



Technical
Documentation

TKU 2040 ATTACHMENT CHAIN CONVEYOR

Each serial number is unique to that specific conveyor and provides mk North America with complete order details.

The conveyor serial number is located on the frame at the drive end of the conveyor. See section 2 for more details.

1	General Information	3
2	Serial Number Label	4
3	Conveyor Description	5
4	Warranty Information	7
5	Safety Requirements	8
6	Wear Items & Maintenance for Specific Options	10
7	Conveyor Chain Maintenance - Tensioning	19
8	Conveyor Chain Maintenance - Chain Replacement	21
9	VST Maintenance Details, Adjustable Width Units Only	23
10	Contact Information	25

1 GENERAL INFORMATION

1.1 Foreword

Congratulations on purchasing a conveyor from mk North America, Inc., a leading manufacturer of quality low profile conveyors. Our more than 30 years experience in material handling allows us to offer robust solutions with long life and reliable operation. We strive to make the best products in the industry even better and we are committed to making sure our customers get top notch support before, during, and after each and every sale.

1.2 The importance of reading your manual

Inside this manual you will find the instructions on how to set up and maintain your mk conveyor properly, as well as maximize its performance. Please take the time to read this manual and familiarize yourself with these set up and maintenance instructions. These instructions will help assure a long product life that requires a minimum amount of service and keeps your conveyor working at its maximum capacity.

1.3 If you need assistance

If you need assistance there are a variety of ways to get it. You can contact our customer service team Monday through Friday, 8am-5pm (Eastern Time) at (860) 769-5500. You can also visit our website for additional information and technical documentation at www.mknorthamerica.com. In addition, your local representative can provide support in many instances.

1.4 When your shipment arrives

- 1) Check your shipment
 - a) If you have not already done so, visually inspect the shipping crate/container for any damage caused during shipment.
 - b) Carefully unpack the crate/container making sure to inspect the components for damage that may have occurred inside the packaging materials.
 - c) If you find any damage, please contact the carrier and mk North America, Inc.
 - d) Lastly, check the contents against the packing slip provided by mk for any discrepancies. If you should find any, please contact mk North America, Inc.
- 2) Locate your ordered items
 - a) Each mk conveyor will ship in its own custom built container, carefully packaged in the most economical way.
 - b) Review the packing slip against your Purchase Order.

2 SERIAL NUMBER LABEL

- The conveyor's serial number is located on the frame at the drive end of the conveyor.

	Type:		Date:	
	Serial #:		CO #:	
	Drawing #:			
	www.mknorthamerica.com (860) 769-5500			Scan for Documentation

Type:

This description refers to the type of unit that is associated with the particular serial number. The type should NOT be substituted for the serial number when inquiring.

Serial #:

This number is unique to this item. With this number we can access all of the original order details.

Drawing #:

This number, if applicable, refers to the specific drawing that was created for this unit.

Date:

This is the date that the unit was scheduled to ship.

CO#:

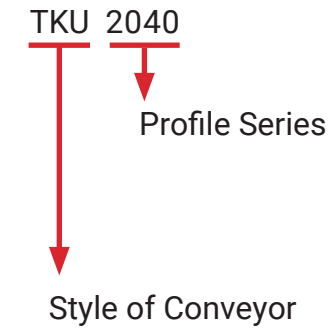
This is the customer order number in which this unit was built. This is an mk North America, Inc. internal number. This number is also referenced on any related invoices, etc.

Scan for Documentation:

Scanning this QR code will bring you to a webpage specific for the conveyor on this order. From here you can access drawings and spare parts.

3 CONVEYOR DESCRIPTION

3.1 Explaining the conveyor **TYPE**.



Style of Conveyor

DGF (Doppel-Gurt Foerderer) Dual-Belt Conveyor

GUF (Gurt Foerderer) Belt Conveyor

KFG (Knickfoerderer Gurt) Bent "Gooseneck" Belt Conveyor

KFM (Knickförder Modular) Bent "Gooseneck" Plastic Modular Belt Conveyor

KGF (Kurvengurt Foerderer) Curve Belt Conveyor

KMF (Kurvengängiges Modulband) Curved Modular Belt Conveyor

KTF (Kettengurt Foerderer) Chain Conveyor

MBF (Modulband Foerderer) Modular Belt Conveyor

RBM (Rollenbahn Motor) Motorized Roller Conveyor

RBS (Rollenbahn Schwerkraft) Idler Roller Conveyor

RBT (Rollenbahn Tangentialkette) Drive Roller Conveyor

SBF (Scharnierband Foerderer) Hinged Belt Conveyor

SPU (Staufaehiges Pallettenumlaufsystem) Continuous Motion Pallet Conveyor

SRF (Staurollen Foerderer) Accumulating Roller Conveyor

TKU (Taktkettenförderer) Timing Chain Conveyor

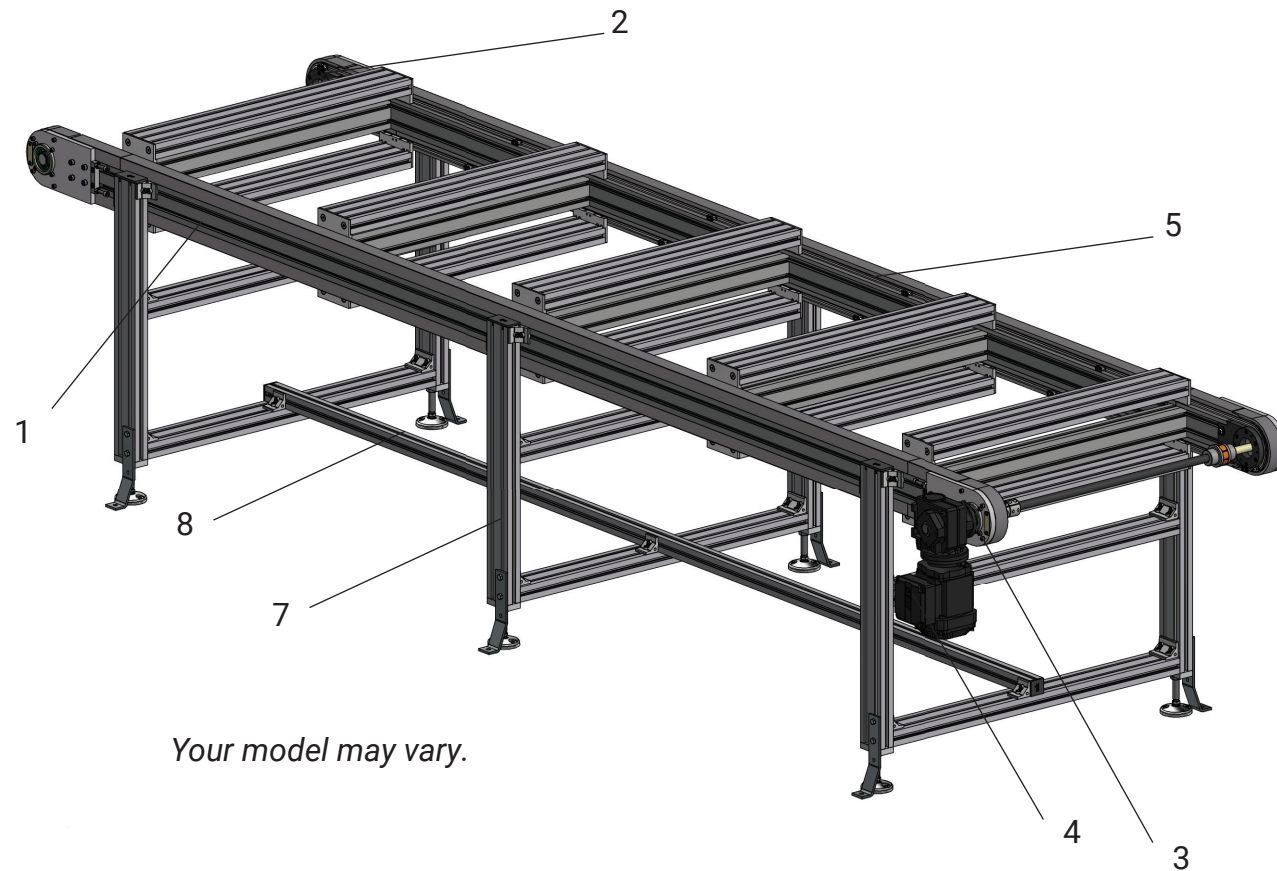
ZRF (Zahnriemen Förderer) Timing Belt Conveyor

3 CONVEYOR DESCRIPTION

(CONT.)

3.2 Conveyor Components

The TKU 2040 has many typical conveyor components. Below is a description of the basic parts and options for the TKU 2040 conveyor. The items you receive will vary based on your actual purchase order. Items may appear different on your model based on your particular order requirements. Consult your approval drawing for specific items included in your order.



Your model may vary.

Typical Components

- 1) Conveyor Frame
- 2) Idler End
- 3) Gearmotor Mount/Drive Assembly
- 4) Gearmotor
- 5) Chain
- 6) Controller (Not Shown)
- 7) Support Stand
- 8) Stand Stringer

4 WARRANTY INFORMATION

Warranty

mk North America, Inc. (MKNA) offers a COMPLETE ONE YEAR WARRANTY from the date of delivery, to the original purchaser of the MKNA equipment (CUSTOMER), to be free from defects in material and workmanship; under normal use and with proper installation, maintenance and cleaning.

Additionally MKNA offers a LIMITED 10 YEAR WARRANTY on all equipment that MKNA is the original manufacturer of, to be free from defect and workmanship.¹

This warranty is extended by MKNA only to CUSTOMER, and is non-transferable. All warranty requests shall be made by CUSTOMER.

MKNA will replace or repair, at our factory or any other location we designate², any defective part within the warranty period and without charge. It is at MKNA's sole discretion whether to repair or replace. CUSTOMER will provide MKNA with a prompt written notice of the defect, including the serial number of the unit (when applicable) and the date of delivery.

At MKNA's request CUSTOMER will return all defective parts for evaluation at MKNA. MKNA will provide CUSTOMER with a return goods authorization number (RGA#). No parts will be returned without a RGA#. The RGA# must clearly be marked on all labels, packages and packing slips.

CUSTOMER shall pay all costs for packaging, shipping, duties and/or any other related costs in the sending or receiving of parts. CUSTOMER is responsible for all labor associated with sending or receiving of parts.

MKNA PROVIDES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE; UNLESS IT IS AGREED TO BY MKNA AND CUSTOMER IN WRITING PRIOR TO PLACEMENT OF ORDER. Such agreement requires approval of MKNA Management.

UNDER NO CIRCUMSTANCES SHALL MKNA BE HELD LIABLE FOR DAMAGES OR LIABILITY FOR LOSS OF PRODUCTION, PRODUCT, EQUIPMENT OR PROFITS OR LIABILITY FOR DIRECT, INCIDENTAL, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES TO PERSONS OR PROPERTY, WHATSOEVER. CUSTOMER agrees that it is their sole remedy for liability of any kind, including negligence with respect to the equipment and services furnished by MKNA shall be limited to the remedies provided herein. This warranty shall not apply to any failure of the unit or its components caused by lack of maintenance and/or improper maintenance, incorrect adjustments, misuse or unreasonable use or exposure to chemicals and/or environments which the unit is not designed for. Unauthorized modification of the unit or the use of non-MKNA replacement parts and building components voids this warranty.

¹ The limited 10 year warranty does not apply to equipment and components manufactured by others. Such equipment and components are subject to any limitation contained in the original manufacturer's warranty and include, but are not limited to: bearings, belts, casters, controllers, motors and pneumatic devices.

² No work will be performed by MKNA or an MKNA factory authorized service representative at the site of installation unless in MKNA's opinion it is impractical for Customer to remove and return the defective part to MKNA's factory.

EXCEPT AS EXPRESSLY STATED HEREIN, THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, BY OPERATION OF LAW OR OTHERWISE, OF THE EQUIPMENT OR SERVICES FURNISHED BY MKNA OR FACTORY AUTHORIZED SERVICE REPRESENTATIVE. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.

mk North America, Inc. reserves the right to change, modify or discontinue products and/or specifications with or without notice.


All of mk North America, Inc. products are covered by this warranty.

5 SAFETY REQUIREMENTS

5.1 Warnings - Safety Guidelines

READ AND UNDERSTAND ALL OF THESE WARNINGS PRIOR TO OPERATING EQUIPMENT.

CAUTION




Read this manual before operating conveyors.

CAUTION



Never operate or service equipment under the influence of drugs and/or alcohol.

CAUTION




Lock out power before servicing the conveyor.

WARNING




Do NOT operate conveyors without guards in place.
Severe injury can occur.

IMPORTANT




Conveyors must be installed so that they are square and level – across the belt. Failure to install conveyors correctly may cause premature equipment failure and/or product damage.

WARNING




Do not operate conveyors in an explosive environment.

DANGER




Moving equipment can cause severe injury or death.
Do NOT touch moving parts. Lock out power before servicing.

WARNING




Garmotors will be hot. Do NOT touch.
Severe injury can occur.

DANGER



Climbing, sitting, walking or riding on the conveyor at any time could result in severe injury or death.
KEEP OFF!

DANGER




Always support conveyor sections prior to loosening stands or supports. Loosening stands or supports can cause the conveyor to fall creating a crush hazard.

5 SAFETY REQUIREMENTS

(CONT.)

NOTICE



All work should be done by qualified professionals. This includes electricians for all wiring.

6 WEAR ITEMS & MAINTENANCE FOR SPECIFIC OPTIONS

6.1	Important Notes About Wear Items & Maintenance	11
6.2	TKU 2040 Fixed Width	12
6.3	TKU 2040 Adjustable Width	14
6.4	TKU 2040 Adjustable Width - VST Specific Items	16

6 WEAR ITEMS & MAINTENANCE FOR SPECIFIC DRIVE OPTIONS

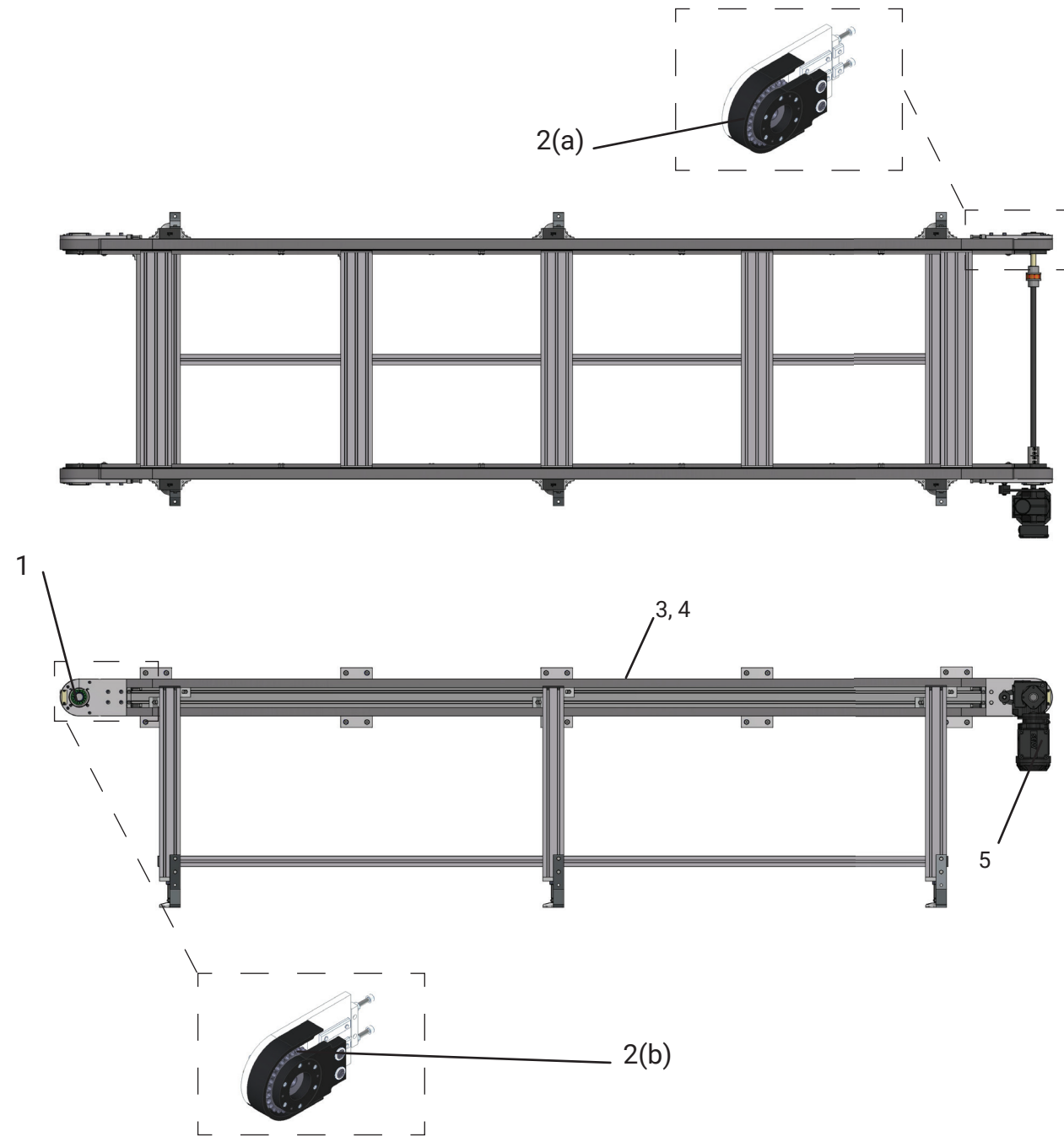
6.1 Important Notes About Wear Items & Maintenance

The following information regarding life of the wear items and service or adjustment intervals of the functional elements are only GUIDELINES. Conveyors are application-specific products whose life expectancy can vary depending on their relative loads and speeds, and which can be significantly influenced by environmental factors.

- All moving components and screw connections should be checked every 6 months.
- All safety-relevant components should be part of a regularly scheduled weekly inspection.
- The proper function of these components must be confirmed at all times.
- Do NOT operate conveyors if safety-relevant components are damaged or missing.
- All parts which contact the product should be cleaned weekly (example: chain).
- Chains require little special care.
- Remove heavy grease coatings with ethyl alcohol.
- Blow off debris from structured surfaces using compressed air.

6 WEAR ITEMS & MAINTENANCE FOR SPECIFIC DRIVE OPTIONS (CONT.)

6.2 TKU 2040 Fixed Width



NOTE: Not all items shown in all views for clarity.

(Cont.)

6 WEAR ITEMS & MAINTENANCE FOR SPECIFIC DRIVE OPTIONS (CONT.)

6.2 TKU 2040 Fixed Width

Maintenance Work for TKU 2040 Fixed Width

Position	Description	Action*	Interval in Hours (Months)	Lubricant
1	Roller Bearing	I	1,000 Hours (Max 6 Months)	
		R	If wear is visible	
2(a)	Drive Sprocket	I, C	500 Hours (Max 3 Months)	
2(b)	Idler Sprocket			
2(a)/(b)	Drive/Idler Sprocket	R	If wear is visible	
3	Wear Strips	I, C	1,000 Hours (Max 6 Months)	
		R	If wear is visible	
4	Chain	I, C, L	500 Hours (Max 3 Months)	SAE20 - SAE50
		R	If chain stretch is greater than 3%	
5	Motor	I	Service & Maintenance per manufacturer's documentation	

* LEGEND: Inspect, Replace, Tension, Clean, Lubricate (grease).

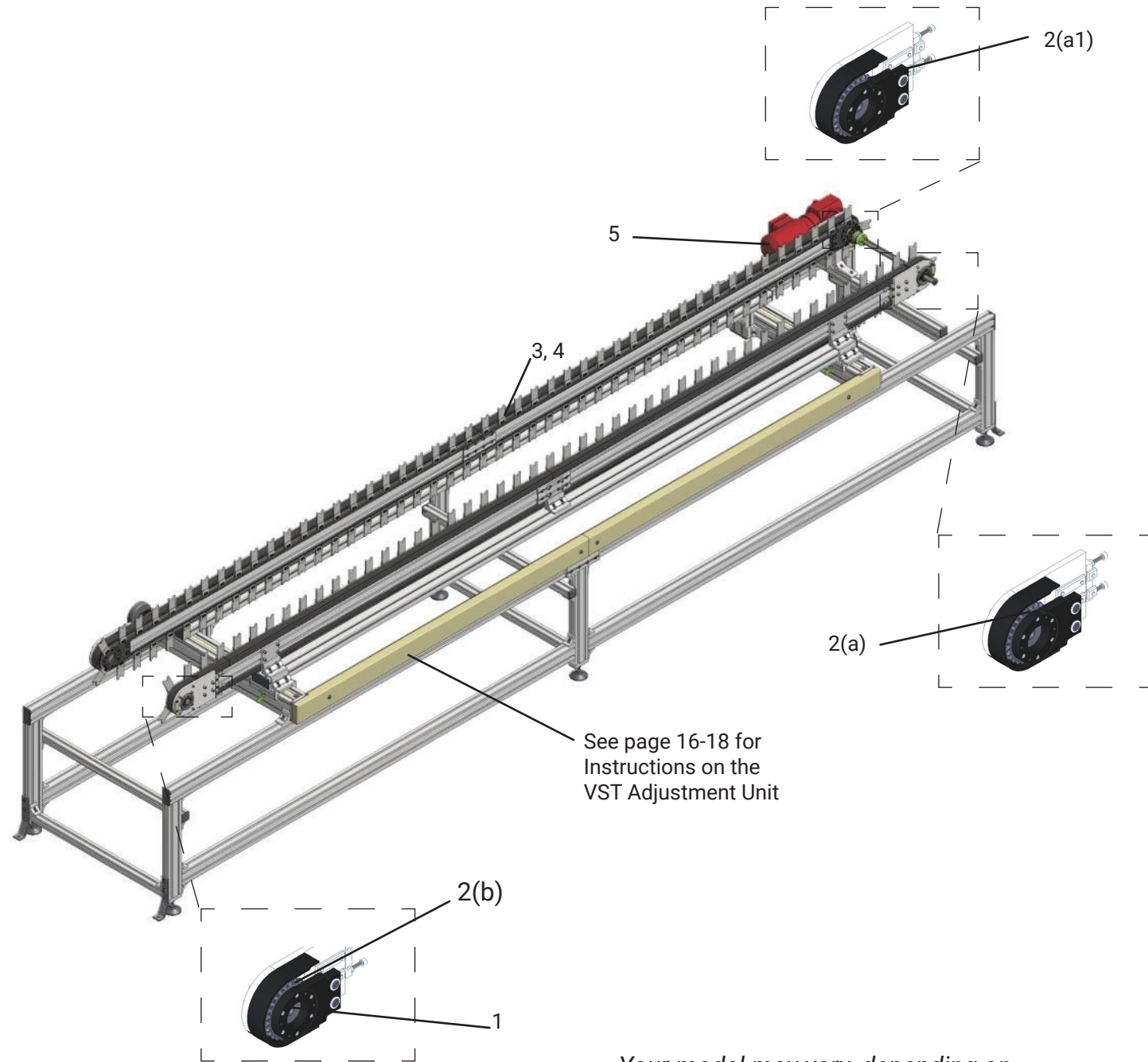
Wear Items for TKU 2040 Fixed Width

Position	Description	Part Number
1	Roller Bearing 6206-2RS1	K101000433
2(a)	Drive Sprocket	58.12.0110
2(b)	Idler Sprocket	58.12.0109
3	Wear Strips	Inquire with mk North America
4	Chain	Inquire with mk North America
5	Motor	Inquire with mk North America

NOTE: For adjusting the chain tensioning, please see the related section for details. When cleaning the chain, avoid any harsh chemicals or detergents.

6 WEAR ITEMS & MAINTENANCE FOR SPECIFIC DRIVE OPTIONS (CONT.)

6.3 TKU 2040 Adjustable Width



Your model may vary, depending on the width adjustment type used.

NOTE: Not all items shown in all views for clarity.

(Cont.)

6 WEAR ITEMS & MAINTENANCE FOR SPECIFIC DRIVE OPTIONS (CONT.)

6.3 TKU 2040 Adjustable Width

Maintenance Work for TKU 2040 Adjustable Width

Position	Description	Action*	Interval in Hours (Months)	Lubricant
1	Roller Bearing	I	1,000 Hours (Max 6 Months)	
		R	If wear is visible	
2(a), 2(a1)	Drive Sprocket	I, C	500 Hours (Max 3 Months)	
2(b)	Idler Sprocket			
2(a)(a1)(b)	Drive/Idler Sprocket	R	If wear is visible	
3	Wear Strips	I, C	1,000 Hours (Max 6 Months)	
		R	If wear is visible	
4	Chain	I, C, L	500 Hours (Max 3 Months)	SAE20 - SAE50
		R	If chain stretch is greater than 3%	
5	Motor	I	Service & Maintenance per manufacturer's documentation	

* LEGEND: *Inspect, Replace, Tension, Clean, Lubricate (grease).*

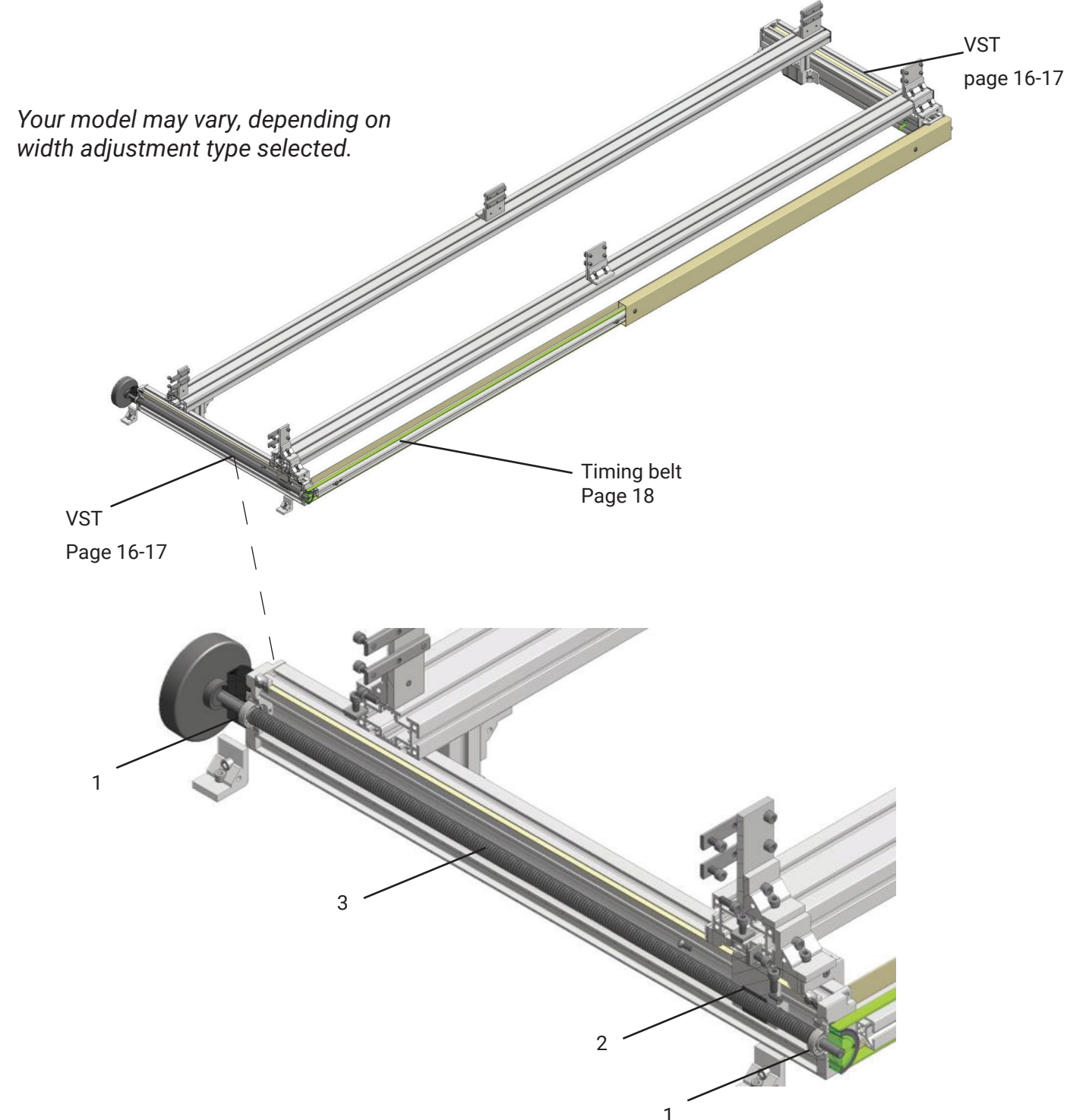
Wear Items for TKU 2040 Adjustable Width

Position	Description	Part Number
1	Roller Bearing 6206-2RS1	K101000433
2(a)	Drive Sprocket	58.12.0110
2(a1)	Drive Sprocket, motor side	58.12.0111
2(b)	Idler Sprocket	58.12.0109
3	Wear Strips	Inquire with mk North America
4	Chain	Inquire with mk North America
5	Motor	Inquire with mk North America

NOTE: For adjusting the chain tensioning, please see the related section for details. When cleaning the chain, avoid any harsh chemicals or detergents.

6 WEAR ITEMS & MAINTENANCE FOR SPECIFIC DRIVE OPTIONS (CONT.)

6.4 TKU 2040 Adjustable Width – VST Specific Wear Items & Maintenance



NOTE: Not all items shown in all views for clarity.

(Cont.)

6 WEAR ITEMS & MAINTENANCE FOR SPECIFIC DRIVE OPTIONS (CONT.)

6.4 TKU 2040 Adjustable Width – VST Specific Wear Items & Maintenance

Maintenance Work for TKU 2040 Adjustable Width

Position	Description	Action*	Interval in Hours (Months)	Lubricant
1	Bearing	I	500 Hours (Max 3 Months)	
		R	If wear is visible	
2	Nut	I, C	1,000 Hours (Max 6 Months)	
		R	If wear is visible	
3	Spindle	I, C, L	500 Hours (Max 3 Months)	SAE20 - SAE50
		R	If wear is visible	

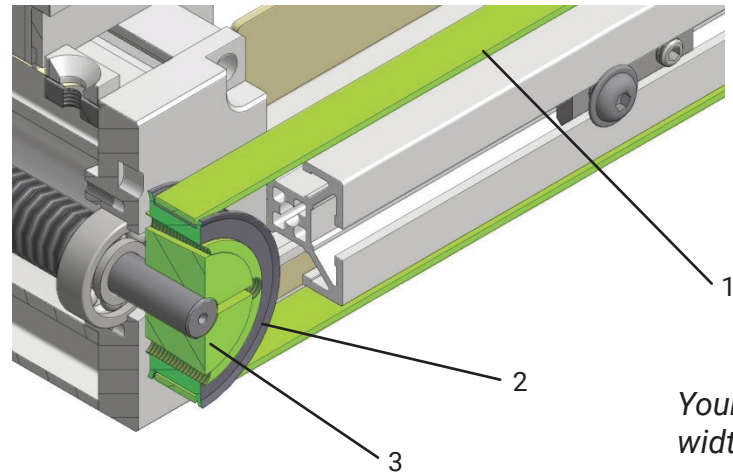
* LEGEND: *Inspect, Replace, Tension, Clean, Lubricate (grease).*

Wear Items for TKU 2040 Adjustable Width – VST Specific Wear Items & Maintenance

Position	Description	Part Number
1	Bearing	Inquire with mk North America
2	Nut	Inquire with mk North America
3	Spindle	Inquire with mk North America

6 WEAR ITEMS & MAINTENANCE FOR SPECIFIC DRIVE OPTIONS

6.4 TKU 2040 Adjustable Width – VST Specific Wear Items & Maintenance



Your model may vary, depending on width adjustment type selected.

Maintenance Work for TKU 2040 Adjustable Width, Timing Belt Portion for VST

Position	Description	Action*	Interval in Hours (Months)
1	Timing Belt	I	500 Hours (Max 3 Months)
		R	If wear is visible
2	Timing Belt Pulley	I, C	500 Hours (Max 3 Months)
		R	If wear is visible
3	Clamping Bushing	I, C	500 Hours (Max 3 Months)
		R	If wear is visible

* LEGEND: *Inspect, Replace, Tension, Clean, Lubricate (grease).*

Wear Items for TKU 2040 Adjustable Width, Timing Belt Portion for VST

Position	Description	Part Number
1	Bearing	Inquire with mk North America
2	Nut	Inquire with mk North America
3	Spindle	Inquire with mk North America

7 CONVEYOR CHAIN MAINTENANCE - TENSIONING

(CONT.)



All work to be performed by qualified personnel only.

General Remarks:

- Chains may need to be tracked due to shifting during shipping.
- Prior to delivery of the mk conveyor, the chain was tensioned and tracked at the factory.
- Chain pretension conveyor length = chain length x 0.1%.
- Chain tracking should only be done at the idler end.
- Avoid over tensioning the chain, increase slack in chain is necessary.

7 CONVEYOR CHAIN MAINTENANCE - TENSIONING

7.1 Standard Idler



All work to be performed by qualified personnel only.

Chain Tensioning

NOTE: This chain is designed in such a way that re-tensioning is not necessary under normal operating conditions.

Re-tension the chain after replacing the chain (see Section 8) or if the chain has been subjected to extraordinary loads or environmental factors.

Caution!

Chain tensioning is only to be done at the idler end (opposite the motor end). Disconnect power before tensioning.

Both sides of the conveyor must be equally tensioned. Ensure that the pallets or fixtures attached to the chain are squared and lined up precisely. Align the roll holders horizontally.

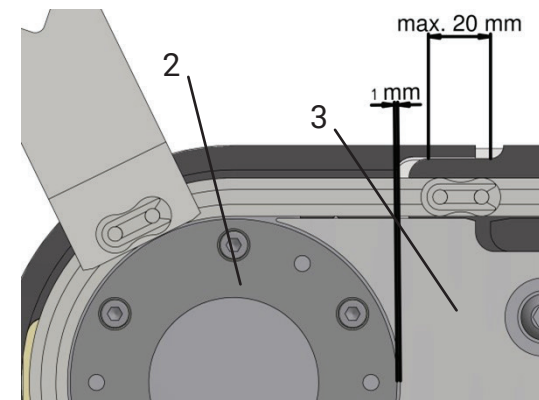
1. Loosen screws (1)
2. Pull the roll holder assembly (2) in the direction of the arrow to apply tension¹
3. Tighten screws (1)

¹Note: See details below in regards to critical dimensions.



Critical Dimensions

- Adjust the guide (2) up to a 1 mm gap to the cover (3).
- Align all components.



8 CONVEYOR CHAIN MAINTENANCE - CHAIN REPLACEMENT (CONT.)



All work to be performed by qualified personnel only.

Conveyor power must be disconnected before replacing the chain.

General Remarks:

- BOTH CONVEYOR CHAINS MUST BE REPLACED AT THE SAME TIME
- REPLACE CHAINS IS EITHER CHAIN HAS 3% OR MORE ELONGATION
- Any interfering parts must be removed.
- Any auxiliary parts that interfere must be removed. This includes pallets that are mounted to the chains.
- Reassemble in reverse order.
- Replacement chains must be tensioned prior to use. (See Section 7)
- Only reapply power and reconnect system after reassembly is complete.

8 CONVEYOR CHAIN MAINTENANCE - CHAIN REPLACEMENT

8.1 Standard Idler



All work to be performed by qualified personnel only.
Conveyor power **must** be disconnected before replacing the chain.

Loosening & Retracting of Idlers

1. Loosen screws (1)
2. Pull the roll holder assembly (2) in the direction of the arrow to apply tension
3. Tighten screws (1)



Replacing the Chain

1. Open the connecting link (3)
2. Remove the old chain
3. Thread the new chain through the system
4. Replace the connecting link

Replace any pallets that may have been removed.
Tension the chains as described in Section 7.



9 VST MAINTENANCE DETAILS, ADJUSTABLE WIDTH UNITS ONLY (CONT.)



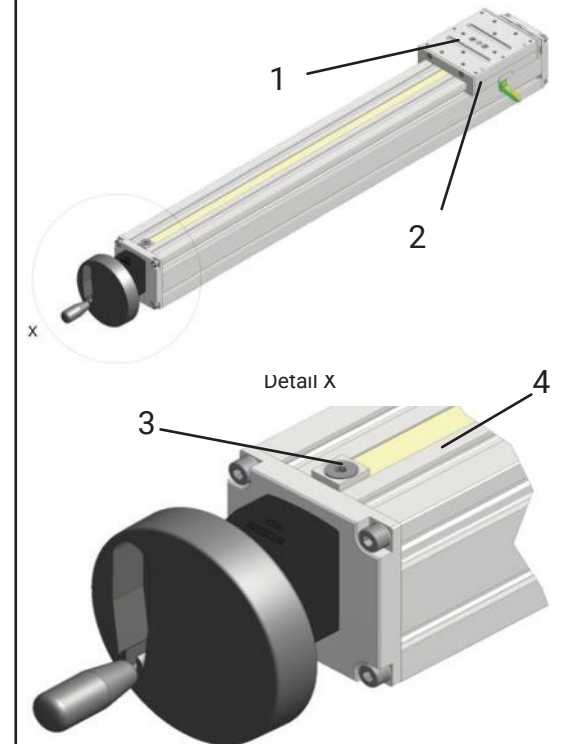
All work to be performed by qualified personnel only.
Conveyor power **must** be disconnected before replacing the chain.

General Remarks:

- Reassemble in reverse order when work is complete.
- Only reapply power and reconnect system after reassembly is complete.

Cleaning, Checking and Lubricating: Bearings, Nut, Spindle
The guide plate (1) is set at the factory with the guide strips (2) and pinned.

1. Loosen the tab (3)
2. Move the tab (3) with the cover (4)
3. Check spindle and nut, clean if necessary
4. Lubricate the spindle
5. Reassemble in reverse order

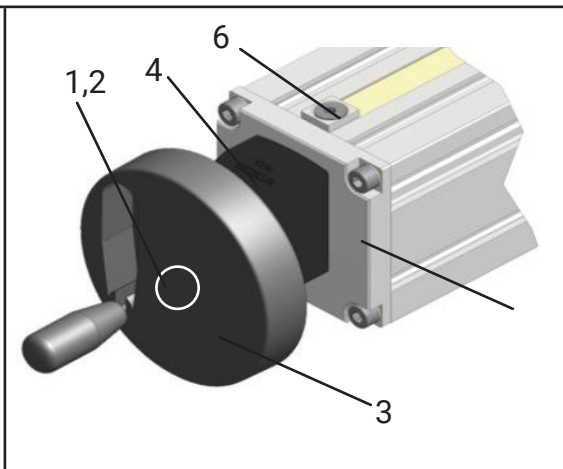
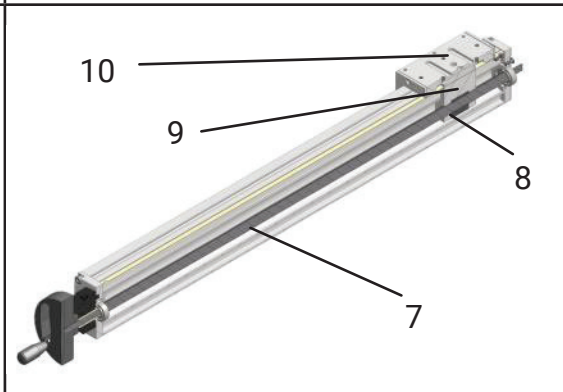
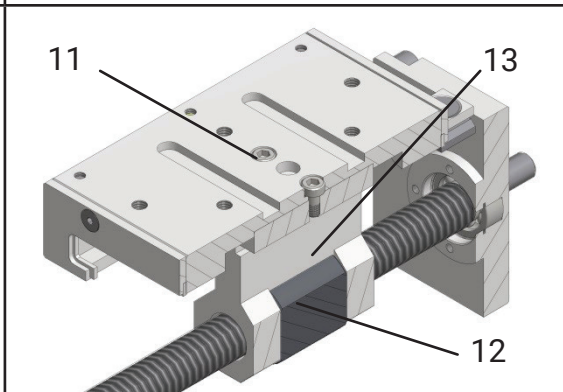


9 VST MAINTENANCE DETAILS, ADJUSTABLE WIDTH UNITS ONLY

10 NOTES & CONTACT INFORMATION



All work to be performed by qualified personnel only.
Conveyor power **must** be disconnected before replacing the chain.

<p><u>Replacing the Spindle and/or Nut</u></p> <ol style="list-style-type: none"> 1. Remove the plug (1) 2. Loosen the hexagon nut (2) 3. Remove the handwheel (3) 4. Remove handwheel (3), digital display, if supplied, (4), bearing plate (5) and lowering bracket (6) 	
<ol style="list-style-type: none"> 5. Remove the spindle (7) with nut (8), driver (9) and guide plate (10) 	
<ol style="list-style-type: none"> 6. Loosen the screws (11) 7. Remove nut (12) and driver (13) 8. Reassemble in reverse order 	



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Technical Documentation
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Chain Conveyor

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