CHAIN MATERIALS

For more detailed material information, see page EM - TT - 10 or the Appendix located at the end of this manual.

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

AS (Anti-Static)

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

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

CR (Extreme Chemical Resistant)

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

D & WD (Acetal)

⇒Plain acetal

DUV (Ultraviolet Resistant)

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

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

FR (Flame Retardant)

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

HP™ & WHP (High Performance)

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

HS (Heat Stabilized)

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

LF & WLF (Low Friction)

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

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 top of the chain

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

PS™ (Platinum Series™)

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

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

WX (Abrasion Resistant)

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



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

Contact Rexnord Application Engineering for more information 1.262.376.4800

TableTop® Conveyor Chain

- Materia;s > AS (Anti-Static)
- > BWR (Black Wear Resistant)
- > CR (Extreme Chemical Resistant)
- > D & WD (Acetal)
- > DUV (Ultraviolet Resistant)
- > ESD (Electrostatic Dissipative)
- > FR (Flame Retardant)
- > HP[™] & WHP (High Performance)
- > HS (Heat Stabilized)
- > LF & WLF (Low Friction)
- > MR (Melt Resistant)
- > P (Chemical Resistant)
- > PS™ (Platinum Series™)
- > S (Carbon Steel)
- > SS (Stainless Steel)
- > SSB (Low Magnetic Stainless Steel)
- > WX (Abrasion Resistant)

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TableTop® Conveyor Chain Materials

> Friction Table
Between Chain
and Product
(Fm)

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lex® TableTop® Chains

FRICTION TABLE BETWEEN CHAIN AND PRODUCT (Fm)

Chain	Material				Product Material			
Chain Material	Lubrication	Aluminum	Glass	Returnable Glass Bottles	Non-Returnable Glass Bottles	Paper	Plastic (including PET)	Steel
	Dry	0.25	0.20	0.27	0.20	0.33	0.25	0.30
AS	Water	0.17	0.15	0.18	0.15	NR	0.20	0.22
AS	Soap & Water	0.12	0.10	0.14	0.10	NR	0.15	0.15
	Oil	-	-	-	-	NR	-	0.10
	Dry	0.25	0.20	0.27	0.20	0.33	0.25	0.30
BWR	Water	NR	NR	NR	NR	NR	NR	NR
BWK	Soap & Water	NR	NR	NR	NR	NR	NR	NR
	Oil	NR	NR	NR	NR	NR	NR	0.10
	Dry	0.25	0.20	0.27	0.20	0.33	0.25	0.30
0.0	Water	0.17	0.15	0.18	0.15	NR	0.20	0.22
CR	Soap & Water	0.12	0.10	0.14	0.10	NR	0.15	0.15
	Oil	-	-	-	-	NR	-	0.10
	Dry	0.25	0.20	0.27	0.20	0.33	0.25	0.30
D	Water	0.17	0.15	0.18	0.15	NR	0.20	0.22
WD	Soap & Water	0.12	0.10	0.14	0.10	NR	0.15	0.15
	Oil	-	-	-	-	NR	-	0.10
	Dry	0.25	0.20	0.27	0.20	0.33	0.25	0.30
	Water	0.17	0.15	0.18	0.15	NR	0.20	0.22
DUV	Soap & Water	0.12	0.10	0.10	0.10	NR	0.15	0.15
	Oil	-	-		-	NR	0.13	0.10
	Dry	0.28	0.22	0.29	0.22	0.35	0.30	0.10
	Water	0.19	0.22	0.29	0.22	NR	0.30	0.35
ESD	Soap & Water	0.19	0.17	0.21	0.17	NR	0.20	0.20
	Oil	-	-	- 0.14	-	NR	0.20	0.20
		0.25	0.20	0.27	0.20	0.33	0.25	0.10
	Dry	0.25	0.20	0.27	0.20	NR	0.23	0.30
FR	Water Soap & Water	0.17	0.15			NR NR	0.20	0.22
Oil	0.12	0.10	0.14	0.10	NR NR	0.15	0.15	
LIDIM	Dry	0.18	0.13	0.16	0.12	0.23	0.18	0.18
HP™		0.14	0.12	0.16	0.11	NR	0.16	0.16
WHP	Soap & Water	0.12	0.10	0.14	0.10	NR	0.14	0.13
	Oil	-	-	-	-	NR	-	0.10
	Dry	0.25	0.20	0.27	0.20	0.33	0.25	0.30
HS	Water	0.17	0.15	0.18	0.15	NR	0.20	0.22
	Soap & Water	0.12	0.10	0.14	0.10	NR	0.15	0.15
	Oil	-	-	-	-	NR	-	0.10
	Dry	0.20	0.15	0.20	0.15	0.30	0.20	0.25
LF	Water	0.15	0.13	0.16	0.13	NR	0.18	0.20
WLF	Soap & Water	0.12	0.10	0.14	0.10	NR	0.15	0.15
	Oil	-	-	-	-	NR	-	0.10
	Dry	0.25	0.20	0.27	0.20	0.33	0.25	0.30
MR	Water	NR	NR	NR	NR	NR	NR	NR
*	Soap & Water	NR	NR	NR	NR	NR	NR	NR
	Oil	NR	NR	NR	NR	NR	NR	0.10
	Dry	0.25	0.20	0.27	0.20	0.33	0.25	0.30
Р	Water	0.17	0.15	0.18	0.15	NR	0.20	0.22
	Soap & Water	0.12	0.10	0.14	0.10	NR	0.15	0.15
	Oil	-	-	-	-	NR	-	0.10
	Dry	0.25	0.20	0.27	0.20	0.33	0.25	0.30
PS™	Water	0.17	0.15	0.18	0.15	NR	0.20	0.22
1 0	Soap & Water	0.12	0.10	0.14	0.10	NR	0.15	0.15
	Oil	-	-	-	-	NR	-	0.10
	Dry	0.28	0.35	0.47	0.35	0.40	0.30	0.35
S	Water	NR	NR	NR	NR	NR	NR	NR
3	Soap & Water	NR	NR	NR	NR	NR	NR	NR
	Oil	-	-	-	-	NR	-	0.15
	Dry	0.28	0.35	0.47	0.35	0.40	0.30	0.35
SS	Water	0.19	0.25	0.31	0.25	NR	0.20	0.25
SSB	Soap & Water	0.12	0.15	0.21	0.15	NR	0.10	0.15
-	Oil	-	-	-	-	NR	-	0.15
	Dry	0.20	0.15	0.20	0.15	0.30	0.20	0.25
	Water	NR	NR	NR	NR	NR	NR	NR
WX	Soap & Water	NR	NR	NR	NR	NR	NR	NR
	Oil	NR	NR	NR	NR NR	NR	NR	NR

NR denotes "not recommended"

Dash denotes "combination not tested"



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

> Friction Table Between Chain and Wearstrips (Fw)

FRICTION TABLE BETWEEN CHAIN AND WEARSTRIPS (Fw)

Chair	n Material	W	earstrip Material	
Chain Material	Lubrication Conditions	Steel and Stainless Steel	UHMWPE	Nylatron®
	Dry	0.30	0.25	0.25
AS	Water	0.23	0.21	0.21
AS	Soap & Water	0.15	0.15	0.15
	Oil	0.10	0.10	0.10
	Dry	0.28	0.22	0.22
DIAID	Water	NR	NR	NR
BWR	Soap & Water	NR	NR	NR
	Oil	0.10	0.10	0.10
	Dry	0.30	0.25	0.25
	Water	0.23	0.21	0.21
CR	Soap & Water	0.15	0.15	0.15
	Oil	0.10	0.10	0.10
	_	0.30	0.10	0.25
	Dry Water	0.23	0.23	0.21
D, WD				
	Soap & Water Oil	0.15	0.15	0.15
		0.10	0.10	0.10
	Dry	0.30	0.25	0.25
DUV	Water	0.23	0.21	0.21
231	Soap & Water	0.15	0.15	0.15
	Oil	0.10	0.10	0.10
	Dry	0.35	0.30	0.30
ESD	Water	0.25	0.25	0.25
ESD	Soap & Water	0.20	0.20	0.20
	Oil	0.10	0.10	0.10
	Dry	0.30	0.25	0.25
	Water	0.23	0.21	0.21
FR	Soap & Water	0.15	0.15	0.15
	Oil	0.10	0.10	0.10
		0.22	0.17	0.17
	Dry			
HP™, WHP	Water	0.20	0.16	0.16
	Soap & Water	0.15	0.14	0.14
	Oil	0.10	0.10	0.10
	Dry	0.30	0.28	0.28
HS	Water	0.25	0.23	0.23
	Soap & Water	0.18	0.18	0.18
	Oil	0.10	0.10	0.10
	Dry	0.25	0.20	0.20
LF, WLF	Water	0.20	0.18	0.18
LI, VVLI	Soap & Water	0.15	0.15	0.15
	Oil	0.10	0.10	0.10
	Dry	0.30	0.28	0.28
145	Water	NR	NR	NR
MR	Soap & Water	NR	NR	NR
	Oil	0.10	0.10	0.10
	Dry	0.30	0.25	0.25
	Water	0.23	0.21	0.21
Р	Soap & Water	0.25	0.15	0.15
	Oil	0.15	0.15	0.15
	Dry	0.18	0.17	0.17
PS™	Water	0.16	0.16	NR
	Soap & Water	0.13	0.14	NR
	Oil	0.10	0.10	0.10
	Dry	0.50	0.40	0.40
S	Water	NR	NR	NR
3	Soap & Water	NR	NR	NR
	Oil	0.20	0.20	0.20
	Dry	0.50	0.40	0.40
00 000	Water	0.40	0.30	0.30
SS, SSB	Soap & Water	0.20	0.20	0.20
	Oil	0.20	0.20	0.20
	Dry	0.25	0.20	0.20
	Water	NR	NR	NR
WX	Soap & Water	NR		
	Oil		NR 0.10	NR 0.10
	OII OII	0.10	0.10	0.10

NR denotes "not recommended"

Friction between chain and wearstrip (Fw) must be adjusted when inclining / declining. See Friction Formulas on page EM - MF - 27 (Multiflex section) for more information.

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

Fm for LBP3000 TableTop® chain (typically) = 0.10; Fm for LBP1503 TableTop® chain (typically) = 0.11

Contact Rexnord Application Engineering for more information 1.262.376.4800

Rex® TableTon® Chain

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TableTop® Sprockets and Idler Wheel Designations Plastic

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

Metallic

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

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Rex® 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

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

⇒Heat Stabilized Nylon

- 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

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

⇒Glass Reinforced Nylon

- 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)

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:

Acetal

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

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

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)

Lubricant Impregnated Wood

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

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 guarter 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

Teflon®

⇒Recommended only for very low speed low load applications

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
- ⇒Provide 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



Wearstrip surface finish is a critical aspect for overall chain life. A surface finish of 32 µ-in Ra is recommended for metal wearstrips and 125 µ-in Ra for plastic wearstrips.

Contact Rexnord Application Engineering for more information 1.262.376.4800

- > Acetal
- **Aluminum**

TableTop®

Wearstrip **Materials**

- > Bronze and **Brass**
- > Nylatron® (Nylon with **Moly Filler**)
- > Lubricant **Impregnated** Wood
- > Steel
- > Stainless Steel
- **Teflon**[®]
- > UHMWPE (Ultra **High Molecular** Weight Polyethylene)

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TableTop[®] Lubrication

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

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Rex® TableTop® Chains

LUBRICATION

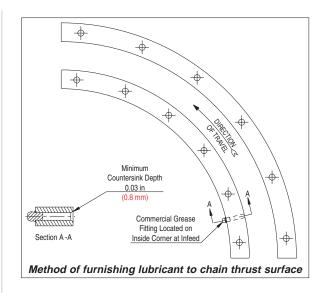
Lubrication is recommended whenever the application permits. It not only reduces friction, thereby reducing chain tension; but also, greatly improves the wear life of the chain and wearstrips. Lubrication offers a constant cleaning effect of both the chain and wearstrip and can also reduce static.

General Recommendations

- ⇒Lubrication should contact both the chain and wearstrip
- ⇒When lubricating side-flexing Rex® 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 affect 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



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™ or PS™ 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.



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

Rex® 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 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

TableTop® LubricationOther Considerations

- > Metal Unit Link Chains
- > Carbon Steel
- > Stainless Steel
- > Rex®
 TableTop®
 Chains with
 Roller Base
 Chains
- > Carbon Steel Base Chains
- > Stainless Steel Base chains

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Rex® TableTop® Chains



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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 - 11 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 Rex® TableTop® chain and wearstrips can vary due to the presence of moisture

	Mini Tempe	mum erature	Maximum Temperature				
Material	D	ry	D	ry	Wet		
	°F	°C	°F	°C	°F	°C	
Acetal	-40	-40	180	82	150	66	
UHWMPE	-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	250	121	
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

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

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 (30 m) 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 recommended.

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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Rex[®] TableTop[®] Chains

TableTop[®] Environmental Considerations

> Rex® TableTop® Chain Material Characteristic

Table

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Rex® TableTop® Chains



MATERIAL CHARACTERISTIC TABLE

Material		Metal			Themoplastic												
Characteristics	S	SS	SSB	HP™ WHP	LF WLF	D WD	BWR	AS	ESD	HS	Р	CR	MR	DUV	FR	PS™	wx
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		-	-	-	-	•					-	-				-	

S = Carbon Steel ESD = Electrostatic Dissipative

SS = Stainless Steel HS = Heat Stabilized
SSB = Low Magnetic Stainless Steel P = Chemical Resistant

 $HP^{\text{\tiny TW}}$ = High Performance CR = Extreme Chemical Resistant

= White High Performance WHP MR = Melt Resistant = Low Friction DUV = Ultraviolet Resistant WLF = White Low Friction FR = Flame Retardant D PS™ = Platinum Series[™] = Acetal WD = White Acetal = Abrasion Resistant

BWR = Black Wear Resistant

AS = Anti-Static

*See Corrosion Resistance Guide on Page EM - TT - 11 for more details

CORROSION RESISTANCE GUIDE

TableTop® Environmental Considerations

CorrosionResistanceGuide

Common	Carbon Steel	Austenitic	Acetal	Nylon & Nylatron®	Polyester	Resistant Fluorinated Polymer	Polypropylene	Polyethylene	Neoprene	EPDM
or Chemical Name	Ø	SS, SSB	AS, DUV, HP™, LF, PS™, WD, WHP, WLF	BWR, HS, MR, WX	P, FR	CR	ESD	UHMWPE		
Acetic Acid (over 5%-up to 50%)	U	М	U	М	S	S	S	S	М	S
Acetone	U	S	S	S	S	U	S	S	М	S
Alcohol	S	S	S	S	S	S	S	S	S	S
Ammonia	М	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	М	U
Brine (pickle)	U	M	М	M	S	S	S	S	S	S
Carbon Tetrachloride	М	М	S	S	S	U	М	М	U	U
Chlorine	U	U	U	U	S	S	S	S	U	М
Citric Acid	U	S	М	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
			S				S			
Hexane	-	S		_	S	S		U	S	U
Hydrochloric Acid (up to 2%)	U	U	U	U	S	S	S	S	М	S
Hydrochloric Acid (up to 37%)	U	U	U	U	S	S	M	S	U	М
Hydrogen Peroxide	U	S	U	U	S	S	S	S	М	S
lodine	U	U	U	U	U	M	М	M	U	U
Isopropanol (isopropyl alcohol)	S	S	S	S	S	S	S	S	S	S
Lactic Acid	U	S	S	М	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	М	S	U	М
Nitric Acid (low concentrations)	U	S	U	U	S	S	S	S	М	S
Oil (vegetable or mineral)	S	S	S	S	S	M	S	S	S	U
Ozonated Water	S	S	М	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	М	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	М	S	S	S	S
Sodium Hypochlorite (Bleach)	U	U	U	U	S	S	S	S	U	S
Stearic Acid	U	S	М	S	S	S	S	S	S	М
Sulphuric Acid (up to 40%)	U	U	U	U	S	S	S	S	M	S
Toluene (Toluol)	S	S	М	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
Ayierie	3	3	3	3	٥	3		IVI		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.

io table to based on table arangement, rances material expenses.

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- > Straight
 Running
 Configuration
- > Side-flexing Configuration

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Rex® TableTop® Chains

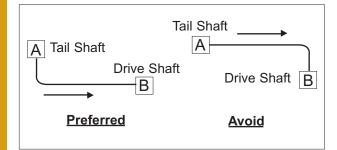
CONVEYOR DESIGN RECOMMENDATIONS

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, obstructions in the plant, etc., the designer can incorporate a side-flexing conveyor, which traverses one or more curve
- ⇒When planning a side-flexing conveyor lay out, 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 below), resulting in lower chain tension and maximizing chain life





In general, the straight section between the corner and the drive shaft must be at least 18 in (457 mm) to allow adequate room for the catenary (see page EM - TT - 25). The tail shaft section should be at least 12 in (305 mm).

- ⇒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



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.

Conveyor Design

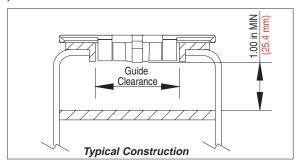
TableTop®

- > Carry Ways
- > Straight Running
- > Side-flexing Bevel Design
- > Side-flexing TAB Design

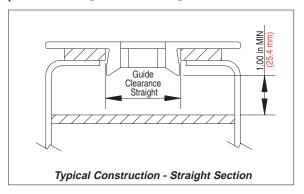
Carry Ways

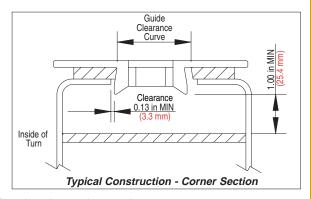
⇒Guide clearance is critical for both straight and side-flexing chains. For guide clearance dimensions of individual chains, see tables on page EM - TT - 17 or Product Catalog

Straight Running



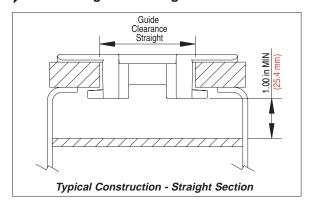
Side-flexing - Bevel Design

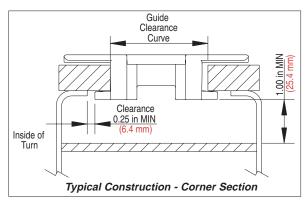




⇒Chain can be lifted out of straight sections only for cleaning or inspection

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

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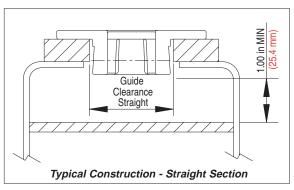
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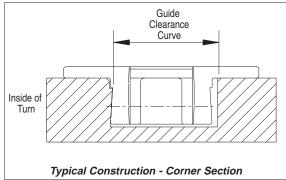
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- CONVEYOR DESIGN RECOMMENDATIONS
- > Carry Ways
- > LPC® (Low Pin Centerline)
- > Magnetflex®

Carry Ways

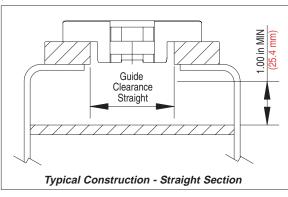
Side-flexing - LPC® (Low Pin Centerline) Design

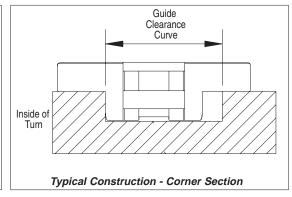




- ⇒Chain can be lifted out of straight and corner sections for cleaning or inspection
- ⇒Must utilize Rex® corners

Side-flexing - Magnetflex® Design





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

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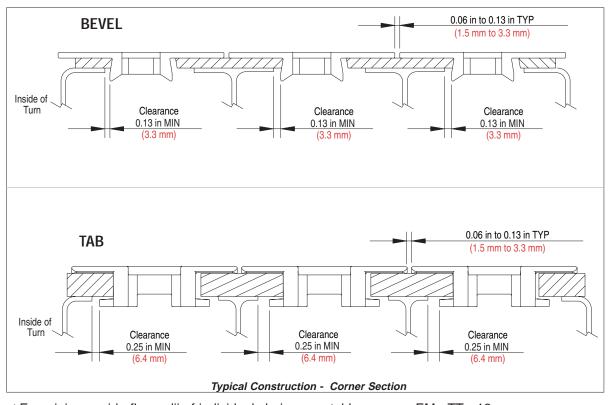
TableTop® Conveyor Design

> Carry Ways

> Multiple Strands (Corner Section Shown)

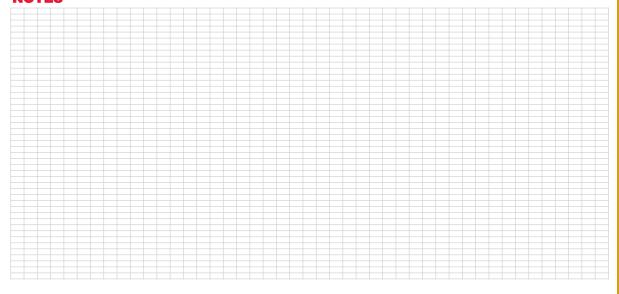
Carry Ways

Multiple Strands (Corner Section Shown)



- ⇒For minimum side-flex radii of individual chains, see table on page EM TT 16
- ⇒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

NOTES



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> Side-flex **Radius Table**

Chain Style	Chair	n Width	Minimum Sid	Minimum Side-flex Radius		
	in	mm	in	mm		
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,	3.25	82.6	18.00	457.2		
880 TAB,	4.50	114.3	24.00	609.6		
880 TAB BO	3.25, 4.50	82.6, 114.3	7.87	200.0		
004 004 TAD	3.25	82.6	18.00	457.2		
881, 881 TAB	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, 7.50, 10.00, 12.00	82.6, 114.3, 190.5, 254.0, 304.8	24.00	609.6		
000 TAD LDD	3.75	95.3	26.25	666.8		
882 TAB LBP	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		
	3.25	82.6	18.00	457.2		
LPC [®] 1050	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		
	3.25	82.6	18.00	457.2		
LPC®1055	3.31	84.0	19.69	500.0		
	4.50, 7.50	114.3, 190.5	24.00	609.6		
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		
	2.25, 3.25, 4.50	57.2, 82.6, 114.3	14.00	355.6		
1873 TAB	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		
	2.25, 3.25, 4.50	57.2, 82.6, 114.3	15.00	381.0		
1874 TAB	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		
0070 715	10.00	254.0	18.00	457.2		
3873 TAB -	12.00	304.8	24.00	609.6		
4873 TAB	3.25	82.6	14.00	355.6		
	3.25	82.6	15.00	381.0		
4874 TAB	6.00	152.4	18.00	457.2		
	7.50	190.5	24.00	609.6		
		1	1			

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Rex® TableTop® Chain Track Details

Straight Running

Chain Style	Э	812 815 820 831	821	1864	866	843	863 963	863T
Guide	in	1.75	5.50	1.38	1.63	0.94	1.44	1.31
Clearance	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		050 055	
Hold Down Sty	le	Bevel	TAB	Bevel	TAB	LPC®	TAB	TAB	TAB	Magnetflex®	TAB	LPC®
Guide Clearance	in	1.75	1.81	2.44	2.38	1.75	0.88	1.31	1.66	1.73	1.81	1.75
Straight	mm	44.5	46.0	62.0	60.5	44.5	22.3	33.3	42.2	44.0	46.0	44.5
Guide Clearance	in	1.63	1.75	2.28	2.28	1.75	0.84	1.38	1.72	1.73	1.75	1.75
Corner	mm	41.1	44.5	57.9	57.9	44.5	21.3	34.9	43.7	44.0	44.5	44.5
Corner Wearstrip	in	0.38	0.38	0.63	0.63	0.61	0.38	0.75	0.90	0.51	0.38	0.61
Thickness	mm	9.7	9.7	15.9	15.9	15.5	9.7	19.1	22.0	13.0	9.7	15.5

TableTop® Conveyor Design

- > Rex®
 TableTop®
 Chain Track
 Details
- > Straight Running
- > Side-flexing

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Rex[®] TableTop[®] Chains

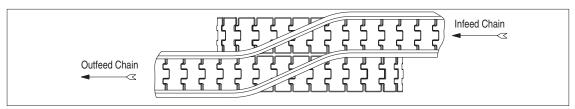
- > Transfers
- > Side Transfer
- > Inline Transfer
- > Radius Edge Chain

CONVEYOR DESIGN RECOMMENDATIONS

Transfers

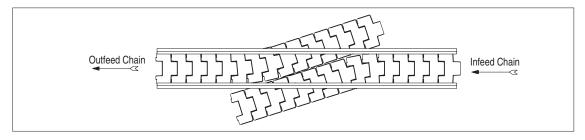
⇒Smooth transfer of the conveyed product from one chain to another is essential. The various methods are described below:

Side Transfer



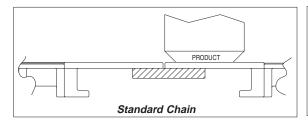
- √ ⇒ Adjacent strands of chain should share a common wearstrip
 - ⇒No stranded products

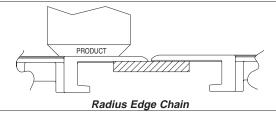
Inline Transfer



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

Radius Edge Chain





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

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Chair

Chai

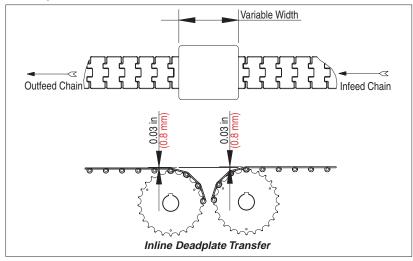
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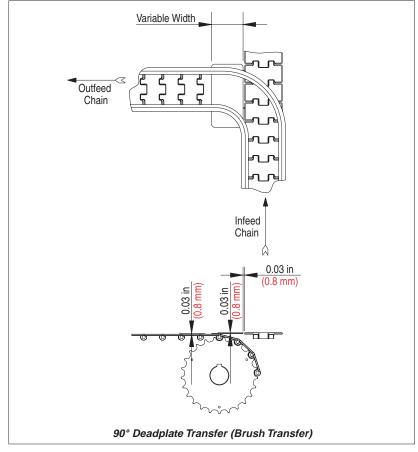
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Transfers

Deadplate Transfers





- /
 - ⇔For deadplate transfers, products should step down to the adjacent chain or deadplate surface (typically a 0.03 in (0.8 mm) 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

TableTop® Conveyor Design

- > Transfers
- > Deadplate Transfers

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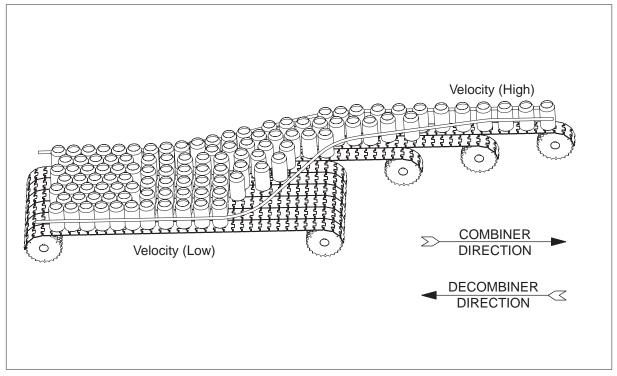
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- **CONVEYOR DESIGN RECOMMENDATIONS**
- > Transfers
- > Combiners / Decombiners

Transfers

Combiners / Decombiners

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





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 - 23 MPM), depending on product.



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

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TableTop® Conveyor Design

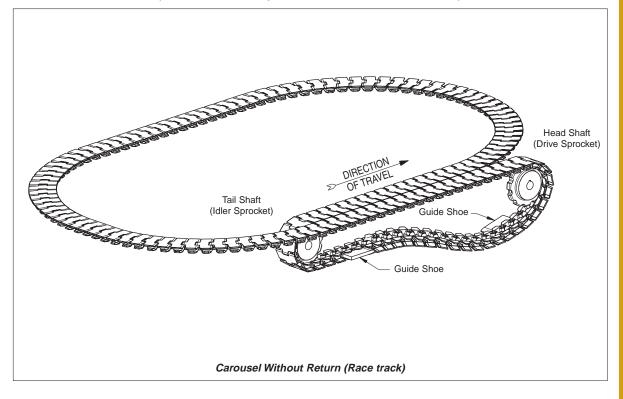
> Alternate Drive Configurations

> Offset Wrap Drive

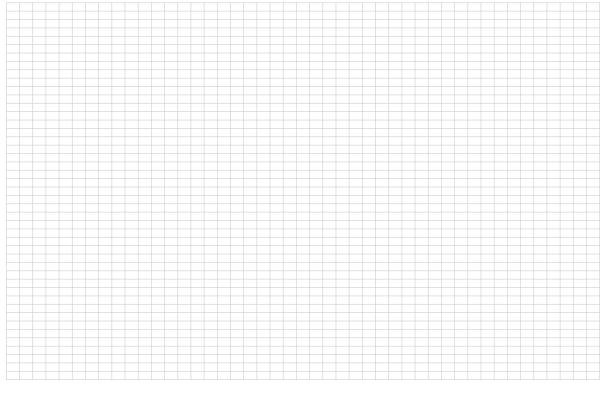
Alternate Drive Configurations

Offset Wrap Drive

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



NOTES



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

Return Ways

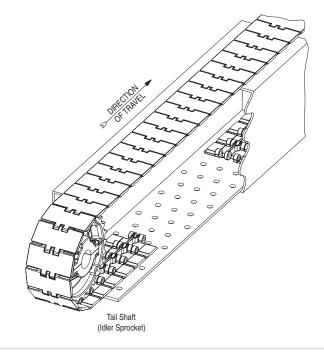
⇒Rex® TableTop® chains can be supported in a variety of ways

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

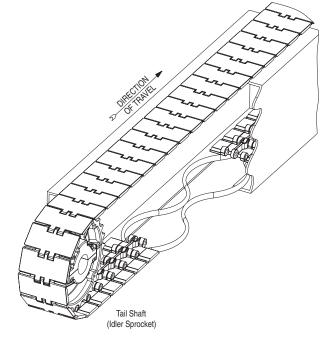


Solid beds should be avoided to eliminate debris build up and suction effect.



Serpentine Style Return

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



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Rex® TableTop® Chains



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

Possible solutions:

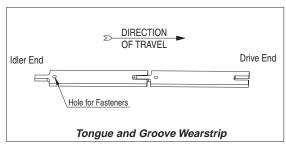
- ◆Return the chain on its TABs
- ◆Return the chain on the outer edge of the links via rollers or wearstrips

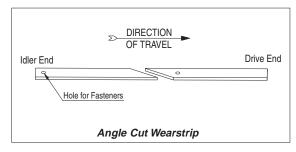
Contact Rexnord Application Engineering for more information 1.262.376.4800

Return Ways

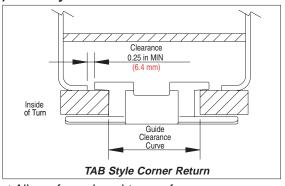
Wearstrip Considerations

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





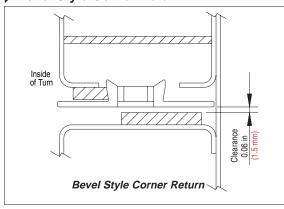
TAB Style Corner Return



⇒Allows for reduced top surface wear.

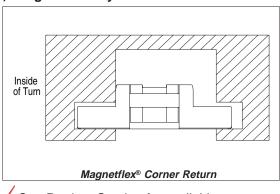
See Product Catalog for available corners

Bevel Style Corner Return



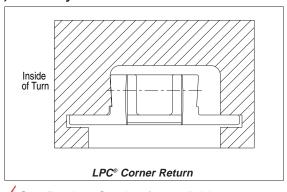
See Product Catalog for available corners

Magnetflex® Style Corner Return



See Product Catalog for available corners

LPC® Style 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)

TableTop® Conveyor Design

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

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> Return Ways

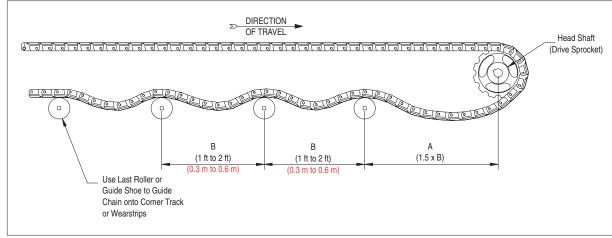
> Roller Return

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 time 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 (38.1 mm); therefore, the minimum roller diameter should be 3.00 in (76.2 mm).



- ⇒Insure 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
Onam otyle	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
866	13.00	330.2
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 (TAB, LPC® & 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

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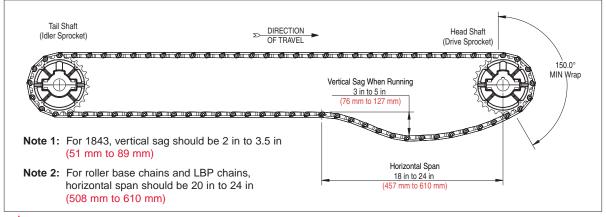
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TableTop® Conveyor Design

Catenary Sag

- ⇒The function of the catenary is to allow a place for excess chain to accumulate
- ⇒Rex® TableTop® chains should never be run
- ⇒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
- > Catenary Sag

> Entry Radius for Sliding **Returns**



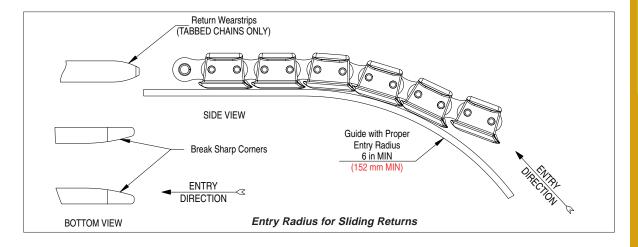


The catenary sag area must be free of all obstructions, such as frame cross-members, supports, drive components, that can damage chair or inhibit proper catenary sag.

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 - 24)
- ⇒Rexnord recommends a 6 in (152 mm) 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 - 17 for proper guide clearance)
- ⇒At the entry of the return wearstrips, provide rounded corners to prevent catching or snagging of the chain flights



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

CONVEYOR DESIGN RECOMMENDATIONS

Sprocket and Wearstrip Location

- ⇒The distance from the end of the wearstrip to the sprocket shaft centerline should equal dimension "C"; otherwise, the wearstrip will interfere with the free articulation of the chain as it enters the sprocket
 - ◆The leading edges of the wearstrips 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 (which ensures support under chain at all times.)
- ⇒See table below for C & E dimensions

Example:

For an 820 chain utilizing a 25T sprocket:

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

C = 1.50 in

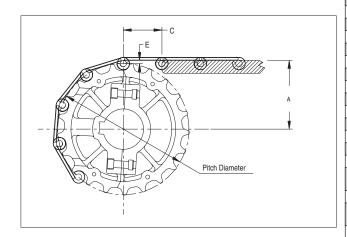
Metric:

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

 $C = 38.1 \ mm$



A = +0.03 in / -0.00 in (+0.8 mm / -0.0 mm)C = +0.25 in / -0.00 in (+6.3 mm / -0.0 mm)



	ا ت. ر		Dimension		
Chain Series	Dime	nsion			
	in	mm	in	mm	
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	
866	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 TAB & Magnetflex®	1.00	25.4	0.138	3.51	
LPC®1050	1.00	25.4	0.470	11.94	
1055 TAB & Magnetflex®	1.00	25.4	0.140	3.56	
LPC®1055	1.00	25.4	0.470	11.94	
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	
		1			

Shaft Drop Values

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TableTop® Conveyor Design

Roller ChainSprocketsfor TwoPiece Chains

Roller Chain Sprockets for Two Piece Chains

⇒Rex® TableTop® two piece roller chains operate over standard ANSI sprockets. Read important note below:

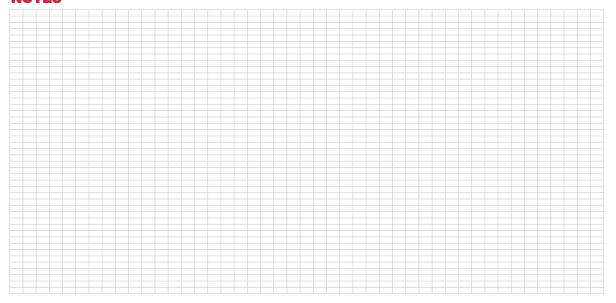


To prevent interference between chain hold down TABs and sprocket hubs, the maximum hub diameters are as follows:

- ⇒1843 TAB sprocket pitch diameter minus 0.65 in (16.5 mm)
- ⇒1874 TAB, 4874 TAB sprocket pitch diameter minus 1.30 in (33.0 mm)
- ⇒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 (38.1 mm)
- ⇒3873 TAB sprocket pitch diameter minus 1.50 in (38.1 mm)

Rex® Roller Base Chain & Sprockets								
Chain Series	Base Chain	Sprockets						
1843TAB	#1843							
1843TAB G	#1043	ANSI #40						
845	#843	ANOI #40						
1844	#043							
863TAB	#863							
963								
1863TAB								
1873TAB								
1873TAB G								
1874TAB	#63	ANSI #60						
1874TAB G								
3873TAB								
4873TAB								
4874TAB								
1864	#1864							
1883TAB	#1883	ANSI #80						

NOTES



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- Idler Wheel and Sprocket Locations (Stationary Shafts Only)
- > Shafting for Stationary Tail Shafts

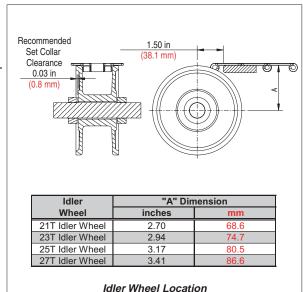
CONVEYOR DESIGN RECOMMENDATIONS

Idler Wheel and Sprocket Location (Stationary Shafts Only)

⇒The idler wheels can only be used in place of tail shaft sprockets on Rex® 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 µ-in Ra



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

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

!

Rex® TableTop® Chains

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Keyway and Setscrew Sizes

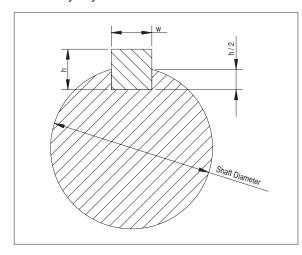
English:				
Shaft Diameter	Key Width (w)			Setscrew Size
> 9/16" to 7/8"	3/16"	3/16"	3/32"	1/4-20
> 7/8" to 1-1/4"	1/4"	1/4"	1/8"	3/8-16
> 1-1/4" to 1-3/8"	5/16"	5/16"	5/32"	3/8-16
> 1-3/8" to 1-3/4"	3/8"	3/8"	3/16"	3/8-16
> 1-3/4" to 2-1/4"	1/2"	1/2"	1/4"	1/2-13
> 2-1/4" to 2-3/4"	5/8"	5/8"	5/16"	1/2-13

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



Rexnord uses ANSI Standards for Keyway Dimensions.



/

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 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 floating.

Split Sprocket Bore Nomenclature

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

Plain Bore - Same tight fit bore as the 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.

TableTop® Conveyor Design

- > Keyway and Setscrew Sizes
- > Split
 Sprocket
 Bore
 Nomenclature

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Rex® TableTop® Calculation Program

> Rex®
TableTop®
Calculation
Program

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Rex® TableTop® Chains



Rex® TableTop® CALCULATION PROGRAM

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

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 & 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, as well as any gearbox manufacturer's recommendations.

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

Rex® TableTop® CALCULATION PROGRAM

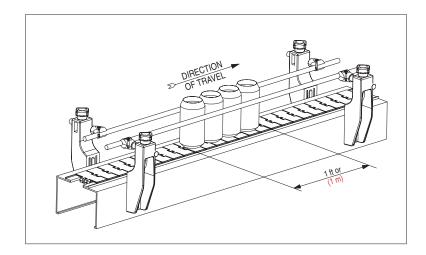
Calculating Chain Speed, Given Production Output

⇒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 (76.2 mm) 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?
- 1) Single File (one strand of SS815-K325 chain)



English

Chain Speed (MPM) _

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

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

Metric

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

CPM

Containers/ft

Rex®
TableTop®
Calculation
Program

- Calculating Chain Speed, Given Production Output
- > Example
- > Single File

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400 MPM

1600

13.1

Rex® TableTop® Calculation Program

- Calculating Chain Speed, Given Production Output
- > Mass Flow

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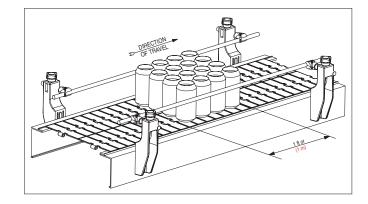
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Rex[®] TableTop[®] Chains

Rex® TableTop® CALCULATION PROGRAM

Calculating Chain Speed, Given Production Output

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



English

Container/ft² =
$$\frac{166.277}{\text{Dia. (in)}^2}$$
 = $\frac{166.277}{3^2}$ = 18.5 containers/ft²

Conveyor Width (in)
$$=$$
 4 of stands x Flight Width (in) $=$ 2 x 7.5 $=$ 15.0 in

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

Metric

Container/m² =
$$\frac{1,500,000}{\text{Dia. (mm)}^2}$$
 = $\frac{1,500,000}{76.2^2}$ = $\frac{198.1 \text{ containers/m}^2}{76.2^2}$

Conveyor Width (mm)
$$_{\pm}$$
 # of stands x Flight Width (in) $_{\pm}$ 2 x 190.5 $_{\pm}$ 381 mm



- Oval and rectangular containers are usually only run single file. En masse (in mass) conveying of such containers leads to orientation and jamming problems.
- 2) 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.
- 3) 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 the caution note on page EM TT 20).



Rex® TableTop® CALCULATION PROGRAM

Rex® TableTop® Calculation Program

> Calculating Product Weight, Given Production Output

- > Example
- > Single File
- > Mass Flow

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 (0.454 kg).

1) Single File (one strand of SS815-K325 chain)

English

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

Metric

kg/m = (Containers/m) x (kg/Container) = 13.1 x .454 = 5.9 kg/m

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

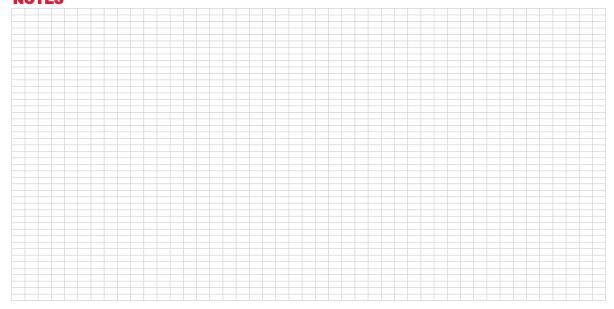
English

lbs/ft = (Containers/ft) x (Flight Width (in)/12 in/ft) x (lbs/Container) = $18.5 \times (7.5/12) \times 1 = 11.6$ lbs/ft

Metric

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

NOTES



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Rex[®] TableTop[®] Chains

Rex® TableTop® Calculation Program

> Typical Product Sizes and Weights



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Rex® TableTop® Chains



TableTop® PRODUCT SIZES AND WEIGHTS

Typical Product Sizes and Weights

	Content	Container	Container Size	Base Din	nensions	Weigl	nt Full	Single	File	En M	asse
		Material		inches	mm	lbs	kg	lbs/ft	kg/m	lbs/ft²	kg/m²
		Paper Paper	1/2 Pint Pint	3 x 3 3 x 3	76.2 x 76.2 76.2 x 76.2	0.60 1.10	0.27	2.4 4.4	3.6 6.5		
	Milk	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		
Dairy		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
	Toguit	Plastic	6 Pack / 4 oz Containers	5 x 7	127 x 177.8	1.57	0.71	3.8	5.6	/	
	Cattaga Chasas	Plastic	1/2 lb	4 Ø	101.6Ø	0.60	0.27	1.8	2.7	6.2	30.3
	Cottage Cheese	Plastic Plastic	1 lb 2 lb	4-3/4 Ø 5 Ø	120.7Ø 127Ø	1.10 2.30	0.50 1.04	2.8 5.5	4.1 8.2	8.1 15.3	39.4 74.4
	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
	luioo	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	250 ml 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 Plastic	500 ml PET 20 oz PET	2-37/64 Ø 2-7/8 Ø	65.5Ø 73.0Ø	1.16	0.53	5.4 5.7	8.0 8.5	29.0 27.6	141.0 134.1
	Soft Drink	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
		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
Bayyawawaa		Glass	16 oz Non-Returnable	2-3/4 Ø	69.9Ø	1.60	0.73	7.0	10.4	35.2	170.8
Beverages		Glass Glass	32 oz 64 oz	2-5/8 Ø 3-5/8 Ø	66.7Ø 92.1Ø	3.40 3.88	1.54 1.76	15.5 12.8	23.1 19.1	82.0 49.1	398.6 238.6
		Aluminum	12 oz	2.6 Ø	66.0Ø	0.85	0.39	3.9	5.8	20.9	101.8
	Beer	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		.00
		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 750 ml	13-1/2 x 7-3/4 2-7/8 Ø	342.9 x 196.9	24.48	11.10	21.8 12.0	32.4 17.9	57.9	201.0
		Glass Glass	1.5 Liter	2-7/8 Ø 4-1/4 Ø	73.0Ø 108.0Ø	6.37	1.31 2.89	18.0	26.8	57.9	281.9 284.9
	Wine / Champagne	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		
		Metal	1/2 lb	4-1/8 Ø	104.8Ø	0.80	0.36	2.3	3.5	7.8	38.0
	Coffee	Metal	1 lb	4-1/8 Ø	104.8Ø	1.30	0.59	3.8	5.6	12.7	61.7
	Collect	Metal	2 lb	5-1/4 Ø	133.4Ø	2.50	1.13	5.7	8.5	15.1	73.3
	D F	Metal	3 lb	6-1/4 Ø	158.8Ø	3.80	1.72	7.3	10.9	16.2	78.6
	Baby Food Baby Food	Glass Glass	Regular Junior	2-3/8 Ø 2-3/8 Ø	60.3Ø 60.3Ø	0.56	0.25	2.8 4.0	4.2 6.0	16.5 23.6	80.3 114.8
	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
Food	Jelly	Glass	32 oz	3-5/16" Ø	84.1Ø	2.15	0.98	7.8	11.6	32.6	158.6
	Jelly	Glass Plastic	18 oz	2-5/8 Ø 2-1/4 x 3-3/4	66.7Ø	1.62 1.63	0.73	7.4	11.0 12.9	39.1	189.9
	Catsup Apple Sauce	Glass	24 oz 23 oz	3-5/16 Ø	57.2 x 95.3 84.1Ø	2.05	0.74	8.7 7.4	11.1	31.1	151.2
	Mayonaise Mayonaise	Glass	32 oz	4 Ø	101.6Ø	3.03	1.37	9.1	13.5	31.5	151.2
	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 Liquid Laundry Soap	Plastic Plastic	32 oz 100 oz	2-5/8 x 4-1/2 5-1/2 x 7-3/4	66.7 x 114.3 139.7 x 196	2.30 7.01	1.04 3.18	10.5 15.3	15.6 22.8		
	Liquid Lauridry 30ap	Plastic	Quart	3-1/2 X 7-3/4	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 Tire	Plastic	24 Pack	12 x 15-1/2	304.8 x 393.7	5.67 35.00	2.57	5.7	8.4		
Automotive	Tire	Passenger Truck	Typical Typical	28 Ø 48 Ø	711.2 Ø 1219.2 Ø	150.00	15.87 68.03				
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