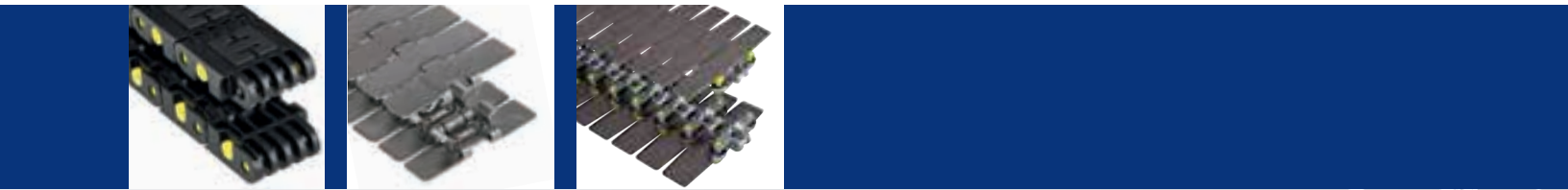


# Engineering Manual

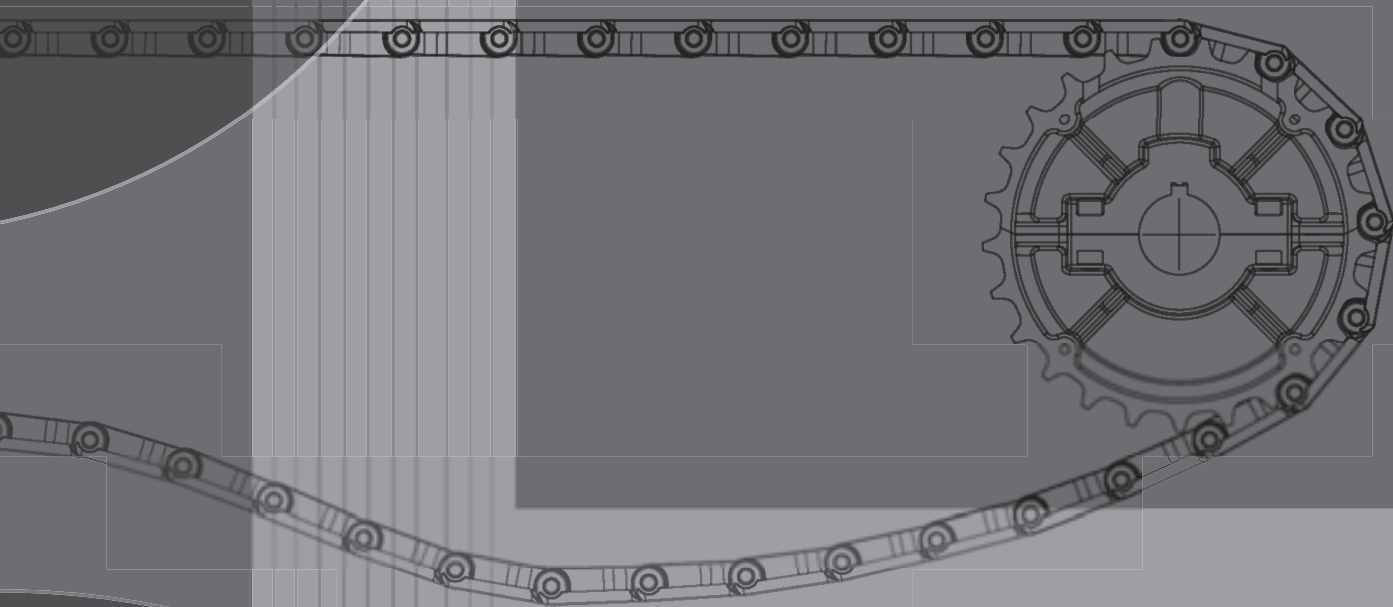
## Rexnord MatTop and TableTop Chain – Issue 3





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# Index & Introduction



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Rexnord®, TableTop®, MatTop®, Positrack®, DTS®, DynamicTransfer System™, TwistLock®, RexFlex™, HP™, UHS™, LPC®, PS®, Platinum Series®, PosiClean and RubberTop® are trademarks of Rexnord Industries, Inc.

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## ► INTRODUCTION

### ► Application Expertise/ Superior Engineering Support

With over 120 years of experience, we are the industry's most knowledgeable team of conveying experts.

Our chains are manufactured to perform better and last longer. Every chain stamped with the Rexnord® brand has undergone extensive research and quality testing, ensuring your conveying needs will be met with the most economical, efficient and reliable means possible.

Our qualified engineering staff is willing and able to assist you on all of your application needs. Rexnord will provide assistance with:

- Chain selection recommendations
- Chain pull calculations
- Product performance analysis
- Product handling tests
- Retrofit information
- Plant surveys
- Run dry surveys
- New product development

### ► Applications Throughout Industry

As expected, Rexnord's broad selection of chain is used throughout a wide variety of applications; such as food processing, beverage, unit handling and industrial applications.

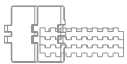
Whenever the industry has to move, transfer or deliver the goods, chain from Rexnord is the preferred choice.

### ► Online - At Your Fingertips

Let's face it - your time is valuable. At Rexnord, we realize the success of your business depends on up-to-date product information, superior technical support and customer service. That's why we've created [www.rexnord.com](http://www.rexnord.com). It's loaded with product information, useful tools and technical support options to help your business succeed. You can even search for a distributor in your area! Best of all, it's available 24 hours a day, seven days a week. So go ahead and log on today.

<http://www.rexnord.com>

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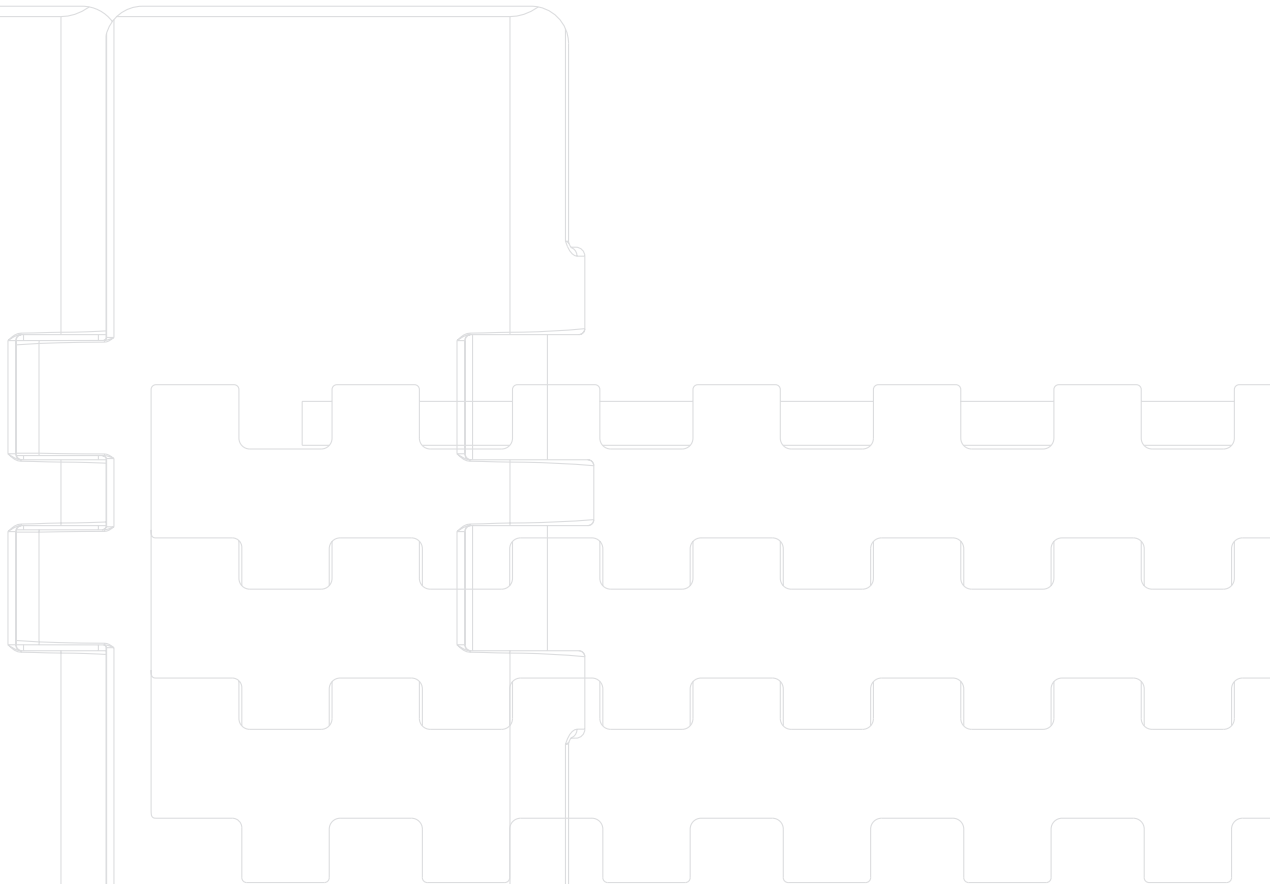
## TableTop and MatTop Chain Features

### ► TableTop Chain Features

- ⇒ Available in both metal and plastic materials
- ⇒ Available in both straight and side-flexing styles
- ⇒ Available in a wide variety of plastic materials
- ⇒ Available in both one piece (unit link) and two piece (base chain with snap on topplate) designs
- ⇒ Only available in Molded to Width (MTW) construction
- ⇒ The maximum width for plastic chains is 12.00 in (304.8 mm) and the maximum for metal chains is 7.50 in (190.5 mm)
- ⇒ Can be used with multiple strands and/or variable speed conveyors
- ⇒ The pins do not extend across the entire width of the chain (hinge width < chain width)

### ► MatTop Chain Features

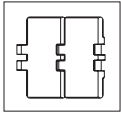
- ⇒ Available in virtually any width
- ⇒ Available in both straight and side-flexing styles
- ⇒ Available in a wide variety of plastic materials
- ⇒ Available in a variety of surface styles
- ⇒ Available in Molded to Width (MTW) and Assembled to Width construction
- ⇒ MatTop chains can run side by side without any gaps
- ⇒ Full width pins extend across the entire width of the chain
- ⇒ There are no gaps between the links when the chain is wrapped around the sprockets
- ⇒ Available with a variety of attachments:
  - Pushers
  - Sideguards
  - Positrack
  - DTS - DynamicTransfer System
  - Hold down TABs



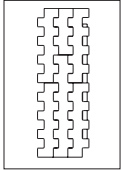
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## SYMBOLS

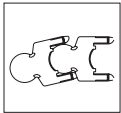
The documentation for this manual includes various icons described below:



**TableTop Chain Icon**



**MatTop Chain Icon**



**Multiflex Chain Icon**



**Caution**

This icon marks caution information that should be read before continuing on in this manual.



**Information**

This icon marks general information that should be read to further understand the specified topic.



**Check Point**

This icon marks check point information that expands on the subject explained.



**Survey**

This icon marks a survey that needs to be completed before continuing any process.



**Grounding**

This icon explains that grounding is crucial for all electrical equipment.

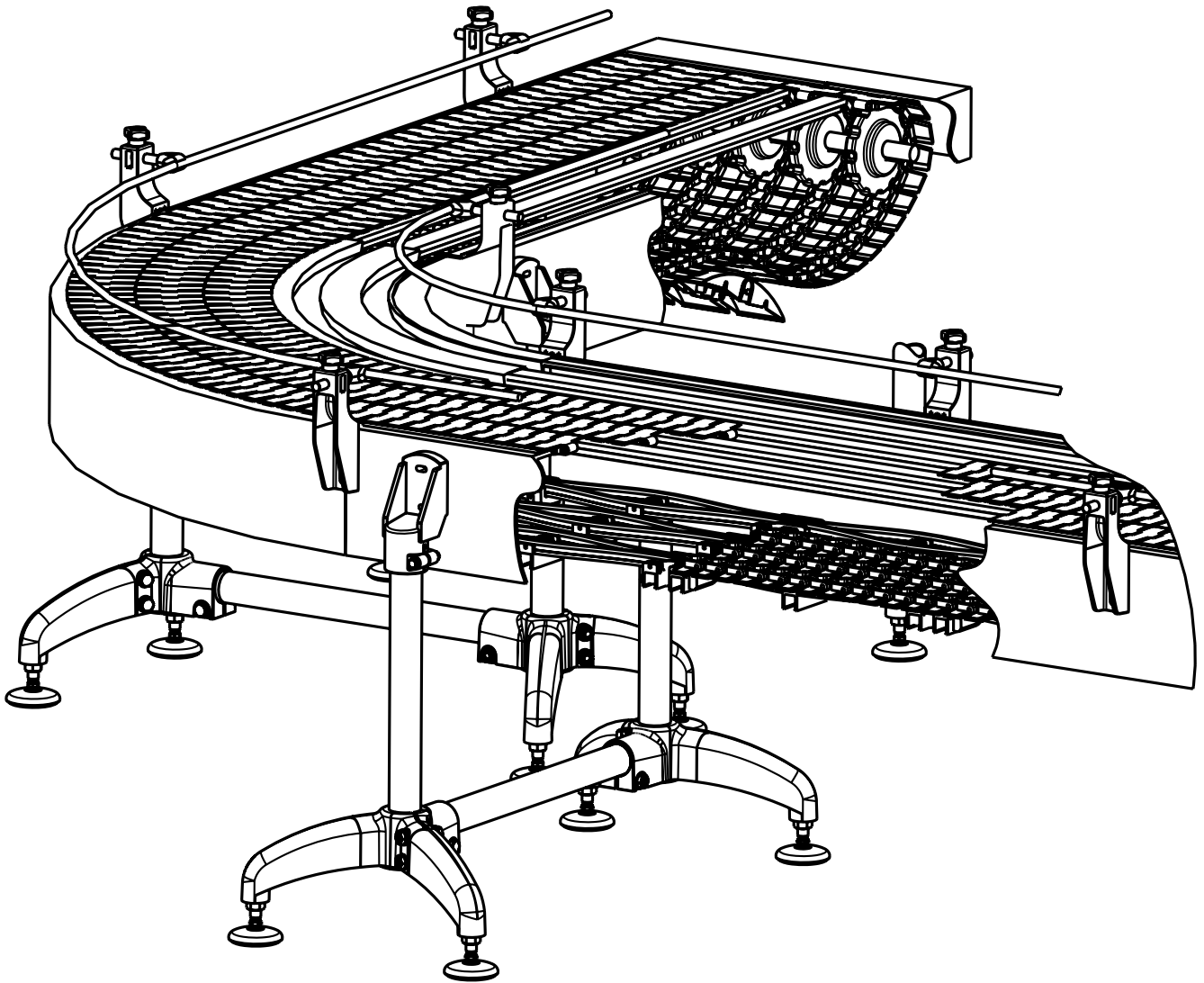
**For further information about the use of the icons in this manual, please contact Rexnord Application Engineering 1.262.376.4800.**

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# Rexnord TableTop Chains



## TableTop Conveyor Chain Materials

- > Acetal Family
- > D and WD (Acetal)
- > MLF
- > LF and WLF (Low-Friction)
- > HP™ and WHP (High Performance)
- > PS™ (Platinum Series™)
- > PSX (Platinum Series X)
- > XLG (Low-Friction Acetal, Green)
- > XLA (Low-Friction Acetal, Gray)
- > Metal Family
- > S (Carbon Steel)
- > SS (Stainless Steel)
- > SSB (Low Magnetic Stainless Steel)
- > Specialty Plastics
- > AS (Anti-Static)
- > HCAS (High Capacity Anti-Static)
- > BIR (Black Impact Resistant)
- > ESD (Electrostatic Dissipative)

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## CHAIN MATERIALS

For more detailed material information, see page EM - TT - 16 or the Appendix located at the end of this manual.

Materials vary per chain series; see Product Catalog to determine standard versus special materials.

### ➤ Acetal Family

#### ➤ D and WD (Acetal)

⇒ Plain acetal

#### ➤ MLF

⇒ Cost-effective general purpose chain material

⇒ Suitable for slower speeds

#### ➤ LF and WLF (Low-Friction)

⇒ Patented blend of acetal that provides good wear resistance and long service life due to the low coefficient of friction

#### ➤ HP and WHP (High Performance)

⇒ Patented blend of acetal specifically formulated for dry-running conveyors due to excellent friction characteristics

#### ➤ PS (Platinum Series)

⇒ Patented blend of acetal specially formulated for high-speed conveying applications

#### ➤ PSX (Platinum Series X)

⇒ High-speed conveying with little to no external lubrication

⇒ Long wear life with minimal dusting

#### ➤ XLG (Low-Friction Acetal, Green)

⇒ Internally lubricated extra low-friction acetal

#### ➤ XLA (Low-Friction Acetal, Gray)

⇒ Internally lubricated extra low-friction acetal

### ➤ Metal Family

#### ➤ S (Carbon Steel)

⇒ A strong, abrasion-resistant, fine-grained, hardened carbon steel with a smooth finish

⇒ Used in applications requiring high strength, high impact resistance and a hardened chain surface such as part handling

#### ➤ SS (Stainless Steel)

⇒ Non-magnetic, corrosion-resistant, abrasion-resistant austenitic stainless steel

#### ➤ SSB (Low Magnetic Stainless Steel)

⇒ A special austenitic stainless steel which allows a magnetic field to pass through without affecting chain tension or drive requirements

### ➤ Specialty Plastics

#### ➤ AS (Anti-Static)

⇒ An electrically conductive acetal formulated to reduce or eliminate nuisance static charge

⇒ **ALWAYS** contact Rexnord Application Engineering for assistance

#### ➤ HCAS (High Capacity Anti-Static)

⇒ Reduces or eliminates nuisance static

⇒ High capacity acetal resin, requires 10% derate from acetal counterparts

#### ➤ BIR (Black Impact-Resistant)

⇒ Specifically formulated to take constant impact

#### ➤ ESD (Electrostatic Dissipative)

⇒ Polypropylene formulated for conveying sensitive products such as electronics and computer chips where controlling static charge or static decay is critical

⇒ **ALWAYS** contact Rexnord Application Engineering for assistance



# CHAIN MATERIALS

## ▶ HC-ESD (High Capacity, Electrostatic Dissipative)

- ⇒ High capacity polypropylene formulated for conveying sensitive products such as electronics and computer chips where controlling static charge or static decay is critical
- ⇒ Requires 10% derate from polypropylene counterparts
- ⇒ **ALWAYS** contact Rexnord Application Engineering for assistance

## ▶ FTR (Black, Fryer Temperature-Resistant)

- ⇒ Formulated to be used in oven/fryer discharge conveyor applications such as snack chips

## ▶ GTC (Grey Tough Composite)

- ⇒ High-strength, impact modified composite
- ⇒ High impact resistance, low strength

## ▶ USP (Ultra-Stabilized Polypropylene, Dark Green)

- ⇒ Superior resistance to chemicals used in pasteurizers, warmers and coolers
- ⇒ Remains stronger and more flexible than standard polypropylene

## ▶ BWR (Black Wear-Resistant)

- ⇒ BWR may extend chain life up to 5 times in comparison to other plastic materials in applications such as conveying rough machined parts

## ▶ WX/BWX (Abrasion-Resistant)

- ⇒ A nylon material formulated to be used in abrasive applications where chain is subjected to abrasives such as glass, sand and dirt

## ▶ P (Chemical-Resistant)

- ⇒ A polyester formulated to reduce or eliminate material degradation in applications where chemicals such as chlorine and phosphorous are present in moderate concentrations

## ▶ CR (Extreme Chemical-Resistant)

- ⇒ Fluorinated polymer that is chemically resistant to high concentrations of oxidizing agents, acids and bases

## ▶ DUV (Ultraviolet-Resistant)

- ⇒ Specially formulated acetal
- ⇒ Used for outdoor applications with direct exposure to the sun or UV radiation

## ▶ MR (Melt-Resistant)

- ⇒ A nylon material with a high melting point used to prevent hot objects (product temperature up to 375°F [190°C]) from melting the surface of the chain

## ▶ FR (Flame-Retardant)

- ⇒ Flame-retardant polyester that meets the requirements of UL Standard 94 V-0 rated combustion

## ▶ HS (Heat-Stabilized)

- ⇒ Nylon resin designed for environments that contain hot water spray (rinser, sterilizer and pasteurizer applications)

## ▶ BSM

- ⇒ Acetal-based resin with superior wear and cut resistance
- ⇒ Suitable for both dry and wet conditions



Since materials vary in strength, refer to the Product Catalog (8rxCAT-en) for specific chain / material strengths when changing out materials.



Not all materials are available in all chains. Contact Rexnord Application Engineering for further assistance.

## TableTop Conveyor Chain Materials

- > HC-ESD (High Capacity, Electrostatic Dissipative)
- > FTR (Black, Fryer Temperature-Resistant)
- > GTC (Grey Tough Composite)
- > USP (Ultra-Stabilized Polypropylene, Dark Green)
- > BWR (Black Wear-Resistant)
- > WX/BWX (Abrasion-Resistant)
- > P (Chemical-Resistant)
- > CR (Extreme Chemical-Resistant)
- > DUV (Ultraviolet-Resistant)
- > MR (Melt-Resistant)
- > FR (Flame-Retardant)
- > HS (Heat-Stabilized)
- > BSM

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# FRICITION TABLE BETWEEN CHAIN AND PRODUCT (Fm)

> Friction Table  
Between Chain and  
Product (Fm)

Base Material	Chain Material		Product Material							
	Chain Material	Lubrication Condition	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink)	Plastic (PET)	Steel	
Acetal	PS	Dry Water	0.18	0.20	0.12	0.23	0.18	0.16	0.18	
			0.14	0.18	0.11	NR	0.16	0.15	0.16	
		Soap & Water Oil	0.12	0.14	0.10	NR	0.14	0.14	0.13	
			-	-	-	NR	-	-	0.10	
	PSX	Dry Water	Soap and & Oil	0.16	0.20	0.12	0.23	0.18	0.16	0.16
				0.13	0.18	0.11	NR	0.16	0.15	0.14
		Soap and & Oil	0.12	0.14	0.10	NR	0.14	0.14	0.12	
			-	-	-	NR	-	-	0.10	
	HP, WHP	Dry Water	Soap & Water Oil	0.18	0.20	0.12	0.23	0.18	0.18	0.18
				0.14	0.18	0.11	NR	0.16	0.16	0.16
		Soap & Water Oil	0.12	0.14	0.10	NR	0.14	0.14	0.13	
			-	-	-	NR	-	-	0.10	
	LF, WLF, XL, XLA, XLG	Dry Water	Soap & Water Oil	0.20	0.20	0.15	0.30	0.20	0.20	0.25
				0.15	0.18	0.13	NR	0.18	0.18	0.20
		Soap & Water Oil	0.12	0.14	0.10	NR	0.15	0.15	0.15	
			-	-	-	NR	-	-	0.10	
	D, WD, MLF	Dry Water	Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
				0.17	0.20	0.15	NR	0.20	0.20	0.22
		Soap & Water Oil	0.12	0.14	0.10	NR	0.15	0.15	0.15	
			-	-	-	NR	-	-	0.10	
	AS, HCAS	Dry Water	Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
				NR	NR	NR	NR	NR	NR	NR
		Soap & Water Oil	NR	NR	NR	NR	NR	NR	NR	
			-	-	-	NR	-	-	NR	
	WSA, GSA, BSA	Dry Water	Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
				0.17	0.18	0.15	NR	0.20	0.20	0.22
		Soap & Water Oil	0.12	0.14	0.10	NR	0.15	0.15	0.15	
			-	-	-	NR	-	-	0.10	
	WSM, BSM, SMB	Dry Water	Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
				0.17	0.18	0.15	NR	0.20	0.20	0.22
		Soap & Water Oil	0.12	0.14	0.10	NR	0.15	0.15	0.15	
			-	-	-	NR	-	-	0.10	
	DUV	Dry Water	Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
				0.17	0.18	0.15	NR	0.20	0.20	0.22
		Soap & Water Oil	0.12	0.14	0.10	NR	0.15	0.15	0.15	
			-	-	-	NR	-	-	0.10	
Metal	SS, SSC	Dry Water	0.34	0.35	0.33	0.43	0.31	0.30	0.38	
			0.27	0.30	0.29	NR	0.22	0.21	0.30	
		Soap & Water Oil	0.14	0.15	0.15	NR	0.15	0.14	0.15	
			-	-	-	NR	-	-	-	
	S	Dry Water	Soap & Water Oil	0.34	0.35	0.33	0.43	0.31	0.30	0.38
				NR	NR	NR	NR	NR	NR	NR
		Soap & Water Oil	NR	NR	NR	NR	NR	NR	NR	
			0.10	0.10	NR	NR	NR	NR	0.10	
	SSB	Dry Water	Soap & Water Oil	0.28	0.47	0.35	0.40	0.30	0.30	0.35
				0.19	0.31	0.25	NR	0.20	0.20	0.25
		Soap & Water Oil	0.12	0.21	0.15	NR	0.10	0.10	0.15	
			-	-	-	NR	-	-	0.15	
Nylon	WX/BWX	Dry Water	0.25	0.27	0.20	0.33	0.25	0.25	0.30	
			NR	NR	NR	NR	NR	NR	NR	
		Soap & Water Oil	NR	NR	NR	NR	NR	NR	NR	
			-	-	-	NR	-	-	-	
	MR/FTR	Dry Water	Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
				NR	NR	NR	NR	NR	NR	NR
		Soap & Water Oil	NR	NR	NR	NR	NR	NR	NR	
			-	-	-	NR	-	-	0.10	
	BWR	Dry Water	Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
				NR	NR	NR	NR	NR	NR	NR
		Soap & Water Oil	NR	NR	NR	NR	NR	NR	NR	
			-	-	-	NR	-	-	0.10	
	HS	Dry Water	Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
				0.17	0.18	0.15	NR	0.20	0.20	0.22
		Soap & Water Oil	0.12	0.14	0.10	NR	0.15	0.15	0.15	
			-	-	-	NR	-	-	0.10	

NR denotes "not recommended"

Dash denotes "combination not tested"

**i** All values shown in this table were obtained through product testing. Actual values may be higher or lower depending on environmental conditions.

Contact Rexnord Application Engineering for more information 1.262.376.4800

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# FRICITION TABLE BETWEEN CHAIN AND PRODUCT (Fm)

TableTop  
Conveyor  
Chain  
Materials

> Friction Table  
Between Chain and  
Product (Fm)

Base Material	Chain Material		Product Material						
	Chain Material	Lubrication Condition	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink)	Plastic (PET)	Steel
Polyester	TC	Dry Water Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
			0.17	0.18	0.15	NR	0.21	0.21	0.23
			0.12	0.14	0.10	NR	0.15	0.15	0.15
			-	-	-	NR	0.10	0.10	0.10
	P	Dry Water Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
			0.17	0.18	0.15	NR	0.21	0.21	0.22
			0.12	0.14	0.10	NR	0.15	0.10	0.15
			-	-	-	NR	-	-	0.10
	FR	Dry Water Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
			0.17	0.18	0.15	NR	0.20	0.20	0.22
			0.12	0.14	0.10	NR	0.15	0.15	0.15
			-	-	-	NR	-	-	0.10
Fluorinated Polymer	CR	Dry Water Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
			0.17	0.18	0.15	NR	0.20	0.20	0.22
			0.12	0.14	0.10	NR	0.15	0.15	0.15
			-	-	-	NR	-	-	0.10
Polypropylene	HT, WHT, RHT, KHT, HTB, BHT, YP, XP, USP	Dry Water Soap & Water Oil	0.29	0.29	0.24	0.35	0.32	0.28	0.31
			0.19	0.21	0.18	NR	0.24	0.20	0.25
			0.15	0.14	0.10	NR	0.19	0.15	0.17
			-	-	-	NR	-	-	0.10
	WHA, BHA	Dry Water Soap & Water Oil	0.28	0.29	0.22	0.35	0.30	0.30	0.35
			0.19	0.21	0.17	NR	0.25	0.25	0.25
			0.16	0.14	0.10	NR	0.20	0.20	0.20
			-	-	-	NR	-	-	0.10
	ESD	Dry Water Soap & Water Oil	0.28	0.29	0.22	0.35	0.30	0.30	0.35
			0.19	0.21	0.17	NR	0.25	0.25	0.25
			0.16	0.12	0.10	NR	0.20	0.20	0.20
			-	-	-	NR	-	-	0.10
	THD	Dry Water Soap & Water Oil	0.28	0.29	0.22	0.35	0.30	0.30	0.35
			0.19	0.21	0.17	NR	0.25	0.25	0.25
			0.16	0.14	0.10	NR	0.20	0.20	0.20
			-	-	-	NR	-	-	0.10
	HUV	Dry Water Soap & Water Oil	0.28	0.29	0.22	0.35	0.30	0.30	0.35
			0.19	0.21	0.17	NR	0.25	0.25	0.25
			0.16	0.14	0.10	NR	0.20	0.20	0.20
			-	-	-	NR	-	-	0.10
	UHS, YPR	Dry Water Soap & Water Oil	0.30	0.29	0.25	0.35	0.32	0.30	0.35
			0.19	0.21	0.19	NR	0.24	0.25	0.25
			0.16	0.14	0.10	NR	0.19	0.20	0.20
			-	-	-	NR	-	-	0.10
Polyethylene	WLT, BLT, LT	Dry Water Soap & Water Oil	0.22	0.24	0.18	0.30	0.22	0.22	0.28
			0.17	0.17	0.14	NR	0.18	0.18	0.22
			0.12	0.14	0.10	NR	0.15	0.15	0.15
			-	-	-	NR	-	-	0.10
	WLA, BLA	Dry Water Soap & Water Oil	0.22	0.24	0.18	0.30	0.22	0.22	0.28
			0.17	0.17	0.14	NR	0.19	0.19	0.22
			0.12	0.14	0.10	NR	0.25	0.25	0.15
			-	-	-	NR	-	-	0.10
	GLD, RLD	Dry Water Soap & Water Oil	0.22	0.24	0.18	0.30	0.22	0.22	0.28
			0.17	0.17	0.14	NR	0.18	0.18	0.22
			0.12	0.14	0.10	NR	0.15	0.15	0.15
			-	-	-	NR	-	-	0.10
	LUV	Dry Water Soap & Water Oil	0.22	0.24	0.28	0.30	0.22	0.22	0.28
			0.17	0.17	0.14	NR	0.18	0.18	0.22
			0.12	0.14	0.10	NR	0.15	0.15	0.10
			-	-	-	NR	-	-	0.10
All RubberTop Products	Dry	-	-	-	0.87***	0.85***	0.85***	-	

\*\* Friction of returnable bottles will depend on the quality of the glass, the amount of roughed up surface, etc.

\*\*\* It is not recommended to accumulate on RubberTop products; however, these values can be utilized when determining brake belt or "hold back" calculations.

**NR denotes "not recommended"**

**Dash denotes "combination not tested"**

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TableTop Chains

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# FRICITION TABLE BETWEEN CHAIN AND WEARSTRIP (Fw)

> Friction Table  
Between Chain and  
Wearstrip (Fw)

Base Material	Chain Material		Wearstrip Material			
	Chain Material	Lubrication Condition	Steel and Stainless Steel	UHMWPE	Nylatron	ULF
Acetal	PS	Dry Water	0.22	0.18	0.18	0.12
			0.20	0.16	0.16	0.11
		Soap & Water Oil	0.15	0.14	0.14	0.11
			0.10	0.10	0.10	0.10
	PSX	Dry Water	0.22	0.18	0.18	0.12
			0.20	0.16	0.16	0.11
		Soap & Water Oil	0.15	0.14	0.14	0.11
			0.10	0.10	0.10	0.10
	HP, WHP	Dry Water	0.22	0.18	0.18	0.14
			0.20	0.16	0.16	0.12
		Soap & Water Oil	0.15	0.14	0.14	0.11
			0.10	0.10	0.10	0.10
	LF, WLF, XL, XLA, XLG	Dry Water	0.25	0.20	0.20	0.16
			0.20	0.18	0.18	0.14
		Soap & Water Oil	0.15	0.15	0.15	0.13
			0.10	0.10	0.10	0.10
	D, WD, MLF	Dry Water	0.30	0.25	0.25	0.20
			0.23	0.21	0.21	0.18
		Soap & Water Oil	0.15	0.15	0.15	0.15
			0.10	0.10	0.10	0.10
	AS, HCAS, HC-ESD	Dry Water	0.30	0.25	0.25	0.20
			NR	NR	NR	NR
		Soap & Water Oil	NR	NR	NR	NR
			NR	0.10	0.10	0.10
	WSA, GSA, BSA	Dry Water	0.30	0.25	0.25	0.20
			0.23	0.21	0.21	0.18
		Soap & Water Oil	0.15	0.15	0.15	0.15
			0.10	0.10	0.10	0.10
	WSM, BSM, SMB, BRSM, BYSM, SYMB, SRMB	Dry Water	0.30	0.25	0.25	0.20
			0.23	0.21	0.21	0.18
		Soap & Water Oil	0.15	0.15	0.15	0.15
			0.10	0.10	0.10	0.10
	DUV	Dry Water	0.30	0.25	0.25	0.20
			0.23	0.21	0.21	0.18
		Soap & Water Oil	0.15	0.15	0.15	0.15
			0.10	0.10	0.10	0.10
Metal	SS, SSC	Dry Water	0.40	0.30	0.30	0.30
			0.35	0.22	0.22	0.22
		Soap & Water Oil	0.15	0.15	0.15	0.15
			0.15	0.10	0.10	0.10
	S	Dry Water	0.40	0.30	0.30	0.30
			NR	NR	NR	0.22
		Soap & Water Oil	NR	NR	NR	0.15
			0.10	0.10	0.10	0.10
	SSB	Dry Water	0.50	0.40	0.40	0.40
			0.40	0.30	0.30	0.30
		Soap & Water Oil	0.20	0.20	0.20	0.20
			0.20	0.10	0.10	0.10
Nylon	WX, FR-PA	Dry Water	0.30	0.25	0.25	0.22
			NR	NR	NR	NR
		Soap & Water Oil	NR	NR	NR	NR
			NR	NR	NR	NR
	MR, FTR	Dry Water	0.30	0.28	0.28	0.25
			NR	NR	NR	NR
		Soap & Water Oil	NR	NR	NR	NR
			0.10	0.10	0.10	0.10
	BIR, BWR	Dry Water	0.28	0.22	0.22	0.20
			NR	NR	NR	NR
		Soap & Water Oil	NR	NR	NR	NR
			0.10	0.10	0.10	0.10
	HS	Dry Water	0.30	0.28	0.28	0.25
			0.25	0.23	0.23	0.22
		Soap & Water Oil	0.18	0.18	0.18	0.18
			0.10	0.10	0.10	0.10
	FR-ESD	Dry Water	0.30	0.25	0.25	0.22
			NR	NR	NR	NR
		Soap & Water Oil	NR	NR	NR	NR
			NR	0.10	0.10	0.10

NR denotes "not recommended"

Dash denotes "combination not tested"

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# FRICITION TABLE BETWEEN CHAIN AND WEARSTRIP (Fw)

## TableTop Conveyor Chain Materials

> Friction Table  
Between Chain and  
Wearstrip (Fw)

Base Material	Chain Material		Wearstrip Material			
	Chain Material	Lubrication Condition	Steel and Stainless Steel	UHMWPE	Nylatron	ULF
Polyester	GTC	Dry Water	0.30	0.25	0.25	0.22
			0.23	0.21	0.21	0.20
		Soap & Water Oil	0.15	0.15	0.15	0.15
			0.10	0.10	0.10	0.10
	P	Dry Water	0.30	0.25	0.25	0.22
			0.23	0.21	0.21	0.20
		Soap & Water Oil	0.15	0.15	0.15	0.15
			0.10	0.10	0.10	0.10
	FR	Dry Water	0.30	0.25	0.25	0.22
			0.23	0.21	0.21	0.20
		Soap & Water Oil	0.15	0.15	0.15	0.15
			0.10	0.10	0.10	0.10
Fluorinated Polymer	CR	Dry Water	0.30	0.25	0.25	0.22
			0.23	0.21	0.21	0.20
		Soap & Water Oil	0.15	0.15	0.15	0.15
			0.10	0.10	0.10	0.10
Polypropylene	HT, WHT, RHT, KHT, HTB, BHT, YP, XP, USP	Dry Water	0.35	0.30	0.30	0.26
			0.30	0.25	0.25	0.22
		Soap & Water Oil	0.25	0.20	0.20	0.19
			0.10	0.10	0.10	0.10
	WHA, BHA	Dry Water	0.35	0.30	0.30	0.26
			0.25	0.25	0.25	0.22
		Soap & Water Oil	0.20	0.20	0.20	0.19
			0.10	0.10	0.10	0.10
	ESD	Dry Water	0.35	0.30	0.30	0.26
			0.25	0.25	0.25	0.22
		Soap & Water Oil	0.20	0.20	0.20	0.19
			0.10	0.10	0.10	0.10
	THD	Dry Water	0.35	0.30	0.30	0.26
			0.25	0.25	0.25	0.22
		Soap & Water Oil	0.20	0.20	0.20	0.19
			0.10	0.10	0.10	0.10
	HUV	Dry Water	0.35	0.30	0.30	0.26
			0.24	0.16	0.16	0.22
		Soap & Water Oil	0.20	0.20	0.20	0.19
			0.10	0.10	0.10	0.10
	UHS, YPR	Dry Water	0.35	0.30	0.30	0.26
			0.30	0.25	0.25	0.22
		Soap & Water Oil	0.25	0.20	0.20	0.19
			0.10	0.10	0.10	0.10
Polyethylene	WLT, BLT, LT	Dry Water	0.28	0.23	0.23	0.21
			0.22	0.20	0.20	0.19
		Soap & Water Oil	0.15	0.15	0.15	0.14
			0.10	0.10	0.10	0.10
	WLA, BLA	Dry Water	0.28	0.23	0.23	0.21
			0.22	0.20	0.20	0.19
		Soap & Water Oil	0.15	0.15	0.15	0.14
			0.10	0.10	0.10	0.10
	GLD, RLD	Dry Water	0.28	0.23	0.23	0.21
			0.22	0.20	0.20	0.19
		Soap & Water Oil	0.15	0.15	0.15	0.14
			0.10	0.10	0.10	0.10
	LUV	Dry Water	0.28	0.23	0.23	0.21
			0.22	0.20	0.20	0.19
		Soap & Water Oil	0.15	0.15	0.15	0.14
			0.10	0.10	0.10	0.10

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Dash denotes "combination not tested"

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TableTop Chains



# SPROCKET AND IDLER WHEEL DESIGNATIONS

Rexnord has developed a variety of sprocket and idler materials for various and unique applications. Sprockets are available in plastic and metallic varieties.

## ➤ Plastic

### ➤ Acetal (N)

- ⇒ Good corrosion- and wear-resistant properties
- ⇒ One-piece sprocket
- ⇒ Temperature Range: -40° to +180°F (-40° to +82°C)

### ➤ Heat-Stabilized Nylon (HS)

- ⇒ Stabilized nylon-based resin for environments that contain hot water spray rinser, sterilizer and pasteurizer applications
- ⇒ Resists thermal degradation from 212°F (100°C) water spray
- ⇒ Available in select one-piece styles only
- ⇒ Temperature Range: +40° to +240°F (+4° to +116°C)

### ➤ LF Acetal (LF)

- ⇒ Available in select idler wheel styles only
- ⇒ Self-lubricating
- ⇒ Temperature Range: -40° to +180°F (-40° to +82°C)

### ➤ Glass-Reinforced Nylon (NS)

- ⇒ Split sprocket design for ease in assembly and disassembly
- ⇒ Excellent wear-resistant properties
- ⇒ Temperature Range: -40° to +180°F (-40° to +82°C)

### ➤ Chemical-Resistant Fluorinated Polymer

- ⇒ Used in applications where chemical resistance is required (i.e. chlorine, phosphorous)
- ⇒ Temperature Range: +40° to +240°F (+4° to +116°C)

## ➤ KU and KUS (Machined Plastic)

- ⇒ KU and KUS do not designate material
- ⇒ KU designates solid (one-piece) design and KUS designates a split (two-piece) design
- ⇒ Sprockets machined in a variety of plastic materials
- ⇒ Flush side for ease in cleaning
- ⇒ Sprockets come in a wide variety of pitch diameters and bore sizes

## ➤ Metallic

### ➤ Semi-Steel (Cast Iron)

- ⇒ Used in non-corrosive, abrasive environments such as broken glass, metal chips
- ⇒ One-piece sprocket
- ⇒ Temperature Range: -40 to +350°F (-40° to +177°C)

### ➤ SS (Stainless Steel)

- ⇒ Used in corrosive, abrasive environments such as vegetable processing, snack and foods
- ⇒ Available in select chains only
- ⇒ Available in split and one-piece designs
- ⇒ Temperature Range: -100 to +800°F (-73° to +427°C)

## TableTop Sprocket and Idler Wheel Designations

### > Plastic

- > Acetal (N)
- > Heat-Stabilized Nylon (HS)
- > LF Acetal (LF)
- > Glass-Reinforced Nylon (NS)
- > Chemical-Resistant Fluorinated Polymer
- > KU and KUS (Machined Plastic)

### > Metallic

- > Semi-Steel (Cast Iron)
- > SS (Stainless Steel)

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# WEARSTRIP MATERIALS

Proper chain and wearstrip selection will provide optimum life. Since a function of the wearstrip is to lower friction and to reduce wear, it is recommended to give careful consideration when selecting the material.

The following general guidelines will help in selecting the proper material for your application.

## ➤ Plastic

### ➤ Acetal

⇒ Not recommended for use with acetal chains; it is best not to run identical plastics together

### ➤ Nylatron (Nylon with Moly Filler)

- ⇒ Recommended for dry applications due to low wear and low friction
- ⇒ Especially suited for dry operation on thermoplastic side-flexing chain corners due to its high PV (Pressure-Velocity) rating
- ⇒ Typically not recommended in wet applications because it will absorb moisture and expand (if used in wet applications, allow clearance for expansion and movement of fasteners)
- ⇒ Typically only used for curves

## ➤ Metal

### ➤ Aluminum

⇒ **NOT RECOMMENDED** due to poor wear resistance

### ➤ Bronze and Brass

- ⇒ Sometimes used with stainless steel chains
- ⇒ Typically used for non-sparking and anti-static conditions
- ⇒ For bronze — recommended one-half hard temper (Rb 58)
- ⇒ For brass — recommended one-half hard (Rb 70 Min) to full hard (Rb 82) temper

## ➤ Steel

- ⇒ Recommended for non-corrosive, abrasive or high-temperature applications
- ⇒ Abrasive particles are less likely to imbed in metal wearstrips in comparison to plastic
- ⇒ A cold-rolled plain carbon steel is recommended
- ⇒ Heat treated grades — hardened to 25 to 30 Rc is recommended

### ⇒ Stainless Steel

- ⇒ Recommended for corrosive, abrasive or high-temperature applications
- ⇒ Abrasive particles are less likely to imbed in metal wearstrips in comparison to plastic
- ⇒ A cold-rolled austenitic grade is recommended which offers the best corrosion-resistant properties
- ⇒ Recommended one-quarter hard temper (25 to 35 Rc) with any chain material, especially with thermoplastic
- ⇒ Softer annealed grades of austenitic are **NOT RECOMMENDED**. Adverse interaction between the chain material and the soft stainless steel might develop. When this happens, the resulting wear debris consists almost entirely of finely divided stainless steel particles, nearly black in color, similar to molydisulfide or graphite. The wear of the stainless steel might be rapid while the thermoplastic chain by contrast exhibits only slight wear.
- ⇒ Martensitic stainless steel can also be used when heat-treated (25 to 35 Rc); however, it is not as corrosion-resistant as austenitic
- ⇒ Hardness is more critical than grade for better wear resistance

## ➤ Specialty

### ➤ Teflon

⇒ Recommended only for very low-speed/low-load applications

### ➤ Lubricant-Impregnated Wood

- ⇒ Commonly used in dry abrasive applications (i.e. glass, paper)
- ⇒ Not recommended in wet applications

## TableTop Wearstrip Materials

### > Plastic

- > Acetal
- > Nylatron (Nylon with Moly Filler)

### > Metal

- > Aluminum
- > Bronze and Brass
- > Steel
- > Stainless Steel

### > Specialty

- > Teflon
- > Lubricant-Impregnated Wood

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- > UHMWPE (Ultra High Molecular Weight Polyethylene)
- > ULF (Ultra Low-Friction)



## WEARSTRIP MATERIALS

### ➤ UHMWPE (Ultra High Molecular Weight Polyethylene)

- ⇒ Recommended for dry or wet applications on straight or side-flexing conveyors
- ⇒ Not recommended for abrasive conditions where particles may imbed in the surface and wear the chain
- ⇒ Provides lower coefficient of friction than metals
- ⇒ Not affected by moisture and more resistant to chemicals than nylon
- ⇒ UHMWPE materials can be supplied with various fillers:
  - Ceramic/glass
  - Conductive
  - Oil/wax

### ➤ ULF (Ultra Low-Friction)

- ◆ UHMWPE with self-lubricating additive package
- ◆ Consistent low friction
- ◆ Suitable for high-speed conveying where minimal or no external lubrication is present
- ◆ Improved PV (Pressure-Velocity) properties in comparison to other curve materials



Wearstrip surface finish is a critical aspect for overall chain life.

Recommended wearstrip surface finish values are:

Metal:	32 $\mu$ -in Ra (0.8 $\mu$ -m Ra)
Nylatron:	63 $\mu$ -in Ra (1.6 $\mu$ -m Ra)
UHMWPE:	125 $\mu$ -in Ra (3.2 $\mu$ -m Ra)

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# LUBRICATION


Lubrication is recommended whenever the application permits. It not only reduces friction, thereby reducing chain tension, but also greatly improves the wear life of the chain and wearstrips. Lubrication offers a constant cleaning effect of both the chain and wearstrip and can also reduce static.

## ➤ General Recommendations

- ⇒ Lubrication should contact both the chain and wearstrip.
- ⇒ When lubricating side-flexing TableTop chains, the lubricant must be applied at the entrance of the inside corner track. Metal side-flexing chains should ALWAYS be lubricated in the corners.
- ⇒ Depending upon the application, lubrication requirements may vary. Lubricant quality and lubrication frequency can have a great effect on the longevity of the chain. For most common applications, any ISO 68 grade lubricant is satisfactory. For applications with special considerations such as high temperature, chemical compatibility, FDA requirements, please contact your lubrication supplier.

## ➤ General Types of Lubricants

- ⇒ Water — Only utilize with corrosion-resistant materials. Can be used as a general lubricant; however, it is not as effective as other types due to friction and chain-cleaning properties.
- ⇒ Water soluble lubricants and soaps — Only utilize with corrosion-resistant materials. These are excellent lubricants which also help clean the chain.
- ⇒ Oil base lubricants — These are vegetable, mineral oils or grease which offer high lubricity. Can be used with plastic or metal materials. Recommended to be used on all metal chains whenever practical. Food grade oils are available.

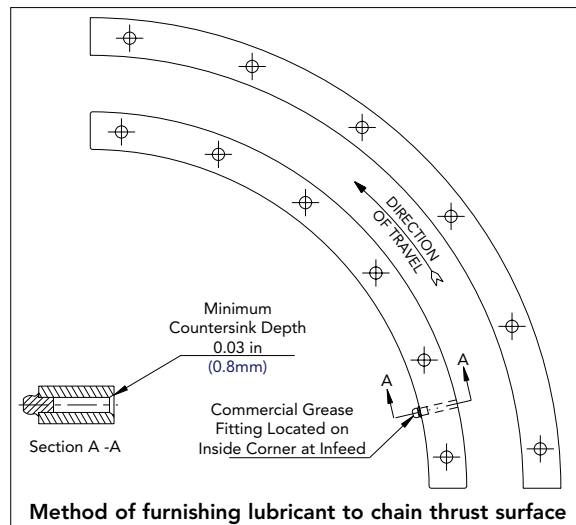
 To eliminate or reduce lubrication, contact Rexnord Application Engineering to conduct a run-dry survey. 1.262.376.4800

For more information on lubrication types, compatibility, methods, contact a lubricant manufacturer.

Contact Rexnord Application Engineering for more information 1.262.376.4800

## ➤ Dry Film Lubricants

- ⇒ A dry lubricant system has many of the same benefits of a run-dry conveyor with the added benefit of a lower coefficient of friction. A dry lubricant is applied by an automatic system with dosing units that put very little lubricant on select areas of the conveyors. The lubricant can be water- or oil-based with Teflon, silicone or solid micro-particles. The preferred lubricant is an oil and water emulsion. The most critical part of the process is how the lubricant is applied on the chain. This is typically accomplished with the use of brushes, shoes or spray nozzles. The benefit of spray nozzles is the absence of contact with the chain, eliminating the possibility of trapped dirt or debris. The lubricant can also be applied to the inside of a curve for side-flexing conveyors. There are many dry lubricant products on the market which have been specifically formulated for either plastic or metal chains and container types.
- ⇒ While dry lubricants offer many advantages, conveyor cleanliness considerations should be taken into account since dry lubes do not provide a continuous cleaning process like traditional water and soap lubrication.



## ➤ Selective Lubrication

- ⇒ In some applications, the presence of a lubricant cannot be tolerated. For these applications, it is recommended to utilize chains made of HP, PS or PSX acetal material with Nylatron corners, which offers the lowest coefficient of friction.

- > General Recommendations
- > General Types of Lubricants
- > Dry Film Lubricants
- > Selective Lubrication

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> Metal Unit Link  
Chains

> Carbon Steel

> Stainless Steel

> TableTop  
Chains with  
Roller Base  
Chains

> Carbon Steel Base  
Chains

> Stainless Steel Base  
Chains

> Cleaning

> Inspection



## LUBRICATION — OTHER CONSIDERATIONS

### ➤ Metal Unit Link Chains

#### ⇒ Carbon Steel

- ◆ Light lubricant and rust preventative is applied at the factory to prevent corrosion during shipping and storage
- ◆ Chains should be lubricated upon installation and re-lubricated when necessary
- ◆ Metal side-flexing chains should **ALWAYS** be lubricated in the corners

#### ⇒ Stainless Steel

- ◆ Stainless steel chains are supplied dry from the factory
- ◆ Stainless steel chains can be run dry; however, lubrication will greatly increase their wear life and help reduce noise
- ◆ Metal side-flexing chains should **ALWAYS** be lubricated in the corners

### ➤ TableTop Chains with Roller Base Chains

Platetops can be either plastic or metal with the following types of base chains.

#### ⇒ Carbon Steel Base Chains

- ◆ Base chains are supplied with lubricant and rust preventative
- ◆ Base chains do not need to be lubricated when installed
- ◆ Base chains must be re-lubricated when necessary
- ◆ The thrust surface of side-flexing metal platetop chains should **ALWAYS** be lubricated in the corners which will help reduce noise as well as lubricate the chain

#### ⇒ Stainless Steel Base Chains

- ◆ Stainless steel base chains are supplied dry from the factory (with the exception of PS 1873SSL-G, see Product Catalog [8rxCAT-en] for details)
- ◆ Stainless steel base chains can be run dry; however, lubrication will greatly increase their wear life and help reduce noise
- ◆ The thrust surface of side-flexing metal platetop chains should **ALWAYS** be lubricated in the corners which will help reduce noise as well as lubricate the chain

### ➤ Cleaning

In many applications, rapid buildup of grease, dirt, grit, sand, spilled syrup and beverage can occur. These result in:

1. Soiling and damage to the conveyed product
2. Increased work demands for the chain and motor
3. Accelerated sprocket tooth wear
4. Conveyor pulsation and wear
5. Excessive chain wear on the flight and in the joint areas
6. Rapid wear of the wear strips

Frequent cleaning of the chain and conveyor frame is advised. Such agents as steam, warm water and soap are commonly used. Many times combined “cleaner/lubricants” are applied continuously. Strong caustic agents used with metal chains should not be used with plastic chains. Always rinse cleaning agents completely off of chain and conveyor frame. When excessive amounts of syrup or other liquids, broken glass or debris accumulate, cleaning will be required on a regular basis to remove these undesirable materials. It is advisable to have operating personnel keep brushes and cleaning solutions nearby to remove broken glass and excessive spillage.



All cleaners and lubricants must be compatible with chain and conveyor materials. See page EM - TT - 17 or contact Rexnord.

### ➤ Inspection

In the course of conveyor operation, periodic inspection of the chain, sprockets and system is required to detect faults and make repairs before serious damage occurs. The important thing is to set up a regular inspection and maintenance schedule.

#### Checklist

1. Look for unusual wear patterns on the chain.
2. Check for excessive gap between flights due to jam-up or overload.
3. Pulsating, jerky chain operation indicates poor lubrication or a conveyor obstruction.
4. Check deadplate and turntable clearance.

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## LUBRICATION — OTHER CONSIDERATIONS

5. Examine sprockets for signs of excessive wear.
6. Examine sprockets for signs of dirt buildup in tooth pockets.
7. Check for sprocket guide ring wear and possible chain misalignment.
8. Check wearstrips for excessive wear.
9. Inspect lubrication system for proper operation.
10. Check the inside curves and the supporting conveyor frame for excess heat buildup which may indicate an obstruction in the curve or a high-friction area.
11. If return support rollers are used, check to ensure rollers are free-turning.

These suggestions on chain and conveyor care serve as a guide toward maintaining continuous, trouble-free operation. Implementation of a conscientious programmed maintenance schedule will lead to many productive hours of conveyor operation.

### ► Repair and Replacement

Any malfunctions found during an inspection usually stem from one or more of the following conditions:

1. Severe overloads, jam-ups or wedging of broken glass or crowns.
2. Severe back-flexing of chain on the return carrying ways.
3. Poor lubrication or no lubrication.
4. Interference and obstruction.
5. Worn sprockets.
6. Poor conveyor design.
7. Badly worn or damaged chain.

These causes should be corrected to avoid future problems.

Chain and sprockets should be replaced when:

1. The chain reaches 3% elongation.
2. The chain jumps the sprocket.
3. The flights have worn to about one-half of the original thickness.
4. The conveying surface becomes uneven through wear.
5. The thrust surface of side-flexing chains wears away and exposes the rivet or other metal parts which may cut into wearstrips or other conveyor components.
6. The sprocket teeth develop a hooked profile or the chain tends to "hang up" on the sprocket teeth.

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# ENVIRONMENTAL CONSIDERATIONS

## ➤ Abrasive Applications

- ⇒ Applications with the presence of dirt, sand, glass or metal particles can lead to premature wear of the conveying chain and wearstrips.
- ⇒ Recommendations:
  - ◆ Utilize wearstrips and chains with a hard wear surface
  - ◆ If possible, use controls to minimize the amount of accumulation
  - ◆ The use of WX chain material and metal sprockets can extend wear life

## ➤ Chemical Applications

- ⇒ Make sure any chemicals or cleaners used on conveyors are compatible with chain, wearstrip and sprockets. See table on page EM - TT - 17 for more detailed compatibility information.

## ➤ Dry Applications

- ⇒ Considerations to be taken when running dry:
  - ◆ Product backline pressure
  - ◆ Conveyor cleanliness
  - ◆ Conveyor pulsation
  - ◆ Increased component wear

## ➤ Extreme Temperature Applications

- ⇒ The recommended minimum and maximum operating temperatures for TableTop chain and wearstrips can vary due to the presence of moisture.

Wearstrip Material	Minimum Temperature		Maximum Temperature			
	Dry		Dry		Wet	
	°F	°C	°F	°C	°F	°C
Acetal	-40	-40	180	82	150	66
UHMWPE/ULF	-100	-73	180	82	160	71
Nylon	-40	-40	220	104	NR	NR
Stainless Steel	-100	-73	800	427	250	121
Steel	-40	-40	350	177	NR	NR
Lubricated Impregnated Wood	-50	-46	160	71	160	71

## ➤ Metal Detector Applications

- ⇒ Plastic chains passing through metal detectors can be supplied with plastic pins on a Made-To-Order (MTO) basis (requires 60% derate).

## ➤ High-Speed Applications


- ⇒ In any high-speed application, the critical aspect of the conveyor is the corners. The concern with running the chain at high

speeds is the PV (Pressure-Velocity) in the corners. If the PV limits are exceeded, the chain or corner track may become damaged due to the heat generated from the high speed and/or load. It is generally recommended to utilize Nylatron corner tracks in conjunction with PS or HP materials or selective lubrication for these applications. PSX chain with ULF corner tracks will provide the best PV capability and least energy consumption.


## ➤ Long-Length Conveyors/Pulsation Applications

- ⇒ Pulsation or “slip stick” of chain results in a jerking chain motion which can occur in long, slow-speed and dry conveyors. Pulsation can create product stability problems in extreme cases. It can also result in premature chain elongation or the chain jumping drive sprocket teeth. As a general rule of thumb, it is recommended that conveyor lengths do not exceed 100 ft (30m) per drive, regardless of loading. Rexnord also recommends a 150° minimum wrap on the head sprocket. If necessary, this can be maintained with the use of a snubber roller.

## ➤ Static Environment Applications

- ⇒ Under certain conditions, thermoplastic can acquire a static nuisance charge. Static environments are classified as:
  -  **Class I:** Static spark causes explosion — stainless steel chains are required.
  - Class II:** Static spark is a nuisance charge — low charge will provide slight shock or possible circuit damage.

- ⇒ All applications utilizing thermoplastic anti-static materials (i.e. AS, ESD) must be approved by Rexnord Application Engineering prior to quoting.

-  Grounding is crucial for the system to reduce static charges.

## ➤ UV Applications

- ⇒ When conveyor chains are exposed to direct UV (Ultraviolet) or sunlight, DUV stabilized material should be utilized.

# TableTop Environmental Considerations

- > Abrasive Applications
- > Chemical Applications
- > Dry Applications
- > Extreme Temperature Applications
- > Metal Detector Applications
- > High-Speed Applications
- > Long-Length Conveyors/Pulsation Applications
- > Static Environment Applications
- > UV Applications

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TableTop Chains



# MATERIAL CHARACTERISTIC TABLE

> TableTop  
Chain Material  
Characteristic Table

Material Characteristics	Metal			Thermoplastic														
	S	SS	SSB	HP WHP	LF WLF	D WD	BWR	AS HCAS	ESD	HS	P	CR	MR	DUV	FR	PS PSX	WX BWX	
Impact-Resistant	•	•	•				•					•	•				•	
Wear-Resistant	•	•	•	•	•		•										•	•
Chemical-Resistant*		•	•									•	•					
High-Strength	•	•	•	•	•	•	•			•	•	•	•	•		•	•	
Low Frictional Characteristics				•	•	•											•	
Capability to Run Dry in Corners				•	•		•						•				•	•
Suitability in Wet Environments		•	•	•	•	•				•	•	•		•	•	•		
Low-Temperature Capability (to 40°F)	•	•	•	•	•	•	•			•			•	•		•	•	
High-Temperature Capabilities (to +180°F)	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•	
Ultra Violet Capabilities	•	•	•				•					•	•				•	
Suitability for Class II (nuisance static)	•	•	•					•	•									
Suitability for Class I (explosive static)		•	•															
Non-magnetic Qualities		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
Flame Retardance	•	•	•									•			•			
Capability to Convey Hot Products (to +375°F)	•	•	•										•				•	
FDA Approval		•	•	•	•	•					•	•				•		

- S = Carbon Steel
- SS = Stainless Steel
- SSB = Low Magnetic Stainless Steel
- HP = High Performance
- WHP = White High Performance
- LF = Low-Friction
- WLF = White Low-Friction
- D = Acetal
- WD = White Acetal
- BWR = Black Wear-Resistant
- AS = Anti-Static
- HCAS = Anti-Static High Capacity
- ESD = Electrostatic Dissipative
- HS = Heat-Stabilized
- P = Chemical-Resistant
- CR = Extreme Chemical-Resistant
- MR = Melt-Resistant
- DUV = Ultraviolet-Resistant
- FR = Flame-Retardant
- PS = Platinum Series
- PSX = Platinum Series X
- WX = Abrasion-Resistant
- BWX = Black Abrasion-Resistant

\*See Corrosion Resistance Guide on Page EM - TT - 17 for more details.

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# CORROSION RESISTANCE GUIDE

Common or Chemical Name	Carbon Steel	Austenitic	Acetal	Nylon and Nylatron	Polyester	Chemically Resistant Fluorinated Polymer	Polypropylene	Polyethylene	Neoprene	EPDM
	S	SS, SSB	AS, HCAS, DUV, HP, LF, PS, PSX, WD, WHP, WLF	BWR, HS, MR, WX, BWV	P, FR	CR	ESD	UHMWPE		
Acetic Acid (over 5%-up to 50%)	U	M	U	M	S	S	S	S	M	S
Acetone	U	S	S	S	S	U	S	S	M	S
Alcohol	S	S	S	S	S	S	S	S	S	S
Ammonia	M	S	U	S	S	S	S	S	S	S
Beer	S	S	S	S	S	S	S	S	S	S
Beverages-Soft Drinks	S	S	S	S	S	S	S	S	S	S
Benzene	S	S	S	S	S	S	M	M	M	U
Brine (pickle)	U	M	M	M	S	S	S	S	S	S
Carbon Tetrachloride	M	M	S	S	S	U	M	M	U	U
Chlorine	U	U	U	U	S	S	S	S	U	M
Citric Acid	U	S	M	M	S	S	S	S	S	S
Cyclohexane	-	-	S	-	-	S	U	U	S	S
Ethyl Chloride	-	S	S	S	S	S	M	M	M	M
Formaldehyde	S	S	S	S	S	M	S	S	S	S
Formic Acid	U	U	U	U	S	S	S	S	M	M
Fruit Juices	U	S	S	S	S	S	S	S	S	S
Gasoline	S	S	S	S	S	S	M	M	S	U
Hexane	-	S	S	-	S	S	S	U	S	U
Hydrochloric Acid (up to 2%)	U	U	U	U	S	S	S	S	M	S
Hydrochloric Acid (up to 37%)	U	U	U	U	S	S	M	S	U	M
Hydrogen Peroxide	U	S	U	U	S	S	M	S	M	S
Iodine	U	U	U	U	U	M	M	M	U	U
Isopropanol (isopropyl alcohol)	S	S	S	S	S	S	S	S	S	S
Lactic Acid	U	S	S	M	S	M	S	S	S	S
Methylene Chloride	-	S	S	-	U	M	S	U	U	U
Milk	S	S	S	S	S	S	S	S	S	S
Muriatic Acid	U	U	U	U	S	S	M	S	U	M
Nitric Acid (low concentrations)	U	S	U	U	S	S	S	S	M	S
Oil (vegetable or mineral)	S	S	S	S	S	M	S	S	S	U
Ozonated Water	S	S	M	U	S	S	M	S	U	S
Paraffin	S	S	S	S	S	S	S	S	S	U
Phosphoric Acid (up to 10%)	U	S	U	U	S	S	S	S	S	S
Soap and Water	M	S	S	S	S	S	S	S	S	S
Sodium Chloride	U	M	S	S	S	S	S	S	S	S
Sodium Hydroxide (up to 25%)	U	S	S	U	U	M	S	S	S	S
Sodium Hypochlorite (Bleach)	U	U	U	U	S	S	S	S	U	S
Stearic Acid	U	S	M	S	S	S	S	S	S	M
Sulfuric Acid (up to 40%)	U	U	U	U	S	S	S	S	M	S
Toluene (Toluol)	S	S	M	S	S	M	S	U	U	U
Turpentine	-	S	S	S	S	S	S	U	S	U
Vegetable Juices	M	S	S	S	S	S	S	S	U	S
Vinegar	U	S	S	S	S	M	S	S	S	S
Water (fresh)	U	S	S	S	S	S	S	S	S	S
Whiskey	S	S	S	S	S	S	S	S	S	S
Wine	S	S	S	S	S	S	S	S	S	S
Xylene	S	S	S	S	S	S	U	M	U	U

Dash = Not Tested

M = Marginal

U = Unsatisfactory

S = Satisfactory



### General Rules of Thumb:

With acetal products, do not use cleaning or lubricating agents with a pH below 4 or above 10. This table is based on data available by various material suppliers.

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# CONVEYOR DESIGN RECOMMENDATIONS

## ➤ Straight-Running Configuration

⇒ A long conveyor with a single drive is the simplest and most ideal design. Sometimes several short conveyors are required due to application constraints.

## ➤ Side-Flexing Configuration

⇒ Because a straight conveyor is not always possible due to flow processes or obstructions in the plant, the designer can incorporate a side-flexing conveyor, which traverses one or more curve.

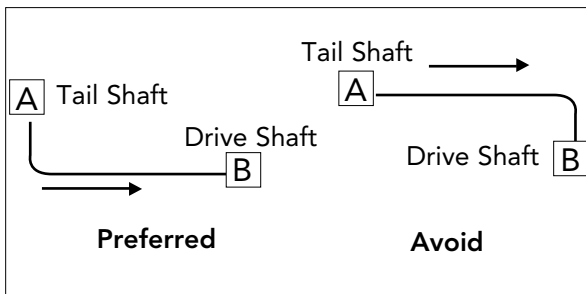
- ⇒ When planning a side-flexing conveyor layout, the designer must consider the following factors that affect chain life:
  - ◆ Minimize the number of corners and the angle of each corner whenever possible
  - ◆ Selective lubrication in the corners must be used with metal side-flexing chains and certain thermoplastic chains, which will prevent excessive noise and premature wear to the chain or corner
  - ◆ When conveying from Point A to Point B, design the conveyor so that the drive is positioned furthest from the last corner (see drawing), resulting in lower chain tension and maximizing chain life

- ◆ Reduces the cost of controls and maintenance by only requiring one drive motor

**i** Make sure that the entire chain path (carry, return, sprocket and catenary sag areas) has plenty of clearance for free chain travel. Make sure all frame and support members, piping, conduits and mounting hardware are well clear of chain path.

⇒ Consideration should be given to the design of the curves within a conveyor such that if the chain has little to no "allowable twist", the curve should be designed to **NOT** change elevation while simultaneously side-flexing through the curve. Doing so on chains that do not twist will bind the chain and lead to chain failure. See table below for allowable twist of various chains.

Allowable TableTop Chain Twist	
Chain	Allowable Twist
880 Tab and Bevel	90° in 7'6" of length
879 Tab and Bevel	90° in 7'6" of length
882 Tab and Bevel	90° in 9' of length
1873	360° in 7' of length
3873T-K12	90° in 10' of length
881	90° in 7' of length
815	90° in 9' of length



**i** In general, the straight section between the corner and the drive shaft must be at least 18 in (457mm) to allow adequate room for the catenary (see page EM - TT - 32). The tail shaft section should be at least 12 in (305mm).

- ⇒ When conveying products 90°, a single side-flexing conveyor offers the following advantages over two separate straight conveyors that have transfer plates between them:
  - ◆ Eliminates deadplate transfers or turntables, preventing the product from slipping or stalling
  - ◆ Minimizes tipping and jamming
  - ◆ Decreases noise

- > Straight-Running Configuration
- > Side-Flexing Configuration

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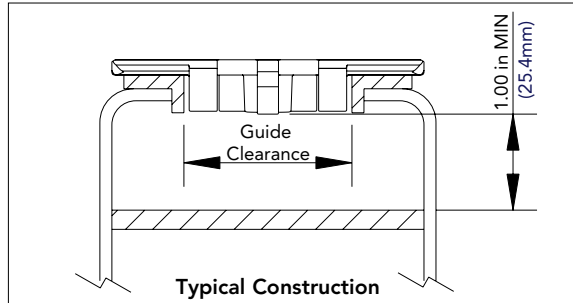


# CONVEYOR DESIGN RECOMMENDATIONS

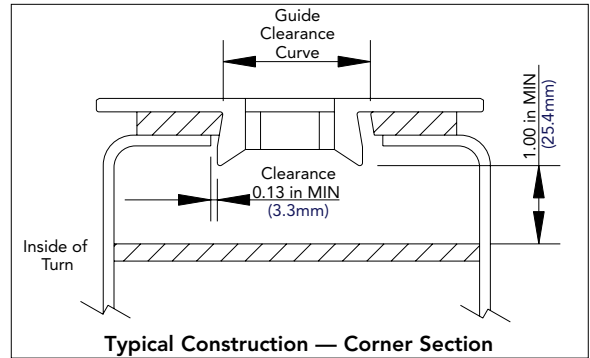
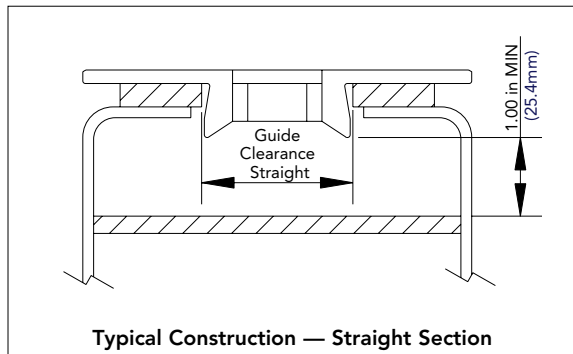
## ➤ Carry Ways

⇒ Guide clearance is critical for both straight and side-flexing chains. For guide clearance dimensions of individual chains, see tables on page EM - TT - 24 or Product Catalog.

### ➤ Straight-Running

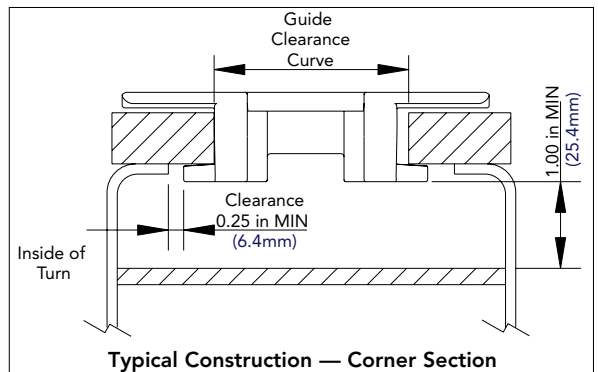
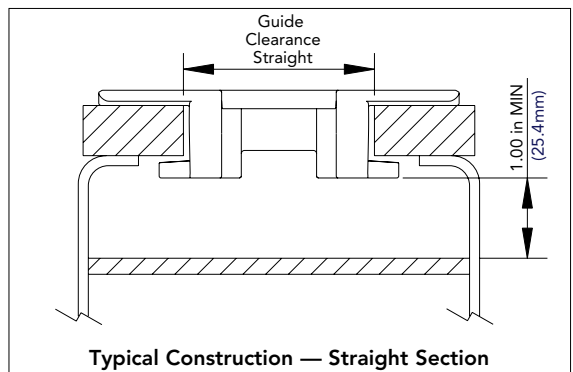


### ⇒ Side-Flexing — Bevel Design



⇒ Chain can be lifted out of straight sections only for cleaning or inspection

### ⇒ Side-Flexing — TAB Design



⇒ Positive retention

⇒ TABs hold chain down in incline or decline applications

⇒ Chain top surface wear is decreased if TAB return is utilized

⇒ Once assembled, TAB chain cannot be lifted out of the conveyor track

- > Carry Ways
- > Straight-Running
- > Side-Flexing — Bevel Design
- > Side-Flexing — TAB Design

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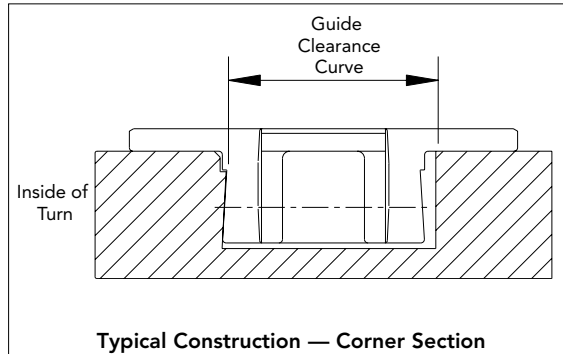
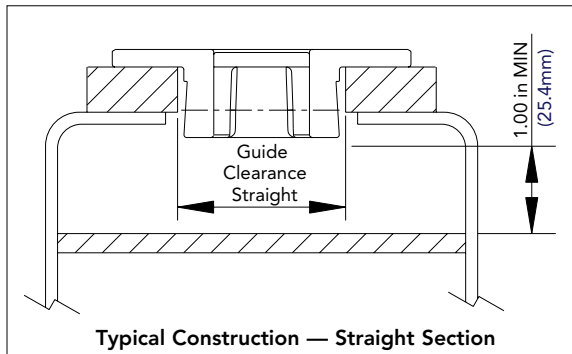
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# CONVEYOR DESIGN RECOMMENDATIONS

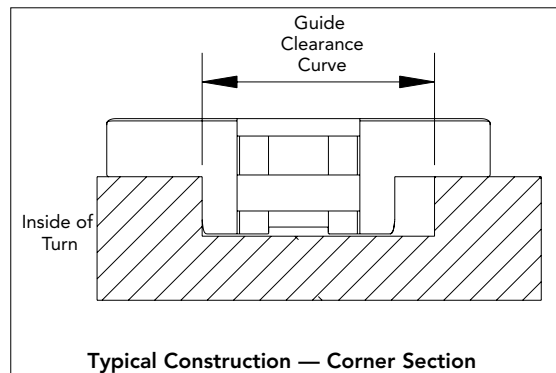
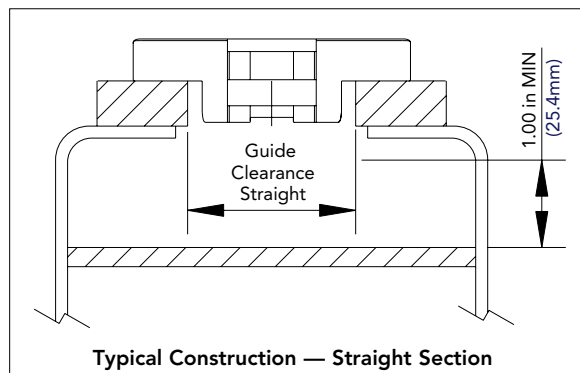
## ➤ Carry Ways

### ➤ Side-Flexing — LPC (Low Pin Centerline) Design



- ⇒ Chain can be lifted out of straight and corner sections for cleaning or inspection
- ⇒ Must utilize corners

### ➤ Side-Flexing — Magnetflex Design



- ⇒ Chain can be lifted out of straight and corner sections for cleaning or inspection
- ⇒ Must utilize corners

- > Carry Ways
- > Side-Flexing — LPC® (Low Pin Centerline) Design
- > Side-Flexing — Magnetflex® Design

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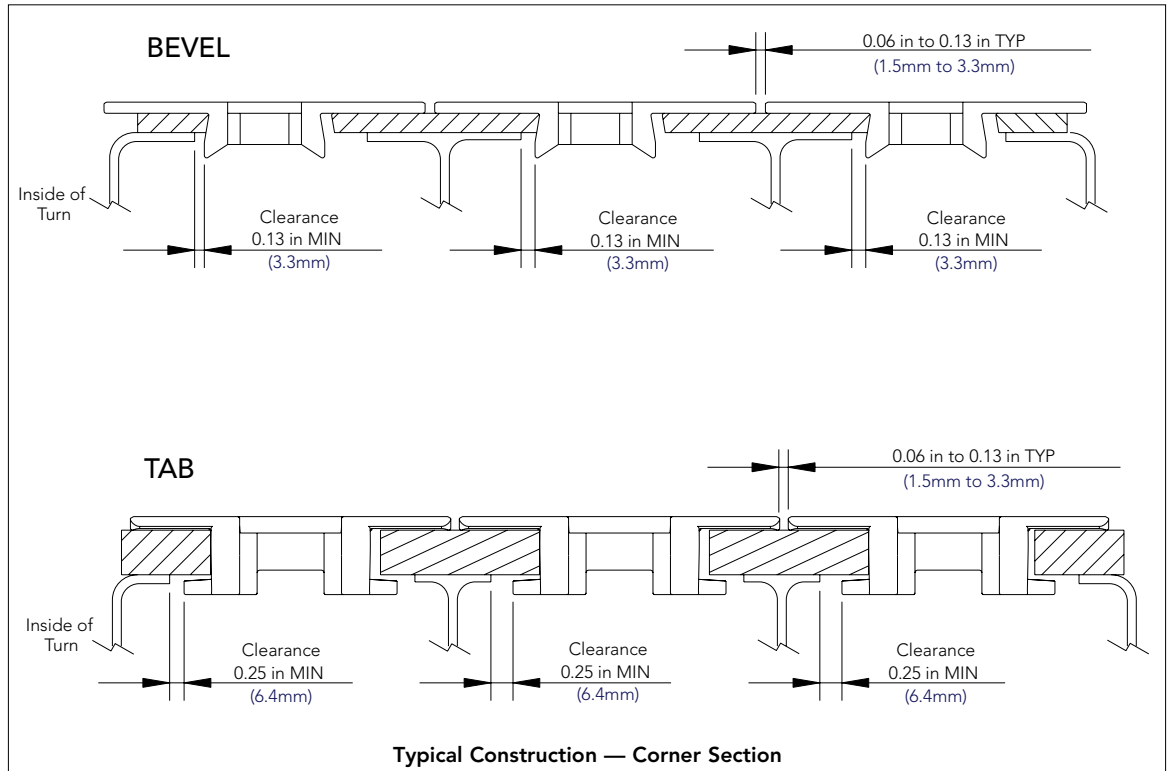
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## ➤ Carry Ways

### ➤ Multiple Strands (Corner Section Shown)

- > Carry Ways
- > Multiple Strands (Corner Section Shown)



- ⇒ For minimum side-flex radii of individual chains, see table on page EM - TT - 23
- ⇒ Adjacent strands should share a common wearstrip
- ⇒ Key all sprockets on the head shaft
- ⇒ Key only one sprocket on the tail shaft, preferably the center strand
- ⇒ Magnetflex and LPC chains follow the same guidelines as TAB chains

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# CONVEYOR DESIGN RECOMMENDATIONS

> Side-Flex  
Radius Table

Chain Style	Chain Width		Minimum Side-Flex Radius	
	in	mm	in	mm
60	3.25	82.6	19.69	500.0
66	3.25	82.6	19.69	500.0
LPC279	3.25, 4.50, 7.50	82.6, 114.3, 190.5	18.00	457.2
770 TAB	3.25	82.6	11.00	279.4
879, 879 TAB, 880, 880 TAB	3.25	82.6	18.00	457.2
	4.50	114.3	24.00	609.6
880 TAB BO	3.25, 4.50	82.6, 114.3	7.87	200.0
881, 881 TAB	3.25	82.6	18.00	457.2
	4.50, 7.50	114.3, 190.5	24.00	609.6
881 TAB G	3.63	92.1	18.00	457.2
882	4.50, 7.50, 10.00	114.3, 190.5, 254.0	24.00	609.6
882 TAB	3.25, 4.50, 6.00, 7.50, 10.00, 12.00	82.6, 114.3, 152.4, 190.5, 254.0, 304.8	24.00	609.6
882 TAB LBP	3.75	95.3	26.25	666.8
	7.50	190.5	24.00	609.6
882 TAB G	3.75	95.3	24.00	609.6
883 TAB LBP	4.50, 7.50	114.3, 190.5	24.00	609.6
1050 Magnetflex, 1050 TAB	3.31	84.0	19.69	500.0
LPC1050	3.25	82.6	18.00	457.2
	3.31	84.0	19.69	500.0
	4.50, 7.50	114.3, 190.5	24.00	609.6
1055 Magnetflex	3.31, 4.50	84.0, 114.3	19.69	500.0
1055 TAB	3.31	84.0	19.69	500.0
LPC1055	3.25	82.6	18.00	457.2
	3.31	84.0	19.69	500.0
	4.50, 7.50	114.3, 190.5	24.00	609.6
1673	6	152.4	16.00	406.4
1843 TAB	1.25, 2.00	31.8, 50.8	10.00	254.0
1843 TAB G	1.50	38.1	10.00	254.0
1863 TAB	2.25	57.2	14.00	355.6
1873 TAB	2.25, 3.25, 4.50	57.2, 82.6, 114.3	14.00	355.6
	6.00, 7.50, 10.00	152.4, 190.5, 254.0	18.00	457.2
	12.00	304.8	24.00	609.6
1873 TAB G	3.75	95.3	15.00	381.0
1874 TAB	2.25, 3.25, 4.50	57.2, 82.6, 114.3	15.00	381.0
	6.00	152.4	18.00	457.2
	7.50	190.5	24.00	609.6
1874 TAB G	3.63	92.1	15.00	381.0
1883 TAB	2.50, 3.25	63.5, 82.6	28.00	711.2
3873 TAB	10.00	254.0	18.00	457.2
	12.00	304.8	24.00	609.6
4873 TAB	3.25	82.6	14.00	355.6
4874 TAB	3.25	82.6	15.00	381.0
	6.00	152.4	18.00	457.2
	7.50	190.5	24.00	609.6

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## TableTop Chain Track Details

### Straight-Running

Chain Style		60 66 812 815 820 831	821	1864	866	843	863 963	863T
Guide Clearance	in	1.75	5.50	1.38	1.63	0.94	1.44	1.31
	mm	44.5	139.7	35.1	41.3	23.9	36.5	33.3

### Side-Flexing

Chain Style		879 880 881	770T 879T 880T 880BO 881T	882	882T 883T	279	1843	1863 1874 4874 1873 4873 3873	1883	1673		60 66	1050 1055		
Hold Down Style		Bevel	TAB	Bevel	TAB	LPC	TAB	TAB	TAB	Single Bearing	Double Bearing	Magnetflex	Magnetflex	TAB	LPC
Guide Clearance Straight	in	1.75	1.81	2.44	2.38	1.75	0.88	1.31	1.66	2.25	3.13	1.73	1.73	1.81	1.75
	mm	44.5	46.0	62.0	60.5	44.5	22.3	33.3	42.2	57.2	79.4	44.0	44.0	46.0	44.5
Guide Clearance Corner	in	1.63	1.75	2.28	2.28	1.75	0.84	1.38	1.72	2.25	3.13	1.73	1.73	1.75	1.75
	mm	41.1	44.5	57.9	57.9	44.5	21.3	34.9	43.7	57.2	79.4	44.0	44.0	44.5	44.5
Corner Wearstrip Thickness	in	0.38	0.38	0.63	0.63	0.61	0.38	0.75	0.90	1.25	1.25	0.53	0.51	0.38	0.61
	mm	9.7	9.7	15.9	15.9	15.5	9.7	19.1	22.0	31.8	31.8	13.5	13.0	9.7	15.5

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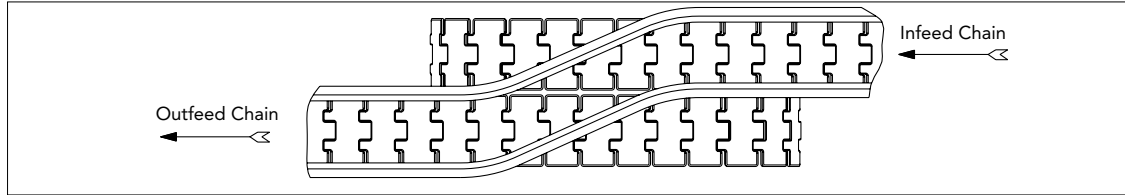


# CONVEYOR DESIGN RECOMMENDATIONS

## Transfers

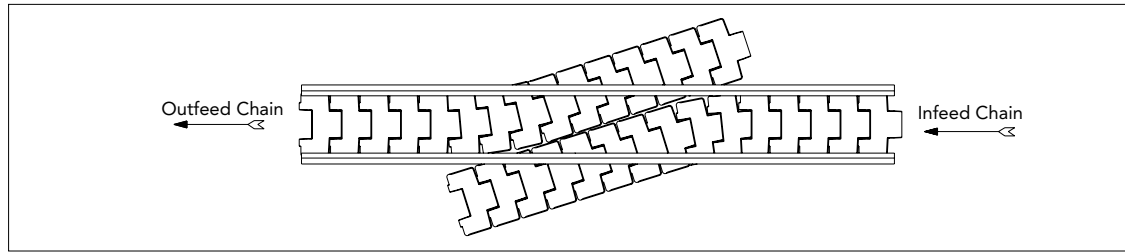
⇒ Smooth transfer of the conveyed product from one chain to another is essential.  
The various methods are described below:

### Side Transfer



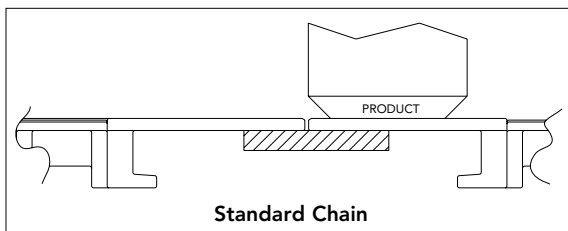
- ✓ ⇒ Adjacent strands of chain should share a common wearstrip
- ⇒ No stranded products

### Inline Transfer

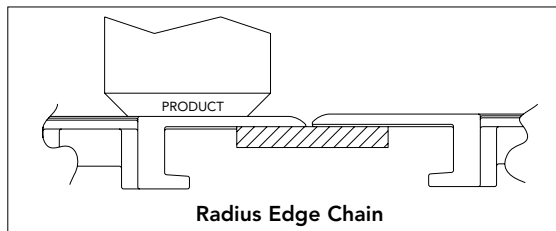


- ✓ ⇒ Adjacent strands of chain should share a common wearstrip
- ⇒ Allows product to remain in straight line
- ⇒ No stranded products

### Radius Edge Chain



Standard Chain



Radius Edge Chain

- ⇒ An option to increase product stability at side transfers for certain products
- ⇒ "R" designates chains with radius edge

- > Transfers
- > Side Transfer
- > Inline Transfer
- > Radius Edge Chain

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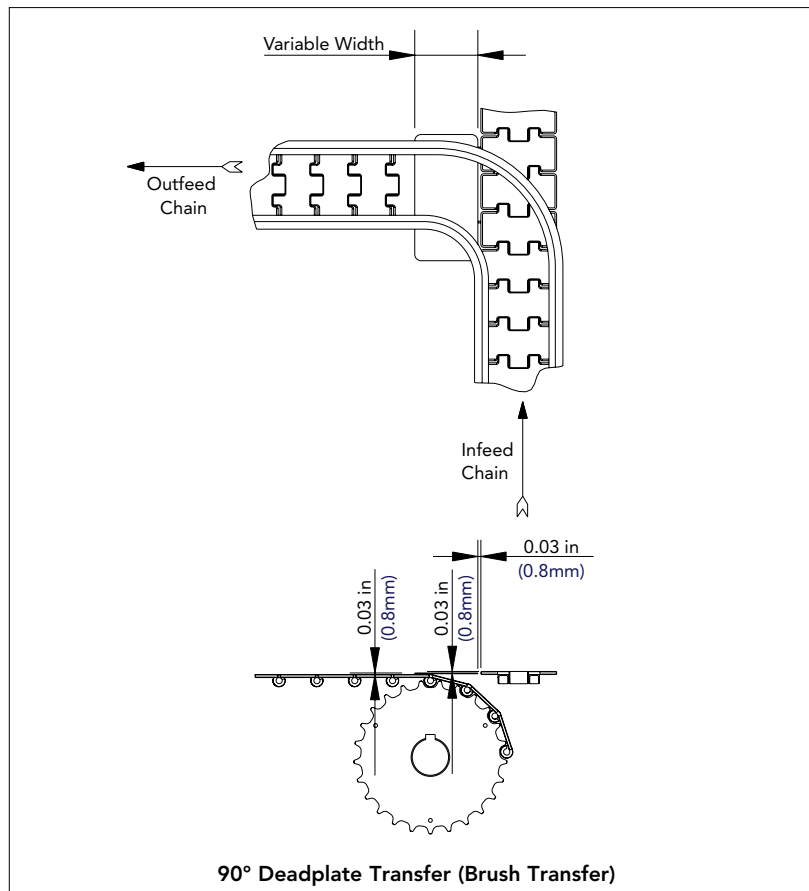
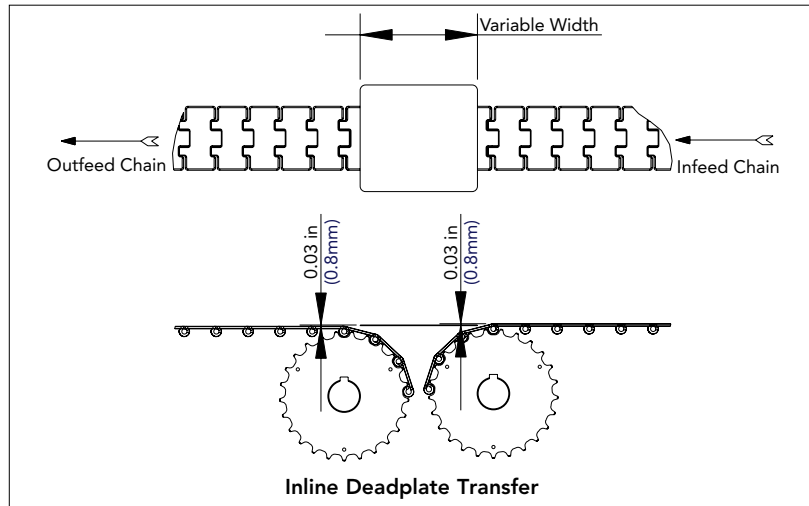
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## Transfers

### Deadplate Transfers



- ✓ ⇒ For deadplate transfers, products should step down to the adjacent chain or deadplate surface (typically a 0.03 in (0.8mm) step is recommended)
- ⇒ Deadplates to be mounted slightly higher than the top surface of the outfeed chain
- ⇒ Deadplates should be as short as possible
- ⇒ Deadplate transfers result in stranded product

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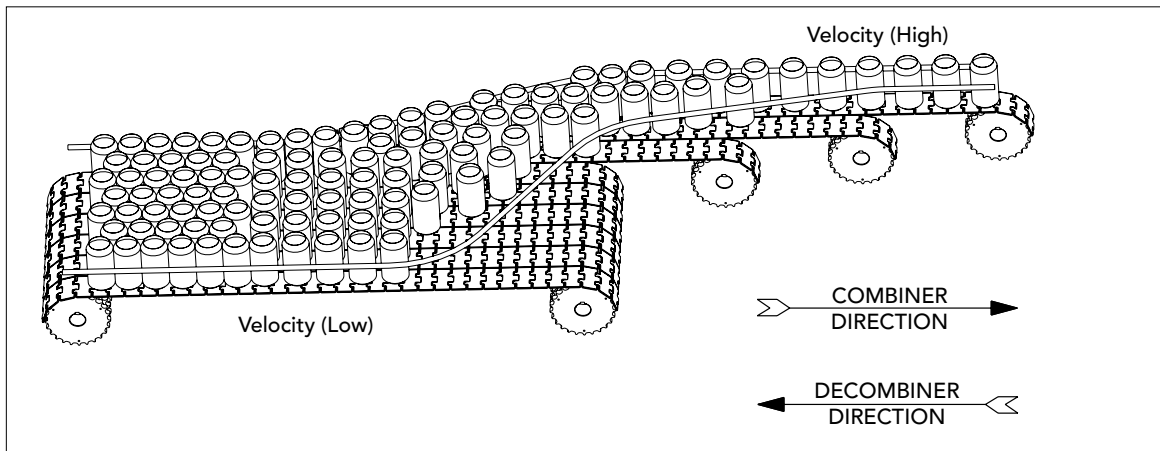
# CONVEYOR DESIGN RECOMMENDATIONS

## Transfers

### Combiners / Decominers

- ⇒ Combiners take products from en masse (in mass) to single file
- ⇒ Decominers take products from single file to en masse (in mass)

- > Transfers
- > Combiners / Decominers



**i** For conveyors using multiple strands of chain, key all sprockets on the head shaft and key only one sprocket on the tail shaft, preferably the center strand.



If space permits, use enough lanes to keep speed differentials between adjacent strands to about 50–75 FPM (15–23MPM), depending on product.



When several chains run side by side, such as on multiple width conveyors and combiners or decominers, make sure the return chains do not interfere with each other.

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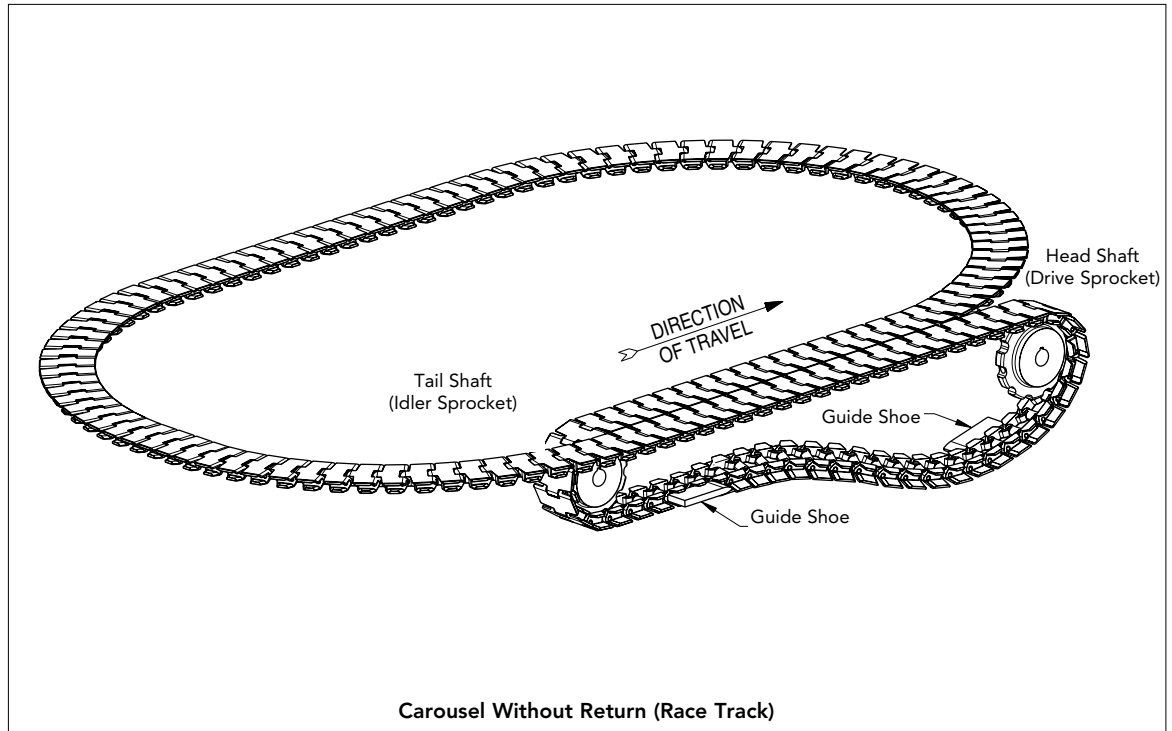
## CONVEYOR DESIGN RECOMMENDATIONS

### ▶ Alternate Drive Configurations

#### ▶ Offset Wrap Drive

- ⇒ Must utilize side-flexing chains
- ⇒ There is less chain required in the conveyor because full return is not required

- > Alternate Drive Configurations
- > Offset Wrap Drive



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# CONVEYOR DESIGN RECOMMENDATIONS

## Return Ways

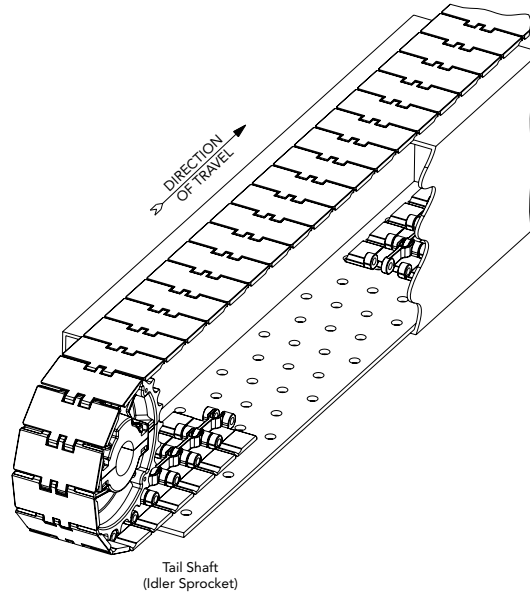
⇒ TableTop chains can be supported in a variety of ways.

### Full Width Sliding Return Bed

- ⇒ Continuous sheets extend the full width of the chain and almost the entire length between the tail and drive sprockets
- ⇒ Plates or sheets should be perforated with slots or holes to allow for drainage and the passage of foreign materials



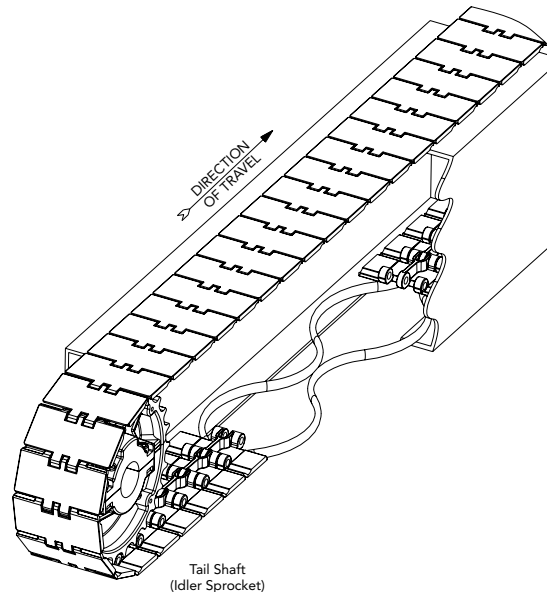
Solid beds should be avoided to eliminate debris buildup and suction effect.



- > Return Ways
- > Full Width Sliding Return Bed
- > Serpentine Style Return

### Serpentine Style Return

- ⇒ The chain is fully supported
- ⇒ Allows for drainage and the passage of foreign materials



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When returning chain with molded inserts (HPM), caution should be taken to ensure that the inserts do not interfere with the return elements.

Possible solutions:

- ◆ Return the chain on its TABs
- ◆ Return the chain on the outer edge of the links via rollers or wearstrips

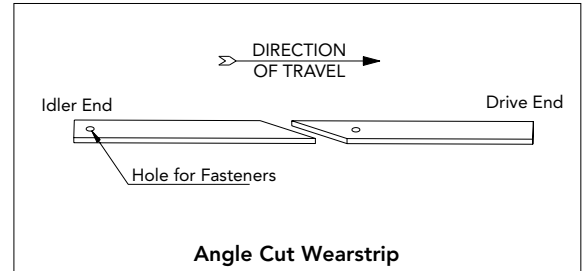
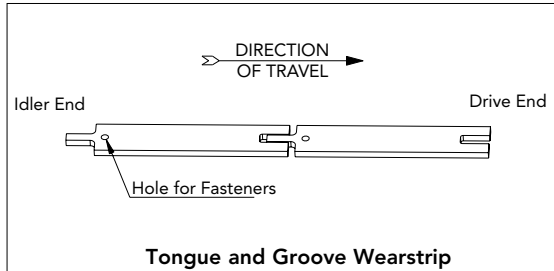


# CONVEYOR DESIGN RECOMMENDATIONS

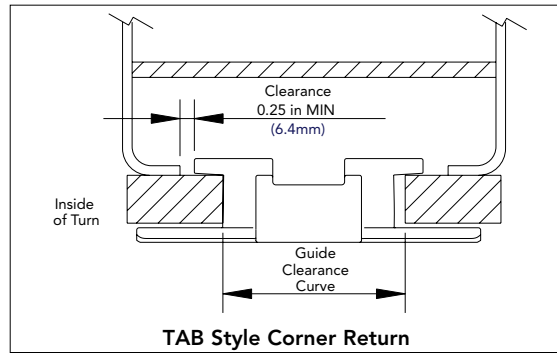
## Return Ways

### Wearstrip Considerations

⇒ Wearstrips will contract and expand due to environmental conditions. Suggested methods to accommodate this are shown below:



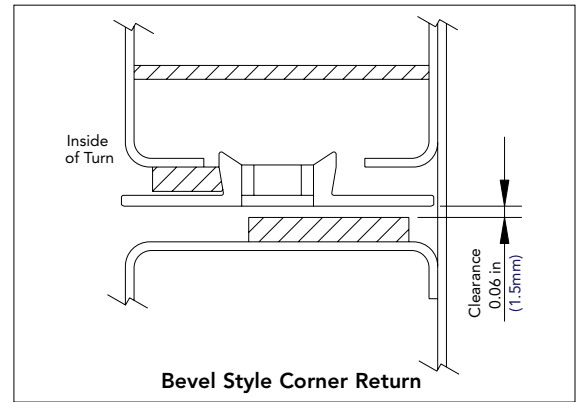
### TAB Style Corner Return



⇒ Allows for reduced top surface wear.

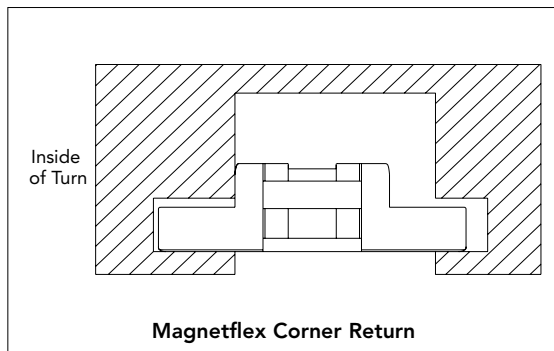
✓ See Product Catalog for available corners

### Bevel Style Corner Return



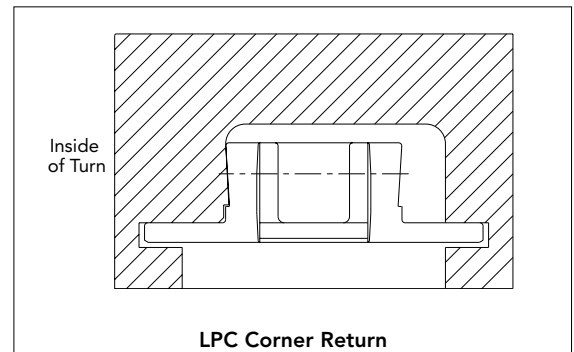
✓ See Product Catalog for available corners

### Magnetflex Corner Return



✓ See Product Catalog for available corners

### LPC Corner Return



✓ See Product Catalog for available corners

### General Recommendations

⇒ Allow for thermal expansion of wearstrips

⇒ All wearstrip surfaces that contact the chain should be in line and smooth (i.e. utilize counter sunk hold down screws, remove burrs)

Contact Rexnord Application Engineering for more information 1.262.376.4800

- > Return Ways
- > Wearstrip Considerations
- > TAB Style Corner Return
- > Magnetflex Corner Return
- > Bevel Style Corner Return
- > LPC Corner Return
- > General Recommendations

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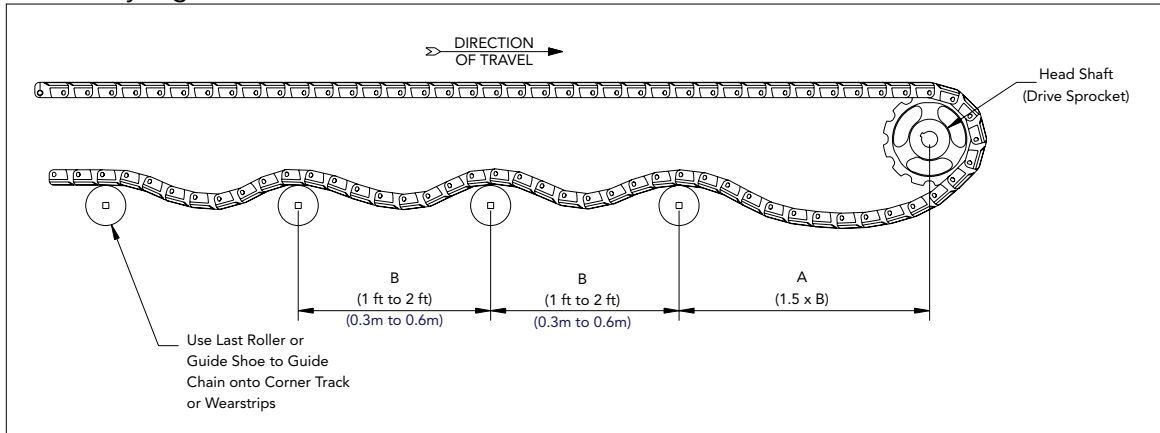


# CONVEYOR DESIGN RECOMMENDATIONS

## Return Ways

### Roller Return

⇒ The first roller should be located far enough away from the head sprocket to allow for proper catenary sag



⇒ Dimension "A" should be 1.5 to 2 times greater than Dimension "B"

⇒ Rollers are recommended to be at least two times greater than the minimum back-flex radius of the chain

**Example:** When using 820 chain series, the minimum back-flex radius is 1.50 in (38.1mm); therefore, the minimum roller diameter should be 3.00 in (76.2mm).



⇒ Ensure rollers **ALWAYS** spin freely

⇒ If rollers do not turn freely, uneven wear patterns or scalloping on the top carry surface of the chain can occur

⇒ See table below for minimum back-flex radii for specific chains



⇒ Roller returns are not recommended for roller base chain designs

Back-Flex Radius Table		
Chain Style	Min. Back-Flex Radius	
	in	mm
279	2.75	69.9
770TAB	1.50	38.1
812, 812 TAB	3.15	80.0
815, 815 TAB	6.50	165.1
820, 821, 831	1.50	38.1
821 LBP	16.00	406.4
843	6.00	152.4
845	18.00	457.2
863 TAB	12.00	304.8
879, 879 TAB, 880, 880 TAB, 880 TAB BO, 881, 881 TAB, 882, 882 TAB	1.50	38.1
882 TAB LBP	9.00	228.6
883 TAB LBP	2.00	50.8
963	6.00	152.4
1050, 1055, 1060 (TAB, LPC and Magnetflex)	5.12	130.0
1843 TAB	4.00	101.6
1844, 1863 TAB	6.00	152.4
1864 TAB, 1873 TAB	12.00	304.8
1874 TAB	10.00	254.0
1883 TAB	4.50	114.3
3873 TAB	7.00	177.8
4873 TAB, 4874 TAB	12.00	304.8
60, 66	3.94	100.0
1673	11.00	279.0

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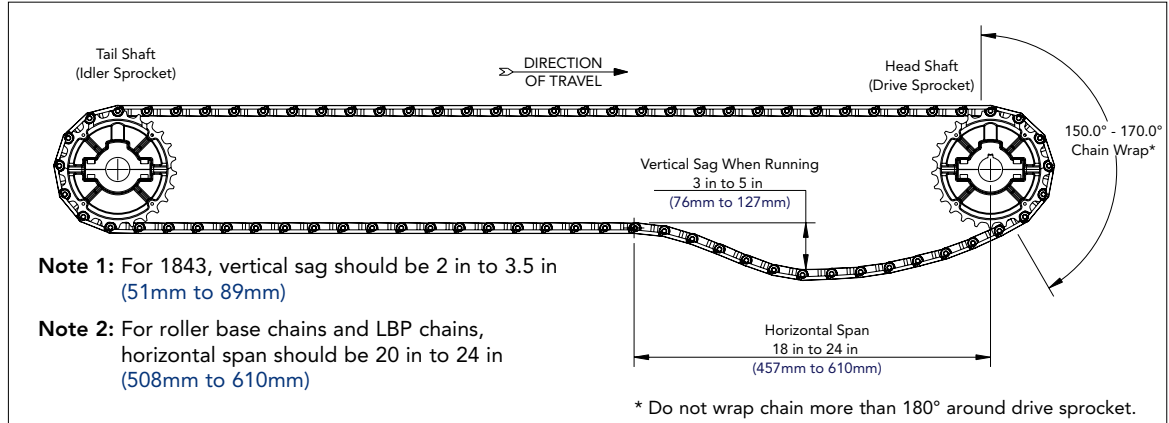


# CONVEYOR DESIGN RECOMMENDATIONS

## ▷ Catenary Sag

- ⇒ The function of the catenary is to allow a place for excess chain to accumulate
- ⇒ TableTop chains should never be run tight
- ⇒ The catenary sag should be measured when running

- ⇒ If catenary sag is excessive or increases due to wear, it should be adjusted by removing links to obtain the proper sag
- ⇒ Take-ups are typically not recommended
- ⇒ The catenary sag should be located as close to the drive as possible



The catenary sag area must be free of all obstructions, such as frame cross-members, supports, drive components, that can damage chain or inhibit proper catenary sag.



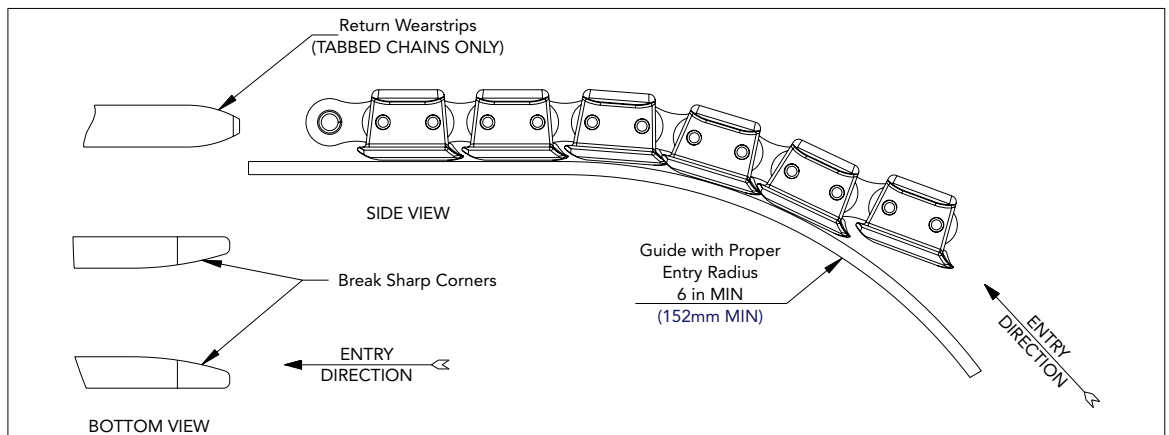
It is recommended to keep the sprockets and chain clean of debris and foreign matter. If this is not done, the chain can stick to (not release freely from) the drive sprockets causing the catenary to bounce leading to possible chain damage or breakage. In cases of extreme environments, a hold down roller can be positioned above the catenary near the drive sprocket(s) to keep the chain from overwrapping the drive sprocket(s).

## ▷ Entry Radius for Sliding Returns



- ⇒ Provide a generous entry radius to the return section which permits the chain to feed smoothly into the return ways
- ⇒ The entry radius should be greater than the minimum back-flex radius of the chain (see table on page EM - TT - 31)
- ⇒ Rexnord recommends a 6 in (152mm) minimum entry radius to prevent non-uniform wear

- ⇒ When returning a chain on its TABS, guide the chain onto the return wearstrips using a guide shoe (see tables on page EM - TT - 24 for proper guide clearance)
- ⇒ At the entry of the return wearstrips, provide rounded corners to prevent catching or snagging of the chain flights



Entry Radius for Sliding Returns

Contact Rexnord Application Engineering for more information 1.262.376.4800

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# CONVEYOR DESIGN RECOMMENDATIONS

## Sprocket and Wearstrip Location

- ⇒ The distance from the end of the wearstrip to the sprocket shaft centerline should equal dimension "C" (one chain flight or pitch); otherwise, the wearstrip will interfere with the free articulation of the chain as it enters the sprocket
- ⇒ The leading edges of the wearstrip should be beveled
- ⇒ The following formulas and dimensions used in conjunction with the figure will give the proper shaft and wearstrip positioning

## Sprocket Location for Conventional Chains

$$A = (\text{Pitch Diameter}/2) + E$$

C = One Chain Pitch (which ensures support under chain at all times)

E = Centerline of Pin to Bottom of Chain Flight (top of wearstrip)

⇒ See table below for C and E dimensions

**Example:** For an 820 chain utilizing a 25T sprocket:

**English:**

$$A = (\text{Pitch Diameter}/2) + E = (6.032 \text{ in}/2) + 0.125 \text{ in} = 3.141 \text{ in}$$

$$C = 1.50 \text{ in}$$

**Metric:**

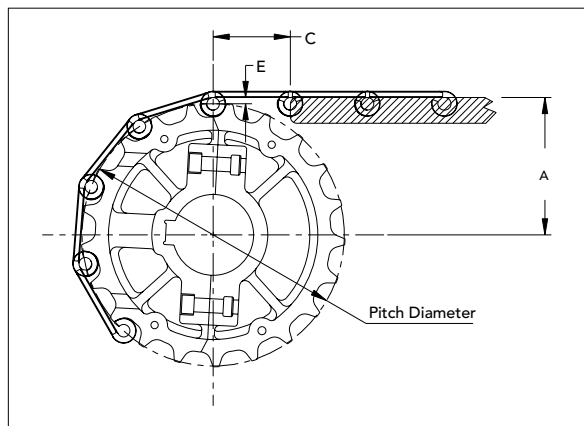
$$A = (\text{Pitch Diameter}/2) + E = (153.21\text{mm}/2) + 3.18\text{mm} = 79.78\text{mm}$$

$$C = 38.1\text{mm}$$

✓ Tolerances

$$A = +.03 \text{ in} / -.00 \text{ in} (+.8\text{mm} / -.0\text{mm})$$

$$C = +.25 \text{ in} / -.00 \text{ in} (+6.3\text{mm} / -.0\text{mm})$$



**i** Dimensions apply to both head and tail shafts.

Chain Series	Shaft Drop Values			
	"C" Dimension		"E" Dimension	
	in	mm	in	mm
60	1.50	38.1	0.125	3.18
66	1.50	38.1	0.125	3.18
1673	1.50	38.1	0.650	16.51
LPC279	1.50	38.1	0.470	11.94
770	1.00	25.4	0.141	3.58
812	1.50	38.1	0.125	3.18
815	1.50	38.1	0.125	3.18
820	1.50	38.1	0.125	3.18
821	1.50	38.1	0.125	3.18
LBP821	1.50	38.1	0.125	3.18
831	1.50	38.1	0.094	2.39
843	1.00	25.4	0.234	5.94
845	1.00	25.4	0.234	5.94
863	1.50	38.1	0.406	10.31
879	1.50	38.1	0.109	2.77
880	1.50	38.1	0.141	3.58
881	1.50	38.1	0.125	3.18
882	1.50	38.1	0.188	4.78
LBP882	1.50	38.1	0.188	4.78
LBP883	1.50	38.1	0.188	4.78
963	1.50	38.1	0.406	10.31
1050	1.00	25.4	0.138	3.51
TAB and Magnetflex LPC1050	1.00	25.4	0.470	11.94
1055	1.00	25.4	0.140	3.56
TAB and Magnetflex LPC1055	1.00	25.4	0.470	11.94
FTM 1060	1.00	25.4	0.138	3.51
1757	1.50	38.1	0.530	13.46
LBP1757	1.50	38.1	0.940	23.88
1843	1.00	25.4	0.266	6.76
1844	1.00	25.4	0.266	6.76
1863	1.50	38.1	0.406	10.31
1864	1.50	38.1	0.406	10.31
1873	1.50	38.1	0.406	10.31
1874	1.50	38.1	0.438	11.13
1883	2.00	50.8	0.480	12.19
3873	1.50	38.1	0.406	10.31
4873	1.50	38.1	0.406	10.31
4874	1.50	38.1	0.438	11.13

- > Sprocket and Wearstrip Location
- > Sprocket Location for Conventional Chains

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## CONVEYOR DESIGN RECOMMENDATIONS

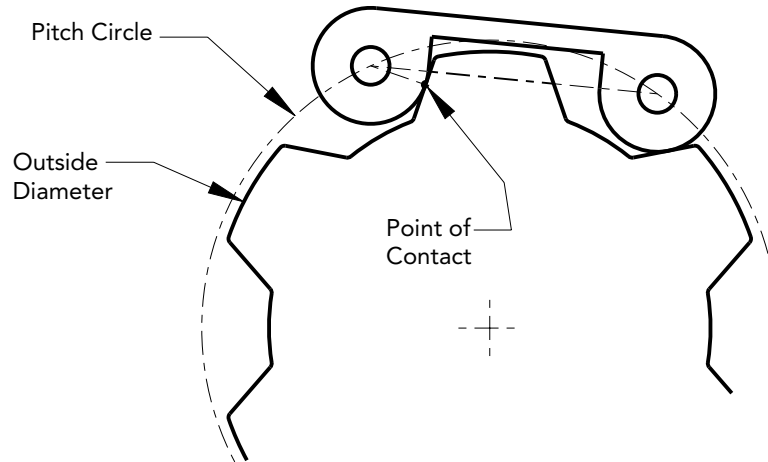


### Sprocket Pitch Diameter vs. Outside Diameter

In some instances, it is possible for a sprocket's pitch diameter to be larger than the outside diameter. This is not a problem because the link does not contact the sprocket on the pitch circle.



### Why Pitch Diameter Is Larger Than the Outside Diameter on Small Sprockets



⇒ The outside diameter is to the outer tips of the teeth.

⇒ The chain's pins are on the pitch diameter. On a very small sprocket, the chord created by the link causes the point where the sprocket contacts the tooth to be much closer to the sprocket center than the pins and the pitch circle.



Chordal action is defined as the up and down motion of the chain over top dead center of the sprocket centerline. Excessive chordal action can lead to product tippage.

> Sprocket Pitch Diameter vs. Outside Diameter

> Why Pitch Diameter Is Larger Than the Outside Diameter on Small Sprockets

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# CONVEYOR DESIGN RECOMMENDATIONS

## ▶ Roller Chain Sprockets for Two-Piece Chains

⇒ TableTop two-piece roller chains operate over standard ANSI sprockets.

Read important note below:

**i** To prevent interference between chain hold down TABs and sprocket hubs, the maximum hub diameters are as follows:

- ⇒ 1843 TAB — sprocket pitch diameter minus 0.65 in (16.5mm)
- ⇒ 1874 TAB, 4874 TAB — sprocket pitch diameter minus 1.30 in (33.0mm)
- ⇒ 1883 TAB — sprocket pitch diameter minus 1.65 in (41.9 mm)
- ⇒ 1863 TAB, 863 TAB, 1873 TAB, 4873 TAB — sprocket pitch diameter minus 1.50 in (38.1mm)
- ⇒ 3873 TAB — sprocket pitch diameter minus 1.50 in (38.1mm)
- ⇒ 1673 TAB — sprocket pitch diameter minus 1.60 in (40.6mm)

Roller Base Chain and Sprockets		
Chain Series	Base Chain	Sprockets
1843TAB	#1843	ANSI #40
1843TAB G		
845		
1844	#843	
863TAB	#863	ANSI #60
963	#63	
1673		
1863TAB		
1873TAB		
1873TAB G		
1874TAB		
1874TAB G		
3873TAB		
4873TAB		
4874TAB		
1864		
1883TAB	#1883	

### > Roller Chain Sprockets for Two-Piece Chains

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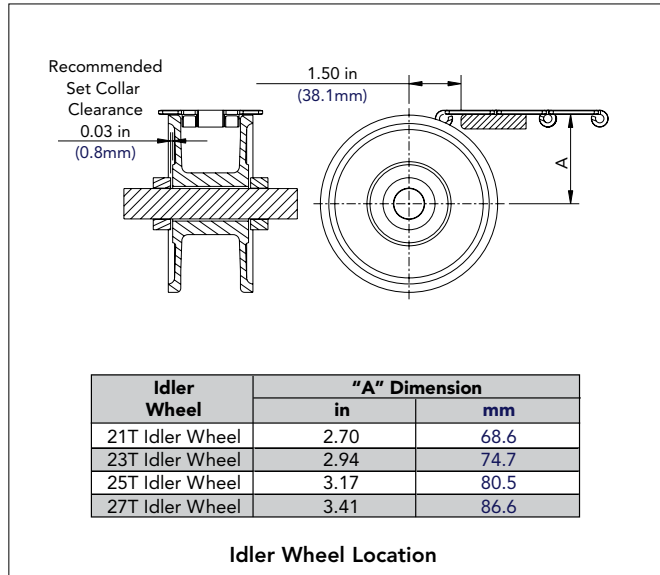
## Idler Wheel and Sprocket Location (Stationary Shafts Only)

⇒ The idler wheels can only be used in place of tail shaft sprockets with TableTop one-piece unit link chains



⇒ Idler wheels should not be used with roller base chains

⇒ For proper location and smooth operation, the idler wheels should be mounted slightly below the top of the wearstrips



## Shafting Recommendations for Stationary Tail Shafts

### Recommended Materials:

- ⇒ Carbon Steel (dry environments only)
- ⇒ Stainless Steel

### Suggested Hardness:

- ⇒ 25 to 30 Rc

### Suggested Surface Finish:

- ⇒ 63  $\mu$ -in Ra

✓ Rexnord recommends rotating shafts in bearings. If bearings are not used, the following are guidelines for operating TableTop sprockets on stationary shafts:

Sprocket	Max. Recommended Chain Speed	
	FPM	MPM
N - Acetal	0-50	0-15
UHMWPE	0-50	0-15
NS - Nylon, Split	0-100	0-30
LF Bushing (Idler Wheel)	0-300	0-90
Bronze Bushing	0-500	0-150
Bearings	Recommended for Speeds > 500	Recommended for Speeds > 150

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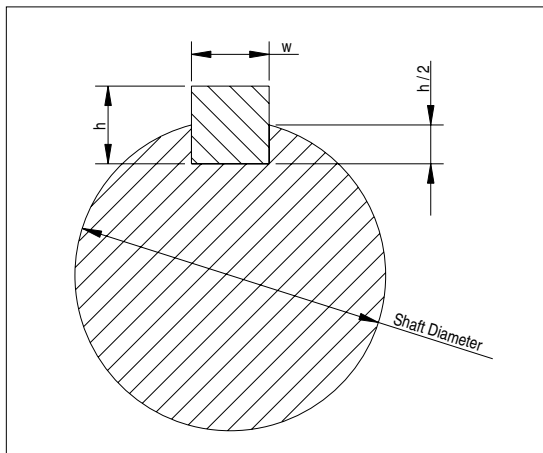
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## Keyway and Setscrew Sizes

English:				
KEYWAY				
Shaft Diameter	Key Width (w)	Key Height (h)	Keyseat Depth (h/2)	Setscrew Size
> 9/16" to 7/8"	3/16"	3/16"	3/32"	1/4-20
> 7/8" to 1-1/4"	1/4"	1/4"	1/8"	3/8-16
> 1-1/4" to 1-3/8"	5/16"	5/16"	5/32"	3/8-16
> 1-3/8" to 1-3/4"	3/8"	3/8"	3/16"	3/8-16
> 1-3/4" to 2-1/4"	1/2"	1/2"	1/4"	1/2-13
> 2-1/4" to 2-3/4"	5/8"	5/8"	5/16"	1/2-13

Metric:				
Shaft Diameter	Key Width (w)	Key Height (h)	Keyseat Depth (h/2)	Setscrew Size
> 22mm to 30mm	8mm	7mm	3.5mm	M6 x 1
> 30mm to 38mm	10mm	8mm	4mm	M8 x 1.25
> 38mm to 44mm	12mm	8mm	4mm	M10 x 1.5
> 44mm to 50mm	14mm	9mm	4.5mm	M10 x 1.5
> 50mm to 58mm	16mm	10mm	5mm	M12 x 1.75
> 58mm to 65mm	18mm	11mm	5.5mm	M12 x 1.75



✓ English keyed round bore sprockets are available with one setscrew as standard. Additional setscrews can be provided upon request. Metric keyed round bore sprockets are not supplied with a setscrew as standard.

⚠ If multiple strands share a tail shaft, key only one sprocket and allow others to rotate. Collars should be utilized to prevent lateral movement.

### Split Sprocket Bore Nomenclature

**Shaft Ready** — Tight fit on the shaft with a keyway and setscrew.

**Plain Bore** — Same tight fit bore as a shaft ready bore, but without a keyway and setscrew.

**Idler Bore** — Round bore with a clearance fit (no keyway or setscrew). Designed to spin freely on the shaft.

**Rough Stock Bore** — Wide tolerance bore used for work in process. Not for use on any shaft. Must be further machined for actual use.

**Over Sized Bore** — Round bore with a slightly loose fit on the shaft with keyway but no setscrew. Designed to move laterally on the shaft during setup and still transmit torque through the keyway as a drive sprocket in the actual application. Not recommended for axial float in thermal applications.

> Keyway and Setscrew Sizes  
> Split Sprocket Bore Nomenclature

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The TableTop Calculation Program is available to perform chain pull calculations for specific conveyor applications.

## ➤ Chain Pull Calculations

⇒ To obtain the most recent calculation program:

- ◆ Download from Technical Support at: <http://www.rexnord.com/flattop>
- ◆ Contact Application Engineering

⇒ Prior to performing chain pull calculations, the following information is needed:

- ◆ Chain style, material and width
- ◆ Wearstrip material
- ◆ Corner track material (if utilizing a side-flexing chain)
- ◆ Lubrication conditions (i.e. dry, water, soap and water, oil)
- ◆ Chain speed (FPM) or (MPM)
- ◆ Product weight (lbs/ft) or (kg/m)
- ◆ Product material
- ◆ Number of starts per hour (e.g. indexing conveyors)
- ◆ Percent of time product accumulation occurs (i.e. slippage)
- ◆ Portion of conveyor where product accumulation occurs
- ◆ Conveyor layout with dimensions

⇒ The calculation output sheet contains the following information:

- ◆ Calculated headshaft chain tension
- ◆ Maximum allowable headshaft chain tension
- ◆ Percent of allowable chain tension
- ◆ Total horsepower required with an assumed gearbox efficiency of 100%

✓ If the percent of allowable chain tension is 100% or less, your conveyor application is within chain capacity.



The horsepower requirement the program calculates is the "design horsepower" that is required to power the conveyor based on the input parameters. Additional considerations should be made for the type of drive used, efficiency losses in the power train, appropriate service factors, as well as any gearbox manufacturer's recommendations.



Rexnord recommends some sort of soft start for all FlatTop chain conveyor motors, but especially for higher speeds and conveyors with bottom drives. Hard starts add peak loads to the chain, which will shorten the service life. Hard starts can also cause the chain to stretch and bounce in the catenary sag section, sometimes causing the chain to catch in the conveyor frame and become damaged. On bottom drives, hard starts can cause the chain to fall off the drive sprockets and skip teeth.

⇒ For a side-flexing conveyor, the calculation output sheet contains the following information:

- ◆ Calculated corner tension (PV)
- ◆ Maximum allowable corner tension

✓ If the calculated corner tension is less than the maximum allowable corner tension, your conveyor application is within chain PV capacity.

⇒ For a side-flexing roller base chain conveyor, the calculation sheet contains the following information:

- ◆ Calculated adjusted corner tension
- ◆ Maximum allowable adjusted corner tension

✓ If the calculated adjusted corner tension is less than the maximum allowable adjusted corner tension, your conveyor application is within chain capacity.

⇒ The TableTop Calculation Program calculates the following:

- ◆ Carousel conveyor analysis (i.e. offset wrap drive conveyors)
- ◆ Universal conveyor analysis (i.e. alpine systems, multiple loading systems)
- ◆ Catenary sag vs. length vs. tension
- ◆ Catenary sag vs. length vs. excess chain
- ◆ Product backline pressure (due to accumulation)



The TableTop Calculation Program does not take environmental conditions into consideration. This calculation program **ONLY** provides information on whether the chain is within capacity.



### ▶ Calculating Chain Speed, Given Production Output

⇒ The speed of each chain depends on the production speed (containers per minute), the container size (diameter or length), and product flow (single file or en masse). If en masse (in mass), the conveyor width must also be considered.

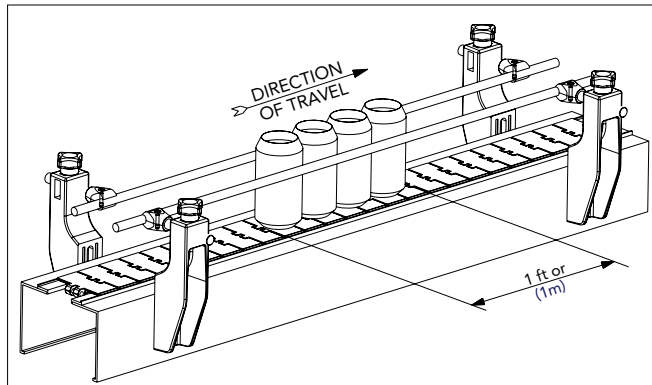
#### ▶ Example:

A production line must run at a speed of 1600 containers per minute (CPM). The jars have a 3.00 in (76.2mm) diameter.

⇒ 1) What is the chain speed when the jars are running single file on SS815-K325 chain?

⇒ 2) What is the chain speed when the jars are running en masse (in mass) on dual strands of SS815-K750 chain?

#### ▶ Single File (one strand of SS815-K325 chain)



#### English:

$$\text{Container/ft} = \frac{12 \text{ in/ft}}{\text{Dia. or length of Container (in)}} = \frac{12}{3} = 4 \text{ containers/ft}$$

$$\text{Chain Speed FPM (Feet per minute)} = \frac{\text{CPM (Containers per minute)}}{\text{Containers/ft}} = \frac{1600}{4} = 400 \text{ FPM}$$

#### Metric:

$$\text{Container/m} = \frac{1000\text{mm/m}}{\text{Dia. or length of Container (mm)}} = \frac{1000}{76.2} = 13.1 \text{ containers/m}$$

$$\text{Chain Speed MPM (Meters per minute)} = \frac{\text{CPM (Containers per minute)}}{\text{Container/m}} = \frac{1600}{13.1} = 122.14 \text{ MPM}$$

> Calculating Chain Speed, Given Production Output

> Example

> Single File

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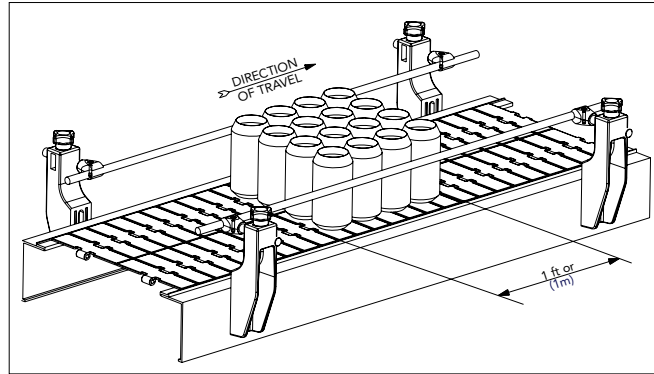
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# TableTop CALCULATION PROGRAM

## ▶ Calculating Chain Speed, Given Production Output

- ▶ Mass Flow (dual strands of SS815-K750 chain) (7.50 in (190.5mm) wide)  
Overall conveyor width = 15.00 (381.0mm)



### English:

$$\text{Container/ft}^2 = \frac{166.277}{\text{Dia. (in)}^2} = \frac{166.277}{3^2} = 18.5 \text{ containers/ft}^2$$

$$\text{Conveyor Width (in)} = \# \text{ of strands} \times \text{Flight Width (in)} = 2 \times 7.5 = 15.0 \text{ in}$$

$$\text{Chain Speed (FPM)} = \frac{\text{CPM}}{\text{Containers/ft}^2 \times (\text{Width (in)}/12 \text{ in/ft})} = \frac{1600}{18.5 \times (15/12)} = 70 \text{ FPM}$$

### Metric:

$$\text{Container/m}^2 = \frac{1,500,000}{\text{Dia. (mm)}^2} = \frac{1,500,000}{76.22} = 198.1 \text{ containers/m}^2$$

$$\text{Conveyor Width (mm)} = \# \text{ of strands} \times \text{Flight Width (mm)} = 2 \times 190.5 = 381 \text{ mm}$$

$$\text{Chain Speed (MPM)} = \frac{\text{CPM}}{\text{Containers/m}^2 \times (\text{Width (mm)}/12\text{mm/m})} = \frac{1600}{198.1 \times (381/1000)} = 21 \text{ MPM}$$



- Oval and rectangular containers are usually only run single file. En masse (in mass) conveying of such containers leads to orientation and jamming problems.
- The actual conveyor speeds are usually about 10-15% faster than the calculated required speeds in order to provide good "product take-away" from the adjacent machinery.
- The speeds of individual chains on combiners and decombiners depend on mass flow speed, single file speed and the number of strands on the combiner/decombiner (see caution note on page EM - TT - 27).

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### ▶ Calculating Product Weight, Given Production Output

⇒ When calculating chain pull, the weight of product per linear unit of measurement (in the direction of chain travel) per individual strand is required.

#### ▶ Example:

Continuing with the previous example, a production line must run at a speed of 1600 containers per minute (CPM). Each jar weighs 1.00 lb (0.454kg).

#### ▶ Single File (one strand of SS815-K325 chain)

**English:**

$$\text{lbs/ft} = (\text{Containers/ft}) \times (\text{lbs/Container}) = 4 \times 1 = 4.0 \text{ lbs/ft}$$

**Metric:**

$$\text{kg/m} = (\text{Containers/m}) \times (\text{kg/Container}) = 13.1 \times 0.454 = 5.9\text{kg/m}$$

#### ▶ Mass Flow (on each strand of SS815-K750 chain)

**English:**

$$\begin{aligned} \text{lbs/ft} &= (\text{Containers/ft}) \times (\text{Flight Width (in)}/12 \text{ in/ft}) \times (\text{lbs/Container}) \\ &= 18.5 \times (7.5/12) \times 1 = 11.6 \text{ lbs/ft} \end{aligned}$$

**Metric:**

$$\begin{aligned} \text{kg/m} &= (\text{Containers/m}) \times (\text{Flight Width (mm)}/1000 \text{ mm/m}) \times (\text{kg/Container}) \\ &= 198.1 \times (190.5/1000) \times 0.454 = 17.1\text{kg/m} \end{aligned}$$

- > Calculating Product Weight, Given Production Output
- > Example
- > Single File
- > Mass Flow

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## Typical Product Sizes and Weights

Content	Container Material	Container Size	Base Dimensions		Weight Full		Single File		En Masse			
			inches	mm	lbs	kg	lbs/ft	kg/m	lbs/ft <sup>2</sup>	kg/m <sup>2</sup>		
Dairy	Milk	Paper	1/2 Pint	3 x 3	76.2 x 76.2	0.60	0.27	2.4	3.6	-	-	
		Paper	Pint	3 x 3	76.2 x 76.2	1.10	0.50	4.4	6.5	-	-	
		Paper	Quart	3-1/8 x 3-1/8	79.4 x 79.4	2.30	1.04	8.8	13.1	-	-	
		Paper	1/2 Gallon	4-1/8 x 4-1/8	104.8 x 104.8	4.50	2.04	13.1	19.5	-	-	
		Plastic	Gallon	6 x 6	152.4 x 152.4	8.90	4.04	17.8	26.5	-	-	
	Yogurt	Plastic	6 oz	2-5/8 Ø	66.7Ø	0.40	0.18	1.8	2.7	9.7	46.9	
		Plastic	6 Pack / 4 oz Containers	5 x 7	127 x 177.8	1.57	0.71	3.8	5.6	-	-	
	Cottage Cheese	Plastic	1/2 lb	4 Ø	101.6Ø	0.60	0.27	1.8	2.7	6.2	30.3	
		Plastic	1 lb	4-3/4 Ø	120.7Ø	1.10	0.50	2.8	4.1	8.1	39.4	
Plastic		2 lb	5 Ø	127Ø	2.30	1.04	5.5	8.2	15.3	74.4		
Beverages	Concentrated Juice	Paper	12 oz	2-5/8 Ø	66.7Ø	1.00	0.45	4.6	6.8	24.1	117.2	
		Plastic	Gallon	6 Ø	152.4Ø	1.17	0.53	2.3	3.5	5.4	26.3	
		Glass	Gallon	6 Ø	152.4Ø	3.59	1.63	7.2	10.7	16.6	80.6	
	Juice	Paper	6.75 oz Box (Tetra)	1-1/2 x 2-1/4	38.1 x 57.2	0.48	0.22	3.8	5.7	-	-	
		Plastic	10 Pack / 6.75 Boxes (Tetra)	3 x 10-1/2	76.2 x 266.7	4.87	2.21	19.5	29.0	-	-	
		Aluminum	250ml PET	2-5/64 Ø	52.9Ø	0.63	0.29	3.6	5.4	24.3	117.4	
	Soft Drink	Aluminum	12 oz	2.6 Ø	66.0Ø	0.85	0.39	3.9	5.8	20.9	101.8	
		Plastic	500ml PET	2-37/64 Ø	65.5Ø	1.16	0.53	5.4	8.0	29.0	141.0	
		Plastic	20 oz PET	2-7/8 Ø	73.0Ø	1.37	0.62	5.7	8.5	27.6	134.1	
		Plastic	1 Liter PET	3-3/16 Ø	81.0Ø	2.31	1.05	8.7	12.9	37.8	183.7	
		Plastic	1-1/2 Liter PET	4-3/16 Ø	106.4Ø	3.40	1.54	9.7	14.5	32.2	156.7	
		Plastic	2 Liter PET	4-1/2 Ø	114.3Ø	4.40	2.00	11.7	17.5	36.1	175.7	
		Plastic	3 Liter PET	5-1/8 Ø	130.2Ø	6.38	2.89	14.9	22.2	40.4	196.3	
		Beer	Glass	12 oz	2-1/2 Ø	63.5Ø	1.50	0.68	7.2	10.7	39.9	194.0
	Glass		12 oz Non-Returnable	2-3/4 Ø	69.9Ø	1.20	0.54	5.2	7.8	26.4	128.1	
	Glass		16 oz Non-Returnable	2-3/4 Ø	69.9Ø	1.60	0.73	7.0	10.4	35.2	170.8	
	Glass		32 oz	2-5/8 Ø	66.7Ø	3.40	1.54	15.5	23.1	82.0	398.6	
	Glass		64 oz	3-5/8 Ø	92.1Ø	3.88	1.76	12.8	19.1	49.1	238.6	
	Aluminum		12 oz	2.6 Ø	66.0Ø	0.85	0.39	3.9	5.8	20.9	101.8	
	Paper		12 Pack / 12 oz Cans	10-3/4 x 7-3/4	273.1 x 196.9	10.40	4.72	11.6	17.3	-	-	
	Paper		12 Pack Fridge Pack	16 x 4-7/8	406.4 x 123.8	10.32	4.68	7.7	11.5	-	-	
	Paper		24 Pack / 12 oz Cans	16 x 10-3/4	406.4 x 273.1	20.16	9.14	15.1	22.5	-	-	
	Paper		24 Pack / 12 oz Cans (cube)	10-3/4 x 7-3/4	273.1 x 196.9	20.16	9.14	22.5	33.5	-	-	
	Paper		18 Pack / 12 oz Cans	16 x 7-3/4	406.4 x 196.9	14.69	6.66	11.0	16.4	-	-	
	Paper		30 Pack / 12 oz Cans	13-1/2 x 7-3/4	342.9 x 196.9	24.48	11.10	21.8	32.4	-	-	
	Wine / Champagne		Glass	750ml	2-7/8 Ø	73.0Ø	2.88	1.31	12.0	17.9	57.9	281.9
			Glass	1.5 Liter	4-1/4 Ø	108.0Ø	6.37	2.89	18.0	26.8	58.6	284.9
			Glass	12 oz	2-1/2 Ø	63.5Ø	1.22	0.55	5.9	8.7	32.5	157.8
		Paper	4 Pack / 12 oz Bottles	5-1/8 x 5-1/4	130.2 x 133.4	5.07	2.30	11.9	17.7	-	-	
		Coffee	Metal	1/2 lb	4-1/8 Ø	104.8Ø	0.80	0.36	3.3	3.5	7.8	38.0
Metal			1 lb	4-1/8 Ø	104.8Ø	1.30	0.59	3.8	5.6	12.7	61.7	
Metal	2 lb		5-1/4 Ø	133.4Ø	2.50	1.13	5.7	8.5	15.1	73.3		
Food	Metal	3 lb	6-1/4 Ø	158.8Ø	3.80	1.72	7.3	10.9	16.2	78.6		
	Baby Food	Glass	Regular	2-3/8 Ø	60.3Ø	0.56	0.25	2.8	4.2	16.5	80.3	
	Baby Food	Glass	Junior	2-3/8 Ø	60.3Ø	0.80	0.36	4.0	6.0	23.6	114.8	
	Soup	Metal	10.5 oz	2-5/8 Ø	66.7Ø	0.76	0.34	3.5	5.2	18.3	89.1	
	Soup	Metal	18.5 oz	3-1/8 Ø	79.4Ø	1.33	0.60	5.1	7.6	22.6	110.0	
	Soup	Metal	32 oz	4 Ø	101.6Ø	1.90	0.86	5.7	8.5	19.7	96.0	
	Cracker	Paper	10 oz Box	2-1/4 x 5-1/4	57.2 x 133.4	0.72	0.33	3.8	5.7	-	-	
	Peanut Butter	Plastic	18 oz	3 Ø	76.2Ø	1.15	0.52	4.6	6.8	21.2	103.3	
	Jelly	Glass	32 oz	3-5/16 Ø	84.1Ø	2.15	0.98	7.8	11.6	32.6	158.6	
	Jelly	Glass	18 oz	2-5/8 Ø	66.7Ø	1.62	0.73	7.4	11.0	39.1	189.9	
	Catsup	Plastic	24 oz	2-1/4 x 3-3/4	57.2 x 95.3	1.63	0.74	8.7	12.9	-	-	
	Apple Sauce	Glass	23 oz	3-5/16 Ø	84.1Ø	2.05	0.93	7.4	11.1	31.1	151.2	
	Mayonnaise	Glass	32 oz	4 Ø	101.6Ø	3.03	1.37	9.1	13.5	31.5	153.1	
	Cereal	Paper	14 oz Box	2-3/8 x 7-1/2	60.3 x 190.5	1.06	0.48	5.4	8.0	-	-	
	Vegetable	Metal	14.5 oz	2-15/16 Ø	74.6Ø	1.04	0.47	4.2	6.3	20.0	97.5	
	Tuna	Metal	12 oz Can	4 Ø	101.6Ø	0.88	0.40	2.6	3.9	9.1	44.5	
	Tomato Sauce	Metal	29 oz	4 Ø	101.6Ø	2.07	0.94	6.2	9.2	21.5	104.6	
	Cleaners	Dish Soap	Plastic	25 oz	2-7/16 x 3-3/8	61.9 x 85.7	1.78	0.81	8.8	13.0	-	-
		Liquid Laundry Soap	Plastic	22 oz	2 x 3-3/8	50.8 x 85.7	1.60	0.73	9.6	14.3	-	-
		Liquid Laundry Soap	Plastic	32 oz	2-5/8 x 4-1/2	66.7 x 114.3	2.30	1.04	10.5	15.6	-	-
Liquid Laundry Soap		Plastic	100 oz	5-1/2 x 7-3/4	139.7 x 196	7.01	3.18	15.3	22.8	-	-	
Liquid Bleach		Plastic	Quart	3-1/4 Ø	82.6Ø	2.40	1.09	8.9	13.2	37.8	183.5	
Liquid Bleach		Plastic	1/2 Gallon	4-3/4 Ø	120.7Ø	4.80	2.18	12.1	18.0	35.4	171.9	
Liquid Bleach		Plastic	Gallon	6-1/4 Ø	158.8Ø	9.50	4.31	18.2	27.1	40.4	196.5	
Toiletries	Liquid Bleach	Plastic	182 oz	7-1/4 Ø	184.2Ø	8.16	3.70	18.5	20.1	25.8	125.5	
	Toilet Paper	Paper	Individual Roll	4-1/4 Ø	108.0Ø	0.23	0.10	0.6	1.0	2.1	10.3	
	Toilet Paper	Plastic	4 Pack	4-1/4 x 8-1/2	108 x 215.9	0.93	0.42	2.6	3.9	-	-	
Automotive	Toilet Paper	Plastic	24 Pack	12 x 15-1/2	304.8 x 393.7	5.67	2.57	5.7	8.4	-	-	
	Tire	Passenger	Typical	28 Ø	711.2Ø	35.00	15.87	-	-	-	-	
Tire	Truck	Typical	48 Ø	1219.2Ø	150.00	68.03	-	-	-	-		

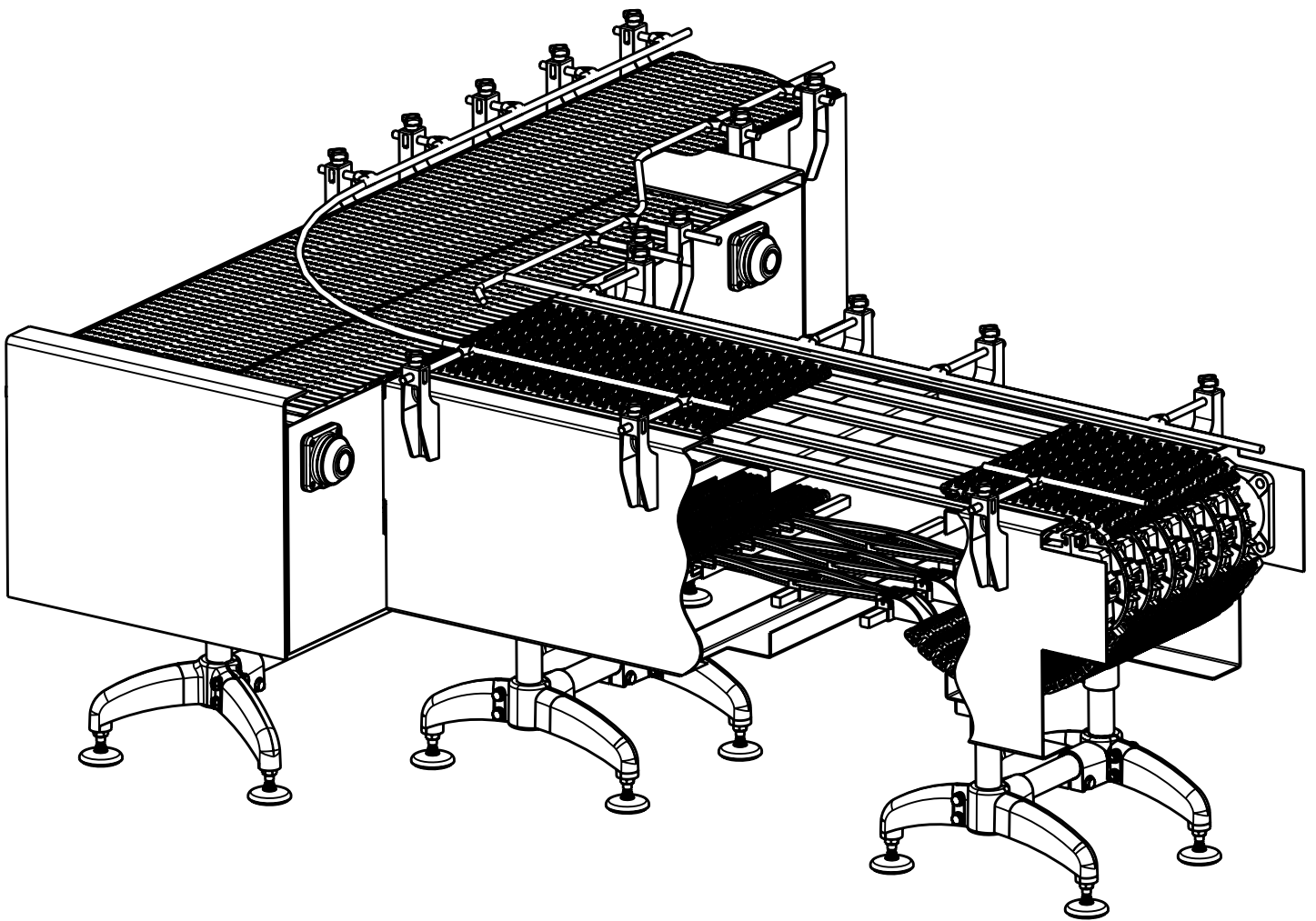
> Typical Product Sizes and Weights

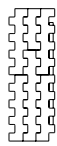
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# Rexnord MatTop Chains





## CHAIN MATERIALS

For more detailed material information, see page EM - MT - 14 or the Appendix located at the end of this manual.

Materials vary per chain series; see Product Catalog to determine standard versus special materials.

### ➤ Acetal Family

#### ➤ LF and WLF (Low-Friction)

⇒ Patented blend of acetal that provides good wear resistance and long service life due to the low coefficient of friction

#### ➤ HP and WHP (High Performance)

⇒ Patented blend of acetal specifically formulated for dry-running conveyors due to excellent friction characteristics

#### ➤ XLG (Low-Friction Acetal, Green)

⇒ Internally lubricated extra low-friction acetal

#### ➤ PS (Platinum Series)

⇒ Patented blend of acetal specially formulated for high-speed conveying applications

#### ➤ PSX (Platinum Series X)

⇒ High-speed conveying with little to no external lubrication  
⇒ Long wear life with minimal dusting

### ➤ Specialty Plastics

#### ➤ AS (Anti-Static)

⇒ An electrically conductive acetal formulated to reduce or eliminate nuisance static charge  
⇒ **ALWAYS** contact Rexnord Application Engineering for assistance

#### ➤ HCAS (High Capacity Anti-Static)

⇒ Reduces or eliminates nuisance static  
⇒ High capacity acetal resin, requires 10% derate from acetal counterparts

#### ➤ BIR (Black Impact-Resistant)

⇒ Specifically formulated to take constant impact

#### ➤ ESD (Electrostatic Dissipative)

⇒ Polypropylene formulated for conveying sensitive products such as electronics and computer chips where controlling static charge or static decay is critical  
⇒ **ALWAYS** contact Rexnord Application Engineering for assistance

#### ➤ HC-ESD (High Capacity, Electrostatic Dissipative)

⇒ High capacity polypropylene formulated for conveying sensitive products such as electronics and computer chips where controlling static charge or static decay is critical  
⇒ Requires 10% derate from polypropylene counterparts  
⇒ **ALWAYS** contact Rexnord Application Engineering for assistance

#### ➤ FTR (Black, Fryer Temperature-Resistant)

⇒ Formulated to be used in oven/fryer discharge conveyor applications such as snack chips

#### ➤ GTC (Grey Tough Composite)

⇒ High-strength, impact-modified composite  
⇒ High impact resistance, low strength

#### ➤ USP (Ultra-Stabilized Polypropylene, Dark Green)

⇒ Superior resistance to chemicals used in pasteurizers, warmers and coolers  
⇒ Remains stronger and more flexible than standard polypropylene

#### ➤ BWR (Black Wear-Resistant)

⇒ BWR may extend chain life up to 5 times in comparison to other plastic materials in applications such as conveying rough machined parts

#### ➤ WX/BWX (Abrasion-Resistant)

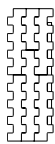
⇒ A nylon material formulated to be used in abrasive applications where chain is subjected to abrasives such as glass, sand and dirt

- > Acetal Family
- > LF and WLF (Low-Friction)
- > HP and WHP (High Performance)
- > XLG (Low-Friction Acetal, Green)
- > PS (Platinum Series)
- > PSX (Platinum Series X)
- > Specialty Plastics
- > AS (Anti-Static)
- > HCAS (High Capacity Anti-Static)
- > BIR (Black Impact-Resistant)
- > ESD (Electrostatic Dissipative)
- > HC-ESD (High Capacity, Electrostatic Dissipative)
- > FTR (Black, Fryer Temperature-Resistant)
- > GTC (Grey Tough Composite)
- > USP (Ultra-Stabilized Polypropylene, Dark Green)
- > BWR (Black Wear-Resistant)
- > WX/BWX (Abrasion-Resistant)

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# CHAIN MATERIALS

## ▶ P (Chemical-Resistant)

⇒ A polyester formulated to reduce or eliminate material degradation in applications where chemicals such as chlorine and phosphorous are present in moderate concentrations

## ▶ CR (Extreme Chemical-Resistant)

⇒ Fluorinated polymer that is chemically resistant to high concentrations of oxidizing agents, acids and bases

## ▶ DUV, BUV, YUV, HUV and LUV (Ultraviolet-Resistant)

⇒ Specially formulated acetal  
⇒ Used for outdoor applications with direct exposure to the sun or UV radiation  
⇒ DUV, BUV, YUV, RUV — Acetal  
LUV — Polyethylene

## ▶ MR (Melt-Resistant)

⇒ A nylon material with a high melting point used to prevent hot objects (product temperature up to 375°F [190°C]) from melting the surface of the chain

## ▶ FR (Flame-Retardant)

⇒ Flame-retardant polyester that meets the requirements of UL Standard 94 V-0 rated combustion

## ▶ HS (Heat-Stabilized)

⇒ Nylon resin designed for environments that contain hot water spray (rinser, sterilizer and pasteurizer applications)

## ▶ WSM, BSM, BRSM, BYSM, RSM, SRMB, SYMB, YSM and SMB (Cut-Resistant)

⇒ Tough acetal material formulated for abrasive and impact loading applications  
⇒ Cut-resistant material commonly used in the meat processing industry on cutting, boning and trimming lines  
⇒ Available in many colors

## ▶ HT, WHT, KHT, BHT, HTB and RHT (High-Temperature)

⇒ Polypropylene formulated for high-temperature and general applications in both wet and dry conditions  
⇒ Excellent chemical resistance

## ▶ TC (Tough Composite)

⇒ Specially formulated alloy, high strength, toughened composite material  
⇒ Excellent for high-speed case incline and decline conveyors  
⇒ Excellent impact and chemical resistance

## ▶ UHS (Ultra High Strength)

⇒ Patented polypropylene composite that allows for increased load-carrying capacity and reduced stretch at elevated temperatures  
⇒ Ideal for heavy-duty pasteurizer, sterilizer and cooler applications

## ▶ WLT and BLT (Low-Temperature)

⇒ Polyethylene formulated to retain toughness, impact strength and ductility in both dry and wet conditions  
⇒ Good chemical resistance  
⇒ Available in white and blue



Since materials vary in strength, refer to the Product Catalog for specific chain/material strengths when changing out materials.

## MatTop Conveyor Chain Materials

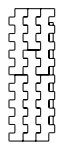
- > P (Chemical-Resistant)
- > CR (Extreme Chemical-Resistant)
- > DUV, BUV, YUV, HUV and LUV (Ultraviolet-Resistant)
- > MR (Melt-Resistant)
- > FR (Flame-Retardant)
- > HS (Heat-Stabilized)
- > WSM, BSM, BRSM, BYSM, RSM, SRMB, SYMB, YSM and SMB (Cut-Resistant)
- > HT, WHT, KHT, BHT, HTB and RHT (High-Temperature)
- > TC (Tough Composite)
- > UHS™ (Ultra High Strength)
- > WLT and BLT (Low-Temperature)

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MatTop Chains



## CHAIN MATERIALS

### ▶ Antimicrobial Product Protection and Antimicrobial Product Protection Detectable Materials

#### ▶ WHA and BHA (High-Temperature Antimicrobial) \*\*\*

⇒ Specially formulated polypropylene material that inhibits the growth of bacteria, mold and mildew that can cause degradation of the chain

⇒ Developed specifically for chains used in food processing

⇒ Available in white and blue

#### ▶ WLA and BLA (Low-Temperature Antimicrobial) \*\*\*

⇒ Specially formulated polyethylene material that inhibits the growth of bacteria, mold and mildew that can cause degradation of the chain

⇒ Developed specifically for chains used in food processing

⇒ Available in white and blue

#### ▶ WSA, BSA and GSA (Cut-Resistant Antimicrobial)

⇒ Specially formulated cut- and abrasive-resistant acetal material that inhibits the growth of bacteria, mold and mildew that can cause degradation of the chain

⇒ Developed specifically for chains used in food processing

⇒ Available in white, blue and gray

#### ▶ GLD and RLD (Low-Temperature Detectable) \*\*\*

⇒ A patented blend of polyethylene antimicrobial additive and non-ferrous metal particulate

⇒ Allows for detection as it passes through a metal detector in dry and frozen food applications

⇒ Available in gray and red

#### ▶ THD (High-Temperature Detectable) \*\*\*

⇒ A patented blend of polypropylene antimicrobial additive and non-ferrous metal particulate

⇒ Allows for detection as it passes through a metal detector in dry and frozen food applications

\*\*\* These materials meet the end-test requirements as specified by FDA 21 CFR 177.1520 (c), the FDA requirement for polyolefin materials intended for food contact. All components of these materials are either compliant for food contact as listed by the FDA or regulated by the EPA.



Standard pin materials for MatTop Chains include:

- Polypropylene
- Polyethylene
- Acetal
- Polyester (PBT)
- Stainless steel available (typically for severely abrasive environments)

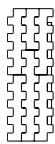


Not all materials are available in all chains. Contact Rexnord Application Engineering for further assistance.

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# FRICION BETWEEN CHAIN AND PRODUCT (Fm)

MatTop  
Conveyor  
Chain  
Materials

> Friction  
Between Chain  
and Product  
(Fm)

Base Material	Chain Material		Product Material						
	Chain Material	Lubrication Condition	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink)	Plastic (PET)	Steel
Acetal	PS	Dry Water Soap & Water Oil	0.18	0.20	0.12	0.23	0.18	0.16	0.18
			0.14	0.18	0.11	NR	0.16	0.15	0.16
			0.12	0.14	0.10	NR	0.14	0.14	0.13
			-	-	-	NR	-	-	0.10
	PSX	Dry Water Soap & Water Oil	0.16	0.20	0.12	0.23	0.18	0.16	0.16
			0.13	0.18	0.11	NR	0.16	0.15	0.14
			0.12	0.14	0.10	NR	0.14	0.14	0.12
			-	-	-	NR	-	-	0.10
	HP, WHP	Dry Water Soap & Water Oil	0.18	0.20	0.12	0.23	0.18	0.18	0.18
			0.14	0.18	0.11	NR	0.16	0.16	0.16
			0.12	0.14	0.10	NR	0.14	0.14	0.13
			-	-	-	NR	-	-	0.10
	LF, WLF, XL, XLA, XLG	Dry Water Soap & Water Oil	0.20	0.20	0.15	0.30	0.20	0.20	0.25
			0.15	0.18	0.13	NR	0.18	0.18	0.20
			0.12	0.14	0.10	NR	0.15	0.15	0.15
			-	-	-	NR	-	-	0.10
	D, WD, MLF	Dry Water Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
			0.17	0.20	0.15	NR	0.20	0.20	0.22
			0.12	0.14	0.10	NR	0.15	0.15	0.15
			-	-	-	NR	-	-	0.10
	AS, HCAS	Dry Water Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
			NR	NR	NR	NR	NR	NR	NR
			NR	NR	NR	NR	NR	NR	NR
			NR	NR	NR	NR	NR	NR	NR
	WSA, GSA, BSA	Dry Water Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
			0.17	0.18	0.15	NR	0.20	0.20	0.22
			0.12	0.14	0.10	NR	0.15	0.15	0.15
			-	-	-	NR	-	-	0.10
	WSM, BSM, SMB	Dry Water Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
			0.17	0.18	0.15	NR	0.20	0.20	0.22
			0.12	0.14	0.10	NR	0.15	0.15	0.15
			-	-	-	NR	-	-	0.10
	DUV	Dry Water Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
			0.17	0.18	0.15	NR	0.20	0.20	0.22
			0.12	0.14	0.10	NR	0.15	0.15	0.15
			-	-	-	NR	-	-	0.10
Metal	SS, SSC	Dry Water Soap & Water Oil	0.34	0.35	0.33	0.43	0.31	0.30	0.38
			0.27	0.30	0.29	NR	0.22	0.21	0.30
			0.14	0.15	0.15	NR	0.15	0.14	0.15
			-	-	-	NR	-	-	-
	S	Dry Water Soap & Water Oil	0.34	0.35	0.33	0.43	0.31	0.30	0.38
			NR	NR	NR	NR	NR	NR	NR
			NR	NR	NR	NR	NR	NR	NR
			0.10	0.10	NR	NR	NR	NR	0.10
	SSB	Dry Water Soap & Water Oil	0.28	0.47	0.35	0.40	0.30	0.30	0.35
			0.19	0.31	0.25	NR	0.20	0.20	0.25
			0.12	0.21	0.15	NR	0.10	0.10	0.15
			-	-	-	NR	-	-	0.15
Nylon	WX/BWX	Dry Water Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
			NR	NR	NR	NR	NR	NR	NR
			NR	NR	NR	NR	NR	NR	NR
			-	-	-	NR	-	-	-
	MR/FTR	Dry Water Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
			NR	NR	NR	NR	NR	NR	NR
			NR	NR	NR	NR	NR	NR	NR
			-	-	-	NR	-	-	0.10
	BWR	Dry Water Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
			NR	NR	NR	NR	NR	NR	NR
			NR	NR	NR	NR	NR	NR	NR
			-	-	-	NR	-	-	0.10
	HS	Dry Water Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
			0.17	0.18	0.15	NR	0.20	0.20	0.22
			0.12	0.14	0.10	NR	0.15	0.15	0.15
			-	-	-	NR	-	-	0.10

NR denotes "not recommended"  
Dash denotes "combination not tested"

**i** All values shown in this table were obtained through product testing. Actual values may be higher or lower depending on environmental conditions.

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MatTop Chains



# FRICITION BETWEEN CHAIN AND PRODUCT (Fm)

Base Material	Chain Material		Product Material							
	Chain Material	Lubrication Condition	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink)	Plastic (PET)	Steel	
Polyester	TC	Dry	0.25	0.27	0.20	0.33	0.25	0.25	0.30	
			Water	0.17	0.18	0.15	NR	0.21	0.21	0.23
			Soap & Water	0.12	0.14	0.10	NR	0.15	0.15	0.15
		Oil	-	-	-	NR	0.10	0.10	0.10	
	P	Dry	0.25	0.27	0.20	0.33	0.25	0.25	0.30	
			Water	0.17	0.18	0.15	NR	0.21	0.21	0.22
			Soap & Water	0.12	0.14	0.10	NR	0.15	0.10	0.15
		Oil	-	-	-	NR	-	-	0.10	
	FR	Dry	0.25	0.27	0.20	0.33	0.25	0.25	0.30	
			Water	0.17	0.18	0.15	NR	0.20	0.20	0.22
			Soap & Water	0.12	0.14	0.10	NR	0.15	0.15	0.15
		Oil	-	-	-	NR	-	-	0.10	
Fluorinated Polymer	CR	Dry	0.25	0.27	0.20	0.33	0.25	0.25	0.30	
		Water	0.17	0.18	0.15	NR	0.20	0.20	0.22	
		Soap & Water	0.12	0.14	0.10	NR	0.15	0.15	0.15	
		Oil	-	-	-	NR	-	-	0.10	
Polypropylene	HT, WHT, RHT, KHT, HTB, BHT, YP, XP, USP	Dry	0.29	0.29	0.24	0.35	0.32	0.28	0.31	
			Water	0.19	0.21	0.18	NR	0.24	0.20	0.25
			Soap & Water	0.15	0.14	0.10	NR	0.19	0.15	0.17
		Oil	-	-	-	NR	-	-	0.10	
	WHA, BHA	Dry	0.28	0.29	0.22	0.35	0.30	0.30	0.35	
			Water	0.19	0.21	0.17	NR	0.25	0.25	0.25
			Soap & Water	0.16	0.14	0.10	NR	0.20	0.20	0.20
		Oil	-	-	-	NR	-	-	0.10	
	ESD	Dry	0.28	0.29	0.22	0.35	0.30	0.30	0.35	
			Water	0.19	0.21	0.17	NR	0.25	0.25	0.25
			Soap & Water	0.16	0.12	0.10	NR	0.20	0.20	0.20
		Oil	-	-	-	NR	-	-	0.10	
	THD	Dry	0.28	0.29	0.22	0.35	0.30	0.30	0.35	
			Water	0.19	0.21	0.17	NR	0.25	0.25	0.25
			Soap & Water	0.16	0.14	0.10	NR	0.20	0.20	0.20
		Oil	-	-	-	NR	-	-	0.10	
	HUV	Dry	0.28	0.29	0.22	0.35	0.30	0.30	0.35	
			Water	0.19	0.21	0.17	NR	0.25	0.25	0.25
			Soap & Water	0.16	0.14	0.10	NR	0.20	0.20	0.20
		Oil	-	-	-	NR	-	-	0.10	
	UHS, YPR	Dry	0.30	0.29	0.25	0.35	0.32	0.30	0.35	
			Water	0.19	0.21	0.19	NR	0.24	0.25	0.25
			Soap & Water	0.16	0.14	0.10	NR	0.19	0.20	0.20
		Oil	-	-	-	NR	-	-	0.10	
Polyethylene	WLT, BLT, LT	Dry	0.22	0.24	0.18	0.30	0.22	0.22	0.28	
			Water	0.17	0.17	0.14	NR	0.18	0.18	0.22
			Soap & Water	0.12	0.14	0.10	NR	0.15	0.15	0.15
		Oil	-	-	-	NR	-	-	0.10	
	WLA, BLA	Dry	0.22	0.24	0.18	0.30	0.22	0.22	0.28	
			Water	0.17	0.17	0.14	NR	0.19	0.19	0.22
			Soap & Water	0.12	0.14	0.10	NR	0.25	0.25	0.15
		Oil	-	-	-	NR	-	-	0.10	
	GLD, RLD	Dry	0.22	0.24	0.18	0.30	0.22	0.22	0.28	
			Water	0.17	0.17	0.14	NR	0.18	0.18	0.22
			Soap & Water	0.12	0.14	0.10	NR	0.15	0.15	0.15
		Oil	-	-	-	NR	-	-	0.10	
	LUV	Dry	0.22	0.24	0.28	0.30	0.22	0.22	0.28	
			Water	0.17	0.17	0.14	NR	0.18	0.18	0.22
			Soap & Water	0.12	0.14	0.10	NR	0.15	0.15	0.10
		Oil	-	-	-	NR	-	-	0.10	
	All RubberTop Products	Dry	-	-	-	0.87***	0.85***	0.85***	-	

\*\* Friction of returnable bottles will depend on the quality of the glass, the amount of roughed up surface, etc.

\*\*\* It is not recommended to accumulate on RubberTop products; however, these values can be utilized when determining brake belt or "hold back" calculations.

**NR denotes "not recommended"**  
**Dash denotes "combination not tested"**

> Friction  
Between Chain  
and Product  
(Fm)

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# FRICITION BETWEEN CHAIN AND WEARSTRIP (Fw)

MatTop  
Conveyor  
Chain  
Materials

> Friction  
Between Chain  
and Wearstrip  
(Fw)

Base Material	Chain Material		Wearstrip Material			
	Chain Material	Lubrication Condition	Steel and Stainless Steel	UHMWPE	Nylatron	ULF
Acetal	PS	Dry	0.22	0.18	0.18	0.12
		Water	0.20	0.16	0.16	0.11
		Soap & Water	0.15	0.14	0.14	0.11
		Oil	0.10	0.10	0.10	0.10
	PSX	Dry	0.22	0.18	0.18	0.12
		Water	0.20	0.16	0.16	0.11
		Soap & Water	0.15	0.14	0.14	0.11
		Oil	0.10	0.10	0.10	0.10
	HP, WHP	Dry	0.22	0.18	0.18	0.14
		Water	0.20	0.16	0.16	0.12
		Soap & Water	0.15	0.14	0.14	0.11
		Oil	0.10	0.10	0.10	0.10
	LF, WLF, XL, XLA, XLG	Dry	0.25	0.20	0.20	0.16
		Water	0.20	0.18	0.18	0.14
		Soap & Water	0.15	0.15	0.15	0.13
		Oil	0.10	0.10	0.10	0.10
	D, WD, MLF	Dry	0.30	0.25	0.25	0.20
		Water	0.23	0.21	0.21	0.18
		Soap & Water	0.15	0.15	0.15	0.15
		Oil	0.10	0.10	0.10	0.10
	AS, HCAS, HC-ESD	Dry	0.30	0.25	0.25	0.20
		Water	NR	NR	NR	NR
		Soap & Water	NR	NR	NR	NR
		Oil	NR	0.10	0.10	0.10
	WSA, GSA, BSA	Dry	0.30	0.25	0.25	0.20
		Water	0.23	0.21	0.21	0.18
		Soap & Water	0.15	0.15	0.15	0.15
		Oil	0.10	0.10	0.10	0.10
	WSM, BSM, SMB, BRSM, BYSM, SYMB, SRMB	Dry	0.30	0.25	0.25	0.20
		Water	0.23	0.21	0.21	0.18
		Soap & Water	0.15	0.15	0.15	0.15
		Oil	0.10	0.10	0.10	0.10
	DUV	Dry	0.30	0.25	0.25	0.20
		Water	0.23	0.21	0.21	0.18
		Soap & Water	0.15	0.15	0.15	0.15
		Oil	0.10	0.10	0.10	0.10
Metal	SS, SSC	Dry	0.40	0.30	0.30	0.30
		Water	0.35	0.22	0.22	0.22
		Soap & Water	0.15	0.15	0.15	0.15
		Oil	0.15	0.10	0.10	0.10
	S	Dry	0.40	0.30	0.30	0.30
		Water	NR	NR	NR	0.22
		Soap & Water	NR	NR	NR	0.15
		Oil	0.10	0.10	0.10	0.10
	SSB	Dry	0.50	0.40	0.40	0.40
		Water	0.40	0.30	0.30	0.30
		Soap & Water	0.20	0.20	0.20	0.20
		Oil	0.20	0.10	0.10	0.10
Nylon	WX, FR-PA	Dry	0.30	0.25	0.25	0.22
		Water	NR	NR	NR	NR
		Soap & Water	NR	NR	NR	NR
		Oil	NR	NR	NR	NR
	MR, FTR	Dry	0.30	0.28	0.28	0.25
		Water	NR	NR	NR	NR
		Soap & Water	NR	NR	NR	NR
		Oil	0.10	0.10	0.10	0.10
	BIR, BWR	Dry	0.28	0.22	0.22	0.20
		Water	NR	NR	NR	NR
		Soap & Water	NR	NR	NR	NR
		Oil	0.10	0.10	0.10	0.10
	HS	Dry	0.30	0.28	0.28	0.25
		Water	0.25	0.23	0.23	0.22
		Soap & Water	0.18	0.18	0.18	0.18
		Oil	0.10	0.10	0.10	0.10
	FR-ESD	Dry	0.30	0.25	0.25	0.22
		Water	NR	NR	NR	NR
		Soap & Water	NR	NR	NR	NR
		Oil	NR	0.10	0.10	0.10

NR denotes "not recommended"

Dash denotes "combination not tested"

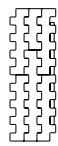
Contact Rexnord Application Engineering for more information 1.262.376.4800

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MatTop Chains



## FRICITION BETWEEN CHAIN AND WEARSTRIP (Fw)

> Friction  
Between Chain  
and Wearstrip  
(Fw)

Base Material	Chain Material		Wearstrip Material			
	Chain Material	Lubrication Condition	Steel and Stainless Steel	UHMWPE	Nylatron	ULF
Polyester	GTC	Dry Water Soap & Water Oil	0.30	0.25	0.25	0.22
			0.23	0.21	0.21	0.20
			0.15	0.15	0.15	0.15
			0.10	0.10	0.10	0.10
	P	Dry Water Soap & Water Oil	0.30	0.25	0.25	0.22
			0.23	0.21	0.21	0.20
			0.15	0.15	0.15	0.15
			0.10	0.10	0.10	0.10
	FR	Dry Water Soap & Water Oil	0.30	0.25	0.25	0.22
			0.23	0.21	0.21	0.20
			0.15	0.15	0.15	0.15
			0.10	0.10	0.10	0.10
Fluorinated Polymer	CR	Dry Water Soap & Water Oil	0.30	0.25	0.25	0.22
			0.23	0.21	0.21	0.20
			0.15	0.15	0.15	0.15
			0.10	0.10	0.10	0.10
Polypropylene	HT, WHT, RHT, KHT, HTB, BHT, YP, XP, USP	Dry Water Soap & Water Oil	0.35	0.30	0.30	0.26
			0.30	0.25	0.25	0.22
			0.25	0.20	0.20	0.19
			0.10	0.10	0.10	0.10
	WHA, BHA	Dry Water Soap & Water Oil	0.35	0.30	0.30	0.26
			0.25	0.25	0.25	0.22
			0.20	0.20	0.20	0.19
			0.10	0.10	0.10	0.10
	ESD	Dry Water Soap & Water Oil	0.35	0.30	0.30	0.26
			0.25	0.25	0.25	0.22
			0.20	0.20	0.20	0.19
			0.10	0.10	0.10	0.10
	THD	Dry Water Soap & Water Oil	0.35	0.30	0.30	0.26
			0.25	0.25	0.25	0.22
			0.20	0.20	0.20	0.19
			0.10	0.10	0.10	0.10
	HUV	Dry Water Soap & Water Oil	0.35	0.30	0.30	0.26
			0.24	0.16	0.16	0.22
			0.20	0.20	0.20	0.19
			0.10	0.10	0.10	0.10
	UHS, YPR	Dry Water Soap & Water Oil	0.35	0.30	0.30	0.26
			0.30	0.25	0.25	0.22
			0.25	0.20	0.20	0.19
			0.10	0.10	0.10	0.10
Polyethylene	WLT, BLT, LT	Dry Water Soap & Water Oil	0.28	0.23	0.23	0.21
			0.22	0.20	0.20	0.19
			0.15	0.15	0.15	0.14
			0.10	0.10	0.10	0.10
	WLA, BLA	Dry Water Soap & Water Oil	0.28	0.23	0.23	0.21
			0.22	0.20	0.20	0.19
			0.15	0.15	0.15	0.14
			0.10	0.10	0.10	0.10
	GLD, RLD	Dry Water Soap & Water Oil	0.28	0.23	0.23	0.21
			0.22	0.20	0.20	0.19
			0.15	0.15	0.15	0.14
			0.10	0.10	0.10	0.10
	LUV	Dry Water Soap & Water Oil	0.28	0.23	0.23	0.21
			0.22	0.20	0.20	0.19
			0.15	0.15	0.15	0.14
			0.10	0.10	0.10	0.10

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**NR denotes "not recommended"**  
**Dash denotes "combination not tested"**



# SPROCKET AND IDLER WHEEL DESIGNATIONS

Rexnord has developed a variety of sprocket and idler materials for various and unique applications. Sprockets are available in plastic and metallic varieties.

## ▶ Plastic

### ⇒ Acetal (N)

- ◆ Good corrosion- and wear-resistant properties
- ◆ One-piece sprocket
- ◆ Temperature Range: -40° to +180°F (-40° to +82°C)

### ⇒ Heat-Stabilized Nylon (HS)

- ◆ Stabilized nylon-based resin for environments that contain hot water spray rinsers, sterilizers and pasteurizers applications
- ◆ Resists thermal degradation from 212°F (100°C) water spray
- ◆ Available in select one-piece styles only
- ◆ Temperature Range: -40° to +220°F (-40° to +104°C)

### ⇒ Glass-Reinforced Nylon (NS)

- ◆ Split sprocket design for ease in assembly and disassembly
- ◆ Excellent wear-resistant properties
- ◆ Temperature Range: -40° to +180°F (-40° to +82°C)

### ⇒ Chemical-Resistant

- ◆ Used in applications where chemical resistance is required (i.e. chlorine, phosphorous)
- ◆ PE: Temperature Range: -100° to +80°F (-73° to +27°C)
- ◆ CR: Temperature Range: +40° to +240°F (+4° to +116°C)

### ⇒ KU and KUS (Machined Plastic)

- ◆ KU (one piece) and KUS (split) do not designate material
- ◆ Sprockets machined in a variety of plastic materials
- ◆ Flush side for ease in cleaning
- ◆ Sprockets come in a wide variety of pitch diameters and bore size
- ◆ Can be nylon or UHMWPE

## ▶ Metallic

### ⇒ Semi-Steel (Cast Iron)

- ◆ Used in non-corrosive, abrasive environments such as broken glass, metal chips
- ◆ One-piece sprocket
- ◆ Temperature Range: -40 to +350°F (-40° to +177°C)

### ⇒ SS (Stainless Steel)

- ◆ Used in corrosive, abrasive environments such as vegetable processing, snack foods
- ◆ Available in select chains only
- ◆ Available in split and one-piece designs
- ◆ Temperature Range: -100 to +800°F (-73° to +427°C)

## MatTop Sprocket and Idler Wheel Designations

### > Plastic

- > Acetal (N)
- > Heat-Stabilized Nylon (HS)
- > Glass-Reinforced Nylon (NS)
- > Chemical-Resistant
- > KU and KUS (Machined Plastic)

### > Metallic

- > Semi-Steel (Cast Iron)
- > SS (Stainless Steel)

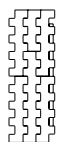
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MatTop Chains

Contact Rexnord Application Engineering for more information 1.262.376.4800



## WEARSTRIP MATERIALS

Proper chain and wearstrip selection will provide optimum life. Since a function of the wearstrip is to lower friction and to reduce wear, it is recommended to give careful consideration when selecting the material.

The following general guidelines will help in selecting the proper material for your application.

### ➤ Plastic

#### ➤ Acetal

⇒ Not recommended for use with acetal chains; it is best not to run identical plastics together

#### ➤ Nylatron (Nylon with Moly Filler)

- ⇒ Recommended for dry applications due to low wear and low friction
- ⇒ Especially suited for dry operation on thermoplastic side-flexing chain corners due to its high PV (Pressure-Velocity) rating
- ⇒ Typically not recommended in wet applications because it will absorb moisture and expand (if used in wet applications, allow clearance for expansion and movement of fasteners)
- ⇒ Typically only used for curves

### ➤ Metal

#### ➤ Aluminum

⇒ **NOT RECOMMENDED** due to poor wear resistance

#### ➤ Bronze and Brass

- ⇒ Sometimes used with stainless steel chains
- ⇒ Typically used for non-sparking and anti-static conditions
- ⇒ For bronze — recommended one-half hard temper (Rb 58)
- ⇒ For brass — recommended one-half hard (Rb 70 Min) to full hard (Rb 82) temper

### ➤ Steel

- ⇒ Recommended for non-corrosive, abrasive or high-temperature applications
- ⇒ Abrasive particles are less likely to imbed in metal wearstrips in comparison to plastic
- ⇒ A cold-rolled plain carbon steel is recommended
- ⇒ Heat treated grades — hardened to 25 to 30 Rc is recommended

### ➤ Stainless Steel

- ⇒ Recommended for corrosive, abrasive or high-temperature applications
- ⇒ Abrasive particles are less likely to imbed in metal wearstrips in comparison to plastic
- ⇒ A cold-rolled austenitic grade is recommended which offers the best corrosion-resistant properties
- ⇒ Recommended one-quarter hard temper (25 to 35 Rc)
- ⇒ Softer annealed grades of austenitic are **NOT RECOMMENDED**. Adverse interaction between the chain material and the soft stainless steel might develop. When this happens, the resulting wear debris consists almost entirely of finely divided stainless steel particles, nearly black in color, similar to molydisulfide or graphite. The wear of the stainless steel might be rapid while the thermoplastic chain by contrast exhibits only slight wear.
- ⇒ Martensitic stainless steel can also be used when heat-treated (25 to 35 Rc); however, it is not as corrosion-resistant as austenitic
- ⇒ Hardness is more critical than grade for better wear resistance

### ➤ Specialty

#### ➤ Teflon

⇒ Recommended only for very low-speed/low-load applications

#### ➤ Lubricant-Impregnated Wood

- ⇒ Commonly used in dry abrasive applications (i.e. glass, paper)
- ⇒ Not recommended in wet applications

- > Plastic
- > Acetal
- > Nylatron (Nylon with Moly Filler)
- > Metal
- > Aluminum
- > Bronze and Brass
- > Steel
- > Stainless Steel
- > Specialty
- > Teflon
- > Lubricant-Impregnated Wood

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# WEARSTRIP MATERIALS

- **UHMWPE (Ultra High Molecular Weight Polyethylene)**
  - ⇒ Recommended for dry or wet applications on straight or side-flexing conveyors
  - ⇒ Not recommended for abrasive conditions where particles may imbed in the surface and wear the chain
  - ⇒ Provides lower coefficient of friction than metals
  - ⇒ Not affected by moisture and more resistant to chemicals than nylon
  - ⇒ UHMWPE materials can be supplied with various fillers:
    - Ceramic/glass
    - Conductive
    - Oil/wax

- **ULF (Ultra Low-Friction)**
  - ◆ UHMWPE with self-lubricating additive package
  - ◆ Consistent low friction
  - ◆ Suitable for high-speed conveying where minimal or no external lubrication is present
  - ◆ Improved PV (Pressure-Velocity) properties in comparison to other curve materials



Wearstrip surface finish is a critical aspect for overall chain life. Recommended wearstrip surface finish values are:

Metal:	32 μ-in Ra (0.8 μ-m Ra)
Nylatron:	63 μ-in Ra (1.6 μ-m Ra)
UHMWPE:	125 μ-in Ra (3.2 μ-m Ra)

- > UHMWPE (Ultra High Molecular Weight Polyethylene)
- > ULF™ (Ultra Low-Friction)

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## LUBRICATION

Lubrication is recommended whenever the application permits. It not only reduces friction, thereby reducing chain tension, but also greatly improves the wear life of the chain and wearstrips. Lubrication offers a constant cleaning effect of both the chain and wearstrip and can also reduce static.

### ➤ General Recommendations

- ⇒ Lubrication should contact both the chain and wearstrip.
- ⇒ When lubricating side-flexing MatTop chains, the lubricant must be applied at the entrance of the outside corner track.

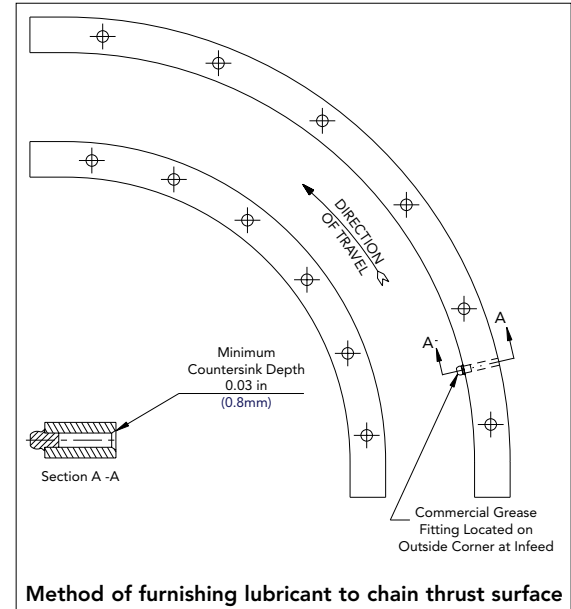
### ➤ General Types of Lubricants

- ⇒ Water — Only utilize with corrosion-resistant materials. Can be used as a general lubricant; however, it is not as effective as other types due to friction and chain-cleaning properties.
- ⇒ Water soluble lubricants and soaps — Only utilize with corrosion-resistant materials. These are excellent lubricants which also help clean the chain.
- ⇒ Oil base lubricants — These are vegetable, mineral oils or grease which offer high lubricity. Can be used with plastic or metal materials. Recommended to be used on all metal chains whenever practical. Food grade oils are available.

### ➤ Dry Film Lubricants

- ⇒ A dry lubricant system has many of the same benefits of a run-dry conveyor with the added benefit of a lower coefficient of friction. A dry lubricant is applied by an automatic system with dosing units that put very little lubricant on select areas of the conveyors. The lubricant can be water- or oil-based with Teflon, silicone or solid micro-particles. The preferred lubricant is an oil and water emulsion. The most critical part of the process is how the lubricant is applied on the chain. This is typically accomplished with the use of brushes, shoes or spray nozzles. The benefit of spray nozzles is the absence of contact with the chain, eliminating the possibility of trapped dirt or debris. The lubricant can also be applied to the inside of a curve for side-flexing conveyors. There are many dry lubricant products on the market which have been specifically formulated for either plastic or metal chains and container types.

- ⇒ While dry lubricants offer many advantages, conveyor cleanliness considerations should be taken into account since dry lubes do not provide a continuous cleaning process like traditional water and soap lubrication.



### ➤ Selective Lubrication

- ⇒ In some applications, the presence of a lubricant cannot be tolerated. For these applications, it is recommended to utilize chains made of HP, PS or PSX acetal material with Nylatron corners, which offers the lowest coefficient of friction.



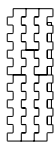
To eliminate or reduce lubrication, contact Rexnord Application Engineering to conduct a run-dry survey. 1.262.376.4800

For more information on lubrication types, compatibility, methods, contact a lubricant manufacturer.

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# ENVIRONMENTAL CONSIDERATIONS

## ➤ Abrasive Applications

- ⇒ Applications with the presence of dirt, sand, glass or metal particles can lead to premature wear of the conveying chain and wearstrips.
- ⇒ Recommendations:
  - ◆ Utilize wearstrips and chains with a hard wear surface
  - ◆ If possible, use controls to minimize the amount of accumulation
  - ◆ The use of WX chain material and metal sprockets can extend wear life

## ➤ Chemical Applications

- ⇒ Make sure any chemicals or cleaners used on conveyors are compatible with chain, wearstrip and sprockets. See table on page EM - MT - 15 for more detailed compatibility information.

## ➤ Dry Applications

- ⇒ Considerations to be taken when running dry:
  - ◆ Product backline pressure
  - ◆ Conveyor cleanliness
  - ◆ Conveyor pulsation
  - ◆ Increased component wear

## ➤ Extreme Temperature Applications

- ⇒ The recommended minimum and maximum operating temperatures for MatTop chain and wearstrips can vary due to the presence of moisture.

Wearstrip Material	Minimum Temperature		Maximum Temperature			
	Dry		Dry		Wet	
	°F	°C	°F	°C	°F	°C
Acetal	-40	-40	180	82	150	66
UHMWPE/ULF	-100	-73	180	82	160	71
Nylon	-40	-40	220	104	NR	NR
Stainless Steel	-100	-73	800	427	250	121
Steel	-40	-40	350	177	NR	NR
Lubricated Impregnated Wood	-50	-46	160	71	160	71

## ➤ Metal Detector Applications

- ⇒ Depending on the sensitivity of the metal detector, different materials can be used.

## ➤ Metal Detectable Applications

- ⇒ Special materials are available with non-ferrous metal particulate that allow detection as they pass through a metal detector.

## ➤ Impact-Loading Applications

- ⇒ Polyethylene (LT) and Tough Composite (TC) materials are ideal for impact-loading

applications. A solid bed should be utilized in impact-loading areas.

## ➤ High-Speed Applications


- ⇒ In any high-speed application, the critical aspect of the conveyor is the corners. The concern with running the chain at high speeds is the PV (Pressure-Velocity) in the corners. If the PV limits are exceeded, the chain or corner track may become damaged due to the heat generated from the high speed and/or load. It is generally recommended to utilize Nylatron corner tracks in conjunction with PS or HP materials or selective lubrication for these applications. PSX chain with ULF corner tracks will provide the best PV capability and least energy consumption.

## ➤ Long-Length Conveyors/Pulsation Applications

- ⇒ Pulsation or "slip stick" of chain results in a jerking chain motion which can occur in long, slow-speed and dry conveyors. Pulsation can create product stability problems in extreme cases. It can also result in premature chain elongation or the chain jumping drive sprocket teeth. As a general rule of thumb, it is recommended that conveyor lengths do not exceed 100 ft (30m) per drive, regardless of loading. Rexnord also recommends a 150° minimum wrap on the head sprocket. If necessary, this can be maintained with the use of a snubber roller. However, if an application exceeds 100 ft (30m), contact engineering for further assistance.


## ➤ Static Environment Applications

- ⇒ Under certain conditions, thermoplastic can acquire a static nuisance charge. Static environments are classified as:

 **Class I:** Static spark causes explosion — stainless steel chains are required.

**Class II:** Static spark is a nuisance charge — low charge will provide slight shock or possible circuit damage.

- ⇒ All applications utilizing thermoplastic anti-static materials (i.e. AS, ESD) must be approved by Rexnord Application Engineering prior to quoting.

 Grounding is crucial for the system to reduce static charges.

## ➤ UV Applications

- ⇒ When conveyor chains are exposed to direct UV (Ultraviolet) or sunlight, UV stabilized material should be utilized.

# MatTop Environmental Considerations

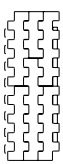
- > Abrasive Applications
- > Chemical Applications
- > Dry Applications
- > Extreme Temperature Applications
- > Metal Detector Applications
- > Metal Detectable Applications
- > Impact-Loading Applications
- > High-Speed Applications
- > Long-Length Conveyors/Pulsation Applications
- > Static Environment Applications
- > UV Applications

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MatTop Chains



# MATERIAL CHARACTERISTIC TABLE

Material Characteristics	HP WHP	LF WLF	WLT BLT GLD	HT BHT HTB KHT RHT THD WHT	BWR	AS HCAS	ESD HC-ESD	HS	P	CR	MR	DUV	HUV	LUV	FR	WSM BSM SMB	UHS	WHA BHA	WSA BSA SMB	WLA BLA	TC	PS PSX	WX BWX
Impact-Resistant			•		•					•	•			•			•			•	•		•
Wear-Resistant	•	•			•											•	•	•	•	•		•	•
Chemical-Resistant*			•	•					•	•								•		•			
Strength	•	•		•	•			•		•	•	•	•			•	•		•			•	•
Low Frictional Characteristics	•	•																				•	
Capability to Run Dry in Corners	•	•			•																	•	•
Suitability in Wet Environments	•	•	•	•				•	•	•		•	•	•	•	•	•	•	•	•	•	•	
Low-Temperature Capability (to 40°F)	•	•	•		•			•			•	•		•		•			•	•		•	•
High-Temperature Capabilities (to +180°F)	•	•		•	•	•	•	•	•	•	•	•	•			•		•	•			•	•
Ultra Violet Capabilities					•					•	•	•	•	•									•
Suitability for Class II (nuisance static)						•	•																
Suitability for Class I (explosive static)																							
Non-magnetic Qualities	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Flame Retardance										•					•								
Capability to Convey Hot Products (to +375°F)											•												•
FDA Approval	•	•	•	•					•	•						•		•	•	•		•	

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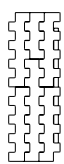
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MatTop Chains

- HP = High Performance
- WHP = White High Performance
- LF = Low-Friction
- WLF = White Low-Friction
- BLT = Blue Low-Temperature
- HT = High-Temperature
- BHT = Blue High-Temperature
- HTB = Black High-Temperature
- KHT = Khaki High-Temperature
- RHT = Red High-Temperature
- WHT = White High-Temperature
- BWR = Black Wear-Resistant
- AS = Anti-Static
- ESD = Electrostatic Dissipative
- HS = Heat-Stabilized
- P = Chemical-Resistant
- CR = Chemical-Resistant
- MR = Melt-Resistant
- DUV = Ultraviolet-Resistant
- HUV = High-Temperature Ultraviolet-Resistant
- LUV = Low-Temperature Ultraviolet-Resistant
- FR = Flame-Retardant
- WSM = White Special Material
- BSM = Black Special Material
- SMB = Blue Cut-Resistant Acetal
- UHS = Ultra High-Strength
- WHA = White High-Temperature with Antimicrobial Product Protection
- BHA = Blue High-Temperature with Antimicrobial Product Protection
- WSA = White Special Material with Antimicrobial Product Protection
- BSA = Blue Special Material with Antimicrobial Product Protection
- GSA = Gray Special Material with Antimicrobial Product Protection
- WLA = White Low-Temperature with Antimicrobial Product Protection
- BLA = Blue Low-Temperature with Antimicrobial Product Protection
- GLD = Gray Low-Temperature Metal Detectable
- RLD = Red Low-Temperature Metal Detectable
- THD = Tan Low-Temperature Metal Detectable
- TC = Tough Composite
- PS = Platinum Series
- WX = Abrasion-Resistant
- BWX = Black Abrasion-Resistant

\* See Corrosion Resistance Guide on Page EM - MT - 15 for more details.





# CORROSION RESISTANCE GUIDE

Common or Chemical Name	Carbon Steel	Austenitic	Acetal	Nylon and Nylatron	Polyester	Chemically Resistant Fluorinated Polymer	Polypropylene	Polyethylene
	S	SS	AS, HCAS, BSA, BSM, DUV, GSA, HP, LF, PS, PSX, SMB, WHP, WLF, WSA, WSM	BWR, HS, MR, WX, BWX	P, FR, TC	CR	BHA, BHT, ESD, HT, HTB, HUV, KHT, RHT, THD, UHS, WHA, WHT	BLA, BLT, GLD, LUV, RLD, UHMWPE, WLA, WLT
Acetic Acid (over 5%-up to 50%)	U	M	U	M	S	S	S	S
Acetone	U	S	S	S	S	U	S	S
Alcohol	S	S	S	S	S	S	S	S
Ammonia	M	S	U	S	S	S	S	S
Beer	S	S	S	S	S	S	S	S
Beverages-Soft Drinks	S	S	S	S	S	S	S	S
Benzene	S	S	S	S	S	S	M	M
Brine (pickle)	U	M	M	M	S	S	S	S
Carbon Tetrachloride	M	M	S	S	S	U	M	M
Chlorine	U	U	U	U	S	S	S	S
Citric Acid	U	S	M	M	S	S	S	S
Cyclohexane	-	-	S	-	-	S	U	U
Ethyl Chloride	-	S	S	S	S	S	M	M
Formaldehyde	S	S	S	S	S	M	S	S
Formic Acid	U	U	U	U	S	S	S	S
Fruit Juices	U	S	S	S	S	S	S	S
Gasoline	S	S	S	S	S	S	M	M
Hexane	-	S	S	-	S	S	S	U
Hydrochloric Acid (up to 2%)	U	U	U	U	S	S	S	S
Hydrochloric Acid (up to 37%)	U	U	U	U	S	S	M	S
Hydrogen Peroxide	U	S	U	U	S	S	M	S
Iodine	U	U	U	U	U	M	M	M
Isopropanol (isopropyl alcohol)	S	S	S	S	S	S	S	S
Lactic Acid	U	S	S	M	S	M	S	S
Methylene Chloride	-	S	S	-	U	M	S	U
Milk	S	S	S	S	S	S	S	S
Muriatic Acid	U	U	U	U	S	S	M	S
Nitric Acid (low concentrations)	U	S	U	U	S	S	S	S
Oil (vegetable or mineral)	S	S	S	S	S	M	S	S
Ozonated Water	S	S	M	U	S	S	M	S
Paraffin	S	S	S	S	S	S	S	S
Phosphoric Acid (up to 10%)	U	S	U	U	S	S	S	S
Soap and Water	M	S	S	S	S	S	S	S
Sodium Chloride	U	M	S	S	S	S	S	S
Sodium Hydroxide (up to 25%)	U	S	S	U	U	M	S	S
Sodium Hypochlorite (Bleach)	U	U	U	U	S	S	S	S
Stearic Acid	U	S	M	S	S	S	S	S
Sulphuric Acid (up to 40%)	U	U	U	U	S	S	S	S
Toluene (Toluol)	S	S	M	S	S	M	S	U
Turpentine	-	S	S	S	S	S	S	U
Vegetable Juices	M	S	S	S	S	S	S	S
Vinegar	U	S	S	S	S	M	S	S
Water (fresh)	U	S	S	S	S	S	S	S
Whiskey	S	S	S	S	S	S	S	S
Wine	S	S	S	S	S	S	S	S
Xylene	S	S	S	S	S	S	U	M

Dash = Not Tested

M = Marginal

U = Unsatisfactory

S = Satisfactory



### General Rules of Thumb:

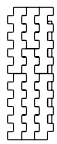
With acetal products, do not use cleaning or lubricating agents with a pH below 4 or above 10. This table is based on data available by various material suppliers.

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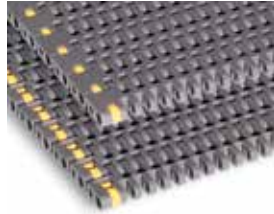
# MatTop CHAIN STYLES

## MatTop Chain Surface Styles



**Solid Top**

- ⇒ Not necessarily 0% open area
- ⇒ General use



**Perforated Top**

- ⇒ Used where air or water flow is required
- ⇒ Open area from 6 to 30%



**Open Area**

- ⇒ Used where the maximum amount of air or water flow is required
- ⇒ Open area larger than 30%



**Raised Rib**

- ⇒ Used where very smooth head transfers are required
- ⇒ Utilized with transfer combs



**Textured Top**

- ⇒ Used to reduce products from sticking to the chain



**LBP**

- ⇒ Low backline pressure used to minimize backline pressure between products



**Transverse LBP**

- ⇒ Low backline pressure used to transfer products at 90°



**Rubbertop/Supergrip**

- ⇒ High friction rubber surface used on incline/decline conveyors, brake belts and metering belts



**Safety Top**

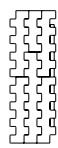
- ⇒ Provides a slip-resistant surface where people walk on the chain

## > MatTop Chain Surface Styles

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# MatTop CHAIN STYLES

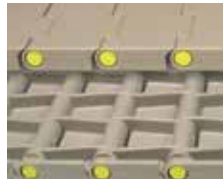
## Pin Retention Styles

> Pin Retention Styles



**Soldered Head**

- ⇒ Excellent pin retention
- ⇒ Pins are not reusable
- ⇒ Soldering iron required
- ⇒ See table below for MatTop chain pin soldering tips



**Plug-Plug  
Plug-Blind**

- ⇒ Reusable pin
- ⇒ No special tools required
- ⇒ Pin access on one side of the chain for plug-blind design
- ⇒ Pin access on both sides of the chain for plug-plug design



**Plug-TAB**

- ⇒ Reusable pin
- ⇒ No special tools required
- ⇒ Plug access from top surface on both sides of chain
- ⇒ Pin access on both sides of chain



**Plug-No TAB**

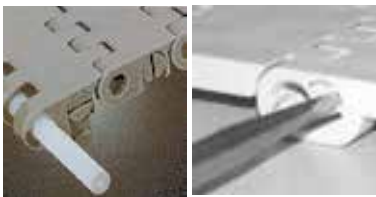
- ⇒ Reusable pin
- ⇒ Needle nose plier required
- ⇒ Plug access from top surface on both sides of chain
- ⇒ Pin access on both sides of chain

MatTop Pin Soldering Tips		
Part Number	Description	Chain Series
114-2047-1	Solder Tip 3/16 in	5935, 5936, 6938
114-2128-1	Solder Tip 3/8 in	4705, 4706, 4707, 5966, 5996



### Offset Pin Hole

- ⇒ No plugs
- ⇒ Reusable pin
- ⇒ No special tools required
- ⇒ Pin access on both sides of the chain
- ⇒ Patented design



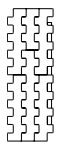
### TwistLock Pin Retention

- ⇒ Plugs are integral part of chain
- ⇒ Reusable pin
- ⇒ No special tools required
- ⇒ Pin access on both sides of chain
- ⇒ Patented design

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# MatTop CHAIN STYLES

## Disassembly (7960 Series)

### STEP 1



⇒ Using a narrow flat-bladed screwdriver, remove retention stake by lifting up on backside of the tab.

### STEP 2



⇒ With retention stake removed, push wear block out of chain link from back side (as shown).

### STEP 3



⇒ With both retention stakes and wear blocks removed, push connecting rod out of chain assembly from either side.

## Assembly (7960 Series)

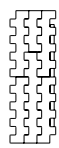
All parts are easily reassembled without any tools. Assembly and disassembly are the same for both 7960NT and 7960ST. 7960NT shown.

- > Disassembly (7960 Series)
- > Assembly (7960 Series)

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## MatTop CHAIN STYLES

### Disassembly (7956 Series)

- ⇒ Rotate TwistLock counterclockwise
- ⇒ Insert thread-puller into pin
- ⇒ Remove pin
- ⇒ Remove TwistLock plug
- ⇒ Separate attachment from chain link by hand or with flat-bladed screwdriver



7956B



7956GT



7956NT



7956TAB



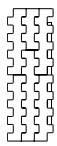
### Assembly (7956 Series)

- ⇒ Reassemble in reverse order

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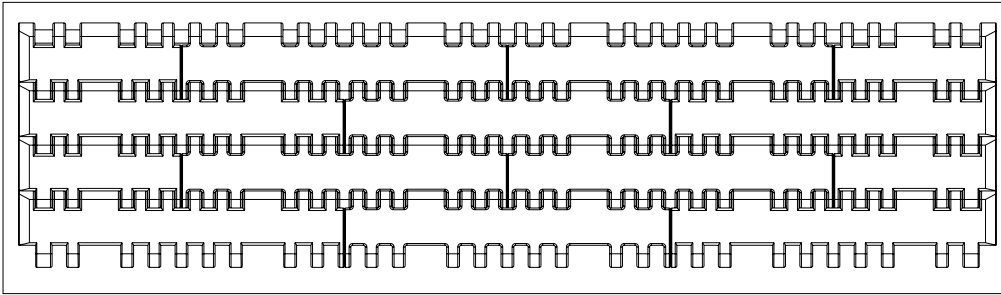
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# MatTop CHAIN STYLES

## ▶ Assembled to Width

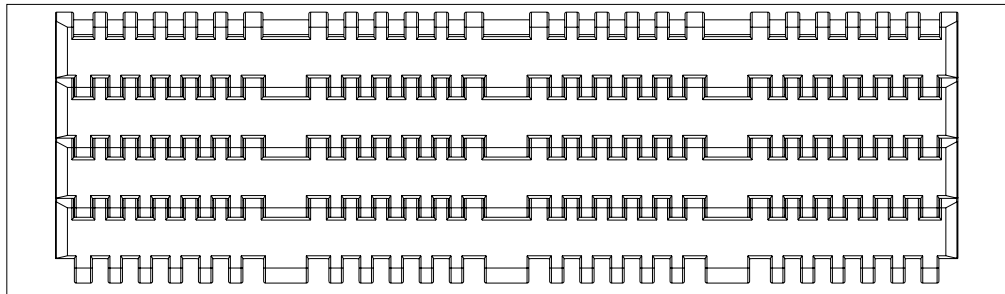


> Assembled to Width

> Molded to Width (MTW)

- ⇒ Width determined by customer order
- ⇒ Rexnord stocks families of modules
- ⇒ Refer to table on page EM - MT - 81 for specific widths
- ⇒ Bricked construction
- ⇒ Assembled to customer order

**i** Standard width chains are recommended. For more width increments, "Cut to width" chains are also available (See page EM - MT - 81)



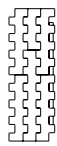
## ▶ Molded to Width (MTW)

- ⇒ Available in standard MatTop chain widths (i.e. 3-1/4 in, 84mm, 4-1/2 in, 6 in, 7-1/2 in, 12 in, 15 in)
- ⇒ Refer to table on page EM - MT - 81 for specific widths
- ⇒ Available with or without Positrack tracking guides in some chain styles
- ⇒ Stocked in 10 ft lengths

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## CONVEYOR DESIGN RECOMMENDATIONS

### ► Straight-Running Configuration

⇒ A long conveyor with a single drive is the simplest and most ideal design. Sometimes several short conveyors are required due to application constraints.

### ► Side-Flexing Configuration

⇒ Because a straight conveyor is not always possible due to flow processes or obstructions in the plant, the designer can incorporate a side-flexing conveyor, which traverses one or more curves.

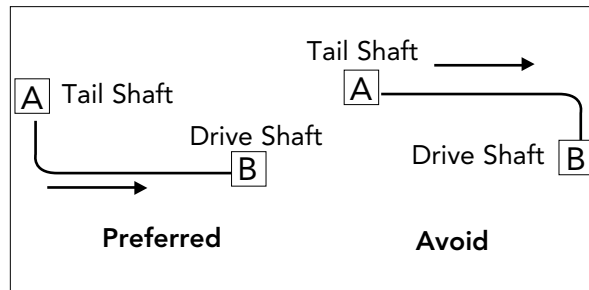
⇒ When conveying products 90°, the following methods can be utilized:

- ◆ DTS transfer (DynamicTransfer System)
- ◆ Side-flexing TableTop or MatTop chain
- ◆ Deadplate transfer
- ◆ LBP chain with transverse rollers

**i** For more information on transfer details see page EM - MT - 47 - 54. For transfers other than 90°, side-flexing chains must be utilized.

⇒ When planning a side-flexing conveyor layout, the designer must consider the following factors that affect chain life:

- ◆ Minimize the number of corners and the angle of each corner whenever possible
- ◆ Selective lubrication in the corners should be considered for certain applications, which will prevent excessive noise and premature wear to the chain or corner
- ◆ When conveying from Point A to Point B, design the conveyor so that the drive is positioned furthest from the last corner (see drawing), resulting in lower chain tension and maximizing chain life



⇒ Consideration should be given to the design of the curves within a conveyor such that if the chain has little to no “allowable twist”, the curve should be designed to **NOT** change elevation while simultaneously side-flexing through the curve. Doing so on chains that do not twist will bind the

chain and lead to chain failure. Side-flexing MatTop chains have negligible “allowable twist” hence curves should be designed in a horizontal plane and any changes in elevation should be done in the straight sections of the conveyor.

**i** In general, the straight section between the corner and the drive shaft must be at least 24 in (610mm) to allow adequate room for the catenary (see page EM - MT - 68). The tail shaft section should be at least 12 in (305mm).

⇒ When conveying products 90°, a single side-flexing conveyor offers the following advantages over two separate straight conveyors that have transfer plates between them:

- ◆ Eliminates deadplate transfers or turntables, preventing the product from slipping or stalling
- ◆ Minimizes tipping and jamming
- ◆ Decreases noise
- ◆ Reduces the cost of controls and maintenance by only requiring one drive motor

### ► Incline/Decline Configuration

⇒ General rules of thumb when designing incline or decline conveyors are as follows:

- ◆ Chain should not be pushed
- ◆ Catenary should be located after the drive shaft
- ◆ Drive shaft should be located at the top of the conveyor for incline conveyors
- ◆ Chains that use pushers, sideguards and high friction inserts need special requirements in the return section (see pages EM - MT - 61 - 66 for examples)

**i** Make sure that the entire chain path (carry, return, sprocket and catenary sag areas) has plenty of clearance for free chain travel. Make sure all frame and support members, piping, conduits and mounting hardware are well clear of chain path.

> Straight-Running Configuration

> Side-Flexing Configuration

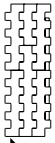
> Incline/Decline Configuration

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## SPECIAL APPLICATION CONSIDERATIONS

### ► Pasteurizers/Coolers/Warmers

- ⇒ Things to be taken into consideration include:
  - ⇒ Thermal expansion (see page EM - MT - 24 for details)
    - ◆ Length and width
    - ◆ Square or hex shafting
  - ⇒ Water flow
  - ⇒ Tracking
  - ⇒ Pasteurizer design manuals are available for more details utilizing 5997 or 9608 chains



If double deck systems are utilized, careful consideration should be taken to ensure adequate clearance for product conveyability on the lower deck.

### ► Vacuum Conveyors

- ⇒ Things to be taken into consideration include:
  - ◆ Percentage of open area required
  - ◆ Hole patterns required
    - Footprint of product conveyed
  - ◆ Standard vacuum chains are 5935, 4705 and 8505
  - ◆ Other series available with drilled holes on a made-to-order (MTO) basis

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# CONVEYOR DESIGN RECOMMENDATIONS

## Guide Clearance and Thermal Expansion, Straight-Running, Assembled to Width MatTop Chains

- ⇒ Room Temperature Applications:
  - ◆ Guide Clearance (GC) = Chain Width + A
- ⇒ Elevated Temperature Applications (pasteurizers, warmers, coolers, etc.):
  - ◆ Actual width increases by an amount that is dependent upon temperature, chain width and the plastic coefficient of thermal expansion

Coefficients of Thermal Expansion		
Material	inches / Feet / °F	mm / m / °C
Acetal	0.0006	0.09
Polyethylene	0.0015	0.23
Polypropylene	0.0010	0.15
Nylon	0.0005	0.07

Standard Conveyor Guide Clearance			
Dimension A		Conveyor Length	
inches	mm	feet	m
0.38	9.7	Up to 30	Up to 9
0.63	16.0	30 to 50	9 to 15
0.75	19.1	Over 50	Over 15

## Standard Conveyor Guide Clearance Calculation of GC at Elevated Temperatures

### Example:

- ⇒ Assume a 12 ft (3.6m) wide, 45 ft (13.5m) long pasteurizer operating at an average temperature of 190°F (88°C) and utilizing a polypropylene chain

⇒ The increase in the width ( $\Delta W$ ) due to the temperature of 190°F (88°C) can be found as shown:

### English:

$$\Delta W = W \text{ (chain width)} \times \text{CTE} \times \Delta T$$

$$\Delta W = 12 \text{ ft} \times 0.0010 \text{ in/ft/°F} \times (190-70^\circ\text{F})$$

$$\Delta W = 1.44 \text{ in}$$

### Metric:

$$\Delta W = W \text{ (chain width)} \times \text{CTE} \times \Delta T$$

$$\Delta W = 3.6\text{m} \times 0.15\text{mm/m/°C} \times (88-21^\circ\text{C})$$

$$\Delta W = 36.6\text{mm}$$

⇒ Allow for standard clearance, "A", based upon conveyor length

⇒ For a 45 ft (13.5m) long conveyor, A = 0.63 in (16.0mm) (from the Standard Conveyor Guide Clearance Table)

⇒ The total GC for this example is:

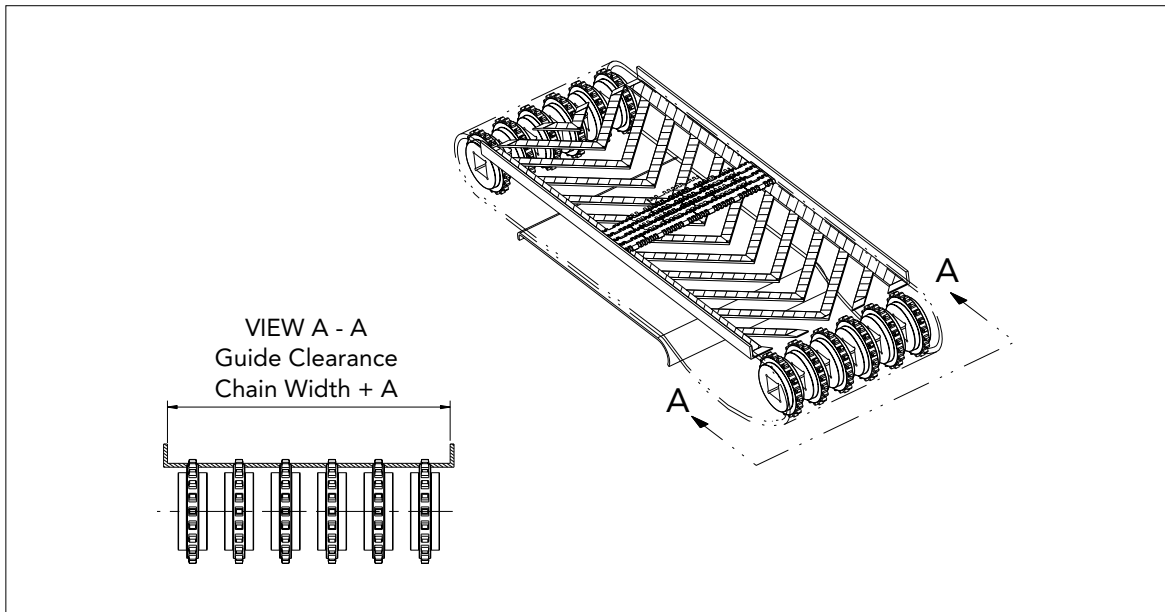
$$\text{GC} = \text{Chain width at room temperature} + \text{expansion due to temperature} + \text{standard clearance (A)}$$

### English:

$$\text{GC} = 144 \text{ in} + 1.44 \text{ in} + 0.63 \text{ in} = 146.07 \text{ in}$$

### Metric:

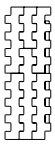
$$\text{GC} = 3658\text{mm} + 36.6\text{mm} + 16.0\text{mm} = 3710.6\text{mm}$$



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# CONVEYOR DESIGN RECOMMENDATIONS

## ➤ Carry and Return Ways

⇒ Guide clearance is critical for both straight and side-flexing chains, especially in extreme-temperature applications (see page EM - MT - 24 for details). For guide clearance dimensions of side-flexing and Molded to Width (MTW) chains containing Positrack tracking guides, see pages EM - MT - 31 - 34, EM - MT - 42 - 44, tables on page EM - MT - 28, or the Product Catalog (8rxCAT-en).

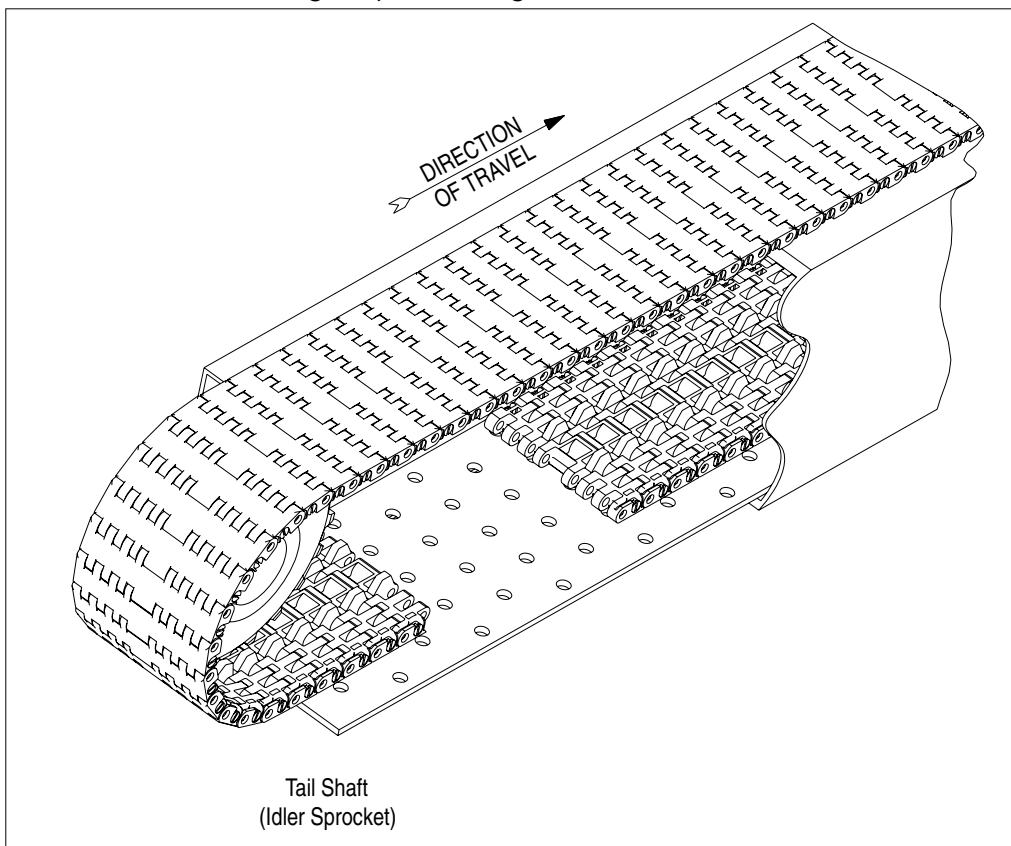
✓ Offset rail, serpentine and chevron patterns are recommended to maximize chain life because they provide uniform wear across the full width of the chain.

⇒ MatTop chains can be supported in a variety of arrangements

⚠ Allow for thermal expansion of chain (see page EM - MT - 24) and wearstrips (see page EM - MT - 58)

## ➤ Full-Width Sliding Carry or Return Ways

- ⇒ Continuous sheets extend the full width of the chain and almost the entire length between the tail and drive sprockets
- ⇒ Plates or sheets may be perforated with slots or holes to allow for drainage and the passage of foreign materials
- ⇒ Not recommended as a return support for wet applications, since a "suction" can be created between the chain and bed
- ⇒ Recommended in areas of high impact loading



> Carry and Return Ways

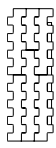
> Full-Width Sliding Carry or Return Ways

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MatTop Chains



# CONVEYOR DESIGN RECOMMENDATIONS

## ▶ Carry and Return Ways

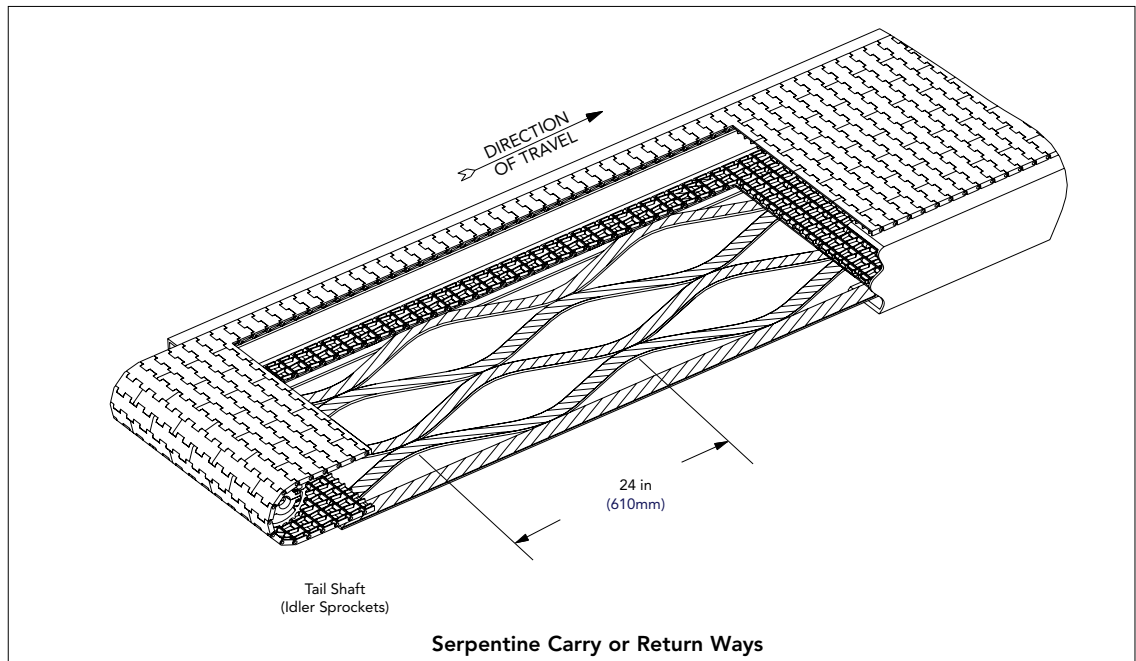
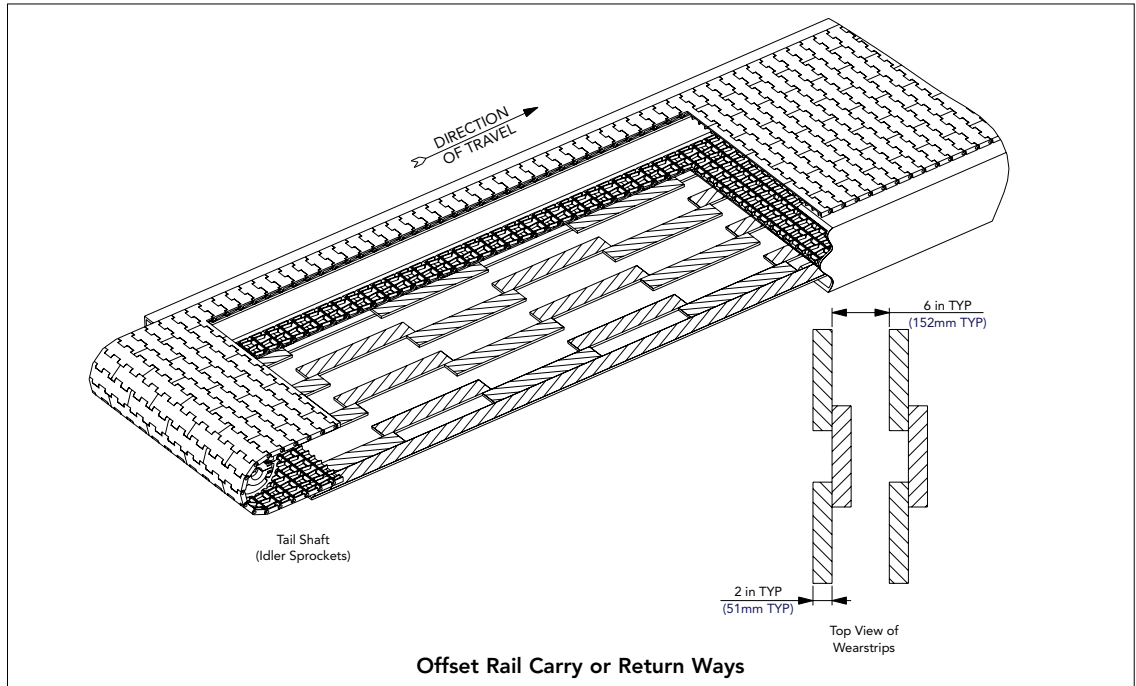
### ▶ Offset Rail Style and Serpentine Carry or Return Ways

⇒ The chain is fully supported

⇒ Allows for drainage and the passage of foreign materials

✓ ⇒ Offset rail, serpentine and chevron patterns are recommended to maximize chain life because they provide uniform wear across the full width of the chain

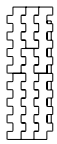
- > Carry and Return Ways
- > Offset Rail Style and Serpentine Carry or Return Ways



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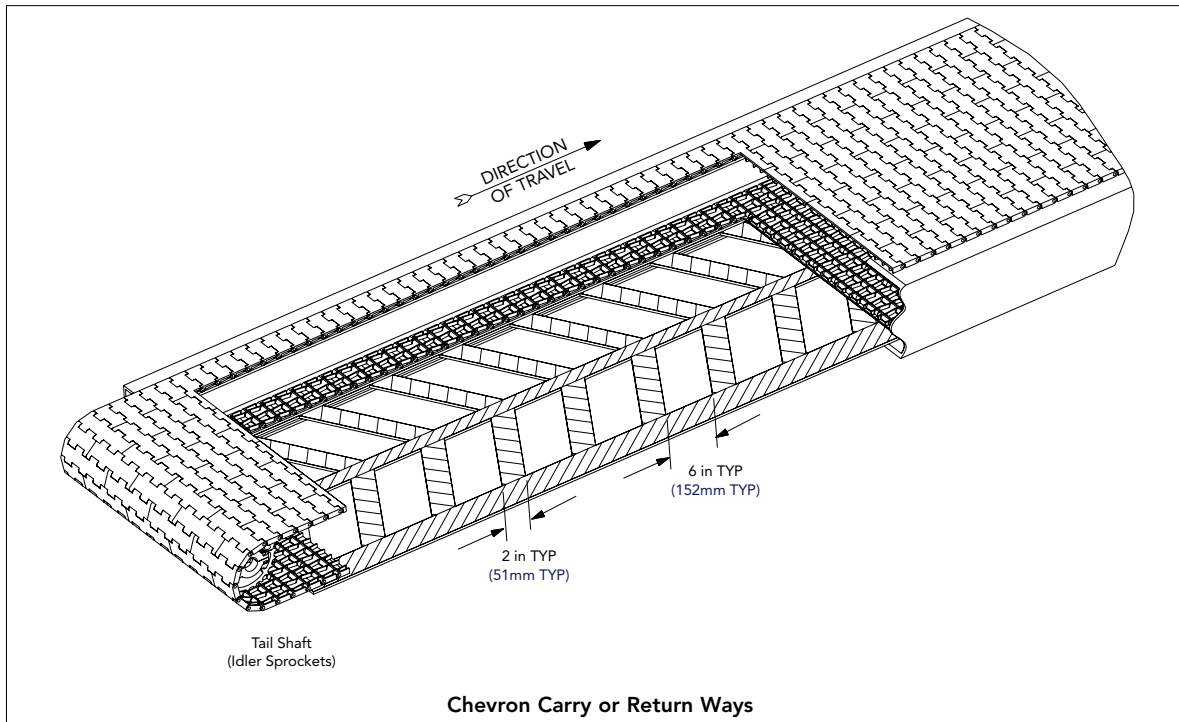


# CONVEYOR DESIGN RECOMMENDATIONS

## ➤ Carry and Return Ways

### ➤ Chevron Carry or Return Ways

- ⇒ The chain is fully supported
- ⇒ Allows for drainage and the passage of foreign materials
- ✓ ⇒ Offset rail, serpentine and chevron patterns are recommended to maximize chain life because they provide uniform wear across the full width of the chain



## ➤ Other Recommendations

### ➤ Chains with Attachments

- ⇒ For chains with attachments, see pages EM - MT - 61 - 66
- ⇒ Offset can only be used for carry way and return

### ➤ LBP Chains

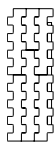
- ⇒ Offset rails, serpentine, and chevron should only be used in the carry ways
- ⇒ For LBP 7703 chain, the chain can be returned with wearstrips on only the outer edges of the chain, but for widths greater than 24", a center support may be needed, or use of S.S. pins to "stiffen" the chain
- ⇒ For other LBP chains, wearstrips can be positioned between the rollers

- > Carry and Return Ways
- > Chevron Carry or Return Ways
- > Other Recommendations
- > Chains with Attachments
- > LBP Chains

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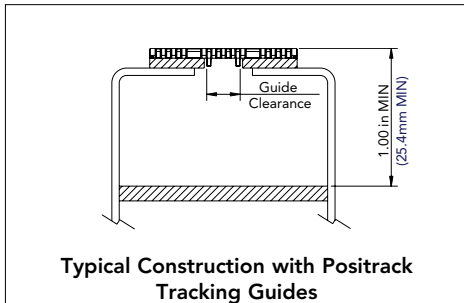


# CONVEYOR DESIGN RECOMMENDATIONS

## Guide Clearance

⇒ Guide clearance is critical for both straight and side-flexing chains. For guide clearance dimensions of Positrack chains, see tables below or Product Catalog (8rxCAT-en). For guide clearance of wide, assembled to width MatTop chains at elevated temperatures, see page EM - MT - 24. For guide clearance of 7956 and 7960 series, see pages EM - MT - 31 - 34 (7956B, GT, NT and TAB) and EM - MT - 42 - 44 (7963NT/7966NT and 7963ST/7966ST).

## Positrack



## Molded to Width MatTop Chains with Positrack Tracking Guides

⇒ MatTop Chains with Positrack tracking guides are usually guided in a manner similar to TableTop Chains

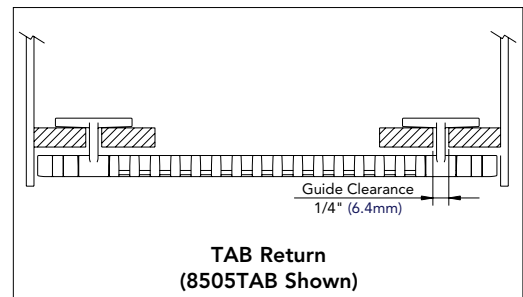
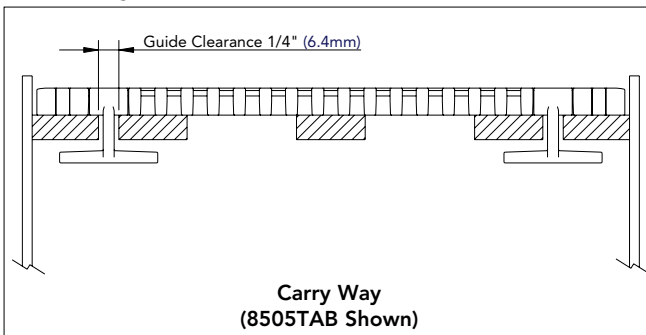
Chain Guide Clearance						
Chain Style	1505 DTS PT		5705 (MTW) PT 5706 (MTW) PT 5705 DTS PT	7705 (MTW) PT 7706 (MTW) PT 7705 (MTW) PT 7705 DTS PT 7705 DTS-R PT	8505 (MTW) PT 8506 (MTW) PT 8505 DTS PT	1000 FTMTW DP 1000 FGMTW DP 1000 FT FreeFlow 1000 FG FreeFlow
	Guide Clearance	in	2.13	1.75	1.75	1.75
	mm	54.1	44.5	44.5	44.5	44.5

## Assembled to Width MatTop Chains with Positrack Tracking Guides

⇒ For further recommendations, see the Product Catalog (8rxCAT-en)

Chain Guide Clearance				
Chain Style	7705 PT End Modules		8506 and 8506 PT End Modules	1000 FT DP, 1000 FGDP
	Guide Clearance	in	1.75	1.75
	mm	44.5	44.5	44.5

## TAB Style (5935/5936 and 8505/8506)



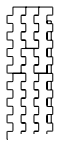
⇒ TABs hold chain down in incline or decline applications

⇒ TABs hold chain in place for vacuum applications

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# CONVEYOR DESIGN RECOMMENDATIONS

## ➤ Guide Clearance

### ➤ Side-Flexing — TAB, GT and Bearing Designs (7956 Chain Series) — ST (Sidetab) (7960 Chain Series)

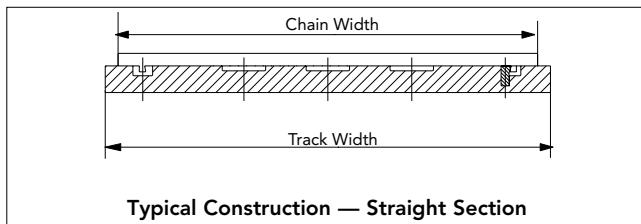
- ⇒ Positive retention
- ⇒ For further design recommendations, see the 7956 design manual (8rx7956dm-en) , or the 7960 Design Manual (FT3-0017960)

### ➤ Side-Flexing — No TAB Design (7956, 7963 and 7966 Chain Series)

- ⇒ No hold down in the straight sections
- ⇒ Chain can be lifted in the straight section for ease in cleaning and maintenance
- ⇒ For further design recommendations, see the 7956 design manual (8rx7956dm-en) or the 7960 series design manual (FT3-0017960)

### ➤ Side-Flexing — Positrack Design (7526 Chain Series)

- ⇒ For further recommendations, see the 7526 section in the Product Catalog (8rxCAT-en) and 7526 Design Manual (8rx7526dm-en)



## > Guide Clearance

> Side-Flexing  
— TAB, GT and  
Bearing Designs  
(7956 Chain Series)  
— ST (Sidetab)  
(7960 Chain Series)

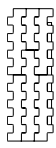
> Side-Flexing  
— No TAB Design  
(7956, 7963, and  
7966 Chain Series)

> Side-Flexing  
— Positrack Design  
(7526 Chain Series)

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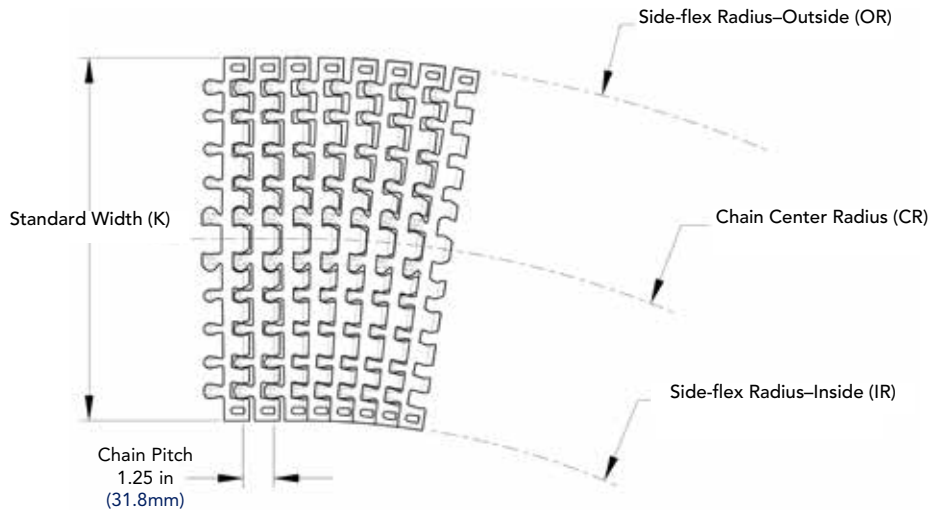


# CONVEYOR DESIGN RECOMMENDATIONS

## Chain Selection

### Basic Chain Dimensions

7956B, 7956GT, 7956NT and 7956TAB MatTop Chain Minimum Side-Flex Radii							
Standard Width (K)		Side-Flex Radius Inside (IR)		Chain Center Radius (CR)		Side-Flex Radius Outside (OR)	
inch	mm	inch	mm	inch	mm	inch	mm
6	152	12	305	15	381	18	457
12	305	24	610	30	762	36	914
15	381	30	762	37.5	953	45	1143
18	457	36	914	45	1143	54	1372
24	610	48	1219	60	1524	72	1829
30	762	60	1524	75	1905	90	2286

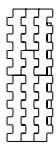


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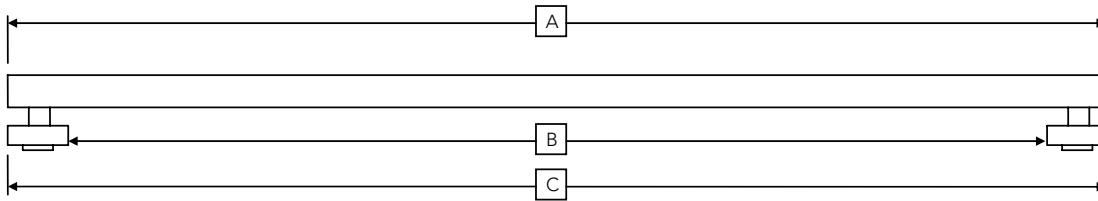




# CONVEYOR DESIGN RECOMMENDATIONS

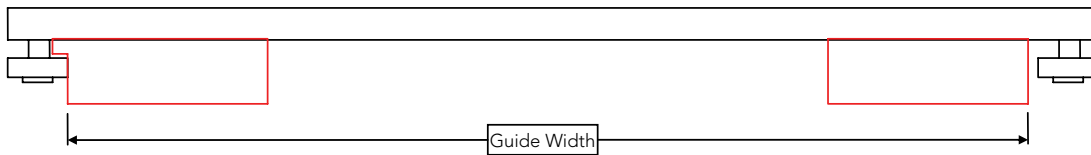
## Chain Selection

### Basic Chain Dimensions — 7956B

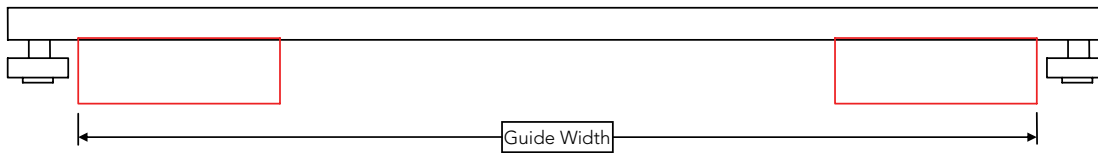


### 7956B — Carryway, Curves

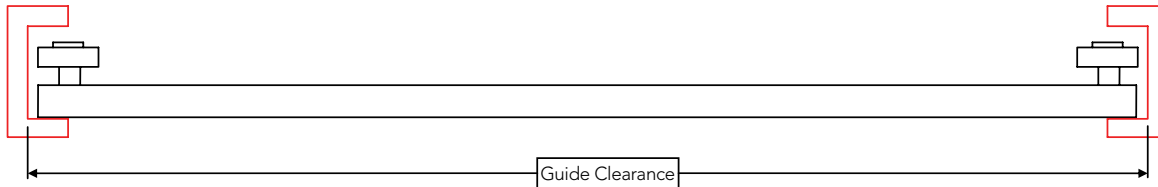
Outside of Curve Inside of Curve



### 7956B — Carryway, Straights



### 7956B — Returnway, Straights and Curves



## > Chain Selection

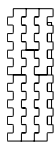
- > Basic Chain Dimensions — 7956B
- > 7956B — Carryway, Curves
- > 7956B — Carryway, Straights
- > 7956B — Returnway, Straights and Curves

7956B														
Chain Width "A"				Carryway Wearstrip Quantities and Locations			Width between Bearings "B"		Outside Bearing Width "C"		Recommended Guide Width, Carryway, Straights and Curves		Recommended Guide Clearance, Returnway, Straights and curves	
Nominal		Actual		Inside	Middle	Outside	inch	mm	inch	mm	inch	mm	inch	mm
inch	mm	inch	mm											
6	152	6.00	152.4	1	0	0	4.41	112.0	6.16	156.5	4.22	107.2	6.34	161.0
12	305	11.98	304.3	1	1	1	10.35	262.9	12.10	307.3	10.16	258.1	12.28	311.9
15	381	14.92	379.0	1	1	1	13.22	335.8	14.97	380.2	13.03	331.0	15.16	385.1
18	457	17.99	456.9	1	2	1	16.27	413.3	18.02	457.7	16.09	408.7	18.22	462.8
24	610	23.97	608.8	1	3	1	22.26	565.4	24.01	609.9	22.06	560.3	24.19	614.4
30	762	29.96	761.0	1	3	1	28.36	720.3	30.11	764.8	28.16	715.3	30.28	769.1

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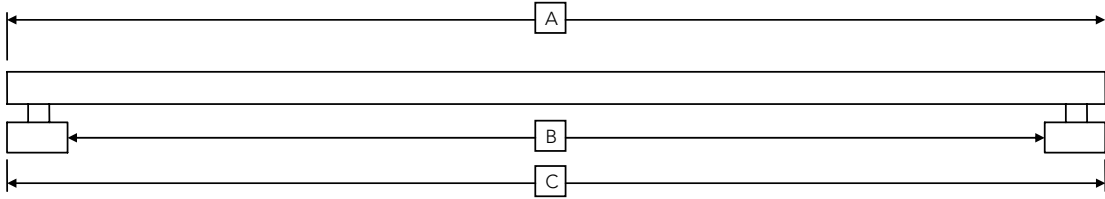
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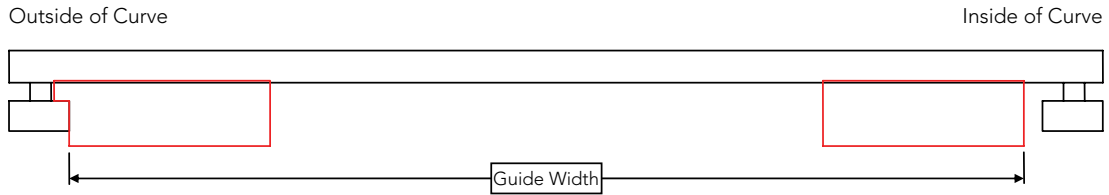
# CONVEYOR DESIGN RECOMMENDATIONS

## Chain Selection

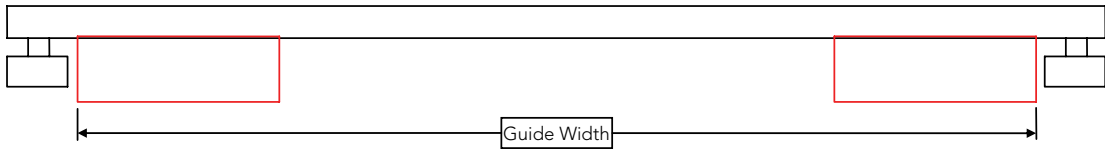
### Basic Chain Dimensions — 7956GT



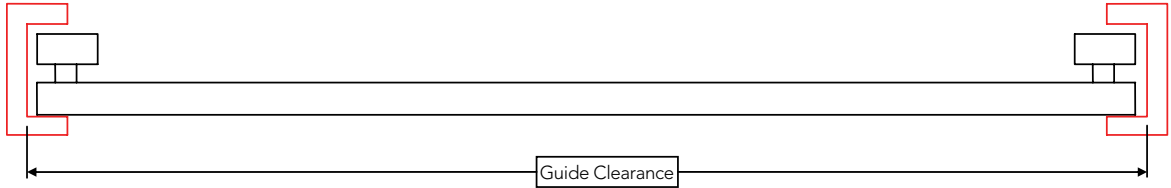
### 7956GT — Carryway, Curves



### 7956GT — Carryway, Straights



### 7956GT — Returnway, Straights and Curves

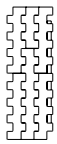


7956GT														
Chain Width "A"				Carryway Wearstrip Quantities and Locations			Width between GT TABs "B"		Outside GT TAB width "C"		Recommended Guide Width, Carryway, Straights and Curves		Recommended Guide Clearance, Returnway, Straights and Curves	
Nominal		Actual		Inside	Middle	Outside	inch	mm	inch	mm	inch	mm	inch	mm
inch	mm	inch	mm											
6	152	5.99	152.1	1	0	0	4.53	115.1	6.04	153.4	4.34	110.2	6.22	158.0
12	305	11.99	304.5	1	1	1	10.48	266.2	11.99	304.5	10.28	261.1	12.19	309.6
15	381	14.92	379.0	1	1	1	13.32	338.3	14.83	376.7	13.13	333.5	15.13	384.3
18	457	18.00	457.2	1	2	1	16.39	416.3	17.90	454.7	16.19	411.2	18.19	462.0
24	610	23.97	608.8	1	3	1	22.36	567.9	23.86	606.0	22.16	562.9	24.16	613.7
30	762	29.96	761.0	1	3	1	28.49	723.6	30.00	762.0	28.28	718.3	30.19	766.8

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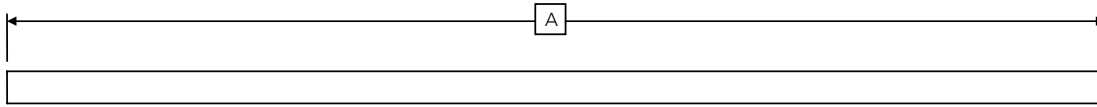
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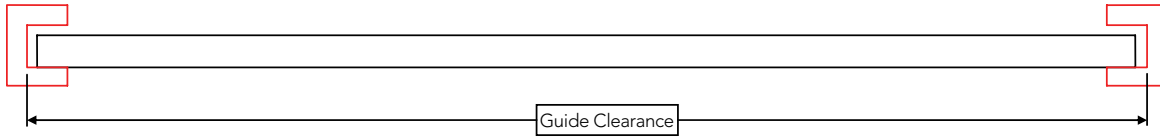
# CONVEYOR DESIGN RECOMMENDATIONS

## Chain Selection

### Basic Chain Dimensions — 7956NT



### 7956NT — Carryway and Returnway, Straights and Curves



#### > Chain Selection

> Basic Chain Dimensions — 7956NT

> 7956NT — Carryway and Returnway, Straights and Curves

7956NT								
Chain Width "A"				Carryway Wearstrip Quantities and Locations			Recommended Guide Clearance, Carryway and Returnway, Straights and Curves	
Nominal		Actual		Inside	Middle	Outside	inch	mm
inch	mm	inch	mm					
6	152	5.99	152.1	1	0	0	6.19	157.2
12	305	11.99	304.5	1	1	1	12.16	308.9
15	381	14.92	379.0	1	1	1	15.09	383.3
18	457	17.99	456.9	1	2	1	18.19	462.0
24	610	23.97	608.8	1	3	1	24.16	613.7
30	762	29.96	761.0	1	3	1	30.16	766.1

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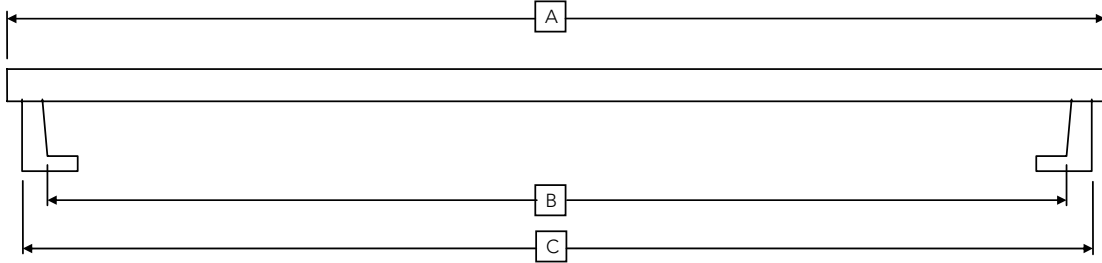
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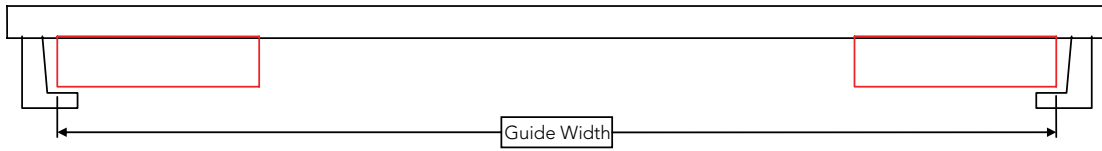
# CONVEYOR DESIGN RECOMMENDATIONS

## Chain Selection

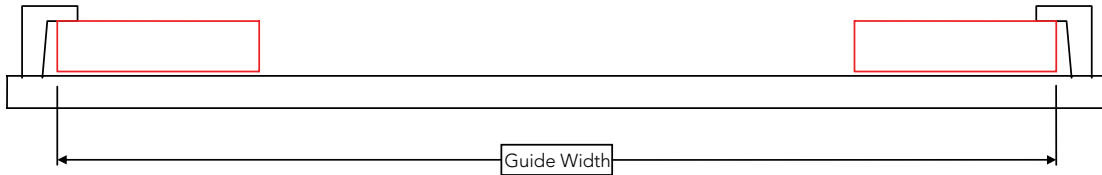
### Basic Chain Dimensions — 7956TAB



### 7956TAB — Carryway, Straights and Curves



### 7956TAB — Returnway, Straights and Curves

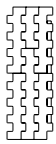


7956TAB												
Chain Width "A"				Carryway Wearstrip Quantities and Locations			Width between TABs "B"		Outside TAB Width "C"		Recommended Guide Width, Carryway and Returnway, Straights and Curves	
Nominal		Actual		Inside	Middle	Outside	inch	mm	inch	mm	inch	mm
inch	mm	inch	mm									
6	152	5.99	152.1	1	0	0	4.90	124.5	5.58	141.8	4.72	119.9
12	305	11.98	304.3	1	1	1	10.85	275.6	11.53	292.9	10.66	270.8
15	381	14.92	379.0	1	1	1	13.69	347.7	14.37	365.0	13.50	342.9
18	457	18.00	457.2	1	2	1	16.76	425.7	17.44	443.0	16.56	420.6
24	610	23.98	609.1	1	3	1	22.74	577.6	23.42	594.9	22.53	572.3
30	762	29.97	761.2	1	3	1	28.81	731.8	29.49	749.1	28.63	727.2

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# CONVEYOR DESIGN RECOMMENDATIONS

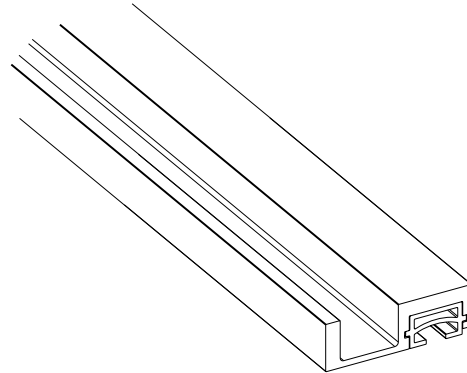
## Carry Section Wearstrips

### Straight-Running Styles, 7956B, GT, NT and TAB

7956B, 7956GT, 7956NT and 7956TAB MatTop chain styles must be retained in the straights and curves with either a Rexnord Edge Guide (shown below) or an edge guide manufactured as shown below.

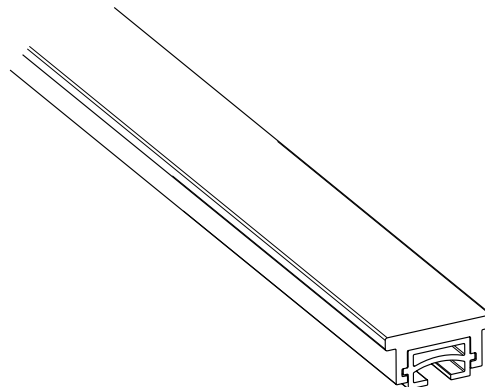
#### Extruded 7956 Straight Guide

- ◆ For use with 7956B and 7956GT chains
- ◆ Extruded anodized aluminum rail for strength
- ◆ Extruded UHMWPE strips for improved friction
- ◆ Mounts with standard carriage bolts
- ◆ Designed for smooth and quiet operation
- ◆ Sold in 10-foot (3.05m) sections



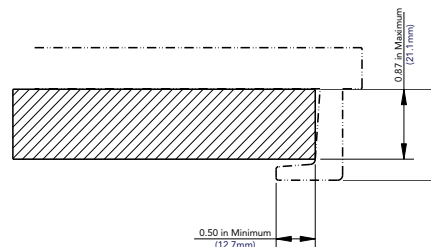
#### Extruded 7956 Curve Guide/Wearstrip

- ◆ For use with 7956B and 7956GT MatTop chains
  - ◆ Extruded anodized aluminum rail for strength
  - ◆ Extruded UHMWPE strips for improved wear
  - ◆ Mounts with standard carriage bolts
  - ◆ Designed for smooth and quiet operation
  - ◆ Sold in 10-foot (3.05m) sections
- i** Curve guides are bent to match specific radius. Contact Application Engineering for information needed to order curve sections.



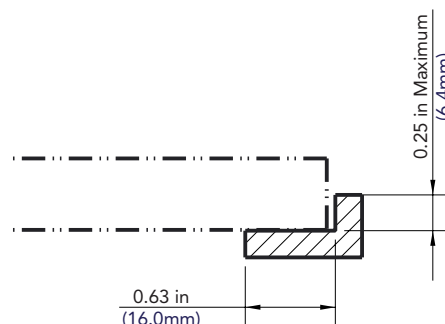
#### 7956TAB Edge Guide

- ◆ 7956TAB MatTop chain must be retained in straights and corners under the wearstrip as shown



#### 7956NT (No TAB) Edge Guide

- ◆ 7956NT chain straights must be retained in the straight sections using the wearstrip as shown



- > Carry Section Wearstrips
- > Straight-Running Styles, 7956B, GT, NT and TAB

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MatTop Chains

Contact Rexnord Application Engineering for more information 1.262.376.4800



# CONVEYOR DESIGN RECOMMENDATIONS

## ➤ Carry Section Wearstrips

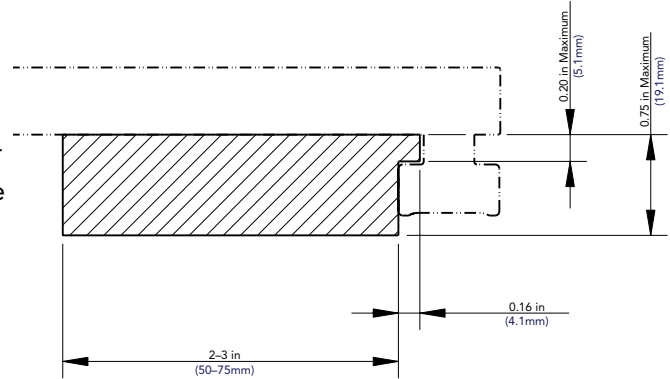
## ➤ Corner Wearstrip Style Options, 7956B, GT, NT and TAB

### > Carry Section Wearstrips

### > Corner Wearstrip Style Options, 7956B, GT, NT and TAB

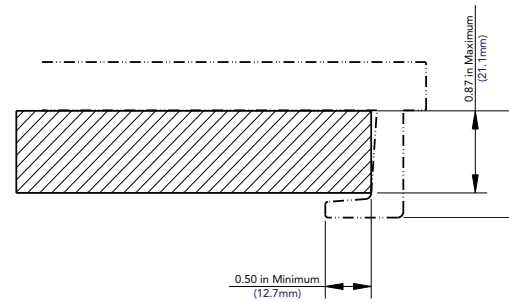
#### ⇒ 7956 B (Bearing) or 7956 GT (Guide TAB) Edge Guide

- ◆ 7956B and 7956GT MatTop chain styles must be retained in the corner with the edge guide as shown. The 7956B or 7956GT attachment is retained under the lip during operation.



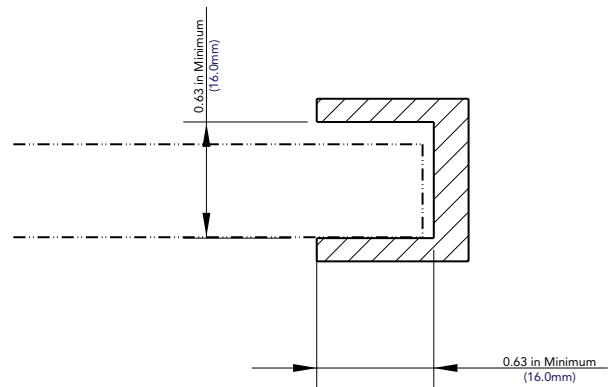
#### ⇒ 7956 TAB Edge Guide

- ◆ 7956TAB MatTop chain must be retained in straights and corners under the wearstrip as shown.



#### ⇒ 7956NT (No TAB) or C (Channel) Edge Guide

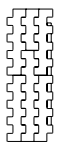
- ◆ 7956NT MatTop chain must be retained in the corner with a pair of edge guides as shown.



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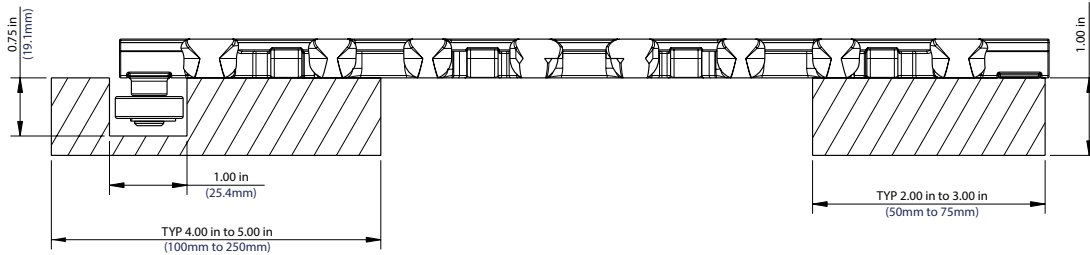
# CONVEYOR DESIGN RECOMMENDATIONS

## Carry Section Wearstrips

### Edge Guide Dimensions in Straights, 7956B, GT, NT and TAB

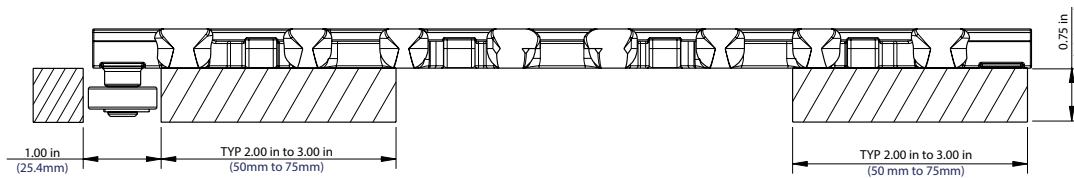
7956 MatTop Series chains must be retained in the straight as shown if the section is more than 5 feet (1.5m) long. Chain guides are needed to stop the chain from moving side-to-side. If the distance in the straight is less than 5 feet (1.5m), the tension in the chain will keep it straight.

#### ⇒ B and GT Version (option 1)

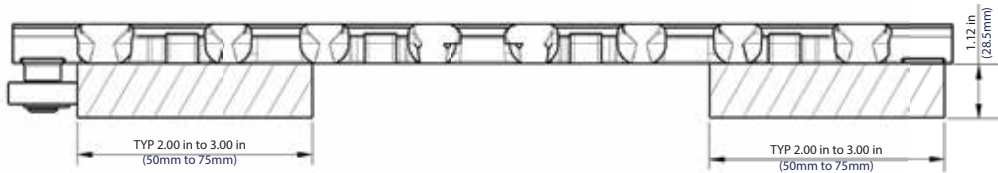


Typical carry configuration—straight (MORE than 5.0 feet [1.5m])

#### ⇒ B and GT Version (option 2)



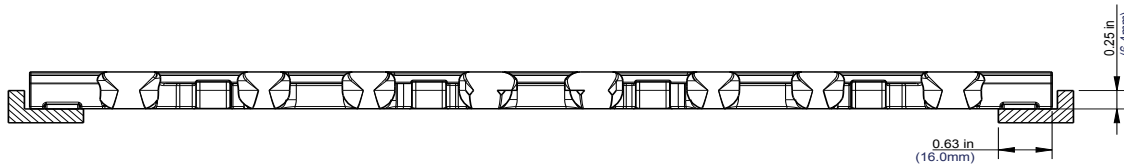
Typical carry configuration—straight (MORE than 5.0 feet [1.5m])



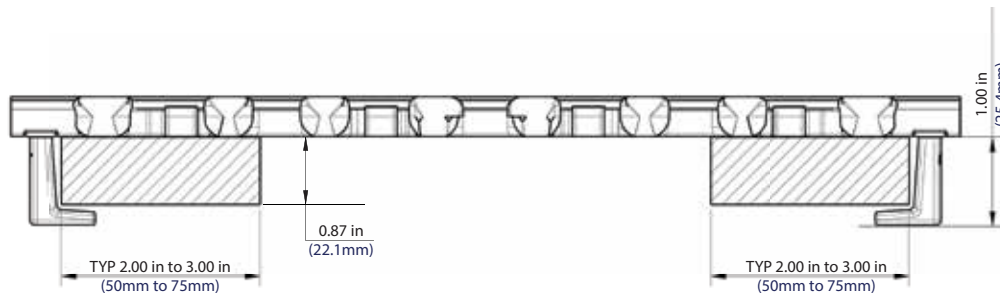
Typical carry configuration—straight (LESS than 5.0 feet [1.5m])

#### ⇒ NT Version

◆ 7956NT MatTop chain must be retained with edge guide through the entire straight as shown



#### ⇒ TAB Version



Typical carry configuration

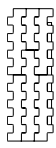
### > Carry Section Wearstrips

### > Edge Guide Dimensions in Straights, 7956B, GT, NT and TAB

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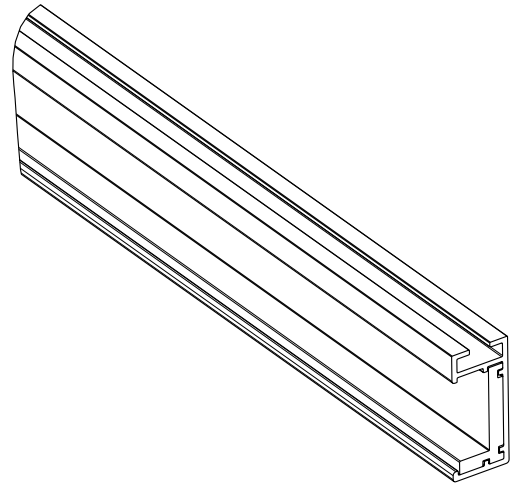


## CONVEYOR DESIGN RECOMMENDATIONS

### Return Section Wearstrips

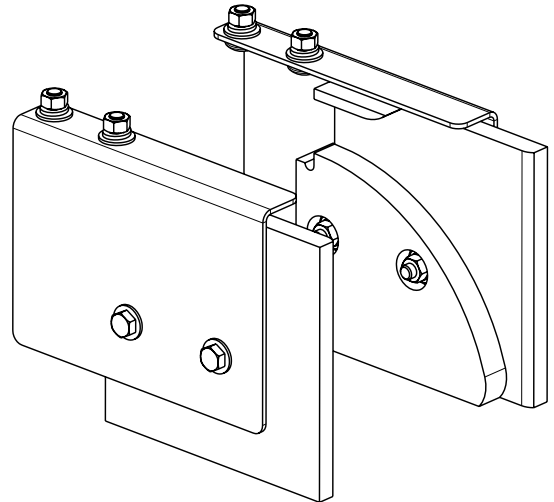
#### Extruded Rexnord 7956 Return Guide

- ⇒ For use with all MatTop chains
- ⇒ Extruded anodized aluminum rail for strength
- ⇒ Extruded UHMWPE strips for improved wear
- ⇒ Mounts with standard carriage bolts
- ⇒ Designed for smooth and quiet operation
- ⇒ Sold in 10-foot (3.05m) sections



#### Return Shoe Assembly

- ⇒ For use with most MatTop Chains
- ⇒ Guides chain into extruded return guides
- ⇒ UHMWPE shoe for smooth and quiet operation
- ⇒ Includes mounting hardware for easy mounting to end of return guides
- ⇒ Sold in pairs

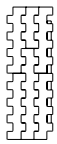


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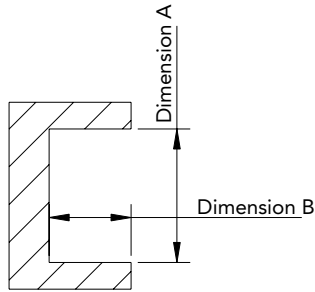


# CONVEYOR DESIGN RECOMMENDATIONS

## Return Section Wearstrips

### Curves and Straights

⇒ C-Channel Return Profile, 7956B, 7956GT and 7956NT



> Return Section  
Wearstrips  
> Curves and  
Straights

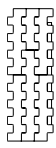
Chain Number	C-Channel Return Wearstrip Dimensions			
	Dimension A (in)	Dimension A (mm)	Dimension B (in)	Dimension B (mm)
7956B, 7956GT	1.25 ±.03	31.8 ±.8	0.63 ±.13	16.0 ±3.30
7956NT	0.63 ±.03	16.0 ±.8	0.63 ±.13	16.0 ±3.30

**i** For 7956NT, this C-Channel Profile can be used in carry and return

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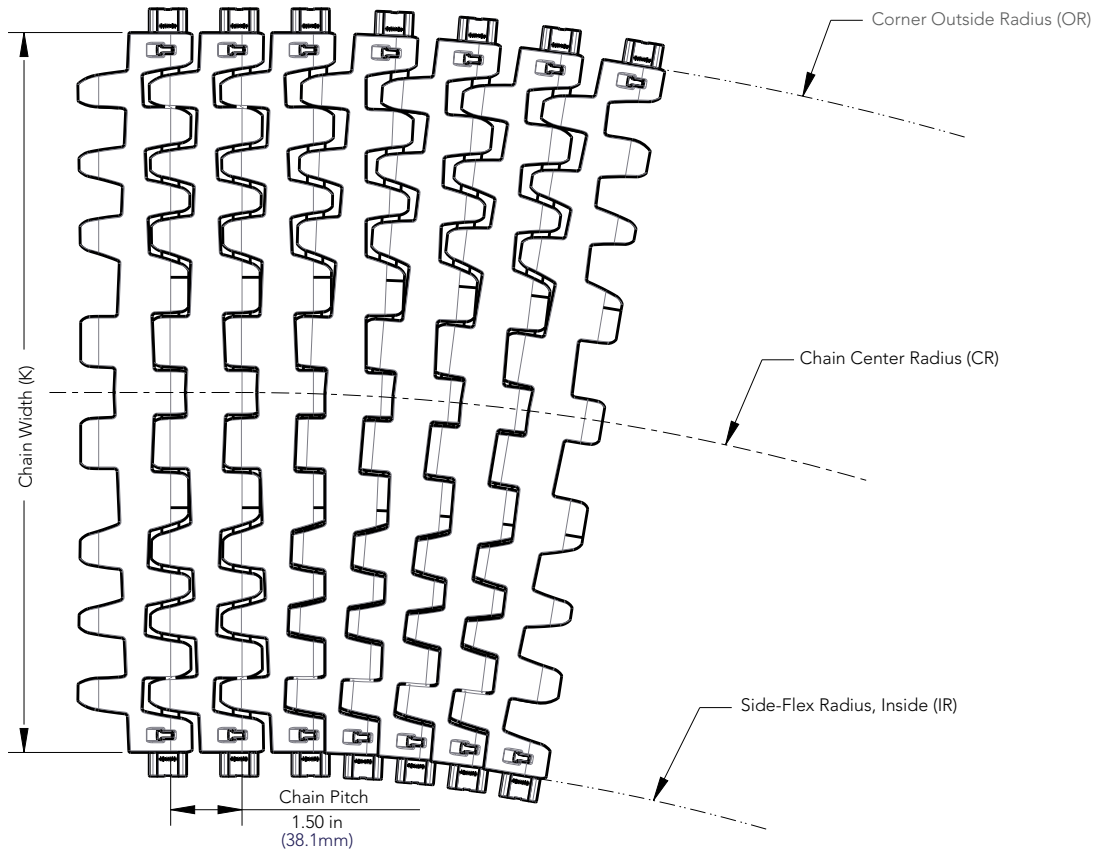
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# CONVEYOR DESIGN RECOMMENDATIONS

## Basic Chain Dimensions — 7963/7966

> Basic Chain Dimensions — 7963/7966



Chain Number	Standard Width (K)		Side-Flex Radius - Inside (IR)*		Chain Radius - Center (CR)**		Side-Flex Radius - Outside (OR)***	
	inch	mm	inch	mm	inch	mm	inch	mm
7963NT-12	12	305	21.00	533.4	27.00	685.8	33.00	838.2
7963NT-15	15	381	26.25	666.8	33.75	857.3	41.25	1047.8
7966NT-12	12	305	21.00	533.4	27.00	685.8	33.00	838.2
7966NT-15	15	381	26.25	666.8	33.75	857.3	41.25	1047.8
7963ST-12	12	305	21.00	533.4	27.00	685.8	33.00	838.2
7963ST-15	15	381	26.25	666.8	33.75	857.3	41.25	1047.8
7966ST-12	12	305	21.00	533.4	27.00	685.8	33.00	838.2
7966ST-15	15	381	26.25	666.8	33.75	857.3	41.25	1047.8

**i** Drawing depicts 7966ST chain

\* Sideflex radius-inside = 1.75 × chain width

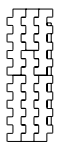
\*\* Chain radius-center = 2.25 × chain width

\*\*\* Side-flex radius-outside = 2.75 × chain width

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# CONVEYOR DESIGN RECOMMENDATIONS

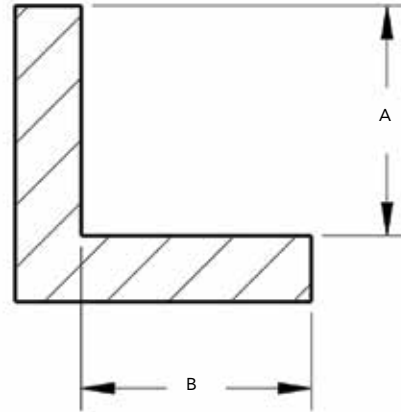
## Edge Guide Dimensions — 7963NT/7966NT

⇒ The Rexnord 7963NT and 7966NT MatTop chain styles are recommended to be retained in straights with the type of edge guide shown.

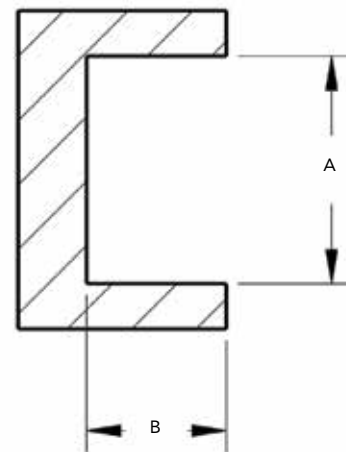
Critical Straight Wearstrip Dimensions				
Chain Number	Dimension A*		Dimension B	
	inch	mm	inch	mm
7963NT-12	0.68	17.5	0.50	12.7
7963NT-15	0.68	17.5	0.50	12.7
7966NT-12	0.68	17.5	0.50	12.7
7966NT-15	0.68	17.5	0.50	12.7

\*Maximum allowable height

**i** The Rexnord 7963NT and 7966NT MatTop Chain must be retained in the corner with a pair of edge guides as shown



Critical Curve Wearstrip Dimensions				
Chain Number	Dimension A		Dimension B	
	inch	mm	inch	mm
7963NT-12	0.84	21.4	0.50	12.7
7963NT-15	0.84	21.4	0.50	12.7
7966NT-12	0.84	21.4	0.50	12.7
7966NT-15	0.84	21.4	0.50	12.7



## Recommendations for Corners and Straight Sections

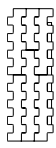
- ⇒ UHMWPE wearstrips are recommended
- ⇒ If required for improved performance, Nylatron wearstrips may be used in corners
- ⇒ All sharp wearstrip edges, including corner tracks, should be chamfered to ensure smooth chain movement. Recommended contact surface finish of wearstrips is 32 to 125  $\mu$ -inch Ra (0.8 to 3.2  $\mu$ -m Ra) for best wear performance.
- ⇒ Inside edges of straight and corner sections should contain a lead-in or chamfer for smooth transition
- ⇒ Offset rail, serpentine or chevron patterns are recommended to maximize chain life because they provide uniform wear across the full width of the chain. Refer to the Engineering Manual (8rxem-en) for more details on carry and return ways.

> Edge Guide  
Dimensions —  
7963NT/7966NT  
> Recommendations  
for Corners and  
Straight Sections

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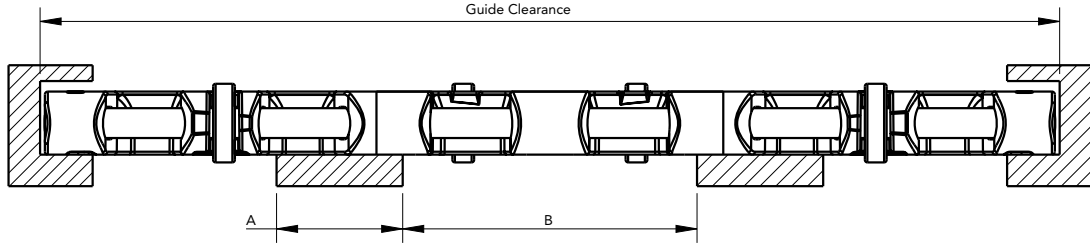


# CONVEYOR DESIGN RECOMMENDATIONS

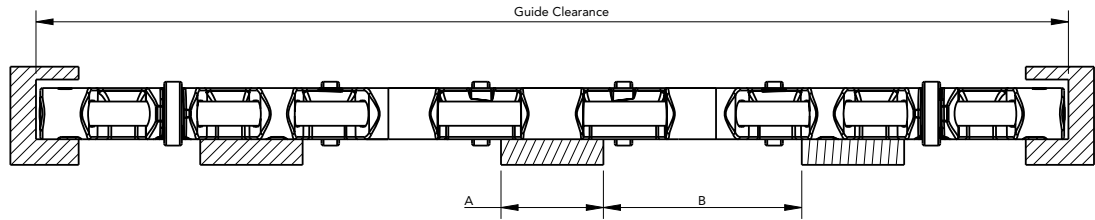
## Guide Clearance — 7963NT/7966NT

### > Guide Clearance — 7963NT/7966NT

#### 12-inch width chain



#### 15-inch width chain



Wearstrip Setup and Guide Clearance						
Chain Number	Recommended Wearstrip Width Dimension A		Distance Between Wearstrips Dimension B		Guide Clearance Carryway & Returnway, Straights & Curves	
	inch	mm	inch	mm	inch	mm
7963NT-12	1.50	40	3.50	87 *	12.25	310
7963NT-15	1.50	40	2.91	72 *	15.25	385
7966NT-12	typ. 1.50	40 min.	typ 3.50	87 max.	12.25	310
7966NT-15	typ. 1.50	40 min.	typ 2.91	72 max.	15.25	385

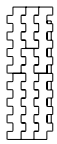
\* Wearstrip location is critical due to LBP roller spacing

- ⇒ Rexnord recommends a minimum 25-30 percent wearstrip coverage of chain surface area in both carry and return
- ⇒ Verify maximum package size to ensure sufficient clearance between corner track hold downs

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# CONVEYOR DESIGN RECOMMENDATIONS

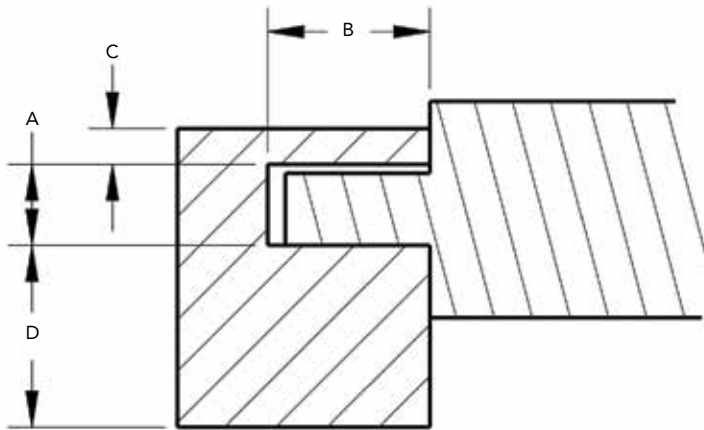
## 7960ST Edge Guide Dimensions — 7963ST/7966ST

⇒ The Rexnord 7963ST and 7966ST MatTop chain styles must be retained in the corners. We recommend that the chain be retained in the straights with the same type of edge guide shown.

> 7960ST Edge Guide Dimensions — 7963ST/7966ST

Critical Straight and Curved Wearstrip Dimensions								
Chain Number	Dimension A (max.)		Dimension B		Dimension C		Dimension D	
	inch	mm	inch	mm	inch	mm	inch	mm
7963ST-12	0.28	7	0.56	15	0.13	3.2	*	*
7963ST-15	0.28	7	0.56	15	0.13	3.2	*	*
7966ST-12	0.28	7	0.56	15	0.13	3.2	*	*
7966ST-15	0.28	7	0.56	15	0.13	3.2	*	*

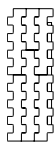
\* Dimension D equals the thickness of the wearstrips plus 0.25 in (6.3 mm). This will allow for the bottom of the edge guides and the bottom of the wearstripes to be at the same level for mounting to a common cross support (see page EM - MT - 44).



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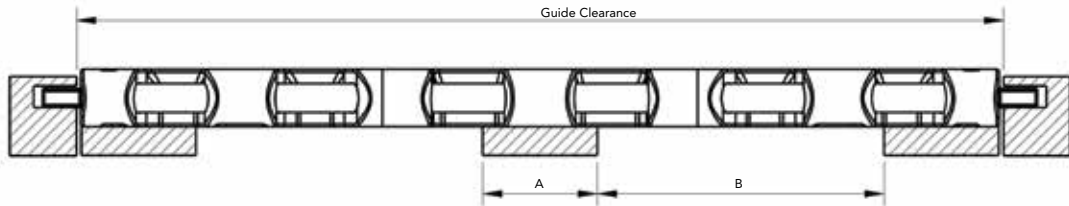


# CONVEYOR DESIGN RECOMMENDATIONS

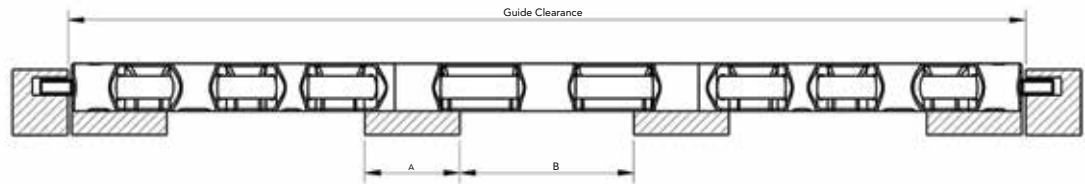
## Guide Clearance — 7963ST/7966ST

⇒ The Rexnord 7963ST and 7966ST MatTop chains must be retained in the corner with a pair of edge guides as shown.

### 12-inch width chain



### 15-inch width chain



**i** Rexnord 7966ST MatTop chain shown in drawings

Wearstrip Setup and Guide Clearance						
Chain Number	Recommended Wearstrip Width Dimension A		Distance Between Wearstrips Dimension B		Guide Clearance Carryway & Returnway, Straights & Curves	
	inch	mm	inch	mm	inch	mm
7963ST-12	1.50	40	3.50	87 *	12.25	310
7963ST-15	1.50	40	2.91	72 *	15.25	385
7966ST-12	typ. 1.50	40 min.	typ. 3.50	87 max.	12.25	310
7966ST-15	typ. 1.50	40 min.	typ. 2.91	72 max.	15.25	385

\* Wearstrip location is critical due to LBP roller spacing

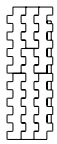
⇒ Rexnord recommends a minimum 25-30 percent wearstrip coverage of chain surface area in both carry and return

⇒ Verify maximum package size to ensure sufficient clearance between corner track hold downs

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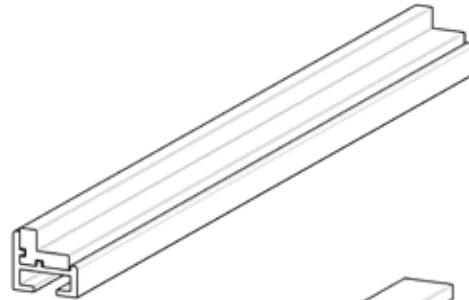


# CONVEYOR DESIGN RECOMMENDATIONS

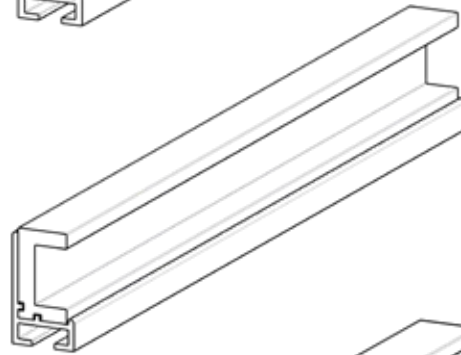
## ▶ Carry Section Wearstrips — 7963/7966, ST and NT

⇒ Aluminum backed edge guides, wearstrips, return guides and return shoe kits are designed specifically for 7960 Series applications, and are available for sale from Rexnord.

- ◆ 7960NT Straight UHMWPE Edge Guide — 614-586-1

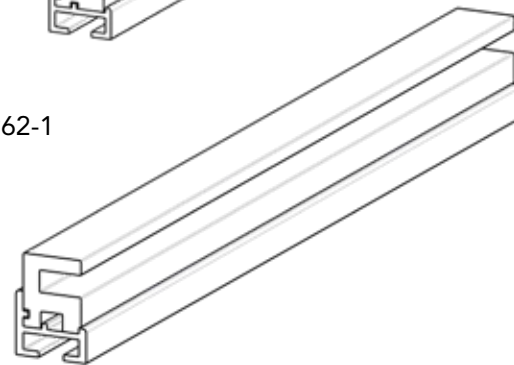


- ◆ 7960NT Curved UHMWPE Edge Guide — 614-925-1



- ◆ 7960NT Curved Nylatron — 614-985-1

- ◆ 7960ST Straight UHMWPE Edge Guide — 614-962-1

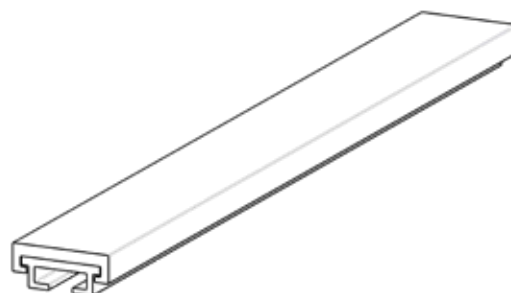


## ▶ Extruded Rexnord 7960 Series Curve Guide/Wearstrip

- ⇒ Extruded anodized aluminum rail for additional strength
- ⇒ UHMWPE or optional Nylatron c-channel for improved performance in corners
- ⇒ Mounts with available standard 5/16-18 UNC carriage bolts
- ⇒ Curved guides are factory-bent to match specific radii per application
- ⇒ Designed for smooth, quiet operation
- ⇒ Sold in 10 ft (3.05 m) sections
- ⇒ Contact Rexnord for information requirements 262-376-4800

- ◆ 7960ST Curved UHMWPE Edge Guide — 614-963-1
- ◆ 7960ST Curved Nylatron Edge Guide — 614-973-1

- ◆ Straight UHMWPE Wearstrip — 614-570-1



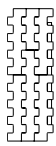
> Carry Section  
Wearstrips —  
7963/7966,  
ST and NT

> Extruded  
Rexnord 7960  
Series Curve  
Guide/Wearstrip

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## CONVEYOR DESIGN RECOMMENDATIONS

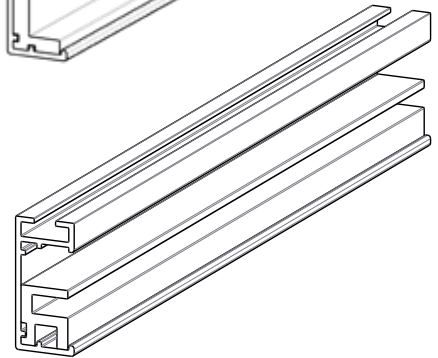
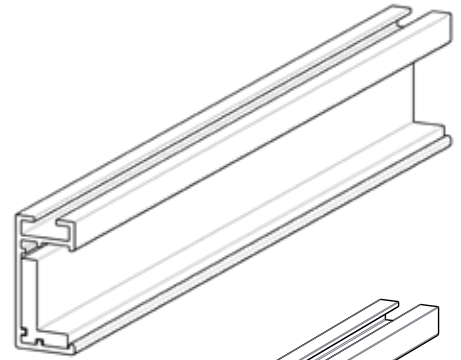
### ▷ Return Section Wearstrips — 7963/7966, ST and NT

> Return Section  
Wearstrips —  
7963/7966,  
ST and NT

> Return Shoe Kit

⇒ 7960NT Straight UHMWPE Return Guide — 614-936-1

⇒ 7960NT Curved UHMWPE Return Guide — 614-597-1



⇒ 7960ST Straight UHMWPE Return Guide — 614-962-1

⇒ 7960ST Curved UHMWPE Return Guide — 614-963-1

### ▷ Return Shoe Kit

⇒ For use with all MatTop Chains

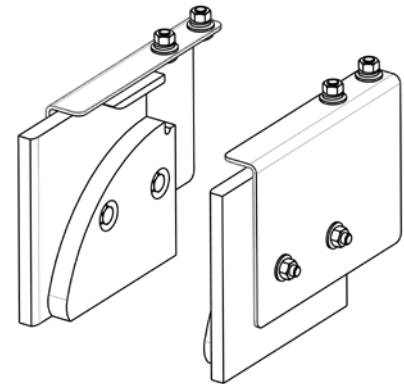
⇒ Guides chain into return guides

⇒ UHMWPE shoe for smooth and quiet operation

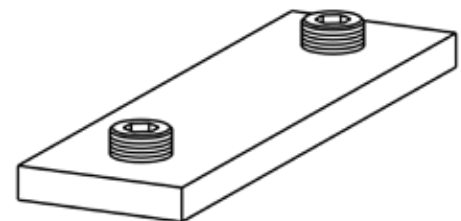
⇒ Includes mounting hardware for easy mounting to ends of return guides

⇒ 7960NT Return Shoe Kit — 614-774-1

⇒ 7960ST Return Shoe Kit — 614-964-1



⇒ Wearstrip Guide Connector — 614-565-1

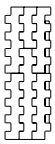


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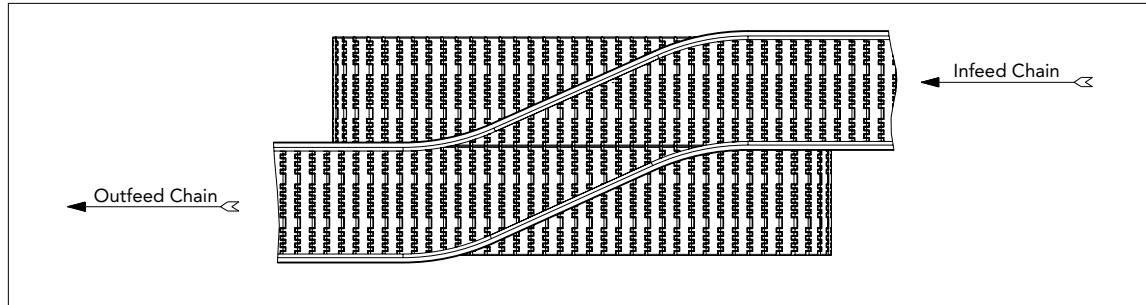


# CONVEYOR DESIGN RECOMMENDATIONS

## Transfers

⇒ In the operation of MatTop chain conveyors, smooth transfer of the conveyed product from one chain to another is essential for product protection and prevention of downtime. The various methods are described below.

### Side Transfer

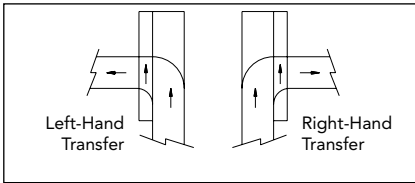


- > Transfers
- > Side Transfer
- > DTS Transfer (DynamicTransfer System)

- ✓ ⇒ Adjacent strands of chain should share a common wearstrip
- ⇒ No stranded products

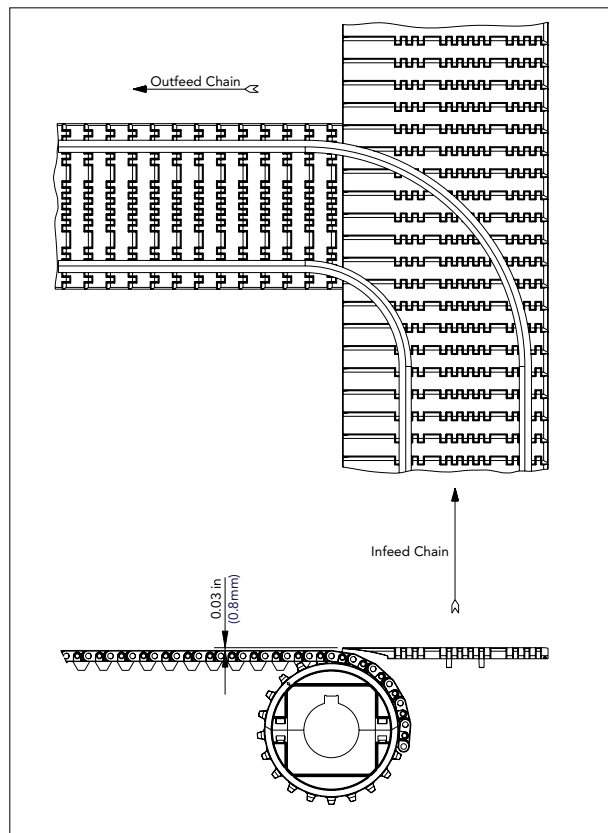
### DTS Transfer (DynamicTransfer System)

- ⇒ DTS is a self-clearing transfer which eliminates stranded product
- ⇒ See the diagram below for left-hand and right-hand transfers



It is difficult to retrofit an existing deadplate transfer with DTS.

- ◆ It is recommended to consult with a qualified OEM to discuss the retrofit details



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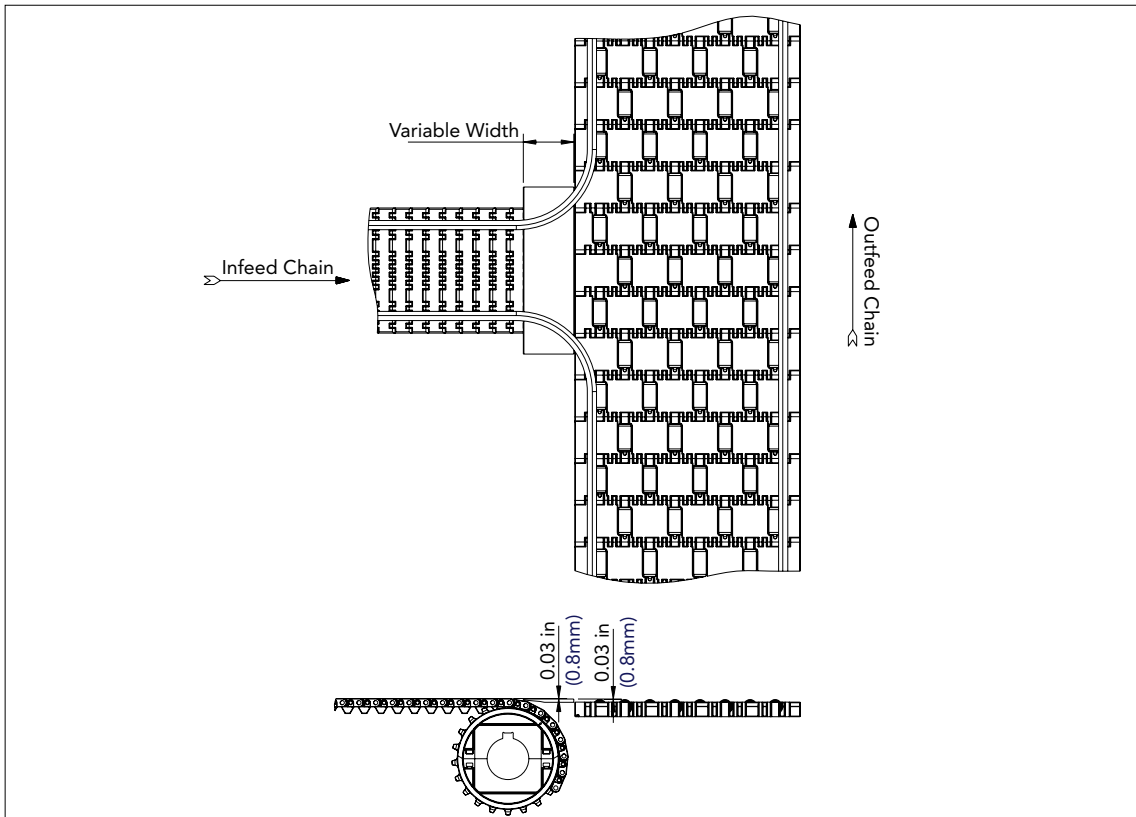
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# CONVEYOR DESIGN RECOMMENDATIONS

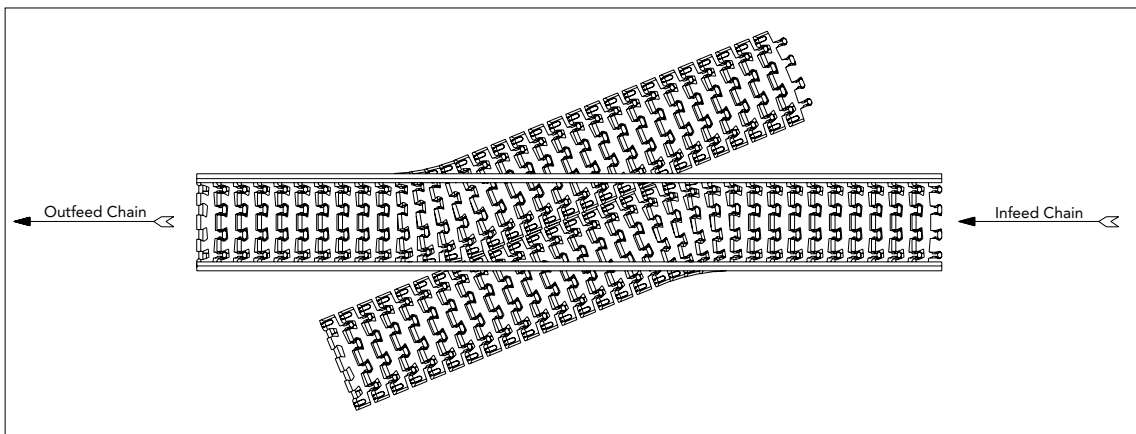
## ▷ Transfers

### ▷ Transverse Roller Transfer



- ⇒ Infeed chain is to be slightly higher than LBP MatTop chain with transverse rollers
- ⇒ Infeed and outfeed conveyors should be mounted as close as possible to each other
- ⇒ Deadplate should be used if the gap between chains is greater than half of the product bottom surface area to prevent the product from dropping below the LBP chain

### ▷ Inline Transfer

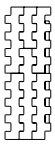


- ✓ ⇒ Adjacent strands of chain should share a common wearstrip
- ⇒ Allows product to remain in straight line

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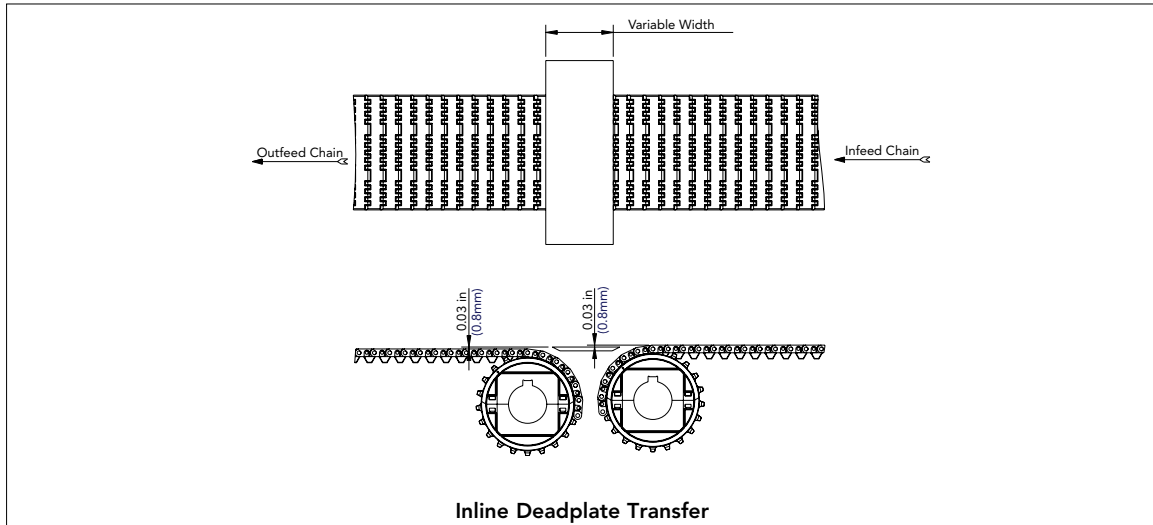
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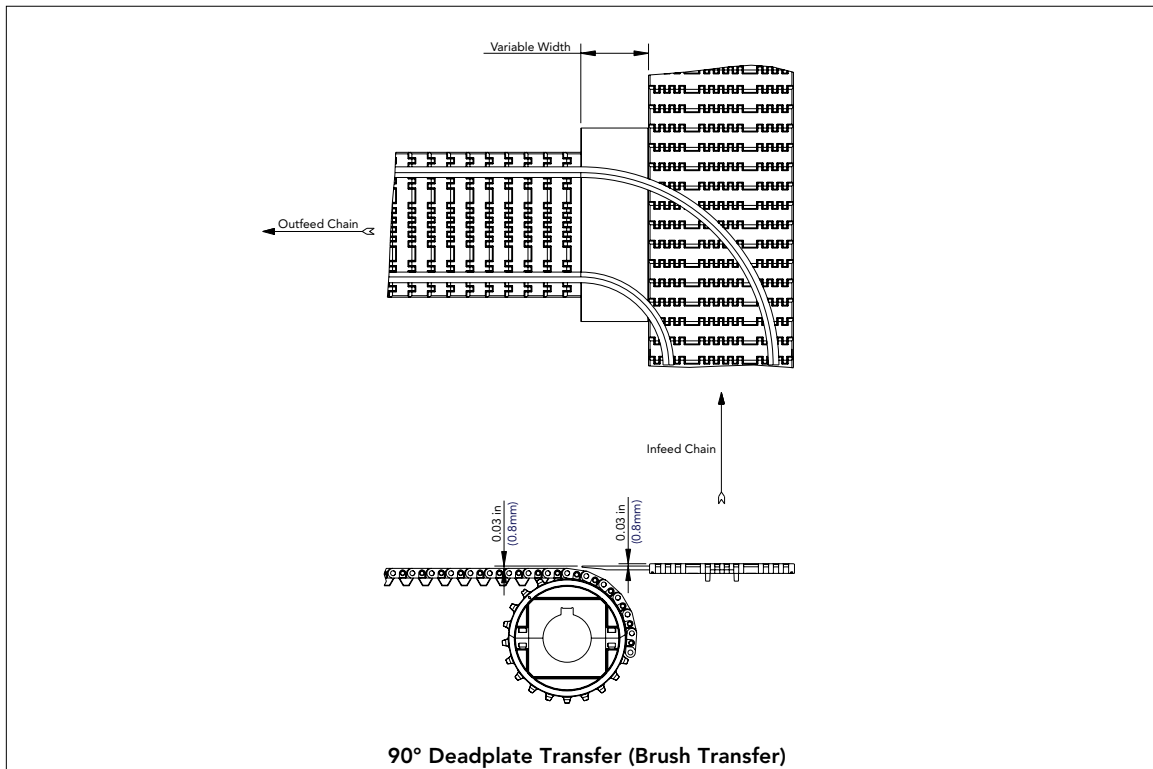
# CONVEYOR DESIGN RECOMMENDATIONS

## Transfers

### Inline Deadplate Transfer



### 90° Deadplate Transfer



- > Transfers
- > Inline Deadplate Transfer
- > 90° Deadplate Transfer

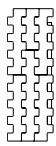
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- ✓ ⇒ For deadplate transfers, products should step down to the adjacent chain or deadplate surface (typically 0.03 in [0.8mm] step is recommended)
- ⇒ Deadplates to be mounted slightly higher than the top surface of the outfeed chain
- ⇒ Deadplates should be as short as possible
- ⇒ Deadplate transfers result in stranded product

Contact Rexnord Application Engineering for more information 1.262.376.4800

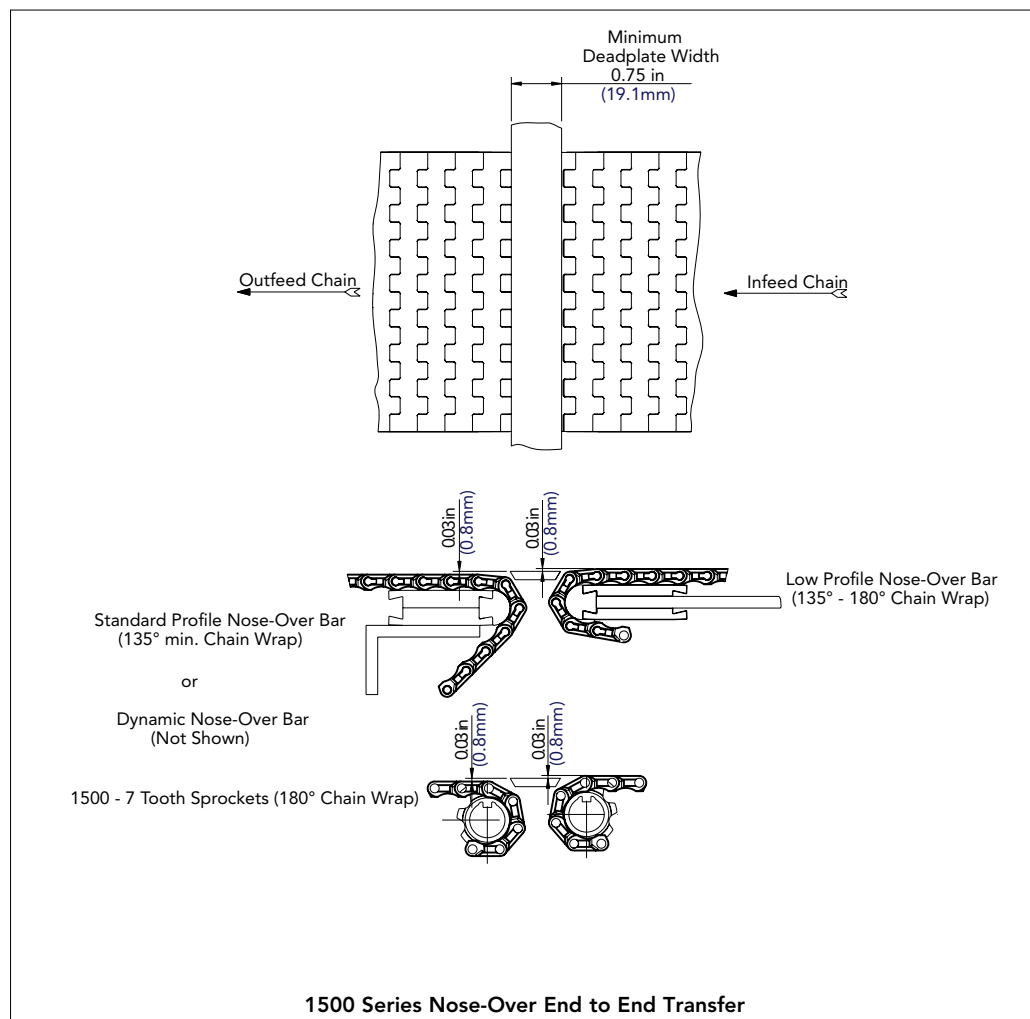


# CONVEYOR DESIGN RECOMMENDATIONS

## Transfers

### 1500 Series Nose-Over End to End Transfer

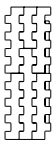
- ⇒ Things to be taken into consideration include:
  - ◆ Chordal action (small pitch is recommended)
  - ◆ Drive configurations (see page EM - MT - 55 for details)
  - ◆ Nose-over bar types:
    - Rotating shaft or dynamic
    - Sliding
  - ◆ 1500 series nose-over bar design manuals are available for more details (8rxNOdm-en)
  - ◆ PBT (Polyester) pins must be used for 1500 nose-over applications



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# CONVEYOR DESIGN RECOMMENDATIONS

## Transfers

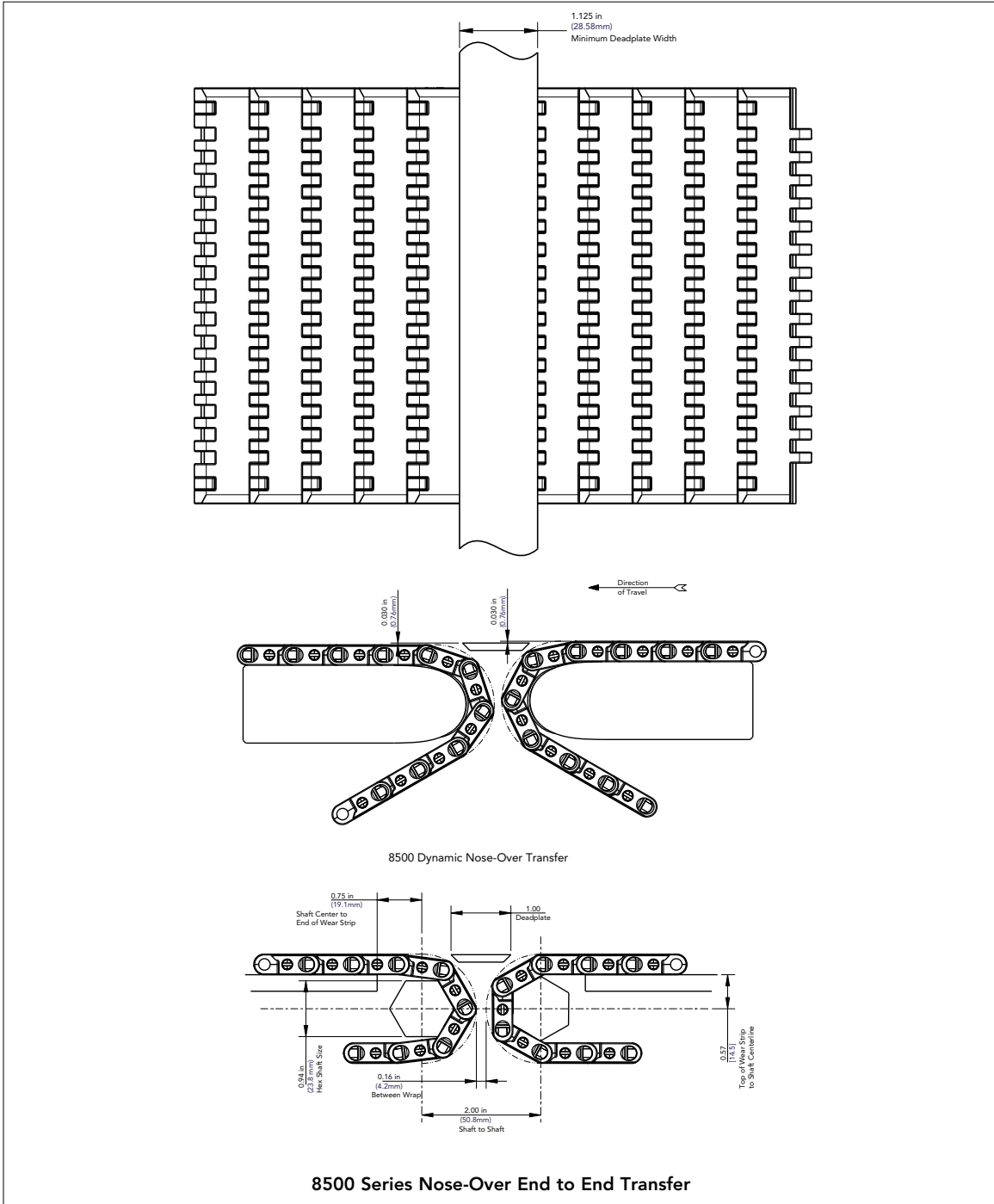
### 8500 Series Nose-Over End to End Transfer

⇒ Things to be taken into consideration include:

- ◆ Chordal action
- ◆ Drive configurations (see page EM - MT - 55 for details)
- ◆ Dynamic or rotating hex shaft is recommended for 8500 series
- ◆ 8500 series nose-over bar design manuals are available for more details (8rxNODm-en)

### > Transfers

- > 8500 Series Nose-Over End to End Transfer

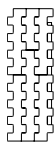


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MatTop Chains



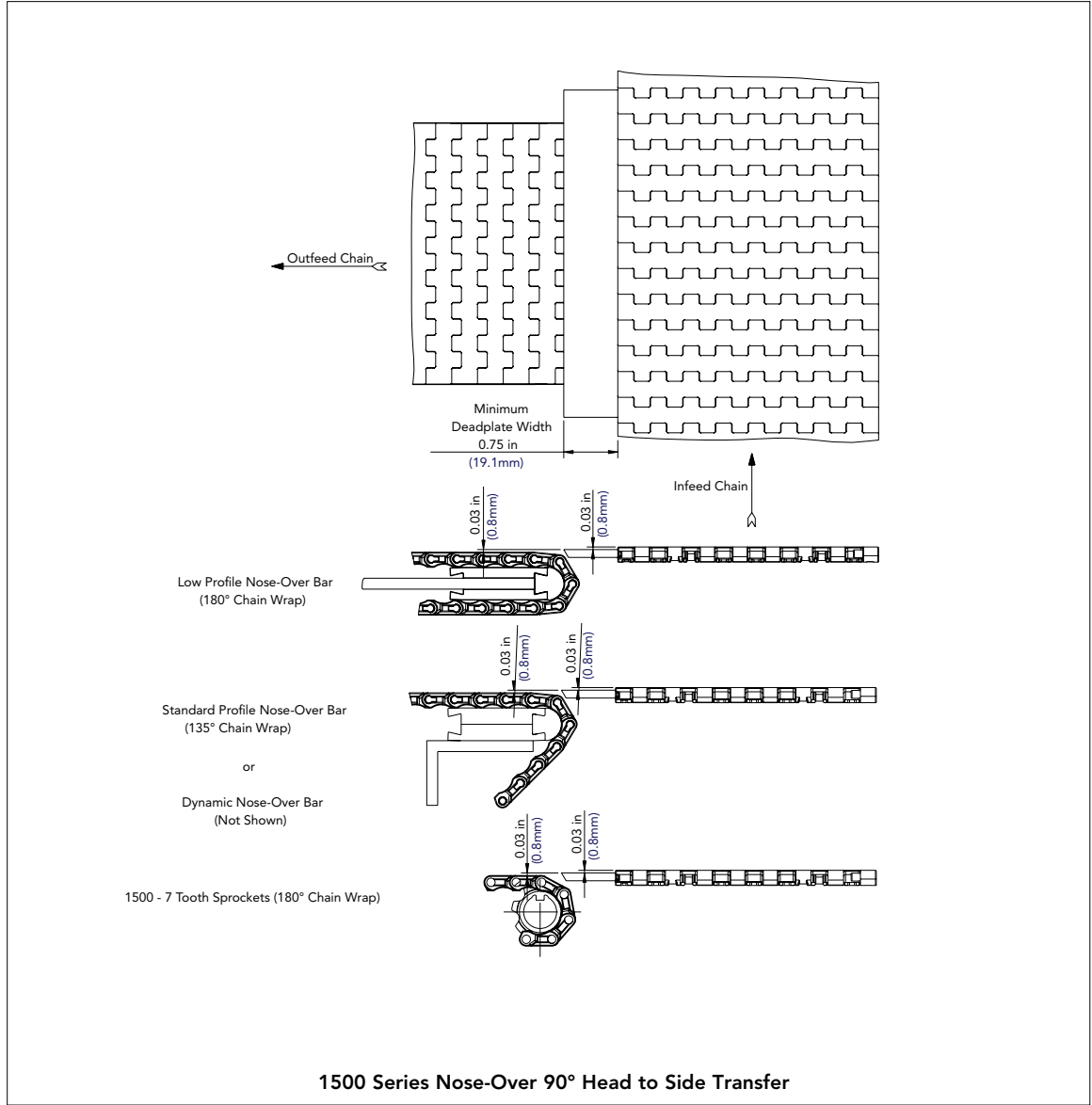
# CONVEYOR DESIGN RECOMMENDATIONS

## Transfers

### 1500 Series Nose-Over 90° Head to Side Transfer

**i** See notes on page EM - MT - 50 for 1500 Series Nose-Over Bar details.

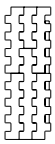
- > Transfers
- > 1500 Series Nose-Over 90° Head to Side Transfer



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# CONVEYOR DESIGN RECOMMENDATIONS

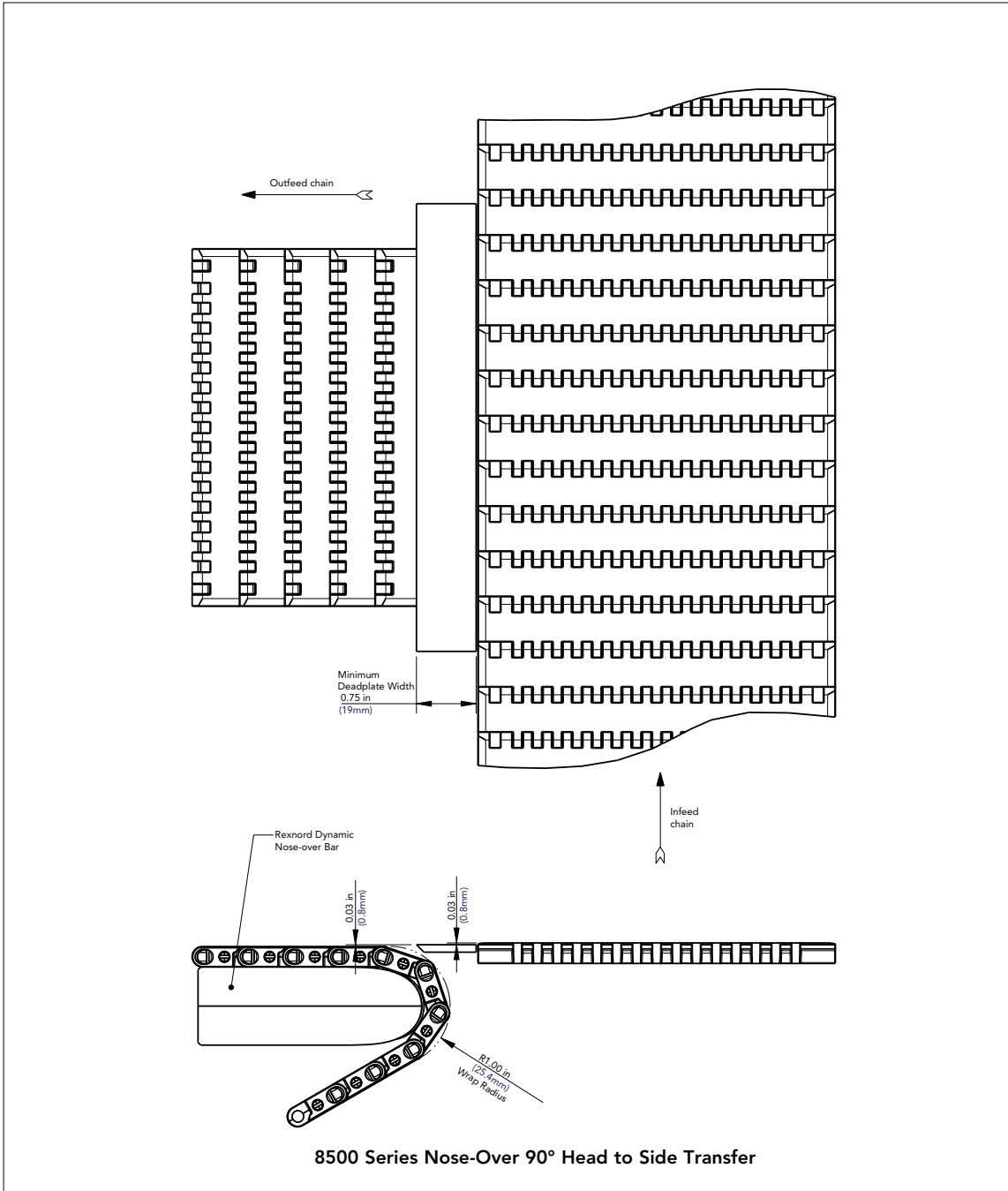
## Transfers

### 8500 Series Nose-Over 90° Head to Side Transfer

**i** See notes on page EM - MT - 51 for 8500 Series Nose-Over Bar details.

## > Transfers

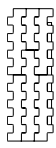
> 8500 Series Nose-Over 90° Head to Side Transfer



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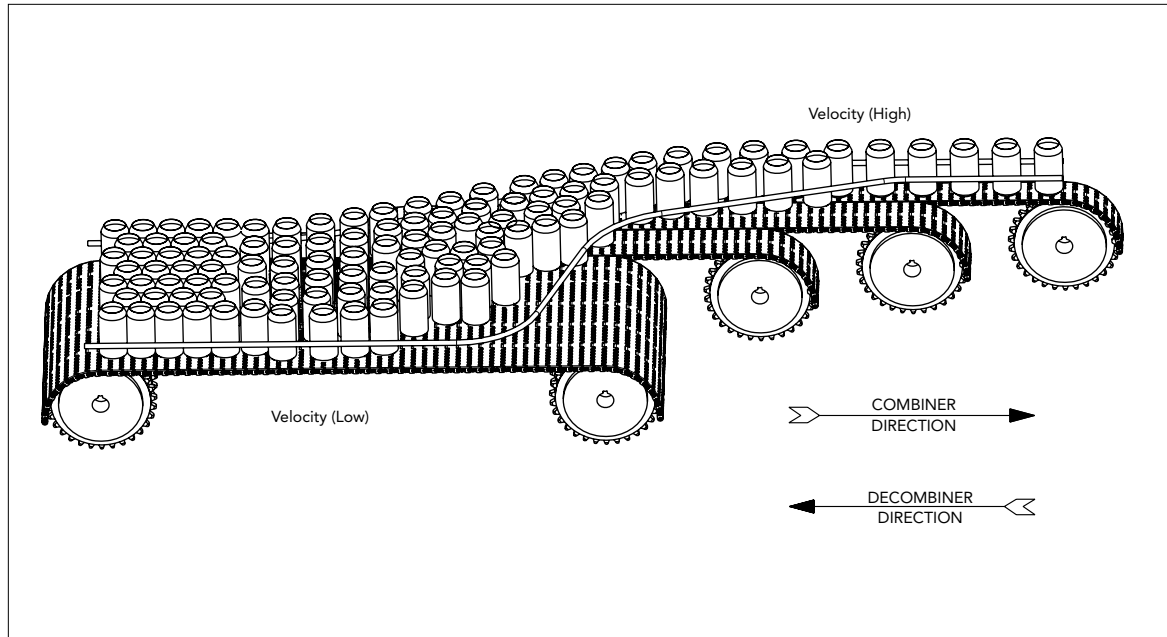


## CONVEYOR DESIGN RECOMMENDATIONS

### ▶ Transfers

### ▶ Combiners/Decominers

- ⇒ Combiners take products from en masse (in mass) to single file
- ⇒ Decominers take products from single file to en masse (in mass)



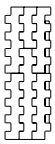
- i** For conveyors using multiple strands of chain, key all sprockets on the head shaft and key only one sprocket on the tail shaft, preferably the center strand.
- CAUTION** If space permits, use enough lanes to keep speed differentials between adjacent strands to about 50–75 FPM (15–23MPM), depending on product.
- CAUTION** When several chains run side by side, such as on multiple width conveyors and combiners or decominers, make sure the return chains do not interfere with each other.

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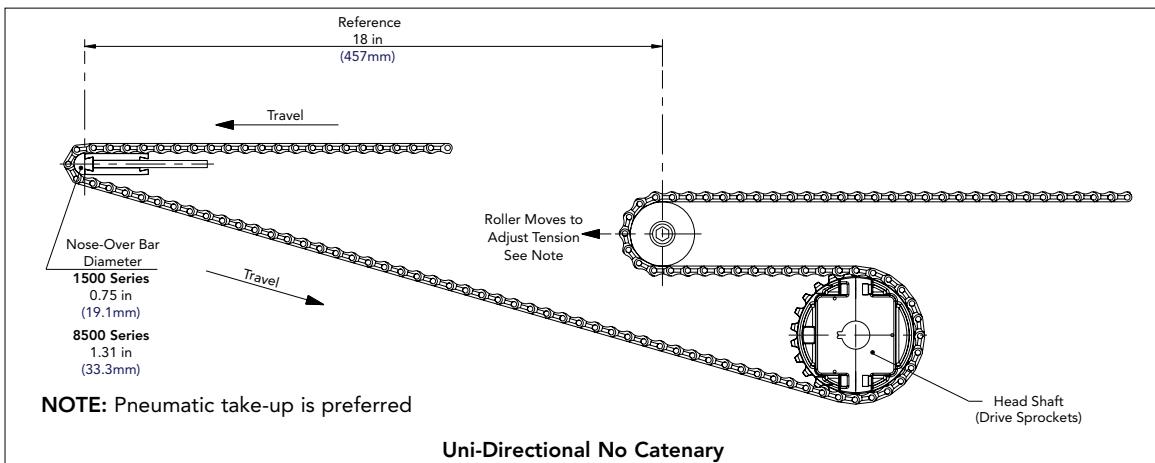
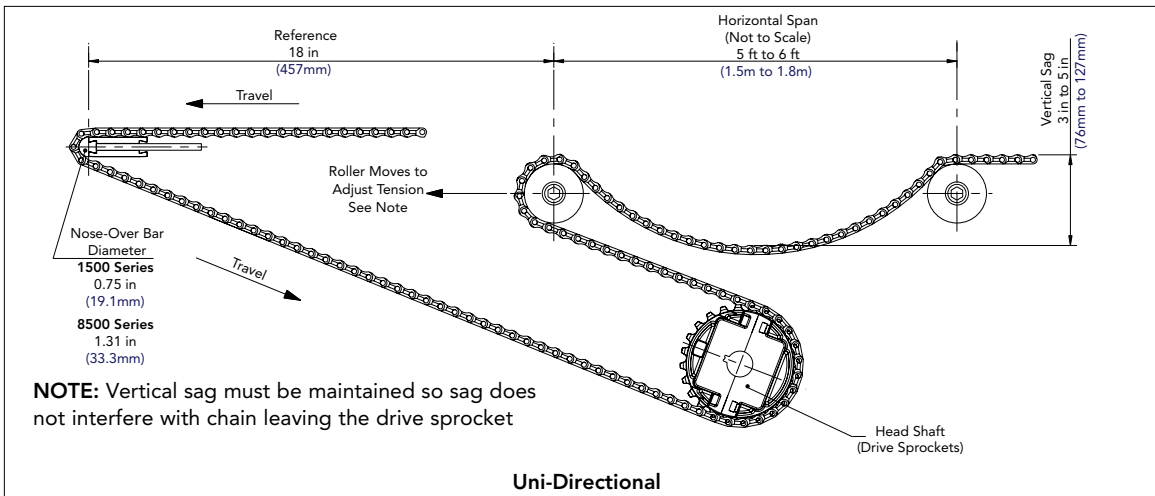
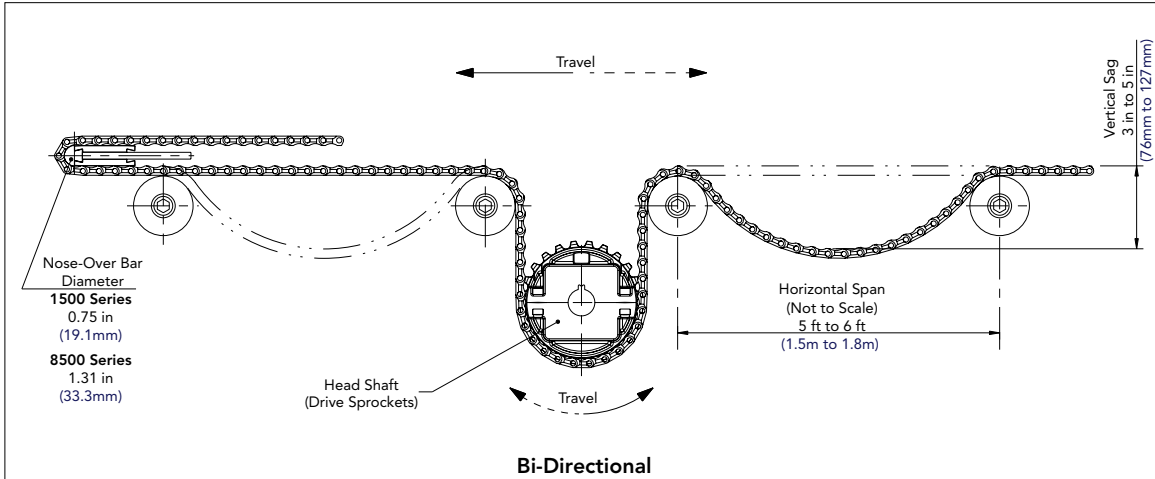
# CONVEYOR DESIGN RECOMMENDATIONS

## ▶ Alternate Drive Configurations

### ▶ Nose-Over Bar Conveyors

- ⇒ Catenary or take-up arrangements will vary based on drive configurations
- ⇒ 1500 and 8500 series nose-over bar design manuals are available for more details (8rxNODm-en)

- > Alternate Drive Configurations
- > Nose-Over Bar Conveyors

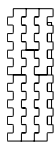


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MatTop Chains



## CONVEYOR DESIGN RECOMMENDATIONS

### ▶ Alternate Drive Configurations

#### ▶ Bi-Directional Bottom Drive Conveyors (for heavy-duty service)

⇒ Recommended roller spacing is 2 ft to 3 ft (0.5m to 1m), depending on speed and other considerations

**i** Allow for thermal expansion or contraction (see page EM - MT - 24 for chain information or EM - MT - 79 for sprocket information).

⇒ Idler Rollers

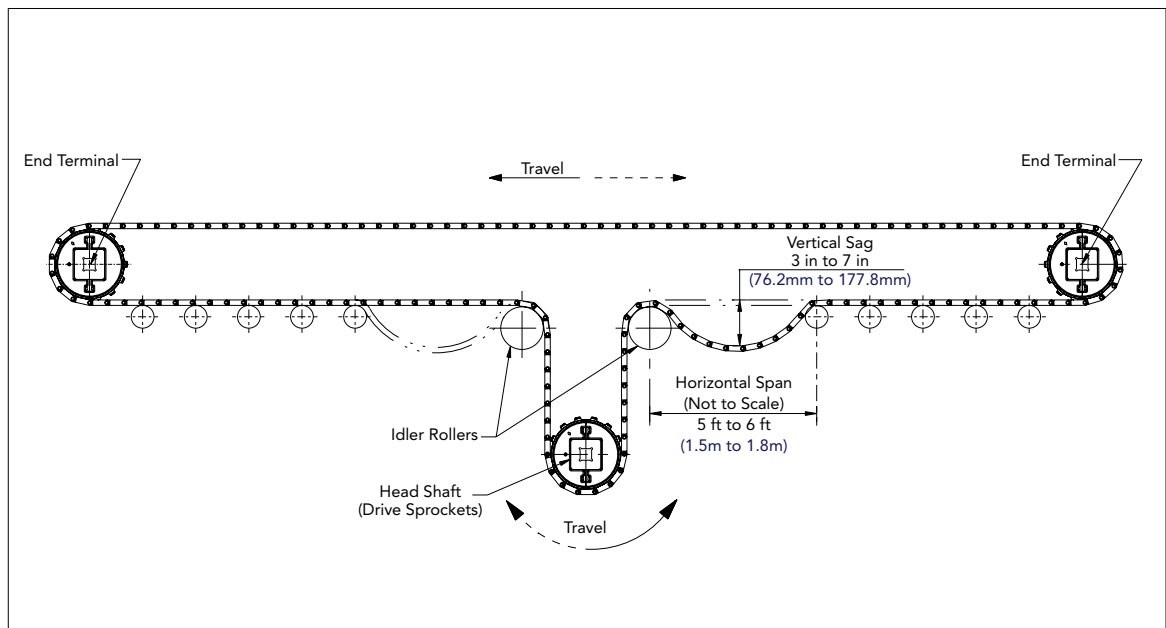
- ◆ Idler rollers can be continuous drums or a series of individual rollers
- ◆ If individual rollers are used, they should be positioned in line with the drive sprockets
- ◆ Roller diameter is recommended to be at least two times greater than the minimum back-flex radius of the chain

⇒ Bottom Drive

- ◆ All sprockets must be keyed inline (see page EM - MT - 79)

⇒ End Terminals

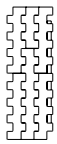
- ◆ For single-strand, continuous-width conveyors, key at least two sprockets, preferably the innermost sprockets



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# CONVEYOR DESIGN RECOMMENDATIONS

## ▶ Alternate Drive Configurations

### ▶ Bi-Directional End Drive Conveyors (for light-duty service)

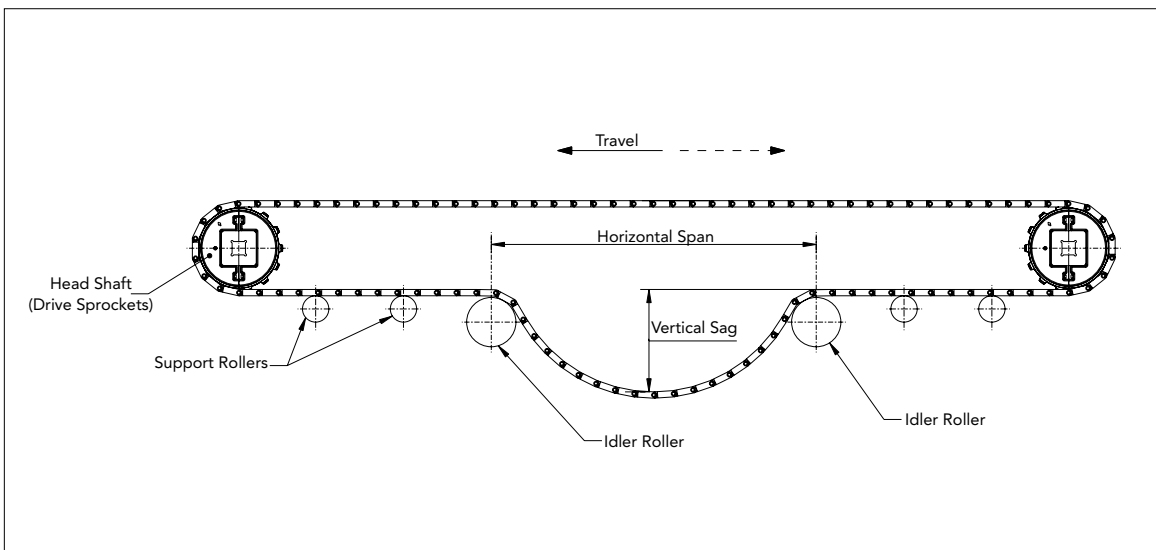
- ⇒ The end drive method is **ONLY** recommended for very light-duty service conveyors (10 ft to 20 ft [3m to 6m] centers) where the chain tension on the carry side can be balanced by the catenary tension
- ⇒ Call Application Engineering to determine catenary dimensions for specific applications
- ⇒ For applications beyond the capacity of the end drive method, use the bottom drive configuration



Make sure the sprockets are properly aligned on the shaft (see page EM - MT - 79).

## > Alternate Drive Configurations

### > Bi-Directional End Drive Conveyors (for light-duty service)



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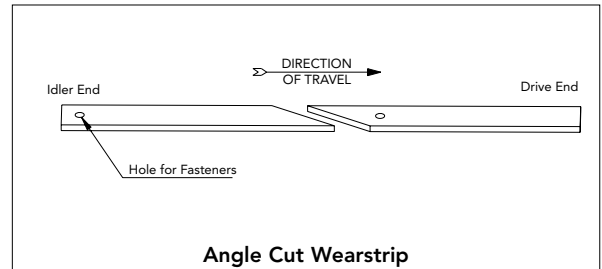
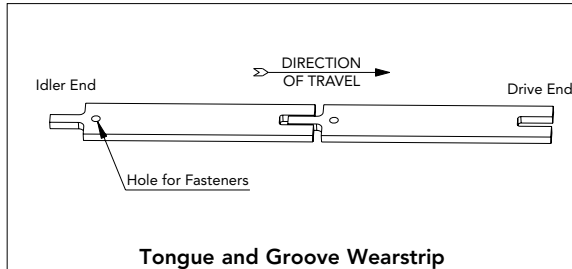


# CONVEYOR DESIGN RECOMMENDATIONS

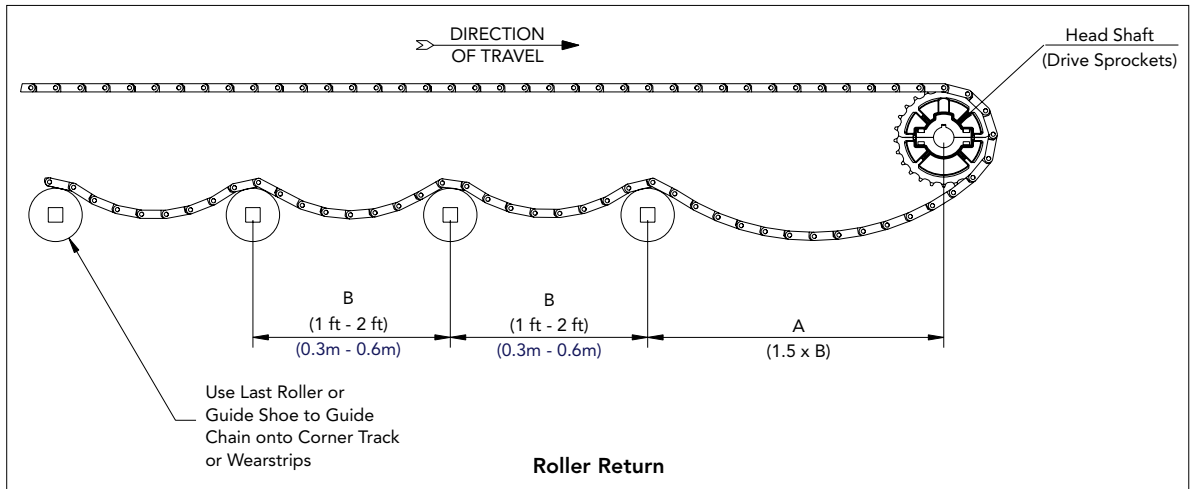
## Return Ways

### Wearstrip Considerations

⇒ Wearstrips will contract and expand due to environmental conditions. Suggested methods to accommodate this are shown below.



⇒ The first roller should be located far enough away from the head sprocket to allow for proper catenary sag



### Roller Return

⇒ Dimension "A" should be 1.5 to 2 times greater than Dimension "B"

⇒ Roller diameter is recommended to be at least two times greater than the minimum back-flex radius of the chain

**Example:** When using 4705 chain series, the chain minimum back-flex radius is 1.50 in (38.1mm); therefore, the minimum roller diameter should be 3.00 in (76.2mm).



⇒ Ensure rollers **ALWAYS** spin freely

✓ ⇒ If rollers do not turn freely, uneven wear patterns or scalloping on the top carry surface can occur

⇒ See table for minimum back-flex radii for specific chains

⇒ For offset rail, serpentine and chevron wearstrip configurations, see page EM - MT - 26 - 27

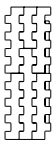
**Back-Flex Radius Table**

Chain Style	Min. Back-Flex Radius	
	in	mm
1000	0.98	25.0
1015	1.50	40.0
1503/1505/1506	1.00	25.4
2011/2015/2016	3.43	87.0
3003/3004	3.75	95.3
3125/3129	3.00	76.2
4705/4706	1.50	38.1
4707	2.00	50.8
5705/5706	1.50	38.1
5935/5936	1.00	25.4
5966	1.50	38.1
5995/5996/5998/5998HD	1.50	38.1
5997	2.75	69.9
6085	2.00	50.8
6938	1.00	25.4
6995/6999	2.50	63.5
7526	0.59	15.0
7703	2.00	50.8
7705 RubberTop/7705 Supergrip	2.00	50.8
7705/7706/7708/7743	1.00	25.4
7725/7726	1.00	25.4
7956	6.00	152.4
7963/7966	2.50	63.5
8503/8505/8506	1.00	25.4
8507	3.50	88.9
9608	1.50	38.1

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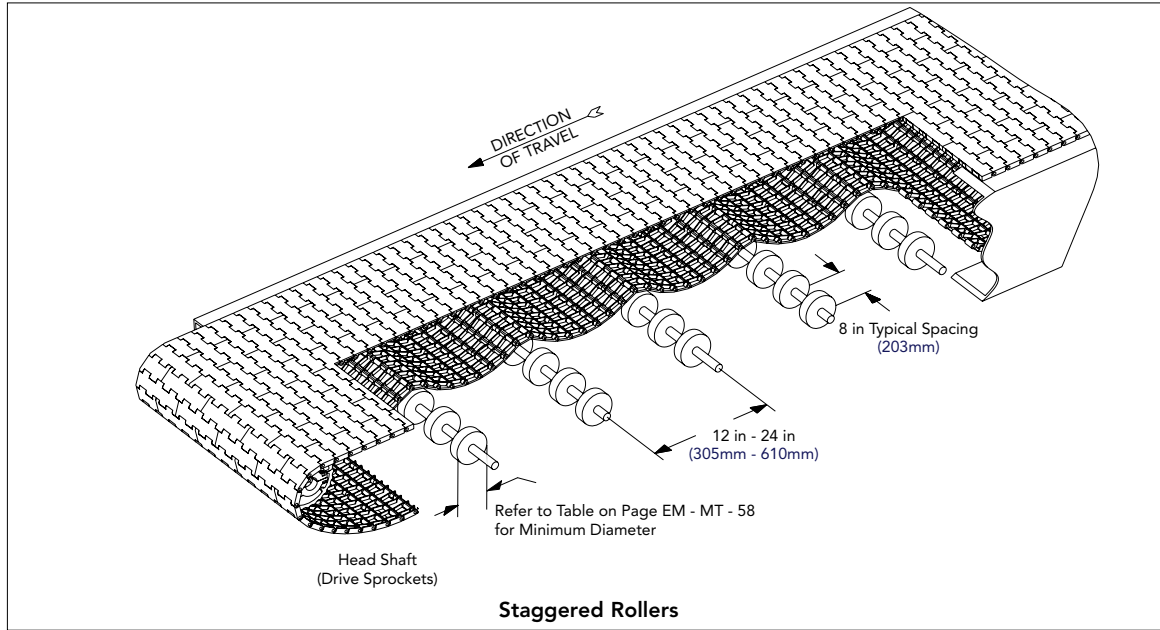


# CONVEYOR DESIGN RECOMMENDATIONS

## Return Ways

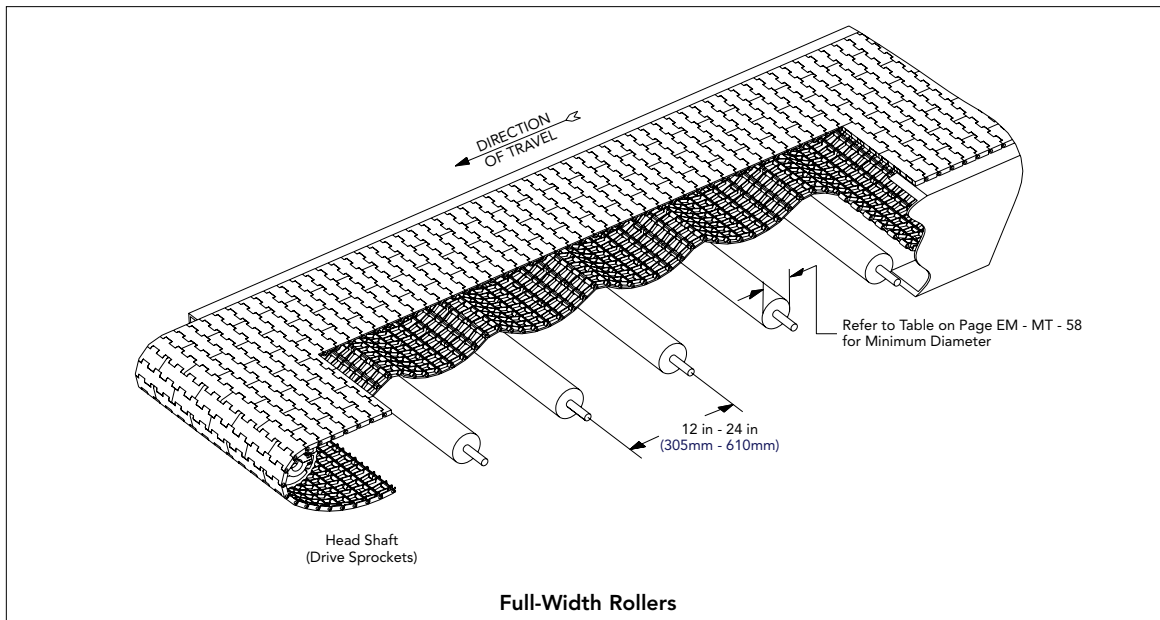
### Roller Return — Staggered Rollers

⇒ See table on page EM - MT - 58 for minimum back-flex radii for specific chains



### Roller Return — Full-Width Rollers

⇒ See table on page EM - MT - 58 for minimum back-flex radii for specific chains



- > Return Ways
- > Roller Return — Staggered Rollers
- > Roller Return — Full-Width Rollers

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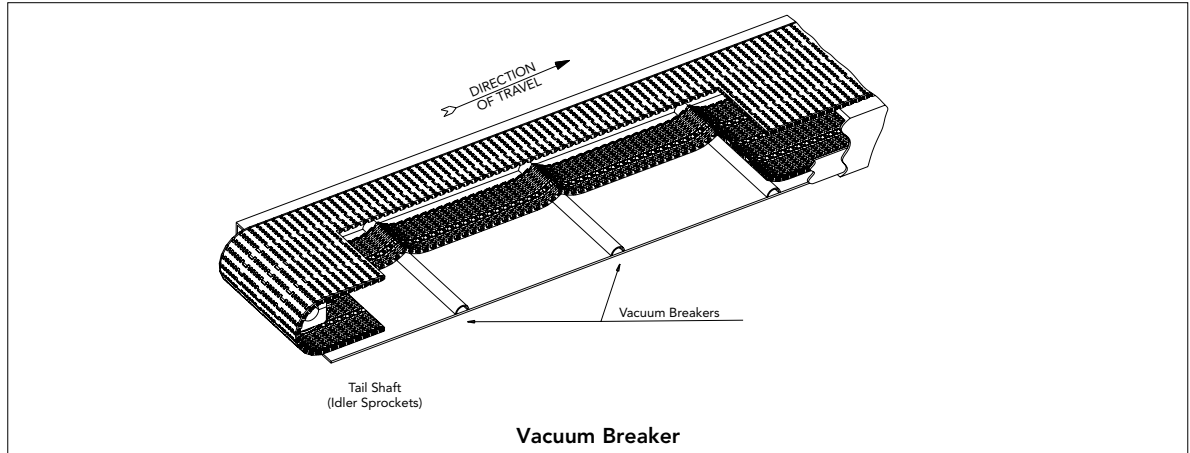


## CONVEYOR DESIGN RECOMMENDATIONS

### Return Ways

#### Vacuum Breaker

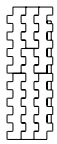
- ⇒ Vacuum breakers can be utilized to reduce “suction” on solid bed returns in “wet” applications
- ⇒ Vacuum breakers are typically spaced 2 ft to 5 ft (0.6m to 1.5m) apart



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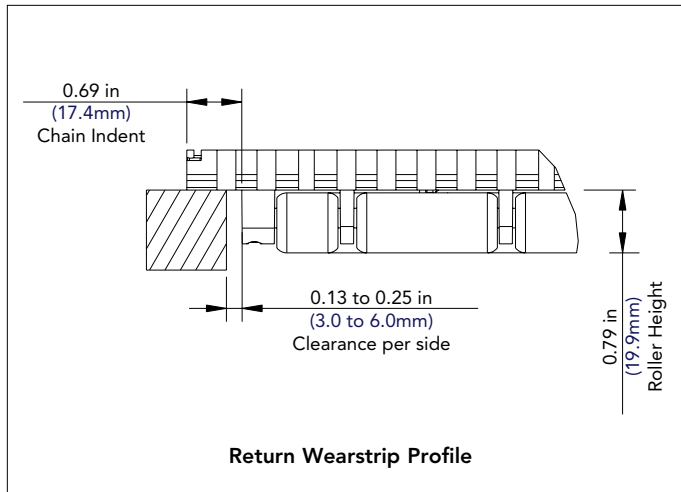


# CONVEYOR DESIGN RECOMMENDATIONS

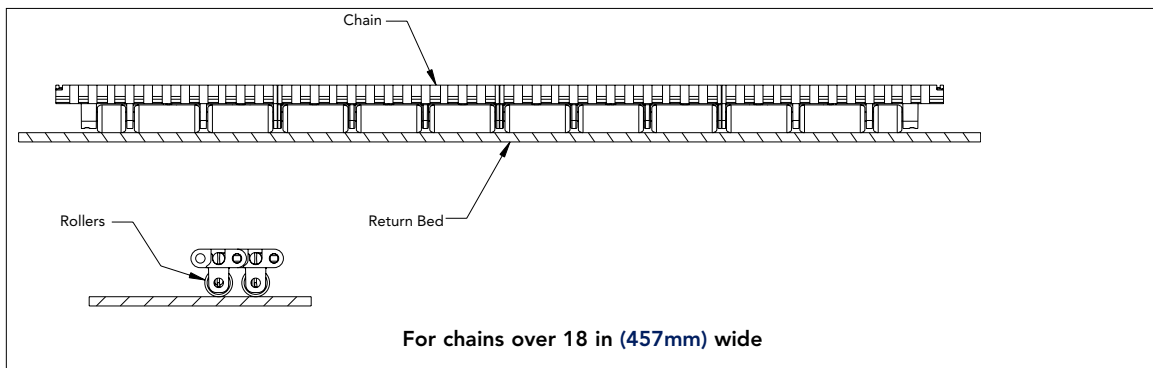
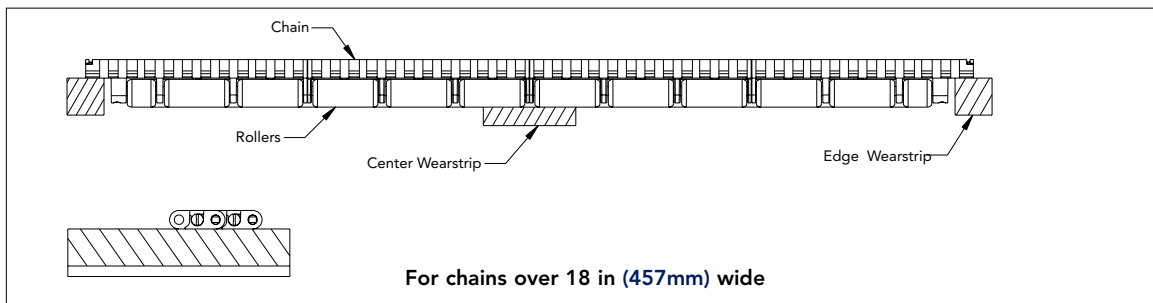
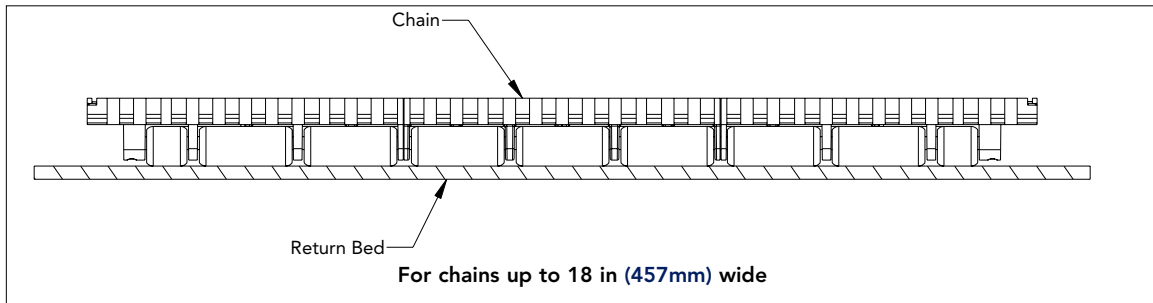
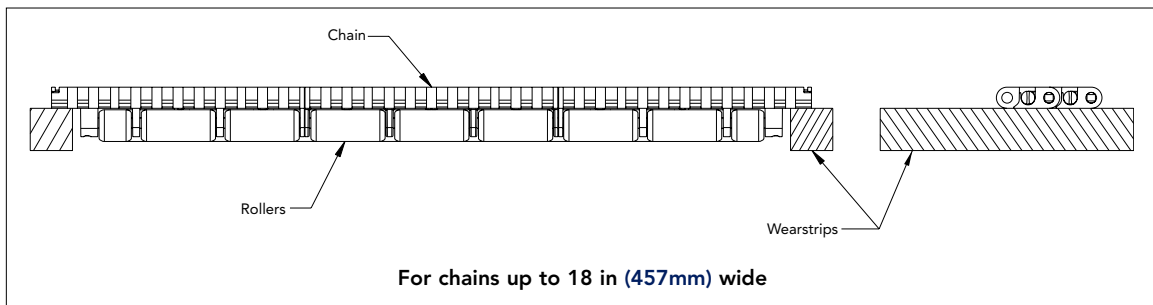
## Return Ways

### Supports for Chains with Rollers

**i** Chain shown in drawings is LBP7703 chain. For all other LBP chains, the wearstrips should be positioned between the rollers.



- > Return Ways
- > Supports for Chains with Rollers



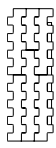
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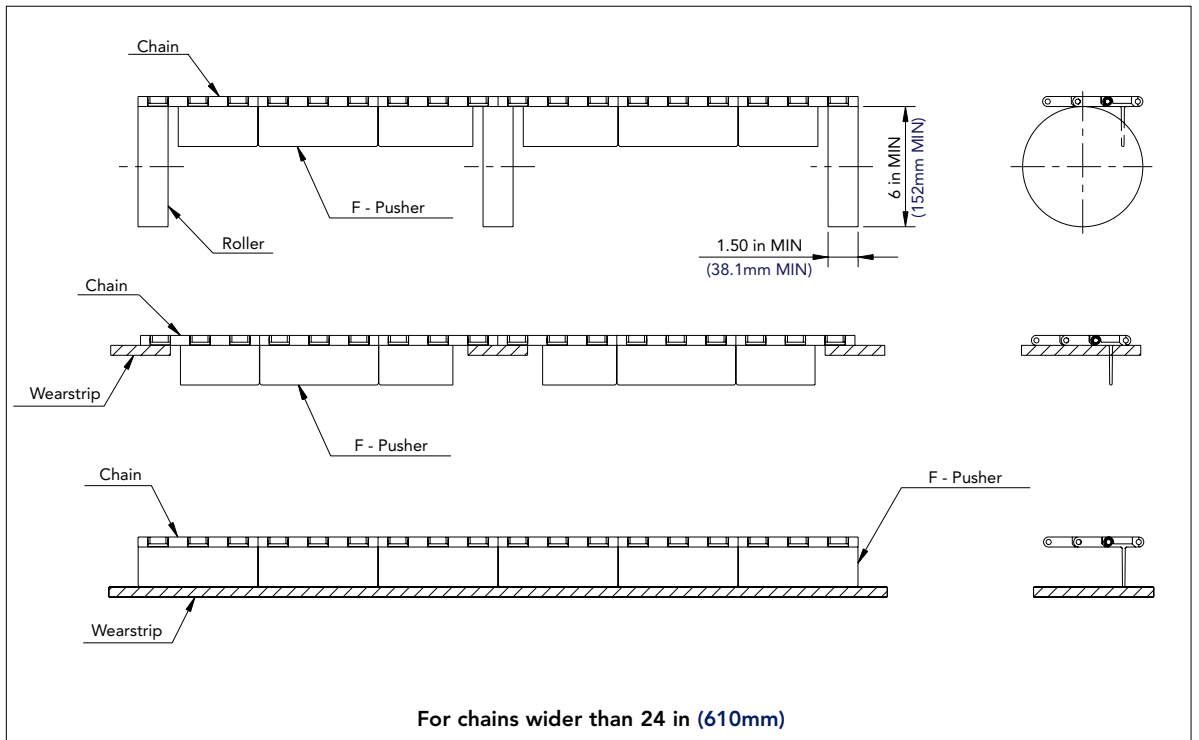
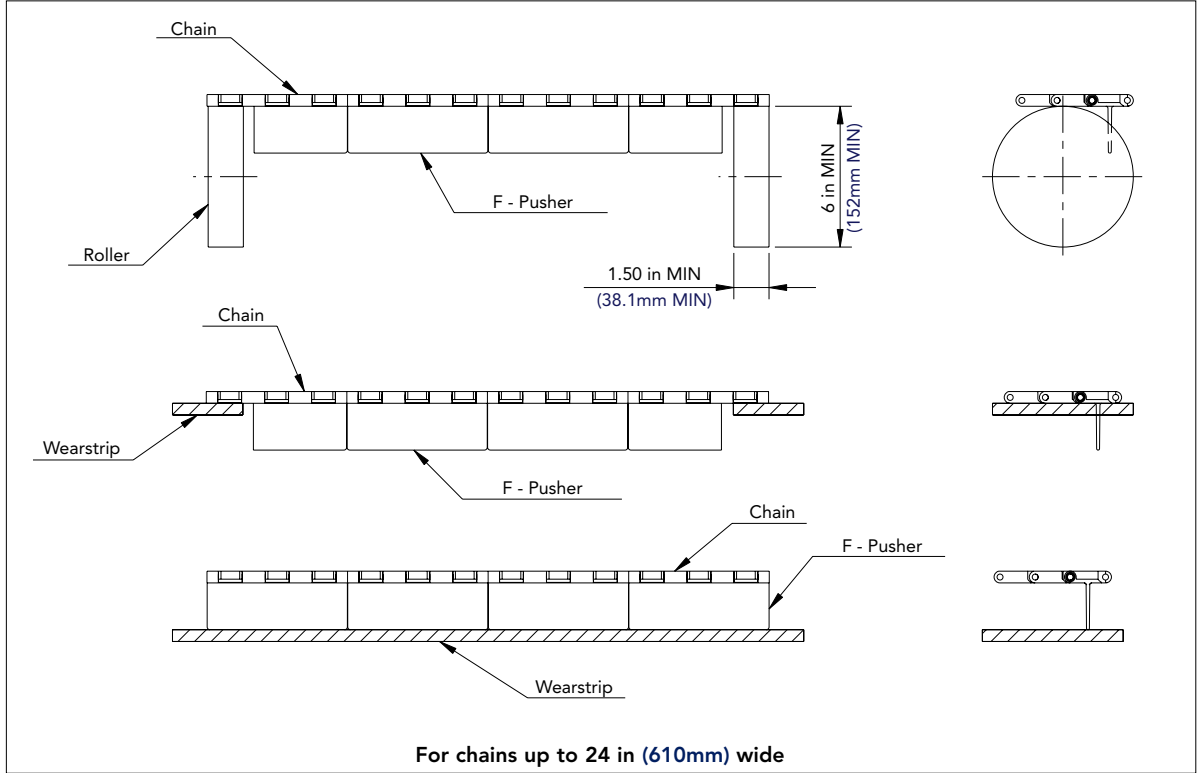
# CONVEYOR DESIGN RECOMMENDATIONS

## Return Ways

### Supports for Chains with Pushers

⇒ Allows for reduced top surface wear

- > Return Ways
- > Supports for Chains with Pushers with Pushers

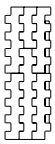


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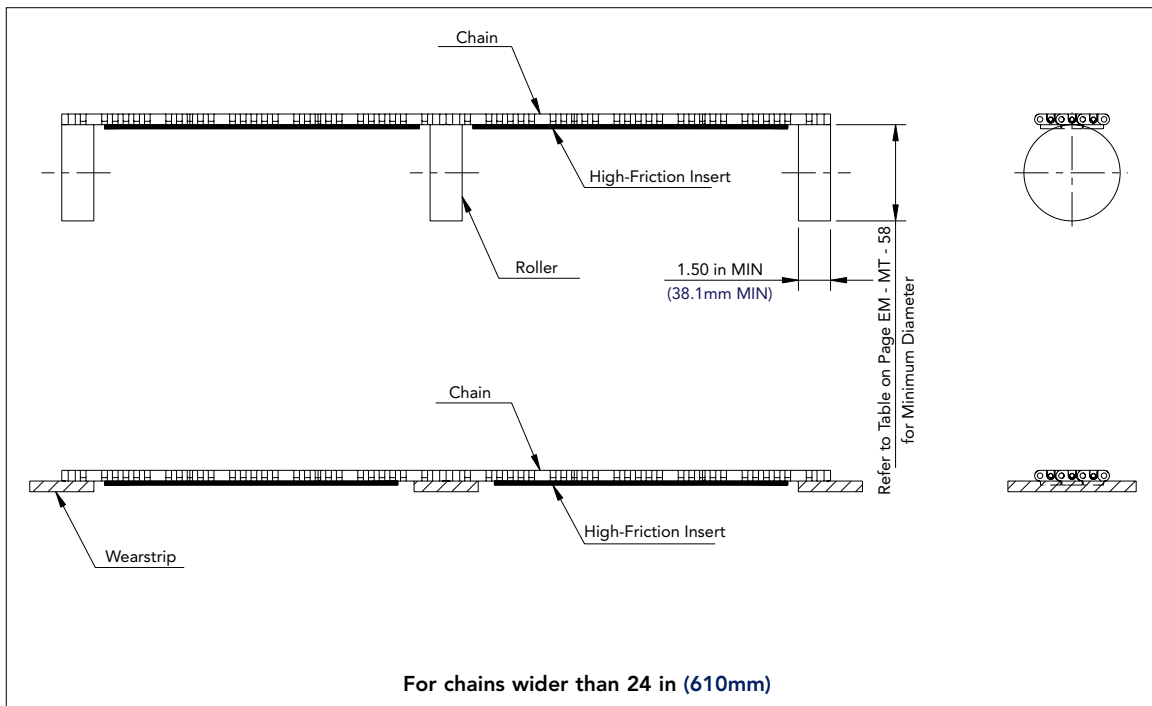
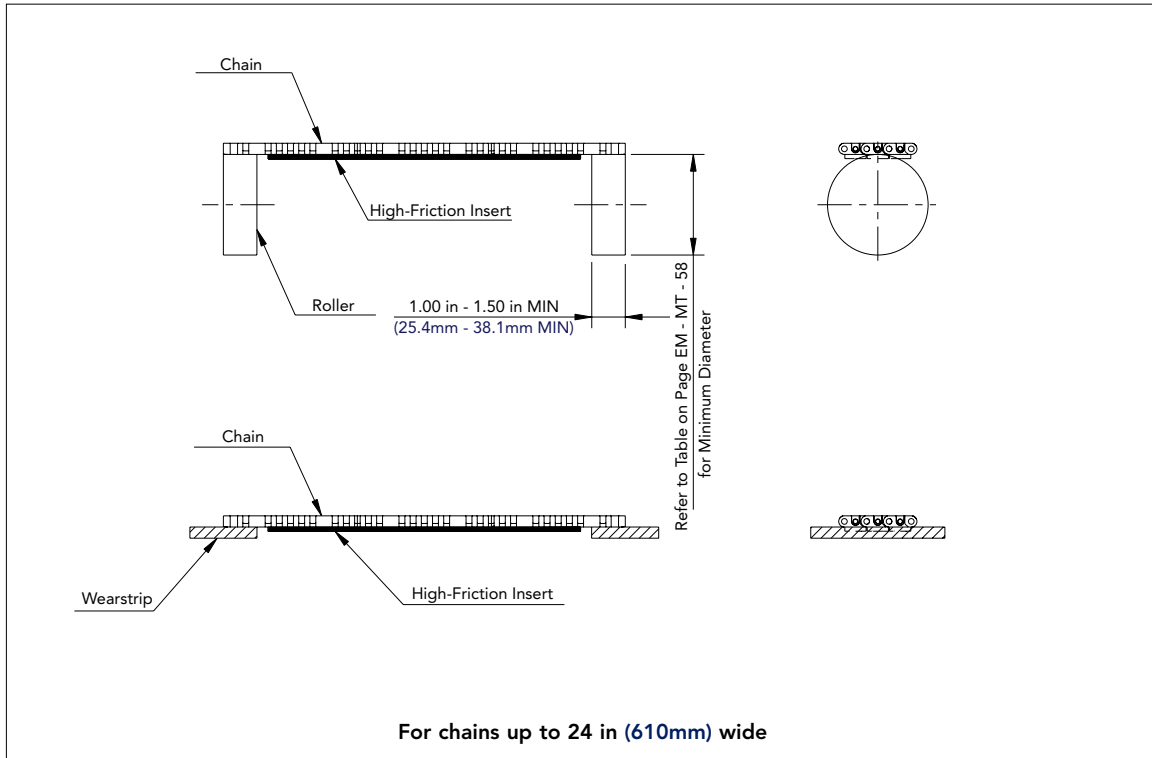


# CONVEYOR DESIGN RECOMMENDATIONS

## Return Ways

### Supports for Chains with High-Friction Inserts

- > Return Ways
- > Supports for Chains with High-Friction Inserts



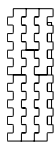
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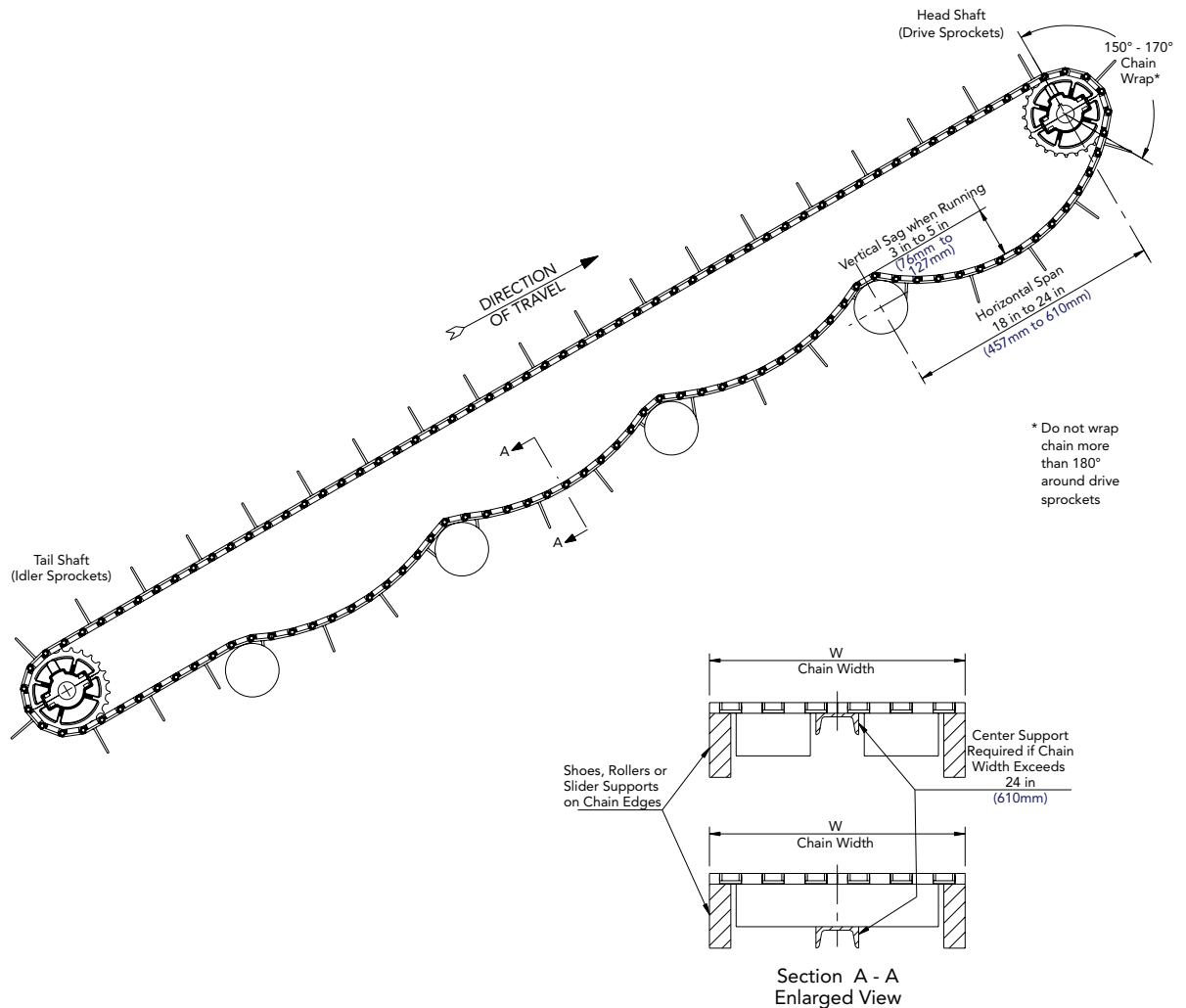


# CONVEYOR DESIGN RECOMMENDATIONS

## Return Ways

## Incline Conveyor

- > Return Ways
- > Incline Conveyor

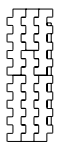


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- ⇒ The catenary position depends on the incline angle
- ⇒ Rollers or shoes **MUST** meet the minimum back-flex radius requirements
- ⇒ If the incline angle is severe, take-up units may need to be considered
  - ◆ Spring or pneumatic take-up units are preferred
- ⇒ Pusher indents provide surface area for return
- ⇒ Notches within the pusher attachment help to extend the life of the pusher
- ⇒ A pusher center return support is required for chains wider than 24 in (610mm)
- ⇒ Slider supports, shoes or rollers can be utilized in the return sections
- ⇒ Sideguards can be utilized to capture product
- ⇒ When abrasives are present, the use of drums or abrasion resistant idler sprockets should be considered
- ⇒ Use guard or drip pans when required

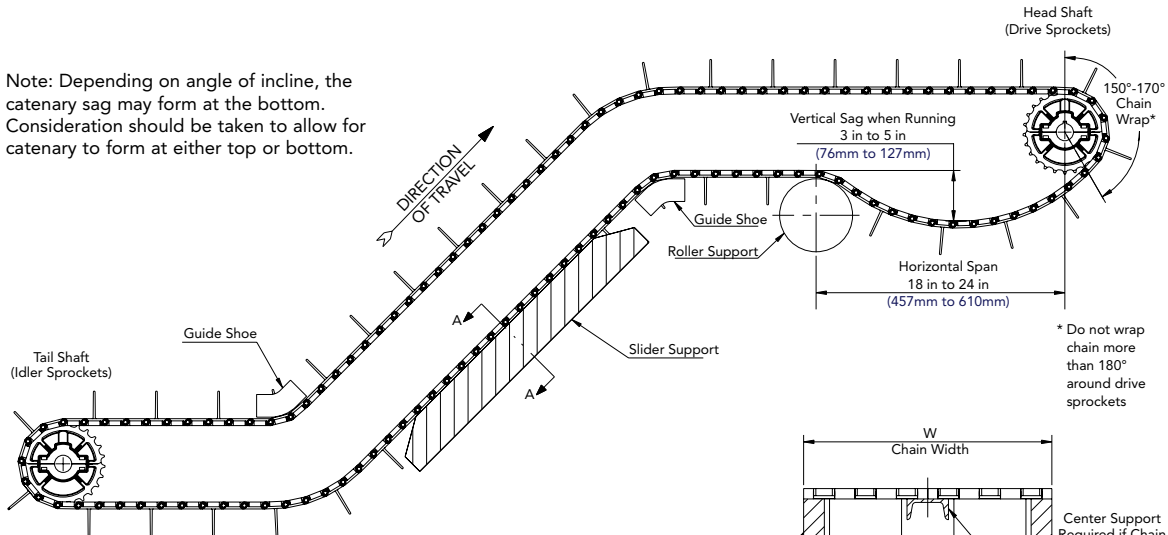


# CONVEYOR DESIGN RECOMMENDATIONS

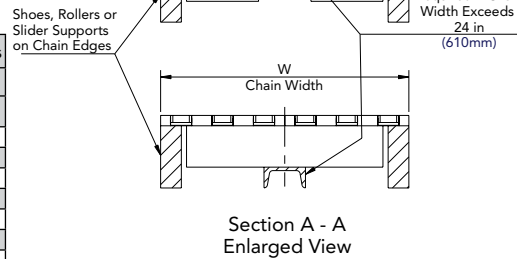
## Return Ways

## Incline Conveyor with Transitions

Note: Depending on angle of incline, the catenary sag may form at the bottom. Consideration should be taken to allow for catenary to form at either top or bottom.



Chain	Attachments	Attachment Spacing		Min Back-Flex Radius	
		in	mm	in	mm
2010 Series	F4	2.00	50.8	5.00	127.0
		4.00	101.6	5.00	127.0
		6.00	152.4	5.00	127.0
		8.00	203.2	5.00	127.0
	F6	2.00	50.8	7.00	177.8
		4.00	101.6	7.00	177.8
		6.00	152.4	7.00	177.8
		8.00	203.2	7.00	177.8
	C4/RC4	2.00	50.8	7.00	177.8
		4.00	101.6	6.00	152.4
		6.00	152.4	5.00	127.0
		8.00	203.2	4.50	114.3
	C6/RC6	2.00	50.8	10.00	254.0
		4.00	101.6	8.00	203.2
		6.00	152.4	7.50	190.5
		8.00	203.2	7.00	177.8
SG2	-	-	6.00	152.4	
SG3	-	-	7.50	190.5	
SG4	-	-	9.00	228.6	



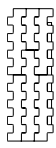
- ⇒ The catenary position depends on the incline angle
- ⇒ Rollers or shoes **MUST** meet the minimum back-flex radius requirements
- ⇒ In carry transition areas, the radius should be as large as possible
- ⇒ If the incline angle is severe, take-up units may need to be considered
  - ◆ Spring or pneumatic take-up units are preferred
- ⇒ Pusher indents provide surface area for return
- ⇒ Notches within the pusher attachment help to extend the life of the pusher
- ⇒ A pusher center return support is required for chains wider than 24 in (610mm)
- ⇒ Slider supports, shoes or rollers can be utilized in the return sections
- ⇒ Sideguards can be utilized to capture product
- ⇒ When abrasives are present, the use of drums or abrasion resistant idler sprockets should be considered
- ⇒ Use guard or drip pans when required

## > Return Ways > Incline Conveyor with Transitions

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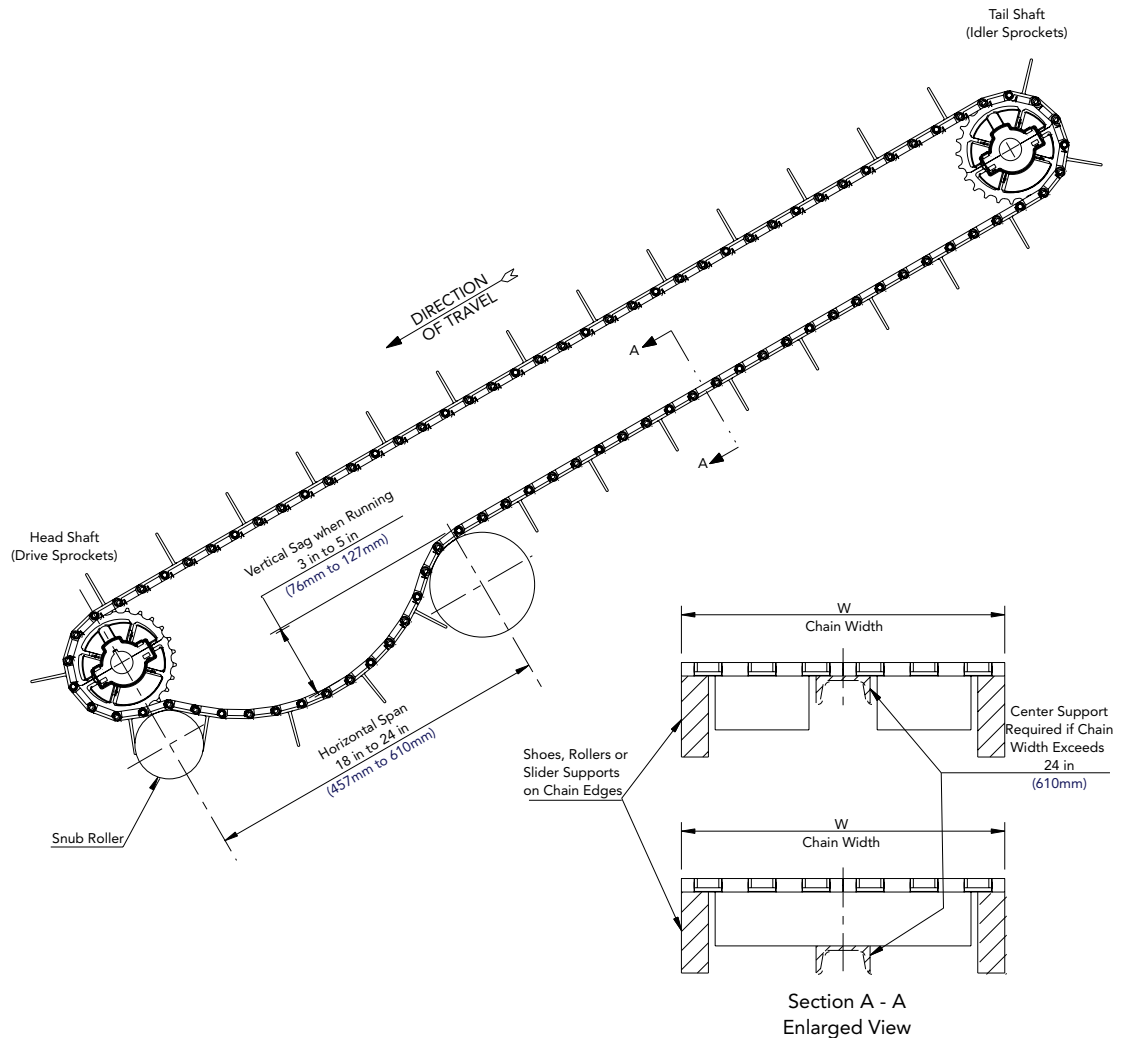
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# CONVEYOR DESIGN RECOMMENDATIONS

- Return Ways
- Decline Conveyor

- > Return Ways
- > Decline Conveyor



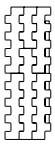
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- ⇒ A snubber roller can be utilized to maintain a 150° to 180° wrap on drive sprocket
- ⇒ The catenary position depends on the incline angle
- ⇒ Rollers or shoes **MUST** meet the minimum back-flex radius requirements
- ⇒ In carry transition areas, the radius should be as large as possible
- ⇒ If the decline angle is severe, take-up units may need to be considered
  - ◆ Spring or pneumatic take-up units are preferred
- ⇒ Pusher indents provide surface area for return
- ⇒ Notches within the pusher attachment help to extend the life of the pusher
- ⇒ A pusher center return support is required for chains wider than 24 in (610mm)
- ⇒ Slider supports, shoes or rollers can be utilized in the return sections
- ⇒ Sideguards can be utilized to capture product
- ⇒ When abrasives are present, the use of drums or abrasion resistant idler sprockets should be considered
- ⇒ Use guard or drip pans when required

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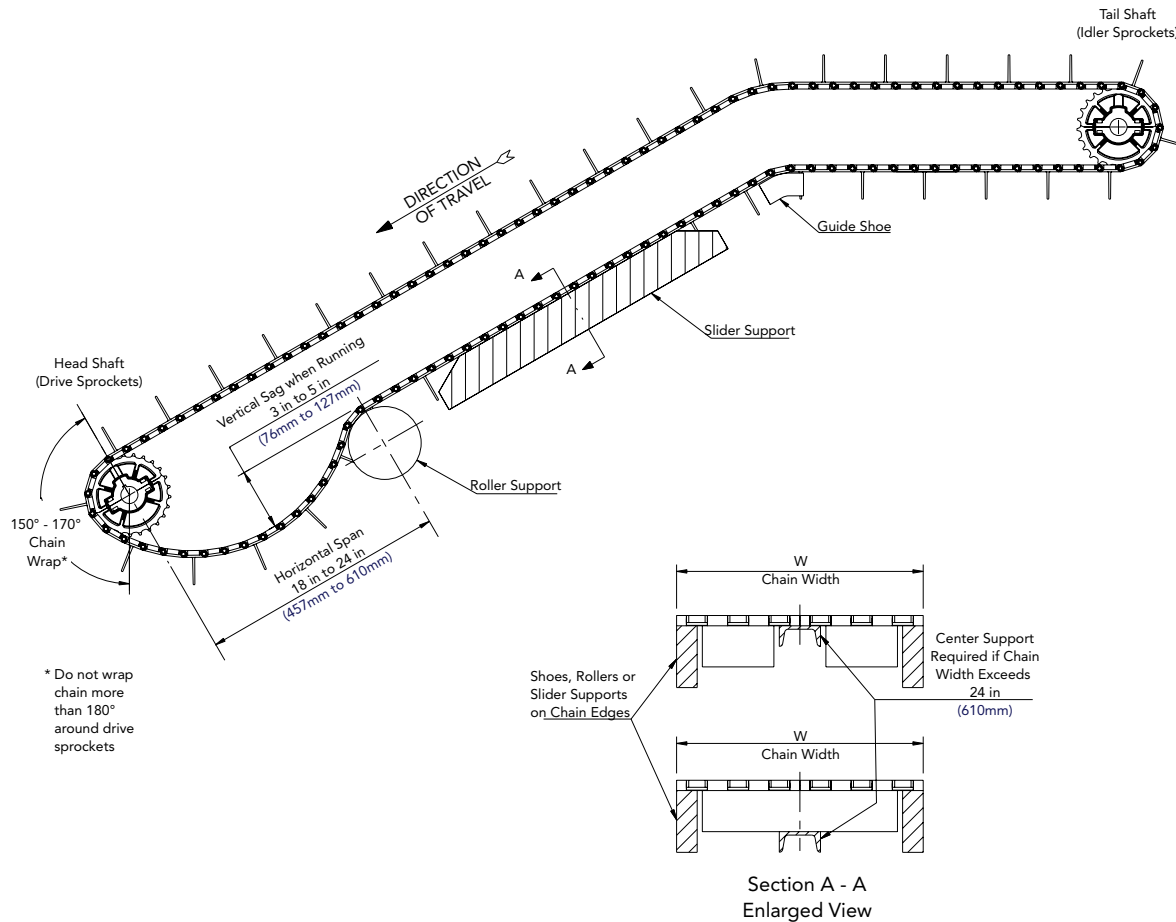


# CONVEYOR DESIGN RECOMMENDATIONS

## Return Ways

## Decline Conveyor with Transitions

## > Return Ways > Decline Conveyor with Transitions

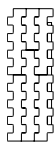


- ⇒ A snubber roller can be utilized to maintain a 150° to 180° wrap on drive sprocket
- ⇒ The catenary position depends on the incline angle
- ⇒ Rollers or shoes **MUST** meet the minimum back-flex radius requirements
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- ⇒ Slider supports, shoes or rollers can be utilized in the return sections
- ⇒ Sideguards can be utilized to capture product
- ⇒ When abrasives are present, the use of drums or abrasion resistant idler sprockets should be considered
- ⇒ Use guard or drip pans when required
- ⇒ See table on page EM - MT - 58 for back-flex information

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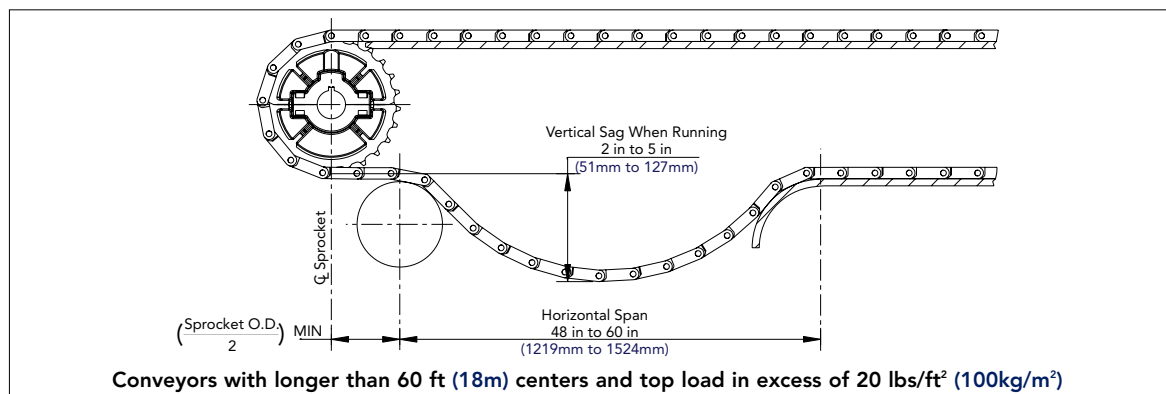
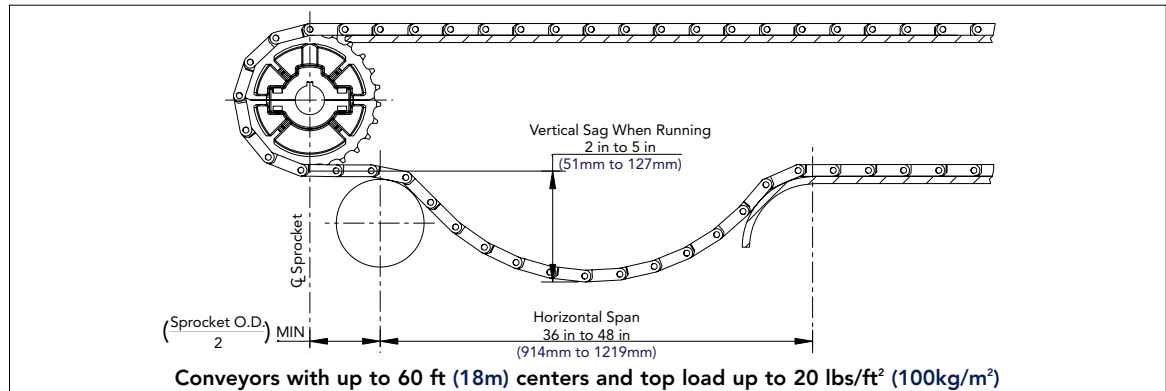
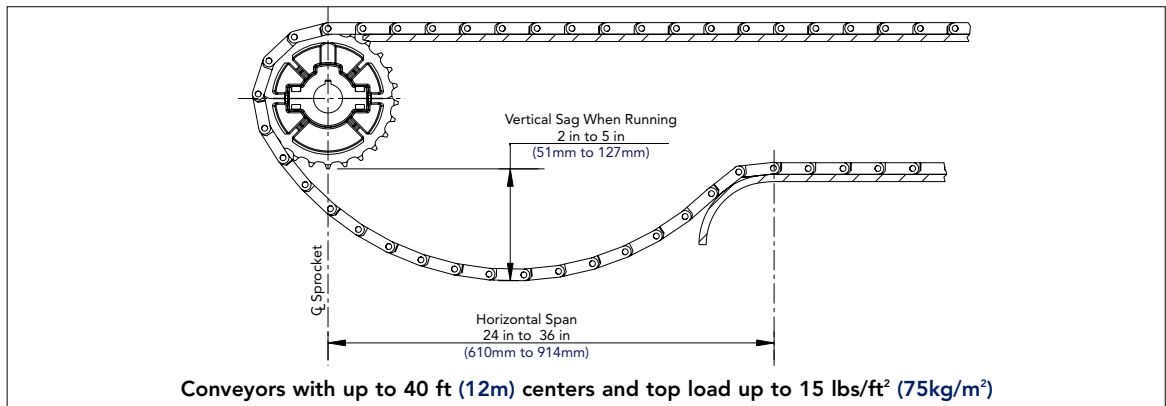


# CONVEYOR DESIGN RECOMMENDATIONS

## Return Ways

### Catenary Sag

- ⇒ The function of the catenary is to allow a place for excess chain to accumulate
- ⇒ MatTop chains should never be run tight
- ⇒ The catenary sag should be measured when running
- ⇒ If the catenary sag is excessive or increases due to wear, it should be adjusted by removing links to obtain the proper sag (2 pitches must be removed for LBP 3000 series chains and any chain with sidguards)
- ⇒ Take-ups are typically not recommended
- ⇒ The catenary sag should be located as close to the drive as possible



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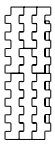


The catenary sag area must be free of all obstructions, such as frame cross-members, supports, drive components, that can damage chain or inhibit proper catenary sag.



It is recommended to keep the sprockets and chain clean of debris and foreign matter. If this is not done, the chain can stick to (not release freely from) the drive sprockets causing the catenary to bounce leading to possible chain damage or breakage. In cases of extreme environments, a hold down roller can be positioned above the catenary near the drive sprocket(s) to keep the chain from overwrapping the drive sprocket(s).

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# CONVEYOR DESIGN RECOMMENDATIONS

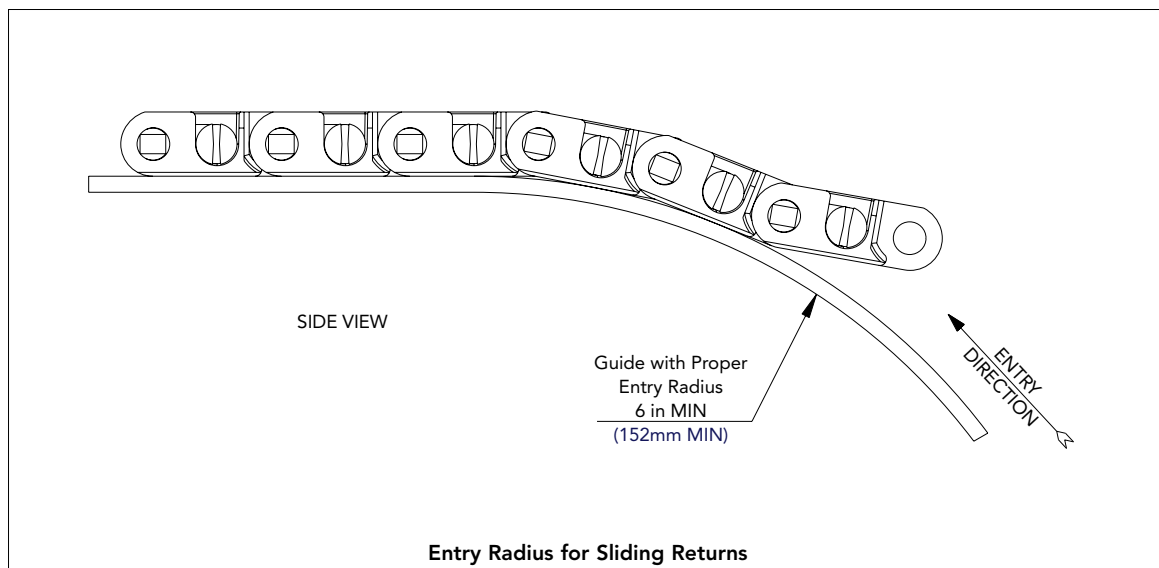
## Return Ways

### Entry Radius for Sliding Returns



- ⇒ Provide a generous entry radius to the return section which permits the chain to feed smoothly into the return ways
- ⇒ The entry radius should be greater than the minimum back-flex radius of the chain (see table on page EM - MT - 58)
- ⇒ Rexnord recommends a 6 in (152mm) minimum entry radius to prevent non-uniform wear
- ⇒ When returning 7956 chain on its TABs, guide the chain onto the return wearstrips using a guide shoe (see table on page EM - MT - 34 for proper guide clearance)
- ⇒ At the entry of the return wearstrips, provide rounded corners to prevent catching or snagging of the chain flights

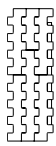
- > Return Ways
- > Entry Radius for Sliding Returns



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# CONVEYOR DESIGN RECOMMENDATIONS

## ▶ Sprocket and Wearstrip Location

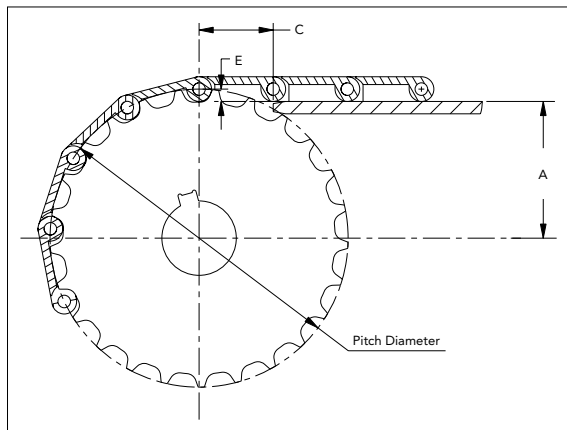
- ⇒ The distance from the end of the wearstrip to the sprocket shaft centerline should equal dimension "C" (one chain pitch); otherwise, the wearstrip will interfere with the free articulation of the chain as it enters the sprocket
- ⇒ The leading edges of the wearstrip should be beveled
- ⇒ The following formulas and dimensions used in conjunction with the figure will give the proper shaft and wearstrip positioning

## ▶ Sprocket Location For Conventional Chains:

**A = (Pitch Diameter/2) - E**

**C = One Chain Pitch (see table below)**

"C" equals one chain pitch which ensures support under chain at all times.



**i** Dimensions apply for both head and tail shafts

Shaft Drop Values for Conventional Chain					
Chain Series	Chain Number	C Dimension		E Dimension	
		in	mm	in	mm
1000	1000FT/1000FG	1.00	25.4	0.170	4.32
1010	1015	1.00	25.4	0.200	5.08
1500	1503/1505/1506	0.59	15.0	0.190	4.83
2010	2011/2015/2016	2.00	50.8	0.320	8.00
3000	3003/3004	2.50	63.5	0.438	11.11
3120	3125/3129	3.00	76.2	0.630	15.88
4700	4705/4706	1.50	38.1	0.250	6.35
5700	5705/5706	1.50	38.1	0.250	6.35
5930	5935/5936	0.75	19.1	0.170	4.32
5966	5966	1.50	38.1	0.250	6.35
5990	5995/5996/ 5998/5998HD	2.25	57.2	0.360	9.14
6085	6085	2.00	50.8	0.310	7.87
6938	6938	0.75	19.1	0.170	4.32
6990	6995/6999	2.25	57.2	0.360	9.14
6990H	6995/6999 H4/H8	2.25	57.2	0.380	9.65
7526	7526	0.50	12.7	0.250	6.35
7700	7703/7705/ 7706/7708/7743	1.00	25.4	0.250	6.35
7950	7956	1.25	31.8	0.250	6.35
7960	7963/7966	1.50	38.1	0.375	9.53
8500	8503/8505/8506	0.75	19.1	0.170	4.32
9600	9608	1.50	38.1	0.380	9.65

### Example:

For a 5996 chain utilizing a 14T sprocket:

$$A = (\text{Pitch Diameter}/2) - E$$

$$= (10.111 \text{ in}/2) - 0.360 \text{ in} = 4.696 \text{ in}$$

$$C = 2.25 \text{ in}$$

### Metric:

$$A = (\text{Pitch Diameter}/2) - E$$

$$= (256.82\text{mm}/2) - 9.14\text{mm} = 119.27\text{mm}$$

$$C = 57.1\text{mm}$$

### Tolerances:

$$A = +.03 \text{ in} / -.00 \text{ in} (+.8\text{mm} / -.0\text{mm})$$

$$C = +.25 \text{ in} / -.00 \text{ in} (+6.3\text{mm} / -.0\text{mm})$$



Above values are good only for sprockets mounted between support tracks. For sprockets mounted in line with support tracks:

$$C = \sqrt{\left(\frac{\text{O.D.}}{2}\right)^2 - (A-t)^2} + 0.125$$

A = (Pitch Diameter/2) - E

O.D. = Outside Diameter of Sprockets

t = Wearstrip Thickness

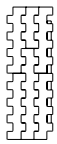
- ⇒ Wearstrips in line with sprockets can also be angled back on the bottom for more clearance

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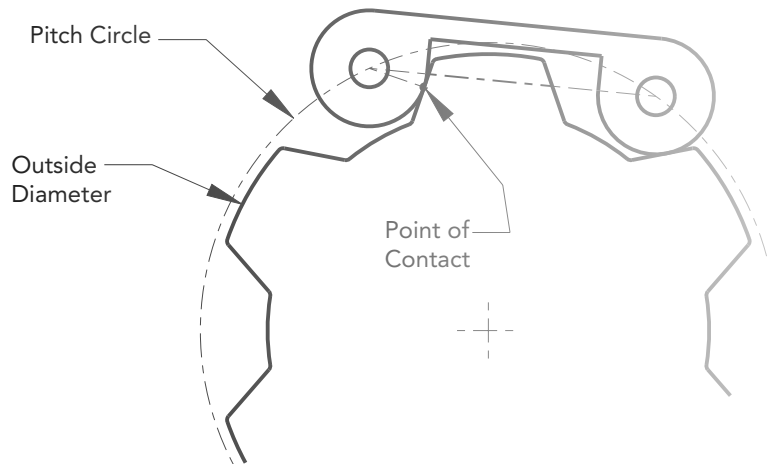


# CONVEYOR DESIGN RECOMMENDATIONS

## ➤ Sprocket Pitch Diameter vs. Outside Diameter

In some instances, it is possible for a sprocket's pitch diameter to be larger than the outside diameter. This is not a problem because the link does not contact the sprocket on the pitch circle.

## ➤ Why Pitch Diameter Is Larger Than the Outside Diameter on Small Sprockets



> Sprocket Pitch Diameter vs. Outside Diameter

> Why Pitch Diameter Is Larger Than the Outside Diameter on Small Sprockets

⇒ The outside diameter is to the outer tips of the teeth.

⇒ The chain's pins are on the pitch diameter. On a very small sprocket, the chord created by the link causes the point where the sprocket contacts the tooth to be much closer to the sprocket center than the pins and the pitch circle.

**i** Chordal action is defined as the up and down motion of the chain over top dead center of the sprocket centerline. Excessive chordal action can lead to product tippage.

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# CONVEYOR DESIGN RECOMMENDATIONS

## Sprocket and Wearstrip Location with Raised-Rib Chains

- ⇒ The distance from the end of the wearstrip to the sprocket shaft centerline should equal dimension "C" (one chain pitch); otherwise, the wearstrip will interfere with the free articulation of the chain as it enters the sprocket
- ⇒ The leading edges of the wearstrip should be beveled
- ⇒ The following formula and dimensions used in conjunction with the figure will give the proper shaft and wearstrip positioning

### Sprocket Location for Raised-Rib Chains:

- A = (Pitch Diameter/2) - E**
- C = One Chain Pitch (see table below)**
- D = (Pitch Diameter/2) + F**
- T = Comb Thickness (see Product Catalog for dimensions)**

"C" equals one chain pitch which ensures support under chain at all times.

### Example:

For a 5997 chain utilizing a 14T sprocket:

$$A = (\text{Pitch Diameter}/2) - E$$

$$= (10.111 \text{ in}/2) - 0.360 \text{ in} = 4.696 \text{ in}$$

$$B = 3.25 \text{ in}$$

$$C = 2.25 \text{ in}$$

$$D = (\text{Pitch Diameter}/2) + F$$

$$= (10.111 \text{ in}/2) + 0.610 \text{ in} = 5.666 \text{ in}$$

$$T = 0.25 \text{ in}$$

### Metric:

$$A = (\text{Pitch Diameter}/2) - E$$

$$= (256.82 \text{ mm}/2) - 9.14 \text{ mm} = 119.27 \text{ mm}$$

$$B = 82.6 \text{ mm}$$

$$C = 57.2 \text{ mm}$$

$$D = (\text{Pitch Diameter}/2) + F$$

$$= (256.82 \text{ mm}/2) + 15.49 \text{ mm} = 143.90 \text{ mm}$$

$$T = 6.4 \text{ mm}$$

### ✓ Tolerances:

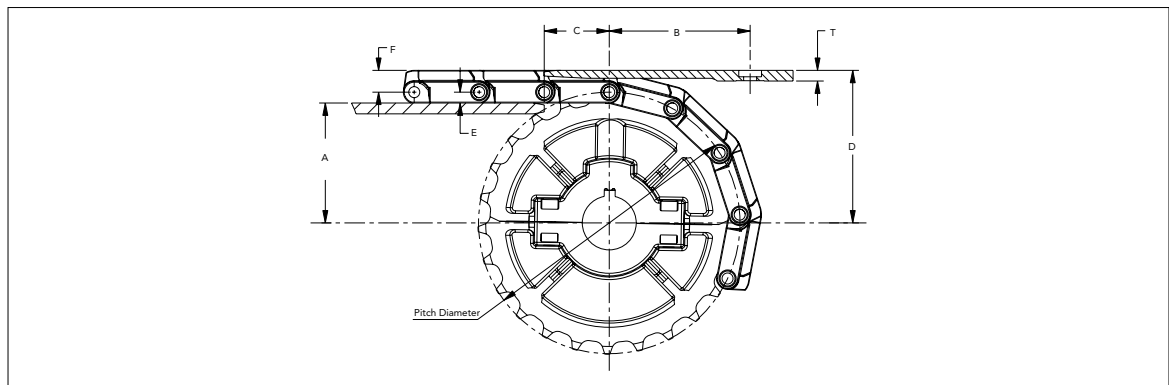
$$A = +.03 \text{ in} / -.00 \text{ in} (+.8 \text{ mm} / -.0 \text{ mm})$$

$$C = +.25 \text{ in} / -.00 \text{ in} (+6.3 \text{ mm} / -.0 \text{ mm})$$

$$D = +.00 \text{ in} / -.03 \text{ in} (+.0 \text{ mm} / -.8 \text{ mm})$$

✓ "B" dimension is flexible. One must ensure that the comb fingers extend beyond the sprocket centerline to avoid transfer problems.

**CAUTION** ⚠ Mounting sprockets in line with wearstrips is not recommended for chains using comb transfer plates.

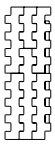


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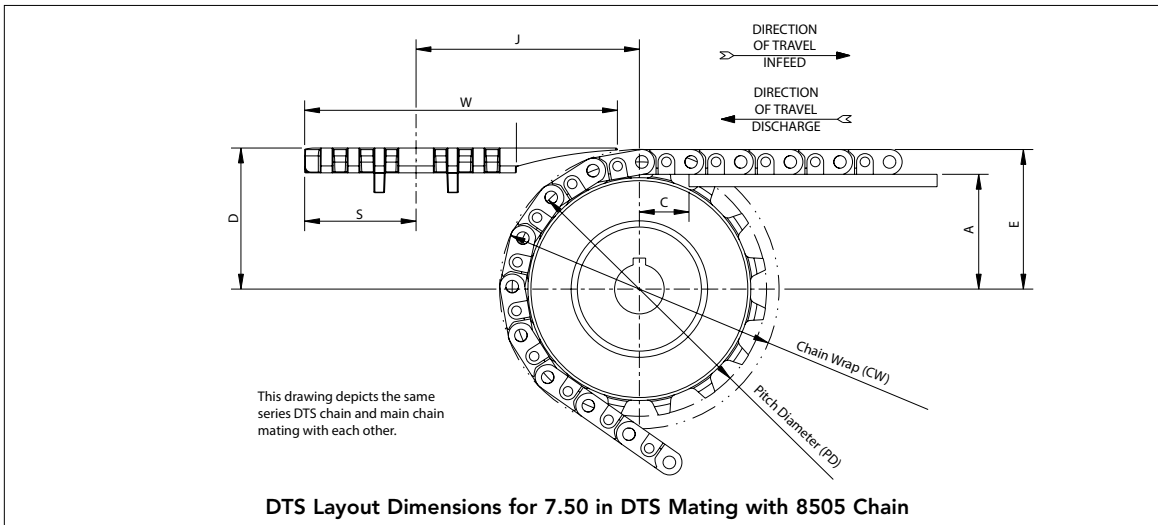
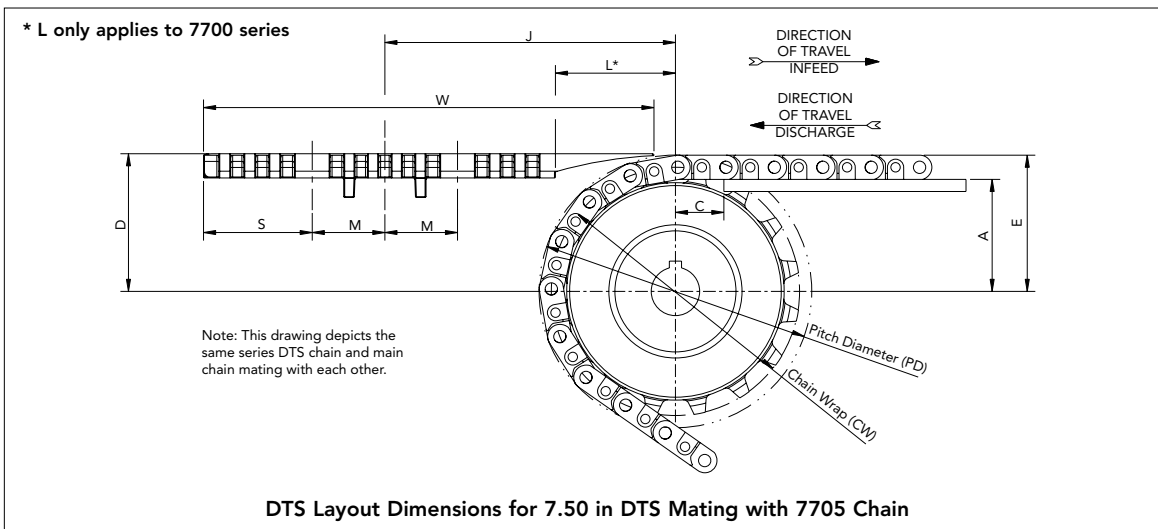
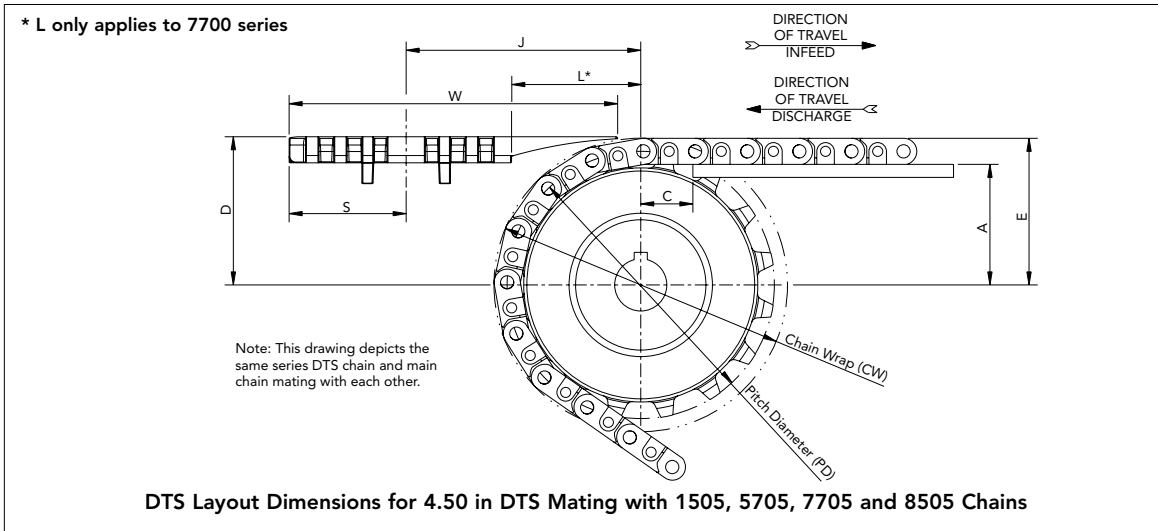
Shaft Drop Values for Conventional Chain									
Chain Series	B Dimension		C Dimension		E Dimension		F Dimension		
	in	mm	in	mm	in	mm	in	mm	
4707	3.25	82.6	1.50	38.1	0.250	6.35	0.500	12.70	
5997	3.25	82.6	2.25	57.2	0.360	9.14	0.610	15.49	
8507	3.25	82.6	0.75	19.1	0.170	4.32	0.390	9.91	



# CONVEYOR DESIGN RECOMMENDATIONS

## Layout Dimensions for DTS Chains

> Layout  
Dimensions for  
DTS Chains



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MatTop Chains



# CONVEYOR DESIGN RECOMMENDATIONS

## Layout Dimensions for DTS® Chains

### > Layout Dimensions for DTS Chains

1505 — 4.50 DTS Mating with 1505											
No. of Spkt. Teeth	PD	A	C	CW	D		E	J		S	W
					Infeed	Discharge		Infeed	Discharge		
24T	4.524	2.07	0.59	4.84	2.45	2.40	2.42	4.17	4.40	2.62	6.29
	114.9	52.6			62.2	61.0		61.5	105.9		
32T	6.040	2.83	15.0	6.35	3.21	3.15	3.18	4.24	4.51	66.5	159.8
	153.4	71.8			81.5	80.0		80.8	107.7		

5705 — 4.50 DTS Mating with 5705											
No. of Spkt. Teeth	PD	A	C	CW	D		E	J		S	W
					Infeed	Discharge		Infeed	Discharge		
21T	5.089	2.30	1.50	5.59	2.83	2.77	2.80	4.98	5.28	2.25	6.82
	129.3	58.4			71.9	70.4		71.1	126.5		
23T	5.560	2.53	38.1	6.06	3.06	3.00	3.03	4.99	5.31	57.2	173.2
	141.2	64.3			77.7	76.2		77.0	126.7		
25T	6.032	2.77	7.00	6.53	3.30	3.24	3.27	5.01	5.33	7.00	136.1
	153.2	70.4			83.8	82.3		83.1	127.3		
27T	6.504	3.00	89.7	7.00	3.53	3.47	3.50	5.03	5.36	89.7	136.1
	165.2	76.2			88.1	88.9		127.8	136.1		

7705 — 4.50 and 7.50 DTS Mating with 7705																
No. of Spkt. Teeth	PD	A	C	CW	D		E	J				L	M	S	W	
					Infeed	Discharge		4.50		7.50						7.50
								Infeed	Discharge	Infeed	Discharge					
16T	5.126	2.31	1.00	5.63	2.84	2.78	2.81	4.58	4.84	6.08	6.34	2.56	2.82	1.50	2.25	6.30
	130.2	58.7			72.1	70.6		71.4	116.3	122.9	154.4					
18T	5.759	2.63	25.4	6.26	3.16	3.10	3.13	4.61	4.88	6.11	6.38	2.59	2.86	38.1	57.2	160.0
	146.3	66.8			80.3	78.7		79.5	117.1	124.0	155.2					
21T	6.710	3.11	10.39	7.21	3.64	3.58	3.61	4.65	4.94	6.15	6.44	2.63	2.92	7.00	136.1	165.2
	170.4	79.0			92.5	90.9		91.7	118.1	125.5	156.2					
31T	9.885	4.69	131.1	10.39	5.22	5.16	5.19	4.77	5.12	6.27	6.62	2.75	3.10	168.1	69.9	78.7
	251.1	119.1			132.6	131.8		121.2	130.0	159.3	168.1					

8505 — 4.50 DTS Mating with 8505											
No. of Spkt. Teeth	PD	A	C	CW	D		E	J		S	W
					Infeed	Discharge		Infeed	Discharge		
17T	4.120	1.89	0.75	4.46	2.26	2.20	2.23	4.44	4.67	2.32	6.30
	104.6	48.0			57.4	55.9		56.6	112.8		
21T	5.079	2.37	19.1	5.42	2.74	2.68	2.71	4.50	4.75	58.9	160.0
	129.0	60.2			137.7	69.6		68.1	68.8		
24T	5.800	2.73	6.14	3.10	3.10	3.04	3.07	4.53	4.79	2.32	6.30
	147.3	69.3			156.1	78.7		77.2	78.0		
25T	6.040	2.85	6.38	3.22	3.16	3.19	3.19	4.54	4.81	2.32	6.30
	153.4	72.4			162.2	81.8		80.3	81.0		
27T	6.521	3.09	6.87	3.46	3.40	3.43	3.43	4.56	4.84	2.32	6.30
	165.6	78.5			174.5	87.9		86.4	87.1		

8505 — 7.50 DTS Mating with 8505											
No. of Spkt. Teeth	PD	A	C	CW	D		E	J		S	W
					Infeed	Discharge		Infeed	Discharge		
17T	4.120	1.89	0.75	4.46	2.26	2.20	2.23	6.10	6.33	3.66	9.30
	104.6	48.0			57.4	55.9		56.7	154.9		
21T	5.079	2.37	19.1	5.42	2.74	2.68	2.71	6.16	6.41	93.0	236.3
	129.0	60.2			137.7	69.6		68.1	68.8		
24T	5.800	2.73	6.14	3.10	3.10	3.04	3.07	6.19	6.46	3.66	9.30
	147.3	69.3			156.0	78.7		77.2	78.0		
25T	6.040	2.85	6.38	3.22	3.16	3.19	3.19	6.20	6.48	3.66	9.30
	153.4	72.4			162.1	81.8		80.3	81.0		
27T	6.521	3.09	6.87	3.46	3.40	3.43	3.43	6.23	6.51	3.66	9.30
	165.6	78.5			174.5	87.9		86.4	87.1		

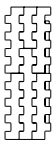
**i** Black = Inches  
Blue = Millimeters

Contact Rexnord Application Engineering for more information 1.262.376.4800

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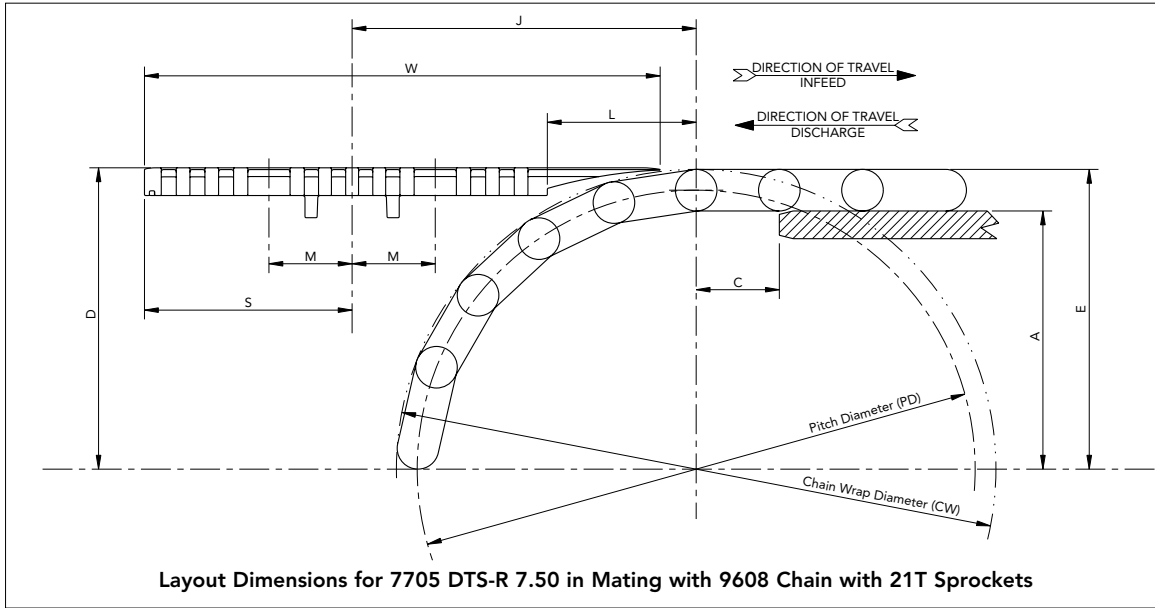
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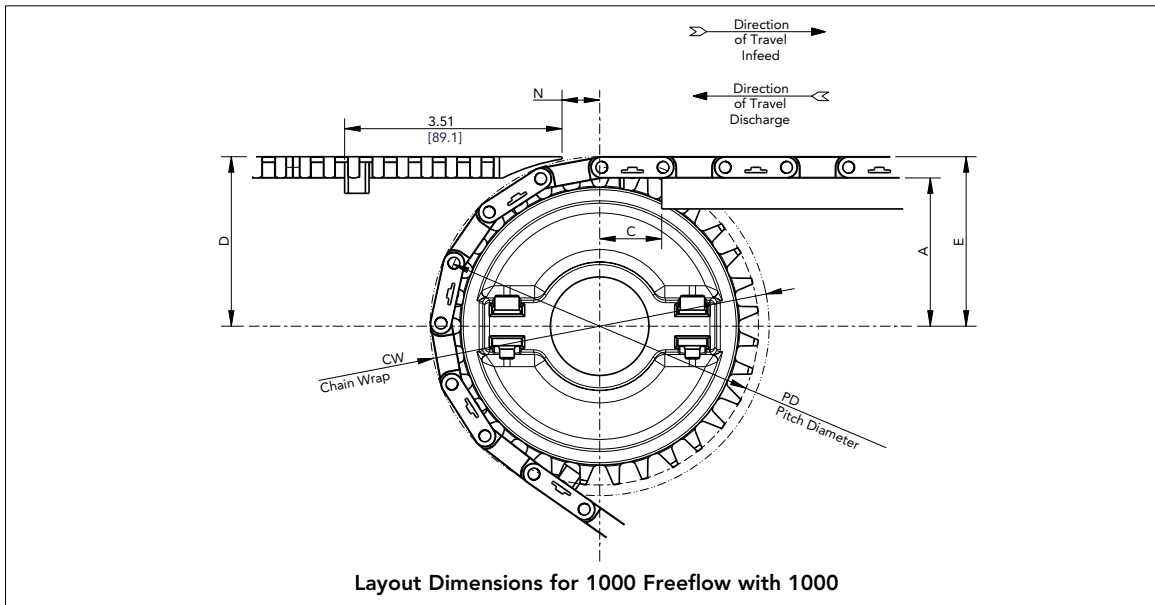


# CONVEYOR DESIGN RECOMMENDATIONS

## Layout Dimensions for DTS Chains



> Layout  
Dimensions for  
DTS Chains



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# CONVEYOR DESIGN RECOMMENDATIONS

## Layout Dimensions for DTS Chains

> Layout Dimensions for DTS Chains

7705 — 4.50 DTS Mating with 9608									
No. of Spkt. Teeth	PD	A	C	CW	D		E	N	
					Infeed	Discharge		Infeed	Discharge
16T	5.13	2.39	1.00	5.47	2.77	2.71	2.74	0.47	0.73
	130.2	60.7	25.4	138.9	70.2	68.7	69.5	11.6	18.4
18T	5.76	2.71	1.00	6.10	3.08	3.02	3.05	0.48	0.77
	146.3	77.5	25.4	155.0	78.2	76.7	77.5	12.2	19.6
20T	6.39	3.02	1.00	6.70	3.40	3.34	3.37	0.50	0.81
	162.4	85.6	25.7	171.1	86.4	84.8	85.6	12.7	20.6

9608 - 7.50 in Single Module DTS															
No. of Spkt. Teeth	PD	A	C	CW	D		E		J		L		M	S	W
					Infeed	Discharge	Infeed	Discharge	Infeed	Discharge	Infeed	Discharge			
21T	10.064	4.66	1.50	10.81	5.44	5.41	5.41	5.33	6.21	6.35	2.68	2.83	1.50	3.75	9.30
	255.6	118.4	38.1	274.7	138.1	137.4	137.4	135.4	157.7	161.3	68.2	71.9	38.1	95.1	236.2

1000 Freeflow with 1000									
No. of Spkt. Teeth	PD	A	C	CW	D		E	N	
					Infeed	Discharge		Infeed	Discharge
16T	5.13	2.39	1.00	5.47	2.77	2.71	2.74	0.47	0.73
	130.2	60.7	25.4	138.9	70.2	68.7	69.5	11.6	18.4
18T	5.76	2.71	1.00	6.10	3.08	3.02	3.05	0.48	0.77
	146.3	77.5	25.4	155.0	78.2	76.7	77.5	12.2	19.6
20T	6.39	3.02	1.00	6.70	3.40	3.34	3.37	0.50	0.81
	162.4	85.6	25.7	171.1	86.4	84.8	85.6	12.7	20.6

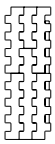
**i** Black = Inches  
Blue = Millimeters

✓ DTS-C design manual is available for more details (8rxDTS-Cdm-en)

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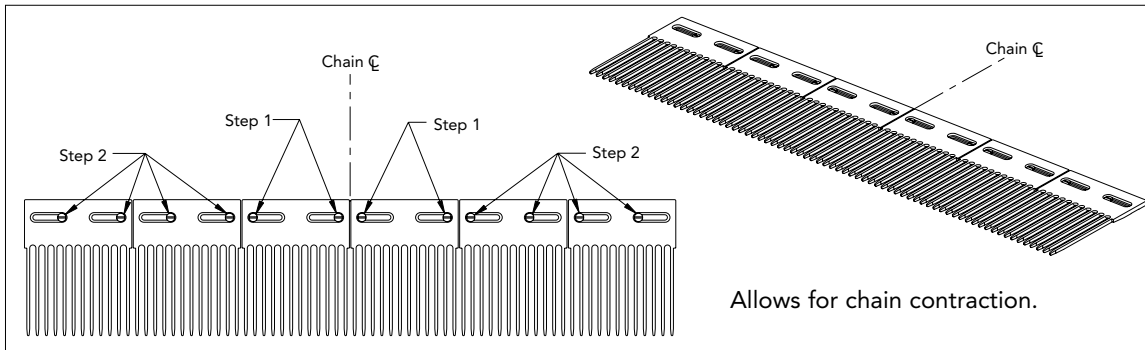
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# CONVEYOR DESIGN RECOMMENDATIONS

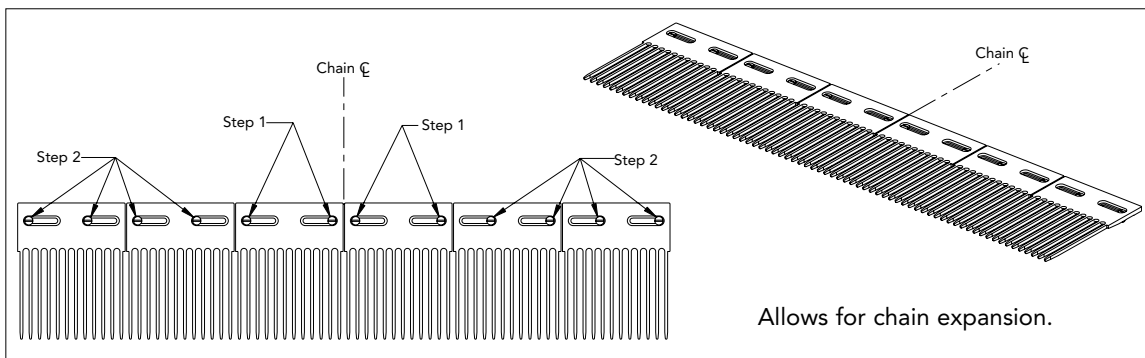
## Transfer Comb Installation

### Low-Temperature Application



**STEP 1** Secure the two centermost transfer plates in order to track the chain

**STEP 2** Position the fasteners in the remaining transfer plates to the corresponding right side or left side of the slots to allow for contraction at low temperatures



### High-Temperature Application

**STEP 1** Secure the two centermost transfer plates in order to track the chain

**STEP 2** Position the fasteners in the remaining transfer plates to the corresponding right side or left side of the slots to allow for expansion at high temperatures

**i** This arrangement will allow these transfer plates to move as required to accommodate changes in the chain width up to 1.50 in (38.1mm).

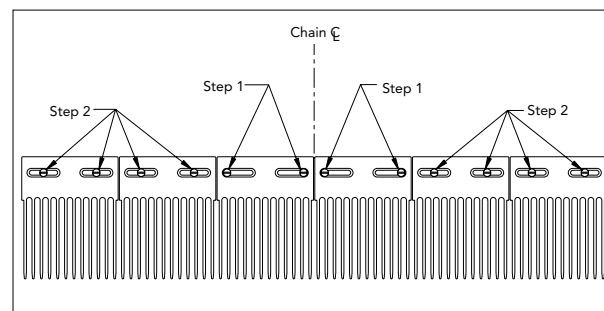
### Room Temperature Application

**STEP 1** Secure the two centermost transfer plates in order to track the chain

**STEP 2** The transfer plates to the left and right should have fasteners centered in the mounting slots

### Combs

⇒ A variety of styles and materials are available



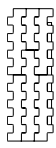
- > Transfer Comb Installation
- > Low-Temperature Application
- > High-Temperature Application
- > Room Temperature Application
- > Combs

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MatTop Chains



# CONVEYOR DESIGN RECOMMENDATIONS

## Shafting Recommendations for Rotating Shafts

### Recommended Materials:

- ⇒ Carbon Steel — best for obtaining high hardness and good finish; used only in non-corrosive environments
- ⇒ Stainless Steel — good finish and chemical resistance; best for wash down or wet applications

### Suggested Hardness:

- ⇒ Shaft material and finish affect sprocket bore wear; typically the harder the shaft, the better the wear
- ⇒ General recommendation is 25 to 30 Rc

### Suggested Surface Finish:

- ⇒ Surface finish of the shaft affects wear; rough surfaces will abrade the sprocket bores
- ⇒ General recommendation is 63 μ-in Ra

### Straightness Tolerance:

- ⇒ General recommendation is within 1/32 inch (0.8mm) over the shaft length


### Twist Tolerance:

- ⇒ General recommendation is maximum of 1/8 degree/ft (0.4 degree/m) of shaft length

### TIR Tolerance (Total Indicator Run-out):

- ⇒ General recommendation is maximum of 1/32 inch (0.8mm)

✓ Shafting over 10 feet (3.0m) long that meets the requirements listed above can be difficult to obtain. For this reason, two shafts can be coupled together to form the required length.

 In using split shafts, it is important to ensure that the shafts are coupled in time with respect to the sprocket keyway or the flats of the square.

## Shafting Recommendations for Stationary Tail Shafts

### Recommended Materials:

- ⇒ Carbon Steel (dry environments only)
- ⇒ Stainless Steel

### Suggested Hardness:

- ⇒ 25 to 30 Rc

### Suggested Surface Finish:

- ⇒ 63 μ-in Ra

✓ Rexnord recommends rotating shafts in bearings. If bearings are not used, the following are guidelines for operating MatTop sprockets on stationary shafts:

Sprocket	Max. Recommended Chain Speed	
	FPM	MPM
N - Acetal	0-50	0-15
UHMWPE	0-50	0-15
NS - Nylon, Split	0-100	0-30
LF Bushing (Idler Wheel)	0-300	0-90
Bronze Bushing	0-500	0-150
Bearings	Recommended for Speeds > 500	Recommended for Speeds > 150

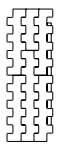
- > Shafting Recommendations for Rotating Shafts
- > Recommended Materials
- > Suggested Hardness
- > Suggested Surface Finish
- > Straightness Tolerance
- > Twist Tolerance
- > TIR Tolerance (Total Indicator Run-out)
- > Shafting Recommendations for Stationary Tail Shafts
- > Recommended Materials
- > Suggested Hardness
- > Suggested Surface Finish

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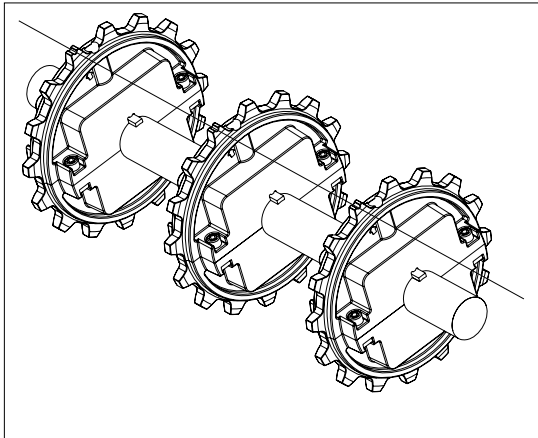
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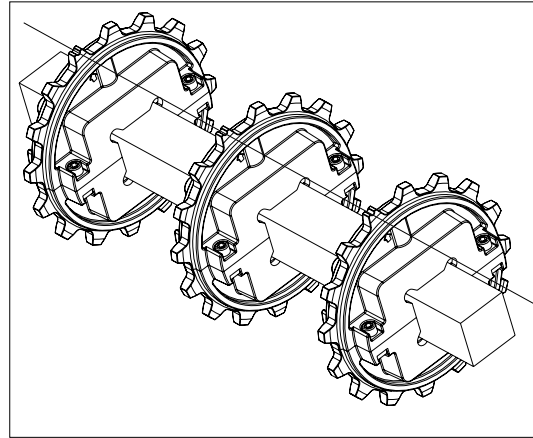
# CONVEYOR DESIGN RECOMMENDATIONS

## ▶ Round Bore Sprockets



- ⇒ Use round bore sprockets on conveyors operating at room temperature
- ⇒ When installing the sprockets, make sure that all sprocket faces are positioned the same way on the shaft (shown in drawing)
- ⇒ After positioning all the sprockets in line with the sprocket tooth pockets in the chain, secure the sprockets with setscrews or set collars

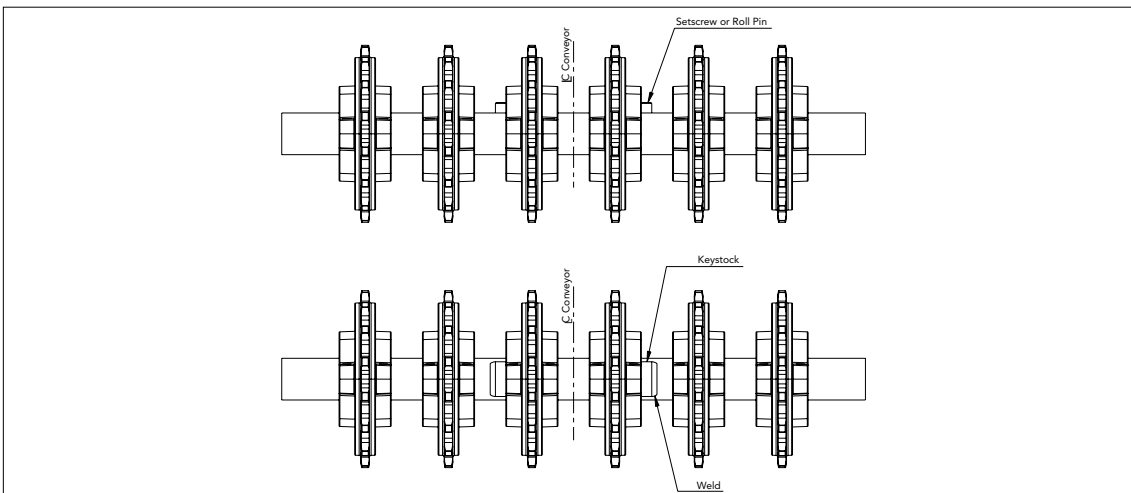
## ▶ Square and Hex Bore Sprockets



- ⇒ Use square bore sprockets on conveyors intended for use at elevated or lower temperatures (warmer, pasteurizer, cooler and freezer applications)
- ⇒ When installing the sprockets, make sure that all sprocket faces are positioned the same way on the shaft (shown in drawing)

## ▶ Locking Methods

- ⇒ It is generally recommended to lock the center sprocket(s) to the shaft using setscrews or set collars. The other sprockets should "float" axially.



- ✓ Close up view of the center sprocket(s) indicates the method of locking the sprocket to the shaft (i.e. keystock, roll pin, snap rings, set collars).

 **CAUTION** For 6085 chains, lock all sprockets in place.

> Round Bore Sprockets

> Square and Hex Bore Sprockets

> Locking Methods

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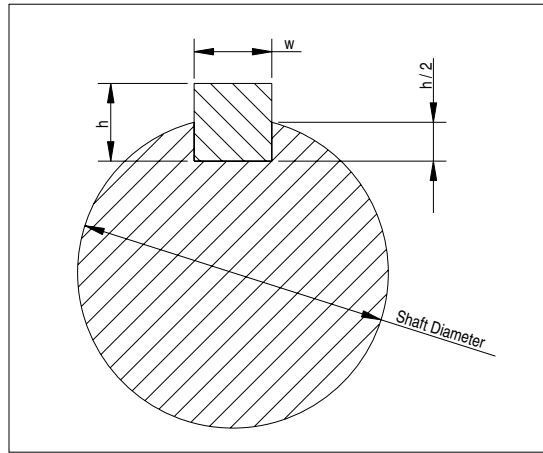


# CONVEYOR DESIGN RECOMMENDATIONS

## ▶ Keyway and Setscrew Sizes

English:	KEYWAY				
Shaft Diameter	Key Width (w)	Key Height (h)	Keyseat Depth (h/2)		Setscrew Size
> 9/16" to 7/8"	3/16"	3/16"	3/32"		1/4-20
> 7/8" to 1-1/4"	1/4"	1/4"	1/8"		3/8-16
> 1-1/4" to 1-3/8"	5/16"	5/16"	5/32"		3/8-16
> 1-3/8" to 1-3/4"	3/8"	3/8"	3/16"		3/8-16
> 1-3/4" to 2-1/4"	1/2"	1/2"	1/4"		1/2-13
> 2-1/4" to 2-3/4"	5/8"	5/8"	5/16"		1/2-13

Metric:	KEYWAY				
Shaft Diameter	Key Width (w)	Key Height (h)	Keyseat Depth (h/2)		Setscrew Size
> 22mm to 30mm	8mm	7mm	3.5mm		M6 x 1
> 30mm to 38mm	10mm	8mm	4mm		M8 x 1.25
> 38mm to 44mm	12mm	8mm	4mm		M10 x 1.5
> 44mm to 50mm	14mm	9mm	4.5mm		M10 x 1.5
> 50mm to 58mm	16mm	10mm	5mm		M12 x 1.75
> 58mm to 65mm	18mm	11mm	5.5mm		M12 x 1.75



- ✓ English keyed round bore sprockets are available with one setscrew as standard. Additional setscrews can be provided upon request. Metric keyed round bore sprockets are not supplied with a setscrew as standard.

- ⚠ CAUTION If multiple strands share a tail shaft, key only one sprocket and allow others to rotate. Collars should be utilized to prevent lateral movement.

## ▶ Split Sprocket Bore Nomenclature

**Shaft Ready** — Tight fit on the shaft with a keyway and setscrew.

**Plain Bore** — Same tight fit bore as a shaft ready bore, but without a keyway and setscrew.

**Idler Bore** — Round bore with a clearance fit (no keyway or setscrew). Designed to spin freely on the shaft.

**Rough Stock Bore** — Wide tolerance bore used for work in process. Not for use on any shaft. Must be further machined for actual use.

**Over Sized Bore** — Round bore with a slightly loose fit on the shaft with keyway but no setscrew. Designed to move laterally on the shaft during setup and still transmit torque through the keyway as a drive sprocket in the actual application. Not recommended for axial float in thermal applications.

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# CONVEYOR DESIGN RECOMMENDATIONS

MatTop  
Conveyor  
Design



## Available Chain Widths (MTW vs Standard vs Nonstandard)

Chain Series	MTW Molded to Width Chains	Standard (Uncut)				Nonstandard (Cut)				Accessories						
		Minimum Chain Width		Chain Width Increment		Minimum Chain Width		Chain Width Increment		Pushers	Curved Pushers	Buckets	Sideguards	DTS-C	Hold Down TABS	Vacuum Holes
		(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)							
1000 FG/FT Metric	84mm	3.35	85	3.35	85	0.98	25	0.20	5							
1000 FFTP/FFGP FreeFlow Metric	85mm	3.35	85	3.35	85	0.98	25	0.20	5							
1000 RRR	38mm	-	-	-	-	-	-	-	-							
1015	24 in	24	609.6	-	-	4 (1/2 increments up to 24)		1 in (1 increments 24 in and wider)		■						
1503	-	12	304.8	6	152.4	6	152.4	3	76.2							
1505/1506	3 in, 4.5 in, 6 in, 38mm, 46mm	3	76.2	3	76.2	4.5	114.3	0.75	19.05	■		■				
1505 RubberTop	-	3	76.2	3	76.2	4.5	114.3	0.75	19.05							
1505 DTS (w/PT)	6.3 in	-	-	-	-	-	-	-	-							
2011	-	6	152.4	2	50.8	6	152.4	2/3	16.93	■	■	■	■			
2015	-	6	152.4	2	50.8	4-2/3 118.53		2/3	16.93	■	■	■	■			
2016	-	6	152.4	2	50.8	6	152.4	2/3	16.93	■	■	■	■			
3000	-	4.5	114.3	1.5	38.1	-	-	-	-							
3125/3129	4 in, 8 in	4	101.6	4	101.6	6	152.4	2	50.8	■		■				
4705	6 in	6	152.4	6	152.4	2	50.8	Any width possible		■		■		■	■	
4706	6 in	6	152.4	6	152.4	2	50.8	Any width possible		■		■				
4707	6 in	6	152.4	6	152.4	2	50.8	1	25.4	■			■			
5705/5706	3.25 in, 4.5 in, 6 in, 7.5 in, 15 in	6	152.4	3	76.2	3	76.2	1	25.4	■						
5705 RubberTop	-	6	152.4	3	76.2	3	76.2	1	25.4							
5705/5706 (w/PT)	3.25 in, 4.5 in	-	-	-	-	-	-	-	-							
5705 DTS (w/PT)	6.8 in	-	-	-	-	-	-	-	-							
5935	3 in	9	228.6	3	76.2	3	76.2	0.75	19.05	■				■	■	
5936	-	18	457.2	6	152.4	2.25	57.15	0.75	19.05	■		■				
5966	-	18	457.2	6	152.4	4-11/16 in (3 in possible)		Contact Rexnord Engineering		■		■				
5995	-	9	228.6	3	76.2	3	76.2	0.5	12.7							
5996	-	18	457.2	6	152.4	4.5	114.3	0.5	12.7			■				
5997	-	18	457.2	6	152.4	4.5	114.3	0.5	12.7				■			
5998/5998HD	-	18	457.2	6	152.4	5	127	0.5	12.7	■		■				
6085	3 in, 6 in	3	76.2	3	76.2	3-3/5	91.44	3/5	15.24	■		■				
6938	3 in, 6 in	3	76.2	3	76.2	3.75	95.25	0.75	19.05	■		■				
6995/6999	-	18	457.2	6	152.4	3	76.2	0.5	12.7	■		■				
7526 Metric	-	10.04	255	3.34	85	6.69	170	0.66	17							
7703	-	9	228.6	3	76.2	5 in (3 in possible)		1	25.4							
7705/7706	3.25 in, 4.5 in, 6 in, 7.5 in, 15 in	6	152.4	3	76.2	5 in (3 in possible)		0.5	12.7							
7705 (w/PT)	3.25 in, 4.5 in, 7.5 in, 84mm	-	-	-	-	-	-	-	-							
7706 (w/PT)	3.25 in, 4.5 in, 7.5 in	-	-	-	-	-	-	-	-							
7705 DTS (w/PT)	6.3 in, 9.3 in	-	-	-	-	-	-	-	-							
7705 DTS-R (w/PT)	6.3 in, 9.3 in	-	-	-	-	-	-	-	-							
7705/7706 Metric	-	10.04	255	3.34	85	5.59	142	Contact Rexnord Engineering								
7705 Metric (w/PT)	-	10.04	255	3.34	85	5.59	142	Contact Rexnord Engineering								
7705 RubberTop	-	9	228.6	3	76.2	9.5	241.3	0.5	12.7							
7705 SuperGrip	-	9	228.6	3	76.2	9.5	241.3	0.5	12.7							
7705 SuperGrip	4 in, 6 in	-	-	-	-	-	-	-	-							
7708	-	9	228.6	3	76.2	5 in (3 in possible)		0.5	12.7							
7743	-	9	228.6	3	76.2	-	-	-	-							
7956	6 in, 12 in, 15 in, 18 in, 24 in, 30 in	-	-	-	-	-	-	-	-							Bear- ing, GT, TAB
8503	-	3	76.2	3	76.2	-	-	-	-							
8505	2.33 in, 3.25 in, 85mm, 4.5 in, 6 in, 7.5 in, 12 in	9	228.6	3	76.2	2-1/3	59.26	1/3	8.5	■		■		■	■	
8505 DTS (w/PT)	6.3 in, 9.3 in	-	-	-	-	-	-	-	-							
8505 Metric	-	10.04	255	3.34	85	3.34	85	1/3	8.5							
8505 RubberTop	-	9	228.6	3	76.2	2-1/3	59.26	1/3	8.5							
8506	2.33 in, 3.25 in, 85mm, 4.5 in, 6 in, 7.5 in, 12 in	9	228.6	3	76.2	2-1/3	59.26	1/3	8.5	■		■		■		
8505/8506 (w/PT)	2.33 in, 3.25 in, 85mm, 4.5 in, 6 in, 7.5 in, 12 in	9	228.6	3	76.2	2-1/3	59.26	1/3	8.5	■		■		■		
8507	-	18	457.2	6	152.4	3	76.2	1/3	8.5							
9608	-	18	457.2	6	152.4	5	127	0.5	12.7							
9217, 9227 *	-	36	914.4	3	76.2	-	-	-	-							

\* Actual Chain Width = Effective (or Nominal) Chain Width (Multiples of 3 in [76.2 mm] + 0.75 in [19.0mm])

> Available Chain  
Widths (MTW  
vs Standard vs  
Nonstandard)

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MatTop Chains



## SPROCKET LOCATIONS

1000 Chain Series (FT, FTDP, FFTP, FG, FGDP, FFGP)

See 1000 Series Design Manual

> 1000 Chain  
Series (FT,  
FTDP, FFTP, FG,  
FGDP, FFGP)

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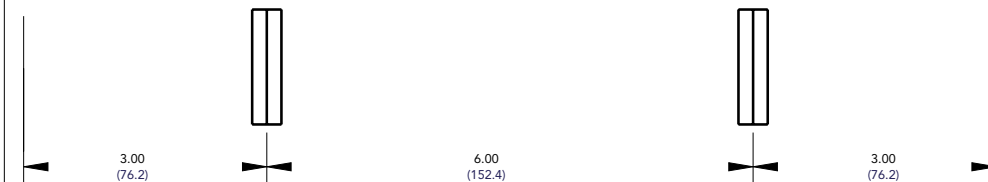
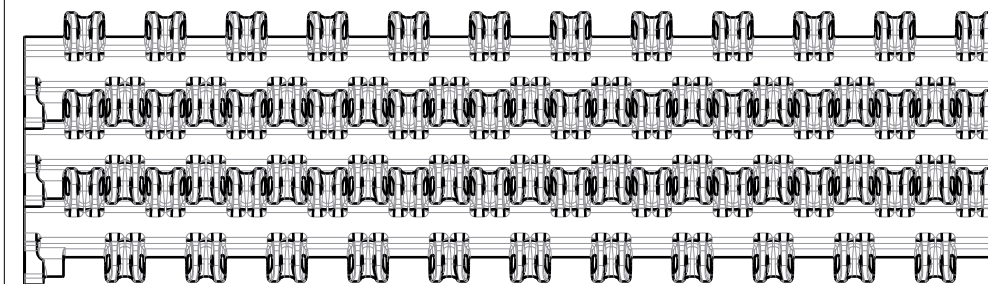
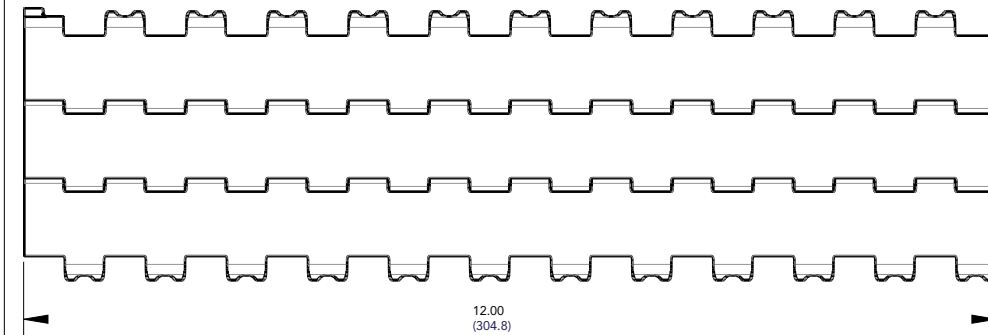
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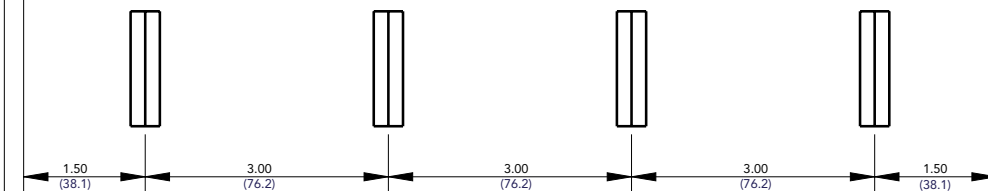
# SPROCKET LOCATIONS

### 1010 Chain Series (1015)

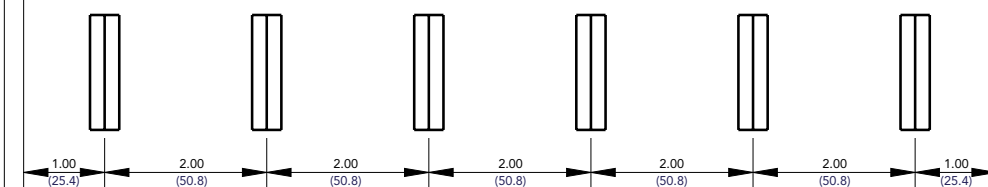
Assembled to Width and Molded to Width



2 Sprockets:  
0-33% Capacity



4 Sprockets:  
34-66% Capacity



6 Sprockets:  
67-100% Capacity

1015 — 12.00 in — MTW

- > 1010 Chain Series (1015)
- > Assembled to Width — 1015
- > 1015 — 12.00 in — MTW

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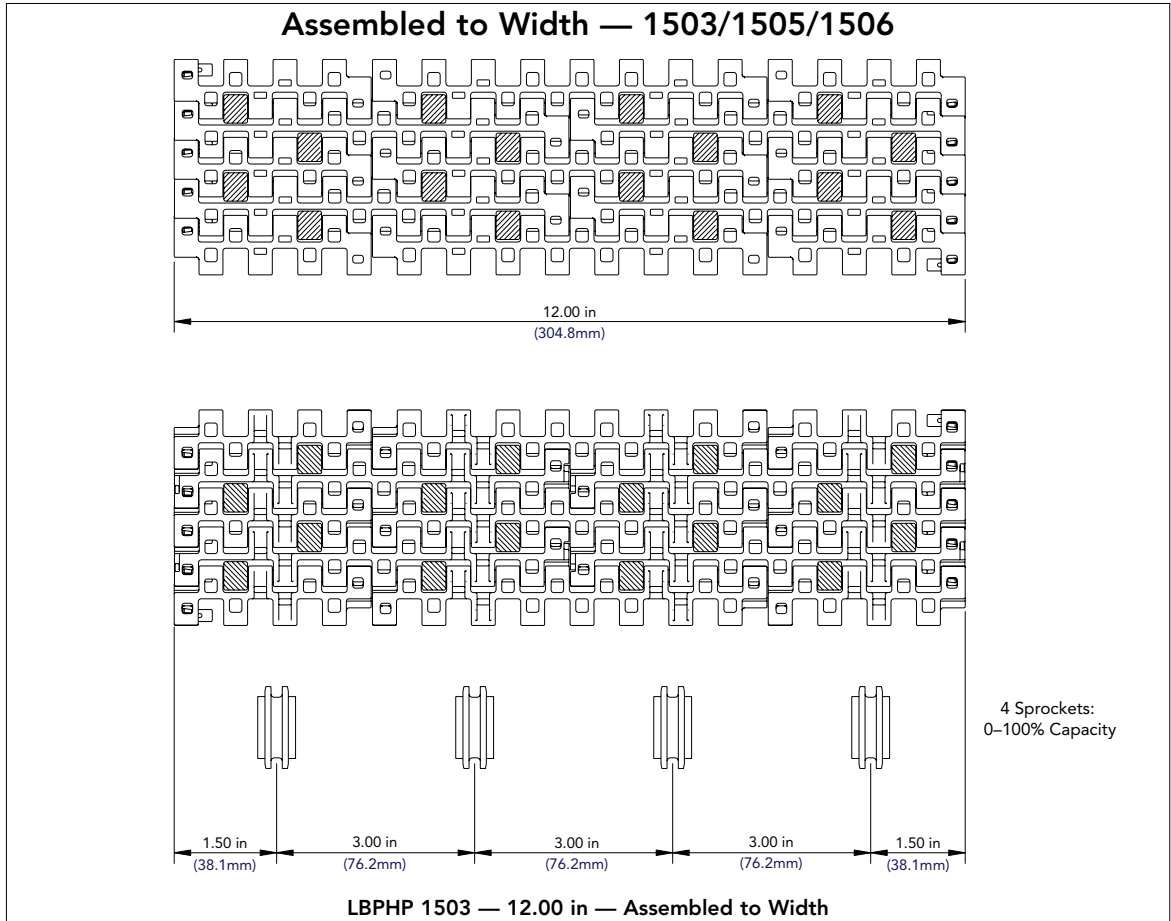
MatTop Chains

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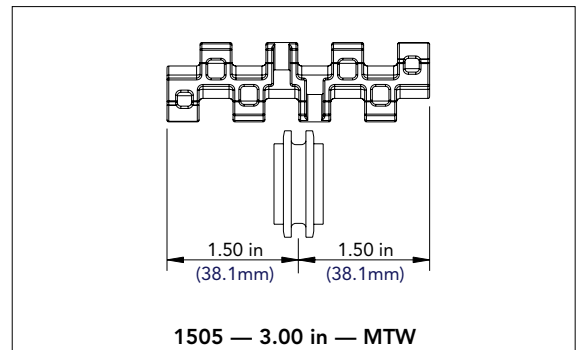
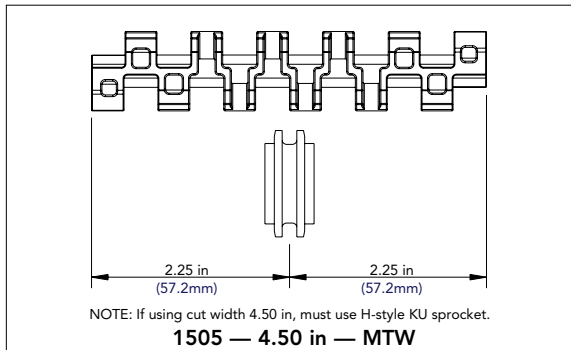
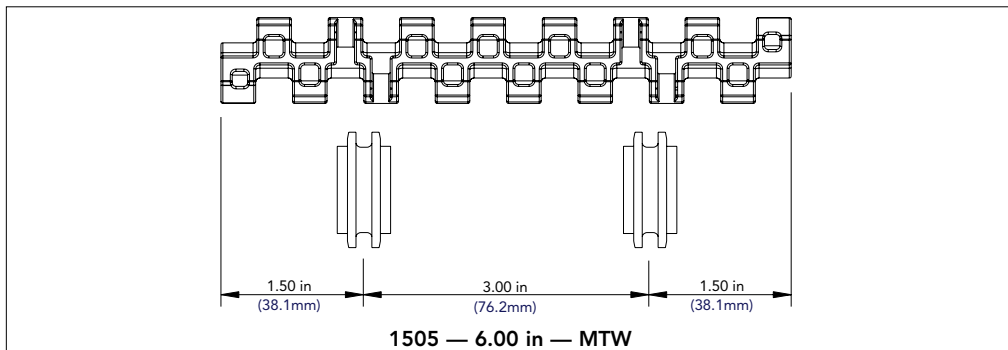


# SPROCKET LOCATIONS

## 1500 Chain Series (1503/1505/1506)



## Molded to Width — 1505/1506



- > 1500 Chain Series (1503/1505/1506)
- > Assembled to Width — 1503/1505/1506
- > 1503 — 12.00 in — Assembled to Width
- > Molded to Width — 1505/1506
- > 1505 — 6.00 in — MTW
- > 1505 — 4.50 in — MTW
- > 1505 — 3.00 in — MTW

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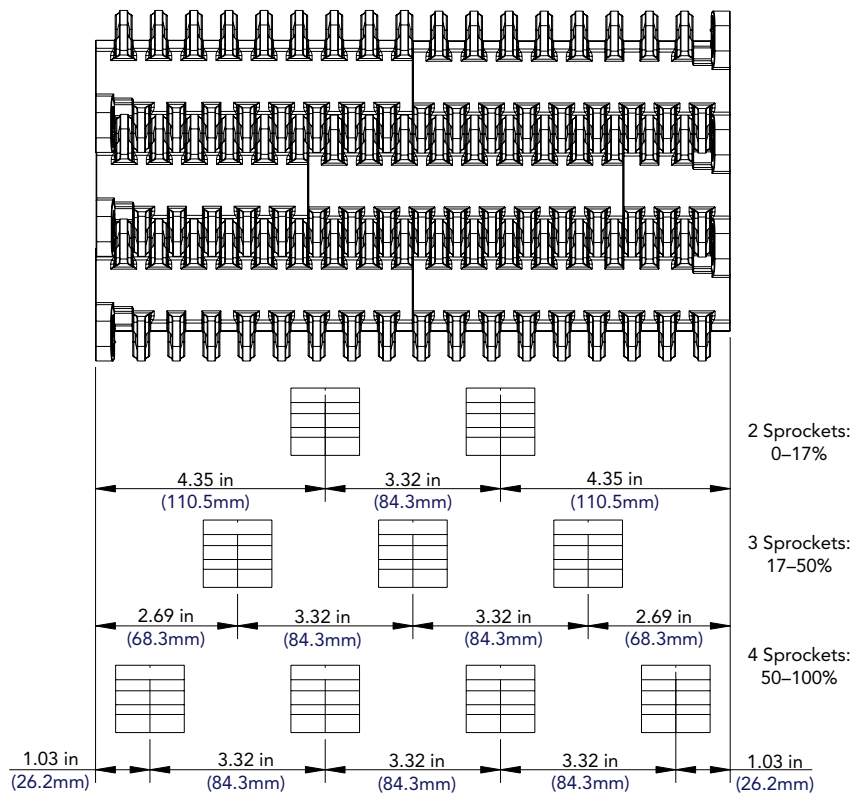
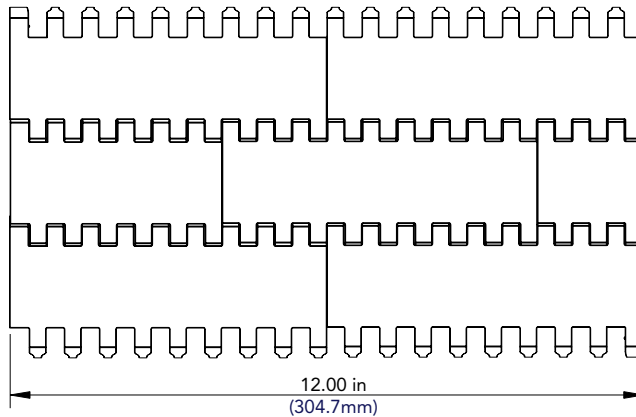
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# SPROCKET LOCATIONS

## 2010 Chain Series (2011/2015/2016)

### Assembled to Width — 2011/2015/2016



### 2015 — 12.00 in — Assembled to Width

- > 2010 Chain Series (2011/2015/2016)
- > Assembled to Width — 2011/2015/2016
- > 2015 — 12.00 in — Assembled to Width

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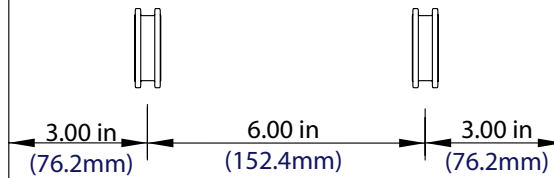
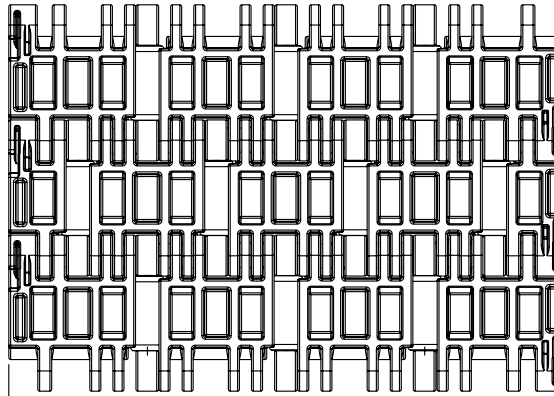
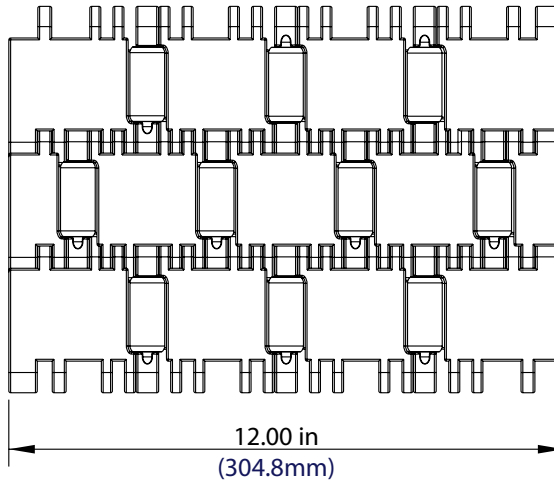
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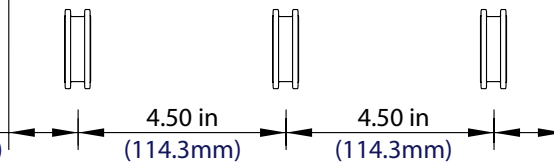
# SPROCKET LOCATIONS

## 3000 Chain Series (3003/3004)

### Assembled to Width — 3003/3004



2 Sprockets:  
0–70% Capacity



3 Sprockets:  
70–100% Capacity

### 3004 — 12.00 in — Assembled to Width

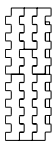
- > 3000 Chain Series (3003/3004)
- > Assembled to Width — 3003/3004
- > 3004 — 12.00 in — Assembled to Width

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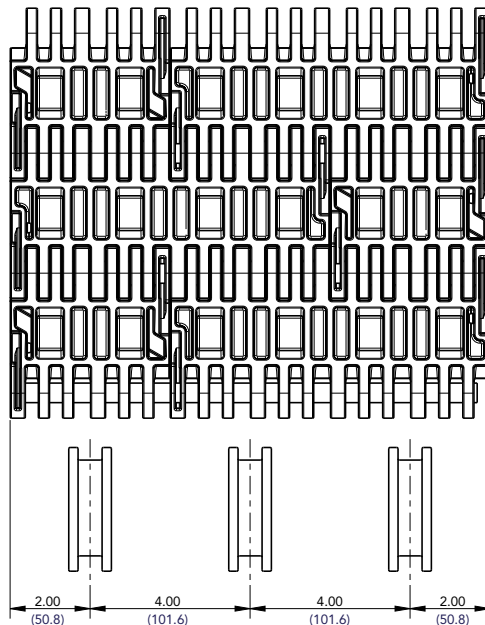
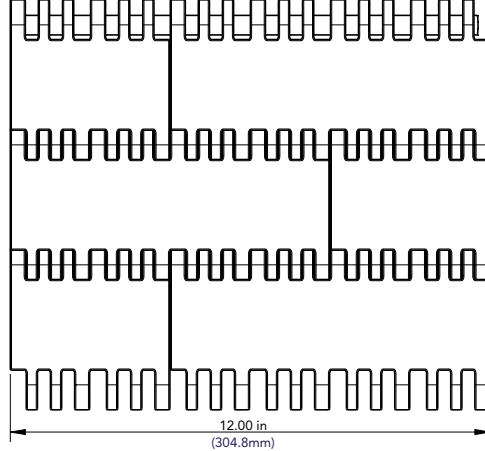


# SPROCKET LOCATIONS

## MatTop Sprocket Locations

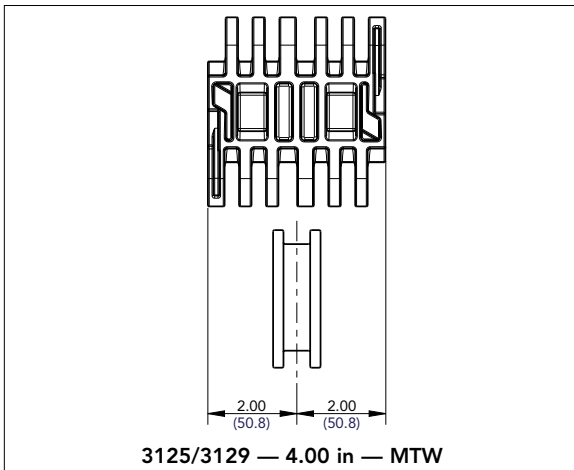
### 3120 Chain Series (3125/3129)

#### Assembled to Width — 3125/3129

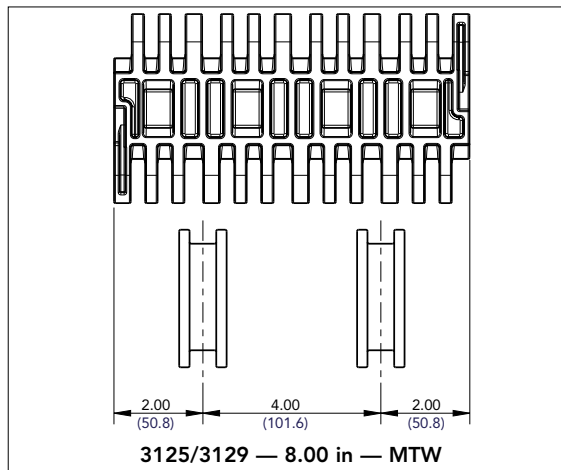


3125/3129 — 12.00 in — Assembled to Width

#### Molded to Width — 3125/3129



3125/3129 — 4.00 in — MTW



3125/3129 — 8.00 in — MTW

- > 3120 Chain Series (3125/3129)
- > Assembled to Width — 3125/3129
- > 3125/3129 — 12.00 in — Assembled to Width
- > Molded to Width — 3125/3129
- > 3125/3129 — 4.00 in — MTW
- > 3125/3129 — 8.00 in — MTW

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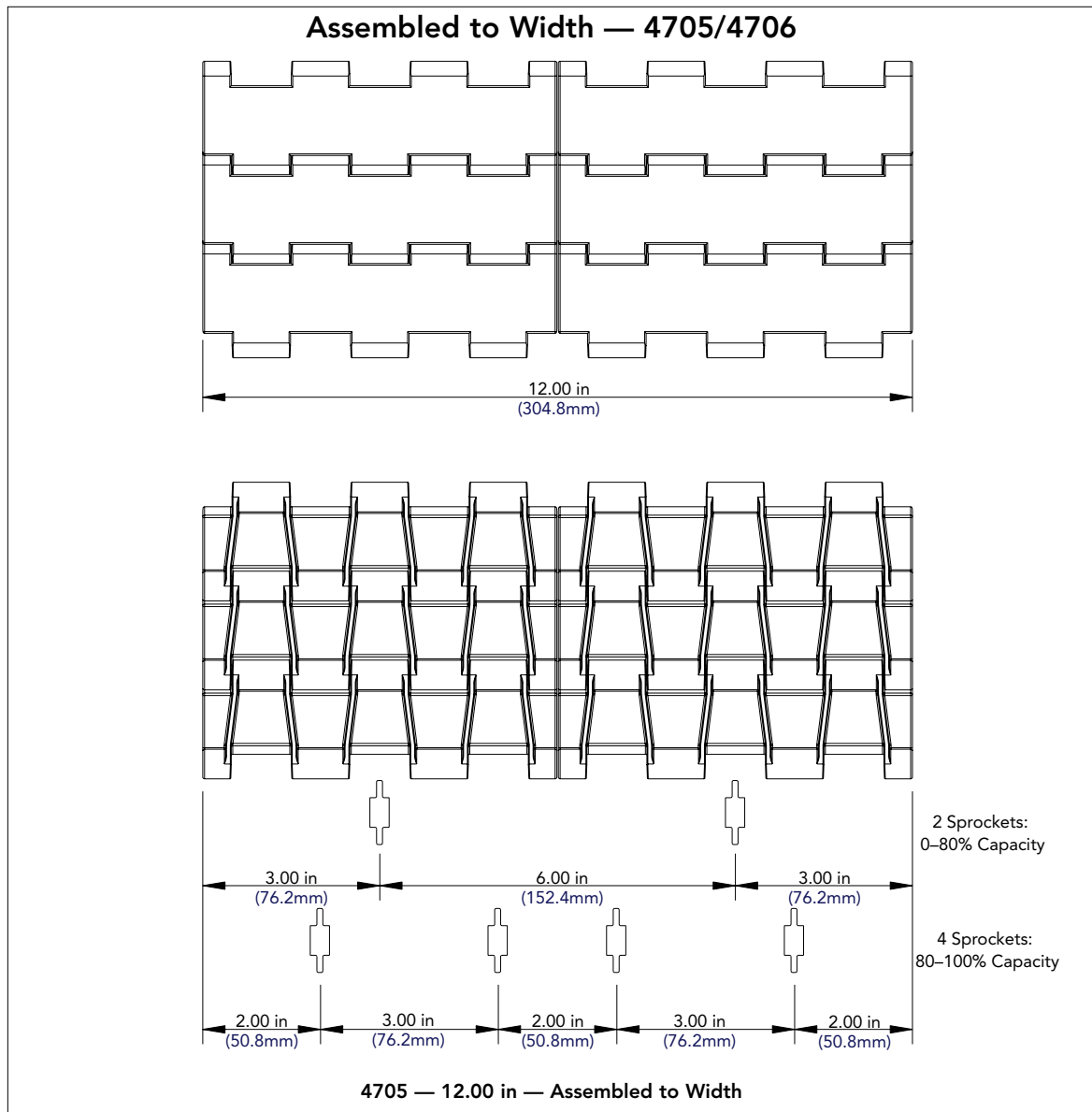
MatTop Chains

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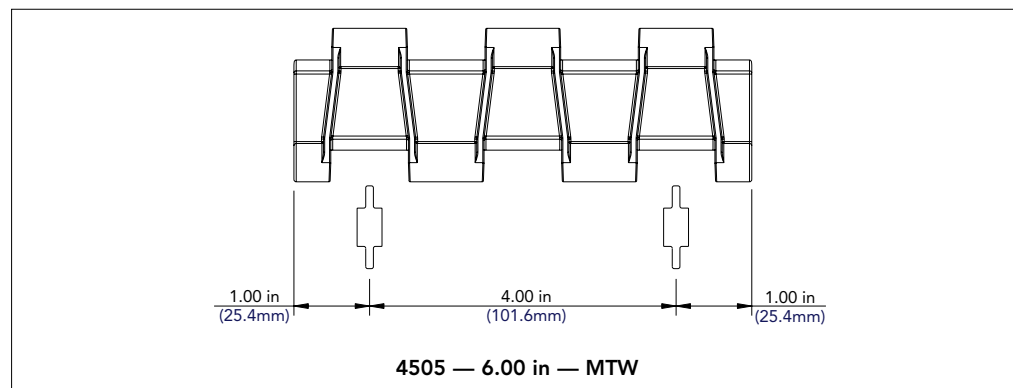


## SPROCKET LOCATIONS

### 4700 Chain Series Using 5700 Sprockets (4705/4706)



### Molded to Width — 4705/4706



- > 4700 Chain Series Using 5700 Sprockets (4705/4706)
- > Assembled to Width — 4705/4706
- > 4705 — 12.00 in — Assembled to Width
- > Molded to Width — 4705/4706
- > 4505 — 6.00 in — MTW

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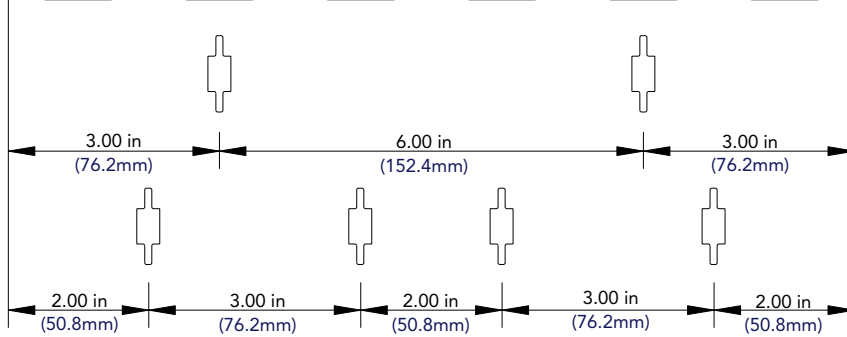
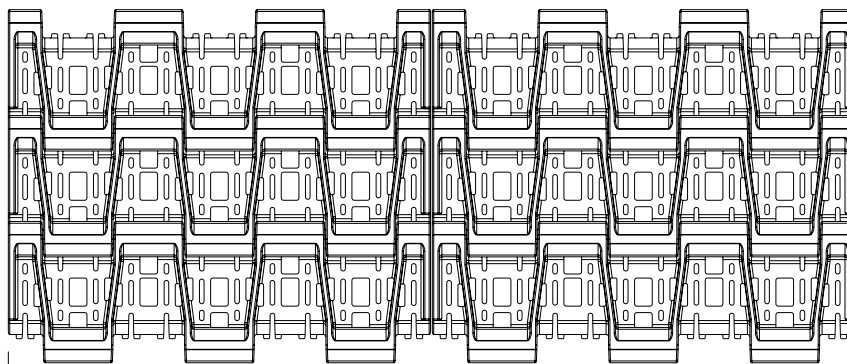
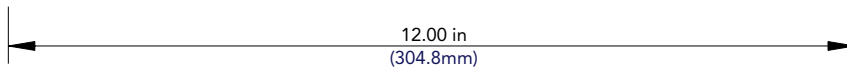
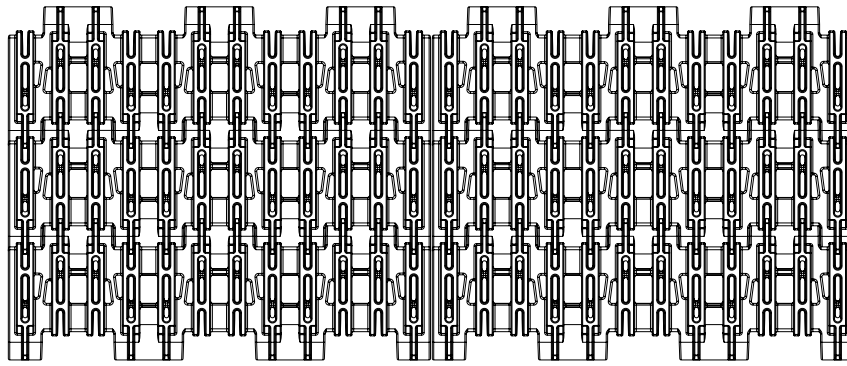
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# SPROCKET LOCATIONS

### 4700 Chain Series Using 5700 Sprockets (4707)

#### Assembled to Width — 4707



2 Sprockets:  
0–80% Capacity  
(without Transfer Comb)

4 Sprockets:  
80–100% Capacity  
(without Transfer Comb)

4 Sprockets:  
0–100% Capacity  
(with Transfer Comb)

#### 4707 — 12.00 in — Assembled to Width

- > 4700 Chain Series Using 5700 Sprockets (4707)
- > Assembled to Width — 4707
- > 4707 — 12.00 in — Assembled to Width

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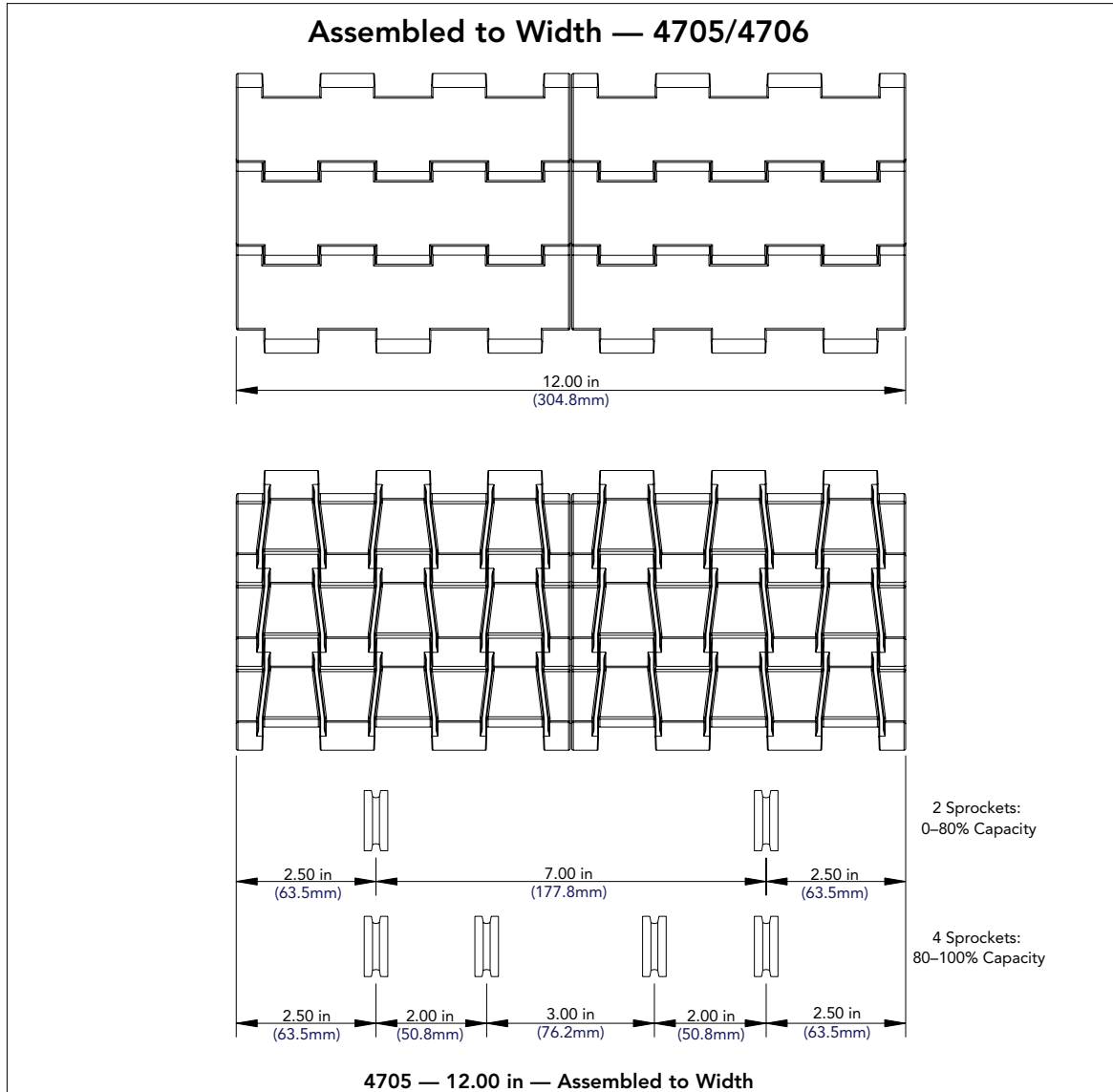
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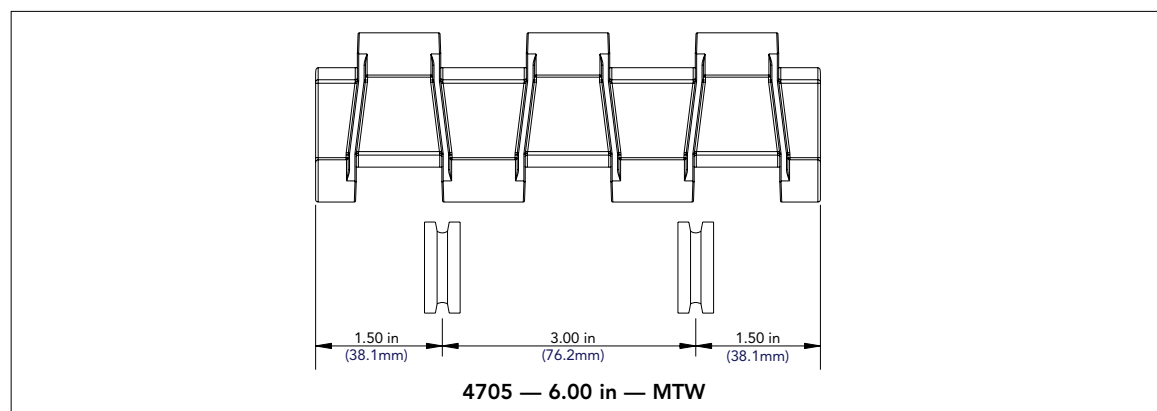
# SPROCKET LOCATIONS

## 4700 Chain Series Using 820 Sprocket (4705/4706)

- > 4700 Chain Series Using 820 Sprocket (4705/4706)
- > Assembled to Width — 4705/4706
- > 4705 — 12.00 in — Assembled to Width
- > Molded to Width — 4705/4706
- > 4705 — 6.00 in — MTW



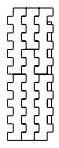
## Molded to Width — 4705/4706



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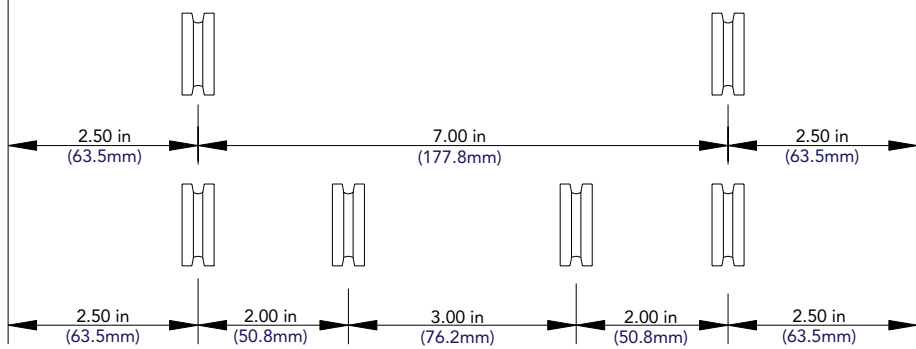
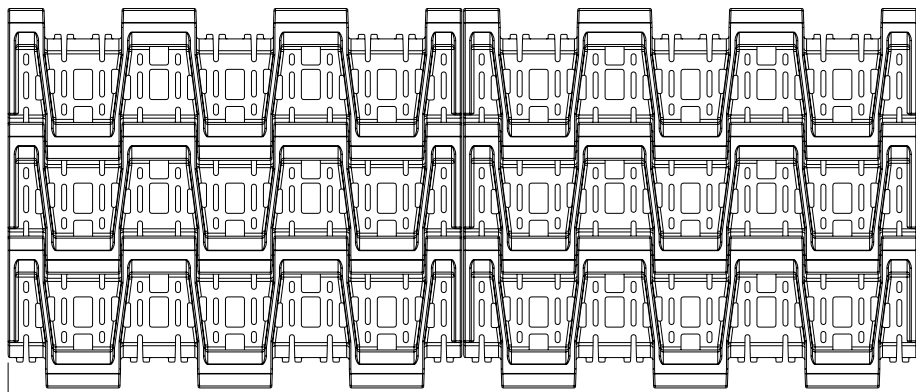
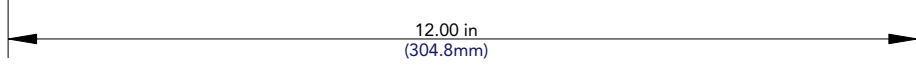
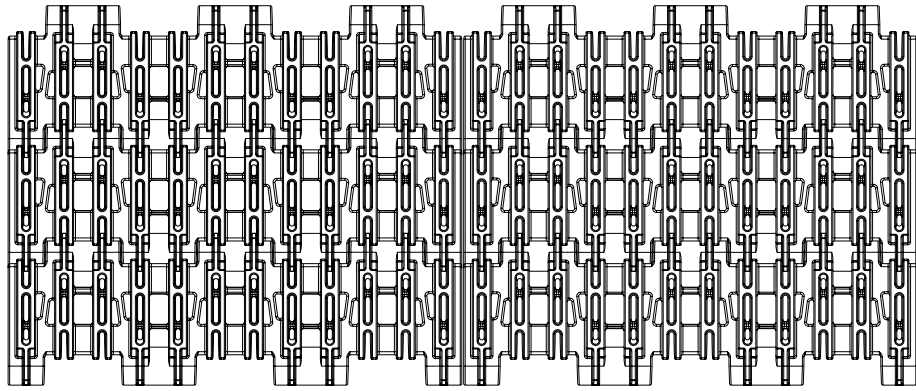


# SPROCKET LOCATIONS

## MatTop Sprocket Locations

### 4700 Chain Series Using 820 Sprockets (4707)

#### Assembled to Width — 4707



2 Sprockets:  
0-80% Capacity  
(without Transfer Comb)

4 Sprockets:  
80-100% Capacity  
(without Transfer Comb)

4 Sprockets:  
0-100% Capacity  
(with Transfer Comb)

4707 — 12.00 in — Assembled to Width

- > 4700 Chain Series Using 820 Sprockets (4707)
- > Assembled to Width — 4707
- > 4707 — 12.00 in — Assembled to Width

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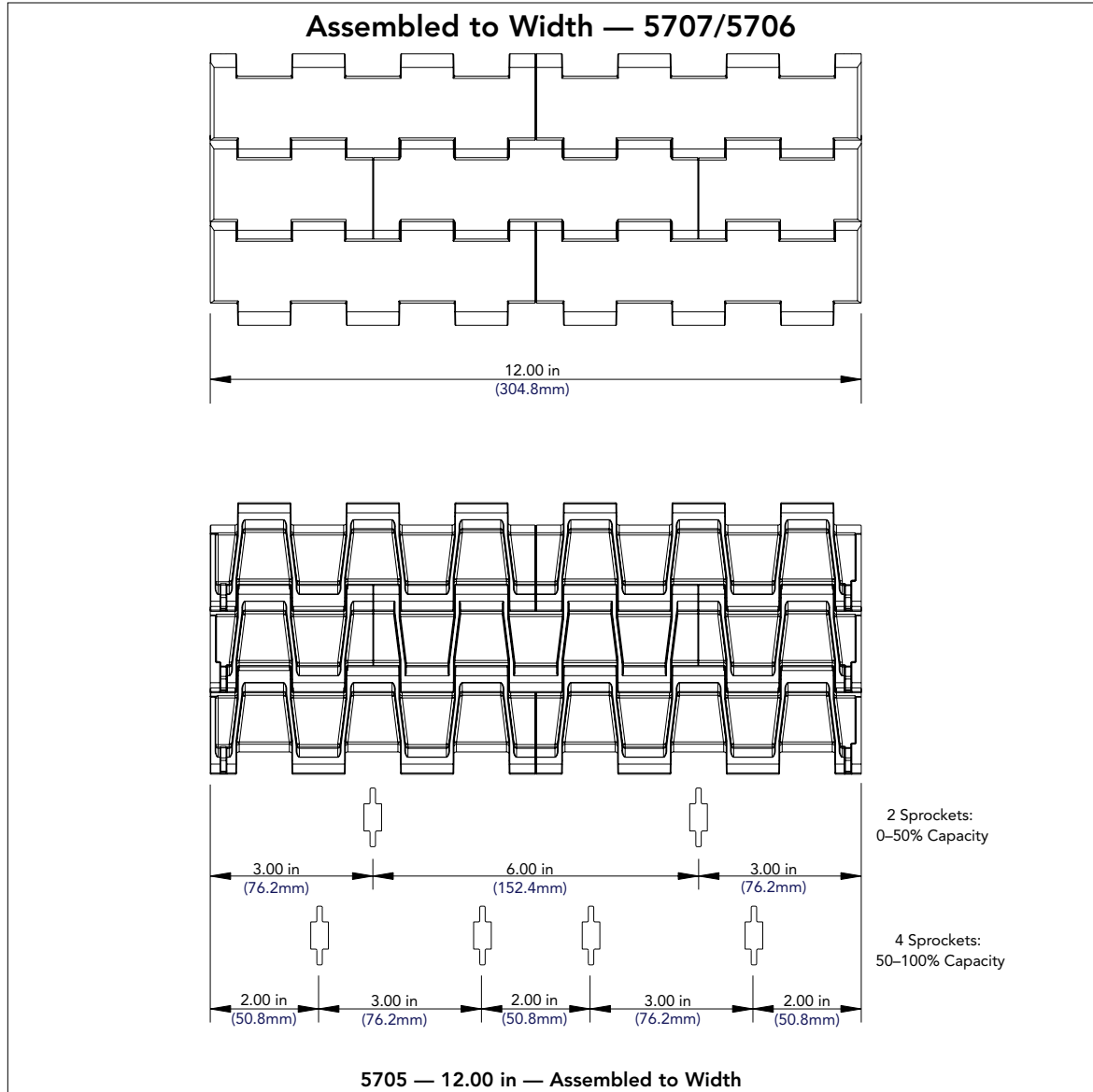
MatTop Chains



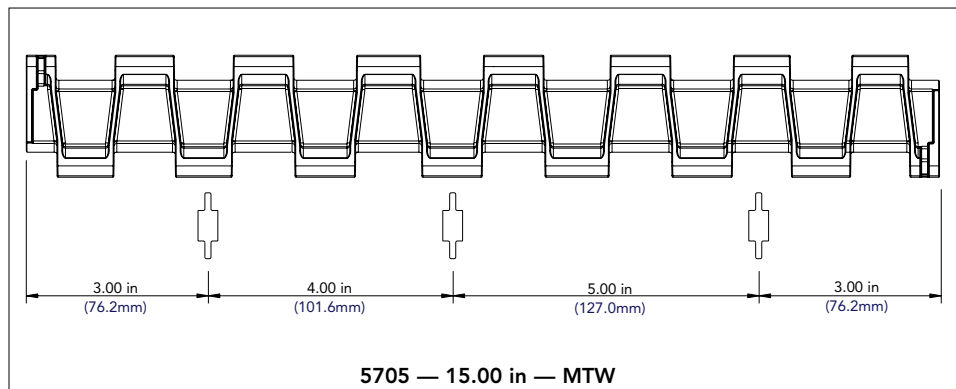
# SPROCKET LOCATIONS

## 5700 Chain Series Using 5700 Sprockets (5705/5706)

- > 5700 Chain Series Using 5700 Sprockets (5705/5706)
- > Assembled to Width — 5707/5706
- > 5705 — 12.00 in — Assembled to Width
- > Molded to Width — 5705/5706
- > 5705 — 15.00 in — MTW



## Molded to Width — 5705/5706



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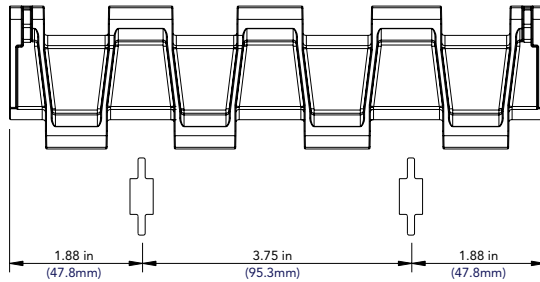


# SPROCKET LOCATIONS

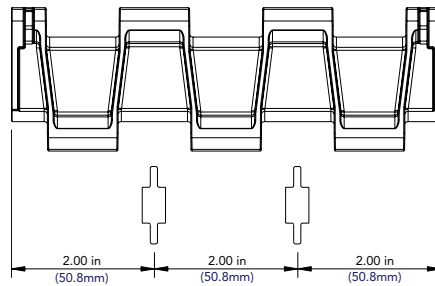
## MatTop Sprocket Locations

### 5700 Chain Series Using 5700 Sprockets (5705/5706)

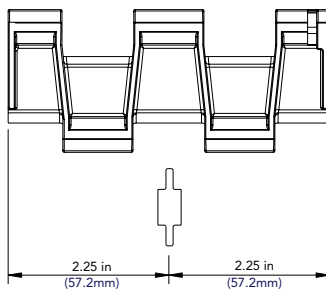
#### Molded to Width — 5705/5706



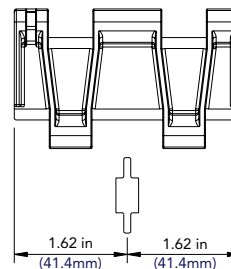
5705 — 7.50 in — MTW



5705 — 6.00 in — MTW



5705 — 4.50 in — MTW



5705 — 3.25 in — MTW

- > 5700 Chain Series Using 5700 Sprockets (5705/5706)
- > Molded to Width — 5705/5706
- > 5705 — 7.50 in — MTW
- > 5705 — 6.00 in — MTW
- > 5705 — 4.50 in — MTW
- > 5705 — 3.25 in — MTW

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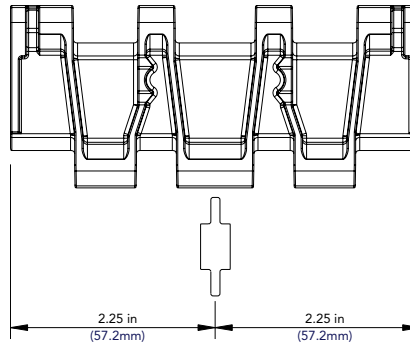
MatTop Chains



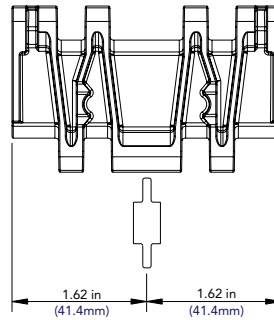
## SPROCKET LOCATIONS

### 5700 Chain Series with Positrack Tracking Guide Using 5700 Sprockets (5705/5706)

#### Molded to Width — 5705/5706



5705 — 4.50 in — MTW Positrack Tracking Guides



5706 — 3.25 in — MTW Positrack Tracking Guides

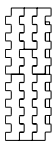
- > 5700 Chain Series with Positrack Tracking Guide Using 5700 Sprockets (5705/5706)
- > Molded to Width — 5705/5706
- > 5705 — 4.50 in — MTW Positrack Tracking Guides
- > 5706 — 3.25 in — MTW Positrack Tracking Guides

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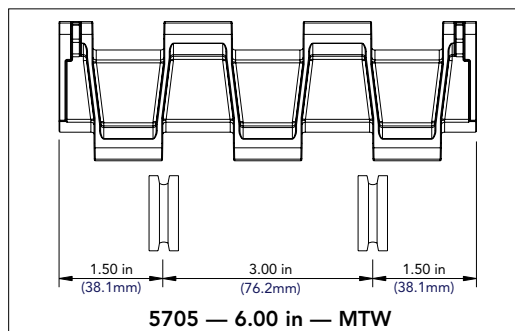
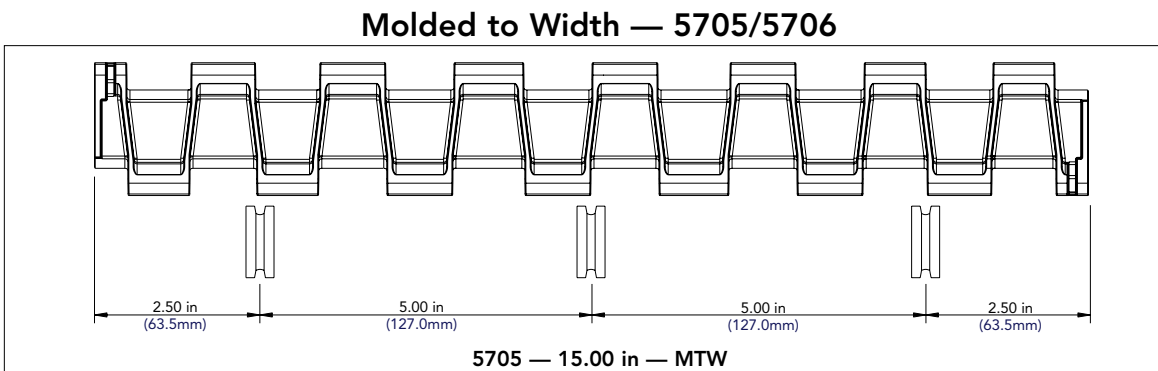
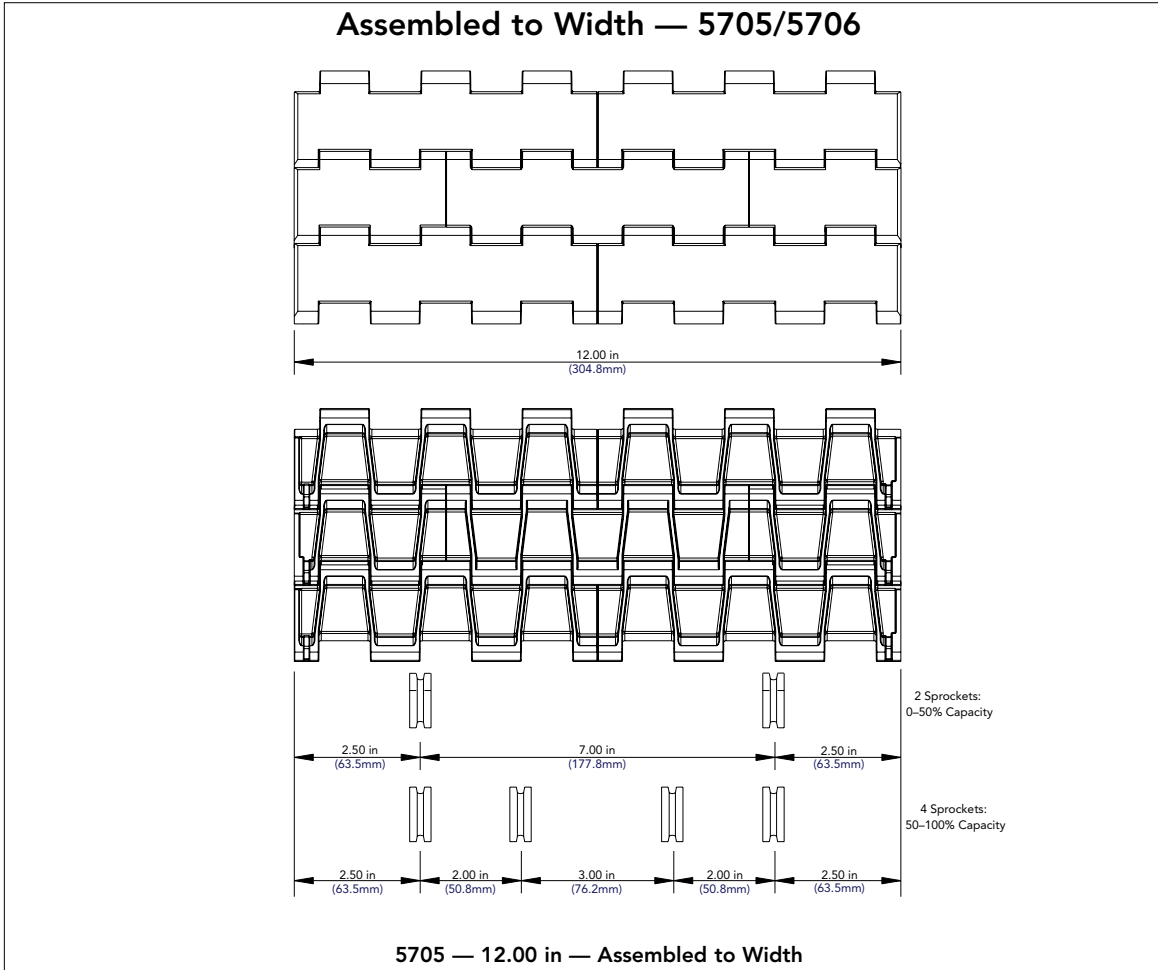
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# SPROCKET LOCATIONS

### 5700 Chain Series Using 820 Sprockets (5705/5706)



- > 5700 Chain Series Using 820 Sprockets (5705/5706)
- > Assembled to Width — 5705/5706
- > 5705 — 12.00 in — Assembled to Width
- > Molded to Width — 5705/5706
- > 5705 — 15.00 in — MTW
- > 5705 — 6.00 in — MTW

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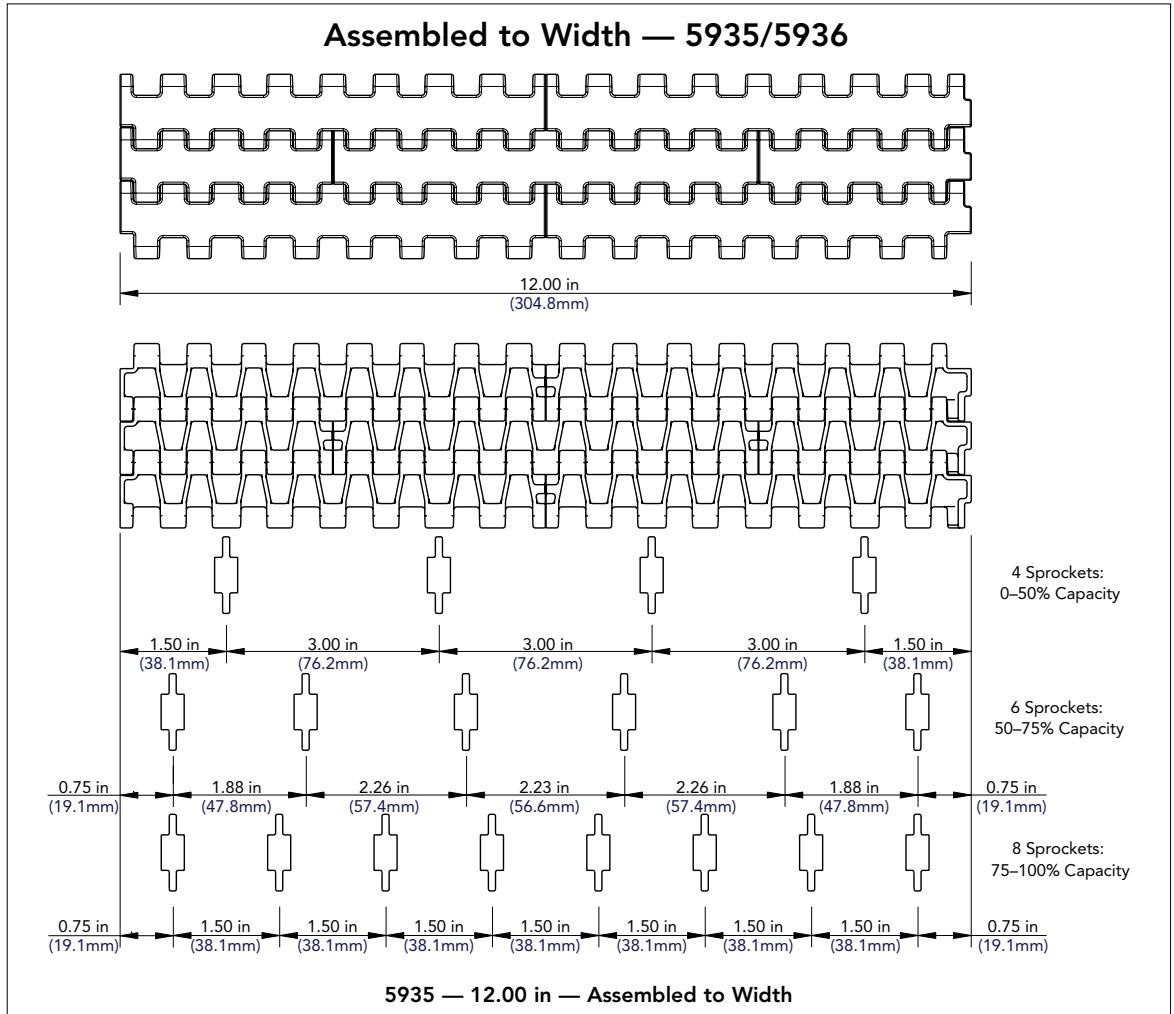
**i** 820 Style Sprockets not recommended for 5705 MTW 3 in and 4.50 in (sprockets will be off center)

Contact Renxord Application Engineering for more information 1.262.376.4800



## SPROCKET LOCATIONS

### 5930 Chain Series (5935/5936)



**i** 5936 — 12 in Assembled to Width chain has a different bricking pattern than above, but has the same sprocket locations.



Do not position sprockets at seam between link modules.

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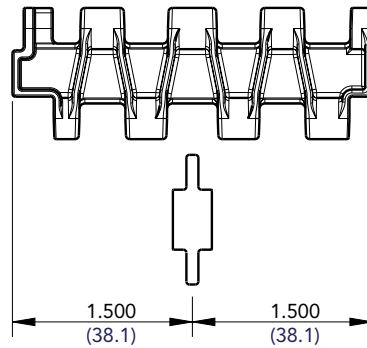
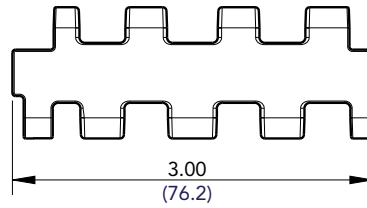


# SPROCKET LOCATIONS

## MatTop Sprocket Locations

### 5930 Chain Series (5935)

#### Molded to Width — 5935



5935 — 3.00 in — MTW

- > 5930 Chain Series (5935)
- > Molded to Width — 5935MTW
- > 5935 — 3.00 in — MTW

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MatTop Chains

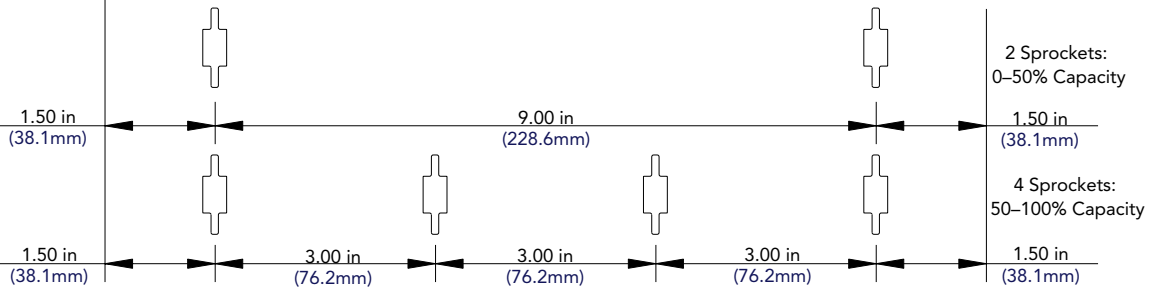
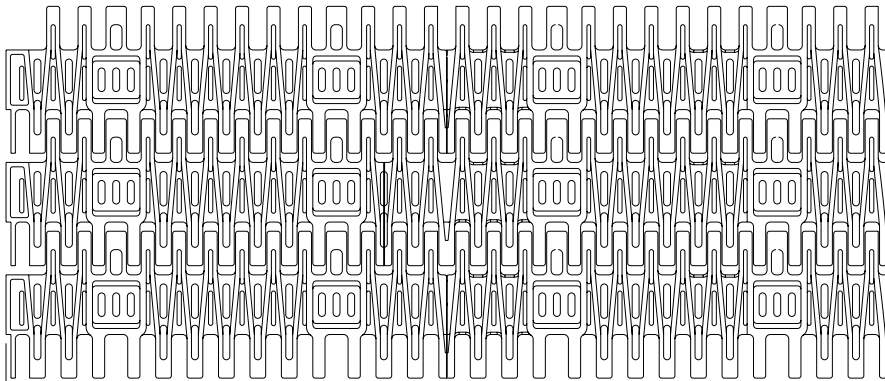
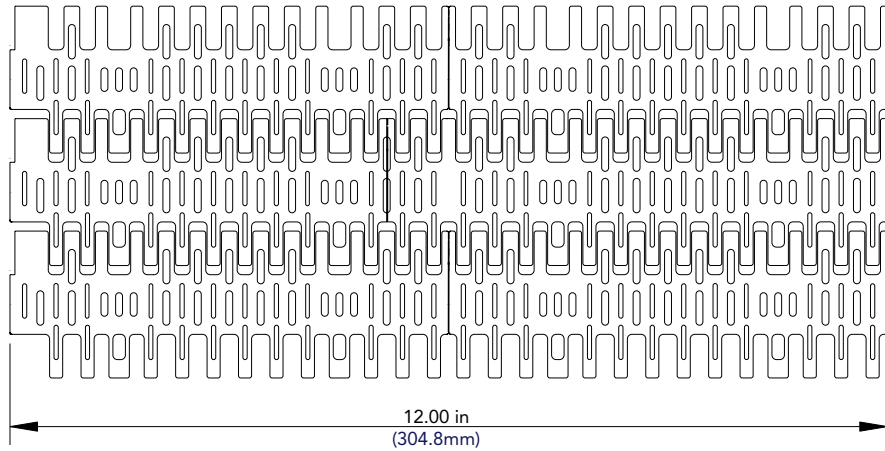
Contact Rexnord Application Engineering for more information 1.262.376.4800



# SPROCKET LOCATIONS

## 5960 Chain Series (5966)

### Assembled to Width — 5966



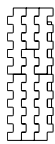
5966 — 12.00 in — Assembled to Width

- > 5960 Chain Series (5966)
- > Assembled to Width — 5966
- > 5966 — 12.00 in — Assembled to Width

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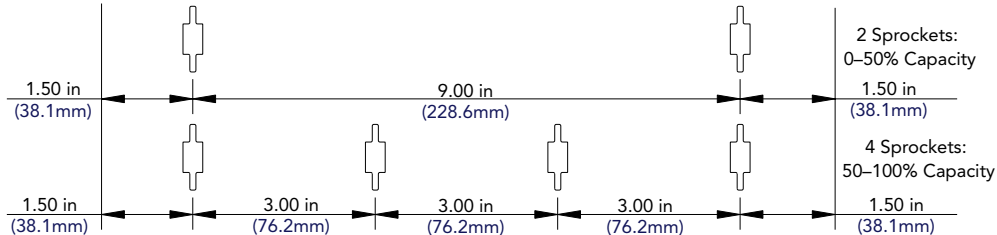
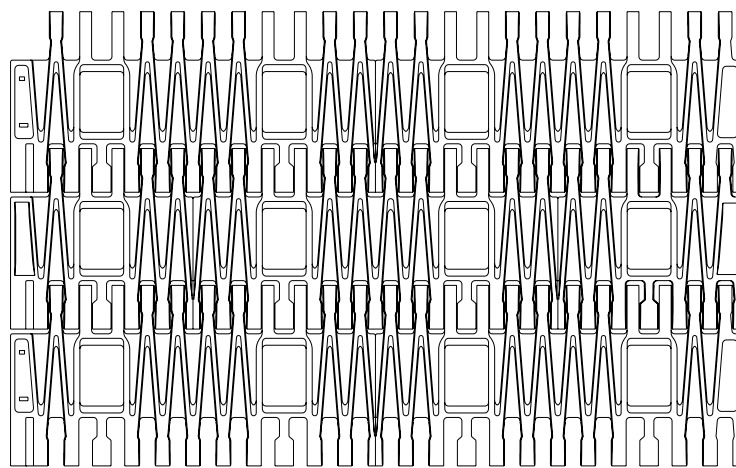
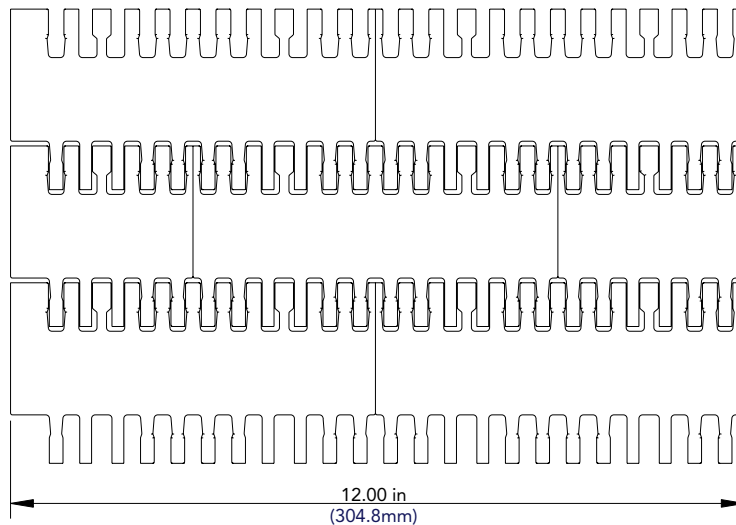
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# SPROCKET LOCATIONS

## 5990 Chain Series (5995/5998/5998HD)

### Assembled to Width — 5995/5998/5998HD



5995 — 12.00 in — Assembled to Width

- > 5990 Chain Series (5995/5998/5998HD)
- > Assembled to Width — 5995/5998/5998HD
- > 5995 — 12.00 in — Assembled to Width

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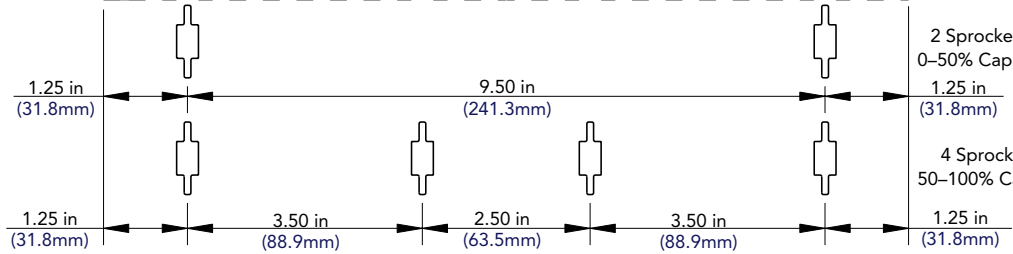
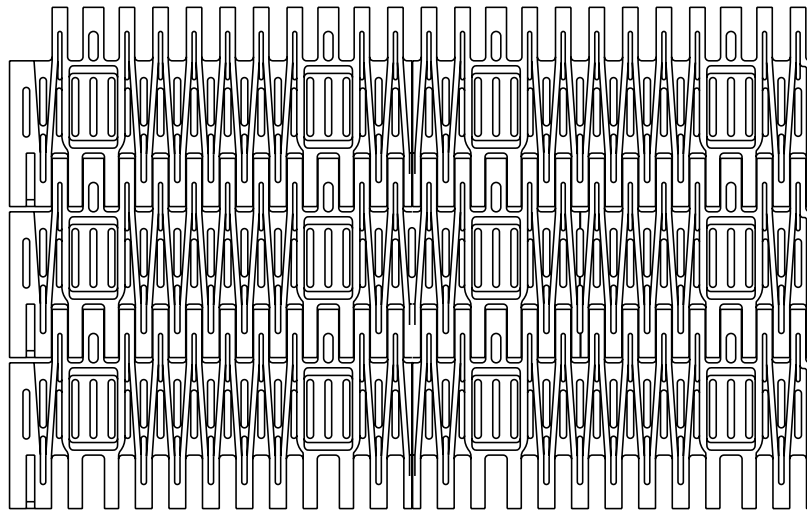
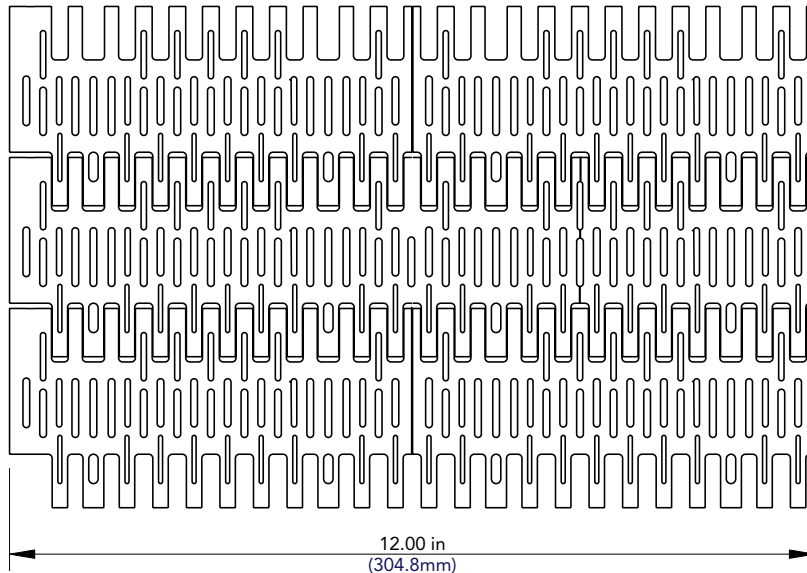
5998 and 5998HD — 12 in Assembled to Width chains have a different bricking pattern than above but have the same sprocket locations.



# SPROCKET LOCATIONS

## 5990 Chain Series (5996)

### Assembled to Width — 5996



2 Sprockets:  
0–50% Capacity

4 Sprockets:  
50–100% Capacity

### 5996 — 12.00 in — Assembled to Width

- > 5990 Chain Series (5996)
- > Assembled to Width — 5996
- > 5996 — 12.00 in — Assembled to Width

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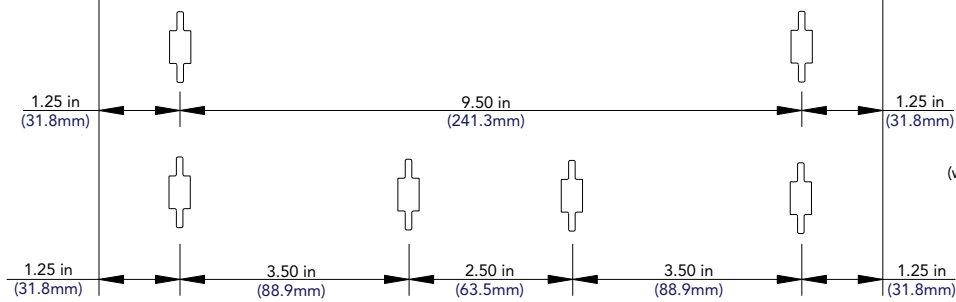
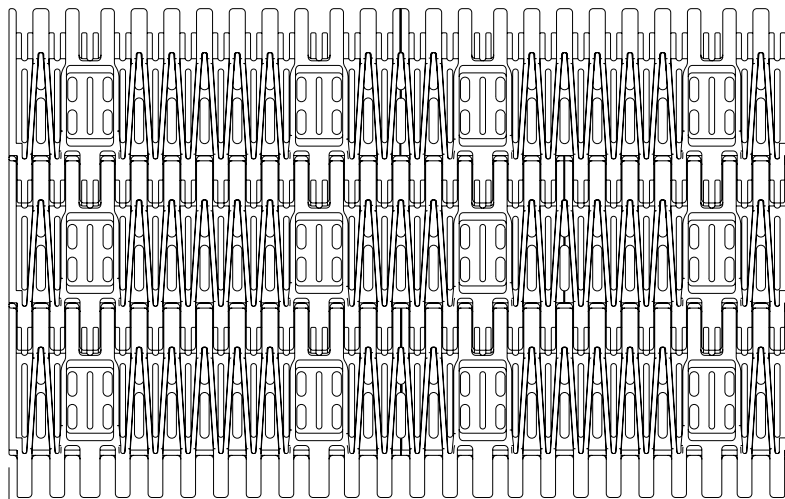
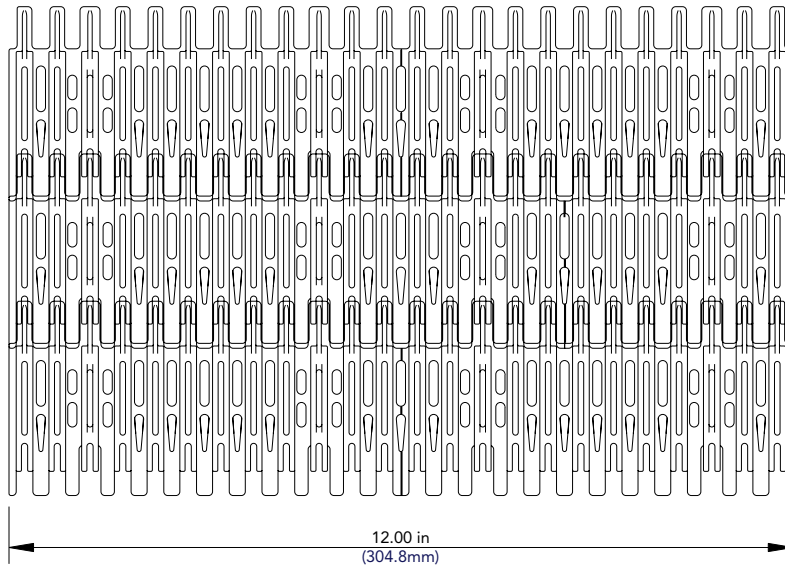
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# SPROCKET LOCATIONS

### 5990 Chain Series (5997)

#### Assembled to Width — 5997



2 Sprockets:  
0-50% Capacity  
(without Transfer Comb)

4 Sprockets:  
50-100% Capacity  
(without Transfer Comb)

4 Sprockets:  
0-100% Capacity  
(with Transfer Comb)

#### 5997 — 12.00 in — Assembled to Width

- > 5990 Chain Series (5997)
- > Assembled to Width — 5997
- > 5997 — 12.00 in — Assembled to Width

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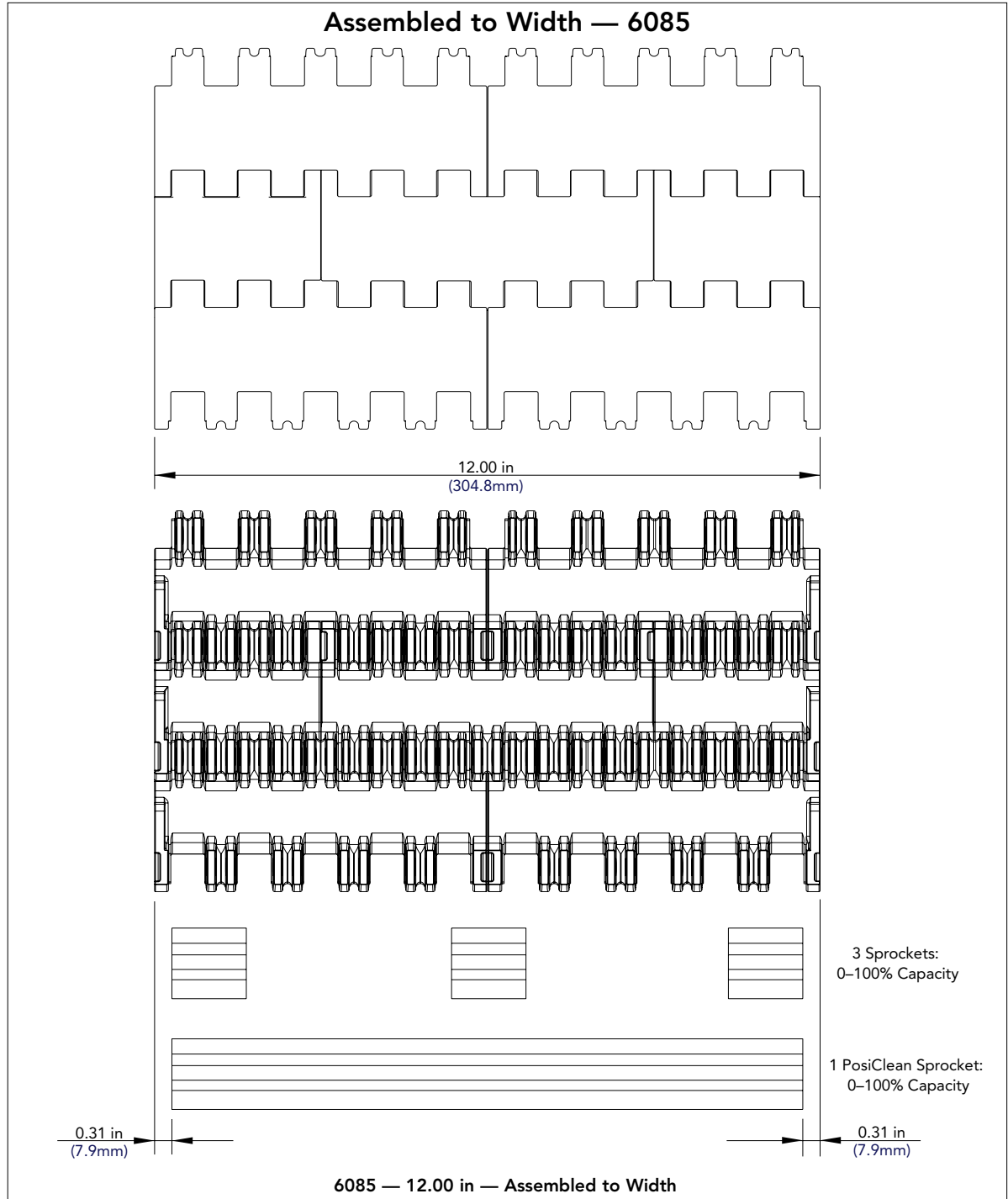
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# SPROCKET LOCATIONS

## 6080 Chain Series (6085)

### Assembled to Width — 6085



- > 6080 Chain Series (6085)
- > Assembled to Width — 6085
- > 6085 — 12.00 in — Assembled to Width

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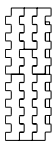
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6085 has no sprocket pockets. Sprockets can be placed anywhere along the width of the chain inside the 0.31 in (7.9mm) edge dimensions.

Contact Rexnord Application Engineering for more information 1.262.376.4800



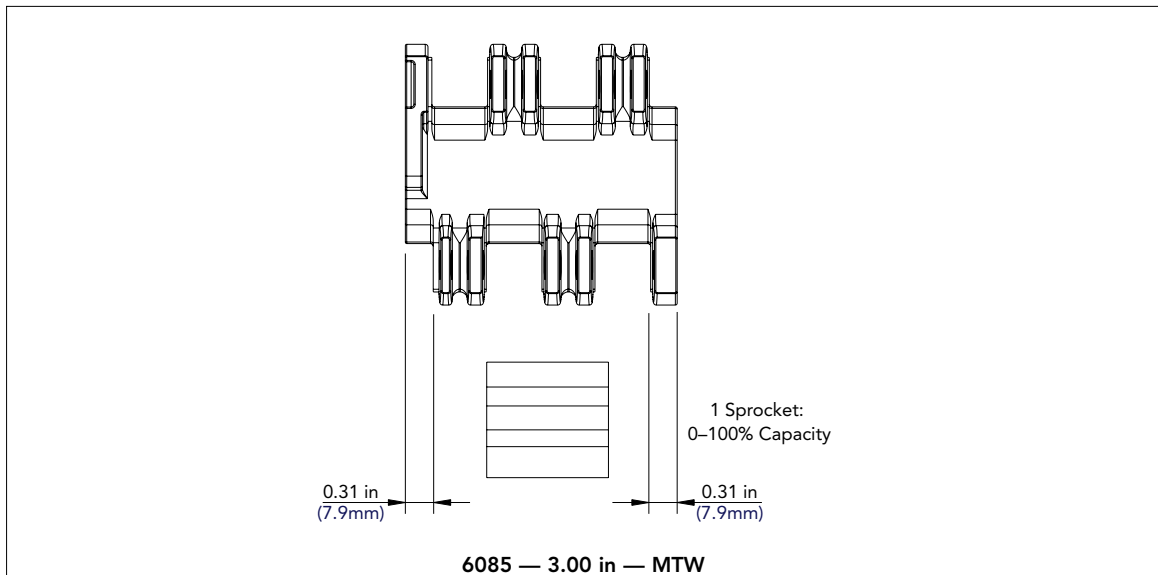
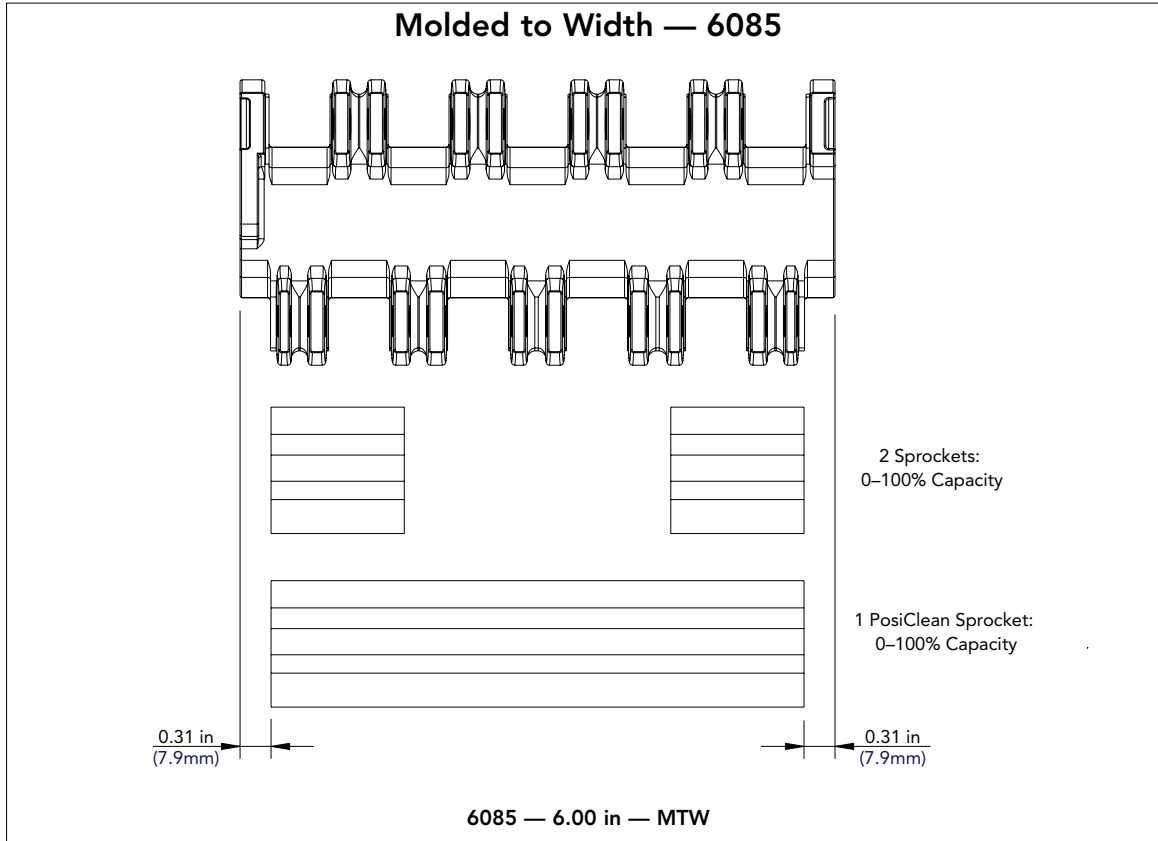


# SPROCKET LOCATIONS

## MatTop Sprocket Locations

### 6080 Chain Series (6085)

#### Molded to Width — 6085



6085 has no sprocket pockets. Sprockets can be placed anywhere along the width of the chain inside the 0.31 in (7.9mm) edge dimensions.

> 6080 Chain Series (6085)

> Assembled to Width — 6085

> 6085 — 6.00 in — MTW

> 6085 — 3.00 in — MTW

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MatTop Chains

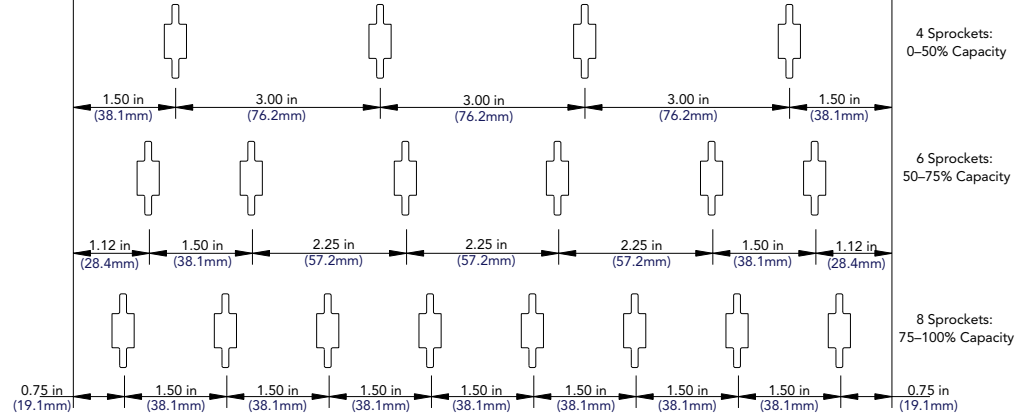
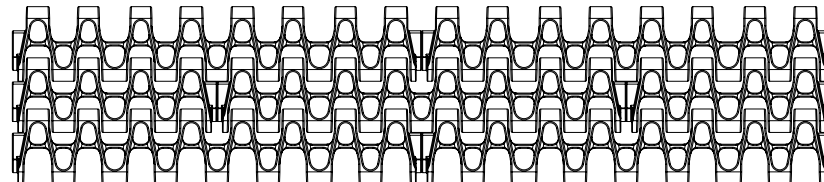
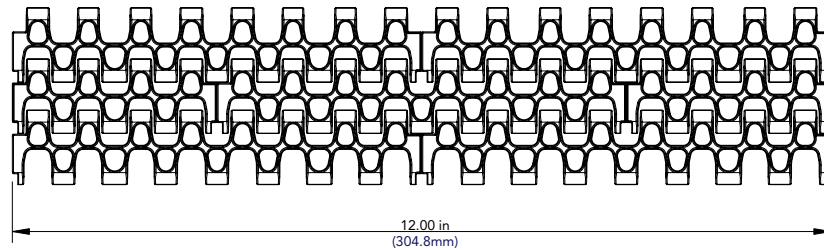
Contact Rexnord Application Engineering for more information 1.262.376.4800



# SPROCKET LOCATIONS

## 6930 Chain Series (6938)

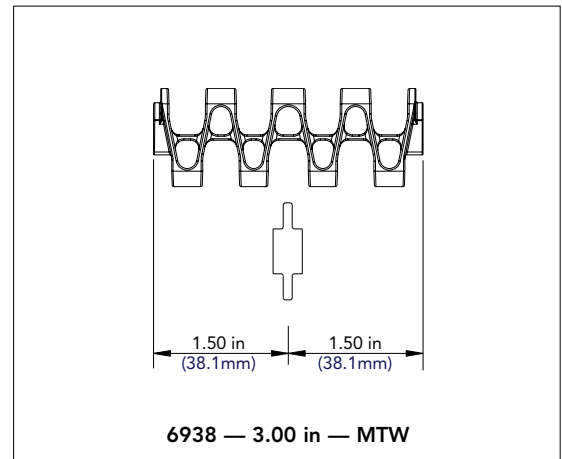
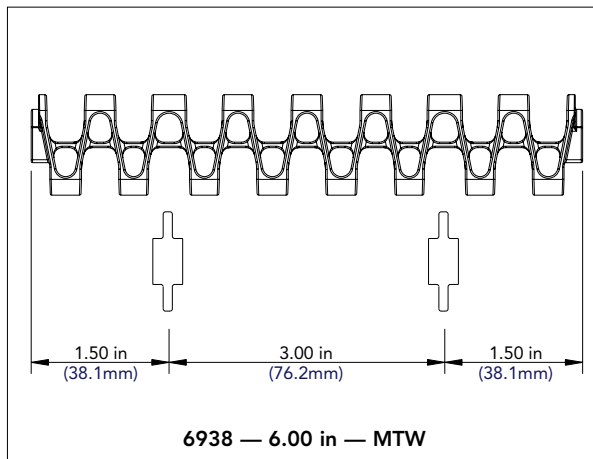
### Assembled to Width — 6938



The 6938 chain is to be driven by the solid portion of the chain, not the exposed pin portion.

6938 — 12.00 in — Assembled to Width

### Molded to Width — 6938



- > 6930 Chain Series (6938)
- > Assembled to Width — 6938
- > 6938 — 12.00 in — Assembled to Width

- > Molded to Width — 6938
- > 6938 — 6.00 in — MTW
- > 6938 — 3.00 in — MTW

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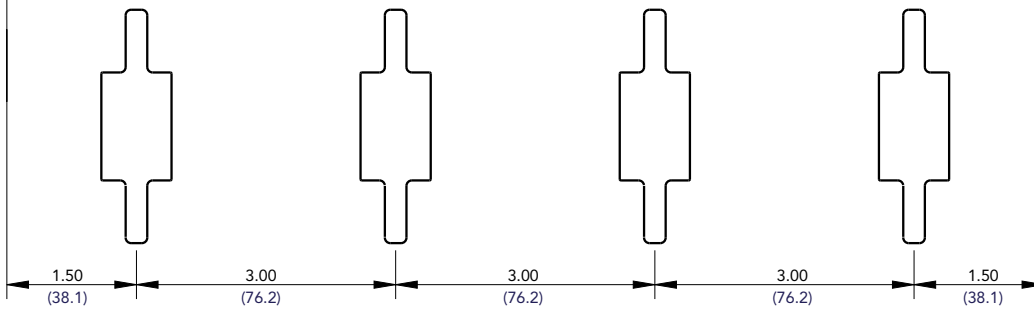
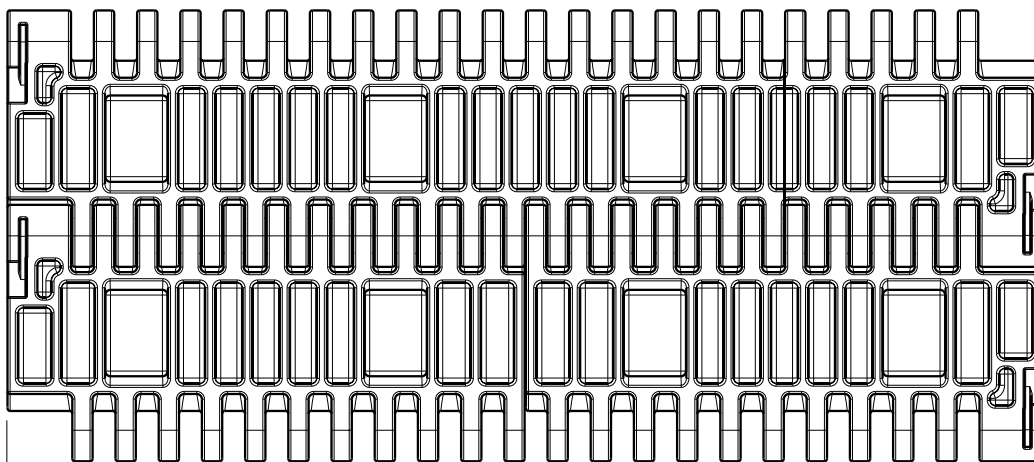
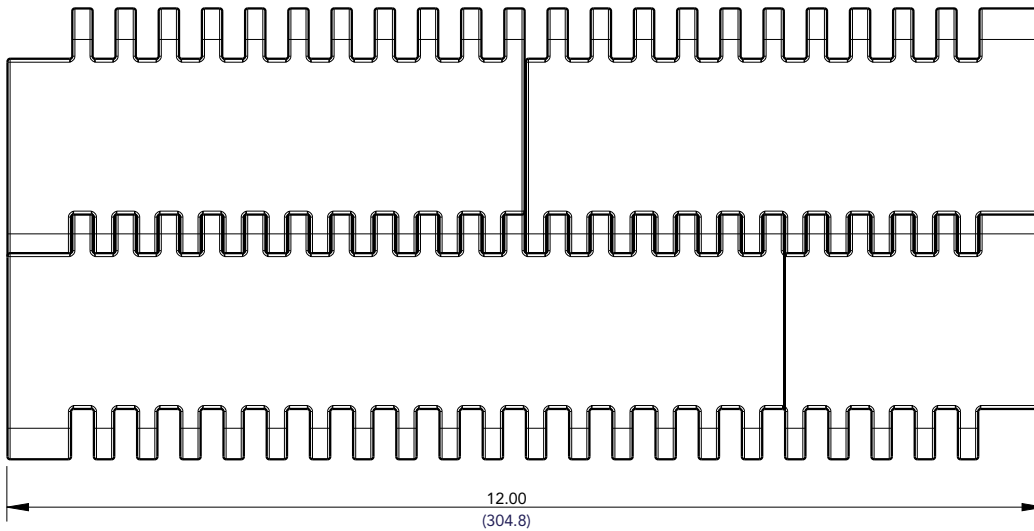
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# SPROCKET LOCATIONS

### 6990 Chain Series (6995/6999)

#### Assembled to Width — 6995/6999



6995 — 12.00 in — Assembled to Width

- > 6990 Chain Series (6995/6999)
- > Assembled to Width — 6995/6999
- > 6995 — 12.00 in — Assembled to Width

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MatTop Chains

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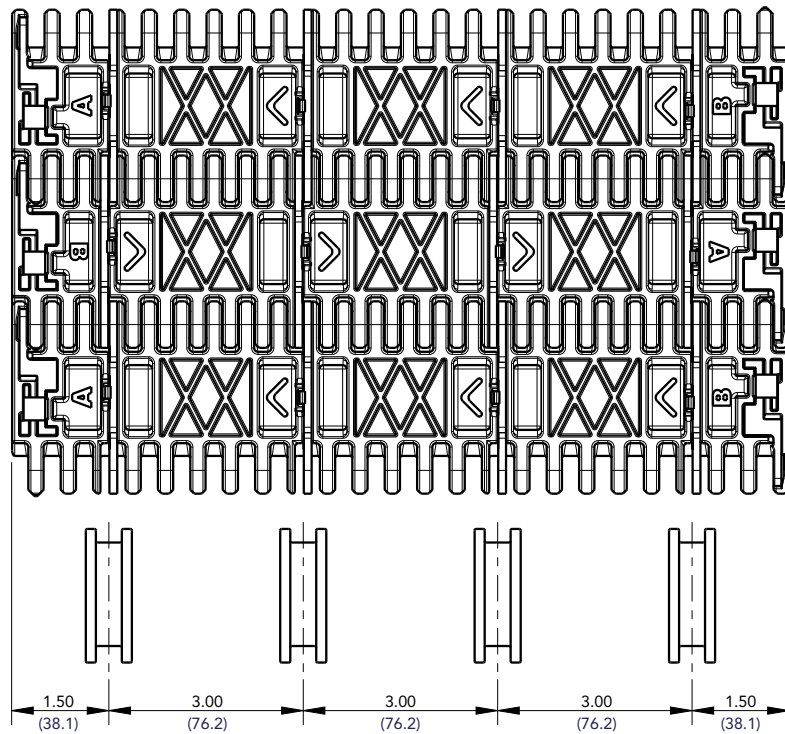
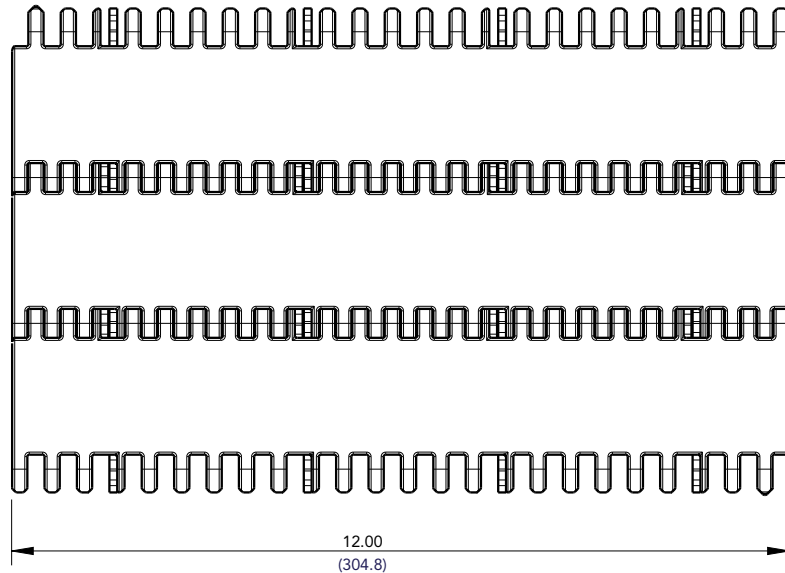


## SPROCKET LOCATIONS

6990 Chain Series (6995H4/6995H8/6999H4/6999H8)

Assembled to Width and Molded to Width — 6995H4/6999H4

- > 6990 Chain Series (6995H4/6995H8/6999H4/6999H8)
- > Assembled to Width and Molded to Width — 6995H4/6999H4
- > 6995H4 — 12.00 in — MTW



6995H4 — 12.00 in — MTW

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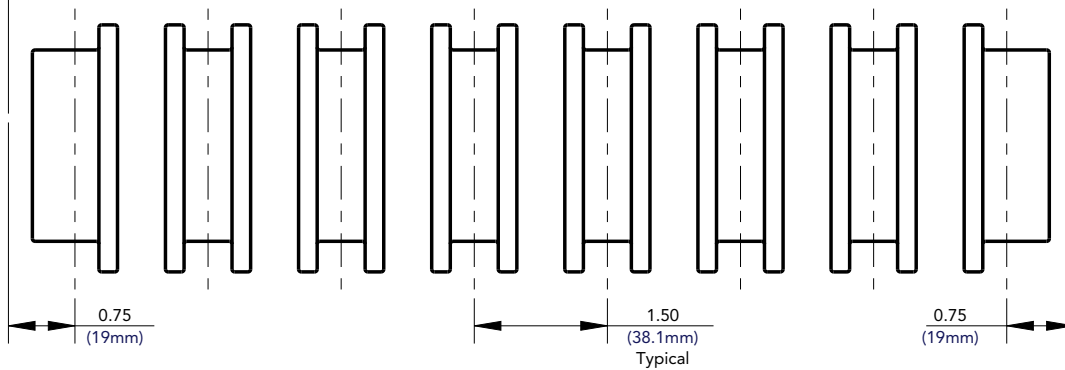
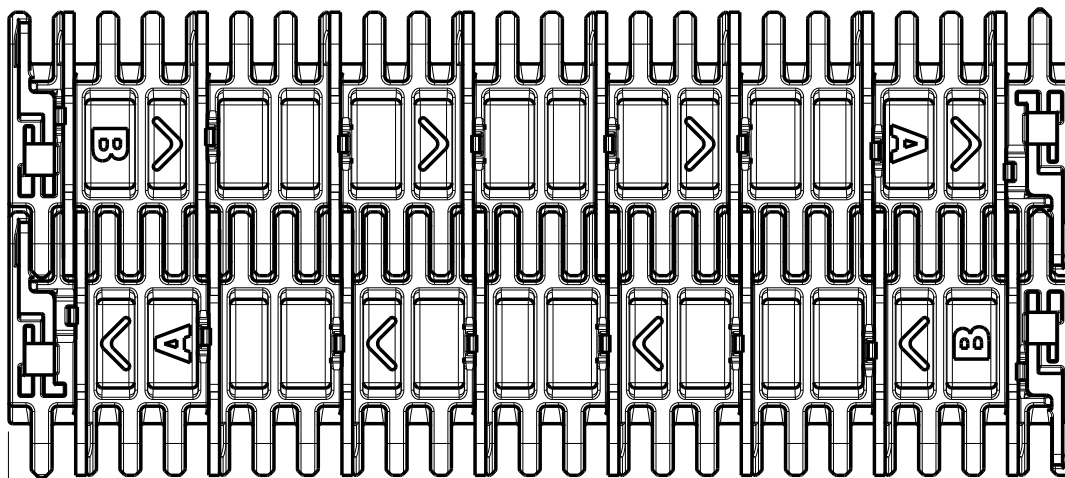
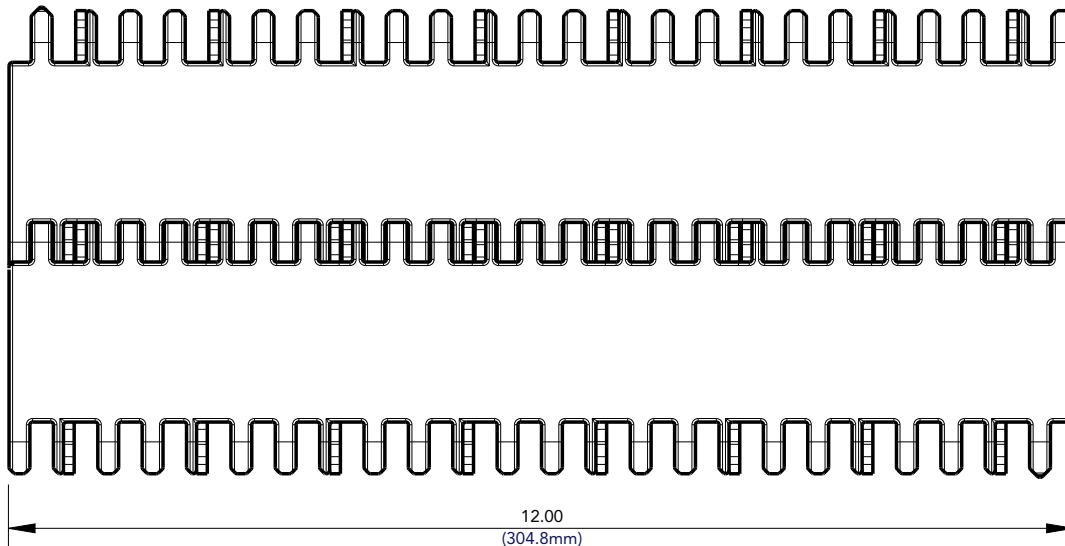
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# SPROCKET LOCATIONS

## 6990 Chain Series (6995H4/6995H8/6999H4/6999H8)

### Molded to Width — 6995H8/6999H8 — 12.00 in



6995H8 — 12.00 in — MTW

MatTop  
Sprocket  
Locations

- > 6990 Chain Series (6995H4/6995H8/6999H4/6999H8)
- > Molded to Width — 6995H8/6999H8 — 12.00 in
- > 6995H8 — 12.00 in — MTW

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MatTop Chains

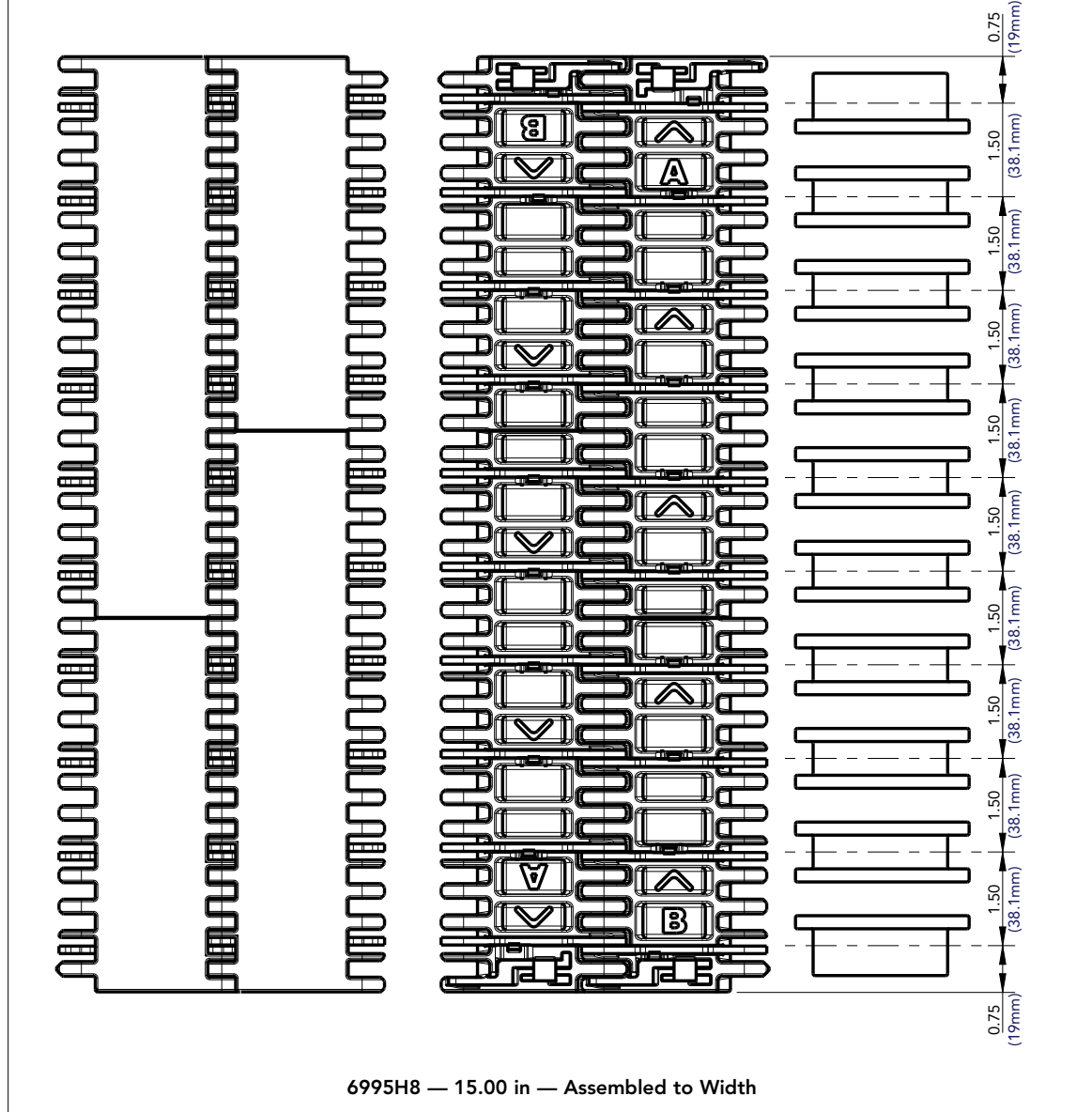
Contact Renxord Application Engineering for more information 1.262.376.4800



## SPROCKET LOCATIONS

6990 Chain Series (6995H4/6995H8/6999H4/6999H8)

Assembled to Width — 6995H8/6999H8 — 15.00 in

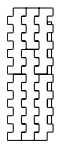


- > 6990 Chain Series (6995H4/6995H8/6999H4/6999H8)
- > Assembled to Width — 6995H8/6999H8 — 15.00 in
- > 6995H8 — 15.00 in — Assembled to Width

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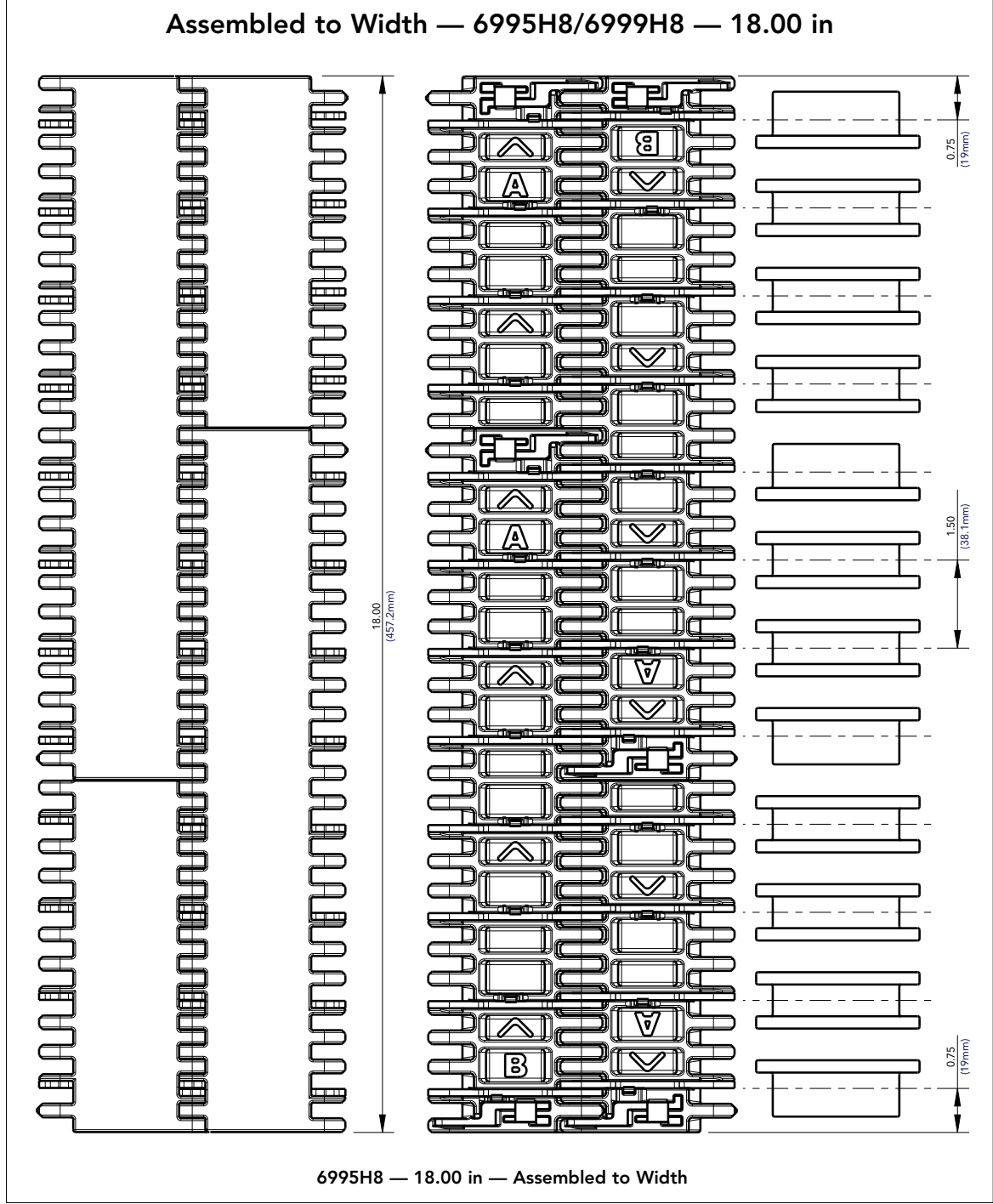
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# SPROCKET LOCATIONS

6990 Chain Series (6995H4/6995H8/6999H4/6999H8)

Assembled to Width — 6995H8/6999H8 — 18.00 in



6995H8 — 18.00 in — Assembled to Width

- > 6990 Chain Series (6995H4/6995H8/6999H4/6999H8)
- > Assembled to Width — 6995H8/6999H8 — 18.00 in
- > 6995H8 — 18.00 in — Assembled to Width

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MatTop Chains

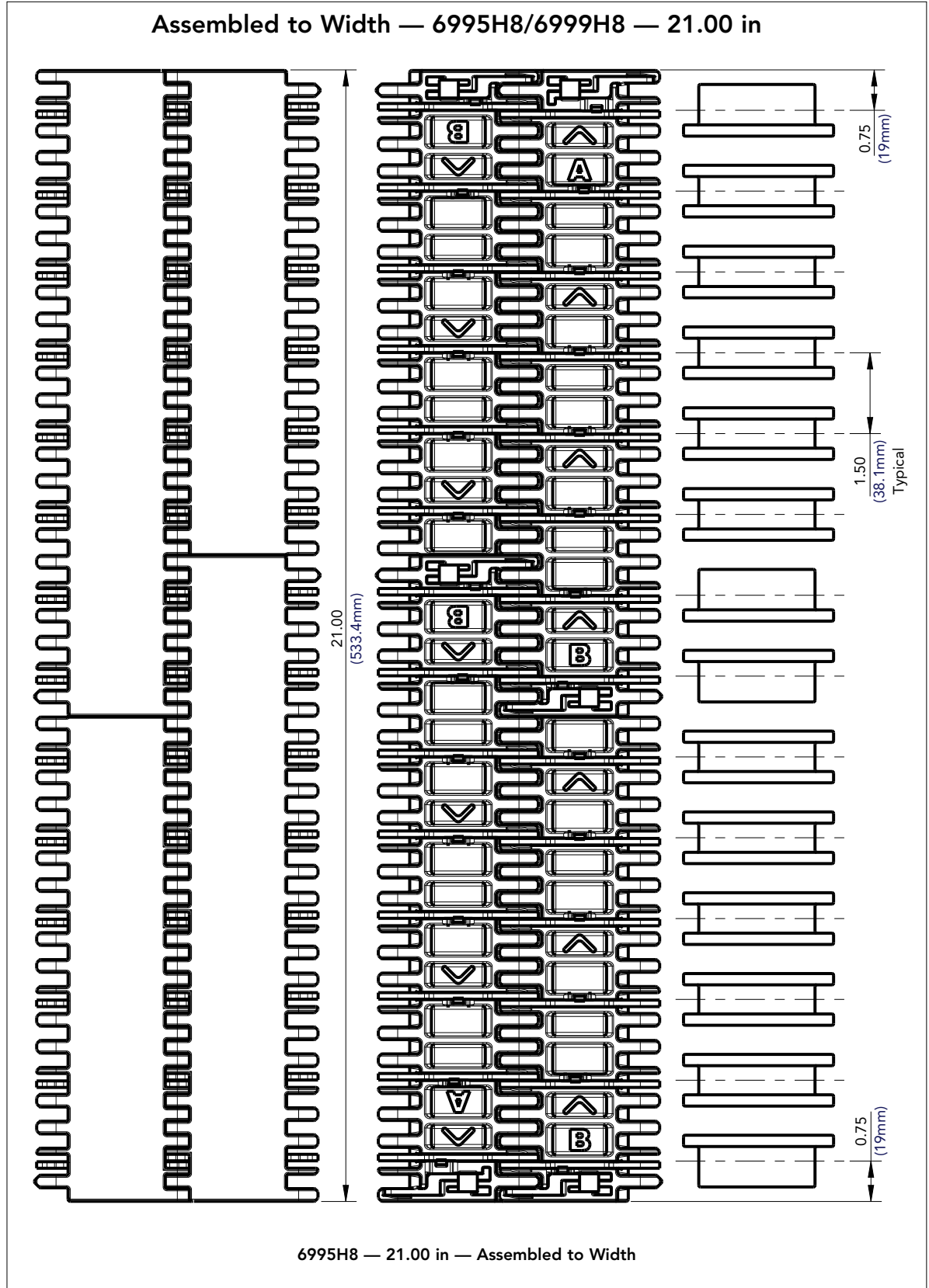
Contact Renxord Application Engineering for more information 1.262.376.4800



## SPROCKET LOCATIONS

6990 Chain Series (6995H4/6995H8/6999H4/6999H8)

Assembled to Width — 6995H8/6999H8 — 21.00 in



- > 6990 Chain Series (6995H4/6995H8/6999H4/6999H8)
- > Assembled to Width — 6995H8/6999H8 — 21.00 in
- > 6995H8 — 21.00 in — Assembled to Width

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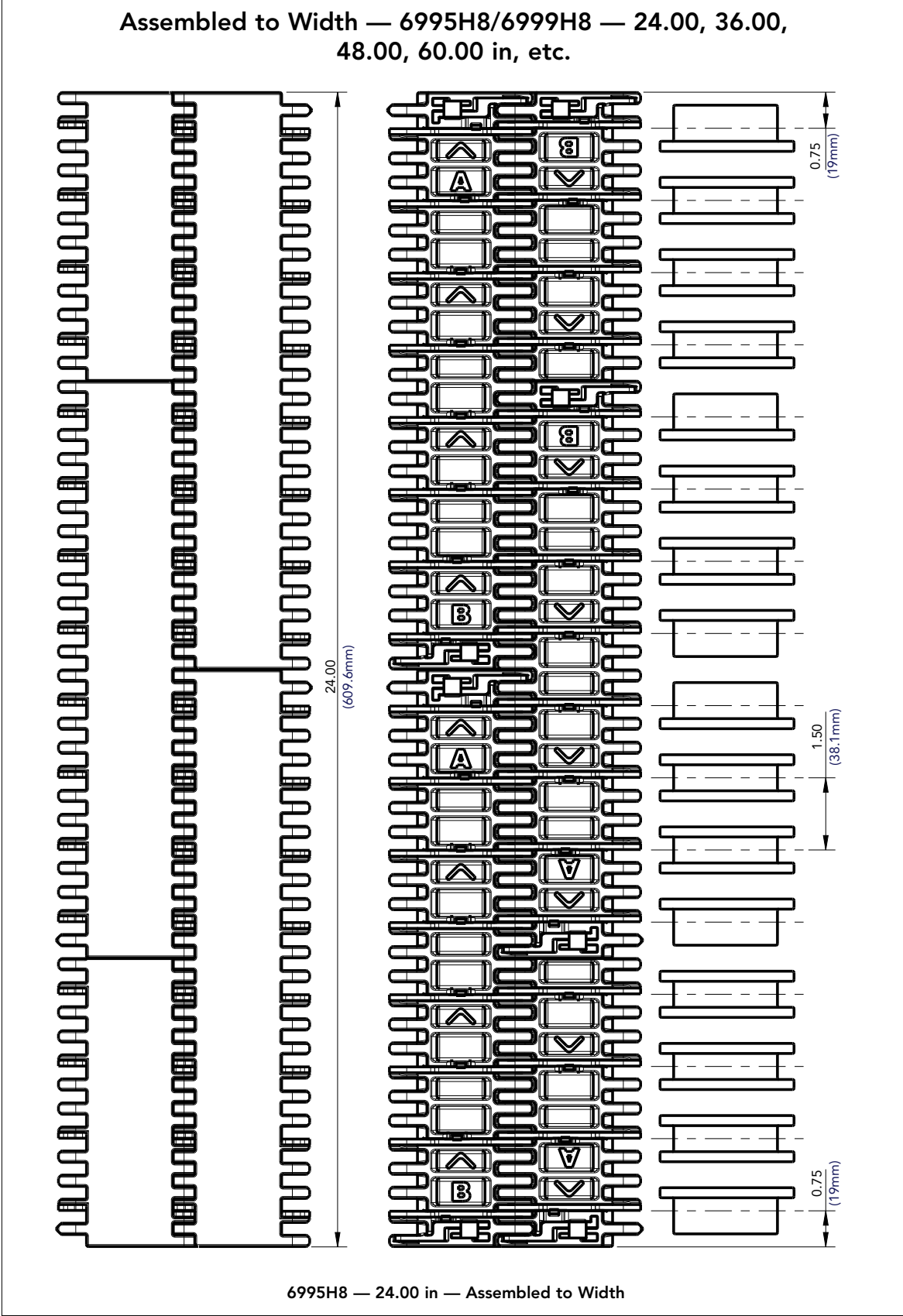




# SPROCKET LOCATIONS

6990 Chain Series (6995H4/6995H8/6999H4/6999H8)

Assembled to Width — 6995H8/6999H8 — 24.00, 36.00, 48.00, 60.00 in, etc.



- > 6990 Chain Series (6995H4/6995H8/6999H4/6999H8)
- > Assembled to Width — 6995H8/6999H8 — 24.00, 36.00, 48.00, 60.00 in, etc.
- > 6995H8 — 24.00 in — Assembled to Width

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MatTop Chains

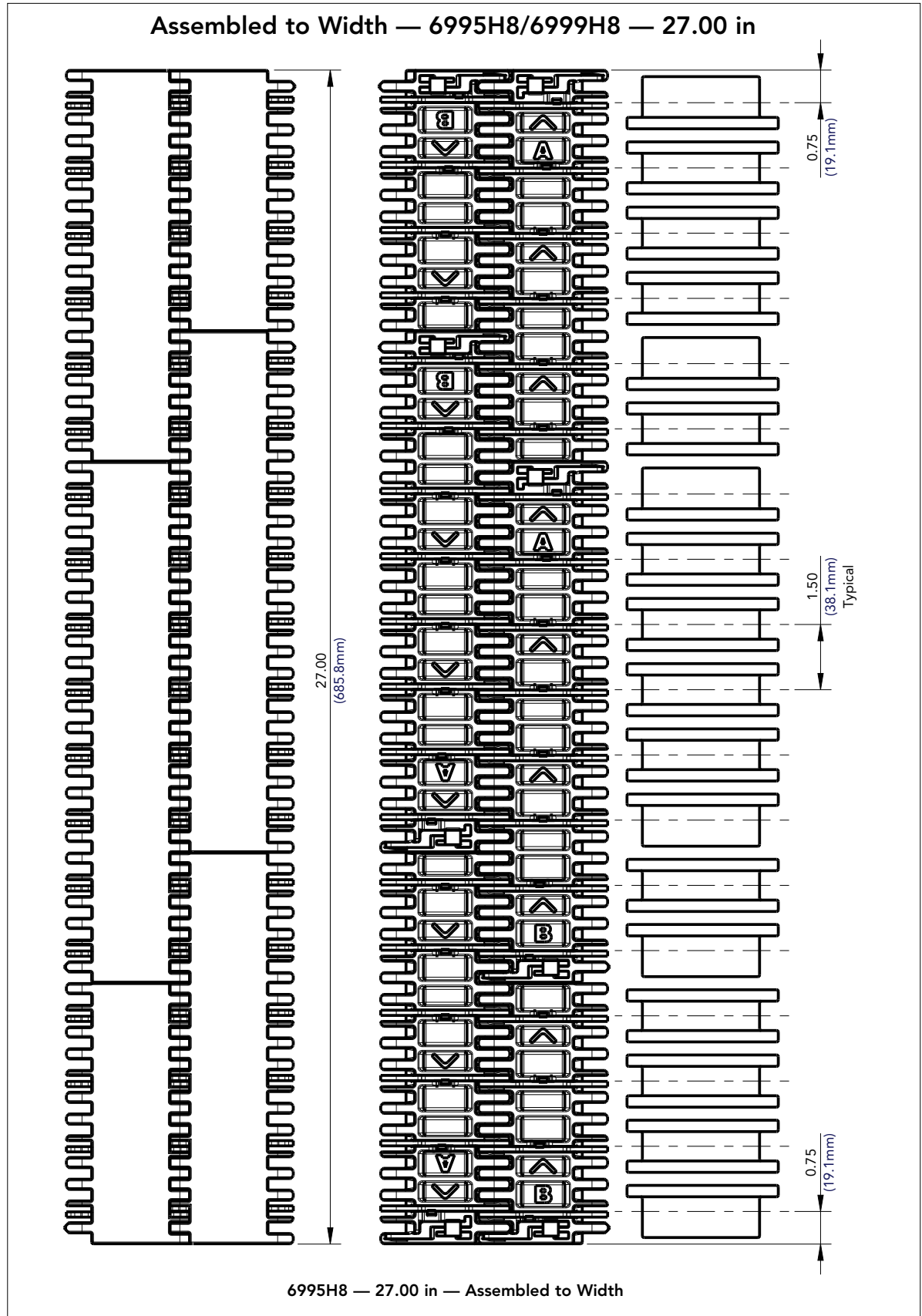


## SPROCKET LOCATIONS

6990 Chain Series (6995H4/6995H8/6999H4/6999H8)

Assembled to Width — 6995H8/6999H8 — 27.00 in

- > 6990 Chain Series (6995H4/6995H8/6999H4/6999H8)
- > Assembled to Width — 6995H8/6999H8 — 27.00 in
- > 6995H8 — 27.00 in — Assembled to Width



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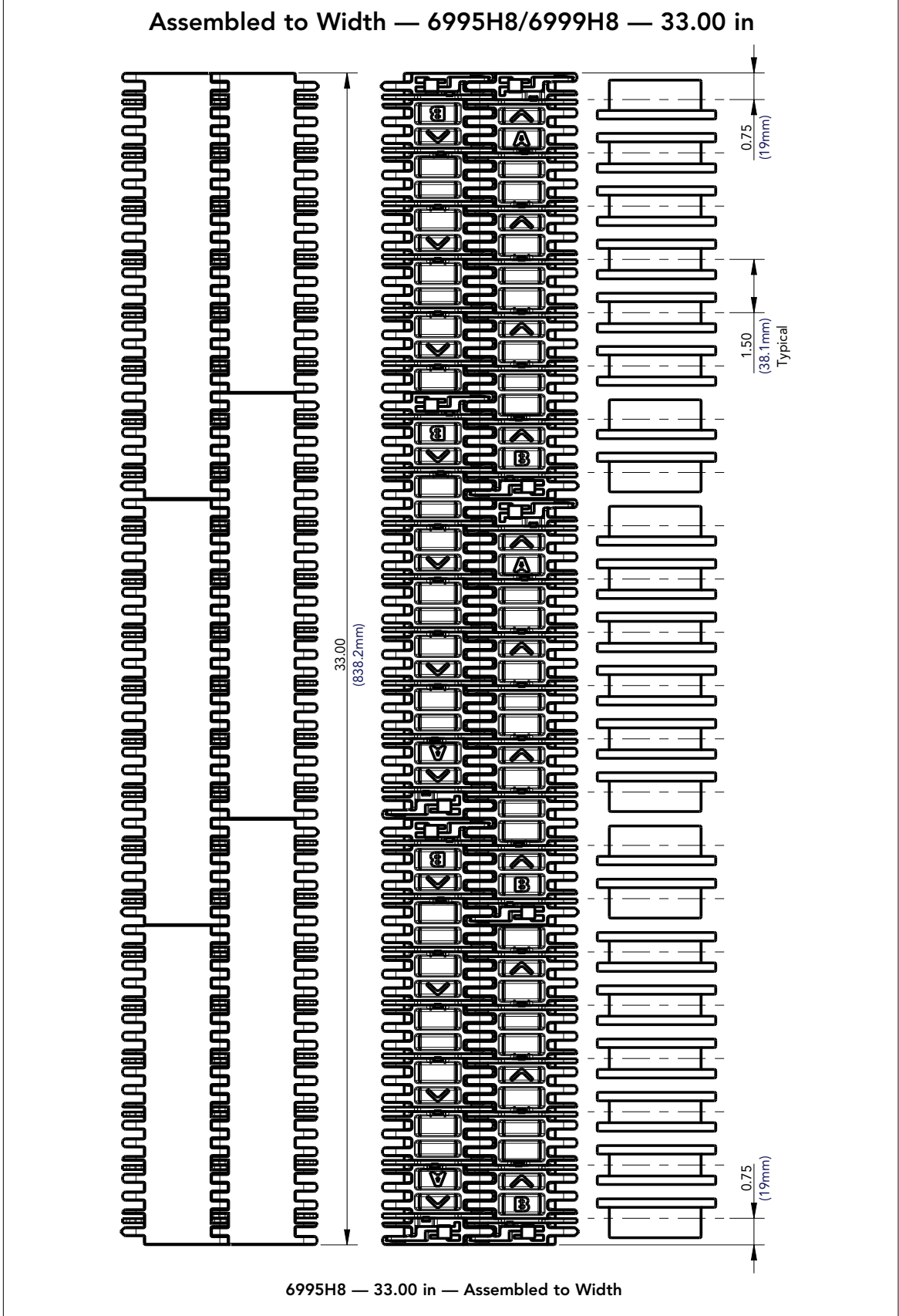
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# SPROCKET LOCATIONS

6990 Chain Series (6995H4/6995H8/6999H4/6999H8)

Assembled to Width — 6995H8/6999H8 — 33.00 in



- > 6990 Chain Series (6995H4/6995H8/6999H4/6999H8)
- > Assembled to Width — 6995H8/6999H8 — 33.00 in
- > 6995H8 — 33.00 in — Assembled to Width

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MatTop Chains

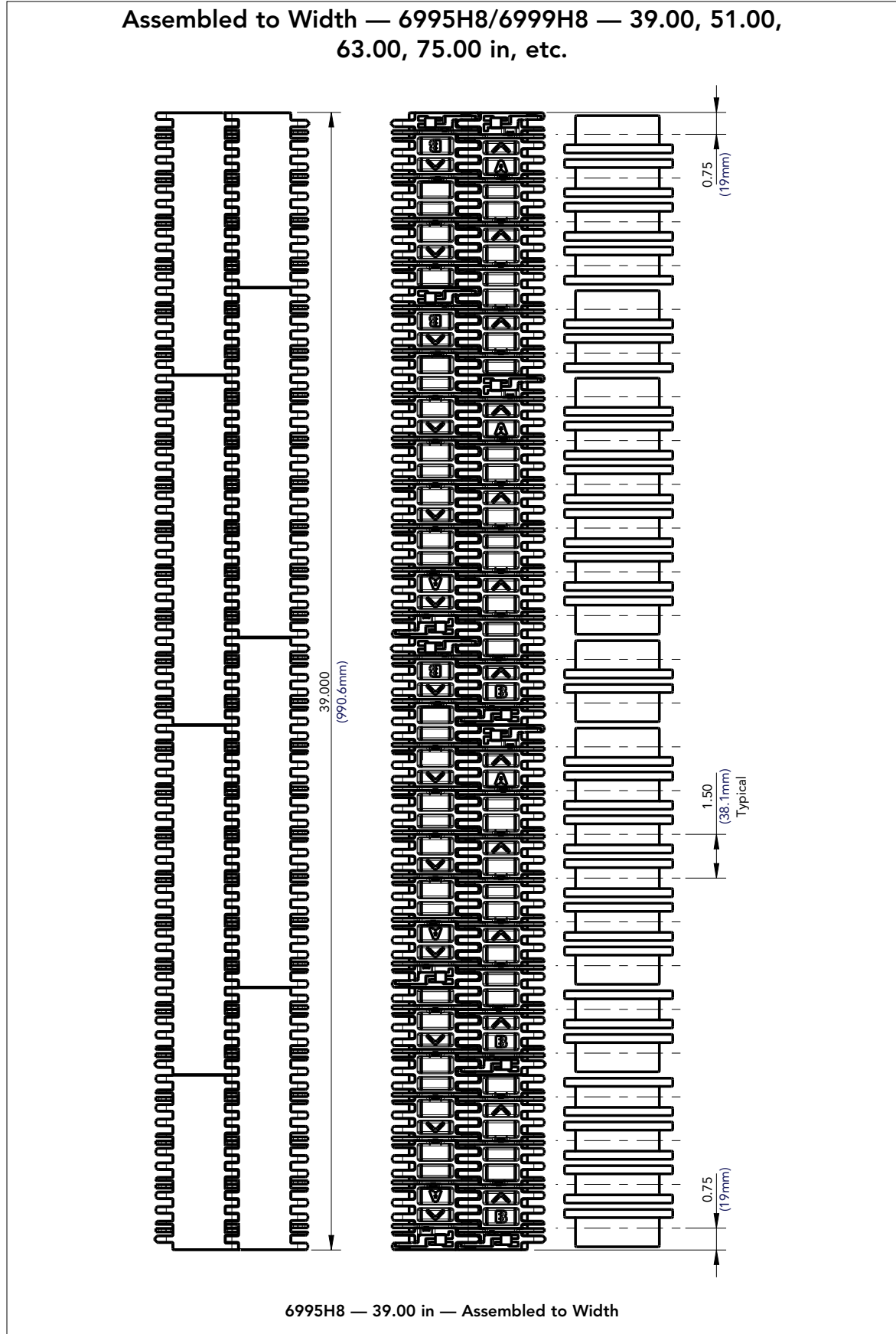


## SPROCKET LOCATIONS

6990 Chain Series (6995H4/6995H8/6999H4/6999H8)

Assembled to Width — 6995H8/6999H8 — 39.00, 51.00, 63.00, 75.00 in, etc.

- > 6990 Chain Series (6995H4/6995H8/6999H4/6999H8)
- > Assembled to Width — 6995H8/6999H8 — 39.00, 51.00, 63.00, 75.00 in, etc.
- > 6995H8 — 39.00 in — Assembled to Width



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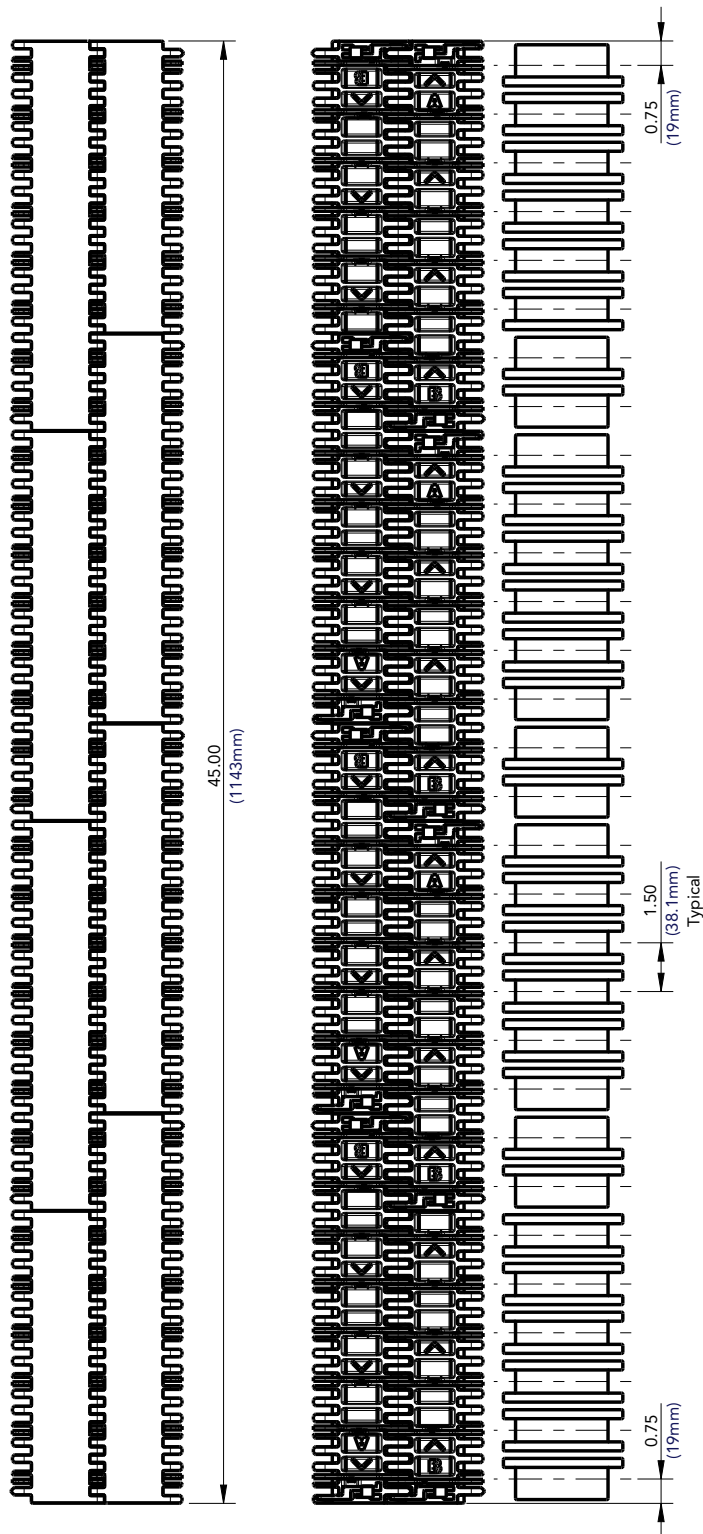
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# SPROCKET LOCATIONS

6990 Chain Series (6995H4/6995H8/6999H4/6999H8)

Assembled to Width — 6995H8/6999H8 — 45.00, 57.00, 69.00, 81.00 in, etc.



6995H8 — 45.00 in — Assembled to Width

## MatTop Sprocket Locations

- > 6990 Chain Series (6995H4/6995H8/6999H4/6999H8)
- > Assembled to Width — 6995H8/6999H8 — 45.00, 57.00, 69.00, 81.00 in, etc.
- > 6995H8 — 45.00 in — Assembled to Width

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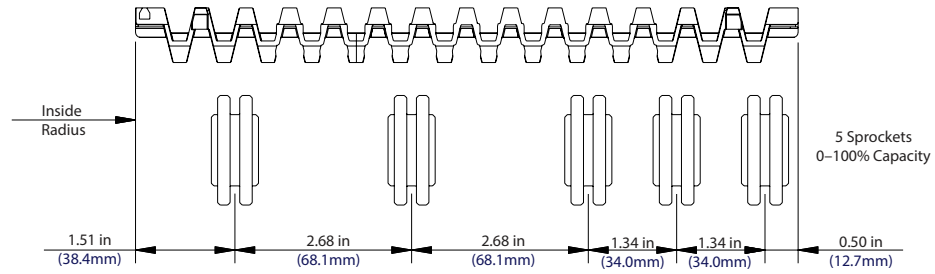
MatTop Chains



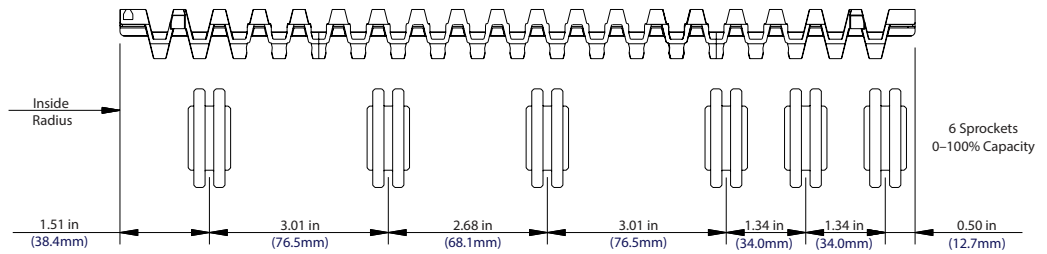
# SPROCKET LOCATIONS

## 7526 Chain Series (7526)

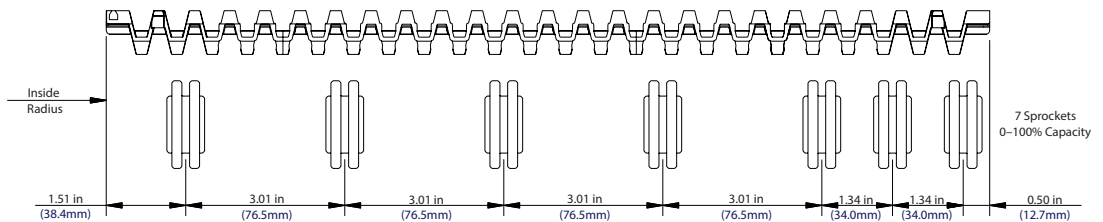
### Assembled to Width — 7526



7526 — 255mm — Assembled to Width



7526 — 340mm — Assembled to Width



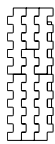
7526 — 425mm — Assembled to Width

- > 7526 Chain Series (7526)
- > Assembled to Width — 7526
- > 7526 — 255mm — Assembled to Width
- > 7526 — 340mm — Assembled to Width
- > 7526 — 425mm — Assembled to Width

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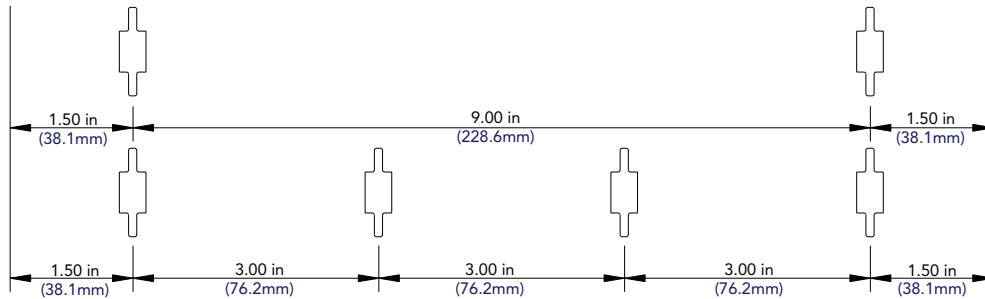
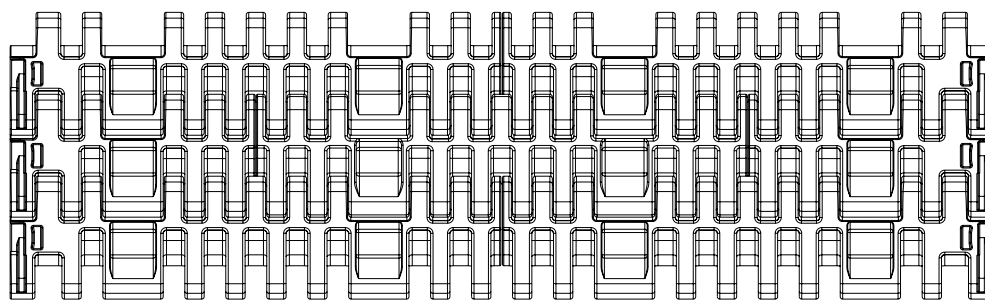
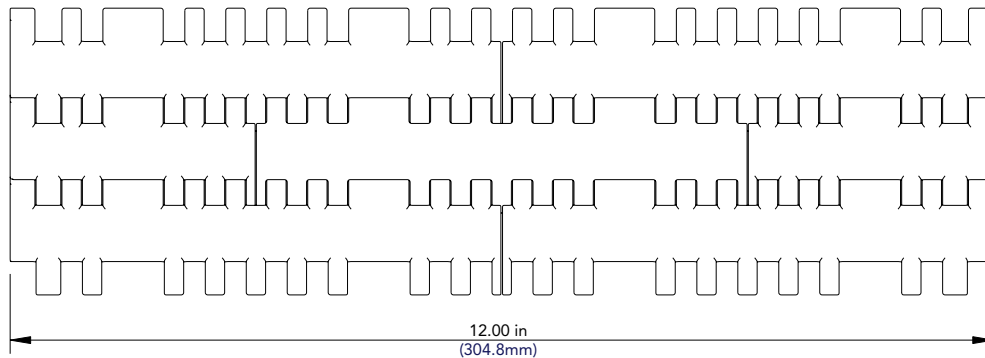


# SPROCKET LOCATIONS

## MatTop Sprocket Locations

### 7700 Chain Series (7705/7706)

#### Assembled to Width — 7705/7706

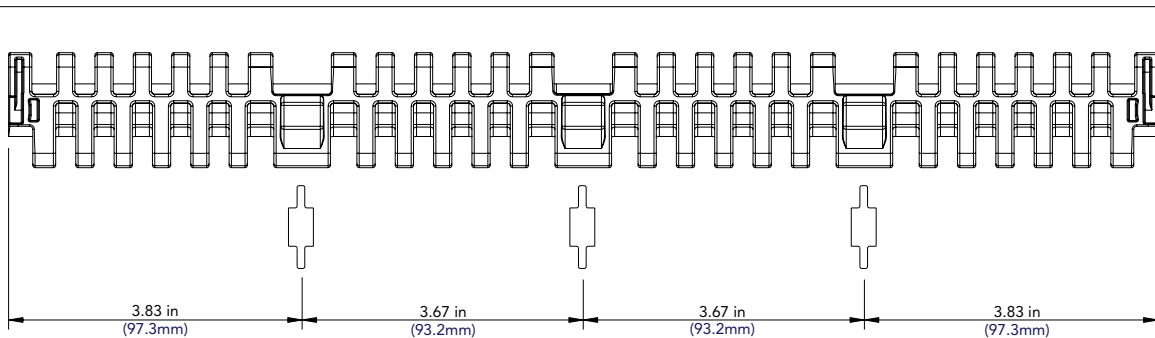


7705 — 12.00 in — Assembled to Width

2 Sprockets:  
0-50% Capacity

4 Sprockets:  
50-100% Capacity

#### Molded to Width — 7705/7706



7705 — 15.00 in — MTW

- > 7700 Chain Series (7705/7706)
- > Assembled to Width — 7705/7706
- > 7705 — 12.00 in — Assembled to Width
- > Molded to Width — 7705/7706
- > 7705 — 15.00 in — MTW

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MatTop Chains



7705 MTW and 7705 ATW cannot couple.

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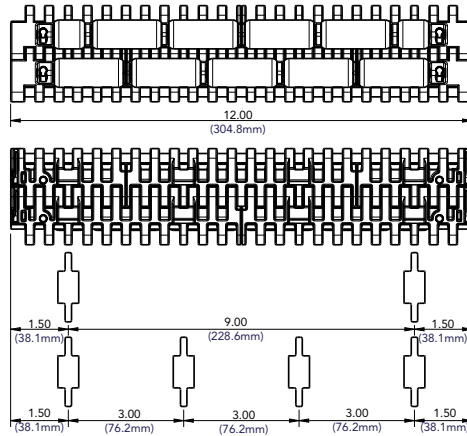


## SPROCKET LOCATIONS

### 7700 Chain Series (7703/7705SG/7743)

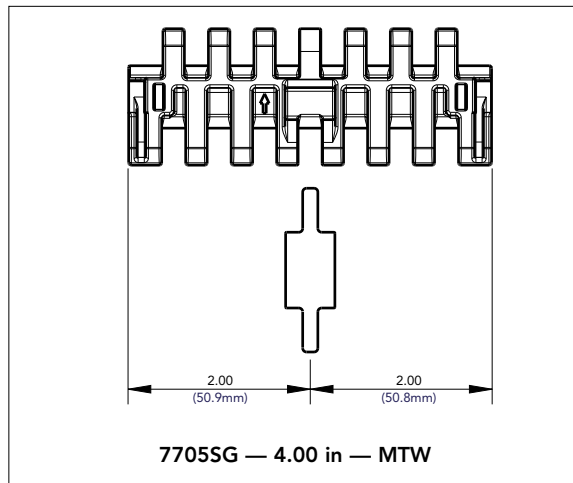
- > 7700 Chain Series (7703/7705SG/7743)
- > Assembled to Width — 7703
- > 7703 — Assembled to Width
- > Molded to Width — 7705SG
- > 7705SG — 4.00 in — MTW
- > 7705SG — 6.00 in — MTW
- > Assembled to Width — 7743
- > 7743 — Assembled to Width

#### Assembled to Width — 7703

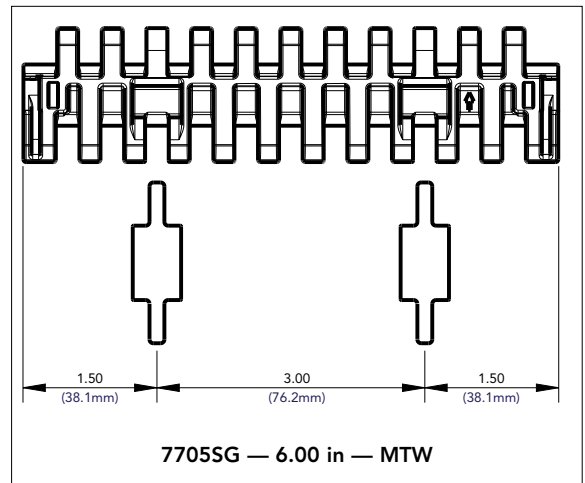


7703 — Assembled to Width

#### Molded to Width — 7705SG

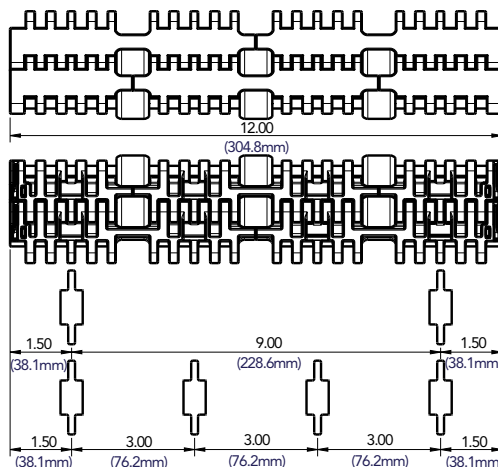


7705SG — 4.00 in — MTW



7705SG — 6.00 in — MTW

#### Assembled to Width — 7743



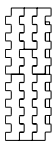
7743 — Assembled to Width

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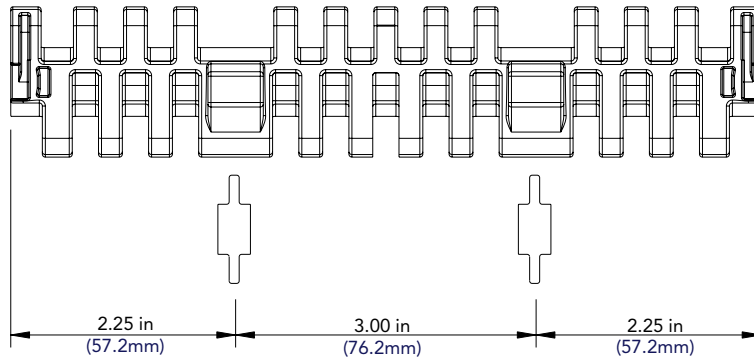




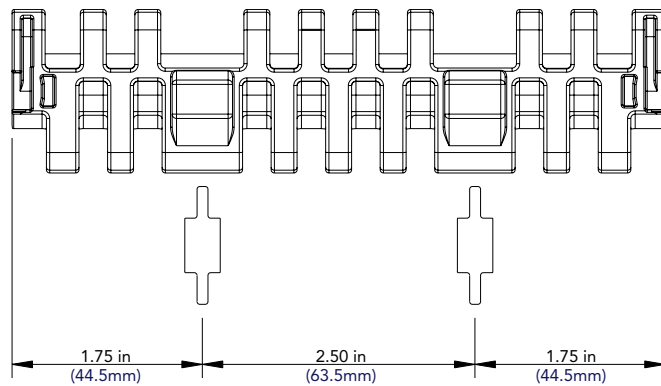
# SPROCKET LOCATIONS

### 7700 Chain Series (7705/7706)

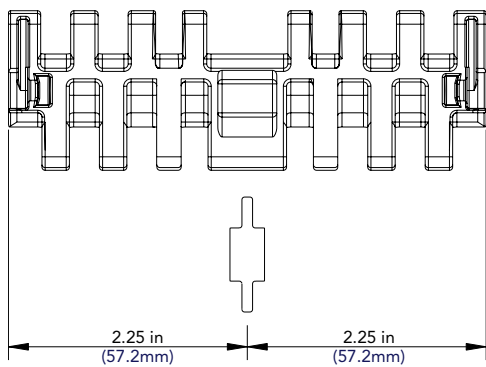
#### Molded to Width — 7705/7706



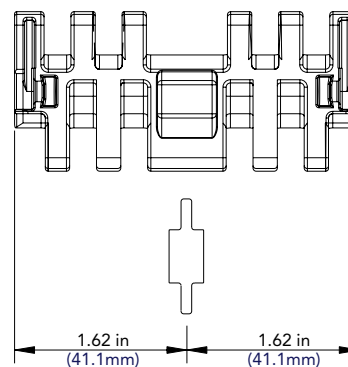
7705 — 7.50 in — MTW



7706 — 6.00 in — MTW



7705 — 4.50 in — MTW



7706 — 3.25 in — MTW

- > 7700 Chain Series (7705/7706)
- > Molded to Width — 7705/7706
- > 7705 — 7.50 in — MTW
- > 7706 — 6.00 in — MTW
- > 7705 — 4.50 in — MTW
- > 7706 — 3.25 in — MTW

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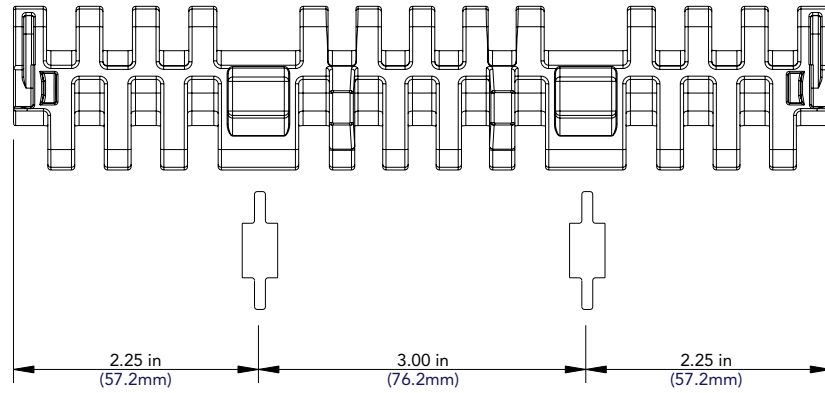
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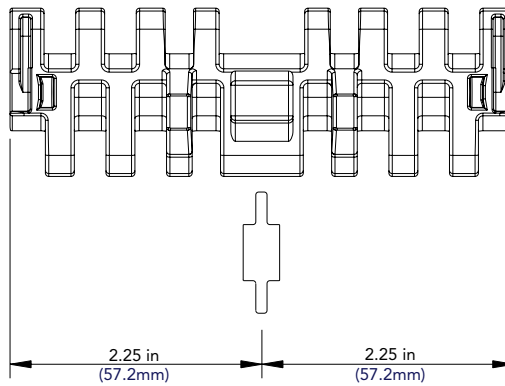
## SPROCKET LOCATIONS

### 7700 Chain Series with Positrack Tracking Guides (7705/7705 Metric/7706)

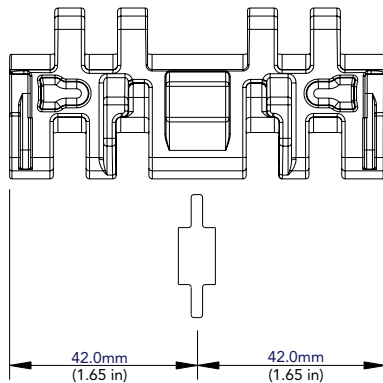
#### Molded to Width — 7705/7706



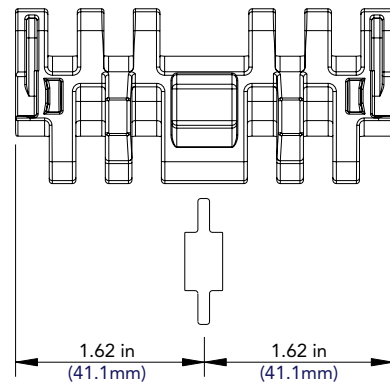
7705 — 7.50 in — MTW Positrack Tracking Guides



7705 — 4.50 in — MTW Positrack Tracking Guides



7705 — 84mm — MTW Positrack Tracking Guides



7705 — 3.25 in — MTW Positrack Tracking Guides

- > 7700 Chain Series with Positrack Tracking Guides (7705/7705 Metric/7706)
- > Molded to Width — 7705/7706
- > 7705 — 7.50 in — MTW Positrack Tracking Guides
- > 7705 — 4.50 in — MTW Positrack Tracking Guides
- > 7705 — 84mm — MTW Positrack Tracking Guides
- > 7705 — 3.25 in — MTW Positrack Tracking Guides

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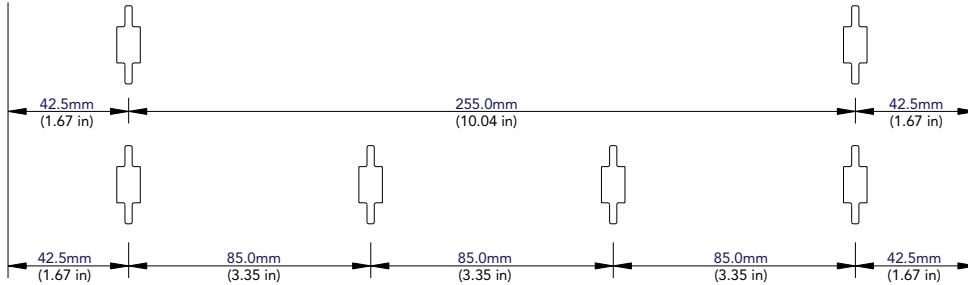
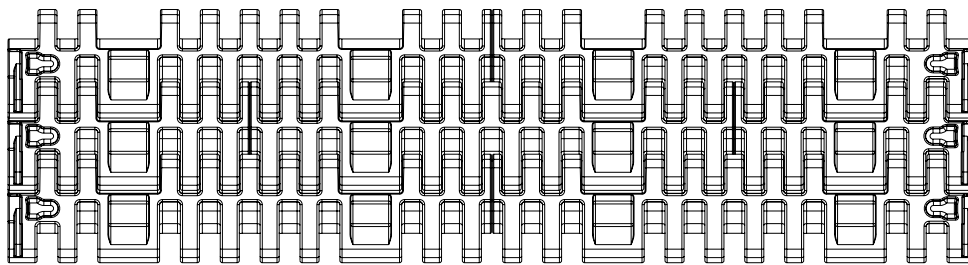
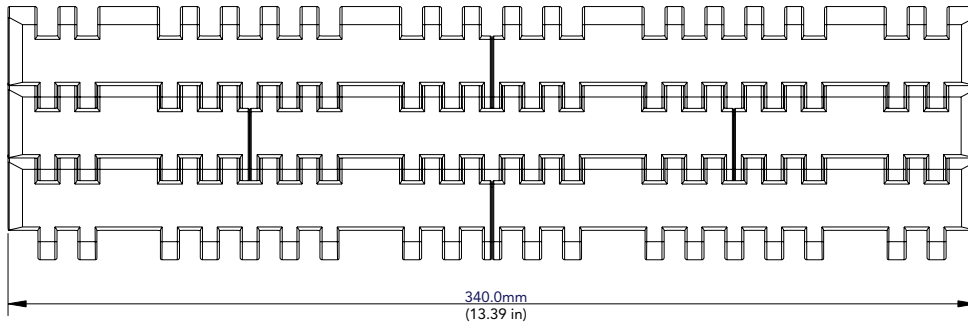
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# SPROCKET LOCATIONS

### 7700 Metric Chain Series (7705)

#### Assembled to Width — 7705



#### 7705 — 340mm — Assembled to Width

- > 7700 Metric Chain Series (7705)
- > Assembled to Width — 7705
- > 7705 — 340mm — Assembled to Width

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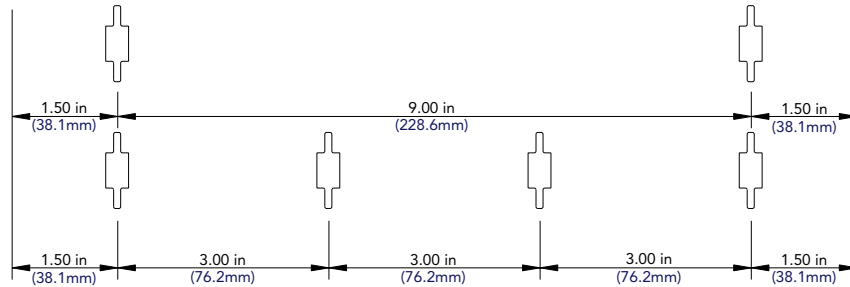
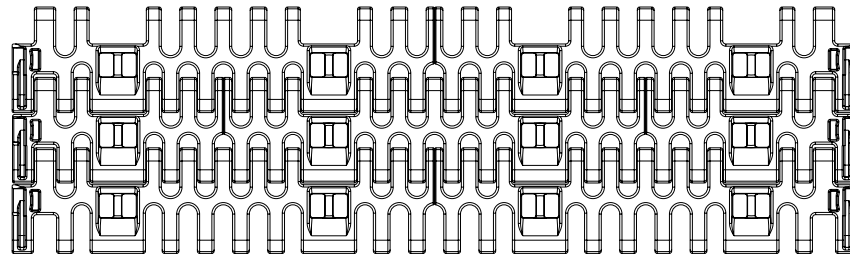
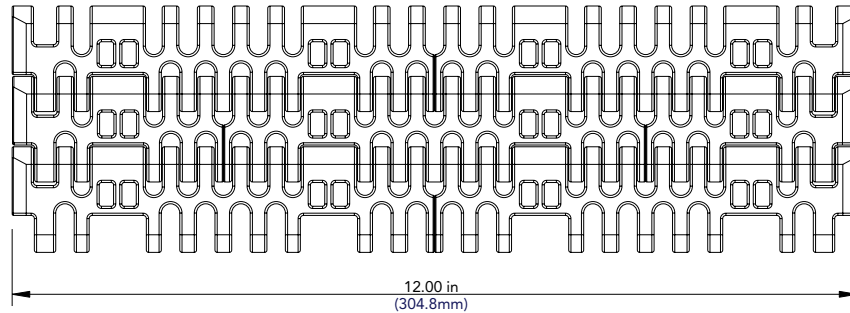
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## SPROCKET LOCATIONS

### 7700 Chain Series (7708)

#### Assembled to Width — 7708



2 Sprockets:  
0-50% Capacity

4 Sprockets:  
50-100% Capacity

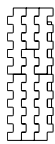
#### 7708 — 12.00 in — Assembled to Width

- > 7700 Chain Series (7708)
- > Assembled to Width — 7708
- > 7708 — 12.00 in — Assembled to Width

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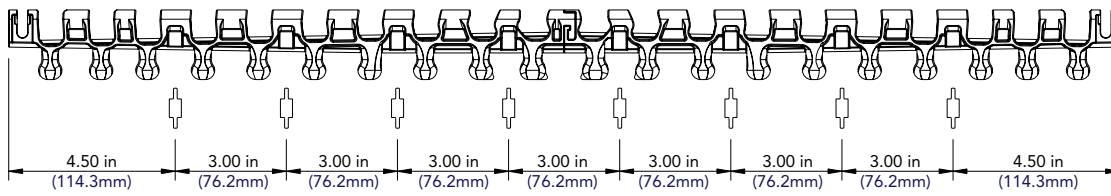


# SPROCKET LOCATIONS

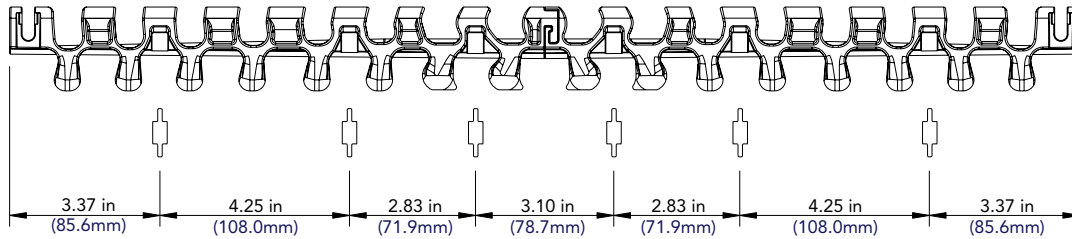
## 7956 Chain Series (7956TAB, 7956NT, 7956B and 7956GT)

### MatTop Sprocket Locations

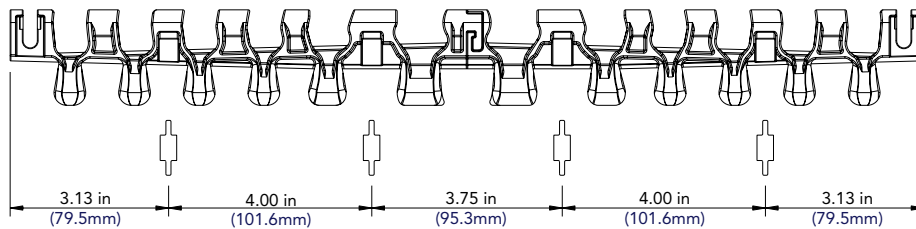
#### Molded to Width — 7956



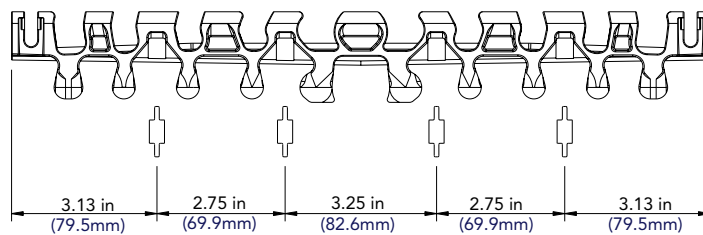
7956 — 30.00 in — MTW



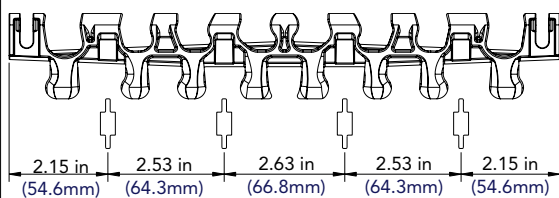
7956 — 24.00 in — MTW



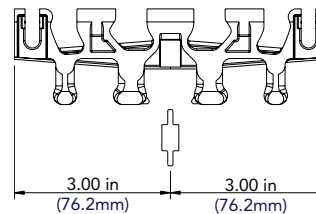
7956 — 18.00 in — MTW



7956 — 15.00 in — MTW



7956 — 12.00 in — MTW



7956 — 6.00 in — MTW

- > 7956 Chain Series (7956TAB, 7956NT, 7956B and 7956GT)
- > Molded to Width — 7956
- > 7956 — 30.00 in — MTW
- > 7956 — 24.00 in — MTW
- > 7956 — 18.00 in — MTW
- > 7956 — 15.00 in — MTW
- > 7956 — 12.00 in — MTW
- > 7956 — 6.00 in — MTW

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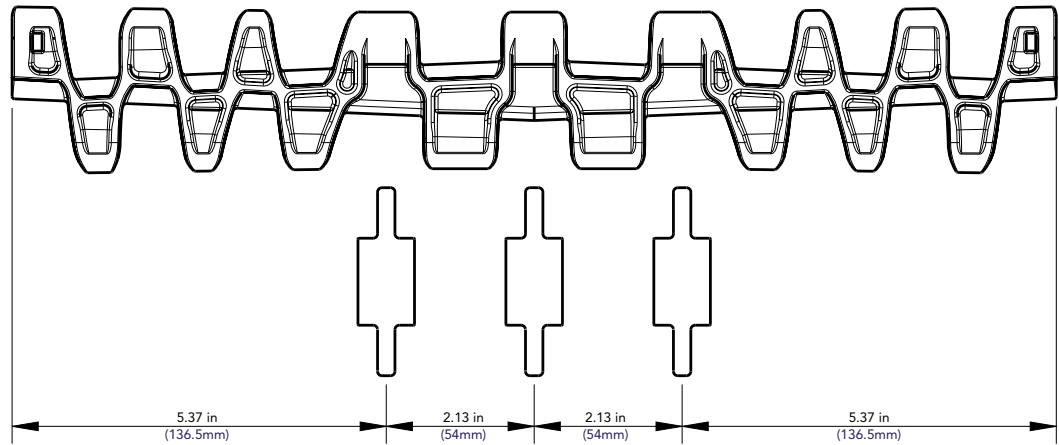
MatTop Chains



## SPROCKET LOCATIONS

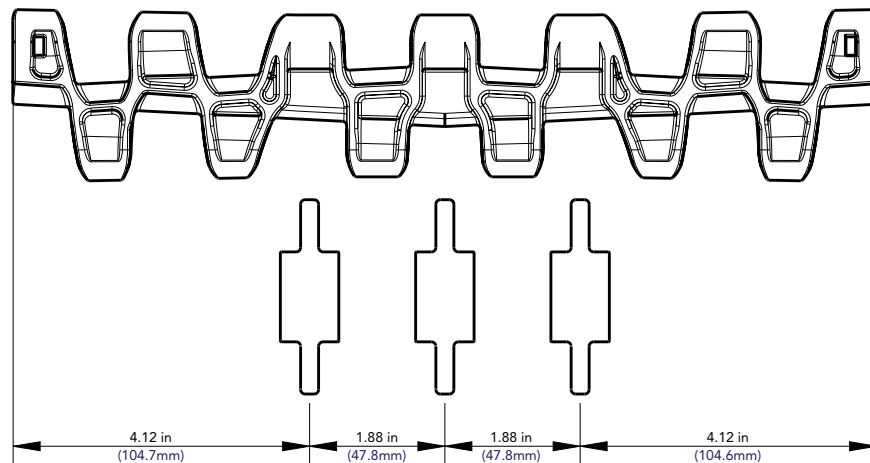
### 7960 Chain Series (7963NT/7963ST/7966NT/7966ST)

#### Molded to Width — 7960



7966 — 15.00 in — MTW

#### Molded to Width — 7960



7966 — 12.00 in — MTW

> 7960 Chain Series (7963NT/7963ST/7966NT/7966ST)

> Molded to Width — 7960

> 7966 — 15.00 in — MTW

> Molded to Width — 7960

> 7966 — 12.00 in — MTW

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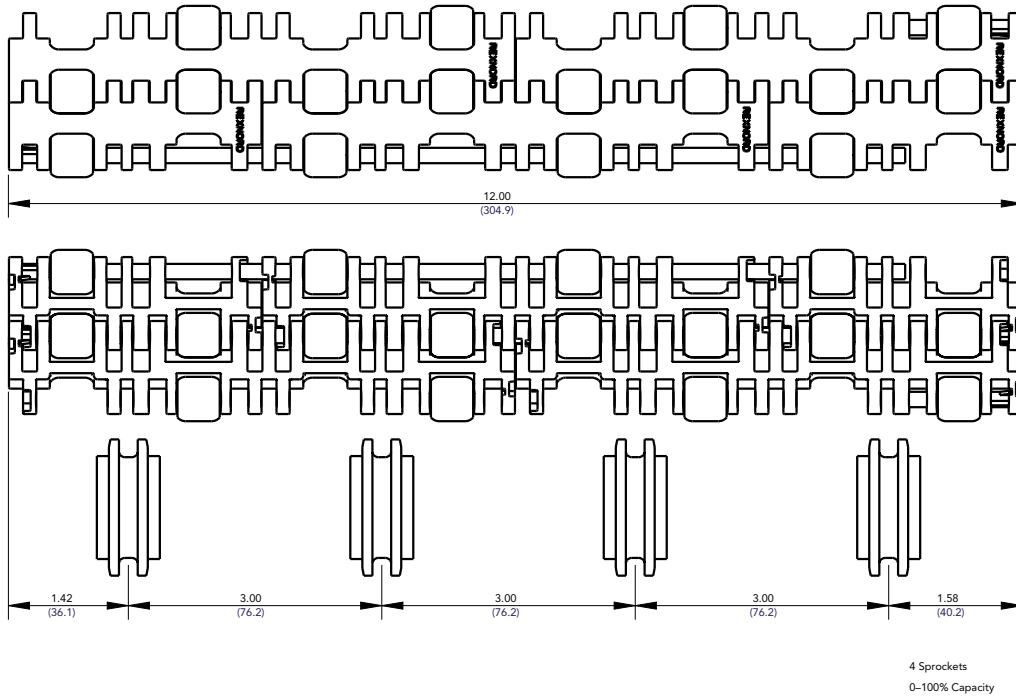


# SPROCKET LOCATIONS

## MatTop Sprocket Locations

### 8500 Chain Series (8503)

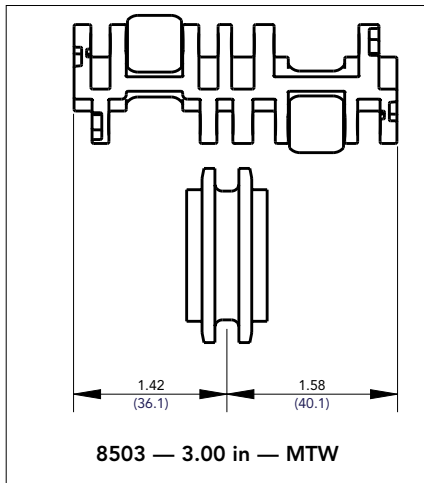
#### Assembled to Width — 8503



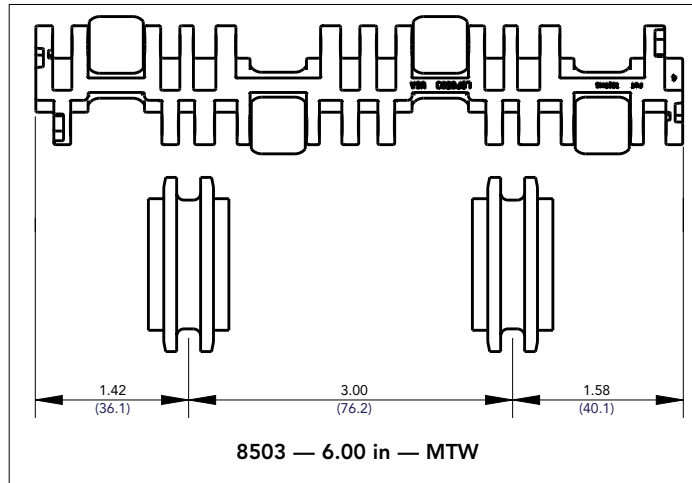
8503 — 12.00 in — Assembled to Width

- > 8500 Chain Series (8503)
- > Assembled to Width — 8503
- > 8503 — 12.00 in — Assembled to Width
- > Molded to Width — 8503
- > 8503 — 3.00 in — MTW
- > 8503 — 6.00 in — MTW

#### Molded to Width — 8503



8503 — 3.00 in — MTW



8503 — 6.00 in — MTW

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MatTop Chains

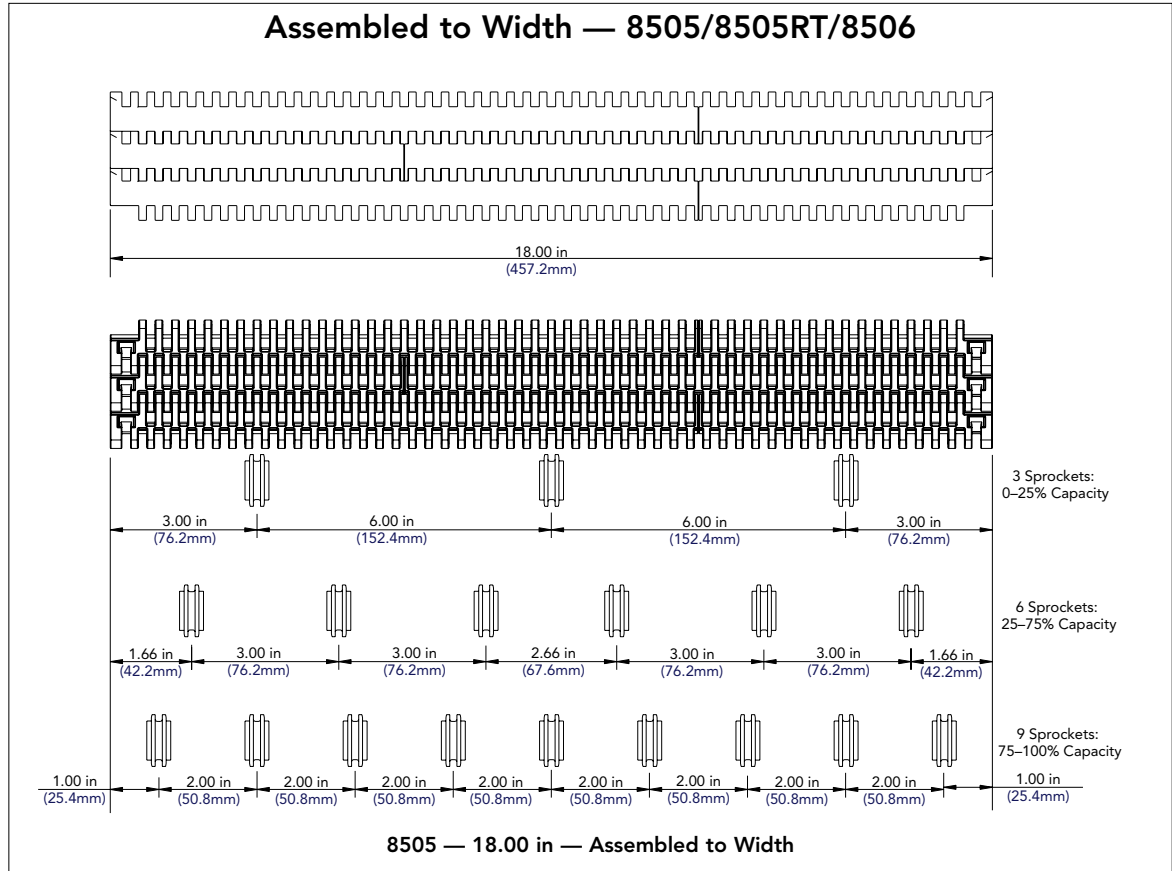
Contact Rexnord Application Engineering for more information 1.262.376.4800



# SPROCKET LOCATIONS

## 8500 Chain Series (8505/8505RT/8506)

### Assembled to Width — 8505/8505RT/8506



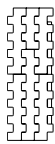
- > 8500 Chain Series (8505/8505RT/8506)
- > Assembled to Width — 8505/8505RT/8506
- > 8505 — 18.00 in — Assembled to Width

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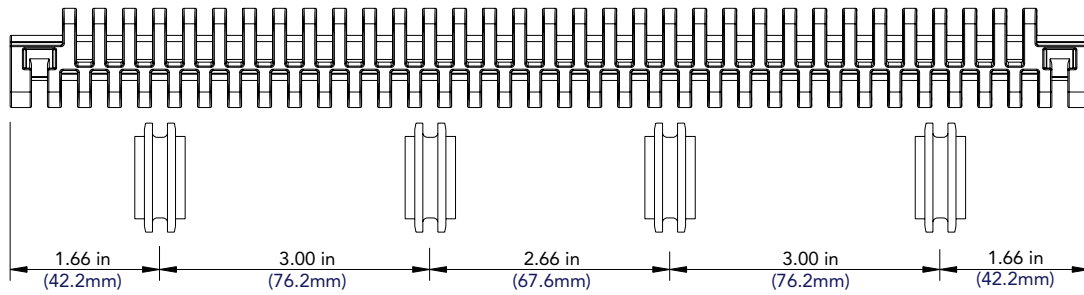


# SPROCKET LOCATIONS

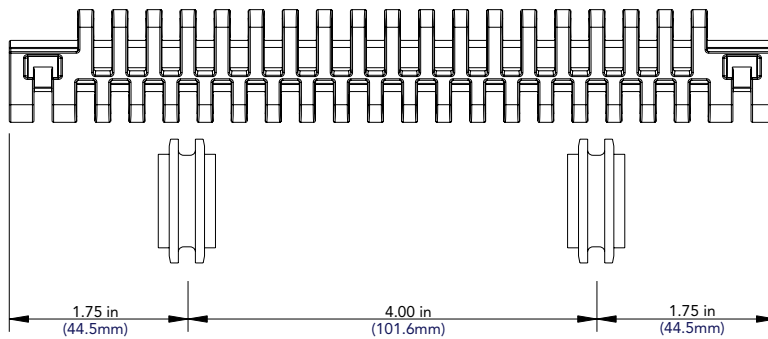
## MatTop Sprocket Locations

### 8500 Chain Series (8505/8506)

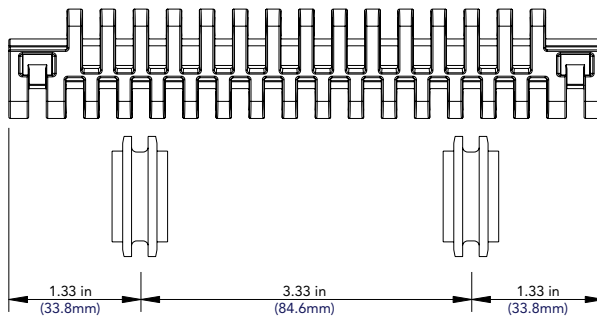
#### Molded to Width — 8505/8506



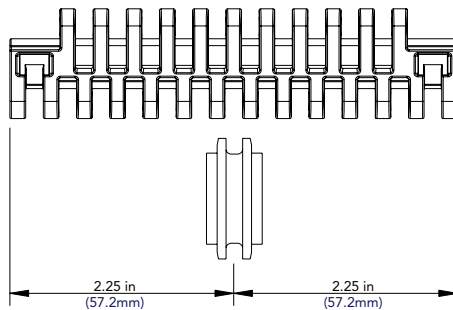
8505/8506 — 12.00 in — MTW



8505/8506 — 7.50 in — MTW



8505/8506 — 6.00 in — MTW



8505/8506 — 4.50 in — MTW

- > 8500 Chain Series (8505/8506)
- > Molded to Width — 8505/8506
- > 8505/8506 — 12.00 in — MTW
- > 8505/8506 — 7.50 in — MTW
- > 8505/8506 — 6.00 in — MTW
- > 8505/8506 — 4.50 in — MTW

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MatTop Chains

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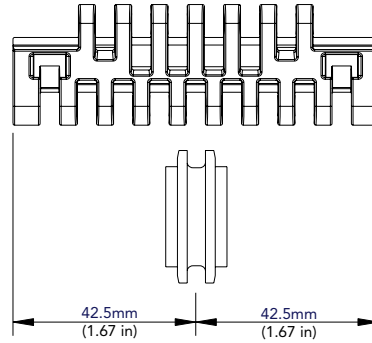
# MatTop Sprocket Locations



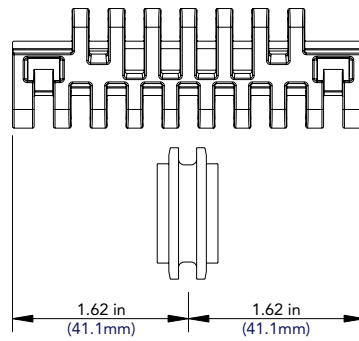
## SPROCKET LOCATIONS

### 8500 Chain Series (8505/8506)

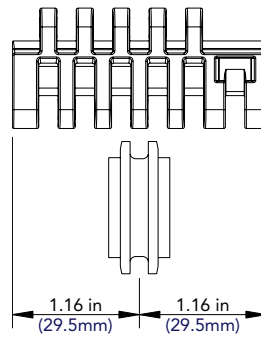
#### Molded to Width — 8505/8506



8505/8506 — 85mm — MTW



8505/8506 — 3.25 in — MTW



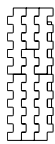
8505/8506 — 2.33 in — MTW

- > 8500 Chain Series (8505/8506 Metric/8505/8506)
- > Molded to Width — 8505/8506
- > 8505/8506 — 85mm — MTW
- > 8505/8506 — 3.25 in — MTW
- > 8505/8506 — 2.33 in — MTW

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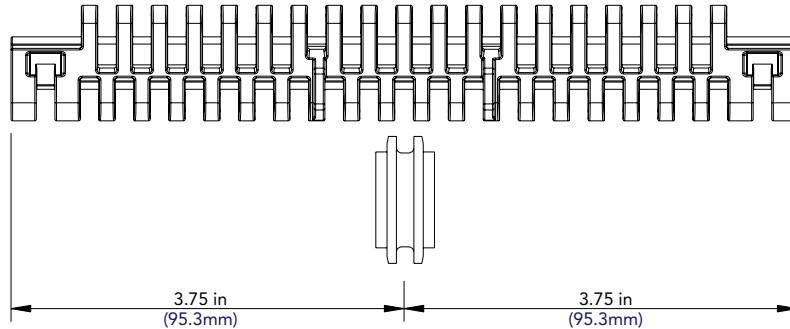
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# SPROCKET LOCATIONS

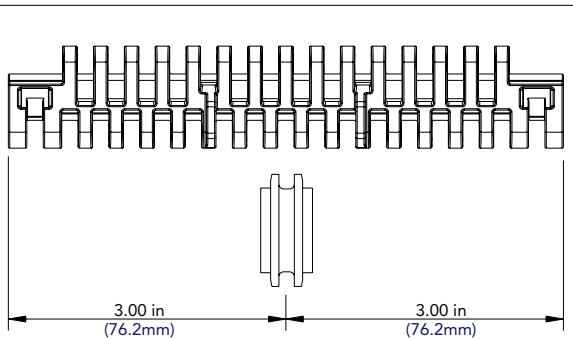
## 8500 Chain Series with Positrack Tracking Guides (8505/8506/8506 Metric)

### Molded to Width — 8505/8506

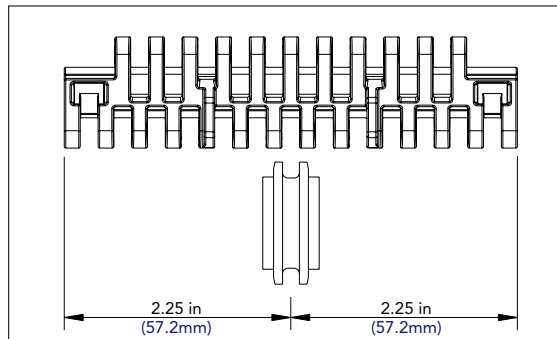


8505/8506 — 7.50 in — MTW Positrack Tracking Guides

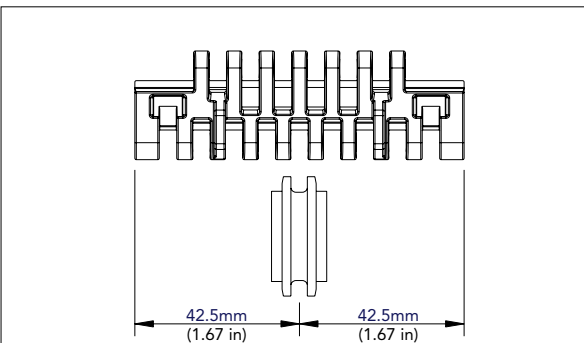
- > 8500 Chain Series with Positrack Tracking Guides (8505/8505 Metric/8506/8506 Metric)
- > Molded to Width — 8505/8506
- > 8505/8506 — 7.50 in — MTW Positrack Tracking Guides
- > 8505/8506 — 6.00 in — MTW Positrack Tracking Guides
- > 8505/8506 — 4.50 in — MTW Positrack Tracking Guides
- > 8505/8506 — 85mm — MTW Positrack Tracking Guides
- > 8505/8506 — 3.25 in — MTW Positrack Tracking Guides



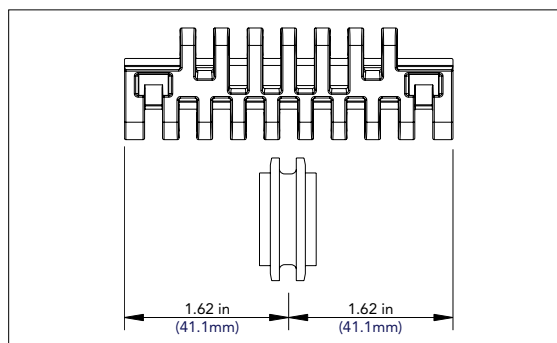
8505/8506 — 6.00 in — MTW Positrack Tracking Guides



8505/8506 — 4.50 in — MTW Positrack Tracking Guides



8505/8506 — 85mm — MTW Positrack Tracking Guides



8505/8506 — 3.25 in — MTW Positrack Tracking Guides

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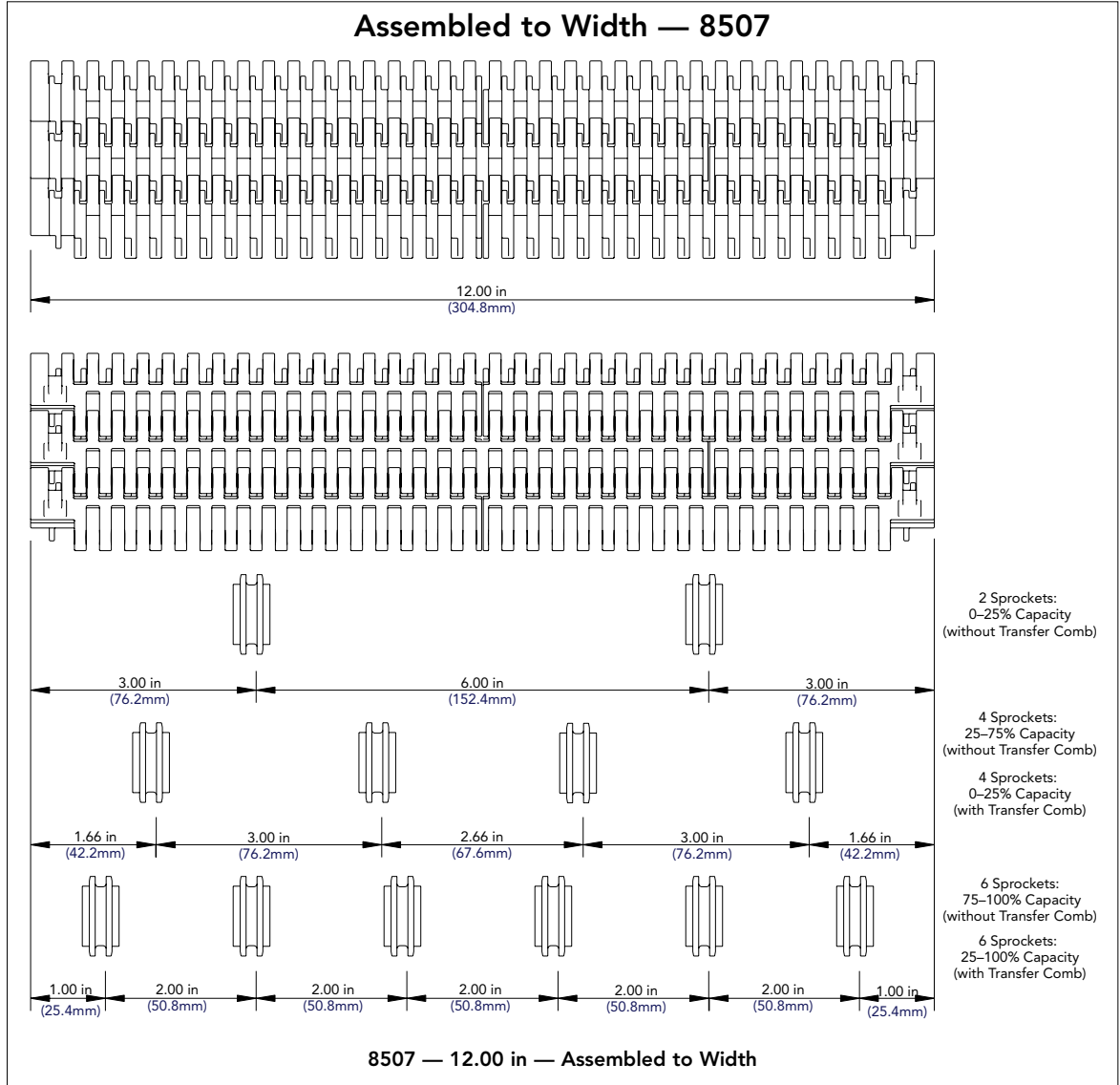
MatTop Chains



# SPROCKET LOCATIONS

## 8500 Chain Series (8507)

### Assembled to Width — 8507

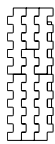


- > 8500 Chain Series (8507)
- > Assembled to Width — 8507
- > 8507 — 12.00 in — Assembled to Width

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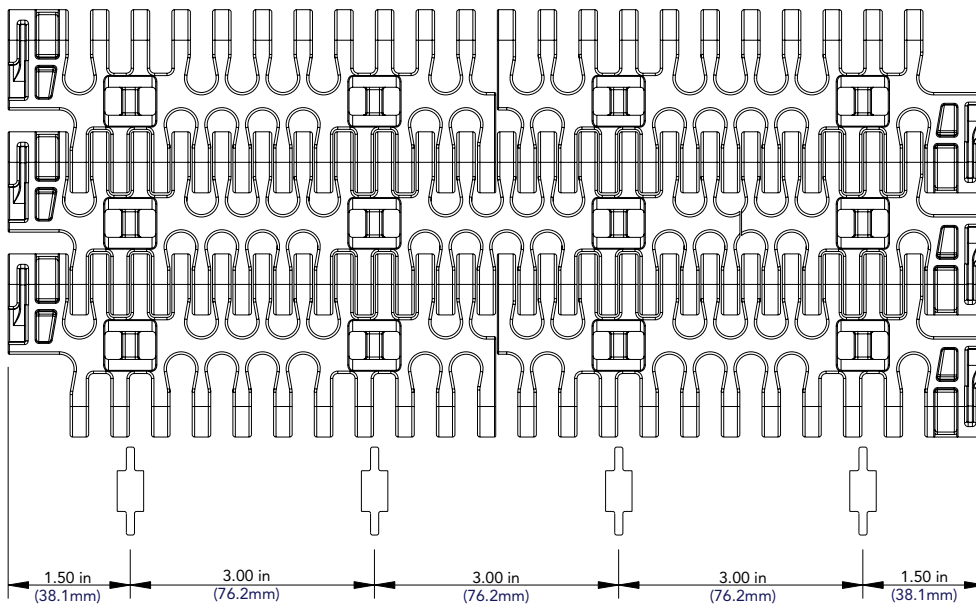
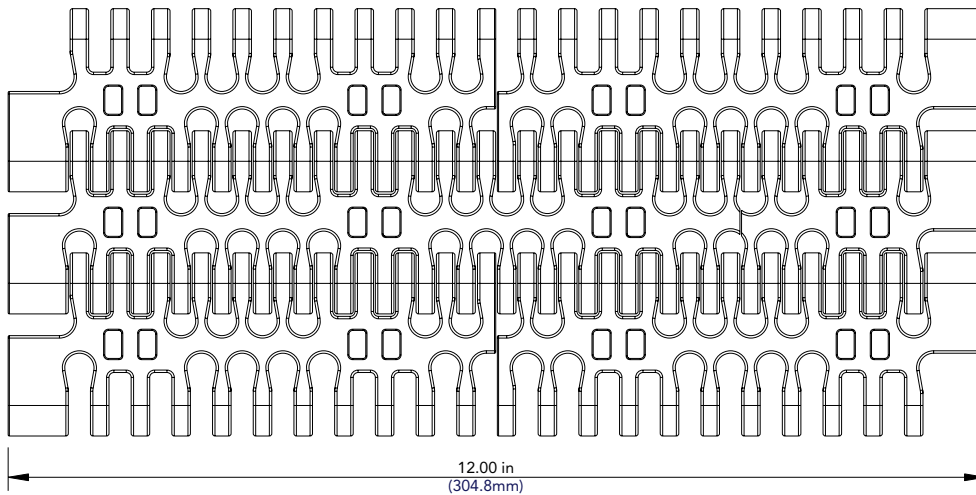
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# SPROCKET LOCATIONS

### 9600 Chain Series (9608)

#### Assembled to Width — 9608



#### 9608 — 12.00 in — Assembled to Width

- > 9600 Chain Series (9608)
- > Assembled to Width — 9608
- > 9608 — 12.00 in — Assembled to Width

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## MatTop CALCULATION PROGRAM

The MatTop Calculation Program is available to perform chain pull calculations for specific conveyor applications.

### ➤ Chain Pull Calculations

⇒ **To obtain the most recent calculation program:**

- ◆ Download from Technical Support at: <http://www.rexnord.com/flattop>
- ◆ Contact Application Engineering

⇒ **Prior to performing chain pull calculations, the following information is needed:**

- ◆ Chain style, material and width
- ◆ Drive configuration (i.e. end drive, bottom drive)
- ◆ Wearstrip material
- ◆ Corner track material (if utilizing a side-flexing chain)
- ◆ Lubrication conditions (i.e. dry, water, soap and water, oil)
- ◆ Chain speed (FPM) or (MPM)
- ◆ Product weight (lbs/ft<sup>2</sup>) or (kg/m<sup>2</sup>)
- ◆ Product material
- ◆ Percent of time product accumulation occurs (i.e. slippage)
- ◆ Portion of conveyor where product accumulation occurs
- ◆ Conveyor layout with dimensions
- ◆ Change in elevation
- ◆ Sprocket pitch diameter

⇒ **The calculation output sheet contains the following information:**

- ◆ Maximum allowable headshaft chain tension (per temperature)
- ◆ Percent of allowable chain tension (per temperature)
- ◆ Number of sprockets required per shaft
- ◆ Tension per chain width
- ◆ Total horsepower required with an assumed gearbox efficiency of 100%
- ◆ Total torque required
- ◆ Minimum shaft diameter required

- ✓ If the percent of allowable chain tension is 100% or less, your conveyor application is within chain capacity.



The horsepower requirement the program calculates is the “design horse power” that is required to power the conveyor based on the input parameters. Additional considerations should be made for the type of drive used, efficiency losses in the power train, appropriate service factors, as well as any gearbox manufacturer’s recommendations.



Rexnord recommends some sort of soft start for all FlatTop chain conveyor motors, but especially for higher speeds and conveyors with bottom drives. Hard starts add peak loads to the chain, which will shorten the service life. Hard starts can also cause the chain to stretch and bounce in the catenary sag section, sometimes causing the chain to catch in the conveyor frame and become damaged. On bottom drives, hard starts can cause the chain to fall off the drive sprockets and skip teeth.

⇒ **For a side-flexing conveyor, the calculation output sheet contains the following information:**

- ◆ Calculated corner tension (PV)
- ◆ Maximum allowable corner tension

- ✓ If the calculated corner tension is less than the maximum allowable corner tension, your conveyor application is within chain PV capacity.

⇒ **The MatTop Calculation Program calculates the following:**

- ◆ MatTop conveyor and shafting analysis
- ◆ Catenary sag vs. length vs. tension
- ◆ Catenary sag vs. length vs. excess chain
- ◆ Product backline pressure (due to accumulation)



The MatTop Calculation Program does not take environmental conditions into consideration. This calculation program **ONLY** provides information on whether the chain is within capacity.

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# MatTop CALCULATION PROGRAM

## MatTop Calculation Program

### IMPORTANT FORMULAS (Metric)

<b>Conveyor Speed</b>		<b>Product Weight</b>
<b>Containers:</b>		
Single File: Containers/m	= $\frac{1000 \text{ mm/m}}{\text{Dia. or Length of Container (mm)}}$	kg/m = Containers/m x kg/Container
m/min	= $\frac{\text{CPM}}{\text{Containers/m}}$	
<b>Mass Flow:</b>		
MatTop Chain: Containers/m <sup>2</sup>	= $\frac{1,150,000}{\text{Dia. (mm)}^2}$	<b>For MatTop Chain:</b> kg/m <sup>2</sup> = Containers/m <sup>2</sup> x kg/Container
m/min	= $\frac{\text{CPM}}{\text{Containers/m}^2 \times (\text{Width [mm]}/1000 \text{ mm/m})}$	<b>For TableTop Chain:</b> kg/m = Containers/m <sup>2</sup> x kg/Container x (Flight Width [mm]/1000mm/m)
Note: For TableTop Chain: Conveyor Width = # of Strands x Flight Width (mm) (mm)		
<b>Bulk Flow:</b>		
kg/min	= $\frac{\text{Tonnes/hour} \times 1000 \text{ kg/Tonne}}{60 \text{ min/hour}}$	kg/m <sup>2</sup> = Density (kg/m <sup>3</sup> ) x H (m)
m/min	= $\frac{\text{Density (kg/m}^3\text{)} \times \text{H (m)} \times \text{W (m)}}{1000 \text{ mm/m}}$	
<b>Knowing Headshaft RPM:</b>		
m/min	= $\frac{\text{Eff. Spkt Teeth (n)} \times \text{Pitch (mm)} \times \text{RPM}}{1000 \text{ mm/m}}$	
	OR: ~ $\frac{\text{P.D. (mm)} \times \text{Pi} \times \text{RPM}}{1000 \text{ mm/m}}$	
<b>Power</b>		<b>NOTES ON POWER:</b>
KW	= $\frac{\text{Chain Pull (n)} \times \text{m/min}}{60,000}$	For TableTop Chain: Chain Pull = chain tension x # of strands where chain tension is in newtons
	OR: = $\frac{\text{Torque (N-m)} \times \text{RPM}}{9550}$	For MatTop Chain: Chain Pull = chain tension x chain width (m) where chain tension is in N/m of MatTop chain width
<b>Sprocket Dimensions</b>		Remember to apply appropriate service factors and take drive train efficiencies into account.
Spkt P.D.	= $\frac{\text{Chain Pitch (mm)}}{\text{SIN (180/N)}}$	

### IMPORTANT FORMULAS (English)

<b>Conveyor Speed</b>		<b>Product Weight</b>
<b>Containers:</b>		
Single File: Containers/ft	= $\frac{12 \text{ in/ft}}{\text{Dia. or Length of Container (in)}}$	lbs/ft = Containers/ft x lbs/Container
FPM	= $\frac{\text{CPM}}{\text{Containers/ft}}$	
<b>Mass Flow:</b>		
Containers/ft <sup>2</sup>	= $\frac{166,277}{\text{Dia. (in)}^2}$	<b>For MatTop Chain:</b> lbs/ft <sup>2</sup> = Containers/ft <sup>2</sup> x lbs/Container
FPM	= $\frac{\text{CPM}}{\text{Containers/ft}^2 \times (\text{Width [in]}/12 \text{ in/ft})}$	<b>For TableTop Chain:</b> lbs/ft = Containers/ft <sup>2</sup> x lbs/Container x (Flight Width [in]/12in/ft)
Note: For TableTop Chain: Conveyor Width = # of Strands x Flight Width (in) (in)		
<b>Bulk Flow:</b>		
lbs/min	= $\frac{\text{TPH} \times 2000 \text{ lbs/ton}}{60 \text{ min/hour}}$	lbs/ft <sup>2</sup> = Density (lbs/ft <sup>3</sup> ) x H (ft)
FPM	= $\frac{\text{Density (lbs/ft}^3\text{)} \times \text{H (ft)} \times \text{W (ft)}}{12 \text{ in/ft}}$	
<b>Knowing Headshaft RPM:</b>		
FPM	= $\frac{\text{Eff. Spkt Teeth (n)} \times \text{Pitch (in)} \times \text{RPM}}{12 \text{ in/ft}}$	
	OR: ~ $\frac{\text{P.D. (in)} \times \text{Pi} \times \text{RPM}}{12 \text{ in/ft}}$	
<b>Horsepower</b>		<b>NOTES ON HORSEPOWER:</b>
HP	= $\frac{\text{Chain Pull (lbs)} \times \text{FPM}}{33,000}$	For TableTop Chain: Chain Pull = chain tension x # of strands Where chain tension is in lbs
	OR: = $\frac{\text{Torque (ft-lb)} \times \text{RPM}}{5252}$	For MatTop Chain: Chain Pull = chain tension x chain width (ft) Where chain tension is in lbs/ft of MatTop chain width
<b>Sprocket Dimensions</b>		Remember to apply appropriate service factors and take drive train efficiencies into account.
Spkt P.D.	= $\frac{\text{Chain Pitch (in)}}{\text{SIN (180/N)}}$	

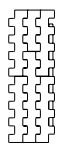
- MatTop Calculation Program
- Important Formulas

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MatTop Chains

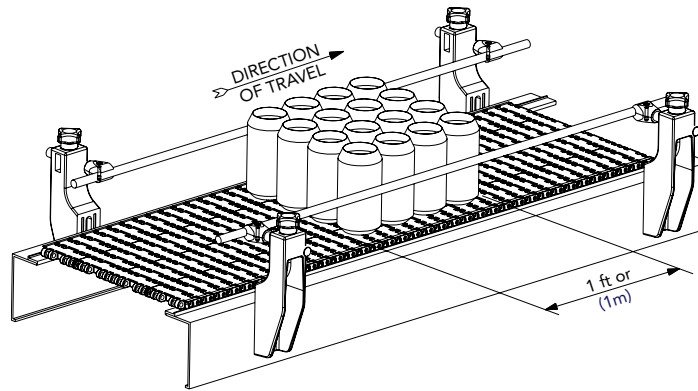


# MatTop CALCULATION PROGRAM

## ▶ Calculating Chain Speed, Given Production Output

### ▶ Unit Handling

⇒ When handling individual containers or packages, the speed of MatTop Chain is determined using the same method as for TableTop Chain (see pages EM - TT - 57 - 59). Likewise, the product weight is figured in the same manner, with one exception: for en masse (in mass) conveyors, always use the product weight per area (ft<sup>2</sup> or m<sup>2</sup>), regardless of the actual chain width.



### ▶ Example:

An incline dewatering belt must run tomatoes at a speed of 100 tons per hour (TPH) (90.7 tonnes per hour). The density of the tomatoes is 65 lbs/ft<sup>3</sup> (1041kg/m<sup>3</sup>). The chain width is 3.00 ft (0.91m) and the estimated average height of the product on the incline is 0.25 ft (0.08m).

⇒ Initial chain selection = HUV5998-36 in w/ F4 Pusher Flights every 6th Pitch

### English

$$\text{lbs/min} = \frac{\text{TPH} \times 2000 \text{ lbs/ton}}{60 \text{ min/hour}} = \frac{100 \times 2000}{60} = 3,333 \text{ lbs/min}$$

$$\text{Chain Speed (FPM)} = \frac{\text{lbs/min}}{\text{Density (lbs/ft}^3\text{)} \times \text{H (ft)} \times \text{W (ft)}} = \frac{3,333}{65 \times 0.25 \times 3.00} = 68 \text{ FPM}$$

### Metric

$$\text{kg/min} = \frac{\text{Tonnes/hour} \times 1000\text{kg/tonne}}{60 \text{ min/hour}} = \frac{90.7 \times 1000}{60} = 1512\text{kg/min}$$

$$\text{Chain Speed (MPM)} = \frac{\text{kg/min}}{\text{Density (kg/m}^3\text{)} \times \text{H (m)} \times \text{W (m)}} = \frac{1512}{1041 \times 0.08 \times 0.91} = 20\text{MPM}$$

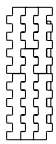
**i** The actual conveyor speeds are usually about 10–15% faster than the calculated required speed in order to provide good “product take-away” from the adjacent machinery.

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# MatTop CALCULATION PROGRAM

## ▶ Calculating Product Weight, Given Production Output

### ▶ Bulk Handling

⇒ For bulk product conveying, the chain speed depends on the production speed (tons per hour), the product density (weight or mass per unit of volume), the chain width and the estimated height of the product on the chain

**i** When calculating chain tension, the weight of product per area (lbs/ft<sup>2</sup> or kg/m<sup>2</sup>) is required.

### ▶ Example:

An incline dewatering belt must run tomatoes at a speed of 100 tons per hour (TPH) (90.7 tonnes per hour). The density of the tomatoes is 65 lbs/ft<sup>3</sup> (1041kg/m<sup>3</sup>). The chain width is 3.00 ft (0.91m) and the estimated average height of product on the incline is 0.25 ft (0.08m).

⇒ Initial chain selection = HUV5998-36 in w/ F4 Pusher Flights every 6th Pitch

#### English

$$\text{lbs/ft} = \text{Density (lbs/ft}^3\text{) x H (ft)} = 65 \times 0.25 = 16.3 \text{ lbs/ft}$$

#### Metric

$$\text{kg/m} = \text{Density (kg/m}^3\text{) x H (m)} = 1041 \times 0.08 = 83.3 \text{ kg/m}$$

**i** The actual conveyor speeds are usually about 10–15% faster than the calculated required speeds in order to provide good “product take-away” from the adjacent machinery.

⇒ The following table provides an estimate of bulk density for various produce products:

Product	Bulk Density	
	Imperial	Metric
	lb/ft <sup>3</sup>	kg/m <sup>3</sup>
Beets	44	700
Cabbage	31	500
Carrots	34	550
Parsnips	34	550
Potatoes	42	670
Pumpkins & Squash	37	600
Rutabagas & Turnips	37	600
Tomatoes — Small	42.5	681
Tomatoes — Medium	42.9	687
Tomatoes — Large	38.6	619
Tomatoes — Mixed	43.3	694
Onions	41	650

- > Calculating Product Weight, Given Production Output
- > Bulk Handling
- > Example

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# MatTop CALCULATION PROGRAM

## Typical Product Sizes and Weights

Content	Container Material	Container Size	Base Dimensions		Weight Full		Single File		En Masse		
			inches	mm	lbs	kg	lbs/ft	kg/m	lbs/ft <sup>2</sup>	kg/m <sup>2</sup>	
Dairy	Milk	Paper	1/2 Pint	3 x 3	76.2 x 76.2	0.60	0.27	2.4	3.6	-	-
		Paper	Pint	3 x 3	76.2 x 76.2	1.10	0.50	4.4	6.5	-	-
		Paper	Quart	3-1/8 x 3-1/8	79.4 x 79.4	2.30	1.04	8.8	13.1	-	-
		Paper	1/2 Gallon	4-1/8 x 4-1/8	104.8 x 104.8	4.50	2.04	13.1	19.5	-	-
		Plastic	Gallon	6 x 6	152.4 x 152.4	8.90	4.04	17.8	26.5	-	-
	Yogurt	Plastic	6 oz	2-5/8 Ø	66.7Ø	0.40	0.18	1.8	2.7	9.7	46.9
		Plastic	6 Pack / 4 oz Containers	5 x 7	127 x 177.8	1.57	0.71	3.8	5.6	-	-
	Cottage Cheese	Plastic	1/2 lb	4 Ø	101.6Ø	0.60	0.27	1.8	2.7	6.2	30.3
		Plastic	1 lb	4-3/4 Ø	120.7Ø	1.10	0.50	2.8	4.1	8.1	39.4
Plastic		2 lb	5 Ø	127Ø	2.30	1.04	5.5	8.2	15.3	74.4	
Beverages	Concentrated Juice	Paper	12 oz	2-5/8 Ø	66.7Ø	1.00	0.45	4.6	6.8	24.1	117.2
	Juice	Plastic	Gallon	6 Ø	152.4Ø	1.17	0.53	2.3	3.5	5.4	26.3
		Glass	Gallon	6 Ø	152.4Ø	3.59	1.63	7.2	10.7	16.6	80.6
		Paper	6.75 oz Box (Tetra)	1-1/2 x 2-1/4	38.1 x 57.2	0.48	0.22	3.8	5.7	-	-
		Plastic	10 Pack / 6.75 Boxes (Tetra)	3 x 10-1/2	76.2 x 266.7	4.87	2.21	19.5	29.0	-	-
	Soft Drink	Aluminum	250ml PET	2-5/64 Ø	52.9Ø	0.63	0.29	3.6	5.4	24.3	117.4
		Aluminum	12 oz	2.6 Ø	66.0Ø	0.85	0.39	3.9	5.8	20.9	101.8
		Plastic	500ml PET	2-37/64 Ø	65.5Ø	1.16	0.53	5.4	8.0	29.0	141.0
		Plastic	20 oz PET	2-7/8 Ø	73.0Ø	1.37	0.62	5.7	8.5	27.6	134.1
		Plastic	1 Liter PET	3-3/16 Ø	81.0Ø	2.31	1.05	8.7	12.9	37.8	183.7
		Plastic	1-1/2 Liter PET	4-3/16 Ø	106.4Ø	3.40	1.54	9.7	14.5	32.2	156.7
		Plastic	2 Liter PET	4-1/2 Ø	114.3Ø	4.40	2.00	11.7	17.5	36.1	175.7
	Beer	Plastic	3 Liter PET	5-1/8 Ø	130.2Ø	6.38	2.89	14.9	22.2	40.4	196.3
		Glass	12 oz	2-1/2 Ø	63.5Ø	1.50	0.68	7.2	10.7	39.9	194.0
		Glass	12 oz Non-Returnable	2-3/4 Ø	69.9Ø	1.20	0.54	5.2	7.8	26.4	128.1
		Glass	16 oz Non-Returnable	2-3/4 Ø	69.9Ø	1.60	0.73	7.0	10.4	35.2	170.8
		Glass	32 oz	2-5/8 Ø	66.7Ø	3.40	1.54	15.5	23.1	82.0	398.6
		Glass	64 oz	3-5/8 Ø	92.1Ø	3.88	1.76	12.8	19.1	49.1	238.6
		Aluminum	12 oz	2.6 Ø	66.0Ø	0.85	0.39	3.9	5.8	20.9	101.8
		Paper	12 Pack / 12 oz Cans	10-3/4 x 7-3/4	273.1 x 196.9	10.40	4.72	11.6	17.3	-	-
		Paper	12 Pack Fridge Pack	16 x 4-7/8	406.4 x 123.8	10.32	4.68	7.7	11.5	-	-
		Paper	24 Pack / 12 oz Cans	16 x 10-3/4	406.4 x 273.1	20.16	9.14	15.1	22.5	-	-
		Paper	24 Pack / 12 oz Cans (cube)	10-3/4 x 7-3/4	273.1 x 196.9	20.16	9.14	22.5	33.5	-	-
		Paper	18 Pack / 12 oz Cans	16 x 7-3/4	406.4 x 196.9	14.69	6.66	11.0	16.4	-	-
		Paper	30 Pack / 12 oz Cans	13-1/2 x 7-3/4	342.9 x 196.9	24.48	11.10	21.8	32.4	-	-
		Wine / Champagne	Glass	750ml	2-7/8 Ø	73.0Ø	2.88	1.31	12.0	17.9	57.9
	Glass		1.5 Liter	4-1/4 Ø	108.0Ø	6.37	2.89	18.0	26.8	58.6	284.9
	Glass		12 oz	2-1/2 Ø	63.5Ø	1.22	0.55	5.9	8.7	32.5	157.8
	Paper		4 Pack / 12 oz Bottles	5-1/8 x 5-1/4	130.2 x 133.4	5.07	2.30	11.9	17.7	-	-
	Coffee	Metal	1/2 lb	4-1/8 Ø	104.8Ø	0.80	0.36	2.3	3.5	7.8	38.0
Metal		1 lb	4-1/8 Ø	104.8Ø	1.30	0.59	3.8	5.6	12.7	61.7	
Metal		2 lb	5-1/4 Ø	133.4Ø	2.50	1.13	5.7	8.5	15.1	73.3	
Metal		3 lb	6-1/4 Ø	158.8Ø	3.80	1.72	7.3	10.9	16.2	78.6	
Food	Baby Food	Glass	Regular	2-3/8 Ø	60.3Ø	0.56	0.25	2.8	4.2	16.5	80.3
	Baby Food	Glass	Junior	2-3/8 Ø	60.3Ø	0.80	0.36	4.0	6.0	23.6	114.8
	Soup	Metal	10.5 oz	2-5/8 Ø	66.7Ø	0.76	0.34	3.5	5.2	18.3	89.1
	Soup	Metal	18.5 oz	3-1/8 Ø	79.4Ø	1.33	0.60	5.1	7.6	22.6	110.0
	Soup	Metal	32 oz	4 Ø	101.6Ø	1.90	0.86	5.7	8.5	19.7	96.0
	Cracker	Paper	10 oz Box	2-1/4 x 5-1/4	57.2 x 133.4	0.72	0.33	3.8	5.7	-	-
	Peanut Butter	Plastic	18 oz	3 Ø	76.2Ø	1.15	0.52	4.6	6.8	21.2	103.3
	Jelly	Glass	32 oz	3-5/16 Ø	84.1Ø	2.15	0.98	7.8	11.6	32.6	158.6
	Jelly	Glass	18 oz	2-5/8 Ø	66.7Ø	1.62	0.73	7.4	11.0	39.1	189.9
	Catsup	Plastic	24 oz	2-1/4 x 3-3/4	57.2 x 95.3	1.63	0.74	8.7	12.9	-	-
	Apple Sauce	Glass	23 oz	3-5/16 Ø	84.1Ø	2.05	0.93	7.4	11.1	31.1	151.2
	Mayonnaise	Glass	32 oz	4 Ø	101.6Ø	3.03	1.37	9.1	13.5	31.5	153.1
	Cereal	Paper	14 oz Box	2-3/8 x 7-1/2	60.3 x 190.5	1.06	0.48	5.4	8.0	-	-
	Vegetable	Metal	14.5 oz	2-15/16 Ø	74.6Ø	1.04	0.47	4.2	6.3	20.0	97.5
	Tuna	Metal	12 oz Can	4 Ø	101.6Ø	0.88	0.40	2.6	3.9	9.1	44.5
Tomato Sauce	Metal	29 oz	4 Ø	101.6Ø	2.07	0.94	6.2	9.2	21.5	104.6	
Cleaners	Dish Soap	Plastic	25 oz	2-7/16 x 3-3/8	61.9 x 85.7	1.78	0.81	8.8	13.0	-	-
	Liquid Laundry Soap	Plastic	22 oz	2 x 3-3/8	50.8 x 85.7	1.60	0.73	9.6	14.3	-	-
	Liquid Laundry Soap	Plastic	32 oz	2-5/8 x 4-1/2	66.7 x 114.3	2.30	1.04	10.5	15.6	-	-
	Liquid Laundry Soap	Plastic	100 oz	5-1/2 x 7-3/4	139.7 x 196	7.01	3.18	15.3	22.8	-	-
	Liquid Bleach	Plastic	Quart	3-1/4 Ø	82.6Ø	2.40	1.09	8.9	13.2	37.8	183.5
	Liquid Bleach	Plastic	1/2 Gallon	4-3/4 Ø	120.7Ø	4.80	2.18	12.1	18.0	35.4	171.9
	Liquid Bleach	Plastic	Gallon	6-1/4 Ø	158.8Ø	9.50	4.31	18.2	27.1	40.4	196.5
Toiletries	Liquid Bleach	Plastic	182 oz	7-1/4 Ø	184.2Ø	8.16	3.70	13.5	20.1	25.8	125.5
	Toilet Paper	Paper	Individual Roll	4-1/4 Ø	108.0Ø	0.23	0.10	0.6	1.0	2.1	10.3
	Toilet Paper	Plastic	4 Pack	4-1/4 x 8-1/2	108 x 215.9	0.93	0.42	2.6	3.9	-	-
Automotive	Toilet Paper	Plastic	24 Pack	12 x 15-1/2	304.8 x 393.7	5.67	2.57	5.7	8.4	-	-
	Tire	Passenger	Typical	28 Ø	711.2Ø	35.00	15.87	-	-	-	-
	Tire	Truck	Typical	48 Ø	1219.2Ø	150.00	68.03	-	-	-	-

> Typical Product Sizes and Weights

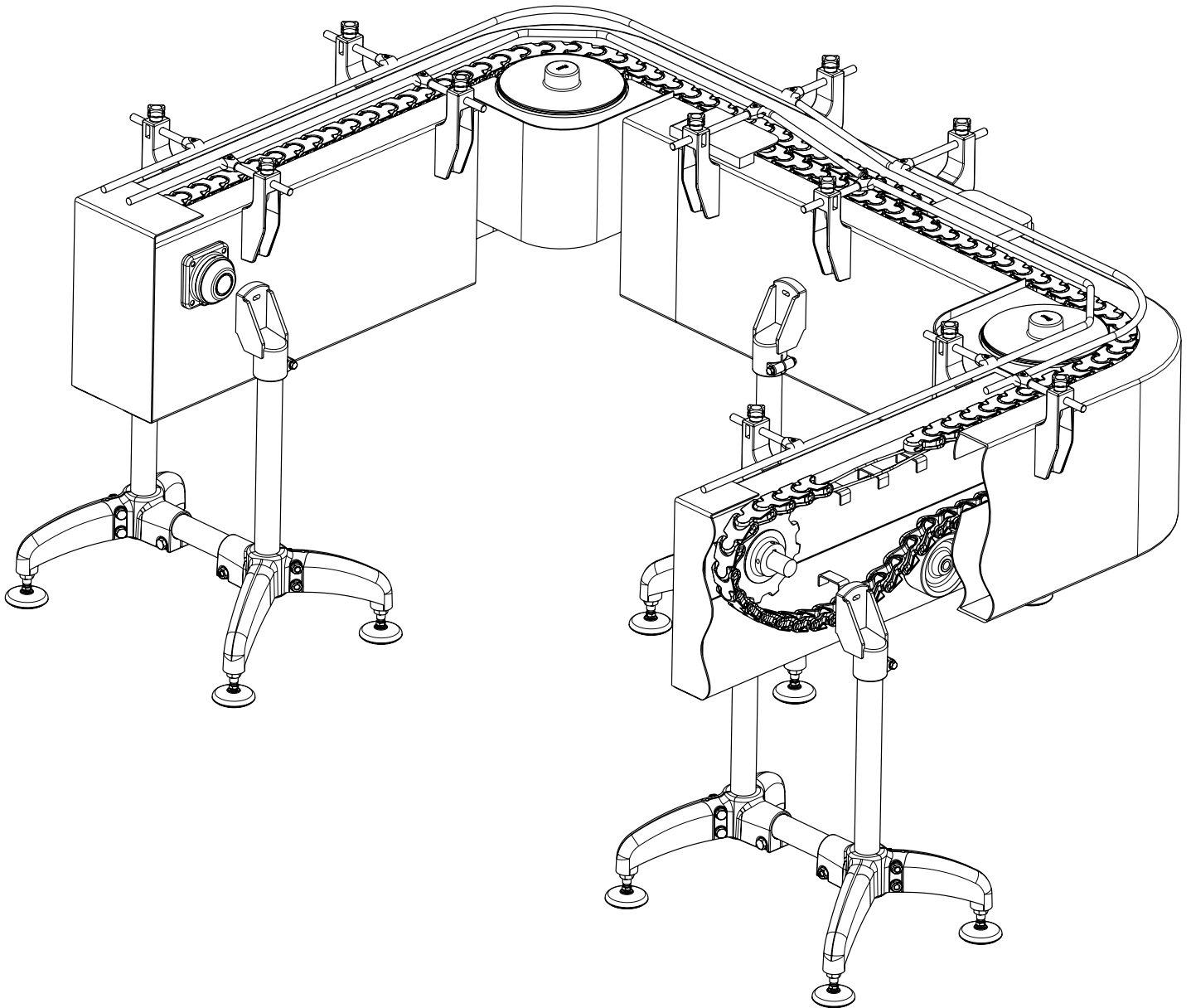
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MatTop Chains

# Multiflex Chains





For more detailed material information, see page EM - MF - 14 or the Appendix located at the end of this manual.

Materials vary per chain series; see Product Catalog to determine standard versus special materials.

## ➤ Acetal Family

### ➤ D and WD (Acetal)

⇒ Plain acetal

### ➤ MLF

⇒ Cost-effective general purpose chain material

⇒ Suitable for slower speeds

### ➤ LF and WLF (Low-Friction)

⇒ Patented blend of acetal that provides good wear resistance and long service life due to the low coefficient of friction

### ➤ HP and WHP (High Performance)

⇒ Patented blend of acetal specifically formulated for dry-running conveyors due to excellent friction characteristics

### ➤ PS (Platinum Series)

⇒ Patented blend of acetal specially formulated for high-speed conveying applications

### ➤ PSX (Platinum Series X)

⇒ High-speed conveying with little to no external lubrication

⇒ Long wear life with minimal dusting

### ➤ XLG (Low-Friction Acetal, Green)

⇒ Internally lubricated extra low-friction acetal

### ➤ XLA (Low-Friction Acetal, Gray)

⇒ Internally lubricated extra low-friction acetal

## ➤ Metal Family

### ➤ AC (Armour Clad)

⇒ Austenitic stainless steel cladding available with a variety of plastic link materials

⇒ Excellent for conveying raw castings, rough parts

## ➤ Specialty Plastics

### ➤ AS (Anti-Static)

⇒ An electrically conductive acetal formulated to reduce or eliminate nuisance static charge

⇒ **ALWAYS** contact Rexnord Application Engineering for assistance

### ➤ HCAS (High Capacity Anti-Static)

⇒ Reduces or eliminates nuisance static

⇒ High capacity acetal resin, requires 10% derate from acetal counterparts

### ➤ BIR (Black Impact-Resistant)

⇒ Specifically formulated to take constant impact

### ➤ ESD (Electrostatic Dissipative)

⇒ Polypropylene formulated for conveying sensitive products such as electronics and computer chips where controlling static charge or static decay is critical

⇒ **ALWAYS** contact Rexnord Application Engineering for assistance

### ➤ HC-ESD (High Capacity, Electrostatic Dissipative)

⇒ High capacity polypropylene formulated for conveying sensitive products such as electronics and computer chips where controlling static charge or static decay is critical

⇒ Requires 10% derate from polypropylene counterparts

⇒ **ALWAYS** contact Rexnord Application Engineering for assistance

### ➤ FTR (Black, Fryer Temperature-Resistant)

⇒ Formulated to be used in oven/fryer discharge conveyor applications such as snack chips

- > Acetal Family
- > D and WD (Acetal)
- > MLF
- > LF and WLF (Low-Friction)
- > HP and WHP (High Performance)
- > PS (Platinum Series)
- > PSX (Platinum Series X)
- > XLG (Low-Friction Acetal, Green)
- > XLA (Low-Friction Acetal, Gray)
- > Metal Family
- > AC (Armour Clad)
- > Specialty Plastics
- > AS (Anti-Static)
- > HCAS (High Capacity Anti-Static)
- > BIR (Black Impact-Resistant)
- > ESD (Electrostatic Dissipative)
- > HC-ESD (High Capacity, Electrostatic Dissipative)
- > FTR (Black, Fryer Temperature-Resistant)

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# CHAIN MATERIALS

## ▶ GTC (Grey Tough Composite)

- ⇒ High-strength, impact modified composite
- ⇒ High impact resistance, low strength

## ▶ USP (Ultra-Stabilized Polypropylene, Dark Green)

- ⇒ Superior resistance to chemicals used in pasteurizers, warmers and coolers
- ⇒ Remains stronger and more flexible than standard polypropylene

## ▶ BWR (Black Wear-Resistant)

- ⇒ BWR may extend chain life up to 5 times in comparison to other plastic materials in applications such as conveying rough machined parts

## ▶ WX/BWX (Abrasion-Resistant)

- ⇒ A nylon material formulated to be used in abrasive applications where chain is subjected to abrasives such as glass, sand and dirt

## ▶ P (Chemical-Resistant)

- ⇒ A polyester formulated to reduce or eliminate material degradation in applications where chemicals such as chlorine and phosphorous are present in moderate concentrations

## ▶ CR (Extreme Chemical-Resistant)

- ⇒ Fluorinated polymer that is chemically resistant to high concentrations of oxidizing agents, acids and bases

## ▶ DUV (Ultraviolet-Resistant)

- ⇒ Specially formulated acetal
- ⇒ Used for outdoor applications with direct exposure to the sun or UV radiation

## ▶ MR (Melt-Resistant)

- ⇒ A nylon material with a high melting point used to prevent hot objects (product temperature up to 375°F [190°C]) from melting the surface of the chain

## ▶ FR (Flame-Retardant)

- ⇒ Flame-retardant polyester that meets the requirements of UL Standard 94 V-0 rated combustion

## ▶ HS (Heat-Stabilized)

- ⇒ Nylon resin designed for environments that

contain hot water spray (rinsers, sterilizer and pasteurizer applications)

## ▶ BSM

- ⇒ Acetal-based resin with superior wear and cut resistance
- ⇒ Suitable for both dry and wet conditions



Since materials vary in strength, refer to the Product Catalog (8rxCAT-en) for specific chain / material strengths when changing out materials.



Not all materials are available in all chains. Contact Rexnord Application Engineering for further assistance.

## Multiflex Conveyor Chain Materials

- > GTC (Grey Tough Composite)
- > USP (Ultra-Stabilized Polypropylene, Dark Green)
- > BWR (Black Wear-Resistant)
- > WX/BWX (Abrasion-Resistant)
- > P (Chemical-Resistant)
- > CR (Extreme Chemical-Resistant)
- > DUV (Ultraviolet-Resistant)
- > MR (Melt-Resistant)
- > FR (Flame-Retardant)
- > HS (Heat-Stabilized)
- > BSM

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Multiflex Chains

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# FRICITION TABLE BETWEEN CHAIN AND PRODUCT (Fm)

> Friction Table  
Between Chain and  
Product (Fm)

Base Material	Chain Material		Product Material							
	Chain Material	Lubrication Condition	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink)	Plastic (PET)	Steel	
Acetal	PS	Dry Water	0.18	0.20	0.12	0.23	0.18	0.16	0.18	
			0.14	0.18	0.11	NR	0.16	0.15	0.16	
		Soap & Water Oil	0.12	0.14	0.10	NR	0.14	0.14	0.13	
			-	-	-	NR	-	-	0.10	
	PSX	Dry Water	Soap & Water Oil	0.16	0.20	0.12	0.23	0.18	0.16	0.16
				0.13	0.18	0.11	NR	0.16	0.15	0.14
		Soap & Water Oil	0.12	0.14	0.10	NR	0.14	0.14	0.12	
			-	-	-	NR	-	-	0.10	
	HP, WHP	Dry Water	Soap & Water Oil	0.18	0.20	0.12	0.23	0.18	0.18	0.18
				0.14	0.18	0.11	NR	0.16	0.16	0.16
		Soap & Water Oil	0.12	0.14	0.10	NR	0.14	0.14	0.13	
			-	-	-	NR	-	-	0.10	
	LF, WLF, XL, XLA, XLG	Dry Water	Soap & Water Oil	0.20	0.20	0.15	0.30	0.20	0.20	0.25
				0.15	0.18	0.13	NR	0.18	0.18	0.20
		Soap & Water Oil	0.12	0.14	0.10	NR	0.15	0.15	0.15	
			-	-	-	NR	-	-	0.10	
	D, WD, MLF	Dry Water	Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
				0.17	0.20	0.15	NR	0.20	0.20	0.22
		Soap & Water Oil	0.12	0.14	0.10	NR	0.15	0.15	0.15	
			-	-	-	NR	-	-	0.10	
	AS, HCAS	Dry Water	Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
				NR	NR	NR	NR	NR	NR	NR
		Soap & Water Oil	NR	NR	NR	NR	NR	NR	NR	
			NR	NR	NR	NR	NR	NR	NR	
	WSA, GSA, BSA	Dry Water	Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
				0.17	0.18	0.15	NR	0.20	0.20	0.22
		Soap & Water Oil	0.12	0.14	0.10	NR	0.15	0.15	0.15	
			-	-	-	NR	-	-	0.10	
	WSM, BSM, SMB	Dry Water	Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
				0.17	0.18	0.15	NR	0.20	0.20	0.22
		Soap & Water Oil	0.12	0.14	0.10	NR	0.15	0.15	0.15	
			-	-	-	NR	-	-	0.10	
	DUV	Dry Water	Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
				0.17	0.18	0.15	NR	0.20	0.20	0.22
		Soap & Water Oil	0.12	0.14	0.10	NR	0.15	0.15	0.15	
			-	-	-	NR	-	-	0.10	
Metal	SS, SSC	Dry Water	0.34	0.35	0.33	0.43	0.31	0.30	0.38	
			0.27	0.30	0.29	NR	0.22	0.21	0.30	
		Soap & Water Oil	0.14	0.15	0.15	NR	0.15	0.14	0.15	
			-	-	-	NR	-	-	-	
	S	Dry Water	Soap & Water Oil	0.34	0.35	0.33	0.43	0.31	0.30	0.38
				NR	NR	NR	NR	NR	NR	NR
		Soap & Water Oil	NR	NR	NR	NR	NR	NR	NR	
			0.10	0.10	NR	NR	NR	NR	0.10	
	SSB	Dry Water	Soap & Water Oil	0.28	0.47	0.35	0.40	0.30	0.30	0.35
				0.19	0.31	0.25	NR	0.20	0.20	0.25
		Soap & Water Oil	0.12	0.21	0.15	NR	0.10	0.10	0.15	
			-	-	-	NR	-	-	0.15	
Nylon	WX/BWX	Dry Water	0.25	0.27	0.20	0.33	0.25	0.25	0.30	
			NR	NR	NR	NR	NR	NR	NR	
		Soap & Water Oil	NR	NR	NR	NR	NR	NR	NR	
			-	-	-	NR	-	-	-	
	MR/FTR	Dry Water	Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
				NR	NR	NR	NR	NR	NR	NR
		Soap & Water Oil	NR	NR	NR	NR	NR	NR	NR	
			-	-	-	NR	-	-	0.10	
	BWR	Dry Water	Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
				NR	NR	NR	NR	NR	NR	NR
		Soap & Water Oil	NR	NR	NR	NR	NR	NR	NR	
			-	-	-	NR	-	-	0.10	
	HS	Dry Water	Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
				0.17	0.18	0.15	NR	0.20	0.20	0.22
		Soap & Water Oil	0.12	0.14	0.10	NR	0.15	0.15	0.15	
			-	-	-	NR	-	-	0.10	

NR denotes "not recommended"

Dash denotes "combination not tested"

**i** All values shown in this table were obtained through product testing. Actual values may be higher or lower depending on environmental conditions.

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# FRICITION TABLE BETWEEN CHAIN AND PRODUCT (Fm)

**Multiflex  
Conveyor  
Chain  
Materials**

> Friction Table  
Between Chain and  
Product (Fm)

Base Material	Chain Material		Product Material						
	Chain Material	Lubrication Condition	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink)	Plastic (PET)	Steel
Polyester	TC	Dry Water Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
			0.17	0.18	0.15	NR	0.21	0.21	0.23
			0.12	0.14	0.10	NR	0.15	0.15	0.15
			-	-	-	NR	0.10	0.10	0.10
	P	Dry Water Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
			0.17	0.18	0.15	NR	0.21	0.21	0.22
			0.12	0.14	0.10	NR	0.15	0.10	0.15
			-	-	-	NR	-	-	0.10
	FR	Dry Water Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
			0.17	0.18	0.15	NR	0.20	0.20	0.22
			0.12	0.14	0.10	NR	0.15	0.15	0.15
			-	-	-	NR	-	-	0.10
Fluorinated Polymer	CR	Dry Water Soap & Water Oil	0.25	0.27	0.20	0.33	0.25	0.25	0.30
			0.17	0.18	0.15	NR	0.20	0.20	0.22
			0.12	0.14	0.10	NR	0.15	0.15	0.15
			-	-	-	NR	-	-	0.10
Polypropylene	HT, WHT, RHT, KHT, HTB, BHT, YP, XP, USP	Dry Water Soap & Water Oil	0.29	0.29	0.24	0.35	0.32	0.28	0.31
			0.19	0.21	0.18	NR	0.24	0.20	0.25
			0.15	0.14	0.10	NR	0.19	0.15	0.17
			-	-	-	NR	-	-	0.10
	WHA, BHA	Dry Water Soap & Water Oil	0.28	0.29	0.22	0.35	0.30	0.30	0.35
			0.19	0.21	0.17	NR	0.25	0.25	0.25
			0.16	0.14	0.10	NR	0.20	0.20	0.20
			-	-	-	NR	-	-	0.10
	ESD	Dry Water Soap & Water Oil	0.28	0.29	0.22	0.35	0.30	0.30	0.35
			0.19	0.21	0.17	NR	0.25	0.25	0.25
			0.16	0.12	0.10	NR	0.20	0.20	0.20
			-	-	-	NR	-	-	0.10
	THD	Dry Water Soap & Water Oil	0.28	0.29	0.22	0.35	0.30	0.30	0.35
			0.19	0.21	0.17	NR	0.25	0.25	0.25
			0.16	0.14	0.10	NR	0.20	0.20	0.20
			-	-	-	NR	-	-	0.10
	HUV	Dry Water Soap & Water Oil	0.28	0.29	0.22	0.35	0.30	0.30	0.35
			0.19	0.21	0.17	NR	0.25	0.25	0.25
			0.16	0.14	0.10	NR	0.20	0.20	0.20
			-	-	-	NR	-	-	0.10
	UHS, YPR	Dry Water Soap & Water Oil	0.30	0.29	0.25	0.35	0.32	0.30	0.35
			0.19	0.21	0.19	NR	0.24	0.25	0.25
			0.16	0.14	0.10	NR	0.19	0.20	0.20
			-	-	-	NR	-	-	0.10
Polyethylene	WLT, BLT, LT	Dry Water Soap & Water Oil	0.22	0.24	0.18	0.30	0.22	0.22	0.28
			0.17	0.17	0.14	NR	0.18	0.18	0.22
			0.12	0.14	0.10	NR	0.15	0.15	0.15
			-	-	-	NR	-	-	0.10
	WLA, BLA	Dry Water Soap & Water Oil	0.22	0.24	0.18	0.30	0.22	0.22	0.28
			0.17	0.17	0.14	NR	0.19	0.19	0.22
			0.12	0.14	0.10	NR	0.25	0.25	0.15
			-	-	-	NR	-	-	0.10
	GLD, RLD	Dry Water Soap & Water Oil	0.22	0.24	0.18	0.30	0.22	0.22	0.28
			0.17	0.17	0.14	NR	0.18	0.18	0.22
			0.12	0.14	0.10	NR	0.15	0.15	0.15
			-	-	-	NR	-	-	0.10
	LUV	Dry Water Soap & Water Oil	0.22	0.24	0.28	0.30	0.22	0.22	0.28
			0.17	0.17	0.14	NR	0.18	0.18	0.22
			0.12	0.14	0.10	NR	0.15	0.15	0.10
			-	-	-	NR	-	-	0.10
All RubberTop Products	Dry	-	-	-	0.87***	0.85***	0.85***	-	

\*\* Friction of returnable bottles will depend on the quality of the glass, the amount of roughed up surface, etc.

\*\*\* It is not recommended to accumulate on RubberTop products; however, these values can be utilized when determining brake belt or "hold back" calculations.

**NR denotes "not recommended"**

**Dash denotes "combination not tested"**

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Multiflex Chains

Contact Rexnord Application Engineering for more information 1.262.376.4800



# FRICITION TABLE BETWEEN CHAIN AND WEARSTRIP (Fw)

> Friction Table  
Between Chain and  
Wearstrip (Fw)

Base Material	Chain Material		Wearstrip Material			
	Chain Material	Lubrication Condition	Steel and Stainless Steel	UHMWPE	Nylatron	ULF
Acetal	PS	Dry Water Soap & Water Oil	0.22	0.18	0.18	0.12
			0.20	0.16	0.16	0.11
			0.15	0.14	0.14	0.11
			0.10	0.10	0.10	0.10
	PSX	Dry Water Soap & Water Oil	0.22	0.18	0.18	0.12
			0.20	0.16	0.16	0.11
			0.15	0.14	0.14	0.11
			0.10	0.10	0.10	0.10
	HP, WHP	Dry Water Soap & Water Oil	0.22	0.18	0.18	0.14
			0.20	0.16	0.16	0.12
			0.15	0.14	0.14	0.11
			0.10	0.10	0.10	0.10
	LF, WLF, XL, XLA, XLG	Dry Water Soap & Water Oil	0.25	0.20	0.20	0.16
			0.20	0.18	0.18	0.14
			0.15	0.15	0.15	0.13
			0.10	0.10	0.10	0.10
	D, WD, MLF	Dry Water Soap & Water Oil	0.30	0.25	0.25	0.20
			0.23	0.21	0.21	0.18
			0.15	0.15	0.15	0.15
			0.10	0.10	0.10	0.10
	AS, HCAS, HC-ESD	Dry Water Soap & Water Oil	0.30	0.25	0.25	0.20
			NR	NR	NR	NR
			NR	NR	NR	NR
			NR	0.10	0.10	0.10
	WSA, GSA, BSA	Dry Water Soap & Water Oil	0.30	0.25	0.25	0.20
			0.23	0.21	0.21	0.18
			0.15	0.15	0.15	0.15
			0.10	0.10	0.10	0.10
	WSM, BSM, SMB, BRSM, BYSM, SYMB, SRMB	Dry Water Soap & Water Oil	0.30	0.25	0.25	0.20
			0.23	0.21	0.21	0.18
			0.15	0.15	0.15	0.15
			0.10	0.10	0.10	0.10
	DUV	Dry Water Soap & Water Oil	0.30	0.25	0.25	0.20
			0.23	0.21	0.21	0.18
			0.15	0.15	0.15	0.15
			0.10	0.10	0.10	0.10
Metal	SS, SSC	Dry Water Soap & Water Oil	0.40	0.30	0.30	0.30
			0.35	0.22	0.22	0.22
			0.15	0.15	0.15	0.15
			0.15	0.10	0.10	0.10
	S	Dry Water Soap & Water Oil	0.40	0.30	0.30	0.30
			NR	NR	NR	0.22
			NR	NR	NR	0.15
			0.10	0.10	0.10	0.10
	SSB	Dry Water Soap & Water Oil	0.50	0.40	0.40	0.40
			0.40	0.30	0.30	0.30
			0.20	0.20	0.20	0.20
			0.20	0.10	0.10	0.10
Nylon	WX, FR-PA	Dry Water Soap & Water Oil	0.30	0.25	0.25	0.22
			NR	NR	NR	NR
			NR	NR	NR	NR
			NR	NR	NR	NR
	MR, FTR	Dry Water Soap & Water Oil	0.30	0.28	0.28	0.25
			NR	NR	NR	NR
			NR	NR	NR	NR
			0.10	0.10	0.10	0.10
	BIR, BWR	Dry Water Soap & Water Oil	0.28	0.22	0.22	0.20
			NR	NR	NR	NR
			NR	NR	NR	NR
			0.10	0.10	0.10	0.10
	HS	Dry Water Soap & Water Oil	0.30	0.28	0.28	0.25
			0.25	0.23	0.23	0.22
			0.18	0.18	0.18	0.18
			0.10	0.10	0.10	0.10
	FR-ESD	Dry Water Soap & Water Oil	0.30	0.25	0.25	0.22
			NR	NR	NR	NR
			NR	NR	NR	NR
			NR	0.10	0.10	0.10

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# FRICITION TABLE BETWEEN CHAIN AND WEARSTRIP (Fw)

**Multiflex  
Conveyor  
Chain  
Materials**

> Friction Table  
Between Chain and  
Wearstrip (Fw)

Base Material	Chain Material		Wearstrip Material			
	Chain Material	Lubrication Condition	Steel and Stainless Steel	UHMWPE	Nylatron	ULF
Polyester	GTC	Dry Water	0.30	0.25	0.25	0.22
			0.23	0.21	0.21	0.20
		Soap & Water Oil	0.15	0.15	0.15	0.15
			0.10	0.10	0.10	0.10
	P	Dry Water	0.30	0.25	0.25	0.22
			0.23	0.21	0.21	0.20
		Soap & Water Oil	0.15	0.15	0.15	0.15
			0.10	0.10	0.10	0.10
	FR	Dry Water	0.30	0.25	0.25	0.22
			0.23	0.21	0.21	0.20
		Soap & Water Oil	0.15	0.15	0.15	0.15
			0.10	0.10	0.10	0.10
Fluorinated Polymer	CR	Dry Water	0.30	0.25	0.25	0.22
			0.23	0.21	0.21	0.20
		Soap & Water Oil	0.15	0.15	0.15	0.15
			0.10	0.10	0.10	0.10
Polypropylene	HT, WHT, RHT, KHT, HTB, BHT, YP, XP, USP	Dry Water	0.35	0.30	0.30	0.26
			0.30	0.25	0.25	0.22
		Soap & Water Oil	0.25	0.20	0.20	0.19
			0.10	0.10	0.10	0.10
	WHA, BHA	Dry Water	0.35	0.30	0.30	0.26
			0.25	0.25	0.25	0.22
		Soap & Water Oil	0.20	0.20	0.20	0.19
			0.10	0.10	0.10	0.10
	ESD	Dry Water	0.35	0.30	0.30	0.26
			0.25	0.25	0.25	0.22
		Soap & Water Oil	0.20	0.20	0.20	0.19
			0.10	0.10	0.10	0.10
	THD	Dry Water	0.35	0.30	0.30	0.26
			0.25	0.25	0.25	0.22
		Soap & Water Oil	0.20	0.20	0.20	0.19
			0.10	0.10	0.10	0.10
	HUV	Dry Water	0.35	0.30	0.30	0.26
			0.24	0.16	0.16	0.22
		Soap & Water Oil	0.20	0.20	0.20	0.19
			0.10	0.10	0.10	0.10
	UHS, YPR	Dry Water	0.35	0.30	0.30	0.26
			0.30	0.25	0.25	0.22
		Soap & Water Oil	0.25	0.20	0.20	0.19
			0.10	0.10	0.10	0.10
Polyethylene	WLT, BLT, LT	Dry Water	0.28	0.23	0.23	0.21
			0.22	0.20	0.20	0.19
		Soap & Water Oil	0.15	0.15	0.15	0.14
			0.10	0.10	0.10	0.10
	WLA, BLA	Dry Water	0.28	0.23	0.23	0.21
			0.22	0.20	0.20	0.19
		Soap & Water Oil	0.15	0.15	0.15	0.14
			0.10	0.10	0.10	0.10
	GLD, RLD	Dry Water	0.28	0.23	0.23	0.21
			0.22	0.20	0.20	0.19
		Soap & Water Oil	0.15	0.15	0.15	0.14
			0.10	0.10	0.10	0.10
	LUV	Dry Water	0.28	0.23	0.23	0.21
			0.22	0.20	0.20	0.19
		Soap & Water Oil	0.15	0.15	0.15	0.14
			0.10	0.10	0.10	0.10

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**Dash denotes "combination not tested"**

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Multiflex Chains



Rexnord has developed a variety of sprocket and idler materials for various and unique applications. Sprockets are available in plastic and metallic varieties.

- > **Plastic**
- > Acetal (N)
- > LF Acetal (LF)
- > KU and KUS  
(Machined Plastic)

- > **Metallic**
- > Semi-Steel  
(Cast Iron)

## ➤ Plastic

### ➤ Acetal (N)

- ⇒ Good corrosion- and wear-resistant properties
- ⇒ One-piece sprocket
- ⇒ Temperature Range: -40° to +180°F  
(-40° to +82°C)

### ➤ LF Acetal (LF)

- ⇒ Available in select idler wheel styles only
- ⇒ Self-lubricating
- ⇒ Temperature Range: -40° to +180°F  
(-40° to +82°C)

### ➤ KU and KUS (Machined Plastic)

- ⇒ KU and KUS do not designate material
- ⇒ KU designates solid (one-piece) design and KUS designates a split (two-piece) design
- ⇒ Sprockets machined in a variety of plastic materials
- ⇒ Flush side for ease in cleaning
- ⇒ Sprockets come in a wide variety of pitch diameters and bore sizes

## ➤ Metallic

### ➤ Semi-Steel (Cast Iron)

- ⇒ Used in non-corrosive, abrasive environments such as broken glass, metal chips
- ⇒ One-piece sprocket
- ⇒ Temperature Range: -40 to +350°F  
(-40° to +177°C)

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# WEARSTRIP MATERIALS

Proper chain and wearstrip selection will provide optimum life. Since a function of the wearstrip is to lower friction and to reduce wear, it is recommended to give careful consideration when selecting the material.

The following general guidelines will help in selecting the proper material for your application:

## ➤ Plastic

### ➤ Acetal

⇒ Not recommended for use with acetal chains; it is best not to run identical plastics together

### ➤ Nylatron (Nylon with Moly Filler)

- ⇒ Recommended for dry applications due to low wear and low friction
- ⇒ Especially suited for dry operation on thermoplastic side-flexing chain corners due to its high PV (Pressure-Velocity) rating
- ⇒ Typically not recommended in wet applications because it will absorb moisture and expand (if used in wet applications, allow clearance for expansion and movement of fasteners)
- ⇒ Typically only used for curves

## ➤ Metal

### ➤ Aluminum

⇒ **NOT RECOMMENDED** due to poor wear resistance

### ➤ Bronze and Brass

- ⇒ Sometimes used with stainless steel chains
- ⇒ Typically used for non-sparking and anti-static conditions
- ⇒ For bronze — recommended one-half hard temper (Rb 58)
- ⇒ For brass — recommended one-half hard (Rb 70 Min) to full hard (Rb 82) temper

## ➤ Steel

- ⇒ Recommended for non-corrosive, abrasive or high-temperature applications
- ⇒ Abrasive particles are less likely to imbed in metal wearstrips in comparison to plastic
- ⇒ A cold-rolled plain carbon steel is recommended
- ⇒ Heat treated grades — hardened to 25 to 30 Rc is recommended

### ⇒ Stainless Steel

- ⇒ Recommended for corrosive, abrasive or high-temperature applications
- ⇒ Abrasive particles are less likely to imbed in metal wearstrips in comparison to plastic
- ⇒ A cold-rolled austenitic grade is recommended which offers the best corrosion resistant properties
- ⇒ Recommended one-quarter hard temper (25 to 35 Rc) with any chain material, especially with thermoplastic
- ⇒ Softer annealed grades of austenitic are **NOT RECOMMENDED**. Adverse interaction between the chain material and the soft stainless steel might develop. When this happens, the resulting wear debris consists almost entirely of finely divided stainless steel particles, nearly black in color, similar to molydisulfide or graphite. The wear of the stainless steel might be rapid while the thermoplastic chain by contrast exhibits only slight wear.
- ⇒ Martensitic stainless steel can also be used when heat-treated (25 to 35 Rc); however, it is not as corrosion-resistant as austenitic
  - ◆ Hardness is more critical than grade for better wear resistance

## ➤ Specialty

### ➤ Teflon

⇒ Recommended only for very low-speed/low-load applications

### ➤ Lubricant-Impregnated Wood

- ⇒ Commonly used in dry abrasive applications (i.e. glass, paper)
- ⇒ Not recommended in wet applications

## Multiflex Wearstrip Materials

### > Plastic

- > Acetal
- > Nylatron (Nylon with Moly Filler)

### > Metal

- > Aluminum
- > Bronze and Brass
- > Steel
- > Stainless Steel

### > Specialty

- > Teflon
- > Lubricant-Impregnated Wood

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Multiflex Chains



## **WEARSTRIP MATERIALS**

### **▶ UHMWPE (Ultra High Molecular Weight Polyethylene)**

- ⇒ Recommended for dry or wet applications on straight or side-flexing conveyors
- ⇒ Not recommended for abrasive conditions where particles may imbed in the surface and wear the chain
- ⇒ Provides lower coefficient of friction than metals
- ⇒ Not affected by moisture and more resistant to chemicals than nylon
- ⇒ UHMWPE materials can be supplied with various fillers:
  - Ceramic/glass
  - Conductive
  - Oil/wax

### **▶ ULF (Ultra Low-Friction)**

- ⇒ UHMWPE with self-lubricating additive package
- ⇒ Consistent low friction
- ⇒ Suitable for high-speed conveying where minimal or no external lubrication is present
- ⇒ Improved PV (Pressure-Velocity) properties in comparison to other curve materials



Wearstrip surface finish is a critical aspect for overall chain life. Recommended wearstrip surface finish values are:

Metal:	32 $\mu$ -in Ra (0.8 $\mu$ -m Ra)
Nylatron:	63 $\mu$ -in Ra (1.6 $\mu$ -m Ra)
UHMWPE:	125 $\mu$ -in Ra (3.2 $\mu$ -m Ra)

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Lubrication is recommended whenever the application permits. It not only reduces friction, thereby reducing chain tension, but also greatly improves the wear life of the chain and wearstrips. Lubrication offers a constant cleaning effect of both the chain and wearstrip and can also reduce static.

### ➤ General Recommendations

- ⇒ Lubrication should contact both the chain and wearstrip.
- ⇒ When lubricating side-flexing TableTop chains, the lubricant must be applied at the entrance of the inside corner track. Metal side-flexing chains should **ALWAYS** be lubricated in the corners.
- ⇒ Depending upon the application, lubrication requirements may vary. Lubricant quality and lubrication frequency can have a great effect on the longevity of the chain. For most common applications, any ISO 68 grade lubricant is satisfactory. For applications with special considerations such as high temperature, chemical compatibility, FDA requirements, please contact your lubrication supplier.

### ➤ General Types of Lubricants

- ⇒ Water — Only utilize with corrosion-resistant materials. Can be used as a general lubricant; however, it is not as effective as other types due to friction and chain-cleaning properties.
- ⇒ Water soluble lubricants and soaps — Only utilize with corrosion-resistant materials. These are excellent lubricants which also help clean the chain.
- ⇒ Oil base lubricants — These are vegetable, mineral oils or grease which offer high lubricity. Can be used with plastic or metal materials. Recommended to be used on all metal chains whenever practical. Food grade oils are available.

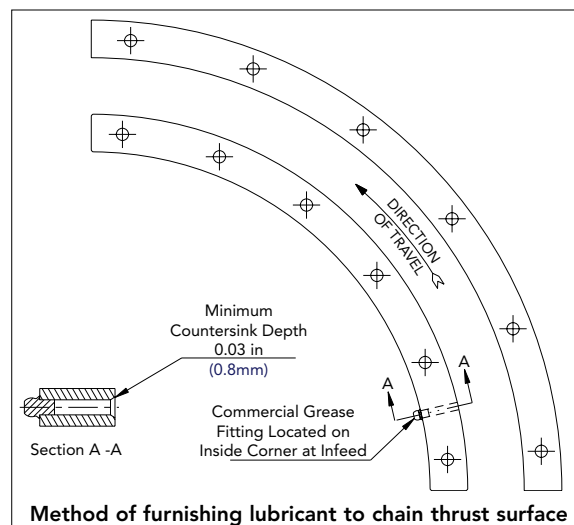


To eliminate or reduce lubrication, contact Rexnord Application Engineering to conduct a run-dry survey. 1.262.376.4800

For more information on lubrication types, compatibility, methods, contact a lubricant manufacturer.

### ➤ Dry Film Lubricants

- ⇒ A dry lubricant system has many of the same benefits of a run-dry conveyor with the added benefit of a lower coefficient of friction. A dry lubricant is applied by an automatic system with dosing units that put very little lubricant on select areas of the conveyors. The lubricant can be water- or oil-based with Teflon, silicone or solid micro-particles. The preferred lubricant is an oil and water emulsion. The most critical part of the process is how the lubricant is applied on the chain. This is typically accomplished with the use of brushes, shoes or spray nozzles. The benefit of spray nozzles is the absence of contact with the chain, eliminating the possibility of trapped dirt or debris. The lubricant can also be applied to the inside of a curve for side-flexing conveyors. There are many dry lubricant products on the market which have been specifically formulated for either plastic or metal chains and container types.
- ⇒ While dry lubricants offer many advantages, conveyor cleanliness considerations should be taken into account since dry lubes do not provide a continuous cleaning process like traditional water and soap lubrication.



### ➤ Selective Lubrication

- ⇒ In some applications, the presence of a lubricant cannot be tolerated. For these applications, it is recommended to utilize chains made of PSX, HP or PS acetal material with Nylatron corners, which offers the lowest coefficient of friction.

- > General Recommendations
- > General Types of Lubricants
- > Dry Film Lubricants
- > Selective Lubrication

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### ► Cleaning

In many applications, rapid build-up of grease, dirt, grit, sand, spilled syrup and beverage can occur. These result in:

1. Soiling and damage to the conveyed product
2. Increased work demands for the chain and motor
3. Accelerated sprocket tooth wear
4. Conveyor pulsation and wear
5. Excessive chain wear on the flight and in the joint areas
6. Rapid wear of the wear strips.

Frequent cleaning of the chain and conveyor frame is advised. Such agents as steam, warm water and soap are commonly used. Many times combined "cleaner/lubricants" are applied continuously. Strong caustic agents used with metal chains should not be used with plastic chains. Always rinse cleaning agents completely off of chain and conveyor frame. When excessive amounts of syrup or other liquids, broken glass or debris accumulate, cleaning will be required on a regular basis to remove these undesirable materials. It is advisable to have operating personnel keep brushes and cleaning solutions nearby to remove broken glass and excessive spillage.



All cleaners and lubricants must be compatible with chain and conveyor materials. See page EM - TT - 15 or contact Rexnord.

### ► Inspection

In the course of conveyor operation, periodic inspection of the chain, sprockets and system is required to detect faults and make repairs before serious damage occurs. The important thing is to set up a regular inspection and maintenance schedule.

#### Checklist

1. Look for unusual wear patterns on the chain.
2. Check for excessive gap between flights due to jam-up or overload.
3. Pulsating, jerky chain operation indicates poor lubrication or a conveyor obstruction.
4. Check deadplate and turntable clearance.
5. Examine sprockets for signs of excessive wear.
6. Examine sprockets for signs of dirt buildup in tooth pockets.

7. Check for sprocket guide ring wear and possible chain misalignment.
8. Check the ways and wear strips for excessive wear.
9. Inspect lubrication system for proper operation.
10. Check the inside curves and the supporting conveyor frame for excess heat buildup which may indicate an obstruction in the curve or a high-friction area.
11. If return support rollers are used, check to ensure rollers are free-turning.

### ► Repair and Replacement

Any malfunctions found during an inspection usually stem from one or more of the following conditions:

1. Severe overloads, jam-ups or wedging of broken glass or crowns.
2. Severe back-flexing of chain on the return carrying ways.
3. Poor lubrication or no lubrication.
4. Interference and obstruction.
5. Worn sprockets.
6. Poor conveyor design.
7. Badly worn or damaged chain.

These causes should be corrected to avoid future problems.

Chain and sprockets should be replaced when:

1. The chain reaches 3% elongation.
2. The chain jumps the sprocket.
3. The flights have worn to about one-half of the original thickness.
4. The conveying surface becomes uneven through wear.
5. The thrust surface of side-flexing chains wears away and exposes the rivet or other metal parts which may cut into wearstrips or other conveyor components.
6. The sprocket teeth develop a hooked profile or the chain tends to "hang up" on the sprocket teeth.

These suggestions on chain and conveyor care serve as a guide toward maintaining continuous, trouble-free operation. Implementation of a conscientious programmed maintenance schedule will lead to many productive hours of conveyor operation.

- > Cleaning
- > Inspection
- > Repair and Replacement

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# ENVIRONMENTAL CONSIDERATIONS

## ➤ Abrasive Applications

- ⇒ Applications with the presence of dirt, sand, glass or metal particles can lead to premature wear of the conveying chain and wearstrips.
- ⇒ Recommendations:
  - ◆ Utilize wearstrips and chains with a hard wear surface
  - ◆ If possible, use controls to minimize the amount of accumulation
  - ◆ The use of WX chain material and metal sprockets can extend wear life

## ➤ Chemical Applications

- ⇒ Make sure any chemicals or cleaners used on conveyors are compatible with chain, wearstrip and sprockets. See table on page EM - TT - 15 for more detailed compatibility information.

## ➤ Dry Applications

- ⇒ Considerations to be taken when running dry:
  - ◆ Product backline pressure
  - ◆ Conveyor cleanliness
  - ◆ Conveyor pulsation
  - ◆ Increased component wear

## ➤ Extreme Temperature Applications

- ⇒ The recommended minimum and maximum operating temperatures for Multiflex chain and wearstrips can vary due to the presence of moisture.

Wearstrip Material	Minimum Temperature		Maximum Temperature			
	Dry		Dry		Wet	
	°F	°C	°F	°C	°F	°C
Acetal	-40	-40	180	82	150	66
UHMWPE/ULF	-100	-73	180	82	160	71
Nylon	-40	-40	220	104	NR	NR
Stainless Steel	-100	-73	800	427	250	121
Steel	-40	-40	350	177	NR	NR
Lubricated Impregnated Wood	-50	-46	160	71	160	71

## ➤ Metal Detector Applications

- ⇒ Plastic chains passing through metal detectors can be supplied with plastic pins on a Made-To-Order (MTO) basis (requires 60% Derate).

## ➤ High-Speed Applications

- ⇒ In any high-speed application, the critical aspect of the conveyor is the corners. The concern with running the chain at high

speeds is the PV (Pressure-Velocity) in the corners. If the PV limits are exceeded, the chain or corner track may become damaged due to the heat generated from the high speed and/or load. It is generally recommended to utilize Nylatron corner tracks in conjunction with PS or HP materials or selective lubrication for these applications. PSX chain with ULF corner tracks will provide the best PV capability and least energy consumption.

## ➤ Long-Length Conveyors/Pulsation Applications

- ⇒ Pulsation or "slip stick" of chain results in a jerking chain motion which can occur in long, slow-speed and dry conveyors. Pulsation can create product stability problems in extreme cases. It can also result in premature chain elongation or the chain jumping drive sprocket teeth. As a general rule of thumb, it is recommended that conveyor lengths do not exceed 100 ft (30m) per drive, regardless of loading. Rexnord also recommends a 150° minimum wrap on the head sprocket. If necessary, this can be maintained with the use of a snubber roller.

## ➤ Static Environment Applications

- ⇒ Under certain conditions, thermoplastic can acquire a static nuisance charge. Static environments are classified as:



**Class I:** Static spark causes explosion — stainless steel chains are required.

**Class II:** Static spark is a nuisance charge — low charge will provide slight shock or possible circuit damage.

- ⇒ All applications utilizing thermoplastic anti-static materials (i.e. AS, ESD) must be approved by Rexnord Application Engineering prior to quoting.



Grounding is crucial for the system to reduce static charges.

## ➤ UV Applications

- ⇒ When conveyor chains are exposed to direct UV (Ultraviolet) or sunlight, DUV stabilized material should be utilized.

# Multiflex Environmental Considerations

- > Abrasive Applications
- > Chemical Applications
- > Dry Applications
- > Extreme Temperature Applications
- > Metal Detector Applications
- > High Speed Applications
- > Long-Length Conveyors/Pulsation Applications
- > Static Environment Applications
- > UV Applications

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Multiflex Chains



# MATERIAL CHARACTERISTIC TABLE

> Multiflex Chain  
Material Selection  
Table

Material Characteristics	Metal			Thermoplastic													
	S	SS	SSB	HP WHP	LF WLF	D WD	BWR	AS HCAS	ESD	HS	P	CR	MR	DUV	FR	PS PSX	WX BWX
Impact-Resistant	•	•	•				•					•	•				•
Wear-Resistant	•	•	•	•	•		•									•	•
Chemical-Resistant*		•	•									•	•				
High Strength	•	•	•	•	•	•	•			•	•	•	•	•		•	•
Low Frictional Characteristics				•	•	•										•	
Capability to Run Dry in Corners				•	•		•						•			•	•
Suitability in Wet Environments		•	•	•	•	•				•	•	•		•	•	•	
Low-Temperature Capability (to 40°F)	•	•	•	•	•	•	•			•			•	•		•	•
High-Temperature Capabilities (to +180°F)	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•
Ultra Violet Capabilities	•	•	•				•					•	•				•
Suitability for Class II (nuisance static)	•	•	•					•	•								
Suitability for Class I (explosive static)		•	•														
Non-magnetic Qualities		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Flame Retardance	•	•	•									•			•		
Capability to Convey Hot Products (to +375°F)	•	•	•										•				•
FDA Approval		•	•	•	•	•					•	•				•	

- S = Carbon Steel
- SS = Stainless Steel
- SSB = Low Magnetic Stainless Steel
- HP = High Performance
- WHP = White High Performance
- LF = Low-Friction
- WLF = White Low-Friction
- D = Acetal
- WD = White Acetal
- BWR = Black Wear-Resistant
- AS = Anti-Static
- HCAS = Anti-Static High Capacity
- ESD = Electrostatic Dissipative
- HS = Heat-Stabilized
- P = Chemical-Resistant
- CR = Extreme Chemical-Resistant
- MR = Melt-Resistant
- DUV = Ultraviolet-Resistant
- FR = Flame-Retardant
- PS™ = Platinum Series
- PSX = Platinum Series X
- WX = Abrasion-Resistant
- BWX = Black Abrasion-Resistant

\*See Corrosion Resistance Guide on Page EM - MF - 15 for more details

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# CORROSION RESISTANCE GUIDE

Multiflex  
Environmental  
Considerations

> Corrosion  
Resistance  
Guide

Common or Chemical Name	Carbon Steel	Austenitic	Acetal	Nylon and Nylatron	Polyester	Chemically Resistant Fluorinated Polymer	Polypropylene	Polyethylene	Neoprene	EPDM
	S	SS, SSB	AS, HCAS, DUV, HP, LF, PS, PSX, WD, WHP, WLF	BWR, HS, MR, WX, BWX	P, FR	CR	ESD	UHMWPE		
Acetic Acid (over 5%-up to 50%)	U	M	U	M	S	S	S	S	M	S
Acetone	U	S	S	S	S	U	S	S	M	S
Alcohol	S	S	S	S	S	S	S	S	S	S
Ammonia	M	S	U	S	S	S	S	S	S	S
Beer	S	S	S	S	S	S	S	S	S	S
Beverages-Soft Drinks	S	S	S	S	S	S	S	S	S	S
Benzene	S	S	S	S	S	S	M	M	M	U
Brine (pickle)	U	M	M	M	S	S	S	S	S	S
Carbon Tetrachloride	M	M	S	S	S	U	M	M	U	U
Chlorine	U	U	U	U	S	S	S	S	U	M
Citric Acid	U	S	M	M	S	S	S	S	S	S
Cyclohexane	-	-	S	-	-	S	U	U	S	S
Ethyl Chloride	-	S	S	S	S	S	M	M	M	M
Formaldehyde	S	S	S	S	S	M	S	S	S	S
Formic Acid	U	U	U	U	S	S	S	S	M	M
Fruit Juices	U	S	S	S	S	S	S	S	S	S
Gasoline	S	S	S	S	S	S	M	M	S	U
Hexane	-	S	S	-	S	S	S	U	S	U
Hydrochloric Acid (up to 2%)	U	U	U	U	S	S	S	S	M	S
Hydrochloric Acid (up to 37%)	U	U	U	U	S	S	M	S	U	M
Hydrogen Peroxide	U	S	U	U	S	S	M	S	M	S
Iodine	U	U	U	U	U	M	M	M	U	U
Isopropanol (isopropyl alcohol)	S	S	S	S	S	S	S	S	S	S
Lactic Acid	U	S	S	M	S	M	S	S	S	S
Methylene Chloride	-	S	S	-	U	M	S	U	U	U
Milk	S	S	S	S	S	S	S	S	S	S
Muriatic Acid	U	U	U	U	S	S	M	S	U	M
Nitric Acid (low concentrations)	U	S	U	U	S	S	S	S	M	S
Oil (vegetable or mineral)	S	S	S	S	S	M	S	S	S	U
Ozonated Water	S	S	M	U	S	S	M	S	U	S
Paraffin	S	S	S	S	S	S	S	S	S	U
Phosphoric Acid (up to 10%)	U	S	U	U	S	S	S	S	S	S
Soap and Water	M	S	S	S	S	S	S	S	S	S
Sodium Chloride	U	M	S	S	S	S	S	S	S	S
Sodium Hydroxide (up to 25%)	U	S	S	U	U	M	S	S	S	S
Sodium Hypochlorite (Bleach)	U	U	U	U	S	S	S	S	U	S
Stearic Acid	U	S	M	S	S	S	S	S	S	M
Sulfuric Acid (up to 40%)	U	U	U	U	S	S	S	S	M	S
Toluene (Toluol)	S	S	M	S	S	M	S	U	U	U
Turpentine	-	S	S	S	S	S	S	U	S	U
Vegetable Juices	M	S	S	S	S	S	S	S	U	S
Vinegar	U	S	S	S	S	M	S	S	S	S
Water (fresh)	U	S	S	S	S	S	S	S	S	S
Whiskey	S	S	S	S	S	S	S	S	S	S
Wine	S	S	S	S	S	S	S	S	S	S
Xylene	S	S	S	S	S	S	U	M	U	U

Dash = Not Tested      M = Marginal      U = Unsatisfactory      S = Satisfactory



### General Rules of Thumb:

With acetal products, do not use cleaning or lubricating agents with a pH below 4 or above 10. This table is based on data available by various material suppliers.

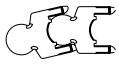
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Multiflex Chains

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## CONVEYOR DESIGN RECOMMENDATIONS

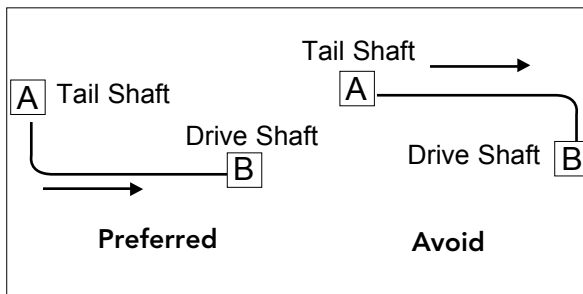
### ➤ Straight-Running Configuration

⇒ A long conveyor with a single drive is the simplest and most ideal design. Sometimes several short conveyors are required due to application constraints

### ➤ Side-Flexing Configuration

**i** In general, the straight section between the corner and the drive shaft must be at least 18 in (457mm) to allow adequate room for the catenary (see page EM - MF - 28). The tail shaft should be at least 12 in (305mm).

- ⇒ Depending on chain style, corner discs or corner tracks can be utilized
- ⇒ Corner discs are used to guide the chain without significant increase in chain tension
- ⇒ When conveying from Point A to Point B, design the conveyor so that the drive is positioned furthest from the last corner (see drawing), resulting in lower chain tension and maximizing chain life



- ⇒ Consideration should be given to the design of the curves within a conveyor such that if the chain has little to no "allowable twist", the curve should be designed to **NOT** change elevation while simultaneously side-flexing through the curve. Doing so on chains that do not twist will bind the chain and lead to chain failure. Multiflex chains have negligible "allowable twist" hence curves should be designed so as **NOT** to

change elevation while side-flexing through the curve.

### ➤ Straight-Running and Side-Flexing Configuration

- ⇒ The conveyor frame is designed to support the chain on the bottom of the link
- ⇒ For applications where debris is a concern, an open design, such as a serpentine design, is preferred over full-width support
- ⇒ The serpentine design prevents the buildup of debris in the track and distributes the wear evenly across the bottom of the link
- ⇒ Abrasive applications should utilize steel or stainless steel wearstrips
- ⇒ Wet abrasive applications should utilize stainless steel wearstrips and pins
- ⇒ Non-abrasive conditions should utilize UHMWPE or Nylatron wearstrips



**Multiflex chains should not be twisted.**



**1700, 1702, 1755, 1765, 2550 and 2565 chains MUST utilize corner discs.**



**i** Make sure that the entire chain path (carry, return, sprocket and catenary sag areas) has plenty of clearance for free chain travel. Make sure all frame and support members, piping, conduits and mounting hardware are well clear of chain path.

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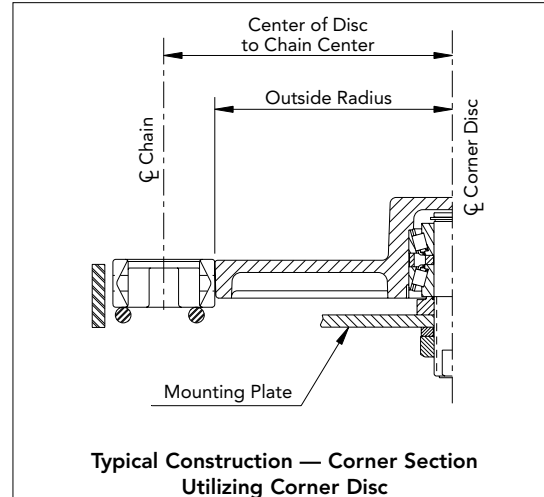
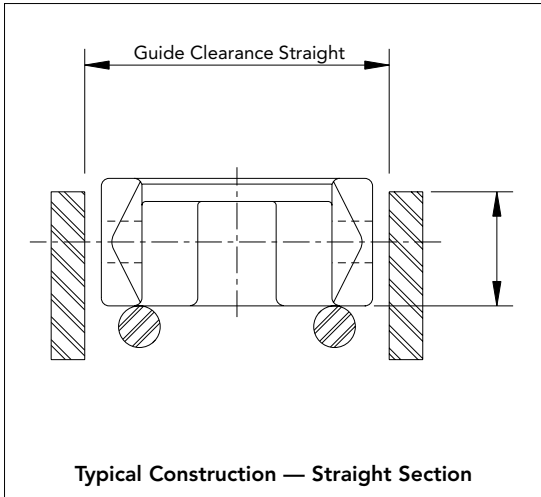
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## ➤ Carry Ways

⇒ Guide clearance is critical for Multiflex chains. For guide clearance dimensions of individual chains, see table on page EM - MF - 21 or Product Catalog (8rxCAT-en).

## ➤ Side-Flexing — Straight Edge Design



⇒ Chain can be lifted out of straight sections for cleaning or inspection

⇒ Longer conveyors can be achieved with the use of corner discs



**1700, 1702, 1755, 1765, 2550 and 2565 chains MUST utilize corner discs.**

## > Carry Ways

## > Side-Flexing — Straight Edge Design

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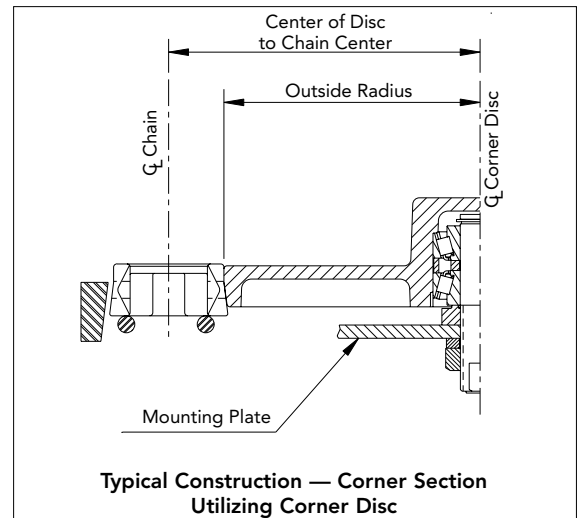
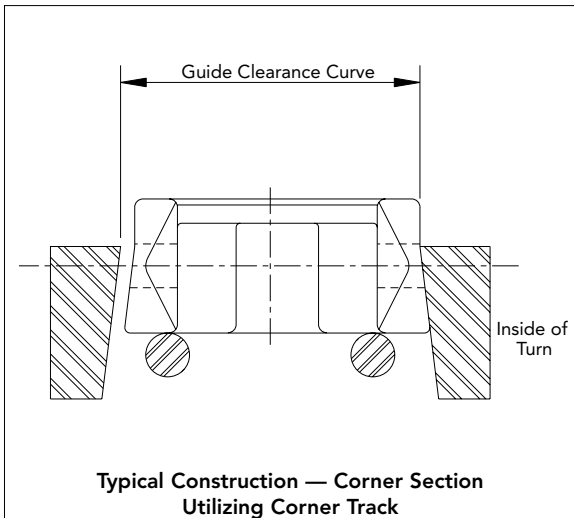
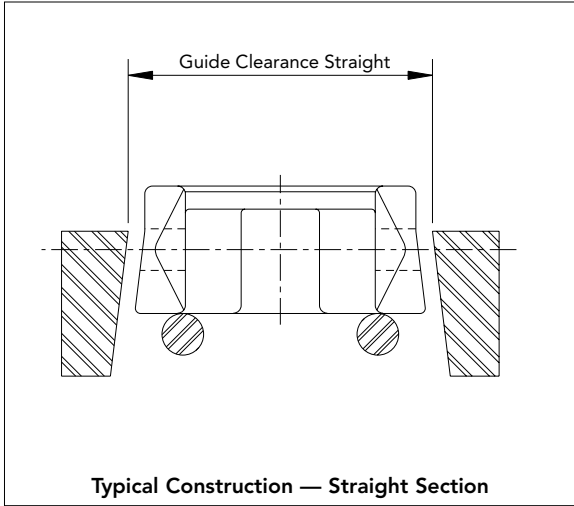
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➤ **Carry Ways**

⇒ Guide clearance is critical for Multiflex chains. For guide clearance dimensions of individual chains, see table on page EM - MF - 21 or Product Catalog (8rxCAT-en).

➤ **Side-Flexing — Bevel Design**



⇒ Chain can be lifted out of straight sections for cleaning or inspection

⇒ Longer conveyors can be achieved with the use of corner discs



**1700, 1702, 1755, 1765, 2550 and 2565 chains MUST utilize corner discs.**

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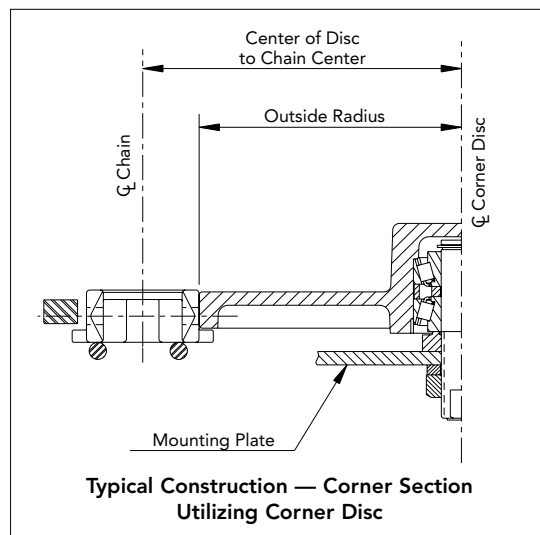
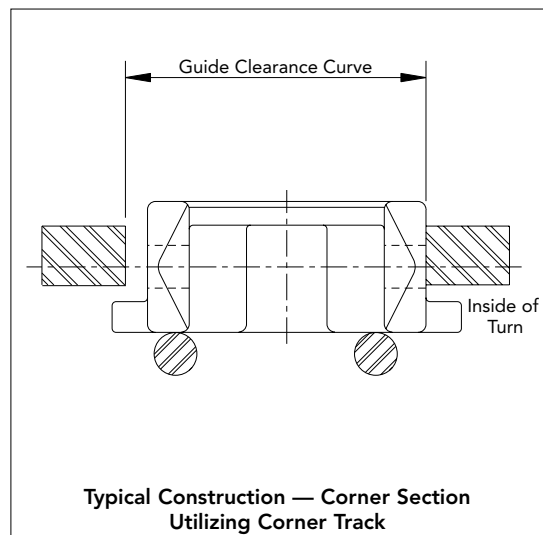
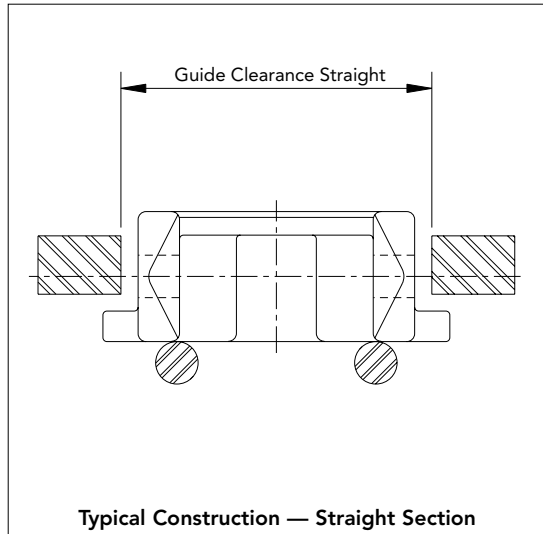
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## ► Carry Ways

⇒ Guide clearance is critical for Multiflex chains. For guide clearance dimensions of individual chains, see table on page EM - MF - 21 or Product Catalog (8rxCAT-en).

## ► Side-Flexing — TAB Design



- ⇒ Positive retention
- ⇒ TABs hold chain down in incline or decline applications
- ⇒ Chain top surface wear is decreased if the TAB return is utilized
- ⇒ Longer conveyors can be achieved with the use of corner discs
- ⇒ Once assembled, the TAB chain cannot be lifted out of the conveyor track



**1700, 1702, 1755, 1765, 2550 and 2565 chains MUST utilize corner discs.**

> Carry Ways  
> Side-Flexing — TAB Design

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 **SIDE-FLEX RADIUS TABLE**

> Side-Flex Radius Table

Chain Style	Chain Width		Minimum Side-Flex Radius	
	in	mm	in	mm
1700	2.17	55.1	5.75	146.1
AC 1700	2.17	55.1	5.75	146.1
1701	2.09	53.1	5.75	146.1
1701 TAB	2.09	53.1	5.75	146.1
AC 1701 TAB	2.09	53.1	5.75	146.1
1702	2.09	53.1	5.75	146.1
1755	1.09	27.7	5.38	136.5
1757 TAB	3.25	82.6	6.00	152.4
LBP 1757 TAB	3.25	82.6	6.00	152.4
1757 TAB G	3.25	82.6	8.00	203.2
1765	2.17	55.1	4.92	125.0
2500 TAB	2.63	66.8	9.50	241.3
2550 TAB	3.50	88.9	9.50	241.3
2565	3.50	88.9	9.50	241.3

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# GUIDE CLEARANCE TABLE

Chain Style		1701	1701T AC 1701T	2500T	AC 1700 1700 1765	1702	1755	1757T LBP 1757T 1757T G	2550T 2565
Hold Down Style		Bevel	TAB	TAB	N/A	N/A	N/A	TAB	TAB
Guide Clearance Straight	in	2.19	2.34	2.97	2.28	2.34	1.20	2.44	3.76
	mm	55.6	59.5	75.4	58.0	59.4	30.5	61.9	95.4
Guide Clearance Corner	in	2.34	2.25	2.81	N/A	N/A	N/A	*	N/A
	mm	59.4	57.2	71.4	N/A	N/A	N/A	*	N/A
Corner Wearstrip Thickness	in	0.63	0.63	0.75	Must Use Corner Disc	Must Use Corner Disc	Must Use Corner Disc	*	Must Use Corner Disc
	mm	16.0	16.0	19.0				*	

\*Rexnord only offers corner discs for these chains; however corner tracks can be utilized.

> Guide Clearance Table

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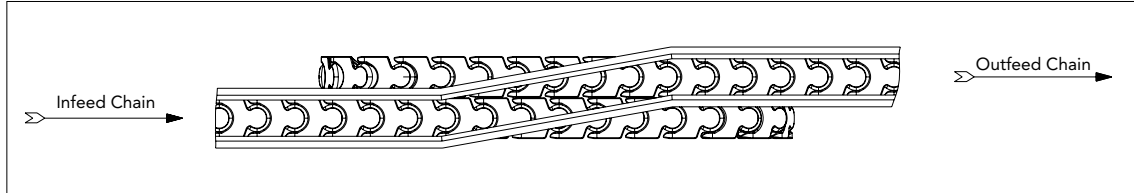
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## CONVEYOR DESIGN RECOMMENDATIONS

### Transfers

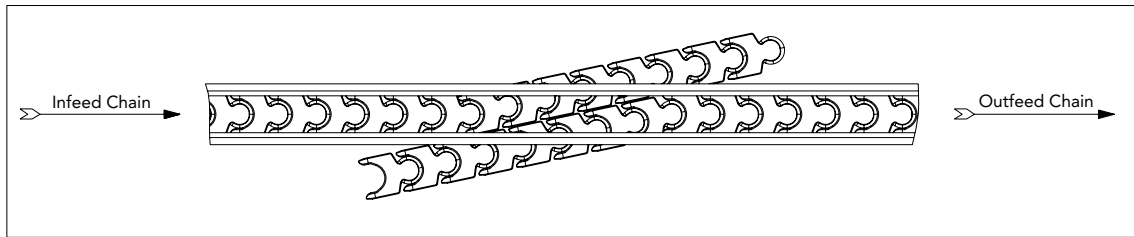
⇒ Smooth transfer of the conveyed product from one chain to another is essential. The various methods are described below:

#### Side Transfer



- ✓ ⇒ Adjacent strands of chain should share a common wearstrip
- ⇒ No stranded products

#### Inline Transfer



- ✓ ⇒ Adjacent strands of chain should share a common wearstrip
- ⇒ Allows product to remain in straight line
- ⇒ No stranded products

**i** These arrangements are used in an offset wrap drive, which allows a single strand of chain to be used; see page EM - TT - 28 (TableTop Section) for offset wrap drive details.

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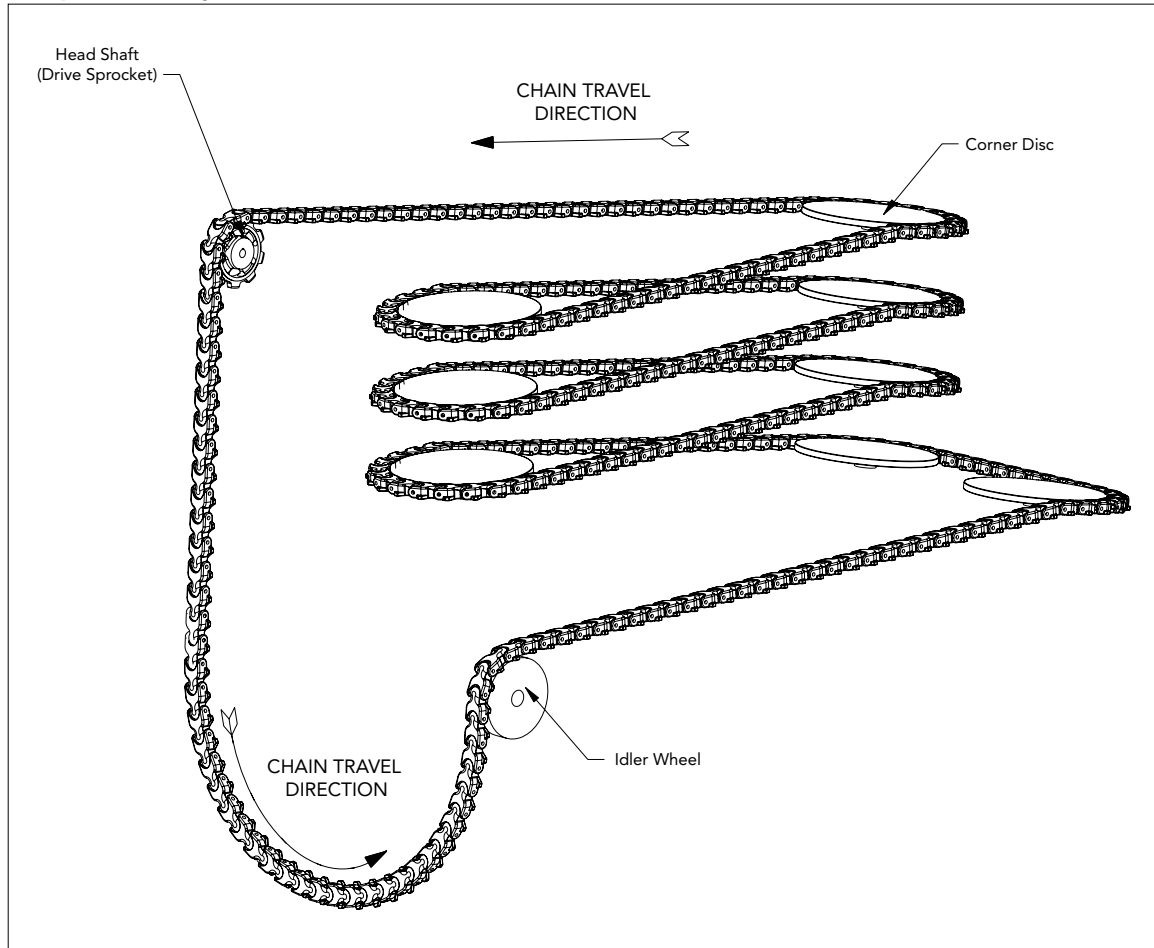
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## ▶ Alternate Drive Configurations

### ▶ Alpine Conveyor



## > Alternate Drive Configurations > Alpine Conveyor

- ⇒ Multiflex chains have the ability to elevate or lower products in a very compact area. This figure shows a typical elevating system and how the chain is returned in a non-standard configuration.
- ⇒ Full return is not required
- ⇒ The chain hangs straight down from the drive sprocket and side-flexes back up into the tail section
- ⇒ Elevators can be designed with free-hanging (catenary sag) and sliding returns
- ⇒ Roller returns are not recommended
- ⇒ The straight and corner return sections can be the same as the carry section
- ⇒ The chain is run in the conveyor upside down through the return section
- ⇒ Depending on chain design, discs may have to be mounted upside down in the return

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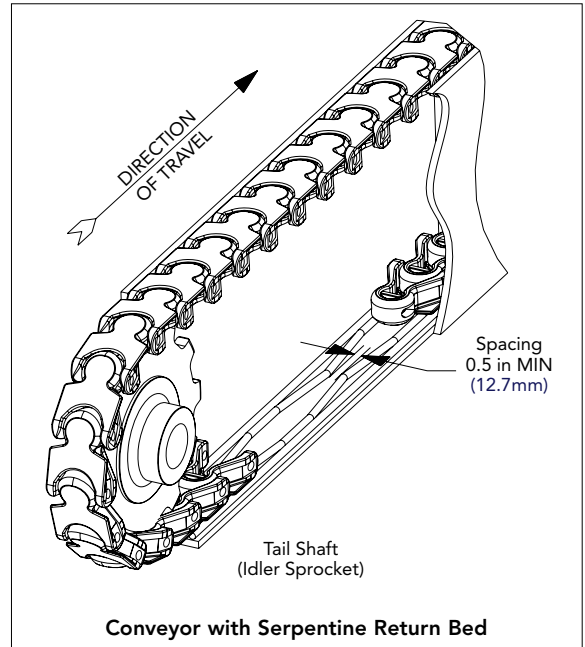
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Multiflex Chains

➤ Return Ways

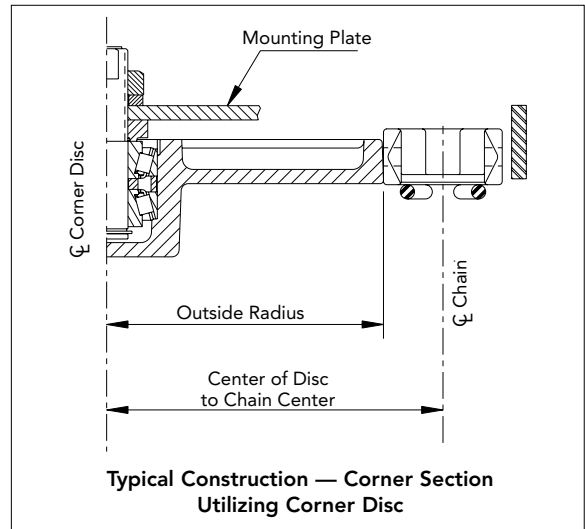
➤ Serpentine Style Return

- ⇒ A wide selection of chain returns are possible with Multiflex chains which offers considerable conveyor design freedom
- ⇒ The chain is fully supported
- ⇒ Allows for drainage and the passage of foreign materials



➤ Side-Flexing — Straight Edge Design

- ⇒ The corner disc in the return section is mounted in the same manner as in the carry section
- ⇒ Depending on chain design, discs may have to be mounted upside down in the return



**i** When returning chain with molded inserts (HPM), caution should be taken to ensure that the inserts do not interfere with the return elements.

Possible solutions:

- ◆ Return the chain on its TABs
- ◆ Return the chain on the outer edge of the links via rollers or wearstrips

- > Return Ways
- > Serpentine Style Return
- > Side-Flexing — Straight Edge Design

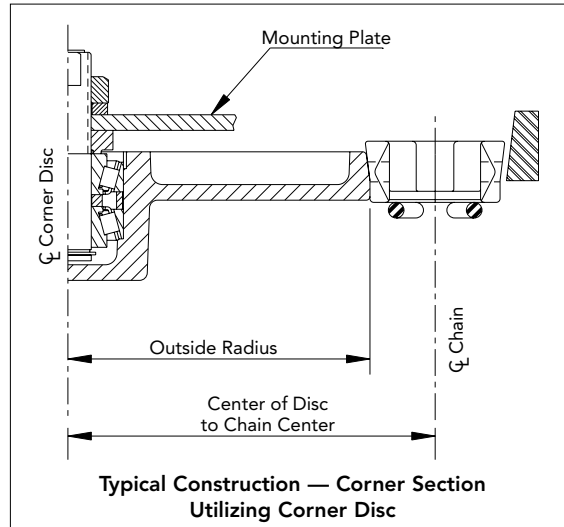
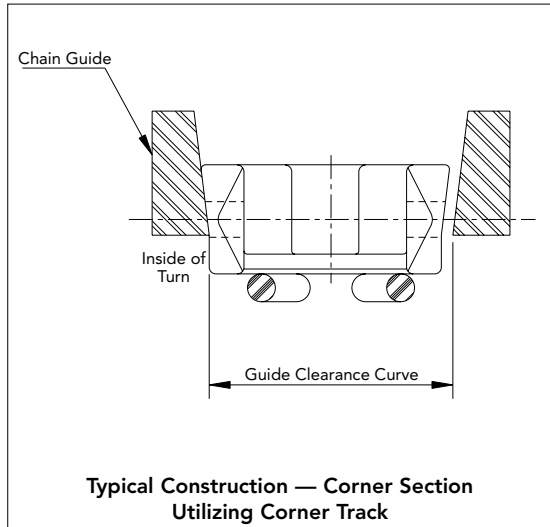
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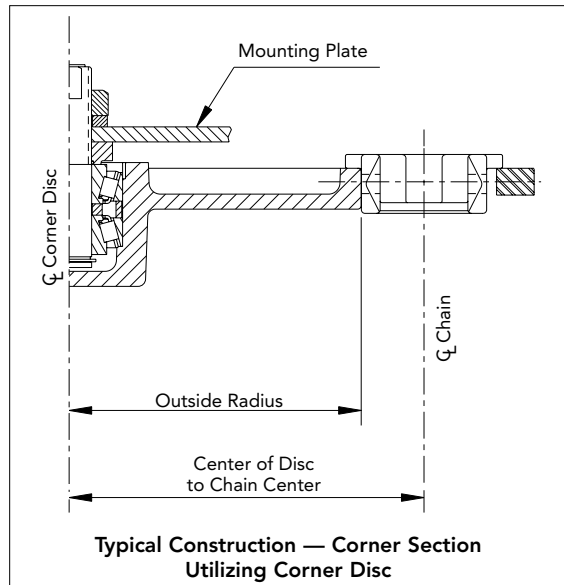
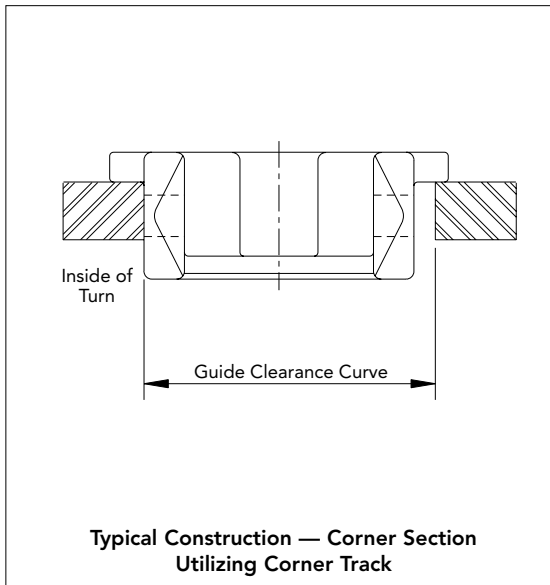
## Return Ways

### Side-Flexing — Bevel Design



- ⇒ The corner disc in the return section is mounted in the same manner as in the carry section
- ⇒ Depending on chain design, discs may have to be mounted upside down in the return

### Side-Flexing — TAB Design



- ⇒ The corner disc in the return section is mounted in the same manner as in the carry section
- ⇒ Depending on chain design, discs may have to be mounted upside down in the return

**CAUTION** 1700, 1702, 1755, 1765, 2550 and 2565 chains **MUST** utilize corner discs.


- > Return Ways
- > Side-Flexing — Bevel Design
- > Side-Flexing — TAB Design

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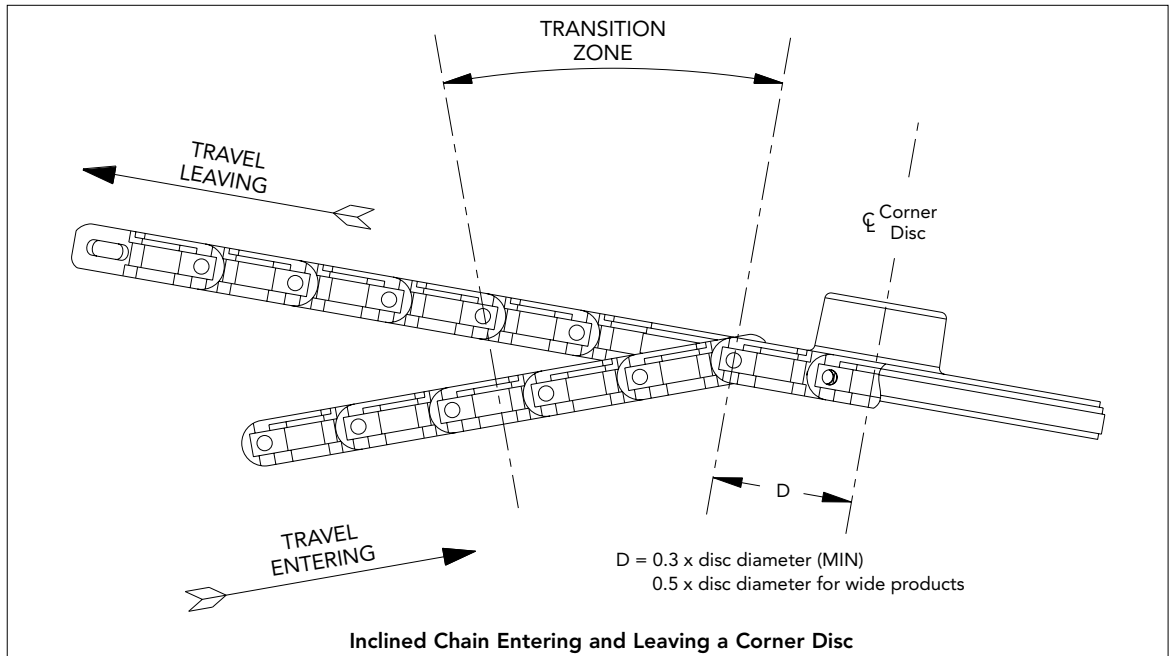
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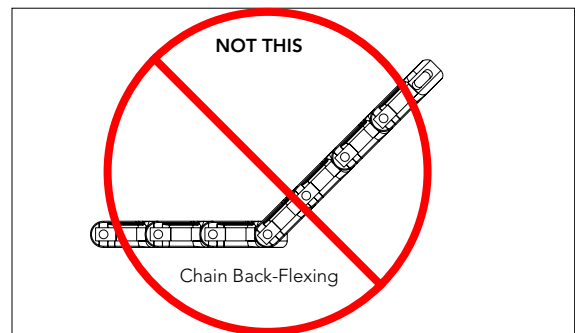
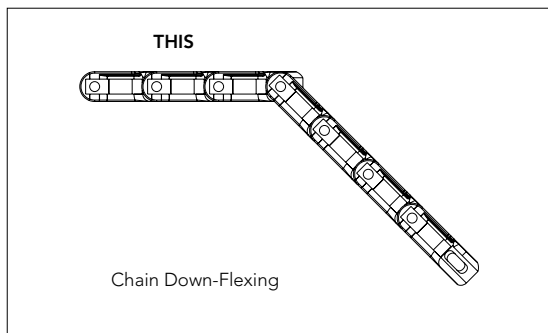
**Multiflex Incline Conveyors**

 To ensure proper functioning of these conveyors it is important that:

- ⇒ The chain enters and leaves the disc in the same plane as the disc
- ⇒ In the transition zone, the wearstrips should be curved to accomplish smooth transition from one plane to the next
- ⇒ The maximum angle of incline or decline for an application depends on product stability and friction between chain and product



- ⇒ When inclining, the chain must pass through a transition zone **prior** to entering the disc
- ⇒ The disc should be tipped so that it lies in the same plane as the chain exiting the disc



⇒ Any change in angle of chain travel should be made by down-flexing the chain as shown

⇒ Back-flexing through a change in angle will cause the chain to rise out of the conveyor frame

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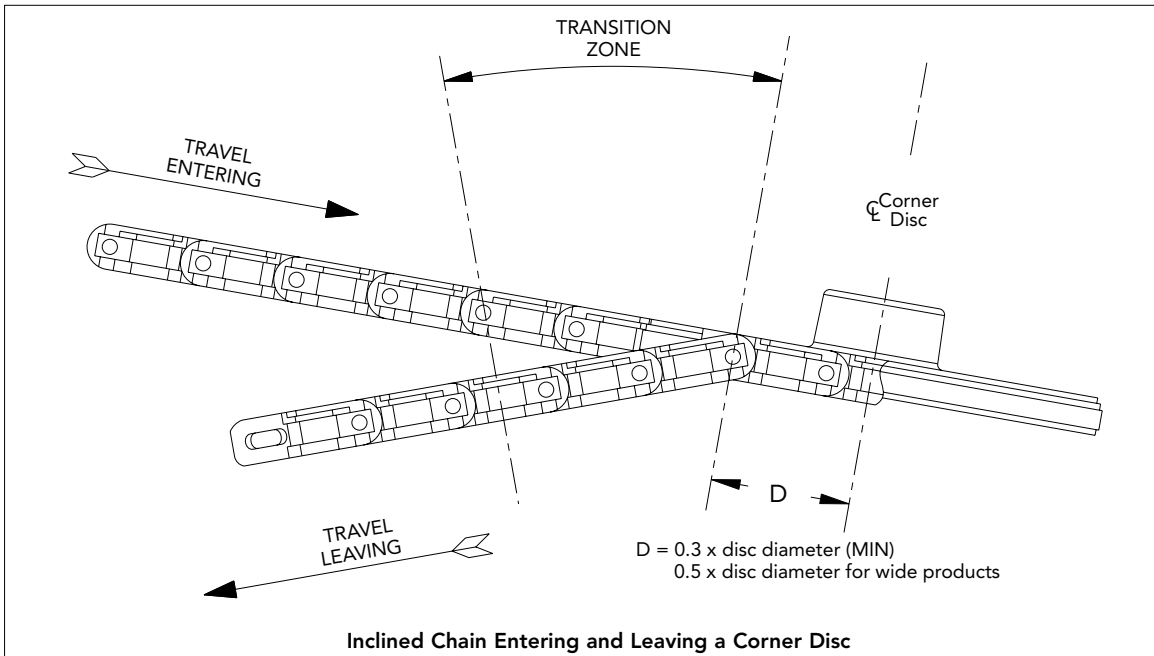
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## Multiflex Decline Conveyors

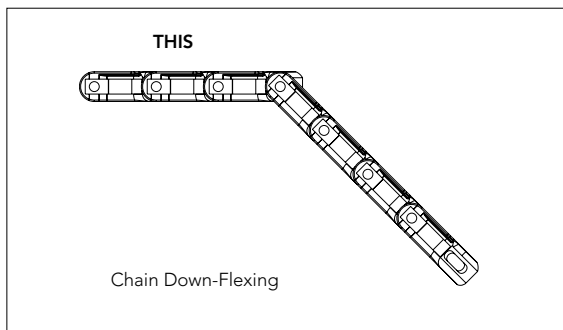


To ensure proper functioning of these conveyors it is important that:

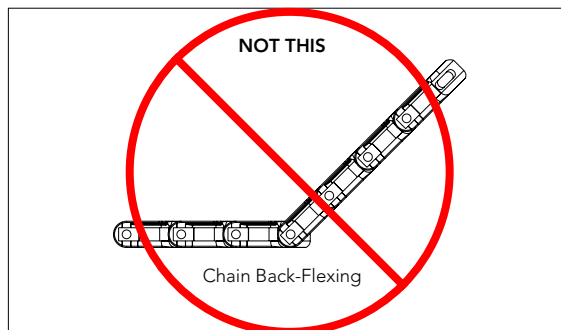
- ⇒ The chain enters and leaves the disc in the same plane as the disc
- ⇒ In the transition zone, the wearstrips should be curved to accomplish smooth transition from one plane to the next
- ⇒ The maximum angle of incline or decline for an application depends on product stability and friction between chain and product



- ⇒ When declining, the chain must pass through a transition zone **after** exiting the disc
- ⇒ The disc should be tipped so that it lies in the same plane as the chain entering the disc



- ⇒ Any change in angle of chain travel should be made by down-flexing the chain as shown



- ⇒ Back-flexing through a change in angle will cause the chain to rise out of the conveyor frame

## > Multiflex Decline Conveyors

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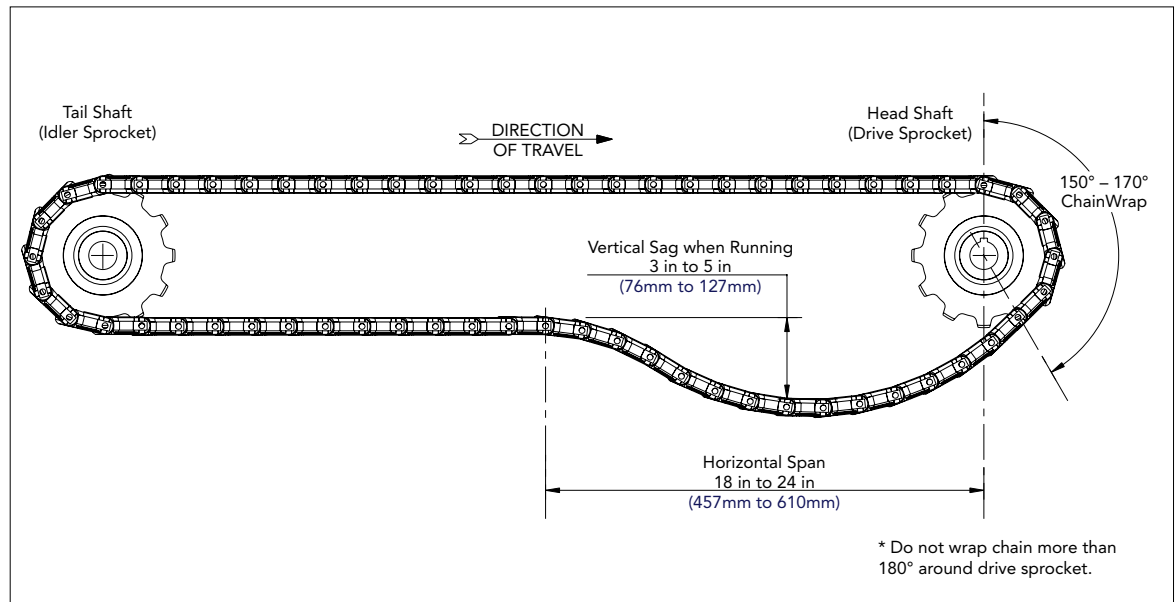
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## Return Ways

### Catenary Sag

- ⇒ The function of the catenary is to allow a place for excess chain to accumulate
- ⇒ Multiflex chains should never be run tight
- ⇒ The catenary sag should be measured when running
- ⇒ If catenary sag is excessive or increases due to wear, it should be adjusted by removing links to obtain the proper sag
- ⇒ Take-ups are typically not recommended
- ⇒ The catenary sag should be located as close to the drive as possible



-  The catenary sag area must be free of all obstructions, such as frame cross-members, supports, drive components, that can damage chain or inhibit proper catenary sag.
-  It is recommended to keep the sprockets and chain clean of debris and foreign matter. If this is not done, the chain can stick to (not release freely from) the drive sprockets causing the catenary to bounce leading to possible chain damage or breakage. In cases of extreme environments, a hold down roller can be positioned above the catenary near the drive sprocket(s) to keep the chain from overwrapping the drive sprocket(s).

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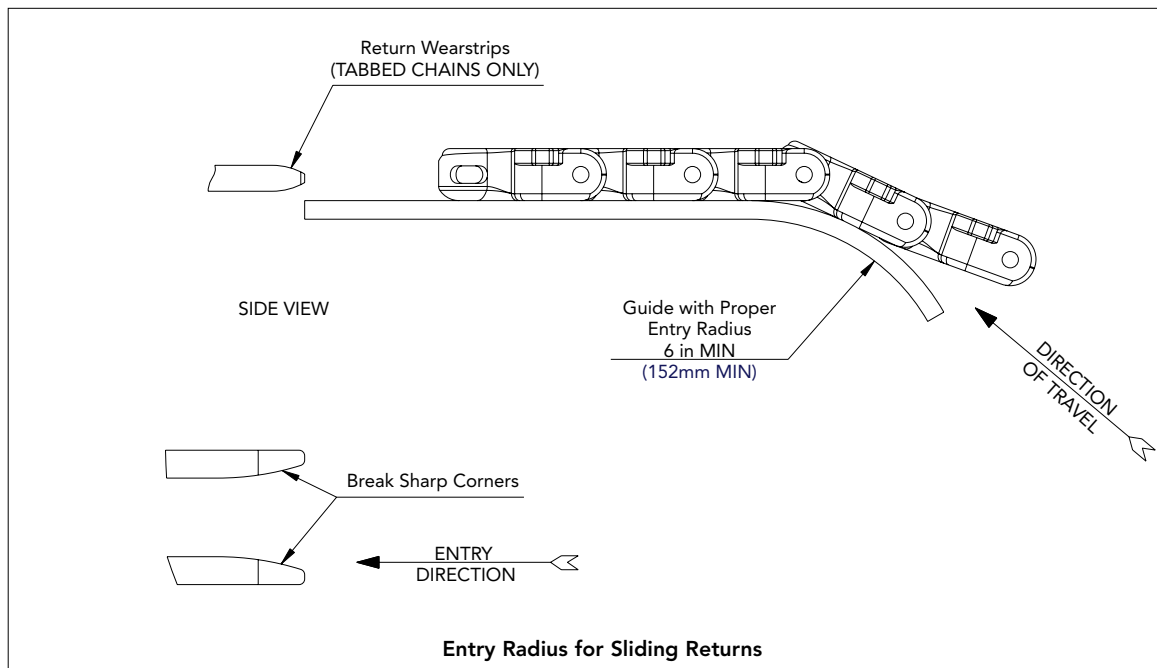
## Return Ways

### Entry Radius for Sliding Returns



Provide a generous entry radius to the return section which permits the chain to feed smoothly into the return ways

- ⇒ The entry radius should be greater than the minimum back-flex radius of the chain (see table below)
- ⇒ Rexnord recommends a 6 in (152mm) minimum entry radius to prevent non-uniform wear
- ⇒ When returning a chain on its TABs, guide the chain onto the return wearstrips using a guide shoe (see table on page EM - MF - 21 for proper guide clearance)
- ⇒ At the entry of the return wearstrips, provide rounded corners to prevent catching or snagging of the chain flights



Back-Flex Radius Table		
Chain Style	Min. Back-Flex Radius	
	in	mm
1700, AC1700, 1701, 1701TAB, AC1701TAB, 1702, 1755, 2500TAB, 2550TAB	1.50	38.1
2565	3.50	88.9
1757TAB, LBP1757TAB	4.00	101.6
1765	2.50	63.5

- > Return Ways
- > Entry Radius for Sliding Returns

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## ▶ Sprocket and Wearstrip Location

- ⇒ The distance from the end of the wearstrip to the sprocket shaft centerline should equal dimension "C" (one chain pitch); otherwise the wearstrip will interfere with the free articulation of the chain as it enters the sprocket.
- ⇒ The leading edges of the wearstrip should be beveled
- ⇒ The following formulas and dimensions used in conjunction with the figure will give the proper shaft and wearstrip positioning:

## ▶ Sprocket Location for Conventional Chains

$$A = (\text{Pitch Diameter}/2) - E$$

C = One Chain Pitch (which ensures support under chain at all times)

- ⇒ See table below for C and E dimensions

### Example:

For a 1700 chain utilizing a 10T sprocket:

$$A = (\text{Pitch Diameter}/2) - E = (6.369 \text{ in}/2) - 0.470 \text{ in} = 2.715 \text{ in}$$

$$C = 1.97 \text{ in}$$

Metric:

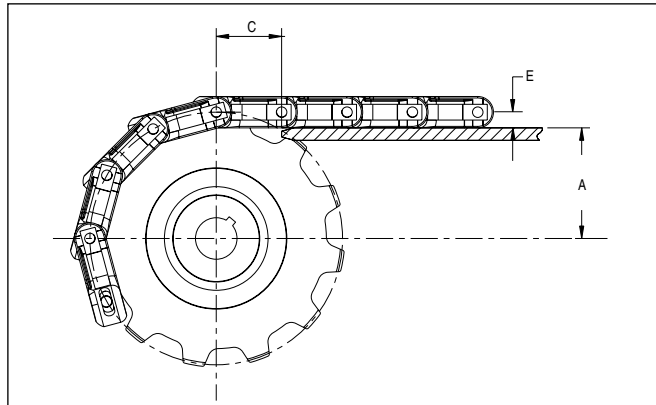
$$A = (\text{Pitch Diameter}/2) - E = (161.77\text{mm}/2) - 11.94\text{mm} = 68.95\text{mm}$$

$$C = 50.0\text{mm}$$

### ✓ Tolerances

$$A = +.03 \text{ in} / -.00 \text{ in} (+.8\text{mm} / -.0\text{mm})$$

$$C = +.25 \text{ in} / -.00 \text{ in} (+6.3\text{mm} / -.0\text{mm})$$




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Shaft Drop Values — For Conventional Chains					
Chain Series	Chain Numbers	"C" Dimension		"E" Dimension	
		in	mm	in	mm
1700	1700, AC1700	1.97	50.0	0.470	11.94
1701	1701	1.97	50.0	0.480	12.19
1701TAB	1701TAB, AC1701TAB	1.97	50.0	0.480	12.19
1702	1702	1.97	50.0	0.480	12.19
1755	1755	1.58	40.0	0.250	6.35
1765	1765	1.97	50.0	0.470	11.94
2500TAB	2500TAB	3.00	76.2	0.700	17.78
2550TAB	2550TAB	3.00	76.2	0.700	17.78
2565	2565	3.00	76.2	0.700	17.78

 For 1757 chains, see page EM - TT - 33 (TableTop section).

Contact Rexnord Application Engineering for more information 1.262.376.4800



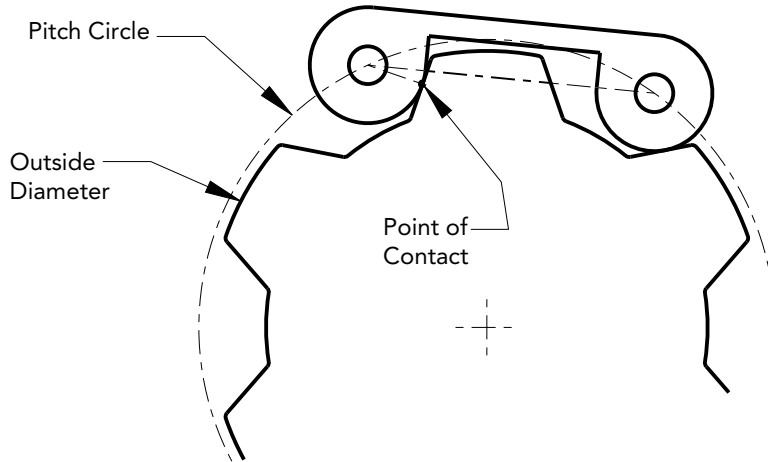


# CONVEYOR DESIGN RECOMMENDATIONS

## ➤ Sprocket Pitch Diameter vs. Outside Diameter

In some instances, it is possible for a sprocket's pitch diameter to be larger than the outside diameter. This is not a problem because the link does not contact the sprocket on the pitch circle.

## ➤ Why Pitch Diameter Is Larger Than the Outside Diameter on Small Sprockets



- ⇒ The outside diameter is to the outer tips of the teeth.
- ⇒ The chain's pins are on the pitch diameter. On a very small sprocket, the chord created by the link causes the point where the sprocket contacts the tooth to be much closer to the sprocket center than the pins and the pitch circle.

**i** Chordal action is defined as the up and down motion of the chain over top dead center of the sprocket centerline. Excessive chordal action can lead to product tippage.

> Sprocket Pitch Diameter vs. Outside Diameter

> Why Pitch Diameter Is Larger Than the Outside Diameter on Small Sprockets

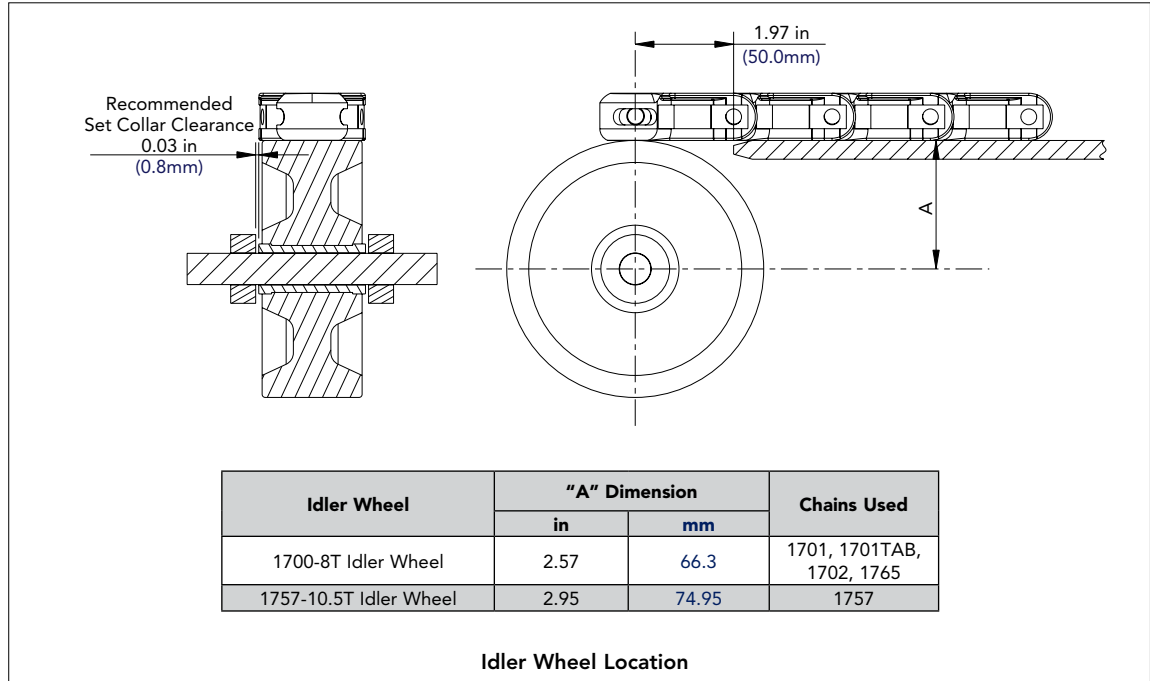
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**Idler Wheel and Sprocket Location (Stationary Shafts Only)**

⇒ For proper location and smooth operation, the idler wheels should be mounted slightly below the top of the wearstrips



Idler Wheel	"A" Dimension		Chains Used
	in	mm	
1700-8T Idler Wheel	2.57	66.3	1701, 1701TAB, 1702, 1765
1757-10.5T Idler Wheel	2.95	74.95	1757

**Idler Wheel Location**

**Shafting Recommendations for Stationary Tail Shafts**

**Recommended Materials:**

- ⇒ Carbon Steel (dry environments only)
- ⇒ Stainless Steel

**Suggested Hardness:**

- ⇒ 25 to 30 Rc

**Suggested Surface Finish:**

- ⇒ 63 μ-in Ra

✓ Rexnord recommends rotating shafts in bearings. If bearings are not used, the following are guidelines for operating Multiflex sprockets on stationary shafts:

Sprocket	Max. Recommended Chain Speed	
	FPM	MPM
N - Acetal	0-50	0-15
UHMWPE	0-50	0-15
NS - Nylon, Split	0-100	0-30
LF Bushing (Idler Wheel)	0-300	0-90
Bronze Bushing	0-500	0-150
Bearings	Recommended for Speeds > 500	Recommended for Speeds > 150

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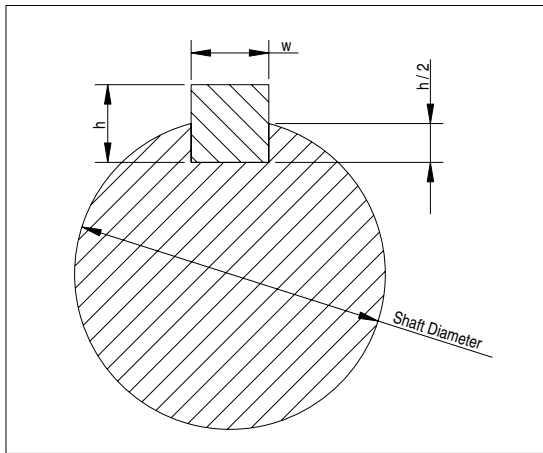
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## ► Keyway and Setscrew Sizes

English:		KEYWAY			Setscrew Size
Shaft Diameter	Key Width (w)	Key Height (h)	Keyseat at Depth (h/2)		
> 9/16" to 7/8"	3/16"	3/16"	3/32"	1/4-20	
> 7/8" to 1-1/4"	1/4"	1/4"	1/8"	3/8-16	
> 1-1/4" to 1-3/8"	5/16"	5/16"	5/32"	3/8-16	
> 1-3/8" to 1-3/4"	3/8"	3/8"	3/16"	3/8-16	
> 1-3/4" to 2-1/4"	1/2"	1/2"	1/4"	1/2-13	
> 2-1/4" to 2-3/4"	5/8"	5/8"	5/16"	1/2-13	

Metric:		KEYWAY			Setscrew Size
Shaft Diameter	Key Width (w)	Key Height (h)	Keyseat at Depth (h/2)		
> 22mm to 30mm	8mm	7mm	3.5mm	M6 x 1	
> 30mm to 38mm	10mm	8mm	4mm	M8 x 1.25	
> 38mm to 44mm	12mm	8mm	4mm	M10 x 1.5	
> 44mm to 50mm	14mm	9mm	4.5mm	M10 x 1.5	
> 50mm to 58mm	16mm	10mm	5mm	M12 x 1.75	
> 58mm to 65mm	18mm	11mm	5.5mm	M12 x 1.75	



✓ English keyed round bore sprockets are available with one setscrew as standard. Additional setscrews can be provided upon request. Metric keyed round bore sprockets are not supplied with a setscrew as standard.

 If multiple strands share a tail shaft, key only one sprocket and allow others to rotate. Collars should be utilized to prevent lateral movement.

## ► Split Sprocket Bore Nomenclature

**Shaft Ready** — Tight fit on the shaft with a keyway and setscrew.

**Plain Bore** — Same tight fit bore as a shaft ready bore, but without a keyway and setscrew.

**Idler Bore** — Round bore with a clearance fit (no keyway or setscrew). Designed to spin freely on the shaft.

**Rough Stock Bore** — Wide tolerance bore used for work in process. Not for use on any shaft. Must be further machined for actual use.

**Over Sized Bore** — Round bore with a slightly loose fit on the shaft with keyway but no setscrew. Designed to move laterally on the shaft during setup and still transmit torque through the keyway as a drive sprocket in the actual application. Not recommended for axial float in thermal applications.

> Keyway and Setscrew Sizes  
> Split Sprocket Bore Nomenclature

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Multiflex Chains



The TableTop Calculation Program is available to perform chain pull calculations for specific conveyor applications.

**➤ Chain Pull Calculations**

⇒ **To obtain the most recent calculation program:**

- ◆ Download from Technical Support at: <http://www.rexnord.com/flattop>
- ◆ Contact Application Engineering

⇒ **Prior to performing chain pull calculations, the following information is needed:**

- ◆ Chain style, material and width
- ◆ Wearstrip material
- ◆ Corner disc or corner track material
- ◆ Lubrication conditions (i.e. dry, water, Soap & Water, oil)
- ◆ Chain speed (FPM) or (MPM)
- ◆ Product weight (lbs/ft) or (kg/m)
- ◆ Product material
- ◆ Number of starts per hour (e.g. indexing conveyors)
- ◆ Percent of time product accumulation occurs (i.e. slippage)
- ◆ Portion of conveyor where product accumulation occurs
- ◆ Conveyor layout with dimensions

⇒ **The calculation output sheet contains the following information:**

- ◆ Calculated headshaft chain tension
- ◆ Maximum allowable headshaft chain tension
- ◆ Percent of allowable chain tension
- ◆ Total horsepower required with an assumed gearbox efficiency of 100%
- ◆ Calculated corner tension (PV)
- ◆ Maximum allowable corner tension

**➤ Friction Formulas**

⇒ When inclining or declining, the coefficient of friction must be modified between chain and wearstrip (Fw)

**Incline:**  $Fw_{incline} = (Fw_{horizontal} \times \text{Cos}\theta) + \text{Sin}\theta$

**Decline:**  $Fw_{decline} = (Fw_{horizontal} \times \text{Cos}\theta) - \text{Sin}\theta$

**i** For an example of calculating chain speed, see page EM - TT - 39 (TableTop Section).

✓ If the percent of allowable chain tension is 100% or less, your conveyor application is within chain capacity.



The horsepower requirement the program calculates is the "design horsepower" that is required to power the conveyor based on the input parameters. Additional considerations should be made for the type of drive used, efficiency losses in the power train, appropriate service factors, as well as any gearbox manufacturer's recommendations.



Rexnord recommends some sort of soft start for all FlatTop chain conveyor motors, but especially for higher speeds and conveyors with bottom drives. Hard starts add peak loads to the chain, which will shorten the service life. Hard starts can also cause the chain to stretch and bounce in the catenary sag section, sometimes causing the chain to catch in the conveyor frame and become damaged. On bottom drives, hard starts can cause the chain to fall off the drive sprockets and skip teeth.

✓ If the calculated corner tension is less than the maximum allowable corner tension, your conveyor application is within chain PV capacity.

⇒ **The TableTop Chain Calculation Program calculates the following:**

- ◆ Carousel conveyor analysis (i.e. offset wrap drive conveyors)
- ◆ Universal conveyor analysis (i.e. alpine systems, multiple loading systems)
- ◆ Catenary sag vs. length vs. tension
- ◆ Catenary sag vs. length vs. excess chain
- ◆ Product backline pressure (due to accumulation)



The TableTop Calculation Program does not take environmental conditions into consideration. This calculation program ONLY provides information on whether the chain is within capacity.

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## ▶ Typical Product Sizes and Weights

> Typical Product  
Sizes and  
Weights

Content	Container Material	Container Size	Base Dimensions		Weight Full		Single File		En Masse		
			inches	mm	lbs	kg	lbs/ft	kg/m	lbs/ft <sup>2</sup>	kg/m <sup>2</sup>	
Dairy	Milk	Paper	1/2 Pint	3 x 3	76.2 x 76.2	0.60	0.27	2.4	3.6	-	-
		Paper	Pint	3 x 3	76.2 x 76.2	1.10	0.50	4.4	6.5	-	-
		Paper	Quart	3-1/8 x 3-1/8	79.4 x 79.4	2.30	1.04	8.8	13.1	-	-
		Paper	1/2 Gallon	4-1/8 x 4-1/8	104.8 x 104.8	4.50	2.04	13.1	19.5	-	-
	Plastic	Gallon	6 x 6	152.4 x 152.4	8.90	4.04	17.8	26.5	-	-	
	Yogurt	Plastic	6 oz	2-5/8 Ø	66.7Ø	0.40	0.18	1.8	2.7	9.7	46.9
		Plastic	6 Pack / 4 oz Containers	5 x 7	127 x 177.8	1.57	0.71	3.8	5.6	-	-
	Cottage Cheese	Plastic	1/2 lb	4 Ø	101.6Ø	0.60	0.27	1.8	2.7	6.2	30.3
Plastic		1 lb	4-3/4 Ø	120.7Ø	1.10	0.50	2.8	4.1	8.1	39.4	
Plastic		2 lb	5 Ø	127Ø	2.30	1.04	5.5	8.2	15.3	74.4	
Beverages	Concentrated Juice	Paper	12 oz	2-5/8 Ø	66.7Ø	1.00	0.45	4.6	6.8	24.1	117.2
		Plastic	Gallon	6 Ø	152.4Ø	1.17	0.53	2.3	3.5	5.4	26.3
	Juice	Glass	Gallon	6 Ø	152.4Ø	3.59	1.63	7.2	10.7	16.6	80.6
		Paper	6.75 oz Box (Tetra)	1-1/2 x 2-1/4	38.1 x 57.2	0.48	0.22	3.8	5.7	-	-
		Plastic	10 Pack / 6.75 Boxes (Tetra)	3 x 10-1/2	76.2 x 266.7	4.87	2.21	19.5	29.0	-	-
		Aluminum	250ml PET	2-5/64 Ø	52.9Ø	0.63	0.29	3.6	5.4	24.3	117.4
	Soft Drink	Aluminum	12 oz	2.6 Ø	66.0Ø	0.85	0.39	3.9	5.8	20.9	101.8
		Plastic	500ml PET	2-37/64 Ø	65.5Ø	1.16	0.53	5.4	8.0	29.0	141.0
		Plastic	20 oz PET	2-7/8 Ø	73.0Ø	1.37	0.62	5.7	8.5	27.6	134.1
		Plastic	1 Liter PET	3-3/16 Ø	81.0Ø	2.31	1.05	8.7	12.9	37.8	183.7
		Plastic	1-1/2 Liter PET	4-3/16 Ø	106.4Ø	3.40	1.54	9.7	14.5	32.2	156.7
		Plastic	2 Liter PET	4-1/2 Ø	114.3Ø	4.40	2.00	11.7	17.5	36.1	175.7
		Plastic	3 Liter PET	5-1/8 Ø	130.2Ø	6.38	2.89	14.9	22.2	40.4	196.3
		Beer	Glass	12 oz	2-1/2 Ø	63.5Ø	1.50	0.68	7.2	10.7	39.9
	Glass		12 oz Non-Returnable	2-3/4 Ø	69.9Ø	1.20	0.54	5.2	7.8	26.4	128.1
	Glass		16 oz Non-Returnable	2-3/4 Ø	69.9Ø	1.60	0.73	7.0	10.4	35.2	170.8
	Glass		32 oz	2-5/8 Ø	66.7Ø	3.40	1.54	15.5	23.1	82.0	398.6
	Glass		64 oz	3-5/8 Ø	92.1Ø	3.88	1.76	12.8	19.1	49.1	238.6
	Aluminum		12 oz	2.6 Ø	66.0Ø	0.85	0.39	3.9	5.8	20.9	101.8
	Paper		12 Pack / 12 oz Cans	10-3/4 x 7-3/4	273.1 x 196.9	10.40	4.72	11.6	17.3	-	-
Paper	12 Pack Fridge Pack		16 x 4-7/8	406.4 x 123.8	10.32	4.68	7.7	11.5	-	-	
Paper	24 Pack / 12 oz Cans		16 x 10-3/4	406.4 x 273.1	20.16	9.14	15.1	22.5	-	-	
Paper	24 Pack / 12 oz Cans (cube)		10-3/4 x 7-3/4	273.1 x 196.9	20.16	9.14	22.5	33.5	-	-	
Paper	18 Pack / 12 oz Cans		16 x 7-3/4	406.4 x 196.9	14.69	6.66	11.0	16.4	-	-	
Wine / Champagne	Paper		30 Pack / 12 oz Cans	13-1/2 x 7-3/4	342.9 x 196.9	24.48	11.10	21.8	32.4	-	-
	Glass	750ml	2-7/8 Ø	73.0Ø	2.88	1.31	12.0	17.9	57.9	281.9	
	Glass	1.5 Liter	4-1/4 Ø	108.0Ø	6.37	2.89	18.0	26.8	58.6	284.9	
	Glass	12 oz	2-1/2 Ø	63.5Ø	1.22	0.55	5.9	8.7	32.5	157.8	
Coffee	Paper	4 Pack / 12 oz Bottles	5-1/8 x 5-1/4	130.2 x 133.4	5.07	2.30	11.9	17.7	-	-	
	Metal	1/2 lb	4-1/8 Ø	104.8Ø	0.80	0.36	2.3	3.5	7.8	38.0	
	Metal	1 lb	4-1/8 Ø	104.8Ø	1.30	0.59	3.8	5.6	12.7	61.7	
	Metal	2 lb	5-1/4 Ø	133.4Ø	2.50	1.13	5.7	8.5	15.1	73.3	
Food	Metal	3 lb	6-1/4 Ø	158.8Ø	3.80	1.72	7.3	10.9	16.2	78.6	
	Baby Food	Glass	Regular	2-3/8 Ø	60.3Ø	0.56	0.25	2.8	4.2	16.5	80.3
	Baby Food	Glass	Junior	2-3/8 Ø	60.3Ø	0.80	0.36	4.0	6.0	23.6	114.8
	Soup	Metal	10.5 oz	2-5/8 Ø	66.7Ø	0.76	0.34	3.5	5.2	18.3	89.1
	Soup	Metal	18.5 oz	3-1/8 Ø	79.4Ø	1.33	0.60	5.1	7.6	22.6	110.0
	Soup	Metal	32 oz	4 Ø	101.6Ø	1.90	0.86	5.7	8.5	19.7	96.0
	Cracker	Paper	10 oz Box	2-1/4 x 5-1/4	57.2 x 133.4	0.72	0.33	3.8	5.7	-	-
	Peanut Butter	Plastic	18 oz	3 Ø	76.2Ø	1.15	0.52	4.6	6.8	21.2	103.3
	Jelly	Glass	32 oz	3-5/16 Ø	84.1Ø	2.15	0.98	7.8	11.6	32.6	158.6
	Jelly	Glass	18 oz	2-5/8 Ø	66.7Ø	1.62	0.73	7.4	11.0	39.1	189.9
	Catsup	Plastic	24 oz	2-1/4 x 3-3/4	57.2 x 95.3	1.63	0.74	8.7	12.9	-	-
	Apple Sauce	Glass	23 oz	3-5/16 Ø	84.1Ø	2.05	0.93	7.4	11.1	31.1	151.2
	Mayonnaise	Glass	32 oz	4 Ø	101.6Ø	3.03	1.37	9.1	13.5	31.5	153.1
	Cereal	Paper	14 oz Box	2-3/8 x 7-1/2	60.3 x 190.5	1.06	0.48	5.4	8.0	-	-
	Vegetable	Metal	14.5 oz	2-15/16 Ø	74.6Ø	1.04	0.47	4.2	6.3	20.0	97.5
	Tuna	Metal	12 oz Can	4 Ø	101.6Ø	0.88	0.40	2.6	3.9	9.1	44.5
Tomato Sauce	Metal	29 oz	4 Ø	101.6Ø	2.07	0.94	6.2	9.2	21.5	104.6	
Cleaners	Dish Soap	Plastic	25 oz	2-7/16 x 3-3/8	61.9 x 85.7	1.78	0.81	8.8	13.0	-	-
	Liquid Laundry Soap	Plastic	22 oz	2 x 3-3/8	50.8 x 85.7	1.60	0.73	9.6	14.3	-	-
	Liquid Laundry Soap	Plastic	32 oz	2-5/8 x 4-1/2	66.7 x 114.3	2.30	1.04	10.5	15.6	-	-
	Liquid Laundry Soap	Plastic	100 oz	5-1/2 x 7-3/4	139.7 x 196	7.01	3.18	15.3	22.8	-	-
	Liquid Bleach	Plastic	Quart	3-1/4 Ø	82.6Ø	2.40	1.09	8.9	13.2	37.8	183.5
	Liquid Bleach	Plastic	1/2 Gallon	4-3/4 Ø	120.7Ø	4.80	2.18	12.1	18.0	35.4	171.9
	Liquid Bleach	Plastic	Gallon	6-1/4 Ø	158.8Ø	9.50	4.31	18.2	27.1	40.4	196.5
	Liquid Bleach	Plastic	182 oz	7-1/4 Ø	184.2Ø	8.16	3.70	13.5	20.1	25.8	125.5
Toiletries	Toilet Paper	Paper	Individual Roll	4-1/4 Ø	108.0Ø	0.23	0.10	0.6	1.0	2.1	10.3
	Toilet Paper	Plastic	4 Pack	4-1/4 x 8-1/2	108 x 215.9	0.93	0.42	2.6	3.9	-	-
	Toilet Paper	Plastic	24 Pack	12 x 15-1/2	304.8 x 393.7	5.67	2.57	5.7	8.4	-	-
Automotive	Tire	Passenger	Typical	28 Ø	711.2Ø	35.00	15.87	-	-	-	-
	Tire	Truck	Typical	48 Ø	1219.2Ø	150.00	68.03	-	-	-	-

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Multiflex Chains

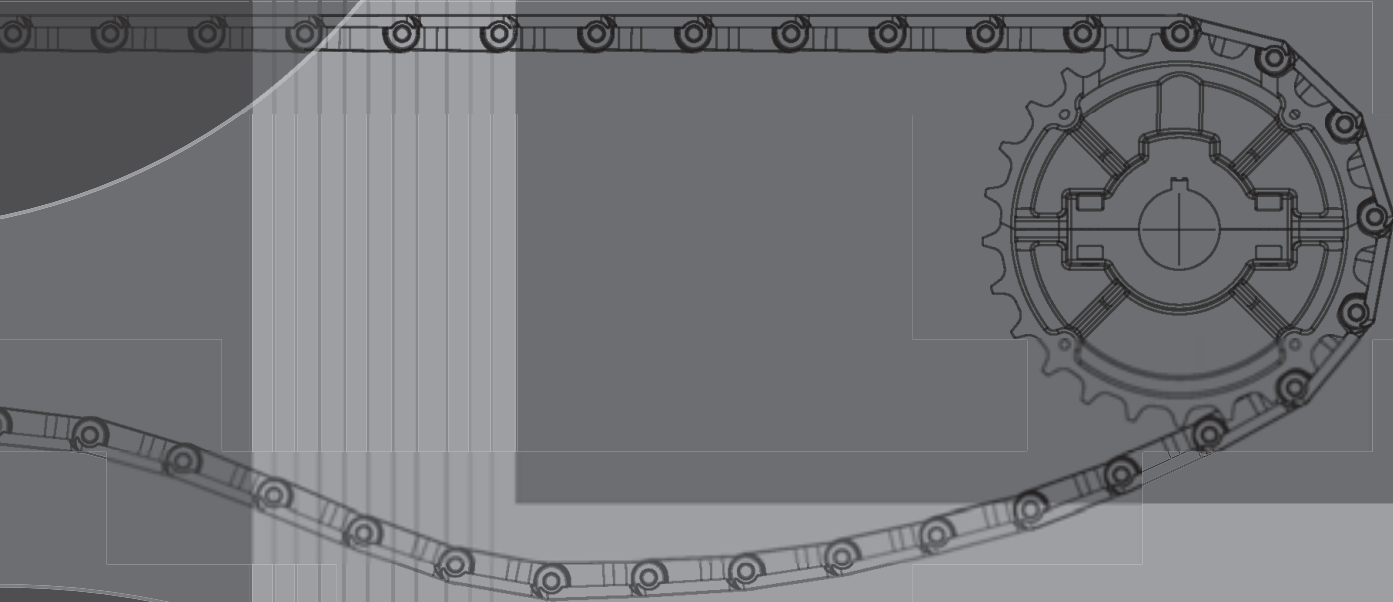
Contact Rexnord Application Engineering for more information 1.262.376.4800





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# Appendix



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All Rexnord® Chains are formed or molded from the highest quality materials available. From low friction to high temperature, we offer the widest selection of materials specifically tailored around the needs of our customers. We are committed to ongoing research and development allowing us to adapt to our customers and their demanding application requirements.

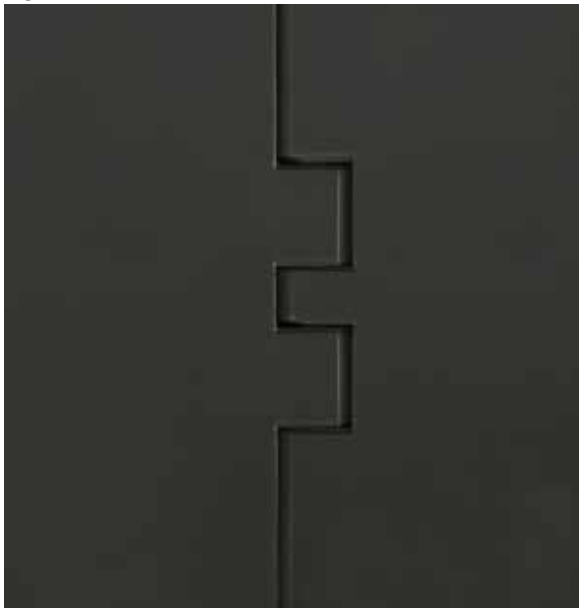
# Rexnord® Materials



MATERIAL INDEX

Material Prefix	Description	Page	Primary Components	FDA Approved
AS	Anti-Static	MA - 1	Electrically conductive acetal (POM)	No
BHA	Blue High Temperature Antimicrobial	MA - 36	Polypropylene (PP) Microban® antimicrobial product protection	***
BHT	Blue High Temperature	MA - 17	Polypropylene (PP)	Yes
BIR	Black Impact Resistant	MA - 2	Impact resistant nylon (PA)	No
BLA	Blue Low Temperature Antimicrobial	MA - 37	Polyethylene (HDPE) Microban® antimicrobial product protection	Yes
BLT	Blue Low Temperature	MA - 21	Polyethylene (HDPE)	***
BRSM	Black Cut Resistant with Red Links	MA - 3	Cut and abrasive wear resistant acetal (POM)	Yes
BSA	Blue Special Acetal Antimicrobial	MA - 38	Cut resistant acetal (POM) Microban® antimicrobial product protection	***
BSM	Black Cut Resistant	MA - 39	Cut and abrasive wear resistant acetal (POM)	Yes
BUV	Blue Acetal Ultraviolet Resistant	MA - 7	Ultraviolet resistant acetal (POM)	No
BWR	Black Wear Resistant	MA - 4	Wear resistant nylon (PA) composite	No
BYSM	Black Cut Resistant with Yellow End Links	MA - 3	Cut and abrasive wear resistant acetal (POM)	Yes
CR	Extreme Chemical Resistant	MA - 5	Fluorinated polymer	Yes
D	Plain Acetal	MA - 6	Acetal (POM)	No
DUV	Plain Acetal Ultraviolet Resistant	MA - 7	Ultraviolet resistant acetal (POM)	No
EPDM	Ethylene Propylene Rubber	MA - 8	Ethylene Propylene Rubber	No
ESD	Electrostatic Dissipative	MA - 9	Electrically conductive polypropylene (PP)	No
FR	Flame Retardant	MA - 10	Flame retardant polyester (PBT)	No
FR-ESD	Flame Retardant Electrostatic Dissipative	MA - 45	Flame retardant electrostatic dissipative Nylon (PA)	No
FTR	Fryer Temperature Resistant (Black)	MA - 11	Fryer Temperature Resistant Nylon (PA).	Yes
GLD	Grey Low Temperature Detectable Antimicrobial	MA - 12	Polyethylene (HDPE) and nonferrous metal particulate Microban® antimicrobial product protection	***
GSA	Grey Special Acetal Antimicrobial	MA - 38	Cut resistant acetal (POM) Microban® antimicrobial product protection	***
GTC	Grey Tough Composite	MA - 13	High strength, impact modified composite.	No
HCAS	High Capacity Anti-static (Black)	MA - 43	High capacity Anti-static acetal (POM)	No
HC-ESD	High Capacity Electrostatic Dissipative	MA - 44	High capacity electrostatic dissipative acetal (POM)	No
HP	High Performance	MA - 14	High performance, internally lubricated acetal (POM)	Yes
HS	Heat Stabilized	MA - 16	Heat stabilized nylon (PA)	No
HT	High Temperature	MA - 17	Polypropylene (PP)	Yes
HTB	Black High Temperature	MA - 17	Polypropylene (PP)	Yes
HTF	High Temperature Friction Top	MA - 18	High temperature polypropylene with TPE high friction pads	No
HUV	High Temperature Ultraviolet Resistant	MA - 19	Ultraviolet resistant polypropylene (PP)	No
KHT	Khaki High Temperature	MA - 17	Polypropylene (PP)	Yes
LF	Low Friction	MA - 20	Low friction acetal (POM)	Yes
LT	Low Temperature (natural)	MA - 21	Low friction acetal (POM)	Yes
LUV	Low Temperature Ultraviolet Resistant	MA - 22	Ultraviolet resistant polyethylene (HDPE)	No
MLF	Medium Duty Low Friction (Tan)	MA - 23	Low friction acetal (POM)	No
MR	Melt Resistant	MA - 24	Melt resistant nylon (PA)	No
Neoprene	Neoprene	MA - 25	Neoprene	No
P	Chemical Resistant	MA - 26	Polyester (PBT)	Yes
PS®	Platinum Series	MA - 27	High speed, Platinum Series internally lubricated acetal (POM)	Yes
PSX®	Platinum Series	MA - 28	High speed, Platinum Series internally lubricated acetal (POM)	Yes
RHT	Red High Temperature	MA - 17	Polypropylene (PP)	Yes
RLD	Red Low Temperature Detectable Antimicrobial	MA - 12	Polyethylene (HDPE) and nonferrous metal particulate Microban® antimicrobial product protection	***
RSM	Red Cut Resistant	MA - 39	Cut and abrasive wear resistant acetal (POM)	Yes
RUV	Red Acetal Ultraviolet Resistant	MA - 7	Ultraviolet resistant acetal (POM)	No
S	Carbon Steel	MA - 29	Carbon steel	No
SMB	Blue Cut Resistant	MA - 39	Cut and abrasive wear resistant acetal (POM)	Yes
SRMB	Blue Cut Resistant with Red End Links	MA - 3	Cut and abrasive wear resistant acetal (POM)	Yes
SS	Stainless Steel	MA - 30	Austenitic stainless steel	Yes
SSB	Stainless Steel Low Magnetic	MA - 31	Low ferromagnetic austenitic stainless steel	Yes
SYMB	Blue Cut Resistant with Yellow End Links	MA - 3	Cut and abrasive wear resistant acetal (POM)	Yes
THD	Tan High Temperature Detectable Antimicrobial	MA - 33	Polypropylene (PP) and nonferrous metal particulate	***
UHS	Ultra High Strength	MA - 34	High strength polypropylene (PP) composite	No
USP	Ultra Stabilized Polypropylene	MA - 35	Polypropylene (PP) and Chemical Stabilizers	Yes
WD	White Plain Acetal	MA - 6	Acetal (POM)	No
WHA	White High Temperature Antimicrobial	MA - 36	Polypropylene (PP)	***
WHP	White High Performance	MA - 14	High performance, internally lubricated acetal (POM)	Yes
WHT	White High Temperature	MA - 17	Polypropylene (PP)	Yes
WLA	White Low Temperature Antimicrobial	MA - 37	Polyethylene (HDPE)	***
WLF	White Low Friction	MA - 20	Low friction acetal (POM)	Yes
WLT	White Low Temperature	MA - 21	Polyethylene (HDPE)	Yes
WSA	White Special Acetal Antimicrobial	MA - 38	Cut resistant acetal (POM)	***
WSM	White Cut Resistant	MA - 39	Cut and abrasive wear resistant acetal (POM)	Yes
WX	Green Abrasion Resistant Polymaide	MA - 40	Abrasion Resistant Polymaide (PA) Composite	No
XLA	Internally Lubricated Polyacetal (Grey)	MA - 41	Internally lubricated polyacetal (POM)	Yes
XLG	Low Friction Acetal (Green)	MA - 42	Internally lubricated polyacetal (POM)	Yes
YSM	Yellow Cut Resistant	MA - 39	Cut and abrasive wear resistant acetal (POM)	Yes
YUV	Yellow Acetal Ultraviolet Resistant	MA - 7	Ultraviolet resistant acetal (POM)	No

\*\*\*These materials meet the end-test requirements as specified by FDA 21 CFR 177.1520 (c), the FDA requirement for polyolefin materials intended for direct food contact. All components of these materials are either compliant for food contact as listed by the FDA or regulated by the EPA.



**Brief Description**

Formulated to reduce or eliminate nuisance static buildup that can occur while conveying products or during product accumulation. Used to dissipate nuisance sparks for Class II type static environments only. Please contact Application Engineering at 262.376.4800 for specific uses for this material.

**Primary Components**

Electrically conductive acetal (POM)

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet	dry	wet			
AS	Anti-Static (Black)	0	+180	NR	-18	+82	NR	No

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.25	0.27	0.20	0.33	0.25	0.25	0.30
Water	NR	NR	NR	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR	NR	NR	NR
Oil	NR	NR	NR	NR	NR	NR	NR

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.30	0.25	0.25	0.20
Water	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR
Oil	NR	0.10	0.10	0.10

**Regulatory Information**

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- Types of Static Environments:  
Class I: Static spark causes explosion. Use stainless steel chain materials.  
Class II: Static spark is a nuisance charge causing slight shock, possible circuit damage or electrical malfunction.
- Electrical Properties: Surface resistivity = 10<sup>3</sup> Ω/sq.
- Wearstrip Recommendations: Wearstrips must be grounded to the conveyor frame and must be electrically conductive to be effective. The conveyor frame should also be externally grounded.
- Strength Considerations:
  - Rexnord® TableTop® & MatTop® Chains molded from anti-static material must be derated 40% from their acetal counterparts.
  - Pressure-Velocity (PV) Limits: PV Limit of Rexnord® TableTop® Chains molded from anti-static material must be derated 40% from acetal materials. PV Limits relate to the speed and tension exerted as the chain travels around the corners.
- Depending on application requirements, the entire conveyor chain can be comprised of anti-static material or sections of antistatic material can be interspersed at various intervals.
- AS friction factor should be used when interspersing AS links into any other material.

NR denotes "not recommended", Dash denotes "combination not tested"

\*\*Friction of returnable bottles will vary depending on the quality of the glass, the amount of roughed up surface, etc.

# BIR



### Brief Description

BIR is an impact resistant material specifically formulated to take constant impact. It has excellent impact resistance as well as good chemical resistance.

### Primary Components

Impact resistant nylon (PA)

### General Information

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
			dry	wet		dry	wet	
BIR	Black Impact Resistant	-40	+180	NR	-40	+82	NR	No

### Friction Factors Between Material and Product

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.25	0.27	0.20	0.33	0.25	0.25	0.30
Water	NR	NR	NR	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR	NR	NR	NR
Oil	---	---	---	NR	---	---	0.10

### Friction Factors Between Material and Wearstrips

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.28	0.22	0.22	0.20
Water	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR
Oil	0.10	0.10	0.10	0.10

#### 1. Strength Considerations:

- Pressure-Velocity (PV) Limits: PV Limit of Rexnord® TableTop® Chains molded from impact resistant material must be derated 20% from acetal materials. PV Limits relate to the speed and tension exerted as the chain travels around the corners.

#### 2. It is important to lubricate side-flexing chains in the corners to reduce noise levels at speeds in excess of 100FPM; water lubrication is unacceptable because it will cause melt resistant material to swell and lose strength.

#### 3. Not intended for wet applications due to expansion

### Regulatory Information

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\*\*Friction of returnable bottles will vary depending on the quality of the glass, the amount of roughed up surface, etc.

**BRSM**



**BYSM**



**SRMB**



**SYMB**



**Brief Description**

Automotive handling applications require chains to be assembled with different color end links to provide contrast. These are the same chain modules molded in wear and cut resistant materials (BSM, SMB, RSM and YSM) only assembled in the same chain. Can be used in both dry and wet conditions and in applications where abrasive wear due to products or environment is a concern. Has good impact resistance and is as strong as standard acetal materials.

**Primary Components**

Cut and abrasive wear resistant acetal (POM)

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet		dry	wet		
BRSM	Black Cut Resistant with Red End Links	-40	+180	+150	-40	+82	+66	Yes
BYSM	Black Cut Resistant with Yellow End Links	-40	+180	+150	-40	+82	+66	Yes
SRMB	Blue Cut Resistant with Red End Links	-40	+180	+150	-40	+82	+66	Yes
SYMB	Blue Cut Resistant with Yellow End Links	-40	+180	+150	-40	+82	+66	Yes

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.25	0.27	0.20	0.33	0.25	0.25	0.30
Water	NR	NR	NR	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR	NR	NR	NR
Oil	---	---	---	NR	---	---	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.30	0.25	0.25	0.20
Water	0.23	0.21	0.21	0.18
Soap and Water	0.15	0.15	0.15	0.15
Oil	0.10	0.10	0.10	0.10

1. Not available for Rexnord® TableTop® and Multiflex chains.

**Regulatory Information**

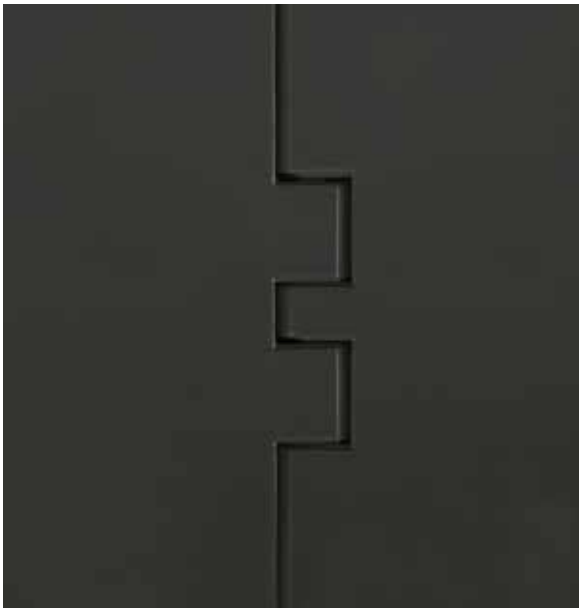
The Food and Drug Administration (FDA) accepts certain materials for direct food contact. FDA approved material is compliant to FDA 21 CFR § 177.

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# BWR



### Brief Description

Formulated to be used in applications where chain is subjected to very abrasive product surfaces. Used to convey irregularly shaped products such as castings and machined steel parts. May extend chain wear life up to five times compared to acetal materials.

### Primary Components

Wear resistant nylon (PA)

### General Information

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet		dry	wet		
BWR	Black Wear Resistant	-40	+180	NR	-40	+82	NR	No

### Friction Factors Between Material and Product

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.25	0.27	0.20	0.33	0.25	0.25	0.30
Water	NR	NR	NR	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR	NR	NR	NR
Oil	---	---	---	NR	---	---	0.10

### Friction Factors Between Material and Wearstrips

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.28	0.22	0.22	0.20
Water	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR
Oil	0.10	0.10	0.10	0.10

#### 1. Strength Considerations:

- Pressure-Velocity (PV) Limits: PV Limit of Rexnord® TableTop® Chains molded from wear resistant material must be derated 20% from acetal materials. PV Limits relate to the speed and tension exerted as the chain travels around the corners.

2. It is important to lubricate side-flexing chains in the corners to reduce noise levels at speeds in excess of 100FPM; water lubrication is unacceptable because it will cause melt resistant material to swell and lose strength.

3. Not intended for wet applications due to expansion

### Regulatory Information

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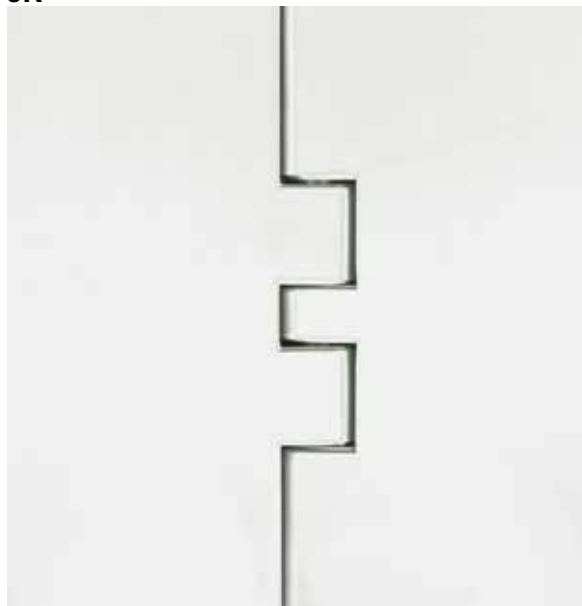
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NR denotes "not recommended", Dash denotes "combination not tested"

\*\*Friction of returnable bottles will vary depending on the quality of the glass, the amount of roughed up surface, etc.

CR

**Brief Description**

Able to withstand nearly any harsh chemical environment, including applications where strong oxidizing agents, acids and bases such as sodium hydroxide, sulfuric acid, hydrochloric acid, hydrofluoric acid and iodine are present. Please contact Rexnord at (262) 376-4800 for specific uses for this material.

**Primary Components**

Fluorinated polymer

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet		dry	wet		
CR	Extreme Chemical Resistant (White)	+40	+240	+212	+4	+116	+100	Yes

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.25	0.27	0.20	0.33	0.25	0.25	0.30
Water	0.17	0.18	0.15	NR	0.20	0.20	0.22
Soap and Water	0.12	0.14	0.10	NR	0.15	0.15	0.15
Oil	---	---	---	NR	---	---	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.30	0.25	0.25	0.22
Water	0.23	0.21	0.21	0.20
Soap and Water	0.15	0.15	0.15	0.15
Oil	0.10	0.10	0.10	0.10

**Regulatory Information**

The Food and Drug Administration (FDA) accepts certain materials for direct food contact. FDA approved material is compliant to FDA 21 CFR § 177.

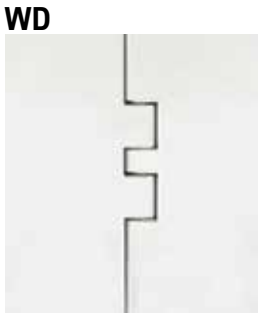
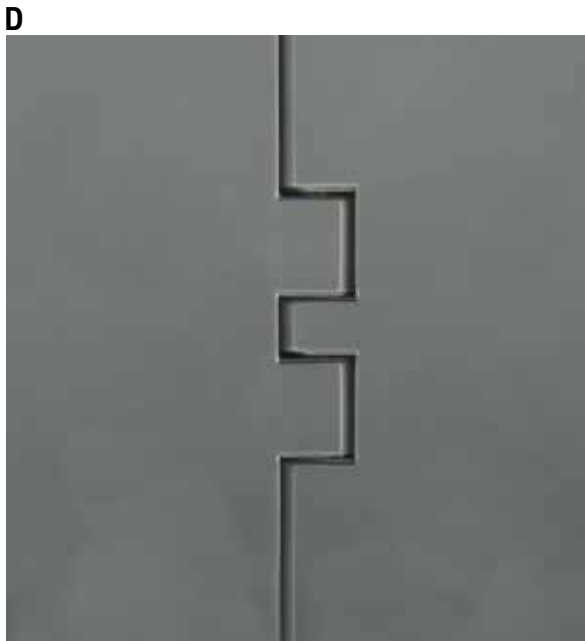
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**1. Strength Considerations:**

- Rexnord® TableTop® Chains molded from extreme chemical resistant material (with stainless steel pins) must be derated 20% from their acetal counterparts (with stainless steel pins).
- Rexnord® TableTop® Chains molded from extreme chemical resistant material (with plastic pins) must be derated 40% from their acetal counterparts (with stainless steel pins).
- Rexnord® MatTop® Chains molded from extreme chemical resistant material must be derated 20% from their acetal counterparts.
- Pressure-Velocity (PV) Limits: PV Limit of Rexnord® TableTop® Chains molded from extreme chemical resistant material must be derated 20% from acetal materials. PV Limits relate to the speed and tension exerted as the chain travels around the corners.



**Brief Description**

A general-purpose conveyor chain material which has low friction, high strength, excellent wear life, superior fatigue resistance and is chemical resistant in a wide range of environments.

**Primary Components**

Acetal (POM)

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet	min	dry	wet		
D	Plain Acetal (Gray)	-40	+180	+150	-40	+82	+66	No
WD	White Plain Acetal	-40	+180	+150	-40	+82	+66	No

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.25	0.27	0.20	0.33	0.25	0.25	0.30
Water	0.17	0.20	0.15	NR	0.20	0.20	0.22
Soap and Water	0.12	0.14	0.10	NR	0.15	0.15	0.15
Oil	---	---	---	NR	---	---	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.30	0.25	0.25	0.20
Water	0.23	0.21	0.21	0.18
Soap and Water	0.15	0.15	0.15	0.15
Oil	0.10	0.10	0.10	0.10

**Regulatory Information**

The Food and Drug Administration (FDA) accepts certain materials for direct food contact. FDA approved material is compliant to FDA 21 CFR § 177.

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NR denotes "not recommended", Dash denotes "combination not tested"

\*\*Friction of returnable bottles will vary depending on the quality of the glass, the amount of roughed up surface, etc.

**DUV**



**BUV**



**YUV**



**RUV**



**Brief Description**

Formulated to reduce or eliminate material degradation in applications where ultraviolet radiation exposure is a concern. Retains its mechanical integrity when exposed to direct sunlight (outdoor applications) as well as in applications that use ultraviolet radiation to run a process. Has the same strength and wear properties as plain acetal material.

**Primary Components**

Ultraviolet resistant acetal (POM)

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
			dry	wet		dry	wet	
DUV	Acetal Ultraviolet Resistant (Black)	0	+180	+150	-18	+82	+66	No
BUV	Blue Acetal Ultraviolet Resistant	0	+180	+150	-18	+82	+66	No
RUV	Red Acetal Ultraviolet Resistant	0	+180	+150	-18	+82	+66	No
YUV	Yellow Acetal Ultraviolet Resistant	0	+180	+150	-18	+82	+66	No

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.25	0.27	0.20	0.33	0.25	0.25	0.30
Water	0.17	0.18	0.15	NR	0.20	0.20	0.22
Soap and Water	0.12	0.14	0.10	NR	0.15	0.15	0.15
Oil	---	---	---	NR	---	---	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.30	0.25	0.25	0.20
Water	0.23	0.21	0.21	0.18
Soap and Water	0.15	0.15	0.15	0.15
Oil	0.10	0.10	0.10	0.10

**Regulatory Information**

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Nylatron is a registered trademark of Quadrant Engineering Plastics Products.

NR denotes "not recommended", Dash denotes "combination not tested"

\*\*Friction of returnable bottles will vary depending on the quality of the glass, the amount of roughed up surface, etc.



## EPDM (Black)



## EPDM (White)



### Brief Description

EPDM is used as a gripper material that has outstanding resistance to oxygen and ozone. It also has good resistance to the very hot water used in many SideGrip™ rinser applications. It is available in several different durometers (or hardness) for different applications.

### Primary Components

Ethylene propylene rubber

### General Information

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
			dry	wet		dry	wet	
-	EPDM	-58	+302	+302	-50	+150	+150	No

### Friction Factors Between Material and Product

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	NR	NR	NR	NR	NR	NR	NR
Water	NR	NR	NR	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR	NR	NR	NR
Oil	NR	NR	NR	NR	NR	NR	NR

### Friction Factors Between Material and Wearstrips

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	NR	NR	NR	NR
Water	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR
Oil	NR	NR	NR	NR

1. This material is not available in TableTop®, MatTop®, or Multiflex chains. It is only available as a gripper material for SideGrip™ chains.
2. The temperature range for standard 50 shore EPDM grippers. Other hardnesses will affect the operating temperature.
3. Color may be black or white depending on chain series. See specific chain series in Product Catalog for color.

### Regulatory Information

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Nylatron is a registered trademark of Quadrant Engineering Plastics Products.



**Brief Description**

A proprietary compound formulated for conveying sensitive products, such as electronics and computer chips, where controlling static charge and static decay are of critical importance. Meets the ESD Association Draft Standard DS 4.1 - 1995. Used to dissipate static charges that may occur while conveying products or during product accumulation. Also used to dissipate nuisance sparks for Class II type static environments only. Please contact Application Engineering at 262.376.4800 for specific uses for this material.

**Primary Components**

Electrically conductive polypropylene (PP)

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet	dry	wet			
ESD	Electrostatic Dissipative (Black)	0	+180	+180	-18	+82	+82	No

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.28	0.29	0.22	0.35	0.30	0.30	0.35
Water	0.19	0.21	0.17	NR	0.25	0.25	0.25
Soap and Water	0.16	0.12	0.10	NR	0.20	0.20	0.20
Oil	---	---	---	NR	---	---	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.35	0.30	0.30	0.26
Water	0.25	0.25	0.25	0.22
Soap and Water	0.20	0.20	0.20	0.19
Oil	0.10	0.10	0.10	0.10

**Regulatory Information**

Rexnord, TableTop and MatTop is a trademark of Rexnord Corporation.

Nylatron is a registered trademark of Quadrant Engineering Plastics Products.

- Types of Static Environments:  
Class I: Static spark causes explosion. Use stainless steel chain materials.  
Class II: Static spark is a nuisance charge causing slight shock, possible circuit damage or electrical malfunction.
- Electrical Properties: Surface resistivity = 105 to 109 Ω/sq.
- Wearstrip Recommendations: Wearstrips must be grounded to the conveyor frame and must be electrically conductive to be effective. The conveyor frame should also be externally grounded.
- Strength Considerations:
  - Rexnord® TableTop® & MatTop® Chains molded from ESD material must be derated 40% from their acetal counterparts.
  - Pressure-Velocity (PV) Limits: PV Limit of Rexnord® TableTop® Chains molded from ESD material must be derated 40% from acetal materials. PV Limits relate to the speed and tension exerted as the chain travels around the corners.
- Depending on application requirements, the entire conveyor chain can be comprised of anti-static material or sections of antistatic material can be interspersed at various intervals.
- Electrostatic dissipative material is only available in Rexnord® MatTop® and plastic

NR denotes "not recommended", Dash denotes "combination not tested"

\*\*Friction of returnable bottles will vary depending on the quality of the glass, the amount of roughed up surface, etc.

FR

**Brief Description**

Formulated to eliminate the possibility of sustained combustion should the chain be accidentally ignited. Will self extinguish per the UL Standard 94 V-0 standard when the source of ignition or flame is removed.

**Primary Components**

Flame retardant polyester (PBT)

**General Information**

Prefix	Material	Temperature						FDA Approval				
		Fahrenheit			Celsius							
		min	max		min	max						
FR	Flame Retardant (Gray)	0	dry	wet	+180	+140	-18	dry	wet	+82	+60	No

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.25	0.27	0.20	0.33	0.25	0.25	0.30
Water	0.17	0.18	0.15	NR	0.20	0.20	0.22
Soap and Water	0.12	0.14	0.10	NR	0.15	0.15	0.15
Oil	---	---	---	NR	---	---	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.30	0.25	0.25	0.22
Water	0.23	0.21	0.21	0.20
Soap and Water	0.15	0.15	0.15	0.15
Oil	0.10	0.10	0.10	0.10

**Regulatory Information**

Rexnord, TableTop and MatTop is a trademark of Rexnord Corporation.

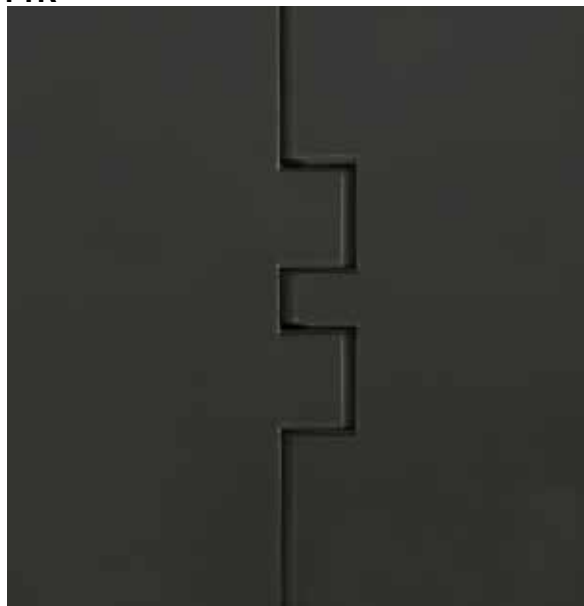
Nylatron is a registered trademark of Quadrant Engineering Plastics Products.

**1. Strength Considerations:**

- Rexnord® TableTop® Chains molded from flame retardant material must be derated 40% from their acetal counterparts.
- Rexnord® MatTop® Chains molded from flame retardant material must be derated 15% from their acetal counterparts.
- Pressure-Velocity (PV) Limits: PV Limit of Rexnord® TableTop® Chains molded from flame retardant material must be derated 20% from acetal materials. PV Limits relate to the speed and tension exerted as the chain travels around the corners.

**2. Flame retardant material is not recommended for high temperature applications.**

## FTR

**Brief Description**

Formulated to be used in oven / fryer discharge conveyor applications where the chain is exposed to high temperatures. Used to convey high temperature products such as chips.

**Primary Components**

Fryer temperature resistant nylon (PA)

**General Information**

Prefix	Material	Temperature						FDA Approval	
		Fahrenheit			Celsius				
		min	max		min	max			
		dry	wet		dry	wet			
FTR	Fryer Temperature Resistant (Black)	-80	+220	NR		-62	+104	NR	Yes

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.25	0.27	0.20	0.33	0.25	0.25	0.30
Water	NR	NR	NR	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR	NR	NR	NR
Oil	NR	NR	NR	NR	NR	NR	NR

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.30	0.28	0.28	0.25
Water	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR
Oil	0.10	0.10	0.10	0.10

**Regulatory Information**

The Food and Drug Administration (FDA) accepts certain materials for direct food contact. FDA approved material is compliant to FDA 21 CFR § 177.

Rexnord, TableTop and MatTop is a trademark of Rexnord Corporation.

Nylatron is a registered trademark of Quadrant Engineering Plastics Products.

## 1. Strength Considerations:

- Pressure-Velocity (PV) Limits: PV Limit of Rexnord® TableTop® Chains molded from melt resistant material must be derated 20% from acetal materials. PV Limits relate to the speed and tension exerted as the chain travels around the corners.

2. It is important to lubricate side-flexing chains in the corners to reduce noise levels at speeds in excess of 100FPM; water lubrication is unacceptable because it will cause melt resistant material to swell and lose strength.

3. Only available in 8505/8506 MatTop® chain series.

4. All applications must come through Application Engineering.

**GLD**



**RLD**



**Brief Description**

A patented blend of the Rexnord® Low Temperature Antimicrobial material. Formulated to inhibit the growth of bacteria, mold and mildew that may cause discoloration, odor or degradation of the Rexnord® MatTop® chain. Allows detection as it passes through a metal detector. Formulated for detection in dry food and frozen food. Retains toughness, impact strength and ductility in both dry and wet conditions to temperatures as low as -100°F (-73°C). While not as impact resistant as the WLT material, it still has excellent impact resistance. Chemical resistant to most bleaches, bases, acids and hydrocarbons. Developed specifically for chains used in dry snack food and frozen food processing.

**Primary Components**

Polyethylene (HDPE) and non ferrous metal particulate  
Microban® Antimicrobial Product Protection

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet	min	dry	wet		
GLD	Grey Low Temperature Detectable Antimicrobial	-100	+80	+80	-73	+27	+27	***
RLD	Red Low Temperature Detectable Antimicrobial	-100	+80	+80	-73	+27	+27	***

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.22	0.24	0.18	0.30	0.22	0.22	0.28
Water	0.17	0.17	0.14	NR	0.18	0.18	0.22
Soap and Water	0.12	0.14	0.10	NR	0.15	0.15	0.15
Oil	---	---	---	NR	---	---	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.28	0.23	0.23	0.21
Water	0.22	0.20	0.20	0.19
Soap and Water	0.15	0.15	0.15	0.14
Oil	0.10	0.10	0.10	0.10

1. Buoyant in water.
2. Not available for Rexnord® TableTop® and Multiflex chains.
3. The ability to detect plastic particles will vary due to sensitivity of individual metal detectors.

**Regulatory Information**

\*\*\*These materials meet the end-test requirements as specified by FDA 21 CFR 177.1520 (c), the FDA requirement for polyolefin materials intended for direct food contact. All components of these materials are either compliant for food contact as listed by the FDA or regulated by the EPA.

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This material will not protect the user against food-borne illness. Always maintain good hygiene, proper cleaning procedures are still required.  
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Nylatron is a registered trademark of  
Quadrant Engineering Plastics Products.

U.S. Patent 6177113

NR denotes "not recommended", Dash denotes "combination not tested"

\*\*Friction of returnable bottles will vary depending on the quality of the glass, the amount of roughed up surface, etc.

**GTC**



**Brief Description**

GTC is a high strength, toughened composite material specifically formulated to take constant impact. It's combination of high strength and low stretch make it an excellent material for high speed case incline (or decline) conveyors. Has excellent impact resistance as well as good chemical resistance.

**Primary Components**

High strength, impact modified composite

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
			dry	wet		dry	wet	
GTC	Grey Tough Composite	0	+180	+140	-18	+82	+60	No

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.25	0.27	0.20	0.33	0.25	0.25	0.30
Water	0.17	0.18	0.15	NR	0.21	0.21	0.23
Soap and Water	0.12	0.14	0.10	NR	0.15	0.15	0.15
Oil	---	---	---	NR	0.10	0.10	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.30	0.25	0.25	0.22
Water	0.23	0.21	0.21	0.20
Soap and Water	0.15	0.15	0.15	0.15
Oil	0.10	0.10	0.10	0.10

**Regulatory Information**

The Food and Drug Administration (FDA) accepts certain materials for direct food contact. FDA approved material is compliant to FDA 21 CFR § 177.

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Nylatron is a registered trademark of Quadrant Engineering Plastics Products.

Patent Pending.

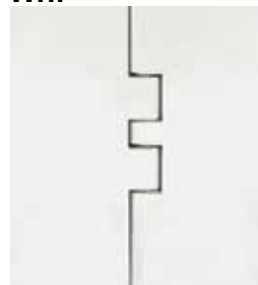
NR denotes "not recommended", Dash denotes "combination not tested"

\*\*Friction of returnable bottles will vary depending on the quality of the glass, the amount of roughed up surface, etc.

**HP™**



**WHP**



**Brief Description**

Patented Rexnord® High Performance Material has the lowest coefficient of friction of any chain or belt material. Extensive testing has proven that new high performance materials can reduce wear up to 40% over plain acetal and 25% over low friction acetal. Ideal for dry running applications and will permit greater operating speeds for aggressive applications in the beverage and container industry. Used to lower product backline pressure and to minimize conveyor pulsation resulting in reduced chain flight wear and reduced chain elongation.

**Primary Components**

High performance, internally lubricated acetal (POM)

**General Information**

Prefix	Material	Temperature						FDA Approval				
		Fahrenheit			Celsius							
		min	max		min	max						
HP™	High Performance (Brown)	-40	dry	wet	+180	+150	-40	dry	wet	+82	+66	Yes
WHP	White High Performance	-40	dry	wet	+180	+150	-40	dry	wet	+82	+66	Yes

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.18	0.20	0.12	0.23	0.18	0.18	0.18
Water	0.14	0.18	0.11	NR	0.16	0.16	0.16
Soap and Water	0.12	0.14	0.10	NR	0.14	0.14	0.13
Oil	---	---	---	NR	---	---	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.22	0.18	0.18	0.14
Water	0.20	0.16	0.16	0.12
Soap and Water	0.15	0.14	0.14	0.11
Oil	0.10	0.10	0.10	0.10

**Regulatory Information**

The Food and Drug Administration (FDA) accepts certain materials for direct food contact. FDA approved material is compliant to FDA 21 CFR § 177.

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Nylatron is a registered trademark of Quadrant Engineering Plastics Products.

U.S. Patent: 4436200

NR denotes "not recommended", Dash denotes "combination not tested"

\*\*Friction of returnable bottles will vary depending on the quality of the glass, the amount of roughed up surface, etc.

# HP RubberTop® / SuperGrip™



## Brief Description

HP™ RubberTop® and SuperGrip™ are specifically formulated for general high friction applications. The high performance HP™ base links in conjunction with molded high friction pads make it ideal for high speed incline or decline conveyors.

## Primary Components

High performance HP™ with molded high friction pads

## General Information

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet		dry	wet		
HP	High Performance Friction Top	-40	+180	+150	-40	+82	+66	No

## Friction Factors Between Material and Product

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	NR	NR	NR	NR	NR	NR	NR
Water	NR	NR	NR	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR	NR	NR	NR
Oil	NR	NR	NR	0.87***	0.85***	NR	NR

## Friction Factors Between Material and Wearstrips

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.22	0.18	0.18	0.14
Water	0.20	0.16	0.16	0.12
Soap and Water	0.15	0.14	0.14	0.11
Oil	0.10	0.10	0.10	0.10

## Regulatory Information

\*\*\*It is not recommended to accumulate on RubberTop® products; however, these values can be utilized when determining brake belt or "hold back" calculations.

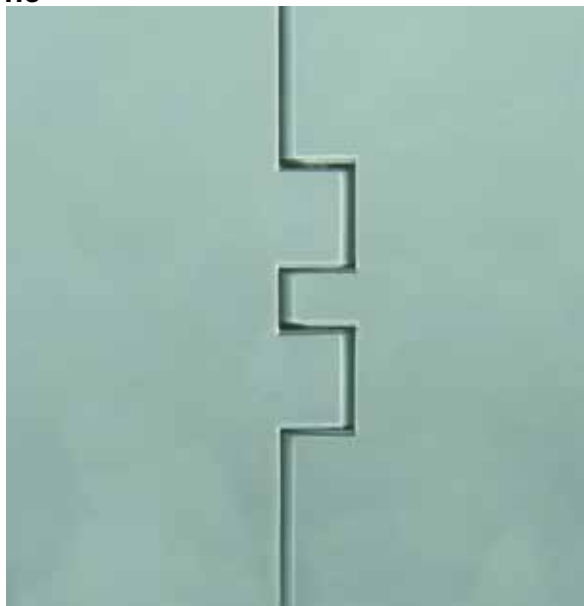
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Nylatron is a registered trademark of Quadrant Engineering Plastics Products.



HS

**Brief Description**

Formulated to retain strength and resist degradation and swelling in hot, wet environments. Can be used in demanding high temperature applications such as bottle rinsers, sterilizers, warmers and pasteurizers.

**Primary Components**

Heat stabilized nylon (PA)

**General Information**

Prefix	Material	Temperature						FDA Approval				
		Fahrenheit			Celsius							
		min	max		min	max						
HS	Heat Stabilized (Green)	-40	dry	wet	+220	+212	-40	dry	wet	+104	+100	No

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.25	0.27	0.20	0.33	0.25	0.25	0.30
Water	0.17	0.18	0.15	NR	0.20	0.20	0.22
Soap and Water	0.12	0.14	0.10	NR	0.15	0.15	0.15
Oil	---	---	---	NR	---	---	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.30	0.28	0.28	0.25
Water	0.25	0.23	0.23	0.22
Soap and Water	0.18	0.18	0.18	0.18
Oil	0.10	0.10	0.10	0.10

**1. Strength Considerations:**

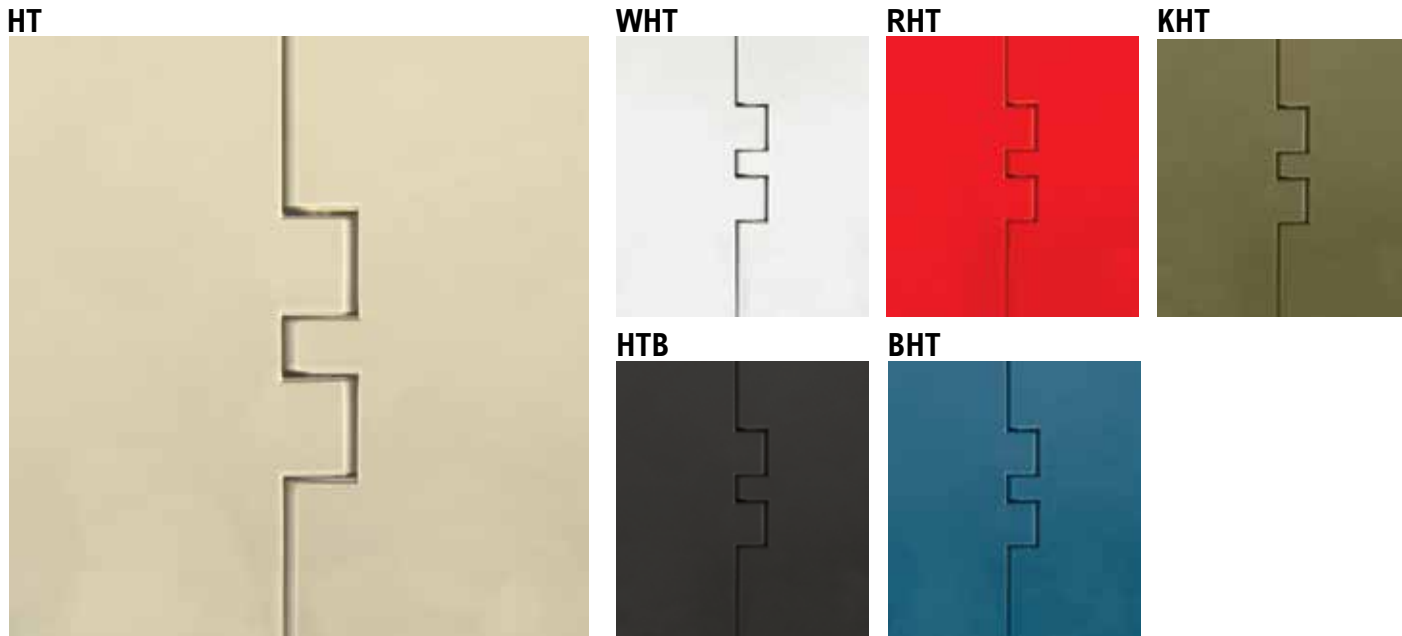
- Pressure-Velocity (PV) Limits: PV Limit of Rexnord® TableTop® Chains molded from heat stabilized material must be derated 20% from acetal materials. PV Limits relate to the speed and tension exerted as the chain travels around the corners.

**2. Heat stabilized material, unlike other nylon materials, can be used in wet environments without the risk of swelling.****Regulatory Information**

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**Brief Description**

Formulated to be used in both high temperature and general applications in both dry and wet conditions. A good general purpose conveyor chain material and in addition has excellent resistance to chemicals including salts, alcohol, bases and many acids.

**Primary Components**

Polypropylene (PP)

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max dry	wet	min	max dry	wet	
HT	High Temperature (Beige)	+40	+220	+212	+4	+104	+100	Yes
WHT	White High Temperature	+40	+220	+212	+4	+104	+100	Yes
RHT	Red High Temperature	+40	+220	+212	+4	+104	+100	Yes
KHT	Khaki High Temperature	+40	+220	+212	+4	+104	+100	Yes
BHT	Blue High Temperature	+40	+220	+212	+4	+104	+100	Yes
HTB	Black High Temperature	+40	+220	+212	+4	+104	+100	Yes

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.29	0.29	0.24	0.35	0.32	0.28	0.31
Water	0.19	0.21	0.18	NR	0.24	0.20	0.25
Soap and Water	0.15	0.14	0.10	NR	0.19	0.15	0.17
Oil	---	---	---	NR	---	---	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.35	0.30	0.30	0.26
Water	0.30	0.25	0.25	0.22
Soap and Water	0.25	0.20	0.20	0.19
Oil	0.10	0.10	0.10	0.10

1. Buoyant in water.
2. Not available for Rexnord® TableTop® and Multiflex chains.

**Regulatory Information**

The Food and Drug Administration (FDA) accepts certain materials for direct food contact. FDA approved material is compliant to FDA 21 CFR § 177.

Rexnord and TableTop are trademarks of Rexnord Corporation.

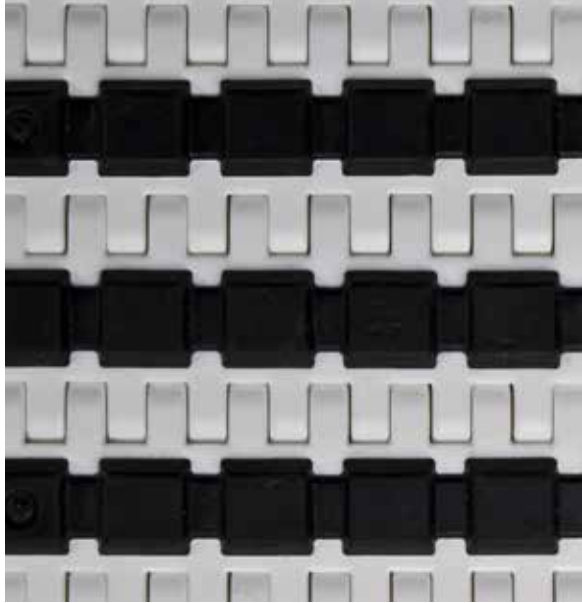
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NR denotes "not recommended", Dash denotes "combination not tested"

\*\*Friction of returnable bottles will vary depending on the quality of the glass, the amount of roughed up surface, etc.

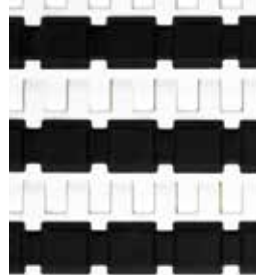
## HT RubberTop® / SuperGrip™



## KHT



## WHT



### Brief Description

HT is specifically formulated for general high friction applications. The polypropylene base links in conjunction with high friction surface make it ideal for incline or decline conveyors

### Primary Components

High temperature polypropylene with high friction pads

### General Information

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max dry	wet	min	max dry	wet	
HT	High Temperature	+40	+180	+140	+4	+82	+60	Yes
KHT	Khaki High Temperature	+40	+180	+140	+4	+82	+60	Yes
WHT	White High Temperature	+40	+180	+140	+4	+82	+60	Yes

### Friction Factors Between Material and Product

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	NR	NR	NR	NR	NR	NR	NR
Water	NR	NR	NR	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR	NR	NR	NR
Oil	NR	NR	NR	0.87***	0.85***	NR	NR

### Friction Factors Between Material and Wearstrips

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.35	0.30	0.30	0.26
Water	0.30	0.25	0.25	0.22
Soap and Water	0.25	0.20	0.20	0.19
Oil	0.10	0.10	0.10	0.10

1. Buoyant in water.
2. Not available for Rexnord® TableTop® and Multiflex chains.

### Regulatory Information

\*\*\*It is not recommended to accumulate on RubberTop® products; however, these values can be utilized when determining brake belt or "hold back" calculations.

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# HUV



## Brief Description

Formulated to reduce or eliminate material degradation in applications where ultraviolet radiation exposure is a concern. Retains its mechanical integrity when exposed to direct sunlight (outdoor applications) as well as in applications that use ultraviolet radiation to run a process. Has excellent resistance to chemicals including salts, alcohol, bases and many acids.

## Primary Components

Polypropylene (PP)

## General Information

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet		dry	wet		
HUV	High Temperature Ultraviolet Resistant (Black)	+40	+220	+180	+4	+104	+82	No

## Friction Factors Between Material and Product

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.28	0.29	0.22	0.35	0.30	0.30	0.35
Water	0.19	0.21	0.17	NR	0.25	0.25	0.25
Soap and Water	0.16	0.14	0.10	NR	0.20	0.20	0.20
Oil	---	---	---	NR	---	---	0.10

## Friction Factors Between Material and Wearstrips

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.35	0.30	0.30	0.26
Water	0.24	0.16	0.16	0.22
Soap and Water	0.20	0.20	0.20	0.19
Oil	0.10	0.10	0.10	0.10

1. Buoyant in water.
2. Not available for Rexnord® TableTop® and Multiflex chains.

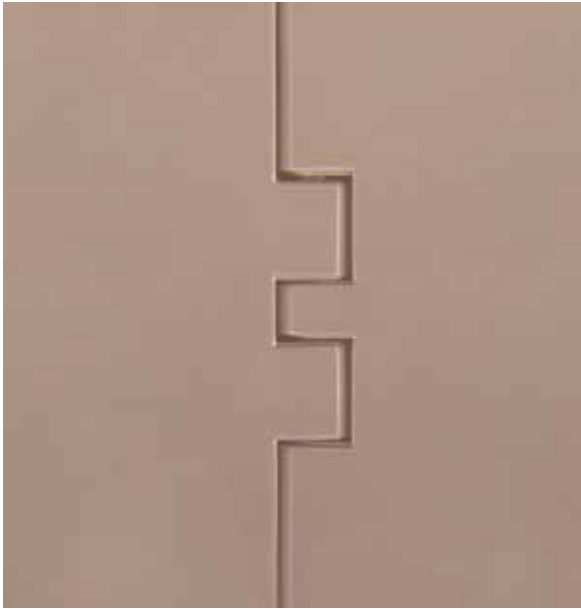
## Regulatory Information

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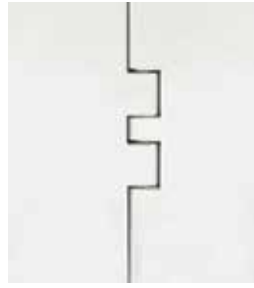
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**LF**



**WLF**



**Brief Description**

An excellent conveyor chain material with a low coefficient of friction between a variety of materials. Extensive testing has proven that low friction materials can reduce wear up to 15% over plain acetal. Ideal for dry running applications and will permit greater operating speeds. Used to lower product backline pressure and minimize conveyor pulsation resulting in reduced chain flight wear and reduced chain elongation.

**Primary Components**

Patented blend of low friction acetal (POM) and lubricants

**General Information**

Prefix	Material	Temperature						FDA Approval				
		Fahrenheit			Celsius							
		min	max		min	max						
LF	Low Friction (Tan)	-40	dry	wet	+180	+150	-40	dry	wet	+82	+66	Yes
WLF	White Low Friction	-40	dry	wet	+180	+150	-40	dry	wet	+82	+66	Yes

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.20	0.20	0.15	0.30	0.20	0.20	0.25
Water	0.15	0.18	0.13	NR	0.18	0.18	0.20
Soap and Water	0.12	0.14	0.10	NR	0.15	0.15	0.15
Oil	---	---	---	NR	---	---	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.25	0.20	0.20	0.16
Water	0.20	0.18	0.18	0.14
Soap and Water	0.15	0.15	0.15	0.13
Oil	0.10	0.10	0.10	0.10

**Regulatory Information**

The Food and Drug Administration (FDA) accepts certain materials for direct food contact. FDA approved material is compliant to FDA 21 CFR § 177.

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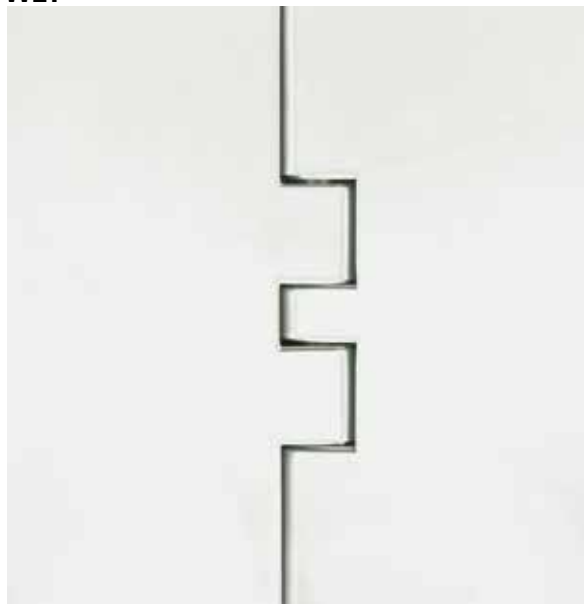
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U.S. Patent: 4436200

NR denotes "not recommended", Dash denotes "combination not tested"

\*\*Friction of returnable bottles will vary depending on the quality of the glass, the amount of roughed up surface, etc.

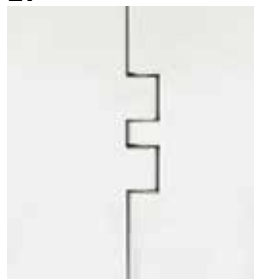
**WLT**



**BLT**



**LT**



**Brief Description**

Formulated to retain toughness, impact strength and ductility in both dry and wet conditions. Retains its properties in temperatures as low as -100 °F (-73 °C). Has excellent impact resistance, and because of its inherent ductility, is excellent in applications where other materials may chip or fracture. Is also chemical resistant to most bleaches, bases, acids and hydrocarbons.

**Primary Components**

Polyethylene (HDPE)

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet		dry	wet		
WLT	White Low Temperature	-100	+80	+80	-73	+27	+27	Yes
BLT	Blue Low Temperature	-100	+80	+80	-73	+27	+27	Yes
LT	Low Temperature (natural)	-100	+80	+80	-73	+27	+27	Yes

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.22	0.24	0.18	0.30	0.22	0.22	0.28
Water	0.17	0.17	0.14	NR	0.18	0.18	0.22
Soap and Water	0.12	0.14	0.10	NR	0.15	0.15	0.15
Oil	---	---	---	NR	---	---	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.28	0.23	0.23	0.21
Water	0.22	0.20	0.20	0.19
Soap and Water	0.15	0.15	0.15	0.14
Oil	0.10	0.10	0.10	0.10

1. Buoyant in water.
2. Not available for Rexnord® TableTop® and Multiflex chains.

**Regulatory Information**

The Food and Drug Administration (FDA) accepts certain materials for direct food contact. FDA approved material is compliant to FDA 21 CFR § 177.

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NR denotes "not recommended", Dash denotes "combination not tested"

\*\*Friction of returnable bottles will vary depending on the quality of the glass, the amount of roughed up surface, etc.

## LUV

**Brief Description**

Formulated to reduce or eliminate material degradation in applications where ultraviolet radiation exposure is a concern. Retains its mechanical integrity when exposed to direct sunlight (outdoor applications) as well as in applications that use ultraviolet radiation to run a process. Also retains toughness, impact strength and ductility in both dry and wet conditions and in temperatures as low as -40 °F (-40 °C). Has excellent impact resistance and because of its inherent ductility, is excellent in applications where other materials may chip or fracture. Chemical resistant to most bleaches, bases, acids and hydrocarbons.

**Primary Components**

Ultraviolet resistant polyethylene (HDPE)

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max dry	wet	min	max dry	wet	
LUV	Low Temperature Ultraviolet Resistant (Black)	-100	+80	+80	-73	+27	+27	No

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.22	0.24	0.28	0.30	0.22	0.22	0.28
Water	0.17	0.17	0.14	NR	0.18	0.18	0.22
Soap and Water	0.12	0.14	0.10	NR	0.15	0.15	0.10
Oil	---	---	---	NR	---	---	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.28	0.23	0.23	0.21
Water	0.22	0.20	0.20	0.19
Soap and Water	0.15	0.15	0.15	0.14
Oil	0.10	0.10	0.10	0.10

1. Buoyant in water.
2. Not available for Rexnord® TableTop® and Multiflex chains.

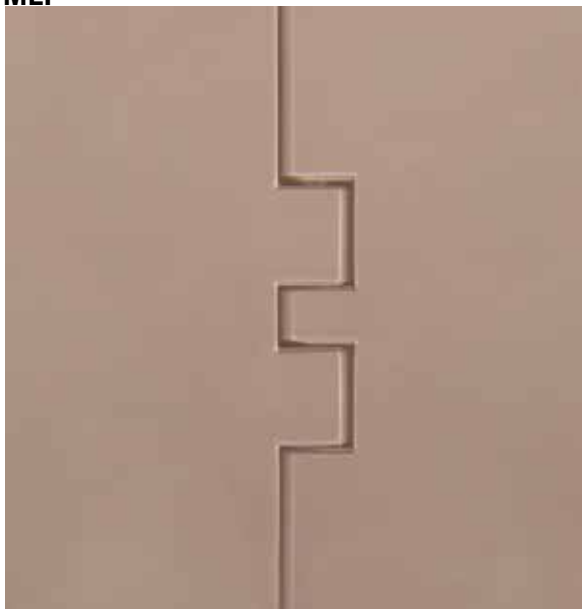
**Regulatory Information**

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**MLF**



**Brief Description**

A cost-effective general purpose conveyor chain material which has low friction, high strength, excellent wear life, superior fatigue resistance and is chemical resistant in a wide range of environments

**Primary Components**

Low friction acetal (POM)

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet		dry	wet		
MLF	Medium Duty Low Friction (Tan)	-40	+180	+150	-40	+82	+66	No

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.25	0.27	0.20	0.33	0.25	0.25	0.30
Water	0.17	0.20	0.15	NR	0.20	0.20	0.22
Soap and Water	0.12	0.14	0.10	NR	0.15	0.15	0.15
Oil	---	---	---	NR	---	---	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.30	0.25	0.25	0.20
Water	0.23	0.21	0.21	0.18
Soap and Water	0.15	0.15	0.15	0.15
Oil	0.10	0.10	0.10	0.10

1. Only available in selected Rexnord® TableTop® and Multiflex chains.

**Regulatory Information**

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NR denotes "not recommended", Dash denotes "combination not tested"

\*\*Friction of returnable bottles will vary depending on the quality of the glass, the amount of roughed up surface, etc.



**MR**



**Brief Description**

Formulated to be used in applications where conveying hot products may cause chain top surface to melt. Can resist contact temperatures up to 375 °F (190 °C). Used to convey high temperature products such as hot cans and hot pans in container manufacturing and industrial part processing applications

**Primary Components**

Melt resistant nylon (PA)

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet		dry	wet		
MR	Melt Resistant (Black)	-80	+220	NR	-62	+104	NR	No

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.25	0.27	0.20	0.33	0.25	0.25	0.30
Water	NR	NR	NR	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR	NR	NR	NR
Oil	---	---	---	NR	---	---	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.30	0.28	0.28	0.25
Water	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR
Oil	0.10	0.10	0.10	0.10

1. Strength Considerations:

- Pressure-Velocity (PV) Limits: PV Limit of Rexnord® TableTop® Chains molded from melt resistant material must be derated 20% from acetal materials. PV Limits relate to the speed and tension exerted as the chain travels around the corners.

2. It is important to lubricate side-flexing chains in the corners to reduce noise levels at speeds in excess of 100 FPM; water lubrication is unacceptable because it will cause melt resistant material to swell and lose strength.

**Regulatory Information**

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NR denotes "not recommended", Dash denotes "combination not tested"

\*\*Friction of returnable bottles will vary depending on the quality of the glass, the amount of roughed up surface, etc.

## Neoprene (Black)



## Neoprene (White)



### Brief Description

Neoprene is used as a gripper material that has good resistance to gasoline, sunlight, ozone & oxidation. It is available in several different durometers (or hardness) for different applications.

### Primary Components

Neoprene

### General Information

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet		dry	wet		
-	Neoprene	-40	+212	+200	-40	+100	+93	No

### Friction Factors Between Material and Product

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	NR	NR	NR	NR	NR	NR	NR
Water	NR	NR	NR	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR	NR	NR	NR
Oil	NR	NR	NR	NR	NR	NR	NR

### Friction Factors Between Material and Wearstrips

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	NR	NR	NR	NR
Water	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR
Oil	NR	NR	NR	NR

1. This material is not available in TableTop®, MatTop®, or Multiflex chains. It is only available as a gripper material for SideGrip™ chains.
2. The temperature range for standard 40 shore Neoprene grippers. Other hardnesses will affect the operating temperature.
3. Color may be black or white depending on chain series. See specific chain series in Product Catalog for color.

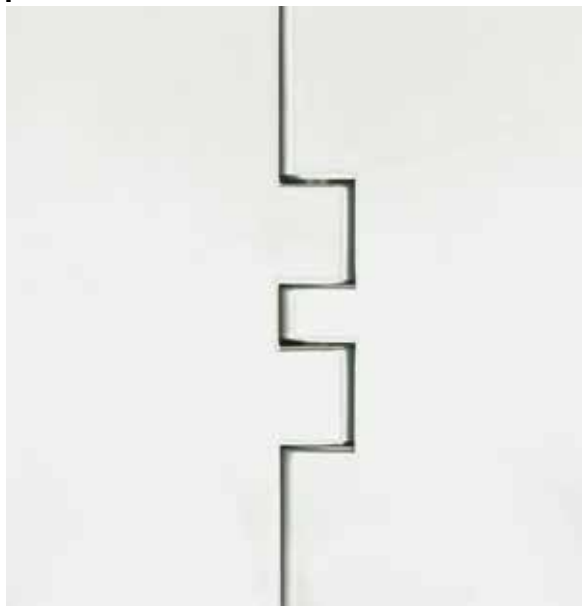
### Regulatory Information

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P

**Brief Description**

Formulated to reduce or eliminate material degradation in applications where chemicals such as chlorine and phosphorous are present at moderate concentrations

**Primary Components**

Polyester (PBT)

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet		dry	wet		
P	Chemical Resistant (White)	0	+180	+140	-18	+82	+60	Yes

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.25	0.27	0.20	0.33	0.25	0.25	0.30
Water	0.17	0.18	0.15	NR	0.21	0.21	0.22
Soap and Water	0.12	0.14	0.10	NR	0.15	0.10	0.15
Oil	---	---	---	NR	---	---	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.30	0.25	0.25	0.22
Water	0.23	0.21	0.21	0.20
Soap and Water	0.15	0.15	0.15	0.15
Oil	0.10	0.10	0.10	0.10

**Regulatory Information**

The Food and Drug Administration (FDA) accepts certain materials for direct food contact. FDA approved material is compliant to FDA 21 CFR § 177.

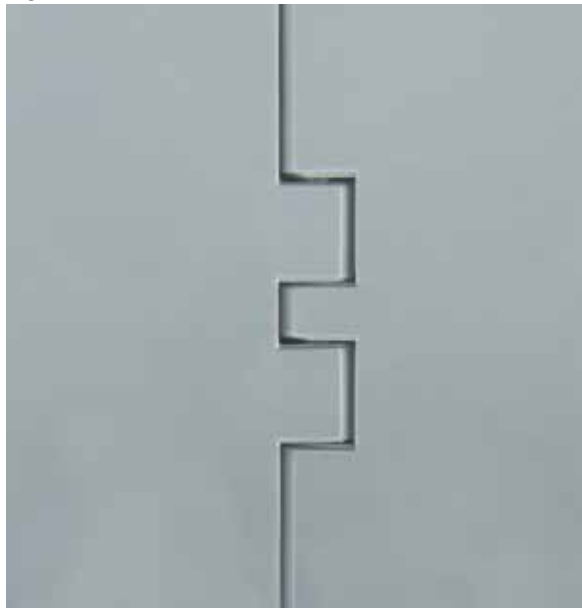
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**1. Strength Considerations:**

- Rexnord® TableTop® Chains molded from chemical resistant material (with stainless steel pins) must be derated 20% from their acetal counterparts (with stainless steel pins).
- Rexnord® TableTop® Chains molded from chemical resistant material (with plastic pins) must be derated 40% from their acetal counterparts (with stainless steel pins).
- Rexnord® MatTop® Chains molded from chemical resistant material must be derated 20% from their acetal counterparts.
- Pressure-Velocity (PV) Limits: PV Limit of Rexnord® TableTop® Chains molded from chemical resistant material must be derated 20% from acetal materials. PV Limits relate to the speed and tension exerted as the chain travels around the corners.



### Brief Description

Platinum Series® PS® material is a specially formulated material especially suited for high speed conveying. PS® material can decrease high speed wear by as much as 5 times. Side-flexing PV limits are also increased which means that a side-flexing chain molded in PS® can be run 200% faster than the same chain in acetal, or 150% faster than the same chain in HP™! "Optimized for PET" means that PET bottles running on PS® chains exhibit the lowest friction available. Low coefficients of friction reduce product backline pressures and minimize pulsations.

### Primary Components

High speed Platinum Series® internally lubricated acetal (POM)

### General Information

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet	min	dry	wet		
PS®	Platinum Series® (Silver)	-40	+180	+150	-40	+82	+66	Yes

### Friction Factors Between Material and Product

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.18	0.20	0.12	0.23	0.18	0.16	0.18
Water	0.14	0.18	0.11	NR	0.16	0.15	0.16
Soap and Water	0.12	0.14	0.10	NR	0.14	0.14	0.13
Oil	---	---	---	NR	---	---	0.10

### Friction Factors Between Material and Wearstrips

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.22	0.18	0.18	0.12
Water	0.20	0.16	0.16	0.11
Soap and Water	0.15	0.14	0.14	0.11
Oil	0.10	0.10	0.10	0.10

### Regulatory Information

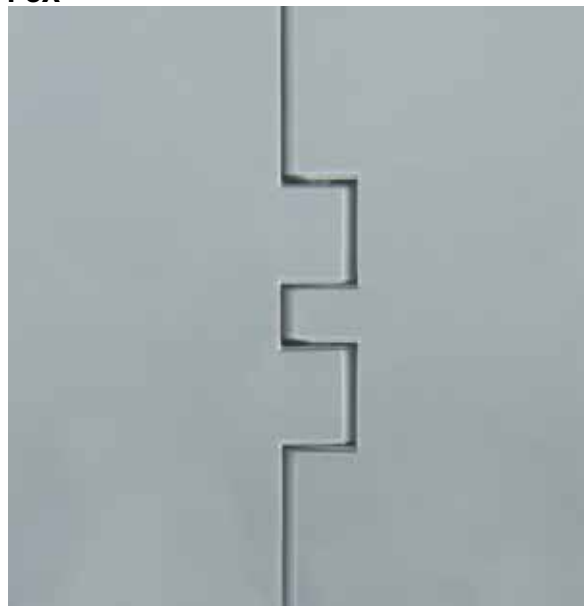
The Food and Drug Administration (FDA) accepts certain materials for direct food contact. FDA approved material is compliant to FDA 21 CFR § 177.

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**PSX®**



**Brief Description**

Platinum Series X® PSX® material is an advanced performance polymer alloy engineered specifically for run dry applications. PSX® material minimizes the amount of conveyor lubrication needed, and in many cases offers a completely run dry solution. PSX® material also minimizes the dusting phenomena in dry running conditions.

**Primary Components**

Advanced performance polymer alloy designed specifically for run dry applications

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet	dry	wet			
PSX®	Platinum Series X® (Gray)	-40	+180	+150	-40	+82	+66	Yes

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.16	0.20	0.12	0.23	0.18	0.16	0.16
Water	0.13	0.18	0.11	NR	0.16	0.15	0.14
Soap and Water	0.12	0.14	0.10	NR	0.14	0.14	0.12
Oil	---	---	---	NR	---	---	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.22	0.18	0.16	0.12
Water	0.20	0.16	0.14	0.11
Soap and Water	0.15	0.14	0.12	0.11
Oil	0.10	0.10	0.10	0.10

**Regulatory Information**

The Food and Drug Administration (FDA) accepts certain materials for direct food contact. FDA approved material is compliant to FDA 21 CFR § 177.

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NR denotes "not recommended", Dash denotes "combination not tested"

\*\*Friction of returnable bottles will vary depending on the quality of the glass, the amount of roughed up surface, etc.

S

**Brief Description**

A strong, abrasion resistant, fine grained, hardened carbon steel with a smooth surface finish. Used in applications requiring high strength, impact resistance and hardened chain surface such as parts handling.

**Primary Components**

Carbon steel

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet		dry	wet		
S	Carbon Steel	-40	+350	NR	-40	+177	NR	No

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.34	0.35	0.33	0.43	0.31	0.30	0.38
Water	NR	NR	NR	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR	NR	NR	NR
Oil	0.10	0.10	NR	NR	NR	NR	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.40	0.30	0.30	0.30
Water	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR
Oil	0.10	0.10	0.10	0.10

1. It is important to lubricate side-flexing chains in the corners to reduce noise levels; water lubrication is unacceptable due to the potential for corrosion and rusting. Melt resistant material to swell and lose strength.
2. Not available for Rexnord® MatTop® and Multiflex chains.

**Regulatory Information**

Rexnord and MatTop are trademarks of Rexnord Corporation.

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SS

**Brief Description**

Has excellent corrosion and abrasion resistance. Possess resistance to acids, have non-magnetic qualities, good impact resistance, good surface hardness and smooth surface finish. Used in applications requiring corrosion and abrasion resistance, including glass containers and parts handling where water or lubricants are used. The chain life of Rexnord® TableTop® Chains made with austenitic stainless steel material have been demonstrated to have more than 2x the wear life than competitive chains made with ferritic stainless steel.

**Primary Components**

Austenitic stainless steel

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet	min	dry	wet		
SS	Stainless Steel	-100	+800	+212	-73	+427	+100	Yes

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.34	0.35	0.33	0.43	0.31	0.30	0.38
Water	0.27	0.30	0.29	NR	0.22	0.21	0.30
Soap and Water	0.14	0.15	0.15	NR	0.15	0.14	0.15
Oil	---	---	---	NR	---	---	---

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.40	0.30	0.30	0.30
Water	0.35	0.22	0.22	0.22
Soap and Water	0.15	0.15	0.15	0.15
Oil	0.15	0.10	0.10	0.10

1. It is important to lubricate side-flexing chains in the corners to reduce noise levels.
2. Not available for Rexnord® MatTop® and Multiflex chains.

**Regulatory Information**

Based on the material chemistries, industry standards, and the documentation in the Federal Registry, it is the opinion of Rexnord that the Rexnord® TableTop® stainless steel chains can be considered GRAS for direct food contact.

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Nylatron is a registered trademark of Quadrant Engineering Plastics Products.



### Brief Description

A special austenitic stainless steel used in applications that require the chain to allow magnetic fields to pass through. In some applications, magnets are used to stabilize or hold products that are conveyed on the top of the chain. Allows magnets to interact with the product without increasing chain tension or drive requirements. Can also be used in mechanical applications where magnetism introduced into the system can cause component malfunction. Has excellent corrosion, abrasion and impact resistance. Also has good surface hardness and a smooth surface finish. Used in corrosive environments where strong acids or bases are present.

### Primary Components

Low ferromagnetic austenitic stainless steel

### General Information

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet	dry	wet			
SSB	Stainless Steel	-100	+800	+212	-73	+427	+100	Yes

### Friction Factors Between Material and Product

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.28	0.47	0.35	0.40	0.30	0.30	0.35
Water	0.19	0.31	0.25	NR	0.20	0.20	0.25
Soap and Water	0.12	0.21	0.15	NR	0.10	0.10	0.15
Oil	---	---	---	NR	---	---	0.15

### Friction Factors Between Material and Wearstrips

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.50	0.40	0.40	0.40
Water	0.40	0.30	0.30	0.30
Soap and Water	0.20	0.20	0.20	0.20
Oil	0.20	0.10	0.10	0.10

1. It is important to lubricate side-flexing chains in the corners to reduce noise levels.
2. Not available for Rexnord® MatTop® and Multiflex chains.

### Regulatory Information

Based on the material chemistries, industry standards, and the documentation in the Federal Registry, it is the opinion of Rexnord that the Rexnord® TableTop® stainless steel chains can be considered GRAS for direct food contact.

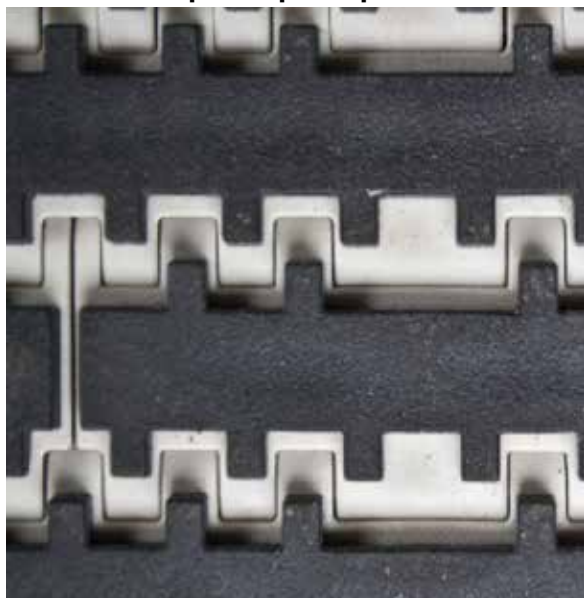
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Nylatron is a registered trademark of Quadrant Engineering Plastics Products.



## GTC RubberTop® / SuperGrip™



### Brief Description

GTC is a high strength, toughened composite material specifically formulated to take constant impact. It's combination of high strength and low stretch along with high friction surface make it excellent for high speed case incline (or decline) conveyors. Has excellent impact resistance as well as good chemical resistance.

### Primary Components

High strength, impact modified composite with high friction pads

### General Information

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet		dry	wet		
GTC	Gray Tough Composite	0	+180	+140	-18	+82	+60	No

### Friction Factors Between Material and Product

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	NR	NR	NR	NR	NR	NR	NR
Water	NR	NR	NR	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR	NR	NR	NR
Oil	NR	NR	NR	0.87***	0.85***	NR	NR

### Friction Factors Between Material and Wearstrips

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.30	0.25	0.25	0.22
Water	0.23	0.21	0.21	0.20
Soap and Water	0.15	0.15	0.15	0.15
Oil	0.10	0.10	0.10	0.10

1. Not available for Rexnord® TableTop® and Multiflex chains.

### Regulatory Information

\*\*\*It is not recommended to accumulate on RubberTop® products; however, these values can be utilized when determining brake belt or "hold back" calculations.

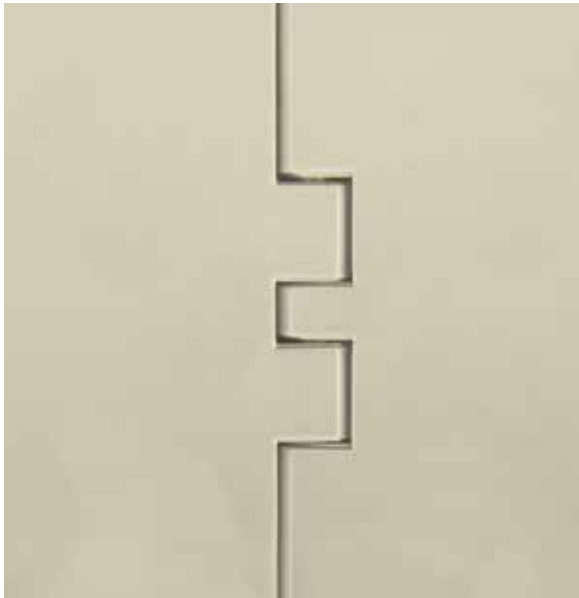
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Patent Pending.

# THD



### Brief Description

A patented blend of the Rexnord® High Temperature Antimicrobial material. Formulated to inhibit the growth of bacteria, mold and mildew that may cause discoloration, odor or degradation of the Rexnord® MatTop® chain. Allows detection as it passes through a metal detector. Formulated for detection in dry food and frozen food. Retains physical properties at elevated temperatures in both wet and dry environments. A good general purpose conveyor chain material with excellent resistance to chemicals including salts, alcohol, bases and many acids. Developed specifically for chains used in dry snack food and frozen food processing.

### Primary Components

Polypropylene (PP) and nonferrous metal particulate  
Microban® Antimicrobial Product Protection

### General Information

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet		dry	wet		
THD	Tan High Temperature Detectable Antimicrobial	+40	+220	+212	+4	+104	+100	***

### Friction Factors Between Material and Product

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.28	0.29	0.22	0.35	0.30	0.30	0.35
Water	0.19	0.21	0.17	NR	0.25	0.25	0.25
Soap and Water	0.16	0.14	0.10	NR	0.20	0.20	0.20
Oil	---	---	---	NR	---	---	0.10

### Friction Factors Between Material and Wearstrips

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.35	0.30	0.30	0.26
Water	0.25	0.25	0.25	0.22
Soap and Water	0.20	0.20	0.20	0.19
Oil	0.10	0.10	0.10	0.10

1. Buoyant in water.
2. Not available for Rexnord® TableTop® and Multiflex chains.
3. The ability to detect plastic particles will vary due to sensitivity of individual metal detectors.

### Regulatory Information

\*\*\*These materials meet the end-test requirements as specified by FDA 21 CFR 177.1520 (c), the FDA requirement for polyolefin materials intended for direct food contact. All components of these materials are either compliant for food contact as listed by the FDA or regulated by the EPA.

Rexnord, TableTop and MatTop are trademarks of Rexnord Corporation.

All rights reserved.

This material will not protect the user against food-borne illness. Always maintain good hygiene, proper cleaning procedures are still required.

Microban is a registered trademark of Microban Products Company.

Nylatron is a registered trademark of Quadrant Engineering Plastics Products.

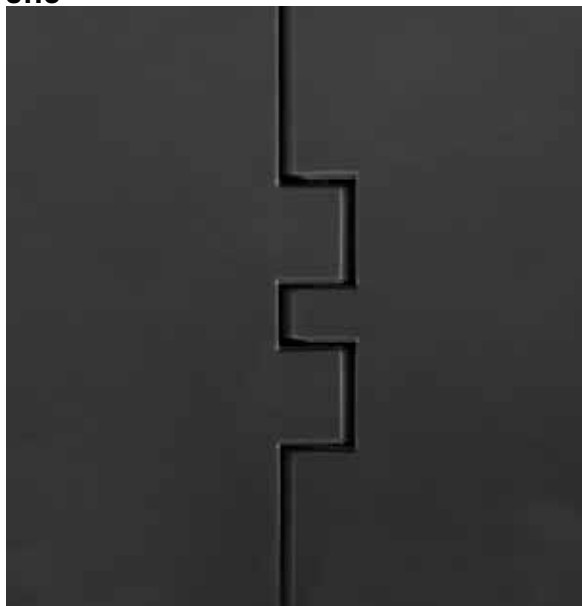
U.S. Patent 6177113



NR denotes "not recommended", Dash denotes "combination not tested"

\*\*Friction of returnable bottles will vary depending on the quality of the glass, the amount of roughed up surface, etc.

UHS™

**Brief Description**

Patented Rexnord® Ultra High Strength Material is specially formulated to be used in heavy-duty applications such as pasteurizers, sterilizers and coolers. Has excellent chemical resistance and can be used in high temperature applications in both dry and wet environments.

**Primary Components**

High strength polypropylene (PP) composite

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet		dry	wet		
UHS™	Ultra High Strength (Black)	+40	+220	+212	+4	+104	+100	No

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.30	0.29	0.25	0.35	0.32	0.30	0.35
Water	0.19	0.21	0.19	NR	0.24	0.25	0.25
Soap and Water	0.16	0.14	0.10	NR	0.19	0.20	0.20
Oil	---	---	---	NR	---	---	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.35	0.30	0.30	0.26
Water	0.30	0.25	0.25	0.22
Soap and Water	0.25	0.20	0.20	0.19
Oil	0.10	0.10	0.10	0.10

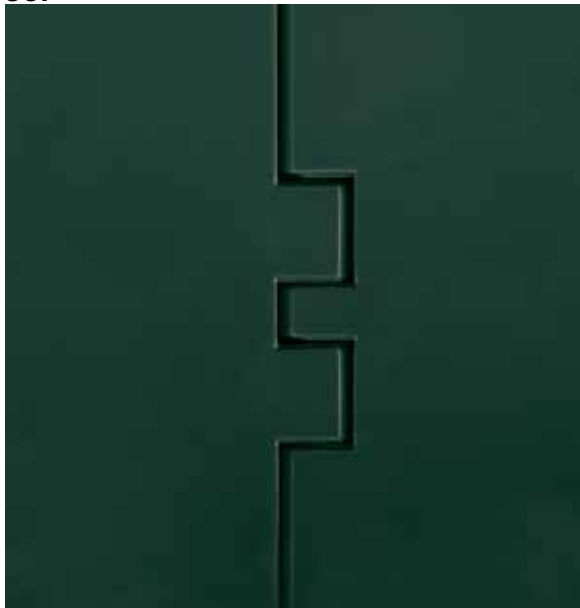
1. Not buoyant in water.
2. Not available for Rexnord® TableTop® and Multiflex chains.

**Regulatory Information**

Rexnord, TableTop and UHS are trademarks of Rexnord Corporation.

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Nylatron is a registered trademark of Quadrant Engineering Plastics Products.



**Brief Description**

USP is specifically formulated for chemically aggressive pasteurizer, warmer and cooler applications. USP offers advantages that include superior resistance to chemicals used in cleaning and boil-out as well as extended chain life in high-temperature environments. USP material remains stronger and more flexible than plain polypropylene in hot, oxidative environments such as pasteurizers or warmers/coolers. The end result is increased reliability throughout the entire life of the chain

**Primary Components**

Polypropylene (PP) + Chemical Stabilizers

**General Information**

Prefix	Material	Temperature					FDA Approval	
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet		dry	wet		
USP	Ultra Stabilized Polypropylene (Dark Green)	+40	+220	+212	+4	+104	+100	Yes

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.29	0.29	0.24	0.35	0.32	0.28	0.31
Water	0.19	0.21	0.18	NR	0.24	0.20	0.25
Soap and Water	0.15	0.14	0.10	NR	0.19	0.15	0.17
Oil	---	---	---	NR	---	---	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.35	0.30	0.30	0.26
Water	0.30	0.25	0.25	0.22
Soap and Water	0.25	0.20	0.20	0.19
Oil	0.10	0.10	0.10	0.10

1. Buoyant in water.
2. Not available for Rexnord® TableTop® and Multiflex chains.

**Regulatory Information**

The Food and Drug Administration (FDA) accepts certain materials for direct food contact. FDA approved material is compliant to FDA 21 CFR § 177.

Rexnord and TableTop are trademarks of Rexnord Corporation.

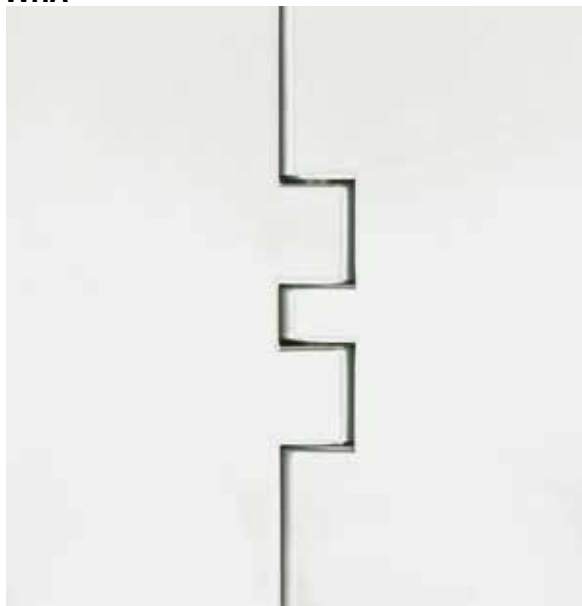
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Nylatron is a registered trademark of Quadrant Engineering Plastics Products.

NR denotes "not recommended", Dash denotes "combination not tested"

\*\*Friction of returnable bottles will vary depending on the quality of the glass, the amount of roughed up surface, etc.

**WHA**



**BHA**



**Brief Description**

Formulated to inhibit the growth of bacteria, mold and mildew that may cause discoloration, odor or degradation of the Rexnord® MatTop® chain. Retains physical properties at elevated temperatures in both dry and wet environments. A good general purpose conveyor chain material with excellent resistance to chemicals including salts, alcohol bases and many acids. Developed specifically for chains used in food processing.

**Primary Components**

Polypropylene (PP)  
Microban® Antimicrobial Product Protection

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet		dry	wet		
WHA	White High Temperature w/Antimicrobial Additive	+40	+220	+212	+4	+104	+100	***
BHA	Blue High Temperature w/Antimicrobial Additive	+40	+220	+212	+4	+104	+100	***

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.28	0.29	0.22	0.35	0.30	0.30	0.35
Water	0.19	0.21	0.17	NR	0.25	0.25	0.25
Soap and Water	0.16	0.14	0.10	NR	0.20	0.20	0.20
Oil	---	---	---	NR	---	---	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.35	0.30	0.30	0.26
Water	0.25	0.25	0.25	0.22
Soap and Water	0.20	0.20	0.20	0.19
Oil	0.10	0.10	0.10	0.10

1. Buoyant in water.
2. Not available for Rexnord® TableTop® and Multiflex chains.

**Regulatory Information**

\*\*\*These materials meet the end-test requirements as specified by FDA 21 CFR 177.1520 (c), the FDA requirement for polyolefin materials intended for direct food contact. All components of these materials are either compliant for food contact as listed by the FDA or regulated by the EPA.

Rexnord, TableTop and MatTop are trademarks of Rexnord Corporation. All rights reserved.

This material will not protect the user against food-borne illness. Always maintain good hygiene, proper cleaning procedures are still required.

Microban is a registered trademark of Microban Products Company.

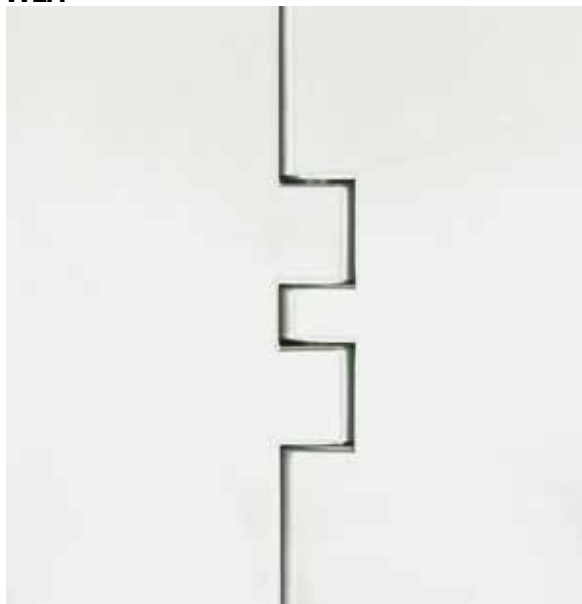
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\*\*Friction of returnable bottles will vary depending on the quality of the glass, the amount of roughed up surface, etc.

**WLA**



**BLA**



**Brief Description**

Formulated to inhibit the growth of bacteria, mold and mildew that may cause discoloration, odor or degradation of the Rexnord® MatTop® chain. Retains toughness, impact strength and ductility in both dry and wet conditions to temperatures as low as -100°F (-73°C). Has excellent impact resistance, and because of its inherent ductility, is excellent in applications where other materials may chip or fracture. Chemical resistant to most bleaches, bases, acids and hydrocarbons. Developed specifically for chains used in food processing.

**Primary Components**

Polyethylene (HDPE)  
Microban® Antimicrobial Product Protection

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet		dry	wet		
WLA	White Low Temperature w/Antimicrobial Additive	-100	+80	+80	-73	+27	+27	***
BLA	Blue Low Temperature w/Antimicrobial Additive	-100	+80	+80	-73	+27	+27	***

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.22	0.24	0.18	0.30	0.22	0.22	0.28
Water	0.17	0.17	0.14	NR	0.19	0.19	0.22
Soap and Water	0.12	0.14	0.10	NR	0.25	0.25	0.15
Oil	---	---	---	NR	---	---	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.28	0.23	0.23	0.21
Water	0.22	0.20	0.20	0.19
Soap and Water	0.15	0.15	0.15	0.14
Oil	0.10	0.10	0.10	0.10

1. Buoyant in water.
2. Not available for Rexnord® TableTop® and Multiflex chains.

**Regulatory Information**

\*\*\*These materials meet the end-test requirements as specified by FDA 21 CFR 177.1520 (c), the FDA requirement for polyolefin materials intended for direct food contact. All components of these materials are either compliant for food contact as listed by the FDA or regulated by the EPA.

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Microban is a registered trademark of Microban Products Company.

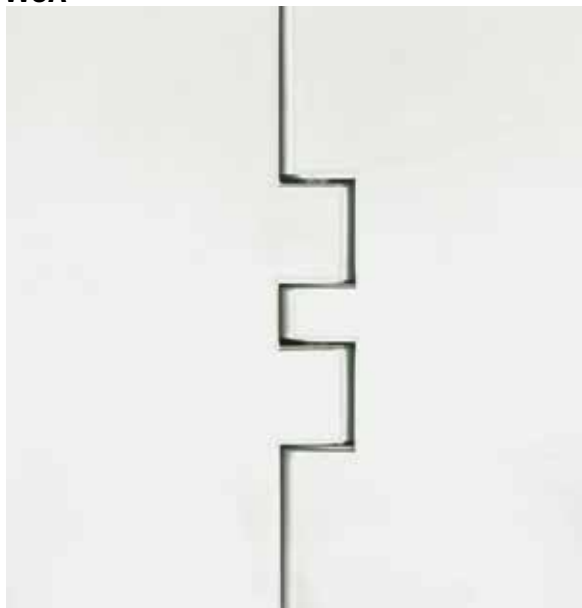
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NR denotes "not recommended", Dash denotes "combination not tested"

\*\*Friction of returnable bottles will vary depending on the quality of the glass, the amount of roughed up surface, etc.

**WSA**



**GSA**



**BSA**



**Brief Description**

Formulated to inhibit the growth of bacteria, mold and mildew that may cause discoloration, odor or degradation of the Rexnord® MatTop® chain. Retains physical properties in both wet and dry environments and has superior impact resistance over standard acetal. A good chain material where resistance to abrasion and cutting are required. Developed specifically for chains used in the food processing industry.

**Primary Components**

Cut and abrasive wear resistant acetal (POM)  
Microban® Antimicrobial Product Protection

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
WSA	White Cut Resistant w/Antimicrobial Additive	-40	+180	+150	-40	+82	+66	***
GSA	Grey Cut Resistant w/Antimicrobial Additive	-40	+180	+150	-40	+82	+66	***
BSA	Blue Cut Resistant w/Antimicrobial Additive	-40	+180	+150	-40	+82	+66	***

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.25	0.27	0.20	0.33	0.25	0.25	0.30
Water	0.17	0.18	0.15	NR	0.20	0.20	0.22
Soap and Water	0.12	0.14	0.10	NR	0.15	0.15	0.15
Oil	---	---	---	NR	---	---	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.30	0.25	0.25	0.20
Water	0.23	0.21	0.21	0.18
Soap and Water	0.15	0.15	0.15	0.15
Oil	0.10	0.10	0.10	0.10

1. Not available for Rexnord® TableTop® and Multiflex chains.

**Regulatory Information**

\*\*\*These materials meet the end-test requirements as specified by FDA 21 CFR 177.1520 (c), the FDA requirement for polyolefin materials intended for direct food contact. All components of these materials are either compliant for food contact as listed by the FDA or regulated by the EPA.

Rexnord, TableTop and MatTop are trademarks of Rexnord Corporation. This material will not protect the user against food-borne illness. Always maintain good hygiene, proper cleaning procedures are still required.

Microban is a registered trademark of Microban Products Company.

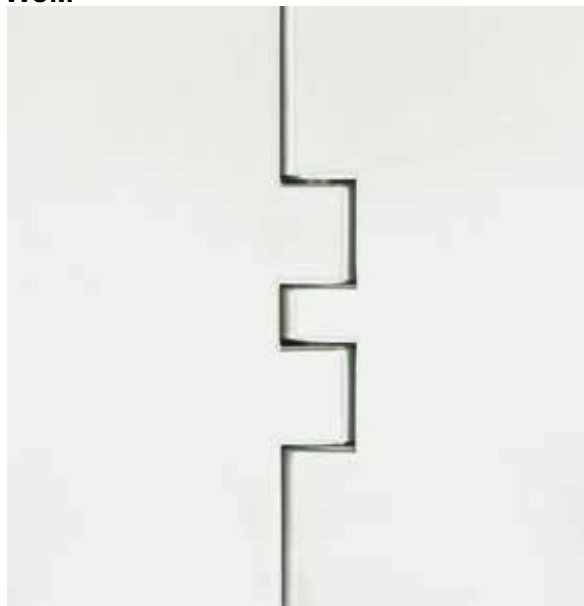
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NR denotes "not recommended", Dash denotes "combination not tested"

\*\*Friction of returnable bottles will vary depending on the quality of the glass, the amount of roughed up surface, etc.

**WSM**



**BSM**



**RSM**



**SMB**



**YSM**



**Brief Description**

Formulated to be used in applications when superior wear and cut resistance is required. Can be used in both dry and wet conditions and in applications where abrasive wear due to products or environment is a concern. Cut resistant materials are commonly used in the meat processing industry on cutting, boning and trimming lines. Has good impact resistance and is as strong as standard acetal materials.

**Primary Components**

Cut and abrasive wear resistant acetal (POM)

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet		dry	wet		
WSM	White Cut Resistant	-40	+180	+150	-40	+82	+66	Yes
BSM	Black Cut Resistant	-40	+180	+150	-40	+82	+66	Yes
SMB	Blue Cut Resistant	-40	+180	+150	-40	+82	+66	Yes
RSM	Red Cut Resistant	-40	+180	+150	-40	+82	+66	Yes
YSM	Yellow Cut Resistant	-40	+180	+150	-40	+82	+66	Yes

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.25	0.27	0.20	0.33	0.25	0.25	0.30
Water	0.17	0.18	0.15	NR	0.20	0.20	0.22
Soap and Water	0.12	0.14	0.10	NR	0.15	0.15	0.15
Oil	---	---	---	NR	---	---	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.30	0.25	0.25	0.20
Water	0.23	0.21	0.21	0.18
Soap and Water	0.15	0.15	0.15	0.15
Oil	0.10	0.10	0.10	0.10

**Regulatory Information**

The Food and Drug Administration (FDA) accepts certain materials for direct food contact. FDA approved material is compliant to FDA 21 CFR § 177.

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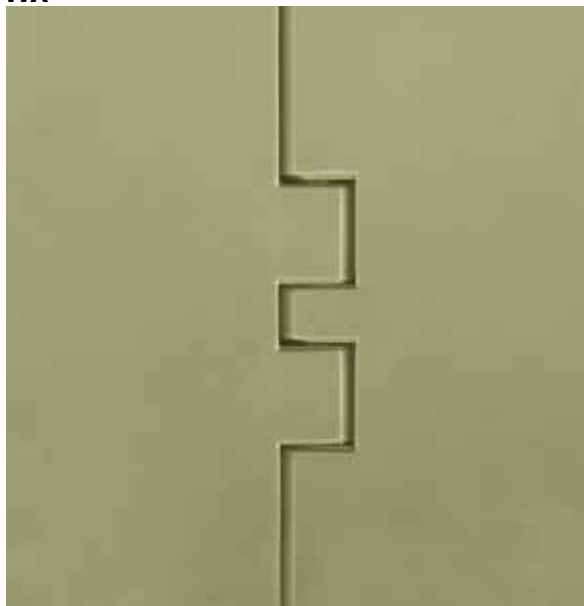
Nylatron is a registered trademark of Quadrant Engineering Plastics Products.

NR denotes "not recommended", Dash denotes "combination not tested"

\*\*Friction of returnable bottles will vary depending on the quality of the glass, the amount of roughed up surface, etc.



**WX**



**BWX**



**Brief Description**

Formulated to be used in abrasive applications where chain is subjected to abrasives such as glass, sand and dirt. May extend chain wear life up to five times compared to acetal materials. Designed to be used in glass handling applications where abrasive shards of glass can wear other plastic chain materials rapidly. Can also be used in other abrasive applications.

**Primary Components**

Abrasion resistant nylon (PA)

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet		dry	wet		
WX	Green Abrasion Resistant Polyamide	-40	+220	NR	-40	+104	NR	No
BWX	Black Abrasion Resistant Polyamide	-40	+220	NR	-40	+104	NR	No

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.25	0.27	0.20	0.33	0.25	0.25	0.30
Water	NR	NR	NR	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR	NR	NR	NR
Oil	---	---	---	NR	---	---	---

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.30	0.25	0.25	0.22
Water	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR
Oil	NA	NA	NA	NR

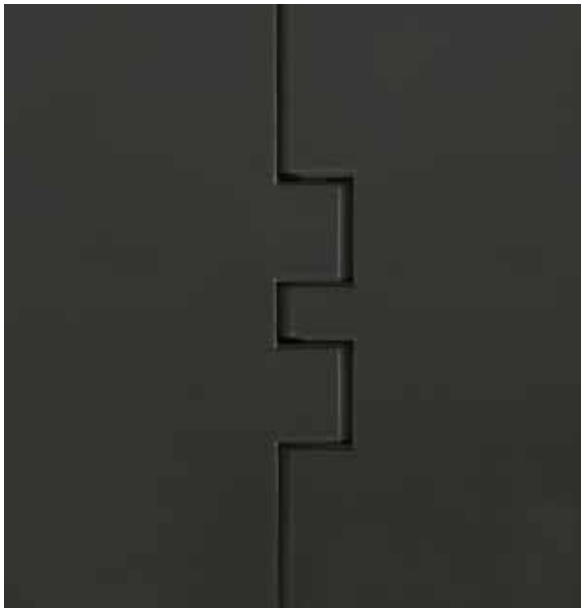
1. It is important to lubricate side-flexing chains in the corners to reduce noise levels at speeds in excess of 60 FPM; however water lubrication is unacceptable because it will cause wear resistant material to swell and lose strength.

**Regulatory Information**

Rexnord is a trademark of Rexnord Corporation.

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Nylatron is a registered trademark of Quadrant Engineering Plastics Products.



**Brief Description**

Internally lubricated, extra low friction acetal for improved wearlife and high strength.

**Primary Components**

Internally lubricated acetal (POM)

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet		dry	wet		
XLA	Internally Lubricated Polyacetal (Grey)	-40	+180	+150	-40	+82	+66	Yes

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.20	0.20	0.15	0.30	0.20	0.20	0.25
Water	0.15	0.18	0.13	NR	0.18	0.18	0.20
Soap and Water	0.12	0.14	0.10	NR	0.15	0.15	0.15
Oil	---	---	---	NR	---	---	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.25	0.20	0.20	0.16
Water	0.20	0.18	0.18	0.14
Soap and Water	0.15	0.15	0.15	0.13
Oil	0.10	0.10	0.10	0.10

1. Used for Low Backline Pressure (LBP) chains.

**Regulatory Information**

The Food and Drug Administration (FDA) accepts certain materials for direct food contact. FDA approved material is compliant to FDA 21 CFR § 177.

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Nylatron is a registered trademark of Quadrant Engineering Plastics Products.

## XLG

**Brief Description**

Internally lubricated, extra low friction acetal for improved wear life and high strength.

**Primary Components**

Internally lubricated acetal (POM)

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet		dry	wet		
XLG	Low Friction Acetal (Green)	-40	+180	+150	-40	+82	+66	Yes

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.20	0.20	0.15	0.30	0.20	0.20	0.25
Water	0.15	0.18	0.13	NR	0.18	0.18	0.20
Soap and Water	0.12	0.14	0.10	NR	0.15	0.15	0.15
Oil	---	---	---	NR	---	---	0.10

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.25	0.20	0.20	0.16
Water	0.20	0.18	0.18	0.14
Soap and Water	0.15	0.15	0.15	0.13
Oil	0.10	0.10	0.10	0.10

1. Only available in MCC® TableTop® and MatTop® chains.

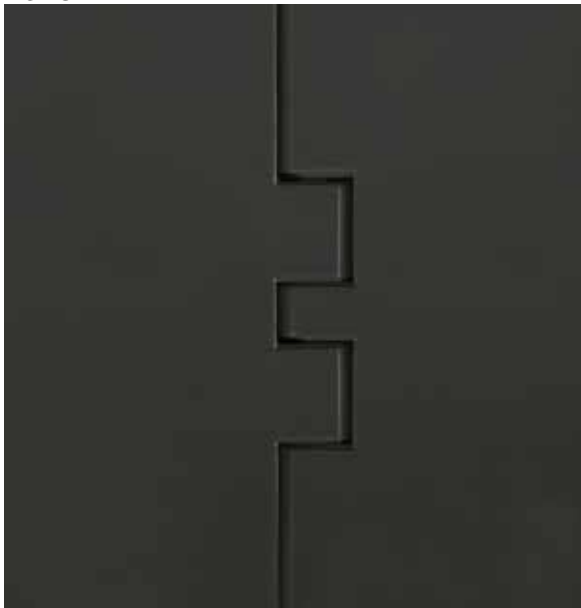
**Regulatory Information**

The Food and Drug Administration (FDA) accepts certain materials for direct food contact. FDA approved material is compliant to FDA 21 CFR § 177.

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**Brief Description**

Proprietary acetal material that combines good wear resistance, strength, and low friction characteristics with anti-static properties. It is formulated to reduce or eliminate nuisance static buildup that can occur while conveying heavy products or during product accumulation. Also used to dissipate nuisance sparks for class II type static environments only. Please contact Application Engineering at 262.376.4800 for specific uses for this material.

**Primary Components**

High capacity anti-static acetal (POM)

**General Information**

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet	dry	wet			
HCAS	High Capacity Anti-static (Black)	0	+180	+150	-18	+82	+66	No

**Friction Factors Between Material and Product**

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.25	0.27	0.20	0.33	0.25	0.25	0.30
Water	NR	NR	NR	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR	NR	NR	NR
Oil	NR	NR	NR	NR	NR	NR	NR

**Friction Factors Between Material and Wearstrips**

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.30	0.25	0.25	0.20
Water	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR
Oil	NR	0.10	0.10	0.10

**Regulatory Information**

Rexnord and TableTop are trademarks of Rexnord Corporation. All rights reserved.  
 Nylatron is a registered trademark of Quadrant Engineering Plastics Products.  
 Teflon® is a registered trademark of E.I. DuPont Demours and Co.

- Types of Static Environments:  
 Class I: Static spark causes explosion. Use stainless steel materials.  
 Class II: Static spark is a nuisance charge causing slight shock, possible circuit damage or electrical malfunction
- Electrical properties: surface resistivity =  $10^{11} - 10^{13} \Omega/\text{sq}$ .
- HCAS is Teflon® and is silicone free.
- Wearstrip Recommendations:  
 Wearstrips must be grounded to the conveyor frame and must be electrical conductive to be effective. The conveyor frame should also be externally grounded.
- Strength considerations:  
 Rexnord MatTop® chains molded from HCAS material must be derated 15% from their acetal (BSM) counterparts.
- Depending on application requirements, the entire conveyer chain can be compromised of anti-static material or sections of anti-static material can be interspersed at various intervals.
- HCAS friction factor should be used when interspersing HCAS links into any other MatTop® material.

NR denotes "not recommended", Dash denotes "combination not tested"

\*\*Friction of returnable bottles will vary depending on the quality of the glass, the amount of roughed up surface, etc.

# HC-ESD



### Brief Description

Proprietary acetal material that combines good wear resistance, strength, and low friction characteristics with electrostatic dissipative properties. It is formulated for conveying heavy, sensitive products that contain electronics or computer chips, where controlling static charge and static decay are of critical importance. Meets the ESD Association Draft Standard SD 4.1 - 1995. Used to dissipate static charges that can occur while conveying products or during product accumulation. Also used to dissipate nuisance sparks for class II type static environments only. Please contact Application Engineering at 262.376.4800 for specific uses for this material.

### Primary Components

High capacity electrostatic dissipative acetal (POM)

### General Information

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet		dry	wet		
HC-ESD	High Capacity Electrostatic Dissipative (Black)	0	+180	+150	-18	+82	+66	No

### Friction Factors Between Material and Product

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.25	0.27	0.20	0.33	0.25	0.25	0.30
Water	NR	NR	NR	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR	NR	NR	NR
Oil	NR	NR	NR	NR	NR	NR	NR

### Friction Factors Between Material and Wearstrips

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.30	0.25	0.25	0.20
Water	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR
Oil	NR	0.10	0.10	0.10

### Regulatory Information

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Nylatron is a registered trademark of Quadrant Engineering Plastics Products.

- Types of Static Environments:  
Class I: Static spark causes explosion. Use stainless steel materials.  
Class II: Static spark is a nuisance charge causing slight shock, possible circuit damage or electrical malfunction
- Electrical properties: surface resistivity =  $10^5 - 10^9 \Omega/\text{sq}$ .
- HC-ESD is Teflon® and is silicone free.
- Wearstrip Recommendations:  
Wearstrips must be grounded to the conveyor frame and must be electrical conductive to be effective. The conveyor frame should be also externally grounded.
- Strength considerations:  
Rexnord MatTop® molded from HC-ESD material must be derated 10% from their acetal (BSM) counterparts.
- Depending on application requirements, the entire conveyor chain can be compromised of HC-ESD material or sections HC-ESD material can be interspersed at various intervals.
- HC-ESD friction factor should be used when interspersing HC-ESD links into any other chain material.

NR denotes "not recommended", Dash denotes "combination not tested"

\*\*Friction of returnable bottles will vary depending on the quality of the glass, the amount of roughed up surface, etc.

# FR-ESD



## Brief Description

Proprietary material that combines good wear resistance and strength with electrostatic dissipative and flame retardant properties. It is formulated for conveying heavy, sensitive products that contain electronics or computer chips, where controlling static charge and static decay are of critical importance. Meets the ESD Association Draft Standard SD 4.1 - 1995. Used to dissipate static charges that can occur while conveying products or during product accumulation. Also used to dissipate nuisance sparks for class II type static environments only. Meets the DIN4102-1 B1 flame retardant criteria for construction materials. Please contact Application Engineering at 262.376.4800 for specific uses for this material.

## Primary Components

Flame Retardant electrostatic dissipative nylon (PA)

## General Information

Prefix	Material	Temperature						FDA Approval
		Fahrenheit			Celsius			
		min	max		min	max		
		dry	wet		dry	wet		
FR-ESD	Flame Retardant Electrostatic Dissipative (Black)	0	+180	NR	-18	+82	NR	No

## Friction Factors Between Material and Product

Operating Condition	Product Material						
	Aluminum	Returnable Glass Bottles**	Non-Returnable Glass Bottles	Paper	Plastic (crates, shrink wrap, etc)	PET	Steel
Dry	0.25	0.27	0.20	0.33	0.25	0.25	0.30
Water	NR	NR	NR	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR	NR	NR	NR
Oil	NR	NR	NR	NR	NR	NR	NR

## Friction Factors Between Material and Wearstrips

Operating Condition	Wearstrip Material			
	Carbon and Stainless Steel	UHMWPE	Nylatron®	ULF™
Dry	0.30	0.25	0.25	0.22
Water	NR	NR	NR	NR
Soap and Water	NR	NR	NR	NR
Oil	NR	0.10	0.10	0.10

## Regulatory Information

Rexnord and TableTop are trademarks of Rexnord Corporation.

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Nylatron is a registered trademark of Quadrant Engineering Plastics Products.

Teflon® is a registered trademark of E.I. DuPont Demours and Co.

- Types of Static Environments:  
Class I: Static spark causes explosion. Use stainless steel materials.  
Class II: Static spark is a nuisance charge causing slight shock, possible circuit damage or electrical malfunction
- Electrical properties: surface resistivity =  $10^5 - 10^9 \Omega/\text{sq}$ .
- FR-ESD is Teflon® and is silicone free.
- Wearstrip Recommendations:  
Wearstrips must be grounded to the conveyor frame and must be electrical conductive to be effective. The conveyor frame should also be externally grounded.
- Strength considerations:  
Rexnord MatTop® molded from FR-ESD material must be derated 40% from their acetal (BSM) counterparts.
- Actual dimensions of FR-ESD MatTop® chains will differ +1.5% to +1.8% from nominal dimensions.

NR denotes "not recommended", Dash denotes "combination not tested"

\*\*Friction of returnable bottles will vary depending on the quality of the glass, the amount of roughed up surface, etc.



# REXNORD TableTop AND MatTop APPLICATION INFORMATION SHEET

Rexnord Industries, Inc.

Attn: \_\_\_\_\_

1272 Dakota Drive, Grafton, WI 53024  
Phone: 262.376.4700  
Fax: 262.376.4720

Submitted by: \_\_\_\_\_ Phone: \_\_\_\_\_

Company: \_\_\_\_\_ Contact: \_\_\_\_\_ Phone: \_\_\_\_\_

Is this application...  Existing application  Retrofit application  New application

Chain style: \_\_\_\_\_ Width: \_\_\_\_\_ Material: \_\_\_\_\_ Length: \_\_\_\_\_

Any attachments or special requirements (If so, please describe in detail)?

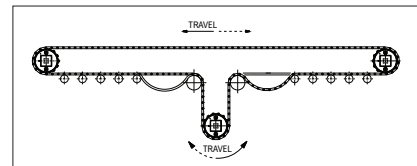
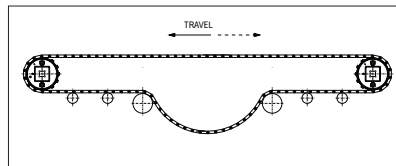
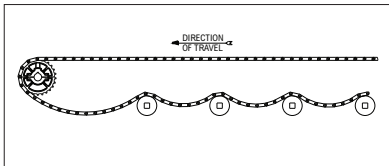
\_\_\_\_\_  
\_\_\_\_\_

What drive configuration?

Uni-Directional

Bi-Directional, End-Drive

Bi-Directional, Bottom Drive



Desired sprocket size: \_\_\_\_\_

Product information (product description, dimensions, weight per item):

\_\_\_\_\_  
\_\_\_\_\_

Product weight (lbs/ft for TableTop or lbs/ft<sup>2</sup> for MatTop): \_\_\_\_\_

Wearstrip material: \_\_\_\_\_ Ambient/Chain temperature: \_\_\_\_\_

% of time accumulation occurs (% slip): \_\_\_\_\_ Length of conveyor accumulation occurs: \_\_\_\_\_

Number of starts and stops per hour: \_\_\_\_\_ Speed (FPM or MPM): \_\_\_\_\_

Lubrication (specify): \_\_\_\_\_

Environment: Abrasive:  Chemicals:  Bacteria:  Other:  (specify) \_\_\_\_\_

- If chemicals are present in the application, please obtain MSDS sheets for the chemical in question.
- Any other special design considerations (i.e. impact loading, FDA approval, special type of transfer, special materials)

Is special chain material required? \_\_\_\_\_  
(i.e. Ultra Violet stabilized (DUV, HUV, or LUV), Anti-static (AS), Melt Resistant (MR), etc.)

**IMPORTANT: Please attach a conveyor layout or schematic.**  
(include lengths, curves, radius of curves, drive locations, inclines, elevators)

All items in **BOLD** will need to be filled in before calculations can be performed.



866-REXNORD/866-739-6673 (Within the U.S.)  
414-643-2366 (Outside the U.S.)  
[www.rexnord.com](http://www.rexnord.com)

## Why Choose Rexnord?

When it comes to providing highly engineered products that improve productivity and efficiency for industrial applications worldwide, Rexnord is the most reliable in the industry. Commitment to customer satisfaction and superior value extend across every business function.

### Delivering Lowest Total Cost of Ownership

The highest quality products are designed to help prevent equipment downtime and increase productivity and dependable operation.

### Valuable Expertise

An extensive product offering is accompanied by global sales specialists, customer service and maintenance support teams, available anytime.

### Solutions to Enhance Ease of Doing Business

Commitment to operational excellence ensures the right products at the right place at the right time.

# REXNORD

## Rexnord Company Overview

Rexnord is a growth-oriented, multi-platform industrial company with leading market shares and highly trusted brands that serve a diverse array of global end markets.

## Process & Motion Control

The Rexnord Process & Motion Control platform designs, manufactures, markets and services specified, highly engineered mechanical components used within complex systems where our customers' reliability requirements and the cost of failure or downtime are extremely high.

## Water Management

The Rexnord Water Management platform designs, procures, manufactures and markets products that provide and enhance water quality, safety, flow control and conservation.