



CONVEYX
SOLUTIONS, LLC

3-STAGE EXTENDABLE BELT CONVEYOR

INSTALLATION, OPERATION & MAINTENANCE MANUAL

PLEASE REVIEW MANUAL BEFORE OPERATING EQUIPMENT

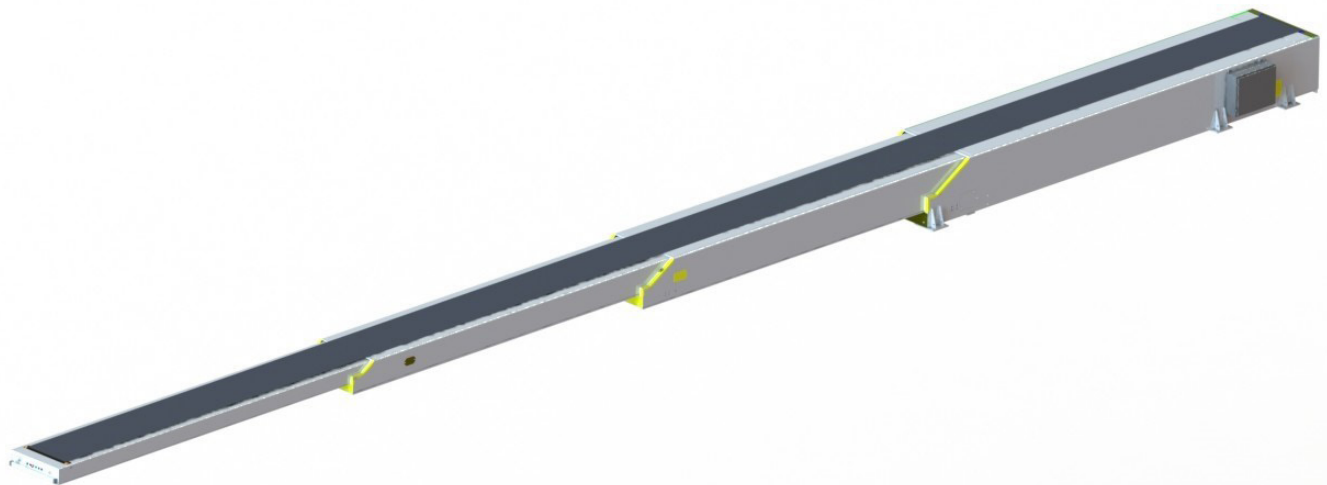
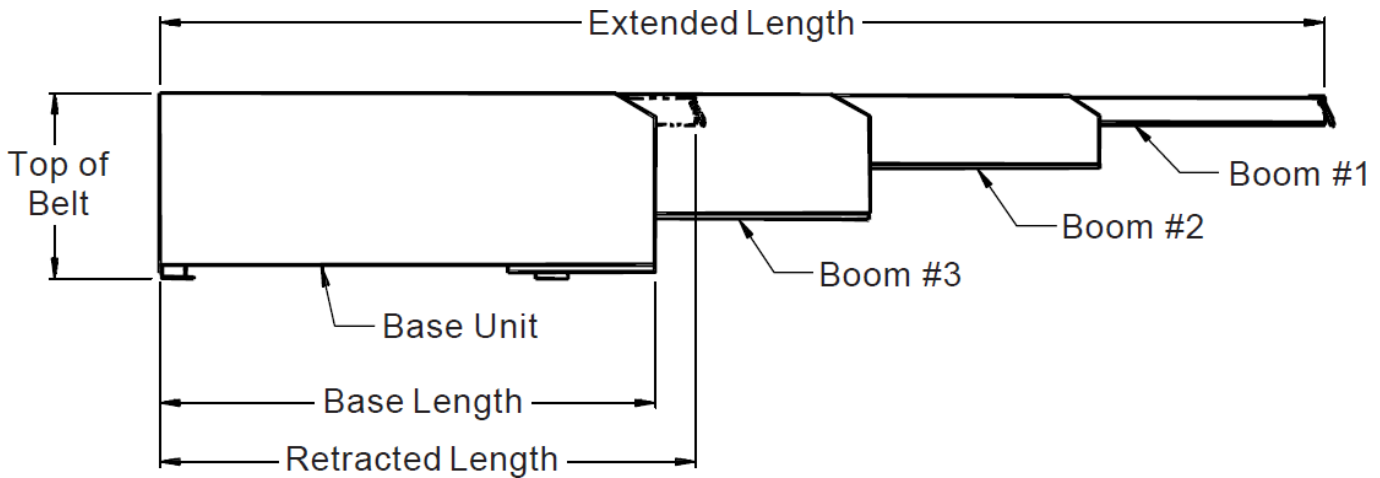


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GENERAL OVERVIEW

ConveyX Solutions, LLC (CXL) 3-Stage Extendable Belt Conveyor (referred to as the “conveyor”) is designed for efficient unloading of unitized product on truck trailer docking areas. Delivered completely assembled, the conveyor is ready to be located, anchored and connected to electrical service per the instructions contained within this manual. The conveyor consists of a base section with three (3) extendable booms. For conveyor specifications, see information listed below.



PRODUCT SPECIFICATIONS

GENERAL	
Belt Width	30"
Speed	54 – 65 FPM
Boom Speed	40 FPM
Electrical Requirement	480V
Overall Retracted Length	25'
Overall Extended Length	80'
Max Live Load	3,250 pounds
Total Conveyor Weight	13,000 pounds
Hold Down Force on Back Mounting Plate	10,500 pounds

HANDLING INSTRUCTIONS



WARNING

- See Conveyor Specifications Nameplate for specific information about this unit.
- All equipment capacity used to lift or handle this conveyor must exceed the total conveyor weight.

UNLOADING

Upon receipt of your IC Three-Stage Extendable Belt Conveyor inspect the conveyor immediately for shipping damage. After initial inspection is complete, remove any protective shipping covers. Once the conveyor has been moved to its final location, remove any shipping braces or structure that is lagged or bolted for shipping purposes only.

FINAL SITE PREPARATION

Prepare the final conveyor location to accept conveyor. Install the conveyor anchoring system. Please see conveyor specifications shown on the title page of this manual for required hold down force and support structures. The anchors must be properly secured to conveyor mounting pad, matching the hole pattern of conveyor base unit.



WARNING

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

TRANSFERRING CONVEYOR TO FINAL SITE

The conveyor must be properly handled when transferring from the unloading area to the final site location to prevent damage. Do not attempt to pull or lift the conveyor from the locations.

Serious damage to the unit may result.



WARNING

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

WARNINGS AND SAFETY INSTRUCTIONS

Failure to follow the instructions and cautions throughout this manual and warning labels on the conveyor, may result in injury to personnel or damage to the equipment.

ConveyX Solutions' 3-Stage Extendable Belt Conveyor is motor-powered and this motor can be stopped by turning off the motor's electrical power. As with all powered machinery, the drive-related components can be dangerous so safety guards and other optional devices have been installed to prevent accidental contact with these parts along with warning labels to identify potential hazards.

Special attention must be paid to the following areas of this manual:



ENVIRONMENTAL STANDARDS

ConveyX Solutions' equipment is designed to be installed in a clean, dry environment. Exposure to extreme humidity, direct sunlight, blowing dirt or rain can permanently damage some components and equipment. Concrete curing agents are also known to attack and degrade the urethane conveyor components. Be sure that the concrete is properly cured at new sites before setting the conveyor on it and that proper ventilation is used to prevent curing agent fumes from impacting the conveyor. Equipment should be stored under cover to protect it from exposure to the weather and other adverse conditions from the dock door to the truck entrance. Failure to comply with these guidelines will void the warranty on any failed components that result from these environmental issues.

ANSI STANDARDS FOR CONVEYORS

It is essential for safe and efficient system operation that the safety information and guidelines presented here are properly understood and implemented. The American National Standard Institute (ANSI) booklet entitled Safety Standards for Conveyors and Related Equipment, for more information contact <https://webstore.ansi.org>.

With any piece of industrial equipment, conditions exist that might cause injury to workers. Because it is not possible to describe each potentially hazardous situation that might develop, workers must be alert at all times for unsafe conditions. To avoid injury, use maximum possible care and common sense and adhere to all safety standards.

Take special care while maintaining and inspecting electrical equipment and devices. All personnel working on or around the system should be aware of, and adhere to all CAUTION, DANGER and WARNING signs.

Labels or signs are posted to reduce the risk of injury to all personnel. Never assume that the signs and notices are applicable only to inexperienced personnel. Maintain signs in a legible condition. Contact a supervisor to post additional safety signs if necessary.

ANSI CONVEYOR SAFETY RULES

Below are the conveyor safety rules, as well as specific regulations and guidelines listed in this publication:

- DO NOT touch moving Conveyor parts.
- DO NOT walk, ride or climb on the Conveyor.
- DO NOT operate the Conveyor with chain guards or other protective guards removed.
- Keep jewelry, clothing, hair, etc., away from the Conveyor.
- Know the location and function of all start/stop devices and keep those devices free from obstruction.
- Clear all personnel from the equipment before starting the Conveyor.
- DO NOT attempt to clear product jams while the Conveyor is running.
- Allow only trained and authorized personnel to maintain or repair Conveyor equipment.
- DO NOT load the Conveyor beyond specified design limits.
- DO NOT attempt to make repairs to the Conveyor while it is running.
- DO NOT modify equipment without checking with the manufacturer.

- DO NOT operate or perform maintenance on equipment when taking any type of drug or sedative, when under the influence of alcohol or when over-fatigued.
- Report any unsafe condition to your supervisor or maintenance staff.

CEMA STANDARDS FOR CONVEYOR

The Conveyor Equipment Manufacturers Association (CEMA) provides safety information related to conveyor systems. To learn more about CEMA visit website, www.cemanet.org.

CEMA produces various Conveyor safety videos and posters, and it is recommended that the videos be made available for training and education purposes as part of a safe working environment around conveyor equipment. The videos introduce awareness of operations, personnel, maintenance technicians and safety hazard management commonly associated with the automated material-handling conveyor equipment.

The safety posters review important safety labels and are intended to be posted in public places as a day-to-day reinforcement of good safety practices. These posters can be downloaded from the CEMA website at: <http://www.cemanet.org/safety-label-posters>.

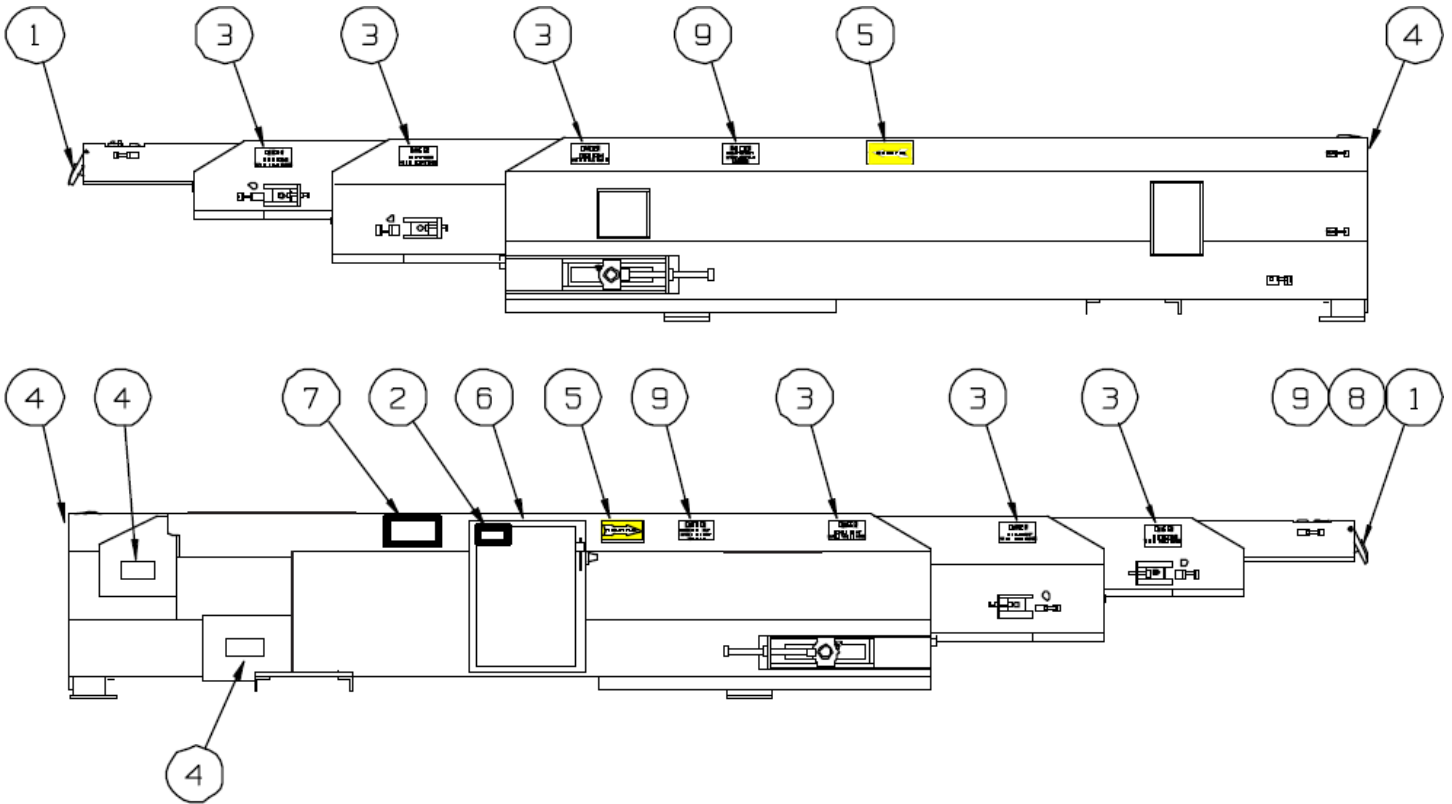
SAFETY INSTRUCTIONS



WARNING

- Move conveyor only by grasping the handles located on the sides or at each end of the conveyor.
- When expanding or compressing your conveyor, keep hands, clothing and other items clear of the sidebars.
- Do not exceed the conveyor load capacity, as it may result in possible operator injury or conveyor damage.
- Avoid wearing excessively loose clothing when working with moving equipment.
- Keep long hair pulled up to prevent it from becoming caught in moving parts.
- Broken or worn parts must be replaced immediately.
- 3-Stage Extendable Belt Conveyors must only be serviced by properly trained and qualified technicians.
- Conveyor's power cord must be connected to a grounded receptacle that is protected by an overcurrent device rated at no more than 30 Amps, unless otherwise specified.
- Never service a conveyor with the power applied. Always disconnect power before servicing equipment and use the company's machine specific lockout/tag out procedures.
- Never operate conveyor with an electrical enclosure open or any guards removed.

SAFETY INSTRUCTIONS



DET	NTI NO.	DESCRIPTION	COLOR
1	111752	DANGER! CLIMBING, SITTING, WALKING OR RIDING ON CONVEYOR AT ANY TIME WILL CAUSE SEVERE INJURY OR DEATH	RED & WHITE
2	111745	DANGER HIGH VOLTAGE	RED, BLACK & WHITE
3	111744	DANGER MOVING PARTS WILL CAUSE SEVERE INJURY - KEEP CLEAR	RED, BLACK & WHITE
4	110478	WARNING EXPOSED MOVING PARTS CAN CAUSE INJURY, LOCK OUT POWER BEFORE REMOVING GUARD.	ORANGE, BLACK & WHITE
5	111628	ARROW PRODUCT FLOW (RIGHT ARROW)	BLACK & WHITE
	111743	ARROW PRODUCT FLOW (LEFT ARROW)	BLACK & WHITE
6	111747	CAUTION DISCONNECT BEFORE SERVICING	YELLOW & BLACK
7	PUR	DATA PLATE UNIT INFORMATION, SERIAL NO., MODEL NO., BELT SPEED, BOOM SPEED, PRODUCT WEIGHT, ELECTRICAL REQUIREMENT	---
8	111748	BELT BELT MUST BE RUNNING WHEN EXTENDING OR RETRACTING BOOMS	YELLOW & BLACK
9	111746	CAUTION CONVEYOR MAY START WITHOUT WARNING	YELLOW & BLACK

INSPECTING THE EQUIPMENT



WARNING

Follow all proper safety precautions and plant installation procedures.

If you find any damage to the conveyor upon inspection or any loose wires, contact the factory **BEFORE** applying power to the conveyor.

An 3-Stage Extendable Belt Conveyor contains many moving parts including chains, sprockets, shafts, rollers and extendable booms. Any moving part is a potential source of danger to a careless or untrained operator. All personnel should be instructed in the necessity for continual care and attention to safety in the operation of a 3-Stage Extendable Belt Conveyor. They should be trained to identify and immediately report any unsafe conditions or practices relating to the conveyor and it's operation.

1. NEVER allow personnel to ride or walk on a 3-Stage Extendable Belt Conveyor .
2. NEVER operate conveyors with the guards removed.
3. ELECTRICAL SERVICE MUST BE TURNED OFF AND LOCKED OUT when servicing 3-Stage Extendable Belt Conveyor to prevent accidental restarting by other persons or interconnecting equipment (when used).
4. Jams or malfunctions must be immediately corrected by trained authorized personnel only.
5. All personnel working around or coming into contact with the 3-Stage Extendable Belt Conveyor must be instructed to keep their hands or other parts of their person, including clothing, clear of all moving parts.
6. The area around loading and unloading points shall be kept clear of obstructions which could cause personnel to come in contact with moving 3-Stage Extendable Belt Conveyor .
7. Operators must inspect the path of this 3-Stage Extendable Belt Conveyor , clearing all obstacles prior to startup of boom extension.
8. Routine inspections with preventative and/ or corrective maintenance programs shall be conducted to insure that all safety features and devices are maintained and function properly.
9. Personnel must stay clear of moving parts when restarting 3-Stage Extendable Belt Conveyor .
10. Maintain an orderly area in the vicinity of the 3-Stage Extendable Belt Conveyor at all times. Clean up spilled materials or lubricants promptly.
11. All guarding and protective devices must be in place prior to 3-Stage Extendable Belt Conveyor restart.
12. Maintenance personnel should be alert for hazardous conditions at all times. Remove sharp edges or protruding objects. Repair or replace worn or damaged parts immediately.
13. When using hydraulic hoses and drop cords, string them to avoid creating a tripping hazard.

The 3-Stage Extendable Belt Conveyor is capable of belt start-up with possible boom extension or retraction at any time.

An optional Tilt function allows the 3-Stage Extendable Belt Conveyor to lift or lower at anytime. Signs appear at various locations along the length of the 3-Stage Extendable Belt Conveyor stating,

CAUTION

3-Stage Extendable Belt Conveyor may start without warning.

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) 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, prominent warning means, such as signs or warning lights, shall be provided in the area or on the equipment in lieu of guarding.

Overhead conveyors, such as trolley conveyors and hanger suspended tray conveyors, for which guarding would render the conveyor unusable or would be impracticable, shall have prominent and legible warnings posted in the area or on the equipment, and where feasible, lines shall be painted on the floor delineating the danger area.

When a conveyor passes over a walkway, roadway, or work station, it is considered guarded by location if all moving parts are a least 2.44 m (8ft.) above the floor or walking surface or are otherwise located so that personnel cannot inadvertently come in contact with hazardous moving parts.

Although overhead conveyors may be guarded by location, spill guards, pan guards, or equivalent shall be installed if material may fall off the conveyor and endanger personnel.

3) HEADROOM

When conveyors are installed above exit passageways, aisles, or corridors, there shall be provided a minimum clearance of 6 feet 8 inches (2 m) measured vertically from the floor or walking surface to the lowest part of the conveyor or guards.

Where system function will be impaired by providing the minimum clearance of 6 feet 8 inches (2 m) through an emergency exit, alternate passageways should be provided.

Alternative emergency exits are permissible for passage under conveyors with less than 6 feet 8 inches (2 m) clearance from the floor as long as suitable warning for "low headroom" exists.

4) ANCHORING

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



WARNING

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

INSTALLATION SAFETY

1) ELECTRICAL CODE

All electrical installations and wiring shall conform to local codes and National Electrical Code (Article 670 or other applicable articles) as published by the National Fire Protection Association and as approved by the American National Standards Institute, Inc.

When conveyor operation is not required for a maintenance procedure, Electrical power must be turned off and locked / tagged out.

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.

When a conveyor that would cause injury when started is automatically controlled or must be controlled from a remote location, an audible device or devices shall be provided that can be clearly heard at all hazardous points along the conveyor where personnel may be present. The audible warning shall be actuated by the controller device starting the conveyor and shall continue for a required period of time before the conveyor starts. A flashing light or similar visual warning may be used in conjunction with, or in place of the audible device if a visual warning is more effective.

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 need 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.

Refer to OSHA Standard Number 29 CFR 1910.147 "The Control of Hazardous Energy (Lockout/Tagout)" and ANSI Z244-1-1982, American National Standard for Personnel Protection-Lockout/Tagout of Energy Sources - Minimum Safety Requirements.



WARNING

Replace all safety devices 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 that person is specifically authorized by the employer or owner. Under authorized circumstances, such employee shall only ride a conveyor which has platforms, supporting structure, or control stations specifically designed for carrying 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.



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

INSTALLATION

The Extendable Belt Conveyor is delivered fully assembled. The conveyor is packaged to provide protection against loss of parts and physical damage during shipment. It is ready to be located and anchored. Electrical connection to be performed by on-site systems integrator. To ensure the conveyor is safely and correctly used, all instructions within this manual must be read and understood.

CONVEYOR SPECIFICATIONS NAMEPLATE

A corrosion resistant nameplate is supplied containing basic conveyor specifications. This plate is located on the upper channel of the base unit in the drive unit area.

UNLOADING

Upon receipt of your Three-Stage Extendable Belt Conveyor, inspect the conveyor immediately for shipping damage. After initial inspection is complete, remove any protective shipping bracing. Once the conveyor has been moved to its final location, remove any shipping braces and straps that are lagged, bolted, or attached for shipping purposes only.

FINAL SITE PREPARATION

Prepare the final conveyor location to accept conveyor. Install the conveyor anchoring system. Please see conveyor specifications shown on the title page of this manual for required hold down force and support structures. The anchors must be properly secured to conveyor mounting pad, matching the hole pattern of conveyor base unit.

WARNING

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

WARNING

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

TRANSFERRING CONVEYOR TO FINAL SITE

The conveyor must be properly handled when transferring from the unloading area to final site location to prevent damage. Carefully lift and transfer the conveyor to the final site location. Do not attempt to pull or lift the conveyor from other locations.

Serious damage to the unit may result.

FLOOR ANCHORING RECOMMENDATIONS

Anchors must be properly secured to the conveyor mounting pads, matching the hole pattern of the conveyor base unit. ALL anchor holes must be used. Use holes in the foot pads as a guide for location. Floor must be a minimum of 4,000 PSI rated concrete. Use a minimum of 3/4" diameter "B7" threaded rod (embedded a minimum of 5" deep in floor) and a 2-part epoxy.

NOTE

Anchors are not to be closer than 7-1/2" to any edge, relief cut or expansion joint in the flooring.

ELECTRICAL SERVICE CONNECTION

All electrical installation and service must be performed by a qualified electrician. Follow all national, state and local electrical codes and ordinances. See electrical drawings supplied with this manual before connecting power. Electrical installation is the responsibility of the on-site systems integrator. The electrical service requirements for this conveyor is 480-Volt, 3-Phase, 60-Hertz or 480-Volt, 3-Phase, 60-Hertz.

WARNING

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

INSTALLATION VISUAL INSPECTION

After mechanical and electrical installation is completed, a final visual inspection is required prior to initial conveyor start-up. See the following list.

- Visually check to ensure that the conveyor is ready to be activated.
- Make sure that the conveyor is properly installed. All conveyors must be anchored.
- Verify that the electrical service is properly installed.
- Check to see that all guarding is in place.
- The conveyor and the area around the loading and/or unloading points are clear of obstructions.
- Operators inspect the path of this conveyor, clearing all obstacles prior to start-up.
- If any unsafe conditions relating to the conveyor and its operational use are present, they must be immediately reported.



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

INITIAL START-UP AND TESTING

After passing mechanical, electrical, and visual inspections; the following operational testing must be completed. A review of the push button controls in the Electrical Definitions section might be desired at this point. The electrical disconnect must be in the ON position and all stop buttons must be reset before initial start up and testing.

Never operate the conveyor if all controls are not full functional

With the operator at the front of the first boom controls and a second operator located at the conveyors' main control panel. Start with the following test procedures.

1. Control Panel: Test electrical disconnect. Turn to Off position. All conveyor operations must be non-functional.
2. Control Panel: Turn electrical disconnect to On position.
3. Control Panel: Test Limit Switch Fail light. Depress push-to-test light lens to verify light bulb is functioning properly.

4. Boom Operator: Start belt, verify proper belt direction.
5. Control Panel: Depress Emergency Stop button. Belt must stop.
6. Test all controls at control panel and operator station. all controls must not function.
7. Control Panel: Reset Emergency Stop button.
8. Boom Operator: Depress Emergency Stop button. Test all controls at control panel and operator station. All controls must not function.
9. Boom Operator: Reset Emergency Stop button.
10. Boom Operator: Start belt. Start Extending boom. (Note: This is a momentary push button. It only functions when held depressed).
11. Control Panel: Depress Emergency Stop button. Belt and boom must stop.
12. Control Panel: Reset Emergency Stop button.
13. Boom Operator: Start belt. Start Retracting boom.
14. Control Panel: Depress Emergency Stop button. Belt and boom must stop.
15. Control Panel: Reset Emergency Stop button.
16. Boom Operator: Start belt, Extend boom(s) to an intermittent position. Stop belt.
17. Control Panel: Depress Emergency Retract button. (Note: This is a momentary push button. It must only function when being held depressed.). The boom(s) must retract completely with belt stopped.
18. Boom Operator: Start belt. Extend boom(s) to an intermittent position. Stop boom(s). Belt will remain running.
19. Control Panel: Depress Emergency Retract button. With the belt running, the boom(s) must retract.
20. Boom Operator: Belt running. Extend boom(s) to an intermittent position. Stop boom(s). Depress Safety Stop Plate and hold depressed.
21. Control Panel: Depress Emergency Retract button, while holding Safety Stop Plate depressed. Booms must retract.

NOTE

The purpose of the control panel operated Emergency Retract button is for emergency use only. This button should override all combinations of boom controls at the front of the first boom except for the Emergency Stop located at the control panel or the operator station.

INSTALLATION

22. Start belt.
23. Depress Emergency Stop button. Belt must stop.
24. Reset Emergency Stop button.
25. Start belt.
26. Depress and hold Extend button. Booms will begin to extend.
27. Depress Emergency Stop button while boom is extending at some intermittent position. Booms and belt must stop.
28. Reset Emergency Stop button.
29. Start belt.
30. Depress and hold Retract button. Booms will begin to retract.
31. Depress Emergency Stop button while boom is retracting at some intermittent position. Booms and belt must stop.
32. Reset Emergency Stop button.
33. Depress Safety Stop Plate.
34. Start belt and check for proper belt direction.
35. Depress belt Stop button. Belt must stop.
36. Start belt.
37. Depress Safety Stop Plate. Belt must stop.
38. Start belt (Note: DO NOT extend or retract boom(s) unless the belt is running. This helps maintain belt tracking.).
39. Push and hold the Extend button. The boom will begin extending.
40. At an intermittent position, release the Extend button. Boom(s) must stop. Belt will remain running
41. Depress and hold the Extend push button. Depress Safety Stop Plate. Boom(s) and belt must stop. Let Safety Stop Plate reset.
42. Start belt with conveyor in an intermittent position.
43. Push and hold the Retract button. The boom(s) will begin retracting.
44. At an intermittent position, release the Retract button. Boom(s) must stop. Belt will remain running.
45. Depress Retract push button. Depress Safety Stop Plate. Boom(s) and belt must stop. Let Safety Stop Plate reset.
46. Start belt. Fully Extend and Retract conveyor verifying that the primary limit switch shuts off power to boom motor.
47. Retract conveyor to the fully retracted position. Make sure boom(s) fully retract into base section. (First boom extends about 3" outside of base unit in the full retracted position.)

Initial start-up and testing is now complete. If any of the above conveyor operating controls do not function as designed, consult the electrical schematic, the conveyor assembly drawings, and the troubleshooting guide. If the controls problem cannot be resolved using these methods of troubleshooting, refer to the technical assistance page located at the front of this Owner's Manual.

OPERATION

The Extendable Belt Conveyor operation is controlled with one (1) operator using electrical controls located at the front of the leading boom. Prior to Start-up, a visual check of the conveyor and its surrounding area must be done. Also, control testing must be done daily to ensure that all functions are operational. The conveyor **MUST NOT** be used unless all functions operate as designed.

TRUCK UNLOADING MODE (OPTIONAL)

- Operator moves to front boom controls.

NOTE

When the extend or retract push button is held depressed, the belt must be running and continue to run until the button is released. This helps to maintain belt tracking. (These are momentary push buttons. They only function when held depressed.)

- Depress and hold the boom Extend button. The booms extend into the truck as required to remove the product.

NOTE

If the Safety Bar Stop comes into contact with a product or other objects, the Safety Bar Stop is depressed, which stops the booms and belt in the extend boom operation.

- If the booms are extended to the fully extended length, a limit switch will stop the booms from over travel to prevent damage to the unit.
- The product from the truck is positioned on the conveyor belt and transported to the discharge area.
- After the truck unloading is complete, the operator depresses and holds the boom Retract button. The belt must be started and continue to run until the Retract button is released. The booms retract completely into the base unit where a limit switch stops the boom travel.
- Stop the belt. The belt must never be left running when not in use.

TRUCK LOADING MODE (OPTIONAL)

- Operator moves to front boom controls.

NOTE

When the extend or retract push button is held depressed, the belt must be running and continue to run until the button is released. This helps to maintain belt tracking. (These are momentary push buttons. They only function when held depressed.)

- Depress and hold the boom Extend button. The booms extend into the truck as required to load the product.

NOTE

If the Safety Bar Stop comes into contact with a product or other objects, the Safety Bar Stop is depressed, which stops the booms and belt in the extend boom operation.

- If the booms are extended to the fully extended length, a limit switch will stop the booms from over travel to prevent to the unit.
- The product will then be placed on the Extendable Belt Conveyor from the truck and then conveyed to the infeed conveyor in the plant.
- With the booms extended into the truck, the operator will the then retract booms as required to continue unloading the product until complete.

NOTE

The belt must remain running while booms are being retracted.

- After truck unloading is complete, the operator restarts the belt and depresses and holds the boom Retract joystick. The booms retract completely into the base unit where a limit switch stops the boom travel.
- Stop the belt. The belt must never be left on when not in use.

GENERAL PREVENTATIVE MAINTENANCE



WARNING

ELECTRICAL POWER MUST BE TURNED OFF AND LOCKED / TAGGED OUT 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.

When 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. Refer to OSHA Standard 19 CFR 1910.147, “The Control of Hazardous Energy (Lockout/Tagout)” and ANSI Z244-1-1982, American National Standard for Personnel Protection - Lockout/Tagout of Energy Sources - Minimum Safety Requirements, for proper tagout procedures.

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.



WARNING

Guard Removed. Risk of severe injury. DO NOT OPERATE without guard.

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.



WARNING

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

GENERAL PREVENTATIVE MAINTENANCE

Maintenance of the Extendable Belt Conveyor requires adjusting and accessing many areas of the conveyor. When conveyor operation is not required for a maintenance procedure, **ELECTRICAL SERVICE MUST BE TURNED OFF AND LOCKED OUT**. This will prevent accidental restarting by other persons or by interconnecting equipment (when used). All guarding **MUST** be replaced in manufacturer's original installed position after maintenance is completed and prior to conveyor start-up. **NEVER** operate the conveyor with any guard removed. Failure to follow proper operational safeguards during the course of any maintenance procedure may result in serious injury or death.



WARNING

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

INSPECTION SCHEDULE

Based on an 8-hour daily operation.

Perform Daily:

- Inspect conveyor to ensure all guarding is securely in place.
- Inspect conveyor travel path for obstructions.
- Verify that safety devices are operating.

Perform Weekly:

- Inspect conveyor for loose bolts.
- Inspect condition of belt and check for proper belt tension.
- Inspect conveyor chains to ensure proper tension and that they run freely and without excessive noise.

(Electrical service required)

Perform Monthly:

- Check oil level in reducers.
- Check conveyor chains for proper lubrication. Use "LPS Chain Mate" chain lube part #02416 or equivalent.
- Check drive sprockets for proper alignment.
- Check drive chains for proper tension.
- Lubricate all bearings at grease fittings.

Perform Annually:

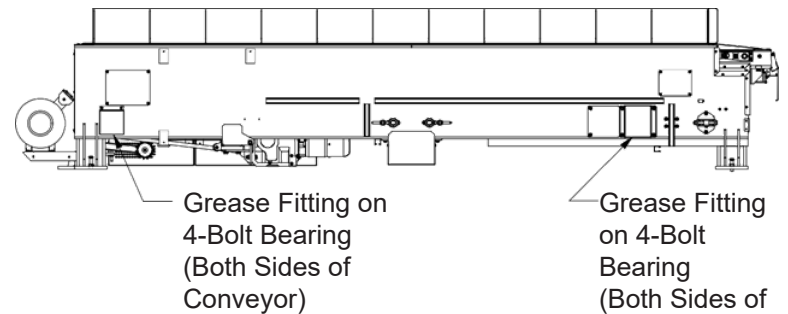
- If required, change lubricant in reducers.

LUBRICATION (Optional)

Standard Grease Fitting Locations

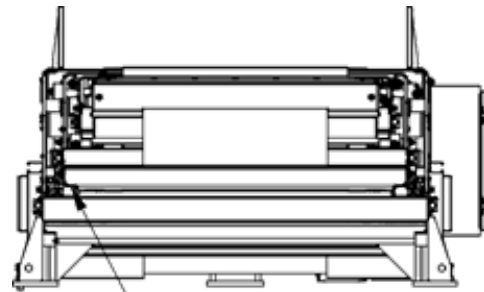
The following views show all standard grease fitting locations. Refer to the Inspection Schedule for proper periodic lubrication. Prior to turning off and locking out the electrical service, the conveyor must be partially extended to allow access to grease fitting locations.

(Front End View)



Grease Fitting on 4-Bolt Bearing (Both Sides of Conveyor)

Grease Fitting on 4-Bolt Bearing (Both Sides of Conveyor)



Grease Fittings on Yoke Rollers, Typical Both Sides (6) Places

CONVEYOR ADJUSTMENTS

Belt Tracking

The belt has been installed and tracked at the factory, but due to shipping and handling, the belt may not be tracking at installation. If at installation the belt is not tracking, it may be necessary to re-track the belt. The conveyor belt must be running while extending or retracting the boom. View the YouTube video for the tracking procedure found on the ConveyX YouTube channel.

1. Loosen all adjustment collars, located at the end of the boom, and lower front of the main base.
2. Retighten adjustment collars to approximately center in adjustment slots.

GENERAL PREVENTATIVE MAINTENANCE

- From approximate center, continue to tighten the belt until it is not in contact with any guards on the underside of the main base. Maintaining an equal position of the adjustment collars in adjustment slots for side-to-side of the conveyor, by measuring from the outside of the adjustment collar to the edge of the adjustment slot.

NOTE

It is not necessary for the boom adjustment location and the main base adjustment location be equal, but allow for maximum belt stretch and tracking try to stay as close to center at both locations as possible.

- With belt properly tightened and pulleys square to frame, start the belt conveyor with boom retracted. While the conveyor is running, observe the travel of the belt across the face of the pulleys. If the belt starts to “walk” towards one side, an adjustment is required. If the belt “walks” to one side, quickly stop the conveyor before any contact on edge of conveyor to avoid possible damage to belt.
- All adjustments to the track of the belt must be done while the conveyor is running. To change the track of the belt, with the boom retracted, use the adjustment collars on the main base. If the belt is walking to one side of a pulley, adjust on that side. This will cause the belt to “walk” in the opposite direction. Only adjust enough to stop the “walking” of the belt. It will take at least three (3) revolutions of the belt to see full effect of adjustment.
- Once the belt seems to be maintaining a steady tracking position with boom retracted, now extend the boom. The track of the belt may have changed. If so, use the collar adjustments at the end of the boom to control tracking. As before, use the adjustment collar on the side that the belt is “walking” toward. Remember that it will take at least three (3) revolutions of the belt to see full effects of adjustment. It is important to note that the track of the belt may not be the same with boom extended as with boom retracted.

Once the belt is maintaining a tracked position in the extended and retracted positions, the conveyor should be ran for several hours, periodically extending and retracting the boom. During this period there may need to be small adjustments made to fine tune the tracking of the belt. This run off period also allows for the belt to stretch and take a “set” to the pulleys.



WARNING

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



WARNING

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

Conveyor Leveling

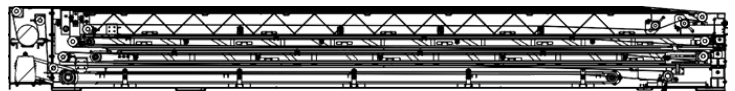
If after tracking is attempted and the belt continues to run to one side, the conveyor deck may not be level. Place a level across the main frame slider deck. The deck must be level. If the deck is not level, adjustments to the conveyor support system must correct the leveling issue.

Belt Splicing

After checking the conveyor for level, if the belt continues to run to one side, the belt splice may not be square. If splice is not square the joint must be removed, and a new square splice must be installed.

(See "Squaring the Belt and Belt Lacing" sections)

Belt Tracking Pulley Adjustments



Base Unit Belt Tensioning, Take Up Pulley.

GENERAL PREVENTATIVE MAINTENANCE

Conveyor Pulleys

Conveyor pulleys can be adjusted with the jack bolts, providing either forward or backward belt tracking. To adjust a pulley assembly, loosen the pulley bearing mounting bolts and the jam nut on the jack bolt block. Turn jack bolt as required.

The following sequence should be followed when conveyor pulley adjustment is required for proper belt tracking.

1. Fully extend conveyor.
2. Belt tracking adjustments can only be made at the front pulley of Boom #1 and the take-up pulley located in the main base.

After following the previously mentioned steps, if belt tracking is still a problem contact the company listed under "Technical Assistance" located at the front of the manual.

(See conveyor reference drawings for your application.)

Conveyor Adjustments

Belt Tracking Pulleys and Rollers

For proper belt tracking, all pulleys, snubber rollers, and idler rollers must be square to conveyor frame. This will allow uniform belt pressure across the pulley/roller face. The exception to this rule is when the end pulleys are being used to track the belt.

Take-Up Pulleys

Any adjustments to the take-up pulleys should be completed with the belt stopped. The adjustment screws should be uniform in screw pressure or adjustment on both sides of the conveyor. They should remain square to the conveyor frame. They are to be used for belt tensioning, NOT belt tracking.

Belt Tensioning

Proper belt tensioning is adjusted with take-up assemblies. The direction of the belt travel determines the type and location of the take-up assemblies provided. All initial adjustments are completed prior to shipping. Additional belt tensioning should be done only if belt slippage is evident.

There must be sufficient belt tension to:

- Prevent slippage between the belt and drive pulley.
- Force the belt to conform to the crown shape of the pulleys.
- Carry the maximum number of products being transported without belt slippage.

Excessive belt tension may cause:

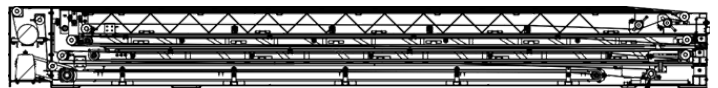
- Damage to pulleys or pulley components.
- Bearing failure.
- Belt lacing failure.
- Shortened conveyor component life.



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

Belt Take-Up Adjustment (Loading)

When the Extendable Belt Conveyor function is loading a truck, two (2) take-up assemblies are provided. One (1) take-up assembly is positioned at the front Boom 3 and one (1) take-up assembly is located near the motorized drive pulley.



Base Unit Belt Tensioning, Take Up Pulley.

Belt Take-Up Adjustment (Unloading)

When the Extendable Belt Conveyor function is unloading a truck, one (1) take-up assembly is provided at the front of Boom 3. At the front take-up adjustment with the booms retracted and no product load, adjust belt tension to overcome any slippage. Systematically work toward the final belt tension by continuing to add product load to the retracted conveyor. Adjust front take-up to compensate for any slippage.

Continue with this process until belt will overcome the maximum product load that will be carried on the conveyor. The final belt tension should never be more than the total force required to convey the products with no slippage. Excessive belt tension will shorten the belt life and other related components such as belt lacing, pulleys, bearings, etc.

Chain Adjustments Drive Chain

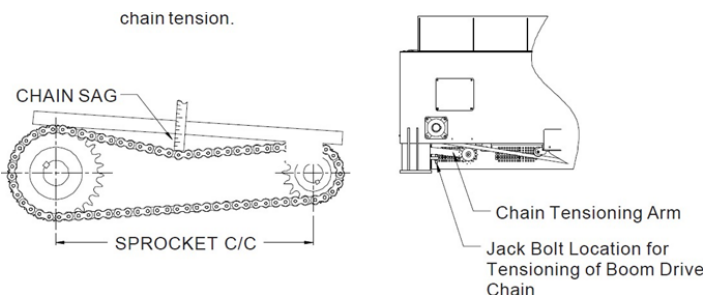
The Extendable Belt Conveyor has two (2) drive units. These consist of the boom drive and motorized pulley drive unit. Refer to the Inspection Schedule for proper periodic maintenance. Prior to any chain inspections and/or adjustments, the conveyor MUST be turned off and locked out.

GENERAL PREVENTATIVE MAINTENANCE

Remove drive guard(s) for chain inspection. Inspect chains and sprockets for proper alignment and excessive wear. (See "Parts Replacement" section if replacement is desired.) Place a straight edge on the face of both sprockets, they must be in line. If they are not, loosen set screws located in sprocket hubs and realign.

The drive chain must have the correct chain tension for proper operation. The drive(s) should have chain sag equal to two (2) percent of the shaft centers (e.g. 20" shaft centers x .02 = .40"). To check the chain sag, lay a straight edge from sprocket to sprocket as shown in illustration below.

Using a scale setting perpendicular to the straight edge, push down against the chain. Measure the amount of sag present. If the current amount of sag is greater than the calculated amount, the chain must be tightened to allow the proper chain tension.



To tighten the boom drive chain, adjust the square head set screw up or down on tensioning arm to desired tension. Once the sprocket has applied the proper tension on the chain, tighten the jam nut on the square head set screw. Any removed guarding MUST be replaced prior to the conveyor electrical service being reconnected.

WARNING

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

Base and Boom Chain(s)

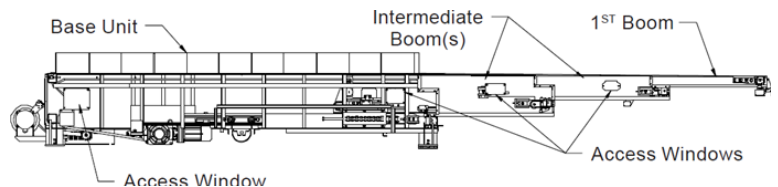
WARNING

Before starting any maintenance procedure, the ELECTRICAL SERVICE MUST BE TURNED OFF AND LOCKED OUT.

Adjustments to boom chains occur in the intermediate booms and the base unit. Each intermediate boom has front and back sprocket adjustment points. The base unit has one (1) adjustment point located at the front sprocket. The first boom contains no chain, therefore requiring no chain adjustments. Access windows are positioned at specific locations along the length of the conveyor to allow access to necessary chain adjustments. All chain adjustments should be made with the conveyor in the fully retracted position.

The belt conveyor utilizes a dual chain design. The chains are located on opposing sides within the structure. Both chains of the dual chain system must be equal. Do not exceed the recommended chain tension. If the recommended tension is exceeded, the entire boom will start to shift which is undesirable. If one chain is allowed to have more tension than the other, various problems may occur such as belt tracking, boom alignment and chain breakage. The recommended torque to the chain take-up adjustment bolt is approximately 120 foot/pounds.

When the take-up adjustments are complete, reposition and tighten the jam nut. All guarding MUST be replaced after the adjustments are completed. NEVER operate the conveyor with any guard removed.



WARNING

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

GENERAL PREVENTATIVE MAINTENANCE

Chain Adjustments: Base

Position #1: Illustrates a slack chain located between the intermediate boom anchor and the drive sprocket.

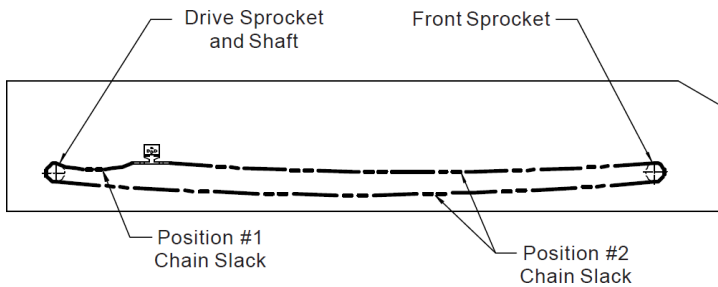
To correct this condition:

- First, the drive chain attached to the reducer must be disconnected.
- Adjust the drive shaft toward the back of the base unit, keeping the shaft square to the conveyor frame.
- After slack chain is properly adjusted for the correction tension, reattach the reducer drive chain.

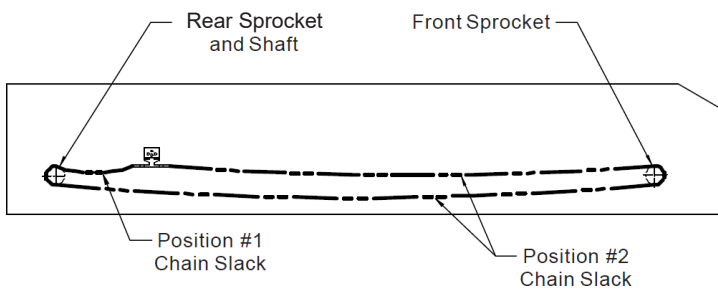
Position #2: Illustrates a slack chain located between the intermediate boom anchor and the front sprocket and/or between the drive sprocket and the front sprocket.

In either case, to correct this condition:

- Move to the front sprocket and adjust the tension of the chain per instructions located at the front of this section.



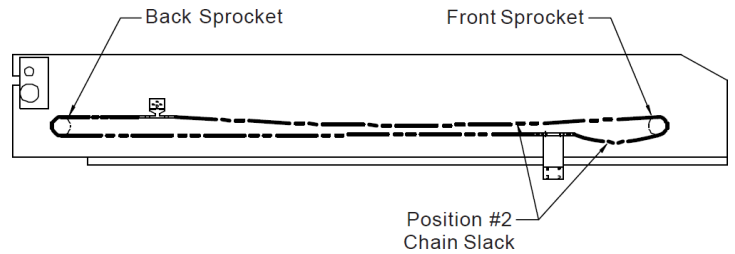
Chain Adjustments: Intermediate Boom



Position #1: Illustrates a slack chain located between the intermediate boom anchor and the rear sprocket and/or between the rear and front sprockets as shown above.

In either case, to correct this condition:

- Move to the rear sprocket and adjust the chain tension per instructions at the front of this section.



Position #2: Illustrates a slack chain located between the intermediate boom anchor and the front sprocket and/or between the back and the front sprockets as shown above.

In either case, to correct this condition:

- Move to the front sprocket and adjust the chain tension per instructions at the front of this section.

Boom Alignment

Proper boom extension is essential to the operation of the Extendable Belt Conveyor.

Controlling boom extension utilizes two (2) cam rollers located at both ends of each boom section. The cam rollers allow boom extension with no additional supporting devices required. The boom side movement is also controlled with two (2) cam rollers located at both ends of each boom section.

These adjustments ensure that the booms will extend in a straight line. Boom alignment adjustments should not be attempted unless the customer is experiencing belt tracking concerns or component interference. The following procedures explain how to make proper alignment adjustments.



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

Rear Cam Roller Boom Adjustment

The cam rollers are factory set. Please contact Technical Assistance for help.

Height Adjustment

The conveyor height is originally set by the manufacturer and should not need to be altered.

Conveyor booms must be level for belt tracking. Please contact technical assistance for help.

GENERAL PREVENTATIVE MAINTENANCE

Cable Reel

Cable Sag Inspection / Adjustments

NOTE

See the “General” maintenance paragraph located at the start of the maintenance section before performing any maintenance procedures.

The cable reel settings are originally set by the manufacturer. Occasional adjustments may be required as a part of normal maintenance procedures to insure a long equipment life. All cable/cable reel inspections must be performed on a weekly basis. Refer to the “Maintenance Section”, “Inspection Schedule” for required inspections. Follow the cable reel adjustment procedure listed below.

- Fully extend conveyor.
- Cable is located on left side of conveyor. Cable reel must maintain enough tension on cable to prevent excessive cable sag. Cable should be taught, but not overly tight.
- Fully retract conveyor.
- If cable reel maintains proper tension on cable at all times, no adjustment is required.
- If cable is excessively sagging, refer to the cable reel manufacturers service manual (See Index).
- Refer to “Spring Tension” section within the cable reel manufacturer’s service manual.
- After adjusting cable reel, start to extend or retract conveyor. Recheck the cable tension several times.
- If proper cable tension is not maintained, cable reel components may end replacement.
- Refer to the service section of the cable reels service manual.
- If the cable reel must be replaced, see the “Parts Replacement” cable reel section.



WARNING

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

PARTS AND REPLACEMENTS



WARNING

Before starting any maintenance procedure, the ELECTRICAL SERVICE MUST BE TURNED OFF AND LOCKED OUT.



WARNING

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

Belt Replacement

The manufacturer's standard belting specifications are as follows: 2-Ply PVC 120 PIW, black, belt lacing is stainless steel clipper lace with pin. Other belting is available as a customer option. The conveyor belting should last several years under normal operating conditions with a proper maintenance schedule.

When installing a new belt, first refer to the "Belt Installation" drawing located in the "Conveyor Reference" drawings section toward the back of the manual. This drawing shows the belt path required for proper operation of the conveyor. Improperly lacing the belt through the conveyor will cause damage to the belt and cause belt tracking, belt tensioning, and belt lacing issues. One of the following procedures should be followed for belt replacement:

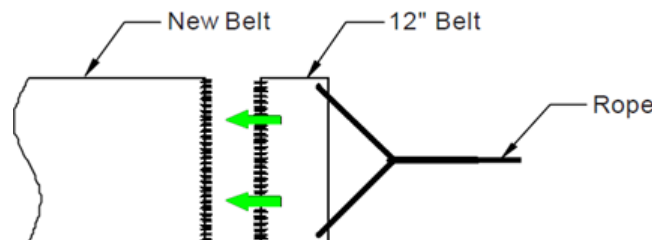
Option #1: When old belt is still on conveyor.

1. Fully extend conveyor if possible.
2. Lace one end of the new belt. (Refer to Belt Lacing in this same section)
3. Attach one end of old belt to the recently laced new belt. (Old belt will pull new belt toward back of conveyor)
4. Move to the front of the base unit. Adjust the belt take-up assembly fully toward the rear of the conveyor.
5. Stand facing toward the front of the first boom. Be prepared to help direct the new belt. **USE EXTREME CAUTION WHEN HANDLING THE BELT IS NECESSARY FOR INSTALLATION PROCEDURE.** Additional personnel may be required. Do not allow old belt to be slack when drive is extracting the old belt. For new belt to feed through properly, old belt must have a minimal amount of tension. Old belt must be continually removed from conveyor path to prevent belt from becoming entangled.

6. Reconnect electrical service.
7. Start belt from front operator station.
8. Allow the old belt to pull the new belt through the conveyor to the point that lacing the belt can occur.
9. Stop belt.
10. Remove the old belt.
11. Check end of belt for squareness. (Refer to Squaring the Belt section)
12. Lace remaining end of new belt.
13. Join both ends of new belt.
14. Re-adjust front take-up assembly for correct belt tension. (Refer to Belt Tensioning section)
15. Track belt as required for normal operation. (Refer to Belt Tracking section)

Option #2: If old belt has been removed from conveyor prior to installing new belt.

1. Fully extend conveyor if possible.
2. To ease installation of initially defining and feeding belt through the correct path, a rope or cord may be used. (See the following illustration for clarity)



3. Attach the rope along the width of one end of a piece of belting approximately 12" in length.
4. Lace the belt on the opposing end of the 12" piece of belt.
5. Lace one end of the new belt to be installed to the 12" belt.
6. Using the rope approximately 100' long, follow the Belt Installation drawing. Weave the rope through the conveyor following the proper belt path.
7. Located at the front of the base unit, adjust the belt take-up assembly fully toward the back of the conveyor. (Refer to Belt Tensioning section)
8. Stand facing toward the front of the first boom. Be ready to help direct the new belt. **USE EXTREME CAUTION WHEN BELT HANDLING IS NECESSARY FOR INSTALLATION PROCEDURE.** Additional personnel may be required. For new belt to feed through properly, the rope must be in tension.

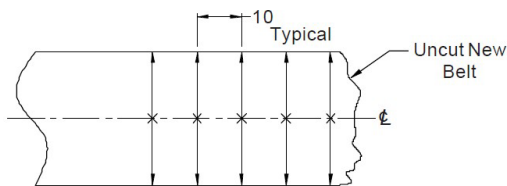
PARTS AND REPLACEMENTS

9. Reconnect electrical service.
10. Start belt drive motor from front operator station.
11. Allow the drive pulley to start feeding the rope and attached belt through the proper belt path.
12. Continue to maintain rope and belt tension while pulling new belt through the conveyor to the point that lacing the belt will occur.
13. Stop belt.
14. Check end of new belt for squareness. (Refer to Squaring the Belt and Belt Lacing sections)
15. Lace remaining end of new belt.
16. Join both ends of new belt.
17. Re-adjust front take-up assembly for correct belt tension. (Refer to Belt Tensioning section)
18. Track belt as required for normal operation. (Refer to Belt Tracking section)

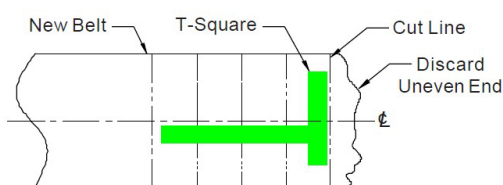
Squaring the Belt

Prior to lacing the new belt or re-lacing an existing belt, the end of the belt must be square to the centerline of the belt. Improperly lacing a belt will result in improper belt tracking and may result in serious belt damage. The illustration below shows the proper layout method to square a belt prior to lacing.

Finding the Centerline of Belt...



Squaring and Cutting the Belt Prior to Lacing...



When a new belt is received, the ends of the belt may not be square. Having the lacing square to the belt provides a belt splice that helps to distribute the product load evenly across the width of the belt. Do not use the fabric wales as guidelines, they are not always parallel to the belts length. To properly square the belt, the centerline method is recommended and is described below. Refer to the illustration shown on previous page)

To properly locate the belt centerline, measure the belt width of five points approximately 10" apart starting near

the end to be laced. Divide each measurement in half and mark the center point of each measurement. Draw an average centerline through the five marks. This line is the actual centerline of the belt.

Next position a T-square along the centerline. Along the perpendicular edge of the T-square, mark the "cut line" across the width of the belt near the end to be laced (See illustration on previous page). At this time, mark several right-angle reference line across the belt surface to be used as guidelines at a later time. Using the "cut line" as a guide, cut off the end of the belt with a sharp razor knife. Make sure that the cut is clean, vertical, and without imperfections.

At this time, it may be preferable to repeat this procedure on the opposite end of the belt. Note that the final belt length may need to include an allowance for such things as additional splices that may need to be made.

Belt Lacing

The conveyor's belt splice originally uses "Unibar" #36 lacing with the standard 2-Ply PVC 120 PIW belt. Optional belts may utilize other types and/or sizes of lacing.

Consult with belting manufacturer for the best belting/lacing application. Either "Clipper" (flexible steel) lacing or "Alligator" (steel hinge) lacing may be used. Clipper lacing does require a lacing machine for correct installation. The manufacturer's lacing instructions should be referenced for proper installation.

Belt Repairs

Extensive tears across the width or along the length of the belt are not practical to repair. In these cases replacement of the belt is required. Some tears or cuts may not require belt replacement. A torn belt may be repaired with belt lacing or rubber cement can be used to repair a cut belt. If a specific section of the belt is badly damaged, a new section of belt may be inserted in the existing belt.

Bearings

Before starting any maintenance procedure, THE ELECTRICAL SERVICE MUST BE TURNED OFF AND LOCKED OUT. Preventative maintenance should include practices that will minimize bearing damage, wear, and corrosion. Refer to the inspection schedule to ensure maximum bearing life. This section provides instructions for the removal, installation and storage of bearings. Existing bearings needed replacement should be replaced with bearings from the same manufacturer and of the same specifications.



WARNING

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

PARTS AND REPLACEMENTS

Proper Bearing Care

Most bearings or connecting shafts are accessible from the outside of the conveyor. When inspection bearings for correct function with the conveyor belt running, listen for vibrations with a long metal rod. NEVER insert rod into a moving area of the conveyor, serious injury may result. Never reach into or under conveyor when the conveyor is running. THE ELECTRICAL SERVICE MUST BE TURNED OFF AND LOCKED OUT.

The Do's of Proper Bearing Care

- Work with clean tools in clean surroundings.
- Remove all outside dirt from housing before exposing bearings.
- Handle bearings with clean, dry hands.
- Treat a used bearing as carefully as a new one.
- Use clean solvents and flushing oils.
- Lay bearings out on a clean paper.
- Protect disassembled bearings from dirt and moisture.
- Use clean, lint-free cloths to wipe bearings.
- Keep bearings wrapped in oil proof paper when not in use.
- Clean the inside of the housing before replacing bearings.
- Install new bearings as removed from packages without washing.

The Don'ts of Proper Bearing Care

- Don't work in dirty surrounds.
- Don't use wooden mallets or work on rough/dirty bench tops.
- Don't use dirty, brittle or chipped tools.
- Don't handle bearings with dirty, moist hands.
- Don't spin uncleaned bearings.
- Don't spin any bearing with compressed air.
- Don't use the same container for bearing cleaning and final rinsing.
- Don't use cotton waste or dirty cloths to wipe bearings.
- Don't expose bearings to moisture or dirt at any time.
- Don't scratch or nick bearing surfaces.
- Don't remove grease or oil from new bearings.

Pressed Bearing Replacement/Installation

New pressed bearings must be carefully installed with clean, dry hands. Clean shafting thoroughly using clean

lint-free cloths. Remove all dirt, burrs and slivers from the shafts and keyways.

Pressed bearings must be installed straight and square onto the shaft or into the bearing housing. Press only on the right, which is designed to withstand the pressing force required for the tight fit. Continue pressing until the bearing is fully seated. Read and follow all bearing manufacturer's instructions prior to installation.

Pillow Block and Flange Bearing Replacement/Installation

When a bearing is damaged or defective, the complete bearing and bearing housing should be replaced. For bearing inspection and/or replacement, follow the procedure listed below.

1. Extend conveyor booms until bearing may be accessed.
2. TURN OFF AND LOCK OUT ELECTRICAL SERVICE.
3. Remove guards to access bearing as required.
4. Move to front take-up adjustment.
5. Mark position of existing bearing (Reference mark to properly install new bearing).
6. Release belt tension.
7. Remove bearing.
8. Inspect bearing for excessive damage and/or wear.
9. If existing bearing meets the required performance parameters, clean and reinstall. If bearing shows excessive damage and/or wear, replace the complete bearing and bearing housing.
10. Locate bearing with reference marks for correct alignment.
11. Check belt tracking (Refer to Belt Tracking section).
12. Check belt tensioning (See Belt Tensioning section).
13. Replace all guarding.

Idler Roller Replacement/Installation

Rollers may wear or become damaged over a period of time. A regular maintenance schedule for roller inspections will allow early detection of worn or damaged parts before excessive damage could cause conveyor down time. Individual bearing replacements are not practical in comparison to the cost of a replacement roller. Full roller replacement in comparison is a more economical alternative, requiring less conveyor down time and less personnel labor costs for the repair. To inspect and replace idler rollers, complete the following procedure.

PARTS AND REPLACEMENTS

Inspect individual rollers for excessive noise. Touch a metal rod to the end of the roller axle and listen. NEVER insert the rod into a moving area of the conveyor, serious injury may result. NEVER reach into or under the conveyor when the conveyor is running.

1. If excessive noise or vibrations are present, the roller must be removed and replaced.
2. TURN OFF AND LOCK OUT THE ELECTRICAL SERVICE.
3. Depress axle of roller enough to make roller drop out of frame.
4. Remove roller from conveyor.
5. Inspect roller. If roller is functioning properly, re-install. If roller shows excessive wear or damage, replace roller.
6. To re-install roller, insert axle of the spring end of the roller into side frame and depress axle. Slide roller into position by aligning hex axle and the hex hole in side frame. Once the hex is aligned with hex hole, the axle will slide into position.

Chain/Sprockets

This section provides information for the repair and replacement of chains and/or sprockets. Regularly scheduled preventative maintenance will help to ensure that the maximum component life is attained. Before starting any maintenance procedure, the ELECTRICAL SERVICE MUST BE TURNED OFF AND LOCKED OUT.



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

Drive Chain/Sprocket Replacement

Periodic inspection and clearing of the chains and sprockets is required to allow normal daily conveyor operations. In the event that the conveyor chains and/or sprockets become excessively dirty, worn or damaged, they need to be cleaned or replaced. The following procedure should be completed.

- Rotate the reducer sprocket until a connecting link is fully engaged with one of the sprockets. This should relieve the chain tension at the connecting link.
- Remove connecting link cotter pins and connecting link. If chain tension is not relieved, the chain tensioner must be loosened to allow the chain enough slack necessary to remove connecting link (See Chain adjustments, Drive Chain section).

- Remove and inspect chain. If chain is in satisfactory condition, thoroughly clean chain. Refer to the Clearing/Lubrication section immediately following. If evidence of excessive wear or damage is evident, chain must be replaced. If the chain is replaced, make sure that the new chain has the same number of pitches.
- Inspect sprockets. If sprocket is in satisfactory condition, thoroughly clean with proper cleaning solution. If excessive sprocket wear is noticeable, sprockets must be replaced.
- Install new chain and sprockets or re-install existing chain and sprockets. If the existing chain or sprockets are badly worn, both should be replaced.
- After initially locating sprockets on reducer and drive shaft, the proper alignment is required. Align sprockets with respect to each other by holding a straight edge against the sides of the sprocket faces. If the length between sprockets is too large, stretch a taut wire from one sprocket face to the other. Make sure that the sprockets are square and in-line with each other and that the keys are located correctly.
- Tighten set screws at two (2) locations per sprocket.
- Install chain onto sprockets. Position chain so connecting link will be positioned on a sprocket. With both ends of the chains fully seated on the sprocket, re-assemble the connecting link.
- Inspect chains and sprockets to double-check that all fasteners and connections are correctly mounted.
- Correctly adjust chain tension (See Chain Adjustments section).
- Refer to Inspection Schedule to properly lubricate the chain and sprockets.

Chain/Sprockets Cleaning/Lubrication

As previously mentioned, following a regular maintenance schedule will extend component life. The life of the chain is usually limited by wear. The presence of dust or dirt is one of the primary contributors to wear. Periodic inspection and cleaning of the chains and sprockets is required to allow normal daily conveyor operations.

Follow the below procedure to properly clean chains:

1. The best way to thoroughly clean the chain is by removing it from the sprockets.
2. Soak the chain in an approved chain cleaning solvent.
3. After all foreign materials are removed, rinse the chain in clean solvent.
4. Allow excess solvent to drain off.
5. Clean the sprockets with solvent.
6. Inspect and reinstall chain.
7. See inspection schedule for proper lubrication.
8. Lubricate chain.

PARTS AND REPLACEMENTS

Broken Boom Chain

If a boom chain failure occurs, the conveyor must be stopped immediately. Any continued conveyor usage or movement may cause additional damage to the conveyor resulting in more costly repairs. Remove all products from the conveyor belt. **TURN OFF AND LOCK OUT ELECTRICAL SERVICE.** Continue with the following procedure;

1. Determine the point of chain failure.
2. Disconnect the boom drive chain.
3. Remove any damaged components that will interfere with retracting the boom(s).
4. Manually push boom(s) to the fully retracted position.
5. Position the front of each intermediate boom flush with the front of the base unit.
6. Position the front of the first boom extending approximately 9" from the base unit.
7. Remove all base unit and boom access windows.
8. Loosen both front and back chain take-up adjustments on the boom to be repaired.
9. Remove the chain anchor at the point of chain breakage (Removing the chain anchor usually eases chain repair.).
10. Inspect chain for damage and/or excessive wear. Repair and install cleaned existing chain or install new chain as required. The same number of pitches must be used in replacement chain.
11. Raise anchor to the access window, reconnecting the repaired chain (Spring clips on master links should be reconnected facing the center of the conveyor.).
12. Connect anchor to side of boom.
13. Adjust chain tension at front and rear chain adjustment take-ups to a recommended torque of 120-foot/pounds or until chain sag is within acceptable limits. Equally adjust the tension of the boom chains located on both sides of the conveyor (Refer to Chain Adjustments, Base and Boom Chains.).
14. If the boom starts to extend during chain tensioning, clamping one boom to the next will eliminate the movement.
15. Manually extend the booms several feet to verify a uniform boom extension.
16. After all adjustments are completed, reconnect drive chain.
17. Replace all access windows and guarding. **NEVER** operate the conveyor with any guard removed.

18. Reconnect electrical service.
19. Run Initial Start-Up and Testing, verifying that limit switches engage properly and that chain anchors do not interfere with idler sprockets.

Chain Anchors

Replacing a Damaged or Broken Chain Anchor

If a chain anchor is damaged or broken, the conveyor must be stopped immediately. Any attempted continuation of conveyor operation or movement may cause additional damage resulting in more costly repairs. Remove all products from the conveyor belt. **TURN OFF AND LOCK OUT ELECTRICAL SERVICE.** Make repairs with the following procedure.

- Determine the point of chain anchor failure.
- Disconnect the boom drive chain.
- Remove any damaged components that will interfere with retracting the boom(s).
- Manually push boom(s) to the fully retracted position.
- Position the front of each intermediate boom flush with the front of the base unit.
- Position the front of the first boom extending approximately 9" from the base unit.
- Remove all base unit and boom access windows.
- Loosen both the front and back chain take-up adjustments on the boom chain anchor to be repaired.
- Remove damaged and/or broken chain anchor.
- Inspect adjoining chain for excessive wear and/or damage. If chain should be replaced, refer to Chain/Sprocket Replacement section.
- Install new chain anchor utilizing access window.
- Connect chain (Spring clips on master links should be reconnected facing toward the center of the conveyor).
- Connect chain anchor to side of boom.
- Adjust chain tension at front and back chain adjustment take-ups to a recommended torque of 120-foot/pounds or until chain sag is within acceptable limits. Equally adjust the tension of the boom chains located on both sides of the conveyor (Refer to Chain Adjustments, Base and Boom Chains).
- If the boom starts to extend during chain tensioning, clamping one boom to the next will eliminate the movement.

PARTS AND REPLACEMENTS

Replacing a Damaged or Broken Chain Anchor

- After all adjustments are completed, reconnect drive chain.
- Replace all access windows and guarding. Never operate the conveyor with any guard removed.
- Reconnect electrical service.
- Run Initial Start-Up and Testing, verifying that limit switches engage properly and that chain anchors do not interfere with idler sprockets.

Pulley Replacement

This section provides the required information for conveyor pulley replacements. Before performing any maintenance procedure, THE ELECTRICAL SERVICE MUST BE TURNED OFF AND LOCKED OUT. Regularly scheduled preventative maintenance should be followed to ensure maximum component life. In the event of excessive wear or damage to the pulley, proceed with one of the following replacement procedures. In all cases, before any pulleys can be removed from the conveyor, adjust the belt take-up assembly fully toward the back of the conveyor. This loosens the belt, which facilitates pulley removal.



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

Extendable Boom Pulley Replacement

- Front Pulley Removal – Extend reach conveyor boom approximately three (3) feet to allow easier access to the pulley located at the front of each boom.
- Rear Pulley Removal – Fully retract the conveyor. Remove main guard on base unit. All pulleys affixed to rear of base unit must be removed to gain access to all rear boom pulleys.
- Remove all bolts, which secure pulley to conveyor structure.
- Remove pulley assembly by feeding it through the loosened belt.
- Replace with new pulleys reversing above order.
- Rear Pulley Removal: Re-install all pulleys and related components previously removed for rear, boom pulley replacement.
- Replace all guarding. NEVER operate the conveyor with any guard removed.
- Refer to Belt Tensioning and Belt Tracking sections for final conveyor adjustments prior to conveyor re-start.

Base Unit Pulley Replacements

Three (3) different types of pulleys are used in the base unit. They include the Motorized Drive Pulley,

Take-Up Pulley and Snubber Pulley. Replacement procedures for each immediately follow. Take-Up Pulley Replacement

- Move to belt take-up assembly.
- Loosen take-up bearing set screws at both bearings.
- Rotate free end of pulley to allow enough shaft clearance to drive the opposite end of the shaft from the other bearing.
- Remove pulley from conveyor.
- Inspect pulley and mating shaft for excessive wear/damage.
- Repair existing pulley or replace with new pulley as required.
- Install pulley reversing removal sequence as stated above.
- Refer to Belt Tensioning and Belt Tracking sections for final conveyor adjustments prior to conveyor re-start.
- Replace all guarding. NEVER operate the conveyor with any guard removed.

Rear Pulley Replacement

- Remove main guard at back of conveyor.
- Remove bolts.
- Pulleys should be free to remove from conveyor.
- Inspect pulley and internal bearings for excessive wear/damage.
- Repair existing pulley or replace with new pulley as required.
- Install pulley by reversing removal sequence as stated above.
- See Belt Tensioning and Belt Tracking sections for final conveyor adjustments prior to restarting conveyor.
- Replace all guarding. NEVER operate the conveyor with any guard removed.

Motorized Drive Pulley Replacement

- Remove right-hand and left-hand guards surrounding motorized pulley.
- Unbolt mounting brackets.
- Motorized pulley is now free to remove from rear or conveyor.
- Inspect motorized pulley for excessive wear/damage.
- Repair existing motorized pulley or replace with new motorized pulley as required.
- Install motorized drive pulley by reversing removal sequence as stated above.

PARTS AND REPLACEMENTS

- See Belt Tensioning and Belt Tracking sections for final conveyor adjustments prior to restarting conveyor.
- Replace all guarding. NEVER operate the conveyor with any guard removed.

Roller Replacement

This section provides the required information for roller replacements. Before performing any maintenance procedure, THE ELECTRICAL SERVICE MUST BE TURNED OFF AND LOCKED OUT. Regularly scheduled preventative maintenance will ensure maximum component life. In the event of excessive wear or damage to the roller, complete the following procedure.

- Move to belt take-up assembly.
- Adjust the belt take-up assembly fully toward the rear of the conveyor. This will loosen the belt, which facilitates removal of the roller.
- Move to idler roller.
- Rollers are spring retained.
- Remove axle by depressing axle.
- Remove roller from conveyor.
- Inspect roller for excessive wear/damage.
- Repair existing roller or replace with new roller as required.
- Install roller reversing removal sequence as stated above.
- See Belt Tensioning and Belt Tracking sections for final conveyor adjustments prior to restarting conveyor.
- Replace all guarding. NEVER operate the conveyor with any guard remove.

Cable Reel Removal

Does Not Apply to One-Boom Units

The following instructional information provides the required steps for the proper removal and installation of the cable reel. Before performing any maintenance procedure. THE ELECTRICAL SERVICE MUST BE TURNED OFF AND LOCKED OUT.

- TURN OFF AND LOCK OUT ELECTRICAL SERVICE.
- Open the junction box cover located at the side of the cable reel.
- Inspect wiring. Wiring should be numbered correctly.
- Disconnect red control wires at junction box.
- Move to junction box located at the front of the first boom.
- Open junction box cover.

- Inspect wiring. Wiring should be numbered correctly.
- Disconnect cable wiring.
- Loosen or remove cable grip fitting.
- Remove cable from junction box. Do not release cable. The cable reel is under a moderate amount of spring tension. The cable reel recoil system may be damaged if cable is released too quickly. Feed cable back to cable reel by hand.
- Tape loose end of cable to cable coiled on the coil reel.
- Remove mounting bolts.
- Remove cable reel from conveyor.

Cable Reel Installation

To correctly reinstall cable reel, reverse the Cable Reel Removal procedure listed above. Make sure that the cable is correctly routed through the cable guides. Verify that the cable is correctly connected to the cable grip. Failure to grip the cable sufficiently may allow the cable to pull out from the operator station located at the front of the first boom.

Limit Switch Replacement

The Extendable Belt Conveyor uses two plug-in limit switches of a modular design. These limit switches control both the extension and retraction limitations of the conveyor. A faulty limit switch must be repaired or replaced immediately. Continued conveyor use may result in added damage to the conveyor and added repair costs. To replace a limit switch, continue with the following procedure.

THE ELECTRICAL SERVICE MUST BE TURNED OFF AND LOCKED OUT.

- Remove limit switch guard.
- Remove limit switch from limit switch base.
- Note position of lever arm on limit switch. Remove lever arm as required.
- Replace faulty limit switch.
- Replace lever arm in original position.
- Re-fasten limit switch to limit switch base.
- Adjust actuator bolt so booms stop in original extended and retracted positions.
- Replace limit switch guard. NEVER operate the conveyor with any guard removed.
- Reconnect electrical service.
- Run Initial Start-Up and Testing, verifying that limit switches engage properly and that boom over-travel does not occur.



WARNING

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

TROUBLESHOOTING

Troubleshooting is a structured process of analyzing equipment abnormalities and relating these symptoms to the most probable cause, thus helping to correct the component failure. By carefully analyzing the deficiency, the experienced troubleshooter can efficiently isolate and take the appropriate steps to correct concerns that may arise.

Equipment malfunctions or failures may occur at any time. Following a regularly scheduled preventative maintenance program can help to minimize conveyor down time. Scheduled maintenance can lessen the frequency of equipment repairs by keeping components running more efficiently and in a better working environment.

Prior to performing any maintenance or replacement procedures, the ELECTRICAL SERVICE MUST BE TURNED OFF AND LOCKED OUT.

The disassembly or repair of equipment under warranty may void such warranty (motor, reducer, cable reel, etc.). Check to be sure that the warranty has not expired or will not be voided prior to performing disassembly or repair.

The troubleshooting information contained on the following pages is general in nature and is intended to provide an efficient means of pinpointing a correct solution in a timely manner. If additional information is required for repairs and is not covered in this manual, refer to the Technical Assistance information located at the front of this manual.



WARNING

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

PROBLEM	CAUSE	SOLUTION
Conveyor Appears Inoperative; Operating Controls Not Functioning Properly	Circuit Breaker On Master Control Panel Not On	Place Master Control Circuit Breaker To On Position
	Power Not Applied To Master Control Panel From Loading Dock Source	Check Source Input Voltage To Conveyor
	Blown Fuse	Inspect And Replace Blown Fuse
	Short Circuit In Electrical System	Isolate Short Circuit And Repair Electrical System
Circuit Breaker On Master Control Panel Will Not Stay On, Breaker Trips		
Belt Cannot Be Operated From Any Of The Control Stations	Fuse Blown	Replace Fuse Onmaster Control Panel
	Belt Overload	Reset Or Replace Belt Overload Relay
	Relay Tripped Or Defective	
	Defective Motor Starter	Replace Motor Starter
	Defective Motor	Replace Motor
	Drive Chain Disconnected	Repair Or Replace Drive Chain
	Defective Power Cable Or Cable Reel	Repair Or Replace Cable Or Cable Reel Locate problem area first
Belt Too Loose	Adjust Belt Tension	
Belt Not Moving But Continues To Run Drive Pulley	Maximum Product Weight Exceeded	Remove Excess Product
Conveyor Belt Cannot Be Operated From A Single Control Station, Operation From Other Stations	Defective Belt Start	Replace Defective

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Appears Normal	Push Button Switch	Start Push Button Switch
	Defective Control Circuit Wiring	Repair Or Replace Control Circuit Wiring As Necessary
	Emergency Stop Button Is Activated	Emergency Stop Button Must Be Pulled To Deactivate
Belt Doesn't Move When Belt Start Button Is Pushed	Defective Belt	Replace Defective
	Start Push Button Switch	Start Push Button Switch
	Defective Control Circuit Wiring	Repair Or Replace Control Circuit Wiring As Necessary
Belt Runs In One Direction But Will Not Run In Reverse Direction (Optional)	Defective Forward / Reverse Selector Switch	Replace Defective Forward / Reverse Selector Switch
	Defective Control Circuit Wiring	Repair Or Replace Control Circuit Wiring As Necessary
Telescoping Boom	Never Attempt To Retract Booms By Pushing On The End Of The Extended Booms Chain Breakage Or Other Serious Damage May Result	Disconnect and remove drive chain from boom drive on base
Telescoping Boom Warnings	If The Booms Must Be Retracted Without Using The Boom Drive Unit, The Following Procedure Must Be Followed (Lock Out Unit):	Using a Suitable wrench on the drive sprocket, rotate shaft to retract booms After booms have been retracted, replace drive chain
Telescoping Booms Will Not Operate (Extend Or Retract) From Any Of The Control Stations	Blown Fuse(S) (Control Transformer) In Master Control Panel	Replace Fuse(S) On Master Control Panel
	Boom Overload Relay Tripped Or Defective	Reset Or Replace Boom Overload Relay
	Defective Motor Starter	Replace Motor Starter
	Defective Motor	Replace Motor
	Defective Control Circuit Wiring	Repair Or Replace Control Circuit Wiring As Necessary
	Defective Limit Switch	Replace Limit Switch
Telescoping Booms Will Not Operate From A Single Control Station; Operation From Other Stations Seems Normal	Drive Chain Is Disconnected	Repair Or Replace Chain Drive
	Defective "Extend" Or "Retract" Pushbutton Switch	Replace Defective Pushbutton Switch
	Defective Control Circuit Wiring	Repair Or Replace Control Circuit Wiring As Necessary

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Telescoping Booms Will Operate In Only One Direction From All Control Stations	Defective Motor Starter	Replace Motor Starter
	Defective Control Circuit Wiring	Repair Or Replace Control Circuit Wiring As Necessary
Only One Or Two Telescoping Booms Extend, Other Sections Do Not Extend	Drive Chains And/Or Chain Anchors Broken Or Disconnected On Both Sides Of One Boom	Repair Or Replace Defective Chain, Brackets Or Attachments As Required
"Safety Stop Plate" On Front Of First Telescoping Boom Fails To Operate Properly	Defective Switch	Repair Or Replace Defective Switch As Necessary
	Defective Control Circuit Wiring	Repair Or Replace Control Circuit Wiring As Necessary
	Safety Switch Not Closing Limit Switch	Adjust Limit Switch or Lever Arm
Conveyor Stops Without Pushing The "Stop" Button	Fuse Blown In Control Transformer Secondary	Inspect And Replace Blown Fuse; Question Cause Of Blown Circuit
	Motor Overload Causing Magnetic Starter To Trip	Reset Magnetic Overload
	Defective Control Circuit Wiring	Repair Or Replace Control Circuit Wiring As Necessary
Excessive Noise Or Vibration From Motor And/Or Reducer	Loose Motor/ Reducer Mounting	(Lock Out Unit) Check Motor Mounting Bolts And Reducer Mounting Bolts, Secure As Required
	Loose Drain Plug And/ Or Damaged Reducer Seal	(Lock Out Unit) Tighten Drain Plug Or Replace If Threads Are Damaged Disassemble Reducer To Replace Damaged Seals
Oil Leakage From Reducer	Cracked Reducer Housing	Drain And Remove Reducer Housing, Install Replacement Unit
	Reducer Housing Over Filled	Remove Excess Oil
Irregular And / Or Excessive Chain Wear	Excessive Chain Tension	Adjust Chain Tension To Correct Force, Both Sides
	Sprocket Misalignment	Loosen Sprocket Set Screws And Re-Align Per Instructions
	Sprocket And / Or Drive Chain Damaged	Remove, Inspect And Replace If Required Properly Align And Tension Component
Excessive Noise Evident From Chain And / Or Sprocket Pulsating Chain	Insufficient Chain Tension	Adjust Chain Tension To Correct Force, Both Sides
	Conveyor Overload	Check For Excessive Conveyor Drag Or Obstructions
	Seized Shaft Or Sprocket	Inspect And Replace Damaged Bearings If Required Verify shafts are straight
Broken Chain	Excessive Wear Or Damage To Chain / Sprocket	Inspect, Repair Or Replace Sprocket / Chain As Required

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Sprocket Loose On Shaft	Loose Set Screws	Inspect Sprockets for Excessive Wear Or Damage, Replace If Required Realign And Tighten Set Screws
Excessive Chain Slack	Keyworn Or Damaged	Inspect Key, Keyseat And Sprocket For Excessive Wear Or Damage, Replace If Required
		Re-Adjust Chain Tension Rapid
		Chain Growth Occurs During Chain Break In
Seized Or Dragging Pulley	Excessive Or Irregular Wear	Re-Adjust Chain Tension
	Bearing Has Excessive Wear Or Damage	Remove, Inspect And Replace Bearing If Required
	Bent Pulley Shaft	Remove Inspect And Replace Pulley Shaft As Required
Pulley Has Excessive Noise	Belt Slipping Against Pulley Face	Correctly Adjust Belt Tension
	Pulleymount Loose	Tighten Flange Bearings Pulley Should Be Square In Frame And Level For Proper Tracking
	Lack Of Bearing Lubrication	Remove, Inspect And Replace Bearing If Excessive Wear Or Damage Is Evident
		Correctly Follow The Maintenance Inspection Schedule
	Bent Pulley Shaft	Remove, Inspect And Replace Shaft And Adjoining Components As Required
Excessive Wear To Belt And /Or Pulley Face	Excessive Belt Slippage	Adjust Belt Tension To Required Force
	Foreign Matter Between Belt And Pulley	Thoroughly Clean Under Side Of Belt And Face Of Pulley Use Care Not To Damage Pulley Face
	Lacing At Belt Splice Projecting	Repair Or Replace Belt Splice
	Oil Or Grease On Pulley Face	Thoroughly Clean Underside Of Belt And Pulley Face If Belt Or Pulley Face Is Damaged, Replace As Required
Belt Runs Off Of Drive Pulley	Drive Pulley Misaligned	Pulley Should Be Square In Frame And Level For Proper Belt Alignment
	Build-Up Of Foreign Material On Face Of Drive Pulley	Thoroughly Clean Underside Of Belt And Face Of Pulley If Belt Or Face Of Pulley Is Damaged, Replace As Required
Belt Runs Off End Pulley	End Pulley Out Of Alignment	Pulley Should Be Square In Frame And Level For Proper Belt Alignment
	Insufficient Belt Tension	Adjust Belt Tension To Required Or Correct Force
	Worn And / Or Damaged Face Of Drive Pulley	Replace Drive Pulley

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Belt Slips At Start-Up	Build-Up Of Foreign Material On Face Of Drive Pulley	Thoroughly Clean Underside Of Belt And Face Of Pulley If Belt Or Face Of Pulley Is Damaged, Replace As Required
	Insufficient Belt Tension	Adjust Belt Tension To Required Force
Belt Slips On Pulley	Worn or Damaged Face On Drive Pulley	Replace Drive Pulley
	Build-Up Of Foreign Material On Face Of Drive Pulley	Thoroughly Clean Underside Of Belt And Face Of Pulley If Belt Or Face Of Pulley Is Damaged, Replace As Required
Excessive Belt Stretch	Excessive Belt Tension	Adjust Belt Tension To Required Or Correct Force
Belt Tension Not Correct	Belt Take-Up Not Correctly Adjusted	Belt Tension Should Be Correctly Set Refer To "Belt Tensioning" Section
	Stretching Of New Belt	Re-Adjust Belt Tension Rapid Belt Growth Occurs In New Belts During The First Few Weeks
Seized Or Dragging Roller	Excessive Bearing Wear And / Or Damage Due To Dirty Work Environment, Bent Roller Shaft	Remove, Inspect And Replace Roller As Required
Excessive Roller Noise	Loose Components Or Mounting	Remove, Inspect, Repair Or Replace Roller As Required
	Bent Roller Shaft	Remove, Inspect, Repair Or Replace Roller As Required
Eccentric Roller	Loose Roller Mount	Tighten Mounted Bearings Roller Should Be Square In Frame And Level For Proper Tracking
Excessive Wear	Foreign Material Between Belt And Rollers	Thoroughly Clean Underside Of Belt And Surface Of Roller
	Lacing At Belt Splice Projecting	Repair Or Replace Belt Splice Inspect Roller For Excessive Wear Or Damage, Replace As Required
	Excessive Wear / Damage To Cam Roller	Remove, Inspect, Repair Or Replace Roller As Required
Excessive Noise	Front Cam Rollers Misaligned	Adjust Cam Rollers To Allow Proper Boom Alignment

WARRANTY STATEMENT

The Seller 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, the Seller 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 the Seller a reasonable opportunity to perform any appropriate tests thereon) Seller will, at its option, either repair the Equipment or supply a replacement therefore.

The Seller under either option shall have the right to require Customer to deliver the Equipment to Seller's designated service center and the Customer shall pay all charges for in-bound and out-bound transportation and for services of any kind, diagnostic or otherwise, excepting only the direct and actual costs of repairing or replacing the Equipment. If after reasonable effort the Seller cannot correct said deficiencies, the Seller will make an equitable price adjustment based on actual performance, provided that such adjustment shall under no circumstances exceed the purchase price. The Seller further warrants that the parts, and components supplied by the Seller and forming a part of the Equipment will be free from defects in material and workmanship for a period of one year or 2080 hours of use, whichever is sooner, from date of shipment to the Customer. The Seller's liability shall be solely limited to the supplying of replacement parts and materials.

For a copy our full warranty included in our Terms and Conditions of Sale, contact ConveyX Solutions, LLC.

RETURN AUTHORIZATION PROCEDURES

If the component in question is included in the replacement parts package, the following procedure will apply:

- Identify the part number from the manual
- If part is indicated as wear part
 - Replace the damaged or defective part from parts inventory
 - Order additional parts as required
- If the part is indicated as a warranty part
 - Replace the damaged or defective part from parts inventory
 - Contact ConveyX Solutions, LLC for a Return Merchandise Authorization (RMA) number
 - Have conveyor serial number available when contacting CXL.
 - Send the part to the following address

ConveyX Solutions, LLC.
2380 US 23 South
Docks C, D, E
Alpena, MI 49707
 - Include the conveyor serial number and RMA number on the packaging and the packing slip
 - CXL will inspect the part and make a warranty determination
 - If the part is under warranty, CXL will...
 - Ship a replacement to Customer to replenish parts stock
 - Issue a credit for the freight

If the component in question is not included in the replacement parts package, the following procedure will apply:

- Identify the part number from the manual
- Contact CXL for an initial review to establish if part is covered under warranty and to provide a quote if needed.
 - Have conveyor serial number available when contacting CXL
- Issue a purchase order for a replacement part
- CXL will issue a Return Merchandise Authorization (RMA) number for the part to be returned.
- Send the part to the following address

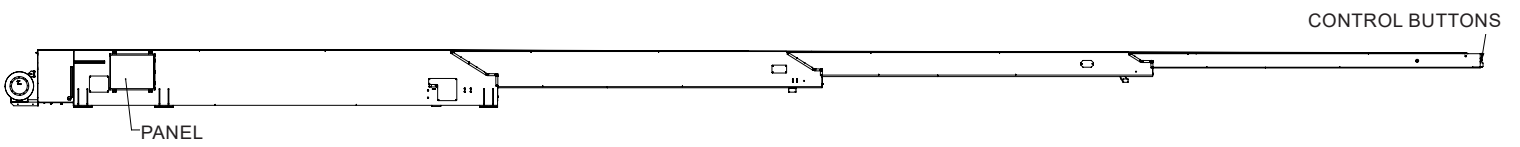
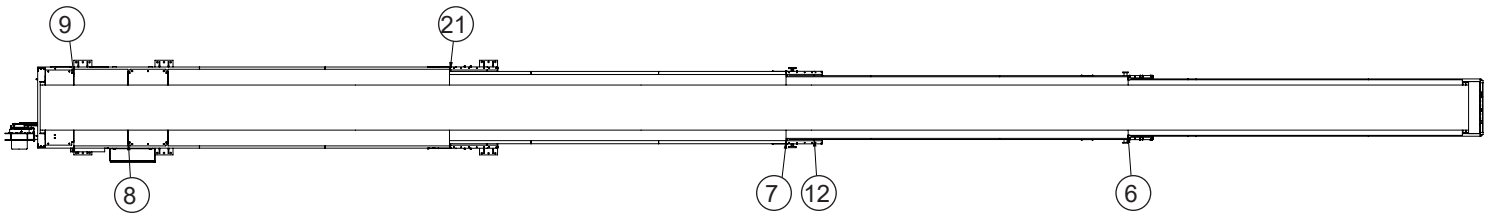
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Docks C, D, E
Alpena, MI 49707
- Include the conveyor serial number and RMA number on the packaging and the packing slip
- CXL will inspect the part and make a warranty determination
- If the part is under warranty, CXL will Issue a credit to Customer for the purchased part and associated freight charges

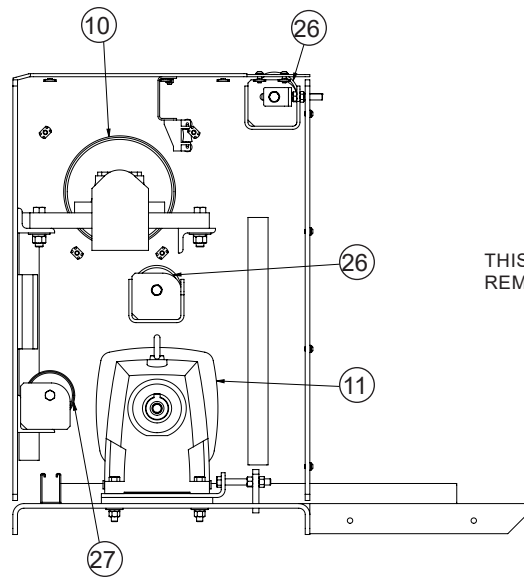
PARTS REFERENCE CHART AND DRAWINGS

3-STAGE EXENDABLE BELT CONVEYOR WEAR/REPLACEMENT PARTS		
1	DODP2BDL200	BEARING: PILLOW BLOCK, 2" BORE, DODGE #P2B-DL-200, #128715
2	DOD-F4B-DL-200	BEARING: 4-BOLT FLANGE, 2" BORE, D-LOCK, DODGE #F4B-DL-200, #128790
3	101786-251	BELT: MOL BELTING #2AW5-0BL-SP-FR-IR, BLACK 2-PLY MONO PVC, 120 PIW, 30" BELT WIDTH X 186'-10" LONG, CUT AND LACED WITH UNIBAR #1 STAINLESS LACING
4	SYMSS404818	BUSHING: SYMMCO #SS-4048-18, 1 1/4" ID X 1 1/2" OD X 1 1/8" LONG
5	SYMSS404820	BUSHING: SYMMCO #SS-4048-20, 1 1/4" ID X 1 1/2" OD X 1 1/4" LONG
6	101786-120	CHAIN LOOP: RC50, 409 PITCHES, BOTH ENDS INSIDE LINK, CONTINUOUS
7	101786-104	CHAIN LOOP: RC60, 335 PITCHES, BOTH ENDS INSIDE LINK, CONTINUOUS
8	101786-254	CHAIN LOOP: RC60, 617 PITCHES, BOTH ENDS INSIDE LINK, CONTINUOUS
9	101786-RC8068-CH	CHAIN LOOP: RC80, 68 PITCHES, (1) CONNECTING LINK, BOTH ENDS INSIDE LINKS
10	=VANTM215	DRUM MOTOR: VAN DER GRAAF #TM215, 5 HP, 65 FPM, EDT, 480V-3PH/60HZ, CROWN FACE PROFILE, 1/4" LAGGING, EP150 GEAR OIL
11	101786-NORD	GEARMOTOR: HELICAL INLINE WITH BRAKE, NORD #SK43VL-90LP/4CUSBRE20HLTW, 2 HP, 13 OUTPUT RPM, 129.38:1 REDUCTION, 1 7/8" DIA. SHAFT, 'M1' MOUNTING POSITION, TERMINAL BOX AT '2', 230/460V/3PH/60HZ, BRE20 BRAKE, BRAKE LEVER AT 'HL2'
12	TORYCRS24	CAM FOLLOWER: SEALS AND INTERNAL THRUST WASHERS, TORRINGTON #YCRS-24
13	PCIYCF4S	CAM FOLLOWER: PCI #YCF-4.00-S, 4" DIA., SHIELDED
14	PCIYCF3S	CAM FOLLOWER: PCI #YCF-3.00-S, 3" DIA., SHIELDED
15	PCIYCF35S	CAM FOLLOWER: PCI #YCF-3.50-S, 3 1/2" DIA., SHIELDED
16	PCISCF4S	CAM FOLLOWER: PCI #SCF-4.00-S, 4" DIA., SHIELDED
17	PCISCF3SH	CAM FOLLOWER: PCI #SCF-3.00-SH, 3" DIA., SHIELDED
18	PCISCF25S	CAM FOLLOWER: PCI #SCF-2.50-S, 2 1/2" DIA., SHIELDED
19	TORCRS22	TRACK ROLLER: SHIELDED BEARING, TORRINGTON #CRS-22
20	TORCRS28	TRACK ROLLER, SHIELDED BEARING, TORRINGTON #CRS-28
21	74405T707	STRIP BRUSH: TIGHT SEAL STRIP BRUSH WITH NYLON BRISTLES, RIGID BACKING, GALV., 8'-0" LONG, MCMMASTER-CARR #74405T707
22	GRE700187580A262S	TORQUE LIMITER: G.L.I. 700, (2) SPRINGS, BUSHING, 80A26 SPROCKET, 1 7/8" BORE, KEYWAY, (2) SET SCREWS
23	C2060	CONNECTING LINK: C2060 DOUBLE PITCH
24	C2050	CONNECTING LINK: C2050 DOUBLE PITCH
25	101786-69	PULLEY ASSEMBLY: 4" OD X 23 1/8" FACE LENGTH, CENTER CROWN, 34 1/8" OVERALL LENGTH, 1 9/16" DIA. SHAFT, TAPPED BOTH ENDS
26	101786-227	PULLEY: 4" OD X 34" FACE LENGTH, 34 7/8" OVERALL LENGTH, 1 9/16" DIA. SHAFT, FLAT FACED, TAPPED BOTH ENDS
27	101786-8	PULLEY: 4" OD X 34" FACE LENGTH, CENTER CROWN, 35 5/8" OVERALL LENGTH, 1 9/16" DIA. SHAFT, TAPPED BOTH ENDS
28	101786-21	PULLEY: 4" OD X 34" FACE LENGTH, CENTER CROWN, 41" OVERALL LENGTH, 2" DIA. SHAFT
29	25275-34-GP	GRAVITY ROLLER: 1.9" OD X 9 GA., 34" BF

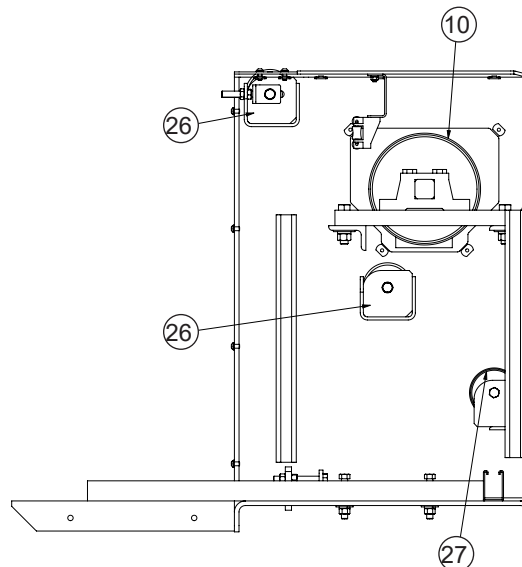
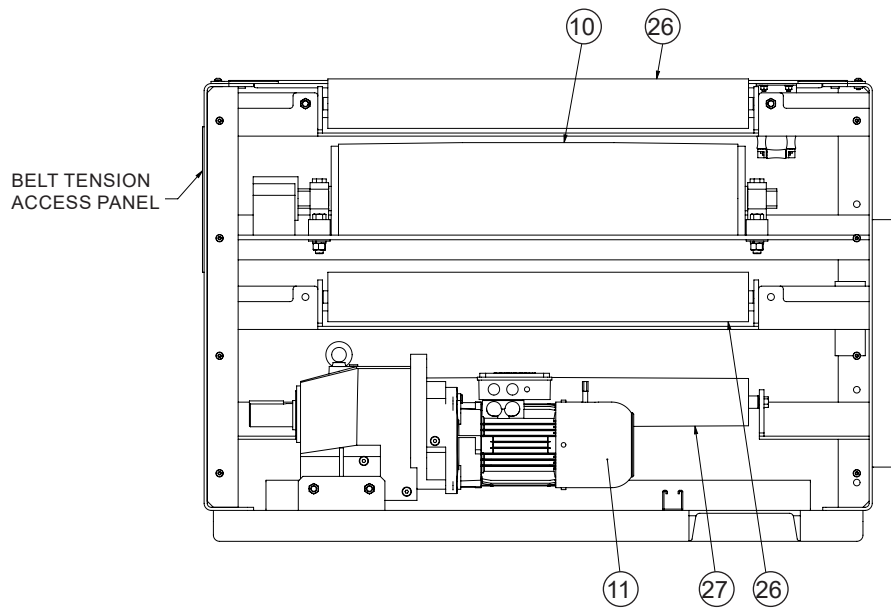
PARTS REFERENCE CHART AND DRAWINGS

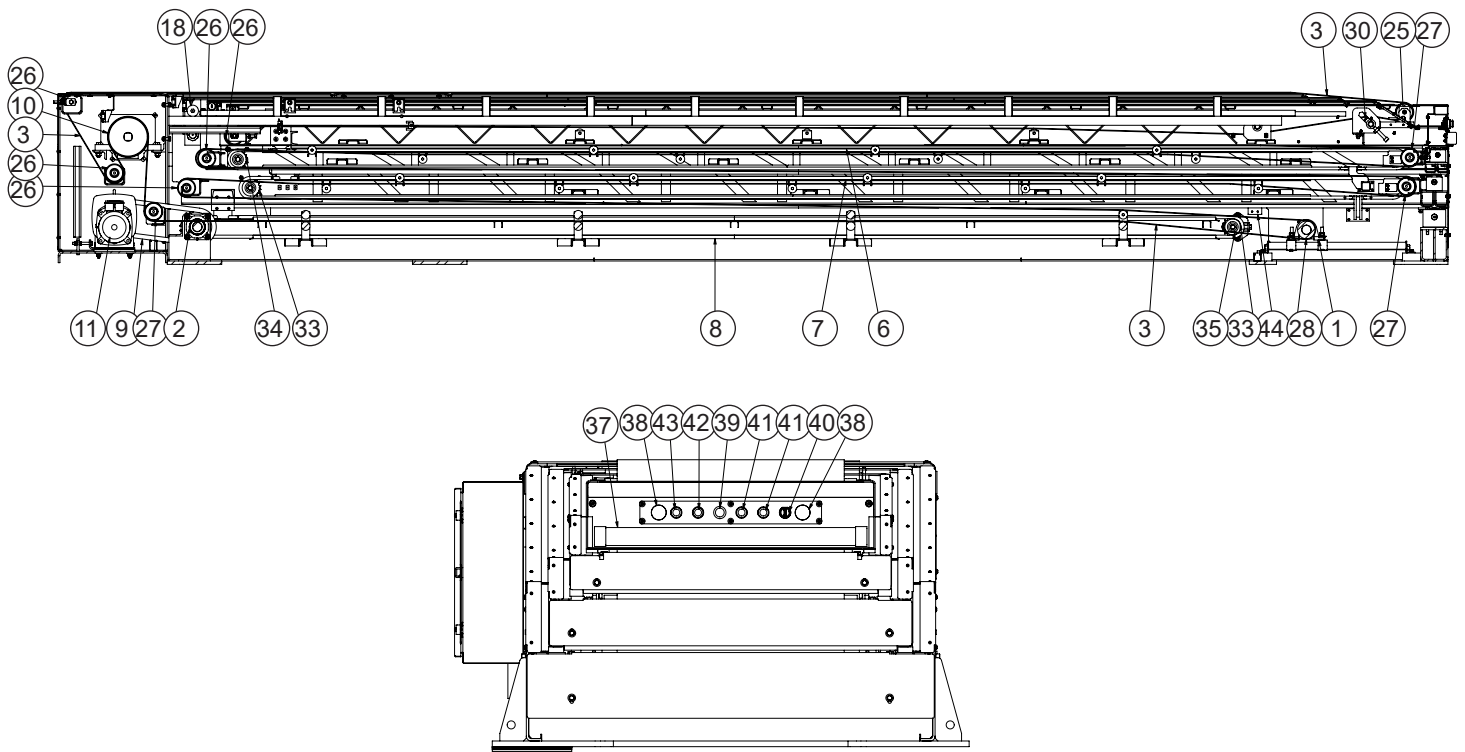
3-STAGE EXENDABLE BELT CONVEYOR WEAR/REPLACEMENT PARTS		
30	44723	GRAVITY ROLLER: 3 1/2" OD X .300 WALL, 34 19/32 BF
31	S8B0232	SPROCKET: 80B23, 2" BORE, (2) SET SCREWS, KEYWAY, HEAT TREATED TEETH
32	S6B018200	SPROCKET: 60B18, 2" BORE, (2) SET SCREWS, KEYWAY, HEAT TREATED TEETH
33	S6B018112	SPROCKET: 60B18, 1 1/2" BORE, (2) SET SCREWS, KEYWAY, HEAT TREATED TEETH
34	S5B020112	SPROCKET: 50B20, 1 1/2" BORE, (2) SET SCREWS, KEYWAY, HEAT TREATED TEETH
35	SYMST40764	THRUST WASHER: SYMMCO #ST-4076-4, 1 1/4" ID X 2 3/8" OD X 1/8" THICK
36	SYMST12241	THRUST WASHER: SYMMCO #ST-1224-1, 3/8" ID X 3/4" OD X 1/32" THICK
37	31-0530	MECHANICAL SWITCH BAR: SECURITY DOOR CONTROLS #MSB550V-36, ALUMINUM ANODIZED, 120VAC MODEL
38	10-0320	LED SPOT LIGHT: BANNER #WL50SWL5Q, 30MM, 12-30VDC, IP67, STAINLESS STEEL, M12
39	10-0108	E-STOP BUTTON: ALLEN-BRADLEY #800T-FXTQH2RA1, 2-POSITION, ILLUMINATED (MEETS UL STANDARDS FOR FEDEX)
40	10-0014	SWITCH (SELECTOR): ALLEN-BRADLEY #800T-H2D1, 2-POSITION, (M,M), 1 NO
41	10-0010	BUTTON (PUSH): ALLEN-BRADLEY #800T-A1D1, GREEN, FLUSH, 1 NO
42	10-0012	BUTTON (PUSH): ALLEN-BRADLEY #800T-B6D2, RED, EXTENDED HEAD, 1 NC
43	10-0009	BUTTON (PUSH): ALLEN-BRADLEY #800T-A2D2, BLACK, FLUSH, 1 NC
44	104018	LIMIT SWITCH: ALLEN-BRADLEY #802T-AP, 1NO-1NC, NON QD

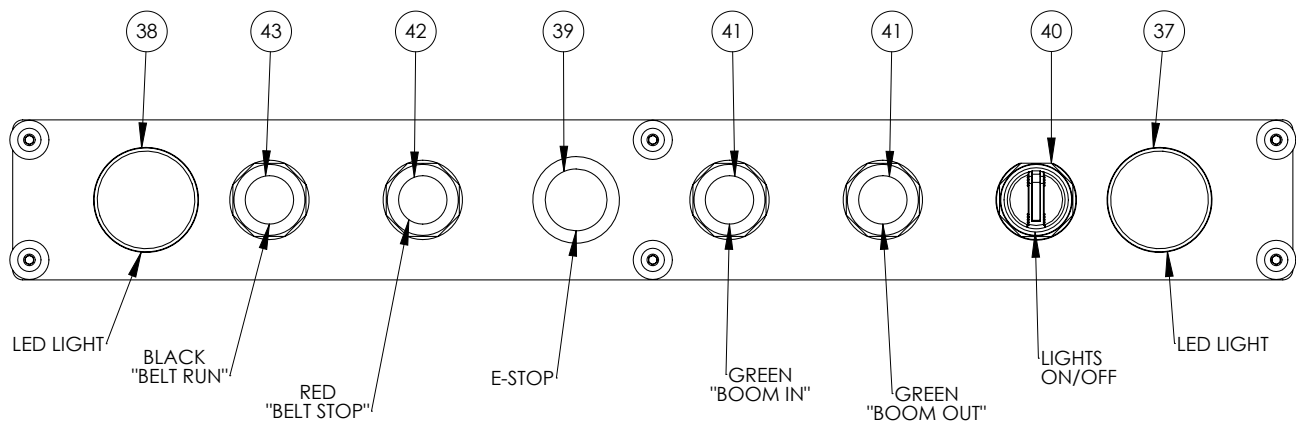


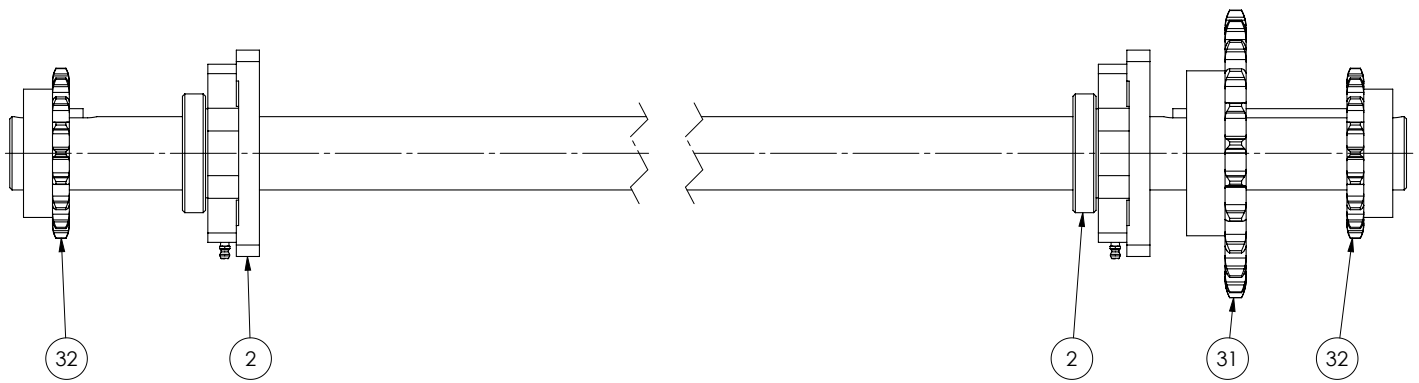


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CONVEYX

SOLUTIONS, LLC

ConveyX Solutions, LLC strives to be the leading dock door conveyor solutions manufacturer in North America. Our load and unload material handling equipment is designed for unit handling applications delivering operational improvements and energy efficiency.

We build to our customers' specifications to enhance their processes with quality equipment and components. We specialize in rapid product development to exceed lead time and volume requirements.