

BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR

TECHNICAL HANDBOOK

Maintenance, Start Up and
Troubleshooting for Your
Omni Metalcraft Corp.
Equipment



DO NOT OPERATE
BEFORE READING

Omni Metalcraftcorp.

DO NOT DISCARD

BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR TECH HANDBOOK
TABLE OF CONTENTS

TABLE OF CONTENTS 2, 3

GENERAL SAFETY STATEMENTS 4

-Introduction 4

-Cautions, Warnings and Hazards 4

SAFETY INFORMATION 5

-Safety Labels 5, 6

-Installation Safety 7

-Electrical Safety 8

-Operational Safety 9

-Maintenance and Service Safety 10, 11

-BDLR Safety Instructions 12

RECEIVING AND INSPECTION 13

-Returns, Damages and Shortages 13

-Removal of Crating 13

GENERAL INSTALLATION 14

-Understanding Pop-Out Rollers 14

-Belt Lacing 14

-Checking Unit Squareness 15

-Squaring 15

-Coupling / Attaching Bed Sections 16

LEG SUPPORTS AND INSTALLATION 17

-Permanent Installation of Legs 17

-Leg Adjustments 17

KNEE BRACES, CASTERS AND CEILING HANGERS 18

-Installing Knee Braces and Casters 18

-Installing Ceiling Hangers 19

MULTI-TIER SUPPORTS 20

-Installation of Multi-Tier Supports 20

ASSEMBLY 21

-Straight BDLR Installation Instructions 21-24

-V-Belt Curve / Spur Installation Instructions 25-29

INSTRUCTIONS FOR BELT TRACKING 30

-Belt Type 1 30

-Belt Type 2 31

PRE-START-UP OVERVIEW 32

-Preparing for Initial Start-Up 32

-Drive Chain and Sprocket Alignment 33

-Drive Chain and Sprocket Tension 34

-Gear Reducer Vent Plug 34

MAINTENANCE 35

-Inspection and Lubrication 35

-Maintenance Schedules 36

-Replacing V-Belt 37

-Report on Miscellaneous Maintenance Performed 38

| | |
|--|-----------|
| TROUBLESHOOTING AND REPLACEMENT PARTS | 39 |
| -Troubleshooting..... | 39, 40 |
| PARTS LISTS | 41 |
| -BDLR Straight | 41 |
| -BDLR V-Belt Curve..... | 42, 43 |
| -BDLR V-Belt Straight Spur | 44-46 |
| -BDLR V-Belt Curve Spur | 47,48 |
| NOTES | 49 |
| WARRANTY | 50 |

IMPORTANT REQUIRED READING!



¡IMPORTANTE! ¡LECTURA OBLIGATORIA!







To ensure this quality product is safely and correctly utilized, all instructions within this manual must be read and understood prior to equipment start-up. Be aware of all safety labels on machinery. **If you do not understand any of the safety instructions or feel there may be safety labels missing, contact your supervisor or product supplier immediately!**

Para garantizar que este producto de calidad se utilice correctamente y con seguridad, es necesario leer y comprender las instrucciones incluidas en este manual, antes de comenzar a utilizar el equipo. Esté atento a todas las etiquetas de seguridad que se encuentran en las máquinas. Si no entiende alguna de las instrucciones de seguridad o considera que faltan algunas etiquetas de seguridad, ¡comuníquese inmediatamente con su supervisor o proveedor del producto!

COMPLIANCE WITH SAFETY STANDARDS

Compliance with safety standards, including federal, state and local codes or regulations is the responsibility of the conveyor purchaser(s). Placement of guards, safety labels and other safety equipment is dependent upon the area and use to which the system is applied. A safety study should be made of the conveyor application by the purchaser(s). It is the purchaser's responsibility to provide any additional guards, safety labels or other safety equipment deemed necessary based on this safety study.

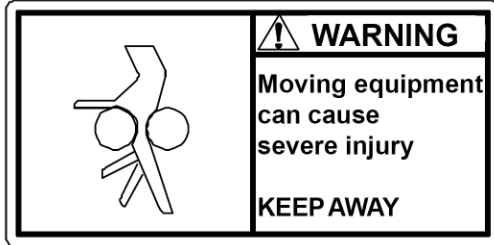
The information contained in this safety manual is correct at the time of printing. Due to the continuing development of product lines, changes in specifications are inevitable. The company reserves the right to implement such changes without prior notice.

-  If you suspect fire hazards, safety hazards, dangers towards health or any other job safety concerns, consult your federal, state or local codes.
-  Certain safety information in this document was reprinted from ASME B20.1-2000 by permission of The American Society of Mechanical Engineers. All rights reserved.
Inspect equipment for **safety labels**. Make sure personnel are aware of and follow safety instructions.
-  Maintain an **orderly environment** in the vicinity of the conveyor at all times. Clean up spilled materials or lubricants immediately.
-  All personnel shall be instructed regarding the necessity for continuous care and attention to safety during the operation of a conveyor. They **must be trained** to identify and immediately report all unsafe conditions or practices relating to the conveyor and its operation.
-  Know your company's machine specific **Lockout / Tagout procedure**. **Do Not** perform maintenance until electrical disconnect has been turned off!
-  **Replace all safety devices, guards and guarding prior to equipment start-up.**

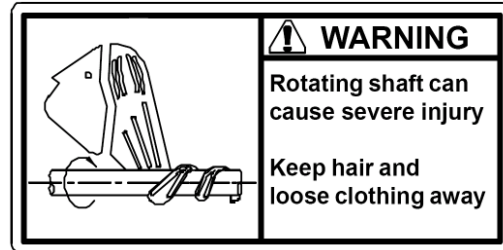
References used for safety instructions in this manual are from: Conveyor Equipment Manufacturers Association (CEMA) and The American Society of Mechanical Engineers (ASME)

BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR TECH HANDBOOK
SAFETY INFORMATION: SAFETY LABELS

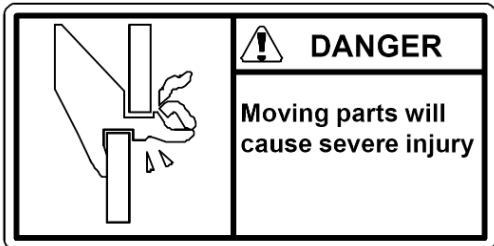
Safety labels have been placed at various points on the equipment to alert everyone of potential dangers. Inspect equipment for proper position of safety labels and make sure all personnel are aware of the labels and obey their warnings. As mentioned in the previous section, a safety study should be made of the conveyor application by the purchaser(s). **It is the purchaser's responsibility to provide any additional guards, safety labels or other safety equipment deemed necessary based on this safety study.** The following pages contain typical safety labels that may have been attached to your equipment.



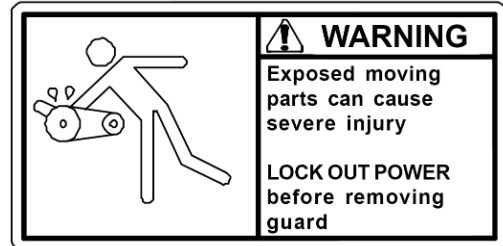
#110479 (5" x 2 1/2")
 Placed on terminating ends (both ends) where there are exposed moving parts which must be unguarded to facilitate function, i.e. rollers, pulleys, shafts, chains, etc.



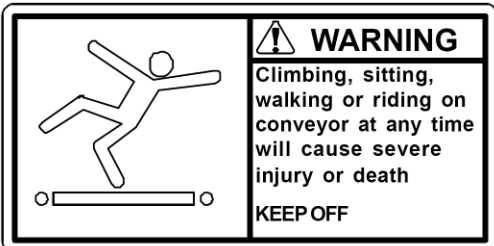
#113529 (5" X 2 1/2")
 Placed next to drive (both sides) to warn personnel that the lineshaft conveyor utilizes a rotating shaft which may be hazardous if hair or loose clothing become entangled around the rotating shaft. Also used on any other conveyors where the exposed shaft may create similar hazards.



#111744 (5" X 2 1/2")
 General warning to personnel that the equipment's moving parts, which operate unguarded by necessity or function, i.e., air cylinders, etc., create hazards to be avoided.



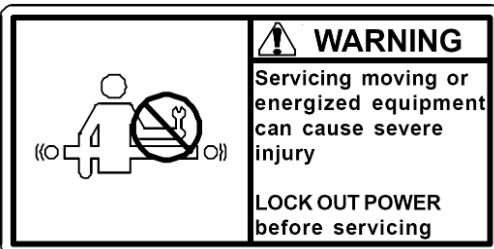
#110478 (5" X 2 1/2")
 Placed on all chain guards to warn that operation of the machinery with guards removed would expose chains, belts, gears, shafts, pulleys, couplings, etc. which create hazards.



#111752 (5" X 2 1/2")
 Placed on max. of 20' centers (both sides) along conveyors which provide surfaces and profiles attractive, but hazardous, for climbing, sitting, walking or riding.



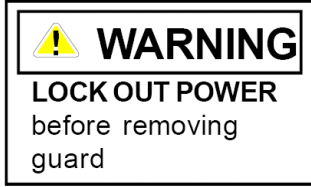
#113513 (5" X 2 1/2")
 Placed on chain guard base so label is visible when guard cover is removed.



#113528 (5" X 2 1/2")
 Placed next to drive (both sides) to warn maintenance personnel that conveyors must be shut off and locked out prior to servicing. Examples: drives, take-ups, and lubrication points, which require guard removal.



#111870 (5" X 3")
 General warning of pinch point hazards.



#111750 (1 3/4" x 1 1/4")
Generally placed on smaller guards to alert personnel of potential danger if guard is removed and power is not locked out.



#111749 (3" x 1 1/4")
Placed on shipping brace which stabilizes equipment during shipping. Brace must be removed before operating! May cause severe injury if not removed.



#110491 (10" x 7")
Placed on equipment where conveyors may start without warning.

1) LOADING / UNLOADING

Have trained personnel load or unload equipment. The conveyor must be properly handled when transferring from the unloading area to final site location to prevent damage.

2) GUARDS / GUARDING

Interfacing of Equipment. When two or more pieces of equipment are interfaced, special attention shall be given to the interfaced area to ensure the presence of adequate guarding and safety devices.

Guarding Exceptions. Wherever conditions prevail that would require guarding under this standard but such guarding would render the conveyor unusable, seek guidance from your safety professional.



3) ANCHORING

DO NOT operate conveyor unless it is properly anchored. Serious injury or death may result.

4) SAFETY WARNING

Install all safety devices, guards and guarding prior to equipment start-up.

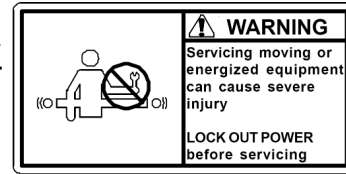
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SAFETY INFORMATION: ELECTRICAL SAFETY

1) ELECTRICAL CODE

All electrical installations and wiring shall conform to federal, state and local codes.

When conveyor operation is not required for a maintenance procedure, **electrical power must be turned off and locked / tagged out following your company's machine specific procedure.**



2) CONTROL STATION

Control stations should be so arranged and located that the operation of the affected equipment is visible from them. Control stations shall be clearly marked or labeled to indicate the function controlled.

A conveyor that would cause injury when started shall not be started until personnel in the area are alerted by a signal or by a designated person that the conveyor is about to start.

Where system function would be seriously hindered or adversely affected by the required time delay, or where the intent of the warning may be misinterpreted (i.e., a work area with many different conveyors and allied devices), a clear, concise and legible warning sign needs to be provided. The warning sign shall indicate that conveyors and allied equipment may be started at any time, that danger exists and that personnel must keep clear. These warning signs shall be provided along the conveyor at areas not guarded by position or location.

Remotely and automatically controlled conveyors, and conveyors where operator stations are not manned or are beyond voice or visual contact from drive areas, loading areas, transfer points and other potentially hazardous locations on the conveyor path not guarded by location, position or guards shall be furnished with emergency stop buttons, pull cords, limit switches or similar emergency stop devices.

All such emergency stop devices shall be easily identifiable in the immediate vicinity of such locations unless guarded by location, position or guards. Where the design, function and operation of such conveyor clearly is not hazardous to personnel, an emergency stop device is not required.

The emergency stop device shall act directly on the control of the conveyor concerned and shall not depend on the stopping of any other equipment. The emergency stop devices shall be installed so that they cannot be overridden from other locations.

Inactive and unused actuators, controllers and wiring should be removed from control stations and panel board, together with obsolete diagrams, indicators, control labels and other material that might confuse the operator.

3) SAFETY DEVICES

All safety devices, including wiring of electrical safety devices, shall be arranged to operate such that a power failure or failure of the device itself will not result in a hazardous condition.

4) EMERGENCY STOPS AND RESTARTS

Conveyor controls shall be so arranged that, in case of emergency stop, manual reset or start at the location where the emergency stop was initiated shall be required for the conveyor(s) and associated equipment to resume operation.

Before restarting a conveyor that has been stopped because of an emergency, an inspection of the conveyor shall be made and the cause of the stoppage determined. The starting device and electrical power must be turned off and locked / tagged out according to your company's machine specific procedure before any attempt is made to remove the cause of the stoppage, unless operation is necessary to determine the cause or to safely remove the stoppage.

5) SAFETY WARNING

Replace all safety devices, guards and guarding prior to equipment start-up.

Only trained, qualified personnel shall be permitted to operate a conveyor. Training shall include instruction in operation under normal conditions and emergency situations.

Where safety is dependent upon stopping / starting devices, they shall be kept free of obstructions to permit access.

The area around loading and unloading points shall be kept clear of obstructions that could endanger personnel.

Do not ride the load-carrying element of a conveyor under any circumstances, unless the conveyor is designed and equipped with safety and control devices intended to carry personnel. For no reason shall a person ride any element of a vertical conveyor. Warning labels reading **“DO NOT RIDE CONVEYOR”** shall be affixed by the owner of the conveyor.



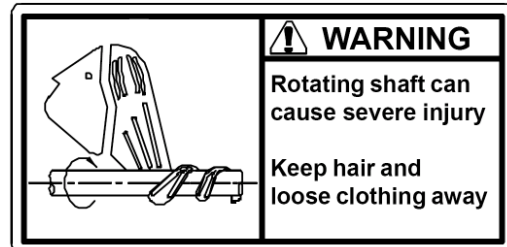
Personnel working on or near a conveyor shall be instructed as to the location and operation of pertinent stopping devices.

A conveyor shall be used to transport only a load that it is designed to handle safely.

Under no circumstances shall the safety characteristics of the conveyor be altered.

Routine inspections and preventative and corrective maintenance programs shall be conducted to ensure that all safety features and guards are retained and function properly. Inspect equipment for safety labels. Make sure personnel are aware of and follow safety label instructions.

Alert all personnel to the potential hazard of entanglement in conveyors caused by items such as long hair, loose clothing and jewelry.



SAFETY WARNING

Replace all safety devices, guards and guarding prior to equipment start-up.

ELECTRICAL POWER MUST BE TURNED OFF AND LOCKED / TAGGED OUT following your company's machine specific procedures when servicing conveyor to prevent accidental restarting by other persons or interconnecting equipment (when used).

1) MAINTENANCE (REPAIR)

Maintenance and service shall be performed by trained, qualified personnel only.

Where lack of maintenance and service would cause a hazardous condition, the user shall establish a maintenance program to ensure that conveyor components are maintained in a condition that does not constitute a hazard to personnel.

No maintenance or service shall be performed when a conveyor is in operation. See "Lubrication" and "Adjustment or Maintenance During Operation" for exceptions.

When a conveyor is stopped for maintenance or service, the starting devices, prime mover, powered accessories or electrical must be locked / tagged out in accordance with a formalized procedure designed to protect all persons or groups involved with the conveyor against an unexpected restart. Personnel should be alerted to the hazard of stored energy, which may exist after the power source is locked out. All safety devices and guards shall be replaced before starting equipment for normal operation.

2) ADJUSTMENT OR MAINTENANCE DURING OPERATION

When adjustments or maintenance must be done while equipment is in operation, only trained, qualified personnel who are aware of the hazards of the conveyor in motion shall be allowed to make adjustments, perform maintenance or service.

Conveyors shall NOT be maintained or serviced while in operation unless proper maintenance or service requires the conveyor to be in motion. If conveyor operation is required, personnel shall be made aware of the hazards and how the task may be safely accomplished.

3) LUBRICATION

Conveyors shall **NOT** be lubricated while in operation unless it is impractical to shut them down for lubrication. Only trained and qualified personnel who are aware of the hazards of the conveyor in motion shall be allowed to lubricate a conveyor that is operating.

Where the drip of lubricants or process liquids on the floor constitutes a hazard, drip pans or other means of eliminating the hazard must be provided by purchaser(s).

4) MAINTENANCE OF GUARDS AND SAFETY DEVICES

Guards and safety devices shall be maintained in a serviceable and operational condition. Warning signs are the responsibility of the owner of the conveyor and must be maintained in a legible / operational condition.



5) INSPECTIONS

Routine inspections with preventative and /or corrective maintenance programs shall be conducted to ensure that all safety features and devices are maintained and function properly.

All personnel shall inspect for hazardous conditions at all times. Remove sharp edges or protruding objects. Repair or replace worn or damaged parts immediately.

6) CLEANING

Where light cleaning and/or casing cleaning are required, they shall be performed by trained personnel. The conveyor electrical power **must be turned off and locked / tagged out following your company's machine specific procedures**. Special attention may be required at feed and discharge points.

7) SAFETY WARNING

Replace all safety devices, guards and guarding prior to equipment start-up.

PARTICULAR DANGER AND PINCH POINTS

- 1) Any point at which a belt bends around a roller or pulley.
- 2) Any point where two rollers or pulleys (sheaves for spurs) are close together and produce a “wringer” effect.
- 3) Any point where accessories are located that also have moving parts.

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RECEIVING AND INSPECTION: RETURNS, DAMAGES AND SHORTAGES

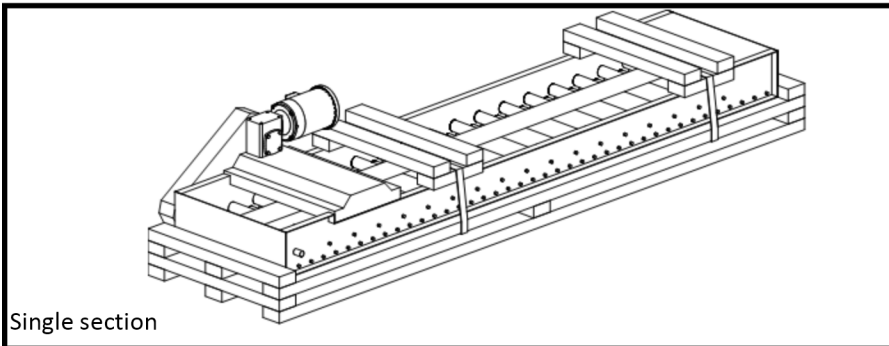
UNCRATING CHECKLIST

- 1) Compare the bill of lading with what you have received (including accessories).
- 2) Examine the equipment for damage.
- 3) Immediately report shortage or damages to the vendor and carrier.
- 4) Obtain a signed damage report from the carrier and send a copy to the vendor.

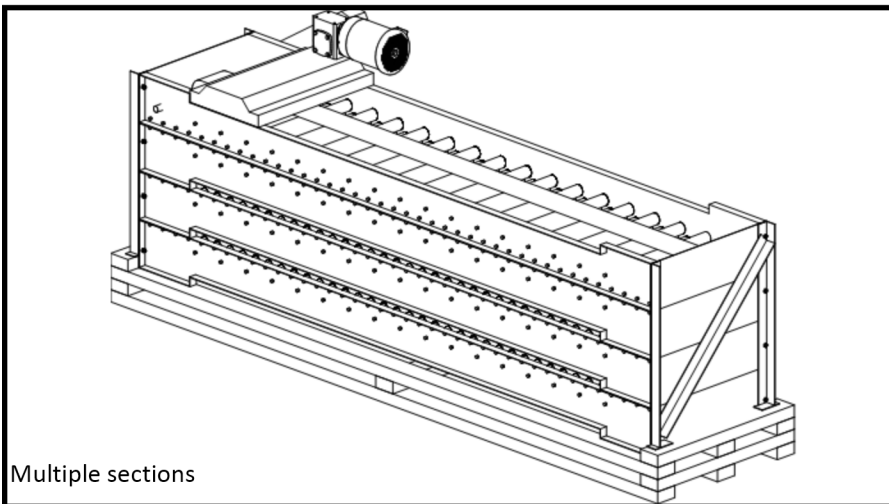
Do not attempt to modify or repair damaged equipment without authorization from vendor.

Note:

Do not return equipment to the factory without a written return authorization. Returns without written authorization will not be accepted.



Single section



Multiple sections

Note: Custom products may be crated differently to fit the conveyor design.

RECEIVING AND INSPECTION: REMOVAL OF CRATING

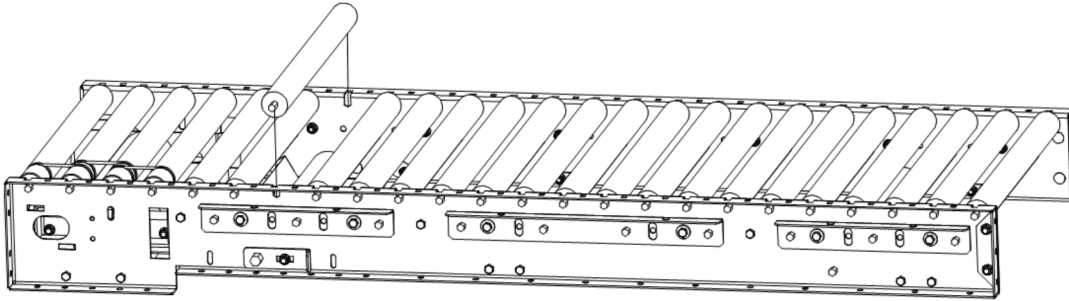
AFTER COMPLETING THE "UNCRATING CHECKLIST"

- 1) Remove crating and packaging.
- 2) Look for boxes, accessories, bags or components such as fasteners, manuals, guard rails etc. that may be banded or fastened to the crating material.

Note: Make sure all fasteners, guards and essential components are not discarded.

POP-OUT ROLLERS

A special load carrying roller mounted in such a manner as to pop out when foreign objects are introduced between the belt and the roller.

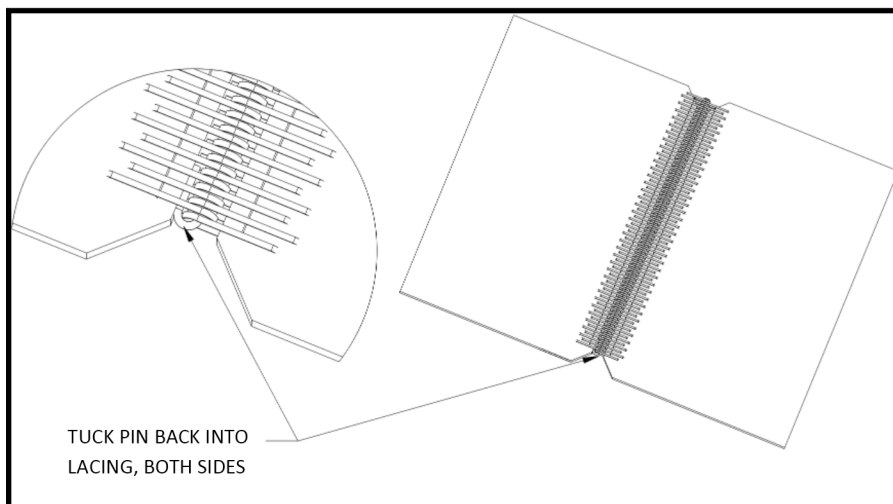


GENERAL INSTALLATION: BELT LACING (STRAIGHT CONVEYOR)

BELT LACING

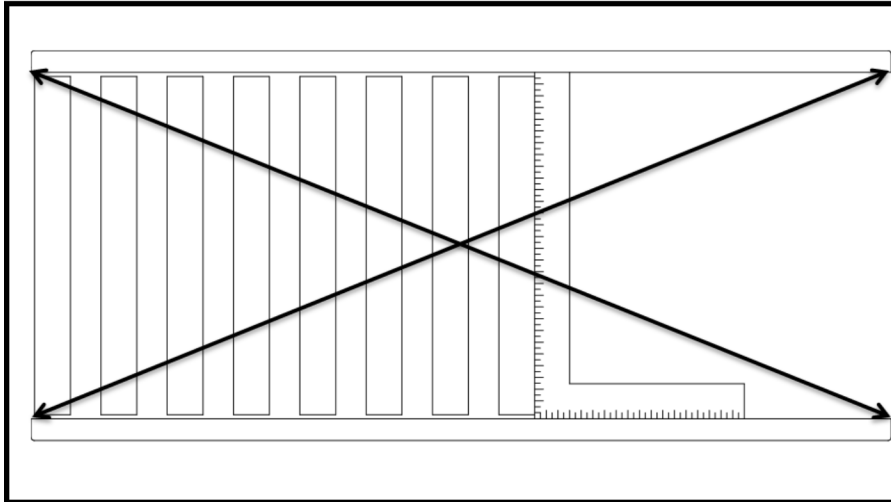
The conveyor belt has been cut to the proper length and lacing has been installed at the factory. To install, follow these steps:

- 1) Thread the belt through the conveyor as shown in on page 22 of this handbook.
- 2) Pull the ends together and insert the lacing pin as shown.
- 3) Adjust the tension with the take-up pulley or tail pulley. Keep the pulley square by moving both tension bolts an equal amount. Maintain enough tension so that the drive pulley will not slip when carrying the rated load.
- 4) Track the belt per the instructions on page 30 and 31.



SQUARING

Frame squareness can be checked by using a simple right angle square as shown or by measuring from the same points diagonally, corner to corner.



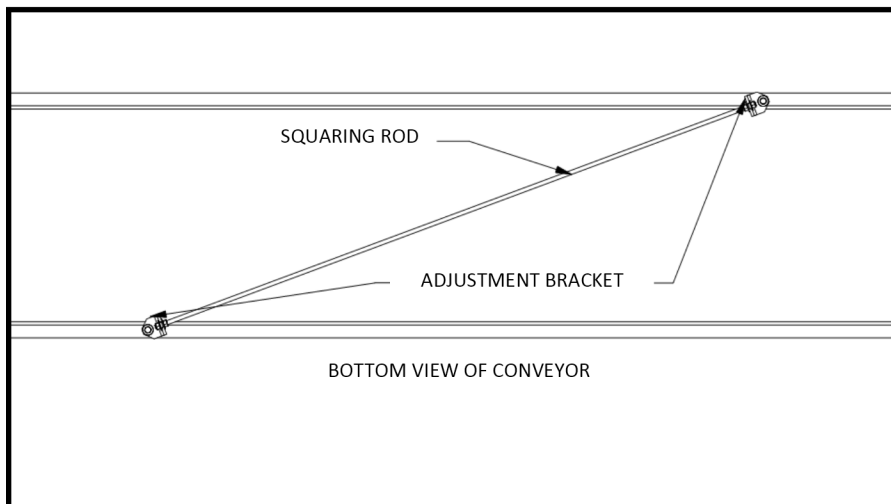
Note:

Make sure frames are square (as shown) or products will skew and tumble from the conveyor. Failure to square frames may also cause premature conveyor wear and failure.

GENERAL INSTALLATION: SQUARING

SQUARING CONVEYOR

Bolt-together BDLR conveyor frames may be brought square utilizing the Squaring Rod Assembly provided with the conveyor. Attach the Squaring Rod Assembly angle brackets to the conveyor side frames as shown below and adjust the threaded rod until frames are squared. Excess (protruding) threaded rod should be cut off after installation.

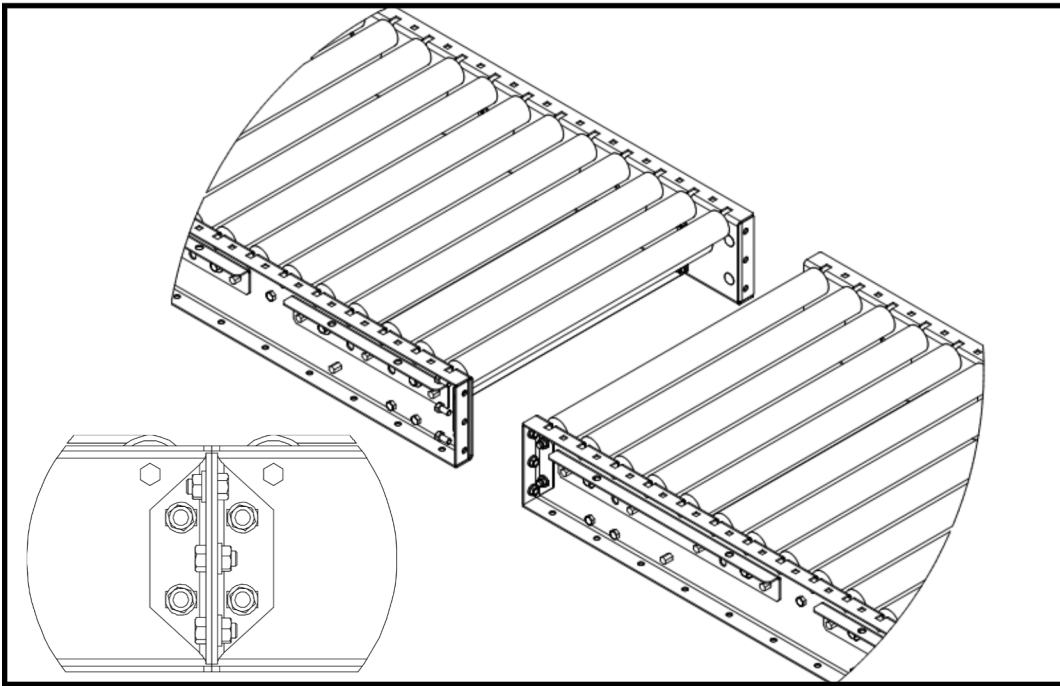


Note:

Only trained professionals should attempt to square up a conveyor. If frames have been damaged in freight, follow the "returns, damages and shortages" protocol on page 13.

COUPLING

Couple the sections using the fasteners provided per the drawing below.



Note:

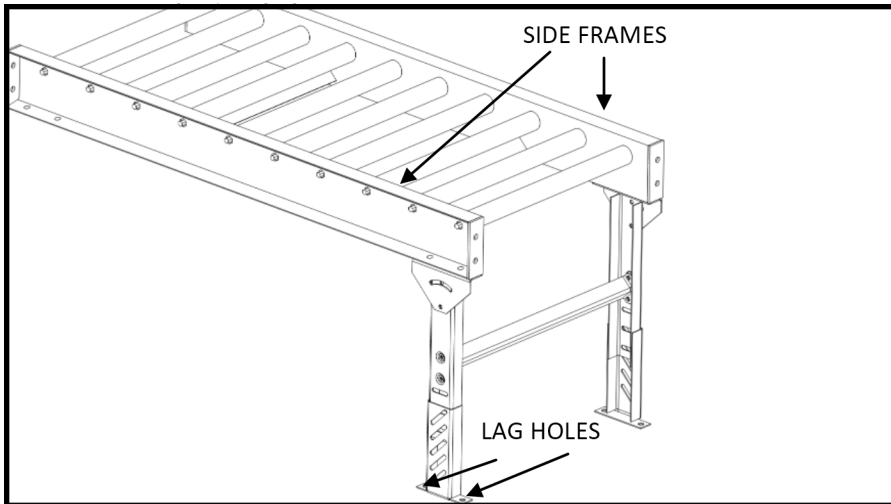
For ease of installation, mount legs on each conveyor section prior to coupling.

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LEG SUPPORTS AND INSTALLATION

PERMANENT INSTALLATION OF LEGS

Secure leg supports to the floor utilizing the lag holes in the adjustable leg boot.

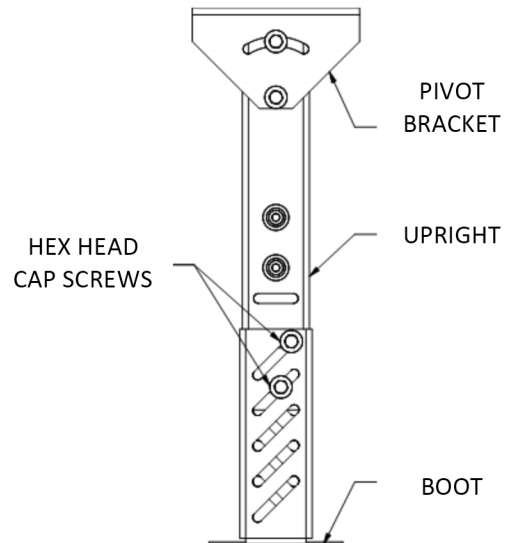


Note:

Make sure the conveyor is level by placing a level on the conveyor side frames. If the conveyor is not level, adjust the legs appropriately as shown below.

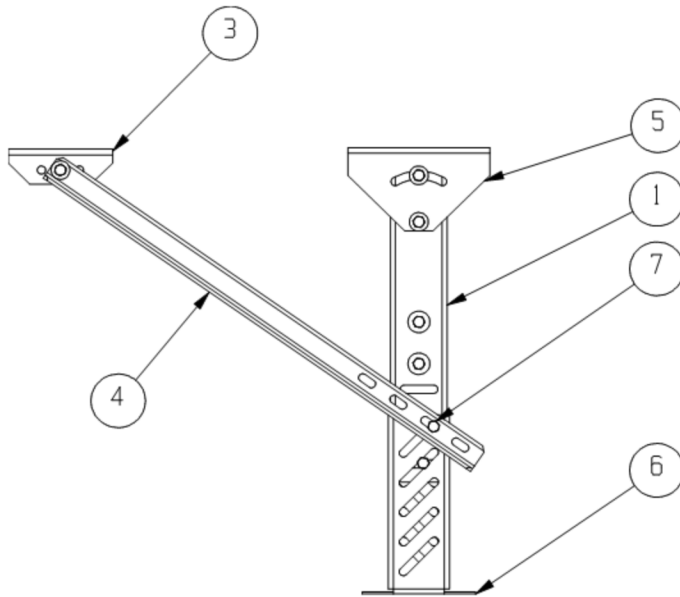
LEG ADJUSTMENT: BOLT-TOGETHER LEGS

- 1) The conveyor electrical power must be turned off and locked / tagged out following your company's machine specific procedures.
- 2) Remove all load from the conveyor.
- 3) Position conveyor in the location to be installed.
- 4) Support conveyor section with jack, hoist or forklift.
- 5) Carefully loosen the fasteners within the slots.
- 6) Lift or lower conveyor until it is at the desired height.
- 7) Ensure that the conveyor is completely level. (reference leveling note below)
- 8) Tighten fasteners using torque appropriate for each fastener's size and grade. (grade 5 fasteners provided)



Note:

Only qualified installation professionals should level and install conveyor.



| DETAIL | DESCRIPTION |
|--------|--------------------|
| 1 | UPRIGHT |
| 2 | SPREADER |
| 3 | BRACE BRACKET |
| 4 | KNEE BRACE ANGLE |
| 5 | PIVOT BRACKET |
| 6 | FOOT |
| 7 | HEX HEAD CAP SCREW |

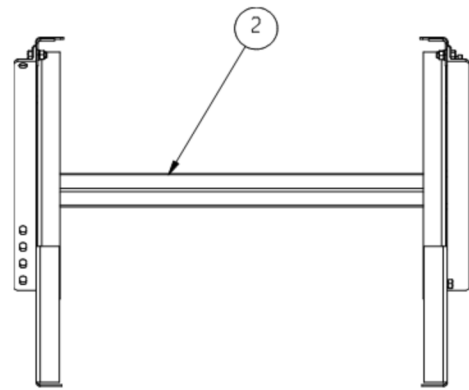
INSTALLING KNEE BRACES

- 1) After leg supports are set in place, attach the brace bracket.
- 2) Attach knee brace angle to the leg support and brace bracket.

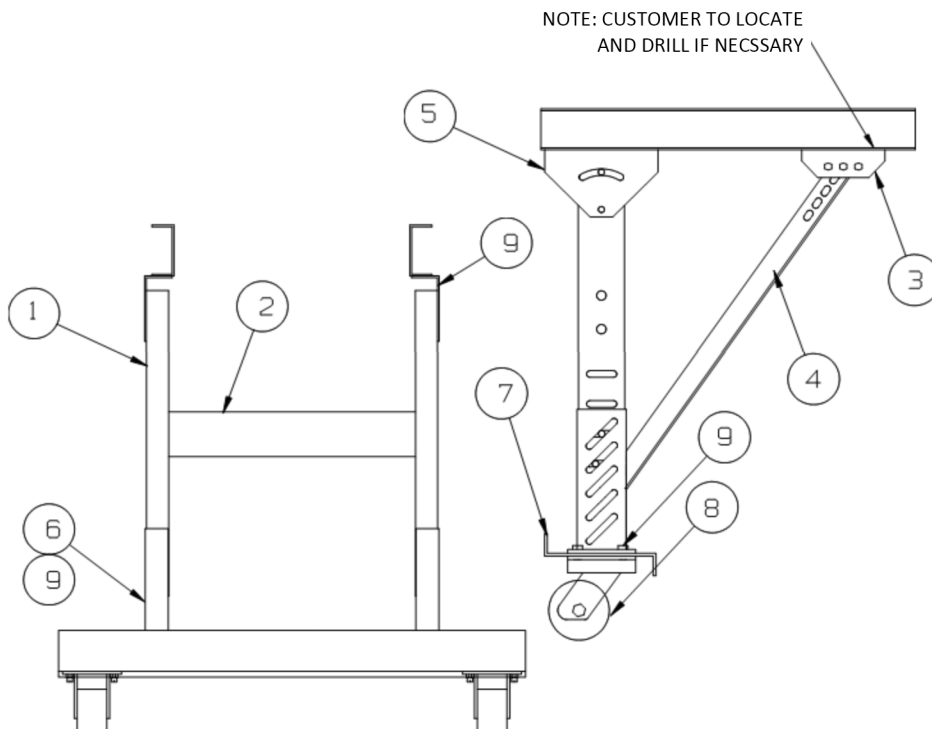
(knee brace angle may need to be cut, drilled and trimmed for proper fit and to eliminate interference with adjacent equipment)

Note:

Knee braces are recommended when the conveyor height exceeds 36" and/or when additional stability is needed.



KNEE BRACES, CASTERS AND CEILING HANGERS: INSTALLING CASTERS



INSTALLING CASTERS

Once in position, casters should be locked until conveyor needs to be moved again.

Note:

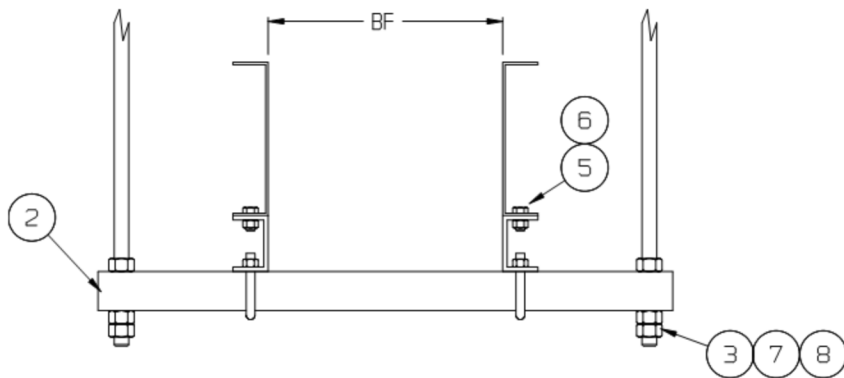
Leg supports with casters follow similar installation instructions as standard leg supports and knee braces.

| DETAIL | DESCRIPTION |
|--------|--------------------|
| 1 | UPRIGHT |
| 2 | SPREADER |
| 3 | BRACE BRACKET |
| 4 | KNEE BRACE ANGLE |
| 5 | PIVOT BRACKET |
| 6 | FOOT |
| 7 | Z-PLATE |
| 8 | PHENOLIC CASTER |
| 9 | HEX HEAD CAP SCREW |

BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR TECH HANDBOOK
KNEE BRACES, CASTERS AND CEILING HANGERS: INSTALLING CEILING HANGERS

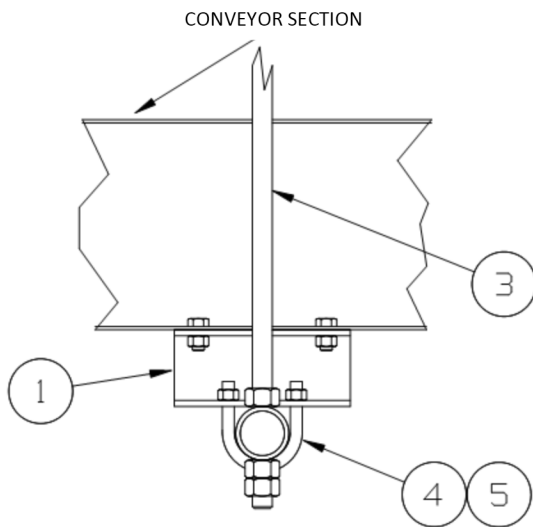
INSTALLING CEILING HANGERS

When using conveyors in an overhead scenario, mount hangers at section joints.



Note:

When installing ceiling hangers, refer to local building codes to ensure that materials comply. Only experienced material handling installers should attempt to install conveyors.

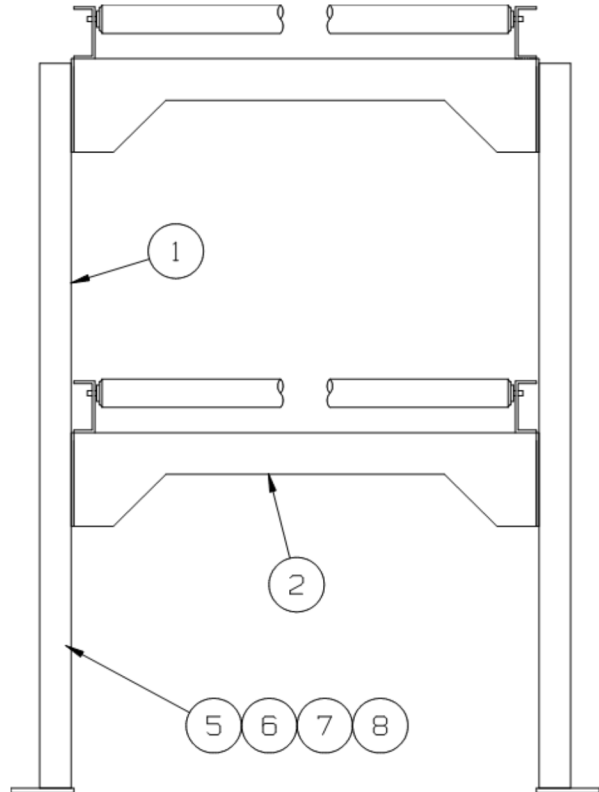
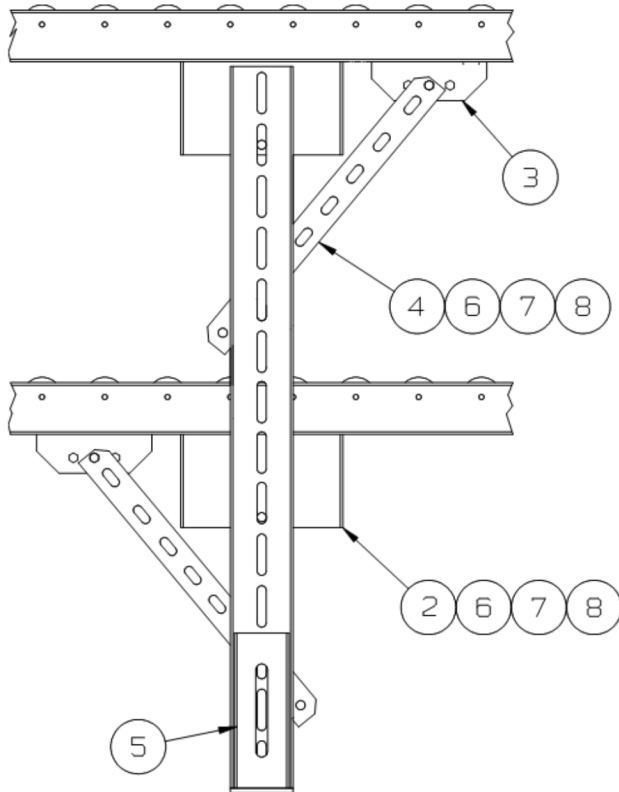


| DETAIL | DESCRIPTION |
|--------|--------------------|
| 1 | HANGER CHANNEL |
| 2 | PIPE SPREADER |
| 3 | THREADED ROD |
| 4 | U-BOLT |
| 5 | WHIZ NUT |
| 6 | HEX HEAD CAP SCREW |
| 7 | HEX NUT |
| 8 | LOCK WASHER |

BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR TECH HANDBOOK
MULTI-TIER SUPPORTS: INSTALLATION OF MULTI-TIER SUPPORTS

INSTALLING MULTI-TIER SUPPORTS

- 1) Remove the upper spreader (detail 2) from support.
- 2) Lower the conveyor section onto the lower spreader (detail 2) and attach using supplied fasteners.
- 3) Check for appropriate elevation and attach the knee bracket assembly (detail 3,4,6,7,8).
- 4) For upper conveyor assembly, replace upper spreader and repeat steps 2 and 3.
- 5) Make sure all multi-tier supports are in line and square prior to conveyor start-up.



Note: Make sure that the conveyor is stable prior to multi-tier assembly. Use of a forklift or crane may be required to ensure safe handling. Only experienced installation professionals should install conveyor.

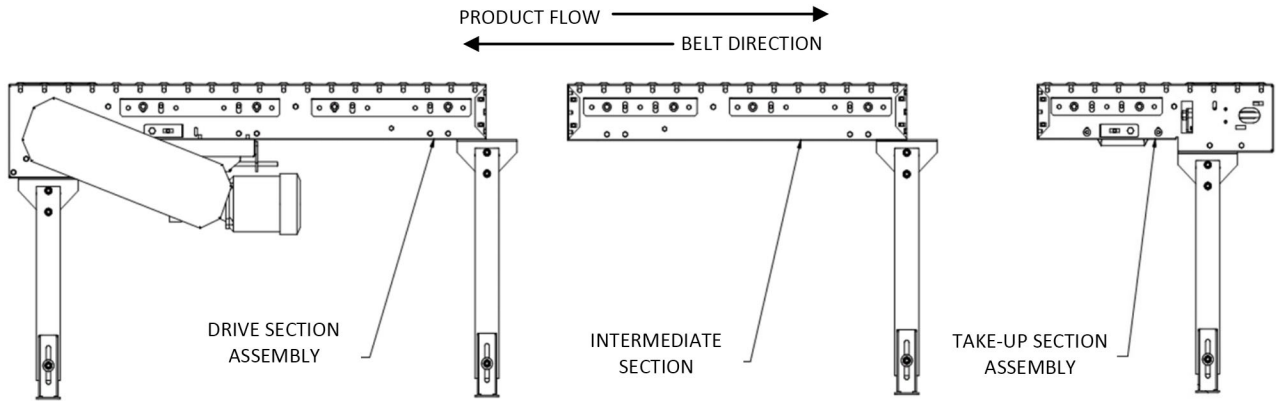
| DETAIL | DESCRIPTION |
|--------|--------------------|
| 1 | UPRIGHT |
| 2 | SPREADER |
| 3 | BRACE BRACKET |
| 4 | KNEE BRACE ANGLE |
| 5 | FOOT WELDMENT |
| 6 | WHIZ NUT |
| 7 | HEX HEAD CAP SCREW |
| 8 | FLAT WASHER |

BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR TECH HANDBOOK
GENERAL INSTALLATION: STRAIGHT BDLR INSTALLATION INSTRUCTIONS

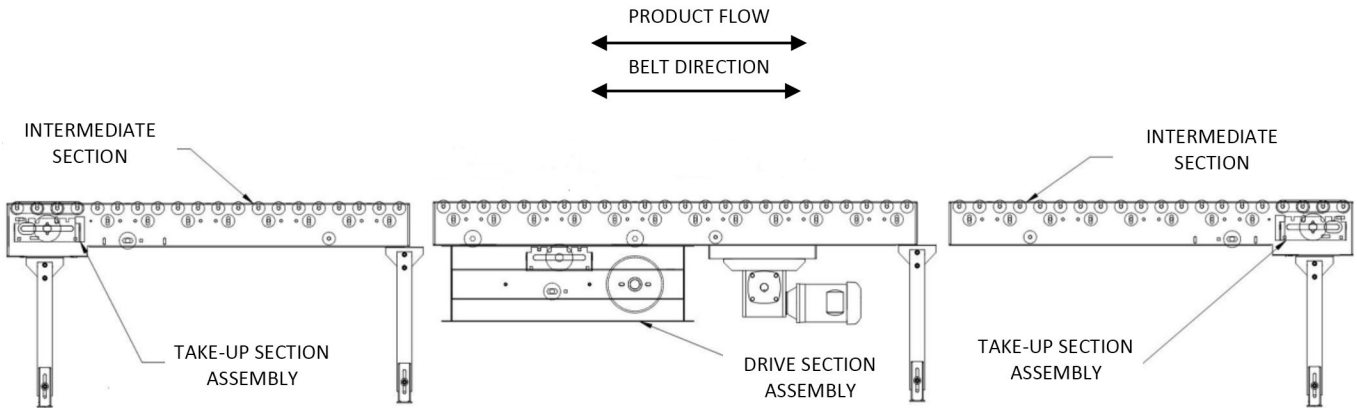
BDLR STRAIGHT TRANSPORTATION AND MINIMUM PRESSURE INSTALLATION INSTRUCTIONS

- 1) Snap a chalk line on the floor along the conveyor center line. All installation should use this as a base line.
- 2) Fasten floor supports to drive section as shown below. Secure supports to approximate desired height.
- 3) Attach supports to intermediate and take-up sections. Secure supports to approximate desired height.
- 4) Attach intermediate sections one at a time to drive section assembly. When all intermediate sections are assembled attach take-up section assembly. Adjust supports to exact height required.

END DRIVE



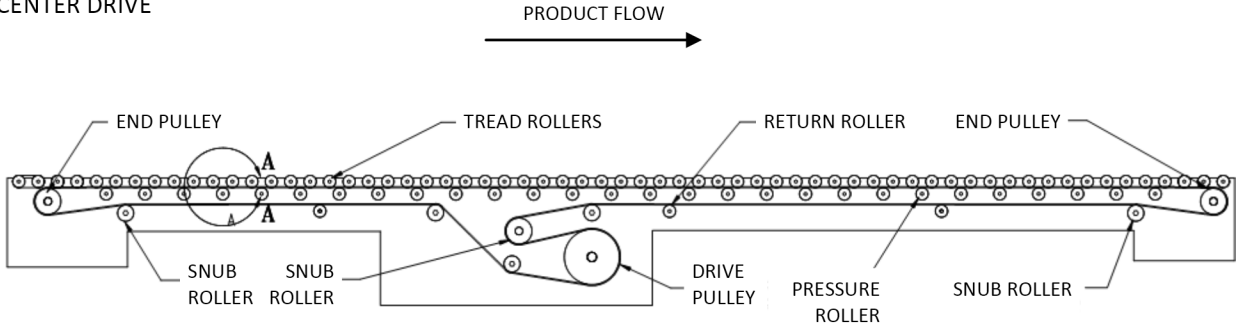
CENTER DRIVE



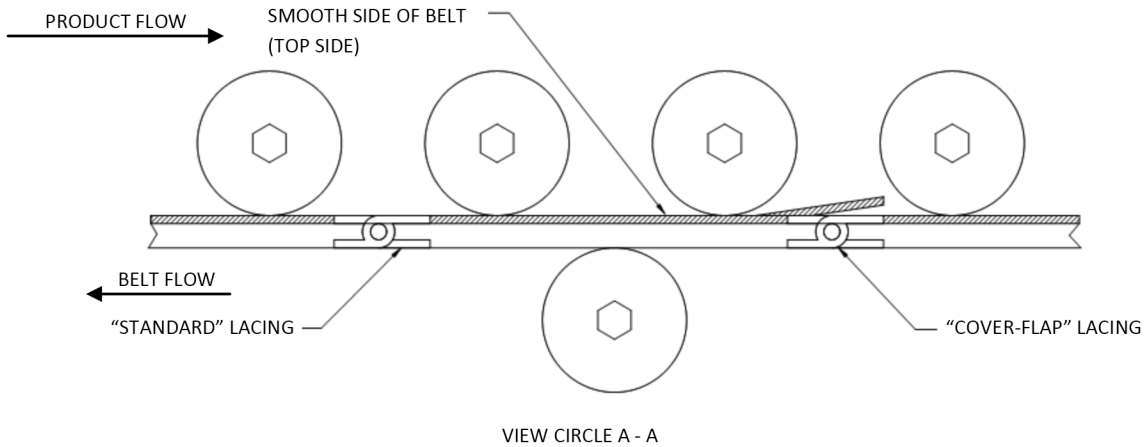
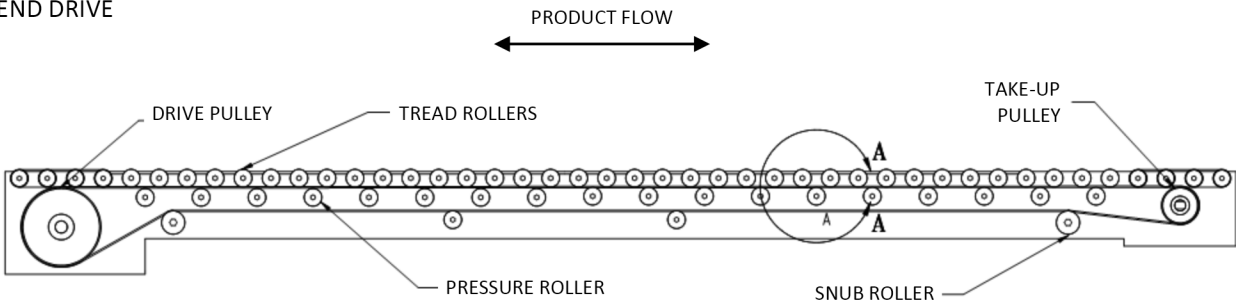
BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR TECH HANDBOOK
GENERAL INSTALLATION: STRAIGHT BDLR INSTALLATION INSTRUCTIONS

- 5) Loop belt over snub rollers, return rollers and end pulleys as shown below. Bring laced ends together and thread steel pin through loops. Belts can be supplied with two types of lacing, "Standard" and "Cover-Flap Lace", position the flap in relationship to flow according to view circle A-A below. It is recommended for the flap to be glued after installation.

CENTER DRIVE



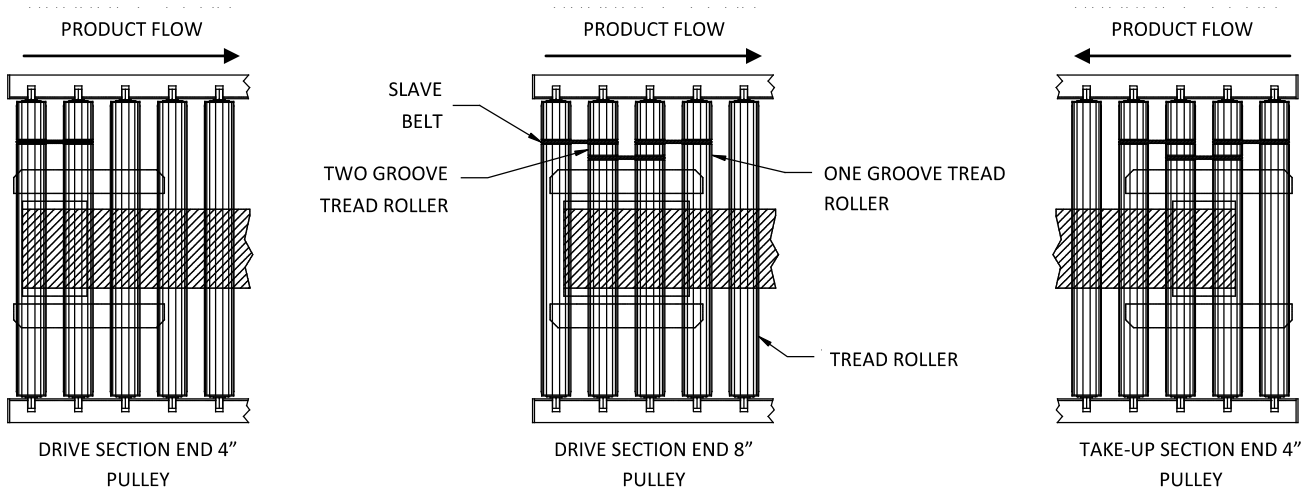
END DRIVE



- 6) Assemble tread rollers into conveyor. (These rollers are shipped loose.)
- 7) Remove excess slack from belt by adjusting the take-up pulley. Do not over tighten belt because it will be difficult, if not impossible, to track the belt.
- 8) Loosen bolts in the pressure roller brackets and raise pressure rollers to increase the driving force of the tread rollers. This should be set to the minimum amount required to move the product. Excess pressure is unnecessary and will cause premature belt and frame wear.
- 9) Check all frame sections, end units, drive units, etc. for squareness (page 15). All snub rollers and pulleys must be set square with the frame before making any belt adjustments.
- 10) See belt tracking instructions for Type 1 Belt on page 30 for End Drive or Type 2 Belt on page 31 for Center Drive.

BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR TECH HANDBOOK
GENERAL INSTALLATION: STRAIGHT BDLR INSTALLATION INSTRUCTIONS

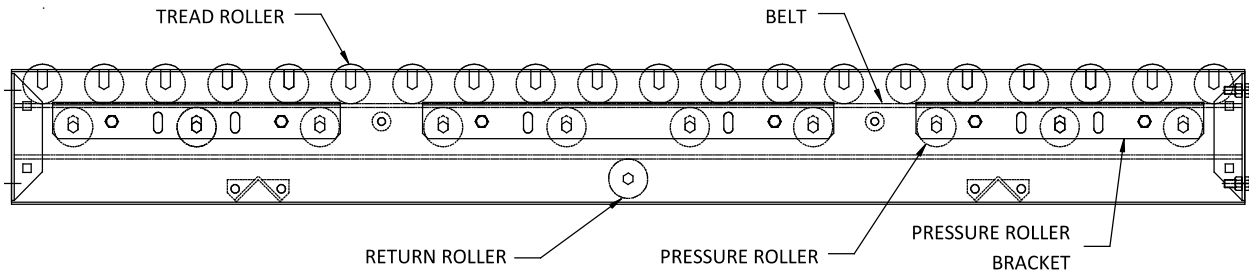
- 6) Assemble tread rollers into conveyor (these rollers are shipped loose). Locate the grooved tread roller and slave belts at conveyor ends as shown below in the appropriate drawing.



- 7) Remove excess slack from belt by adjusting the take-up pulley. Do not over tighten belt because it will be difficult, if not impossible, to track the belt.

8) A) TRANSPORTATION

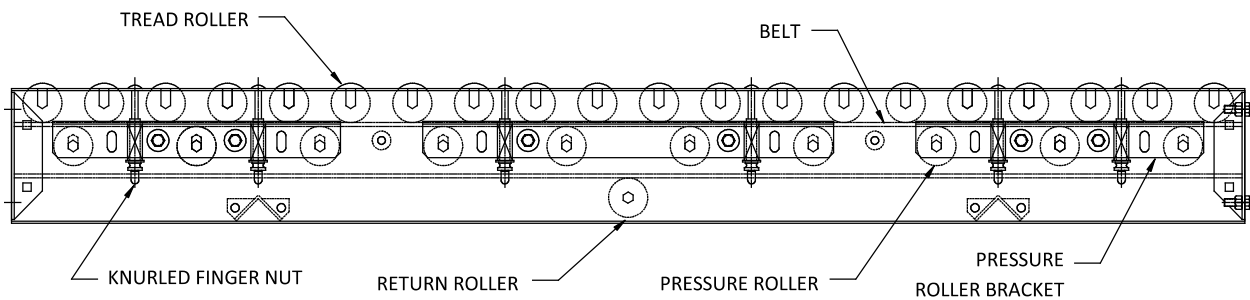
Adjust belt pressure to tread rollers by raising pressure rollers. Loosen bolts in the pressure roller brackets. Raise brackets on both sides of conveyor until belt pressure to tread rollers is sufficient to drive largest product. Keep brackets equal and level from side to side. Retighten bolts. Note: Excess pressure is unnecessary and will cause premature belt and frame wear.



BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR TECH HANDBOOK
GENERAL INSTALLATION: STRAIGHT BDLR INSTALLATION INSTRUCTIONS

8) B) MINIMUM PRESSURE

While the conveyor is running, reduce pressure on all tread rollers by loosening the knurled finger nuts until there is no belt pressure driving the tread rollers. Place the heaviest product to be conveyed on the infeed end of conveyor. Increase pressure by tightening knurled finger nuts until belt pressure to tread rollers is sufficient to drive product. Keep brackets equal and level from side to side. Continue process until product has traveled the entire length of conveyor. Note: Excess pressure is unnecessary and will cause premature belt and frame wear.



- 9) Check all frame sections, end units, drive units, etc. for squareness (page 15). All snub rollers and pulleys must be set square with the frame before making any belt adjustments.
- 10) See belt tracking instructions for Type 1 Belt on page 30 for End Drive or Type 2 Belt on page 31 for Center Drive.

BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR TECH HANDBOOK
GENERAL INSTALLATION: V-BELT CURVE/SPUR INSTALLATION INSTRUCTIONS

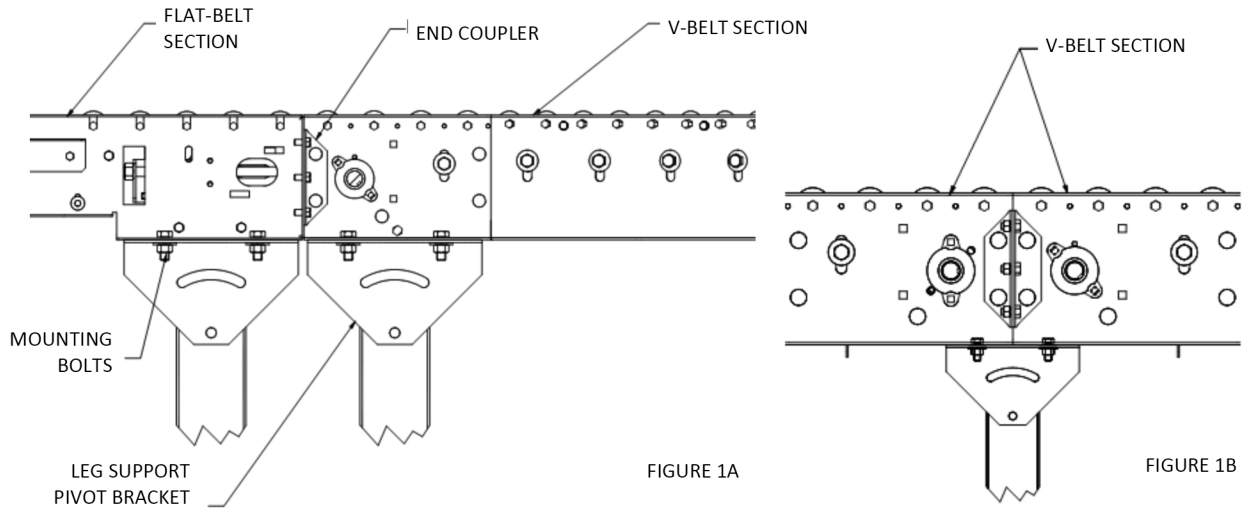
V-BELT DRIVEN LIVE ROLLER CURVE/SPUR INSTALLATION INSTRUCTIONS

V-Belt conveyors can be connected to a wide variety of conveyors, such as other V-Belt sections, Flat-Belt Driven Live Roller, Lineshaft and Gravity Conveyor.

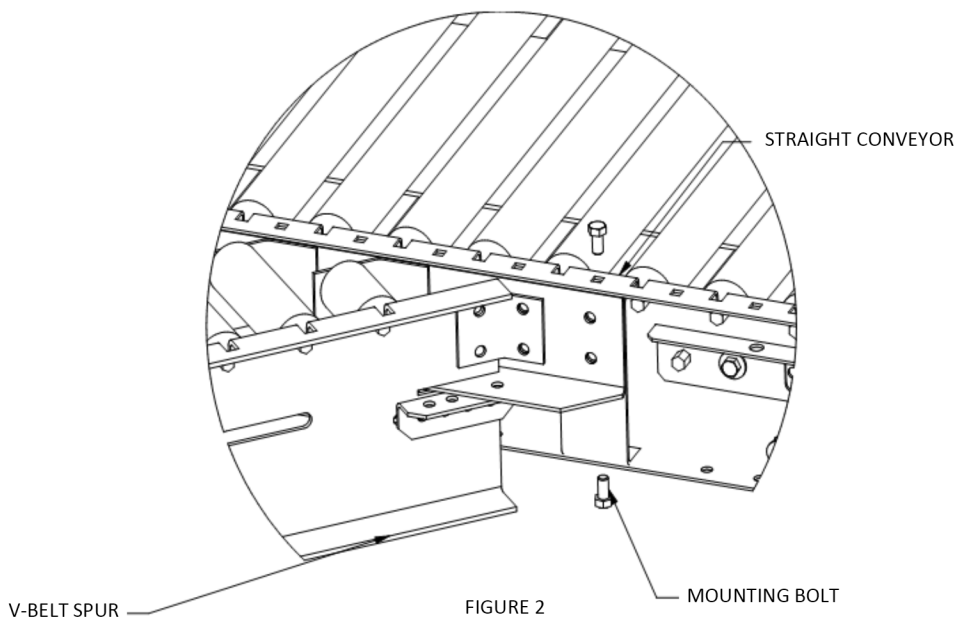
- 1) Snap a chalk line on the floor along the conveyor center line. All installation should use this as a base line.
- 2) Attach supports to both ends (tangent section) of each curve and also (1) support in center portion of curve. V-Belt Driven spurs get (1) leg only underneath head section.

Note: If the V-Belt conveyor will be connecting to another V-Belt conveyor, (1) support may be placed on the splice of the two units, due to frame depths being the same. However, if it to be connected to some other type where the frame depths are different, the supports will need to be placed at the ends of both units.

- 3) Hand tighten bolts only.
- 4) Assemble the conveyor sections and components on the supports as shown in the assembly drawing pertaining to the type of conveyor ordered and/or system layout drawing if provided.
- 5) Fasten sections together with end couplers and leg support pivot brackets. Hand tighten only. See figure 1A and 1B.

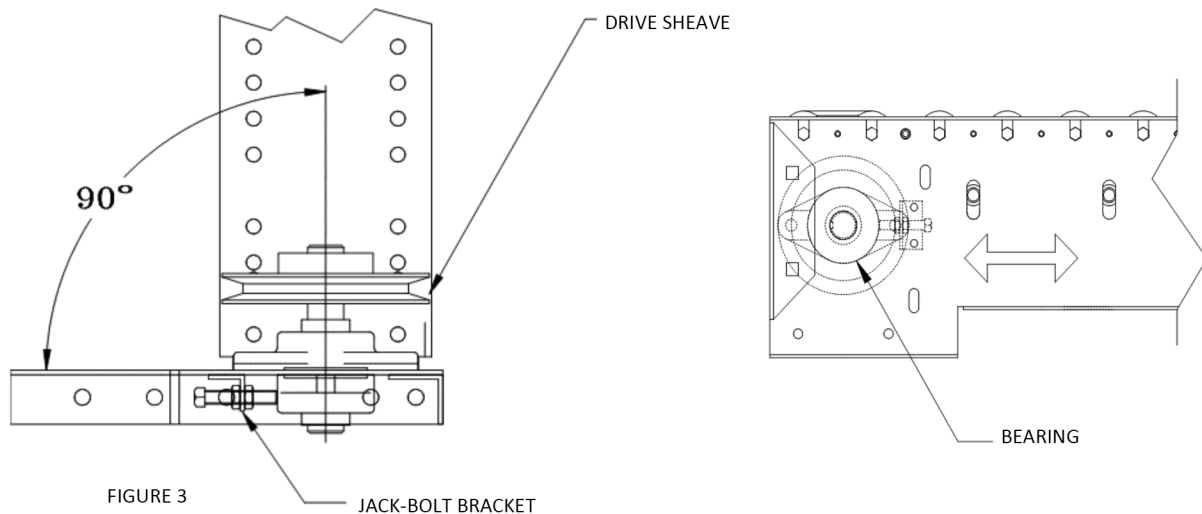


- 6) Attach V-Belt Driven spurs to side of straight conveyor as shown in figure 2.



BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR TECH HANDBOOK
GENERAL INSTALLATION: V-BELT CURVE/SPUR INSTALLATION INSTRUCTIONS

- 7) V-Belt curves and spurs without their own drive unit may be slaved off another V-Belt unit or Flat-Belt Driven conveyor.
- 8) Check all frame sections, end units, etc. for squareness. All rollers, pulleys and sheaves must be square with the conveyor frame.
- 9) Adjust elevation to desired height. Anchor floor supports securely. Level the conveyor. Tighten all bolts securely.
- 10) Check that drive and idler shafts are square with sideframe. Belt may slip off of drive sheave if they are not square. Adjust the jack-bolt bracket next to the bearing on the outside of the conveyor to square shafts. See figure 3.
- 11) Check and tighten all set screws.



SLAVE DRIVEN CURVES AND SPURS

V-Belt Driven Live Roller conveyors can be connected to a wide variety of conveyors, such as other V-Belt sections, Flat-Belt Driven Live Roller, Lineshaft, Gravity conveyors, etc. V-Belt curves and spurs without their own drive may be slaved off another V-Belt unit or Flat-Belt Driven Live Roller conveyor.

- 1) Fasten sections together with end couplers and leg support pivot brackets. Hand tighten only. See figure 1A and 1B on page 25.
- 2) Attach guard backside to conveyor frames. Slide guard over extended shafts and attach with support brackets. Note support bracket locations for connecting (2) V-Belt units together in figure 4A and 4B for connecting V-Belt to Flat-Belt sections.
- 3) Assemble sprockets onto shafts. Use a straight edge along the face of both sprockets to properly align. Make necessary adjustments and tighten set screws.
- 4) Wrap chain or timing belt around sprockets. Use the supplied link to connect the chain together.
- 5) Adjust the chain tensioner or take-up rod bracket to properly tension the chain/timing belt.
- 6) Attach guard cover to guard backside.

BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR TECH HANDBOOK
GENERAL INSTALLATION: V-BELT CURVE/SPUR INSTALLATION INSTRUCTIONS

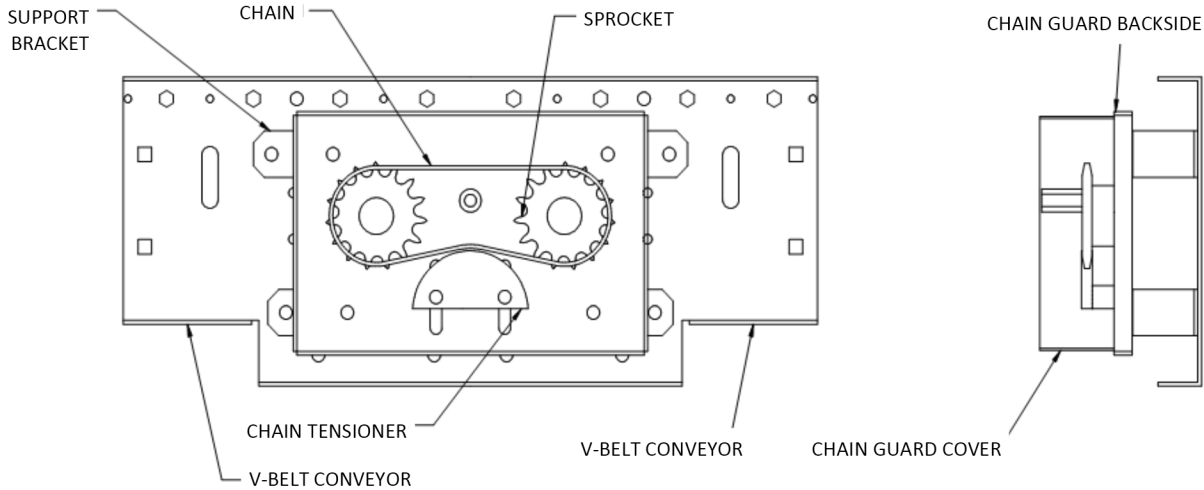


FIGURE 4A
 SLAVE KIT FOR CONNECTING (2) V-BELT UNITS
 TOGETHER - CHAIN DRIVEN

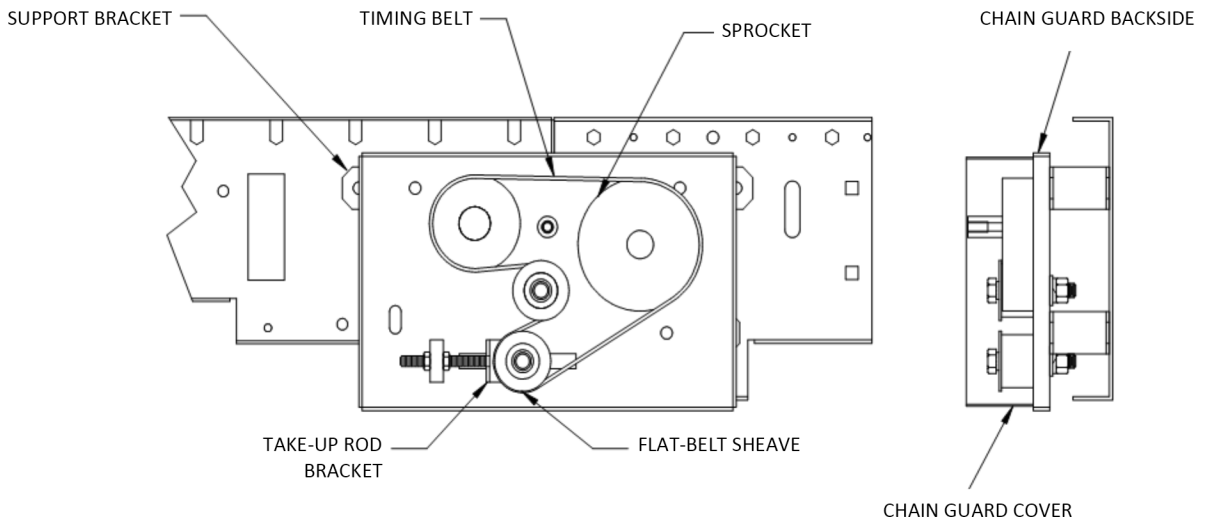


FIGURE 4B
 SLAVE KIT FOR CONNECTING V-BELT UNIT TO FLAT-
 BELT UNIT - TIMING BELT DRIVEN

SIDE GUIDES: FIXED ANGLE / CHANNEL SIDE RAIL

Attach rail to top of conveyor frame as shown in drawing.

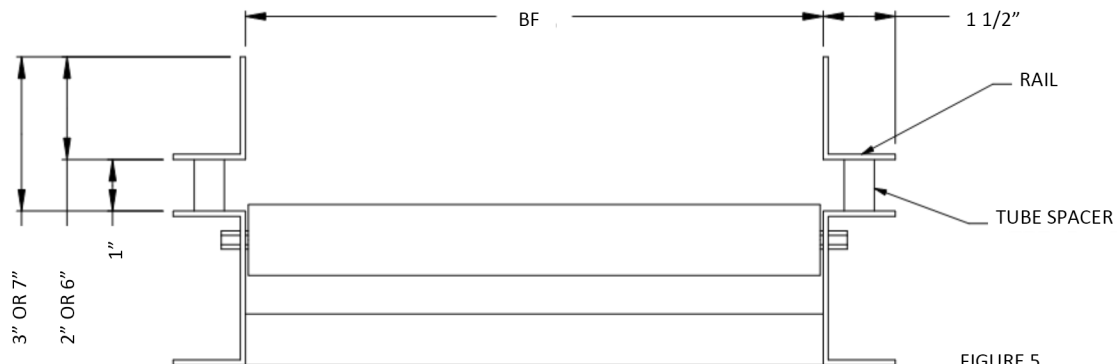


FIGURE 5
 FIXED ANGLE GUARD RAIL
 (CHANNEL GUARD RAIL NOT SHOWN)

Note: Holes must be drilled in frame at time of assembly.

PRESSURE ADJUSTMENT

V-Belt curves and spurs utilize a pressure sheave to force the V-Belt into contact with the tread rollers. Slots in the inside frame of a curve and long frame of a spur allow the sheaves to be adjusted up and down to obtain the correct amount of pressure to the tread rollers. Apply only enough pressure to drive the heaviest product to be conveyed. See figure 6.

CAUTION: APPLYING TOO MUCH PRESSURE CAN CAUSE THE CONVEYOR TO STALL OUT.

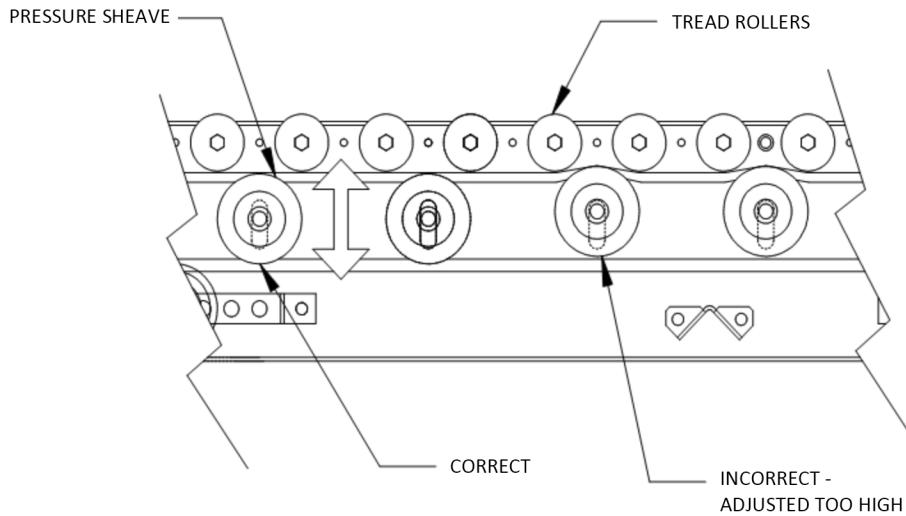


FIGURE 6

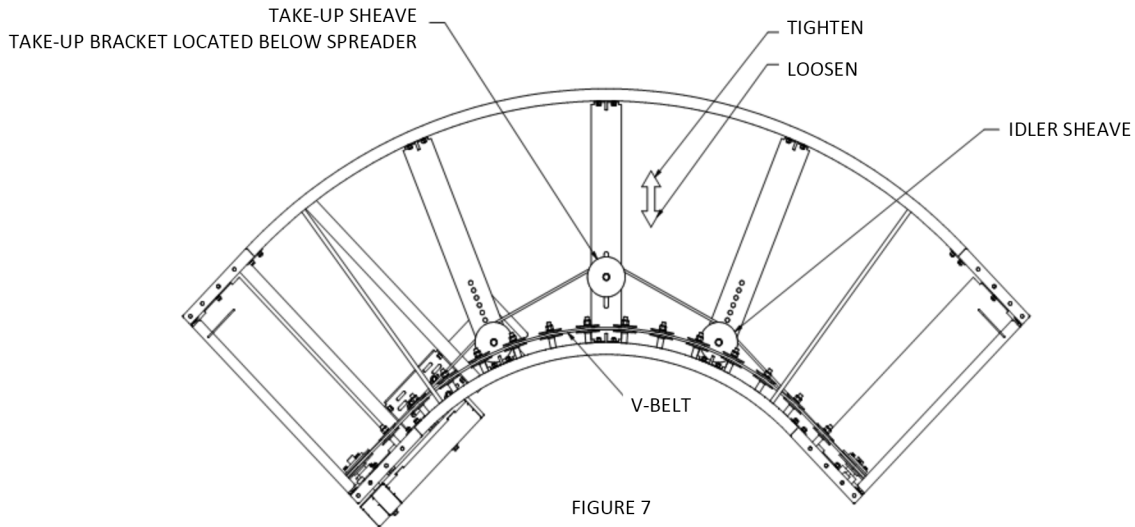
BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR TECH HANDBOOK
GENERAL INSTALLATION: V-BELT CURVE/SPUR INSTALLATION INSTRUCTIONS

BELT TENSIONING (CURVES)

The V-Belt must be properly tensioned to ensure the correct amount of drive pressure. A belt tensioned too much can cause the conveyor to stall out. Likewise, a belt not tensioned enough may be unable to drive the tread rollers at all.

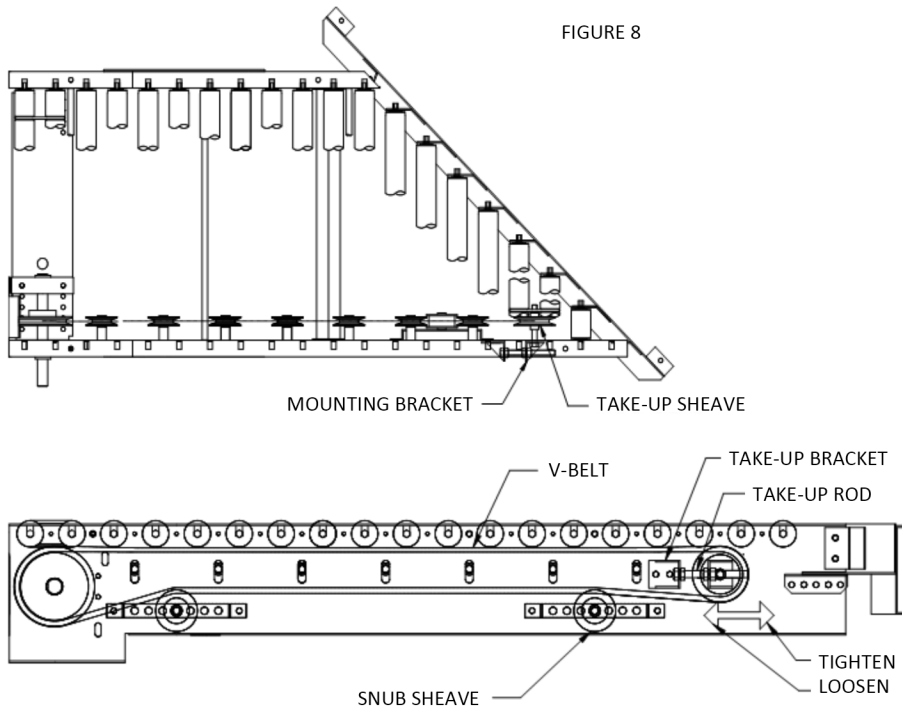
V-Belt curves have a take-up sheave located in the center of the curve that allows the belt to be tensioned. Loosen jam nuts on both ends of take-up rod and adjust sheave as shown in figure 7. If more belt take-up is required than what the take-up sheave allows, (2) idler sheaves may be moved accordingly.

Note: Both idler sheaves should be moved equal distances.



BELT TENSIONING (SPURS)

V-Belt spurs have a take-up sheave located at the narrow end of the spur that allows the belt to be tensioned. Loosen jam nuts on take-up rod and adjust mounting bracket as shown in figure 8. If more belt take-up is required than what the mounting bracket allows, the snub sheave may also be adjusted.

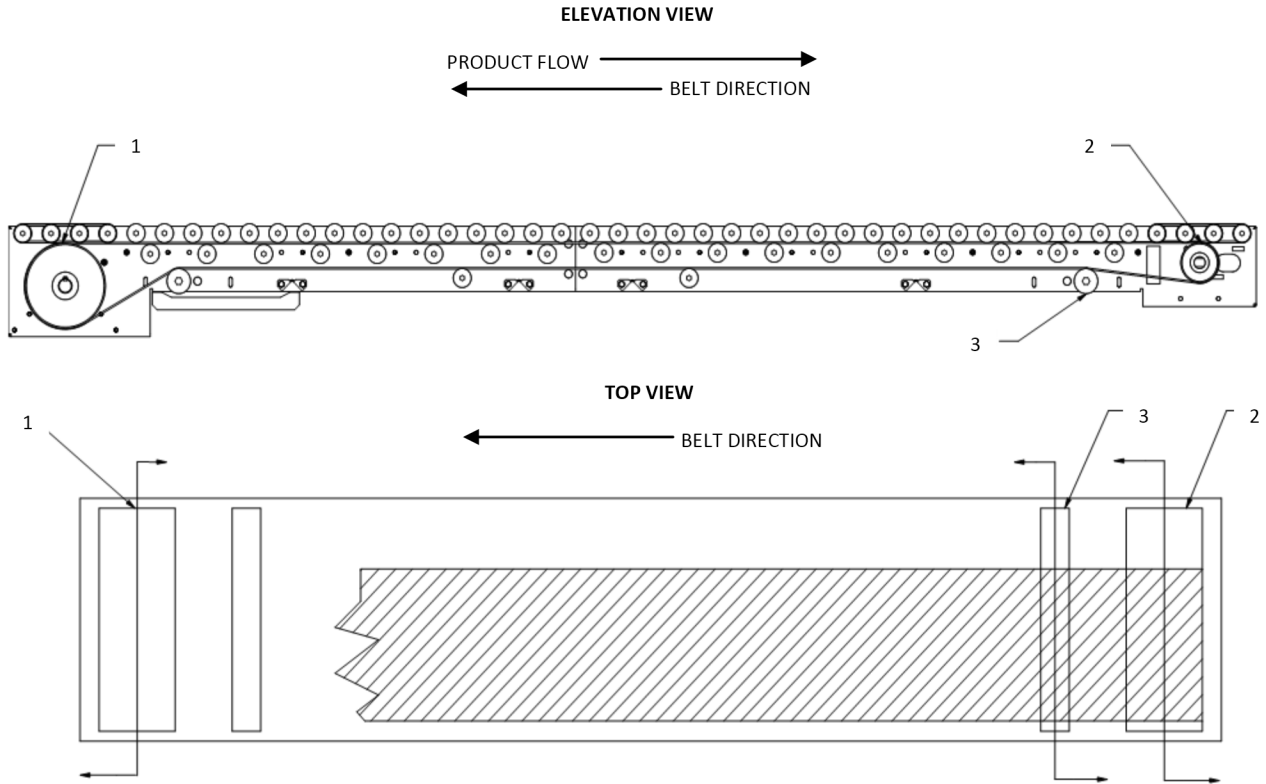


BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR TECH HANDBOOK

INSTRUCTIONS FOR BELT TRACKING: BELT TYPE 1

Note: All snub rollers and pulleys **must be** set square with the frame before making any belt tracking adjustments. Mark initial belt position before beginning. Make all adjustments in small increments. **CONVEYOR POWER MUST BE TURNED OFF WHEN MAKING ANY ADJUSTMENTS.**

BELT TYPE 1: ONE-WAY SERVICE, LEVEL WITH END DRIVE



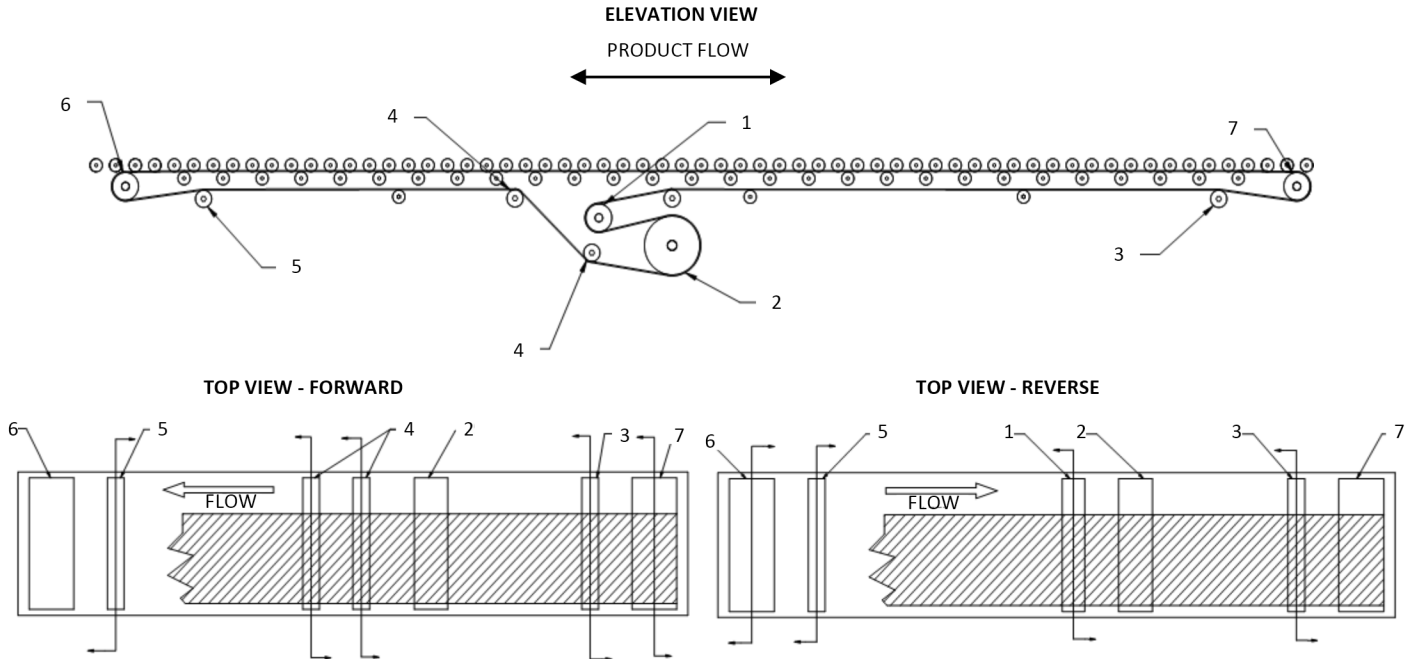
Note: If belt is running off-center to opposite than shown, adjust rollers and pulleys in opposite direction than shown.

- 1) Run conveyor for a few minutes so the belt can take its position. **Stop conveyor immediately if belt rubs against side of conveyor.** If belt shifts to one side, adjust snub roller (3) to steer belt to center of take-up pulley (2).
- 2) If belt is riding at the center of the take-up pulley (2) but not at the center of the drive pulley (1), adjust drive pulley (1) slightly as shown. The belt will travel toward the slack side.
- 3) Adjusting the drive pulley (1) may throw off belt alignment on the take-up pulley (2). Repeat steps 1 and 2 as necessary. The belt will stretch during the first few days of operation. Adjust the take-up pulley (2) to compensate for the stretch.

BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR TECH HANDBOOK
INSTRUCTIONS FOR BELT TRACKING: BELT TYPE 2

Note: All snub rollers and pulleys **must be** set square with the frame before making any belt tracking adjustments. Mark initial belt position before beginning. Make all adjustments in small increments. **CONVEYOR POWER MUST BE TURNED OFF WHEN MAKING ANY ADJUSTMENTS.**

BELT TYPE 2: TWO-WAY SERVICE, LEVEL WITH CENTER DRIVE



Note: If belt is running off-center to opposite than shown, adjust rollers and pulleys in opposite direction than shown.

FORWARD SERVICE

- 1) Start belt for FORWARD service. Run conveyor for a few minutes so the belt can take its position. **Stop conveyor immediately if belt rubs against side of conveyor.** If belt shifts to one side, adjust snub rollers (4) to steer belt to center of take-up pulley (2), which in turn centers the belt onto the take-up pulley (7). Reversing belts may require that the belt run slightly off-center to one side in forward direction and to opposite side in reverse direction. This is due to the nature of the belt.
- 2) Slight adjustment of snub roller (3) may be required to steer the return belt to center of take-up pulley (7).
- 3) If belt is riding at the center of the take-up pulley (7) but not at the center of the take-up pulley (6), slight adjustment of take-up pulley (6) may be needed.

Note: Care is required as leading the belt with this pulley may cause the belt to travel to the opposite side in REVERSE service.

Adjust in very small increments. The belt will stretch during the first few days of operation. Adjust the take-up pulley (1) to compensate for the stretch.

REVERSE SERVICE

- 1) Tracking for REVERSE service should not be done until preliminary FORWARD service has been completed. If belt shifts to one side, adjust take-up pulley (1) to steer belt to center of drive pulley (2), which in turn centers the belt onto take-up pulley (6).
- 2) Slight adjustment of snub roller (5) may be required to steer belt to center of take-up pulley (6).
- 3) If belt is riding at the center of take-up pulley (6), but not at the center of take-up pulley (7), slight adjustment of take up pulley (7) may be needed.

Note: Care is required as leading the belt with this pulley may cause the belt to travel to the opposite side in FORWARD service.

Adjust in very small increments. The belt will stretch during the first few days of operation. Adjust the take-up pulley (1) to compensate for the stretch.

- 1) Review pages 7 through 12 prior to starting any equipment.
- 2) Verify that conveyor sections, leg supports, etc. were installed properly.
- 3) Verify that drive chains and sprockets are installed, aligned and tensioned properly
- 4) Verify set screws are tight in sprockets, bearings and all components that have them in.
- 5) Verify that all drive and mounted bearing bolts are fastened securely.
- 6) Verify that all motor control wiring is connected properly.
- 7) Verify that conveyor is not loaded with product.
- 8) Verify that gearboxes are filled with the proper amount of oil or that they were factory filled with lube. (If your conveyor is equipped with a Boston 700 Series Reducer, it is filled with oil, sealed and lubed for life thus requiring no oil changes. Literature provided with equipment will give detailed info on gearbox lube info)
- 9) Verify that the gearbox has necessary vent plugs installed if applicable. (If your conveyor is equipped with a Boston 700 Series Reducer, it is supplied with a PosiVent® and no vent plug is required. Literature provided with equipment will give detailed info on gearbox vent plug requirements.)

BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR TECH HANDBOOK

PRE-START-UP OVERVIEW: DRIVE CHAIN AND SPROCKET ALIGNMENT

DRIVE CHAIN AND SPROCKET ALIGNMENT

To achieve maximum service life and efficiency from a chain drive, follow these simple guidelines:

- Visually inspect the roller chain, sprockets, and other components and verify that they are in good condition.
- Ensure that the sprockets are properly aligned.
- Adequately lubricate the chain.
- Inspect for proper chain tension.

CONDITION OF COMPONENTS

Shafting and bearings should be supported rigidly to maintain the initial alignment.

Roller chain should be free of grit and dirt. Wash chain in kerosene when required. Relubricate.

DRIVE ALIGNMENT

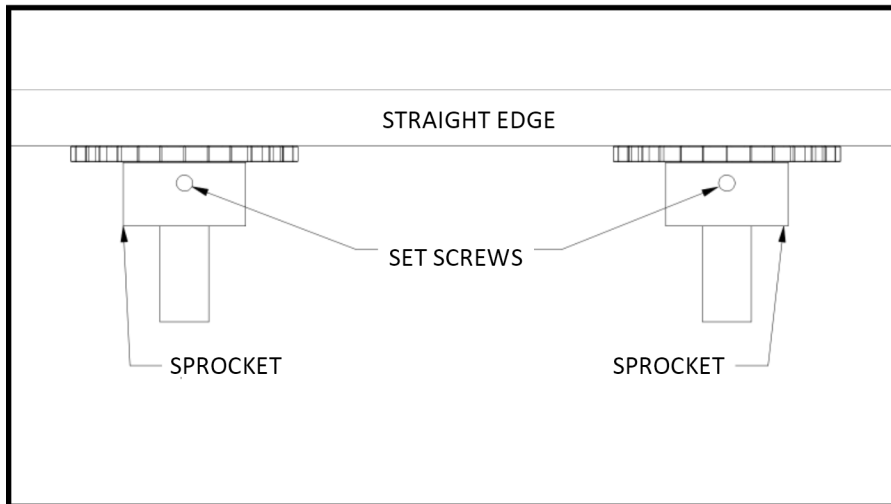
Misalignment results in uneven loading across the width of the chain and may cause roller link-plate and sprocket tooth wear. Drive alignment involves two things: parallel shaft alignment and axial sprocket alignment.

ALIGNING SHAFTS

Shafts should be parallel and level. If there is axial movement of the shaft (as in the case of an electric motor), lock the shaft in the normal running position before aligning the sprockets.

ALIGNING SPROCKETS

Sprocket axial alignment can be checked with a straight edge which will extend across the finished sides of the two sprockets. Normally, it is good practice to align the sprockets as close to the shaft bearing as possible. For long center distances, use a taut cord, or wire long enough to extend beyond each of the sprockets.



WARNING:

Before performing any maintenance, lubrication or inspection on any powered conveyor, the electrical power must be turned off and locked / tagged out following your company's machine specific procedure. **NEVER** operate the conveyor with any guard removed.

BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR TECH HANDBOOK

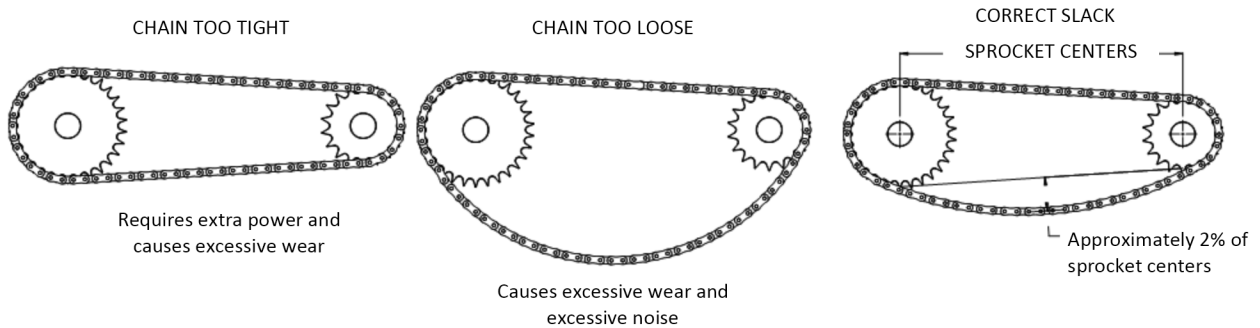
PRE-START-UP OVERVIEW: DRIVE CHAIN AND SPROCKET TENSION

INSTALLING THE CHAIN

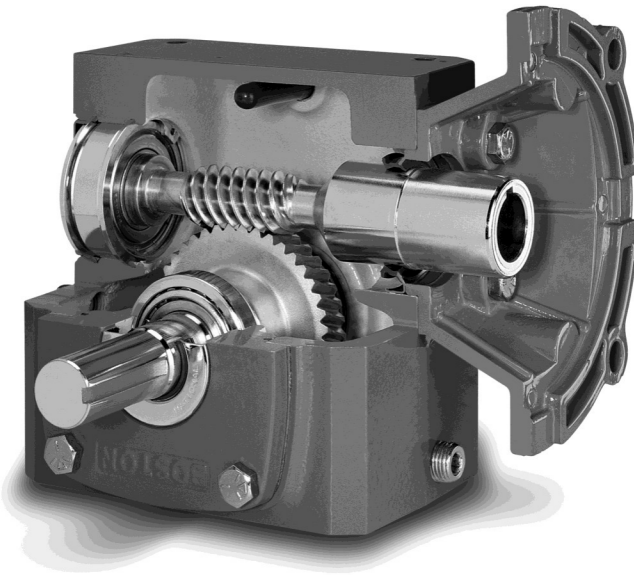
Recheck all preceding adjustments for alignment and make certain all setscrews, bolts and nuts are tight. Fit chain around both sprockets and bring the free ends together on one sprocket for connection. The sprocket teeth will locate the chain end links. Install the connecting link, connecting link cover plate and the spring clip or cotter pins. On larger pitch chains or heavy multiple strand, it may be necessary to lock the sprockets for this operation.

CHAIN TENSION

Check chain tension to be certain the slack span has an approximate 2% mid-span movement.



PRE-START-UP OVERVIEW: GEAR REDUCER VENT PLUG



PosiVent®

Omni Metalcraft Corp. standardly supplies the Boston Gear PosiVent® option for all current 700 series styles and configurations. This specially-designed internal pressure equalization system allows the gearbox to operate in all environments without the use of conventional pressure vents. The unique design comes complete with Klubersynth UH1 6-460 lubrication pre-filled for all mounting positions. Unlike competitive versions, this unique single seam design allows for easy installation and extended life. This means longer trouble-free operation with virtually no maintenance.

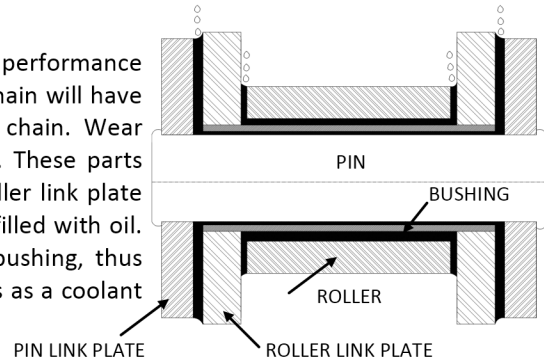
BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR TECH HANDBOOK
MAINTENANCE: INSPECTION AND LUBRICATION

CARE AND MAINTENANCE OF CHAIN

Proper maintenance of any chain should include correct lubrication, periodic inspection and proper adjustment for normal wear. Periodic inspection of the chain and sprockets is required to detect any deviation from normal wear before serious damage takes place. The cost of such inspection is repaid many times in extended chain life and in freedom from failure. No general rule can be given for the frequency of inspection. The frequency should be influenced by conditions of operation.

CHAIN LUBRICATION AND ENVIRONMENT

One of the most important factors in getting the best possible performance out of our drive chain is proper lubrication. A well lubricated chain will have an operating life much longer than that of an unlubricated chain. Wear between the pin and bushing causes drive chain to elongate. These parts should, therefore, be well lubricated. The gap between the roller link plate and the pin link plate on the slack side of the chain should be filled with oil. This oil forms a film which minimizes wear on the pin and bushing, thus increasing the chain's service life. It also reduces noise and acts as a coolant when the chain runs at high speeds.



Clean Atmosphere: Chains operating in a relatively clean atmosphere can be lubricated by brush or drip-feed oilers or by applying the lubricant manually with a brush or oil can.

Atmosphere with Lint or Non-Abrasive Dust: Where large volumes of lint or non-abrasive dust are present, a brush or wiper can be used to clean the chain and apply a lubricant. Otherwise the lint or dust will clog the chain joint clearance and prevent penetration of the oil into the joints.

Abrasive Atmosphere: If abrasives come in contact with chain, lubrication becomes more difficult. When lubricants are applied externally, abrasive particles tend to adhere to the chain surfaces and act as a lapping or grinding compound. Under extreme conditions it is sometimes advisable to avoid chain lubrication.

Extreme Conditions: Consult a lubricant manufacturer when chains are required to operate at temperatures outside of those indicated in the chart below or if chains are used in other extreme conditions.

SUGGESTED LUBRICATION

Only high quality oil should be used to lubricate chain. Neither heavy oil nor grease is suitable. The lubricant should have a viscosity to enable it to reach internal surfaces under normal conditions. Lubricants suggested for specific ambient temperatures and chain speed ranges are given in the table below.

| CHAIN NUMBER | TEMPERATURE | | | |
|-------------------------------------|-------------|--------------|---------------|---------------|
| | 15° - 35° F | 35° - 105° F | 105° - 120° F | 120° - 140° F |
| ANSI 25 - 50 | SAE10W | SAE20 | SAE30 | SAE40 |
| ANSI 60 - 100 | SAE20 | SAE30 | SAE40 | SAE50 |
| ANSI 120 - 240 | SAE30 | SAE40 | SAE50 | |
| 4" & 6" PITCH (ENGINEERED CHAIN) | SAE20 | SAE30 | | SAE40 |

Note:

Review pages 10 and 11 prior to maintaining any equipment.

If equipment repair or replacement is required during inspections, thoroughly review the manufacturer's specific product information for correct procedure.

DAILY MAINTENANCE

- Inspect all conveyors to ensure that all guarding is securely in place.
- Inspect belt tracking for at least (3) full belt revolutions.

WEEKLY MAINTENANCE

- Inspect conveyor for loose bolts and set screws.
- Inspect bearings, gear reducers, motors and chains for excessive noise or heat.
- Inspect belt to ensure that there is not excessive wear and that all splices are intact.
- Inspect belt tension. The tension should be enough to:
 - A) Prevent slippage between drive pulley (sheaves for spurs) and belt under a full load.
 - B) Force belt to conform to the crown on crowned pulleys.
- Inspect rollers to ensure that they rotate freely without excessive noise.

MONTHLY MAINTENANCE

- Inspect oil level in reducer. Fill if necessary.
- Inspect reducer for leaking seals.
- Inspect conveyor for loose bolts.
- Inspect drive chains, jump chains and sprockets for wear, alignment and proper chain tension. For chain lubrication see page 35.

QUARTERLY MAINTENANCE

- Grease all pulley shaft bearings.

SEMI-ANNUAL MAINTENANCE

- Tighten all bearing set screws if not completely tight.

ANNUAL MAINTENANCE

- Change oil in reducers. (If your conveyor is equipped with a Boston 700 Series Reducer, it is filled with oil, sealed and lubed for life thus requiring no oil changes. See manufacturer's information for recommended lubricant at specific temperatures. This information is shipped with every reducer.)

REPLACING V-BELT

- 1) Note how the existing V-Belt is installed.
- 2) Remove all tread rollers.
- 3) Loosen tension on the V-Belt, see figure 7 or 8.
- 4) Remove pipe spreaders where located inside the V-Belt loop (V-Belt curves 13" - 25" BFs only). See figure 9.
- 5) Loosen set screws in bearing located on the bearing support channel.
- 6) Remove fasteners connecting bearing support channel to channel spreader.
- 7) Slide bearing support channel with attached bearing off of shaft.
- 8) Replace V-Belt and reassemble conveyor.
- 9) Adjust belt tension according to the belt tensioning instructions on page 29.

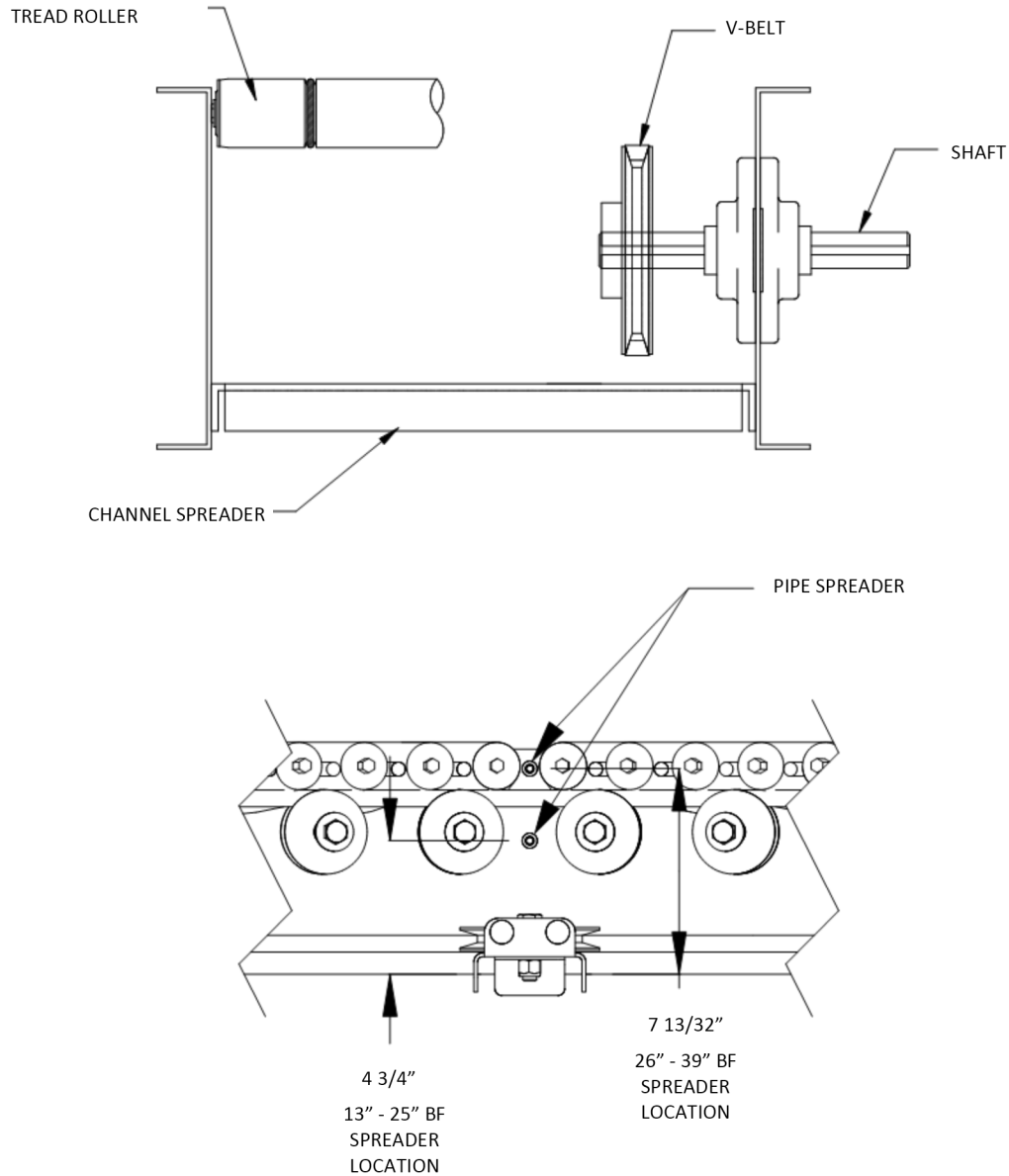


FIGURE 9

REPORT ON MISCELLANEOUS MAINTENANCE PERFORMANCE

Date _____

Maintenance Performed:

Date _____

Maintenance Performed:

Date _____

Maintenance Performed:

Date _____

Maintenance Performed:

Date _____

Maintenance Performed:

Date _____

Maintenance Performed:

Date _____

Maintenance Performed:

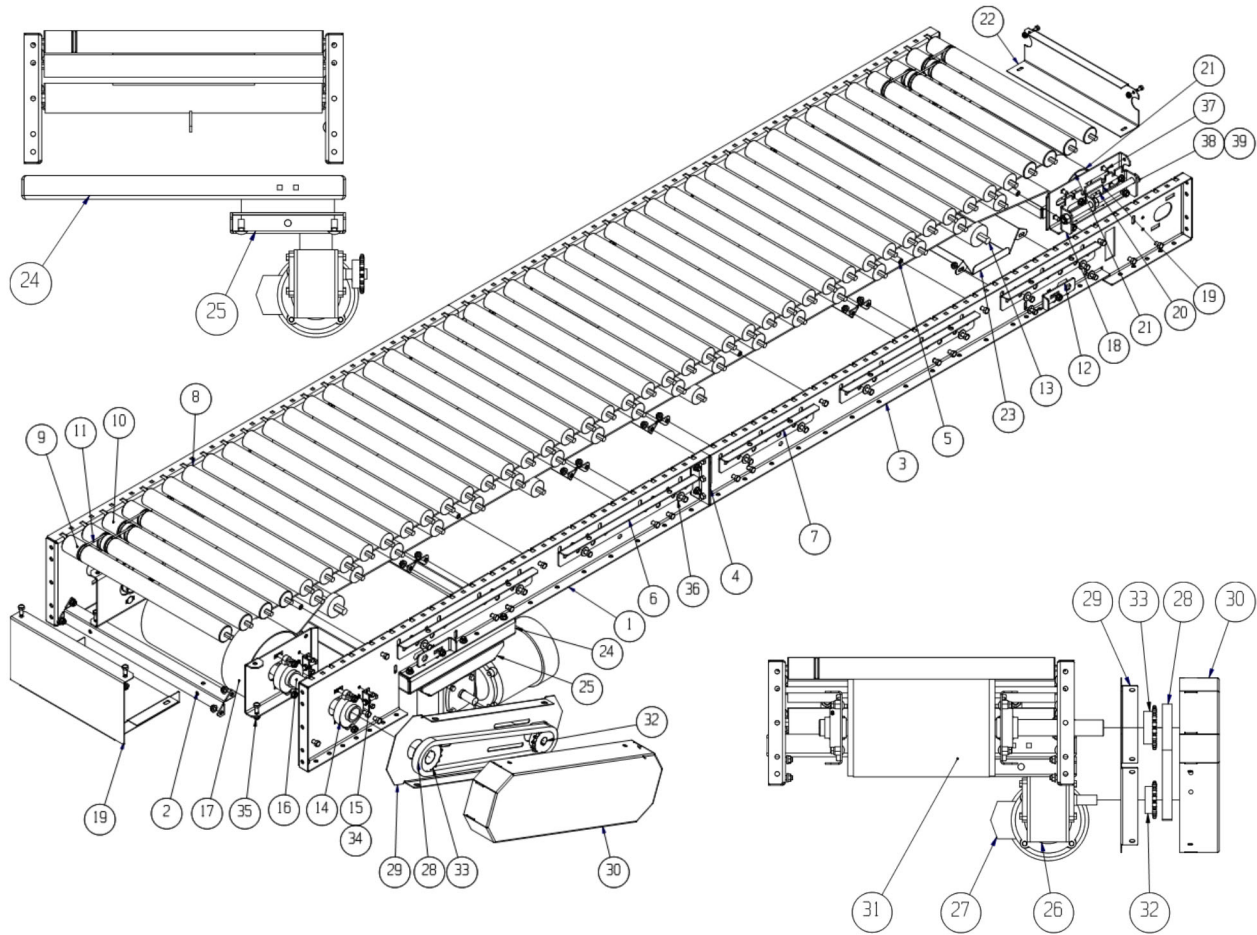
BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR TECH HANDBOOK
TROUBLESHOOTING AND REPLACEMENT PARTS: TROUBLESHOOTING

| PROBLEM | CAUSE | SOLUTION |
|---|---|--|
| V-Belt Slips or Does Not Move | V-Belt too loose | Reposition take-up sheaves to relieve belt tension |
| | Pressure sheaves putting much pressure on belt | Lower pressure sheaves |
| Insufficient Drive | Poor bottom surface on products | Improve conveyability |
| | Overloading the conveyor | Remove overload |
| | Lubricant on belt, rollers and/or pulleys | Clean belt, rollers and pulleys |
| | Interference | Locate and correct interference |
| Rollers Not Turning or Turning Slowly | Bad bearings in roller | Replace roller |
| | Interference with roller or belt | Remove interference |
| | Roller bent | Replace roller |
| Rollers Not Turning or Turning Slowly, but V-Belt is Moving | Pressure against belt from sheaves is too low | Increase pressure to belt by raising pressure sheaves |
| Popping or Grinding Noises Coming from Conveyor | Misaligned drive shaft | Align shaft |
| | Bad bearings in roller | Replace roller |
| | Set screws in bearing loose | Tighten set screws |
| | Drive chain loose | Tighten chain |
| Roller Will Not Fit in Frame | Cross member too short | Shim cross member at frame |
| | Frame bent | Straighten frame or replace |
| | Roller too long | Replace roller with shorter one |
| Bearing Housing Turning in Shell | Insufficient swaging pressure or tube bore too large | Replace roller |
| Reducer or Motor Noisy | Insufficient lubrication | Add recommended oil |
| | Output shaft or chain rubbing on chain guard | Adjust guard |
| | Bent fan housing, worn brushes and worn bearing | Repair or replace part |
| Reducer Oil Leakage | Over filling | Drain lubricant to proper level |
| | Vent in wrong location | Place vent in uppermost position |
| | | Extend vent with pipe nipple |
| | | Tighten all bolts and fittings |
| Worn Seal | Replace seal | |
| Reducer or Motor Overheating | Drive overloaded | Avoid overloading |
| | Motor voltage too low | Correct voltage |
| | Insufficient lubrication | Add recommended oil |
| | V-Belt too tight | Reposition take-up sheaves to relieve belt tension |
| Start Overload Kicking Out | Wrong size overloads | Use proper size overloads |
| | Motor too small | Replace motor with proper size |
| | Defective motor | Replace motor |
| Sprocket Wear | Loose chain | Tighten chain |
| | Misalignment | Check alignment with straight edge along side of chain |
| | Running dry | Lubricate |
| Wear on Inside of Roller Plates or Side of Sprocket Teeth | Sprockets offset on shaft (misaligned) or out of parallel | Realign sprockets |

BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR TECH HANDBOOK
TROUBLESHOOTING AND REPLACEMENT PARTS: TROUBLESHOOTING

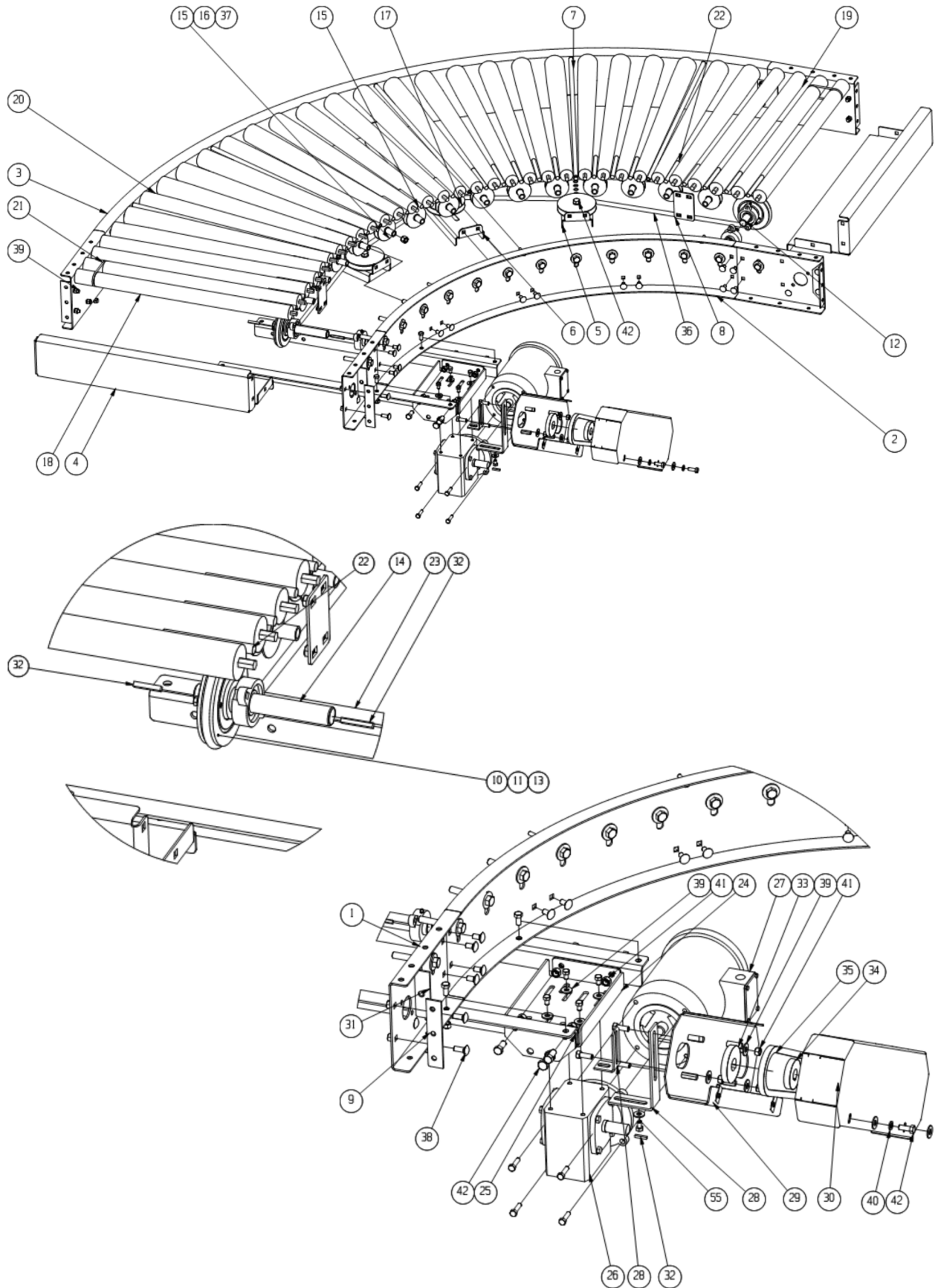
| PROBLEM | CAUSE | SOLUTION |
|--------------------------------------|---|--|
| Wear on Tips of Sprocket Teeth | Chain elongated excessively | Replace chain |
| | Loose chain | Tighten chain |
| Broken Chain Parts or Sprocket Teeth | Drive overloaded | Avoid overloading |
| | Excessive slack causing chain to jump teeth | Periodically adjust center distance |
| | Foreign object | Remove object and prevent entry |
| | Inadequate lubrication | Maintain proper lubrication intervals |
| | Corrosion | Remove source of corrosion or use noncorrosive chain |
| Excessive Chain Noise | Chain contacting fixed object | Remove object |
| | Inadequate lubrication | Maintain proper lubrication intervals |
| | Broken or missing chain rollers | Repair or replace chain |
| | Shaft and sprocket misalignment | Realign |
| | Chain jumping sprocket teeth | Adjust center distance between teeth |
| Drive Pulley Bearings Noisy | Misaligned drive shaft | Loosen bearings, align shaft, retighten bearings |
| | Bad bearings | Replace bearing |
| Weak Slave Belts | Reaction to chemical | Correct cause |
| | Excessive temperature | Replace belt |
| | Ultraviolet rays | Replace belt |

BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR TECH HANDBOOK
PARTS LISTS: BDLR STRAIGHT



| DETAIL | DESCRIPTION | DETAIL | DESCRIPTION |
|--------|------------------------------------|--------|---------------------------|
| 1 | SIDEFRADE: DRIVE SECTION | 21 | TAIL PULLEY |
| 2 | BOLT-IN SPREADER | 22 | END GUARD: TAKE-UP PULLEY |
| 3 | SIDEFRADE TAKE-UP SECTION | 23 | SNUBBER ROLLER GUARD |
| 4 | END COUPLER | 24 | DRIVE SUPPORT BASE |
| 5 | PIPE SPREADER | 25 | CARRIAGE PLATE |
| 6 | PRESSURE ROLLER BRACKET: 4 ROLLERS | 26 | REDUCER |
| 7 | PRESSURE ROLLER BRACKET: 3 ROLLERS | 27 | MOTOR |
| 8 | GRAVITY ROLLER | 28 | DRIVE CHAIN |
| 9 | GROOVED ROLLER: 1 GROOVE | 29 | BACK CHAIN GUARD |
| 10 | GROOVED ROLLER: 2 GROOVE | 30 | FRONT CHAIN GUARD |
| 11 | URETHANE SLAVE BELT | 31 | DRIVE BELT |
| 12 | SNUBBER ROLLER BRACKET | 32 | DRIVE SPROCKET |
| 13 | SNUBBER ROLLER | 33 | DRIVEN SPROCKET |
| 14 | BEARING | 34 | JAM NUT |
| 15 | BEARING ADJUSTER | 35 | WHIZ NUT |
| 16 | DRIVE SHAFT | 36 | FLAT WASHER |
| 17 | DRIVE PULLEY | 37 | CARRIAGE BOLT |
| 18 | TAKE-UP PULLEY BASE PLATE | 38 | HEX HEAD CAP SCREW |
| 19 | TAKE-UP PULLEY BRACKET | 39 | HEX NUT |
| 20 | TAKE-UP SHAFT | | |

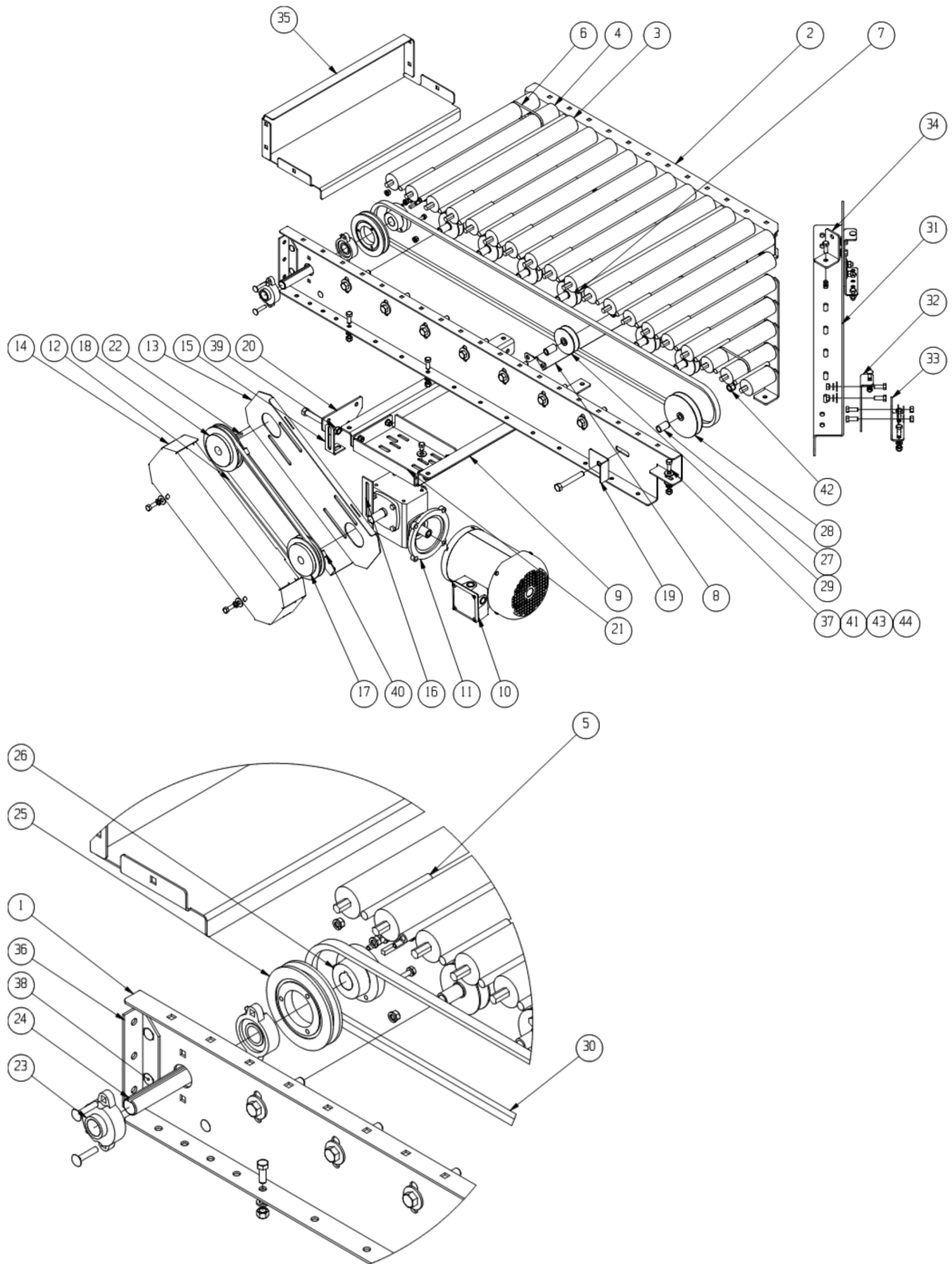
BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR TECH HANDBOOK
PARTS LISTS: BDLR V-BELT CURVE



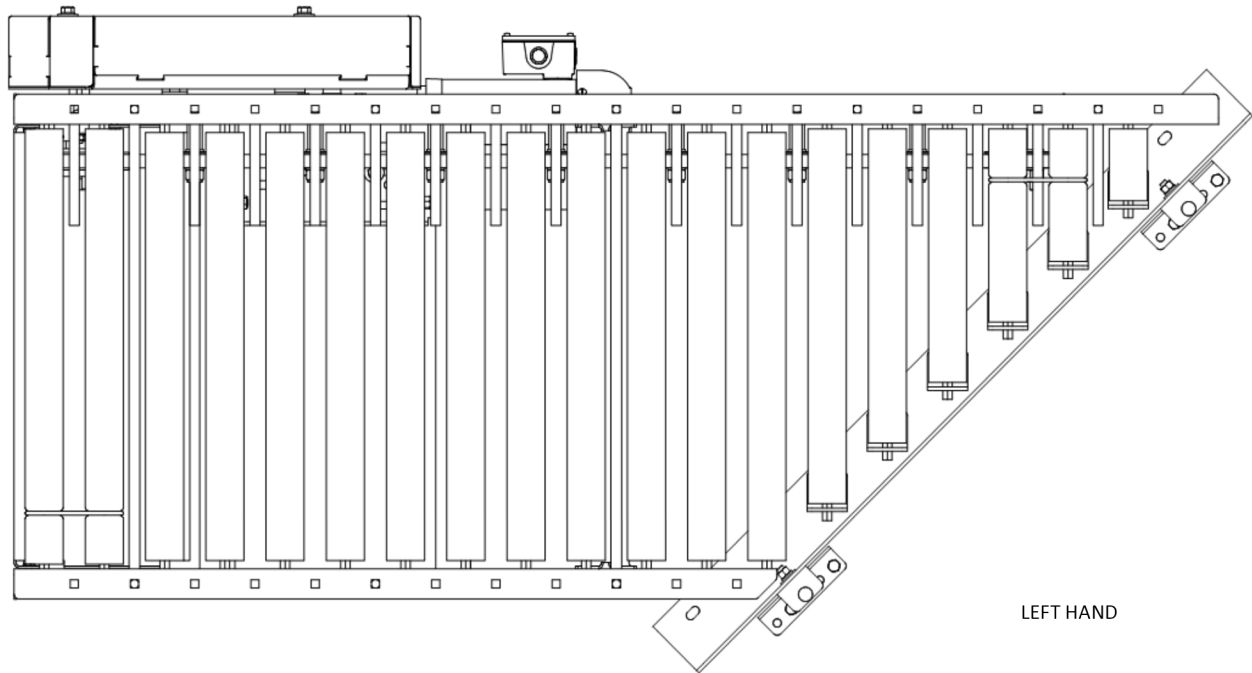
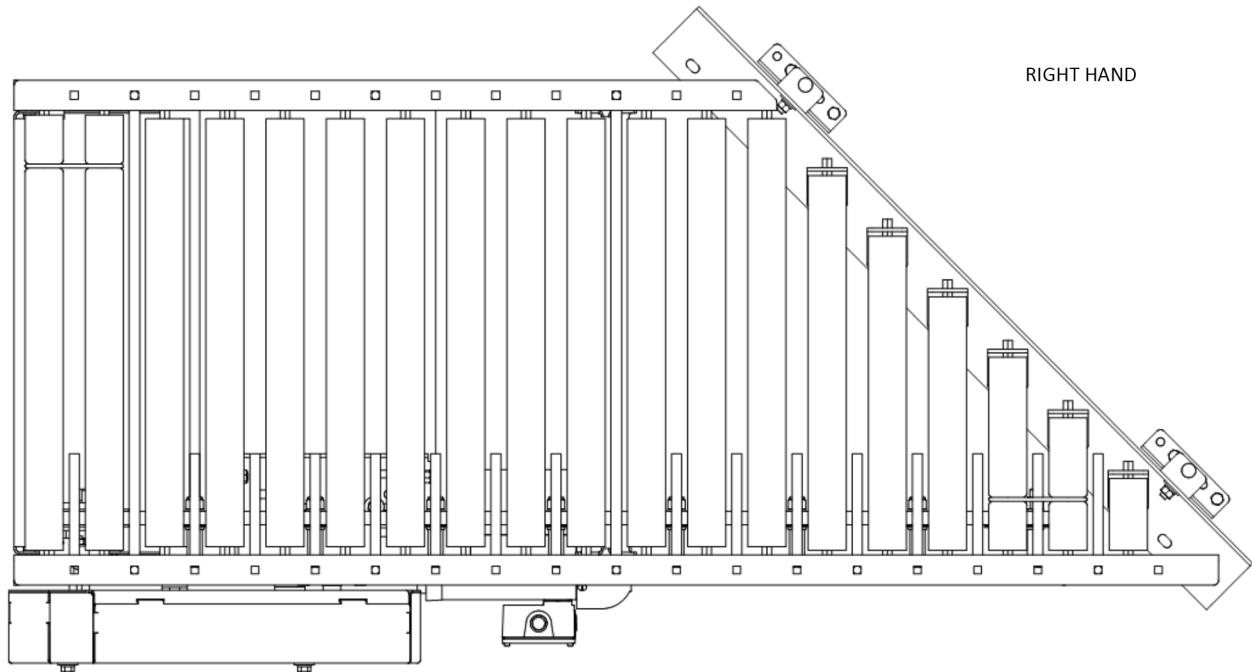
PARTS LISTS: BDLR V-BELT CURVE

| DETAIL | DESCRIPTION |
|--------|---------------------------------|
| 1 | TANGENT SIDEFAME |
| 2 | INSIDE RAIL |
| 3 | OUTSIDE RIAL |
| 4 | END GURAD |
| 5 | PULLEY MOUNT |
| 6 | SPREADER |
| 7 | PIPE SPREADER |
| 8 | SPLICE PLATE |
| 9 | END COUPLER |
| 10 | DRIVE SHEAVE |
| 11 | DRIVE SHEAVE BUSHING |
| 12 | IDLER SHAFT |
| 13 | BEARING |
| 14 | DRIVE SHAFT |
| 15 | IDLER SHEAVE |
| 16 | IDLER SHEAVE SPACER |
| 17 | IDLER PULLEY ADJUSTMENT BRACKET |
| 18 | GROOVED ROLLER: 1 GROOVE |
| 19 | GRAVITY ROLLER |
| 20 | TAPERED ROLLER |
| 21 | URETHANE SLAVE BELT |
| 22 | FINGER GUARD |
| 23 | DRIVE BASE MOUNTING ANGLE |
| 24 | DRIVE BASE |
| 25 | ADJUSTING PLATE |
| 26 | REDUCER |
| 27 | MOTOR |
| 28 | GUARD SUPPORT BRACKET |
| 29 | CHAIN GUARD BACK |
| 30 | CHAIN GUARD FRONT |
| 31 | JACK BOLT BRACKET |
| 32 | KEYSTOCK |
| 33 | DRIVE SPROCKET |
| 34 | DRIVEN SPROCKET |
| 35 | DRIVE CHAIN |
| 36 | V-BELT |
| 37 | NYLOCK NUT |
| 38 | CARRIAGE BOLT |
| 39 | FLAT WASHER |
| 40 | LOCK WASHER |
| 41 | HEX NUT |
| 42 | HEX HEAD CAP SCREW |

BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR TECH HANDBOOK
PARTS LISTS: BDLR V-BELT STRAIGHT SPUR

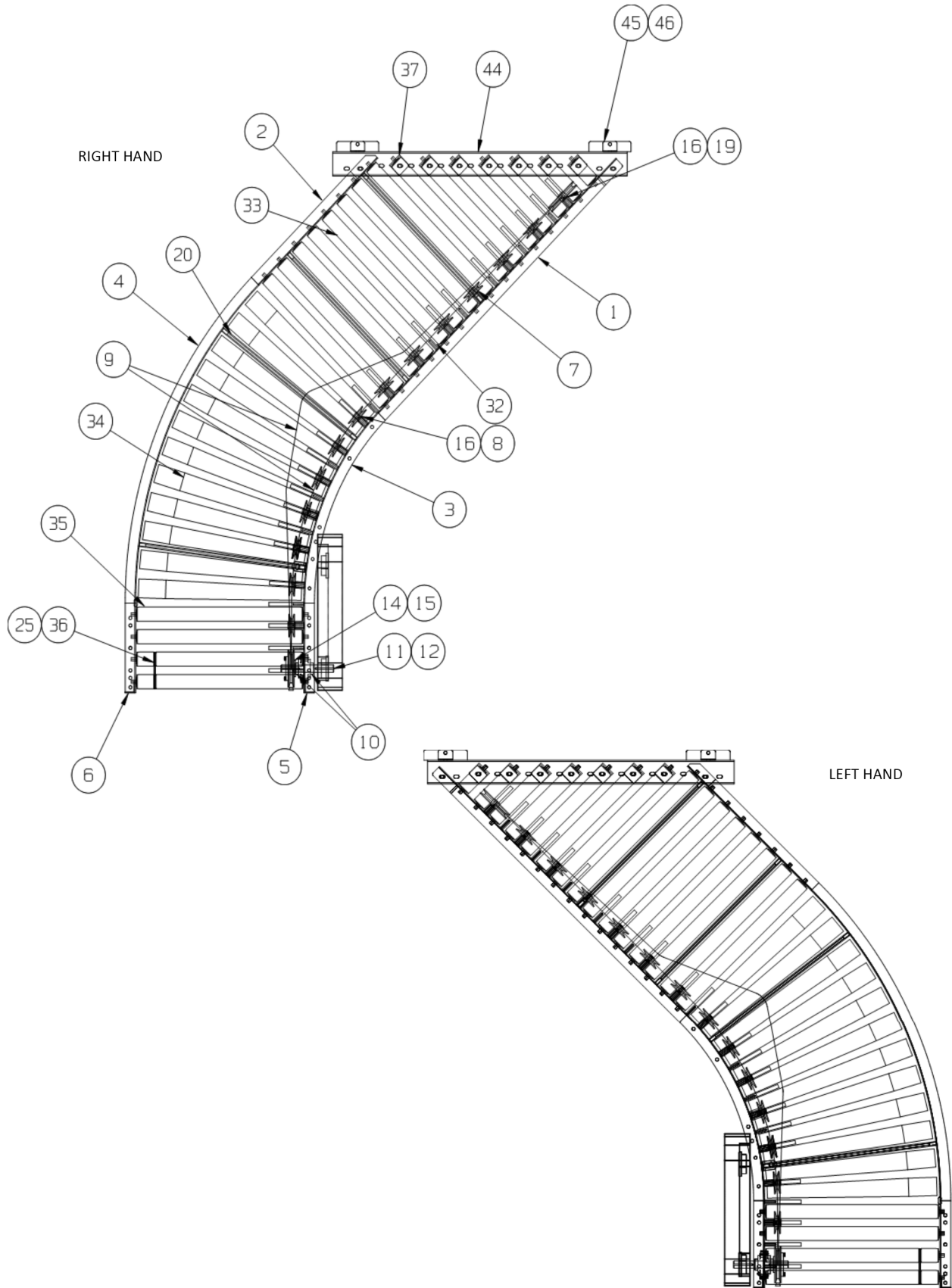


BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR TECH HANDBOOK
PARTS LISTS: BDLR V-BELT STRAIGHT SPUR

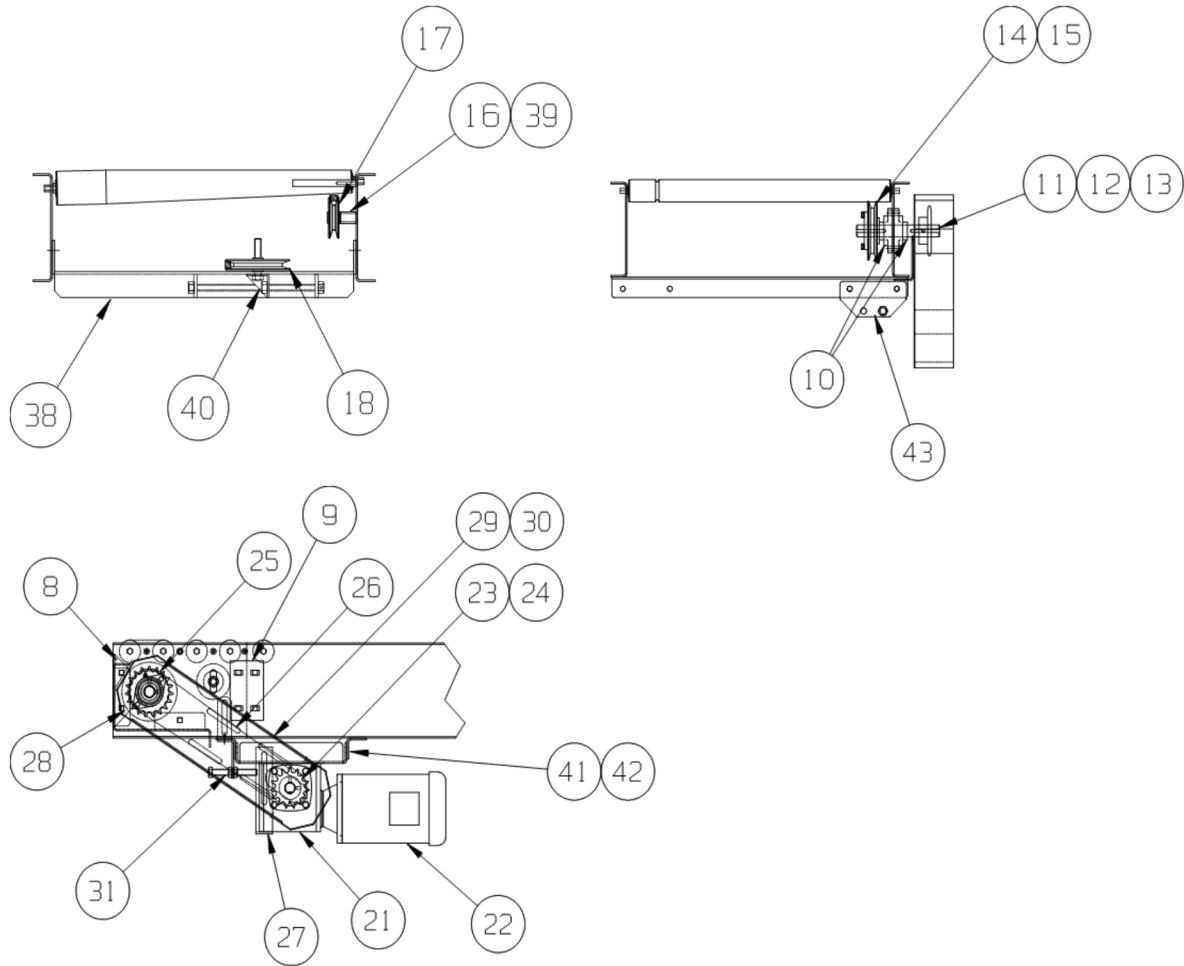


BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR TECH HANDBOOK
PARTS LISTS: BDLR V-BELT STRAIGHT SPUR

| DETAIL | DESCRIPTION |
|--------|-------------------------------|
| 1 | LONG RAIL |
| 2 | SHORT RAIL |
| 3 | GRAVITY ROLLER |
| 4 | GROOVED ROLLER: 1 GROOVE |
| 5 | FINGER GUARD |
| 6 | URETHANE SLAVE BAND |
| 7 | PIPE SPREADER |
| 8 | BOLT-IN SPREADER |
| 9 | DRIVE MOUNTING SPREADER |
| 10 | MOTOR |
| 11 | REDUCER |
| 12 | DRIVE CHAIN |
| 13 | CHAIN GUARD: BACK |
| 14 | CHAIN GUARD: FRONT |
| 15 | CHAIN GUARD BRACKET: SHORT |
| 16 | CHAIN GUARD BRACKET: LONG |
| 17 | DRIVE SPROCKET |
| 18 | DRIVEN SPROCKET |
| 19 | TAKE-UP PUSH PLATE |
| 20 | JACK SCREW BRACKET |
| 21 | CARRIAGE PLATE |
| 22 | KEYSTOCK |
| 23 | 2 BOLT FLANGE BEARING |
| 24 | DRIVE SHAFT |
| 25 | DRIVE SHEAVE |
| 26 | DRIVE SHEAVE BUSHING |
| 27 | IDLER SHEAVE BUSHING |
| 28 | IDLER SHEAVE: 5" DIAMETER |
| 29 | IDLER SHEAVE: 3" DIAMETER |
| 30 | V-BELT |
| 31 | SHELF BRACKET |
| 32 | SHELF SUPPORT BRACKET: TOP |
| 33 | SHELF SUPPORT BRACKET: BOTTOM |
| 34 | ROLLER SUPPORT BRACKET |
| 35 | END GUARD |
| 36 | END COUPLER |
| 37 | HEX HEAD CAP SCREW |
| 38 | CARRIAGE BOLT |
| 39 | JAM NUT |
| 40 | CLIP NUT |
| 41 | HEX NUT |
| 42 | NYLOCK NUT |
| 43 | LOCK WASHER |
| 44 | FLAT WASHER |



BELT DRIVEN LIVE ROLLER CONVEYOR STRAIGHT, V-BELT CURVE, STRAIGHT SPUR AND CURVE SPUR TECH HANDBOOK
PARTS LISTS: BDLR V-BELT CURVE SPUR



| DETAIL | DESCRIPTION | DETAIL | DESCRIPTION |
|--------|---------------------------------|--------|--|
| 1 | LONG RAIL | 24 | KEYSTOCK: REDUCER |
| 2 | SHORT RAIL | 25 | DRIVEN SPROCKET |
| 3 | INSIDE RAIL | 26 | DRIVE CHAIN |
| 4 | OUTSIDE RAIL | 27 | GUARD SUPPORT BRACKET: MEDIUM |
| 5 | TANGENT SIDEFRAME: INSIDE RAIL | 28 | GUARD SUPPORT BRACKET: SHORT |
| 6 | TANGENT SIDEFRAME: OUTSIDE RAIL | 29 | CHAIN GUARD: BACK |
| 7 | BOLT-IN SPREADER | 30 | CHAIN GUARD: FRONT |
| 8 | END COUPLER | 31 | HEX HEAD CAP SCREW |
| 9 | SPLICE PLATE | 32 | FINGER GUARD |
| 10 | 2 BOLT FLANGE BEARING | 33 | GRAVITY ROLLER |
| 11 | DRIVE SHAFT | 34 | TAPERED ROLLER |
| 12 | KEYSTOCK: DRIVE SHEAVE | 35 | GROOVED ROLLER: 1 GROOVE |
| 13 | KEYSTOCK: DRIVE SHAFT | 36 | URETHANE SLAVE BAND |
| 14 | DRIVE SHEAVE BUSHING | 37 | ROLLER SUPPORT BRACKET |
| 15 | DRIVE SHEAVE | 38 | SPREADER/PULLEY MOUNT: V-BELT ADJUSTMENT |
| 16 | IDLER SHEAVE SPACER | 39 | IDLER SHAFT |
| 17 | IDLER SHEAVE: 3" DIAMETER | 40 | IDLER PULLEY ADJUSTMENT BRACKET |
| 18 | IDLER SHEAVE: 5" DIAMETER | 41 | DRIVE MOUNTING SPREADER |
| 19 | V-BELT | 42 | CARRIAGE PLATE |
| 20 | PIPE SPREADER | 43 | JACK SCREW BRACKET |
| 21 | REDUCER | 44 | SHELF BRACKET |
| 22 | MOTOR | 45 | SHELF SUPPORT BRACKET: TOP |
| 23 | DRIVE SPROCKET | 46 | SHELF SUPPORT BRACKET: BOTTOM |

Omni Metalcraft Corp. warrants that the Equipment will be free of defects in workmanship and material (if properly installed, operated and maintained) for a period of one year or 2080 hours of use, whichever is sooner, from date of shipment to Customer, subject to the limitations hereunder set forth. If within the one year warranty period, Omni receives from the Customer written notice of any alleged defects in the Equipment and if the Equipment is not found to be in conformity with this warranty (the Customer having provided Omni a reasonable opportunity to perform any appropriate tests thereon) Omni will, at its option, either repair the Equipment or supply a replacement therefore.

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