HYTROL ProSort 400 Elite High Speed Sortation Conveyor Instruction Manual

ProSort 400 Elite High Speed Sortation Conveyor
Installation and Maintenance Manual with Safety Information
RECOMMENDED SPARE PARTS HIGHLIGHTED IN GRAY
Effective April 2015
(Supersedes October 2005)
IMPORTANT! DO NOT DESTROY

https://hytrolparts.com/

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INTRODUCTION

This manual provides guidelines and procedures for installing, operating, and maintaining your conveyor. A complete parts list is provided with recommended spare parts highlighted in gray. Important safety information is also provided throughout the manual. for safety to personnel and for proper operation of your conveyor, it is recommended that you read and follow the instructions provided in this manual.

Receiving and Uncrating

1. Check the number of items received against the bill of lading.
2. Examine condition of equipment to determine if any damage occurred during shipment.
3. Move all crates to area of installation.
4. Remove crating and check for optional equipment that may be fastened to the conveyor. make sure these parts (or any foreign pieces) are removed.

   NOTE: If damage has occurred or freight is missing, Contact your Hytrol Integration Partner.

How to Order Replacement Parts

Included in this manual are parts drawings with complete replacement parts lists. minor fasteners, such as nuts and bolts, are not included.

When ordering replacement parts:

1. Contact dealer from whom conveyor was purchased or nearest HYTROL Integration Partner.
2. Give Conveyor model Number and Serial Number or HYTROL factory Order Number.

3. Give Part Number and complete description from Parts List.
4. Give type of drive. Example—8” End drive, 8” Center drive, etc.
5. If you are in a breakdown situation, tell us.

HYTROL Serial Number
(Located near drive on Powered models).

SAFETY INFORMATION

Installation
GUARDS AND GUARDING
Interfacing of Equipment. When two or more pieces of equipment are interfaced, special attention shall be given to the interfaced area to insure the presence of adequate guarding and safety devices.
Guarding Exceptions. Whenever conditions prevail that would require guarding under these standards, but such guarding would render the conveyor unusable, prominent warning means shall be provided in the area or on the equipment in lieu of guarding.
Guarded by Location or Position. Where necessary for the protection of employees from hazards, all exposed moving machinery parts that present a hazard to employees at their work station shall be mechanically or electrically guarded, or guarded by location or position.

- Remoteness from frequent presence of public or employed personnel shall constitute guarding by location.
- When a conveyor passes over a walkway, roadway, or work station, it is considered guarded solely by location or position if all moving parts are at least 8 ft. (2.44 m) above the floor or walking surface or are otherwise located so that the employee 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 provided if the product may fall off the conveyor for any reason and if personnel would be endangered.

HEADROOM

- When conveyors are installed above exit passageways, aisles, or corridors, there shall be provided a minimum clearance of 6 ft. 8 in. (2.032 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 ft. 8 in. (2.032 m) through an

emergency clearance, alternate passageways shall be provided.

- It is permissible to allow passage under conveyors with less than 6 ft. 8 in. (2.032 m) clearance from the floor for other than emergency exits if a suitable warning indicates low headroom.

Operation

A) Only trained employees shall be permitted to operate conveyors. Training shall include instruction in operation under normal conditions and emergency situations.
B) Where employee safety is dependent upon stopping and/or starting devices, they shall be kept free of obstructions to permit ready access.
C) The area around loading and unloading points shall be kept clear of obstructions which could endanger personnel.
D) No person shall ride the load-carrying element of a conveyor under any circumstances unless that person is specifically authorized by the owner or employer to do so. Under those circumstances, such employee shall only ride a conveyor which incorporates within its supporting structure platforms or control stations specifically designed for carrying personnel. Under no circumstances shall any person ride on any element of a vertical conveyor.
E) Personnel working on or near a conveyor shall be instructed as to the location and operation of pertinent stopping devices.
F) A conveyor shall be used to transport only material it is capable of handling safely.
G) Under no circumstances shall the safety characteristics of the conveyor be altered if such alterations would endanger personnel.
H) Routine inspections and preventive and corrective maintenance programs shall be conducted to insure that all safety features and devices are retained and function properly.
I) Personnel should be alerted to the potential hazard of entanglement in conveyors caused by items such as long hair, loose clothing, and jewelry.
J) Conveyors shall not be maintained or serviced while in operation unless proper maintenance or service requires the conveyor to be in motion. In this case, personnel shall be made aware of the hazards and how the task may be safely accomplished.
K) Owners of conveyor should insure proper safety labels are affixed to the conveyor warning of particular hazards involved in operation of their conveyors.
CAUTION! Because of the many moving parts on the conveyor, all personnel in the area of the conveyor need to be warned that the conveyor is about to be started.

Maintenance

- All maintenance, including lubrication and adjustments, shall be performed only by qualified and trained personnel.
- It is important that a maintenance program be established to insure that all conveyor components are maintained in a condition which does not constitute a hazard to personnel.
- When a conveyor is stopped for maintenance purposes, starting devices or powered accessories shall be locked or tagged out in accordance with a formalized procedure designed to protect all persons or groups involved with the conveyor against an unexpected start.
- Replace all safety devices and guards before starting equipment for normal operation.
- Whenever practical, DO NOT lubricate conveyors while they are in motion. Only trained personnel who are aware of the hazard of the conveyor in motion shall be allowed to lubricate.

Safety Guards

Maintain all guards and safety devices IN POSITION and IN SAFE REPAIR.

Safety Labels

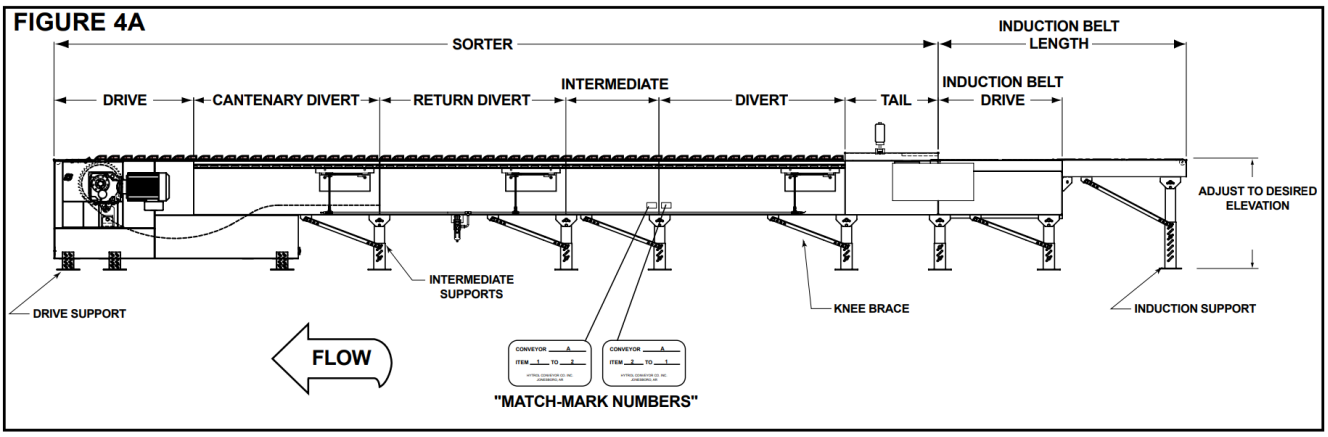
In an effort to reduce the possibility of injury to personnel working around HYTROL conveying equipment, safety labels are placed at various points on the equipment to alert them of potential hazards. Please check equipment and note all safety labels. make certain your personnel are alerted to and obey these warnings. See Safety manual for examples of warning labels.
REMEMBER do not remove, reuse or modify material handling equipment for any purpose other than it’s original

intended use.

INSTALLATION

Location

1. Determine direction of product flow. figure 4A indicates the flow as related to the drive.
2. Refer to “matchmark” numbers on ends of conveyor sections. (figure 4A). Position them in this sequence near area of installation.



Conveyor Set-Up

1. Mark a chalk line on floor to locate center of the conveyor.
2. Attach supports and vibration pads to all conveyor sections shown in figures 4A and 4B. Adjust elevation to required height. Hand tighten bolts only at this time.
3. During installation, check to make sure each bed section is square. measure the diagonals from corner to corner of the frame. If they are not equal the frame must be squared. Attach a come-along or some other suitable pulling device across longest corners and pull until the section is square.
4. Place the infeed (tail) section in position. Locate the (2) provided threaded rods (on the infeed or discharge end). Use these rods to pull together each section during installation.
5. Install remaining sections, placing end without support on extended pivot plate of previous section (figure 4A).
6. fasten sections together with splice plates and pivot plates. (figure 4B). Hand tighten bolts only at this time.

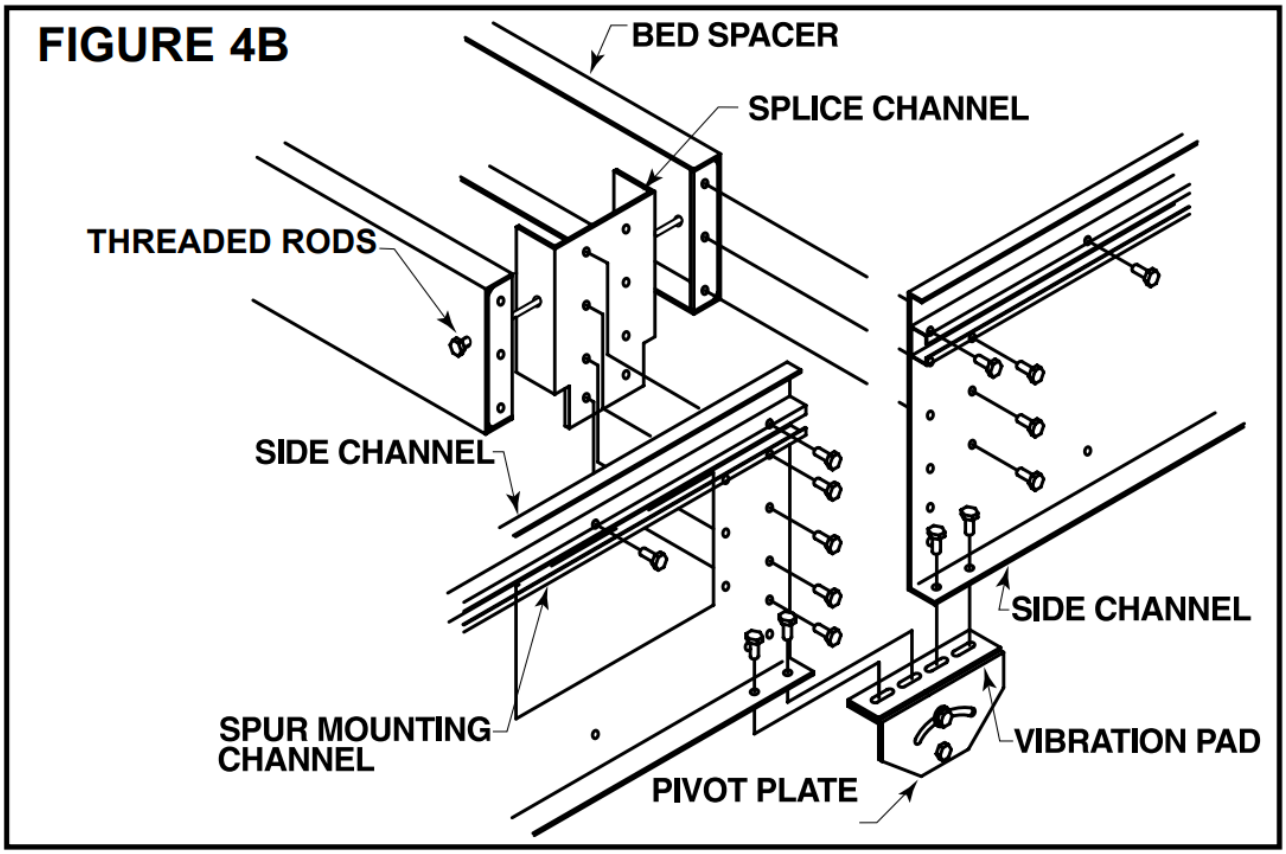
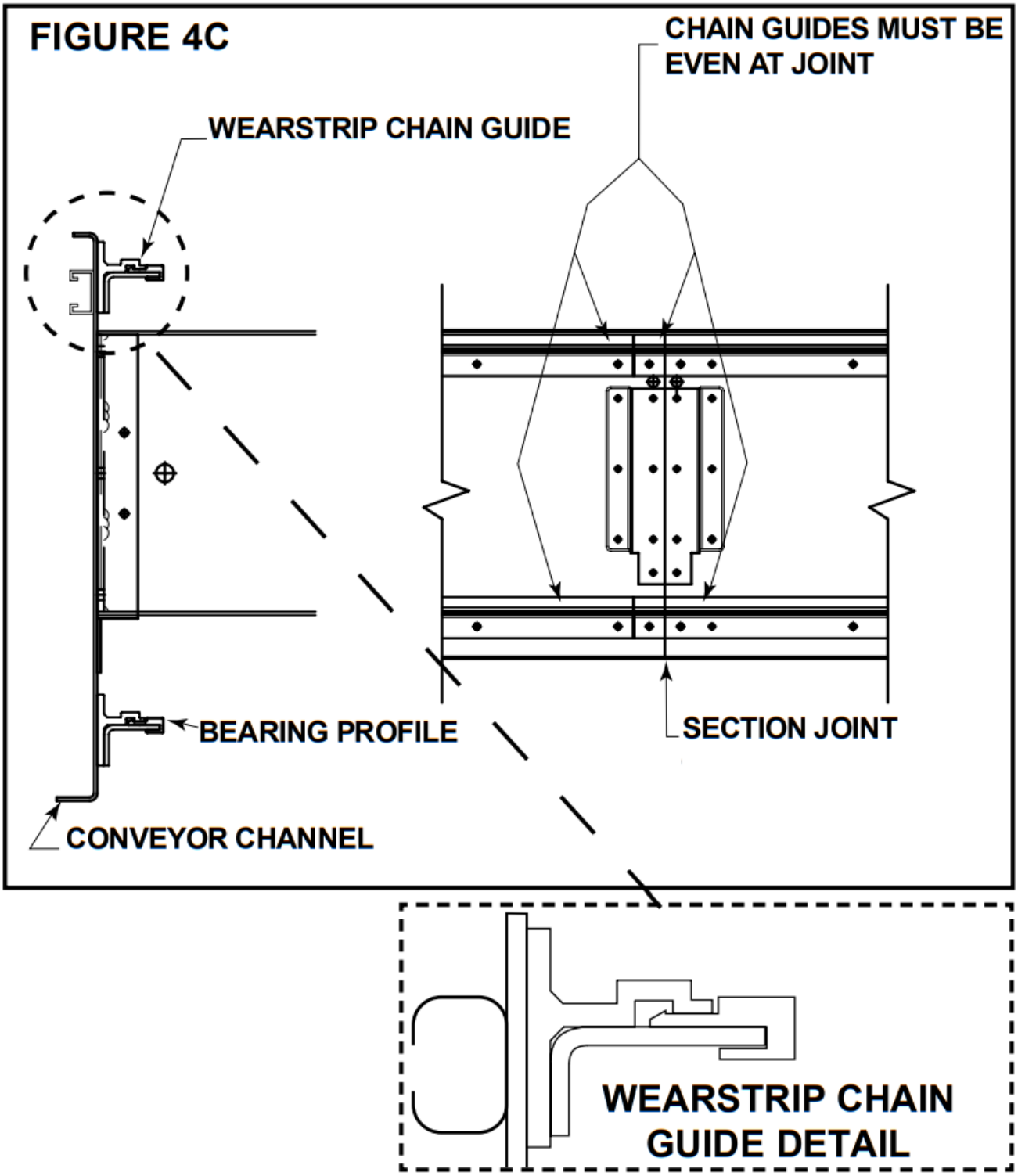
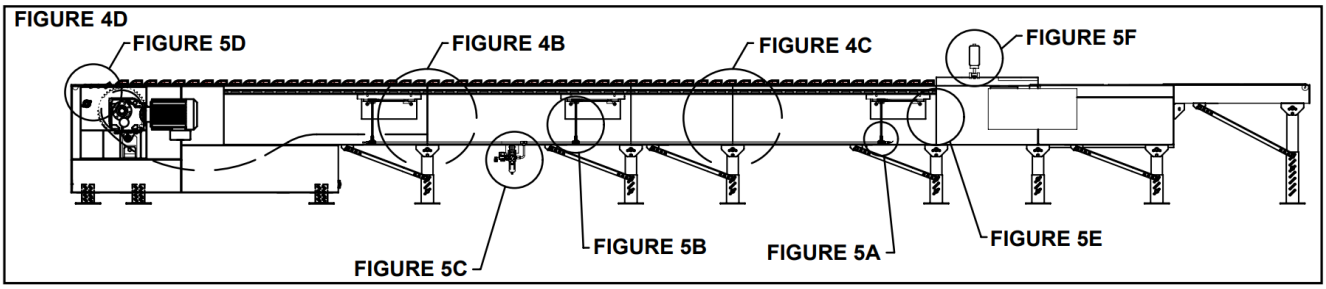


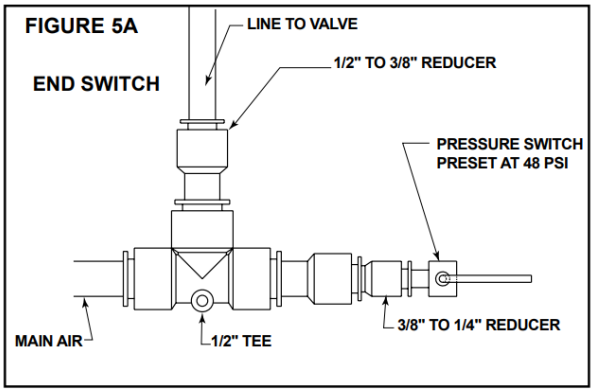
FIGURE 4B
BED SPACER
SPLICE CHANNEL
THREADED RODS
SIDE CHANNEL
SIDE CHANNEL
SPUR MOUNTING CHANNEL
VIBRATION PAD
PIVOT PLATE

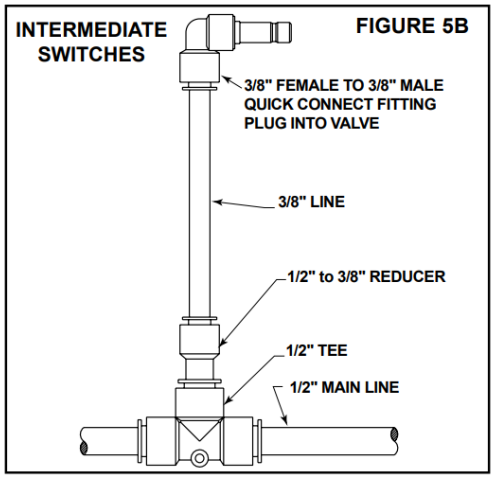


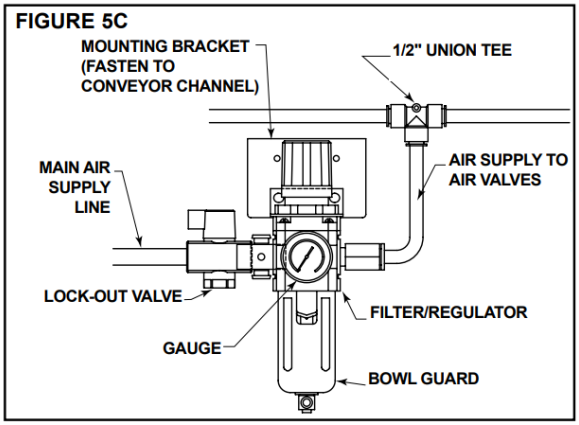
7. Check to see that conveyor is level across the width and length of unit. Adjust supports as necessary.
8. After all sections have been squared and levelled, tighten all splice channels and support mounting bolts and lag support to the floor.
9. Check alignment of wearstrip at all section joints. Sand wearstrip as necessary to provide a smooth wear surface (figure 4B).
10. Starting on the infeed end, fasten bearing profile to wearstrip guide using rubber mallet to force the profile edge under the wearstrip (figure 4B). Glue infeed end of profile to the support angle with loctite # 401 or 454 adhesive.

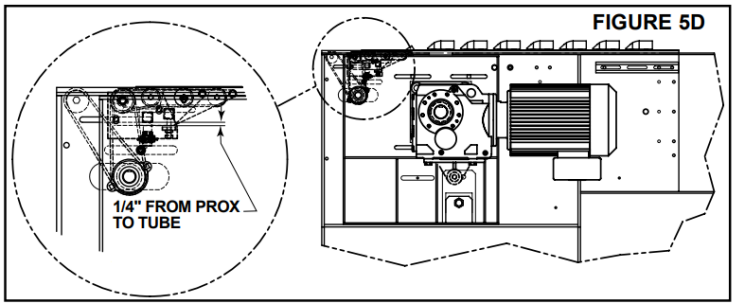


11. Fasten 1/2” main air line to bottom of conveyor channel with cable ties (figures 4d & 5C). Connect 3/8”air lines at divert switches as shown in figures 5A & 5B.
12. Connect main air line to the filter/Regulator, (figure 5C) Set regulator to working pressure of 60 P.S.I. Install low pressure switch, at farthest point from regulator (figure 5A).

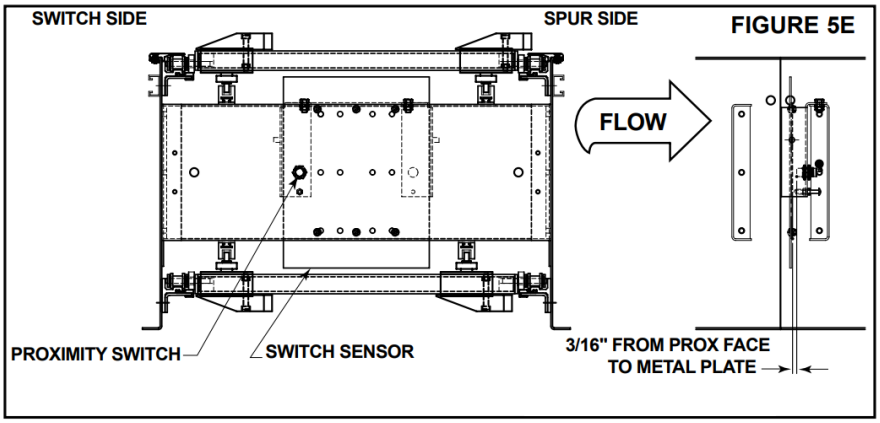


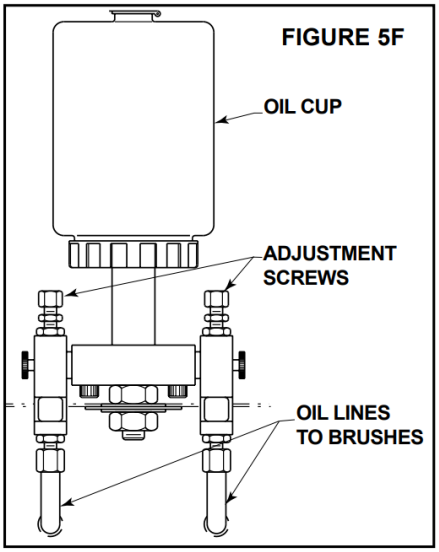






13. Install electrical controls and wire motor. Verify correct motor rotation at this time. See Page 5 & 6 for electrical control information.
14. Check each divert switch to see that it is operating properly. This must be done before carrying chains are installed. See instructions on Page 9 & 10.
15. Check proximity switch clearance at each internal safety switch (figure 5E). Adjust if necessary.





16. Install carrying chains per instructions on Page 9 & 10.
17. Adjust pop-up roller assembly at discharge end to optimize transition of packages from the ProSort to the take away conveyor. Set pop-up roller proximity switch per figure 5d.
18. Install chain oiler at infeed and connect to oil lines as shown in figure 5f. Refer to the Lubrication section, page 6, for type of oil required. After mounting, the oiler will need to be adjusted for proper oiling of mounting chains. Adjustment may be made using a combination of solenoid activation time and flow adjustment screws. (A good rule of thumb for solenoid adjustment is to turn the oiler on for one complete chain revolution for every 2 hours of sorter operation.) Typically, the chain on the divert side will need slightly more oil; the flow adjustment screws can be altered to achieve volume.

    CAUTION: do not allow oil to drip on floor.
19. Locate spurs per instructions on Page 10.
20. Remove threaded rods before start-up.

Electrical Equipment

WARNING! Electrical controls shall be installed and wired by a qualified electrician. Wiring information for the motor and controls are furnished by the equipment manufacturer.

CONTROLS

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

CONTROL STATIONS

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

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

When a conveyor would cause injury when started and is automatically controlled or must be controlled from a remote location, an audible device shall be provided which can be clearly heard at all points along the conveyor where personnel may be present. The warning device 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 more effective in particular circumstances.

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), clear, concise, and legible warning shall be provided. The waning shall indicate that conveyors and allied equipment may be started at any time, that danger exists, and that personnel must keep clear. The warnings shall be provided along the conveyor at areas not guarded by position or location.

C) Remotely and automatically controlled conveyors, and conveyors where operator stations are not manned or are beyond voice and 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.

D) Inactive and unused actuators, controllers, and wiring should be removed from control stations and panel boards, together with obsolete diagrams, indicators, control labels, and other material which serve to confuse the operator.

SAFETY DEVICES

A) All safety devices, including wiring of electrical safety devices, shall be arranged to operate in a “fail-Safe” manner, that is, if power failure or failure of the device itself would occur, a hazardous condition must not result.

B) 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 of the conveyor(s)

and associated equipment to resume operation.
C) Before restarting a conveyor which 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 shall be locked out before any attempt is made to remove the cause of stoppage, unless operation is necessary to determine the cause or to safely remove the stoppage.
Refer to ANSI z244.1-1982, American National Standard for Personnel Protection – Lockout/Tagout of Energy Sources – minimum Safety Requirements and OSHA Standard Number 29 CFR 1910.147 “The Control of Hazardous Energy (Lockout/Tagout).”

OPERATION

- **Conveyor Start-Up**

  Before conveyor is turned on, check for foreign objects that may have been left inside conveyor during installation. These objects could cause serious damage during start-up.

  After conveyor has been turned on and is operating, check all moving parts to make sure they are working freely.

  CAUTION! Because of the many moving parts on the conveyor, all personnel in the area of the conveyor need to be warned that the conveyor is about to be started.

MAINTENANCE

- **Lubrication**

  BEARINGS

  A) NO GREASE FITTING – Prelubricated – No lubrication required.

  B) WITH GREASE FITTING – Relubricate approximately every 10 to 12 weeks with lithium base grease suitable for ball bearing service.

  RECOMMENDED CHAIN LUBRICANT

  A good grade of clean non detergent petroleum or synthetic oil is recommended. See chart for proper viscosity.

Ambient Temperature degrees F	SAE	ISO
20-40 40-100	20 30	46 or 68 100

  REDUCERS

  See recommendations by manufacturer.

Controlling the ProSort
A good software package is essential for the proper operation of the ProSort sorter. With proper controls, the sorter will provide accurate, efficient, reliable sorting for many years. Inadequate controls, however, may result in poor sorter performance and other mechanical failures of the sorter itself, including “crashes”. Hytrol recommends using the Hytrol Pro-Logix software package.
Every sortation system is different, which means that the controls for the system are custom and unique to that system. These custom controls are provided either by Hytrol, the Hytrol Integration Partner or a third party.
Hytrol has built into the sorter some of the controls necessary to operate the divert switches, eliminating the need to control this function externally. Other electrical control components are provided with the sorter to allow the external controls to monitor critical items and to provide an interface between the electrical controls and the mechanical sorter. Still other control components must be provided by the supplier of the custom controls package to insure proper sorter operation.
This section of the manual includes the following information for the custom controls provider:

1. A description of the divert switch control components supplied, their function, and how to interface with them.
2. A description of the other control components provided with the sorter and their intended function.
3. A description of control components that are not included with the sorter that must be provided by the controls supplier.
4. Some control do's and dent's to assist in the design and installation of the controls package.

Please read this section thoroughly and share this information with the controls provider.

DIVERT SWITCH CONTROL

Proper control of the divert switch is critical to the safe and reliable operation of the sorter. failure to properly control the divert switch is one of the most common causes of switch damage and can cause "crashes."

The divert switch functions similar to a switch on a train track to cause the divert shoes to travel either in a straight-through, "non-divert" track or diagonally across the sorter along a "divert track" to push product off of the sorter. When the switch is in the "home" position, the divert shoes travel through the switch along the straightthrough track. When the switch is in the "divert" position, the shoes are caused to move along the divert track.

The transition of the switch between the "home" and "divert" positions must be accurately timed to prevent sorter crashes. Just as a train track switch cannot be safely operated while a train is passing through the switch, the divert switch cannot be safely operated while a divert shoe is passing through the switch. If the movement of the switch mechanism is not timed to occur only when no shoe is present in the switch, the guide pin of the shoe may collide with the point of the divert block, resulting in damage to the switch and potentially costly downtime.

The ProSort has two control components at each divert switch that work together to accurately time the divert switch movement or operation, eliminating the need for the controls provider to do so. These components are the smart prox and the high-speed solenoid air valve.

SMART PROX

The "smart prox" is a special inductive proximity sensor developed exclusively for Hytrol that has the "intelligence" needed to control the switch timing built-in. The prox plugs to the y-cable. See figure 6A.

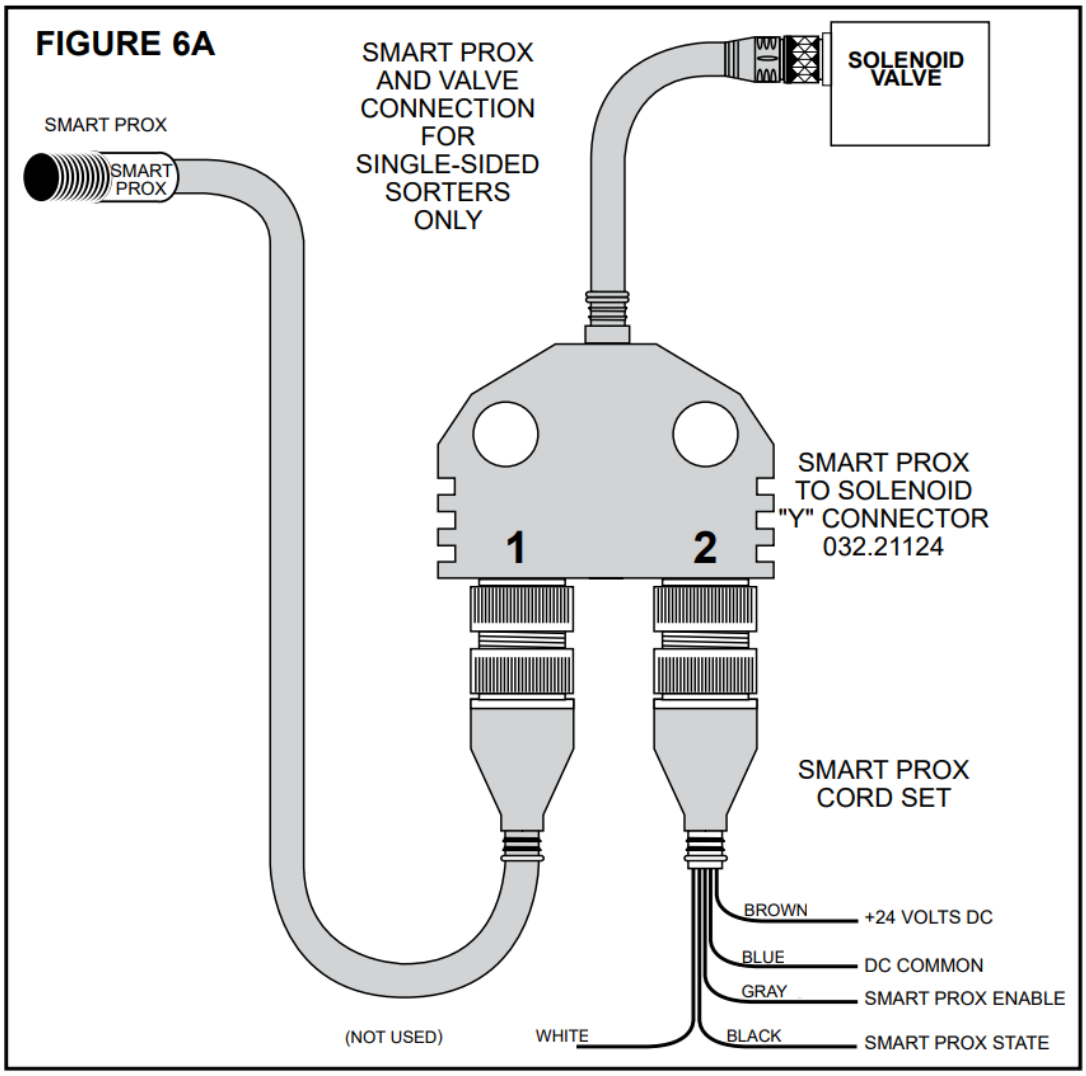
Y Cable

The y-cable is used to connect the smart prox, solenoid air valve and the system controls. The male micro cord set from the smart prox connects to the terminal #1 of the y-cable. The pico pigtail, of the y-cable, connects to the male plug on the solenoid air valve at divert switch. The micro cord set with female end, plugs to terminal #2 of the y-cable. The leads from the terminal #2 cord set have the following functions (fig. 6A). NOTE: Y-cable not used on dual divert sections.

Brown—+24VdC power input to the prox.

Blue—Ground (-) lead for the prox.

Gray—divert enable input lead for the prox. When a 24VdC (high) signal is given to this lead by the system controls, the prox waits for the next time it detects a divert shoe, at which time it provides a 24VdC output through the y-cable to the high speed solenoid air valve. The solenoid air valve then causes the switch to move to "divert" position. All shoes traveling through the switch will then follow the divert track as long as the enable signal is active (held high). When the divert signal is removed (taken low) the prox waits for the next time it detects a divert shoe, at which time it will turn off the output to the solenoid air valve. The switch then returns to the "home" position, and subsequent shoes will follow the "non-divert" track. The enable signal to this lead is the only signal that the system controls must provide to control divert switching.



Black—Standard prox output lead. This lead provides a 24VdC (high) signal each time the prox detects a divert shoe. This is an optional output and is to be used at the discretion of the controls provider.

HIGH-SPEED SOLENOID AIR VALVE

The solenoid air valve is used to receive the smart prox output signal and provide air to the proper end of the divert switch cylinder to move and hold the switch in either the “home” or “divert” positions. The valve used is specially designed for the high speed operation necessary for proper divert switch timing.

The two inputs of the solenoid are non-polarized, allowing either lead to be used as input or ground for the valve. The solenoid requires 24VdC, 4W to operate.

The solenoid air valve is controlled directly by the smart prox. direct control of this valve by the controls package is not required or advised.

Other Control Components Supplied with the Conveyor

VARIABLE FREQUENCY DRIVE CONTROLLER

The variable frequency drive (VFD) is a motor controller that has three functions:

1. It provides a smooth acceleration of the drive motor, allowing the sorter to slowly “ramp up” to full speed. This protects the sorter components from the stress of a full-speed start up.
2. It allows the speed of the sorter to be adjusted to match speed requirements of the system. Also, it allows the sorter to be operated at a very slow speed during installation “debugging” and when certain mechanical components are checked after servicing.
3. It allows the sorter to be operated at a slower speed during “off-peak” seasons, reducing energy consumption, noise, and wear.

Refer to the VFD manufacturer’s installation manual, provided with the sorter, for wiring and adjustment instructions.

AIR PRESSURE SWITCH

The air pressure switch (fig. 5A) is used to detect low operating air pressure. Operation of the sorter at air pressures under 50 PSI can cause erratic switching and potential switch damage. If air pressure falls below this level, the sorter must be shut down until the cause of the pressure drop has been found and remedied. The pressure switch provides a contact-type output which closes at pressures at or above about 48 PSI and opens below that air pressure. The system controls provider should use this switch to monitor air pressure at the sorter and should shut down the sorter if an open (low) output is detected from the pressure switch.

Refer to the pressure switch manufacturer's installation manual, provided with the sorter, for wiring instructions.

SAFETY PROXIMITY SWITCHES

There are safety switch devices located at various locations in the sorter to indicate when a divert shoe is out of place, an obstruction has entered the sorter, or when some other event has occurred that could cause damage to the sorter or danger to personnel. These safety switches use normal inductive proximity switches as the electrical interface to the system controls.

There are two types of safety switches in the sorter:

1. Shoe position safety switches are switch mechanisms inside the sorter that trip if a divert shoe passes them that is not in its proper track. They are also used to detect foreign objects that might fall between the slats and enter the interior of the sorter. They are made to detect problems on both the upper and return portions of the sorter.

   There is one shoe position safety switch located at the infeed end and one at the discharge end of the sorter. There are additional switches included for every 30 feet of sorter length after the first 30 feet. for example, a sorter 50 feet long will have a total of 3 switches, a sorter 80 feet long will have a total of 4 switches and so on. These additional switches are spaced evenly along the sorter's length.
2. The pop-up transition roller safety switch is used to detect when the transition rollers on the discharge end of the sorter are in the "up" position. These rollers are designed to pop up if a stray divert shoe or a foreign object makes contact with them.

   The normal state of the output of the safety proximity switch is "on" (high). If a switch detects a problem the signal is changed to "off" (low). The system controls must be configured to go to an "emergency stop" condition and shut down the sorter and related equipment when a problem is detected. Restart must not be possible until the problem is corrected and the safety switch that detected the problem is again "on" (high).

Refer to the proximity switch manufacturer's installation manual, provided with the sorter, for wiring instructions.

CATENARY TAKE-UP PHOTO EYE

The catenary take-up photo-eye monitors the amount of chain sag occurring in the drive's catenary area. The photo-eye is a retro-reflective, light-operated type, positioned in the catenary so that if the carrying chains allow the slats to sag below a certain level, the beam of the eye is blocked.

The system controls must be configured to stop the sorter when the photo-eye beam is blocked (photo-eye output is "off" or "low") and provide an indication to the sorter operator that the chains must be taken up or shortened before operating the sorter further.

Refer to the photo-eye manufacturer's installation manual, provided with the sorter, for wiring instructions.

ENCODER

An encoder is included with the sorter to provide a pulse signal to be used for product tracking. The encoder provides a square-wave pulse signal of 30 pulses per revolution of the sorter infeed shaft. This equates to one pulse for every 1.75 inches of sorter travel.

The encoder requires 24VdC power, and provides a 24VdC pulse output.

Refer to the encoder manufacturer's installation manual provided with the sorter, for wiring instructions.

CHAIN OILER SOLENOID

The chain oiler is used to provide automatic lubrication of the carrying chains during sorter operation. When the oiler solenoid valve is energized, oil is allowed to gravity feed from the oiler reservoir, through metering valves, to brushes located above the return chains in the sorter.

The system controls should be configured to activate the chain oiler solenoid for a duration equal to one complete revolution of the carrying chains about every two hours of operation. The actual amount of oil applied to the chains is controlled by the metering screws (see "Conveyor Set-up" section of this manual). The chain oiler solenoid

requires 24VdC power to operate.

LOST BEARING DETECTION

The missing bearing block is used to detect a bearing missing from a divert shoe. A divert shoe that does not have a bearing on the bottom can cause damage to the sorter. The missing bearing block uses two proximity switches located in the return section of the sorter to detect the presence of a bearing on the shoe. If one prox detects a bearing being present but the other does not, the block removes its output to indicate a missing bearing was detected. See figure 8A for location of missing bearing prox switches.

The missing bearing block requires 24VdC power to operate. The prox switches are plugged into the left two ports in no particular order. A reset signal of 24VDC is needed to clear the missing bearing error in the block. The output from the block is “on” or “high” when no error is detected.

Control Components Not Supplied with the Conveyor

In addition to the control components supplied with the ProSort sorter, there are several components that must be supplied by the system control provider. Hytrol recommends the following control components be used to protect the sorter from damage due to product jams or other problems.

ADJUSTABLE INSTANTANEOUS MOTOR OVERLOADS

Instantaneous overloads provide protection against sorter “hang-ups” by turning off the drive if a sudden increase in motor current is detected. By adjusting the overload limit to slightly above the power required to operate the sorter, any extra load on the motor, such as would be caused by a product jam or switch malfunction, would cause the sorter to stop, possibly before significant damage is done to the equipment.

The instantaneous overloads should be installed in the control panel for the sorter and sized for the proper power requirements.

PHOTO-EYES

Photo-eyes are common components in systems controls. Hytrol recommends that photo-eyes be installed at the following locations to perform listed functions. These are, of course, in addition to other photo-eyes needed in the system.

Induction Photo-eye—A photo-eye mounted at the infeed point of the sorter. This eye is used to perform the following functions:

ProSort 421 (22° diverts)

0” < W ≤ 13” Minimum gap = 10”
13” < W ≤ 26” Minimum gap = 16”
26” < W ≤ 40” Minimum gap = 20”

*W = Package Width

Note: When sorting to both sides, the minimum gap from the above charts must be increased by 6 in.

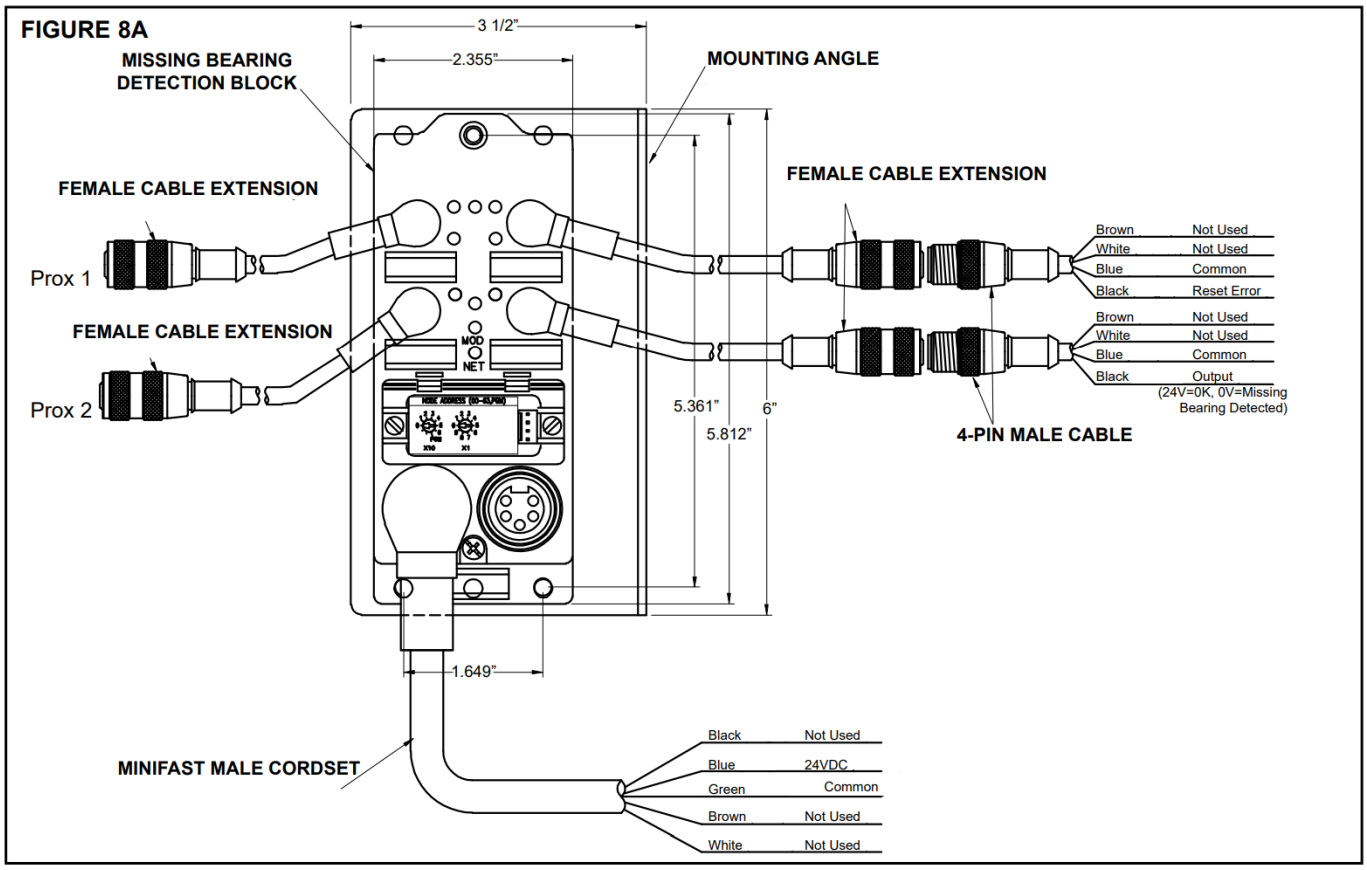
1. Signal the system controls that a particular package has entered the sorter. from this point forward, the package must be tracked using the encoder pulses to determine when it reaches the proper divert location.
2. Measure the length of the package so that the system controls may assign the proper number of divert shoes to the package for diverting. Note: Shoes are to be assigned for the entire length of the package plus one extra shoe is to be assigned to the trailing end of the package.
3. Check for the proper gap between packages for safe sorting. It is important to check for the proper gap here, even if it has been set prior to this point, to insure that the packages are truly spaced properly. Attempting to sort packages with too little gap between them can cause jams.

   Note: The minimum gap necessary for sorting a package is a function of the width of the package. The charts below should be used in checking for proper gap.

Jam/Confirmation Photo-eye—Photo-eyes mounted on each take-away spur of the sorter, as close to the sorter as possible. These eyes perform two functions:

1. Detect a product jam at the sorter “exit point.” If a package blocks this photo-eye for a longer time than it would take for the package to travel past the photo-eye normally, this indicated that the package is jammed. The sorter should be stopped and the jam cleared before restarting the sorter.

2. Divert confirmation. If a divert signal is given to a particular divert point, and no package is detected by the associated jam/confirmation photo-eye, an error has occurred. The sorter should be stopped and the error found and corrected before restarting the sorter.



Full Line Photo-eye—Photo-eyes mounted on each divert lane from the sorter, near the infeed end of that lane. These eyes are used to signal the system controls that a particular divert lane is full. The controls should then send any further packages assigned to that lane to the recirculation line until the full line photo-eye on that lane no longer indicates the full condition.

Some Control Do's and Dont's

The following are recommendations to assist in the design and installation of system controls that are interfacing with ProSort sorters.

- Do not place 24VDC control wires in the same wireway with AC power wires, especially if the AC power exceeds 240 volts. "Noise" produced in the control wires by the power wires may produce undesirable effects.
- Do not use optional "standard prox output" of the smart prox as a substitute for an encoder. The five inch spacing between divert shoes does not provide enough tracking resolution to accurately sort packages.
- Do not use manual override operator of the solenoid air valve to operate a divert switch while the sorter is running. doing so bypasses the switch timing controls and may cause switch damage or a sorter crash.
- Do treat the tripping of any safety switch, motor overload, or low air pressure signal as an emergency stop. Inspect the safety switch and other parts of the sorter to be sure everything is in good working order before starting or restarting the sorter.

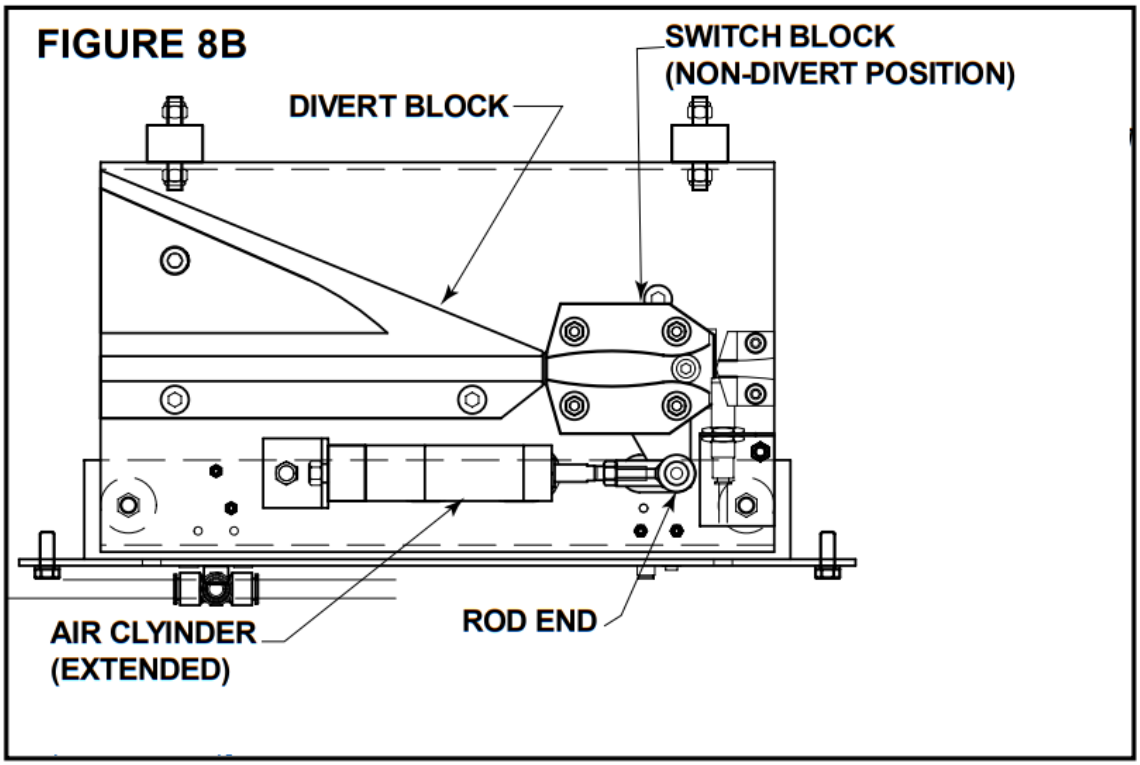
Pneumatic Divert Switch Checklist

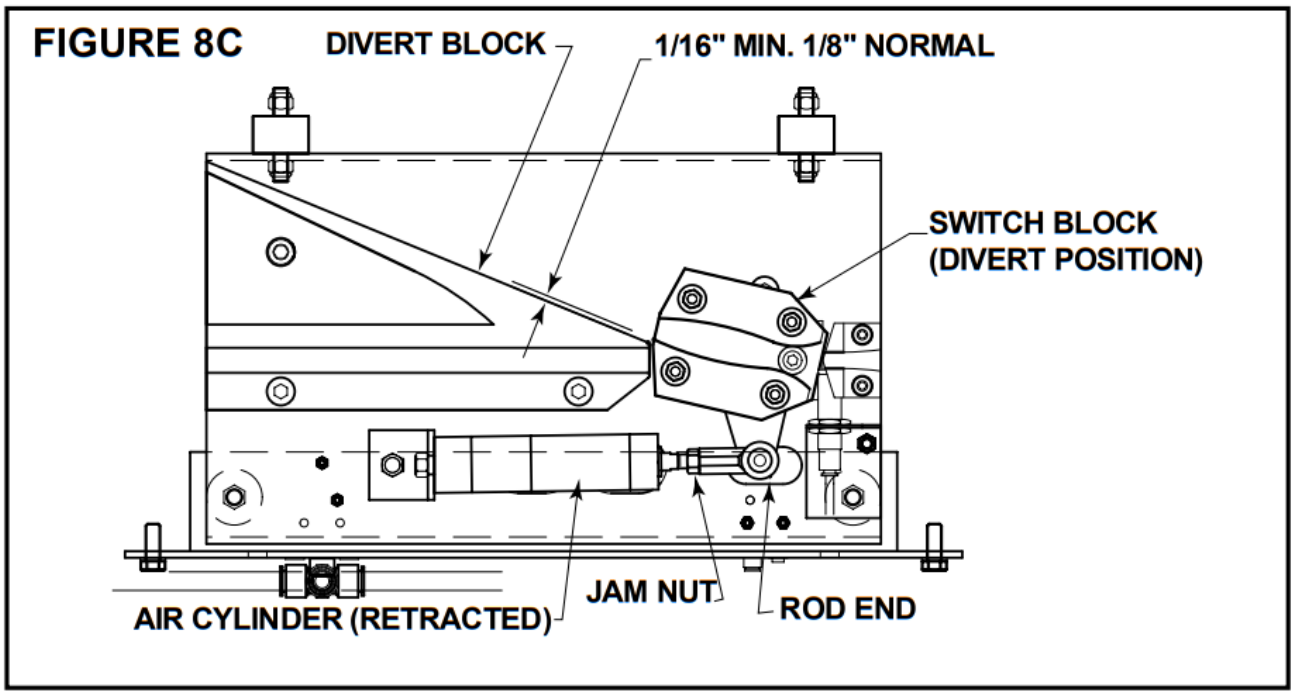
After all ProSort sections are installed and aligned, each divert switch should be checked for proper operations as follows:

1. Before air pressure is supplied to the divert switch solenoid air valve, manually pivot the switch back and forth

between the non-divert and divert position checking for a free and smooth pivoting movement. determine and remedy the cause of any switch binding. for proper switch alignment see figures 8B & 8C. If switch adjustment is necessary, loosen the jam nut on the cylinder rod. Screw cylinder rod into or out of rod end to adjust the switch and retighten jam nut.

2. Turn air pressure on and verify that each divert switch is in, or moves to, the home (non-divert) position (figure 8B).
3. Check to insure that the smart prox is set properly. The face of the prox should be set just out of the shoe pin guide path in the switch guide (figure 9A).



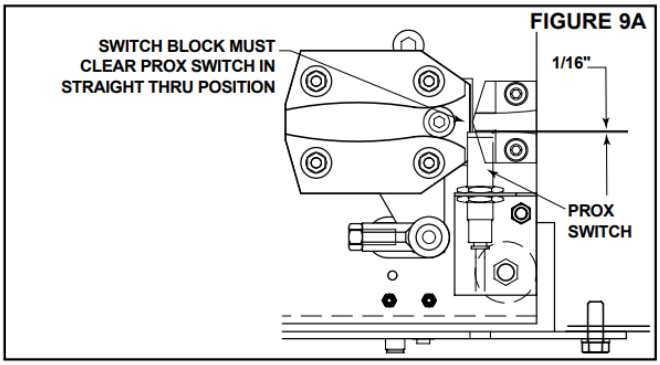


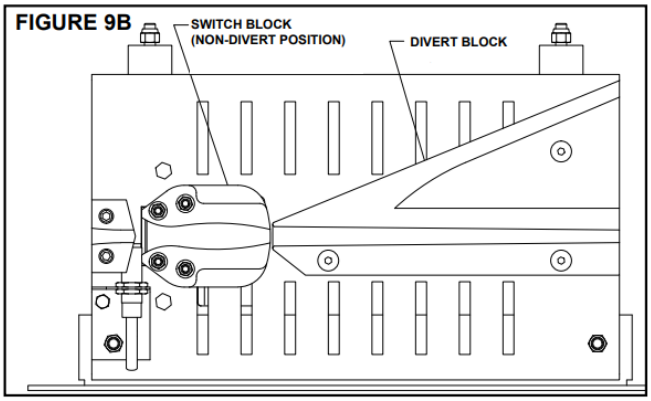
Electric Divert Switch Checklist

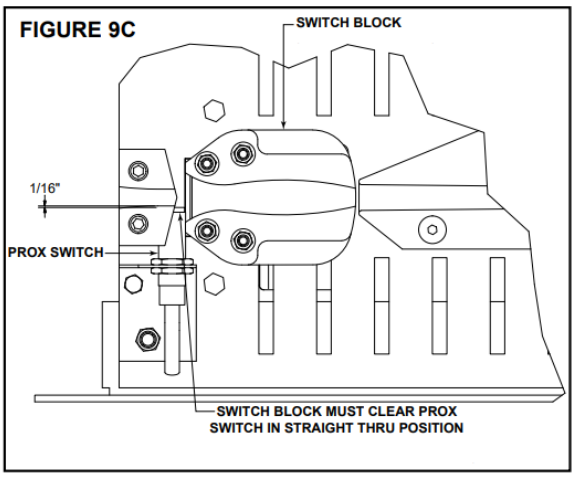
NOTE: All electric divert servo motors are paired with the associated drives at the factory. Connecting motors to the wrong drive may have an adverse effect on the divert operation and could result in physical damage to the

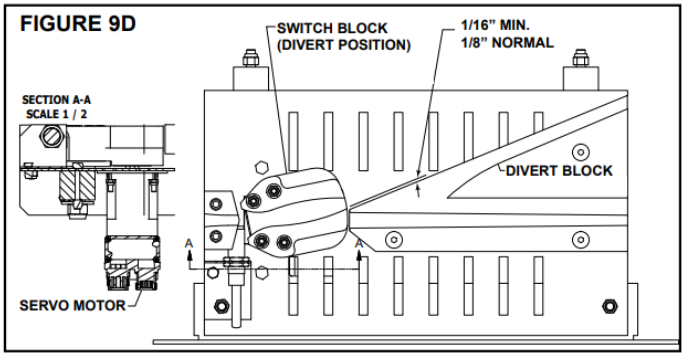
sorter. Always connect the drives to the factory paired motors to prevent damage.

1. Before running the sorter, apply power to the electric switch system and verify that the diverts are fully in either the home or diverted position. divert function was tested at the factory to ensure proper operation. If the diverts are in the diverted position, they can be returned to the home position by removing the enable signal to the Smart Prox and then flagging the Smart Prox to trigger a move operation.
2. Check to ensure that the Smart Prox is set properly. The face of the prox should be set just out of the shoe pin guide path in the switch guide (figure 9B).





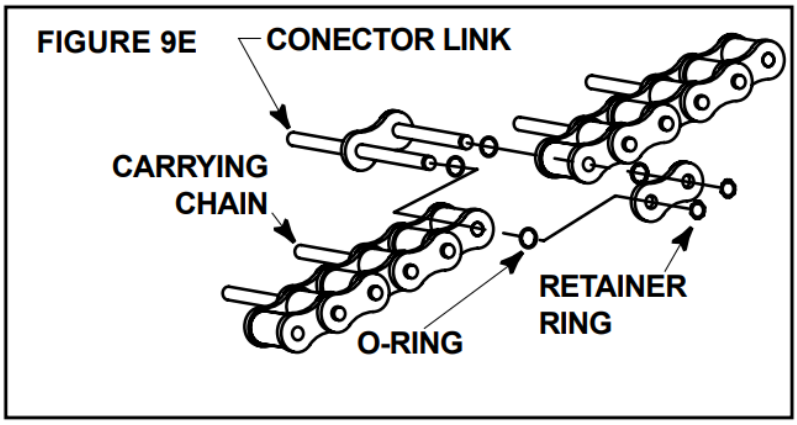


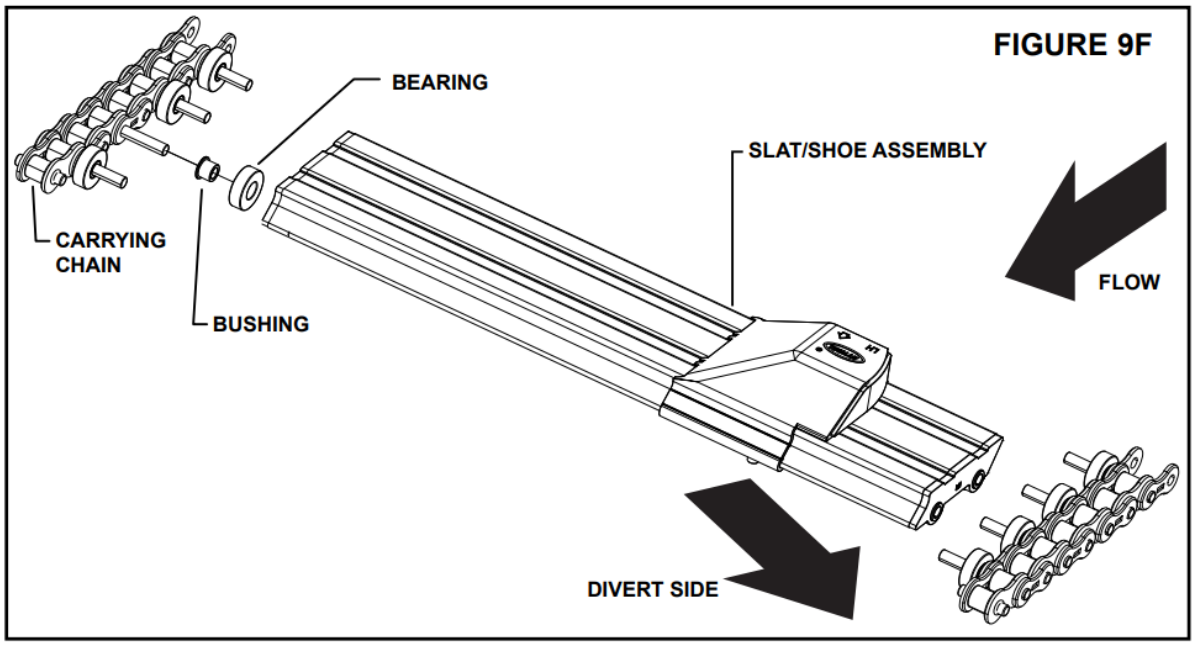


Carrying Chain Installation

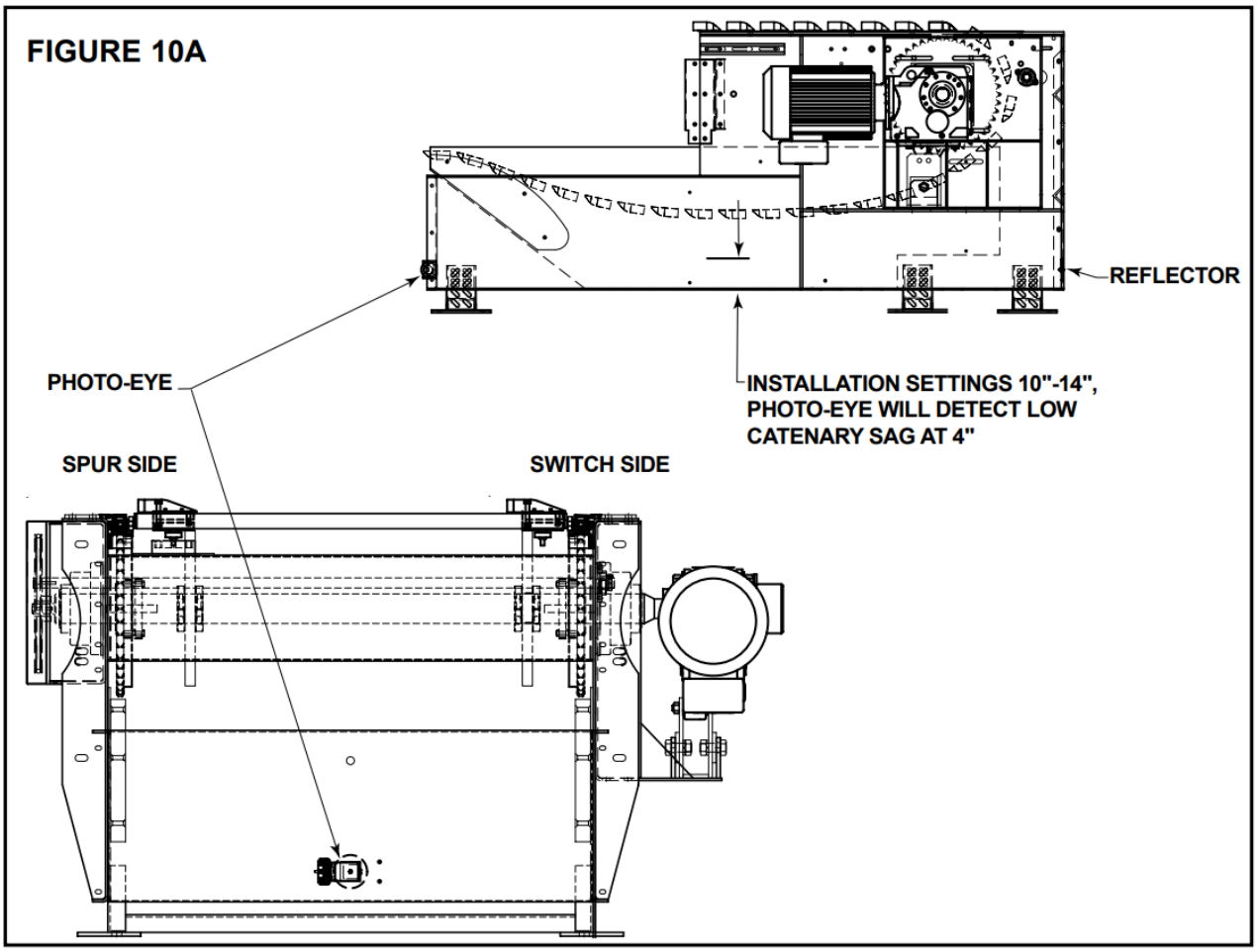
The carrying chains are shipped on marked spools, cut to proper length for each ProSort conveyor. Steps for installing are as follows:

1. Disconnect electrical power to drive motor to prevent accidental start up.
2. Remove the plug from the motor fan guard, exposing the hex on the motor shaft. Use this shaft to rotate the motor manually.
3. Check alignment of chain guides by using two short pieces of chain with slat/shoe assemblies and bearings assembled to pins. This chain/slat/shoe assembly should slide freely through chain guides in direction of travel for entire length of conveyor.
4. Install carrying chains to both sides of conveyor with pins pointed inward. make sure the pins of each chain are directly opposite each other. It will be helpful while installing chains to install one slat/shoe assembly every 4 feet to hold chain in guides.
5. Fasten ends of both chains with connector links as shown in figure 9E.





6. Install slat/shoe assemblies onto the extended chain pins on one side of conveyor – being careful to keep the beveled face of the shoe toward the discharge end and the side with the rubber insert toward the spur side of conveyor (See figure 9F). Lift opposite chain out of chain guide (so chains may be spread apart) and insert extended chain pins into opposite end of slat/shoe assemblies.
7. After all slat/shoe assemblies are installed, tighten carrying chains with take-up bolts at drive shaft. Be sure drive and tail shafts are square. Retighten all drive take-up plate mounting bolts. See figure 10A for proper slack in chains.
8. Manually crank entire carrying chain assembly through the conveyor to see that it operates freely and nothing has been dropped into the conveyor during installation. Also inspect divert shoes to make sure all of them have been installed on the correct centers. If chains are ever shortened it must be in increments of five inches.
9. Replace motor fan guard plug.
10. Reconnect electrical power to drive motor.



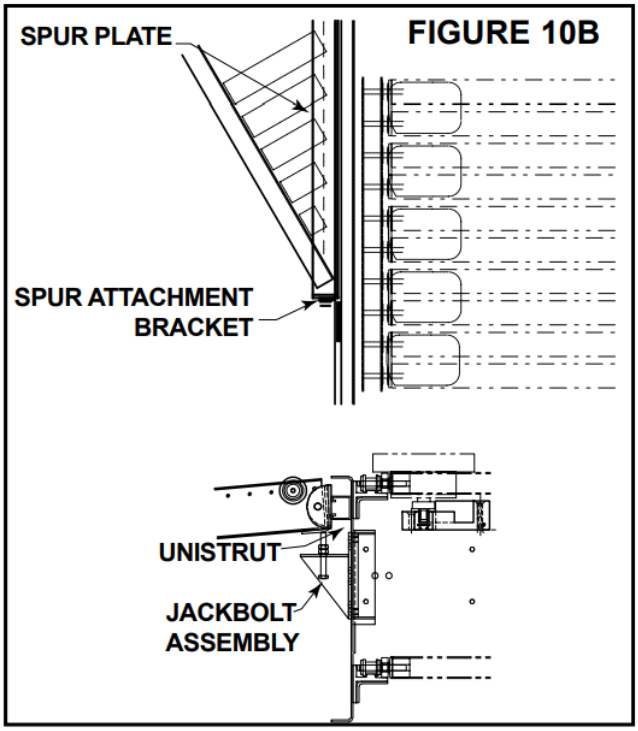
Install Guard Rails at Divert Locations

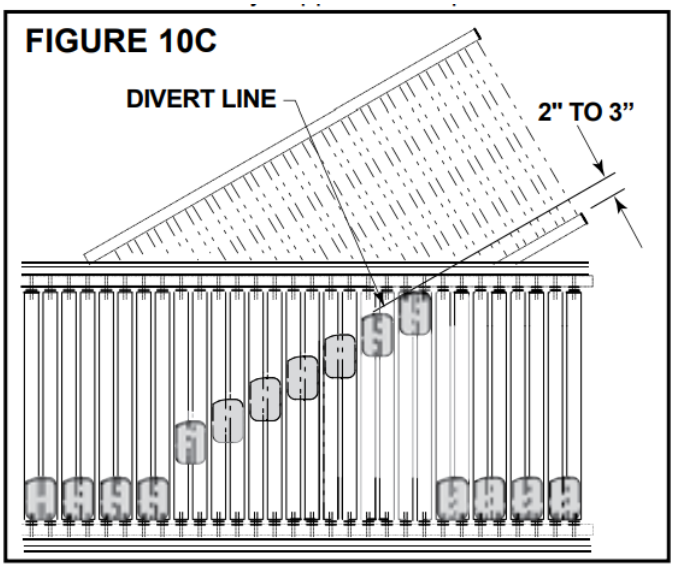
If guard rails are to be installed on the spurs and/or the spur side of the sorter, care should be taken to insure that the guard rails do not interfere in any way with the boxes being diverted. Particularly, guards should not be installed in a way that produces a sharp edge or point in the divert area.

Locating the Spurs

The take-away spurs must be mounted properly on the divert sections of the ProSort to insure proper diverting of product. The following installation guidelines apply to both powered and gravity spurs.

1. Attach spurs to the sorter by bolting the spur attachment bracket to the spur mounting nuts in the Unistrut channel on the sorter side channel (figure 10B). Support the spurs as required. Hand-tighten bolts only at this time.
2. manually place 3 or more shoes along the divert angle as shown. Place a straight-edge against the shoes to determine the location of the “divert line”. Verify that the distance between the “divert line” and the “BR” of the spur is 2 to 3 inches as shown (figure 10C).
3. Position spur vertically so that the spur rollers/skate wheels are level with the slats on the sorter. Tighten mounting bolts.
4. JackbooLt Assembly supplied with spur.

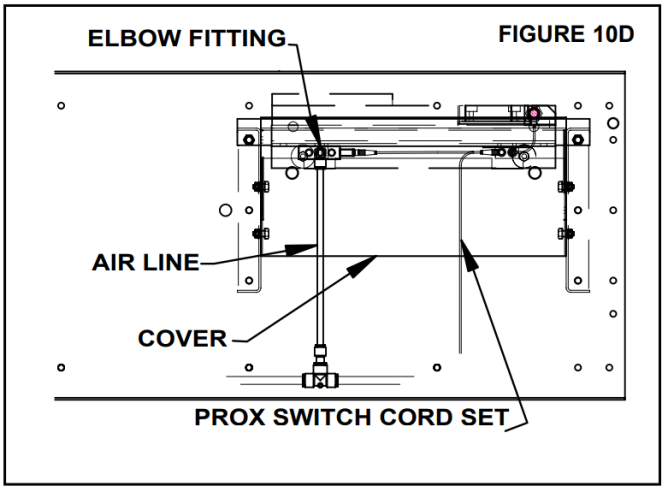


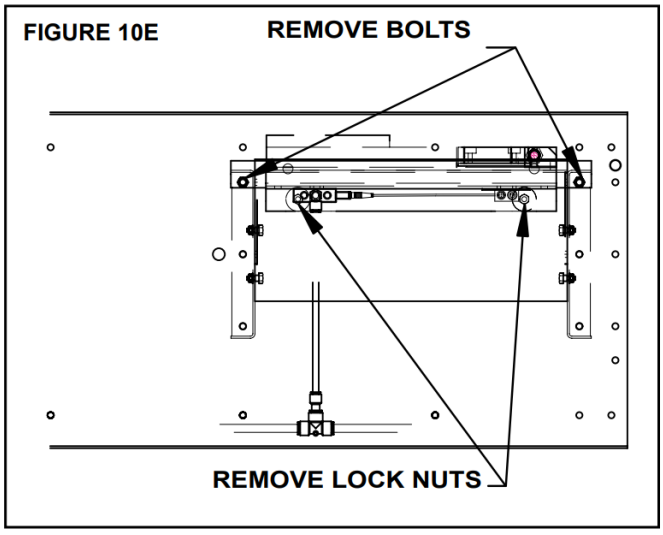


Pneumatic Divert Switch Removal Procedure
ELBOW FITTING

The ProSort is designed for easy removal of the divert switch assembly for maintenance or replacement. In order to remove the electric switch assembly follow the following steps.

1. Unplug the elbow from the fitting on the solenoid air valve by pushing in the red flange of the fitting and then pulling on the elbow.
2. disconnect prox switch cord set from y-cable connector (figure 6A).
3. Remove the cover located on the side of the sorter under the divert switch assembly by lifting and rotating down and out of the way (figure 10d).
4. By reaching through the uncovered hole in the side channel remove the two nuts at the back side of the switch assembly channel. Then remove the two bolts on the outside of the sorter channel which hold up the front side of the switch assembly channel (figure 10E).
5. The front side of the switch assembly channel may then be lowered and the entire assembly may be removed through the opening in the sorter channel.
6. Check the new switch assembly according to the “divert Switch Checklist” on page 8.
7. Install the new divert switch assembly by reversing the procedure by which the old assembly was removed.

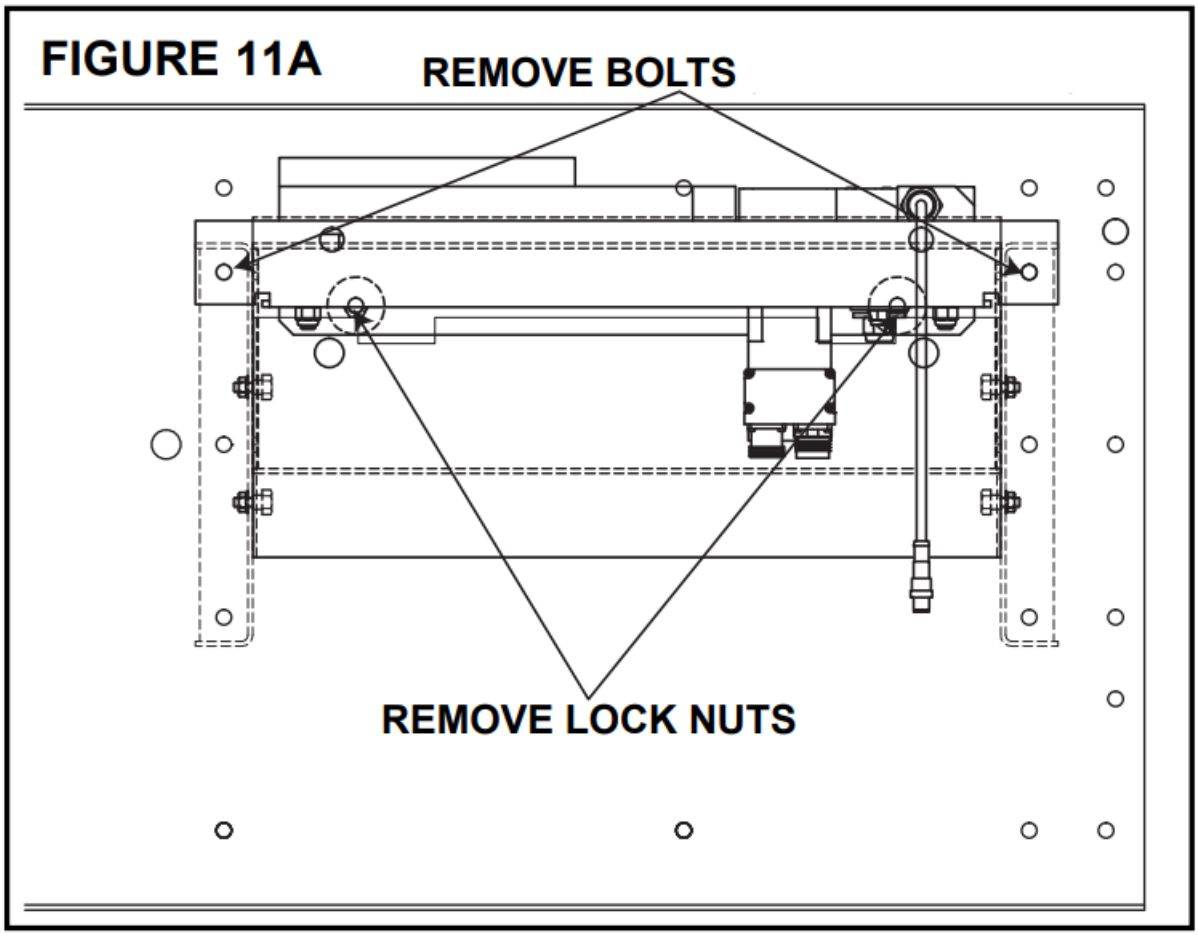




Electric Divert Switch Removal Procedure

The ProSort is designed for easy removal of the divert switch assembly for maintenance or replacement. In order to remove the electric switch assembly follow the following steps.

1. Turn off all power going into the panel connected to the divert that is needing to be removed. This includes turning the disconnect on the front of the panel to the Off position and disconnecting the 3-Phase supply power and control power.
2. Wait at least 90 seconds after removing all power to allow the power to fully dissipate to a safe level.
3. After waiting 90 seconds, remove the cover located on the side of the sorter under the divert switch assembly by lifting and rotating down and out of the way. Next remove the orange power cable and the green encoder cable from the servo motor mounted to the switch. Also remove the 5-wire m12 cable that is connected to the Smart Prox.
4. By reaching through the uncovered hole in the side channel, remove the two nuts at the back side of the switch assembly channel. Then remove the two bolts on the outside of the sorter channel which hold up the front side of the switch assembly channel (figure 11A).
5. The front side of the switch assembly channel may then be lowered and the entire assembly may be removed through the opening in the sorter channel.



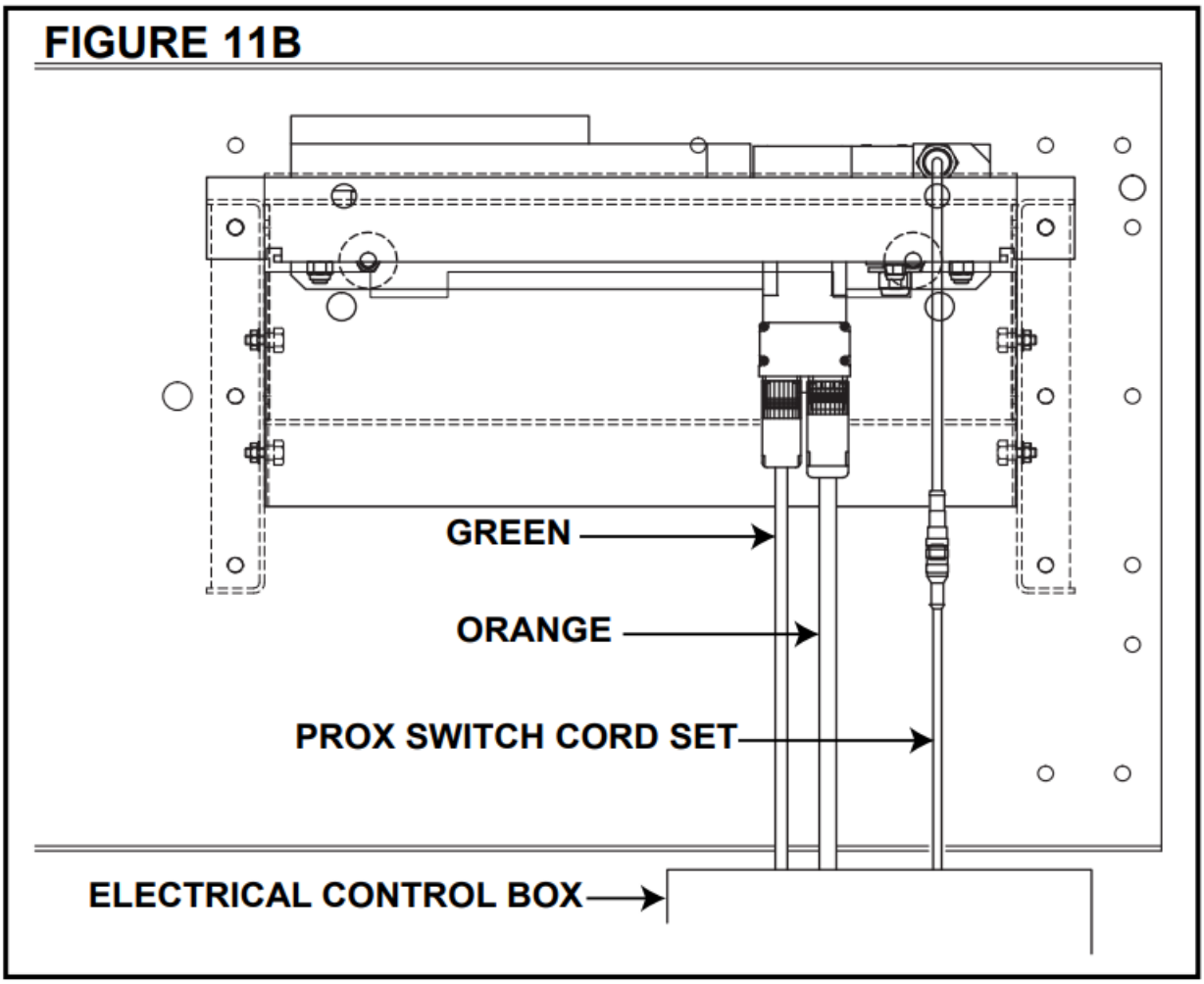
Electric Switch Homing Procedure

1. Turn off all power going into the panel connected to the divert that is needing to be homed. This includes turning the disconnect on the front of the panel to the Off position and disconnecting the 3-Phase supply power and control power.
2. Wait at least 90 seconds after removing all power to allow the power to fully dissipate to a safe level.
3. After waiting 90 seconds, remove the cover located on the side of the sorter under the divert switch assembly

by lifting and rotating down and out of the way. Next remove the orange power cable and the green encoder cable from the servo motor mounted to the switch. Also remove the 5-wire m12 cable that is connected to the Smart Prox.

4. By reaching through the uncovered hole in the side channel, remove the two nuts at the back side of the switch assembly channel. Then remove the two bolts on the outside of the sorter channel which hold up the front side of the switch assembly channel.
5. The front side of the switch assembly channel may then be lowered and the entire assembly may be removed through the opening in the sorter channel.
6. Remove the nut on the bottom of the switch gate. After the nut is removed, pull the switch gate out of the assembly. The servo motor shaft and cam should now be visible.
7. Connect the orange power cable and the green encoder cable.
8. Turn the cam by hand until the motor key is facing the outside mounting plate of the switch assembly.
9. Turn the homing key on the servo drive enclosure on.
10. Apply power to the servo drive enclosure and allow for the drive to power up completely.
11. Turn off power and remove the homing key.
12. If you reapply power at this point the cam should move to the home position. You can reinstall the switch gate and check for correct position in both the home and diverted positions.
13. Turn off enclosure power and reinstall the electric switch assembly.

FIGURE 11B



Trouble Shooting

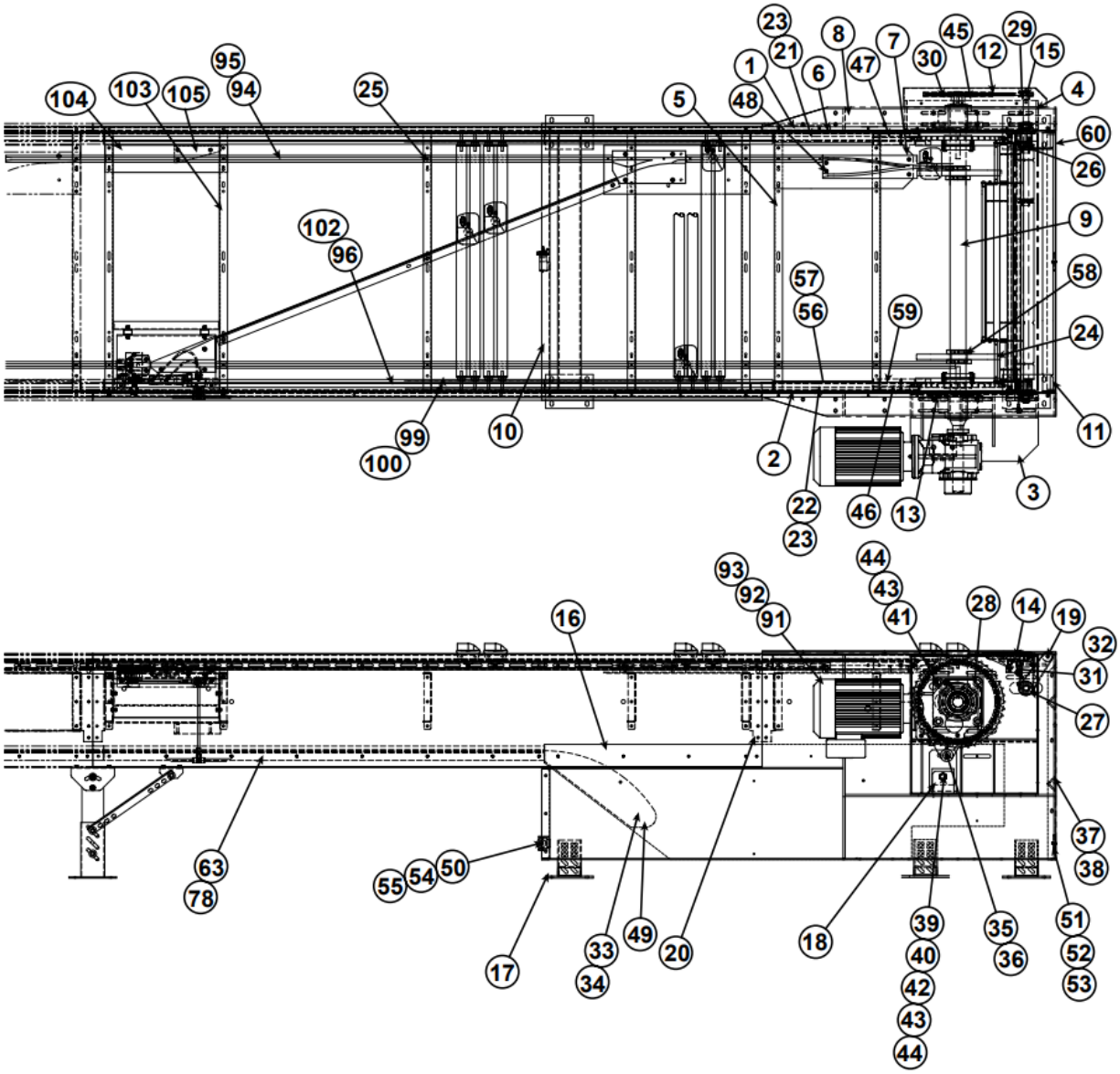
The following charts list possible problems that may occur in the operation of the ProSort.

TROUBLE SHOOTING DRIVES

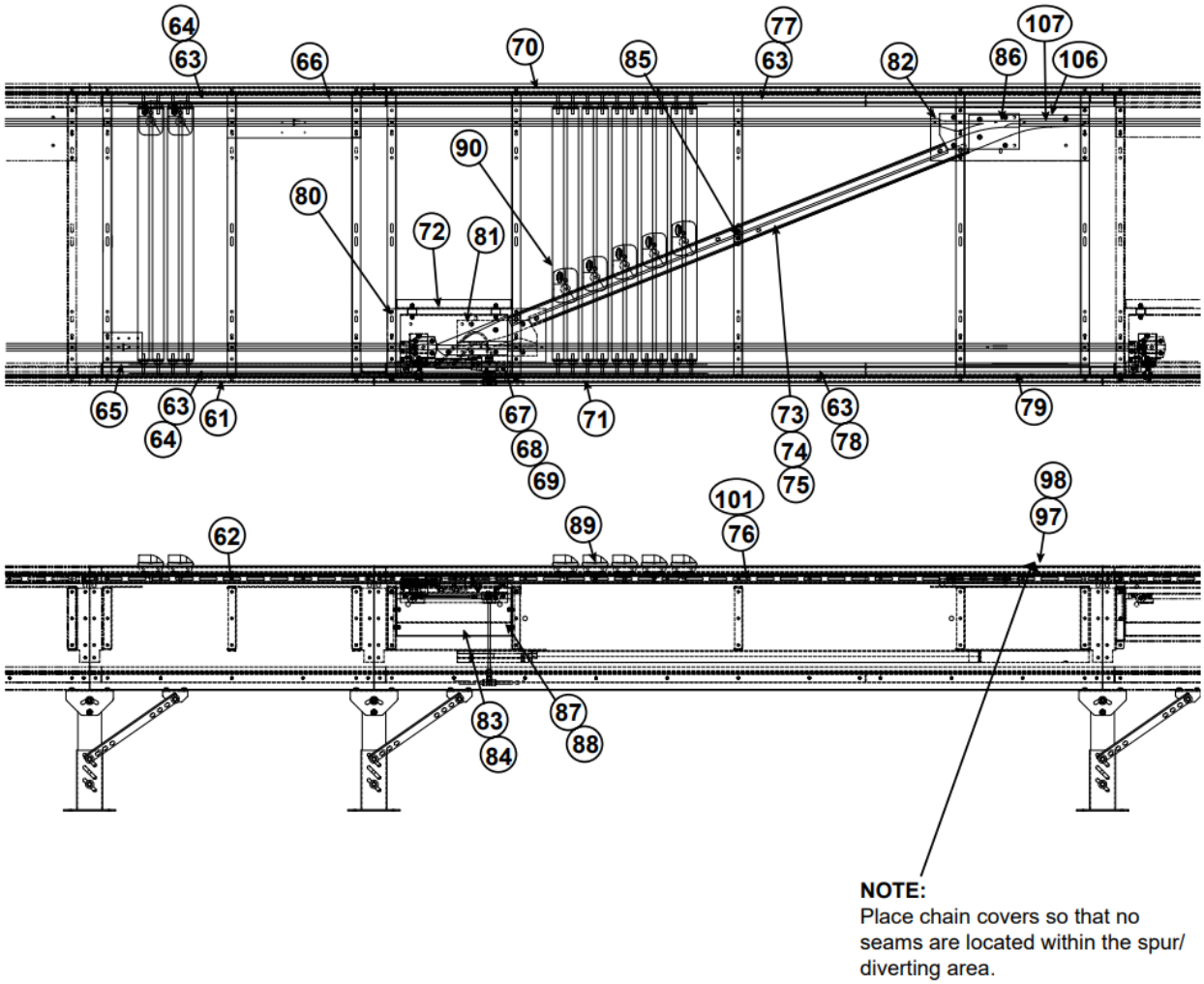
TROUBLE	CAUSE	SOLUTION
Conveyor will not start or sh uts off automatically during operati on.	1) Jam eye blocked 2) Tripped internal safety switch. 3) Pop-up rollers “UP”. 4) Proximity switch for internal safety s witch or pop-up rollers mis-adjusted or defective. 5) Low air pressure. a) Regular set low. b) Air line restricted or broken. c) Air filter clogged. d) Compressor problem. e) Lockout closed. 6) Electrical circuits. 7) Variable speed drive mis-adjusted o r defective. 8) drive motor defective.	1) Unblock jam eye. 2) determine cause of tripping: foreign d ebris, mislocated divert shoes, etc., and correct problem. 3) determine reason for rollers popping up and correct problem. 4) Adjust or replace proximity switch. 5) determine reason for low air pressure and correct problem. 6) Check power and wiring. 7) Refer to variable speed drive manufa cturer’s manual for trouble shooting. 8) Replace motor.
Conveyor takes long time to reach speed or conveyor jerks wh en starting.	1) Variable speed drive mis-adjusted o r defective.	1) Refer to variable speed drive manufa cturer’s manual for trouble shooting.
divert shoes “jump” during d iverting.	1) divert shoe tight on slats. 2) Slats dirty. 3) Slats bent. 4) Switch mis-adjusted.	1) Replace slat/shoe assembly. 2) Clean surface. (Refer to Preventive maintenance details) 3) Replace slat/shoe assembly. 4) Refer to divert Switch Checklist, Pag e 8 & 9.
Inoperative divert switch.	1) No air pressure to cylinder. 2) Lockout closed. 3) Air solenoid valve defective. 4) Proximity switch mis-adjusted or def ective.	1) Check air line and filter regulator. Re place if necessary. 2) Open lockout. 3) Replace. 4) See page 8 & 9 for proper adjust or r eplace.
All divert switches inoperati ve.	1) Loss of power to air solenoid valves. 2) Controls failure.	1) Correct problem. 2) Trouble shoot control system.
Inoperative electric divert s witch	1) No power to electric switch.	1) Check 3-Phase power to the servo d rive enclosure.

Model ProSort 421 Parts Drawing

Catenary Divert and Drive Section

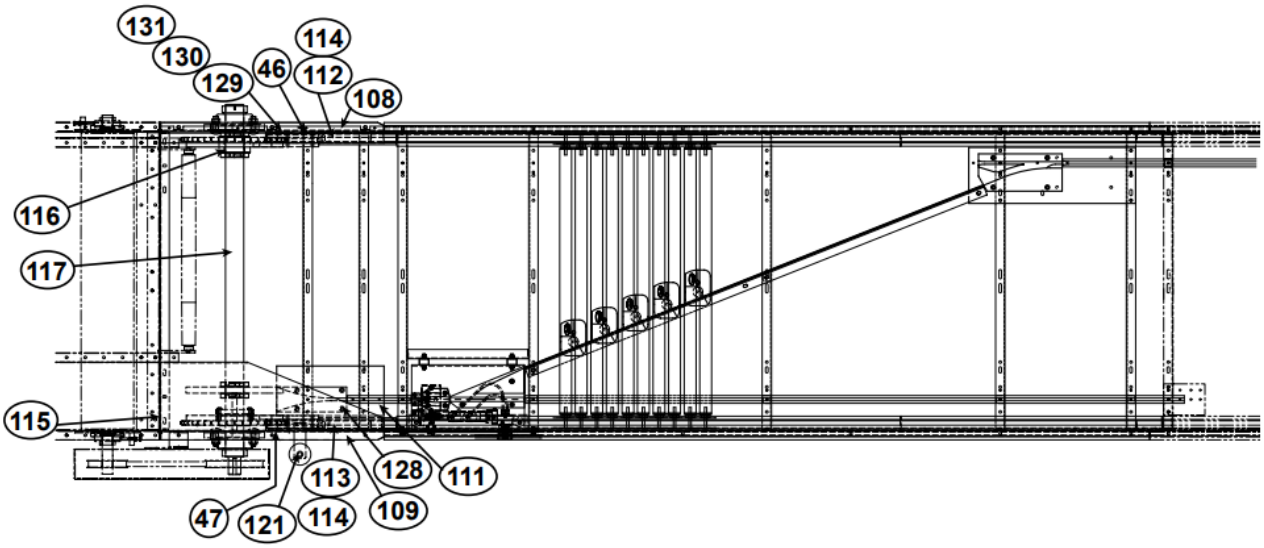


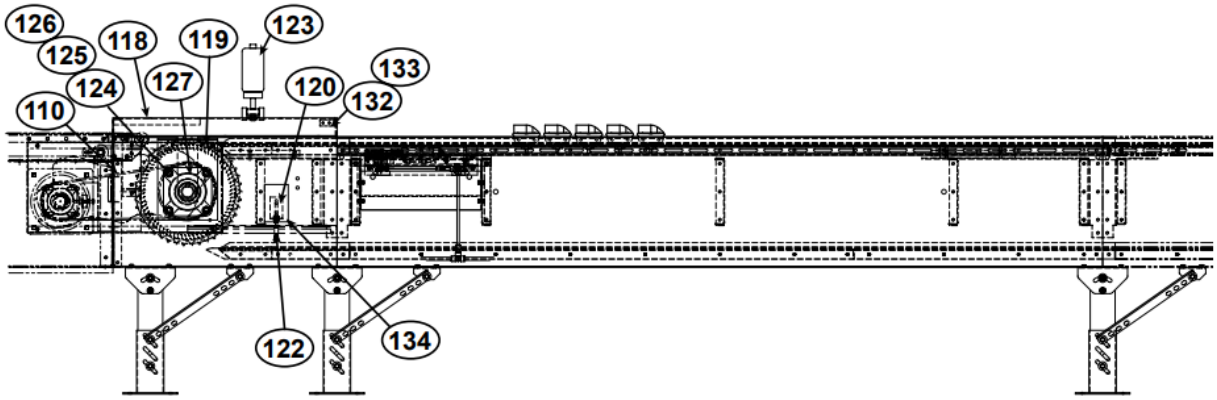
Intermediate and Return Divert Section



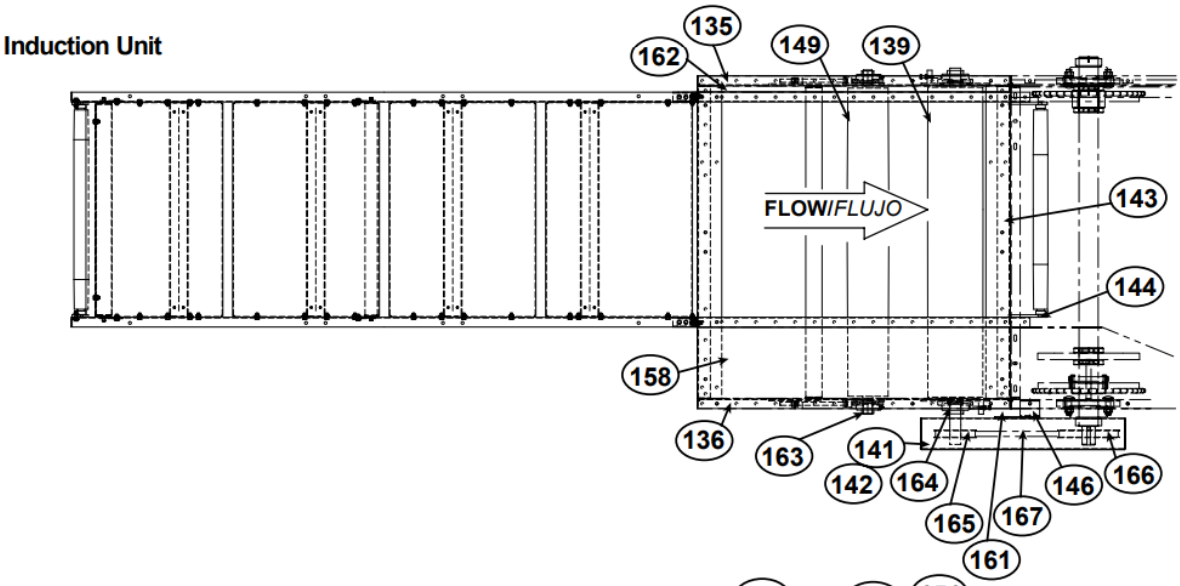
NOTE:
Place chain covers so that no seams are located within the spur/ diverting area.

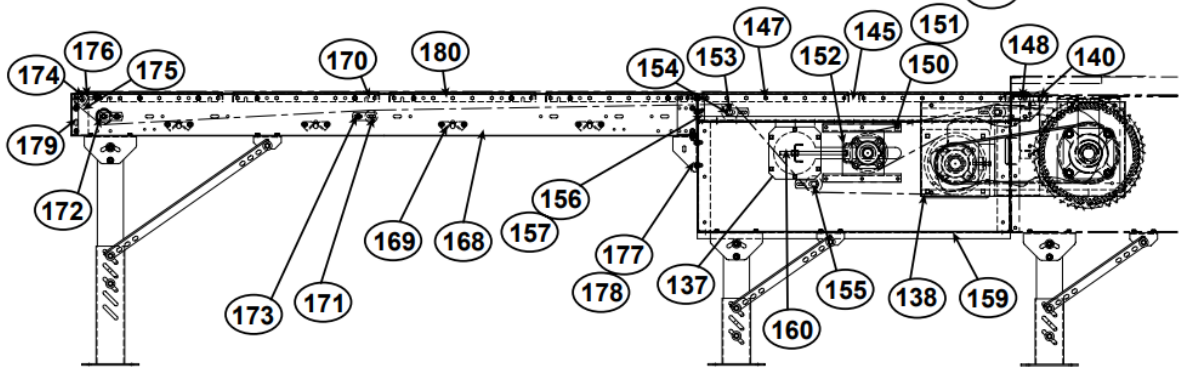
Tail and Divert Section





Induction Unit





Model ProSort 421 Parts List

REF NO.	PART NO.	DESCRIPTION
1	WA-015050-L	Drive Side Chnl Weldment – LH
2	WA-015050-R	Drive Side Chnl Weldment – RH
3	—	Take-Up – Drive Side
—	WA-015252	Left Hand
—	WA-015064	Right Hand
4	—	Take-Up – Slave Side
—	WA-015120	Left Hand
—	WA-015254	Right Hand
5	WA-014976	Bed Spacer Assembly (Specify OAW)
6	MP-001196-012	Spur Mounting Channel
7	PT-053021	Pin Guide Support Plate
8	PT-052597	Top Stiffener Plate
9	—	Drive Shaft
—	PT-103580	KT77 Gearmotor (Specify OAW)
—	PT-103581	KT97 Gearmotor (Specify OAW)
10	B-23250	End Cover (Specify OAW)
11	WA-015169	End Plate Weldment (Specify OAW)
12	WA-015259	Slave Drive Guard
13	B-23258	Bearing Spacer
14	SA-037195	Transition Roller Assembly (Specify OAW)
15	PT-087686	Transition Drive Shaft (Specify OAW)
16	PT-052599	Catenary Take-Up Wearstrip
17	B-23281	Support Weldment (Specify OAW)
18	B-23285	Torque Arm Mounting Weldment for KT77 Gearmotor
19	—	1.9 Dia. Transition Roller

REF NO.	PART NO.	DESCRIPTION
—	SA-038920-240	30 in BR
—	SA-038920-288	36 in BR
—	SA-038920-336	42 in BR
—	SA-038920-384	48 in BR
—	SA-038920-432	54 in BR
20	PT-051623	Splice Channel
21	PT-11580-L	Chain Wearstrip – LH
22	PT-11580-R	Chain Wearstrip – RH
23	PT-052971	Chain Guide Mounting Angle
24	932.0079	Cushion Disk
25	B-17065	Pin Guide Spacer
26	SA-042719	Sprocket 100E42 W/Lagging
27	010.0021	Bearing – Cast Iron, 2-Bolt, 1″ Bore
28	010.2075	Bearing – Cast Iron, 4-Bolt, 2-15/16″ Bore
29	020.130	Sheave – 1A, 2.75″ OD x 1″ Bore (2.5″PD)
30	024.1615	Sheave – 1A, 12.25″ OD x 1″ Bore (12″PD)
31	32.2116	Proximity Switch – DC, Normally Open
32	941.423003	Cordset – 3M, Straight Female
33	042.664	3/8-16 x 2-3/4″ Lg Hex Skt Flt Hd Cap Screw
34	041.798	3/8-16 NC2B Hex Locknut – Nylon Insert
35	040.504	5/8-11 x 4-1/2″ Lg Hex Head Cap Screw
36	041.503	5/8-11 NC2B Hex 2-Way Locknut – Regular
37	049.5205	5/8-18 x 6″ Lg Hex Head Bolt – Hardened
38	041.2021	5/8-18 NC2B Hex Jam Nut – Regular
39	040.700	7/8-9 x 2″ Lg Hex Head Bolt for KT77 Gearmotor

REF NO.	PART NO.	DESCRIPTION
40	040.701	7/8-9 x 6″ Lg Hex Head Bolt for KT97 Gearmotor
41	042.700	7/8-9 x 2-1/2″ Lg Hex Skt Flat Hd. Cap Screw
42	043.1059	7/8″ ID Flat Steel Washer
43	043.207	7/8″ ID Split Lockwasher
44	041.107	7/8-9 NC2B Hex Nut – Regular

45	090.2547	O-Ring – 13-1/2″ ID x 3/8″ Dia.
46	918.0056	Chain Guide Support Block – LH
47	918.0055	Chain Guide Support Block – RH
48	092.1813	Offset Pin Guide
49	092.1838	Catenary Block
50	033.2130	Photoeye – Retro-Reflective, 10-40 VDC
51	032.2185	Reflector – 3.30″ Dia.
52	042.1019	#10-24 x 3/4″ Lg Round Head Mach Screw
53	041.802	#10-24 NC2B Hex Locknut – Nylon Insert
54	033.2131	Photoeye Mounting Bkt – Ball Swivel
55	032.21122	Cordset – for Photoeye
56	PT-098832-384	Brush – Drive
57	PT-057740	Brush Holder – Drive
58	098.1871	Collar – 2-15/16″ ID
59	PT-066395	Reinforcing Strap
60	090.2564	O-Ring – 5-3/8″ ID x 3/16″ Dia.
61	PT-083916	Intermediate Channel (Specify OAL)
62	MP-001196	Spur Mounting Channel – Intermediate (Specify OAL)
63	P-00447	Chain Guide Wearstrip (Specify OAL)
64	PT-052310	Chain Guide Mtg Angle – (Specify OAL)
65	PT-054987	Joint Plate
66	PT-066797	Joint Plate – Long
67	—	Switch Assembly, Pneumatic – See Page 33 & 34
—	SA-022167	Left Hand
—	SA-022196	Right Hand
68	—	Switch Assembly, Electric – See Page 35 & 36
—	SA-054961	Left Hand
—	SA-052517	Right Hand
69	EB-000011	Control Panel – Electric Divert Switch
70	PT-052309	Divert Channel – LH (Specify OAW and LH)
71	PT-052309	Divert Channel – RH (Specify OAW and RH)
72	WA-015033	Switch Mounting Channel Weldment
73	PT-054571	Divert Angle (Specify OAW)

74	—	Mounting Strap
—	P-01509-0494	33 in OAW
—	P-01509-0752	39 in OAW
—	P-01509-1011	45 in OAW
—	P-01509-1269	51 in OAW
—	P-01509-1528	57 in OAW
75	—	Divert Wearstrip
—	0110-0064-0988	33 in OAW
—	0110-0064-1505	39 in OAW
—	0110-0064-2022	45 in OAW
—	0110-0064-2539	51 in OAW
—	0110-0064-3056	57 in OAW
76	MP-001198	Spur Mounting Channel – 22 Deg Divert (Specify OAW)
77	PT-052312	Chain Guide Mtg Angle – 22 Deg Divert (Specify OAW)
78	PT-055292	Chain Guide Mtg Angle – 22 Deg Cat. Divert (Specify OAW)
79	PT-056365	Chain Guide Mtg Angle- End Divert (Specify OAW)
80	PT-67116	Return Y-Block Mtg Plate – 22 Deg
81	—	Return Y-Block – 22 Deg
—	092.179752	Left Hand
—	092.179751	Right Hand
82	PT-051905	Y-Block Mounting Plate
83	PT-052231	Cover Plate – Switch Side
84	PT-060165	Cover Plate – Spur Side
85	B-18446	Track Spacer
86	—	Y-Block – 22 Deg
—	092.17972	Left Hand
—	092.17971	Right Hand
87	042.914	Shoulder Bolt – ACC Suspension Angle
88	049.527	1/4-20 Small Flange Locknut
89	—	Shoe Assembly
—	092.18696	LH Shoe
—	092.18695	RH Shoe

90	SA-057188	Slat Assembly (Specify OAW)
91	Contact Factory	Gear Motor
92	Contact Factory	Variable Speed Controller Kit
93	Contact Factory	Control Package
94	099.462	Aluminum Guide Rail Extrusion x 20′ Long
95	099.463	Special Shape UHMW Guide Rail x 20′ Long
96	069.751	Bearing Profile – Urethane
97	094.423	Chain Cover – Black PVC

REF NO.	PART NO.	DESCRIPTION
98	041.9069	Speed Grip Nut Retainer – 1/4-20
99	029.2657	#100XLO Riveted O-ring Chain W/D1 Att
100	029.2667	Connector Link – #100XLO W/1.75″ Lg D1 Att
101	082.4157	Channel Nut – 3/8-16 With Spring
102	096.114	Loctite Instant Adhesive – #401
103	WA-015017	Bed Spacer Weldment – Catenary (Specify OAW)
104	PT-051907	Safety Block Mounting Plate
105	092.1807	Safety Shoe Guide
106	PT-051908	Return Block Mounting Plate
107	092.1809	Return Sweep Block – 22 Deg
108	PT-053732-L	Tail Channel – LH
109	PT-053732-R	Tail Channel – RH
110	WA-015562	End Bed Spacer Weldment (Specify OAW)
111	PT-053737	Tail Pin Guide Mounting Plate
112	PT-115582-L	Chain Wearstrip – LH
113	PT-115582-R	Chain Wearstrip – RH
114	PT-053735	Chain Guide Mounting Angle – Tail
115	PT-053731	Shoe Guard Support Channel
116	SA-023332	Sprocket Idler 100B42 W/Lagging
117	PT-103582	Tail Shaft – Slave for Induction Conveyor (Specify OAW)

118	—	End Shoe Cover
—	B-23212	Left Hand for Left hand Drive Unit
—	B-23213	Right Hand for Right Hand Drive Unit
119	PT-057975	Bearing Spacer Angle
120	B-18469	Oiler Brush Bracket
121	B-18450	Oiler Mount Bracket
122	095.155	Shank Brush for Chain lubricator
123	095.150	Chain Lubricator W/2 Feeds, 24V DC
124	043.205	3/4″ ID Split Lock washer
125	042.581	3/4-10 x 2-1/2” Lg Carriage Bolt
126	041.106	3/4-10 NC2B Hex Nut – Regular
127	010.2076	Bearing – Cast Iron 4-Bolt, 2-15/16″ Bore
128	092.18101	Tail Pin Guide Block
129	PT-057731	Brush Mounting Bar – Tail
130	PT-057738	Brush Holder – Tail
131	PT-098832-288	Brush – Chain Cover, Tail
132	PT-063104	Belt Flap Mounting Angle
133	932.0076	Belt Flap for End Cover
134	PT-126624	Cover Plate
135	PT-063278-L	Drive Side Plate – LH (Induction Unit)
136	PT-063278-R	Drive Side Plate – RH (Induction Unit)
137	B-23159	Cover Assembly
138	B-23162	Pulley Plate Assembly
139	B-23165	8″ Drive Pulley (Specify OAW)
140	B-23575	2-1/4″ Dia Pulley (Specify OAW)
141	—	Slave Guard
—	PT-054187	Left Hand for Left Hand Drive Unit
—	PT-054252	Right Hand for Right Hand Drive Unit

142	PT-054188	Slave Guard Cover
143	PT-063281	Drive End Channel (Specify OAW)
144	PT-054189	Pulley Mounting Bracket
145	PT-054185	Induction Drive Channel
146	PT-062544	Slave Guard Mounting Bracket
147	B-23294	Bolt in Slider Pan (Specify OAW)
148	B-23295	Nip Point Guard (Specify OAW)
149	B-23296	6″ Take-Up Pulley (Specify OAW)
150	B-04161	Bearing Guide
151	B-09148	Bearing Guide Spacer
152	B-23297	Take-Up Plate Assembly
153	B-04842	11/16″ Hex Idler Bracket
154	—	2-1/2″ Roller – Conveyor Frame
—	B-15299-120	15″ BR
—	B-15299-168	21″ BR
—	B-15299-216	27″ BR
—	B-15299-264	33″ BR
—	B-15299-312	39″ BR
155	—	2-1/2″ Roller – Drive Shell
—	B-15299-240	30″ BR
—	B-15299-288	36″ BR
—	B-15299-336	42″ BR
—	B-15299-384	48″ BR
—	B-15299-432	54″ BR
156	B-23299-L	Butt Coupling – LH
157	B-23299-R	Butt Coupling – RH
158	B-23300	Top Drive Cover – Slave Side
159	B-23301	Lower Drive Guard (Specify OAW)

160	B-23302	Take-Up Bolt
161	B-23304	Idler Plate
162	B-23116	Top Drive Cover

REF NO.	PART NO.	DESCRIPTION
163	010.203	1-7/16” Bore 4-Bolt Bearing
164	010.2045	1-11/16″ Bore 4-Bolt Bearing
165	108.044327	44PTH8 – 35SD x 1-11/16″ Bore Timing Belt Sprocket
166	108.090332	90PTH8 – 35SF x 2″ Bore Timing Belt Sprocket
167	108.816003	1600PTH8M – 35 Timing Belt
168	P-01431	Side Channel Induction Unit (Specify OAL)
169	B-03916	Bed Spacer (Speify BR)
170	—	Bolt in Pan 18″ OAW
—	0265-084120	10-1/2 in. Long Pan
—	0265-108120	13-1/2 in. Long Pan
—	0265-132120	16-1/2 in. Long Pan
—	0265-144120	18 in. Long Pan
—	0265-156120	19-1/2 in. Long Pan
—	0265-168120	21 in. Long Pan
—	0265-172120	21-1/2 in. Long Pan
—	0265-174120	21-3/4 in. Long Pan
—	0265-180120	22-1/2 in. Long Pan
—	0265-186120	23-1/4 in. Long Pan
—	0265-188120	23-1/2 in. Long Pan
—	0265-192120	24 in. Long Pan
—	0265-196120	24-1/2 in. Long Pan
—	0265-198120	24-3/4 in. Long Pan
—	0265-204120	25-1/2 in. Long Pan
—	0265-210120	26-1/4 in. Long Pan

—	0265-212120	26-1/2 in. Long Pan
—	0265-216120	27 in. Long Pan
—	0265-220120	27-1/2 in. Long Pan
—	0265-222120	27-3/4 in. Long Pan
—	0265-228120	28-1/2 in. Long Pan
—	0265-240120	30 in. Long Pan
—	0265-252120	31-1/2 in. Long Pan
—	—	Bolt in Pan 24″ OAW
—	0265-084168	10-1/2 in. Long Pan
—	0265-108168	13-1/2 in. Long Pan
—	0265-132168	16-1/2 in. Long Pan
—	0265-144168	18 in. Long Pan
—	0265-156168	19-1/2 in. Long Pan
—	0265-168168	21 in. Long Pan
—	0265-172168	21-1/2 in. Long Pan
—	0265-174168	21-3/4 in. Long Pan
—	0265-180168	22-1/2 in. Long Pan
—	0265-186168	23-1/4 in. Long Pan
—	0265-188168	23-1/2 in. Long Pan
—	0265-192168	24 in. Long Pan
—	0265-196168	24-1/2 in. Long Pan
—	0265-198168	24-3/4 in. Long Pan
—	0265-204168	25-1/2 in. Long Pan
—	0265-210168	26-1/4 in. Long Pan
—	0265-212168	26-1/2 in. Long Pan
—	0265-216168	27 in. Long Pan
—	0265-220168	27-1/2 in. Long Pan
—	0265-222168	27-3/4 in. Long Pan

—	0265-228168	28-1/2 in. Long Pan
—	0265-240168	30 in. Long Pan
—	0265-252168	31-1/2 in Long Pan
—	—	Bolt in Pan 30″ OAW
—	0265-084216	10-1/2 in. Long Pan
—	0265-108216	13-1/2 in. Long Pan
—	0265-132216	16-1/2 in. Long Pan
—	0265-144216	18 in. Long Pan
—	0265-156216	19-1/2 in. Long Pan
—	0265-168216	21 in. Long Pan
—	0265-172216	21-1/2 in. Long Pan
—	0265-174216	21-3/4 in. Long Pan
—	0265-180216	22-1/2 in. Long Pan
—	0265-186216	23-1/4 in. Long Pan
—	0265-188216	23-1/2 in. Long Pan
—	0265-192216	24 in. Long Pan
—	0265-196216	24-1/2 in. Long Pan
—	0265-198216	24-3/4 in. Long Pan
—	0265-204216	25-1/2 in. Long Pan
—	0265-210216	26-1/4 in. Long Pan
—	0265-212216	26-1/2 in. Long Pan
—	0265-216216	27 in. Long Pan
—	0265-220216	27-1/2 in. Long Pan
—	0265-222216	27-3/4 in. Long Pan
—	0265-228216	28-1/2 in. Long Pan
—	0265-240216	30 in. Long Pan

REF NO.	PART NO.	DESCRIPTION

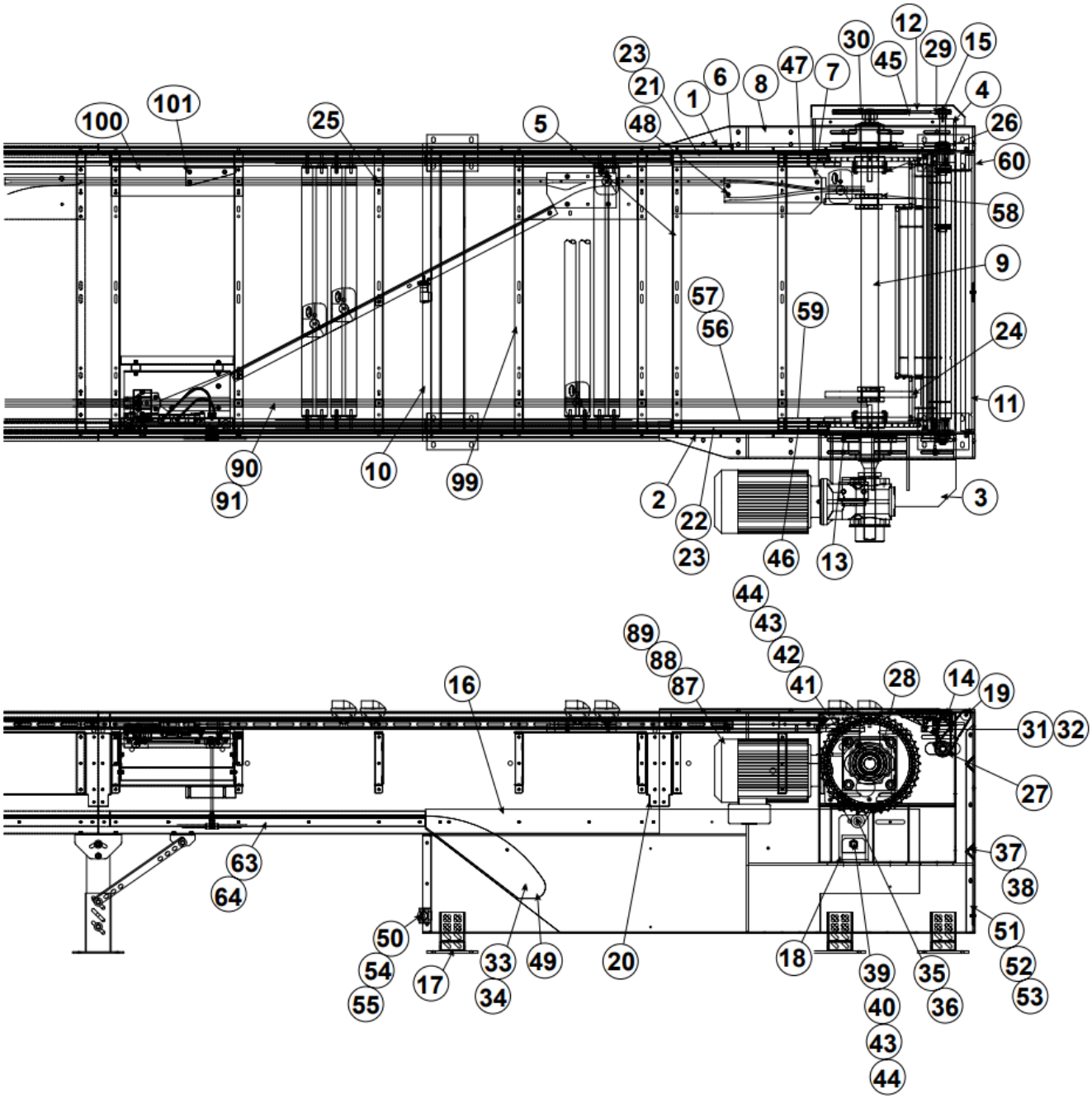
—	0265-252216	31-1/2 in Long Pan
—	—	Bolt in Pan 36” OAW
—	0265-084264	10-1/2 in. Long Pan
—	0265-108264	13-1/2 in. Long Pan
—	0265-132264	16-1/2 in. Long Pan
—	0265-144264	18 in. Long Pan
—	0265-156264	19-1/2 in. Long Pan
—	0265-168264	21 in. Long Pan
—	0265-172264	21-1/2 in. Long Pan
—	0265-174264	21-3/4 in. Long Pan
—	0265-180264	22-1/2 in. Long Pan
—	0265-186264	23-1/4 in. Long Pan
—	0265-188264	23-1/2 in. Long Pan
—	0265-192264	24 in. Long Pan
—	0265-196264	24-1/2 in. Long Pan
—	0265-198264	24-3/4 in. Long Pan
—	0265-204264	25-1/2 in. Long Pan
—	0265-210264	26-1/4 in. Long Pan
—	0265-212264	26-1/2 in. Long Pan
—	0265-216264	27 in. Long Pan
—	0265-220264	27-1/2 in. Long Pan
—	0265-222264	27-3/4 in. Long Pan
—	0265-228264	28-1/2 in. Long Pan
—	0265-240264	30 in. Long Pan
—	0265-252264	31-1/2 in. Long Pan
—	—	Bolt in Pan 42″ OAW
—	0265-084312	10-1/2 in. Long Pan
—	0265-108312	13-1/2 in. Long Pan
—	0265-132312	16-1/2 in. Long Pan
—	0265-144312	18 in. Long Pan
—	0265-156312	19-1/2 in. Long Pan
—	0265-168312	21 in. Long Pan

—	0265-172312	21-1/2 in. Long Pan
—	0265-174312	21-3/4 in. Long Pan
—	0265-180312	22-1/2 in. Long Pan
—	0265-186312	23-1/4 in. Long Pan
—	0265-188312	23-1/2 in. Long Pan
—	0265-192312	24 in. Long Pan
—	0265-196312	24-1/2 in. Long Pan
—	0265-198312	24-3/4 in. Long Pan
—	0265-204312	25-1/2 in. Long Pan
—	0265-210312	26-1/4 in. Long Pan
—	0265-212312	26-1/2 in. Long Pan
—	0265-216312	27 in. Long Pan
—	0265-220312	27-1/2 in. Long Pan
—	0265-222312	27-3/4 in. Long Pan
—	0265-228312	28-1/2 in. Long Pan
—	0265-240312	30 in. Long Pan
—	0265-252312	31-1/2 in. Long Pan
171	—	1.9 O.D. Galv. Roller Assy.
—	B-01982-120	15″ BR
—	B-01982-168	21″ BR
—	B-01982-216	27″ BR
—	B-01982-264	33″ BR
—	B-01982-312	39″ BR
172	—	2-1/8 ” Dia. Idler
—	B-03894-120	15″ BR
—	B-03894-168	21″ BR
—	B-03894-216	27″ BR
—	B-03894-264	33″ BR
—	B-03894-312	39″ BR
173	B-00944	7/16″ Hex Idler Bracket
174	B-23575	2-1/4″ Dia. Pulley (Specify BR)

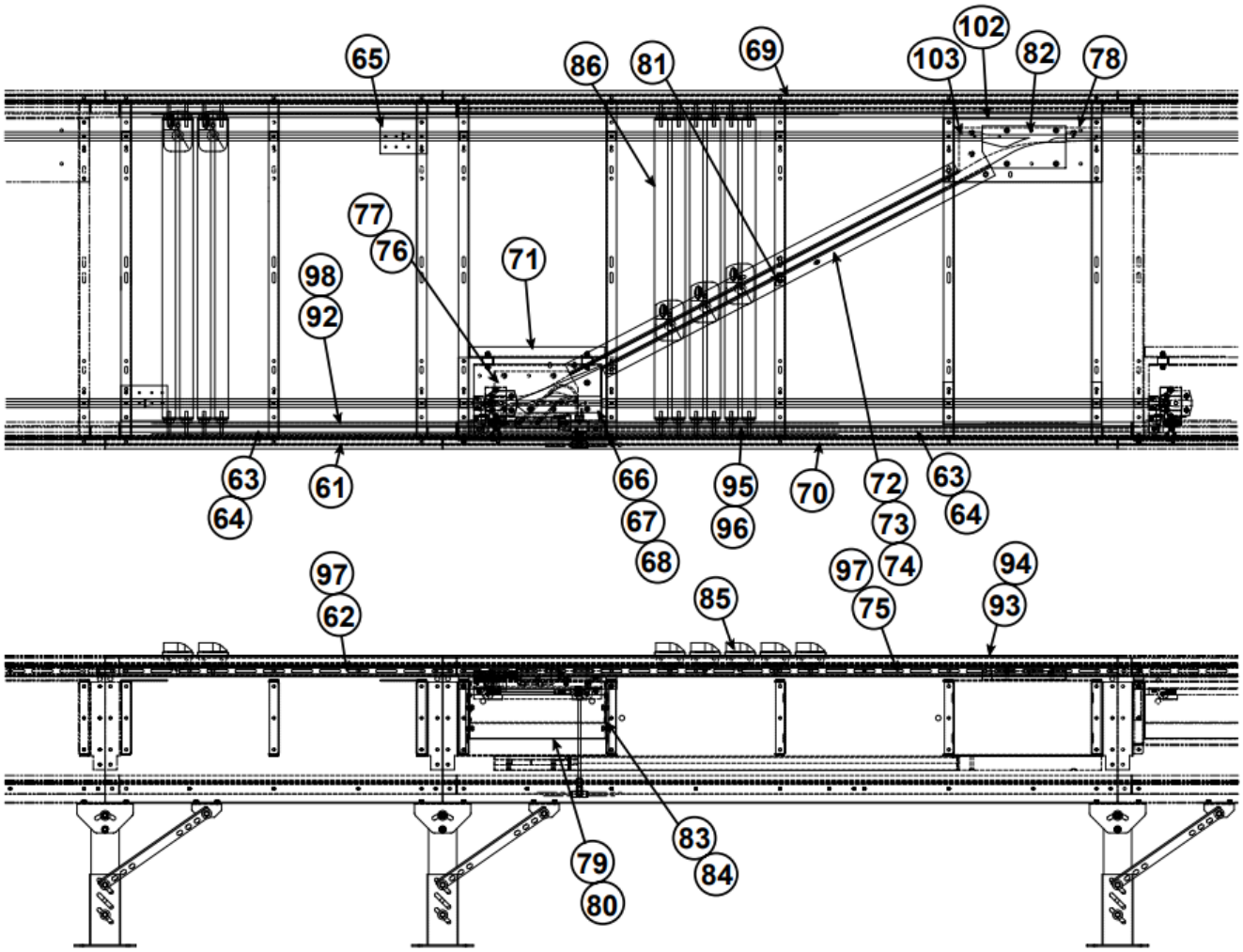
175	B-23578	Pulley Mount
176	B-23579	Nip Point Guard (Specify BR)
177	B-23581-L	Gussett Angle – LH
178	B-23581-R	Gussett Angle – RH
179	B-03191	Butt Coupling
180	B-23585	Belt Kit (Specify Infeed Section Lgth and OAW)
181	SA-061960	Pull Assembly (Specify OAW) (Not Shown)
182	B-24596	Chain Pick-Up Tool – Flat (Not Shown)
183	B-24591	Chain Pick-Up Tool – Bent (Not Shown)
184	SA-023516	Safety Switch Assembly – See Page 37
185	032.293	Encoder – 30PPR (Not Shown)
186	042.49010	1/4 x 1-1/4 Lg Shoulder Bolt (Not Shown)
187	PT-093001	End Coder Cover (Not Shown)

Model ProSort 431 Parts Drawing

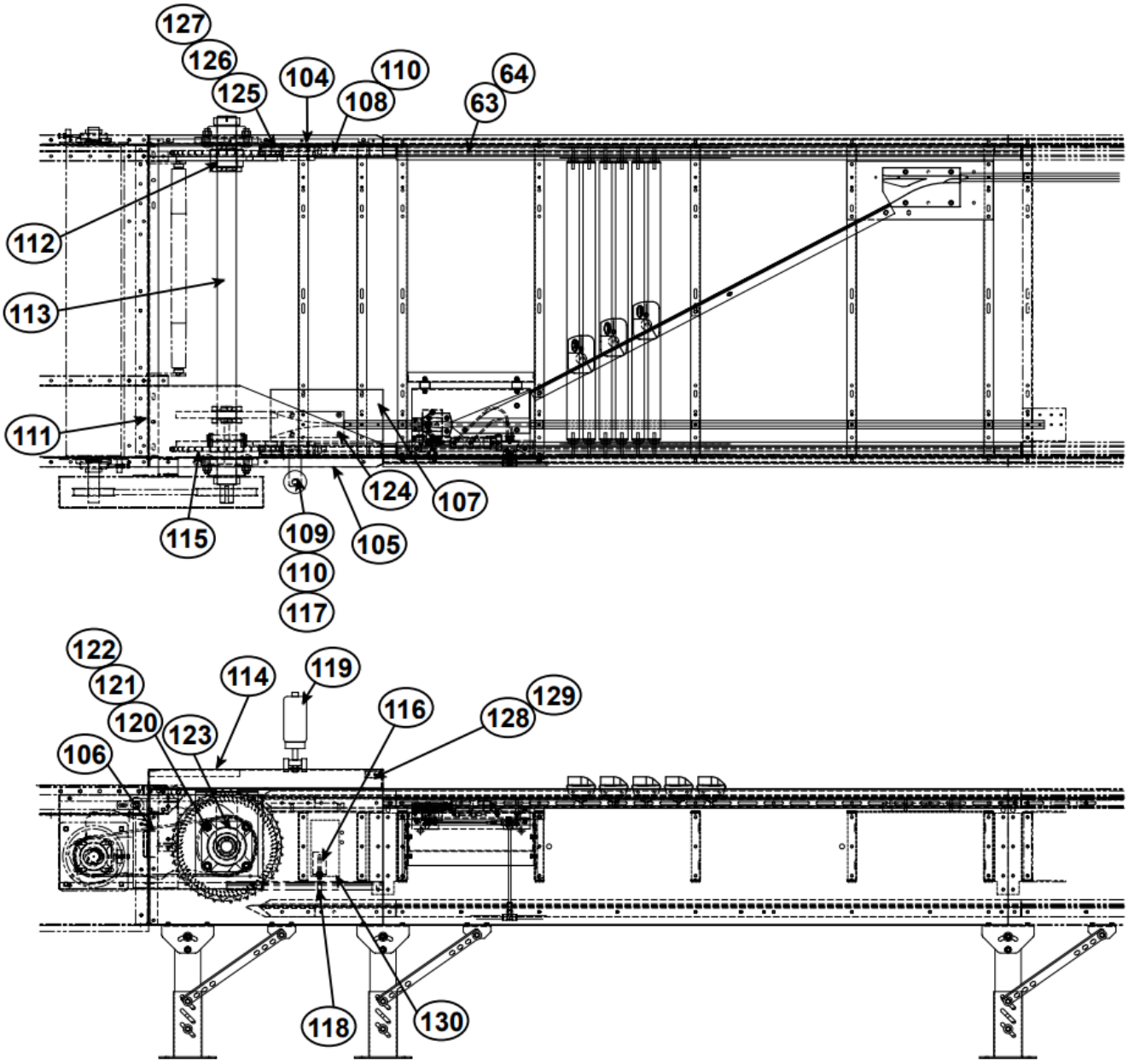
Catenary Divert and Drive Section



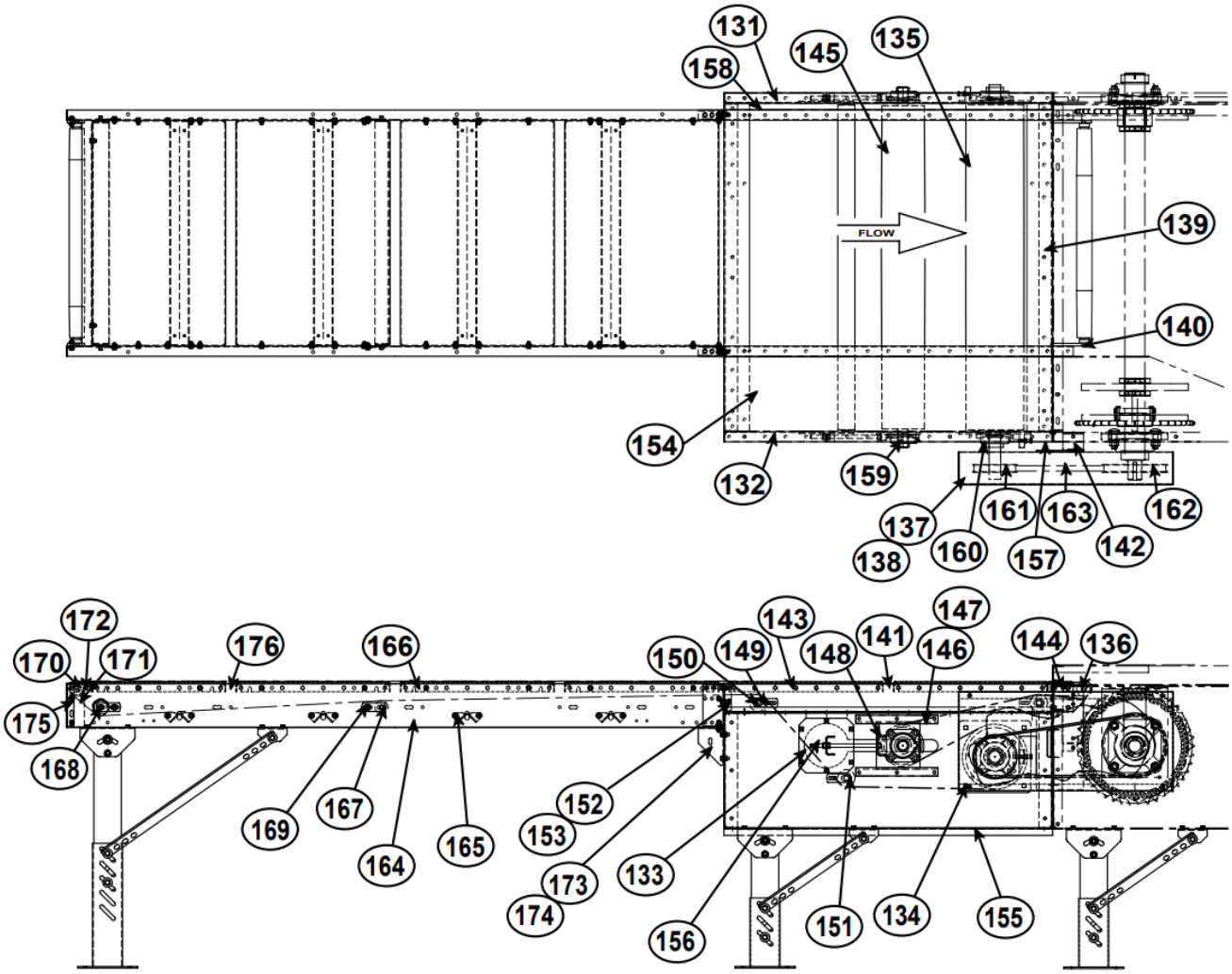
Intermediate and Return Divert Section



Tail and Divert Section



Induction Unit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REF NO.	PART NO.	DESCRIPTION
1	WA-015050-L	Drive Side Chnl Weldment – LH
2	WA-015050-R	Drive Side Chnl Weldment – RH
3	—	Take-Up – Drive Side
—	WA-015252	Left Hand
—	WA-015064	Right Hand
4	—	Take-Up – Slave Side
—	WA-015120	Left Hand
—	WA-015254	Right Hand
5	WA-014976	Bed Spacer Assembly (Specify OAW)
6	MP-001196-012	Spur Mounting Channel
7	PT-053021	Pin Guide Support Plate
8	PT-052597	Top Stiffener Plate
9	—	Drive Shaft
—	PT-103580	KT77 Gearmotor (Specify OAW)
—	PT-103581	KT97 Gearmotor (Specify OAW)
10	B-23250	End Cover (Specify OAW)
11	WA-015169	End Plate Weldment (Specify OAW)
12	WA-015259	Slave Drive Guard
13	B-23258	Bearing Spacer
14	SA-037195	Transition Roller Assembly (Specify OAW)
15	PT-087686	Transition Drive Shaft (Specify OAW)
16	PT-052599	Catenary Take-Up Wearstrip
17	B-23281	Support Weldment (Specify OAW)
18	B-23285	Torque Arm Mounting Weldment for KT77 Gearmotor
19	—	1.9 Dia. Transition Roller
—	SA-038920-240	30 in BR
—	SA-038920-288	36 in BR
—	SA-038920-336	42 in BR
—	SA-038920-384	48 in BR
—	SA-038920-432	54 in BR

REF NO.	PART NO.	DESCRIPTION

20	PT-051623	Splice Channel
21	PT-11580-L	Chain Wearstrip – LH
22	PT-11580-R	Chain Wearstrip – RH
23	PT-052971	Chain Guide Mounting Angle
24	932.0079	Cushion Disk
25	B-17065	Pin Guide Spacer
26	SA-042719	Sprocket 100E42 W/Lagging
27	010.0021	Bearing – Cast Iron, 2-Bolt, 1″ Bore
28	010.2075	Bearing – Cast Iron, 4-Bolt, 2-15/16″ Bore
29	020.130	Sheave – 1A, 2.75″ OD x 1″ Bore (2.5″PD)
30	024.1615	Sheave – 1A, 12.25″ OD x 1″ Bore (12″PD)
31	32.2116	Proximity Switch – DC, Normally Open
32	941.423003	Cordset – 3M, Straight Female
33	042.664	3/8-16 x 2-3/4″ Lg Hex Skt Flt Hd Cap Screw
34	041.798	3/8-16 NC2B Hex Locknut – Nylon Insert
35	040.504	5/8-11 x 4-1/2″ Lg Hex Head Cap Screw
36	041.503	5/8-11 NC2B Hex 2-Way Locknut – Regular
37	049.5205	5/8-18 x 6″ Lg Hex Head Bolt – Hardened
38	041.2021	5/8-18 NC2B Hex Jam Nut – Regular
39	040.700	7/8-9 x 2″ Lg Hex Head Bolt for KT77 Gearmotor
40	040.701	7/8-9 x 6″ Lg Hex Head Bolt for KT97 Gearmotor
41	042.700	7/8-9 x 2-1/2″ Lg Hex Skt Flat Hd. Cap Screw
42	043.1059	7/8″ ID Flat Steel Washer
43	043.207	7/8″ ID Split Lockwasher
44	041.107	7/8-9 NC2B Hex Nut – Regular
45	090.2547	O-Ring – 13-1/2″ ID x 3/8″ Dia.
46	918.0056	Chain Guide Support Block – LH
47	918.0055	Chain Guide Support Block – RH
48	092.1813	Offset Pin Guide

49	092.1838	Catenary Block

REF NO.	PART NO.	DESCRIPTION
50	033.2130	Photoeye – Retro-Reflective, 10-40 VDC
51	032.2185	Reflector – 3.30″ Dia.
52	042.1019	#10-24 x 3/4″ Lg Round Head Mach Screw
53	041.802	#10-24 NC2B Hex Locknut – Nylon Insert
54	033.2131	Photoeye Mounting Bkt – Ball Swivel
55	032.21122	Cordset – for Photoeye
56	PT-098832-384	Brush – Drive
57	PT-057740	Brush Holder – Drive
58	098.1871	Collar – 2-15/16″ ID
59	PT-066395	Reinforcing Strap
60	090.2564	O-Ring – 5-3/8″ ID x 3/16″ Dia.
61	PT-083916	Intermediate Channel (Specify OAL)
62	MP-001196	Spur Mounting Channel – Intermediate (Specify OAL)
63	P-00447	Chain Guide Wearstrip (Specify OAL)
64	PT-052310	Chain Guide Mtg Angle – (Specify OAL)
65	PT-054987	Joint Plate
66	—	Switch Assembly, Pneumatic – See Page 33 & 34
—	SA-022167	Left Hand
—	SA-022196	Right Hand
67	—	Switch Assembly, Electric – See Page 35 & 36
—	SA-054961	Left Hand
—	SA-052517	Right Hand
68	EB-000011	Control Panel – Electric Divert Switch
69	PT-052308	Divert Channel – LH (Specify OAW and LH)
70	PT-052308	Divert Channel – RH (Specify OAW and RH)
71	WA-015033	Switch Mounting Channel Weldment
72	PT-054543	Divert Angle (Specify OAW)
73	—	Mounting Strap
—	P-01509-0354	33 in OAW

—	P-01509-0568	39 in OAW
—	P-01509-0783	45 in OAW
—	P-01509-0998	51 in OAW
—	P-01509-1212	57 in OAW
74	—	Divert Wearstrip
—	0110-0064-0708	33 in OAW
—	0110-0064-1137	39 in OAW
—	0110-0064-1567	45 in OAW
—	0110-0064-1996	51 in OAW
—	0110-0064-2424	57 in OAW
75	MP-001197	Spur Mounting Channel – 30 Deg Divert (Specify OAW)
76	PT-67117	Return Y-Block Mtg Plate – 30 Deg
77	—	Return Y-Block – 30 Deg
—	092.179756	Left Hand
—	092.179755	Right Hand
78	PT-051903	Y-Block Mounting Plate
79	PT-052231	Cover Plate – Switch Side
80	PT-060165	Cover Plate – Spur Side
81	B-18446	Track Spacer
82	—	Y-Block – 30 Deg
—	092.17974	Left Hand
—	092.17973	Right Hand
83	042.914	Shoulder Bolt – ACC Suspension Angle
84	049.527	1/4-20 Small Flange Locknut
85	—	Shoe Assembly
—	092.18696	LH Shoe
—	092.18695	RH Shoe
86	SA-057188	Slat Assembly (Specify OAW)
87	Contact Factory	Gear Motor
88	Contact Factory	Variable Speed Controller Kit
89	Contact Factory	Control Package
90	099.462	Aluminum Guide Rail Extrusion x 20′ Long
91	099.463	Special Shape UHMW Guide Rail x 20′ Long

92	069.751	Bearing Profile – Urethane
93	094.423	Chain Cover – Black PVC
94	041.9069	Speed Grip Nut Retainer – 1/4-20
95	029.2657	#100XLO Riveted O-ring Chain W/D1 Att
96	029.2667	Connector Link – #100XLO W/1.75″ Lg D1 Att
97	082.4157	Channel Nut – 3/8-16 With Spring
98	096.114	Loctite Instant Adhesive – #401
99	WA-015017	Bed Spacer Weldment – Catenary (Specify OAW)
100	PT-051907	Safety Block Mounting Plate
101	092.1807	Safety Shoe Guide
102	PT-051908	Return Block Mounting Plate
103	092.18091	Return Sweep Block – 30 Deg
104	PT-053732-L	Tail Channel – LH
105	PT-053732-R	Tail Channel – RH
106	WA-015562	End Bed Spacer Weldment (Specify OAW)
107	PT-053737	Tail Pin Guide Mounting Plate
108	PT-115582-L	Chain Wearstrip – LH

REF NO.	PART NO.	DESCRIPTION
109	PT-115582-R	Chain Wearstrip – RH
110	PT-053735	Chain Guide Mounting Angle – Tail
111	PT-053731	Shoe Guard Support Channel
112	SA-023332	Sprocket Idler 100B42 W/Lagging
113	PT-103582	Tail Shaft – Slave for Induction Conveyor (Specify OAW)
114	—	End Shoe Cover
—	B-23212	Left Hand for Left hand Drive Unit
—	B-23213	Right Hand for Right Hand Drive Unit
115	PT-057975	Bearing Spacer Angle
116	B-18469	Oiler Brush Bracket
117	B-18450	Oiler Mount Bracket

118	095.155	Shank Brush for Chain lubricator
119	095.150	Chain Lubricator W/2 Feeds, 24V DC
120	043.205	3/4″ ID Split Lock washer
121	042.581	3/4-10 x 2-1/2″ Lg Carriage Bolt
122	041.106	3/4-10 NC2B Hex Nut – Regular
123	010.2076	Bearing – Cast Iron 4-Bolt, 2-15/16″ Bore
124	092.18101	Tail Pin Guide Block
125	PT-057731	Brush Mounting Bar – Tail
126	PT-057738	Brush Holder – Tail
127	PT-098832-288	Brush – Chain Cover, Tail
128	PT-063104	Belt Flap Mounting Angle
129	932.0076	Belt Flap for End Cover
130	PT-126624	Cover Plate
131	PT-063278-L	Drive Side Plate – LH (Induction Unit)
132	PT-063278-R	Drive Side Plate – RH (Induction Unit)
133	B-23159	Cover Assembly
134	B-23162	Pulley Plate Assembly
135	B-23165	8″ Drive Pulley (Specify OAW)
136	B-23575	2-1/4″ Dia Pulley (Specify OAW)
137	—	Slave Guard
—	PT-054187	Left Hand for Left Hand Drive Unit
—	PT-054252	Right Hand for Right Hand Drive Unit
138	PT-054188	Slave Guard Cover
139	PT-063281	Drive End Channel (Specify OAW)
140	PT-054189	Pulley Mounting Bracket
141	PT-054185	Induction Drive Channel
142	PT-062544	Slave Guard Mounting Bracket
143	B-23294	Bolt in Slider Pan (Specify OAW)
144	B-23295	Nip Point Guard (Specify OAW)

145	B-23296	6″ Take-Up Pulley (Specify OAW)
146	B-04161	Bearing Guide
147	B-09148	Bearing Guide Spacer
148	B-23297	Take-Up Plate Assembly
149	B-04842	11/16″ Hex Idler Bracket
150	—	2-1/2″ Roller – Conveyor Frame
—	B-15299-120	15″ BR
—	B-15299-168	21″ BR
—	B-15299-216	27″ BR
—	B-15299-264	33″ BR
—	B-15299-312	39″ BR
151	—	2-1/2″ Roller – Drive Shell
—	B-15299-240	30″ BR
—	B-15299-288	36″ BR
—	B-15299-336	42″ BR
—	B-15299-384	48″ BR
—	B-15299-432	54″ BR
152	B-23299-L	Butt Coupling – LH
153	B-23299-R	Butt Coupling – RH
154	B-23300	Top Drive Cover – Slave Side
155	B-23301	Lower Drive Guard (Specify OAW)
156	B-23302	Take-Up Bolt
157	B-23304	Idler Plate
158	B-23116	Top Drive Cover
159	010.203	1-7/16″ Bore 4-Bolt Bearing
160	010.2045	1-11/16″ Bore 4-Bolt Bearing
161	108.044327	44PTH8 – 35SD x 1-11/16″ Bore Timing Belt Sprocket
162	108.090332	90PTH8 – 35SF x 2″ Bore Timing Belt Sprocket

163	108.816003	1600PTH8M – 35 Timing Belt
164	P-01431	Side Channel Induction Unit (Specify OAL)
165	B-03916	Bed Spacer (Speify BR)
166	—	Bolt in Pan 18″ OAW
—	0265-084120	10-1/2 in. Long Pan
—	0265-108120	13-1/2 in. Long Pan
—	0265-132120	16-1/2 in. Long Pan
—	0265-144120	18 in. Long Pan
—	0265-156120	19-1/2 in. Long Pan
—	0265-168120	21 in. Long Pan
—	0265-172120	21-1/2 in. Long Pan

REF NO.	PART NO.	DESCRIPTION
—	0265-174120	21-3/4 in. Long Pan
—	0265-180120	22-1/2 in. Long Pan
—	0265-186120	23-1/4 in. Long Pan
—	0265-188120	23-1/2 in. Long Pan
—	0265-192120	24 in. Long Pan
—	0265-196120	24-1/2 in. Long Pan
—	0265-198120	24-3/4 in. Long Pan
—	0265-204120	25-1/2 in. Long Pan
—	0265-210120	26-1/4 in. Long Pan
—	0265-212120	26-1/2 in. Long Pan
—	0265-216120	27 in. Long Pan
—	0265-220120	27-1/2 in. Long Pan
—	0265-222120	27-3/4 in. Long Pan
—	0265-228120	28-1/2 in. Long Pan
—	0265-240120	30 in. Long Pan
—	0265-252120	31-1/2 in. Long Pan

—	—	Bolt in Pan 24″ OAW
—	0265-084168	10-1/2 in. Long Pan
—	0265-108168	13-1/2 in. Long Pan
—	0265-132168	16-1/2 in. Long Pan
—	0265-144168	18 in. Long Pan
—	0265-156168	19-1/2 in. Long Pan
—	0265-168168	21 in. Long Pan
—	0265-172168	21-1/2 in. Long Pan
—	0265-174168	21-3/4 in. Long Pan
—	0265-180168	22-1/2 in. Long Pan
—	0265-186168	23-1/4 in. Long Pan
—	0265-188168	23-1/2 in. Long Pan
—	0265-192168	24 in. Long Pan
—	0265-196168	24-1/2 in. Long Pan
—	0265-198168	24-3/4 in. Long Pan
—	0265-204168	25-1/2 in. Long Pan
—	0265-210168	26-1/4 in. Long Pan
—	0265-212168	26-1/2 in. Long Pan
—	0265-216168	27 in. Long Pan
—	0265-220168	27-1/2 in. Long Pan
—	0265-222168	27-3/4 in. Long Pan
—	0265-228168	28-1/2 in. Long Pan
—	0265-240168	30 in. Long Pan
—	0265-252168	31-1/2 in Long Pan
—	—	Bolt in Pan 30″ OAW
—	0265-084216	10-1/2 in. Long Pan
—	0265-108216	13-1/2 in. Long Pan
—	0265-132216	16-1/2 in. Long Pan

—	0265-144216	18 in. Long Pan
—	0265-156216	19-1/2 in. Long Pan
—	0265-168216	21 in. Long Pan
—	0265-172216	21-1/2 in. Long Pan
—	0265-174216	21-3/4 in. Long Pan
—	0265-180216	22-1/2 in. Long Pan
—	0265-186216	23-1/4 in. Long Pan
—	0265-188216	23-1/2 in. Long Pan
—	0265-192216	24 in. Long Pan
—	0265-196216	24-1/2 in. Long Pan
—	0265-198216	24-3/4 in. Long Pan
—	0265-204216	25-1/2 in. Long Pan
—	0265-210216	26-1/4 in. Long Pan
—	0265-212216	26-1/2 in. Long Pan
—	0265-216216	27 in. Long Pan
—	0265-220216	27-1/2 in. Long Pan
—	0265-222216	27-3/4 in. Long Pan
—	0265-228216	28-1/2 in. Long Pan
—	0265-240216	30 in. Long Pan
—	0265-252216	31-1/2 in Long Pan
—	—	Bolt in Pan 36″ OAW
—	0265-084264	10-1/2 in. Long Pan
—	0265-108264	13-1/2 in. Long Pan
—	0265-132264	16-1/2 in. Long Pan
—	0265-144264	18 in. Long Pan
—	0265-156264	19-1/2 in. Long Pan

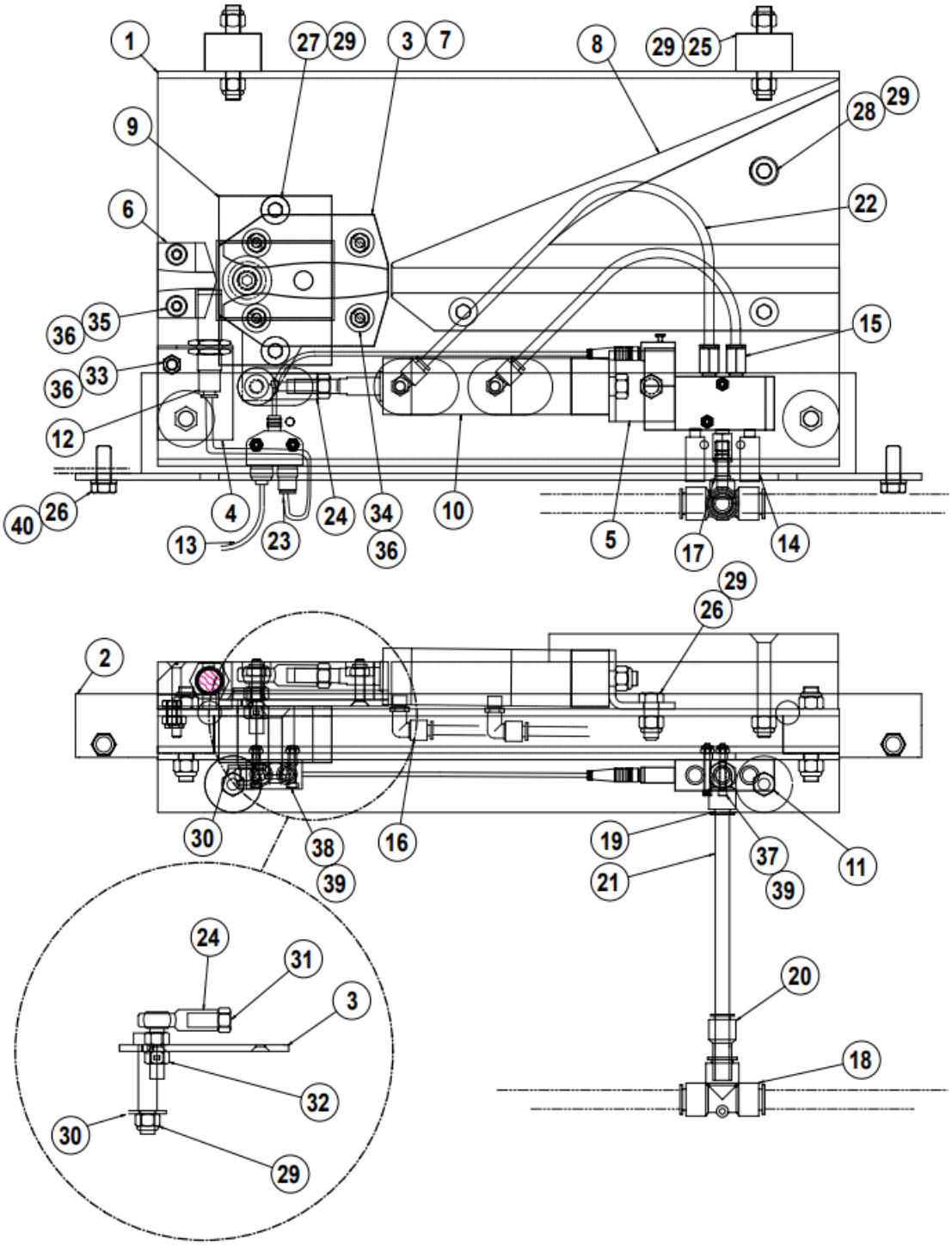
REF NO.	PART NO.	DESCRIPTION
—	0265-168264	21 in. Long Pan

—	0265-172264	21-1/2 in. Long Pan
—	0265-174264	21-3/4 in. Long Pan
—	0265-180264	22-1/2 in. Long Pan
—	0265-186264	23-1/4 in. Long Pan
—	0265-188264	23-1/2 in. Long Pan
—	0265-192264	24 in. Long Pan
—	0265-196264	24-1/2 in. Long Pan
—	0265-198264	24-3/4 in. Long Pan
—	0265-204264	25-1/2 in. Long Pan
—	0265-210264	26-1/4 in. Long Pan
—	0265-212264	26-1/2 in. Long Pan
—	0265-216264	27 in. Long Pan
—	0265-220264	27-1/2 in. Long Pan
—	0265-222264	27-3/4 in. Long Pan
—	0265-228264	28-1/2 in. Long Pan
—	0265-240264	30 in. Long Pan
—	0265-252264	31-1/2 in. Long Pan
—	—	Bolt in Pan 42″ OAW
—	0265-084312	10-1/2 in. Long Pan
—	0265-108312	13-1/2 in. Long Pan
—	0265-132312	16-1/2 in. Long Pan
—	0265-144312	18 in. Long Pan
—	0265-156312	19-1/2 in. Long Pan
—	0265-168312	21 in. Long Pan
—	0265-172312	21-1/2 in. Long Pan
—	0265-174312	21-3/4 in. Long Pan
—	0265-180312	22-1/2 in. Long Pan
—	0265-186312	23-1/4 in. Long Pan
—	0265-188312	23-1/2 in. Long Pan
—	0265-192312	24 in. Long Pan

—	0265-196312	24-1/2 in. Long Pan
—	0265-198312	24-3/4 in. Long Pan
—	0265-204312	25-1/2 in. Long Pan
—	0265-210312	26-1/4 in. Long Pan
—	0265-212312	26-1/2 in. Long Pan
—	0265-216312	27 in. Long Pan
—	0265-220312	27-1/2 in. Long Pan
—	0265-222312	27-3/4 in. Long Pan
—	0265-228312	28-1/2 in. Long Pan
—	0265-240312	30 in. Long Pan
—	0265-252312	31-1/2 in. Long Pan
167	—	1.9 O.D. Galv. Roller Assy.
—	B-01982-120	15″ BR
—	B-01982-168	21″ BR
—	B-01982-216	27″ BR
—	B-01982-264	33″ BR
—	B-01982-312	39″ BR
168	—	2-1/8 ” Dia. Idler
—	B-03894-120	15″ BR
—	B-03894-168	21″ BR
—	B-03894-216	27″ BR
—	B-03894-264	33″ BR
—	B-03894-312	39″ BR
169	B-00944	7/16″ Hex Idler Bracket
170	B-23575	2-1/4″ Dia. Pulley (Specify BR)
171	B-23578	Pulley Mount
172	B-23579	Nip Point Guard (Specify BR)
173	B-23581-L	Gussett Angle – LH
174	B-23581-R	Gussett Angle – RH
175	B-03191	Butt Coupling

176	B-23585	Belt Kit (Specify Infeed Section Lgth and OAW)
177	SA-061960	Pull Assembly (Specify OAW) (Not Shown)
178	B-24596	Chain Pick-Up Tool – Flat (Not Shown)
179	B-24591	Chain Pick-Up Tool – Bent (Not Shown)
180	SA-023516	Safety Switch Assembly – See Page 37
181	032.293	Encoder – 30PPR (Not Shown)
182	042.49010	1/4 x 1-1/4 Lg Shoulder Bolt (Not Shown)
183	PT-093001	End Coder Cover (Not Shown)

Pneumatic Divert Switch Assembly Parts Drawing

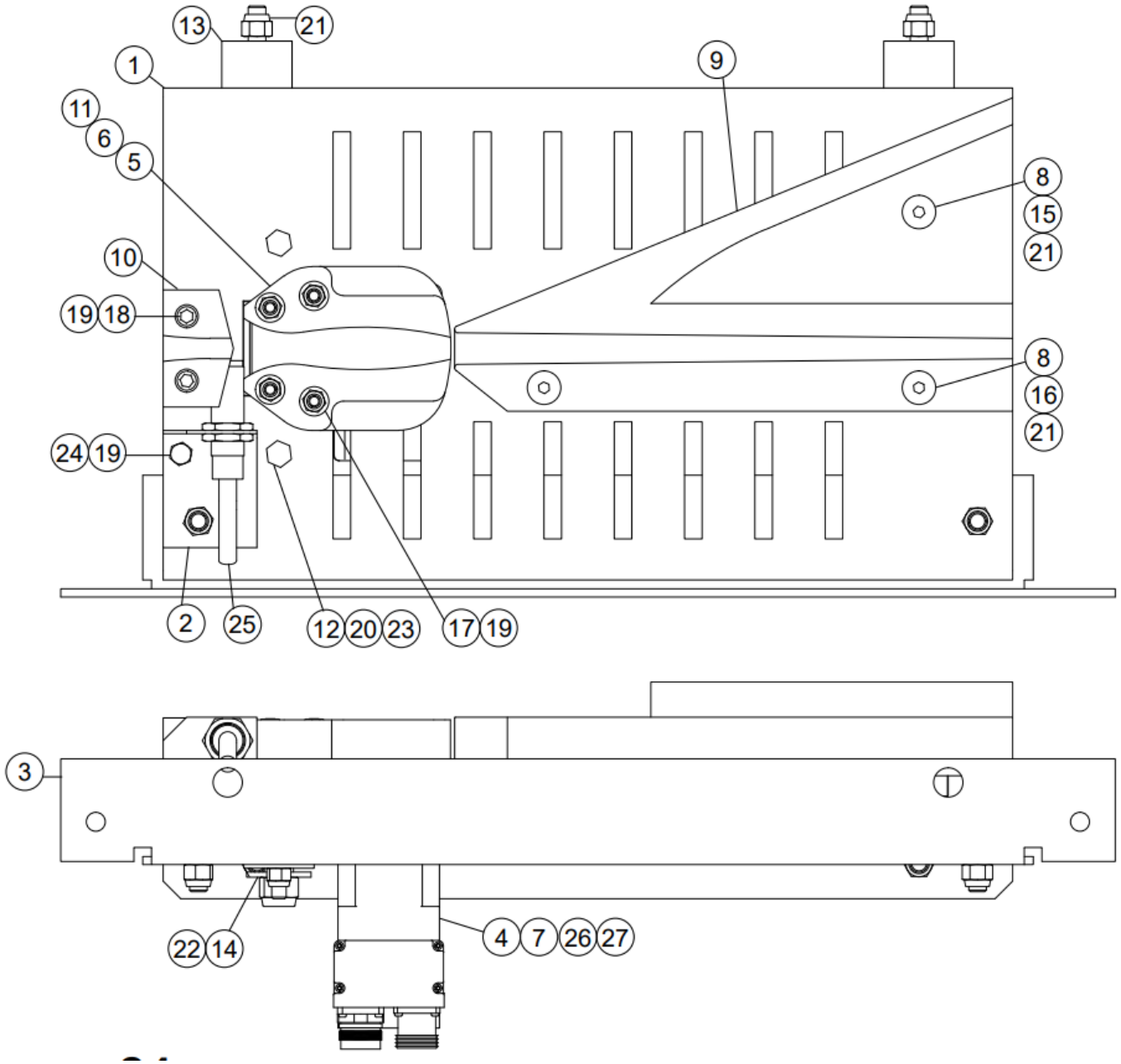


REF NO.	PART NO.	DESCRIPTION
1	—	Switch Channel
—	PT-051011	Left Hand
—	PT-051456	Right Hand
2	PT-051013	Switch mounting Angle
3	—	Switch Plate Weldment
—	WA-014806	Left Hand
—	WA-014807	Right Hand
4	—	Prox Switch mounting Angle

—	PT-051422	Left Hand
—	PT-051466	Right Hand
5	PT-051468	Air Cylinder mounting Angle
6	092.1849	Lead-In Block
7	092.1847	Switch Block
8	—	divert Block
—	092.18492	Left Hand
—	092.18491	Right Hand
9	092.183	Switch Bearing
10	094.1213	Air Cylinder – 5/8” Stroke, 32 mm Bore
11	094.10795	4-Way Single Solenoid Air Valve – 1/8” NPT
12	032.2113	Smart Proximity Switch – 24 VdC, Custom
13	32.21121	Cordset – for Proximity Switch 032.2112
14	0923.0059	Muffler
15	094.14	Brass Conn-Straight male, 1/4” PLST – 1/8” NPT
16	094.1406	Plastic Elbow – male, 360° Swivel w/Ret
17	094.14015	Brass Conn-Straight male, 1/8” NPT – 3/8” PLST
18	094.14089	Plastic Union Tee – 1/2” PLST – 1/2” PLST
19	094.14083	Plastic Elbow – 3/8” PLST – 1/2” Push-In
20	094.1465	Plug-In Reducer – 3/8” PLST – 1/2” Push-In
21	094.1149	3/8” Od Polyurethane Tubing – Black
22	094.11481	1/4” Od Polyurethane Tubing – Green
23	032.21124	Y-Plug Cable Connector
24	019.2222	female Rod End – 3/8” Bore, 3/8-24 Rh Thrds
25	092.163	Rubber Vibration mount – 1 1/2” dia
26	040.303	3/8-16 x 1” Lg Hex Head Cap Screw
27	042.662	3/8-16 x 2” Lg Hex Skt flt Hd Cap Screw
28	042.664	3/8-16 x 2 3/4” Lg Hex Skt flt Hd cap Screw
29	041.798	3/8-16 NC2B Hex Locknut – Nylon Insert
30	043.102	3/8” Id flat Steel Washer
31	041.1021	3/8-24 Nf2B Hex Nut – Regular Series
32	041.505	3/8-24 Nf2B hex 2-Way Locknut – Reg
33	040.1005	1/4-20 x 1/2” Lg Hex Head Cap Screw

34	042.653	1/4-20 x 1 1/4” Lg Hex Skt flt Hd Cap Screw
35	042.654	1/4-20 2” Lg Hex Skt flt Hd Cap Screw
36	041.800	1/4-20 NC2B hex Locknut – Nylon Insert
37	042.59025	#6-32 x 1 1/4” Lg Socket Head mach Screw
38	042.5902	#6-32 x 1” Lg Scoket Head mach Screw
39	041.8005	#6-32 Hex Locknut – Nylon Insert
40	043.202	3/8” Id Split Lockwasher, medium

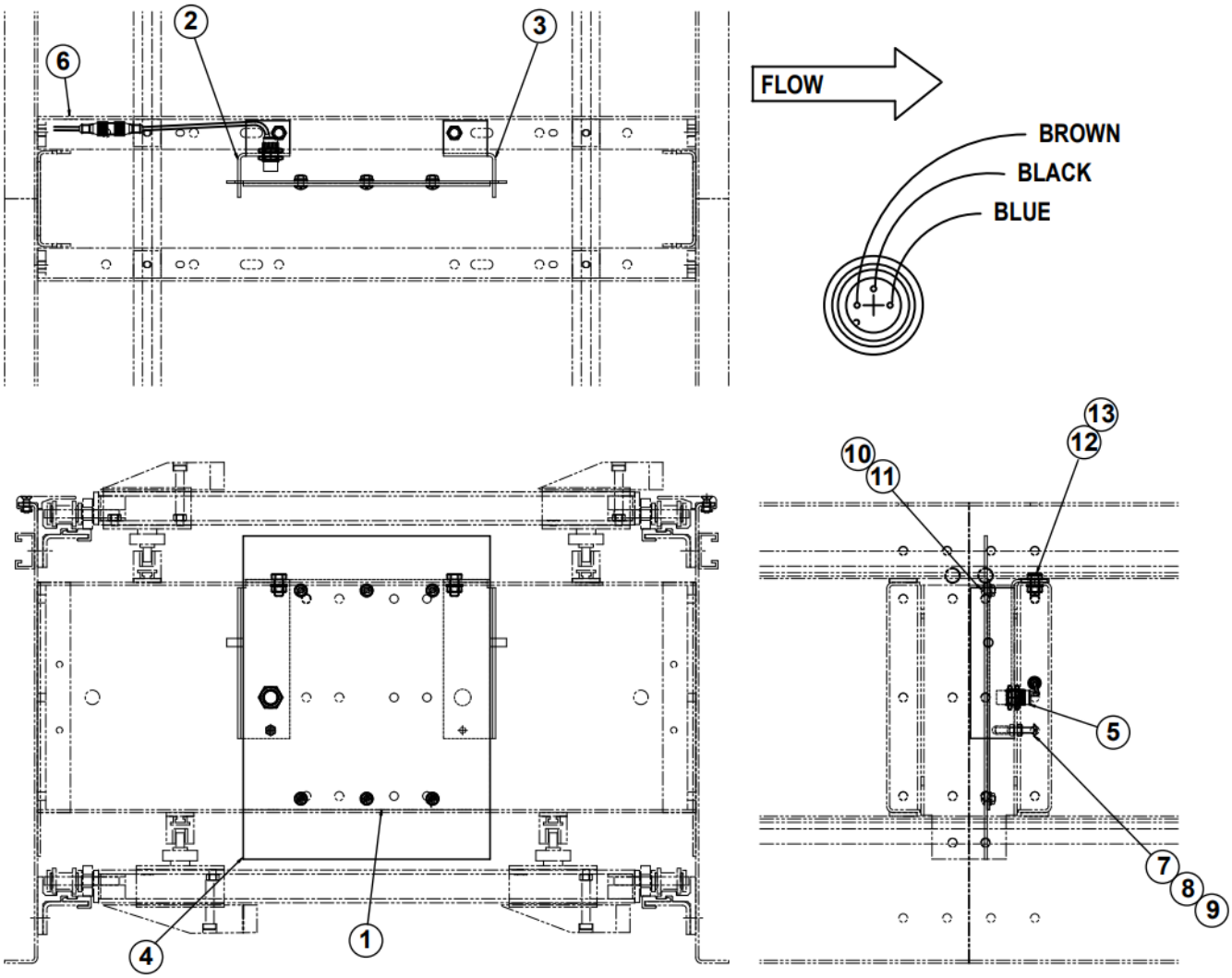
Electric Divert Switch Assembly Parts Drawing



REF NO.	PART NO.	DESCRIPTION
1	—	Switch Channel

—	PT-124169	Left Hand
—	PT-112230	Right Hand
2	—	Prox Mounting Angle
—	PT-124179	Left Hand
—	PT-116223	Right Hand
3	PT-117772	Switch Mounting Angle
4	PT-112229	Spacer Plate
5	PT-109968	Cam
6	WA-034602	Switch Pivot
7	941.810101	Baldor Servo
8	098.160	Spacer – .515 ID x .875 OD x .625 Lg
9	—	Divert Block
—	092.18492	Left Hand
—	092.18491	Right Hand
10	092.1849	Lead-in Block
11	092.1848	Switch Block
12	092.1832	Bearing Block
13	092.163	Rubber Vibration Mount
14	043.102	1/2 ID Flat Washer
15	042.6642	3/8-16 x 3 1/4” Lg Skt Flt Hd Cap Screw
16	042.663	3/8-16 x 2 1/2” Lg Skt Flt Hd Cap Screw
17	042.6535	1/4-20 x 1 3/4” Lg Hex Skt Flt Hd Cap Screw
18	042.59555	1/4-20 x 2 1/2” Lg Skt Hd Cap Screw
19	041.800	1/4-20 Hex Locknut – Nylon Insert
20	041.7989	5/16-18 Hex Locknut – Nylon Insert
21	041.798	3/8-16 Hex Locknut – Nylon Insert
22	041.796	1/2-13 Hex Locknut – Nylon Insert
23	040.2031	5/16-18 x 2” Lg Hex Hd Cap Screw
24	040.1005	1/4-20 x 1/2” Lg Hex Cap Screw
25	032.2113	Smart Prox Switch
26	042.80526	M5-.8 x 25M Lg Hex Skt Hd Cap Screw
27	046.061	M5-.8MM Hex Locknut – Nylon Insert

Safety Switch Assembly



REF NO.	PART NO.	DESCRIPTION
1	PT-054698	Switch Sensor Plate (Specify OAW)
2	PT-054699-L	Mounting Bracket – LH, Safety Prox
3	PT-054669-R	Mounting Bracket – RH, Safety Prox
4	—	Switch Sensor Belt
—	069.7161	33” OAW
—	069.7162	39” OAW
—	069.7163	45” OAW
—	069.7165	51” OAW
—	069.7166	57” OAW
5	032.2116	Prox Switch – DC, Normally Open
6	941.423003	Cable – 4 pin, 3m, Str Push F to Pigtail
7	041.100	1/4-20 Hex Nut – Semi-Fin, Regular
8	042.3027	1/4-20 x 1 3/4” Lg Truss Head Bolt
9	090.220	Red Vinyl Plastisol Cap
10	042.300	1/4-20 x 1/2” Long Tress Head Bolt
11	049.527	1/4-20 Small Flange Locknut
12	040.302	3/8-16 x 3/4” Lg Hex Head Cap Screw
13	049.5285	3/8-16 Small Flange Locknut

Preventive Maintenance Checklist

Note: Check Set Screw for proper torque value after the first 24 hours of operation.
The following is a general maintenance checklist which covers the major components of your conveyor. This will be helpful in establishing a standard maintenance schedule.

COMPONENT	SUGGESTED ACTION	SCHEDULE		
		W	M	Q
Motor	Check Noise			
	Check Temperature			
	Check Mounting Bolts			
Reducer	Check Noise			
	Check Temperature			
	Check Oil Level			
Carrying Chains	Check Lubrication			
	Check Tension			
Carrying Chains Sprockets	Check Alignment with Chain Guards			
Slat/Shoe Assemblies	Check Physical Condition			
	Check Operation			
Carrying Chain Guides	Check for Wear			
Divert Switches	Check Physical Condition			
	Check Operation			
Chain Oiler	Check Oil Level			
Air Regulator	Check Pressure (60 P.S.I. Normal)			
Air Filter	Check Physical Condition			
Structural	General Check: Check All Loose Bolts, etc. tight ened			
Divert Blocks	Check Physical Condition			
Divert Angles	Check Physical Condition			

Documents / Resources

	**HYTROL ProSort 400 Elite High Speed Sortation Conveyor** [pdf] Instruction Manual 421, 431, ProSort 400 Elite, ProSort 400 Elite High Speed Sortation Conveyor, High Speed Sortation Conveyor, Sortation Conveyor, Conveyor

References

- **Hytrol Conveyor Parts & Accessories – HytrolParts.com**
- **Hytrol Conveyor Parts & Accessories – HytrolParts.com**
- **Hytrol Conveyor Parts & Accessories – HytrolParts.com**