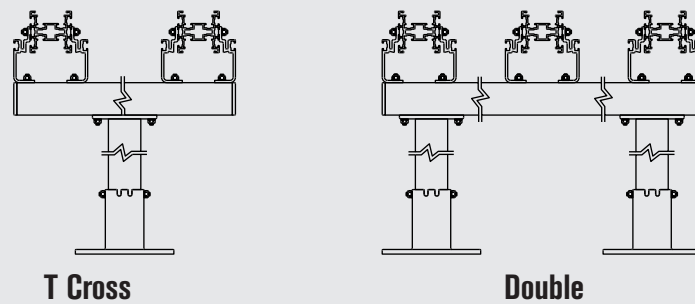
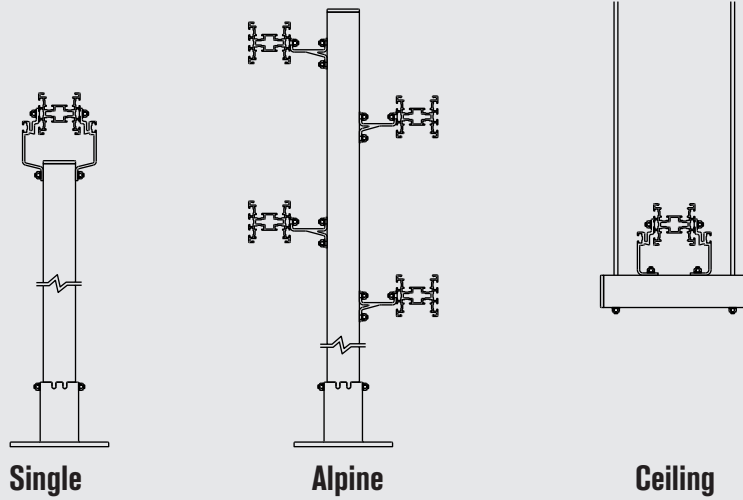
Ceiling Support Hanger

The Ceiling Support Hanger (29000429) is used to support conveyor from the ceiling. A threaded rod (not provided) is used to secure the ceiling support hanger to the ceiling.


Please consult the factory for non-standard lengths.

Support System

These are a few examples of what can be done with the Simpli-Flex® support system.



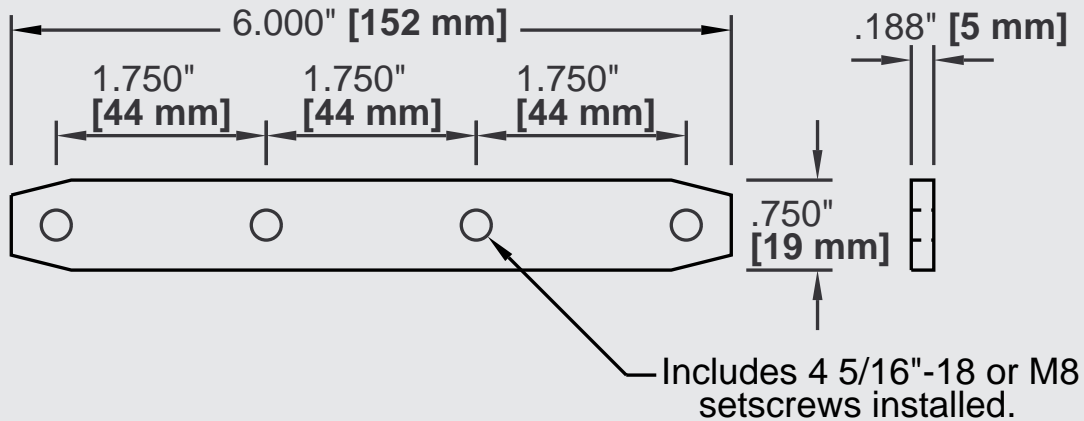
Hardware



The **Simpli-Flex**® system includes all the hardware you need for fastening together the components. A full complement of metric fasteners is also available. As an added feature, the T-SLOT construction of the components will accept many types of commonly available fasteners and brackets.

Hardware

Part No. 29000440 (Joiner Strip)
Part No. 29000441 (Joiner Strip – Metric)



Joiner Strip

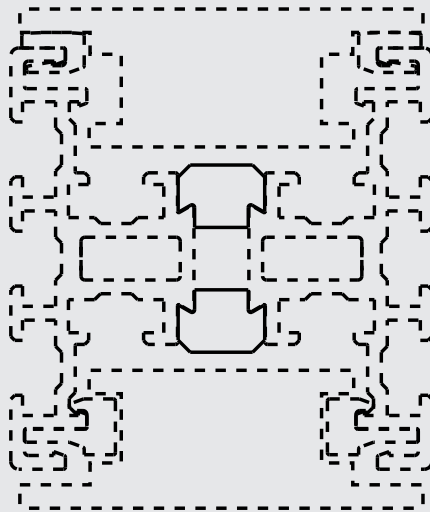
Joiner strips (**29000440**) fit into the T-SLOTS to connect beams, curves, drives and idlers. These strips are zinc plated mild steel.

Each strip is supplied with four 5/16"-18 UNC hex socket setscrews with knurled cup points installed. The (**29000441**) is supplied with M8 setscrews.



Hardware

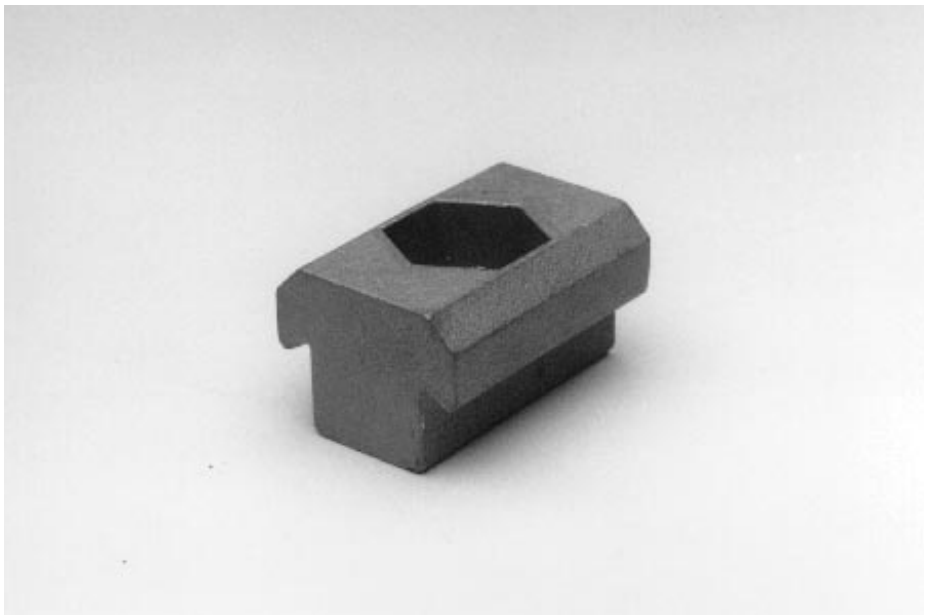
Part No. 29000444 (Dovetail Clamp)



Dovetail Clamp

The dovetail clamp connects two parallel sections of Half Width Conveyor Beam **(29000052)** together.

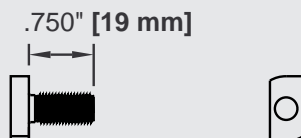
For a 10' **(3 m)** section of beam, place dovetail clamps in the center, and approximately 1' **(300 mm)** in from either end of the beam. When the two beam sections clamp together, the outside dimension is that of the Full Profile Conveyor Beam **(29000050)**. Each clamp consists of two mating aluminum castings, a socket head cap screw and a locknut.



Hardware

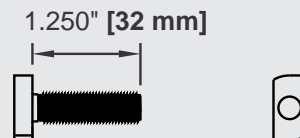
Part No. 29000445 (6T-Bolt)

Part No. 29000447 (6T-Bolt - Metric)



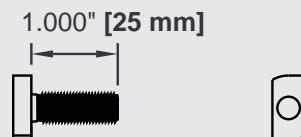
Part No. 29000453 (10T-Bolt)

Part No. 29000455 (10T-Bolt - Metric)



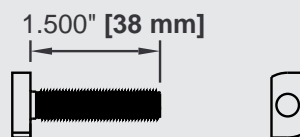
Part No. 29000449 (8T-Bolt)

Part No. 29000451 (8T-Bolt - Metric)



Part No. 29000457 (12T-Bolt)

Part No. 29000459 (12T-Bolt - Metric)



T-Bolts

Four lengths of **T-BOLTS** with 5/16"-18 thread are available to connect Simpli-Flex[®] components:

1. .75" long (**29000445**)
2. 19mm long (**29000447**)
3. 1" long (**29000449**)
4. 25mm long (**29000451**)
5. 1.25" long (**29000453**)
6. 32mm long (**29000455**)
7. 1.5" long (**29000457**)
8. 38mm long (**29000459**)

Sizing relates to the length of the usable threaded bolt. **T-BOLTS** insert into a T-SLOT and rotate clockwise until locked.

NOTE: All **T-BOLTS** are SAE grade 5 fasteners.

Locknuts

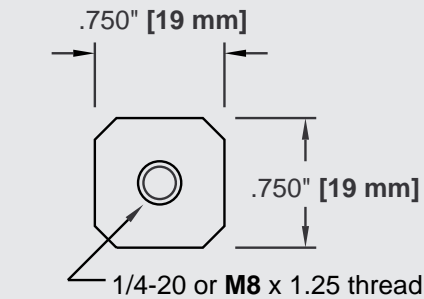
Nylok[™] self-locking hex nuts are available for use with all threaded bolts. Two stock sizes are available:

1. 1/4"-20 thread (**29000510**)
2. 5/16"-18 thread (**29000512**)
3. M8 x 1.25 thread (**29000514**)

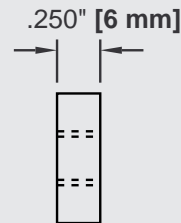
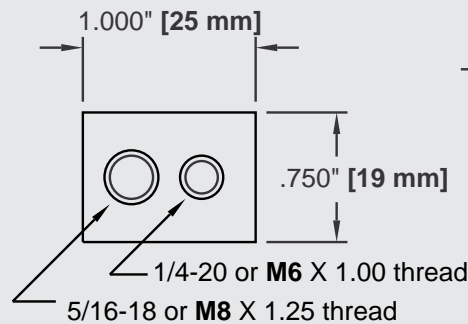
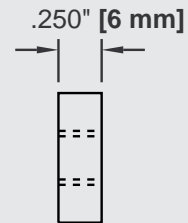


Hardware

Part No. 29000490 (Square Nut)
Part No. 29000492 (Double Square Nut)



Part No. 29000494 (Metric Square Nut)
Part No. 29000496 (Metric Double Square Nut)



Square Nuts

Square nuts slide into the T-SLOTS and accept cap screws, flathead screws, or hex head bolts. Two types are available:

1. 1/4"-20 thread (**29000490**)
2. M8 x 1.25 thread (**29000494**)

A double square nut (**29000492** and **29000496**) is also available where the square nut needs to firmly locate in the T-SLOT, as with vertical T-SLOTS.

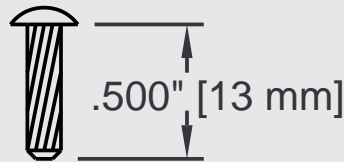
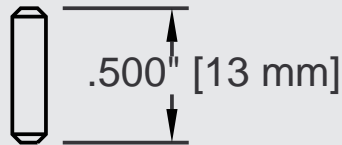
We also offer a square nut with locking setscrew hole.



Hardware

Part No. 29000565 (Roll Pin – Spring Steel)

Part No. 29000567 (Drive Pin – Fluted)



Pins

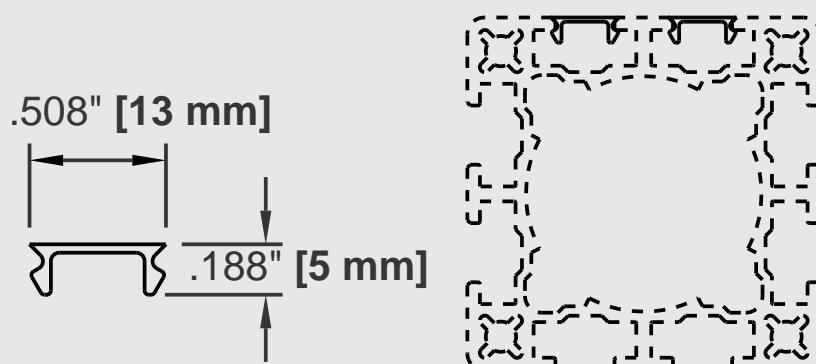
Two types of pin fasteners are available for use with Simpli-Flex® components:

1. A .125" (3 mm) x .50 (13 mm) spring steel roll pin (**29000565**) attaches wearstrips and retainer strips to the chain beam. Use one pin for each section and place it approximately 2" (50 mm) in from the leading end in the direction of conveyor chain travel.
2. Fluted drive pins (**29000567**) pin the (**29000314**) rail cover to the (**29000303**) rail on the top edge of the rail as necessary to keep the cover from slipping.



Hardware

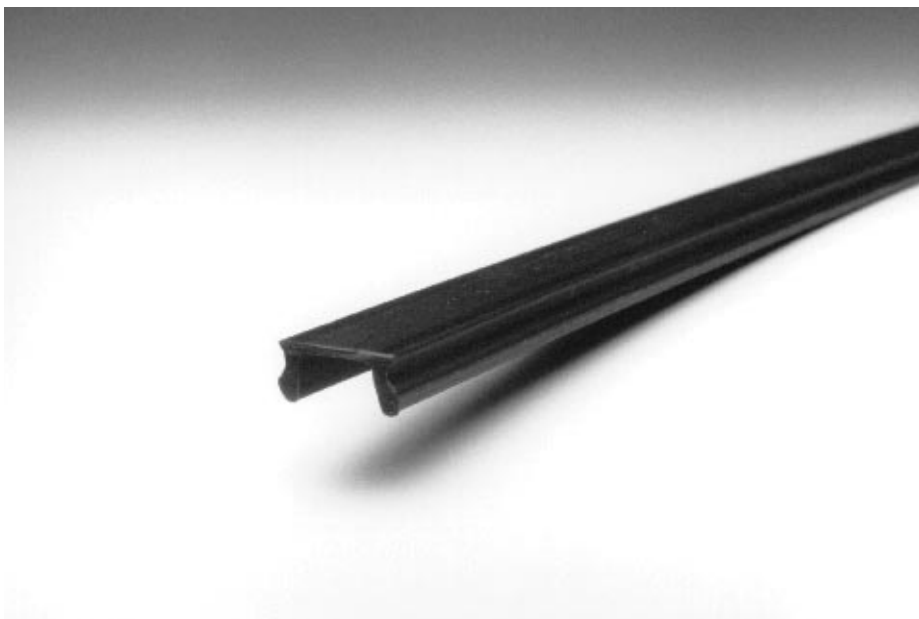
Part No. 29000569 (T-Slot Cover)



T-Slot Cover

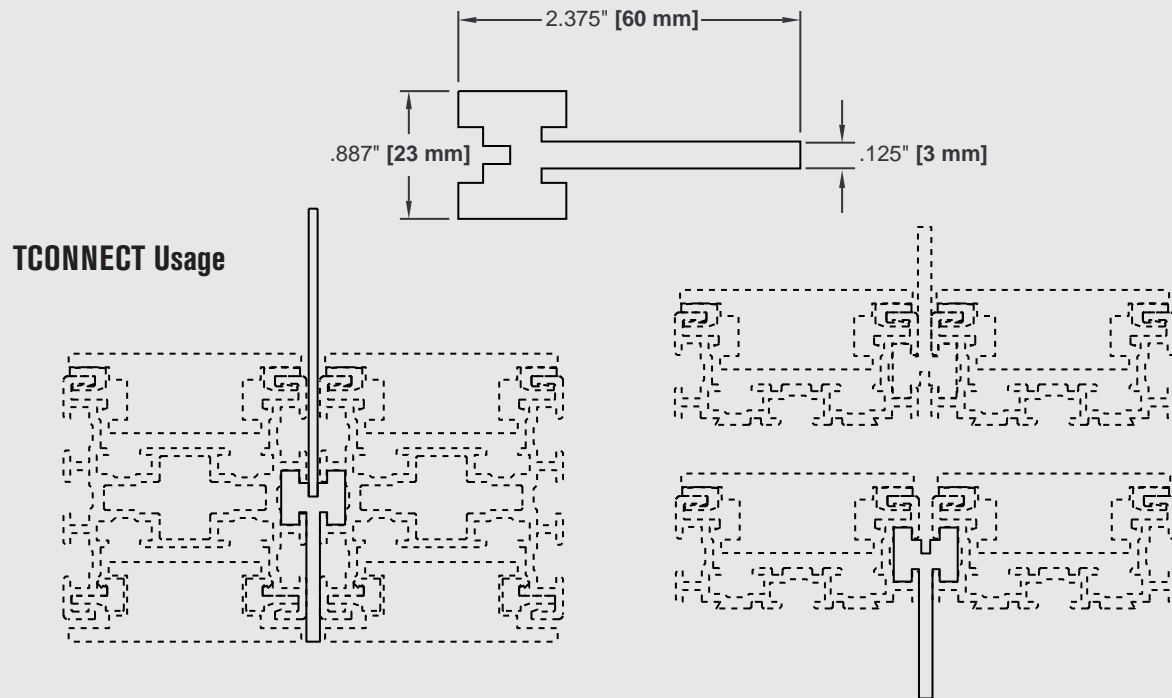
The (29000569) is a PVC insert that snaps into either conveyor beam or support beam T-SLOTS.

- Standard length is 20' (6 m).



Hardware

Part No. 29000570 (T-Slot Connector)



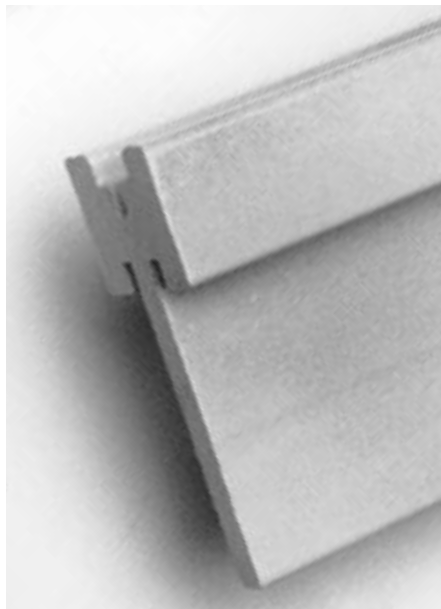
T-Connect

In certain applications, such as side transfers, it is necessary to run two parallel conveyor beams adjacent to one another. In these situations, insert T-Slot Connector (**29000570**) into the center T-SLOTS of the two beams to hold them firmly together.

In its upright position, the (**29000570**) serves as a 1/8" (**3 mm**) deadplate between two adjacent chains.

In its inverted position, the (**29000570**) will accept an 11 gauge (**3 mm**) splitter plate designed for each individual application.

The (**29000570**) material is UHMW PE.



Hardware


Fastener List

All fasteners are zinc plated unless otherwise noted:

Type	Part No.*	Description	Part No.*	Metric Description (Metric Part No.)
BOLTS	29000470	5/16"-18 x .75" Carriage Bolt	29000590	8 mm x 1.25 x 20 mm Carriage Bolt
	29000472	5/16"-18 x 1" Carriage Bolt	29000591	8 mm x 1.25 x 25 mm Carriage Bolt
	29000474	5/16"-18 x 1.25" Carriage Bolt	29000592	8 mm x 1.25 x 32 mm Carriage Bolt
	29000476	5/16"-18 x 1.50" Carriage Bolt	29000593	8 mm x 1.25 x 38 mm Carriage Bolt
	29000480	1/4"-20 x 1" Hex Head Bolt	29000594	6 mm x 1.00 x 26 mm Hex Head Bolt
	29000482	5/16"-18 x 1" Hex Head Bolt	29000595	8 mm x 1.25 x 26 mm Hex Head Bolt
NUTS	29000500	1/4"-20 Hex Head Nut	29000596	6 mm x 1.00 Hex Head Nut
	29000502	5/16"-18 Hex Head Nut	29000597	8 mm x 1.25 Hex Head Nut
	29000510	1/4"-20 Hex Lock Nut	29000598	6 mm x 1.00 Hex Lock Nut
	29000512	5/16"-18 Hex Lock Nut	29000599	8 mm x 1.25 Hex Lock Nut
WASHERS	29000520	Square Adj. Guide Rail Bracket Washer (for 5/16" CBOLTS)	29000600	Square Adj. Guide Rail Bracket Washer
	29000530	1/4" Flat Stainless Steel Washer	29000601	6 mm Flat Stainless Steel Washer
	29000532	5/16" Flat Stainless Steel Washer	29000602	8 mm Flat Stainless Steel Washer
	29000534	1/4" Lock Washer	29000603	6 mm Lock Washer
	29000536	5/16" Lock Washer	29000604	8 mm Lock Washer
SCREWS	29000540	1/4"-20 x .50" Flat Head Allen Screw – Black Zinc	29000605	6 mm x 1.00 x 13 mm Flat Head Allen Screw – Black Zinc
	29000541	1/4"-20 x .50" Flat Head Allen Screw	29000606	6 mm x 1.00 x 13 mm Flat Head Allen Screw
	29000543	1/4"-20 x .75" Flat Head Allen Screw – Black Zinc	29000607	6 mm x 1.00 x 19 mm Flat Head Allen Screw – Black Zinc
	29000545	1/4"-20 x .75" Flat Head Allen Screw	29000608	6 mm x 1.00 x 19 mm Flat Head Allen Screw
	29000547	1/4"-20 x .50" Knurled Cup Point Allen Setscrew	29000609	8 mm x 1.00 x 10 mm Knurled Cup Point Allen Setscrew
	29000549	5/16"-18 x .3125" Knurled Cup Point Allen Setscrew	29000610	8 mm x 1.25 x 8 mm Knurled Cup Point Allen Setscrew
	29000563	1/4"-20 x 1.25" Torx™ Flat Head Self-Tapping Screw	29000611	6 mm x 1.00 x 32 mm Torx™ Flat Head Self-Tapping
	29000551	1/4"-20 x .75" Socket Head Cap Screw	29000612	6 mm x 1.00 x 16 mm Socket Head Cap Screw
	29000553	1/4"-20 x 1" Socket Head Cap Screw	29000613	6 mm x 1.00 x 25 mm Socket Head Cap Screw
	29000555	1/4"-20 x 1.25" Socket Head Cap Screw	29000614	6 mm x 1.00 x 32 mm Socket Head Cap Screw
	29000571	5/16"-18 x .75" Socket Head Cap Screw	29000615	8 mm x 1.25 x 16 mm Socket Head Cap Screw
	29000573	5/16"-18 x 1" Socket Head Cap Screw	29000616	8 mm x 1.25 x 26 mm Socket Head Cap Screw
	29000575	5/16"-18 x 1.25" Socket Head Cap Screw	29000617	8 mm x 1.25 x 50 mm Socket Head Cap Screw
	29000577	5/16"-18 x 1.50" Socket Head Cap Screw	29000618	8 mm x 1.25 x 60 mm Socket Head Cap Screw

*For ordering metric hardware add “-M” to the part number. Example: 1/4 NUT-M

Drip Catch System

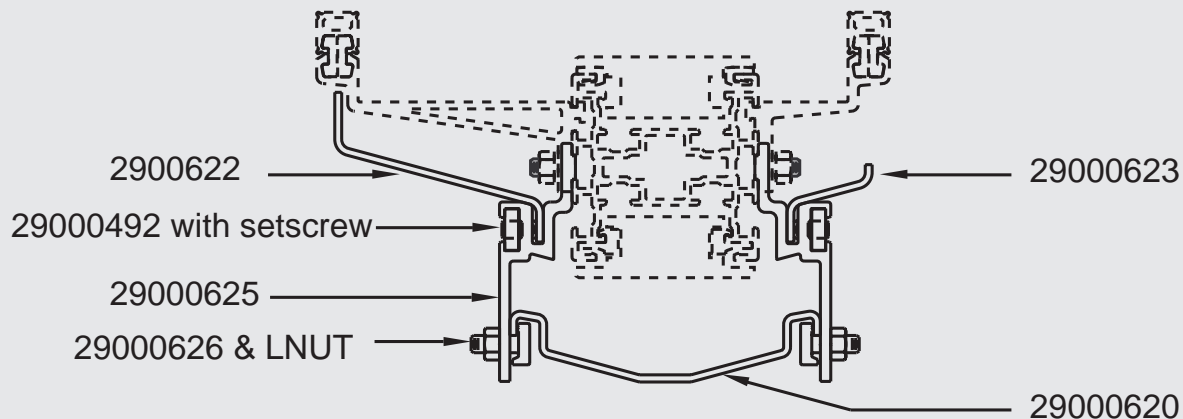


The flexible **Simpli-Flex**® system is ideal for use with virtually any layout requiring the collection of residual liquids, powder or debris, whether from a lubricated operation, package leakage, or some other source. For these applications the modular drip catch components are used.

- The drip catch components consist of vacuum-formed thermoplastic, extruded ABS and injection-molded ABS plastic parts.
- The drip catch wing components can be used to build a collection trough up to 12" (305 mm) wide under the conveyor guide rails.

Drip Catch System

Drip Catch Usage

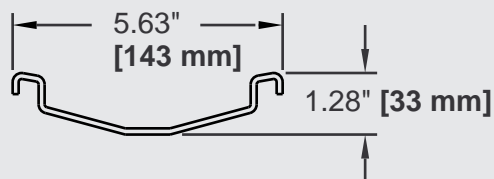


Drip Catch Pan

- A 5.625" (143 mm) wide by 10' (3 m) long black ABS extrusion (29000620) is used under straight sections of conveyor beam.
- The drip catch may be trimmed as needed. Individual sections of drip catch are connected by the drip catch splice fitting (29000621).
- The drip catch locates on the underside of the chain beam and attaches to the elongated slots on either foot support brackets (29000420, 29000421), or drip catch support brackets (29000625) using retainer bolts (29000626) and locknuts.
- To provide a wider catch area under extended width guide rails, use a drip wing on one or both sides of the chain beam. The wing is placed into the recess in the mounting brackets, and held in place by a 5/16"-18 x .250" (6 mm) mounting setscrew.
- Using drip wings on both sides increases the drip catch width to 12" (305 mm) overall.
- Standard length for drip catch pan is 10' (3 m).

NOTE: It should be supported by brackets on 5' (1.5 m) centers, and mounted so the drip catch pan slopes 3-5° toward one end to ensure proper drainage. Drip wings are only used in horizontal applications (no vertical turns).

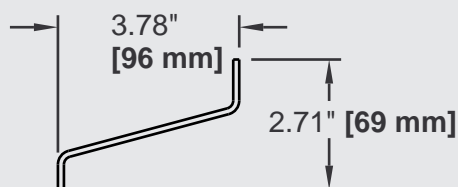
Drip Catch System



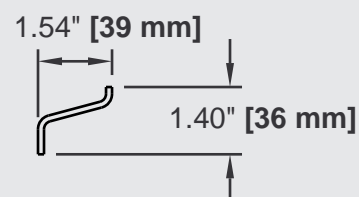
Part No. 29000620
(Drip Catch Pan)



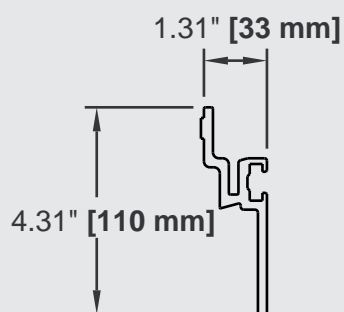
Part No. 29000621
(Drip Catch Splice Fitting)



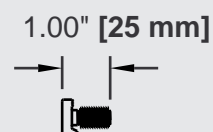
Part No. 29000622
(Drip Catch Long Wing)



Part No. 29000623
(Drip Catch Short Wing)



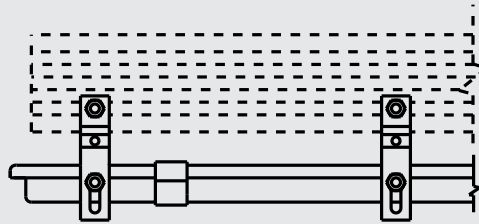
Part No. 29000625
(Drip Catch Support Bracket)



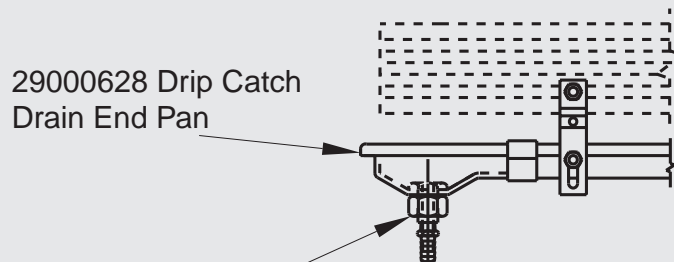
Part No. 29000626
(Drip Catch Pan Retaining Bolt)

Drip Catch System

Part No. 29000627 (Drip Catch Plain End Pan)



Part No. 29000628 (Drip Catch Drain End Pan)



29000711 Brass Conn. w/nut
29000712 Brass Fitting

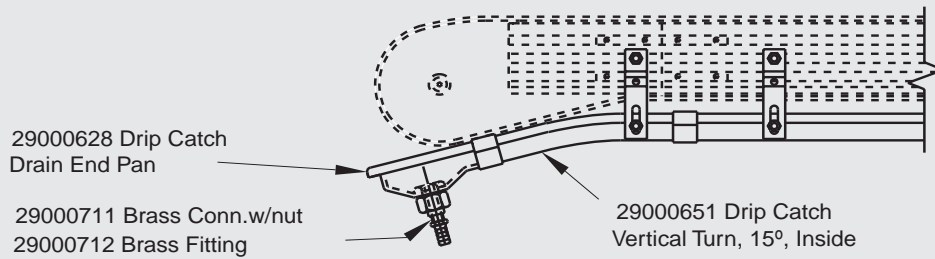
Drip Pan End

- The Drip Pan End (**29000627**) caps off the upper end of a run of drip catch. A collection point at the opposite end of a single run of drip catch pan is required.
- For collection at any other point in a straight section, use a Drip Catch Drain End Pan (**29000628**). For splices to the drip catch pan, use all-purpose plastic pipe adhesive (APA) and the drip catch splice fitting (**29000621**).

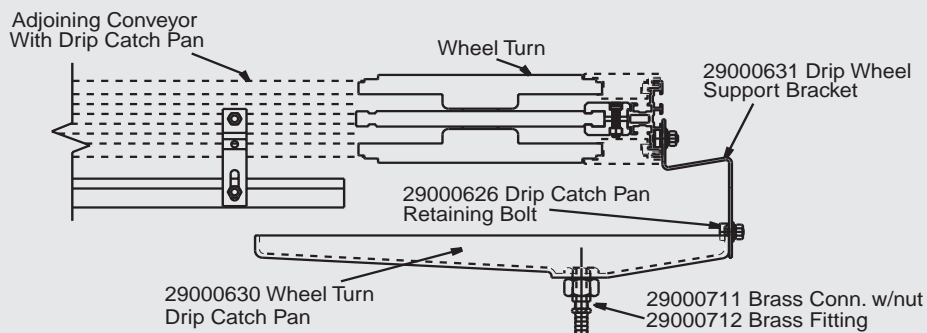


Drip Catch System

Part No. 29000620 (Drip Catch Idler End Drain Pan)



Part No. 29000630 (Wheel Turn Drip Catch Pan)



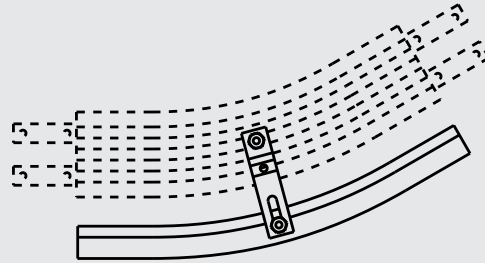
Wheel Turn Drip Catch Pan

- A 20" (508 mm) diameter drip catch which can be used as a drainage collection point under any 27 series wheel turn.
- The drip wheel catch attaches to the wheel turn using a drip catch support bracket (29000631), located on the lower T-SLOT in the center of the wheel turn arc.

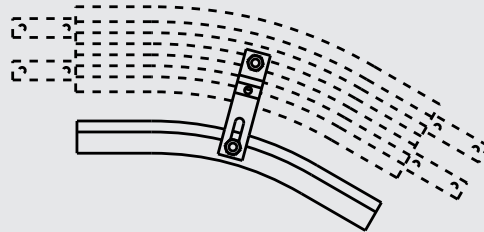


Drip Catch System

Part No. 29000713 (Drip Catch Vertical Turn Outer)



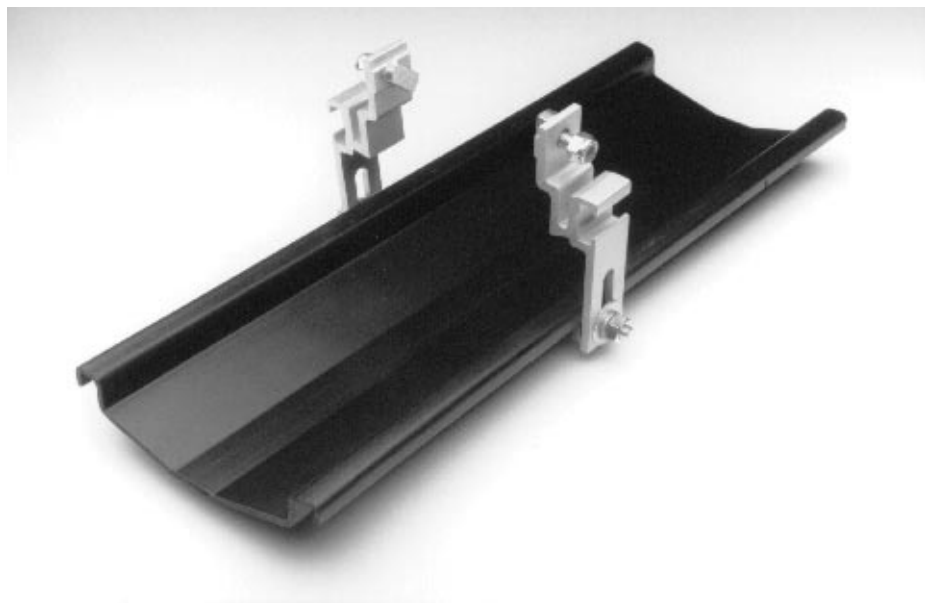
Part No. 29000714 (Drip Catch Vertical Turn Inner)



Concave (Outer) and Convex (Inner) Vertical Plain Curve Drip Catches

Both sets of curves are formed so they can be positioned and mounted 2.438" (62 mm) away from the underside of a standard vertical curve. The vertical drip catch mounts to support brackets using retainer bolts (29000626) and lock nuts.

For applications with parallel beams on close center distances, Simplimatic Automation can help you find other methods of handling drainage. Please consult Simplimatic Automation or your authorized distributor.



Drip Catch System

Drip Catch Vertical Turn Outer



Part No. 29000645
(Drip Catch Vertical Turn
- 90° - Outer)



Part No. 29000644
(Drip Catch Vertical Turn
- 60° - Outer)



Part No. 29000643
(Drip Catch Vertical Turn
- 45° - Outer)



Part No. 29000642
(Drip Catch Vertical Turn
- 30° - Outer)



Part No. 29000641
(Drip Catch Vertical Turn
- 15° - Outer)



Part No. 29000640
(Drip Catch Vertical Turn
- 5° - Outer)

Drip Catch Vertical Turn Inner



Part No. 29000655
(Drip Catch Vertical Turn
- 90° - Inner)



Part No. 29000654
(Drip Catch Vertical Turn
- 60° - Inner)



Part No. 29000653
(Drip Catch Vertical Turn
- 45° - Inner)



Part No. 29000652
(Drip Catch Vertical Turn
- 30° - Inner)



Part No. 29000651
(Drip Catch Vertical Turn
- 15° - Inner)



Part No. 29000650
(Drip Catch Vertical Turn
- 5° - Inner)

Pallet and Puck Conveying

Pallets

A pallet (carrier) is used to provide a uniform shape which can convey a wide variety of product(s) along the path of the conveying system. The product(s) being conveyed ride on and/or are attached to the pallet.

The most frequent pallet shape used is rectangular. Using this shape, as an example, all conveyed product would have a uniform rectangular shape. Many parts cannot be conveyed other than with a pallet due to their shape and configuration.

Often, a fixture, which has been designed to secure a specific product, is attached to the pallet. In cases where the end user has the need to be able to convey many different products, it may be most economical to change fixtures rather than own multiple product-dedicated pallets.

Pucks

A puck (carrier) derives its name from the common hockey puck. Typically, the puck is round with a cavity molded to the shape of the product it carries.

A puck typically is used to convey unstable products, such as tall, small diameter shampoo bottles, which might otherwise have a tendency to fall over during the conveying process.

The difference between the product holding cavity and the outside diameter of the puck can be used to accurately provide spacing between products for the purpose of filling, etc.

Common Benefits

- Pallets and pucks provide answers to products which are otherwise difficult to convey.
- Pallets and pucks provide opportunities to:
 - Control spacing between products
 - Provide features to control product orientation
 - Provide features to allow easy separation of products
 - Provide features which allow product to be stopped at individual workstations
 - Provide the opportunity to minimize product-to-product contact, i.e., in the case of fragile products
 - Allow the conveyance of products, which might otherwise be highly abrasive on a table top conveyor system.

While this document refers, in general, to pallet conveying systems, puck conveying shares many of the same characteristics.

Pallet and Puck Conveying

System Capabilities

Product Size

The size of the product is not limited to the size of the pallet by which it is being carried. By exercising some corner tracking precautions, the product being carried can overhang the length and width of the pallet.* The following table provides length considerations when using wheel turns.

Product Length Limitations when using 6" radius wheel turns

	30 degree	45 degree	90 degree	180 degree
Max	22"	18"	12"	10"

Wheel turns have a 6" centerline radius turn. Wheel turns use free wheeling disks mounted on a fixed shaft to guide the conveyor chain smoothly through the turn. Each disk features two precision sealed bearings to minimize friction. Each turn has a 3" tangent straight section at both the entry and exit.

Standard wheel turns are available in 30, 45, 60, 90 and 180 degree arcs.

Horizontal plain turns may be used instead of wheel turns. Horizontal plain turns are available in 24", 36" and 48" radii and 30, 45, 60 and 90 degree arcs. They are also available in special radii and arcs to meet specific requirements.

Products such as television chassis, computer cases, other large products and products having considerable weight may require a pallet size which spans the gap between two commonly driven conveyors.

*If the length of the product exceeds the length of the pallet, products will contact each other if allowed to accumulate back-to-back on the conveyor. This condition could result in product damage and/or jamming conditions.

Pallet and Puck Conveying

System Capabilities

Weight Considerations

The ideal total weight of product and pallet that is conveyed on a single conveyor chain is less than 20 pounds.

Maximum Conveyor Chain Speed

While conveyor chain is capable of travelling up to 140 feet per minute, such speeds are not realistic to convey product on pallets unless the conveyor is strictly providing transportation between two distant points.

40 feet per minute normally is thought of as the upper speed limitation when pallets are conveyed between workstations. Faster speeds tend to exceed the capabilities of the workstations, and, of course, inertia becomes a major factor when trying to start and stop pallet movement.

Maximum Length/ Conveyor/Drive

100+ foot runs with average weight product and number of turns.

150+ feet when using an endless loop (racetrack) conveyor system.

NOTE: The number of and type of turns used and the percentage of product accumulation on a conveyor system reduce the length of chain which can be pulled by each drive.

Pallet Position Capability

+/- .005" X, Y and Z planes

Elevation Change

Most pallets will incline or decline at up to 5 degrees without special consideration. Inclines up to 15 degrees can be accomplished using our friction conveyor chain.

When conveyor systems require steeper inclines or declines, Crown Simplimatic recommends Sure-Grip™ elevators or lowerators.

Temperature Range

40 - 120 degrees F.

Note: For lower or higher degree ambient temperatures, please consult your Simpli-Flex® representative.

Pallet and Puck Conveying

System Capabilities

Clean Room

Simpli-Flex® conveyor systems are being used in a wide variety of clean room, Class 100, applications.

NOTE: Special design and building criteria must be met. Please consult your Simpli-Flex® representative.

Electrostatic Discharge

Carbon and non-carbon impregnated conveyor chains are available to discharge static electricity. Please consult your Simpli-Flex® representative.

General Warning

Avoid designs and/or products with wires, etc., which overhang the pallet or puck and may become caught in the open space between chain links. These open spaces must be able to close while the chain travels through horizontal turns.

Avoid conveying applications where any small debris is generated which may become jammed in the open area of the conveyor chain.

Cutting oil and other lubricants should be tested for capability with aluminum and/or UHMW-PE products such as those used in Simpli-Flex® wear and retainer strips.

Pallet and Puck Conveying

Pallet Stations

A pallet station typically is a location along the path of the conveyor system at which pallets are purposely stopped. A pallet often is stopped prior to entering a tight radius turn to avoid the possibility of two pallets interfering with each other going through the turn, resulting in a jamming condition.

Typically, however, a pallet station is a position into which pallets are allowed to enter, separated from each other so that work may be performed on the product isolated in front of a person or robotic device.

A properly designed pallet can feature characteristics, which:

- Allow pallets to be lifted off the chain surface
- Provide precision positioning of the pallet
- Are designed to allow the pallet to be turned over
- Allow pallets to be separated from each other
- Minimize back pressure
- Provide desired product orientation
- Have interchangeable fixture capability
- Provide long life
- Exhibit a low coefficient of friction conveying surface

Pallet Design

Pallets come in many basic configurations. The vast majorities are molded plastic which have holes in the top for the attachment of fixtures designed specifically for the product to be carried.

Usually, the long sides of the pallet have horizontal and/or vertical slots, which are used for pallet positioning. The bottom of the pallet may have molded or attached puck-shaped pieces, which ride on the conveyor. In some cases, the bottom of the pallet may be equipped with back pressure relieving rollers, when pallets are allowed to accumulate.

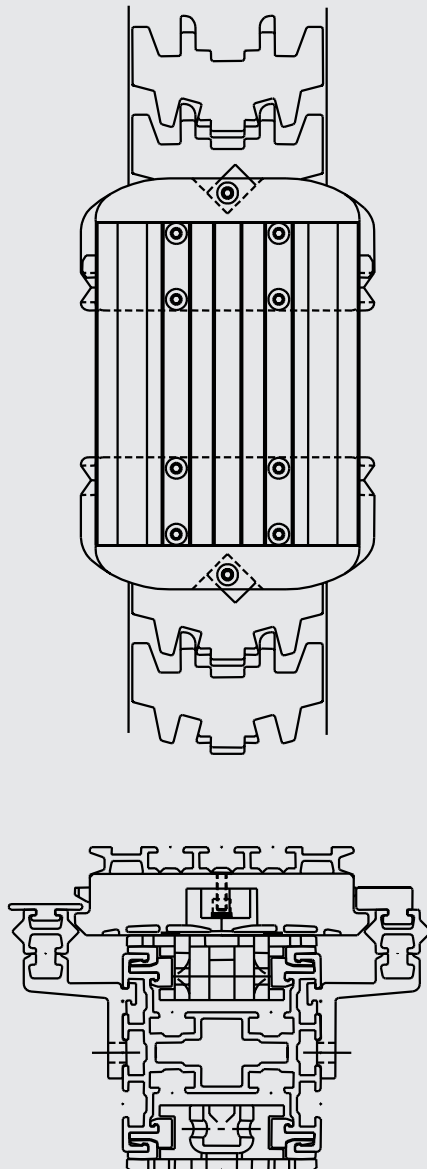
Back pressure relieving roller pallets have a vertical elevation change limitation of approximately two degrees. Pallets without rollers normally will not slide on the conveyor chain in inclines or declines of five degrees.

Generally the corners of a pallet have a radius to keep them from jamming as they travel through a turn.

Pallet and Puck Conveying

Pallet Design

This drawing illustrates one of the many pallet configurations available.



This is a patented pallet design by Simplimatic Automation. This pallet features the ability to engage the conveyor chain during inclines and declines, allowing very steep elevation change.

The design allows it to disengage the chain during horizontal travel so the pallets can be accumulated and subjected to other devices such as stops.

The T-slots allow fixturing to hold product in precision position on the top surface.

The aluminum extrusion can be cut to the required length.

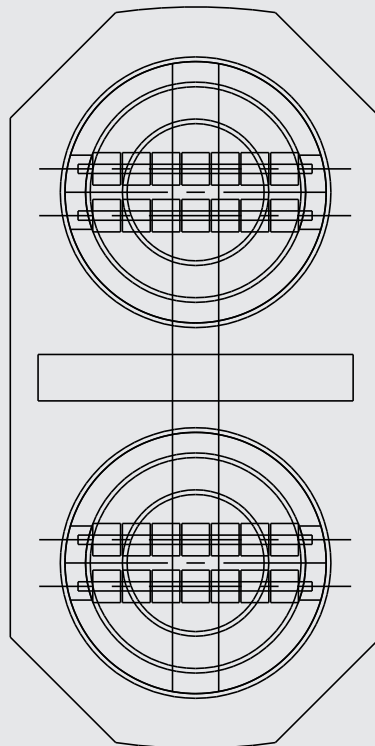
The UHMW-PE round disks attached to the bottom allow the pallet to go around our 6" radius wheel turns.

Currently available only for large quantity applications

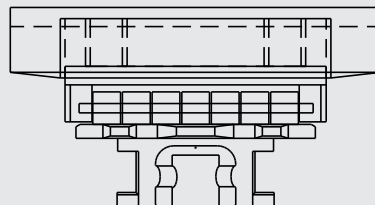
Pallet and Puck Conveying

Pallet Design

This drawing illustrates one of the many pallet configurations available.

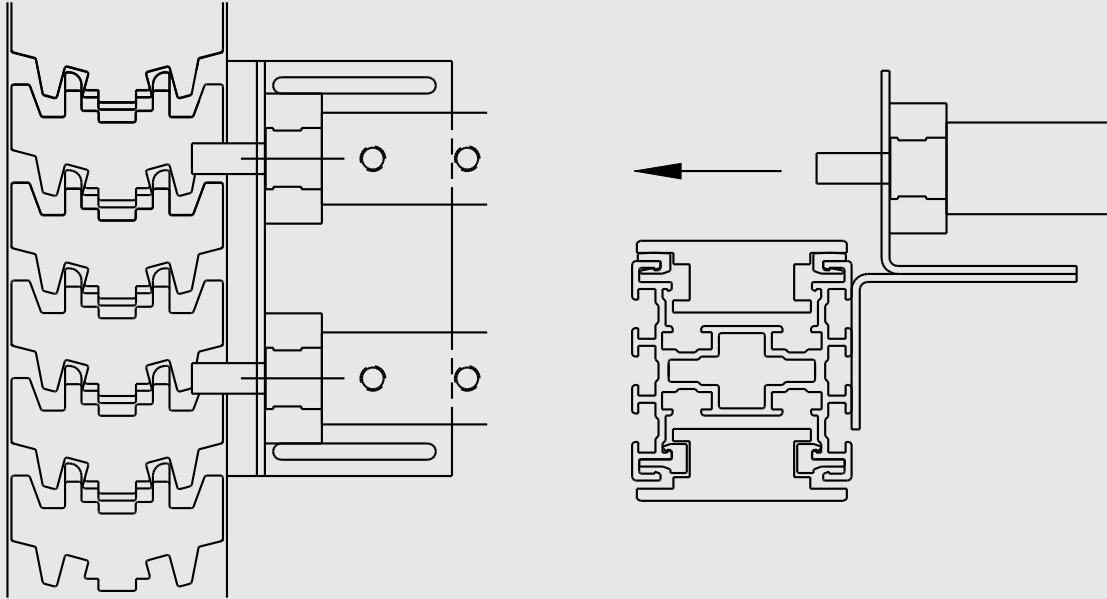


Corner radius helps to prevent trailing pallets from forcing and jamming of preceding pallets against the product guide rails.



Pallet and Puck Conveying

Part No. 29000674 (Alternating Metering Stop)



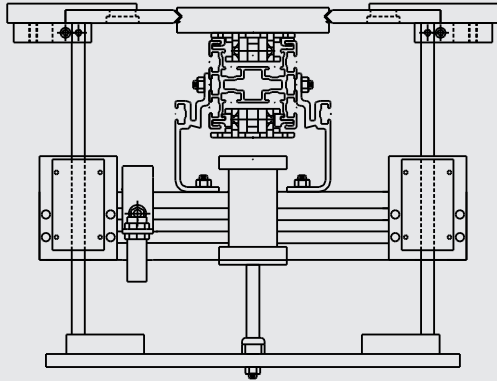
Metering Stops

The **(29000674)** Alternating Metering Stop has a pair of product stops controlled by a single valve. When activated, the two stops alternately cycle between the extended and retracted positions. This enables single or multiple pallets to be meter-fed to each of the stops positions.

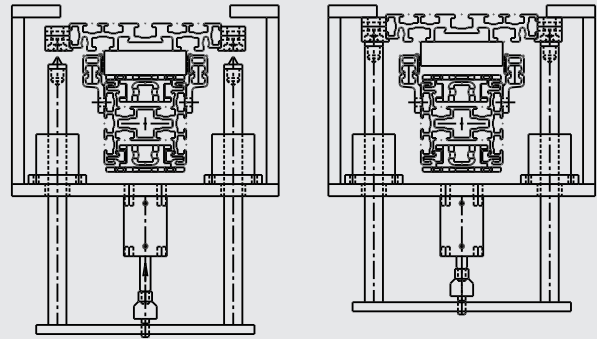
The **(29000675)** Independent Metering Stop (not shown) independently cycles between the extended and retracted positions. This provides complete control over how products are metered or retained by the stops. This type of stop consists of a pair of product stops controlled by two valves.

Pallet and Puck Conveying

Part No. 29000682
(Random Product Lift)



Part No. 29000683
(Precision Product Lift)



Other Devices

Product lifts are designed to lift a pallet off of the conveyor chain at workstation locations. This eliminates vibration due to the conveyor chain traveling beneath a stopped pallet.

Product lifts can be used to present products to other pieces of equipment.

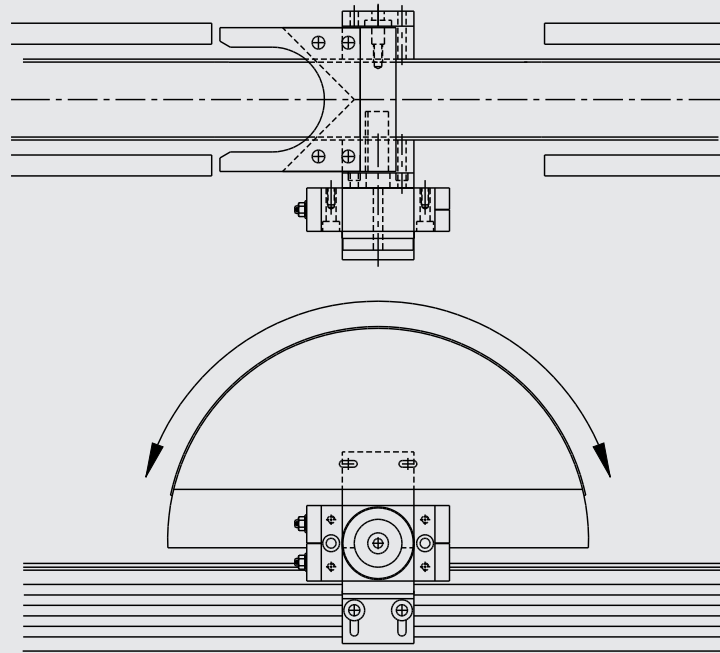
Several styles of product lifts are available.

The **(29000682)** Random Product Lift is used where non-precision positioning of the pallet to the operator or auxiliary is acceptable.

The **(29000683)** Precision Product Lift incorporates locating pins on the end of the arm tooling, which engage with mating surfaces on the pallet. A set of fixed stop rails are also included to hold the pallet firmly in place after it has been lifted off the conveyor surface.

Pallet and Puck Conveying

Part No. 29000685 (Product Inverter)

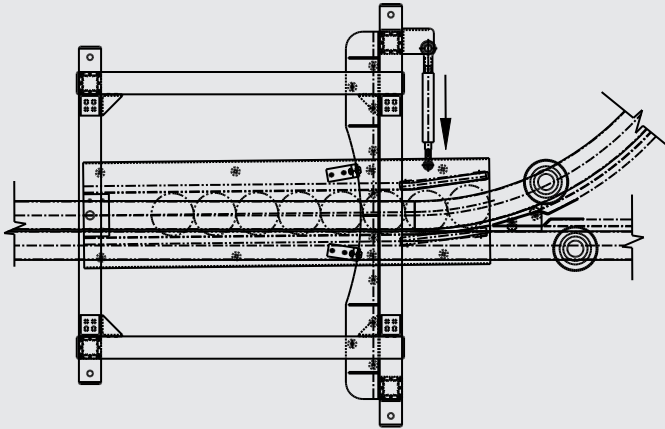


Other Devices

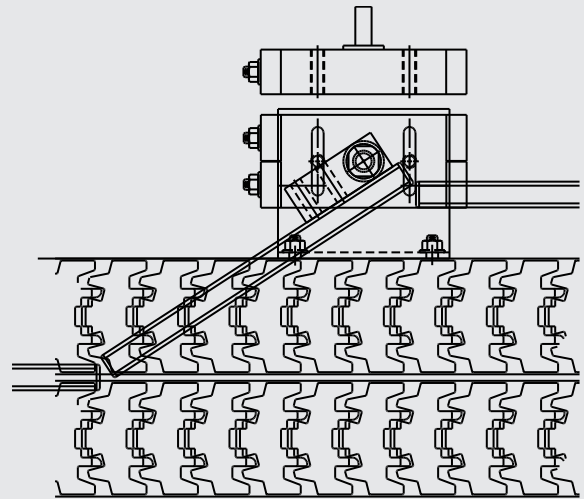
The (29000685) Product Inverter takes a product and flips it over so that a secondary function can be performed. Our light duty inverter uses a standard rotary actuator, while our heavy duty model uses an air over oil system for added control when turning heavy products.

Pallet and Puck Conveying

Part No. 29000677
(Dual Rail Product Divert)



Part No. 29000678
(Rotary Actuator Product Divert)



Other devices

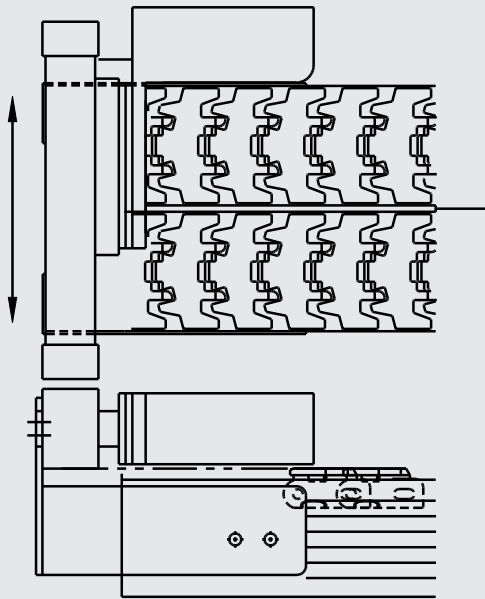
Product diverts direct the flow of pallets during the combining or diverging operations. Depending on the application, diverts come with either a single or double containment wall, manual or pneumatic activation, and the ability to divert product for dual or triple lane conveyor systems.

The **(29000677)** Dual Rail Product Divert is suspended from support beam framework located above the conveyor chain. An air-operated cylinder positions it from one side of the conveyor to the other. It is used for diverting product flow across two lanes of conveyor. A product stop can be incorporated within the divert to hold product during the transition.

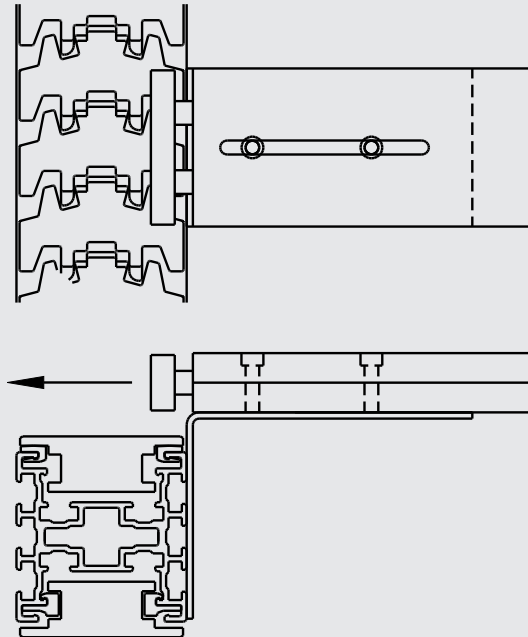
The **(29000678)** Rotary Actuator Product Divert diverts product from one conveyor to an adjacent conveyor, or onto another work surface. It consists of a rotary actuator with a divert arm attached to a standard piece of guide rail. When activated, it shifts 45 degrees in the direction of product flow.

Pallet and Puck Conveying

Part No. 29000679
(End Side Pusher)



Part No. 29000680
(Side Pusher)

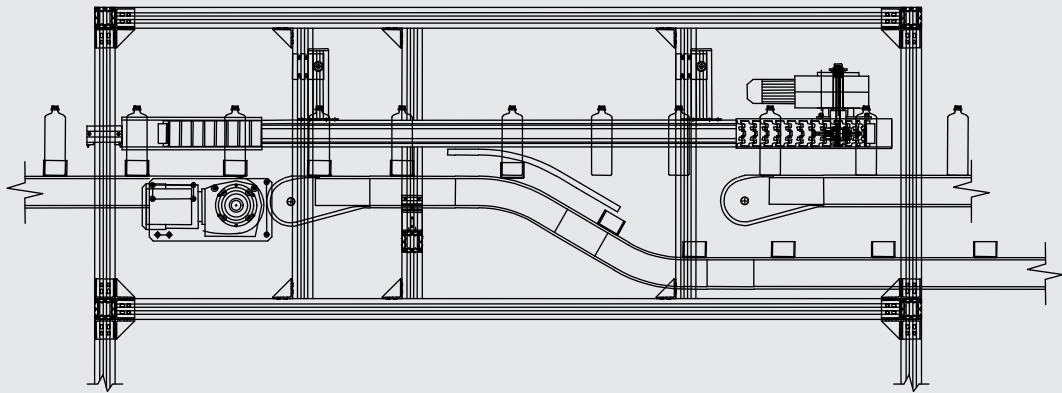


Other Devices

Right angle transfers push product perpendicular to the direction of flow at the end of a conveyor using a **(29000679)** End Side Pusher or from an in-line position using a **(29000680)** Side Pusher.

Pallet and Puck Conveying

De-pucking Stations



Products traveling in pucks for added stability can have the pucks quickly and automatically removed by the Simpli-Flex® De-pucking System.

As products enter the de-pucking station, they are captured by Sure-Grip™ side gripping conveyor. As the product proceeds in a straight line, the puck is carried forward and downward, then returned to the beginning of the line for reuse. After de-pucking, the product is transferred onto another conveying line for transport to the next operation.

Devices

Most automation systems do more than just convey product from one point to another. They also manipulate, orient and/or direct the product as it travels along the conveying path. At Simplimatic Automation, our approach to systems design is to let the process needs determine the approach to applying devices. Before choosing specific devices, a basic understanding of the kinds of functions performed by standard Simplimatic Automation path control devices is necessary. Basic functions occurring along the conveying path include:

Product Stop

1. Stops can act as a barrier. They may extend from below and in front of the product, or from the side and in front. Location is not precise.
2. Stops can act as clamps. They extend from the side of the product and confine it against an opposing stop or the guide rail on the opposite side. Location is not precise.
3. Stops can run into the product. They extend from below or from the side. The top of the stop can be shaped to meet with a recess in the product to allow more accurate positioning.

Product Path Control

1. Divert from one conveyor to multiple conveyors.
2. Converge from multiple conveyors to a single conveyor.
3. Transfer from one conveyor to another. The transfer may occur over the end of the conveyor, to the side, or from above.

Product Metering Stop

Two-position control (metering) where two stops are used together to meter the flow of product along the conveyor path.

1. With alternating metering stops, two stops actuate simultaneously in opposite directions and release one product at a time.
2. With independent metering stops, two stops locate and actuate independent of each other. The quantity of the product released can be either multiple (slug) based or line signal from the controls.

Pick and Place

1. Pick up.
2. Lift up.
3. Place left.
4. Place right.

Product Orientation

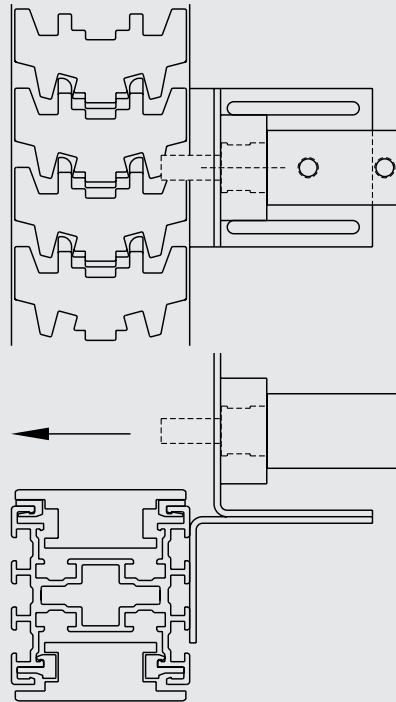
1. Rotate.
2. Invert.

The first steps in selecting the devices that best fit your needs is to analyze the production layout to determine the type, number and location of the devices you need.

The next step is to determine the requirements for sensors and controls needed to actuate the devices. With this information, you can determine which of the standard Simplimatic Automation devices will satisfy your requirements.

Devices

Part No. 29000670 (Product Stop)



Product Stop

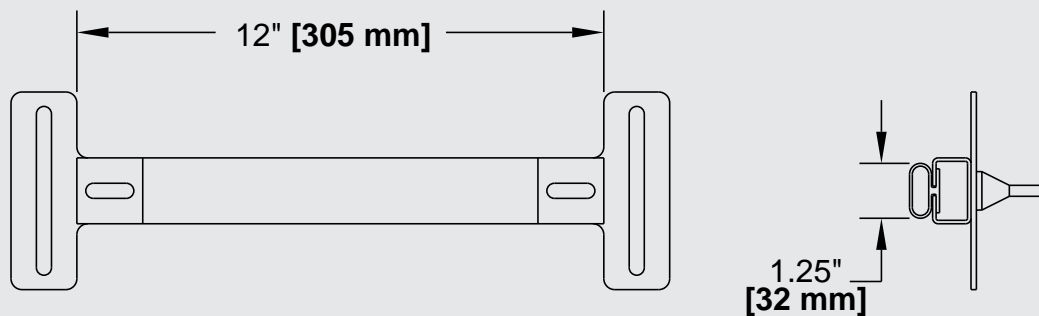
The **Simpli-Flex®** Product Stop (29000670) is an air-operated cylinder which will accept end-of-shaft tooling. A control solenoid provided with the stop powers the cylinder rod in both directions upon input from the control system.

The stop mounts to the side of the chain beam to separate products from below the chain, or to a perpendicular mounting bracket to separate products from the guide rail position. Each stop comes supplied with a mounting plate and four-way solenoid pre-piped.

End-of-device tooling should be compatible with the contour of the product. This tooling is generally provided by the end user, but will be supplied by Simplimatic Automation if desired.

Devices

Part No. 29000671 (Bladder Product Stop)



Bladder Product Stop

The bladder product stop (29000671) is ideal for applications such as tote or carton handling, where there is little or no separation between products, and precise control is not required. Like the single-acting product stop, the bladder product stop prevents a product from traveling along the conveyor. However, because it is non-precision, it is not used for locating or positioning.

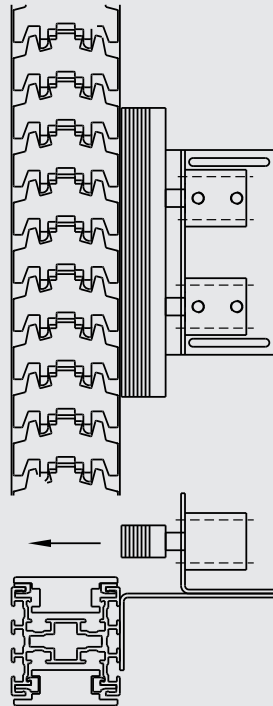
The assembly includes an air inflatable bladder mounted on a bracket to the side of the chain beam, a three-way solenoid to actuate the bladder, and a regulator to control the air pressure levels to the bladder. The assembly is mounted using standard **T-BOLTS** and locknuts.

In the deflated state, the face of the bladder is flush with the face of the guide rail. When actuated, the bladder extends against the side of the product confining it against the guide rail opposite the stop. For heavier products, a pair of bladders may be mounted opposite one another for higher gripping pressure. In this case, both bladders are controlled by the same solenoid. **NOTE:** To assure proper operation, the guide rail opposite the stop needs to have sufficient brackets to prevent deformation of the rail under pressure.

A photocell, proximity switch, or limit switch senses when to actuate each stop. The control logic determines whether to extend or retract the stop and how long to hold it in a given position. Sensors, I/O signal, 12 volt power, wiring and clean air supply may be provided by the user, or by Simplimatic Automation, if desired.

Devices

Part No. 29000673 (Foam Stop)



Foam Stop

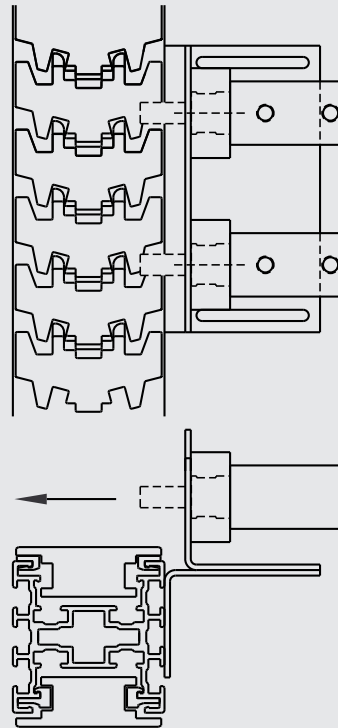
The foam stop (**29000673**) is similar to the bladder product stop, however, it works with two cylinders instead of the bladder. Due to the twin cylinders, a wider range of products can be stopped. The cylinders can extend further than the bladder and have a larger contact area.

NOTE: To assure proper operation, the guide rail opposite the stop needs to have sufficient brackets to prevent deformation of the rail under pressure.

A photocell, proximity switch, or limit switch senses when to actuate each stop. The control logic determines whether to extend or retract the stop and how long to hold it in a given position. Sensors, I/O signal, 12 volt power, wiring and clean air supply may be provided by the user, or by Simplimatic Automation, if desired.

Devices

Part No. 29000674 (Alternating Metering Stop)



Alternating Metering Stop

The alternating metering stop (**29000674**) consists of a pair of product stops controlled by a single solenoid. The stops mount to the side of the chain beam to separate products from below the chain, or to a perpendicular mounting bracket to separate products from the guide rail position.

When actuated, the two stops alternately cycle between the extended and retracted positions. This enables single or multiple products to simultaneously meter feed at each position change of the stops. Although the metering stop has fixed location positioning at the second stop, it should not be used

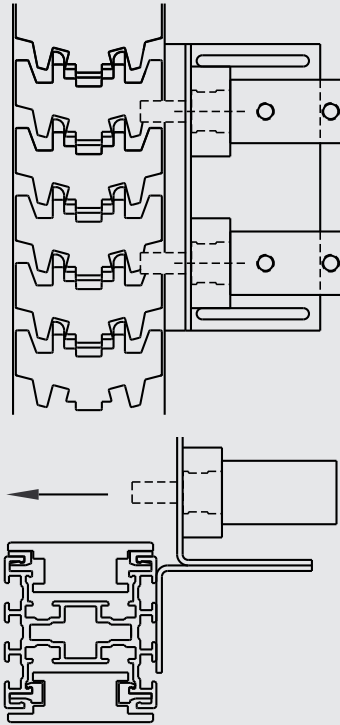
to locate with close dimensional accuracy. End-of-shaft tooling needs to be wedge-shaped for the metering stop to reliably separate adjacent accumulated products. Each metering stop comes with a four-way solenoid and mounting plates.

The cylinder rod has a notch at the end with a threaded hole to accept end-of-device tooling. End-of-device tooling should be compatible with the contour of the product. This tooling is generally provided by the end user, but will be supplied by Simplimatic Automation, if desired.

A photocell, proximity switch, or limit switch senses when to actuate the stops. The control logic determines whether to extend or retract the stops and how long to hold them in a given position. Sensors, I/O signal, 12 volt power, wiring and clean air supply may be provided by the user, or by Simplimatic Automation, if desired.

Devices

Part No. 29000675 (Independent Metering Stop)



Independent Metering Stop

The independent metering stop (**29000675**) independently cycles between the extended and retracted positions. This gives you complete control over how products are metered or retained by the stops.

The stop consists of a pair of product stops controlled by a dual four-way solenoid. The stops mount to the side of the chain beam to separate products from below the chain, or to a perpendicular mounting bracket to separate products from the guide rail position.

Although the metering stop has fixed-location positioning at the second stop, it should not be used to locate with close dimensional accuracy.

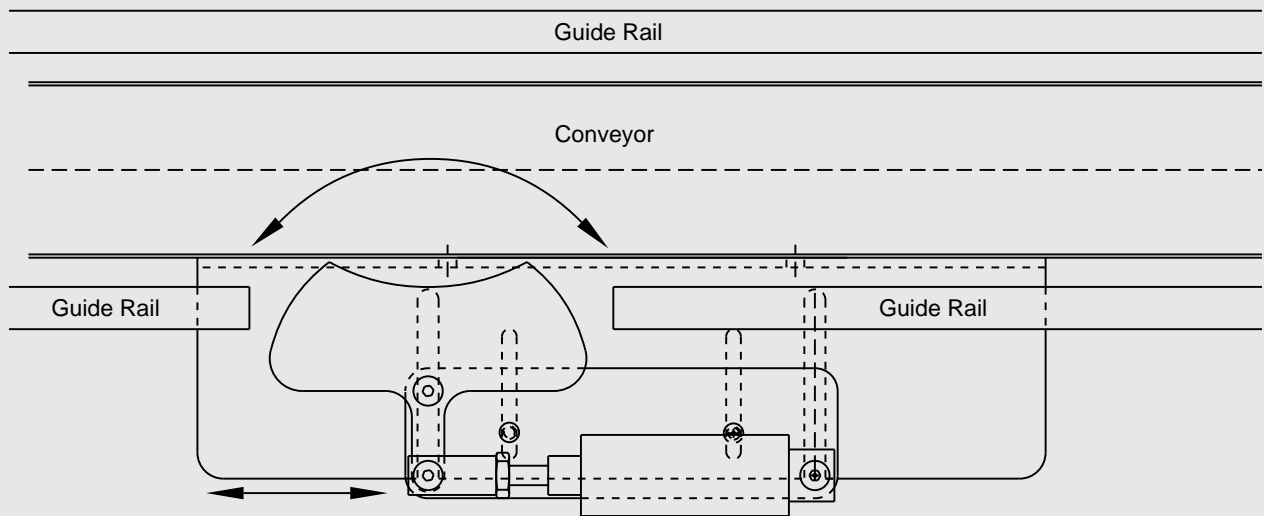
End-of-shaft tooling needs to be wedge-shaped for the metering stop to reliably separate adjacent accumulated products. Each metering stop comes with a dual solenoid and mounting plates.

The cylinder rod has a notch at the end with a threaded hole to accept end-of-device tooling. End-of-device tooling should be compatible with the contour of the product. This tooling is generally provided by the end user, but will be supplied by Simplimatic Automation, if desired.

A photocell, proximity switch, or limit switch senses when to actuate each stop. The control logic determines whether to extend or retract the stop and how long to hold it in a given position. Sensors, I/O signal, 12 volt power, wiring and clean air supply may be provided by the user, or by Simplimatic Automation, if desired.

Devices

Part No. 29000676 (Toggle Product Stop)

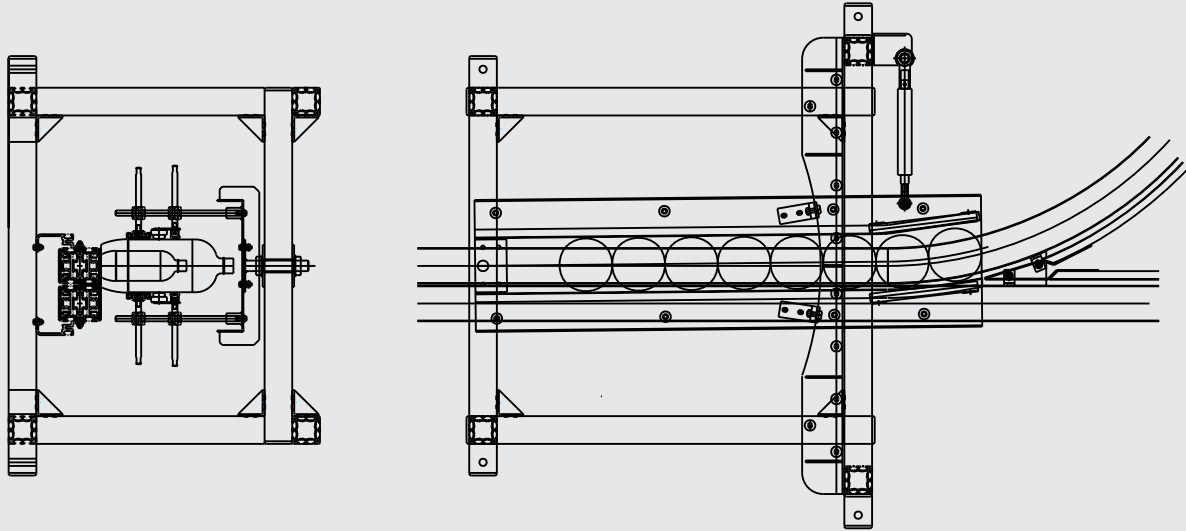


Toggle Product Stop

The toggle product stop (29000676) has a toggle plate that is actuated from the adjacent cylinder to let one product or pallet through at a time. This is required if automation is being performed or spacing of product is essential. The toggle stop is mounted to the conveyor beam with **T-BOLTS** and **LNUTS**.

Devices

Part No. 29000677 (Dual Rail Product Divert)



Ceiling Hung Unit is shown, Floor Mounted Unit is also available.

Simpli-Flex® product diverts let you direct the flow of products during combining or diverging (splitting into multiple lanes) operations. Depending on your application, the gate comes with either a single wall or a double wall, manual or pneumatic, dual lane or triple lane.

Dual Rail Product Divert

The dual rail product divert (**29000677**) suspends from a support beam (**29000410**) framework above the chain beam, and positions by an air operated cylinder from one side to another. Normal gate size is 48" (**1219 mm**) long, for directing flow across two lanes left or right. Larger (custom) gate sizes are available upon request.

All necessary mounting hardware is supplied. A separate pneumatic valve is provided for field mounting. The user provides field installed air piping.

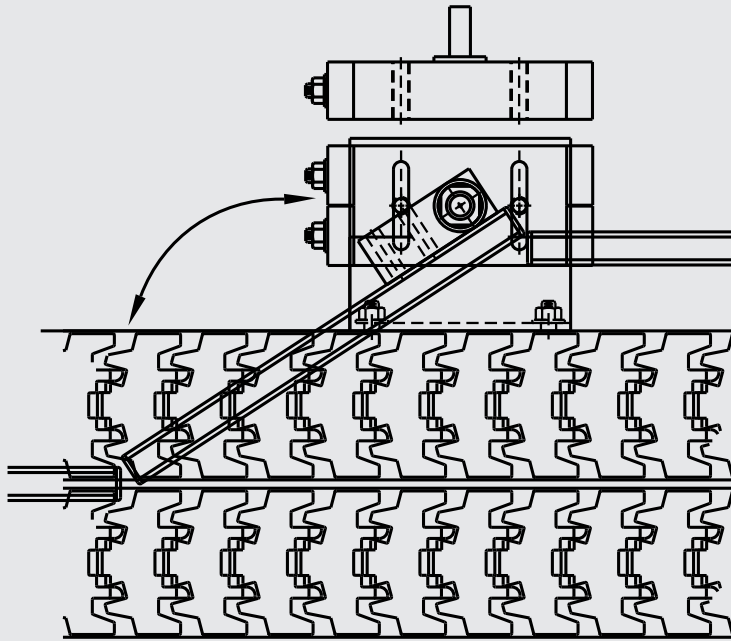
A photocell, proximity switch, or limit switch senses when to actuate each gate. In certain applications, end-of-stroke sensing may be required to verify the position of the gate. The control logic determines whether to shift or position the gate and how long to hold it in a given position. Sensors, I/O signal, 12 volt power, wiring and clean air supply may be provided by the user, or by Simplimatic Automation, if desired.

NOTE:

A hinged product stop can be mounted to all dual lane diverts.

Devices

Part No. 29000678 (Rotary Actuator Product Divert)



Rotary Actuator Product Divert

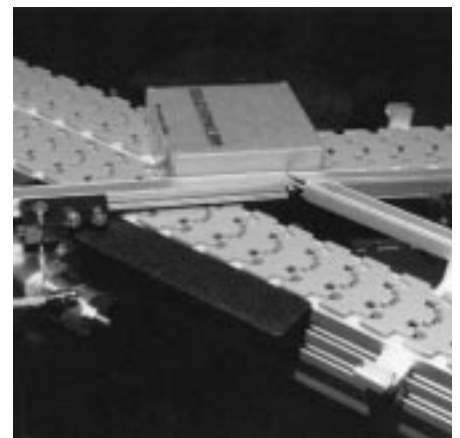
The rotary actuator product divert (**29000678**) moves items off the side of a conveyor onto an adjacent conveyor or surface. The diverter consists of a double-acting rotary actuator with a divert arm which attaches to a standard piece of guide rail.

When actuated, the rail shifts across the chain until it rests in a 45° position (adjustable) to the direction of flow. An opening is required in the guide rail opposite the actuator for products to divert without obstruction.

The actuator attaches to a mounting plate and bolts to the side of the chain beam. The divert rail is not part of the assembly. Cut the divert rail from the guide rail where the device is to locate, and attach it to the actuator arm. If the location of the guide rails is beyond the side of the chain beam, add spacers between the mounting bracket and chain beam for correct positioning of the product diverter assembly. A four-way solenoid controls the actuator and comes separate for field mounting.

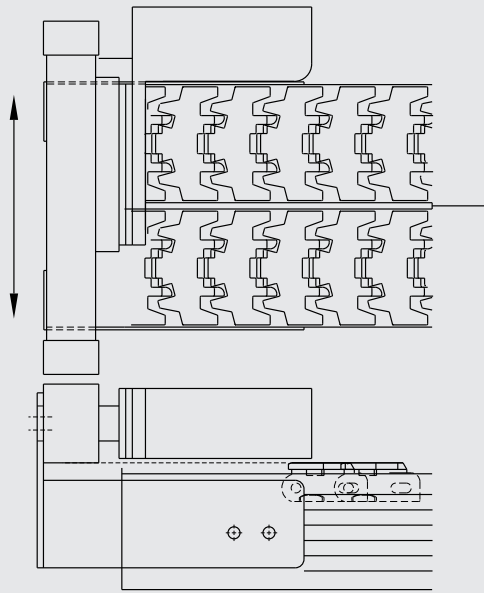
A photocell, proximity switch, or limit switch senses when to actuate the diverter. The control logic determines when to actuate the divert gate and

how long to hold it in position. Sensors, I/O signal, 12 volt power, wiring and clean air supply may be provided by the user, or by Simplimatic Automation, if desired.

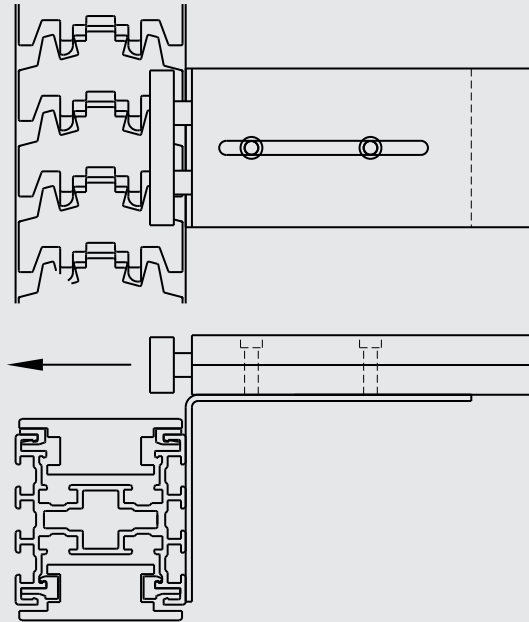


Devices

Part No. 29000679 (End Slide Pusher)



Part No. 29000680 (Side Pusher)



End Slide Pusher

The end slide pusher (29000679) lets you change direction perpendicular to the direction of flow at the end of a conveyor line. The **Simpli-Flex**® pusher uses a special design to minimize side thrust on the air cylinder, preventing it from wearing prematurely.

Stroke range is from 0" to 24" (0 mm - 610 mm). When ordering, please specify the exact stroke range required. The actual size of the pusher will be determined by the stroke and side thrust capacity required.

Side Pusher

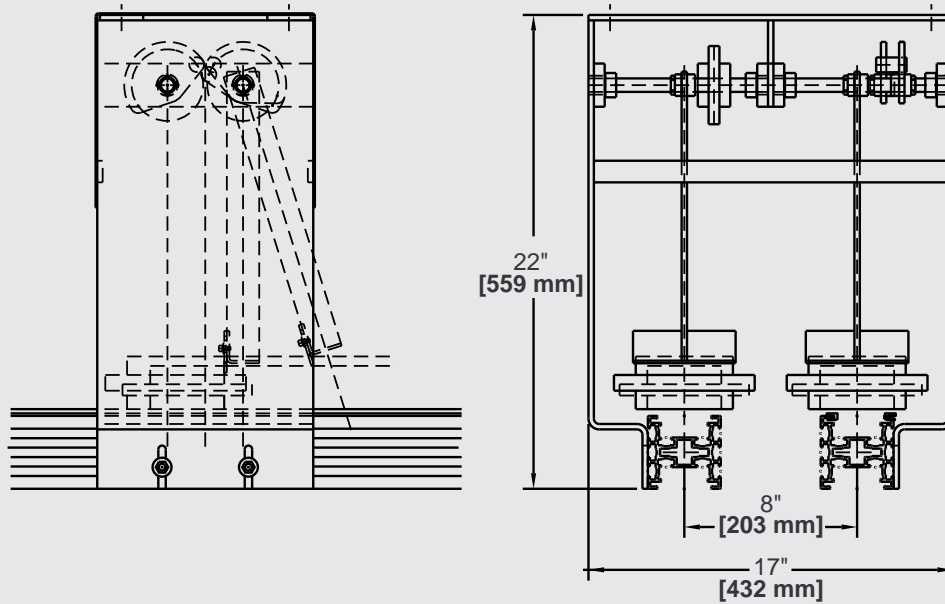
A side pusher (29000680) is mounted on the side of the conveyor. It pushes product perpendicular to flow. Cylinder-mounted flow valves control the cylinder actuation speed. A four-way solenoid controls the rodless air cylinder and is separate for field mounting. Air piping from the cylinder to the solenoid is field installed and provided by the user. Complete mounting hardware is provided with each pusher.

End-of-device tooling needs to be compatible with the contour of the product. This tooling is usually provided by the end user, but will be furnished by Simplimatic Automation, if desired.

A photocell, proximity switch, or limit switch senses when to actuate each pusher. In certain applications, end-of-stroke sensing may be required to verify the position of the pusher head. The pusher has mounting brackets to accept 12 mm threaded proximity sensors. The control logic determines whether to extend or retract the pusher and how long to hold it in a given position. Sensors, I/O signal, 12 volt power, wiring and clean air supply may be provided by the user, or by Simplimatic Automation, if desired.

Devices

Part No. 29000681 (Product Cop)



Product Cop

The product cop (**29000681**) is used to regulate the flow of product joining together into one lane. It is demand-fed in that it lets the first product pass and stops all others until product is clear. This device is all mechanical.

Product Lift

Product lifts enable you to lift products completely off the carrying surface of the conveyor chain. They can be used at assembly stations, or to present products to other pieces of equipment without vibration. Lifting products also minimizes chain wear under a pallet or tote during assembly operations.

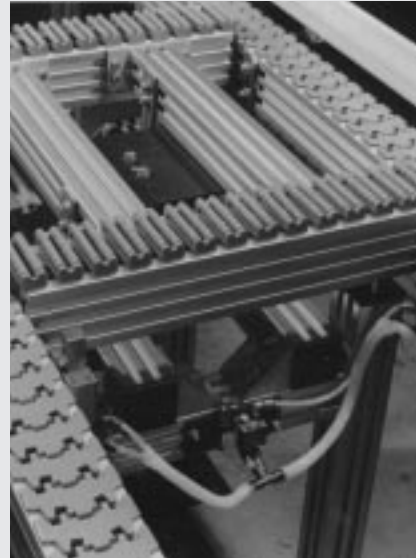
The product lift framework bolts to the side of the chain beam just below the conveying surface. An air operated cylinder mounted to the framework lifts a parallel set of guide rods. The upper ends of the rods have 1/4"-20 (6 mm) tapped holes which accept user supplied fixtures to hold the products being conveyed.

Mounting hardware is provided with the assembly. A four-way solenoid controls the lift cylinder. The solenoid is provided separately for field mounting. Simplimatic Automation offers three styles of product lifts:

- The random product lift (**29000682**) is used where non-precision positioning of the product to the operator or auxiliary equipment is necessary.
- The precision product lift (**29000683**) has locating pins on the end of the arm tooling which engage with mating surfaces on the product or pallet. A set of fixed stop rails are also included to hold the product or pallet firmly in place after it has been lifted.
- The tilting product lift (**29000684**) lifts the product on one side of the conveyor only. A fixed rail mounts on the opposite side of the chain beam, just below the carrying chain surface. As the product lifts, it rests on the rail, causing the product to tilt as it is being lifted.

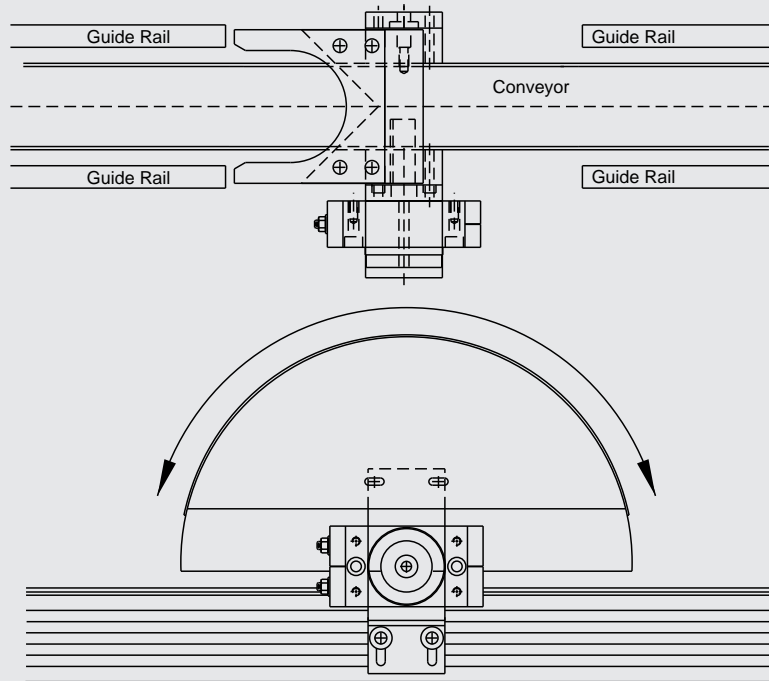
A photocell, proximity switch, or limit switch senses when to actuate each random lift. In certain applications, end-of-stroke sensing may be required to verify the position of the lift. The control logic determines whether to raise or lower the gate, and how long to hold it in a given position. Sensors, I/O signal, 12 volt power, wiring and clean air supply may be provided by the user, or by Simplimatic Automation if desired.

NOTE: Product lifts are custom built to a required pallet.



Devices

Part No. 29000685 (Product Inverter)



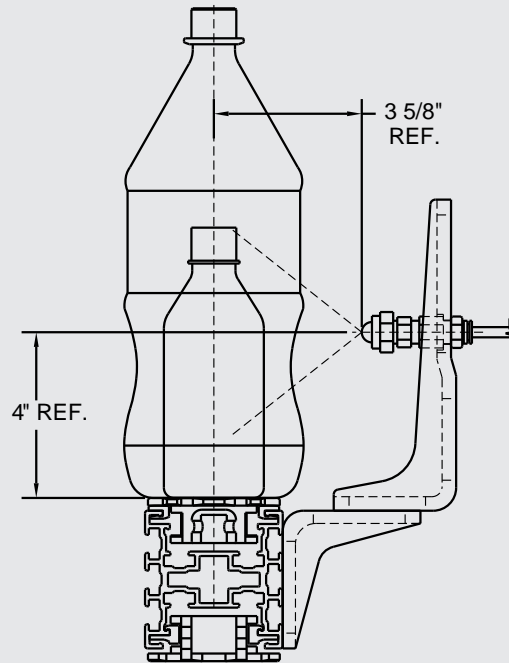
Product Inverter

The product inverter (29000685) takes product and flips it over so that machining or secondary functions can be performed. Simplimatic Automation offers two types of inverters, light and heavy duty. The light duty uses a standard rotary actuator and the heavy duty uses an air-over-oil system. The air-over-oil system gives added control for heavy product.

Both mount directly to the **CONVEYOR BEAM** with **T-BOLTS** and **LNUTS**.

Devices

Part No. 29000686 (Blow-Off)



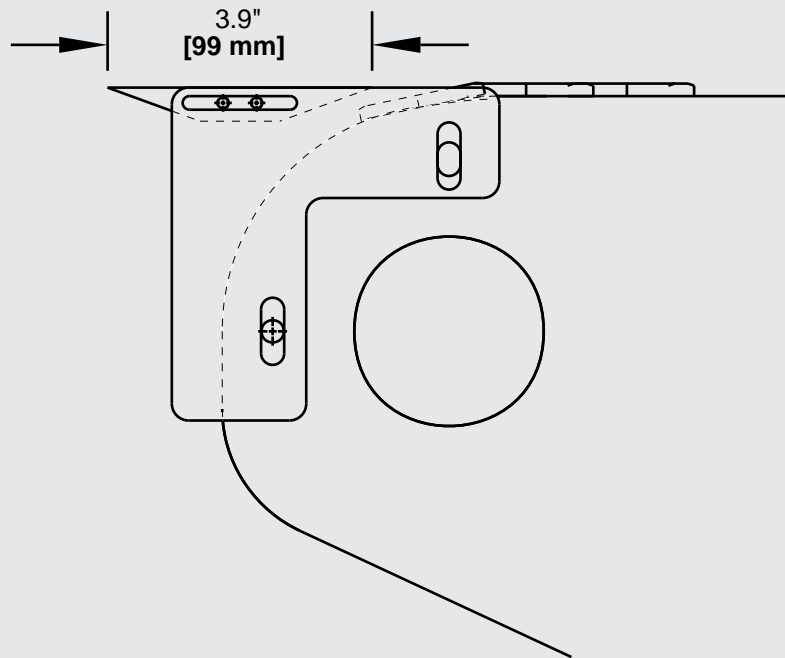
Blow-Off

Some manufacturing processes require upstream production to continue even when downstream product requirement is stopped or temporarily interrupted. This is especially true in applications where it is difficult to stop and start production. When the additional product can't be handled by an accumulation zone (such as an alpine), one solution is to use a blow-off. This device basically uses 80 psi non-lubricated air to blow product off-line into a container. Blow-offs are used mainly for PET bottle applications, but can be used for any lightweight product.



Devices

Part No. 29000687 (Over-the-end Deadplate Drive End)



Transition Deadplates

The preferred method of continuous transfer between two conveyors is diagonally across the top surface of the chains. However, some applications may require products to move directly over the end of one conveyor or machine to the next.

In these applications, a gap of approximately 4" (102 mm) exists between the drive and idle sprocket shaft centerlines. Simplimatic Automation deadplates fill this gap and allow products to transfer smoothly.

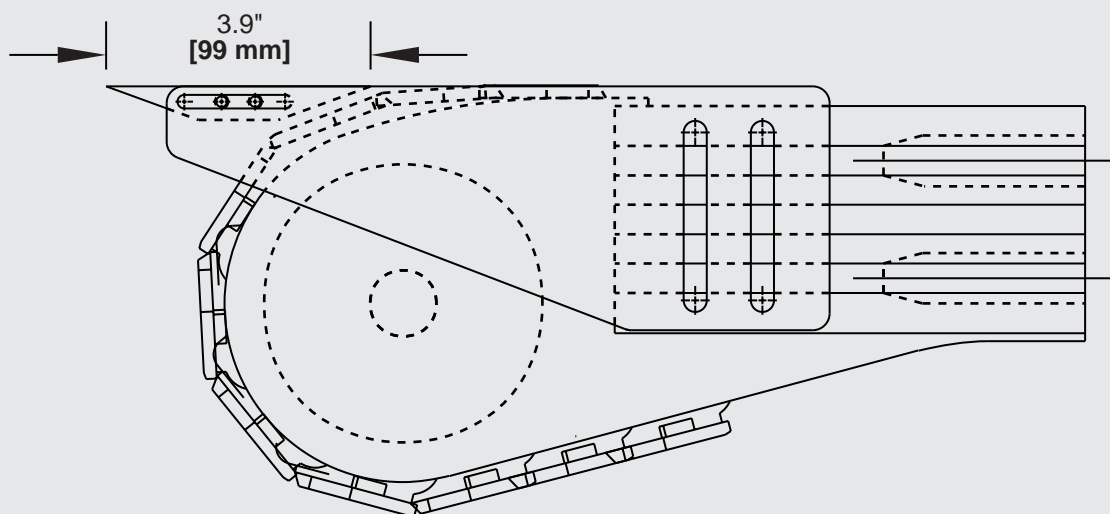
If the product has a dimension in the direction of chain travel of less than 8" (203 mm), some of the products may drag when crossing the deadplate, and stop until pushed off by oncoming products. Longer products will continue to flow without interruption.

Six deadplate styles are available. All drive-mounted deadplates have mounting holes matched to holes in the sideframes of the drive end. All idle-mounted deadplates mount to the T-SLOTS in the chain beam on the idle end. Each deadplate comes with its own mounting hardware.

Although deadplates are designed to minimize pinch points, additional point-of-operation guarding may be needed if a deadplate is located near an operator workstation.

Devices


Part No. 29000688 (Over-the-end Deadplate Idle End)



Transition Deadplates

Part No.	Description	Mounting Position	Conveyor Chain Used
29000687	Over-the-end deadplate	Drive end	29000001, 29000007
29000688	Over-the-end deadplate	Idle end	29000001, 29000007
29000689	Finger-comb deadplate	Drive end	29000016
29000690	Finger-comb deadplate	Idle end	29000029
29000691	Over-the end LBP Dead Plate	Drive End	29000032
29000692	Over-the-end LBP deadplate	Idle end	29000032

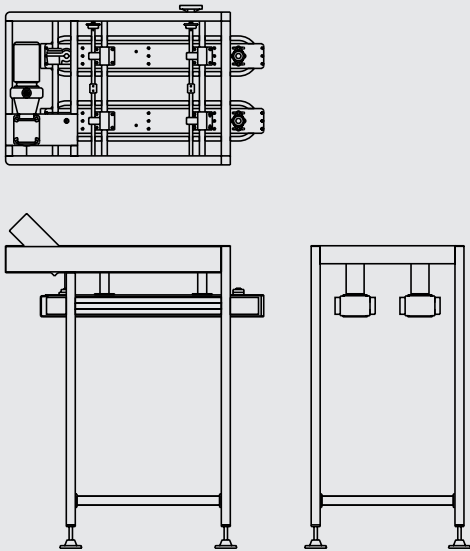
Auxiliary Equipment



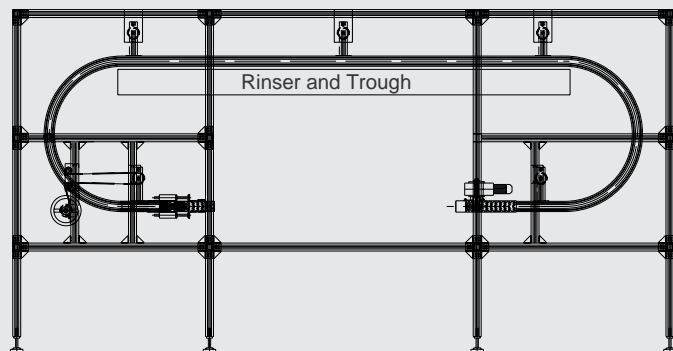
Simplimatic Automation's specialty equipment makes raising, lowering, maneuvering, bulk handling, and positioning products easier than ever.

Auxiliary Equipment

Horizontal Transfer



Inverter Air Rinser



Horizontal Transfer

Picks up items from an infeed conveyor, carries them over a horizontal gap, and delivers them to a discharge conveyor. Both conveyors have the same top-of-chain elevation.

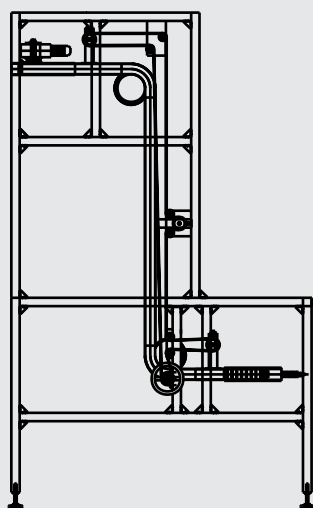
Inverter Air Rinser

Picks up items from a horizontal infeed conveyor, inverts them 180°, passes them over an air rinsing or air rinsing/ionizing section (or other type of customer specified process equipment), inverts them 180° back to their original orientation, and delivers them onto a horizontal discharge conveyor.

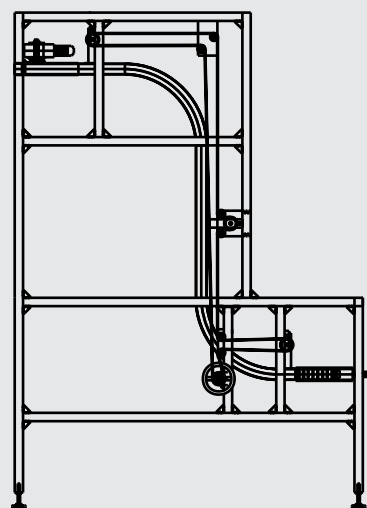
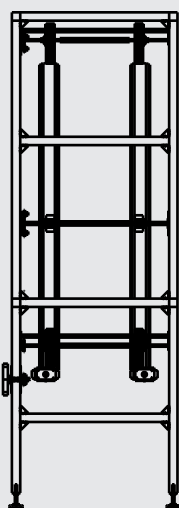
All the Sure-Grip™ units feature modular frame construction using standard fasteners, brackets and **(29000410)** support beam. Automatic lubricators for the gripper chains are standard.

Auxiliary Equipment

Sure-Grip™ Elevators and Lowerators



Elevator with Wheel Turns



Elevator with Plain Turns

Sure-Grip Elevators and Lowerators

Picks up items from an infeed conveyor, carries them (90° vertical) up or down to a higher or lower elevation, and delivers them to a discharge conveyor. Drives are always placed at the discharge end.

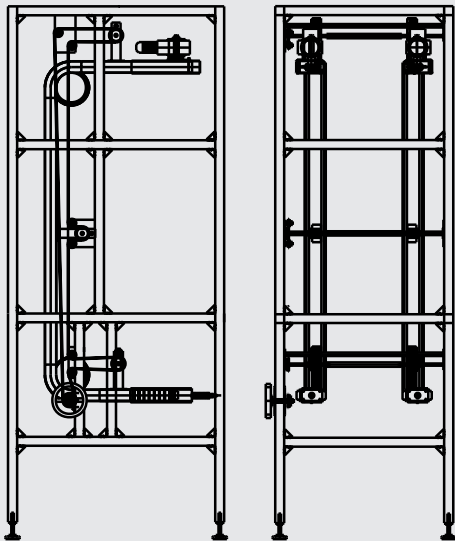
Standard equipment includes:
dual drives, spring chain take-up,
and manual width adjust.

Available options:
single drive, pneumatic chain take-up,
and variable width adjust.

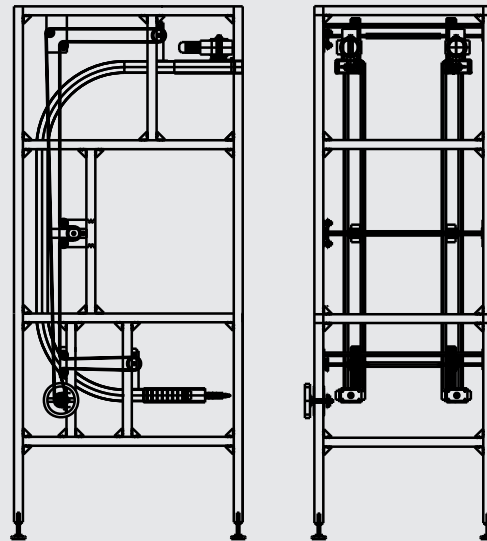


Auxiliary Equipment

Elevator/Inverter with Wheel Turns



Elevator/Inverter with Plain Turns



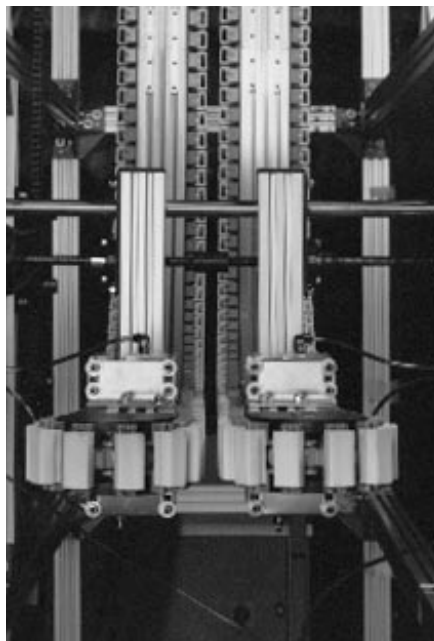
(Note: All Inverters will have drives on the discharge end)

Inverters

Picks up items from an infeed conveyor, carries them (90° vertical) up or down to a higher or lower elevation, inverts them, then delivers them to a discharge conveyor.

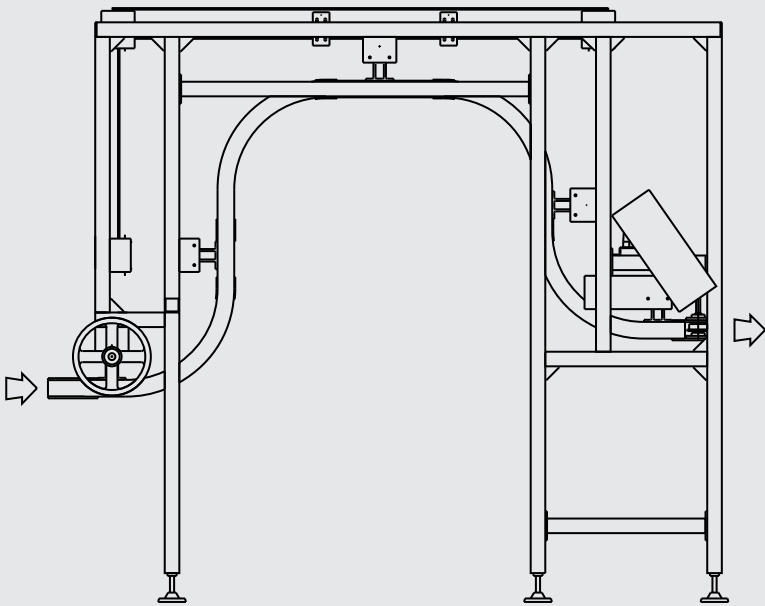
Standard equipment includes:
dual drives, spring chain take-up,
and manual width adjust.

Available options:
single drive, pneumatic chain take-up,
and variable width adjust.



Auxiliary Equipment

Cross Over



Cross Over

Picks up items from a horizontal infeed conveyor, carries them up to a higher elevation, levels out and continues horizontally for a short distance, then declines and levels out to deliver them to a horizontal discharge conveyor.

Elevator/Lowerator/Inverter Specifications:

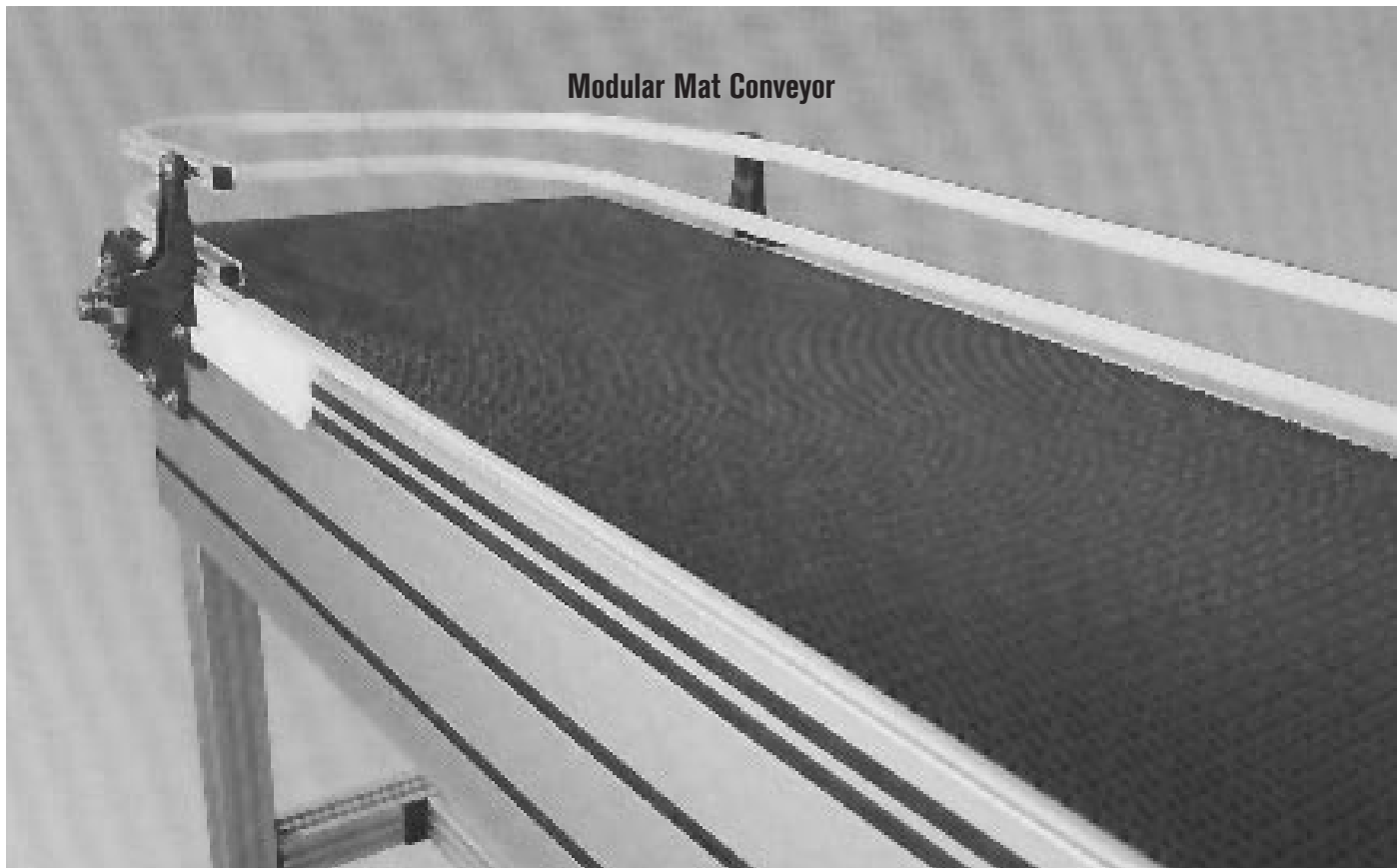
Maximum allowable weight varies according to line speed and the spacing between products being conveyed. Also, the choice of gripper width often depends on factors like a product's center of gravity, inertial

	Mini Sure-Grip™ 1.5" (38 mm) Chain	Standard Sure-Grip™ 3.25" (83 mm) Chain
Product Width	0" - 8" (200 mm)	0" - 10" (254 mm)
Product Height	2.5" (64 mm)-12" (305 mm)	3" (76 mm)-15" (381 mm)
Motor Horsepower	1 hp	2/1 hp
Minimum Elevator Infeed Elevation	24" (610 mm)	20" (508 mm)
Minimum Lowerator Discharge Elevation	18" (450 mm)	20" (508 mm)
Minimum Elevation Change	36" (915 mm)	48" (1220 mm)
Maximum Elevator Elevation Change	180" (4570 mm)	180" (4570 mm)
Maximum Lowerator Elevation Change	180" (4570 mm)	180" (4570 mm)
Maximum Gripper Chain Speed	200 fpm (60 mpm)	200 fpm (60 mpm)

mass, or the contact area on the product. Please consult Simplimatic Automation or your authorized distributor for equipment recommendations, pricing, and delivery. Options include variable speed motors,

electrical controls, drive motor soft start, special voltages, automatic width adjustment, high speed (greater than 200 fpm), ride rails, polycarbonate covers or special safety guarding.

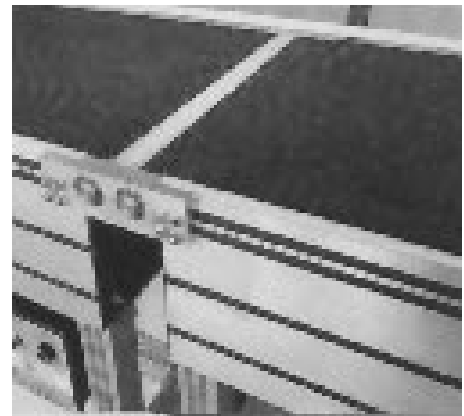
Auxiliary Equipment



Modular Mat Conveyor

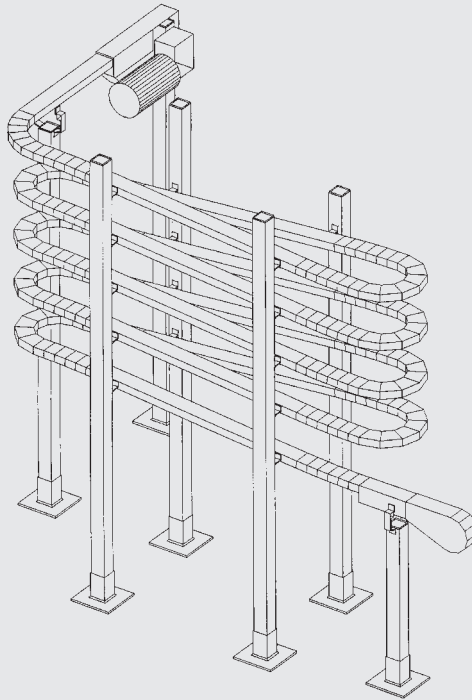
The Modular Mat Conveyor from Simpli-Flex® raises modular product conveying to a new level of productivity. This Modular Mat Conveyor accepts products in mass and then transports, accumulates or single files them onto standard Simpli-Flex® single file conveyor. It does this using parallel side transfers or self-clearing over-the-end deadplates.

This unit is produced with either a center or end drive, in standard 10' lengths, with widths up to 60". The center drive unit allows for bi-directional capability. The overall length can be modified by adding standard or modified length sections as needed.



Auxiliary Equipment

Alpine Conveyor



Alpine Conveyor

An alpine conveyor is a configuration of standard Simpli-Flex® components on a compact spiral loop. There are several reasons for using alpine conveyors. The main reason is to be able to accumulate a large amount of product in a small space. Some manufacturing lines also require a long conveyor distance to allow product to dry or cool between processes. An alpine does this with a minimum of floor space. Alpines can also be used to elevate or lower product combined with the accumulation feature.

Elevation changes are made with alternating mitered vertical turns, straight conveyor beams, and wheel turns. Standard miter angles are 3° and 5°, however custom angles can be manufactured upon request. For most products, a 5° miter angle is the maximum that can be used.

Alpines can be constructed with either top and bottom running chain or top running chain only (to reduce the number of drives required).



Safety Labels



Wherever possible, **Simpli-Flex®** components are labeled before shipping to indicate potential hazards which may exist. Additional pressure-sensitive labels are available for use on installed Simpli-Flex® systems.

After installation and before startup, a study of the system should be made to determine the best placement of safety labels. Additional labels should be added as the system design changes.

The safety labels have been designed to meet circumstances which may be identified during the safety review. All labels should be applied where they will be conspicuous to line operators. Please contact your authorized distributor for assistance in ordering.

Safety Labels

Hazard Severity

- **DANGER**
Immediate hazards which
WILL result in severe
injury or death.
- **WARNING**
Hazards or unsafe practices
which COULD result in severe
personal injury or death.
- **CAUTION**
Hazards or unsafe practices
which COULD result in minor
personal injury or product
or property damage.

Label Size

- Horizontal
5.25" (133 mm) wide
by 3" (76 mm) high
- Vertical
3" (76 mm) wide
by 4" (102 mm) high

Colors

Black foreground on white background,

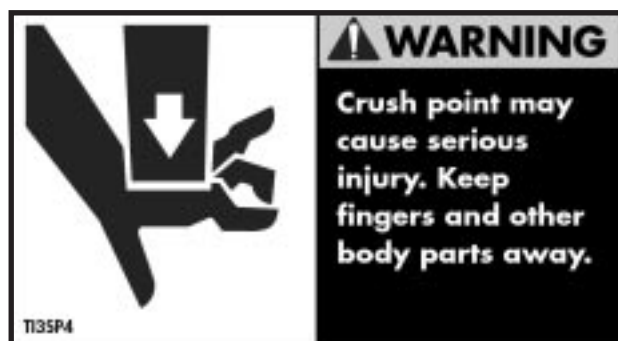
- **DANGER** – Safety red
- **WARNING** – Safety orange
- **CAUTION** – Safety yellow

Safety Labels



Part No. 29000700

Apply on or adjacent to all chain guards, drive guards or other safety guards.



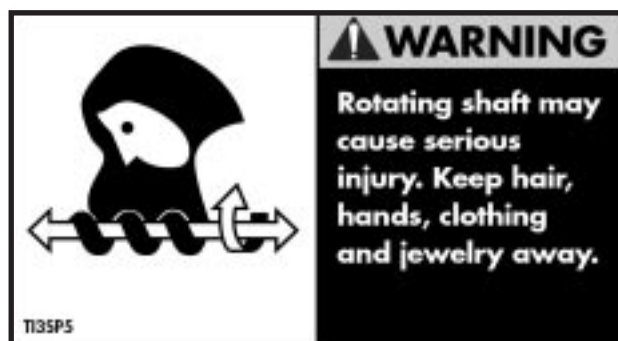
Part No. 29000703

Apply on special devices or any other place that could be considered a crush point.



Part No. 29000701

Apply on starters, controls or electrical panels.



Part No. 29000704

Apply adjacent to all exposed rotating shafts.



Part No. 29000702

Apply adjacent to chain catenaries or any other place considered a pinch point.



Part No. 29000705

Apply on conveyor at appropriate locations.

Safety Labels



Part No. 29000706

Apply at visible intervals along side of remotely controlled conveyor.



Part No. 29000709

Apply at appropriate locations where access to conveyor is possible and injury may result.



Part No. 29000707

Apply on all operator interface devices.



Part No. 29000710

Apply on vertical sections of conveyor requiring holddowns to retain product.



Part No. 29000708

Apply at appropriate locations where access to conveyor is possible and serious injury could result.

Appendix A — Technical Specifications

Operating Temperature

The materials used in Simpli-Flex® components allow continuous operation in dry environments with temperatures ranging from -50°F (-46°C) to 180°F (82°C). The range for wet environments is from 40°F (5°C) to 150°F (65°C). Thermal expansion in aluminum and plastic materials may become significant at temperatures above 100°F (38°C) or below 40°F (4°C) and should be analyzed on a per application basis to determine the necessary provisions for component expansion or contraction.

Component Material

Extruded and die cast aluminum components are made from 6063 grade material and are clear anodized. Plastic materials are blended polyacetal (chain), fiber reinforced polybutylene (wheel turns, idlers), UHMW polyethylene (wearstrips), ABS (end caps and dust covers) and polyurethane (end idler). Platform feet, certain drive sideframes and support brackets are cold rolled steel, shot blasted with an electrostatic powder coat epoxy finish.

Chemical Resistance

The materials used in Simpli-Flex® components can withstand extended exposure to most common chemicals in industrial applications. However, some solutions contained in the products conveyed, or in solutions used to clean and lubricate the equipment may not be compatible.

The Chemical Resistance Guide (Table 8 Appendix C) lists common industrial chemicals and how resistant Simpli-Flex® components may be. If any materials are not listed or compatible with your production environment, please consult Crown Simplimatic for recommendations of more resistant component material lists for conveyor construction.

Static Dissipation

For applications requiring full control of static electrical charge, use the electrostatic dissipative chain, wearstrip and retainer strip (ESD rating). The ESD conveyor chains have a volume resistivity of 10^4 to 10^8 ohms/cm, and surface resistivity of 10^5 to 10^9 ohms/sq. ESD wearstrips and retainer strips have volume conductivity of greater than 10^{-9} siemens/cm and surface resistivity of less than 10^9 ohms/sq. For systems using plain turns, position one of the ground points close to the turn and lubricate the turn.

Appendix A — Technical Specifications

Lubrication Requirements

Simpli-Flex® chain is made from a patented blend of polyacetal with low friction Teflon® additives. For most applications and layouts, no other lubrication is needed between the chain, wearstrips, and retainer strips.

The chain may require up to 40 hours of running time to reach the full level of lubricity across the chain bearing surfaces. During this period, slight chain surges may occur. If this happens, a light application of a food grade mineral oil on the tab side of the chain at the catenary will reduce the surging.

Certain layouts using plain turns, long conveyor lengths and/or high weight-per-foot loads may require periodic application of a lubricant, or the use of a drip oiler to reduce chain surging or binding. Place or inject the lubricant onto the inside radii of the wearstrips and retainer strips in plain turns. The frequency of application will vary according to the type of lubricant and the operating environment. Please contact Crown Simplicmatic for specific lubrication recommendations.

Support/Conveyor Capacity

Simpli-Flex® structural chain beam and support beams are designed to safely carry normal operating loads without adversely deforming the beam, causing side sway, or creating excess vibration. When used as part of a conveyor system, the limits of the structural beam members are above the working limits for the conveyor chain. As such, they are not usually a limiting factor in the design of a system.

The normal working limit for a **(29000050)** is 20 pounds per foot; for **(29000052)** it is 15 pounds per foot; for **(29000051)** it is 5 pounds per foot; for **(29000410)** it is 20 pounds per foot. Limits are based on 10' lengths of beam, simply supported at both ends.

The recommended support spacing is 10' (3 m) maximum. For higher loads, use a closer spacing between support legs. To reduce side sway, add diagonal braces as necessary between chain beam and support legs. Construct bracing from steel flat bar or guide rail **(29000300)**, spacers and T-bolts.

Support feet are made to hold 9000 lbs. of vertical force. Linear expansion for Simpli-Flex® aluminum beam extrusions is .000011" per inch per degree of change from 68° ambient temperature (.000073 mm per millimeter degree of change from 20°C ambient temperature). If there are specific applications where weight may be a concern, contact Simplicmatic Automation Engineering Department for exact calculations.

Appendix B — Technical Calculations

Calculating Chain Length

To order the correct chain length for a given section of conveyor, please use the following procedure:

1. Calculate the length of straight running conveyor. If the layout uses top and bottom running chain, double this value to include the return chain.
2. List each type of turn. Find the total track lengths for each turn (see Section 4). Multiply those lengths times the number of each type of turn. Add together the total length of all turns.
3. Add the total lengths for the drive end and idle end (see Sections 5 and 6). If a center-positioned intermediate drive is used with top and bottom running chain, add the lengths for two idle ends plus the intermediate drive.
4. Add together the totals for steps 1, 2 and 3. This is the total linear amount of chain you'll need for that section of conveyor. Round up to the next even 10' (3 m) increment to include enough chain for the formation of the catenary and to retain some spare chain.
5. If special chain flights or friction links are to be provided, please specify the spacing based on a chain link pitch of 1.5" (38 mm). Allow adequate spacing between flights to avoid product jams at inclines, declines, infeed or discharge areas. Please contact Simplimatic Automation or your authorized distributor for specific application requirements or testing services.

Appendix B — Technical Calculations

Chain Carrying Capacity

The carrying capacity of the Simpli-Flex® series 27 modular conveyor is based on the combination of several factors:

- Overall conveyor length
- Conveyor speed
- Product weight per unit length of the conveyor
- The number and type of curves in the layout, and the position of curves in the layout
- Coefficients of friction between product, chain and wearstrips
- Amount of accumulation, specified as distance and percentage of time accumulation occurs

The normal working limit for Simpli-Flex® 27 series conveyor chain under dynamic conditions at a speed-to-length ratio (S/L) of 0.2 is 500 pounds (**227 kg**) for standard low friction chain (**29000001**), and 300 pounds (**136 kg**) for standard electrostatic dissipative chain (**29000002**). Run chain pull calculations for each length of conveyor used in a layout. To save time, each authorized distributor has engineering software which allows quick calculation of chain pull ratings. The normal working limit for (**29000001**) and (**29000002**) with stainless steel pins is 350 pounds (**159 kg**).

Calculating Chain Pull*: Straight Conveyor Systems with No Turns

Step 1.

Determine product weight in pounds per foot (kg/m) for non-accumulating (PW1) and/or accumulating (PW2) sections of conveyor.

Formula for non-accumulating conveyor: (use standard or international formula)

$$\frac{12''}{\text{Product size (in.)} + \text{gap (in.)}} \times \text{product weight (lbs.)} = \text{product weight/ft. (PW1)}$$

$$\frac{1,000 \text{ mm}}{\text{Product size (mm)} + \text{gap (mm)}} \times \text{product weight (kg)} = \text{product weight/meter (PW1)}$$

* Please ask for our software Chain Pull Program

Appendix B — Technical Calculations

Calculating Chain Pull*: Straight Conveyor Systems with No Turns (continued)

Formula for accumulating conveyor: (use standard or international formula)

$$\frac{12''}{\text{Product size (in.)}} \times \text{product weight (lbs.)} = \text{product weight/ft. (PW2)}$$

$$\frac{1,000 \text{ mm}}{\text{Product size (mm)}} \times \text{product weight (kg)} = \text{product weight/meter (PW2)}$$

Step 2.

Determine the maximum speed (S) that the conveyor will operate in feet (meters) per minute.

Step 3.

Determine the desired conveyor length (L) in linear feet (meters), top side only.

Step 4.

Calculate the speed-to-length ratio.

$$\frac{S \text{ (Step 2)}}{L \text{ (Step 3)}} = \text{Speed-to-Length Ratio}$$

Step 5.

Determine the chain weight per foot (meter) of conveyor (CW) from Table 1, Appendix C.

Step 6.

Determine maximum allowable chain pull at the drive end from Figure 1, Appendix C corresponding to the speed-to-length ratio (S/L) from Step 4.

Step 7.

Determine the coefficient of friction between the chain and wearstrip (M1) from Table 2, Appendix C.

NOTE:

For layouts involving incline or decline sections, calculate the chain pull for that section using an adjusted friction factor in place of M1.

For inclines, use $M1_i = M1 + \tan \infty$

For declines, use $M1_d = M1 - \tan \infty$

Where ∞ = angle of incline or decline

* Please ask for our software Chain Pull Program

Appendix B — Technical Calculations

Calculating Chain Pull*: Straight Conveyor Systems with No Turns (continued)

Step 8.

Determine the coefficient of friction between chain and product (M2) from Table 3, Appendix C.

NOTE:

For layouts involving incline or decline sections, calculate the chain pull for that section using an adjusted friction factor in place of M2.

For inclines, use $M2_i = M2 + \tan \infty$

For declines, use $M2_d = M2 - \tan \infty$

Where ∞ = angle of incline or decline

Step 9.

Determine the appropriate service factor (SF) from Table 4, Appendix C. This factor is based on the number of times the conveyor will be started and then completely stopped in a given hour of normal operation. For values not listed, interpolate from the values given.

Step 10.

Calculate chain pull (CP). Separate formulas are used for non-accumulating and accumulating conveyor.

Formula for non-accumulating conveyor

$$CP_{NA} = [(PW1 + (CW \times 2)) \times L \times M1] \times SF$$

Formula for accumulating conveyor:

(where LS = length of conveyor where product is accumulating)

$$CP_A = \{[(PW1 + (CW \times 2)) \times L \times M1] + (PW2 \times LS \times M2)\} \times SF$$

Step 11.

Compare chain pull in Step 10 to the maximum allowable chain pull at the drive end in Step 6. If the chain pull in Step 10 is less than the value in Step 6, the conveyor will operate satisfactorily. If chain pull in Step 10 exceeds the value in Step 6, the conveyor should be either shortened, lubricated, speed reduced, load reduced or some combination of these. Recalculate the steps with the changes until the chain pull in Step 10 falls below the value in Step 6.

* Please ask for our software Chain Pull Program

Appendix B — Technical Calculations

Calculating Chain Pull*: Conveyor Systems with Straight Sections and Turns

Step 1.

Determine product weight in pounds per foot (kg/m) for non-accumulating (PW1) and/or accumulating (PW2) sections of conveyor.

Formula for non-accumulating conveyor: (use standard or international formula)

$$\frac{12''}{\text{Product size (in.)} + \text{gap (in.)}} \times \text{product weight (lbs.)} = \text{product weight/ft. (PW1)}$$

$$\frac{1,000 \text{ mm}}{\text{Product size (mm)} + \text{gap (mm)}} \times \text{product weight (kg)} = \text{product weight/meter (PW1)}$$

Formula for accumulating conveyor: (use standard or international formula)

$$\frac{12''}{\text{Product size (in.)}} \times \text{product weight (lbs.)} = \text{product weight/ft. (PW2)}$$

$$\frac{1,000 \text{ mm}}{\text{Product size (mm)}} \times \text{product weight (kg)} = \text{product weight/meter (PW2)}$$

Step 2.

Determine the maximum speed (S) that the conveyor will operate in feet per minute (fpm) or meters per minute (mpm).

Step 3.

Break the conveyor down into sections of carrying or return conveyor. Starting with the return side at the drive sprocket, each section consists of a single straight length of conveyor and a single turn. The last section on the return may consist of a single straight section if it is not followed by a turn. Continue breaking down the carrying section in the same manner ending at the drive sprocket.

Step 4.

Determine the desired conveyor length (L) in linear meters, carrying side only. (L) is the sum of all carrying side sections along the centerline of the conveyor.

* Please ask for our software Chain Pull Program

Appendix B — Technical Calculations

Calculating Chain Pull*: Conveyor Systems with Straight Sections and Turns (continued)

Step 5.

Calculate the speed-to-length ratio.

$$\frac{S \text{ (Step 2)}}{L \text{ (Step 3)}} = \text{Speed-to-Length Ratio}$$

Step 6.

Determine the chain weight per meter of conveyor (CW) from Table 1, Appendix C.

Step 7.

Determine maximum allowable chain pull at the drive sprocket from Figure 1, Appendix C, corresponding to the speed-to-length ratio (S/L) from Step 5.

Step 8.

Where plain turns are used, you need to consider the pressure velocity (PV) limits. If the conveyor section includes horizontal or vertical plain turns, determine the maximum chain tension allowed at the curve nearest the drive end using Figure 3, Appendix C.

Step 9.

Determine the coefficient of friction between chain and wearstrip (M1) from Table 2, Appendix C.

NOTE:

For layouts involving incline or decline sections, calculate the chain pull for that section using an adjusted friction factor in place of M1.

For inclines, use $M1_i = M1 + \tan \infty$

For declines, use $M1_d = M1 - \tan \infty$

Where ∞ = angle of incline or decline

Step 10.

Determine the coefficient of friction between chain and product (M2) from Table 3, Appendix C.

NOTE:

For layouts involving incline or decline sections, calculate the chain pull for that section using an adjusted friction factor in place of M2.

For inclines, use $M2_i = M2 + \tan \infty$

For declines, use $M2_d = M2 - \tan \infty$

Where ∞ = angle of incline or decline

* Please ask for our software Chain Pull Program

Appendix B — Technical Calculations

Calculating Chain Pull*: Conveyor Systems with Straight Sections and Turns (continued)

Step 11.

Determine the appropriate service factor (SF) from Table 4, Appendix C. This factor is based on the number of times the conveyor will be started and then completely stopped in a given hour of normal operation. For values not listed, interpolate from the values given.

Step 12.

As a result of differences in turn factors and the fact that the force on a curve is directly affected by the straight section immediately preceding it, the system must be broken down into paired sections of single curve and single preceding straight section (Step 3). Because there is no product load on the return section, separate calculations of chain pull on the carrying and return sides of the conveyor need to be made. Fill in the chain pull worksheet starting with section 1 of conveyor. Fill in the appropriate values for all the remaining conveyor sections. The accumulated sums in column “J” will give you the “Total Accumulated Chain Pull.”

Step 13.

Adjust the accumulated chain pull in step 12 by the service factor (SF) in step 11.

$$\text{Adjusted chain pull (ACP)} = (\text{Total Accumulated Chain Pull}) \times \text{SF}$$

Step 14.

Compare total accumulated chain pull at the curve nearest the drive end from step 12 with the maximum allowable chain tension at the curve nearest the drive end in step 8. At the same time, compare the adjusted chain pull from step 13 to the maximum allowable chain pull at the drive end from step 7.

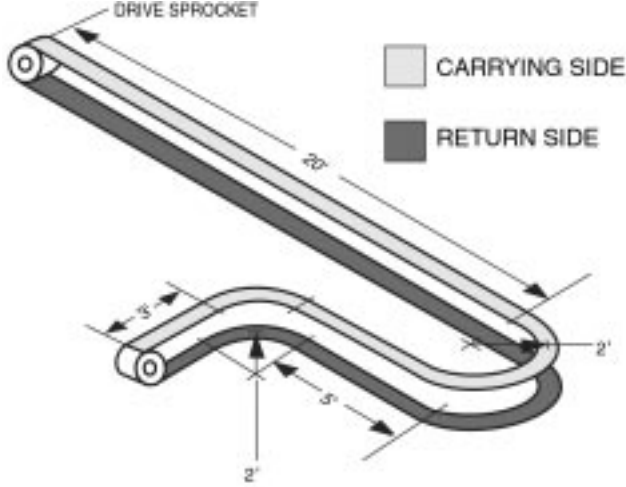
If chain pull in steps 12 and 13 exceeds steps 8 and 7, the conveyor should be either shortened, lubricated, speed reduced, load reduced or some combination of changes. Recalculate the chart until the values in steps 12 and 13 are within acceptable limits.

* Please ask for our software Chain Pull Program

Appendix B — Technical Calculations

Calculating Chain Pull*:

Sample Calculation for Conveyor Systems with Straight Sections and Turns



DRIVE SPROCKET

CARRYING SIDE

RETURN SIDE

20'

5'

2'

2"

GIVEN:

Product weight = 1 lb.

Product size = 2.0" diameter

Product description = metal part

Non-accumulation gap spacing = 2"

Accumulation over section 5 and 6

System will run dry

Maximum Chain Speed = 40 fpm

Line starts = 10 per hour

Step 1.

Determine the product weight per foot in pounds.

(PW1), non-accumulation =

$$\frac{12''}{2'' \text{ dia.} + 2'' \text{ gap}} \times 1 \text{ lb.} = 3 \text{ lbs./ft.}$$

(PW2), accumulation =

$$\frac{12''}{2'' \text{ dia. centered}} \times 1 \text{ lb.} = 6 \text{ lbs./ft.}$$

Step 2.

Determine the maximum speed (S) that the conveyor will operate in feet per minute.

Maximum chain speed (S) = 40 fpm

* Please ask for our software Chain Pull Program

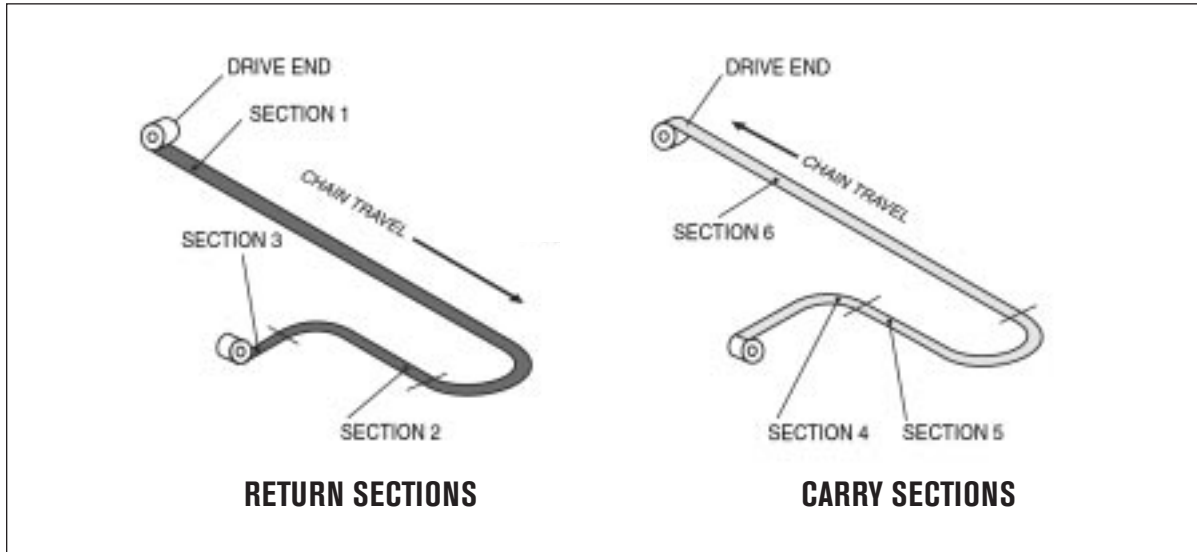
Appendix B — Technical Calculations

Calculating Chain Pull*:

Sample Calculation for Conveyor Systems with Straight Sections and Turns (continued)

Step 3.

Break the conveyor down into sections of carrying or return conveyor.



Step 4.

Determine the desired conveyor length in linear feet (L), carrying side only.

$$\begin{aligned} (L) &= \text{Section 4} & + & \text{Section 5} & + & \text{Section 6} \\ &= \left(3' + \frac{2p2}{4} \right) & + & \left(5' + \frac{2p2}{2} \right) & + & 20' \\ &= (3 + 3.14) & + & (5 + 6.28) & + & 20' \\ &= (6.14) & + & (11.28) & + & 20' \\ &= 37.42 \text{ ft.} \end{aligned}$$

Step 5.

Calculate the speed-to-length ratio (S/L).

$$\frac{40 \text{ fpm}}{37.42 \text{ ft.}} = 1.07$$

* Please ask for our software Chain Pull Program

Appendix B — Technical Calculations

Calculating Chain Pull*: Sample Calculation for Conveyor Systems with Straight Sections and Turns (continued)

Step 6.

Determine the chain weight per foot of conveyor (CW) from Table 1, Appendix C, using standard chain, chain weight (CW) equals 1 lb./ft.

Step 7.

Determine maximum allowable chain pull at the drive sprocket from Figure A, corresponding to the speed-to-length ratio (S/L) from Step 4, Appendix C. Referring to the chart, the resultant value would be 320 pounds.

Step 8.

Determine the maximum chain tension allowed at the curve nearest the drive end using Figure B. Since a chain speed of 40 fpm falls below the minimum chart speed of 50 fpm, use the minimum value, or 50 fpm. Assume the resultant chain pull is 400 lbs. for a dry running section.

Step 9.

Determine the coefficient of friction between chain and wearstrip (M1) from Table 2, Appendix C.

Operating condition is dry, so coefficient is 0.15.

Step 10.

Determine the coefficient of friction between chain and product (M2) from Table 3, Appendix C.

Product is metal in a dry system, so the coefficient of friction is 0.25.

* Please ask for our software Chain Pull Program

Appendix B — Technical Calculations

Calculating Chain Pull*: Sample Calculation for Conveyor Systems with Straight Sections and Turns (continued)

Step 11.

Determine the appropriate service factor from Table 4, Appendix C.

Line will start/stop 10 times per hour. The corresponding service factor from Table 4, Appendix C (Pg. C-2) is 1.7.

Step 12.

Fill in chain pull worksheet to find Total Accumulated Chain Pull.

Step 13.

Adjust the accumulated chain pull in step 12 by the service factor in step 11.

$$\begin{aligned}\text{Adjusted chain pull (ACP)} &= 142.2 \text{ lbs.} \times 1.7 \\ &= 241.7 \text{ lbs.}\end{aligned}$$

Step 14.

The value for Total Accumulated Chain Pull at the curve nearest the drive end (91.2) in step 12 is less than the maximum allowable chain tension at the curve nearest the drive end (400 lbs.) in step 8. Also, the adjusted chain pull (241.7 lbs.) from step 13 is less than the maximum allowable chain pull at the drive end (320 lbs.) in step 7. So, the conveyor layout is acceptable.

* Please ask for our software Chain Pull Program

Appendix B — Technical Calculations

Drive Train Selection

The following procedure should be followed when selecting drive train components for all drives listed in the catalog:

Step 1.

Determine conveyor specifications:

- Product speed in fpm or mpm from the chain pull calculation.
- Total accumulated chain tension (pounds force or Newtons) from chain pull calculations.
- Drive type from the conveyor layout and according to the application requirements.

Step 2.

Determine the drive sprocket pitch diameter.

Drive Type	Drive Sprocket Pitch Diameter	Chain Travel Per Sprocket Revolution
End Drive	(38 mm)	18" (457 mm)
Short Drive	(38 mm)	18" (457 mm)
Wrap Drive	(38 mm)	18" (457 mm)
Intermediate Drive	(38 mm)	18" (457 mm)

Step 3.

Calculate the amount of torque required at the conveyor headshaft.

$$\text{Chain tension} \times \frac{\text{Chain Pitch Diameter}}{2} = \text{Headshaft torque (in.-lbs. or newton-meters)}$$

Step 4.

Select the drive train components.

Gearboxes for Simpli-Flex® drives are manufactured by either Winsmith or SEW Eurodrive. Selection charts are listed by manufacturer. SEW Eurodrive gearboxes are provided with a drive motor. Winsmith gearboxes accept any 56C face motor. Motors used are the totally enclosed fan cooled type.

Gearbox. Refer to Gearbox and Gearmotor charts on Tables 6 and 7 (Appendix C). Using product speed and headshaft torque, determine the gearbox number from the gearbox selection graph. Read up the Y-axis for the product speed, then over in the X-axis direction to the appropriate torque value. Record the gearbox number.

Motor Size. Motor horsepower and style are selected from the gearbox selection chart.

Appendix B — Technical Calculations

Drive Train Selection Example:

SHORT DRIVES –

INTERMEDIATE DRIVES –

Step 1.

GIVEN: Conveyor #1

Product speed	120 fpm
Chain tension (from chain pull calculation)	210 lbs. force
Drive Type	Left hand short drive (27SDL)

Step 2.

The drive sprocket pitch diameter is 1.517".

Step 3.

Calculate torque required:

Headshaft torque = 210 lbs. X (5.796/2 in.) = 608.58 in.-lbs.

Step 4.

Referring to the selection charts, select the drive train components:

Gearbox. Winsmith 20:1 with 615 in.-lbs. maximum torque capacity

SEW Eurodrive S42 gearmotor with 735 in.-lbs. capacity

Motor. For Winsmith 20:1 gearbox, select a 1 hp motor to achieve rated output torque of gearbox

Appendix B – Technical Calculations

Example Calculation

[illegible]

Appendix B – Technical Calculations

Chain Pull Worksheet for Sideflexing Conveyor

[illegible]

Appendix C — Tables

Table 1—Chain Weight (CW)

Link/Pattern (all materials)	Weight
29000001	1.000 lb./ft. (1.490 kg/m)
29000007/ 29000016, every link	1.168 lb./ft. (1.738 kg/m)
29000008/ 29000017, every second link	1.084 lb./ft. (1.613 kg/m)
29000009/ 29000018, every third link	1.056 lb./ft. (1.571 kg/m)
29000010/ 29000019, every fourth link	1.042 lb./ft. (1.550 kg/m)
29000011/ 29000020, every fifth link	1.034 lb./ft. (1.539 kg/m)
29000012/ 29000021, every sixth link	1.027 lb./ft. (1.528 kg/m)
29000013/ 29000022, every seventh link	1.023 lb./ft. (1.522 kg/m)
29000014/ 29000023, every eighth link	1.021 lb./ft. (1.519 kg/m)
29000032	1.600 lb./ft. (2.380 kg/m)

Table 2—Friction Between Wearstrip & Chain (M1)

Condition	Friction Factor M1		
	Steel	UHMW-PE	Conductive UHMW
LF chain –			
Dry	.25	.20	
Water	.20	.18	
Soap and Water	.15	.15	
Oil	.10	.10	
ESD chain –			
Dry	.30		.25
Water	.23		.21
Soap and Water	.15		.15
Oil	.10		.10

Table 3—Friction Between Product & Chain (M2)

Material	Condition	LF Chain Friction Factor M2	ESD Chain Friction Factor M2
Plastic	Dry	.20	.25
	Water	.18	.20
	Soap and Water	.15	.15
Paper	Dry	.30	.33
Metal	Dry	.25	.30
	Water	.20	.22
	Soap and Water	.15	.15
	Oil	.10	.10
Glass	Dry	.15	.20
	Water	.13	.15
	Soap and Water	.10	.10

NOTE: The above friction coefficients are based on years of experience and testing. However, these coefficients shown are intentionally listed as conservative readings.

Appendix C — Tables

Table 4–Service Factor (SF)

Number Of Starts Per Hour	Service Factor (SF)
0	1.0
1-5	1.4
6-10	1.7
11-15	1.8
16-20	1.9
21 or more	2.0

Note: For number of starts not listed, interpolate service factor.

Table 5–Turn Factors (TF)

	Plain Turns				Wheel Turns
	UHMW-PE Wearstrip		Steel Wearstrip		
Turn Arc	Dry	Lubricated	Dry	Lubricated	
Standard –					1.15 for all arcs
15°	1.07	1.05	1.10	1.05	
30°	1.12	1.08	1.18	1.09	
45°	1.17	1.12	1.26	1.14	
60°	1.22	1.15	1.36	1.19	
90°	1.34	1.23	1.56	1.29	
120°	1.47	1.31	1.79	1.40	
180°	1.77	1.49	2.36	1.65	
ESD –					
15°		1.05		1.08	
30°	not recommended	1.08	not recommended	1.12	
45°		1.12		1.16	
60°		1.15		1.21	
90°		1.23		1.30	
120°		1.31		1.41	
180°		1.49		1.64	

Appendix C — Tables

Table 6 – Drive Component Selection

WINSMITH 920 SERIES					
NO.	GEAR	MOTOR	HP	RATIO	TORQUE
1	920	56C Mount	0.50	60:1	537 in.- lb.
2	920	56C Mount	0.75	40:1	617 in.- lb.
3	920	56C Mount	1.00	20:1	615 in.- lb.
4	920	56C Mount	1.75	10:1	561 in.- lb.

Table 7 – Drive Component Selection

EURODRIVE S42 GEARMOTORS					
NO.	GEAR	MOTOR	HP	RATIO	TORQUE
1	29000047	DT71C4	0.33	66.54	600 in.- lb.
2	29000047	DT71D4	0.50	34.51	510 in.- lb.
3	29000047	DT71D4	0.50	20.75	325 in.- lb.
4	29000047	DT80K4	0.75	20.75	490 in.- lb.
5	29000047	DT80N4	1.00	20.75	655 in.- lb.
6	29000047	DT80K4	0.75	15.74	375 in.- lb.
7	29000047	DT80N4	1.00	15.74	500 in.- lb.
8	29000047	DT90S4	1.50	15.74	735 in.- lb.
9	29000047	DT80K4	0.75	12.32	300 in.- lb.
10	29000047	DT80N4	1.00	12.32	395 in.- lb.
11	29000047	DT90S4	1.50	12.32	595 in.- lb.
12	29000047	DT90S4	1.50	7.89	385 in.- lb.

Appendix C – Tables

Table 8 – Chemical Compatibility Chart (based on 68°F)

Chemical Name	Steel	Aluminum	Acetal	UHMWPE	LDPE	ABS	PVC	Propylene	Chemically Resistant Plastic (P)	Nylon HS, and Nylatron
Acetic Acid (5% -50%)	U	M	U	S	S	U	U	S		
Acetone	U	S	S	S	M	U	U	U		
Alcohol	S	S	S	S	S	M	S	S		
Ammonia	M	S	U	S	M	U	M	U		
Beer								S	S	S
Beverages – Soft Drinks								S	S	
Benzene								U	S	S
Brine (pickle)								U	S	M
Carbon Tetrachloride								U	S	S
Chlorine (liquid)	U	U	U	S	U	—	U	U*		
Citric Acid	U	M	M	S	U	U	M	M*		
Cyclohexane								U		
Ethyl Chloride	S	M	S	M	M	U	U	M*		
Formaldehyde	S	S	S	S	M	M	S	—		
Formic Acid	U	S	U	S	U	U	S	—		
Fruit Juice								M	S	S
Gasoline	S	S	S	M	M	U	M	S		
Hexane								S	S	
Hydrochloric Acid (up to 2%)	U	U	U	S	S	S	M	S		
Hydrochloric Acid (up to 37%)	U	U	U	S	S	S	M	M		
Hydrogen Peroxide	U	S	U	S	S	M	S	U		
Iodine	U	S	U	M	S	U	S	—		
Isopropyl alcohol (isopropyl alcohol)	S	M	S	S	S	—	S	S		
Kapadene								S	S	S
Lactic Acid								S	S	M
Methylene Chloride	S	M	S	U	M	U	U	U		
Milk								S	S	S
Muriatic Acid	U	U	U	S	S	S	M	M*		
Nitric Acid (low concentration <10%)	S	S	U	M	M	M	S	M		
Oil (vegetable or mineral)	S	S	S	S	S	S	S	S		
Paraffin								S	S	S
Phosphoric Acid (up to 10%)	U	M	U	S	S	M	M	M*		
Soap and Water	M	M	S	S	U	S	S	S		
Sodium Chloride	U	M	S	S	S	S	S	S*		
Sodium Hydroxide	U	U	U	S	U	S	S	U		
Sodium Hypochlorite (bleach)	U	U	U	S	M	M	M	M*		
Stearic Acid	U	M	M	S	M	—	M	—		
Sulphuric Acid (up to 40%)	U	U	U	S	S	M	S	S		
Toluene (toluol)	S	S	M	U	M	U	U	U		
Turpentine	S	S	S	M	U	U	U	U*		
Vegetable Juices								S	S	S
Vinegar								S	S	
Water (fresh)	S	S	S	S	S	S	S	S*		
Whiskey								S	S	S
Wine								S	S	S
Xylene	S	S	S	M	M	U	U	U*		
S – Satisfactory	M – Marginal			U – Unsatisfactory			*Not actually tested			

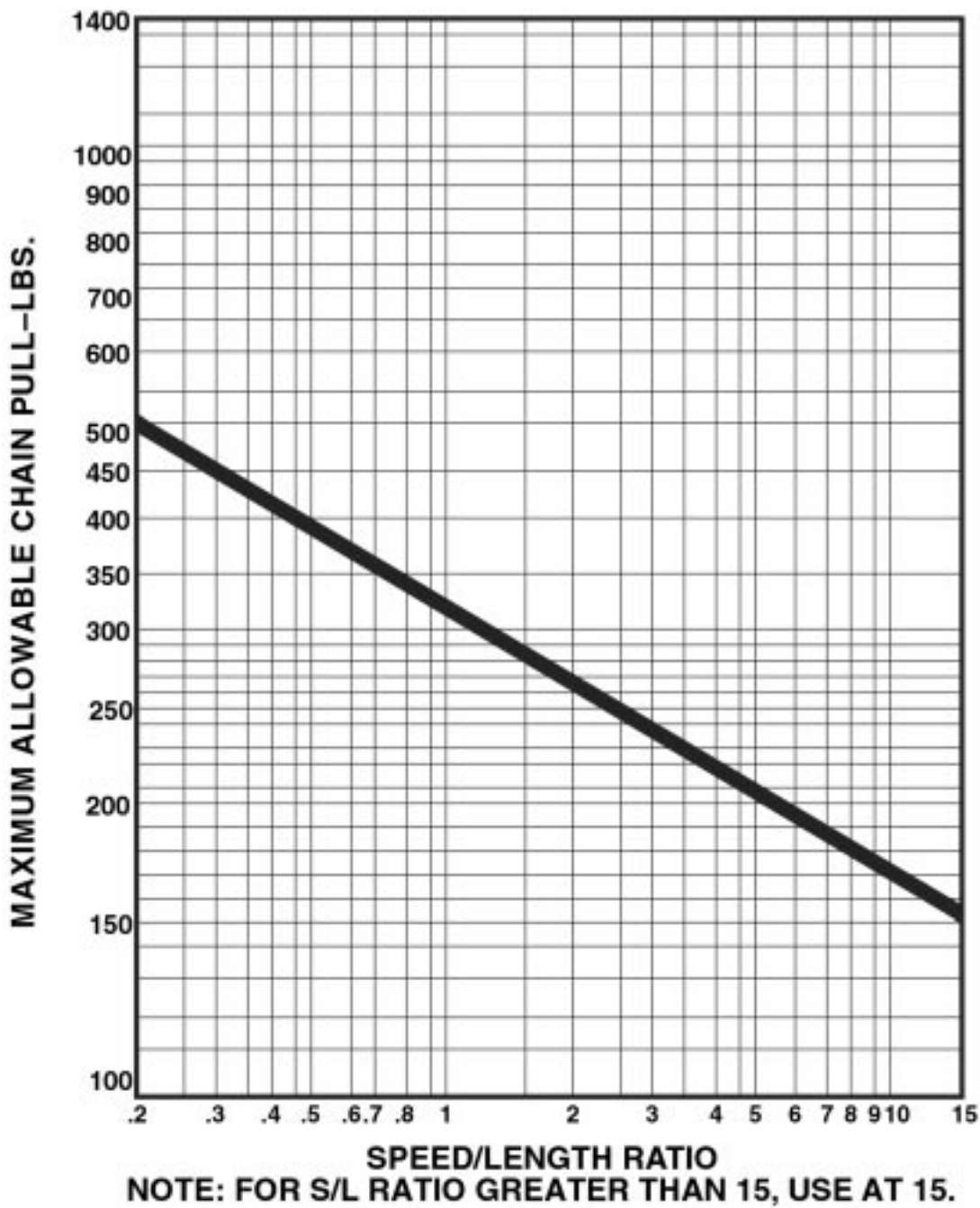
Appendix C — Tables

Solutions contained in products conveyed as well as solutions used to clean or lubricate the chain and equipment may result in corrosive attack of the conveyor components. Use this chart as a general guide to chemical compatibility. To determine how well the components will stand up under exposure to various chemicals, immerse the components in a bath of the specific chemical and allow them to stay immersed for 1 to 4 days. For chemicals not listed, contact Simplimatic Automation for recommendations.

With thermoplastics, do not use cleaning or lubricating agents with a pH below 4 or above 10 or chemicals containing chlorine or free ammonia. These agents may cause immediate attack or “crazing” after several applications because of concentration due to evaporation.

Appendix C — Figures

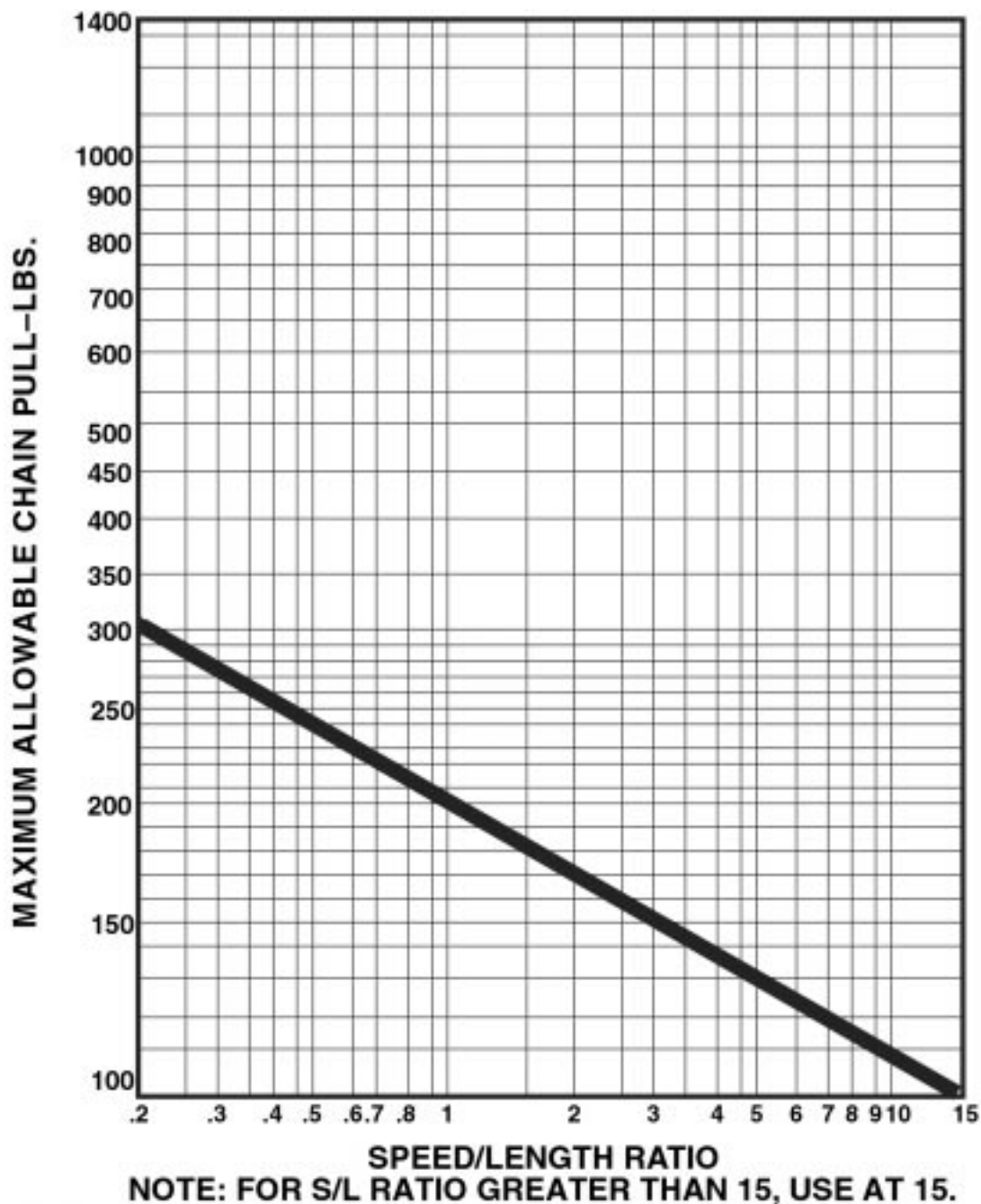
Figure 1
Standard 29000001 Chain Load Limit Chart



Maximum Allowable Chain Pull at Drive Sprocket

Appendix C — Figures

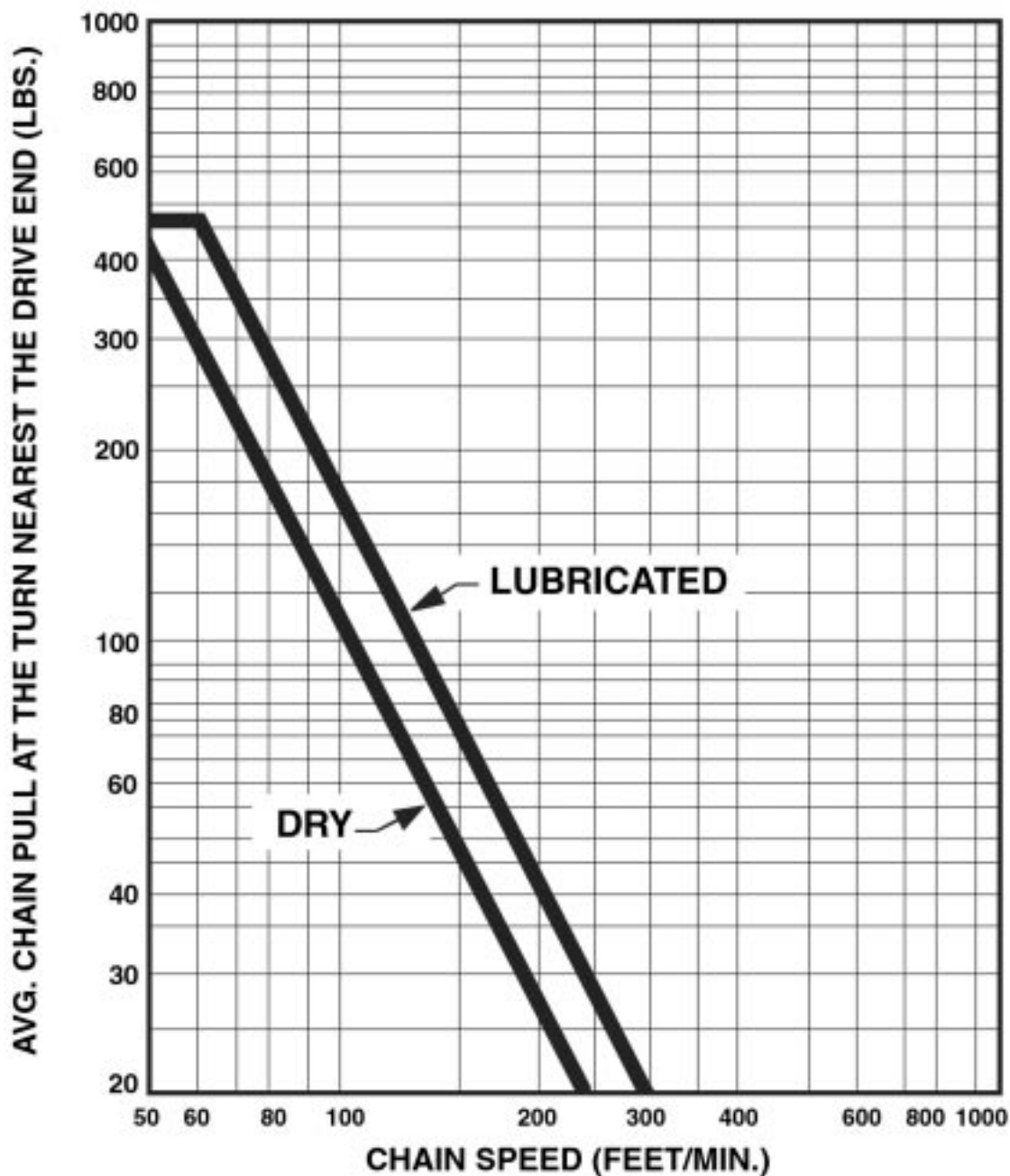
Figure 2
29000002 Electrostatic Dissipative Chain Load Limit Chart



Maximum Allowable Chain Pull at Drive Sprocket

Appendix C — Figures

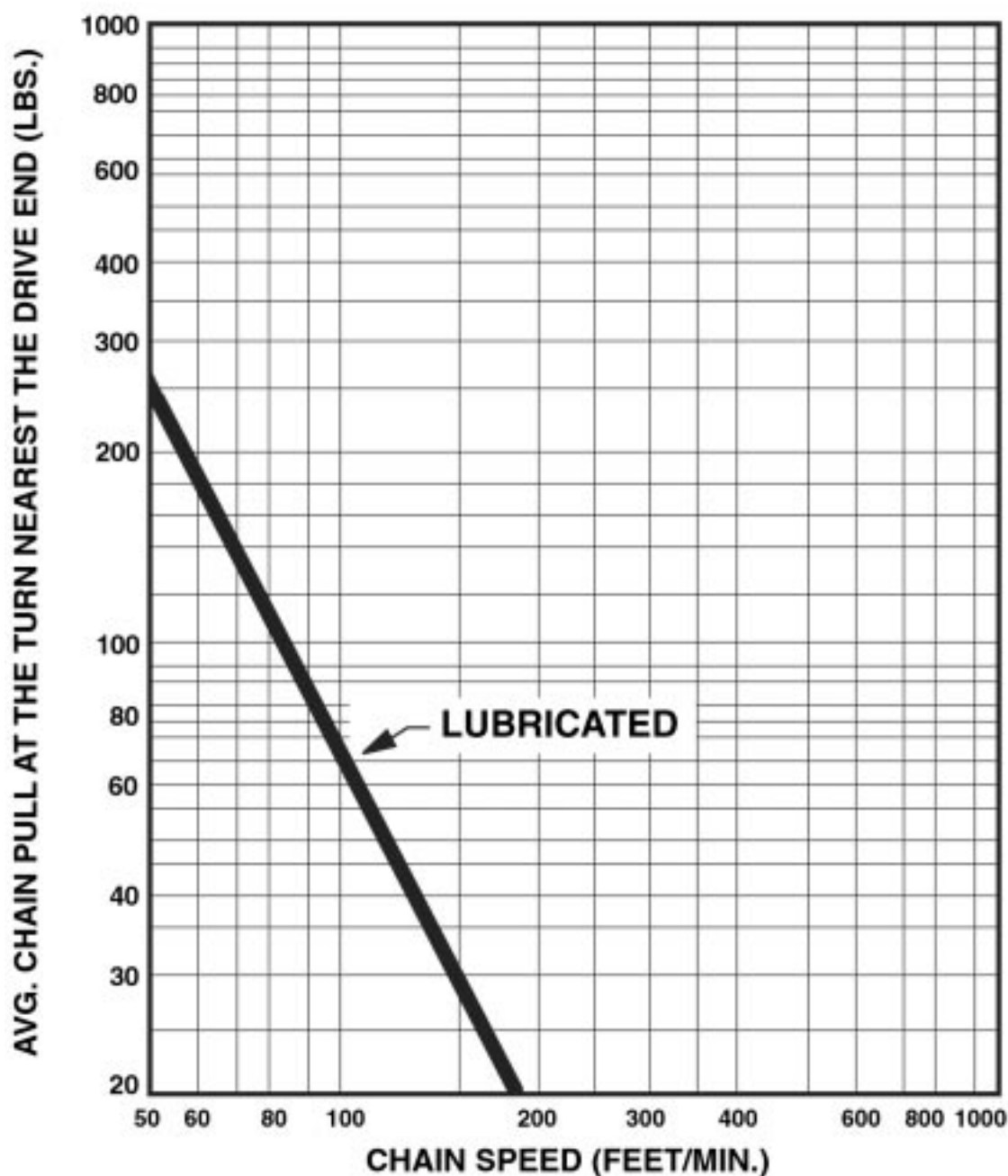
Figure 3
29000001 Series Chain
Corner Load Limit Chart



**Maximum Allowable Chain Pull at a Horizontal or Vertical Plain Turn
Closest to the Drive End, Top Chain Only**

Appendix C — Figures

Figure 4
29000002 Electrostatic Dissipative Chain
Corner Load Limit Chart



Maximum Allowable Chain Pull at a Horizontal or Vertical Plain Turn
Closest to the Drive End, Top Chain Only

Appendix D – Conversions

ENGLISH (USA) UNIT	MULTIPLY BY TO GET	METRIC (SI) UNIT	MULTIPLY BY TO GET	ENGLISH (USA) UNIT
LENGTH				
inch (in.)	25.40	millimeter (mm)	0.0394	inch (in.)
inch (in.)	0.0254	meter (m)	39.37	inch (in.)
foot (ft.)	304.8	millimeter (mm)	0.0033	foot (ft.)
foot (ft.)	0.3048	meter (m)	3.281	foot (ft.)
AREA				
inch ² (in. ²)	645.2	millimeter ² (mm ²)	0.00155	inch ² (in. ²)
inch ² (in. ²)	0.000645	meter ² (m ²)	1550.0	inch ² (in. ²)
foot ² (ft. ²)	92,903.0	millimeter ² (mm ²)	0.00001	foot ² (ft. ²)
foot ² (ft. ²)	0.0929	meter ² (m ²)	10.764	foot ² (ft. ²)
VOLUME				
foot ³ (ft. ³)	645.2	meter ³ (m ³)	0.00155	foot ³ (ft. ³)
foot ³ (ft. ³)	0.000645	liter (l)	1550.0	foot ³ (ft. ³)
VELOCITY and SPEED				
foot/second (ft./sec.)	0.3048	meter/second (m/s)	3.281	foot/second (ft./sec.)
foot/minute (ft./min.)	0.3048	meter/minute (m/min)	3.281	foot/minute (ft./min.)
MASS and DENSITY				
pound-avdp (lb.)	0.4536	kilogram (kg)	2.205	pound-avdp (lb.)
pound/foot ³ (lb./ft. ³)	16.02	kilogram/meter ³ (kg/m ³)	0.0624	pound/foot ³ (lb./ft. ³)
FORCE and FORCE/LENGTH				
pound-force (lbf)	0.4536	kilogram-force (kg)	2.205	pound-force (lbf)
pound-force (lbf)	4.448	newton (N)	0.225	pound-force (lbf)
kilogram-force (kg)	9.807	newton (N)	0.102	kilogram-force (kg)
pound/foot (lb./ft.)	1.488	kilogram/meter (kg/m)	0.627	pound/foot (lb./ft.)
pound/foot (lb./ft.)	14.59	newton/meter (N/m)	0.0685	pound/foot (lb./ft.)
kilogram/meter (kg/m)	9.807	newton/meter (N/m)	0.102	kilogram/meter (kg/m)
POWER				
Horsepower (hp)	745.7	Watt	0.00134	horsepower (hp)
foot-pound/minute (ft.-lb./min.)	0.0226	Watt	44.25	foot-pound/minute (ft.-lb./min.)

TO CONVERT FROM	TO	USE FORMULA
TEMPERATURE		
Temperature Fahrenheit (°F) Temperature Celsius (°C)	Temperature Celsius (°C) Temperature Fahrenheit (°F)	°C = (°F - 32)/1.8 °F = 1.8°C + 32

Appendix E — Preventive Maintenance

The following is a suggested maintenance schedule for Simpli-Flex™ conveyors, and is intended as a general guide only.

Weekly

1. Check catenary sag of chain at the drive end to ensure that there is not too much catenary in the chain. Generally, the chain should not hang more than one to two inches below the bottom of the drive side frame. If excessive catenary is detected, shut down the conveyor, and remove two or three chain links. This is especially important at the initial start-up of the conveyor, and may not be necessary after the first six (6) weeks of operation.
2. Check drive motors and gearboxes for excessive heat. They will be warm to the touch but should not burn your hand. If a motor and/or gearbox is found to be excessively hot, check for the following:
 - A) Sufficient lubricant in the gearbox?
 - B) Is the motor drawing excessive amperage?
 - C) Are tight spots (pinched chain) causing an overload on the motor?
 - D) Is line being run with more accumulation than it was designed for?

Monthly

1. Check guide rails, brackets, supports, and any other “bolted on” part to be sure that they are securely mounted.
2. Check gearbox lubricant.
3. Lift chain up in several locations and inspect track and beam for excessive wear and/or particulate in chain beam.
4. Check electrical wiring and pneumatic tubing for proper connection.
5. Check that all guards are in place.
6. Check power transmission chains on drives, if present, for proper tension, alignment and lubrication.

Annually

1. Replace lubricant in gearboxes with lubricant approved by the manufacturer.
2. Check sprockets for excessive wear.

Appendix F — Safety

Simpli-Flex® modular conveyor is provided in component form to allow end users to design and build systems which satisfy their requirements. As a result, the end user is responsible for ensuring that the equipment complies with all safety standards (industry, OSHA, federal, state and local). Copies of Material Safety Data Sheets for any of the Simpli-Flex® component materials are available upon request from Simplimatic Automation.

Safety Instructions

Normal safety operating practices for conveyor systems include:

1. Only authorized, trained personnel should operate the conveyor system.
2. Know the design limits of the conveyor components and devices. Do not overload the equipment.
3. Do not operate conveyors without protective covers, devices and chain in place.
4. Do not start conveyors without a visual or audible “ALL CLEAR” signal.
5. Do not walk near conveyors without knowing the location and function of control stops.
6. Do not wear loose clothing or uncovered long hair that can get caught in moving parts.
7. Keep areas around conveyors free of obstructions.
8. Do not touch any moving conveyor components or devices.
9. Do not walk, climb, or ride on any part of conveyor systems.
10. Do not walk under conveyors unless they are guarded to prevent injury.
11. Do not attempt to remove jammed parts or products without turning off conveyors.
12. Service conveyors only with trained maintenance personnel.
13. Do not attempt to maintain, repair, or replace any part of conveyors, electrical or pneumatic devices with conveyor systems energized.
14. Maintenance procedures as listed in the maintenance manual must be performed to ensure safe operation of the equipment.
15. Report all unsafe practices or conditions to your supervisor.

Appendix G — Warranty

Simpli-Flex® modular conveyor components will be of high quality, free from defects in design, material and workmanship, and will possess the characteristics represented in writing in this catalog for a period of one year.

Deterioration of equipment beyond normal wear that results from exposure to corrosive or abrasive substances, operation of equipment under abnormal circumstances or operation in areas with excessive abrasives or dampness shall not constitute a defect in equipment design, workmanship, or material.

The information in this catalog is provided only as an aid and service to our customers. Simplimatic Automation does not warranty the accuracy or applicability of such information, and Simplimatic Automation is specifically not responsible for property damage and/or failures caused by improper system design, application, installation, operation, abuse and/or misuse of its products whether or not based on information contained in this catalog. Compliance with local, state or federal safety regulations or standards are the responsibility of the user. The foregoing is in lieu of all other warranties, expressed or implied, including any warranties that extend beyond the description of the products. Warranty claims must be made within 12 months from the date of acceptance or use (whichever comes first), not to exceed 18 months from shipment from either Simplimatic Automation or the authorized local distributor.

Remedy

Upon satisfactory proof of claim by the Buyer to Simplimatic Automation, Simplimatic Automation will, within a reasonable time, make any repairs, additions or corrections, or at the option of Simplimatic Automation, provide replacement parts free of charge F.O.B. our plant. If Simplimatic Automation declares a defect or deficiency to be a "Major Failure" (as herein defined), Simplimatic Automation shall provide, or at Simplimatic Automation's option pay for, warranty labor at no charge to the Buyer. In all other instances Simplimatic Automation shall not be liable for warranty labor expenses. Generally, Major Failures shall be defined as unusual repetitive failures of component parts. **Buyer costs or charges for correcting defects or making additions will not be allowed, nor will Simplimatic Automation accept products returned for credit unless the correction or return is authorized by Simplimatic Automation in writing. With regard to any item not manufactured by Simplimatic Automation, the warranty shall be limited to that extended to Simplimatic Automation by the original manufacturer.**