# **Table of Contents**

I.	Introduction
II.	How To Use This Catalog 2
1.0	Drives
2.0	Idle End
3.0	Conveyor Beams
4.0	Horizontal Wheel Bends 34
5.0	Horizontal Plain Bends 38
6.0	Vertical Bends
7.0	Slide Rails
8.0	Conveyor Chains
9.0	Product Guide Brackets
0.0	Guide Rails
1.0	Conveyor Support Structure
2.0	Wire-way components74
3.0	Safety labels
	Addendums

Simpli-Flex® 83

Modular Side-flexing Plastic Chain Conveyor

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# I. Introduction

**Simpli-Flex® 83** modular conveyor from Simplimatic Automation is designed to help rapidly automate packaging and assembly production lines. Products can be run directly on the conveyor, in pallets, or in pucks as required. This unique system employs an 83mm wide side-flexing plastic chain which allows turns and elevation changes within single continuous runs. The chain travels on low-friction plastic slide rails mounted on an aluminum extrusion track which is designed to quickly bolt together. The modular system can be easily changed when system reconfiguration becomes necessary. Product guide rails are used to stabilize and contain the product as it moves along the conveyor beam.

Our modular conveying systems make the most of capital investment, space, and time by offering a truly flexible conveying structure. A family of pre-engineered modular components makes assembling modular conveying systems very versatile, allowing the greatest amount of layout capability with the least amount of component variation. Components are designed to be used in multiple configurations to give the user unlimited conveying options. Systems can be easily reconfigured to handle products or fixtures of varying specifications.

Standard component designs and the latest advances in aluminum extrusion, injection molding and metal forming technologies are employed to produce high-quality parts. Through standardization, and the use of precise manufacturing tolerances, all conveyor parts can be put together quickly and with ease. This allows simple onsite installations. All system components can be easily assembled, disassembled, and reassembled in far less time than conventional table-top chain conveyors. Design simplicity allows complete systems to be erected with simple hand tools.

The comprehensive approach of the conveyor design allows faster system installation, reliable operation and a cost-effective system design that is flexible enough to adapt to changing system needs.

**Simpli-Flex**<sup>®</sup> **83** modular conveyor systems can be used for a wide range of applications including those in health and beauty, product packaging, electronic assembly, automotive, pharmaceutical, and many other industries.





## **II. How To Use This Catalog**

This catalog is a reference and product selection guide designed to enable system integrators to quickly compose system configurations. It is divided by component categories, and includes the necessary technical specifications and instructions for designing conveying systems. The catalog is presented in the order needed to think through component selections. The flow chart shown, demonstrates the basic thought process of building a conveying system.

Several advanced tools are available to make the process of developing conveyor solutions even easier. They are developed for regular users to help speed the process. They include a variety of Excel spreadsheets, AutoCAD templates and a chain-pull calculation software package. For more information please contact your factory representative.

New components are added regularly to make **Simpli-Flex**<sup>®</sup> **83** the most useful and flexible system possible. If you have applications or need any information not covered in this catalog, please consult the factory or your local authorized distributor. To contact Simplimatic Automation, dial toll free: 800-294-2003.

**Simpli-Flex**<sup>®</sup> **83** is designed and supported by Simplimatic Automation, a global supplier of material handling products. Our experienced factory support staff is available for consultation on any application requirements or to provide technical assistance.



# **1.0 Drives**

#### Introduction

A variety of drive assemblies are available, each addressing unique system configuration needs. Two major sub-groups exist. The first group is used when chain is running through both the product carrying (top side) and chain return (bottom side) of the conveyor beam. This is a typical application and the drive is used in conjunction with idle(s) to facilitate a return path for the conveyor chain. These drives include:

- End Direct Drive
- End Transmission Drive
- Intermediate Direct Drive
- Intermediate Transmission Drive
- Parallel Transfer Direct Drive
- Parallel Transfer Transmission Drive
- Drive-Idle Direct Drive
- Drive-Idle Transmission Drive

The second group is utilized when a system layout allows the use of top-running chain only. In these configurations the chain effectively runs in a circle in the top track of the beam. These configurations are often referred to as race-track or carousel configurations. The main advantage is a savings in the cost of the chain. These drives include:

- Catenary Direct Drive
- Catenary Transmission Drive
- Wrap Direct Drive
- Wrap Transmission Drive

#### **Ordering information**

- Drive assemblies do not include a motor. Motors are ordered separately in sections 1.25 and 1.26 after chain pull and conveyor speed is decided.
- Drives include a slip-clutch which is factory adjusted to prevent system damage.
- Some drives require one or two idles while others include an idle. In each case it is noted in the drive description.
- All drives come with connecting strips and the hardware required to attach to the conveyor beam.
- All drives contain mounting slots that allow the attachment of Type A or B support brackets. It is recommended that a support is placed at each drive location.



### **1.1 End Direct Drive, Right Hand Mount**

#### Part # 25100001

This drive is placed at the "pull" end of a conveyor section to power the chain through the conveyor beam. It is used in conjunction with an idle end (order separately) at the opposite end of the conveyor. The gear motor is directly coupled to the drive shaft of the conveyor. An adjustable slip-clutch coupler is provided to prevent system damage. It is also available in a left hand version (see next page).





Chain and Slide Rail Requirements			
Chain Required Per Drive:	0,8 meters		
Plastic Slide Rail <sup>*</sup> :	0,0 meters		
Technical Specifications			
Number of teeth on drive sprocket	12		
Chain pitch (mm)	33,5		
Pitch diameter (mm)	129,4		
Maximum traction force (N)	1250		



#### **1.1 End Direct Drive, Left Hand Mount**

#### Part # 25100000

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This drive is placed at the "pull" end of a conveyor section to power the chain through the conveyor beam. It is used in conjunction with an idle end (order separately) at the opposite end of the conveyor. The gear motor is directly coupled to the drive shaft of the conveyor. An adjustable slip-clutch coupler is provided to prevent system damage. It is also available in a left hand version (see next page).





Chain and Slide Rail Requirements		
Chain Required Per Drive:	0,8 meters	
Plastic Slide Rail <sup>*</sup> :	0,0 meters	
Technical Specifications		
recinical opecifications		
Number of teeth on drive sprocket	12	
Chain pitch (mm)	33,5	
Pitch diameter (mm)	129,4	
Maximum traction force (N)	1250	



#### **1.3 End Transmission Drive, Right Hand Mount**

#### Part # 25100003

This drive is placed at the "pull" end of a conveyor section. It is used in conjunction with an idle end (order separately) at the opposite end to power the chain through the conveyor beam. The motor is coupled to the drive shaft of the conveyor using a power transmission chain. This allows the motor to be mounted directly underneath the conveyor, thus providing space saving advantages over the Direct Drive. An adjustable slip-clutch coupler is provided to prevent system damage. It is also available in a left hand version (see next page).





Chain and Slide Rail Requirements			
Chain Required Per Drive:	0,8 meters		
Plastic Slide Rail <sup>*</sup> :	0,0 meters		
Technical Specifications			
Number of tooth on shire on a last	10		
Number of teeth on drive sprocket	12		
Chain pitch (mm)	33,5		
Pitch diameter (mm)	129,4		
Maximum traction force (N)	1250		



## **1.4 End Transmission Drive, Left Hand Mount**

#### Part # 25100002

This drive is placed at the "pull" end of a conveyor section. It is used in conjunction with an idle end at the opposite end to power the chain through the conveyor beam. The motor is coupled to the drive shaft of the conveyor using a power transmission chain. This allows for the motor to be mounted directly underneath the conveyor, thus providing space saving advantages over the Direct Drive. An adjustable slip-clutch coupler is provided to prevent system damage. It is also available in a right hand version (see previous page).





Chain and Slide Rail Requirements			
Chain Required Per Drive:	0,8 meters		
Plastic Slide Rail <sup>*</sup> :	0,0 meters		
Technical Specifications			
Number of teeth on drive sprocket	12		
Chain pitch (mm)	33,5		
Pitch diameter (mm)	129,4		
Maximum traction force (N)	1250		



#### **1.5 Intermediate Direct Drive, Right Hand Mount**

#### Part # 25100023

An intermediate drive is best utilized when space restrictions prohibit the placement of an end drive unit. Its advantage is it can be inserted anywhere along the conveyor. It is used in conjunction with two idle ends (ordered separately), one at each end of the conveyor section. When calculating chain pull, note that the Intermediate Drive is not quite as powerful as an End Drive. An adjustable slip-clutch coupler is provided to prevent system damage. It is also available in a left hand version (see next page).





Chain and Slide Rail Requirements		
Chain Required Per Drive:	1,8 meters	
Plastic Slide Rail :	2,7 meters	
Technical Specifications		
Number of teeth on drive sprocket	12	
Chain pitch (mm)	33,5	
Pitch diameter (mm)	129,4	
Maximum traction force (N)	200	



### **1.6 Intermediate Direct Drive, Left Hand Mount**

#### Part # 25100024

An intermediate drive is best utilized when space restrictions prohibit the placement of an end drive unit. Its advantage is it can be inserted anywhere along the conveyor. It is used in conjunction with two idle ends (ordered separately), one at each end of the conveyor section. When calculating chain pull, note that the Intermediate Drive is not quite as powerful as an End Drive. An adjustable slip-clutch coupler is provided to prevent system damage. It is also available in a right hand version (see previous page).





Chain and Slide Rail Requirements		
Chain Required Per Drive:	1,8 meters	
Plastic Slide Rail :	2,7 meters	
Technical Specifications		
Number of teeth on drive sprocket	12	
Chain pitch (mm)	33,5	
Pitch diameter (mm)	129,4	
Maximum traction force (N)	200	



### 1.7 Intermediate Transmission Drive, Right Hand Mount Part # 25100011

An intermediate drive is best utilized when space restrictions prohibit the placement of an end drive unit. Its advantage is it can be inserted anywhere along the conveyor. It is used in conjunction with two idle ends (ordered separately), one at each end of the conveyor section. When calculating chain pull, note that the Intermediate Drive is not quite as powerful as an End Drive. An adjustable slip-clutch coupler is provided to prevent system damage. It is also available in a left hand version (see next page).





Chain and Slide Rail Requirements		
Chain Required Per Drive:	1,8 meters	
Plastic Slide Rail :	2,7 meters	
Technical Specifications		
Number of teeth on drive sprocket	12	
Chain pitch (mm)	33,5	
Pitch diameter (mm)	129,4	
Maximum traction force (N)	200	



### 1.8 Intermediate Transmission Drive, Left Hand Mount Part # 25100010

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An intermediate drive is best utilized when space restrictions prohibit the placement of an end drive unit. Its advantage is it can be inserted anywhere along the conveyor. It is used in conjunction with two idle ends (ordered separately), one at each end of the conveyor section. When calculating chain pull, note that the Intermediate Drive is not quite as powerful as an End Drive. An adjustable slip-clutch coupler is provided to prevent system damage. It is also available in a right hand version (see previous page).





Chain and Slide Rail Requirements		
Chain Required Per Drive:	1,8 meters	
Plastic Slide Rail :	2,7 meters	
Technical Specifications		
recinical specifications		
Number of teeth on drive sprocket	12	
Chain pitch (mm)	33,5	
Pitch diameter (mm)	129,4	
Maximum traction force (N)	200	



#### **1.9 Parallel Direct Drive, Right Hand Mount**

#### Part # 25100014

This drive is best suited for applications that utilize top and bottom running chain requiring a product transfer from a drive to an idle end. This single assembly combines a drive and idle mounted at a 10° offset angle that allows product to travel in a straight path across the bias of the chain. This can be very useful when you need to run small or unstable parts. An adjustable slip-clutch coupler is provided to prevent system damage. It is also available in a left hand version (see next page).





Chain and Slide Rail Requirements			
Chain Required Per Drive:	4,8 meters		
Plastic Slide Rail :	8,4 meters		
Technical Specifications			
Number of teeth on drive sprocket	12		
Chain pitch (mm)	33,5		
Pitch diameter (mm)	129,4		
Maximum traction force (N)	1250		



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This drive is best suited for applications that utilize top and bottom running chain requiring a product transfer from a drive to an idle end. This single assembly combines a drive and idle mounted at a 10° offset angle that allows product to travel in a straight path across the bias of the chain. This can be very useful when you need to run small or unstable parts. An adjustable slip-clutch coupler is provided to prevent system damage. It is also available in a right hand version (see previous page).







Chain and Slide Rail Requirements		
Chain Required Per Drive:	4,8 meters	
Plastic Slide Rail :	8,4 meters	
Technical Specifications		
Number of teeth on drive sprocket	12	
Chain pitch (mm)	33,5	
Pitch diameter (mm)	129,4	
Maximum traction force (N)	1250	



#### 1.11 Parallel Transmission Drive, Right Hand Mount Part # 25100012

This drive is best suited for applications that utilize top and bottom running chain requiring a product transfer from a drive to an idle end. This single assembly combines a drive and idle mounted at a 10° offset angle that allows product to travel in a straight path across the bias of the chain. This can be very useful when you need to run small or unstable parts. An adjustable slip-clutch coupler is provided to prevent system damage. It is also available in a left hand version (see next page).





Chain and Slide Rail Requirements			
Chain Required Per Drive:	4,8 meters		
Plastic Slide Rail :	8,4 meters		
Technical Specifications			
Number of teeth on drive sprocket	12		
Chain pitch (mm)	33,5		
Pitch diameter (mm)	129,4		
Maximum traction force (N)	1250		



#### **1.12 Parallel Transmission Drive, Left Hand Mount**

Part # 25100013

This drive is best suited for applications that utilize top and bottom running chain requiring a product transfer from a drive to an idle end. This single assembly combines a drive and idle mounted at a 10° offset angle that allows product to travel in a straight path across the bias of the chain. This can be very useful when you need to run small or unstable parts. An adjustable slip-clutch coupler is provided to prevent system damage. It is also available in a right hand version (see previous page).





Chain and Slide Rail Requirements		
Chain Required Per Drive:	4,8 meters	
Plastic Slide Rail :	8,4 meters	
Technical Specifications		
Number of teeth on drive sprocket	12	
Chain pitch (mm)	33,5	
Pitch diameter (mm)	129,4	
Maximum traction force (N)	1250	



#### **1.13 Drive-Idle Direct Drive, Right Hand Mount**

#### Part # 25100021

This drive is best suited for applications that utilize top and bottom running chain and require a transfer from a drive to an idle end. By connecting them in a single assembly, a transfer section has been incorporated to help facilitate transfers. The section is available with a dead plate transfer, free roller transfer, or a powered roller transfer. This can be very helpful when running small or unstable parts, pucks, or pallets. Although the Parallel Transfer Drive provides a more stable transfer, the Drive-Idle Drive has a smaller footprint. An adjustable slip-clutch coupler is provided to prevent system damage. It is also available in a left hand version (see next page).







Chain and Slide Rail Requirements		
Chain Required Per Drive:	1,6 meters	
Plastic Slide Rail :	0,0 meters	
Technical Specifications		
Number of teeth on drive sprocket	12	
Chain pitch (mm)	33,5	
Pitch diameter (mm)	129,4	
Maximum traction force (N)	1250	



This drive is best suited for applications that utilize top and bottom running chain and require a transfer from a drive to an idle end. By connecting them in a single assembly, a transfer section has been incorporated to help facilitate transfers. The section is available with a dead plate transfer, free roller transfer, or a powered roller transfer. This can be very helpful when running small or unstable parts, pucks, or pallets. Although the Parallel Transfer Drive provides a more stable transfer, the Drive-Idle Drive has a smaller footprint. An adjustable slip-clutch coupler is provided to prevent system damage. It is also available in a right hand version (see previous page).





Chain and Slide Rail Requirements		
Chain Required Per Drive:	1,6 meters	
Plastic Slide Rail :	0,0 meters	
Technical Specifications		
Number of teeth on drive sprocket	12	
Chain pitch (mm)	33,5	
Pitch diameter (mm)	129,4	
Maximum traction force (N)	1250	

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#### 1.15 Drive-Idle Transmission Drive, Right Hand Mount Part #25100007

This drive is best suited for applications that utilize top and bottom running chain and require a transfer from a drive to an idle end. By connecting them in a single assembly, a transfer section has been incorporated to help facilitate transfers. The section is available with a dead plate transfer, free roller transfer, or a powered roller transfer. This can be very helpful when running small or unstable parts, pucks, or pallets. Although the Parallel Transfer Drive provides a more stable transfer, the Drive-Idle Drive has a smaller footprint. An adjustable slip-clutch coupler is provided to prevent system damage. It is also available in a left hand version (see next page).





Chain and Slide Rail Requirements		
Chain Required Per Drive:	1,6 meters	
Plastic Slide Rail :	0,0 meters	
Technical Specifications		
Number of teeth on drive sprocket	12	
Chain pitch (mm)	33,5	
Pitch diameter (mm)	129,4	
Maximum traction force (N)	1250	



### **1.16 Drive-Idle Transmission Drive, Left Hand Mount** Part #25100006

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This drive is best suited for applications that utilize top and bottom running chain and require a transfer from a drive to an idle end. By connecting them in a single assembly, a transfer section has been incorporated to help facilitate transfers. The section is available with a dead plate transfer, free roller transfer, or a powered roller transfer. This can be very helpful when running small or unstable parts, pucks, or pallets. Although the Parallel Transfer Drive provides a more stable transfer, the Drive-Idle Drive has a smaller footprint. An adjustable slip-clutch coupler is provided to prevent system damage. It is also available in a right hand version (see previous page).





Chain and Slide Rail Requirements		
Chain Required Per Drive:	1,6 meters	
Plastic Slide Rail :	0,0 meters	
Technical Specifications		
Number of teeth on drive sprocket	12	
Chain pitch (mm)	33,5	
Pitch diameter (mm)	129,4	
Maximum traction force (N)	1250	





# **1.17 Catenary Direct Drive, Right Hand Mount**

Part # 25100025

(Note: Used For Top Running Chain Only)

This drive is very similar to an intermediate drive but accommodates top-running chain only. An Idle end is not necessary with this drive. The gear motor is directly coupled to the drive shaft of the conveyor. An adjustable slip clutch is incorporated into the drive to prevent system damage. It is also available in a left hand version (see next page).





Chain and Slide Rail Requirements	
Chain Required Per Drive:	1,8 meters
Plastic Slide Rail :	0,0 meters
lecnnical Specifications	
Number of teeth on drive sprocket	12
Chain pitch (mm)	33,5
Pitch diameter (mm)	129,4
Maximum traction force (N)	1250

# **1.18 Catenary Direct Drive, Left Hand Mount**

Part # 25100026

(Note: Used For Top Running Chain Only)

This drive is very similar to an intermediate drive but accommodates top-running chain only. An Idle end is not necessary with this drive. The gear motor is directly coupled to the drive shaft of the conveyor. An adjustable slip clutch is incorporated into the drive to prevent system damage. It is also available in a right hand version (see previous page).





Chain and Slide Rail Requirements		
Chain Required Per Drive:	1,8 meters	
Plastic Slide Rail :	0,0 meters	
Technical Specifications		
Number of teeth on drive sprocket	12	
Chain pitch (mm)	33,5	
Pitch diameter (mm)	129,4	
Maximum traction force (N)	1250	



### 1.19 Catenary Transmission Drive, Right Hand Mount Part # 25100005

(Note: Used For Top Running Chain Only)

This drive is very similar to an intermediate drive but accommodates top-running chain only. An Idle end is not necessary with this drive. A gear motor mounts underneath the conveyor beam and drives the chain sprocket using a power transmission roller chain. An adjustable slip clutch is incorporated into the drive to prevent system damage. It is also available in a left hand version (see next page).





Chain and Slide Rail Requirements		
Chain Required Per Drive:	1,8 meters	
Plastic Slide Rail :	0,0 meters	
Technical Specifications		
Number of teeth on drive sprocket	12	
Chain pitch (mm)	33,5	
Pitch diameter (mm)	129,4	
Maximum traction force (N)	1250	



#### **1.20 Catenary Transmission Drive, Left Hand Mount**

Part # 25100004

(Note: Used For Top Running Chain Only)

This drive is very similar to an intermediate drive but accommodates top-running chain only. An Idle end is not necessary with this drive. A gear motor mounts underneath the conveyor beam and drives the chain sprocket using a power transmission roller chain. An adjustable slip clutch is incorporated into the drive to prevent system damage. It is also available in a right hand version (see previous page).





Chain and Slide Rail Requirements		
Chain Required Per Drive:	1,8 meters	
Plastic Slide Rail :	0,0 meters	
Technical Specifications		
recinical specifications		
Number of teeth on drive sprocket	12	
Chain pitch (mm)	33,5	
Pitch diameter (mm)	129,4	
Maximum traction force (N)	1250	



### 1.21 Wrap Direct Drive, Right Hand Mount

Part # 25100019

(Note: Used For Top Running Chain Only)

This drive is very similar to a Parallel Transfer Drive but accommodates top-running chain only. This single assembly combines a drive and idle mounted at a 10° offset angle that allows product to travel in a straight path across the bias of the chain. A beam bend returns the chain from the bottom idle to the top side of the conveyor beam. This can be very helpful when running small or unstable parts. It is also available in a left hand version (see next page).





Chain and Slide Rail Requirements		
Chain Required Per Drive:	3,7 meters	
Plastic Slide Rail :	4,4 meters	
Technical Specifications		
Number of teeth on drive sprocket	12	
Chain pitch (mm)	33,5	
Pitch diameter (mm)	129,4	
Maximum traction force (N)	1250	



# **1.22 Wrap Direct Drive, Left Hand Mount**

Part # 25100020

(Note: Used For Top Running Chain Only)

This drive is very similar to a Parallel Transfer Drive but accommodates top-running chain only. This single assembly combines a drive and idle mounted at a 10° offset angle that allows product to travel in a straight path across the bias of the chain. A beam bend returns the chain from the bottom idle to the top side of the conveyor beam. This can be very helpful when running small or unstable parts. It is also available in a right hand version (see previous page).





Chain and Slide Rail Requirements	
Chain Required Per Drive:	3,7 meters
Plastic Slide Rail :	4,4 meters
Technical Specifications	
reclinical opechications	
Number of teeth on drive sprocket	12
Chain pitch (mm)	33,5
Pitch diameter (mm)	129,4
Maximum traction force (N)	1250



#### **1.23 Wrap Transmission Drive, Right Hand Mount**

Part # 25100017

(Note: Used For Top Running Chain Only)

This drive is very similar to a Parallel Transfer Drive but accommodates top-running chain only. This single assembly combines a drive and idle mounted at a 10° offset angle that allows product to travel in a straight path across the bias of the chain. A beam bend returns the chain from the bottom idle to the top side of the conveyor beam. This can be very helpful when running small or unstable parts. It is also available in a left hand version (see next page).





Chain and Slide Rail Requirements		
Chain Required Per Drive:	3,7 meters	
Plastic Slide Rail :	4,4 meters	
Technical Specifications		
Number of teeth on drive sprocket	12	
Chain pitch (mm)	33,5	
Pitch diameter (mm)	129,4	
Maximum traction force (N)	1250	

## **1.24 Wrap Transmission Drive, Left Hand Mount**

Part # 25100018

(Note: Used For Top Running Chain Only)

This drive is very similar to a Parallel Transfer Drive but accommodates top-running chain only. This single assembly combines a drive and idle mounted at a 10° offset angle that allows product to travel in a straight path across the bias of the chain. A beam bend returns the chain from the bottom idle to the top side of the conveyor beam. This can be very helpful when running small or unstable parts. It is also available in a right hand version (see previous page).





Chain and Slide Rail Requiremen	its				
Chain Required Per Drive:	3,7 meters				
Plastic Slide Rail :	4,4 meters				
Tasknisal Spacifications					
recinical specifications					
Number of teeth on drive sprocket	12				
Chain pitch (mm)	33,5				
Pitch diameter (mm)	129,4				
Maximum traction force (N)	1250				



#### **1.25 Gear Motor Selection for Direct Drives**

The table below provides a selection list for SEW-EURODRIVE gear motors that will work for all the direct drives. Gear motors are not included with the drive and must be selected separately. Most commonly used motors are listed; please contact the factory for information on other motor types. Select the desired speed range. For variable speed application where the motor will be operated with a frequency drive see the "range w/inverter" column for possible output speeds. Select the "hand of drive" that matches the drive assembly selected. Motors are capable of handling the following voltages:

230/460 volts 60 Hz, 3 Phase 190 - 208 volts 50 Hz, 3 Phase 380 - 415 volts 50 Hz, 3 Phase



Cat. #	Part #	Standard Speed (m/min)	Actual Speed (m/min)	Range w/inverter (m/min)	Hand of Drive	Gear Motor RPM	Gear Motor Horsepower
1.25.1	25198201	5	6.8	3.4 - 10.2	Left	17	1/3
1.25.2	25198200	5	6.8	3.4 - 10.2	Right	17	1/3
1.25.3	25198203	10	9.6	4.8 - 14.4	Left	24	1/3
1.25.4	25198202	10	9.6	4.8 - 14.4	Right	24	1/3
1.25.5	25198205	15	15.3	7.7 - 22.9	Left	38	1/2
1.25.6	25198204	15	15.3	7.7 - 22.9	Right	38	1/2
1.25.7	25198207	20	19.3	9.7 - 28.9	Left	48	1/2
1.25.8	25198206	20	19.3	9.7 - 28.9	Right	48	1/2
1.25.9	25198209	25	23.7	11.8 - 35.5	Left	59	1/2
1.25.10	25198208	25	23.7	11.8 - 35.5	Right	59	1/2
1.25.11	25198211	30	30.6	15.3 - 45.9	Left	76	1/2
1.25.12	25198210	30	30.6	15.3 - 45.9	Right	76	1/2
1.25.13	25198213	40	37.4	18.7 - 56.1	Left	93	1/2
1.25.14	25198212	40	37.4	18.7 - 56.1	Right	93	1/2
1.25.15	25198215	50	51.1	25.6 - 60	Left	127	3/4
1.25.16	25198214	50	51.1	25.6 - 60	Right	127	3/4
1.25.17	25198217	60	62.7	31.4 - 60	Left	156	1
1.25.18	25198216	60	62.7	31.4 - 60	Right	156	1



### **1.26 Gear Motor Selection for Transmission Drives**

The table below provides a selection list for SEW-EURODRIVE gear motors that will work for all the transmission drives. Gear motors are not included with the drive, and must be selected separately. Most commonly used motors are listed; please contact the factory for information on other motor types. Select the desired speed range. For variable speed application where the motor will be operated with a frequency drive see the "range w/inverter" column for possible output speeds. Select the "hand of drive" that matches the drive assembly selected. A drive sprocket is included with motor. Motors are capable of handling the following voltages:

> 230/460 volts 60 Hz, 3 Phase 190 - 208 volts 50 Hz, 3 Phase 380 - 415 volts 50 Hz, 3 Phase



Cat. #	Part #	Standard Speed (m/min)	Actual Speed (m/min)	Range w/inverter (m/min)	Hand of Drive	Gear Motor RPM	Gear Motor Horsepower	Gear Motor Sprocket # Teeth
1.26.1	25100168	5	5.2	2.6 - 7.8	Left	17	1/3	19
1.26.2	25100169	5	5.2	2.6 - 7.8	Right	17	1/3	19
1.26.3	25100170	10	10	5.0 - 15.0	Left	27	1/2	23
1.26.4	25100171	10	10	5.0 - 15.0	Right	27	1/2	23
1.26.5	25100172	15	15.3	7.7 - 22.9	Left	38	1/2	25
1.26.6	25100173	15	15.3	7.7 - 22.9	Right	38	1/2	25
1.26.7	25100174	20	19.9	10.0 - 29.8	Left	59	3/4	21
1.26.8	25100175	20	19.9	10.0 - 29.8	Right	59	3/4	21
1.26.9	25100176	25	23.7	11.8 - 35.5	Left	59	3/4	25
1.26.10	25100177	25	23.7	11.8 - 35.5	Right	59	3/4	25
1.26.11	25100178	30	30.9	15.5 - 46.3	Left	101	3/4	19
1.26.12	25100179	30	30.9	15.5 - 46.3	Right	101	3/4	19
1.26.13	25100180	40	38.8	19.4 - 58.2	Left	127	3/4	19
1.26.14	25100181	40	38.8	19.4 - 58.2	Right	127	3/4	19
1.26.15	25100182	50	51	25.5 - 60	Left	127	3/4	25
1.26.16	25100183	50	51	25.5 - 60	Right	127	3/4	25
1.26.17	25100184	60	57.4	28.7 - 60	Left	188	1	19
1.26.18	25100185	60	57.4	28.7 - 60	Right	188	1	19





#### 1.27 Drive/Idle Transfer Plate Accessory, Powered Roller Part # 25100029

The powered roller accessory plate is a pluggable option for all the drive/idle drives listed in section 1.13 - 1.16. The drives come standard with a free-wheeling roller transfer that bridges the transfer gap. The powered roller accessory replaces the standard free-wheeling rollers with a combination of two powered rollers and three free-wheeling rollers. The powered rollers are driven via a timing belt that connects to the primary drive shaft. The powered roller accessory is useful when transferring small pallets or parts.



#### 1.28 Drive/Idle Transfer Plate Accessory, Static Plate Part # 25100028

The static accessory plate is a pluggable option for all the drive/idle drives listed in section 1.13 - 1.16. The drives come standard with a free-wheeling roller transfer that bridges the transfer gap. The static plate accessory replaces the free-wheeling rollers with a UHMW plate. It is useful when transferring bottles or parts that may be unsettled by the roller transfer. The static plate is 135mm long.





# 2.0 Idle End

# Introduction

The function of an idle end is to transfer the chain from the return side (bottom side) of the conveyor beam to the product carrying side (top side) of the conveyor beam with a minimal amount of friction. As the chain runs through the idle end, flanges guide and capture the chain to ensure proper alignment with the conveyor beam. Some drives do not require the use of an idle end; consult drive description for clar-ification.

# 2.1 Idle End

# Part # 25200000







Chain and Slide Rail Requirements	
Chain Required Per Idle:	0,7 meters
Plastic Slide Rail Part #25000106 Required Per Idle:	0,8 meters

# **Ordering information**

- 90 degree idler available, please consult factory.
- All idles come with connecting strips and the hardware required to attach to the conveyor beam.



# **3.0 Conveyor Beams**

#### Introduction

Conveyor beams are made of an anodized extruded aluminum profile. This profile acts as the fundamental building block to which all other components are attached. Dual-depth T-slots run the entire length of both sides of the conveyor beam. The inner slots are used to connect beams, bends, drives, and idle ends together using connecting strips. The outer T-Slots are used for mounting product guidework, leg supports, and a variaty of other accesseries. There are two different styles of beam available, each offering slightly different advantages.

#### **Ordering information**

- Calculate the required number of beam lengths; beams are available in 3 meter sections.
- Beams can be cut to length for an additional charge. Refer to Addendum G for cut list form.
- Calculate the number of required connecting strips. Two connecting strips are required for each conveyor joint.
- Please note that drives, bends, and idle ends include connecting strips. Connecting strips are ordered in 10 count bags for increased savings.

### 3.1 Conveyor Beam, 3 Meter Length

#### Part # 25000101

The standard beam profile does not allow chain to be lifted out. It is delivered in 3 meter sections.





Chain and Slide Rail Requirements	
Chain Required Per 3 Meter Length:	6,0 meters
Plastic Slide Rail Part #25000106 Required Per 3 Meter Length:	12,0 meters

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#### 3.2 Conveyor Beam, Removable Chain, 3 Meter Length Part # 25000100

The patent pending removable chain beam allows conveyor chain to be lifted out of the product carrying side (top side) of the conveyor beam profile. This allows easier installation and preventative maintenance. It is delivered in 3 meter sections. Please refer to Addendum D for safety considerations when using this style beam.





Chain and Slide Rail Requirements	
Chain Required Per 3 Meter Length:	6,0 meters
Plastic Slide Rail, Open, Part #25000105 Required Per 3 Meter Length:	6,0 meters
Plastic Slide Rail Part #25000106 Required Per 3 Meter Length:	6,0 meters

# **3.3 Connecting Strip**

# Part # 25000133

Connecting strips are used to join conveyor beams together. Connecting strips fit into the inside T-slot and are held in place by set screws. Two connecting strips are required per beam joint. Drives, bends and idle ends include connecting strips. Each connecting strip is preassembled with M8 set screws with a Nylok patch to prevent loosening. Connecting strips can be ordered individually or in money saving packs of ten.







# **4.0 Horizontal Wheel Bends**

#### Introduction

Horizontal wheel bends provide a low friction guide for chain when turning horizontally. Durable, glassfilled Nylon wheel discs rotate with the chain as it moves through the turn in both the top and bottom tracks of the bend. Each wheel disc is supported by dual sealed ball bearings to ensure long life while providing minimal friction. Horizontal wheel turns are available in 30°, 45°, 90°, and 180° configurations. The center chain radius is 160mm.

#### **Ordering Information**

- When determining the amount of slide rail required, please note that slide rail is only needed on the outer bend side.
- Connecting strips and mounting hardware are included with bends.
- Other special order angles and radii available, please consult factory.

#### 4.1 Horizontal Wheel Bend, 30 degrees

Part # 25300000





Chain and Slide Rail Requirements	
Chain Required Per 30 Degree Turn:	0,5 meters
Plastic Slide Rail Part #25000106 Required Per 30 Degree Turn:	0,6 meters
#### 4.2 Horizontal Wheel Bend, 45 degrees

#### Part # 25300001

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80

160

0,5 meters

0,7 meters

Part # 25300002

**Chain and Slide Rail Requirements** 

4.3	Horizontal	Wheel	Bend,	90	degrees

Plastic Slide Rail Part #25000106 Required Per 60 Degree Turn:

Chain Required Per 60 Degree Turn:

Chain and Slide Rail Requirements	
Chain Required Per 90 Degree Turn:	0,7 meters
Plastic Slide Rail Part #25000106 Required Per 90 Degree Turn:	0,9 meters







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# 4.4 Horizontal Wheel Bend, 180 degrees





Chain and Slide Rail Requirements	
Chain Required Per 180 Degree Turn:	1,2 meters
Plastic Slide Rail Part #25000106 Required Per 180 Degree Turn:	1,5 meters



#### 4.5 Multiple Wheel Bend Applications

The length of some products inhibit the use of single wheel bend configurations. In this event, a change of direction can be created by the use of multiple wheel bends. The illustrations below show the space requirements when multiple wheel bends are utilized. Place at least 160mm of straight conveyor beam between wheel bends.



#### **Combination of two 90° wheel bends**

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#### Combination of three 30° wheel bends





#### **5.0 Horizontal Plain Bends**

#### Introduction

Horizontal plain bends provide a means of turning conveyor in a variety of angles while maintaining a common elevation. The one-piece bend design minimizes alignment problems. Horizontal plain bends are available in 30°, 45°, 60° and 90°. These bends are better suited over horizontal wheel bends for long products that require large-radii turns. It is recommended that wheel turns are used whenever possible. Horizontal plain bends incorporate 200mm straight end sections at each end.

#### Important

The standard tolerance of horizontal plain bends is  $\pm 1$  mm in radius and  $\pm 1^{\circ}$  in angle.

Horizontal plain bends increase chain tension and create higher stress on slide rails. To ensure a reliable conveyor design with horizontal plain bends, always calculate chain pull when using horizontal bends. Only use plain bends when wheel bends cannot be utilized.

#### **Ordering Information**

- Other special order angles and radii available, please consult factory.
- Connecting strips and mounting hardware are included with bends.
- 200mm straight end sections can be cut down to a minimum of 80mm if necessary.

#### 5.1 Horizontal Plain Bend, 30 degrees, R = 700mm





Chain and Slide Rail Requirements	
Chain Required Per 30 Degree Bend:	1,6 meters
Plastic Slide Rail Part #25000106 Required Per 30 Degree Bend:	3,1 meters





5.2 Horizontal Plain Bend, 45 degrees, R = 700mm

Part # 25300018





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Chain and Slide Rail Requirements	
Chain Required Per 60 Degree Bend:	1,9 meters
Plastic Slide Rail Part #25000106 Required Per 60 Degree Bend:	3,8 meters

#### 5.3 Horizontal Plain Bend, 60 degrees, R = 700mm



Chain and Slide Rail Requirements	
Chain Required Per 90 Degree Bend:	2,3 meters
Plastic Slide Rail Part #25000106 Required Per 90 Degree Bend:	4,6 meters





#### **5.4 Horizontal Plain Bend, 90 degrees, R = 700mm**

Part # 25300020



Chain and Slide Rail Requirements	
Chain Required Per 90 Degree Bend:	3,0 meters
Plastic Slide Rail Part #25000106 Required Per 90 Degree Bend:	6,0 meters



#### **6.0 Vertical Bends**

#### Introduction

Vertical bends provide a transition to inclined or declined conveyor sections in areas where an elevation change is necessary. The one-piece bend design minimizes alignment problems. They are available in  $5^{\circ}$ ,  $7^{\circ}$ ,  $15^{\circ}$ ,  $45^{\circ}$ , and  $90^{\circ}$  standard angles.

To prevent products from slipping in conveyor sections exceeding an incline of 5°, cleated or friction chain is recommended. For information on available chain types, please see "Conveyor Chains" section.

#### Important

The standard tolerance of vertical bends is  $\pm 1$ mm in radius and  $\pm 1^{\circ}$  in angle.

Vertical plain bends increase chain tension and cause higher stress on slide rails. To ensure a reliable conveyor design with vertical plain bends, always calculate chain pull when using vertical bends.

#### **Ordering Information**

- Other special order angles and radii available, please consult factory.
- Connecting strips and mounting hardware are included with bends.

#### 6.1 Vertical Bend, 5 degrees, R = 400mm





Chain and Slide Rail Requirements	
Chain Required Per 30 Degree Bend:	0,4 meters
Plastic Slide Rail Part #25000106 Required Per 30 Degree Bend:	0,8 meters



#### 6.2 Vertical Bend, 7 degrees, R = 400mm



Chain and Slide Rail Requirements	
Chain Required Per 7 Degree Bend:	0,5 meters
Plastic Slide Rail Part #25000106 Required Per 60 Degree Bend:	0,9 meters

#### 6.3 Vertical Bend, 15 degrees, R = 400mm





Chain and Slide Rail Requirements	
Chain Required Per 90 Degree Bend:	0,6 meters
Plastic Slide Rail Part #25000106 Required Per 90 Degree Bend:	1,1 meters



#### 6.4 Vertical Bend, 45 degrees, R = 400mm

Part # 25300008



Chain and Slide Rail Requirements	
Chain Required Per 90 Degree Bend:	1,0 meters
Plastic Slide Rail Part #25000106 Required Per 90 Degree Bend:	1,9 meters

#### 6.5 Vertical Bend, 90 degrees, R = 400mm



Chain and Slide Rail Requirements	
Chain Required Per 90 Degree Bend:	1,6 meters
Plastic Slide Rail Part #25000106 Required Per 90 Degree Bend:	3,2 meters





### 7.0 Slide Rails

#### Introduction

Slide rails snap to the upper and lower interior flanges of the conveyor beam profile and must be secured to the conveyor beam profile to prevent shifting during operation. Slide rails are used to provide a low friction and wear resistant track for the chain to slide on. Slide rails will stretch and frequent inspections are recommended. Slide rails are extruded from UHMW-PE.

#### **Ordering Information**

- When ordering slide rail, consult the box labeled "Chain and Slide Rail Requirements" for each component to be used. Add up the total amount of slide rail required and order.
- The "open" beam design requires a special slide rail on the product carrying side (top side) of the conveyor beam.
- Slide Rail is attached to beam by using an adhesive tape or roll pins.
- Other materials are available, please consult factory.

#### 7.1 Slide Rail, UHMW-PE, 25 Meter Length

#### Part # 25000106

This slide rail is used on product carrying side (top side) and chain return side (bottom side) of conveyor beam part number 25000101, and all other assemblies which require additional slide rail as noted in this catalog. However, it is used on the chain return side (bottom side) only of the removable chain beam part number 25000100.





#### 7.2 Slide Rail, Open, UHMW-PE, 25 Meter Length

Part # 25000105

This slide rail is used on the product carrying side (top side) only for removable chain conveyor beam part number 25000100.



#### 7.3 M4 x 6 Spring Pin, 100 Count

#### Part # 25000187

This spring pin is used to secure slide rail to the extrusion. An M4 (5/32 inch) hole is drilled through the slide rail and extrusion, and the pin is inserted. It is only needed at one end of each run, at the end where chain enters the conveyor beam. Pin come in boxes of 100



#### 7.4 Wear Strip Adhesive Tape

Part # 25000188

As an alternative to the spring pin, this adhesive tape is placed on the conveyor beam and the slide rail is snapped in place. The adhesive and press fit secures the slide rail in place.



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8.3 Fully-closed Top Chain, 5 Meter Length Fully-closed chain is utilized mostly in horizontal applications. It has a low friction flat top surface that allows accumulation of products. Fully-closed chain offers optimal finger

protection yet limits back flex radius.

Semi-closed chain is utilized mostly in horizontal applications. It has a low friction flat top surface that allows accumulation of products. Semi-closed chain offers reasonable finger protection and back flex radius.

#### 8.2 Semi-closed Top Chain, 5 Meter Length

#### Finger Top chain is utilized in horizontal applications. It has a low friction top surface that allows accumulation of products. Finger Top chain offers good pinch-pointprotection.

8.1 Finger Top Chain, 5 Meter Length

# 8.0 Conveyor Chains Introduction

Simpli-Flex<sup>®</sup> 83 conveyor chain consists of individual base plates that are joined together by plastic pivots and stainless steel pins, which form the base chain. A variety of top plates are available that accomodate various applications. These top plates are snapped into the top of the base chain and are permanently fixed. Chain should normally be ordered assembled. Advanced users may decide to stock the base chain and a variety of tops to minimize stocking requirement and for custom applications. Always test product on desired chain to ensure that the product and chain combination are suitable for proper conveyance.

#### Part # 25000140



Part # 25000141

# Part #25000142

**Simpli-Flex® 83** 











#### 8.4 Open Top Chain, 5 Meter Length

Open top chain is utilized mostly in horizontal applications. It has a low friction flat top surface that allows accumulation of products. Open top chain offers minimal finger protection and optimum back flex radius.

#### 8.5 Friction Top Chain, 5 Meter Length

Friction top chain is ideal for inclines up to 30° where product may have a tendency to slip. A friction insert is molded into the top plate. This insert increases friction between product and the chain. It is not recommended to accumulate product on this style chain.

#### 8.6 Gripper Top Chain, 5 Meter Length

Gripper top chain is utilized in vertical transport applications such as elevators and lowerators. Conveyed products may include aluminum cans, plastic bottles, cardboard boxes, glass bottles, etc.

#### 8.7 Flighted Top Chain, h = 15 mm, 5 Meter Length

Flighted top chain is ideal for inclines above 30° where product may have a tendency to slip on plain chain. Flights are available in different heights (h). Specify flight pitch at time of order. Part #25000143

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#### Part # 25000144

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#### 8.8 Flighted Top Chain, h = 30 mm, 5 Meter Length

Part # 25000147

Flighted top chain is ideal for inclines above 30° where product may have a tendency to slip on plain chain. Flights are available in different heights (h). Specify pitch \between fights at time of order.



#### 8.9 Roller Top Chain

Roller top chain is utilized mostly in horizontal applications requiring extremely low back pressure. The surface is covered with rollers that allow accumulation of products.

#### 8.10 Steel Top Chain, 5 Meter Length

Steel top chain is ideal for applications where excessive wear exists. Products that are steel based or have sharp edges may be conveyed on steel top chain. A steel insert is molded into the top plate.

#### **Ordering Information**

- Assembled chain is available in 5 meter lengths.
- Top plate and base chain can be ordered separately as shown on the following pages. Chain should normally be ordered assembled. Advanced users may decide to stock the base chain and a variety of tops to minimize stocking requirement and for custom applications.
- When ordering chain, refer to section labeled "Chain and Slide Rail Requirements" for each component to be used. Add up the total amount of chain required and order.
- If flighted chain is required, indicate spacing between flights.

#### Part #25000148







#### 8.11 Build-to-Order Chain

It is recommended that chains are ordered as pre-assembled assemblies as listed in sections 8.1 through 8.10. Advanced users may want to stock base chain and an assortment of top plates to address custom applications.

#### 8.11.1 Base Chain, 5 Meter Length

The base chain comes pre-assembled and ready for top plates to be snapped in. Base chain accepts any of the following top assemblies.

#### 8.11.2 Finger Top

Finger top chain is utilized mostly in horizontal applications. It has a low friction flat top surface that allows accumulation of products. Finger chain offers good pinch-point protection.

#### 8.11.3 Semi-closed Top

**Simpli-Flex® 83** 

Semi-closed chain is utilized mostly in horizontal applications. It has a low friction flat top surface that allows accumulation of products. Semi-closed chain offers reasonable finger protection and back flex radius.

#### Part # 25000161

Part # 25000159





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#### 8.11.4 Fully-closed Top

Fully-closed chain is utilized mostly in horizontal applications. It has a low friction flat top surface that allows accumulation of products. Fully-closed chain offers optimal finger protection yet limits back flex radius.

#### 8.11.5 Open Top

Open top chain is utilized mostly in horizontal applications. It has a low friction flat top surface that allows accumulation of products. Open top chain offers minimal finger protection and optimum back flex radius.

#### 8.11.6 Friction Top

Friction top chain is ideal for inclines up to 30° where product may have a tendency to slip. A friction insert is molded into the top plate. This insert increases friction between product and the chain. It is not recommended to accumulate product on this style chain.

#### 8.11.7 Gripper Top

Gripper top chain is utilized in vertical transport applications such as elevators and lowerators. Conveyed products may include aluminum cans, plastic bottles, cardboard boxes, glass bottles, etc.

#### Part #25000163



#### Part # 25000165











#### 8.11.8 Flighted Top, h = 15 mm

Flighted top chain is ideal for inclines above 30° where product may have a tendency to slip on plain chain. Flights are available in different heights (h).

#### 8.11.9 Flighted Top, h = 30 mm,

Flighted top chain is ideal for inclines above 30° where product may have a tendency to slip on plain chain. Flights are available in different heights (h).

#### 8.11.10 Roller Top

Roller top chain is utilized mostly in horizontal applications requiring extremely low back pressure. The surface is covered with rollers that allow accumulation of products.

#### 8.11.11 Steel Top

Steel top chain is ideal for applications where excessive wear exists. Products that are steel based or have sharp edges may be conveyed on steel top chain. A steel insert is molded into the top plate.



Part # 25000170



Part # 25000168

# Part #25000169





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#### 9.0 Product Guide Brackets

#### Introduction

Product guides are used to stabilize and contain product as it travels throughout the conveyor system. This modular guide system offers maximum flexibility at a cost effective price.

The guide system is comprised of two main components, the guide brackets (covered in this section) and the guide rail (covered in section 10.0). All guide rail brackets and components are made of Nylon unless otherwise noted.

The guides are based on an 18mm shaft size. By using standard components, a variety of configurations can be achieved, allowing for varying amounts of adjustability depending on the application need. Several applications are



shown at the end of this section to give you some ideas on implementation.

It is generally recommended that you have one set of brackets for every 1 meter of straight conveyor length, and at the beginning and end of every turn. If a heavy product is being conveyed, you may want to increase the amount of guide brackets used. When in doubt, please consult factory.

All guide brackets can be ordered individually or in money saving packs of ten.

#### 9.1 Adjustable Guide Rail Bracket



The adjustable guide rail bracket is the base used to form all guide combinations. An 18mm hole accepts a variety of bracket accessories. A clamp mechanism can be tightened using a M6 screw which is included with the bracket. The bracket is attached to the conveyor beam using 8mm hardware which must be ordered separately (see Section 11.26).

#### Part #25000115



#### 9.2 Adjustable Guide Rail Bracket Spacer, 6 mm



The adjustable guide rail bracket spacer is used to increase the distance of the guide rail bracket from the conveyor in 6mm increments. Beam mounting hardware should be adjusted accordingly.





#### 9.3 Adjustable Guide Rail Bracket Spacer, 18 mm



The adjustable guide rail bracket spacer is used to increase the distance of the guide rail bracket from the conveyor in 18mm increments. Beam mounting hardware should be adjusted accordingly.

#### 9.4 Horizontal Guide Rail Clamp



Horizontal guide rail clamps allow horizontal adjustment of the guide rail. Three adjustment ranges are available. The bracket attaches to the guide rail by tightening a M5 screw which is included with the clamp.

9.4.1	L = 40 mm	Part # 25000181
9.4.2	L = 60 mm	Part # 25000175
9.4.3	L = 80 mm	Part # 25000182



#### 9.5 Vertical Guide Rail Support



Horizontal guide rail clamps allow horizontal adjustment of the guide rail. Three adjustment ranges are available. The bracket attaches to the guide rail by tightening a M5 screw which is included with the clamp.

9.5.1	L = 60 mm	Part # 25000174
9.5.2	L = 110 mm	Part # 25000179
9.5.3	L = 160 mm	Part # 25000180



#### 9.6 Vertical Guide Rail Clamp, 110 mm

The vertical guide rail clamp is used to offer vertical adjustment of the guide rail. The vertical guide clamp attaches to the guide rail by tightening a M5 screw which is included with the clamp.

#### Part #25000178







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#### 9.7 Guide Rail Clamp Asm



Horizontal guide rail clamps allow horizontal adjustment of the guide rail. Three adjustment ranges are available. The bracket attaches to the guide rail by tightening a M5 screw which is included with the clamp.



#### 9.8 Guide Rail Clamp for Double Track Conveyor



The guide rail clamp for double track conveyor allows for the mounting of two guide rails back-to-back. The rails can be adjusted vertically. The guide clamp attaches to the guide rail by tightening a M5 screw which is included with the clamp.



#### 9.9 Guide Rail Support Tube, Aluminum, 3 Meter Length Part #25000132

The guide rail support tube is an 18mm anodized aluminum profile which comes in three meter lengths. The tube can be cut to provide a variety of bracket configurations.





#### 9.10 Guide Rail Support Tube End Cap (10 Count)



The guide rail support tube end cap is used to finish off any exposed ends of guide rail support tube. It is attached using a press fit.

Part #25000118







#### 9.11 Guide Rail Support Corner Connector



The guide rail support corner connector is used with guide rail support tube to build-up a variety of complex bracket combinations. The corner accepts two tubes at a 90° angle from one another. The corner connector attaches to the guide support tube by tightening a M6 screw which is included with the connector.

#### Part #25000177

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#### 9.12 Guide Rail Support Cross Connector



The guide rail support cross connector is used with guide rail support tube to build-up a variety of complex bracket combinations. The cross connector accepts two tubes at a 90° angle from one another. The tubes are offset to allow adjustability up and down, in and out. The cross connector attaches to the support tube by tightening a M6 screw which is included with the clamp.





#### 9.13 Guide Rail Application Examples



#### 9.13.1: Pill Bottle Guidance

ltem	Qty	Part Number	Description	
1	2	25000115	Adjustable Guide Rail Bracket	
2	2	25000174	Vertical Guide Rail Support	
3	2	25000175	Horizontal Guide Rail Clamp	
4	"L"	25000104	Guide Rail 15mm, 3m	
5	"L"	25000111	Guide Cover for 15mm, 3m	
6	2	25401010	17 T-Bolt, M8 x 17mm	
7	2	25099988	M8 Hex Lock Nut	



#### 9.13.2: Brackets With Sensors

Item	Qty	Part Number	Description
1	2	25000115	Adjustable Guide Rail Bracket
2	2	25000180	Vertical Guide Rail Support
3	2	25000175	Horizontal Guide Rail Clamp
4	4	25000176	Guide Rail Support Cross Con.
5	"L"	25000132	Guide Rail Support Tube, 3m
6	"L"	25000104	Guide Rail 15mm, 3m
7	"L"	25000111	Guide Cover for 15mm, 3m
8	2	25401012	35 T-Bolt, M8 x 35mm
9	2	25099988	M8 Hex Lock Nut
10	2	25000125	Adjustable Guide Rail Bracket Spacer, 18mm



#### 9.13.3: Tote Application

ltem	Qty	Part Number	Description
1	2	25000115	Adjustable Guide Rail Bracket
2	2	25000125	Adjustable Guide Rail Bracket Spacer, 18mm
3	2	25000178	Vertical Guide Rail Clamp, 110mm
4	"L"	25000104	Guide Rail 15mm, 3m
5	"L"	25000111	Guide Cover for 15 mm, 3m
6	2	25401012	35 T-Bolt, M8 x 35mm
7	2	25099988	M8 Hex Lock Nut

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# 9.13.4: Bottle Application

Item	Qty	Part Number	Description
1	2	25000115	Adjustable Guide Rail Bracket
2	4	25000181	Horizontal Guide Rail Clamp
3	2	25000177	Guide Rail Support Corner Conn.
4	4	25000176	Guide Rail Support Cross Conn.
5	1	25000118	Guide Rail Support Tube End Cap (10 Count)
6	"L"	25000132	Guide Rail Support Tube, 3m
7	"L"	25000104	Guide Rail 15mm, 3m
8	"L"	25000111	Guide Cover for 15 mm, 3 m
9	8	25401010	17 T-Bolt, M8 x 17mm
10	8	25099988	M8 Hex Lock Nut



#### 9.14 Guide Rail Bracket and Clamp Calculation

Possible minimum rail width (W) and maximum rail width (W') for a specific configuration of brackets, spacers, and horizontal guide rail clamps can be calculated by using the following formulas:

 $W(mm) = 85mm + 2(\Sigma Amm) + 2(40mm) - 2(Bmm)$  $W'(mm) = 85mm + 2(\Sigma Amm) + 2(40mm) - 2(B'mm)$ 

See Table 1 for horizontal guide rail extended (B) and horizontal guide rail retracted (B') dimensions. See Table 2 for spacer width dimensions (A). See figures 1 and 2 for variable reference.



Figure 1: Minimum Rail Width (W)

W

85

#### Example:

Calculate the possible rail widths that can be obtained using two 6mm spacers (part # 25000124) and one horizontal guide rail clamp (part # 25000175) per side.

#### Calculation:

W = 85 + 2(2(6)) + 80 - 2(83) = 23 W' = 85 + 2(2(6)) + 80 - 2(50) = 89

Answer: The rail widths (W & W') that can be achieved are between 23mm and 89mm.

Table 3 provides a quick selection guide for some standard rail configurations. It is common to leave at least 3mm per side clearance between clamp wear-strip face and product conveyed. Please note columns that reference required hardware lengths used for mounting guide rail bracket and spacers if any to conveyor beam. If a M8 T-bolt is used, a M8 hex lock nut will also be needed. If a SHCS is used, either an M8 square nut (part number 25401017) or M8 T-slot nut (part number 25401019) will be needed.

Table 1   (Horizontal Guide Rail Clamp B & B' dimensions)			
Guide Rail Clamp #	B Extended mm	<b>B' Retracted mm</b>	
25000181	63	50	
25000175	83	50	
25000182	104	50	

Table 2     (Bracket Spacer dimensions)		
Bracket Spacer	mm	
25000124	6	
25000125	18	

Table 3 Quick Select Chart						
Spacers Maximum		Minimum Width (W mm) by Clamp			Mounting Hardware Length	
$\Sigma$ A (mm)	Width (W' mm)	25000181	25000175	25000182	T-Bolt (mm)	M8 SHCS (mm)
0	65	39	0	0	17	10
6	77	51	11	0	17	16
12	89	63	23	0	24	22
18	101	75	35	0	35	30
24	113	87	47	5	-	35
30	125	99	59	17	-	40
36	137	111	71	29	-	50



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#### 9.15 Guide Rail Kits





#### **Guide Rail Kits:**

These kits represent common guide bracket combinations for applications as shown above. Each kit includes 5 sets of brackets; each set includes ten adjustable guide rail brackets, ten adjustable guide rail spacers if needed, ten vertical guide rail supports, ten horizontal guide rail clamps, and all hardware needed to attach brackets and any spacers to conveyor beam.

Note: "H" may be affected the height of the chain.

Catalog #	Kit Part Number	Minimum Width W (mm)	Maximum Width W' (mm)	Maximum Height H (mm)
9.15.1	25000201	0	65	45.74
9.15.2	25000202	39	65	45.74
9.15.3	25000203	0	77	45.74
9.15.4	25000204	11	77	45.74
9.15.5	25000205	51	77	45.74
9.15.6	25000206	0	101	45.74
9.15.7	25000207	35	101	45.74
9.15.8	25000208	75	101	45.74
9.15.9	25000209	0	65	95.75
9.15.10	25000210	39	65	95.75
9.15.11	25000211	0	77	95.75
9.15.12	25000212	11	77	95.75
9.15.13	25000213	51	77	95.75
9.15.14	25000214	0	101	95.75
9.15.15	25000215	35	101	95.75
9.15.16	25000216	75	101	95.75
9.15.17	25000217	0	65	145.75
9.15.18	25000218	39	65	145.75
9.15.19	25000219	0	77	145.75
9.15.20	25000220	11	77	145.75
9.15.21	25000221	51	77	145.75
9.15.22	25000222	0	101	145.75
9.15.23	25000223	35	101	145.75
9 15 24	25000224	75	101	145 75



## **10.0 Guide Rails**

#### Introduction

Guide rails are made of anodized extruded aluminum. Ridges in the guide rail profile accept guide rail clamp and guide cover features. A UHMW-PE guide rail cover is available to cover the 15 mm guide rail. The guide rail cover will prevent scratching of products as they are conveyed.



#### **Ordering Information**

- Guide rails and covers are available in 3 meter lengths.
- In general, the amount of guide rail needed will be equal to twice the length of the conveyor.
- Guide rail that goes around bends will need to be formed. Bending at the factory is available on a per bend basis. Advanced users may want to develop this ability in-house, please consult factory.
- It is important to remember that some combinations of conveyor chain and guide rail configurations are not compatible. Therefore, it is recommended to always create a cross-section of the conveyor design that shows conveyor beam, conveyor chain, guide rail, guide rail brackets, and product before ordering guide rail components.



#### 10.1 Guide Rail 15 mm, Aluminum, 3 Meter Length

The guide rails are anodized extruded aluminum. They are available in 3 meter lengths and may be cut and bent to accommodate the application. This can be done at the factory on a per bend and cut basis.

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#### 10.2 Guide Cover for 15 mm, UHMW-PE, 3 Meter Length Part #25000111

The guide cover is made of UHMW-PE and snaps onto the 15 mm guide rail. It minimizes abrasion to the product and is highly recommended to prevent premature guide rail wear.

#### 10.3 Guide Rail Connecting Plug, 15 mm (10 Count)

The guide rail connecting plug is used to connect lengths of guide rail. They are press-fit into the ends of the guide rail profile. They are sold in bags of ten. One plug is needed per joint.

10.4 Guide Rail End Plug, 15 mm (10 Count)

The guide rail end plug is used to cover and protect exposed ends of a guide rail section. They are press-fit into the ends of the guide rail profile. They are sold in bags of ten. One plug is needed per rail end to be covered.









Part #25000104







**Simpli-Flex® 83** 

Part #25000114



#### **11.0 Conveyor Support Structure**

#### Introduction

This section contains a series of components that when properly assembled can provide a robust support structure for your conveyor applications. The individual items are presented first and then a section of application examples is shown that depicts common support structures.

#### 11.1 Support Beam 64 x 64, 3 Meter Length

# 

Support beam is made of anodized extruded aluminum. It is used to construct many different frame structures. A T-slot feature provides a convenient location to mount accessories. Eight inner pilot holes on each end accept self-tapping screws. Support beam is ordered in 3 meter lengths and must be cut to length.

Part #25401000

#### 11.2 Support Beam 64 x 44, 3 Meter Length



Support beam is made of anodized extruded aluminum. It is used to construct many different frame structures. A T-slot feature provides a convenient location to mount accessories. Eight inner pilot holes on each end accept selftapping screws. Support beam is ordered in 3 meter lengths and must be cut to length. Part #25401022



#### 11.3 Support Beam 24,5 x 24,5 - 3 Meter Length

Support beam is made of anodized extruded aluminum. It is used to construct many different frame structures. A T-slot feature provides a convenient location to mount accessories. Two inner pilot holes on each end accept self-tapping screws. Support beam is ordered in 3 meter lengths and must be cut to length.

Part #25501001







64

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#### 11.4 Cover Strip for T-slot, PVC, 83mm, 25 meters

This PVC strip snaps into the T-slot of support beam and conveyor beam. It is used to cover the T-slot for cleanliness, or to capture pneumatic tubing and/or wires within the slot.

#### 11.5 End Cap, 64x64 (10 Count)



The die-cast angle bracket is used on support beam to attach or stabilize another section of perpendicular support beam. The bracket is precision cast from aluminum with a mating feature that positions the bracket in the support beam T-slot.

#### 11.6 Angle Bracket, Die-Cast, 80x42x38

80

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5

#### 11.7 Full Plate Bracket, 64 x 64

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120

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 $\bigcirc$  $\bigcirc$  The full plate bracket attaches to the end of 64mm x 64mm extrusion using four M8 self-tapping screws (part #25099975). When attached, the remaining holes at each end of the bracket can be used to attach another support beam at a 90° angle using four M8 T-Bolts (part #25401010) with hex lock nuts (part #25099988).





Part #25401015





64

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64







#### 11.8 Half Plate Bracket, 64 x 64

The half plate bracket attaches to the end of 64mm x 64mm extrusion using four M8 self-tapping screws (part #25099975). When attached, the remaining holes at one end of the bracket can be used to attach another support beam at a 90° angle using four M8 T-Bolts (part #25401010) with hex lock nuts (part #25099988). 110







#### 11.9 Full Plate Bracket, 44 x 64

The Full plate bracket attaches to the end of 64mm x 44mm extrusion using four M8 self-tapping screws (part #25099975). When attached, the remaining holes at each end of the bracket can be used to attach another support beam at a 90° angle using four M8 T-Bolts (part #25401010) with hex lock nuts (part #25099988).



#### 11.10 Half Plate Bracket, 44 x 64

The half plate bracket attaches to the end of 44mm x 64mm extrusion using four M8 self-tapping screws (part #25099975). When attached, the remaining holes at one end of the bracket can be used to attach another support beam at a 90° angle using four M8 T-Bolts (part #25401010) with hex lock nuts (part #25099988).



# 11.11 Full Narrow Plate Bracket, 44 x 64

The Full plate bracket attaches to the end of 44mm x 64mm extrusion using four M8 self-tapping screws (part #25099975). When attached, the remaining holes at each end of the bracket can be used to attach another support beam at a 90° angle using four M8 T-Bolts (part #25401010) with hex lock nuts (part #25099988).



#### Part #25401035



Part #25401034



#### **11.12 Half Narrow Plate Bracket, 44 x 64**

The half plate bracket attaches to the end of 44mm x 64mm extrusion using four M8 self-tapping screws (part #25099975). When attached, the remaining holes at one end of the bracket can be used to attach another support beam at a 90° angle using four M8 T-Bolts (part #25401010) with hex lock nuts (part #25099988).



The Full plate bracket attaches to the end of 24,5mm x 24,5mm extrusion using two M6.3 self-tapping screws (part #25099966). When attached, the remaining holes at each end of the bracket can be used to attach another support beam at a 90° angle using two M8 T-Bolts (part #25401010) with hex lock nuts (part #25099988).

#### 11.14 End Plate For Beam, 64x64, M12 Thread

The die-cast end plate for beam can be mounted to the end of 64mm x 64mm support beam and accepts an M12 threaded support foot. End plates are mounted with four self-tapping screws (part # 25099966) to beam ends.

11.15 Support Foot, M12 Thread, Articulated

Adjustable feet allow conveyors to be adjusted in height ± 50mm. Adjustable feet are screwed into end plate part #25401016. Foot articulates in sockets at end. Should be used in applications where the floor is uneven.

#### Part #25401041





Part #25401023











#### 11.16 Foot, Die-Cast, 64x64



The die-cast foot is the most rigid means of attaching a support beam to the floor. The foot is made of aluminum with powder coat paint which provides a strong resistance to corrosion. Four M8 x 16 SHCS, M8 spring washer, and M8 square nuts (or two mounting bars part # 25401024) are required for mounting. Holes for lagging to floor  $\phi$ 11mm.

#### Part #25401002



Part #25401005

#### 11.17 Beam Support Bracket, Type A

11.18 Beam Support Bracket, Type B



Beam support brackets are used to attach conveyor beam to horizontal support beam. The bracket is made from anodized aluminum.

#### Part #25401003



Straight support brackets are used to attach conveyor beam to vertical support beam. The bracket is made from anodized aluminum. A vertical slot feature allows for the use in incline and decline applications.





Made from our standard anodized aluminum support beam, this ceiling support extrusion is cut to length and clearance holes are machined through each end. The holes accept M16 or 5/8 inch threaded rod to allow attachment to ceiling structures.







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#### **11.20 Accessory Brackets**



Made from anodized aluminum and containing a slot for mounting, this accessory bracket can be used in a variety of applications. Slot is 6mm wide.



11.20.1	38,1mm x 38,1mm	Part #25401043
11.20.2	38,1mm x 50,8mm	Part #25401044
11.20.3	50,8mm x 50,8mm	Part #25401045
11.20.4	50,8mm x 76,2mm	Part #25401046



#### 11.21 T-Bolt

T-bolts are designed to slip into the T-slot of both the conveyor beam and support beam and allow for the attachment of a variety of accessories. Hardware is supplied in boxes of 100 pieces.

11.21.1	L = 17 mm	Part #25401010
11.21.2	L = 24 mm	Part #25401011
11.21.3	L = 35 mm	Part #25401012
11.21.4	L = 53 mm	Part #25401013
11.21.5	L = 71 mm	Part #25401014



#### 11.22 Screw, M5 SHC, ZP

Zinc plated socket head cap screws with an M5 thread. Hardware is supplied in boxes of 100 pieces.

11.22.1	L = 16 mm	Part #25099978
11.22.2	L = 25 mm	Part #25099977



#### 11.23 Screw, M6 SHC, ZP

Zinc plated socket head cap screws with an M6 thread. Hardware is supplied in boxes of 100 pieces.

11.23.1	L = 16 mm	Part #25099976
11.23.2	L = 20 mm	Part #25099973
11.23.3	L = 25 mm	Part #25099980





#### 11.24 Screw, M8 SHC, ZP

Zinc plated socket head cap screws with an M8 thread. Hardware is supplied in boxes of 100 pieces.

11.24.1	L = 10 mm	Part #25099972
11.24.2	L = 16 mm	Part #25099981
11.24.3	L = 22 mm	Part #25099971
11.24.4	L = 30 mm	Part #25099970
11.24.5	L = 35 mm	Part #25099969
11.24.6	L = 40 mm	Part #25099968
11.24.7	L = 50 mm	Part #25099967



#### 11.25 Screw, Self Tapping Torx®

Zinc plated self-tapping Torx<sup>®</sup> screws in both M6,3 and M8 thread are used to secure plates into end of support extrusions. Hardware is supplied in boxes of 100 pieces.

11.25.1	M6,3 - L = 30 mm, Flat Head	Part #25099966
11.25.2	M6,3 - L = 30 mm, Pan Head	Part #25099974
11.25.3	M8 - L = 30 mm, Flat Head	Part #25099975



#### 11.26 Square Nut

Square nuts are designed to slip into the end of the T-slot of both the conveyor beams and support beams during assembly and allow for the attachment of a variety of accessories. Hardware is supplied in boxes of 50 pieces.

11.26.1	Square Nut, M6	Part #25401020
11.26.2	Square Nut, M8	Part #25401017



#### 11.27 Bevel Nut

Bevel nuts are designed to slip into the aluminum conveyor beam and support beam after assembly and allow for the attachment of a variety of accessories. A spring clip holds the nut in place during assembly. Hardware is supplied in boxes of 50 pieces.

11.27.1	Bevel Nut, M6	Part #25401021
11.27.2	Bevel Nut, M8	Part #25401019



#### 11.28 Nut, Hex ZP

Hex nuts are zinc plated and come in M5 and M6 thread size. Hardware is supplied in boxes of 100 pieces.

11.28.1	M5 x 0.8 Hex Nut	Part #25099987
11.28.2	M6 x 1.0 Hex Nut	Part #25099979

#### 11.29 Nut, Hex Lock, ZP

Hex lock nut is zinc plated and comes in M8 thread size. Nut has nylon insert to prevent inadvertent loosening. Hardware is supplied in boxes of 100 pieces.

<b>11.29.1</b> M8 x 1.25 Lock Nut Part #25099988
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#### 11.30 Tapped Mounting Bar, Die Cast Foot

This optional tapped mounting bar is used to attach the die cast foot to vertical support beam in lieu of individual square nuts. Bars are tapped for M8.

11.30	Tapped Mounting Bar, Die Cast Foot	Part #25401024

#### 11.31 Washer, Lock, ZP

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Lock washer is zinc plated and come in M8 size. Hardware is supplied in boxes of 100 pieces.











#### 11.32 Washer, Flat, ZP

Flat washer is zinc plated and comes in M5 and M8 size. Hardware is supplied in boxes of 100 pieces.

11.32.1	M5 Flat Washer	Part #25099998
11.32.2	M8 Flat Washer	Part #25099999




# **11.12 Application Examples**

#### **11.12.1 Single Beam Support Leg Structure**

This is the most common single beam support structure. It is typically recommended that you position one support for every joint in the conveyor beam, not to exceed 3 meters between supports. Heavy products may require additional supports. Feet should be lagged to floor.



Note: To calculate required support beam length (item 2), take the desired conveyor elevation and subtract 210 mm.

L = Elevation - 210 mm

Elevation will be adjustable by ± 40 mm

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Item	Qty	Part Number	Description	
1		Reference only	Conveyor Beam	
2	"L"	25401000	Support Extrusion 64 x 64	
3	1	25401002	Die Cast Foot	
4	2	25401003	Support Bracket Style "B"	
5	1	25401004 Support End Cap		
6	8	25401010	010 17 T-Bolt, M8 x 17mm	
7	2	25401024	Foot Tap Bar	
8	8	25099988	M8 Hex Nut	
9	2	25099999	M8 Washer	
10	4	25099997	M8 Spring Washer	
11	4	25099981	M8 x 16 Socket Head Cap Screw	



#### **11.12.1 Multiple Beam Support Leg Structure**

This is the most common multiple beam support structure. It is typically recommended that you position one support for every joint in the conveyor beam, not to exceed 3 meters between supports. Heavy products may require additional supports. Feet should be lagged to floor.



Item	Qty	Part Number	Description	
1		Reference only	Conveyor Beam	
2	"L"	25401000	Support Extrusion 64 x 64	
3	"W"	25401000	Support Extrusion 64 x 64	
4	2	25401004	Support End Cap	
5	8	25401005	Support Bracket Style "A"	
6	4	25401015	Support End Plate	
7	2	25401016	End Plate For Beam, 64 x 64, M12	
8	2	25401023	Support Foot	
9	32	25401010	17 T-Bolt, M8 x 17mm	
10	32	25099988	M8 Hex Nut	
11	8	25099974	M6.3x30 Self Tapping Spline SHCS	
12	16	25099975	M8x30 Self Tapping Spline SHCS	

#### **11.12.3 Ceiling Hung Support Structure**

This is the most common ceiling hung beam support structure. It is typically recommended that you position one support for every joint in the conveyor beam, not to exceed 3 meters between supports. Heavy products may require additional supports. Threaded rod is not supplied with bracketry.



Item	Qty	ty Part Number Description	
1		Reference only Conveyor Beam	
2	2	25401004	Support End Cap
3	2	25401005	Support Bracket Style "A"
4	1	25401025	Ceiling Hung Support Extrusion
5	6	25401010	17 T-Bolt, M8 x 17mm
6	6	25099988	M8 Hex Nut
7	"L"	Reference only	M16 or 5/8 Threaded Rod
8	2	Reference only	M16 or 5/8 Washer
9	2	Reference only	M16 or 5/8 Hex Nut

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## **12.0 Wire-way components**

#### Introduction

Wire-way cavity, cover, and divider is made of anodized extruded aluminum. It is useful to conceal electrical wires and pneumatics along a conveying system. A divider may be inserted into a slot inside the cavity extrusion to separate pneumatic lines, or to separate high and low voltage electrical lines. Wireway cover is simply snapped into the top of the cavity without any tools for a firm fit. Along the bottom and one side of the wire-way cavity. T-slots allow connecting strips to be inserted to connect wire-way pieces. These T-slots also allow wire-way mounting brackets to be fastened to support beam to secure the wire-way firmly. Stainless steel end plates cover wire-way ends and are attached by inserting four bolts to a wire-way end.

#### **12.1 Wire-way Extrusion**



Wire-way aluminum extrusion comes in 3 meter lengths and can be used to route wires throughout a conveyor system.





#### **12.2 Wire-way Extrusion Cover**



Wire-way aluminum extrusion cover snaps onto above extrusion to cover the wire-way.

#### Part #25401030



#### **12.3 Wire-way End Plate**



Wire-way end plate attaches to end of extrusion to cover exposed ends.

#### Part #25401031





## 12.4 Accessory Bracket, 38.1 mm x 38.1 mm



38.1

38,1

0

Wire-way bracket is used to attach wire-way extrusion to horizontal or vertical support beams.

#### **12.5 Wire-way Connecting Strip**



Wire-way connecting strip is used to attached two wire-way extrusions together end to end. Two are required 25 per joint.





## Part #25401043



# 13.0 Safety labels

#### Introduction

Wherever possible, Simpli-Flex<sup>®</sup> components are labeled before shipping to indicate potential hazards which may exist. However, additional pressure sensitive labels are available to purchase for use on installed Simpli-Flex<sup>®</sup> systems. After installation and before startup, a study of the conveying 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 a safety review. All labels should be applied where they will be conspicuous to line operators. Please contact the factory or your authorized distributor for assistance in ordering. Following is a general guideline used when creating these 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 and/or product and property damage.

#### Label Size

Language

English—Part Number xx-xxx-xxx0

Spanish-Part Number xx-xxx-xxx5

Horizontal - 133 mm wide by 76 mm high

Vertical - 76 mm wide by 102 mm high

#### Colors

Black foreground on white background

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



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



# DANGER

Electrical equipment; turn off power before servicing.

13.3	Part # 70-425-0020
13.4	Part # 70-425-0025

Apply on starters, controls or electrical devices.

WARNING

**Crush point may** 

cause serious injury. Keep fingers and other body parts away.



# WARNING

Pinch point, KEEP CLEAR

13.5	Part # 70-425-0030	
13.6	Part # 70-425-0035	

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



# **13.7** Part # 70-425-0040 **13.8** Part # 70-425-0045

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



13.15	Part # 70-425-0080		
13.16	Part # 70-425-0085		

Apply on all operator interface devices.

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13.13

13.14

remotely controlled conveyor.

Part # 70-425-0070

Part # 70-425-0075

Apply at visible intervals along side a





# WARNING

Walking or riding on conveyor can cause serious injury.

13.17	Part # 70-425-0090
13.18	Part # 70-425-0095

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

Do not operate conveyor without top holddowns in place.		
KEEP CLEAR		
TI35P11		
<b>13.21</b> Part # 70-425-0110		
13.22	Part # 70-425-0115	

Apply on vertical sections of conveyor requiring hold downs to retain product.



# **CAUTION**

Walking or riding on conveyor may cause serious injury.

13.19	Part # 70-425-0100		
13.20	Part # 70-425-0105		

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

# Addendum A: Technical Calculations

#### **Chain length calculation**

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 effective track length sections on pages 16 19). 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 effective track lengths section on pages 16 19).
- 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 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 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.

#### **Chain carrying capacity/Chain Pull Calculations**

The carrying capacity of the **Simpli-Flex® 83** modular conveyor system 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 as well as the position of curves in the layout
- Coefficients of friction between product, chain and slide rails
- · Amount of accumulation, specified as distance and percentage of time accumulation occurs

A software package is available from Simplimatic Automation that calculates the maximum chain pull for a given system configuration.



## **Addendum B: General Technical Specifications**

#### **Operating Temperature**

The materials used in **Simpli-Flex® 83** 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 components are made from 6063 grade material and are clear anodized. Plastic materials are blended polyacetal (chain), Nylon or glass-filled Nylon (wheel turns, idler units, end caps, etc.), PVDF, and UHMW-PE (slide rails), or HDPE.

#### **Chemical Resistance**

The materials used in **Simpli-Flex® 83** 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. Please consult Simplimatic Automation for recommendations of resistant materials.



#### **Static Dissipation**

For applications requiring full control of static electrical charge, use the electrostatic dissipative chain, slide rail, and guide rail cover. The static dissipative conveyor chains have a volume resistivity of 104 to 108 ohms/cm, and surface resistivity of 105 to 109 ohms/sq. Static dissipative slide rails have volume conductivity of greater than 10-9 siemens/cm and surface resistivity of less than 109 ohms/sq. Guide rails have a resistivity of 104 to 108.

#### **Lubrication Requirements**

**Simpli-Flex® 83** conveyor chain is made from a patented copolymer blend with low friction Teflon additives. For most applications and layouts, no other lubrication is needed between conveyor chain and slide rails. However, the chain may require up to forty 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 or Simplimatic Automation chain lubrication 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 slide rails in plain turns. The frequency of application will vary according to the type of lubricant and the operating environment. Please contact Simplimatic Automation for specific lubrication recommendations.

#### Support/Conveyor Capacity

Simpli-Flex<sup>®</sup> 83 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 conveying 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. Special consideration should be given, however, to system configurations that apply uneven loads to structural components, large vertical systems, and unsupported horizontal spans above 3m.

The recommended support spacing is 3m 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.

If there are specific applications where weight may be a concern, contact Simplimatic Automation Engineering Department for exact calculations.

Linear expansion for **Simpli-Flex® 83** aluminum beam extrusions is .000011" per 1" per degree of change from 68°F ambient temperature (.000073 mm per millimeter degree of change from 20°C ambient temperature).



## **Addendum C: Preventative Maintenance**

#### Introduction

The following is a suggested maintenance schedule for **Simpli-Flex® 83** conveyors, and is intended as a general guide only.

#### Weekly

- Check catenary sag of chain at the drive unit to ensure that there is not too much catenary in the chain. Generally, the chain should not hang more than two inches below the bottom of the drive side frame. If excessive catenary is detected, shut the conveyor down, and remove two or three chain lengths. This is especially important at the initial start-up of the conveyor.
- Check drive motors and gearboxes for excessive heat. They should 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 of the motor?
  - D.) Is the conveying line be run with more accumulation that it was designed for?

#### Monthly

- Check guide rails, brackets, supports, and any other "bolted on" parts to be sure that they are securely mounted.
- Check gearbox lubricant.
- Lift chain up in several locations and inspect track and beam for excessive wear and/or particulate in chain beam.
- Check electrical wiring and pneumatic tubing for proper connection.
- Check that all safety guards are in place.
- Check power transmission chains on drives, if present, for proper tension, alignment and lubrication.
- Check friction torque limiter on drives, if present, for proper tension.

#### Annually

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



# **Addendum D: Safety**

#### Introduction

**Simpli-Flex® 83** modular conveyors are provided in component form to allow end users to design and build conveying systems which satisfy their conveying requirements. As a result, the end user is responsible for ensuring that the equipment complies with all safety standards (industry, OSHA, local, state, and federal). Copies of material safety data sheets for any of the materials used in **Simpli-Flex® 83** components are available upon request from Simplimatic Automation.

#### **Safety Instructions**

#### (Note: This is not an exhaustive list of safety measures. It is up to the enduser to identify and protect hazards).

Normal safety operating practices for conveyor systems include:

- 1. Only authorized, trained personnel should operate the conveying 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 previously outlined must be performed to ensure safe operation of the equipment.
- 15. Report all unsafe practices or conditions to your supervisor.



# **Addendum E: Conversion Chart**

ENGLISH (USA) UNIT	MULTIPLY BY TO GET	METRIC (SI) UNIT	MULTIPLY BY TO GET	ENGLISH (USA) UNIT		
LENGTH						
inch (in.)	25.4	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	•			
inch2 (in.2)	645.2	millimeter2 (mm2)	0.00155	inch2 (in.2)		
inch2 (in.2)	0.000645	meter2 (m2)	1550	inch2 (in.2)		
foot2 (ft.2)	92903	millimeter2 (mm2)	0.00001	foot2 (ft.2)		
foot2 (ft.2)	0.0929	meter 2(m2)	10.764	foot2 (ft.2)		
	<u>.</u>	VOLUME	<u>.</u>	<u>.</u>		
foot3 (ft.3)	645.2	meter3 (m3)	0.00155	foot3 (ft.3)		
foot3 (ft.3)	0.000645	liter (l)	1550	foot3 (ft.3)		
	- -	<b>VELOCITY &amp; SPEED</b>	<u>.</u>	<u>.</u>		
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 & DENSITY				
pound-avdp (lb.)	0.4536	kilogram (kg)	2.205	pound-avdp (lb.)		
pound/foot3 (lb/ft.3)	16.02	kilogram/meter3 (kg/m3)	0.0624	pound/foot3 (lb/ft.3)		
	FORCE & 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/min. (ftlb/min)	0.0226	Watt	44.25	foot-pound/min. (ftlb/min)		

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

# Addendum F: Warranty

#### Introduction

**Simpli-Flex**<sup>®</sup> **83** 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, express or implied, including any warranties that extend beyond the description of the products. Warranty claims must be made within 90 days of the date of acceptance or use (whichever comes first), not to exceed 12 months from shipment from either Simplimatic Automation or an authorized local distributor.

#### Remedy

Upon satisfactory proof of claim by the buyer to Simplimatic Automation, Simplimatic Automation will, within 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 in writing. With regard 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 equipment manufacturer.