

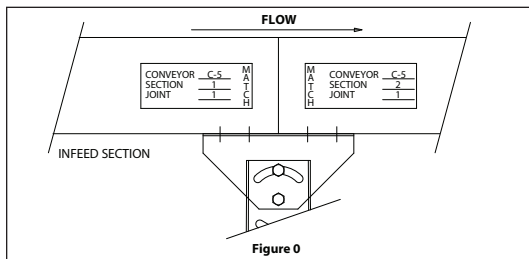
**MODEL "251ACDA" AIR OPERATED ZERO PRESSURE CHAIN DRIVEN PALLET ACCUMULATOR  
ASSEMBLY AND OPERATING INSTRUCTIONS**

**RECEIVING INSTRUCTIONS**

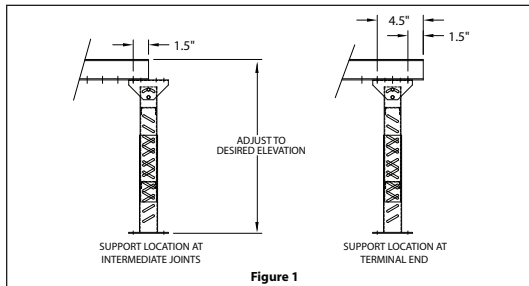
- 1) Prior to uncrating the equipment, check the number of crates, boxes, skids, etc. received against the freight bill to insure that all items shipped are on the job site.
- 2) Check to see that none of the equipment was damaged in transit. If damages occurred, note damages on freight bill and immediately contact the motor carrier and file claim for the damages.
- 3) Transport conveyors on their skids as near the installation site as possible.

**INSTALLATION INSTRUCTIONS – MECHANICAL**

- 1) Remove conveyor sections from their skids and place on floor in proper sequence based on the match mark identification on the conveyor sections and direction of product flow. (See Figure "0" for clarification). If fork lift is used make sure forks or fork extensions are long enough to support both side rails of conveyor.



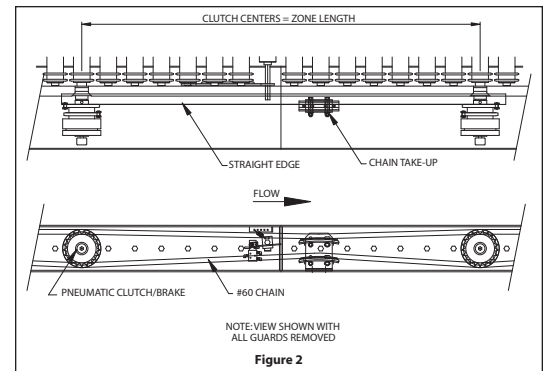
- 2) Beginning with the first section in match mark sequence, and while raised using fork lift, bolt a support at each end, leaving a space for the second bed section on pivot plate. Remember to set stands at proper elevation while section is raised. (See Figure "1" for support positions). Finger tighten bolts only and place into position.
- 3) Remove the next intermediate sections (from skid, using fork lift) in the match mark sequence and add one stand to far end, bolting on 1/2 of pivot plate. Finger tighten stand bolts, carefully turn right side up and attach end without stand to previous section. Repeat this procedure until complete conveyor is assembled.



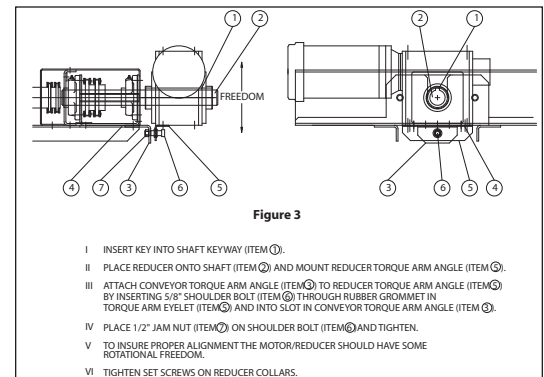
- 4) Do not wrench tighten bolts until unit is assembled, aligned, and lagged to the floor.
- 5) Align Conveyor - To align conveyor, tie a chalk line to the exact center of the pulleys at each end of the conveyor and pull it tight. Take each section of the conveyor starting at one end and align the

frames so that the chalk line is in the exact center of each section of the conveyor.

- 6) Remove front guard from each conveyor section to expose zone to zone RC60 drive chain. (See Figure "2"). Check sprocket alignment with straight edge prior to installing drive chain. Install RC60 chains from section to section on double sprockets and fasten with connecting link. Make sure chain rides over UHMW wear bar as shown in Figure "2".



- 7) RC60 zone to zone drive chains have been properly tensioned at factory. If chain should need adjustment, the UHMW plastic wear bar may be raised by loosening its bolts and sliding it up in the vertical slot. **DO NOT OVER TIGHTEN CHAINS. TIGHT CHAINS CAN CAUSE PREMATURE WEAR OF DRIVE COMPONENTS OR DAMAGE TO OTHER PARTS.**
- 8) Make air line connections at conveyor joints using push-lok connectors.
- 9) Replace chain guards after chains are installed and ensure chains have been checked for proper tension.
- 10) Install shaft mount reducer/motor per Figure "3".



- I INSERT KEY INTO SHAFT KEYWAY (ITEM ①).
- II PLACE REDUCER ONTO SHAFT (ITEM ②) AND MOUNT REDUCER TORQUE ARM ANGLE (ITEM ③).
- III ATTACH CONVEYOR TORQUE ARM ANGLE (ITEM ④) TO REDUCER TORQUE ARM ANGLE (ITEM ③) BY INSERTING 5/8" SHOULDER BOLT (ITEM ⑤) THROUGH RUBBER GROMMET IN TORQUE ARM EYELET (ITEM ⑥) AND INTO SLOT IN CONVEYOR TORQUE ARM ANGLE (ITEM ④).
- IV PLACE 1/2" JAM NUT (ITEM ⑦) ON SHOULDER BOLT (ITEM ⑤) AND TIGHTEN.
- V TO INSURE PROPER ALIGNMENT THE MOTOR/REDUCER SHOULD HAVE SOME ROTATIONAL FREEDOM.
- VI TIGHTEN SET SCREWS ON REDUCER COLLARS.

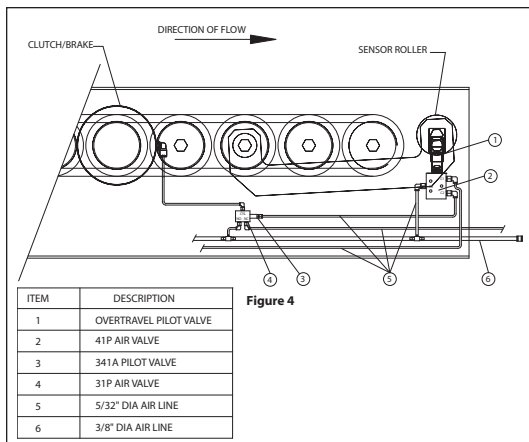
- 11) Install lag bolts (not furnished) through holes in support feet.
- 12) Recheck alignment and wrench tighten all bolts.
- 13) All sensor rollers are wired in the "DOWN" position for shipment. Prior to running conveyor, remove these wires so sensor rollers will move to the "UP" or operating position. **DO NOT RUN CONVEYOR BEFORE REMOVING WIRES.**

## INSTALLATION INSTRUCTIONS – ELECTRICAL

- 1) Connect power to the electric motor in accordance with the name plate on the electric motor. Electrical controls for starting and stopping the conveyor are not supplied as part of the conveyor equipment. Contact a qualified electrician to recommend and install suitable electrical controls for this function.
- 2) Zone #1 (discharge zone) is equipped with an electric solenoid and limit switch (supplied as part of conveyor) to control load release. The logic to control this switch is not supplied as a standard part of the conveyor.

## ZERO PRESSURE ADJUSTMENT

- 1) For the accumulation feature to work trouble free, it is important that the air supply be CLEAN and DRY. A contaminated air supply can cause malfunctions with the air valves on the sensor roller assemblies which will not allow the accumulation feature to work properly. To aid in determining the volume of air required to operate the system, each pneumatic clutch/brake requires .075 cu. ft. of air per cycle at 40 PSI.
- 2) Connect air supply to filter/regulator and set air pressure on regulator at 40 PSI. If load will not move when placed on conveyor, increase air pressure gradually until load moves easily and without interruption. DO NOT operate at more than 80 PSI.
- 3) Each accumulation zone is equipped with a "sensor roller" which, when product depresses it, activates the accumulation feature. These sensor rollers have been factory set and should not require field adjustments. See Figure "4" for description of components.



## SAFETY INFORMATION

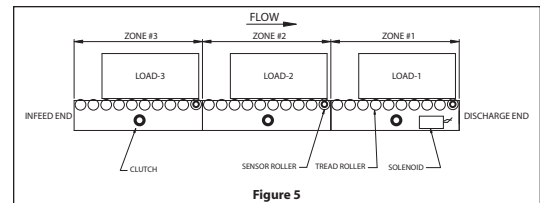
- 1) After completion of conveyor installation and **BEFORE** operation, personnel operating the conveyor must be properly trained in its use. It is recommended these employees be walked through the proper sequence of starting and stopping the motor drive, shown where hazardous areas exist along the length of the conveyor (identified by safety labels attached to the conveyor frame and drive guards) and correct loading and unloading methods. Make sure safety labels are legible and that personnel understand their meaning.

- 2) Conveyor should **NEVER** be operated with any of the safety guards removed as physical harm could come to the user. All pinch points of the conveyor are guarded and also identified by safety labels attached in the guarded pinch point area. Instruct users to turn the conveyor off and notify the proper personnel should a guard be missing and the conveyor is running.
- 3) Only qualified maintenance personnel should perform work on the conveyor. Should the unit require maintenance, **disconnect conveyor motor drive from power source before attempting to adjust or repair conveyor.** If guards were removed to perform the maintenance task, they must be replaced before attempting to operate conveyor. If guards are damaged and become unusable they must be replaced. Locate the conveyor's serial number plate, which is mounted near the motor drive, and contact your ACSI distributor for a replacement. He will need the serial number of the conveyor to secure the correct guard.

## SEQUENCE OF OPERATION

### LOADING THE CONVEYOR (See Figure 5)

- 1) When a load is placed on infeed end of conveyor it will continue to travel the length of the conveyor until it reaches the last zone (at discharge end) of the conveyor (Zone #1). At this time the load will depress sensor roller #1 which activates a pneumatic pressure switch to indicate a load is in Zone #1. This pressure switch sends a signal to external controls (not supplied by ACSI). External controls will determine whether or not to accumulate the load. If accumulation is desired the solenoid (supplied) should be activated to stop the load in Zone #1.

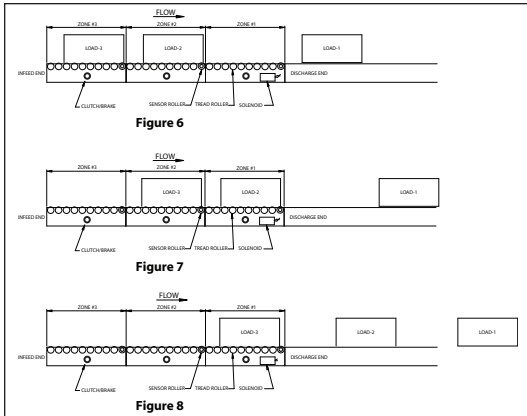


- 2) As soon as sensor roller #1 is depressed, it sends an air signal to Zone #1 indicating Zone #1 is occupied.
- 3) When load #2 depresses sensor roller #2, the clutch/brake in Zone #2 is disengaged allowing load #2 to accumulate. At the same time, an air signal is sent to Zone #3 indicating Zone #2 is occupied. This sequence of events will continue until the conveyor is fully loaded.

### UNLOADING THE CONVEYOR

- 1) To activate Zone #1 to release load #1, an electrical signal (120VAC) must be sent to the solenoid switch controlling the clutch/brake in Zone #1. **THIS EXTERNAL SIGNAL IS NOT SUPPLIED AS PART OF THE CONVEYOR EQUIPMENT.**
- 2) When the electrical signal is received by the solenoid switch controlling the clutch/brake in Zone #1, load #1 will be discharged from the conveyor (See Figure "6").
- 3) As soon as load #1 clears the sensor roller in Zone #1, load #2 will advance into Zone #1 and stop when it depresses sensor roller #1 (See Figure "7"). The 120VAC external signal must again be sent to the solenoid controlling the clutch/brake in Zone #1 to discharge load #2.

- 4) As soon as load #2 clears sensor roller #2, load #3 will advance to Zone #2 and stop on sensor roller #2 (See Figure "8").
- 5) This sequence continues automatically as long as the loads in Zone #1 are removed, creating an opening for the loads to advance.



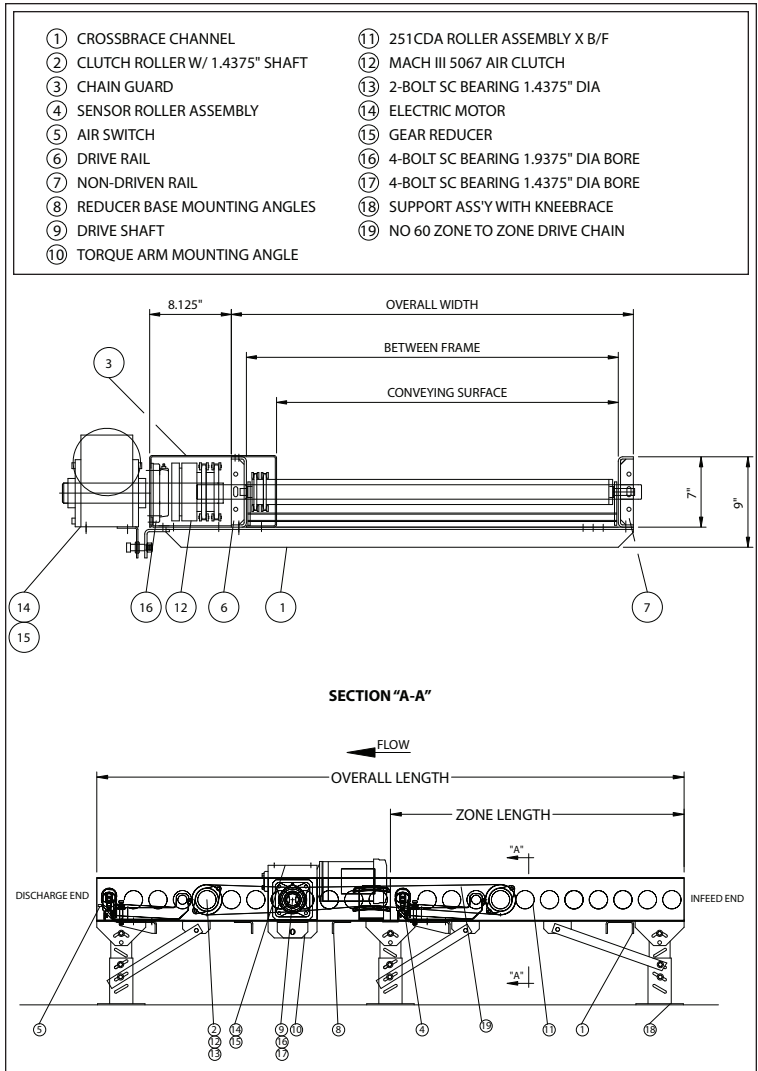
**NOTE: The above sequence of operation covers the standard operating procedures of the "251ACDA." For other options that are available for special applications or requirements contact factory.**

### PREVENTATIVE MAINTENANCE

(See Lubrication and Maintenance Check List for more details.)

- 1) **DRIVE CHAINS** - Every 500 hours - Wipe off grease with solvent and apply clean SAE 20 motor oil. Check tension on main drive chain (1/4" - 2% (of sprocket centers) movement midway between sprockets). Use straight edge and check sprocket alignment.
- 2) **ELECTRIC MOTOR** - Every 1000 hours - Remove grease plugs (if supplied on motor) and grease motor bearings sparingly with ball bearing grease.
- 3) **SPEED REDUCER** - Every 750 hours - Remove filler and drain plugs. Flush and refill with lubricant suggested by reducer manufacturer.
- 4) **TREAD ROLLERS** - Every 500 Hours - Make sure all rollers turn freely. Replace any that are dented, warped, binding, etc.
- 5) **FLANGE MOUNTED BEARINGS (PULLEYS)** - Every 1000 hours - Grease pulley bearings through grease fittings using grease gun. **CAUTION:** Do not over grease.
- 6) **ENTIRE CONVEYOR** - Daily, weekly. - Look for any abnormal action of conveyor, oil leaks, unusual noises, etc. Repair at once.

### - PARTS LIST - 251ACDA



**- PARTS LIST -**  
**251ACDA**

- ① 0.375" X 0.25" NPT FEMALE ELBOW
- ② 0.125" NPT PLUG
- ③ 0.15625" X 0.125" NPT MALE CONNECTOR #68PL
- ④ 41P HUMPHREY VALVE
- ⑤ PNEUMADYNE OVER TRAVEL PILOT VALVE
- ⑥ PILOT VALVE SPRING
- ⑦ BARBED UNION TEE 0.375" X 0.15625"
- ⑧ 0.375" DIA POLYETHYLENE AIR LINE
- ⑨ 0.15625" DIA POLYETHYLENE AIR LINE
- ⑩ 31P HUMPHREY VALVE
- ⑪ 341A HUMPHREY PILOT VALVE
- ⑫ 0.15625" X 0.125" MALE SWIVEL ELBOW
- ⑬ 0.15625" TUBE UNION (PARKER# 62PL-5/32)
- ⑭ 0.375" TUBE UNION (PARKER# 62PL-6)
- ⑮ 0.15625" X 0.25" NPT MALE CONNECTOR

**INFEEED ZONE**

- ① 0.15625" X 0.125" NPT MALE CONNECTOR
- ② 41P HUMPHREY VALVE
- ③ PNEUMADYNE OVER TRAVEL PILOT VALVE
- ④ PILOT VALVE SPRING
- ⑤ BARBED UNION TEE 0.375" X 0.15625"
- ⑥ 0.375" DIA POLYETHYLENE AIR LINE
- ⑦ 0.15625" DIA POLYETHYLENE AIR LINE
- ⑧ 31P HUMPHREY VALVE
- ⑨ 341A HUMPHREY PILOT VALVE
- ⑩ 0.15625" X 0.125" NPT MALE SWIVEL ELBOW
- ⑪ 0.15625" TUBE UNION (PARKER# 62PL-5/32)
- ⑫ 0.375" TUBE UNION (PARKER# 62PL-6)

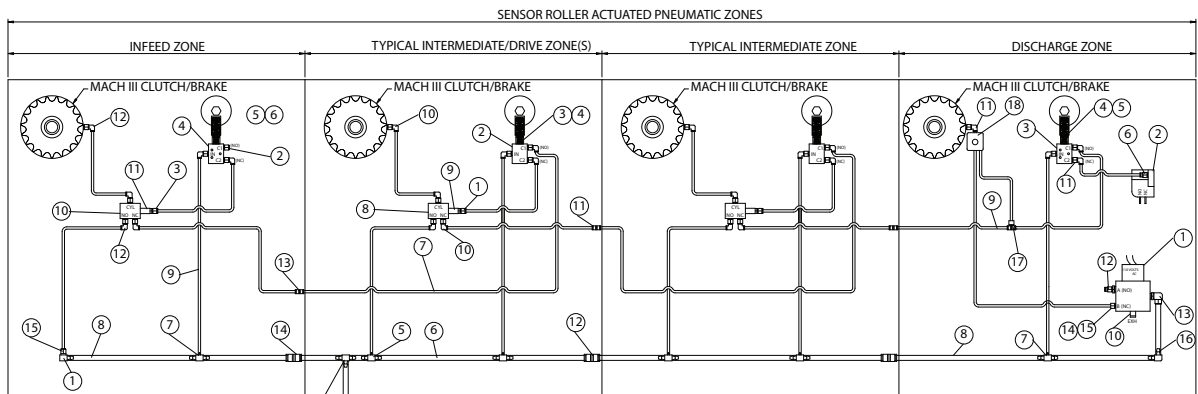
**INTERMEDIATE ZONE OR DRIVE ZONE**

- ① VERSA SOLENOID VALVE 110 VOLTS AC # KSG-4332 WITH KM445E
- ② PRESSURE SWITCH F4200-100
- ③ 41P HUMPHREY VALVE
- ④ PNEUMADYNE OVER TRAVEL PILOT VALVE
- ⑤ PILOT VALVE SPRING
- ⑥ 0.15625" TUBE X 10-32 MALE CONNECTOR
- ⑦ BARBED UNION TEE 0.375" X 0.15625"
- ⑧ 0.375" DIA POLYETHYLENE AIR LINE
- ⑨ 0.15625" DIA POLYETHYLENE AIR LINE
- ⑩ C-38 SPEED CONTROL VALVE
- ⑪ 0.15625" X 0.125" NPT MALE SWIVEL ELBOW
- ⑫ 0.375" NPT PLUG
- ⑬ 0.375" TUBE X 0.375" NPT MALE ELBOW
- ⑭ 0.375" NPT X 0.25" NPT BUSHING
- ⑮ 0.15625" TUBE X 0.25" MALE CONNECTOR
- ⑯ 0.375" TUBE BARBED UNION ELBOW
- ⑰ 5/32" TUBE OD PUSH CONNECT UNION TEE
- ⑱ "OR" VALVE 5/32" 190LS/ZPA ZONE DIR VALVE

**DISCHARGE ZONE**

NOTE:  
TO CONTROL PRODUCT RELEASE IN DISCHARGE ZONE, A PNEUMATIC PRESSURE SWITCH AND A SOLENOID VALVE ARE SUPPLIED. ADDITIONAL WIRING AND CONTROLS ARE REQUIRED. (NOT SUPPLIED)

FLOW →



FILTER/REGULATOR COMBINATION TO BE MOUNTED  
 AT AN INTERMEDIATE ZONE  
 FILTER/REGULATOR ASSEMBLY

MAXIMUM AIR PRESSURE = 80 p.s.i.  
 OPERATING AIR PRESSURE = 40 p.s.i. - 80 p.s.i.  
 AIR PRESSURE DETERMINES TORQUE OF CLUTCH.

- ① FILTER/REGULATOR COMBINATION
  - ② FILTER/REGULATOR MOUNTING BRACKET
  - ③ FILTER/REGULATOR MOUNTING ANGLEE
  - ④ 0.375" X 0.375" X 0.375" BARBED TEE
  - ⑤ 0.375" X 0.25" NPT MALE ELBOW W/ BUSHING
  - ⑥ 0.375" DIA POLYETHYLENE AIR LINE
- FILTER/REGULATOR ASSEMBLY**  
(1 PER ASSEMBLY)