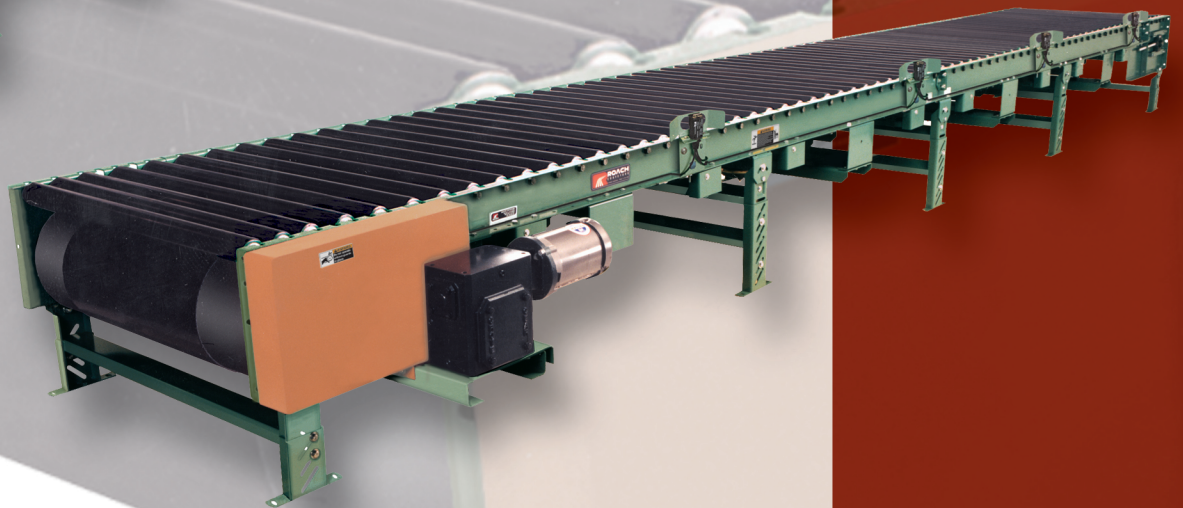
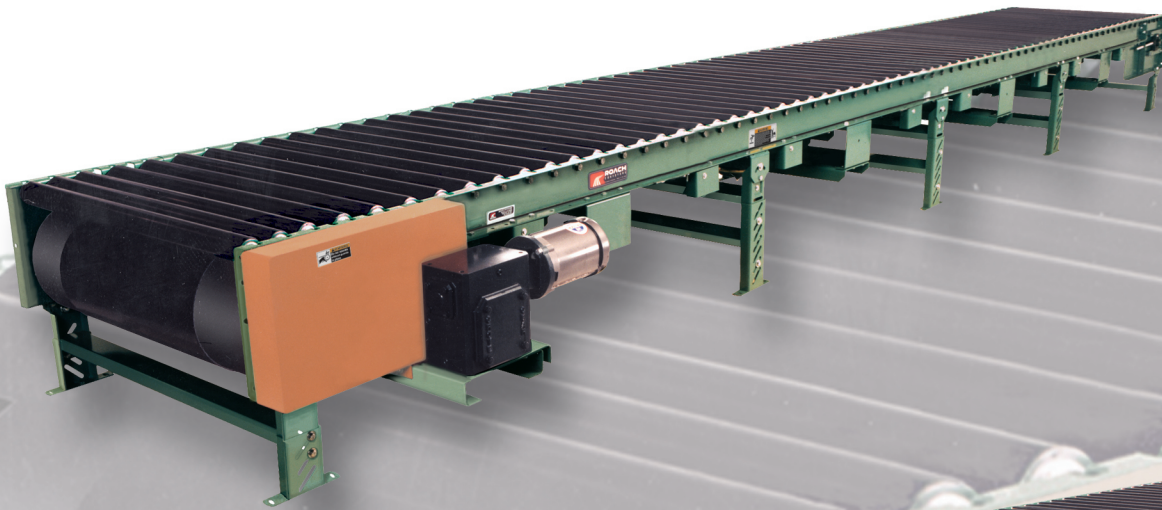




OWNER'S MANUAL



Zero Pressure Accumulators

Models 251ZPA • SZ251ZPA

DO NOT OPERATE BEFORE READING THIS HANDBOOK
KEEP IN A SAFE PLACE – DO NOT DISCARD

TECH HANDBOOK FOR 251ZPA & SZ251ZPA

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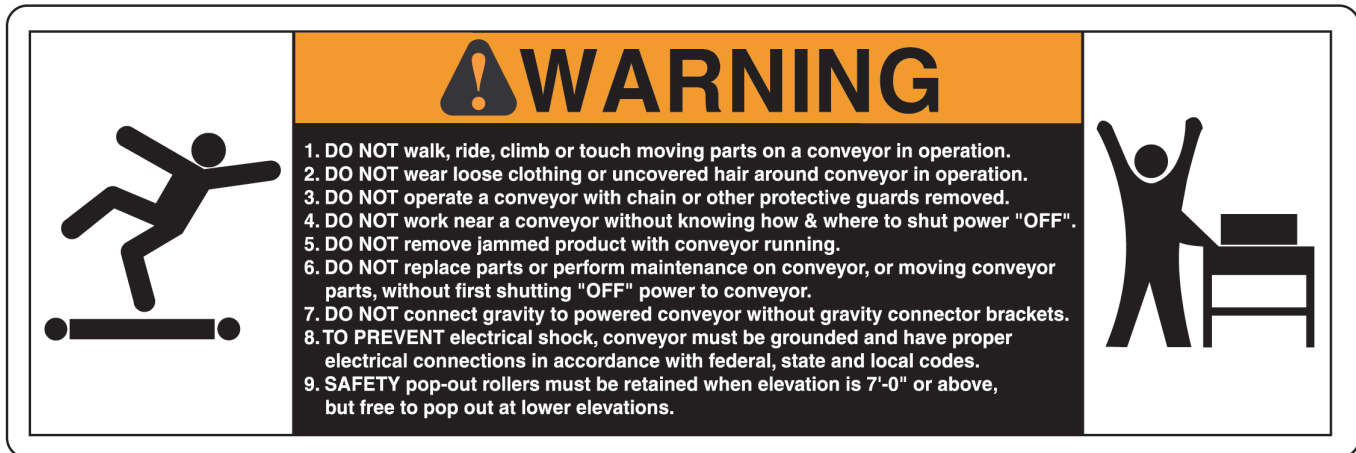
WARNING LABELS



ABOVE: Label attached to all protective guards (drives, roller guards, etc.)



ABOVE: Label placed near all pulleys (center drives, end drives, tail pulleys)



ABOVE: Label placed near all drive assemblies and at 30' intervals

CAUTIONS, WARNINGS AND HAZARDS

INTRODUCTION

This manual was prepared as a “how-to-guide” for installers, end-users and maintenance personnel. It is also intended to educate both owner (purchaser) and all individuals working around the unit, of potential hazards.

With proper installation and maintenance, conveyors are essential for achieving a variety of functions essential in today’s industrial marketplace. By following a simple, periodic maintenance schedule, the life of a typical conveyor (or, most any type of machinery-including our automobiles!) will increase when com-

pared to a similar unit in an application receiving little or no maintenance. You may find that a conveyor can become your best workplace friend by following simple safety guidelines. Failure to follow even the most basic safety suggestions can result in serious personal injury.

Conveyors contain many moving parts-pulleys, belting, chains, sprockets, shafts, rollers, etc. Therefore, it is imperative to become familiar with basic unit operation and know all points of potential hazards.

Remember, when working around or near conveyors (and any industrial machinery)

it is your responsibility to become familiar with the unit, to know potential hazards (many are noted with caution labels) and to operate unit in strict accordance with the safety guidelines in this manual.

Keep this manual in a safe place for future reference. It should be placed where appropriate personnel may maintain proper maintenance and records.


This manual must be read by all new users before operating or working near this unit.


WARNING


**DO NOT OPERATE BEFORE READING THIS MANUAL!
KEEP IN SAFE PLACE--DO NOT DISCARD!**


CAUTIONS, WARNINGS AND HAZARDS


WARNING


 ALWAYS anchor permanent supports to floor (or mounting surface). Use 3/8" x 2-1/2" (or longer) wedge anchors for permanent installation in concrete flooring.


 It is the responsibility of the customer and installation personnel to supply and install net or mesh guarding on overhead mounted conveyors to prevent product and/or debris from falling to floor in areas where required.


 If belt conveyor pulleys are adjusted during installation or maintenance, nip point guard (at drive end on end drive unit) must be readjusted. Nip point guard (take-up end) is automatically adjusted when take-up pulley is adjusted. Nip point guards at both ends of conveyor (center drive) must be readjusted. Center drive guards MUST be replaced after installation or maintenance.


 Before unit is ready for operation, snub roller guard (cover) must be adjusted to ensure safe unit operation.


 Belt lacing must be kept in good condition for safe work environment.

 To check drive sprocket alignment, shut “OFF” and lock out power source before attempting any adjustments.

 To check drive sprocket tension, shut “OFF” and lock out power source before any adjustments are attempted.

 Electrical controls must be designed by a qualified electrical engineer to ensure that appropriate safety features (emergency stops, pull cords, switches, etc.) are installed on unit for safe operation. Before conveyor start-up, all operators and other personnel coming in contact with unit must be properly trained and must have read accompanying Tech Handbook.

 Upon start-up, if belt tracks to one side, turn unit “OFF”, lock out power source and confirm that conveyor is square and that all prime tracking components are square with bed. Belt tracking adjustments should be performed by trained personnel ONLY. Read section on “Belt Tracking” completely before attempting belt tracking adjustments.

 Only trained personnel shall perform maintenance functions. Before maintenance operations are performed, shut conveyor “OFF” and lock out power source to prevent unauthorized start-up. When maintenance is completed, only authorized personnel shall be permitted to start conveyor following maintenance or other emergency shut-off.

SAFETY INFORMATION

IMPORTANT SAFETY GUIDELINES

! WARNING

WARNING: All personnel coming in contact with this conveyor should be aware of the following safety guidelines BEFORE USING OR WORKING AROUND CONVEYOR. NOTE: ALWAYS notify Roach Manufacturing® whenever any conveyor is used in an application or condition other than was originally intended. Failure to notify Roach® may allow conveyor to be operated in a hazardous operating condition. Injuries resulting from negligence or violation of safety instructions hereby removes responsibility of product liability claims from Roach®.

! Do not operate conveyor with protective guards removed. This includes chain guards, belt guards, snub roller guards, center drive guards and any other safety guard.

! Do not walk, ride, climb, or touch moving parts on a conveyor in operation.

! Do not wear loose clothing or uncovered hair around conveyor.

! Do not work near conveyor without knowing how & where to shut power "OFF" and lock out power source.

! Do not remove jammed product with conveyor running.

! Do not replace parts or perform maintenance on conveyor, or moving conveyor parts, without first shutting "OFF" power to conveyor and locking out power source.

! Do not connect gravity to powered conveyor without safety gravity connector brackets.

! To prevent electrical shock, conveyor must be grounded, and have proper electrical connections in accordance with federal, state, and local codes.

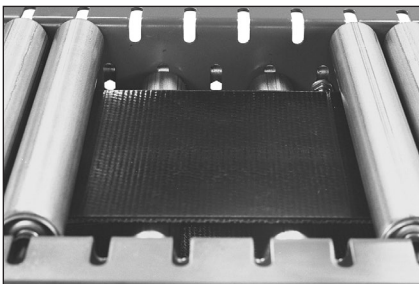
! Safety pop out rollers in conveyors installed above 7'-0" elevation must be retained by guard rail, clips, etc. Safety pop out rollers must be allowed to pop out

when conveyors are installed at or below 7'-0" elevation.

! It is the responsibility of conveyor end-user to comply with all safety standards including OSHA and other federal, state, and local codes or regulations. Install protective guarding and other related safety precautionary equipment to eliminate hazardous operating conditions which may exist when two or more vendors supply machinery for related use.

! Any violation of above safety instructions hereby removes all product liability claims from Roach Manufacturing Corporation®.

UNDERSTANDING POP OUT ROLLERS



SLOTTED FRAME ALLOWS ROLLERS TO EASILY POP OUT (rollers removed for clarity)



WHEN GUARD RAIL IS ADDED, DO NOT COVER POP OUT SLOTS IN CONVEYOR FRAME*

WARNING: Belt driven live roller conveyors must have safety pop out tread rollers when installed below 7'-0" elevation. Conversely, when installed at 7'-0" or greater elevation, tread rollers must NOT be allowed to pop out of frame. Shut conveyor OFF and lock out power source until above safety considerations are completely adhered to.

*NOTE: Guard rail may be used to hold rollers in frame when installed at 7'-0" or higher elevations.

In most instances, live roller conveyor frames are equipped with slots in the frame for tread rollers. Why is this necessary? When installed below 7'-0" elevation, tread rollers must be designed to pop out of the frame to prevent injury to operator or individuals coming in contact with tread rollers. However, when installed at 7'-0" and greater elevation,

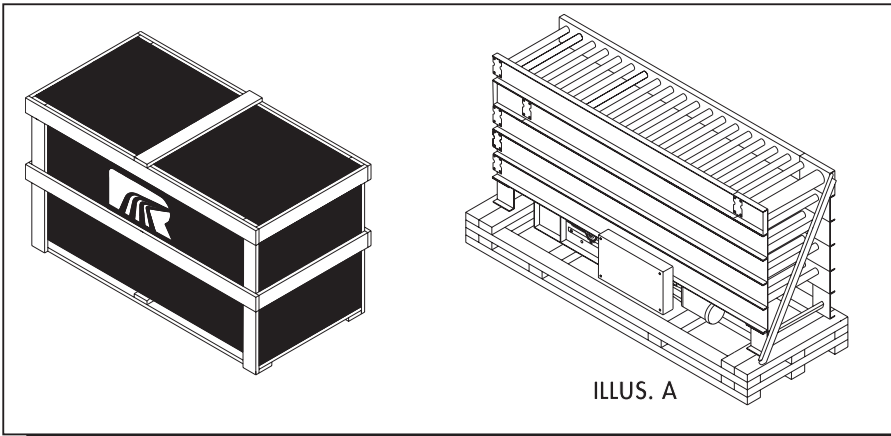
tread rollers must NOT be allowed to pop out. Individuals stationed below the conveyor could be injured by rollers that inadvertently become free from conveyor frame. Therefore, a belt driven live roller originally supplied with slotted frame and pop out rollers, must be modified if it is moved to 7'-0" or higher elevation. A special hold-down angle must be installed

to eliminate pop out rollers. Also, when a live roller conveyor that does not feature pop out rollers, is used in an application below 7'-0" elevation, conveyor MUST be modified to include safety pop out rollers.

Contact Roach national sales at 870-483-7631 with conveyor serial number for additional information.

RECEIVING AND INSPECTION

SHORTAGES, DAMAGES AND RETURN AUTHORIZATIONS



NOTE: Do not return goods to factory without prior, written return authorization. Unauthorized returns are subject to refusal at factory.

Before uncrating, check the quantity of items received against bill of lading to confirm that all material has been received. Examine the condition of the equipment to determine if any damage has occurred.

Also, it is possible that some items may become separated from the original shipment. Therefore, when receiving goods,

it is imperative that the bill of lading (or, accompanying freight documentation) be checked to ensure receipt of ALL units ordered including ALL accessories.

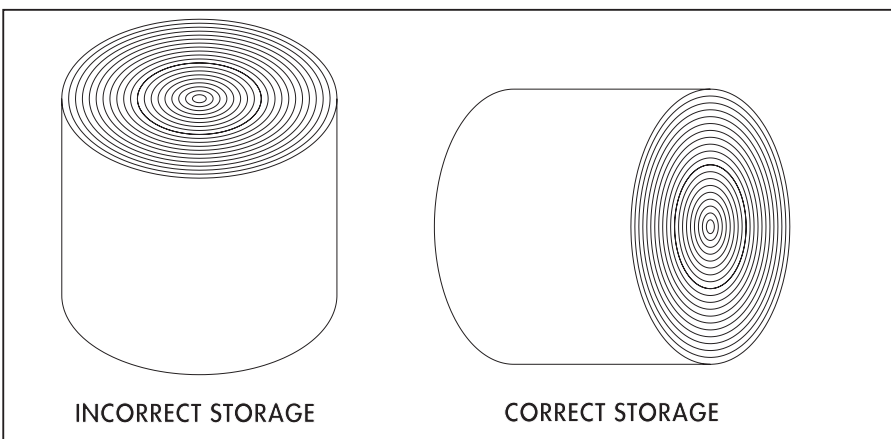
Damage and/or shortage in shipment should be reported immediately to both vendor and carrier. Obtain a signed damage report from carrier agent and send copy to vendor. Do not repair any

damage before obtaining this report.

For damaged shipments, consult factory to determine if entire shipment must be returned to factory for repair or if an immediate order should enter production to produce a new, replacement shipment.

In illustration A above, model 196ZPA is shown palletized for shipment.

UNCRATING AND STORAGE



NOTE: Never store belt placed directly on floor. Elevate belting to prevent contact with floor moisture.

After receipt and initial inspection is completed, carefully remove crating and look for essential components and specific accessories that may have been boxed and attached (or 'banded') to crating material. Pop out tread rollers, guard rails and hardware are often packaged and shipped in this manner. Save all hardware for subsequent use by installa-

tion personnel.

The drive section will be shipped mounted to its actual operating bed section (see illustration at top of page). Intermediate bed sections are shipped mounted on top of drive bed section with formed steel stiffener (spacer) brackets.

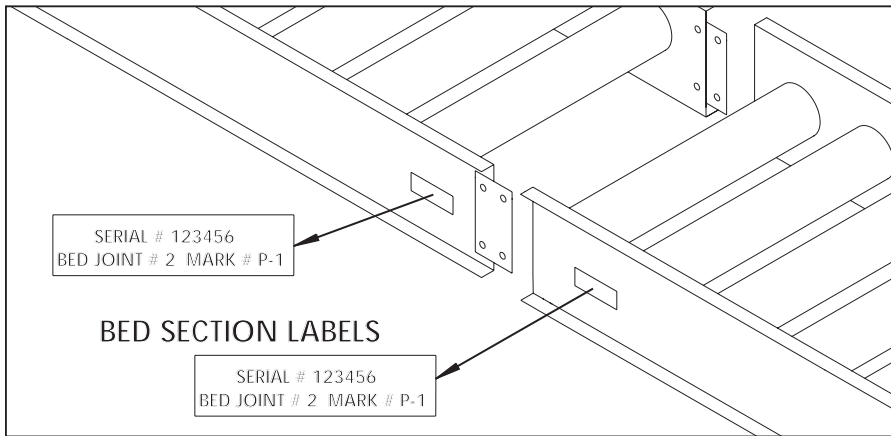
Belting must be housed in dry quarters.

Do not store belt on edge (see illustration above). Also, never store belt placed directly on floor. Elevate belting to prevent contact with floor moisture.

Some items (electric motors, gearbox, etc.) may be shipped direct from their manufacturer to final destination. Thus, the conveyor may consist of two or more separate shipments.

GENERAL INSTALLATION INFORMATION

COUPLINGS / ATTACHING BED SECTIONS



When preparing to install conveyor, first locate all component sections in the actual installation area. After uncrating, place unit bed sections conveying side up. Each bed section is marked to indicate proper sequence for mating (see illustration above for typical bed section labels).

It is critical for bed sections to be field assembled in proper sequence following

bed section labels. Refer to bed section drawing for location of supports and assemble as shown.

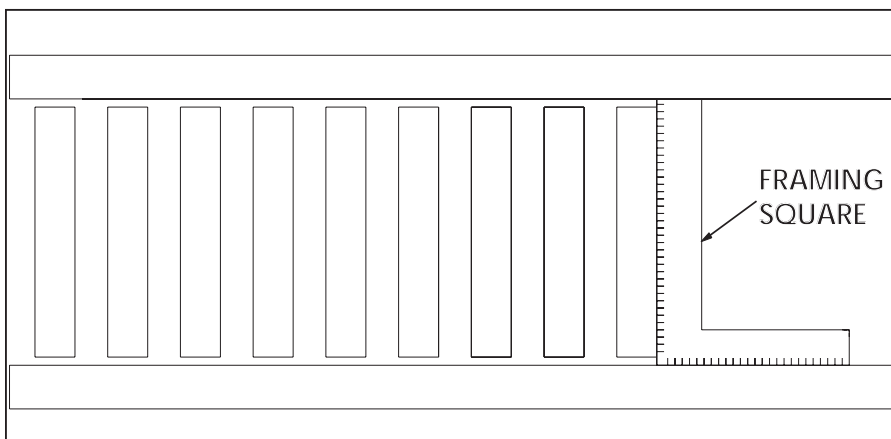
Conveyors are set up at the factory, bed section labels are applied, unit is test run and receives rigorous quality assurance inspection. At this time unit becomes field-ready. Therefore, it is critical that field installation personnel re-assemble unit

NOTE: It is critical for bed sections to be field assembled in proper sequence following bed section labels.

by mating beds in accordance with bed section labels (and bed section drawing).

Create a reference base line on floor by marking a chalk line along the centerline of conveyor. Follow base line when installing unit.

UNIT SQUARENESS



Use mechanical hoist (fork truck or other available means) to raise bed sections to approximate installed elevation. Mate intermediate sections with splice plates to join bed sections (see illustration at top of page).

One of the most critical elements of proper installation is unit squareness. Check drive pulley, tail pulley, snub roller (if

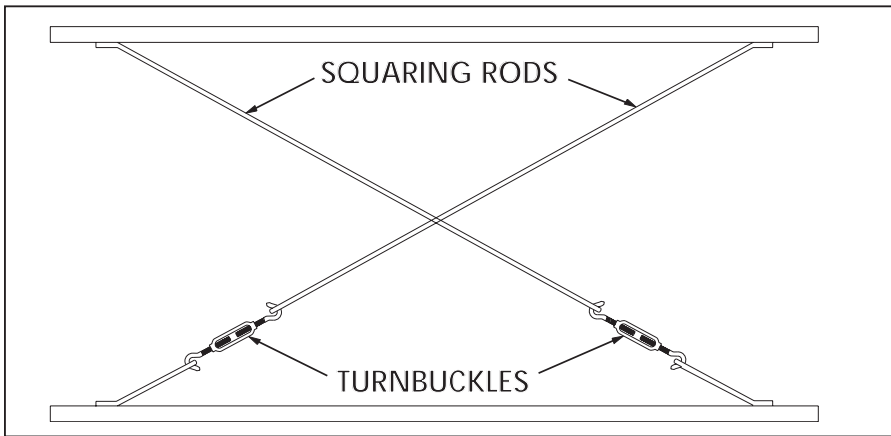
used in drive assembly) and return roller assemblies to ensure these components are square with unit bed. A framing square can be utilized to confirm that conveyor frame is square. Also, a diagonal measurement across the conveyor frame may be used to determine if the frame is out of square. If measurement is not equal, the frame is not square. Rollers

NOTE: One of the most critical elements of proper installation is unit squareness. Check pulleys, snub and return rollers and square each with unit bed.

will be skewed and product will run to one side of the conveyor or perhaps, off of the conveyor in some cases. The importance of unit squareness is perhaps the single most critical stage of installation with belt driven live roller conveyors. If unit is out of square, proceed to next section for adjustments required to square frame and components.

GENERAL INSTALLATION INFORMATION

SQUARING BED SECTIONS



NOTE: Squaring rods are supplied on the underneath side of bed sections and feature a turnbuckle assembly which is used to square accompanying bed sections. Adjust the turnbuckle until the frame is squared.

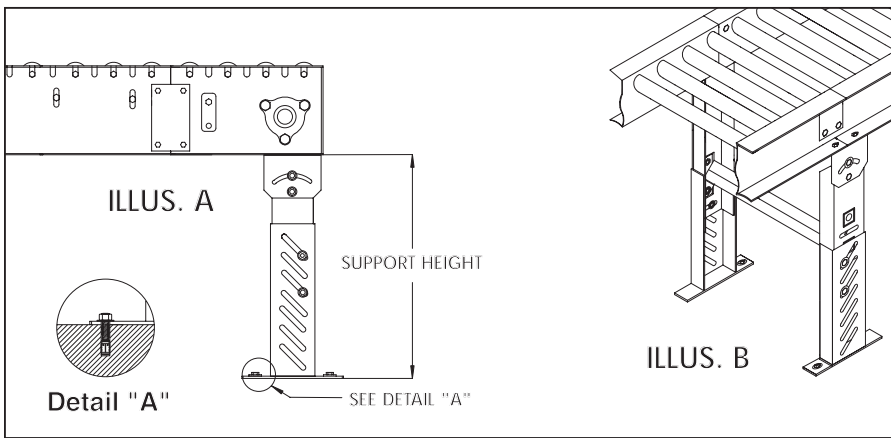
When conveyor section is determined to be out of square, adjustments must be made before proceeding to next section.

In illustration above, "x-bracing" or "squaring rods", are used to square a frame that has become "racked" or is otherwise out of square. It is common for bed sections to become racked during transit, thus requiring adjustment during

field assembly. Squaring rods are supplied on the underneath side of bed sections and feature a turnbuckle assembly which is used to square accompanying bed sections. Adjust the turnbuckle until the frame is squared. Confirm by again taking a diagonal measurement. The frame is then square when diagonal measurements from opposite sides are equal in measurement.

Next, tighten bolts in splice plates when frame is square. Finally, conveyor must be installed at level elevation across the width to prevent erratic belt tracking or to prevent package from travelling to one side of conveyor (which is especially possible on long conveyor lines when unit is not installed level across the width).

IDENTIFYING / INSTALLING PERMANENT FLOOR SUPPORTS



*MINIMUM SUPPORT HEIGHT			
MODEL SH (3000# CAPACITY)		MODEL SS (6000# CAPACITY)	
SH-1	6-1/4"	SH-7	25-3/4"
SH-2	7-3/4"	SH-8	31-3/4"
SH-3	10-3/4"	SH-9	43-3/4"
SH-4	13-3/4"	SH-10	55-3/4"
SH-5	16-3/4"	SH-11	67-3/4"
SH-6	19-3/4"	SH-12	79-3/4"
SS-1	7-1/4"	SS-7	34-1/4"
SS-2	10-1/4"	SS-8	46-1/4"
SS-3	13-1/4"	SS-9	58-1/4"
SS-4	16-1/4"	SS-10	70-1/4"
SS-5	20-1/4"	SS-11	80-1/4"
SS-6	24-1/4"	SS-12	92-1/4"

CAUTION: Always anchor permanent supports to floor (or mounting surface). Use 3/8" x 2-1/2" (or longer) wedge anchors for permanent installation in concrete flooring.

Permanent supports may be installed on conveyors at various locations. However, it is most common to use single tier permanent floor supports at each end of a powered section (see illustration A above) and where intermediate bed sections are adjoined (see illustration B above). Notice intermediate supports have two lag bolts in a diagonal pattern while end (terminal) supports have four lag bolts,

one in each of the four foot plate mounting holes.

When two (or more) powered conveyors are placed end-to-end, a single tier permanent support may be used at the end junction commonly supporting both units. Check load rating of support before using this method of installation.

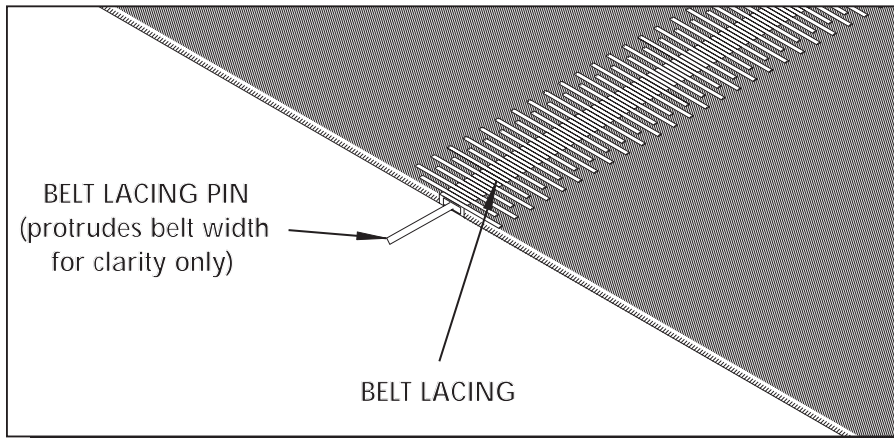
Adjust elevation to top of conveyor by loosening bolts in support uprights, rais-

ing or lowering conveyor and fully tightening bolts at desired elevation. Tighten all bolts in supports before unit operation. Complete support installation by lagging support attachment plates to floor. Confirm that unit is level across width of conveyor before completing final support height adj.

*Supports are normally shipped at minimum support height. See chart above.

INSTALLATION OF BELTING

BELT CONNECTIONS



CAUTION: Belt lacing must be kept in good condition for safe work environment.

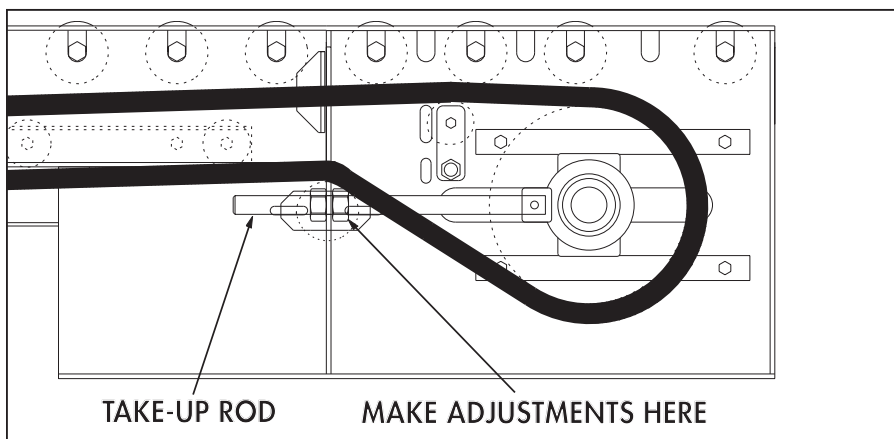
Conveyor belting is cut to proper length, laced and assembled on conveyor at the factory. It is test run and inspected before it is shipped to its final destination.

Unit is normally supplied with Trackmate belting, friction surface both sides. Therefore, belt has no "up" or "down" surface to determine before threading belt on conveyor. However, when sup-

plied with PVC-120 drive belting, "COS" (cover one side, friction surface other side), the correct side to be placed down must be determined. The friction surface offers decreased friction and less driving force. The friction side appears dull and grainy; the cover side darker and shiny. To maximize driving ability, place cover side of belt up.

If unit is shipped "knocked down," belt must be re-threaded on unit during installation (see opposite page). Join ends of belt as shown above with lacing pin. Loosen threaded take-up rods (if necessary) at take-up pulley equal amount on both sides and re-adjust when belt is installed keeping pulley square with conveyor bed. A belt puller can also be used to join belting.

MAINTAINING PROPER BELT TENSION



CAUTION: Belt lacing must be kept in good condition for safe work environment. Also, do not operate unit with improper belt tension. Unit is subject to abnormal wear and maintenance when operated with belt incorrectly adjusted.

Maintaining proper belt tension is vital to unit operation. Enough tension should be maintained so that drive pulley does not slip under fully loaded conditions.

It is perfectly normal for a belt to stretch (in varying climatic conditions) under rated loading. Therefore, a short belt insert or "belt patch" (or patches) is provided for future removal when belting has stretched

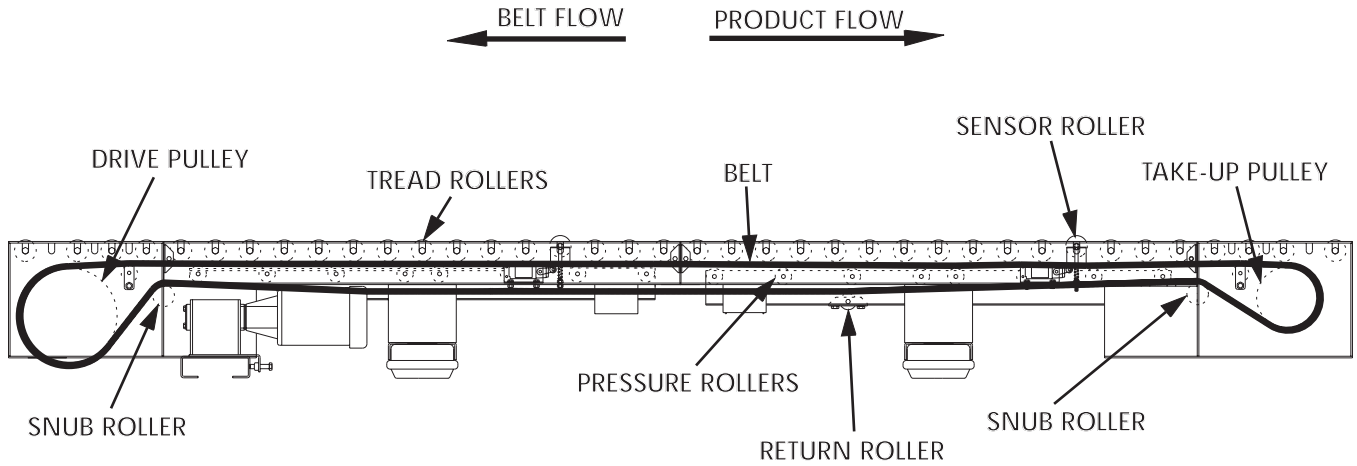
beyond means of conveyor take-up assembly. For yet additional belt take-up, the belt should be cut and re-laced to maintain proper belt tension.

To adjust conveyor take-up, adjust position of take-up rod (see illustration above) as required. Remember to equally adjust both sides to hold take-up pulley square (to maintain unit squareness for belt tracking).

Operating unit with slipping belt will decrease life of both belting and pulley lagging. Also, do not operate unit with too much tension on belt. This will decrease belt life and may harm unit drive and take-up bearings. Over tensioning belt requires additional horsepower from unit drive.

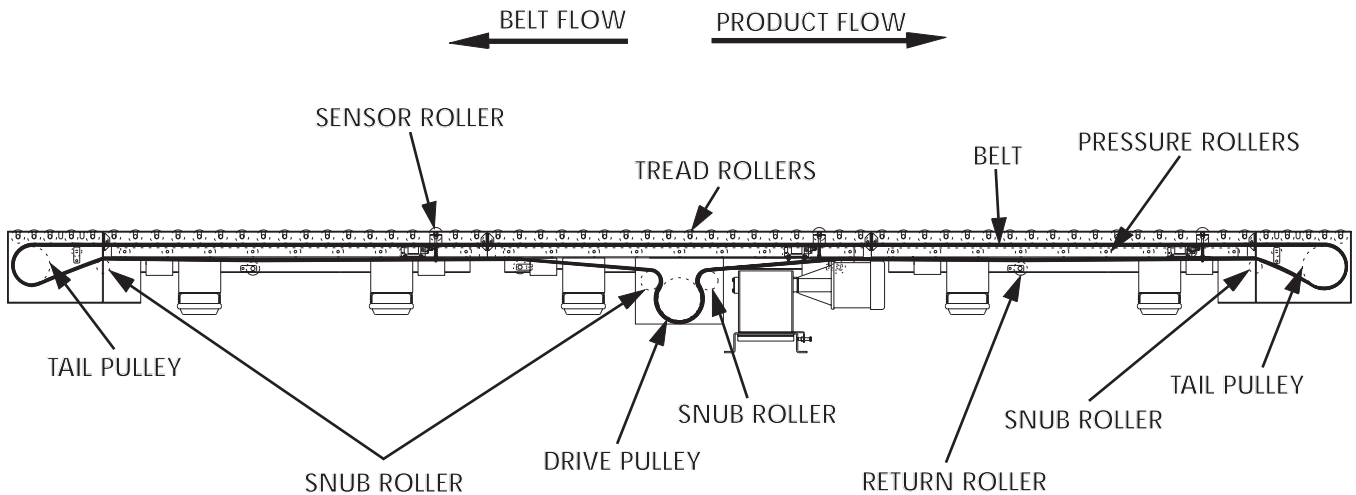
BELT PATH

ILLUSTRATION FOR UNITS WITH END DRIVE



WARNING: Belt driven live roller conveyors must have safety pop out tread rollers when installed below 7'-0" elevation. When installed at 7'-0" or higher elevation, tread rollers must NOT be allowed to pop out of frame.

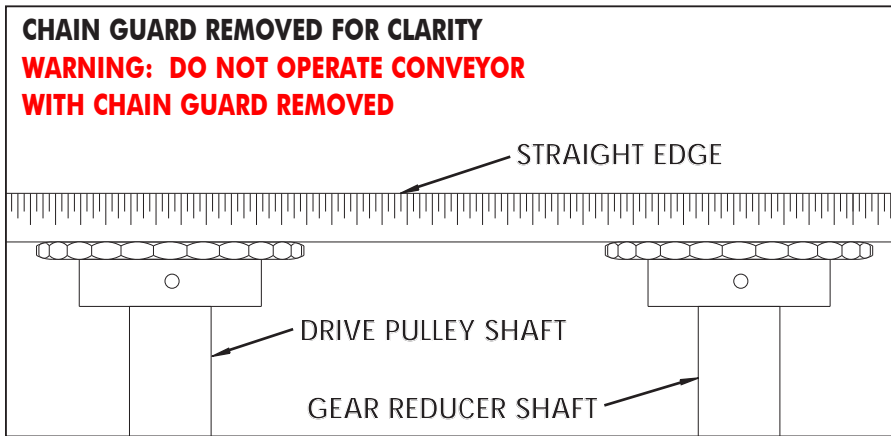
ILLUSTRATION FOR UNITS WITH CENTER DRIVE



WARNING: Belt driven live roller conveyors must have safety pop out tread rollers when installed below 7'-0" elevation. When installed at 7'-0" or higher elevation, tread rollers must NOT be allowed to pop out of frame.

START-UP PROCEDURES

DRIVE CHAIN AND SPROCKET ALIGNMENT



Set up and maintenance of drive sprocket and drive chain alignment is critical. A periodic visual inspection is recommended to confirm alignment of drive components (which includes both drive sprockets and drive chain). Should set screws become loose, drive sprockets are subject to excessive wear and ultimately, to untimely replacement.

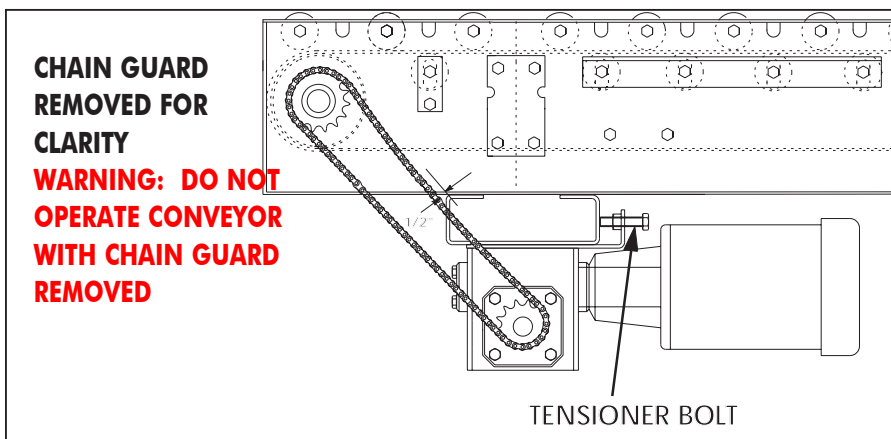
To check drive sprocket alignment, it is imperative that conveyor is shut "OFF" and power source is locked out before any adjustments are attempted. Remove chain guard cover and place straight-edge (see illustration above) across face of both drive sprockets. If re-alignment is necessary, loosen set screws and adjust drive sprockets as required. Remember

WARNING: To check drive sprocket alignment, it is imperative that conveyor is shut "OFF" and power source is locked out before any adjustments are attempted.

to securely tighten set screws when alignment is complete.

Before replacing chain guard cover, check drive chain tension as described in following section, "Drive Chain and Sprocket Tension."

DRIVE CHAIN AND SPROCKET TENSION



Maintaining proper chain tension is especially important. Again, a periodic visual inspection is recommended to ensure chain tension within a pre-determined operating range.

Remember, before any adjustments are attempted, conveyor must be shut "OFF" and power source locked out.

Before replacing chain guard cover, check to see if drive chain is operating within 1/2" range (see above illustration). If unit is out of tolerance, adjustment is necessary.

To adjust drive chain tension, tensioner bolt located on reducer push plate should be tightened (rotate clockwise) if chain tension is loose. Tighten until proper operating range is achieved. If chain tension

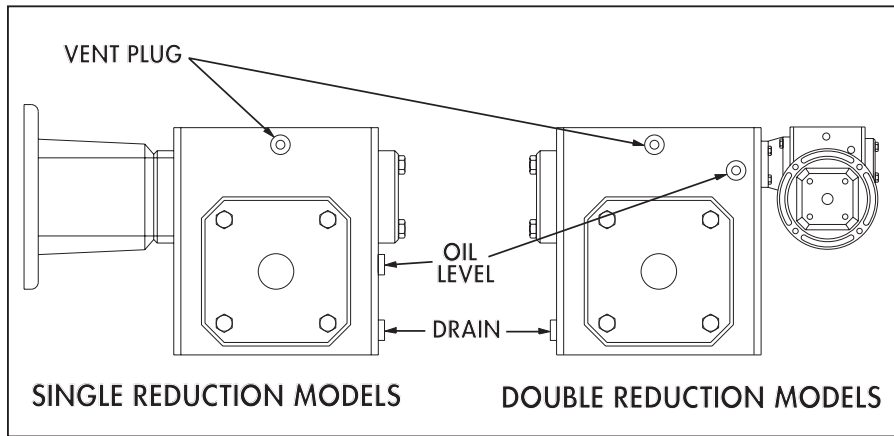
WARNING: To check drive sprocket tension, shut "OFF" and lock out power source before any adjustments are attempted.

is too tight, loosen tensioner bolt (rotate counterclockwise) as required. When adjustment is complete replace chain guard cover.

WARNING: Do not operate unit until chain guard cover is replaced. Serious operator or other personal injury could result if protective guarding is not replaced.

START-UP PROCEDURES

GEAR REDUCER VENT PLUG



CAUTION: Before conveyor is operated, replace steel plug with vent plug (or “breather plug”) supplied. Do not operate conveyor until vent plug has been installed.

To expedite installation and start-up process, all gear reducers are shipped filled with oil. Initially, levels are checked at factory before unit is set up and test run. Upon field installation and before operating, again check oil level. See “Recommended Lubricants” section later in handbook for appropriate lubricants if gear reducer oil level is low.

Gear reducer is shipped from the factory with a steel plug placed in gear reducer to prevent oil from spilling during shipment. Before conveyor is operated, replace steel plug with vent plug (or “breather plug”) supplied. The small hole in the end of the vent plug must be placed “up” to prevent oil from escaping unit. Do not operate conveyor until

vent plug has been installed. Failure to replace steel plug with vent plug will void gear reducer manufacturer warranty. Install vent plug in uppermost hole in gear box upon unit installation when motor is in working position.

PREPARING FOR INITIAL START-UP



WARNING: WARN ALL PERSONNEL TO KEEP CLEAR OF CONVEYOR DURING UNIT START-UP

WARNING: Electrical controls must be designed by a qualified electrical engineer to ensure that appropriate safety features (emergency stops, pull cords, switches, etc.) are installed on unit for safe operation. Before conveyor start-up, all operators and other personnel coming in contact with unit must be properly trained and must have read accompanying Tech Handbook.

Before conveyor start-up, all operators and other personnel coming in contact with unit must be properly trained and must have read accompanying Tech Handbook.

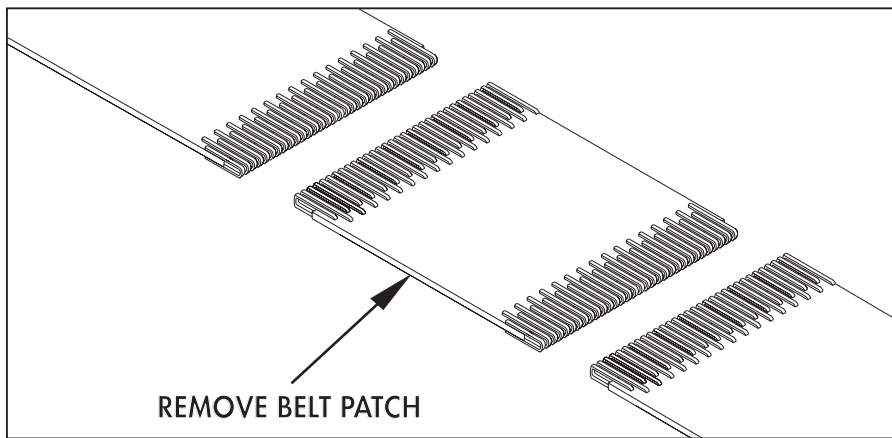
Provisions must be in order to instruct all personnel coming in contact with conveyor on the location of emergency stops, pull cords, etc.

A routine maintenance program should be implemented before unit is placed into operation so that fundamental unit components are attended to. This maintenance program should include an inspection to ensure that any dangerous or hazardous operating conditions are noted and IMMEDIATELY corrected, as well as including electrical and mechanical unit inspections and corrections.

Finally, when conveyor is initially started, an immediate visual inspection should include motor, gear reducer, belt tracking (discussed in following section under “Belt Tracking”) and related adjustments noted in handbook for unit/component corrections.

BELT TRACKING

GENERAL INFORMATION



Upon initial use belting will stretch after a few days of operation. Remember that maintaining proper belt tension is a crucial element in belt tracking. Therefore, this stretching of a belt when placed into operation may affect its ability to track. Adjustment of the take-up pulley will likely adequately compensate for initial stretch. However, depending on the overall unit

length, removal of a belt patch may be necessary to correct.

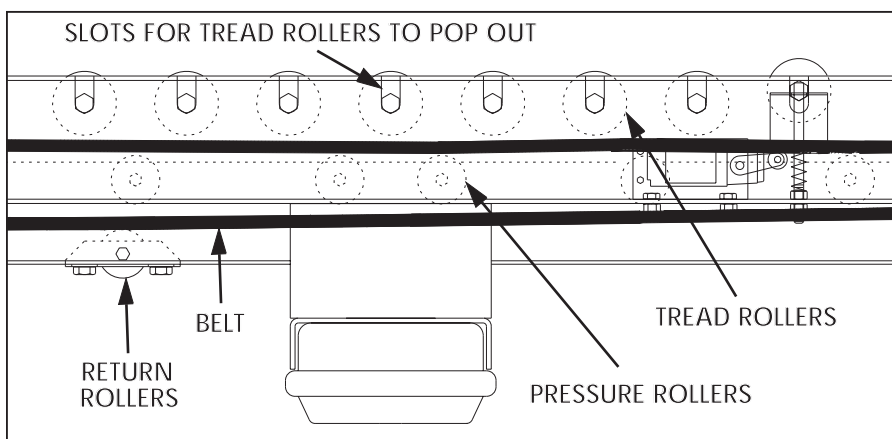
The return direction of the belt must clear supports, ceiling hangers, floor openings, etc. Dragging on such components will contribute to belt tracking problems and is certain to damage belting at extended intervals. Also, do not allow belt to rub against conveyor side frame.

CAUTION: Upon initial operation the belt will stretch. To maintain proper belt tension, adjustment of the take-up pulley or removal of belt patch will be required. ONLY trained personnel should make belt tracking adjustments.

In a reversible application, a belt that runs off to one side in one direction will likely run off to the other side when operated in the opposite direction.

Belt must be tracked in both unloaded and loaded situations. See following step for installation of tread rollers to track belt in loaded situation.

POP OUT ROLLERS & INSTALLATION OF TREAD ROLLERS



In most instances, model 251ZPA frames are equipped with slots in the frame for tread rollers. When installed below 7'-0" elevation, tread rollers will pop out of the frame to prevent injury to operator or individuals coming in contact with tread rollers. Live rollers installed at 7'-0" or higher elevations, require tread rollers to be installed in a NON pop out design to

prevent rollers from popping out and causing injury to individuals stationed below the conveyor. Therefore, the frame should be punched rather than slotted OR a hold down angle must be used to eliminate pop out rollers in high elevation applications. (See "UNDERSTANDING POP OUT ROLLERS", page 4).

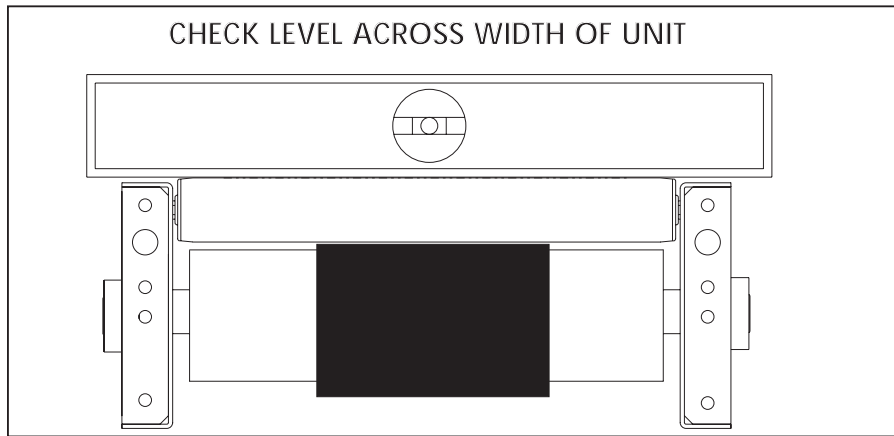
CAUTION: ONLY trained personnel should make belt tracking adjustments. Shut unit "OFF" and lock out power source before attempting adjustments in belt tracking.

WARNING: Belt driven live roller conveyors must have safety pop out tread rollers when installed below 7'-0" elevation. Conversely, when installed at 7'-0" elevation or greater, tread rollers must NOT be allowed to pop out of frame.

Remove tread rollers from shipping crate and install in conveyor. Once installed, confirm that belt will track under loaded conditions. If belt does not track after tread rollers are installed, further adjustments will be required. Confirm that return rollers, beds and all pulleys are squared. Skewing of return rollers in small increments may complete belt tracking.

BELT TRACKING

ERRATIC TRACKING AT START-UP



CAUTION: Upon start-up, if belt tracks to one side of unit, turn unit "OFF", lock out power source and confirm that conveyor is square and that all prime tracking components are square with bed. Belt tracking adjustments should be performed by trained personnel ONLY.

Improper tracking of conveyor belting should be considered a "systems" problem rather than solely a deficiency in the belt. To explain, a belt is tracked with adjustments made to the conveyor rather than just the belting.

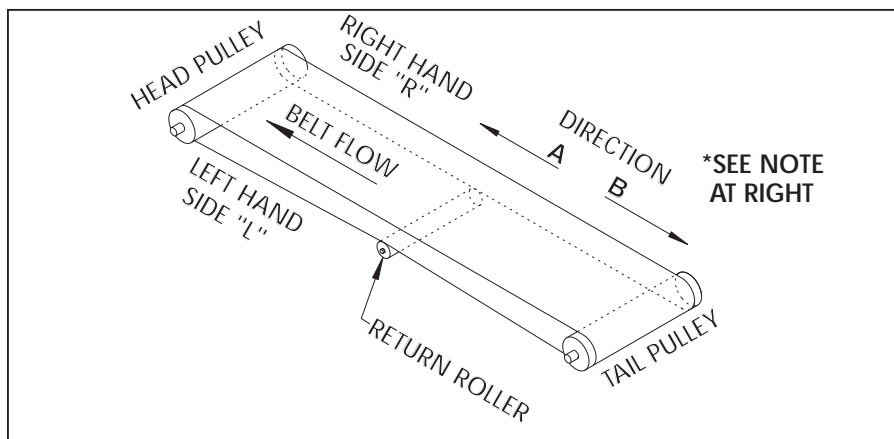
Upon start-up, if belt tracks to one side of unit, turn unit "OFF", lock out power source and confirm that conveyor is

square. All prime tracking components must be square with bed including drive pulley, tail pulley, snub roller and return rollers. Both sides of take-up should be adjusted exactly the same amount. The conveyor should be level across the width of the unit. Confirm that the belt has been properly threaded (see "Belt Path" section) and that belt lacing is square

with the belt edges. Make adjustments as necessary; however, all adjustments should be made in small increments.

Start conveyor again and operate for at least ten minutes once initial phase of adjustments are complete. If belt continues to track erratically, turn unit "OFF" and proceed to following section.

ADVANCED TRACKING ADJUSTMENTS



CAUTION: Belt tracking adjustments should be performed by trained personnel ONLY. Read section on "Belt Tracking" completely before attempting belt tracking adjustments.

***NOTE:** When making adjustments in direction "A" or direction "B", component must pivot from side "L" with actual component movement on side "R".

When adjustments noted in previous sections have been completed and belt continues to track erratically, a final series of tracking adjustments are necessary.

The following adjustments will be made referring to the direction of belt flow and not the product flow of the conveyor.

If belt tracks toward side "R" (see illustra-

tion above), skew return rollers in direction "B" to shift belting toward side "L". If belt tracks toward side "L", skew return rollers in direction "A" to shift belting toward side "R".

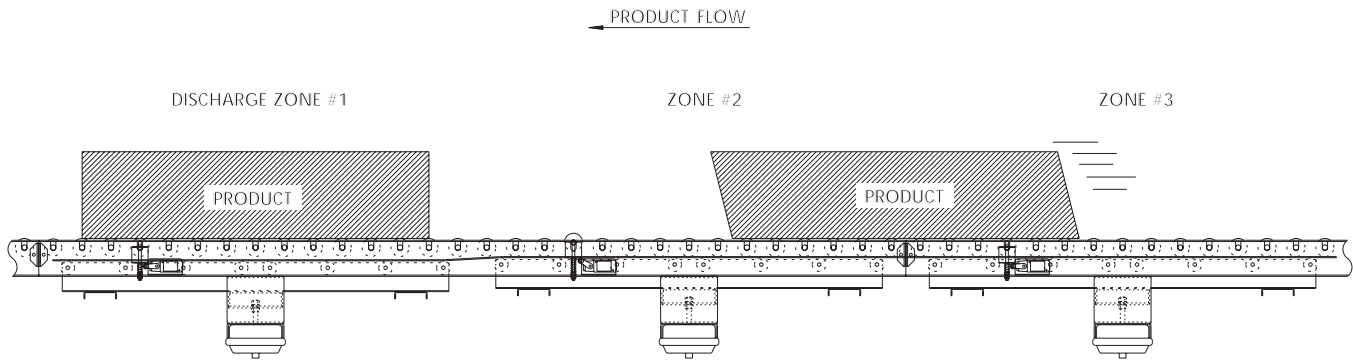
Skewing head pulley (pulley at unit discharge) in direction "A" moves belt toward side "L". Skewing head pulley in direction "B" moves belt toward side "R".

As a rule of thumb, do not use drive and take-up pulley for belt tracking since this will overly increase belt tension. When adjusting take-up pulley, adjust both sides an equal amount.

As a last resort, shift the tail pulley in direction "B" to move belting toward side "L"; shift head pulley in direction "A" to move belting toward side "L".

TECHNICAL

251ZPA ACCUMULATION (ZONE SINGULATION OPERATION)



Model 251ZPA, zero pressure accumulator, features zone singulation accumulation operation. Zone singulation allows product to be efficiently accumulated and offloaded-or singulated.

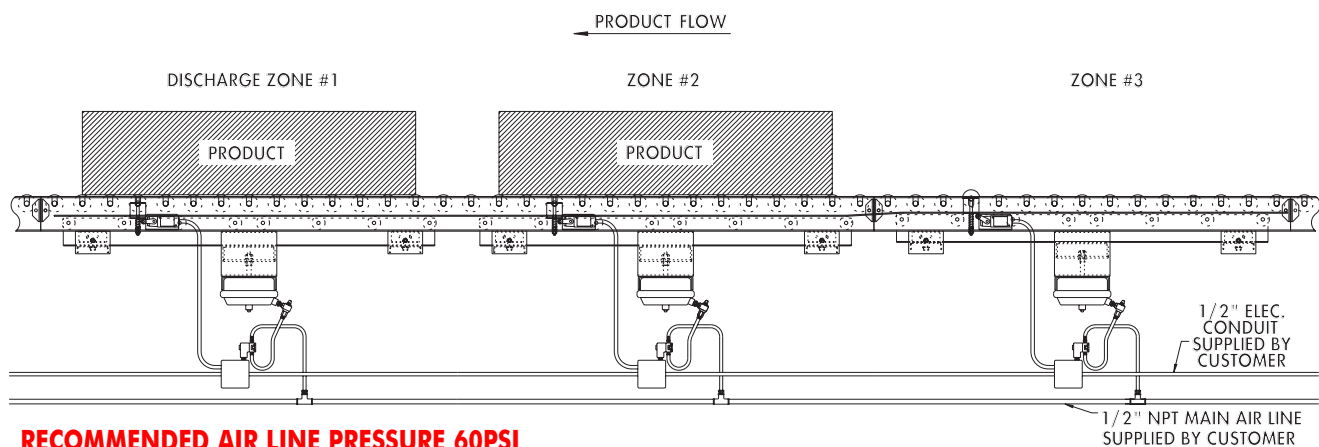
Here's how model 251ZPA operates as equipped with standard 251ZPA accumulation (zone singulation operation). The first package on the conveyor travels until

it depresses the sensor roller in discharge zone #1. The next package accumulates in zone #2 when it depresses the sensor roller mechanism located in zone #2. This process is repeated for all successive zones during standard 251ZPA accumulation (zone singulation operation).

Each zone is equipped with a limit switch which is activated by the downward

movement of the sensor roller mechanism. When the sensor roller is depressed, an electrical signal is relayed to a 3-way single solenoid valve and air flow is directed away from an air chamber causing the pressure roller structure to lower thus removing drive belt from tread rollers and ultimately, directing the zone to enter its accumulation mode.

STANDARD LIMIT SWITCH CONTROLLED PNEUMATIC/ELECTRICAL PLUMBING



RECOMMENDED AIR LINE PRESSURE 60PSI

During unit setup and testing at factory, model 251ZPA is set up and thoroughly tested prior to rigorous quality assurance inspection.

The diagram above illustrates typical plumbing of primary pneumatic and electrical components to achieve standard 251ZPA accumulation (zone singulation operation). The main input air supply line,

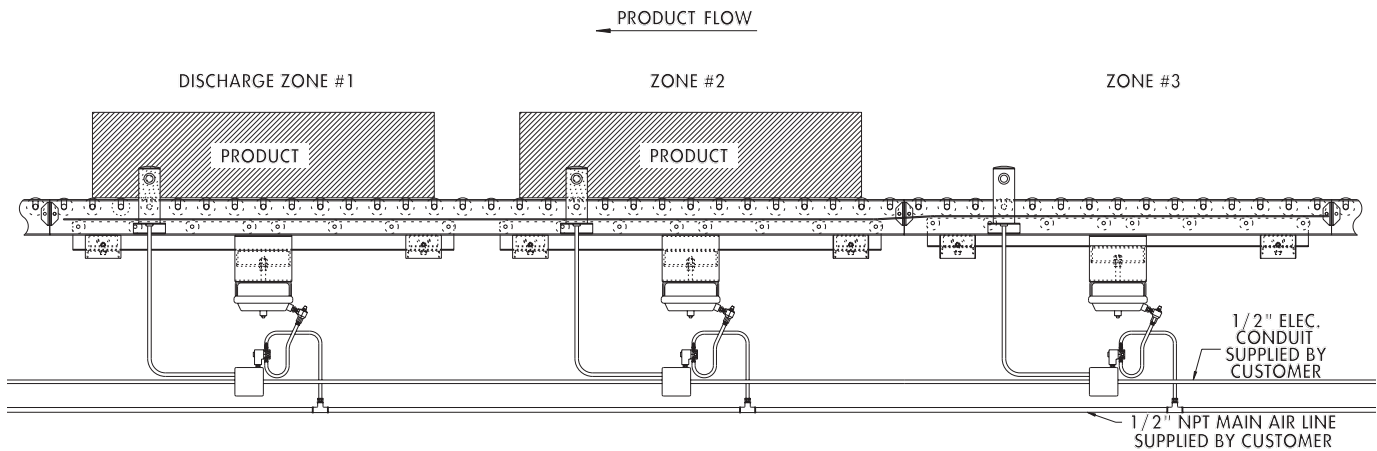
1/2" NPT, must be supplied by customer/others for completion of pneumatic plumbing during installation. Air flow is then routed to a 3-way single solenoid valve for delivery to an air chamber in each zone. A zone remains in its transportation mode UNTIL a package depresses the sensor roller and activates a limit switch located in that zone. Once the limit switch is acti-

vated, the zone remains in accumulation mode until the next discharge-side zone is clear and sensor roller in that zone has returned to its UP position.

1/2" electrical conduit must be supplied by customer/others and connected to a junction box located in each zone to complete the electrical requirements per zone. See page 22 for additional drawings/info.

TECHNICAL

OPTIONAL PHOTOEYE CONTROLLED PNEUMATIC/ELECTRICAL PLUMBING

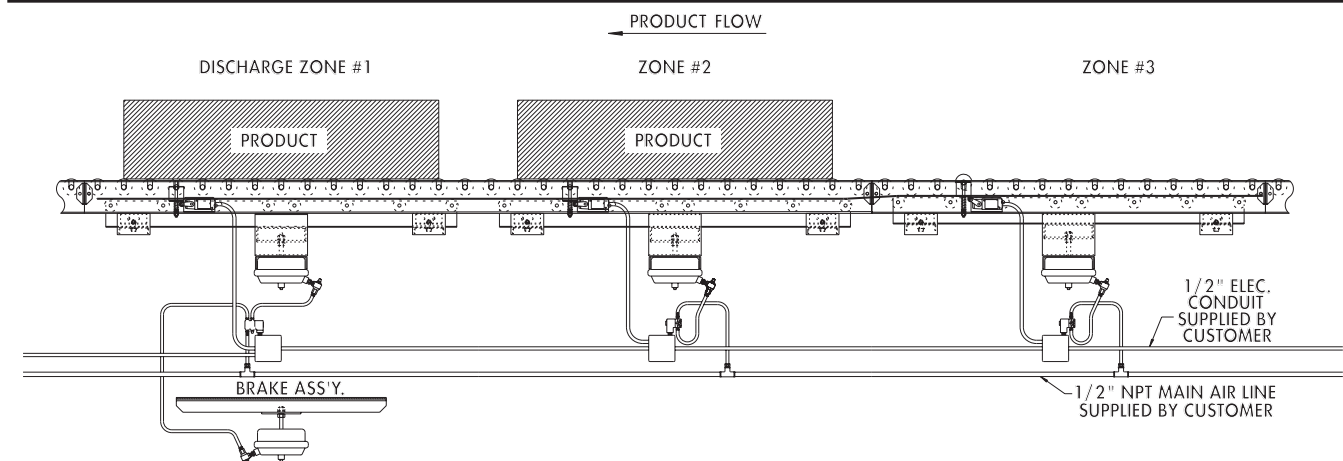


In some applications a sensor roller mechanism cannot be used on model 251ZPA. For example, if the bottom surface of the product being conveyed (or, the part of the product that actually comes in contact with the tread rollers) allows the sensor roller to raise, thus transmitting a "false" signal by way of the

zone limit switch, sensor rollers must be replaced. One way to accomplish this is to replace both the sensor roller mechanism and limit switch in every zone with photoeyes. The photoeye is simply used

to detect the presence of product in zone. Additional drawings/information on page 22.

PNEUMATIC/ELECTRICAL PLUMBING FOR OPTIONAL BRAKE ASSEMBLY



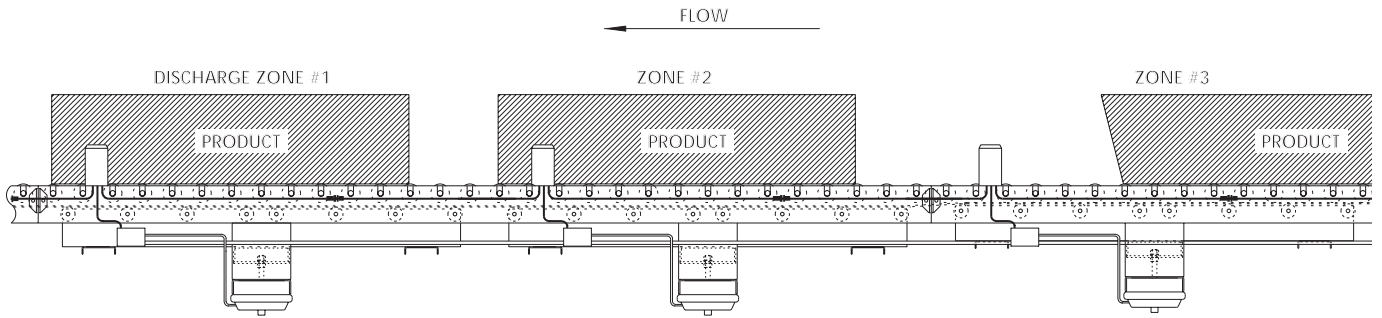
During accumulation and depending on conveyor operating speed, package may coast beyond the intended accumulation zone. Consideration is necessary to minimize package coast when accumulating. A pneumatic brake assembly is commonly utilized to curtail package/product coast. In the illustration above, a discharge zone brake assembly is added. This brake

assembly is pneumatically raised and lowered to "brake" the tread rollers when the discharge zone enters its accumulation mode. This simple addition is designed to eliminate package coasting through the discharge zone (see illustration above). However, a brake assembly can be added to any or all zones on model 251ZPA in this same manner. A 4-way

single solenoid valve is used in place of a 3-way single solenoid valve in each zone with a pneumatic brake assembly. When the sensor roller is depressed, the pneumatic brake assembly is raised, effectively curtailing product coasting in all zones equipped with a pneumatic brake assembly. Additional drawings/information on page 22.

TECHNICAL - SMART ZONE®

SMART ZONE® OPERATION



Roach® Smart Zone® model SZ251ZPA is a zero pressure accumulation conveyor utilizing photo sensors rather than mechanical sensor rollers to detect presence of product. Each requires photo sensor, reflector, solenoid valve and pneumatic air chamber per zone. Also, a 24 volt DC power supply with 115/1 input voltage is required per conveyor, which is capable

of powering up to 50 zones. The power supply delivers a low voltage signal to each "daisy-chained" photo sensor located in each accumulating zone.

Since Smart Zone® does not require physical package or carton weight to depress mechanical sensor, minimal weight objects can be accumulated.

Here's how Smart Zone® accumulates. The first package on the conveyor travels until it blocks the photo sensor in discharge zone #1. The next package accumulates in zone #2 when it blocks the photo sensor in zone #2. The next package accumulates in zone #3 and so forth. This process is repeated for all successive zones on Smart Zone®.

SMART ZONE® DETAILS

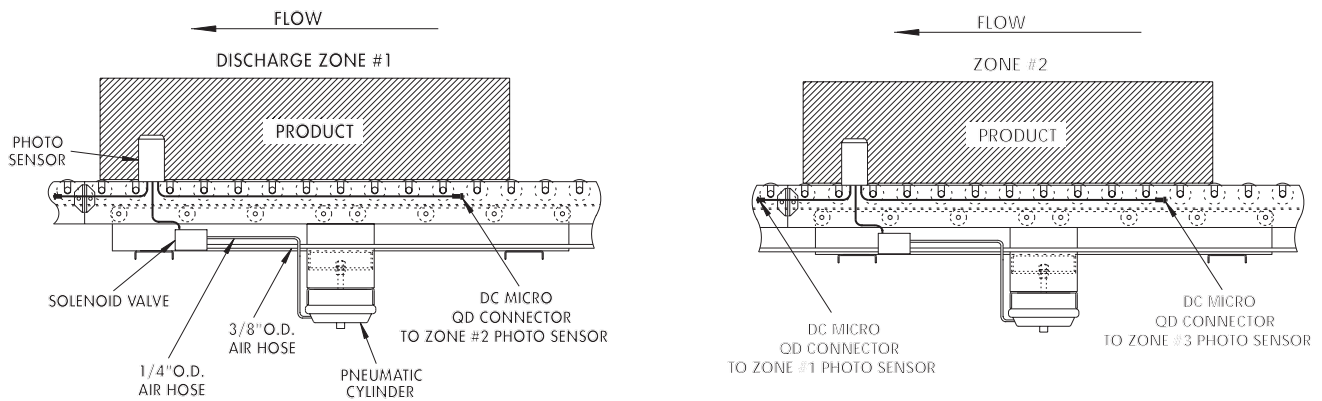


Photo sensors, reflectors, solenoid valves and pneumatic cylinders are shipped mounted, connected and tested on Smart Zone®. When mating individual Smart Zone® bed sections during field installation, two simple connections are required, neither requiring any tools. First, photo sensors must be adjoined across bed sections via DC micro QD connectors, a

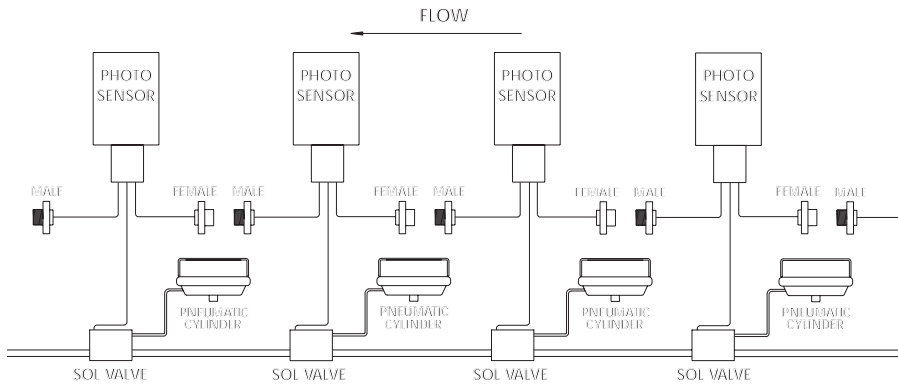
screw-type connection. The second connection involves 3/8" O.D. hose and solenoid valve. The hose is inserted in 3/8" quick connect push-in hose fitting on the solenoid valve.

When a product blocks discharge zone #1 photo sensor, a signal is delivered to the pneumatic cylinder in this zone which shifts the zone into accumulation mode.

The second product will stop moving when it blocks the photo sensor in zone #2 and so forth. A product cannot accumulate in a zone until a product is accumulated in the adjacent discharge zone.

TECHNICAL - SMART ZONE®

SMART ZONE® OFFLOADING



WARNING: Electrical controls must include appropriate safety features (emergency stops, pull cords, switches, etc.) installed on unit for safe operation. Before conveyor start-up, all operators and other personnel coming in contact with unit must be properly trained and must have read accompanying Tech Handbook.

The standard mode of operation for Roach® Smart Zone® is zone singulation operation. The standard mode of product release for Smart Zone® is therefore, zone singulation release. Each product is accumulated in a separate zone on the conveyor. A product advances into the adjacent discharge zone when that zone is clear. The photo sensor clears and a single product advances.

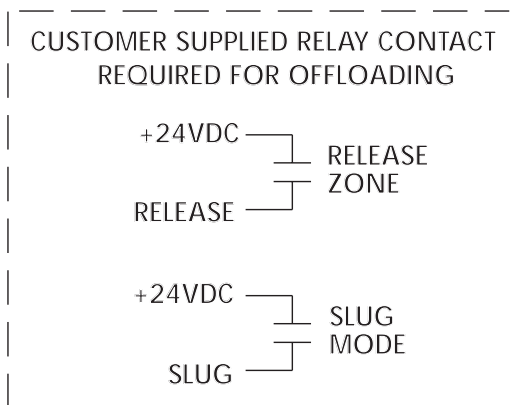
To offload utilizing standard zone singulation operation, operator uses a relay contact to the conveyor power supply to discharge a single product. The Smart Zone® power supply is a 100 watt 24VDC enclosure.

Finally, an operator may offload Smart Zone® by simply removing a product from

the discharge zone, which allows another product to advance into the discharge zone when the previous product clears that zone.

NOTE: Maximum air line pressure must not exceed 30PSI.

SMART ZONE® SLUG RELEASE OFFLOADING / SLUG LOADING



WARNING: Electrical controls must include appropriate safety features (emergency stops, pull cords, switches, etc.) installed on unit for safe operation. Before conveyor start-up, all operators and other personnel coming in contact with unit must be properly trained and must have read accompanying Tech Handbook.

A common feature for Smart Zone® conveyors is slug release or slug offloading. When utilizing slug offloading, all zones are powered at once to release all accumulated products. Likewise, once the slug mode is selected from Smart Zone® power supply via customer-supplied relay contact, the conveyor remains in slug mode for both slug offloading and slug loading.

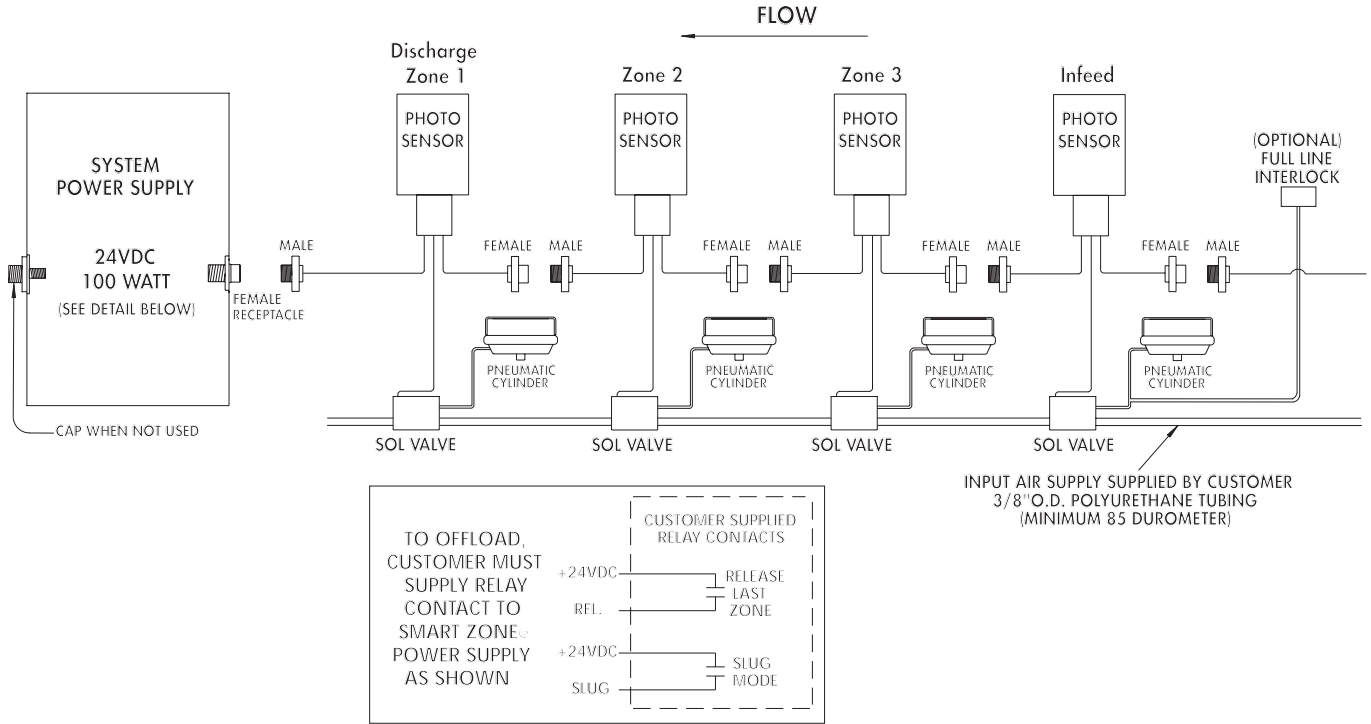
Slug loading allows a group or “slug” of products to accumulate on Smart Zone® at once. These products will continue in motion until either an additional sensor (not supplied with Smart Zone®) stops

Smart Zone® from continuously running or customer-supplied relay contact switches power supply from slug mode.

TECHNICAL - SMART ZONE®

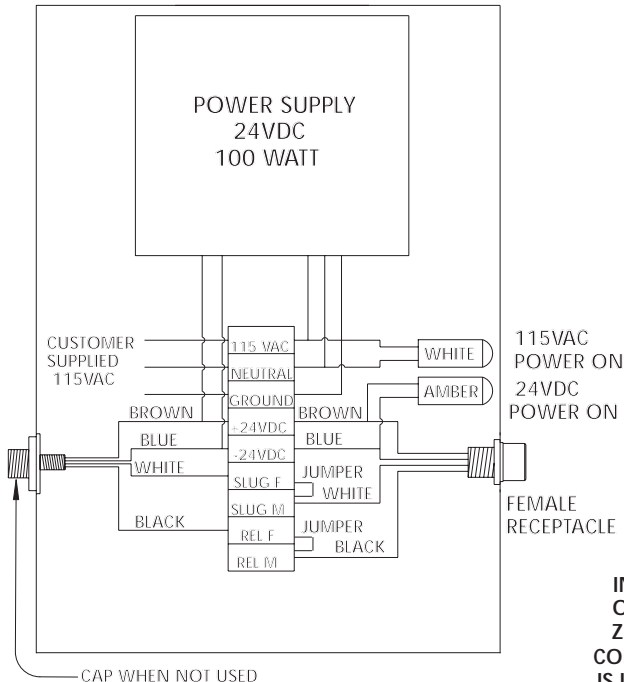
MODELS UP TO 50' W/ DISCHARGE POWER SUPPLY

TYPICAL ZONE-TO-ZONE CONNECTION FOR UP TO 25 ZONES OR 50' MAX.



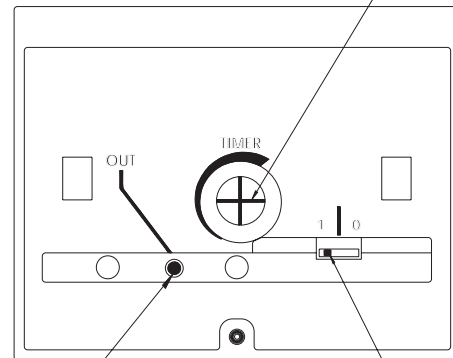
SMART ZONE® POWER SUPPLY AND PHOTO SENSOR DETAILS

SMART ZONE® POWER SUPPLY



SMART ZONE® PHOTO SENSOR

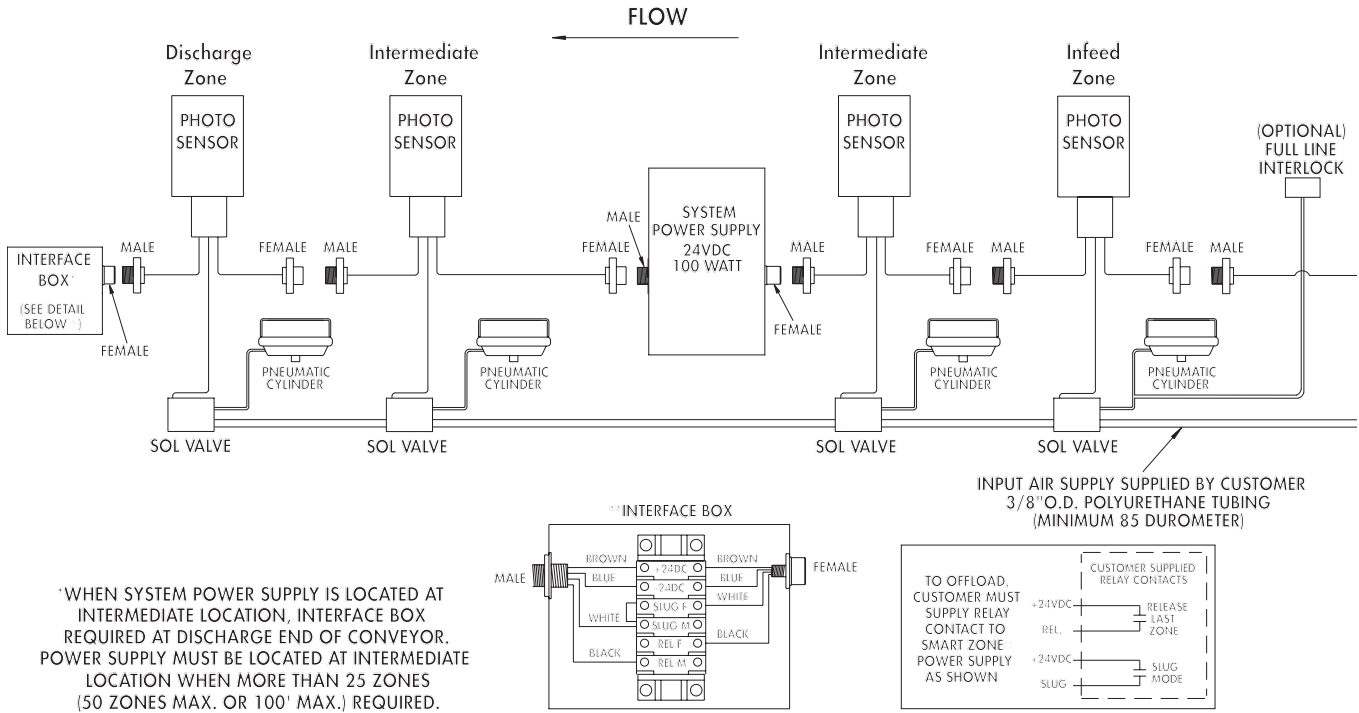
EACH PHOTO SENSOR FEATURES BUILT-IN TIME DELAY OF 0-10 SECONDS. USE SCREWDRIVER IN SLOT SHOWN TO ADJUST REQUIRED TIME DELAY. TURN CLOCKWISE TO INCREASE TIME DELAY (10 SECONDS MAXIMUM).



DIP SWITCH SHOULD ALWAYS BE SET TO POSITION 1 FOR MODEL ZPA SMART ZONE®. THIS FEATURE DIRECTS SOLENOID VALVE TO ENERGIZE FOR PROPER OPERATION.

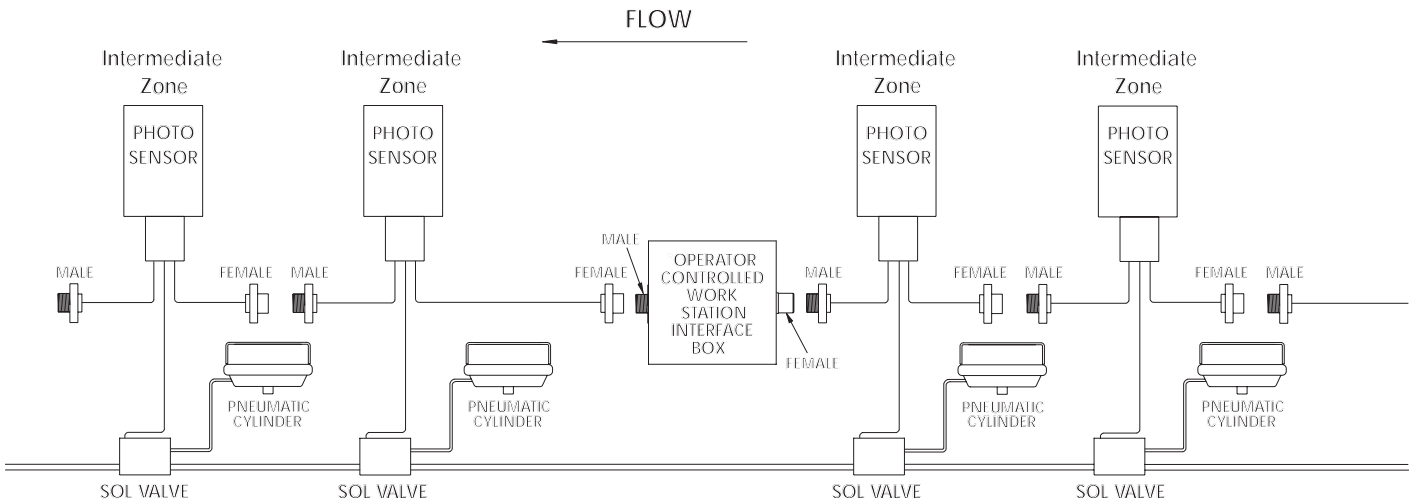
INDICATOR LIGHT INDICATES SOLENOID VALVE OUTPUT. SOLENOID VALVE IS ENERGIZED AND ZONE IS RUNNING WHEN INDICATOR LIGHT IS CONTINUOUSLY LIT. ZONE IS NOT RUNNING AND IS IN ACCUMULATION MODE WHEN LIGHT IS OUT.

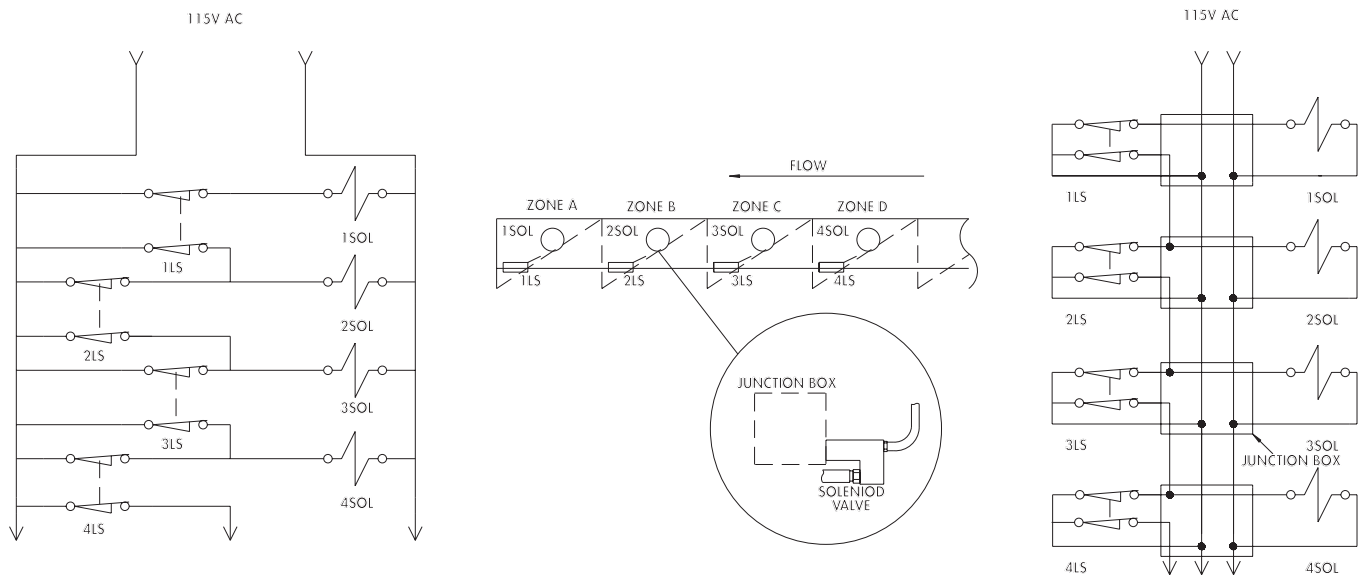
TYPICAL ZONE-TO-ZONE CONNECTION FOR UP TO 50 ZONES OR 100' MAX.



SMART ZONE® OPERATOR-CONTROLLED WORK ZONES (OPTIONAL)

TYPICAL CONNECTION FOR OPERATOR-CONTROLLED WORK STATION





BEFORE PERFORMING MAINTENANCE

CAUTION: Only trained personnel shall perform maintenance functions. Before maintenance operations are performed, conveyor must be shut "OFF" and disconnects locked in the "OFF" position to prevent unit from unauthorized start-up.

One of the most important guidelines for maximizing conveyor operation and personnel safety is to implement a regular maintenance schedule and train personnel on the appropriate needs of the specific unit.

Only trained personnel shall perform maintenance functions. Before maintenance operations are performed, conveyor must be shut "OFF" and disconnects locked in the "OFF" position to prevent unit from unauthorized start-up during maintenance. All personnel should be informed of the safety procedures associated with unit maintenance and performance.

Do not perform any work on conveyors or conveyor system while in operation unless it is impossible to otherwise conduct adjustment, lubrication or other maintenance function. Only experienced, trained personnel possessing advanced hazards-training should attempt such critical operations.

MAINTENANCE AND FOLLOW-UP DETAILS

CAUTION: Only trained personnel shall perform maintenance functions. When maintenance is completed, only authorized personnel shall be permitted to start conveyor following maintenance or other emergency shut-off.

While performing maintenance do not wear loose clothing. Immediately report any hazardous conditions-sharp edges, pinch (or nip) points or other conditions that may result when several manufacturers supply machinery which may create operating hazards.

When using mechanical aids such as hoists, cables, or cranes exercise extreme caution to prevent damage to conveyors or other integrated machinery which may create a working hazard when maintenance is completed and units are in operation.

Clean up any spilled lubricants or other materials used in the maintenance process or those which may be deposited during unit operation. Eliminating poor housekeeping practices increases unit efficiency while creating safer personnel working conditions.

After maintenance, conduct visual inspection to ensure that all safety devices and guards have been replaced. Confirm that all units are clear of tools, debris or other items. Before starting conveyor, check condition of unit caution labels (see "CAUTION LABELS" at front of handbook). If labels have been destroyed or are not clearly legible, call 870.483.7631 to receive replacement labels. Placement of caution labels is critical to avoid unauthorized unit operation which may result in hazardous working conditions for all related personnel coming in contact with conveyor.

Warn personnel that conveyor is being prepared for start-up and to stay clear of unit. Do not start conveyor until all personnel are clear. When maintenance is completed, only authorized personnel shall be permitted to start conveyor following maintenance or other emergency shut-off.

MAINTENANCE AND LUBRICATION

MAINTENANCE SCHEDULES

MODEL NO. _____

WEEKLY RECOMMENDED MAINTENANCE SCHEDULE*	
COMPONENT	DETAIL OF MAINTENANCE
BELTING	Inspect belt tracking
PILLOW BLOCK/ FLANGE BEARINGS	Lubricate in dirty, dusty or moist/wet conditions
UNIT SAFETY CHECK	Confirm placement of all guards, pop out rollers, warning labels & check for loose bolts, nip points & other hazards

MONTHLY RECOMMENDED MAINTENANCE SCHEDULE*	
COMPONENT	DETAIL OF MAINTENANCE
GEAR REDUCER	Check oil level (After first 100 operating hours-monthly thereafter) & add if necessary Check misc. operating conditions (normal heat & noise) & confirm use of vent plug
BELTING	Check for proper operating tension & laced connections
V-BELT DRIVE BELT	Check for proper operating tension & overall wear
DRIVE SHEAVES	Check & re-tighten set screws & check for overall wear
PILLOW BLOCK/ FLANGE BEARINGS	Lubricate (normal conditions)
DRIVE CHAIN	Check for proper operating tension & for overall wear & lubricate
DRIVE SPROCKETS	Check for overall wear & re-tighten set screws

PERIODIC RECOMMENDED MAINTENANCE SCHEDULE*	
COMPONENT	DETAIL OF MAINTENANCE
GEAR REDUCER	Change oil every 2500 hours or 6 months (whichever comes first) Change oil more often in severe environment (dusty, humid)
DRIVE CHAIN	Clean (brush in solvent) & re-lubricate by applying lubricant to inside of chain with brush or spout can at 2000 hour intervals
MOTOR	Check & clear motor ventilation openings at 500 hour intervals Check misc. operating conditions (normal heat & noise)

*All charts are for guidelines in normal operating or 'as noted' conditions. Severe applications may warrant additional maintenance.

MAINTENANCE AND LUBRICATION

RECOMMENDED LUBRICANTS

GEARMOTOR LUBRICANTS		
MANUFACTURER	15-60°F AMBIENT TEMPERATURE AGMA COMPOUNDED NO. 7	50-125°F AMBIENT TEMPERATURE AGMA COMPOUNDED NO. 8
Amoco Oil Company	Worm Gear Oil	Cylinder Oil #680
Chevron USA, Inc.	Cylinder Oil #460X	Cylinder Oil #680X
Exxon Co. USA	Cyclesstic TK-460	Cyclesstic TK-680
Gulf Oil Co.	Senate 460	Senate 680D
Mobil Oil Corp.	600W Super	Extra Hecla Super or Mobilgear 636
Shell Oil Co.	Valvata Oil J460	Valvata Oil J680
Sun Oil Co.	Gear Oil 7C	Gear Oil 8C
Texaco	Meropa 460	Meropa 680
Union Oil Co. of California	Steaval A	Worm Gear Lube 140

NOTE: Frequently check gearbox oil level. Add oil to gearbox through filler plug (or, vent plug, see page 13) until oil comes out the oil level plug. Inspect vent plug often to ensure it is clean and that vented holes are open for continued unit operation. Also, some gear lubricants contain E.P. additives that can be corrosive to gear bronze. Avoid lubricants that are compounded with sulphur and/or chlorine. For temperature ranges not shown, consult factory.

CAUTION: Do not mix types and/or brands of oil. Thoroughly drain gearbox while unit is warm prior to changing lubricant.

MISC. LUBRICANTS	
LUBRICANT	BRAND/DESCRIPTION
General Purpose Grease (For -30°F to 300°F operation)*	Shell Dolium R (Shell Oil Co.) (or suitable equivalent)
For Extreme Temperature Operation (-90°F to 350°F operation)*	Mobiltemp SHC-32 (Mobil Oil Corp.) (or suitable equivalent)
Washdown Application* (-30°F to 225°F operation) (May require special consideration-consult factory)	Shell Alvania No. 3 (Shell Oil Co.) (or suitable equivalent)
General Purpose Oil	SAE 10; SAE 20 OR SAE 30

***NOTE:** Temperatures listed indicate the nominal operational temperature for the specific lubricant listed. This does not imply that the bearing housing, seals or any other conveyor unit component is rated to operate in this specific temperature range or environment. 250°F is the maximum operating temperature for standard bearing lubricants and bearing components. Although various lubricants may enhance bearing operation, special-order bearings may be required to achieve optimal bearing performance. For additional information, consult factory.

TROUBLE SHOOTING AND REPLACEMENT PARTS

TROUBLE SHOOTING / SERIAL PLATE

TROUBLE SHOOTING		
TROUBLE	PROBABLE CAUSE	REMEDY
Motor & gear reducer running excessively hot, repeated stalling or hard to start	A. Drag on conveyor B. Lack of lubricant C. Frozen sprocket D. Frozen roller E. Overload F. Electrical	A. Inspect entire conveyor for obstruction causing drag on chain. B. Check oil level in gear case. Be sure vent plug is open. C. Check and inspect all sprockets and bearings. Replace sprockets failing to rotate or that are difficult to rotate. D. Check all rollers for rotation. E. Reduce cause and/or increase motor horsepower. F. Check wiring and circuits, take ampere reading, replace motor if nec.
Motor & gear reducer makes excessive noise	A. Lack of Lubrication B. Damaged Gears C. Faulty Bearing	A. Check oil level in gear reducer. B. Replace Unit. C. Replace Bearing.
Drive chain, conveying chain or sprockets experience excessive wear	A. Excessive chain tension B. Sprockets misaligned C. Chain not lubricated D. Damaged sprocket or chain E. Misalignment of chain gd. F. Dirty Chain	A. Reduce chain tension. B. Realign with straight edge across sprocket faces. C. Lubricate chain with approved lubricant, wipe away excess lubricant. D. Replace damaged component E. Adjust chain guard assembly as necessary. F. Clean thoroughly and lubricate with approved lubricant.
Drive chain, conveying chain or sprockets make excessive noise	A. Insufficient chain tension B. Chain not adequately lubricated C. Sprockets misaligned	A. Adjust chain tension. B. Lubricate chain with approved lubricant, wipe away excess lubricant. C. Realign sprockets with straight edge across sprocket faces.
Pulsating chain	A. Insufficient chain tension B. Misalignment of chain gd. C. Overload	A. Adjust chain tension. B. Adjust chain guard assembly as necessary. C. Inspect for obstruction to or drag on conveyor.
Broken Chain	A. Frozen bearing or sprocket shaft B. Worn or damaged chain C. Obstructed or jam	A. Inspect for damaged bearings, replace if necessary. Replace links as required. B. Replace chain as required. C. Remove obstruction to clear jam.
Sprocket loose on shaft	A. Loose set screws B. Worn or damaged key	A. Realign sprockets with straight edge and tighten set screws. B. Replace with new key.
Excessive slack in chain	A. Normal Wear	A. Expect rapid chain growth in first two weeks of operation. Adjust chain tension.



ROACH CONVEYORS
808 HIGHWAY 463
TRUMANN, AR 72472
TEL 870-483-7631

SERIAL NO. **123456**

ORDERING REPLACEMENT PARTS

To order any replacement parts or when calling for assistance with any powered conveyor, ALWAYS provide the unit serial number. Shown at actual size, this aluminum plate is placed on conveyor frame near location of drive assembly.

To order replacement parts or add-on components, contact Roach distributor who originally furnished the unit if possible. If this is not possible, contact the national sales office at 870.483.7631 for the name of the authorized Roach distributor in your area. Have unit model number and serial number BEFORE calling. Refer to unit drawings (in rear section of handbook) for part numbers if ordering replacement parts.

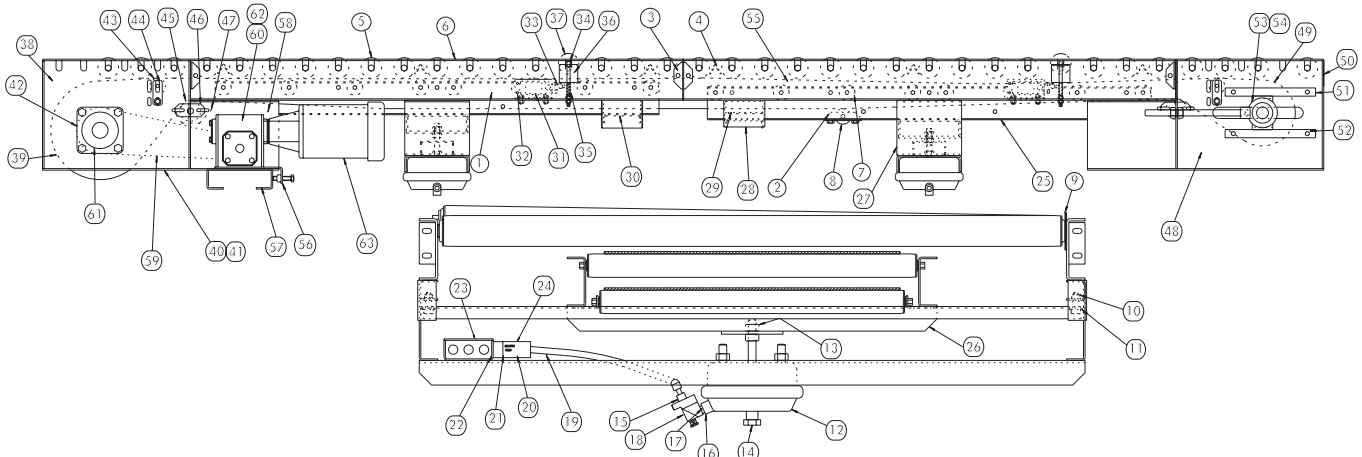
MODEL 251ZPA

PARTS LIST FOR UNIT WITH 8" AND 12" END SIDE MOUNT DRIVE

ITEM NO.	PART NO.	DESCRIPTION	ITEM NO.	PART NO.	DESCRIPTION
1	251ZPAI-BF-RC-LG-SN	251ZPA Intermediate Bed Section	38	ED-ZPA-8-BF-RC-SN	8" END DRIVE ASSEMBLY
2	00498-SN	Return Roller Bracket	39	20183-BF-SN	8" Drive Pulley
3	00180-SN	Bolt-in Butt Coupling for 4" Channel	40	00641L-SN	8" End Drive Plate (Left Hand)
4	10010-10013-SN	Cross Brace Pipe (4" Roller Centers)	41	00641R-SN	8" End Drive Plate (Right Hand)
4	10253-BF-SN	Cross Brace Angle (6" Roller Centers)	42	BRW04070	4 Hole Flange Bearing w/ 1-7/16" Bore
5	20345-BF-SN	251S Roller	43	20340-BF-SN	196S Pressure Roller
6	SN	Side Channel	44	01169G-SN	1.9 Roller Adjustment Bracket
7	20340-27BF-SN	196S-27BF Pressure Roller	45	20132-BF-SN	Snub Roller w/ 1" dia. shaft
8	20340-25BF-SN	196S-25BF Return Roller	46	BRW04010-01	2 Hole Flange Bearing w/ 1" Bore
9	MCW06306	Photo Eye, Reflector & Mount (OPTIONAL, Not Shown)	47	SN	Snub Roller Belt Guard
10	FSW09355	1/2" x 3/4" x 3/8" - 16 Shoulder Bolt	38	ED-ZPA-12-BF-RC-SN	12" END DRIVE ASSEMBLY
11	MCW06204	1/2" Rubber Washer	39	MCW06600-BF-SN	12" Drive Pulley
12	SN	Air Chamber	40	00640L-SN	12" End Drive Plate (Left Hand)
13	FSW09900-02	5/8" - 18 UNF - 2A Hex Nut	41	00640R-SN	12" End Drive Plate (Right Hand)
14	MCW06100	3/8" NPT Galvanized Plug	42	BRW04080	4 Hole Flange Bearing w/ 1-15/16" Bore
15	MCW06560	1/4" Port Quick Exhaust Valve	43	20340-BF-SN	196S Pressure Roller
16	MCW06117	3/8" x 1/4" Galvanized Pipe Bushing	44	01169G-SN	1.9 Roller Adjustment Bracket
17	MCW06101	1/4" NPT x 2" Galvanized Nipple	45	20132-BF-SN	Snub Roller w/ 1" dia. shaft
18	MCW06540-02	E-622 1/4" NPT Exhaust Muffler	46	BRW04010-01	2 Hole Flange Bearing w/ 1" Bore
19	MCW06273	1/4" Air Hose	47	SN	Snub Roller Belt Guard
20	MCW06182	1/8" x 1/4" Brass Barbed Fitting	48	ETUZPA-8-BF-RC-SN	8" END TAKE-UP ASSEMBLY
21	MCW06112	1/8" NPT Street Elbow	49	20136-BF-SN	8" Take-Up Pulley
22	ELW08195	1/2" Conduit Chase Nipple	50	20074-SN	Take-Up Plate
23	ELW08808	4" x 4" Junction Box w/ Cover	51	04045-SN	Take-Up Bearing Guide
24	MCW06583	Mac-111B-111CA Single Solenoid Valve	52	MCW06725	Take-Up Bearing Guide Spacer (Black Nylon)
25	SN	Pressure Roller Mounting Channel Assembly	53	BRW04415	Take-Up Bearing Assembly (Left Hand)
26	SN	Lift Channel Assembly	54	BRW04415	Take-Up Bearing Assembly (Right Hand)
27	00496-SN	Cylinder Mounting Channel Spacer	55	SN	24" Wide PVC-120 Belting
28	00493-SN	Spacer Guard	56	SN	Reducer Push Plate Assembly
29	00495-SN	Spacer Channel	57	SN	Motor Base Plate
30	00643-00646-SN	Cylinder Mounting Channel	58	SN	Chain Guard Assembly
31	ELW08157	*Limit Switch	59	SN	#50 (thru 1-1/2 HP) or #60 Roller Chain
32	00497-SN	*Universal Limit Switch Mount w/ Hardware	60	SN	Gear Reducer Drive Sprocket
33	ELW08366	*Roller Arm	61	SN	Pulley Drive Sprocket
34	FSW08374-SN	*Carrier Stud	62	SN	Gear Reducer
35	MCW06045	2-3/8" Carrier Spring	63	SN	Motor
36	00668-SN	Roller Limit Switch Bracket			
37	20345-BF-SN	251S Sensor Roller			

BF = Between Frames. SN = Unit Serial Number. Specify unit serial number when ordering replacement parts to ensure proper allocation of components. Recommended Spare Parts are shown in red. *These items not required if model 251ZPA photo eye controlled (see item no. 9).

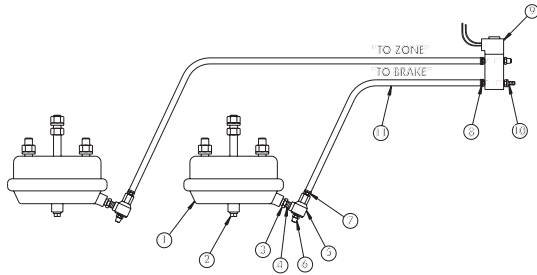
WARNING: When installing below 7'-0" elevation, tread rollers must be designed to pop out. When installing at 7'-0" or higher elevation, tread rollers must NOT be allowed to pop out.



MODEL 251ZPA WITH 12" END SIDE MOUNT DRIVE SHOWN IN DRAWING

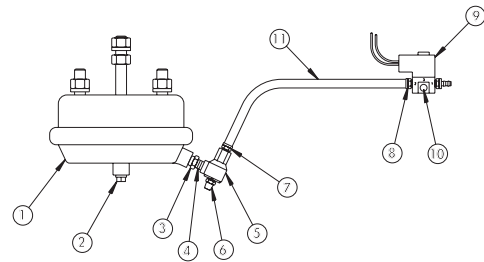
MODEL 251ZPA

PNEUMATIC PARTS LIST FOR ACCUMULATION ZONE & BRAKE ASS'Y.



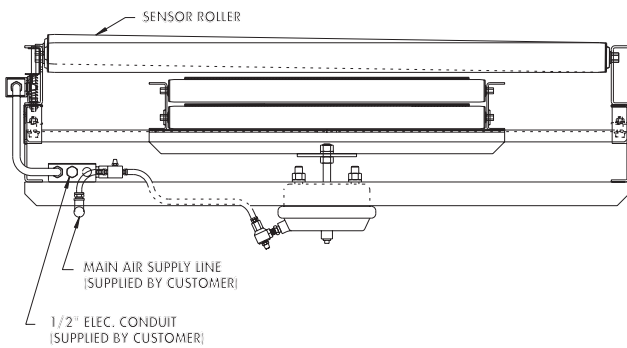
ITEM NO.	PART NO.	DESCRIPTION
1	PNW06282	Air Chamber
2	PNW06100	3/8" NPT Plug
3	PNW06117	3/8" to 1/4" Reducer Bushing
4	PNW06154	1/4" NPT Close Nipple
5	PNW06560	1/4" Quick Exhaust
6	PNW06540-02	1/4" NPT Exhaust Muffler
7	PNW06179	1/4" NPT x 1/4" Brass Barbed Fitting
8	PNW06182	1/8" NPT x 1/4" Brass Barbed Fitting
9	PNW06582-03	45A-AA2-DAAA-1CM Valve
10	PNW06540-03	1/8" NPT Exhaust Muffler
11	PNW06560	1/4" Rubber Air Hose

AIR CHAMBER DETAIL, PARTS LIST W/ OPTIONAL BRAKE ASSEMBLY

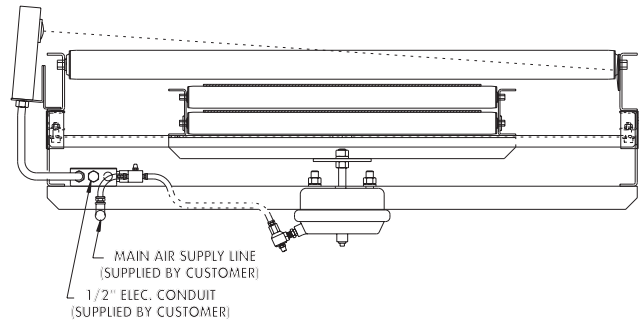


ITEM NO.	PART NO.	DESCRIPTION
1	PNW06282	Air Chamber
2	PNW06100	3/8" NPT Plug
3	PNW06117	3/8" to 1/4" Reducer Bushing
4	PNW06154	1/4" NPT Close Nipple
5	PNW06560	1/4" Quick Exhaust
6	PNW06540-02	1/4" NPT Exhaust Muffler
7	PNW06179	1/4" NPT x 1/4" Brass Barbed Fitting
8	PNW06182	1/8" NPT x 1/4" Brass Barbed Fitting
9	PNW06583	111B-111CA 1/8" Valve
10	PNW06540-03	1/8" NPT Exhaust Muffler
11	PNW06560	1/4" Rubber Air Hose

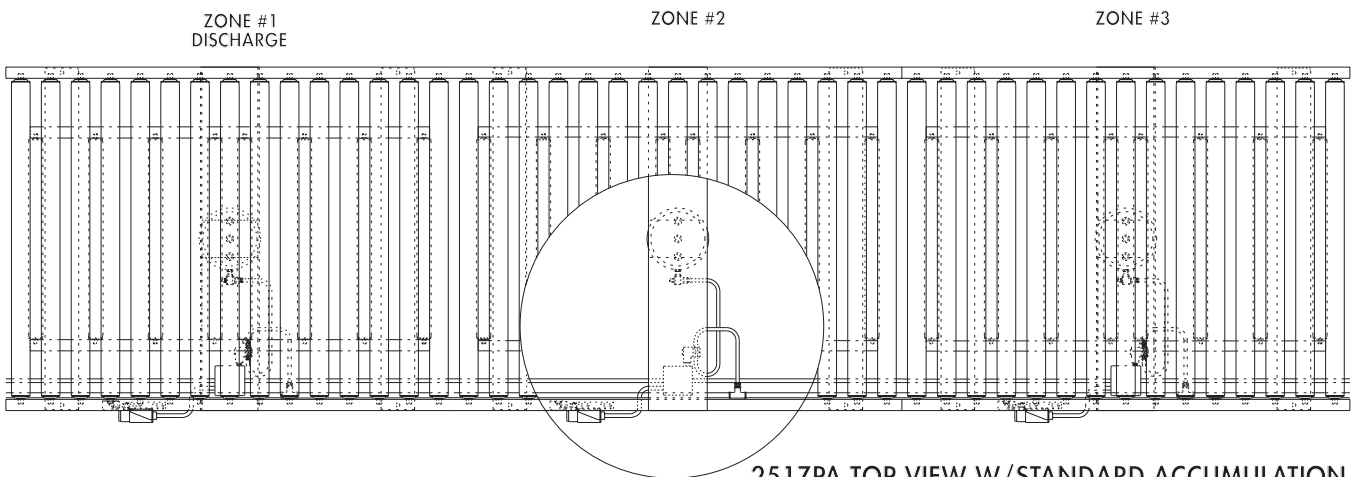
AIR CHAMBER DETAIL, PARTS LIST W/ STANDARD ACCUMULATION



251ZPA END VIEW W/STANDARD ACCUMULATION



251ZPA END VIEW W/OPTIONAL PHOTOEYE CONTROLLED ZONES



251ZPA TOP VIEW W/STANDARD ACCUMULATION



ROACH CONVEYORS

WARRANTY

- Materials used by Roach Conveyors are of good quality.
- Any part proving to be defective in materials or workmanship upon Roach inspection, will be replaced at NO cost, FOB, Trumann, Arkansas, for one year. Installation expense will be paid by others.
- Roach liability includes furnishing said part or parts; Roach is not liable for consequential damages, such as loss of profit, delays or expenses incurred by failure of said part or parts.
- Failure due to abuse, incorrect adjustments, exposure to corrosive or abrasive environment or operation under damp conditions does not constitute failure due to defects in workmanship or materials.
- Component parts not manufactured by Roach (motors, gear reducers, etc.) will be repaired or replaced at the option of their manufacturer. Contact nearest authorized service center for all warranty claims.

NOTE: Motors or gear reducers tampered with before inspection shall be considered free of ALL Warranty Claims.

~~-All specifications are subject to change without notice-~~
~~-Drawings are intended for illustration ONLY and are not to scale-~~

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