Curestar Dryer

Infrared Conveyor Dryer

Manufactured by Ranar

IMPORTANT UNIT INFORMATION

This dryer's Serial No. is: _____

*Date Sold:*_____

*Sold by:*_____

Electrical Specifications

*Voltage:*_____

*Amps:*_____

For more information you may consult the wiring diagram on the last page.

For additional help you can contact us at:

1-800-421-9910 or **support@ranar.com**

WARRANTY

3 years on the mechanical parts

2 years on the heating elements

1 year on electrical parts

Warranty is limited to parts only. **Labor is not included**. Parts under warranty need to be returned to Ranar for inspection **before** replacement part is shipped.

Shipping will be covered inside the continental U.S. by UPS ground only and will be subject to inventory on hand. Any expedited service will be at customer's expense. **This warranty is not transferable and only covers the original owner**.

Send defective part to:

Ranar Screen Printing Equpiment Inc

1340 Stylemaster Dr.

Union MO 63084

CAUTION
THESE PRECAUTIONS ARE FOR THE SAFEY OF PERSONNEL
INSTALLING, OPERATING AND SERVICING OF
RANAR HEATING AND DRYING EQUIPMENT

INSTALLATION

1. Electrical supply connections shall be to uniform safety electrical code.
2. Chassis of dryer shall be wired to a properly grounded (earth) outlet.
3. Electrical supply shall be connected as shown on equipment wiring diagram.
4. If inks used discharge offensive vapors, venting of oven to the outside is necessary. If venting has a horizontal run more than 16 feet, an exhaust fan may be needed at exit of building.

CAUTION

1. The heaters reach temperatures above 1000° F (600° C). Use extreme care to keep hands away from heaters if it is necessary to reach inside of dryer be aware of heater.
2. Keep flammables such as paint and solvents away from dryer.
3. Keep all covers that enclose electrical wiring in place at all times while operating.
4. Never leave dryer running unattended.
5. Keep children and pets clear of the dryer.
6. Only authorized employees that have been instructed on the proper use should operate the dryer.
7. Never attempt to run dryer with visible damage to electrical/mechanical parts.

IMPORTANT:

Should motor overload fuse, replace it with 1.5 or 2 Amp fuse. A larger rated fuse could damage the motor control.

SERVICING

1. Only qualified persons should attempt to service equipment.
2. Unplug or switch off electrical supply at the main disconnect before servicing equipment.
3. Make sure dryer is cooled before servicing.

Assembly

Your conveyor dryer is partially or fully assembled at the factory. Occasionally, only minor assembly must be completed in order for your dryer to operate properly.

Hardware provided

LEG BOLTS – Assembles legs and attaches to conveyor

- *20 - ¼-20 Kep Nuts*
- *20 – ¼ Flat Washers*
- *20 – ¼-20 x 5/8 Hex Bolts*

DECK JOINERS – Bolts to connect deck sections together

- *20 – ¼-20 Kep Nuts*
- *20 – ¼ Flat Washers*
- *20 – ¼-20 x 5/8 Hex Bolts*

DECK BOLTS – To attach oven hood to conveyor

- *4 – ¼-20 Kep Nuts*
- *4 – ¼ Flat Washers*
- *4 – ¼-20 x 1 Hex Bolts*
- *(Larger dryers may include additional hardware)*

GALVANIZED DECK – To attach deck to conveyor

- *6 – ¼-20 Kep Nuts*
- *12 – ¼ Flat Washers*
- *6 – ¼-20 x 5/8 Hex Bolts*
- *(Larger dryers may include additional hardware)*

GATE KNOBS – Attaches gates to entrance and exit of dryers

- *4 – 3/8-16 Gate Knobs*

Step 1. Identify all the parts of your unit. Four (4) legs, two (2) braces, two (2) conveyor frames, two (2) deck joiners, one (1) galvanized deck, one (1) belt, one (1) oven hood, etc. *Special parts for custom dryers not listed, please look for and identify these before continuing. Check to make sure that you do not throw out any small parts when unpacking and discarding packaging. Please note that larger units will have more legs & braces to sustain the additional weight.*

Step 2. Assemble Conveyor. *Place conveyor frame sections upside down on floor or accessible flat surface. Push together the two (2) sections such that the pulley tubes are at the ends. Using the "L" shaped deck joiners, bolt together each with the hex head screws supplied. (10) bolts and nuts per deck joiner.*

Step 3. Assemble the Legs & Install Conveyor. *Dryers generally have two (2) sets of legs and a pair of braces but additional legs & braces may be necessary for larger dryers.*

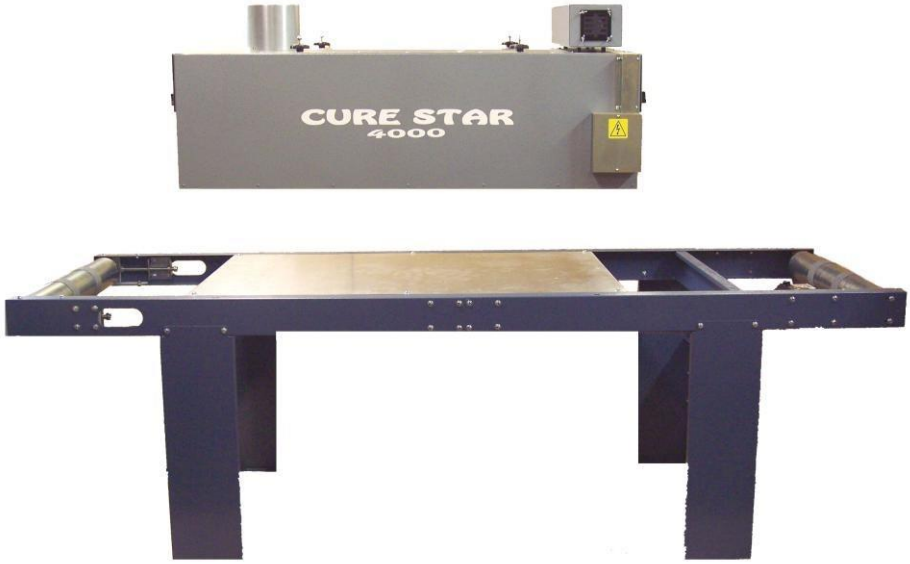
Step 3a. Install casters. (Optional) *If requested, add casters to the unit now. Assemble the caster frame first and then mount caster frames onto the legs of the unit. Set casters to locked position before turning unit over.*

Step 4 Install Galvanized Deck. *Turn the conveyor over and set it upright on its legs. Set the galvanized deck in place and bolt down using hardware provided.*

Step 5 Install oven hood. *Place the oven hood on top of the conveyor deck and bolt into place. Curestar model come from the bottom into the threaded holes on the oven. Bolts for Curestar models come from the bottom into the threaded holes on the oven.*

Hardware needed:

- *4 ¼-20 bolts*
- *4 rack washers*
- *4 flat washers*

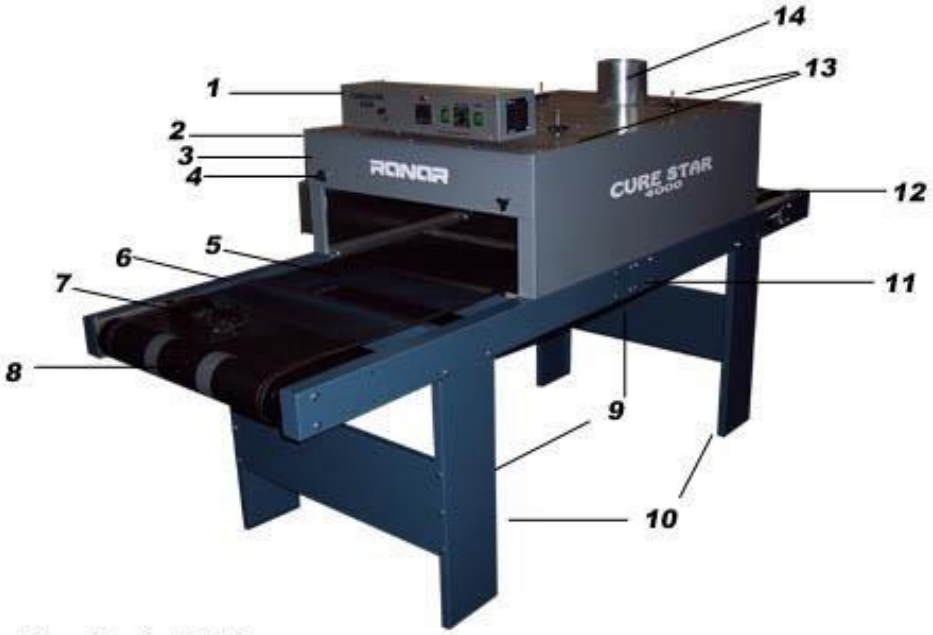


Step 6 Install belt. *See "Start-up procedure", "Conveyor belt installation" and "Belt Guidance Tips" on the following pages.*

Step 7 The dryer is now ready for electrical hook-up. *Only qualified electricians are recommended for hooking up the electrical service to the dryer. The electrical requirements are located on a metal tag on the service box.* ***Make sure the conveyor dryer is properly grounded****.*

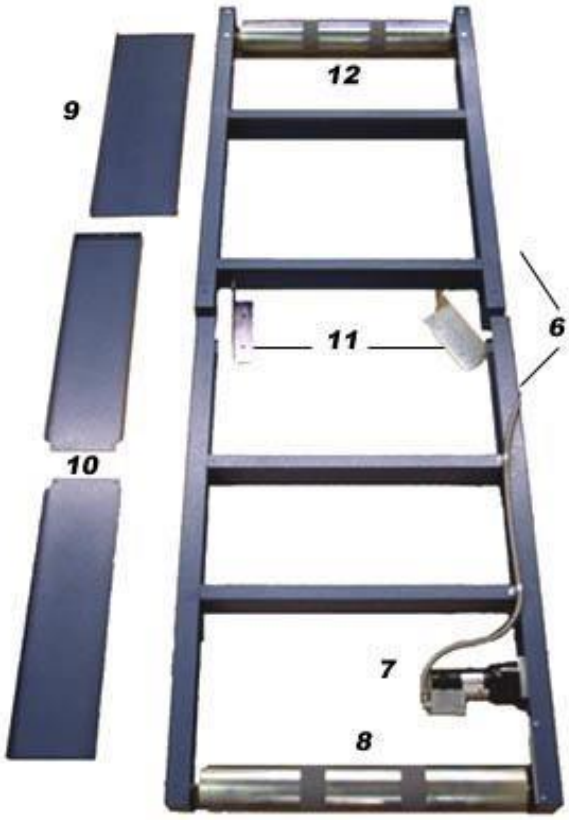
Note: If your dryer requires a neutral, please do so. Some components within the control box run on 220v/110v. Failure to wire your dryer correctly may cause you to short out the motor control as this in many cases utilizes 110v.

Note: The dryer is designed to run on 220V/240V if you have anything less such as 208V, the performance difference is approx 10% and the dryer will not heat up as much.



Curestar Parts List

1. Control Box
   (See: Description of Controls)
2. Hood
   a. Heaters
3. Gates
4. Gate Knobs
5. Belt
6. Conveyor frame
   Drive end (front) & Adjustable End (rear)
7. Motor
   a. Motor Sprocket
8. Drive Roller
   a. Bearings (2)
   b. Sprocket
   c. Shaft
   d. Chain
9. Braces (2)
10. Legs (4)
11. Deck Joiners
12. Adjustable roller
    a. Bearings (2)
    b. Shaft
13. Height Adjustment Handles (4)
14. Vent (6 1/2" Diameter)



START-UP PROCEDURE

1. Turn on **Power Switch**
2. Turn on B**elt Speed Control**. The light should be on indicating power to speed control. By turning the dial clock wise the belt will start moving. (See chart for belt speed setting in ft. per minute)
3. Set heat panel height using the 4 knobs located on top of the oven section, behind the control box.

   The height should be set to 4 inches off the belt.
4. Set temperature control (see instructions on page 12)
5. Track belt (see instructions page 14)

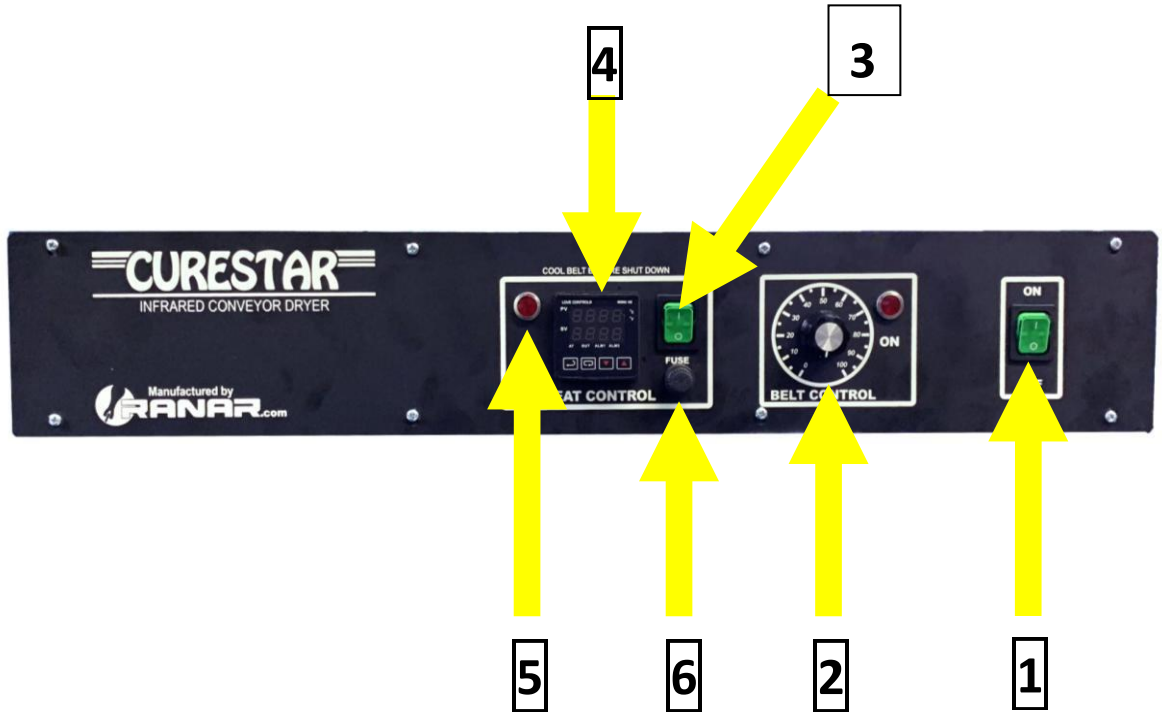
Note: For recommended settings to cure plastisol see page 16

TURNING THE DRYER OFF

1. Turn the heaters off first by pushing the heater switch to the off position. This will turn off the heat control which will in turn shut down the heat.
2. Continue to run the belt. It should take about 10-15 minutes for the dryer to be cool enough to turn the rest of the dryer off.

Important: Ensure belt is moving at all times when heat is on. Belt can withstand up to 500 degrees Fahrenheit.

DESCRIPTION OF CONTROLS



1. MAIN POWER SWITCH – 220V

Turns on power to dryer controls and activates process temperature display

2. BELT CONROL

Regulates belt speed from 0-25 fpm. Markings on belt control are for reference only and do not represent actual speed.

3. HEAT SWITCH – 120V

Activates heat control's micro-processor. When this switch is off, heat will be off. **4. HEAT CONTROL**

Micro-processor controls temperature of heater panel.

(See page 11 for operation guide)

5. PILOT LIGHT

When on, indicates that electricity is going into the heater and the heater panel is on. When heater(s) reach set temperature, this light will cycle on and off, indicating that the heater is self-regulating to maintain set temperature. If light does not come on, there may be a problem with the control relay or heater (heating circuit).

6. 1.5 AMP FAST BLOW FUSE

Motor control and heat control are on this fuse circuit.

HEAT CONTROL MICRO-PROCESSOR

Step by step procedure for setting heat temp using digital readout micro-processor heat control.

The system consists of three parts:

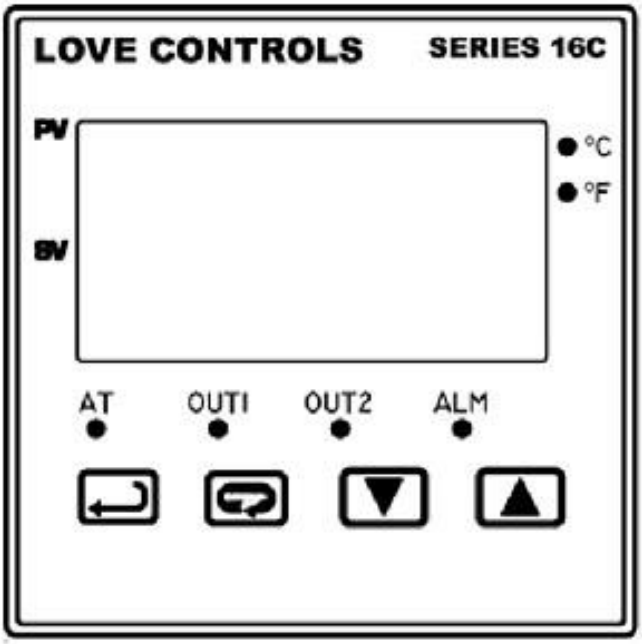
- A digital readout and touch keys at the front of the control panel
- A solid state relay in the electrical control box that turns on the heater(s).
- A temperature sensing thermal-couple in the heater that reads panel temperature.

Note: It is important to understand that the temperature reading at the controller is the heater temperature and not the temperature on the belt surface. The temperature on the belt will be lower. The surface temperature is a product of heater height, panel temperature and belt speed.

Refer to diagram and list of functions of key and display on the Love Control Series 16C.

1. Switch on the power to heat control. Digital reading will show PV value (red), which is the actual temperature of the heater, and SV value (green), which is Set Value (what temperature you want the heaters to reach). Note: when switched on you will see the green light below the "out" symbol turn on and also the red heater indicator light at the same time.
2. To set the SV (set value) use the ▲ (up) and ▼ (down) arrows. The numbers will blink until you push the Enter button on bottom left (see front key functions on next page).
3. Once the SV is set, you should notice the PV temperature increasing or decreasing depending on what the previous setting was.
4. The temperature is in either °F or °C, whichever the light is next to. To change, please contact Ranar Manufacturing Co., Inc. for instructions.

Note: The maximum temperature of the heat panels are approximately 1100° F. Setting the temperature above this value will result in the heater temperature leveling off at the heaters maximum temperature. This will vary depending on the input voltage of the dryer. 208 voltage may have a maximum of 950° F compared to 240 voltage, which may max out at 1100° F.



FRONT KEY FUNCTIONS

Key Functions are as follows:

INDEX: Pressing the INDEX key advances the display to the next menu item.

*UP ARROW: Increments a value or changes a menu item. If pressed during the **Operation Mode**, the set point value will increase*

*DOWN ARROW: Decrements a value or changes a menu item. If pressed during the **Operation Mode**, the set point value will be decreased.*

*ENTER: Stores the value or item change. If not pressed, the previously stored value or item will be retained. When pressed during the **Operation Mode**, the controller switches to the **Regulation Mode**. If held for more than 3 seconds during the **Operation Mode**, the controller switches to the **Initial Setting Mode**. If pressed during the **Regular Mode** or **Initial Setting Mode**, the controller will return to **Operation Mode**.*

CONVEYOR BELT INSTALLATION AND
START-UP PROCEDURE

1. Inspect the belt prior to installation for damage which can occurred in transit or handling.

2. Align and level all rollers and ensure that the dryer is level.

3. Place the belt around the deck, over the rollers and through the oven section.

4. Connect both ends of the belt. (*See next page for instructions*)

5. Apply only a sufficient amount of tension to the take-up rolls to take the slack out of the belt and eliminate slippage on the drive rollers. The exact amount will vary from machine to machine. Experience will dictate established running tension. **Remember, the less tension the better.**

6. Using the cross rail of the dryer as a guide, align the splice pin (zipper) on both sides to ensure the belt is square. Apply tension to the belt evenly to ensure that it is square. **Do not over tension the belt or over tension either side.**

7. Gradually bring oven up to operating temperatures, constantly checking belt tracking. Grip tape on roller will help with traction and tracking. Adjust the roller you have selected to manually track the belt, as required. Changes in temperature will cause slight variation in belt tension, needing continued adjustment of the selected manual tracking roll.

8. Monitor tracking for ten minutes to ensure that the belt continues to track satisfactorily. If the belt moves to one side, move the belt back to the middle of the roller to ensure the correct tracking.

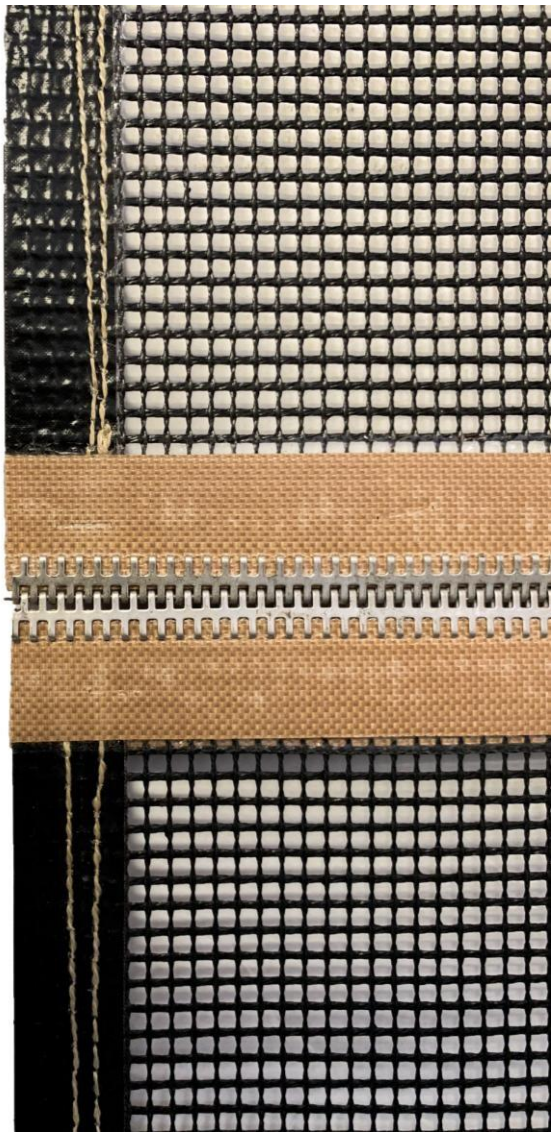
9. Check the belt tension. Increase/reduce (whichever the case) the amount of tension equally on each side of the take-up roll so to maintain the exact roll alignment present while the belt was tracking within tolerance (plus or minus ½").

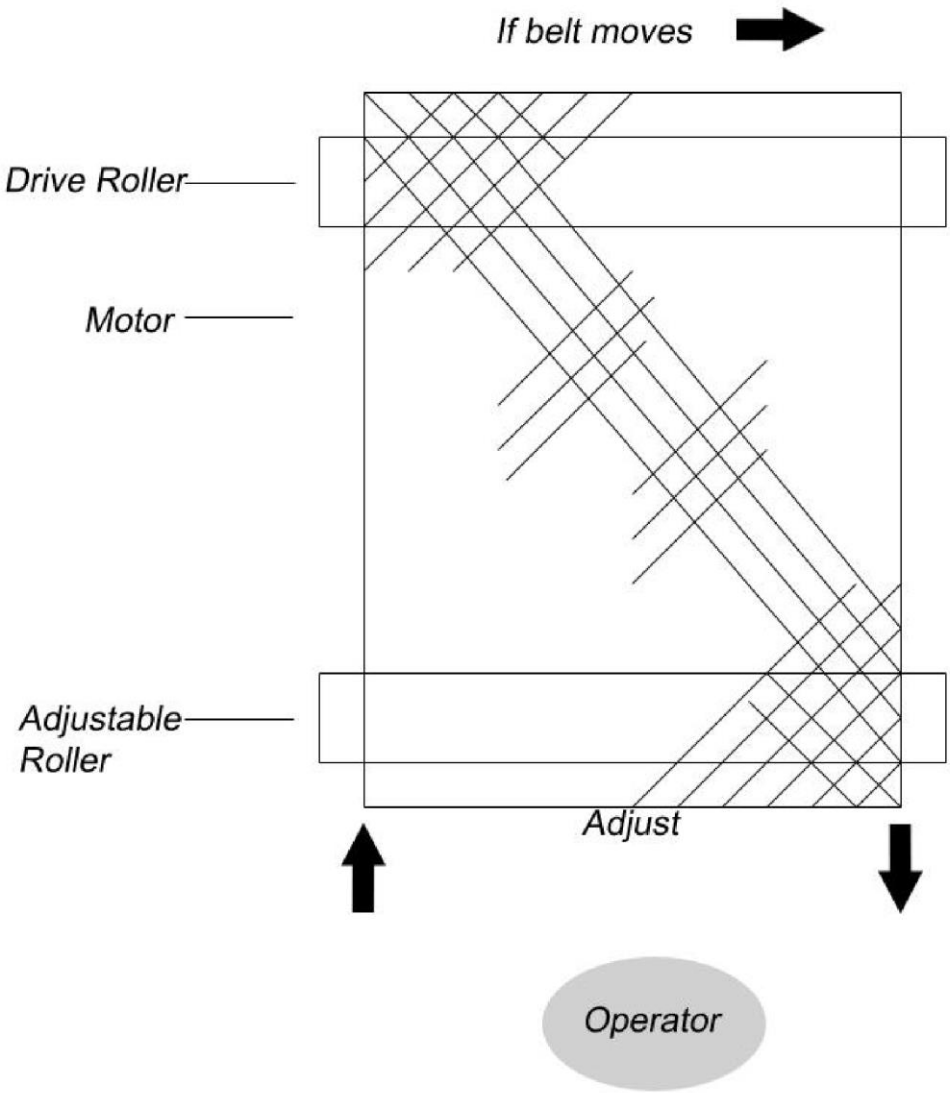
Connecting Belt

1. Belt ends with alligator splices. Line up both ends of the belt as evenly as possible.

2. Slide included pin through the zipper eyelets.

3. Cut off any excess wire to avoid catching edge while belt is running





Stand at the adjustable roller facing the unit.

- If your belt moves toward your right, then adjust right side out, or left side in.
- If your belt moves toward your left, then adjust left side out, or right side in.

Recommended Set up to Cure Plastisol Inks

- Maximum productions settings: Set heater panel temperature to 1100 degrees Fahrenheit. Set belt speed to 20 on the dial. Set panel height to 4 inches from the belt. Run curing test on shirt.
- There are many ways to setup your dryer.
    1. Panel Height
    2. Heat Temperature
    3. Belt Speed
- If you have a fixed temperature, you can vary that temperature by speeding up or slowing down the belt.
- Raising or lowering the panel height of the heater will also affect your temperature.

You may want to change the way you run the conveyor dryer to fit your needs. Run some tests to check if the plastisol ink is cured. Thicker deposits of ink would require more heat or time in tunnel to cure thoroughly.

Tips for checking the cure of plastisol inks

- Conduct a stretch test of the ink after its cured and cooled.
- Do a wash test of the garment to verify cure is correct.
- As garment is exiting the heater panel (this is the appropriate point) check with temp gun. Note: *if you wait for the garment to exit the oven it will already have cooled.*

Typical cure temperatures

- The cure window for plastisol on white shirts is 330-375 degrees Fahrenheit.
- Black shirts with white ink typically cure at 385 degrees Fahrenheit.
- If the shirt has been printed using the under base technique the cure window is 375-390 degrees Fahrenheit.

DRYER MAINTENANCE

CONVEYOR BELT

Check frequently for rips, wear and tear – especially at the edges – and look carefully for problems with the tracking.

Be sure to track belt to center of rollers. Failure to track correctly will damage the edges when it runs to the edge of the rollers.

GENERAL INSPECTION

Lint should be cleaned or vacuumed from the dryer every 6 months or more often if the unit is operated on more than one shift. Lint build-up will vary depending on the dryer's application. Plastics and electronics industries have cleaner production environments and will not require as frequent cleanings as in the case of curing ink on textiles. Therefore, the cleaning schedule should be adjusted accordingly. Special areas to check are:

1. *Exhaust Vent* should be checked once every 6 months for lint and foreign debris build up.
2. *Control Box Filters.*
3. *Interior of Oven*.

MOTORS

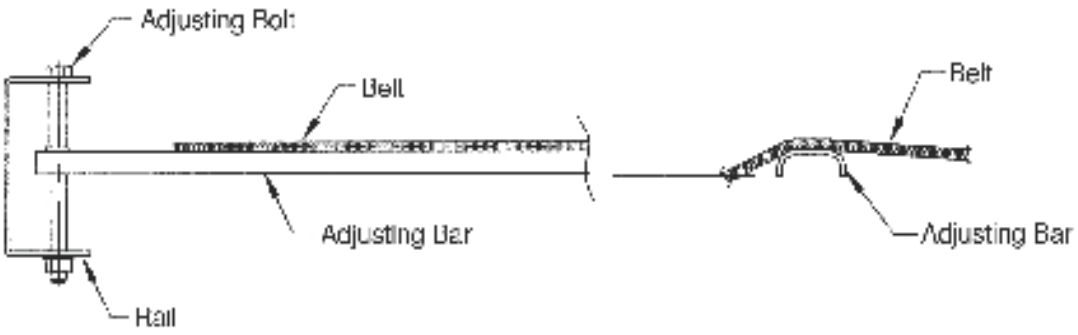
1. *Gear Motor and chain drive* should be checked once a year for dirt, lint and foreign debris. 2. *Control box cooling Fan* should be checked every 6 months for dirt, lint and foreign debris.

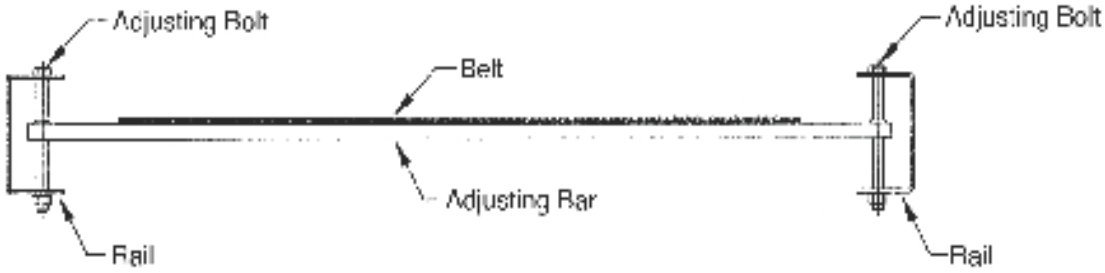
3. *Gear Motor* brushes need to be checked once a year.
4. *Lubrication* of *Gear Motor, Chain Roller Bearings* should be done every 6 months.

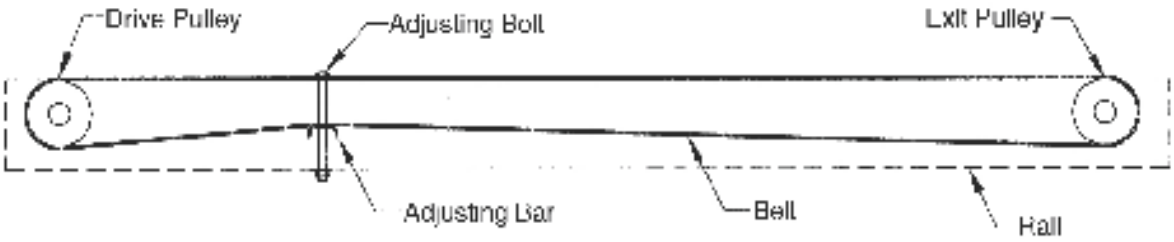
ELECTRICAL WIRING

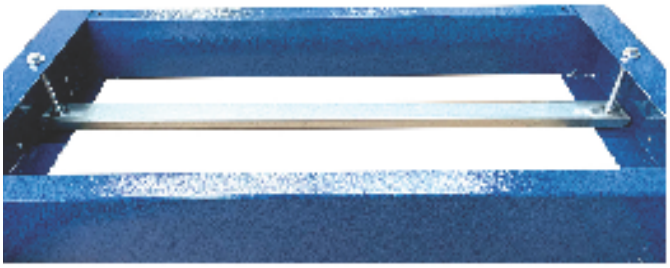
Once a year (maybe more often depending on humidity/climate where unit is operating) a visual inspection of the control box wiring is recommended (the control box can be opened by unscrewing the top panel). The visual inspection should be done for wires or terminals that may look corroded, discolored or damaged. To prevent unexpected down-time, damaged wires and terminals should be replaced with new ones as soon as possible.

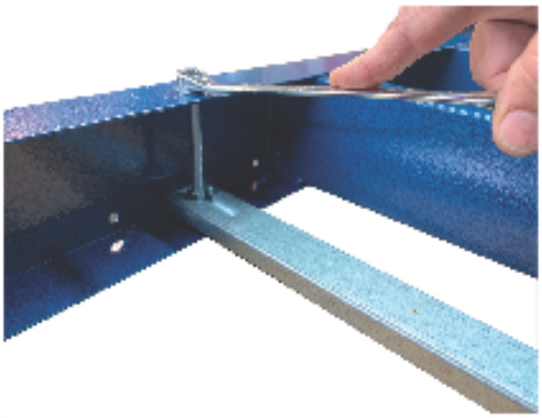
Heating panel terminals should also be checked for potential damage or corrosion once a year. This is lowering the panel to the belt and removing the cover of the electrical box on top of the heater.











To Help track belt, turn adjusting nut on either side of the dryer entrance. If the belt tracks to the motor side, make the channel higher on that side or lower on the opposite side.

Note: Belt should ride on top of adjusting channel. Belt does not need to be super tight.