

GRAVITY SKATEWHEEL CONVEYOR STRAIGHT, CURVE AND SPUR

TECHNICAL HANDBOOK

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



DO NOT OPERATE
BEFORE READING

Omni Metalcraft corp.

DO NOT DISCARD

TABLE OF CONTENTS

| | |
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| TABLE OF CONTENTS | 2 |
| GENERAL SAFETY STATEMENTS | 3 |
| -Introduction | 3 |
| -Cautions, Warnings and Hazards | 3 |
| SAFETY INFORMATION | 4 |
| -Safety Labels | 4, 5 |
| -Installation Safety | 6 |
| -Operational Safety | 7 |
| -Maintenance and Service Safety..... | 8, 9 |
| -Gravity Skatewheel Conveyor Safety Instructions | 10 |
| RECEIVING AND INSPECTION..... | 11 |
| -Returns, Damages and Shortages | 11 |
| -Removal of Crating | 11 |
| GENERAL INSTALLATION | 12 |
| -Checking Unit Squareness..... | 12 |
| -Squaring | 12 |
| -Coupling / Attaching Bed Sections..... | 13 |
| LEG SUPPORTS AND INSTALLATION..... | 14 |
| -Permanent Installation of Legs | 14 |
| -Leg Adjustments | 14 |
| KNEE BRACES, CASTERS AND CEILING HANGERS | 15 |
| -Installing Knee Braces and Casters | 15 |
| -Installing Ceiling Hangers | 16 |
| MULTI-TIER SUPPORTS | 17 |
| -Installation of Multi-Tier Supports..... | 17 |
| MAINTENANCE..... | 18 |
| -Maintenance Schedules..... | 18 |
| -Report on Miscellaneous Maintenance Performed..... | 19 |
| TROUBLESHOOTING AND REPLACEMENT PARTS..... | 20 |
| -Troubleshooting..... | 20 |
| PARTS LISTS..... | 21 |
| -Gravity Skatewheel Straight..... | 21 |
| -Gravity Skatewheel Curve..... | 22 |
| -Gravity Skatewheel Straight Spur | 23, 24 |
| -Gravity Skatewheel Curve Spur..... | 25, 26 |
| NOTES | 27 |
| WARRANTY | 28 |

GENERAL SAFETY STATEMENTS

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.



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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!

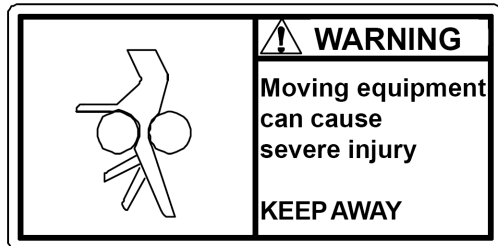


Replace all safety devices, guards and guarding prior to equipment start-up.

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

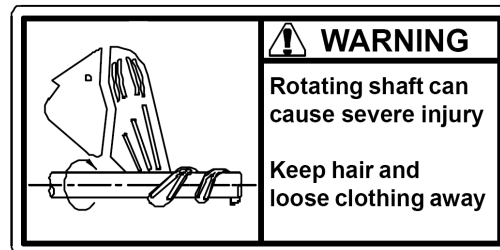
SAFETY INFORMATION: SAFETY LABELS

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.



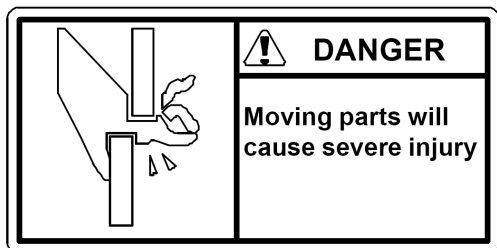
#110479 (5" x 2 1/2")

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.



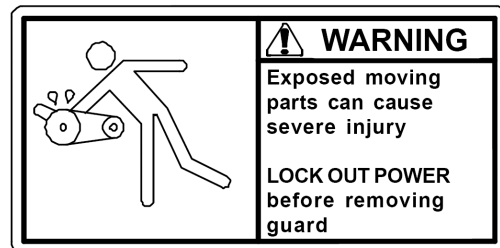
#113529 (5" x 2 1/2")

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.



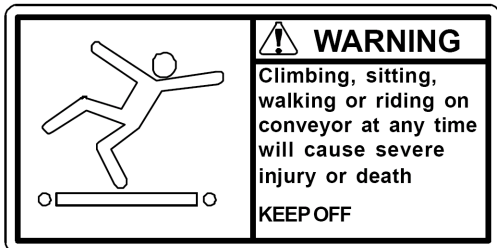
#111744 (5" x 2 1/2")

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.



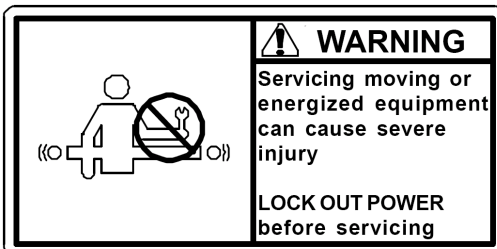
#111752 (5" x 2 1/2")

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")

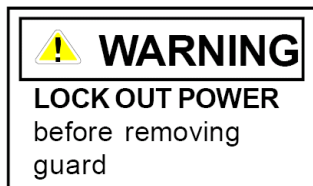
Placed next to drive (both sides) to warn maintenance personnel that conveyors must be shut off and locked out prior to servicing. Examples: drives, take-ups, and lubrication points, which require guard removal.



#111870 (5" x 3")

General warning of pinch point hazards.

SAFETY INFORMATION: SAFETY LABELS (Continued)



#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.

SAFETY INFORMATION: INSTALLATION SAFETY

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) ANCHORING

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

3) SAFETY WARNING

Install all safety devices prior to equipment start-up.

SAFETY INFORMATION: OPERATIONAL SAFETY

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.



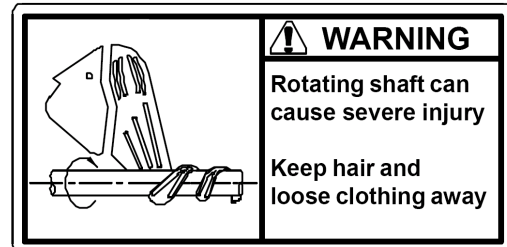
Personnel working on or near a conveyor shall be instructed as to the location and operation of pertinent stopping devices.

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 prior to equipment start-up.

SAFETY INFORMATION: MAINTENANCE / SERVICE SAFETY

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.



SAFETY INFORMATION: MAINTENANCE / SERVICE SAFETY (Continued)

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.

SAFETY INFORMATION: GRAVITY SKATEWHEEL CONVEYOR SAFETY INSTRUCTIONS

PARTICULAR DANGER AND PINCH POINTS

- 1) Interface between powered conveyor and gravity skatewheel conveyor can produce a “wringer” effect.
- 2) Any point where accessories are located that also have moving parts.
- 3) Product is free flowing.

RECEIVING AND INSPECTION: RETURNS, DAMAGES AND SHORTAGES

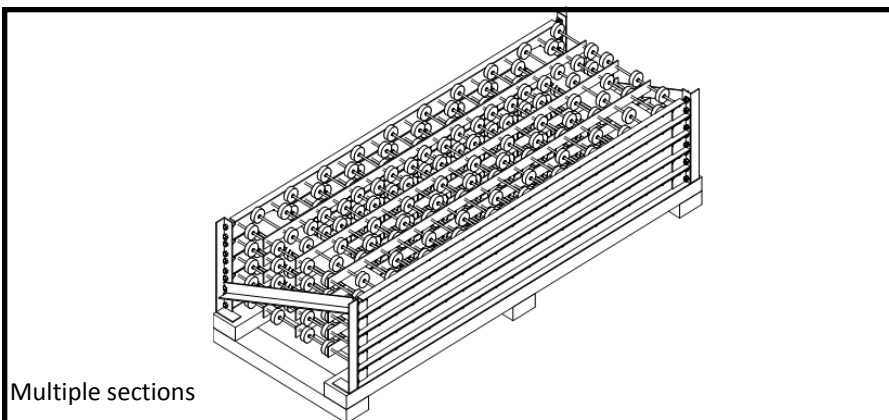
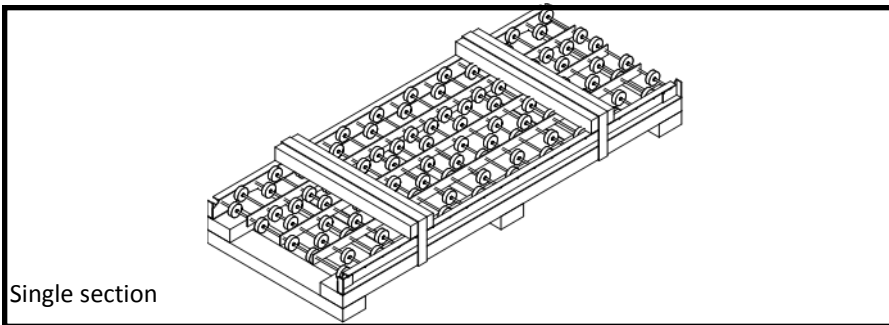
UNCRATING CHECKLIST

- 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.



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

RECEIVING AND INSPECTION: REMOVAL OF CRATING

AFTER COMPLETING THE "UNCRATING CHECKLIST"

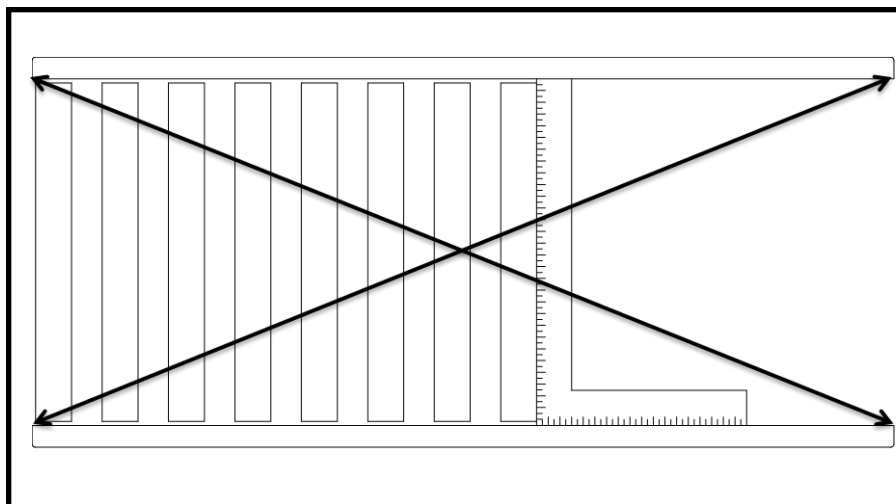
- 1) Remove crating and packaging.
- 2) Look for boxes, accessories, bags or components such as fasteners, manuals, guard rails etc. that may be banded or fastened to the crating material.

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

GENERAL INSTALLATION: CHECKING UNIT SQUARENESS

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.



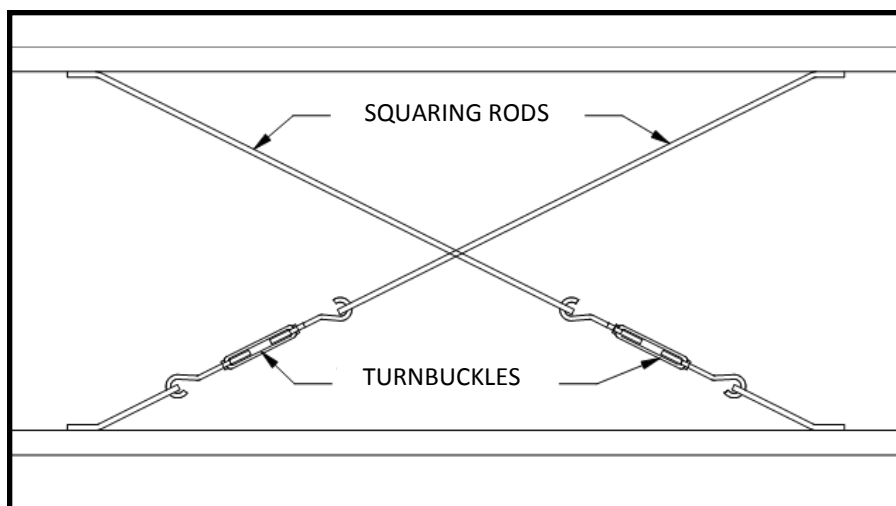
Note:

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

USING TURNBUCKLES TO SQUARE CONVEYOR

Bolt-together conveyor frames may be brought square by means of attaching turnbuckles to each corner and turning them down appropriately until square.



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 11.

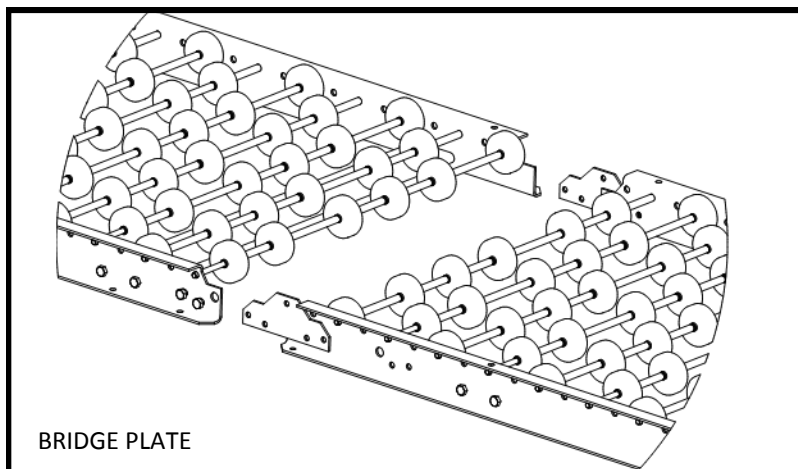
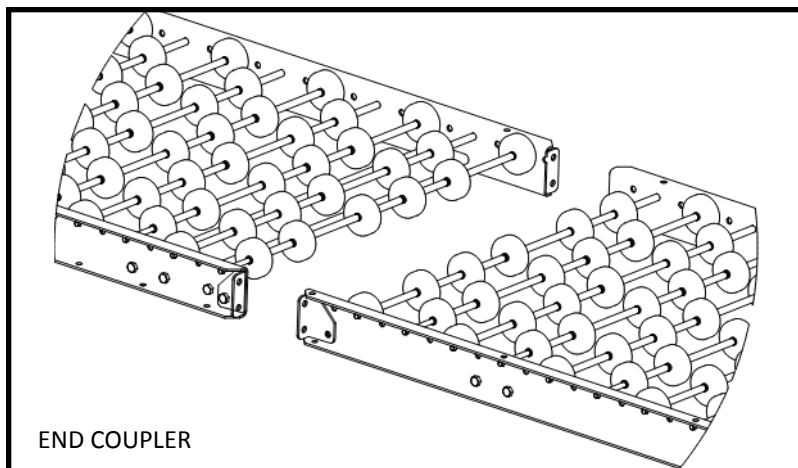
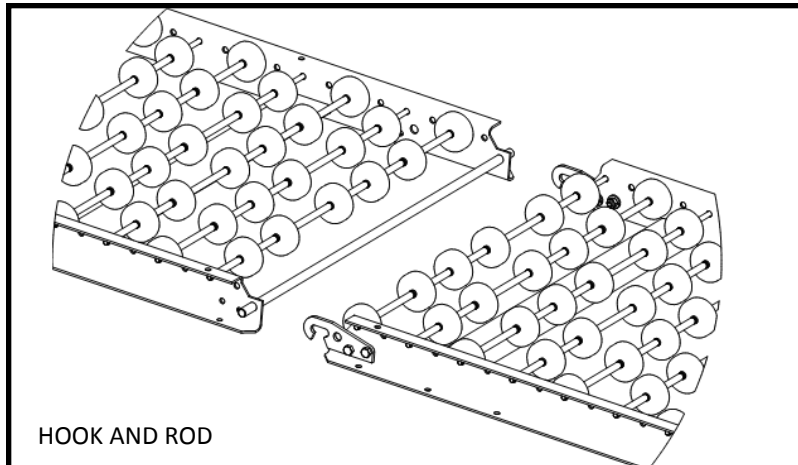
GENERAL INSTALLATION: COUPLING / ATTACHING BED SECTIONS

COUPLING

Couple the sections using bolts provided per the drawing below.

Note:

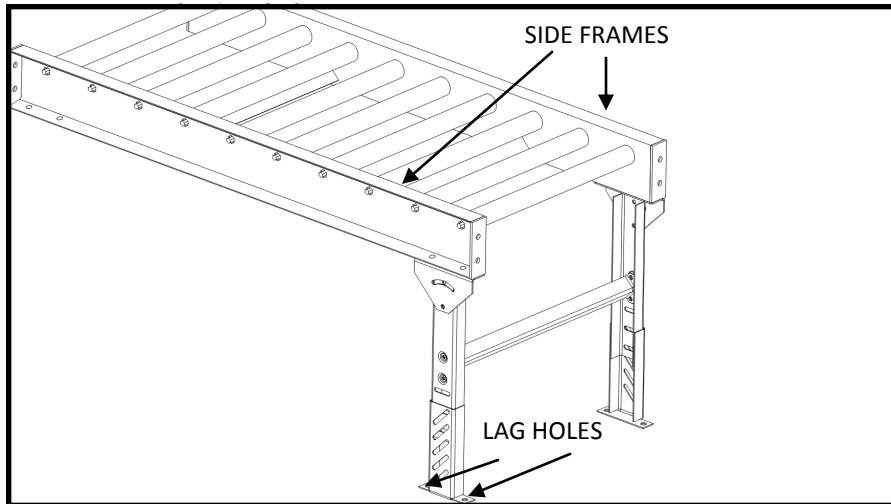
For ease of installation, mount legs on each conveyor section prior to coupling.



LEG SUPPORTS AND INSTALLATION: BOLT-TOGETHER

PERMANENT INSTALLATION OF LEGS

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

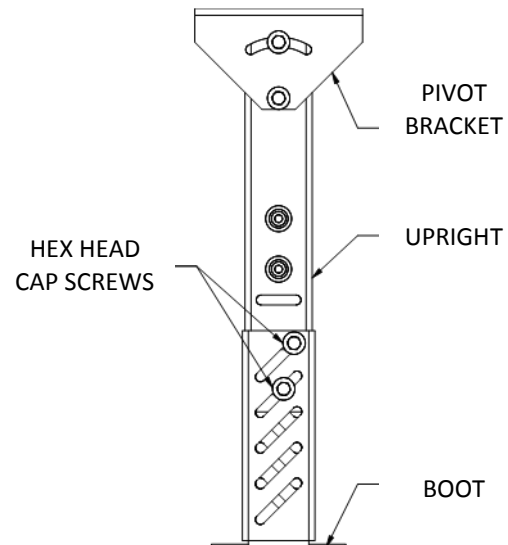


Note:

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

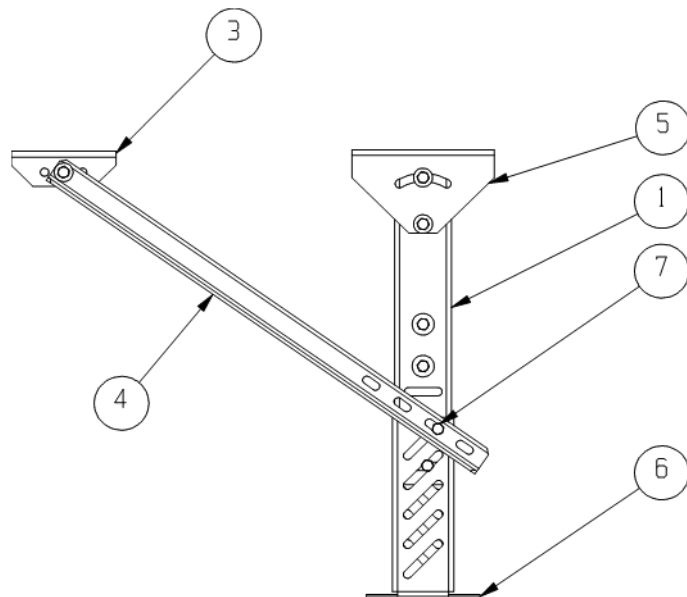
- 1) The conveyor electrical power must be turned off and locked / tagged out following your company's machine specific procedures.
- 2) Remove all load from the conveyor.
- 3) Position conveyor in the location to be installed.
- 4) Support conveyor section with jack, hoist or forklift.
- 5) Carefully 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.

KNEE BRACES, CASTERS AND CEILING HANGERS: INSTALLING KNEE BRACES



INSTALLING KNEE BRACES

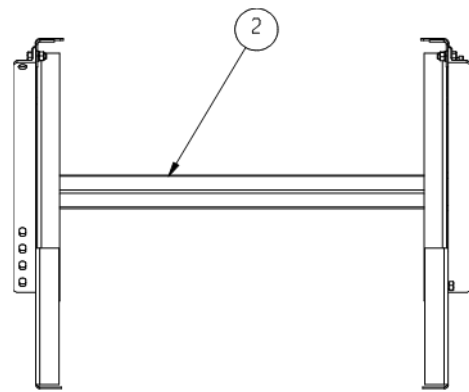
- 1) After leg supports are set in place, attach the brace bracket.
- 2) Attach knee brace angle to the leg support and brace bracket.

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

Note:

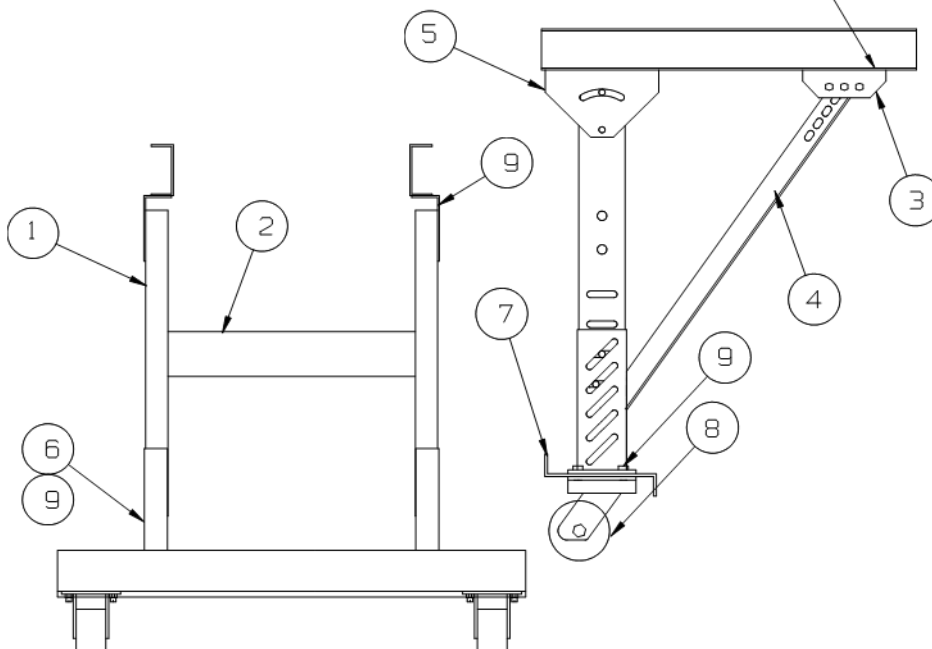
Knee braces are recommended when the conveyor height exceeds 36" and/or when additional stability is needed.

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



KNEE BRACES, CASTERS AND CEILING HANGERS: INSTALLING CASTERS

NOTE: CUSTOMER TO LOCATE AND DRILL IF NECESSARY



INSTALLING CASTERS

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

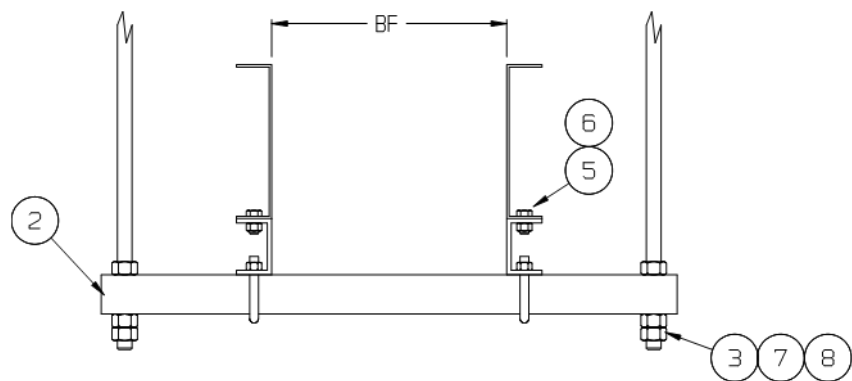
Note:

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

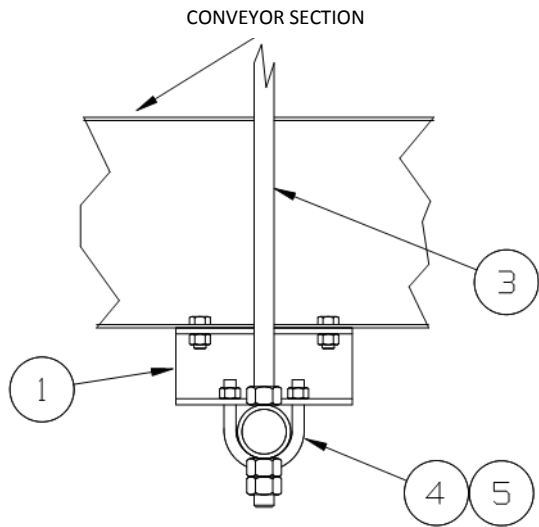
| DETAIL | DESCRIPTION |
|--------|--------------------|
| 1 | UPRIGHT |
| 2 | SPREADER |
| 3 | BRACE BRACKET |
| 4 | KNEE BRACE ANGLE |
| 5 | PIVOT BRACKET |
| 6 | FOOT |
| 7 | Z-PLATE |
| 8 | PHENOLIC CASTER |
| 9 | HEX HEAD CAP SCREW |

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.

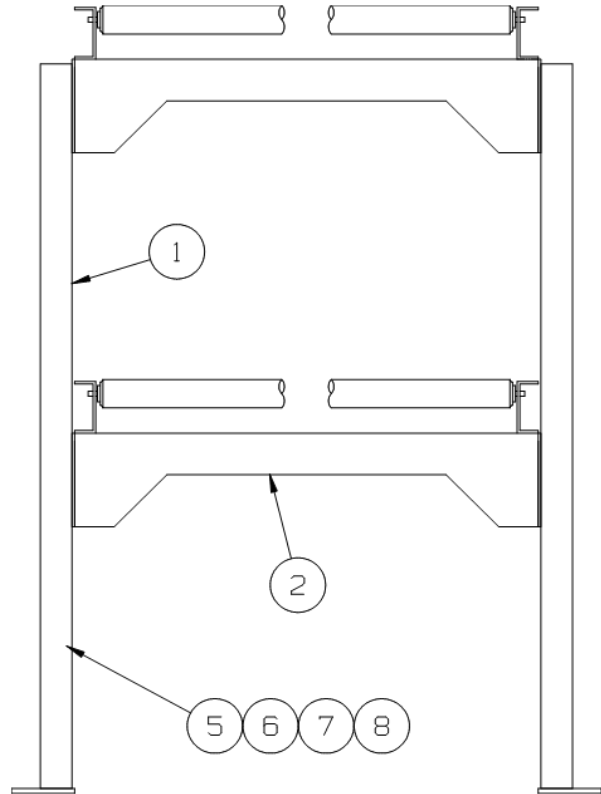
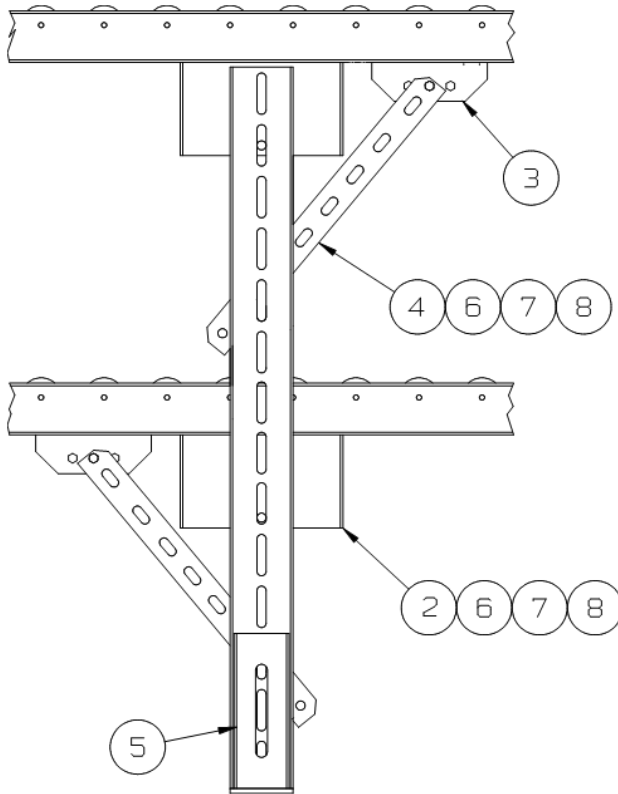


| DETAIL | DESCRIPTION |
|--------|--------------------|
| 1 | HANGER CHANNEL |
| 2 | PIPE SPREADER |
| 3 | THREADED ROD |
| 4 | U-BOLT |
| 5 | WHIZ NUT |
| 6 | HEX HEAD CAP SCREW |
| 7 | HEX NUT |
| 8 | LOCK WASHER |

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 |

MAINTENANCE: MAINTENANCE SCHEDULES

Note:

Review pages 8 and 9 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.

WEEKLY MAINTENANCE

- Inspect conveyor for loose bolts.
- Inspect wheels to ensure that they rotate freely.
- Inspect axles for any wear.

MAINTENANCE: REPORT ON MISCELLANEOUS MAINTENANCE PERFORMANCE

REPORT ON MISCELLANEOUS MAINTENANCE PERFORMANCE

Date_____

Maintenance Performed:

Date_____

Maintenance Performed:

Date_____

Maintenance Performed:

Date_____

Maintenance Performed:

Date_____

Maintenance Performed:

Date_____

Maintenance Performed:

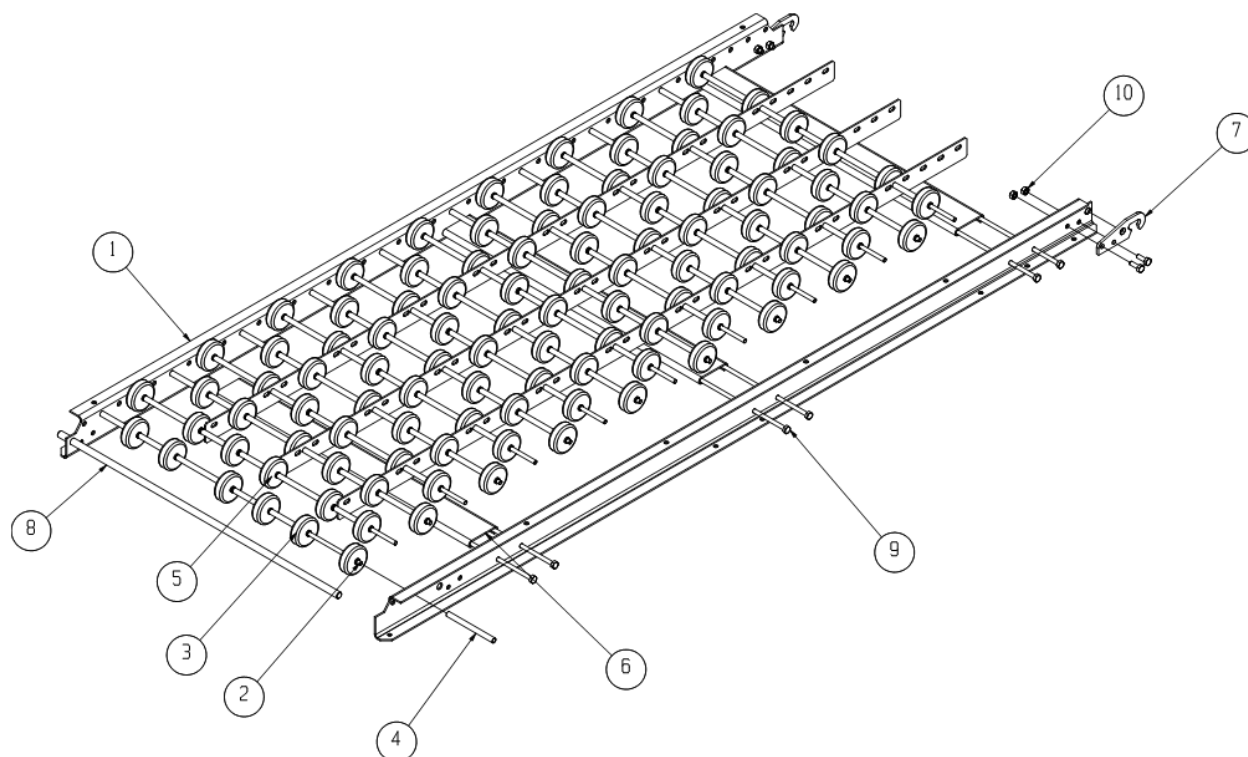
Date_____

Maintenance Performed:

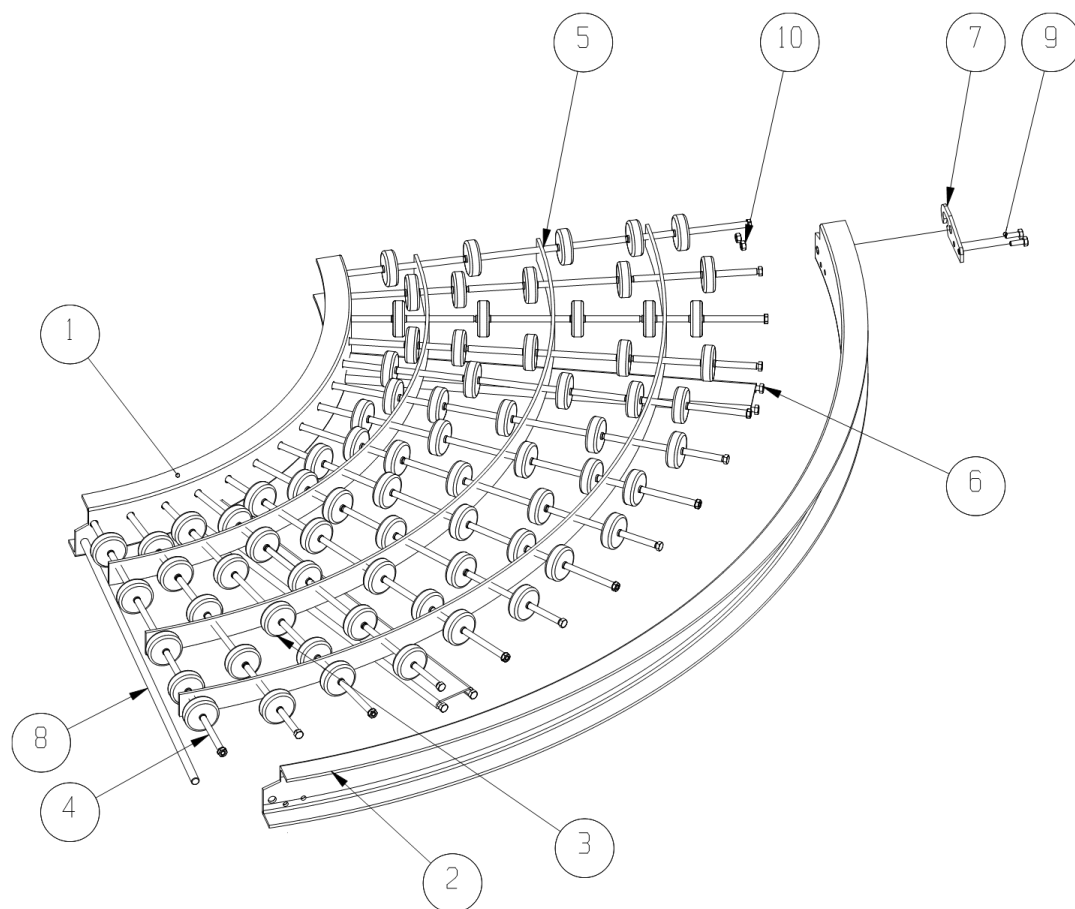
TROUBLESHOOTING AND REPLACEMENT PARTS: TROUBLESHOOTING

| PROBLEM | CAUSE | SOLUTION |
|---|---------------------------------|--|
| Product Doesn't Flow | Insufficient decline | Raise infeed height or lower discharge height |
| | Skatewheels don't rotate freely | Replace damaged skatewheels |
| | Poor bottoms on product | Improve conveyability |
| Product Skews as It Travels Down the Line | Axles not square in frame | Loosen connecting bolts. Square the frames. Tighten the connecting bolts. See page 12. |

PARTS LISTS: GRAVITY SKATEWHEEL STRAIGHT

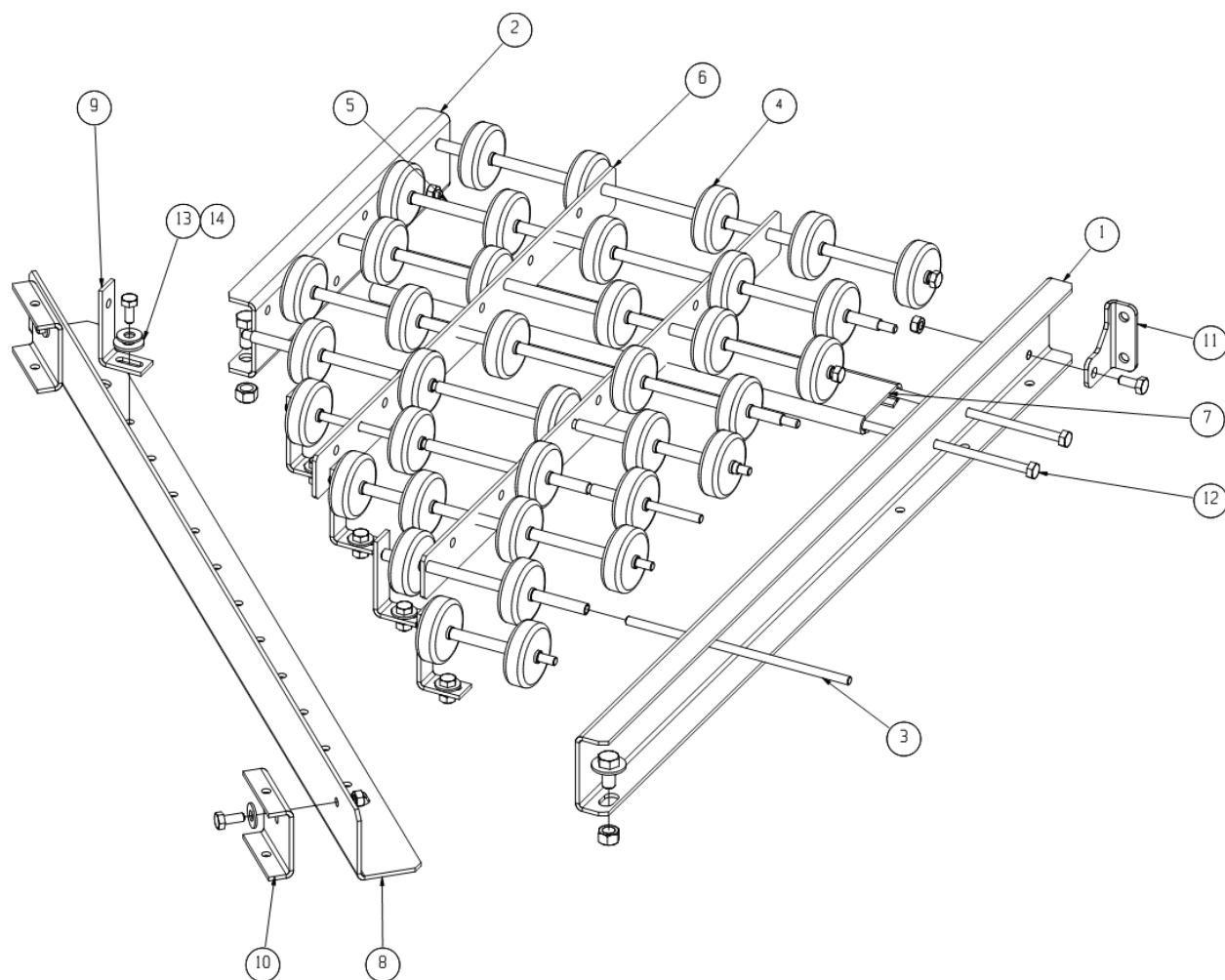


| DETAIL | DESCRIPTION |
|--------|--------------------|
| 1 | SIDEFRAME |
| 2 | CONVEYOR ROD |
| 3 | SKATEWHEEL |
| 4 | SPACER |
| 5 | SUPPORT BAR |
| 6 | BOLT-IN SPREADER |
| 7 | HOOK |
| 8 | ROD |
| 9 | HEX HEAD CAP SCREW |
| 10 | HEX NUT |

PARTS LISTS: GRAVITY SKATEWHEEL CURVE

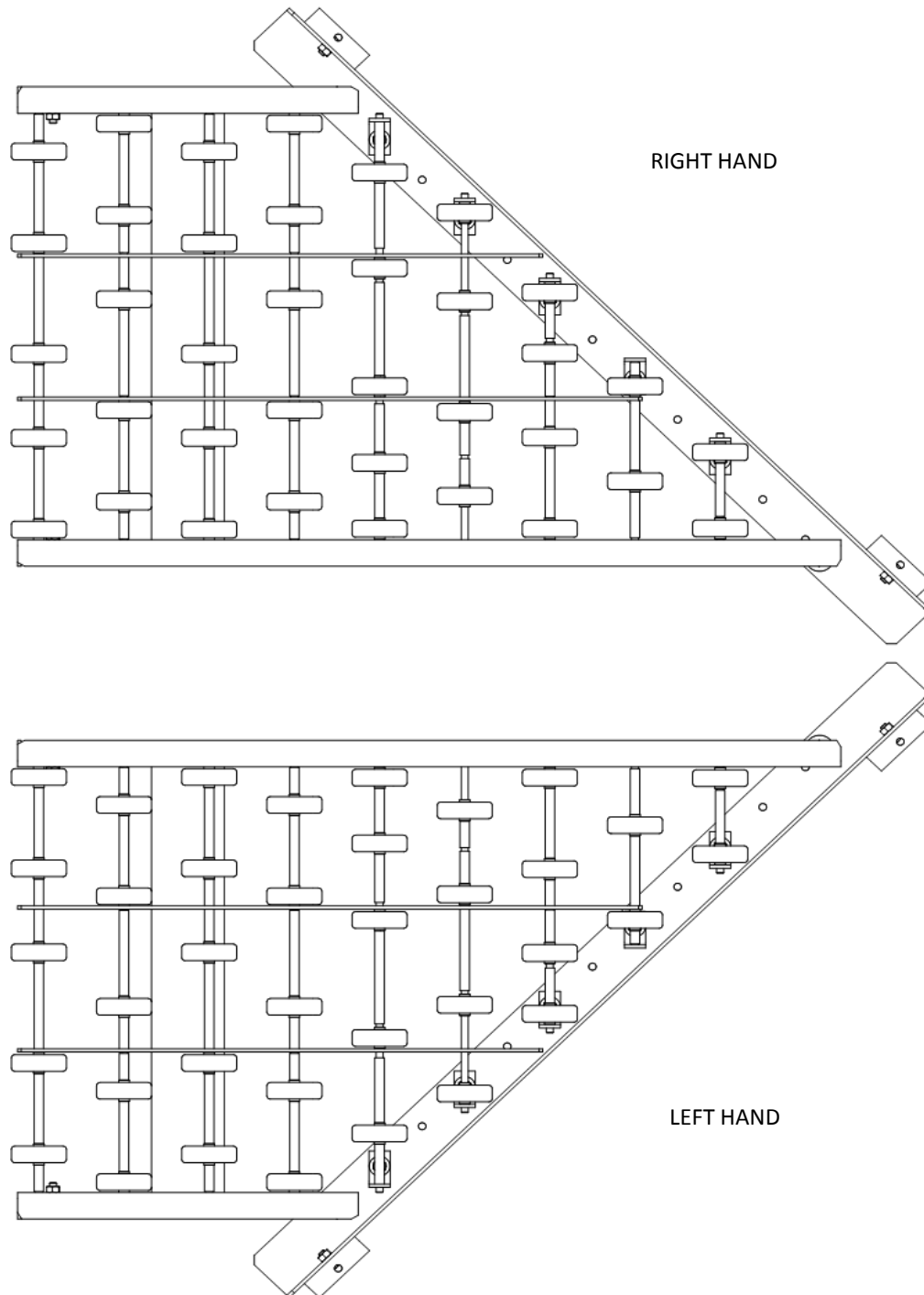
| DETAIL | DESCRIPTION |
|--------|--------------------|
| 1 | INSIDE RAIL |
| 2 | OUTSIDE RAIL |
| 3 | SKATEWHEEL |
| 4 | SPACER |
| 5 | SUPPORT BAR |
| 6 | BOLT-IN SPREADER |
| 7 | HOOK |
| 8 | ROD |
| 9 | HEX HEAD CAP SCREW |
| 10 | HEX NUT |

PARTS LISTS: GRAVITY SKATEWHEEL STRAIGHT SPUR

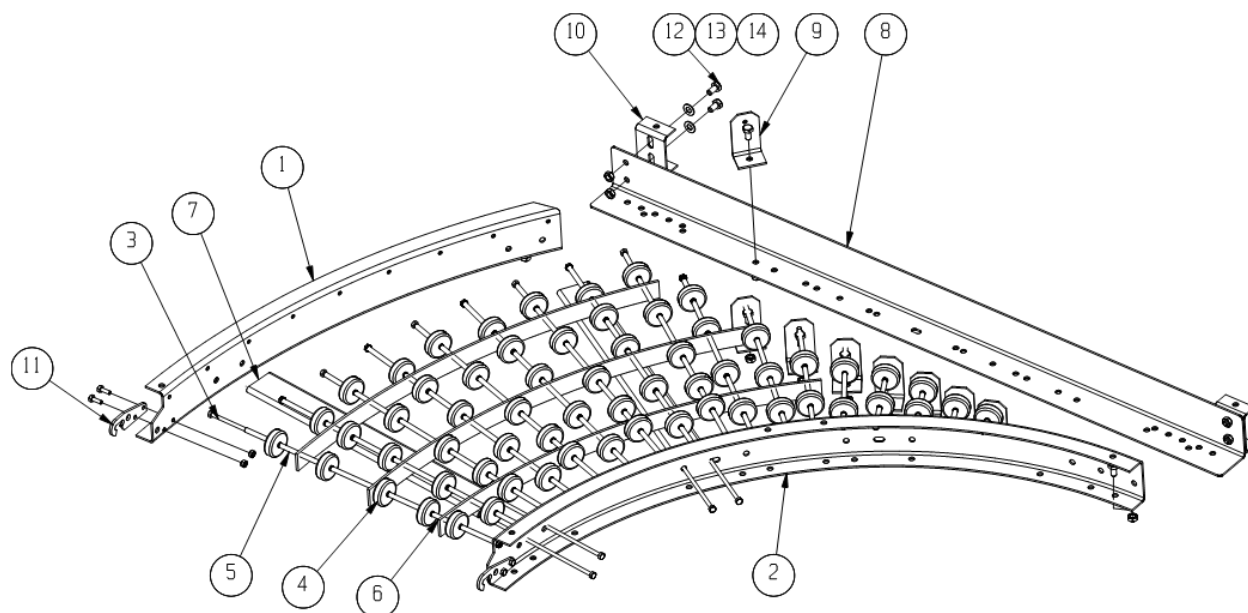


| DETAIL | DESCRIPTION |
|--------|-----------------------|
| 1 | LONG RAIL |
| 2 | SHORT RAIL |
| 3 | CONVEYOR ROD |
| 4 | SKATEWHEEL |
| 5 | SPACER |
| 6 | SUPPORT BAR |
| 7 | BOLT-IN SPREADER |
| 8 | SHELF BRACKET |
| 9 | WHEEL SUPPORT |
| 10 | SHELF SUPPORT BRACKET |
| 11 | END COUPLER |
| 12 | HEX HEAD CAP SCREW |
| 13 | FLAT WASHER |
| 14 | HEX NUT |

PARTS LISTS: GRAVITY SKATEWHEEL STRAIGHT SPUR

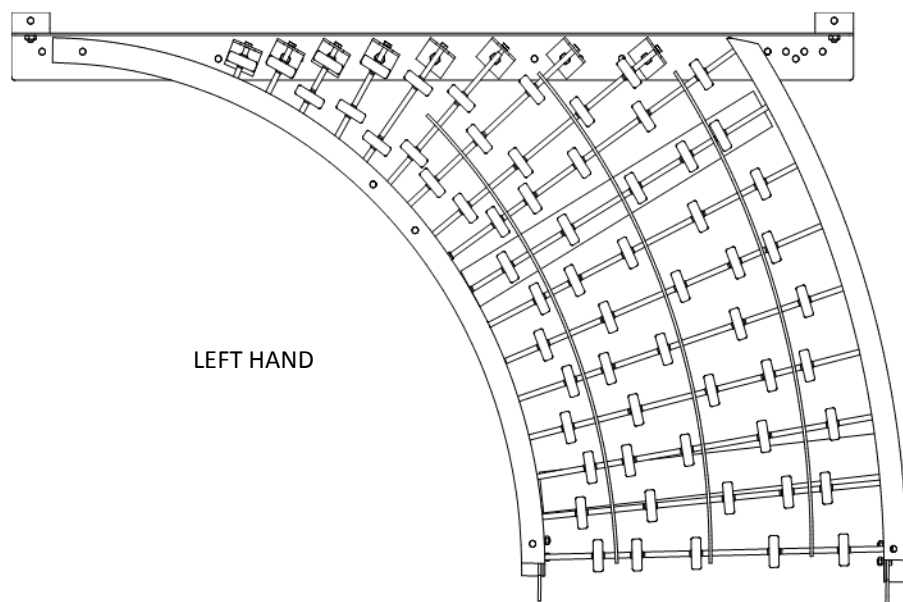
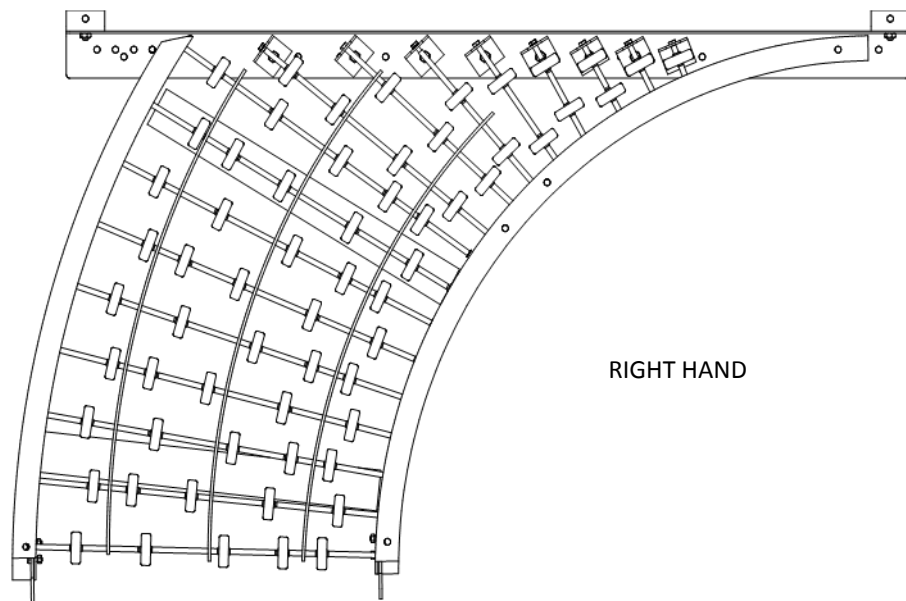


PARTS LISTS: GRAVITY SKATEWHEEL CURVE SPUR



| DETAIL | DESCRIPTION |
|--------|-----------------------|
| 1 | OUTSIDE RAIL |
| 2 | INSIDE RAIL |
| 3 | CONVEYOR ROD |
| 4 | SKATEWHEEL |
| 5 | SPACER |
| 6 | SUPPORT BAR |
| 7 | BOLT-IN SPREADER |
| 8 | SHELF BRACKET |
| 9 | WHEEL SUPPORT |
| 10 | SHELF SUPPORT BRACKET |
| 11 | HOOK |
| 12 | HEX HEAD CAP SCREW |
| 13 | FLAT WASHER |
| 14 | HEX NUT |

PARTS LISTS: GRAVITY SKATEWHEEL CURVE SPUR



[illegible]

ABBREVIATED WARRANTY

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.

*The above stated information is in reference to a section of Omni Metalcraft's full Terms and Conditions of sale. This information does not constitute an agreement, but simply reference information. To obtain a full copy of Omni Metalcraft's Terms and Conditions of Sale, please contact your Sales Representative.

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