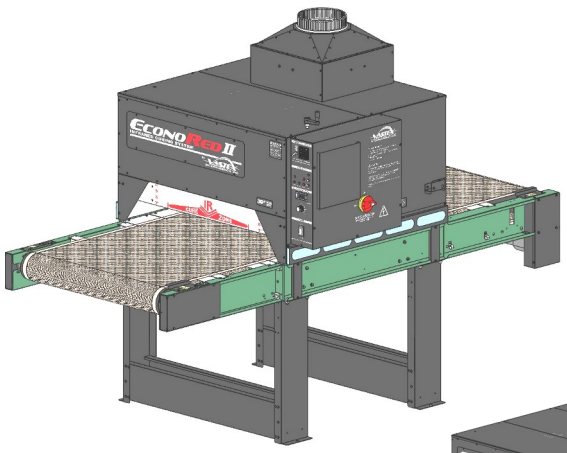
Year of Manufacture: 20____

Doc. # 01-32-001E April 14, 2025

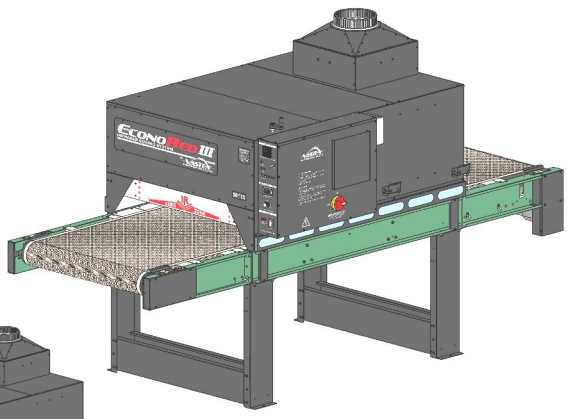
Original Instructions

EconoRed (ER) Series Dryers

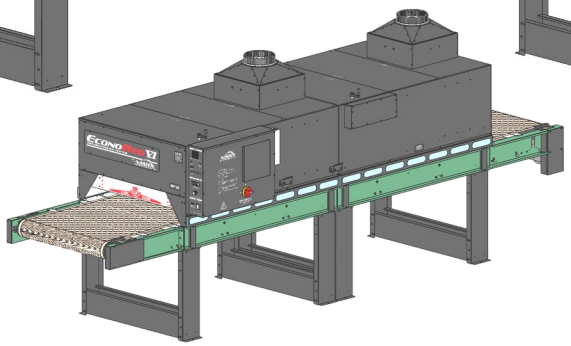
Assembly, Operating, and Maintenance Instructions for EconoRed II, EconoRed III & EconoRed VI Dryers



(ER-II-30 Shown)



(ER-III-30 Shown)



(ER-VI-30 Shown)

Electrical Drawing #: _____ Rev:_____

Serial Number: VTX_____ Date:____/____/_____

(Please log your machine's serial number and date of purchase for future reference.)

Vastex International, Inc.
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Bethlehem, Pa. 18015 USA
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Vastex E-mail assistance

Purchasing & Product Info:
sales@vastex.com

Tech Support:
techsupport@vastex.com

Warranty

A copy of the warranty is also available at:
https://www.vastex.com/Library.php

Introduction

Congratulations, you have chosen a VASTEX conveyor curing system. VASTEX has been designing and building dryers since 1960 and has the knowledge and expertise to supply a quality dryer and help you keep it running for years to come. VASTEX has innovated many of the features found in conveyor ovens today from control methods, modular features, air movements and belt tracking.

Your Vastex Infrared Dryer has been Factory tested and burned in for a period of 2-8 hours. All components are tested to be sure they work correctly when the Dryer leaves our factory.

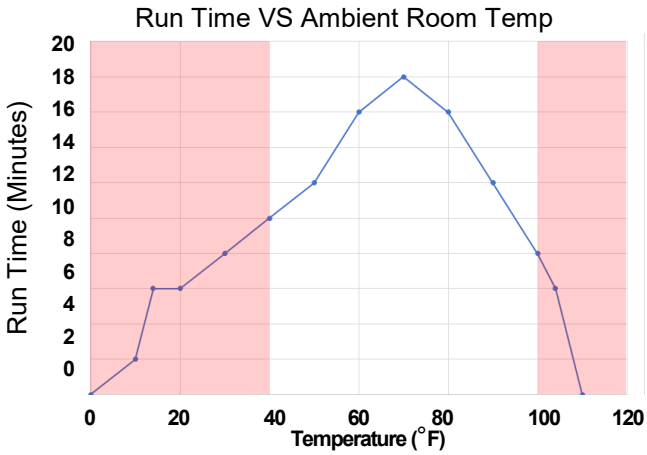
Environmental Conditions

Your conveyor dryer must be operated in a controlled environment to achieve best performance, longest service life, and to take advantage of an industry leading warranty period. Failure to follow these guidelines may result in machine damage and warranty being void.

Ambient Operating Temperature: No less than 40°F(5°C) and no more than 100°F(37°C)

Maximum Humidity: 80%

Maximum Duty cycle: 18 hrs @ 70°F(21°C)
Your dryer must be powered down for 30 minutes if it is to be operated in excess of recommended Run Time. Please see chart.



Safety

The Instruction Manual and Safety Instructions must be read and understood by anyone operating the Vastex Conveyor Curing System.

- The operator should read and understand the instruction manual before operating this equipment. Store instruction manual and safety instructions near equipment for easy access to operators.
- VASTEX Conveyor Curing System is intended for the curing of non-flammable inks on screen printed materials. Do not use for any other purpose unless authorized by Vastex International, Inc. Use of this equipment for any other purpose can be dangerous and may cause damage to this equipment, voiding the warranty.
- It is recommended that the area around this equipment be designated as a work area and only authorized employees be allowed in the area.
- Children and pets must be kept clear of the work area.
- Do not place any objects on top of the drying chamber. Surfaces are hot!
- Never leave equipment unattended.
- Do not operate conveyor or dryer with any cover or guard removed.
- Operator must be familiar with controls of the dryer and conveyor.
- Never put excessive load on the conveyor belt.

Safety, continued

- Before starting production, the operator must check that all covers and guards are in place, no material has been left on the conveyor, and the work area is clear of obstructions.
- Switch on and verify conveyor belt is moving before turning on the heat.
- Allow dryer to cool to 300°F (149°C) before switching off conveyor.
- Always turn off power at the main disconnect at the end of production.
- In case an abnormal symptom occurs, for example excessive vibration, noise, and strong smell or smoke development, turn off the VASTEX Conveyor Curing System and contact a qualified technician.
- Immediately turn off the VASTEX Conveyor Curing System if products become jammed in the drying chamber or conveyor belt.
- Do not remove any cover or guard until power at the main disconnect is switched off and locked out. No unauthorized persons are to be allowed inside the control boxes.
- Turn off and lock out power at the main disconnect before any cleaning or maintenance.
- Only qualified technicians should be allowed to make repairs on the VASTEX Conveyor Curing System.
- **Noise and vibration:** This equipment does not produce noise exceeding 70 dB(A) at workstations.
- CE Declaration of Conformity available upon request.
- **Stability during use, transportation, assembly, dismantling when out of service, testing, and foreseeable breakdowns:** This equipment is designed and expected to be stable during all foreseeable conditions, so long as the procedures and instructions given in this manual are followed.
- **Safe handling, transport, and storage:** Before storing the unit, follow the shutdown procedure on Pg.15 (or on the front of your machine) to allow the heater assembly to cool properly. No special handling considerations are necessary, except to be aware of the weight of the equipment and take standard precautions for moving such weights:
- Please contact VASTEX or your dealer for the weight and dimensions of your machine.

Important

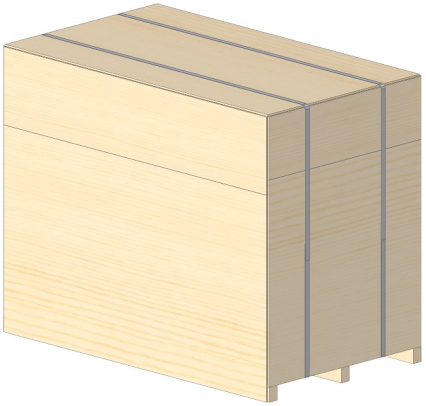
**** REMOVE THE CLEAR HEATER / SENSOR PROTECTOR SHEET BEFORE OPERATING THE DRYER ****
(protector sheet is located between the heater face and the sensor bracket)

- **Be sure a licensed electrician installs and completes the warranty form**
- **Placing your equipment into service and using your machine:**
  - Read and understand **Component Identification, Controls, Operation, and Safety pages.**
  - Follow **Assembly pages** before powering up machine
  - At the end of all shifts and / or production runs, follow the Dryer Shutdown Procedure posted on the front of the dryer and in **Dryer Operation.**
  - Any restriction in the dryer exhaust may result in excessive heat buildup within the chamber. More information in **Dryer & Exhaust Hood Ducting** page.
  - To use your machine, follow the instructions found in **Operation.**

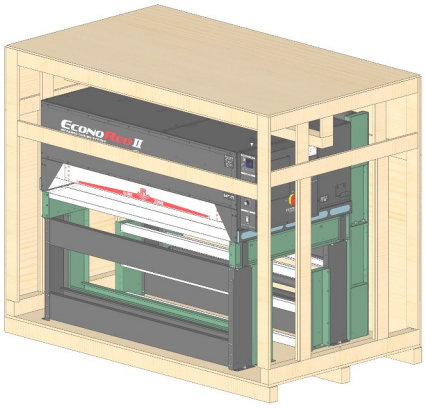
Assembly

Tools Needed: (1) Crowbar or Claw Hammer, (2) 9/16” open end wrenches, (1) 7/16” open end wrench or socket, (1) 1/4” nut driver or flat blade screw driver, (1) 1/8” allen wrench, tin snip

Econored-II-54 shown for illustration purposes. Econored II, III, and VI are assembled and operated in the same manner. Econored-III has a 3rd heater and is 18”(45.7cm) longer than Econored-II. Econored VI uses a second chamber is and crated separately.



1) Cut straps with tin snip

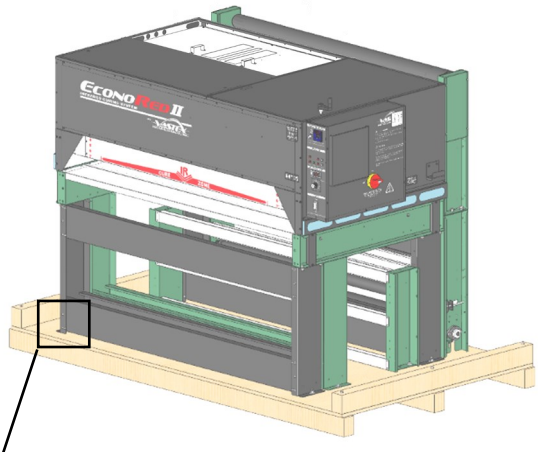


2) Using crow bar or claw hammer, pry off plywood carefully

3) Remove all wood supports

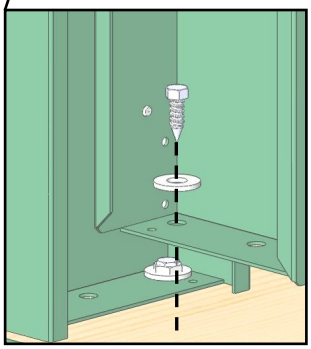
Caution!

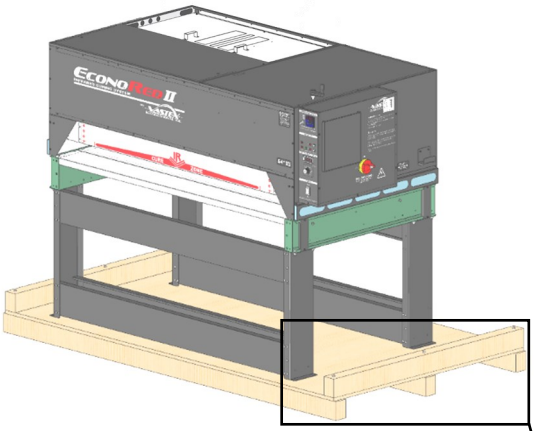
The heating chamber sits on top of conveyor pins. Lifting the chamber will separate the chamber from conveyor.



4) Remove front and rear conveyor pieces, additional (optional) legs, and any boxes shipped underneath chamber.

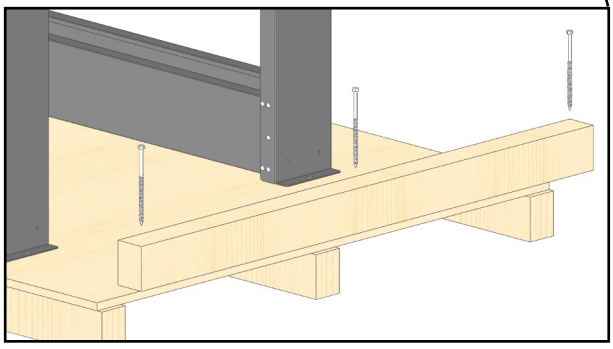
-Use 9/16 or 15mm socket/wrench to remove lag bolts





5) Remove side runner to slide machine off pallet.

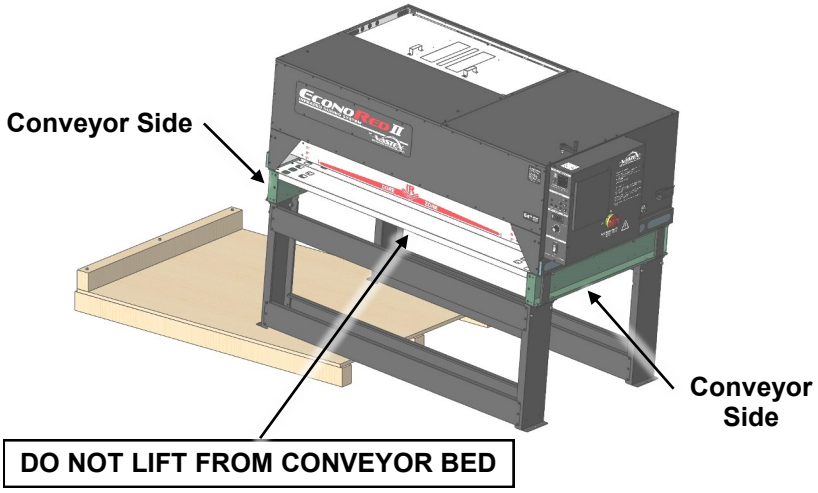
-Use 9/16 or 15mm socket/ wrench to remove lag bolts



Assembly Continued

6) Carefully slide the dryer and conveyor assembly off the pallet and onto the shop floor.

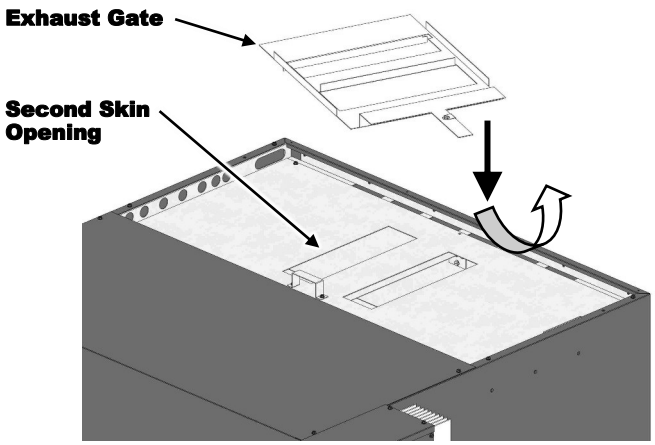
Lift from Conveyor Sides only.
Do not lift from Conveyor Bed!



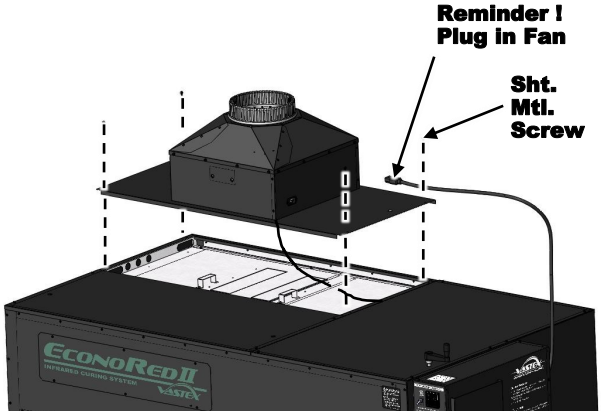
Caution!

The heating chamber sits on top of conveyor pins. Lifting the chamber will separate the chamber from conveyor.

7) Install the Exhaust Gate, If not installed into the opening in the Second Skin. The Exhaust Gate has a return pointing down that will fit inside of the opening. You need to lower the Exhaust Gate into the Skin at and angle and then turn to hook it into place.

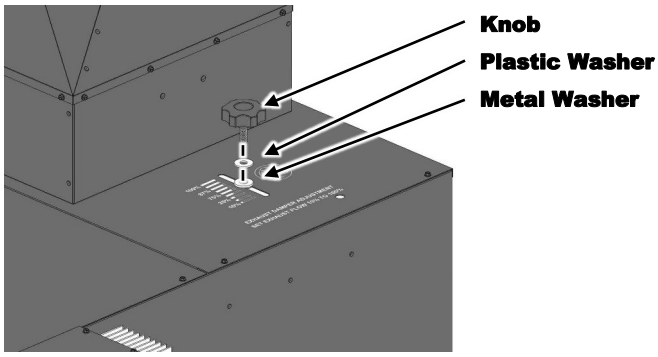


8) Carefully lift the exhaust section of the dryer and place it on top of the dryer, this is removed for shipping. Screw down the lid with black sheet metal screws.

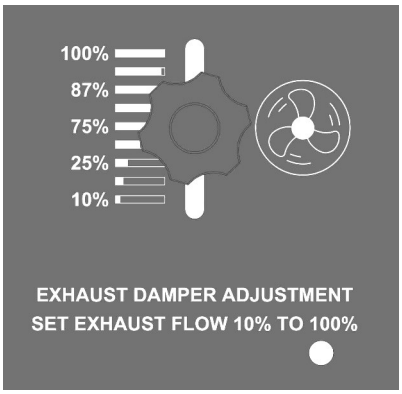


Assembly Continued

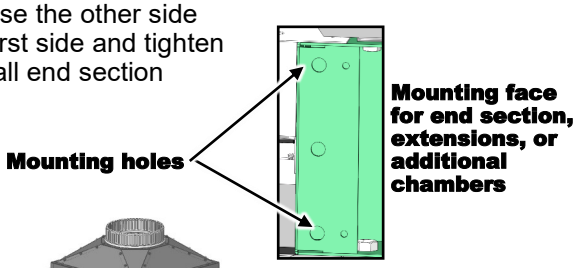
9) Install the Knob through the Rear Exhaust Lid into the Clip nut that is installed on the Exhaust Gate. Install the Metal Washer on the bottom against the lid, followed by the Plastic Washer and then the Knob.

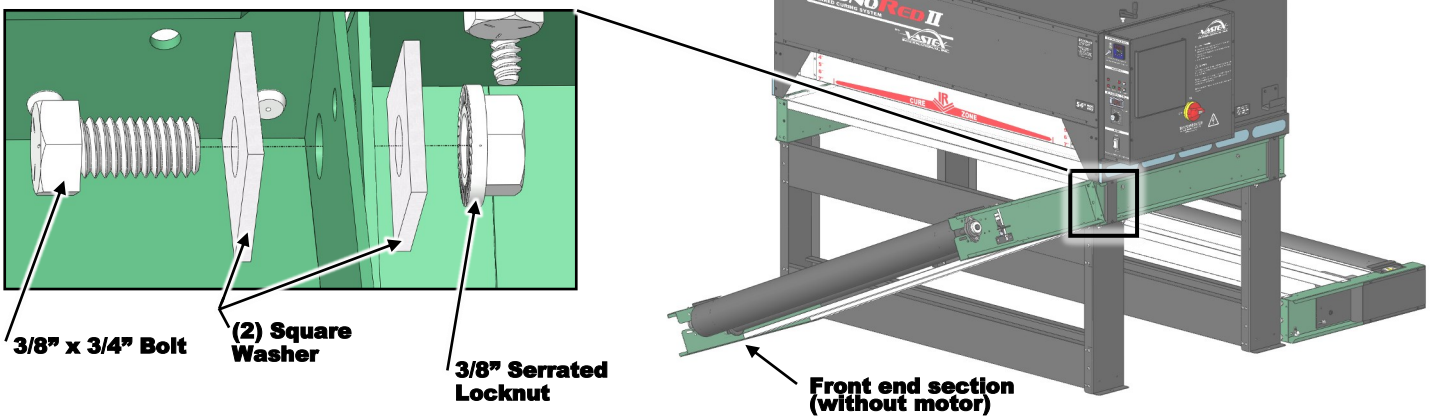


NOTE) Use the scale that is screen printed onto the Lid to set the desired amount of Exhaust.



10) Position front end section (section without motor) on the floor in the front of the dryer as shown. Locate 3/8 bolts, square washers, and serrated locking nuts from hardware bag. Two 9/16" wrenches are required. Raise one side and attach with hardware as shown below through the upper mounting hole. Do not tighten at this time. Carefully raise the other side and insert both upper and lower bolts and nuts. Install remaining bolt on first side and tighten all bolts. Use the same procedure for installing rear end section. Be sure all end section mounting bolts are tight before continuing.





Assembly Continued

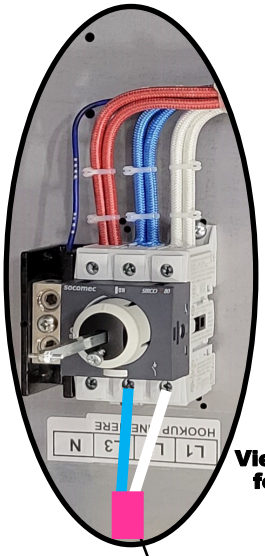
11) Have a licensed electrician complete the electrical hook-up and fill out the warranty card. Send it back to Vastex to validate your warranty. A wiring diagram has been included with this manual, and is also adhered to the inside of the control box cover.

12) Plug the wire from the conveyor motor into the motor cpc connector. (**Shown on Controls page 13)**

13) Plug the fan cord protruding from the back of the control panel into the socket on the exhaust stack. **(Shown below)**

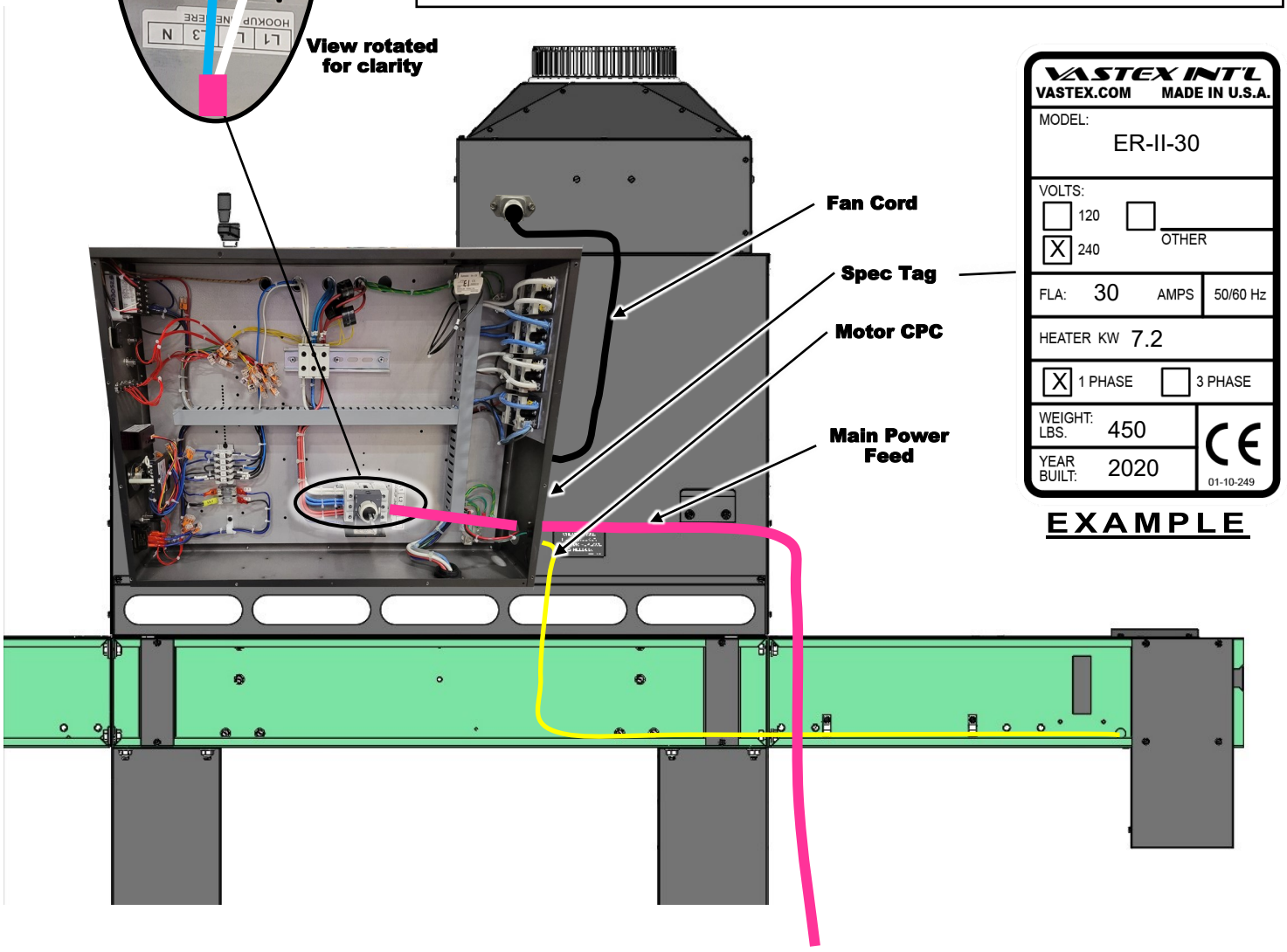
14) Have a licensed electrician test the shops voltage at the machines disconnect, for shops with less than 240V service, it is necessary to auto tune your controller. This procedure can be found in the **Troubleshooting** section.

Please record your shops actual voltage here:_____



View rotated for clarity

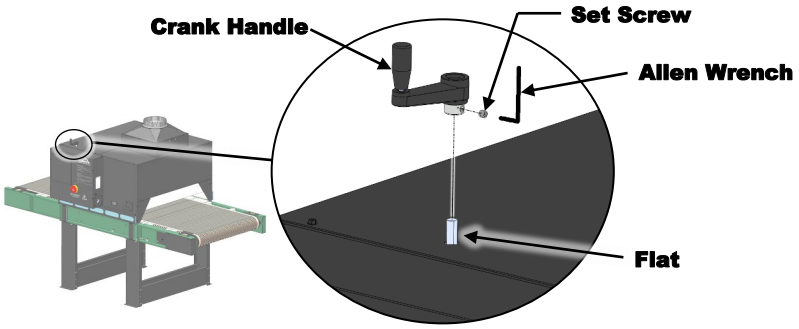
- **Review spec tag and wiring diagram for electrical requirements.**
- **FLA refers to Full Load Amps, NOT the recommended line size.**
- **A licensed electrician should perform electrical installation.**
- **Please follow the NEC for wire selection and sizing.**
- **Do NOT use solid or aluminum wiring for main power hookup.**
- **All connections, especially power hookup, should be checked and tightened after one month of operation**



EXAMPLE

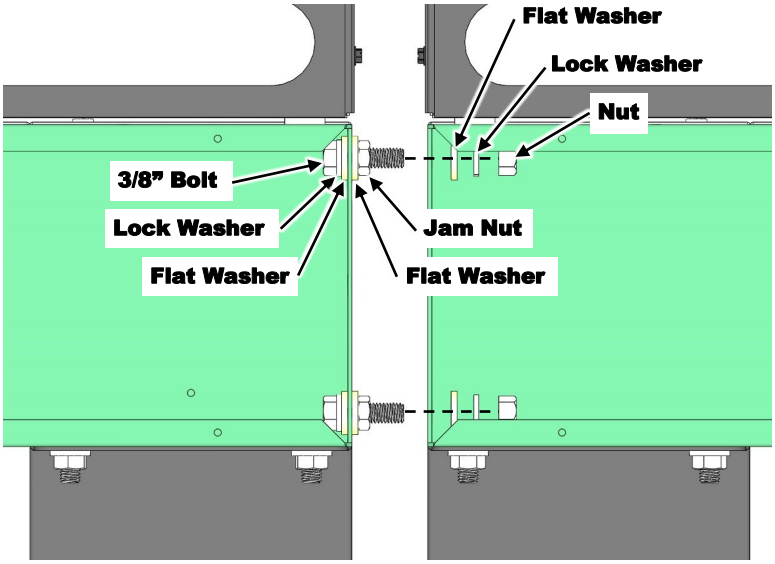
Assembly Continued

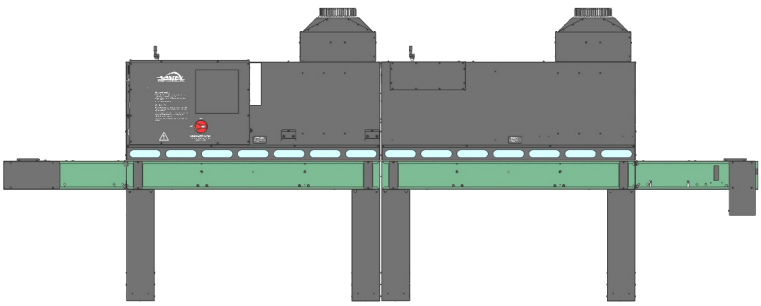
15) Install the crank handle onto the shaft on top of the chamber. Align set screw to the flat on shaft and tighten with 1/8” allen wrench. Raise heaters to full up position.



16) Installing Multiple Chambers Together
To install multiple chambers together use the hardware as shown in the figure bellow.

NOTE: A small gap between the chambers is normal and will not effect operation.



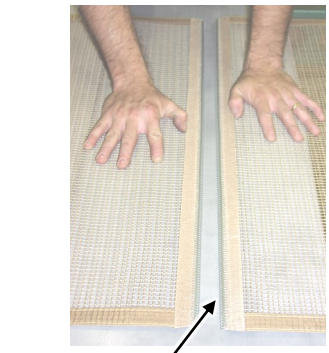


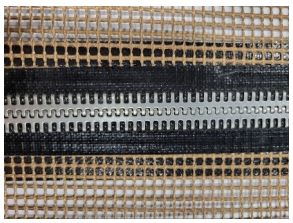
ER-VI Shown

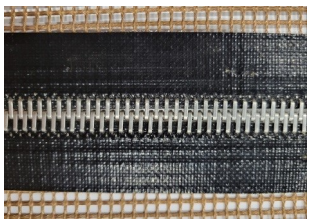
Assembly Continued

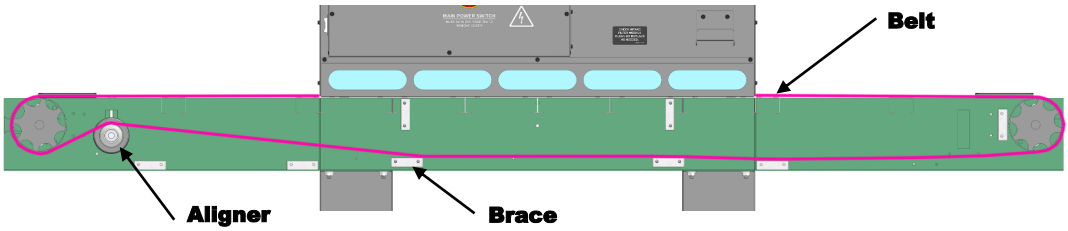
17) The belt needs to be installed as shown in the diagram below, the belt dose have a top and bottom. For dryers with an (optional) rear drive idler, please see Optional Drive Idler page. Be sure the belt is routed over all braces on the conveyor and over the Aligner. To connect your belt, align the Alligator Lace and install the pin. Once the pin is installed use a wire cutter to trim the pin so it sticks pas the Alligator Lace by 1/16”(1.6mm) on each side.

NOTE: If the pin walks out of the alligator lace during use, pull the pin out about 1 inch add a kink to it and push the pin back in.





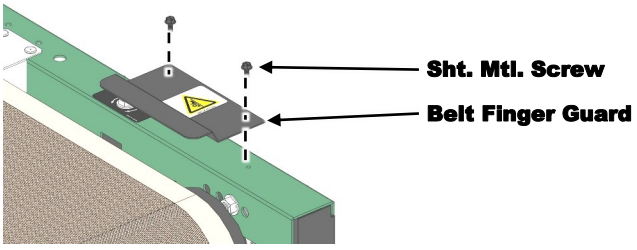




18) The belt needs to be tightened and adjusted. To tighten and adjust the belt, use the Aligner Bolts. To raise the Aligner, turn the Aligner Bolt clockwise with a 7/16” wrench. To lower it, turn it counter clockwise. Start with the belt centered on the pulley.

19) To track the belt and continue machine setup, follow **Startup Procedure** in **Operation** page 14. To track the belt, follow instructions found on **Belt Tracking** page.

20) Install the Belt Finger Guards on the 4 corners of the dryer. The guards and hardware can be found in a separate bag. Use a 1/4” nut driver or flat blade screwdriver to install the sheet metal screws.

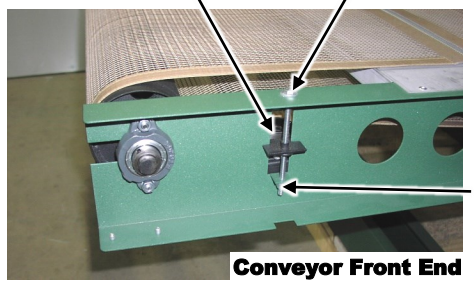


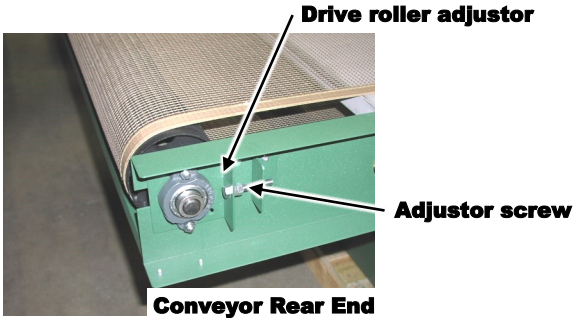
Belt Tracking

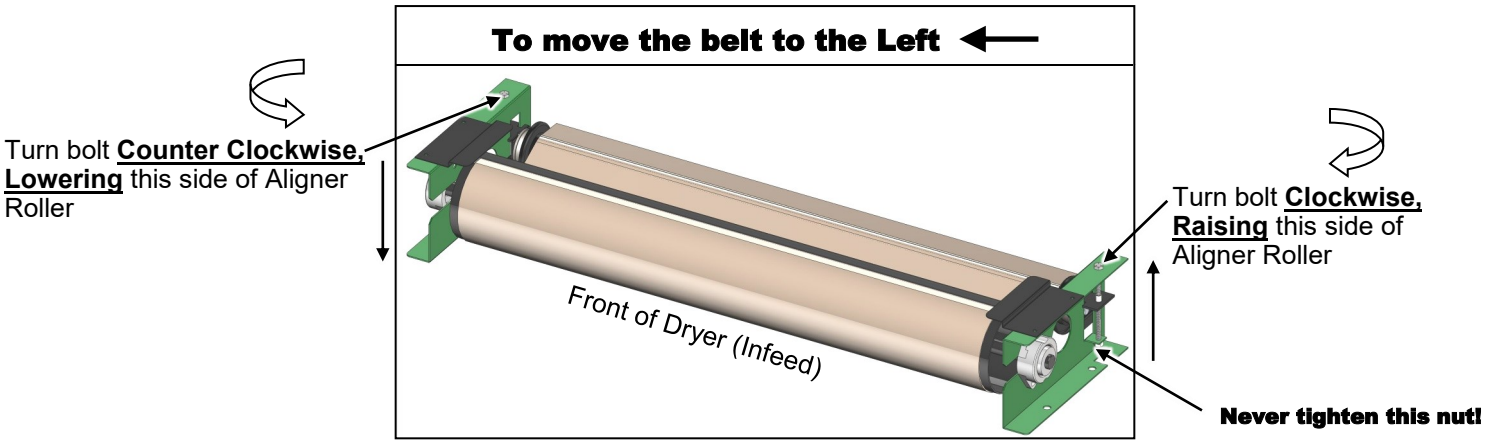
Belt Tracking
(Move in small increments while belt is moving. Do not leave conveyor running unattended.)

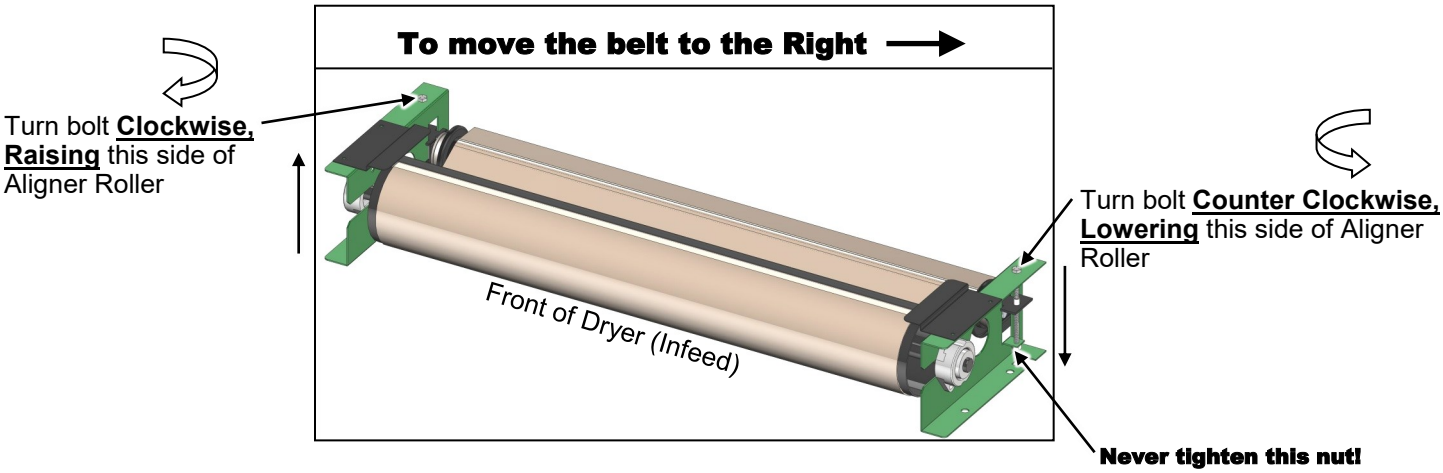
- If the belt is slipping, add belt tension by raising equally both sides of aligner roller. 1”-2” of belt sag at the bottom side is desirable. To raise roller turn adjustor bolt clockwise..
- To adjust the belt to the left or right follow the instructions shown in the images below. Be sure to only turn the aligner bolts 1/2 a turn at a time.
- If belt is tracking off center at the drive roller, Turn adjustor screw clockwise to move belt toward motor end of pulley and counter clockwise to move belt away from motor end of pulley. Recheck belt tracking at front end.

Note: Do not over-tighten belt, 1” to 2” belt sag is desirable. You may need to remove conveyor guards to access adjustments.







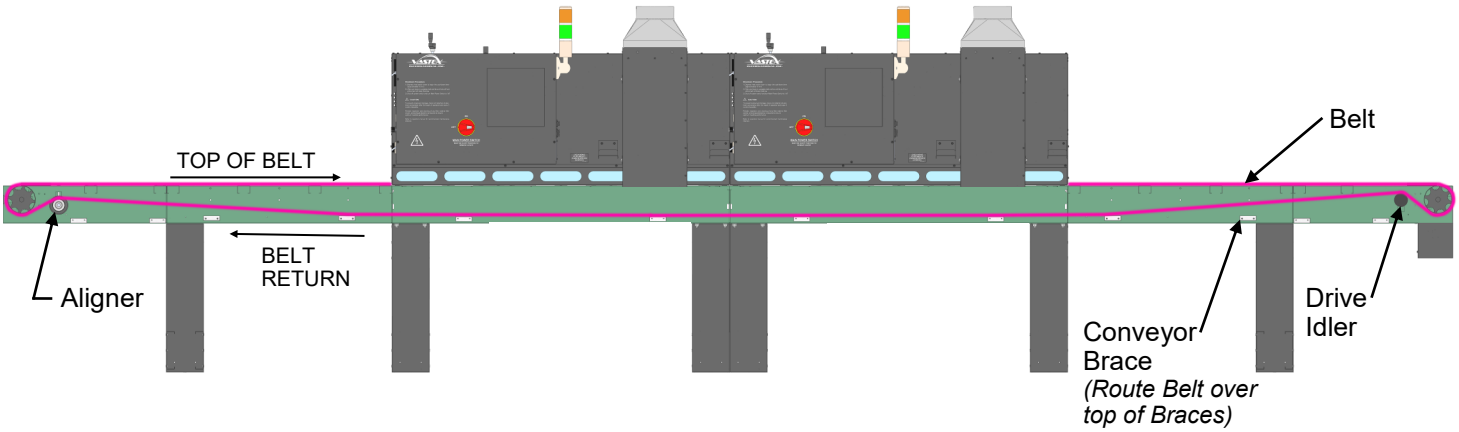


Optional Drive Idler

Features:

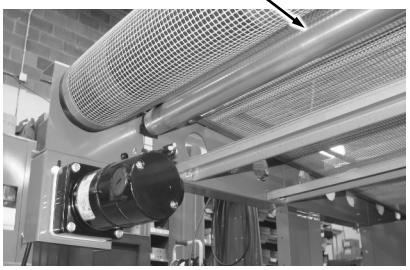
- Drive Idler Provides additional grip on rear pulley.
- Required on machines over 17’(5m) in length

CONVEYOR BELT PATH OF MAHCINE OVER 17’

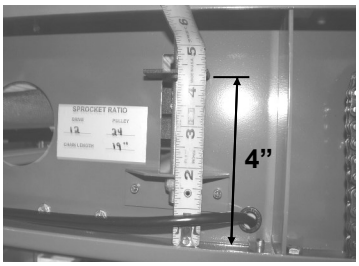


DRIVE ROLLER TENSIONER

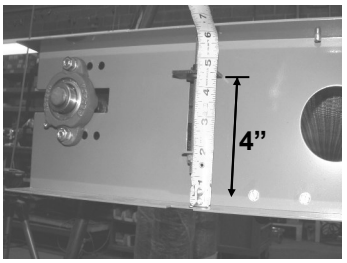
Drive Idler on 17’+ Long Conveyor



Bottom View Conveyor Drive End



Drive End RH Side



Drive End LH Side

After conveyor belt is installed, adjust Drive Roller Tensioner to achieve 4” as shown.

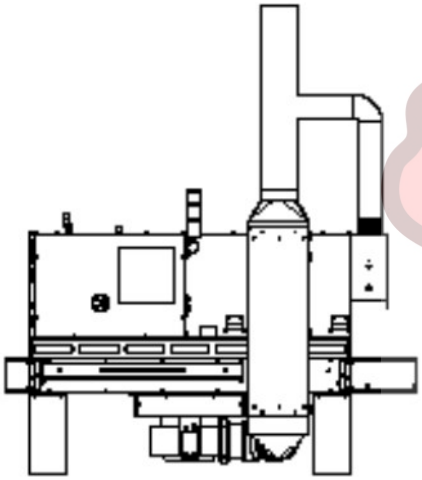
Note: The conveyor belt should be adjusted at the front aligner end to maintain the belt centered on the pulleys. See manual page 8 for belt tracking.

Ducting Information

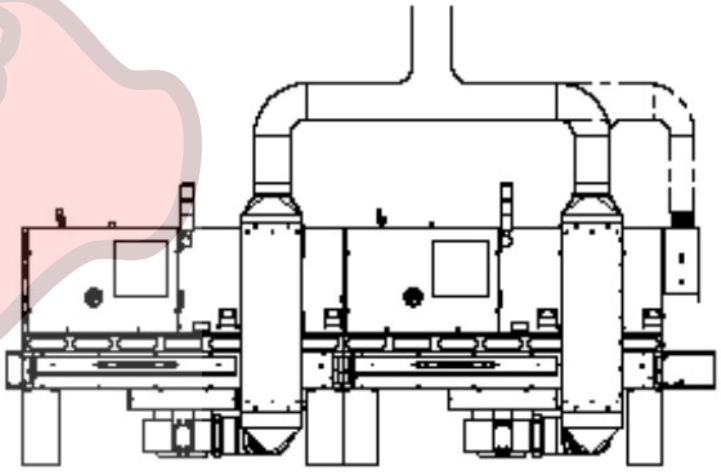
CFM cannot be reduced by more than 10% at exit of ducting. An exhaust booster must be used if CFM is reduced more than 10% due to length of duct or amount of bends. Please seek professional advice if this is not your area of expertise.

Proper venting is important for safety of operator and work area as well as quality of product.

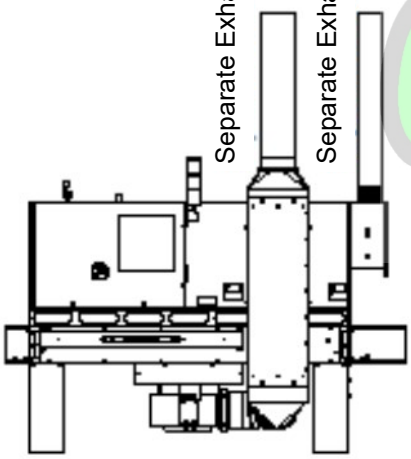
NO STRAIGHT "T" CONNECTIONS SHOULD BE USED.
DAMAGE TO BLOWERS WILL OCCUR.



NOT ACCEPTABLE



NOT ACCEPTABLE



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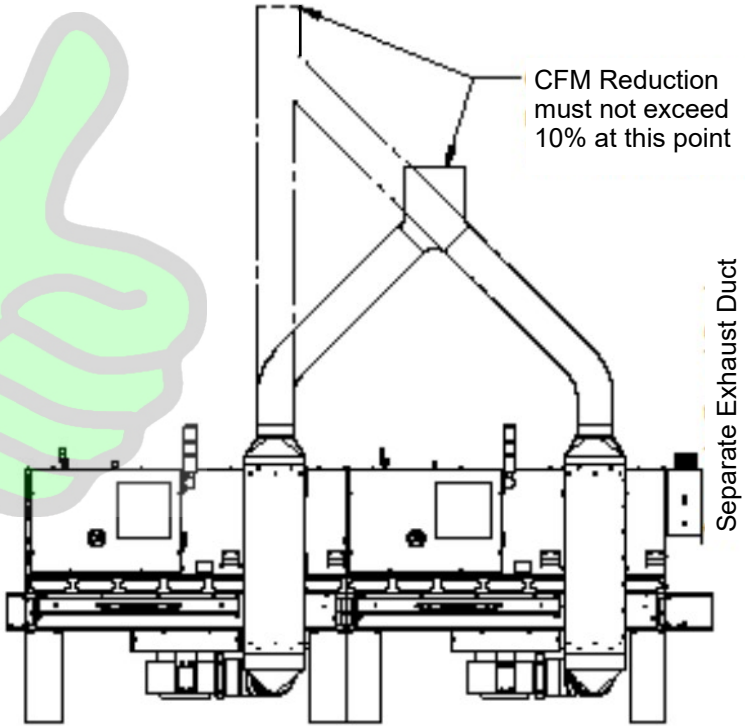
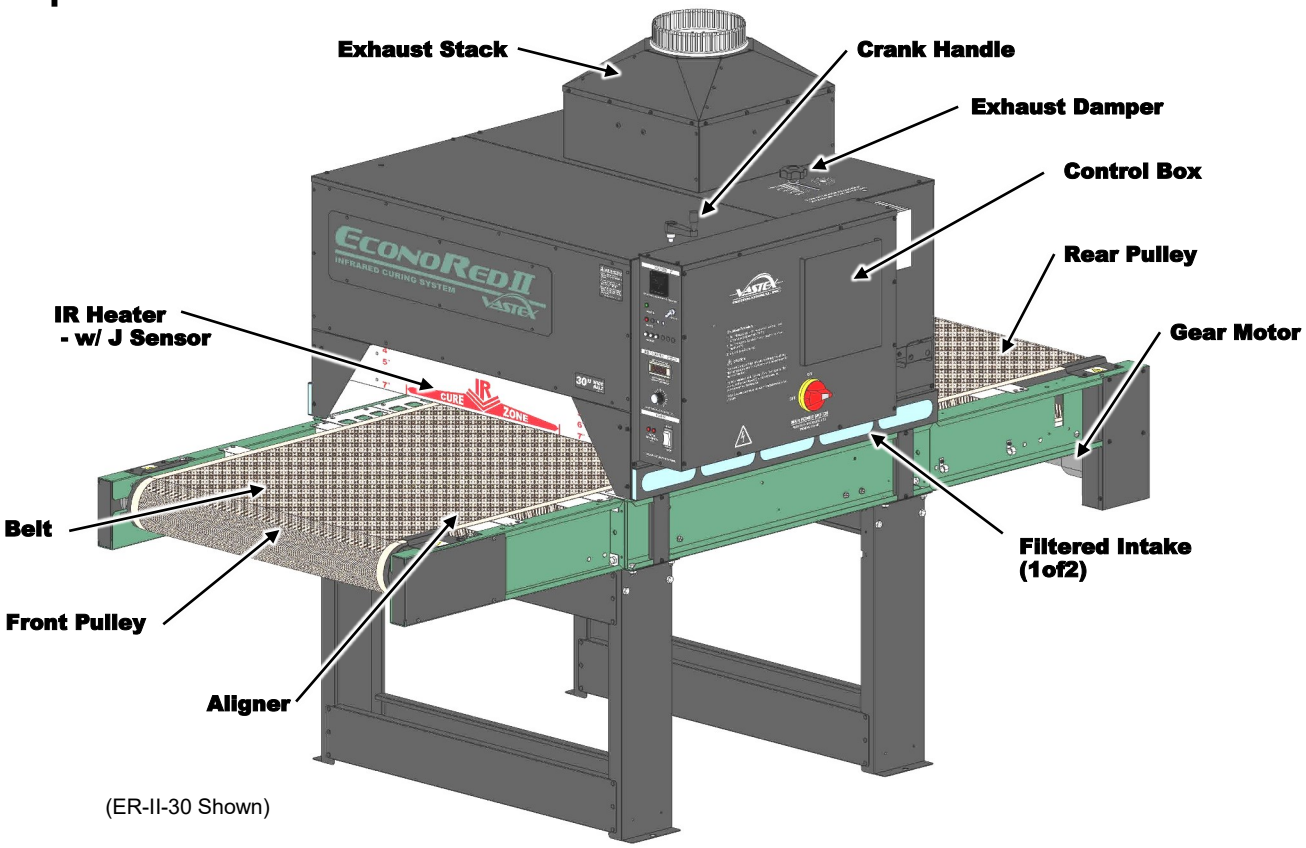


ACCEPTABLE

Component Identification



(ER-II-30 Shown)

Chamber Components

IR Heater The infrared heaters in VASTEX dryers emit medium wave infrared heat, perfect for curing plastisol inks. The heater connections are located in the trough on the right side of the heater, connected with high temperature terminals and stainless steel screws.

J Sensor Vastex uses a mineral insulated "Type J" Thermocouple mounted under the first heating element on the right side. It is shielded to provide a near "closed loop" control system. The sensor reacts very quickly to heater changes and is designed to be aware of changes in the chamber's environment. The sensor is wired to the Digital Temperature Controller found on the control panel.
Refer to wiring diagram when replacing "J" Sensor. (if SBER is displayed on controller, "J" Sensor is malfunctioning)

Control Box The Control Box contains most electrical components and is designed for easy maintenance. Connections should be checked after the first (3) months of use and every (6) months after. More information on the Control Box can be found in the **Controls** sections.

Crank Handle Used to raise and lower IR Heater assembly. Turning the handle clockwise raises the elements, counterclockwise lowers them. Vastex dryers use three variables to control the curing process, 1) Belt speed, 2) Temperature and 3) Heater height (Heater Focusing).

Exhaust Stack 8" exhaust stack. See Dryer & Exhaust Hood Ducting for proper venting.
(Note: Restricting the dryers exhaust can affect the operation of the dryer causing excessive heat buildup within the chamber and fumes to fill the chamber and work area. The excessive heat buildup in the chamber may damage the dryers exhaust blower. Proper venting is important.)

Exhaust Damper Adjustable Exhaust Damper used to increase or decrease the amount of exhaust from the heat chamber.

Filtered Intake Filters the incoming air. Clean or replace this filter often and as needed.

Conveyor Components

Belt The conveyor belt is made of Teflon coated fiberglass. It is joined together with an alligator lace using a steel pin to connect each side. The belt will not burn under normal conditions, but the dryer should always have the belt moving while the heaters are above 300 degrees. The belt should remain tracked in the center of each pulley. (See "Belt Installation and Tracking" for adjustment instructions.)

Aligner The aligner is a device for tracking the belt and keeping it on the pulley. As the belt moves from side to side the aligner is used for adjustments to keep it centered. The belt does not have to be perfectly centered on the pulley but should not be hanging over either edge.

Pulley The pulleys at either end of the conveyor are made by VASTEX of 4 ½ inch steel tubing with ¾ inch center shaft. They are mounted on self aligning flange bearing blocks for precision rolling.

Gear Motor A 130 Volt DC gear motor is located to the rear of the conveyor. It drives the rear pulley and belt with a roller and a #35chain. Replacement part numbers can be found on your dryer's wiring diagram.

Controls

Temperature Control: Set and control temperature here.

Control Output Light: A 250 volt GREEN pilot light is wired to the output side of the temperature controller. This light should cycle on & off with the controller. It verifies that the controller output voltage is going to the relay coil.

Heat Switch: Controls power to heater only.

Relay Output Light: This 250 volt RED pilot light is wired to the output side of the relay. This light will cycle on & off with the control output light. It verifies that the relay is working properly.

Heater Light: This 6 volt WHITE pilot light is wired to the IR Heaters. One light per heater is used. These lights indicate when electricity is flowing through each heater.

Fan Light: This 6 volt BLUE pilot light is wired to the exhaust fan(s). One light per fan is used. These lights indicate when electricity is flowing through each fan.

DC Volt Meter: Digital Volt Meter displays, in volts, the amount of power going to the belt motor. This makes setting and adjusting belt speed much easier. A table showing the time associated with voltage can be found in **Dryer Operation.**

Belt Speed Control: An AC-DC converter is mounted to the face of the control panel which allows the operator to vary the DC volts to the motor.

Power Lights: Wired to the main power switch.1 for single phase, 2 for 3 phase. Will be illuminated whenever the main power switch is in the on position. At the end of the day, the machine should be disconnected so the light(s) is/are out.

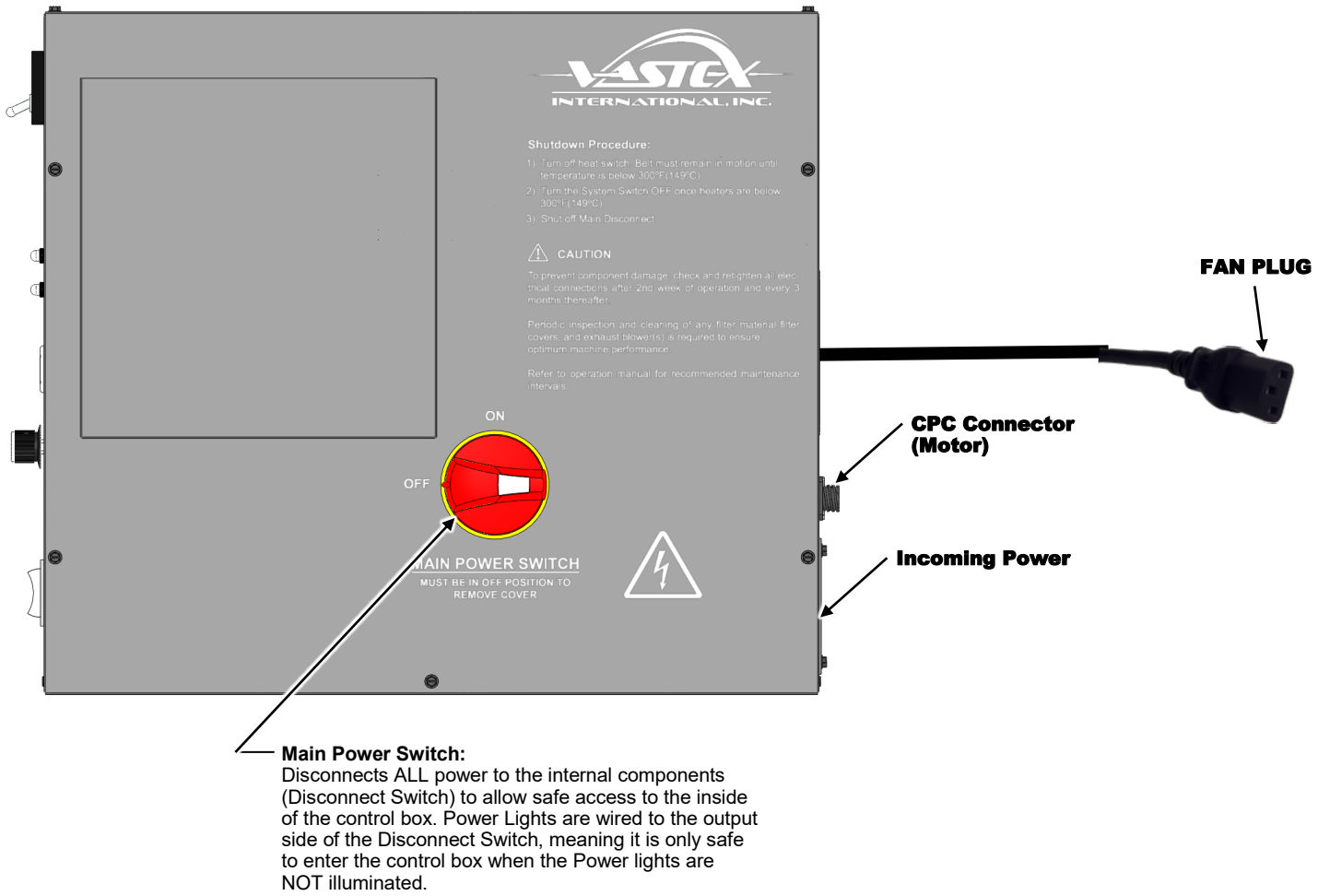
Power Switch: Controls power to the control circuit. Shutting this switch off does not make it safe to open the Control Box. Shut off power at main disconnect before servicing, Power Light must be out before entering any part of this machine.

Components found inside control box.

Relays: ECONORED Dryers are equipped with SSR (Solid State Relays). The relays are the switching devices which send the power to the heaters. The relay coil is wired to lug #2 on the digital temperature controller. As the controller gets a signal from the sensor, for heating or cooling, the relay opens and closes its solid state contactor to modulate power and maintain a consistent temperature. On 208V - 240V units, each relay is wired to an output light which helps to monitor their operation.

Fuses: System fuses are found in the control box, and protect the internal electronics.

Controls Continued



Main Power Switch:
Disconnects ALL power to the internal components (Disconnect Switch) to allow safe access to the inside of the control box. Power Lights are wired to the output side of the Disconnect Switch, meaning it is only safe to enter the control box when the Power lights are NOT illuminated.

Control Box cover removal and replacement

ONLY QUALIFIED TECHNICIANS SHOULD OPERATE/TEST CONTROL BOX COMPONENTS UNDER POWER

Removal

1) Disconnect Switch MUST be in the OFF position to remove control box cover.
2) Remove all sheet metal screws. (Use a flat blade screw driver or 1/4" nut driver)
- Control box cover is "hooked" on the top and bottom
3) Pull the bottom of control box towards you slightly to unhook.
4) Lift up slightly, to unhook top of cover, and pull straight off.

Note: <u>Cover cannot be removed with the disconnect in the ON position. The handle and shaft are keyed to prevent this.</u>

Installation is the reverse of Removal. Be sure to leave the disconnect in the OFF position for correct alignment to the handle.

Dryer Operation

Control System Summary:

The control system in your dryer is called a "closed loop system". The system includes a Digital PID Temperature Controller, a Sensor/Thermocouple- shielded under one heater, a relay(s) and a Infrared Heater(s). The digital controller is set to the desired temperature and the Sensor measures the temperature at the face of the heater. The sensor reports back to the control, and the relay switches the heat on and off to the heater. There is variable belt speed, variable heater height and as of 06/2024 variable exhaust flow.

Operation Tips

- **While machine is in operation, it is necessary to have the belt moving while the heater is above 300°F(149°C).**
- **Allow approximately 15 minutes for dryer to reach 700°F - 800°F (371° - 427°C).**
- **If no garments are being run through the dryer for more than 10 minutes, it is recommended to lower the heat set point to 500°F (260°C). It will take approximately 10 minutes to return to operating temperature.**
- **Periodically check ink temperature at the exit of the dryer. It is recommended that you check the temperature of the ink towards the outside of the printed image.**
- **When checking temperature with a laser gun, shoot the ink while it is still under the heater**
- **Variable exhaust allows setting just enough exhaust flow for your operation. Too much will cool the dryer, not enough can cause smoke or fumes to escape from the infeed or outfeed of the heat chamber.**

Startup Procedure

1	**Rotate main power switch to ON:**	The red Power Light will illuminate. Main Power Switch located on side of control box.
2	**Check belt path:**	Remove any objects from the conveyor and belt.
3	**Turn on Power Switch**:	Power is sent to the heater switch, belt speed controller, and the exhaust fan will start.
4	**Turn on Conveyor**:	Set speed to desired setting.
5	**Turn on Heat Switch**:	Turn on the Temperature Controller.
6	**Set Exhaust Flow**	Locate adjustment knob near exhaust stack. Set flow % based on needs, see below.

How to determine Temperature set point:

The sensor is located directly under the heater, reading a much higher temperature than seen at the garment. Set the temperature several hundred degrees higher to compensate. A heat gun can be used to read the temperature of the ink at the end of the dryer while it is still under the last heater, but these read colder then the actual ink temp. A better choice is a Atkins Probe, contact thermocouple, it is the most accurate. Temperature set point, heater distance to the garment, belt speed and exhaust flow % will all effect the ink temp.

Curing Plastisol with infrared:

Plastisol ink can fully cure in approximately 20-30* seconds. The ink must achieve 310°-320°F (154°-160°C) to cure and fuse to the garment. We recommend* a starting temperature 800°F (427°C), 3" heater height and a belt speed of 30 seconds in the chamber and exhaust flow set to 25%.

Discharge or water based:

Water based products require more time than plastisol to cure due to the fact that the water/moisture must be evaporated before the ink can cure. We have seen cure times from 50 to 90* seconds to achieve a full cure or discharge and not damage the garment. Please note as the time is increased the temperature must be decreased to protect the garment from scorching.

***Actual cure times can vary depending on conditions such as garment moisture and color, ink color, ink thickness, and environmental conditions. All three variables should be used to maximize production while insuring a proper cure.**

Dryer Operation Continued

7 Set the temperature: 

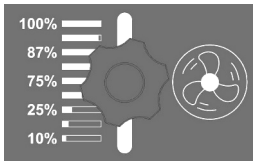
With the power on, push and hold the up arrow, the (SV) will climb. The longer you hold the button, the faster the (SV) will climb, it will start climbing by one, then ten, then hundreds. Set the desired temperature and allow approximately 15 minutes for heat up.
-Refer to the **Troubleshooting** section for Controller Error Messages.

8 Set the Heater Height: 

Rotate the Hand Crank on top of the Dryer Chamber, clockwise to raise the heaters, and counter-clockwise to lower them. Set the desired heater height for your job. It is recommended to run the heater height at about 2" - 3" above the garment.

9 Set the Belt Speed: 

Rotate the Belt Speed Control Knob clockwise to increase speed and counter-clockwise to decrease it. Refer to the example chart below for Time Through Chamber settings. For Plastisol inks, a good starting point is 20-25 seconds in the chamber.

10 Set the Exhaust Flow Percentage%: 

Unlock the knob and slide to set desired flow. Film and paper will be airborne with exhaust over 50%. Set flow to remove fumes and smoke from escaping the heat chamber. Setting the flow higher then needed can result cooler temperatures under the first and last heater.

Time through chamber

As explained on the **Controls** page, your Vastex dryer displays Voltage sent to the motor in reference to Conveyor speed. Below you will find an example chart relating Voltage to Time Through Chamber. Time Through Chamber is the time it takes an object to travel from the beginning to the end of the Heat Chamber. This is also known as "Time in Heat".

- **Example time chart shown below.**
- **Specific chart for your machine can be found on a label on the control box.**
- **Times below may not pertain to your machine.**
- **Always verify times with label on machine and Stop Watch.**

Time Through Chamber	Volts	Time Through Chamber	Volts
11 Sec	130 V	37 sec	40 V
13 Sec	115 V	43 Sec	35 V
[illegible] Sec	90 V	50 Sec	30 V
19 Sec	80 V	1 Min [illegible] Sec	25 V
21 Sec	70 V	1 Min [illegible] Sec	20 V
25 Sec	60 V	1 Min 39 Sec	15 V
30 Sec	50 V	2 Min 29 Sec	10 V

*** Shutdown Procedure ***

1 Turn off Heat Switch: Turn the Heat Switch off. Allow the heaters to drop to a maximum of 300°F (149°C) before turning off the conveyor.

2 Turn off Conveyor: **(optional)** Once the dryer cools down to 300°F (149°C) or lower, turn the Belt Speed down to the off position, skip this step if leaving the conveyor belt speed set for the following shift.

3 Turn off Power Switch: Turn the Power Switch to STOP only after dryer has cooled to 300°F (149°C) or lower. Verify that the only Diagnostic light still on is the Power Light.

4 Rotate main power switch to OFF: The dryer must be shut off via the Main Power Switch at the end of every shift.

At this point, no lights should be illuminated on the Control Box.

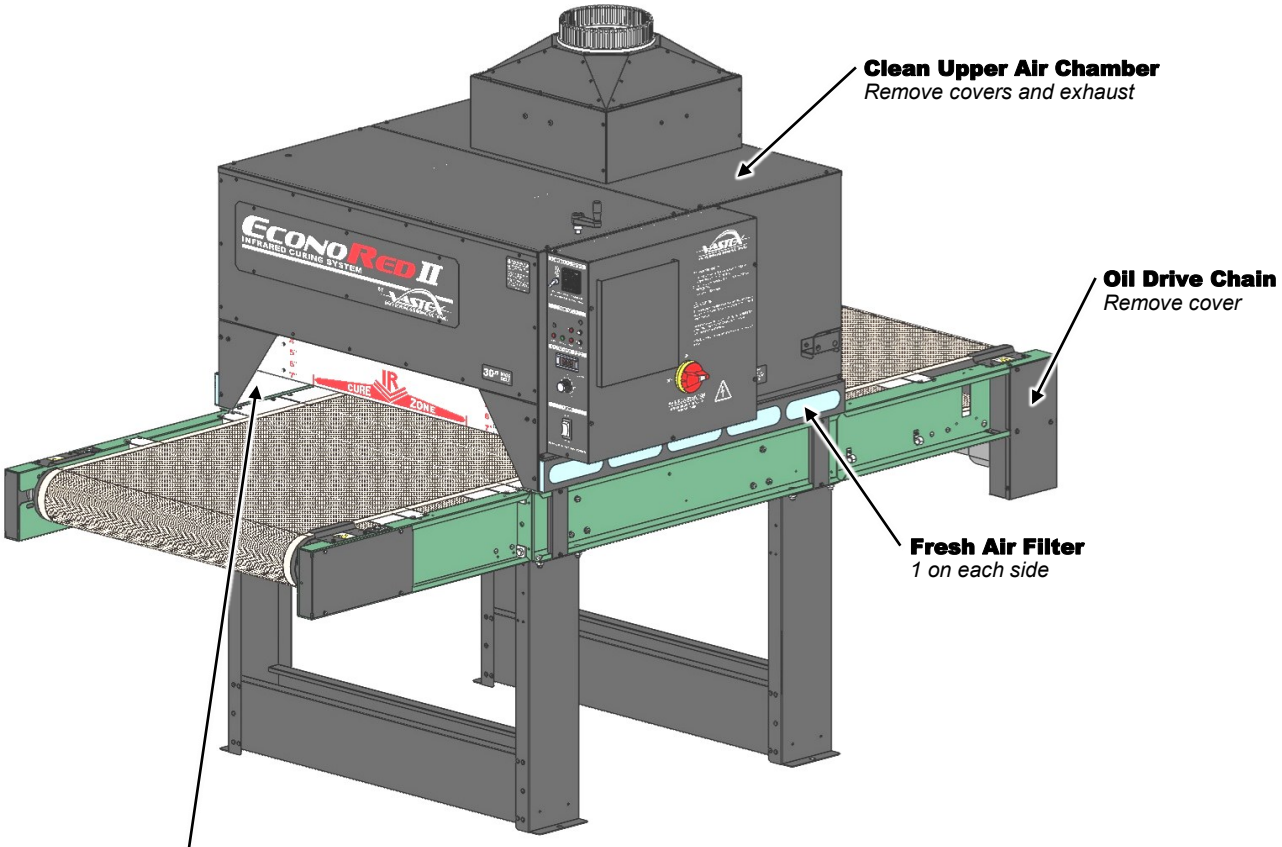
Always follow dryer shutdown procedure at the end of all shifts and / or production runs. The Dryer Shutdown Procedure is also defined on a label affixed to the front of the dryer.

Maintenance

Caution! **Power must be turned off at the external disconnect, or the machine unplugged, before entering any part of this machine. The red Power Light labeled "Power" must be off!! A qualified electrician should perform any internal testing requiring power on!**

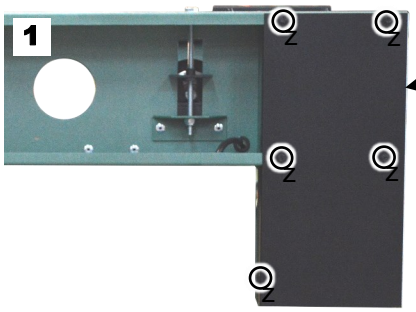
Maintenance Schedule	WEEKLY	MONTHLY	3 MONTHS	6 MONTHS	12 MONTHS
Visually check both Fresh Air Filters	X	X	X	x	x
Check Belt Tracking and Belt Condition	X	X	X	X	X
Oil Drive Chain			X	X	X
Clean Optional Rear Exhaust Hood intake			X	X	X
Check Electrical Connections in Control Box			X	X	X
Apply Anti-Seize lubricant to Lead screws				X	X
Replace Fresh Air Filters**				X	X
Clean Upper Air Chamber. Remove lids and clean all lint.				X	X
Remove and clean exhaust ducting					X

****NOTE:** Due to the size and amount of heat in the 78" wide EconoRed dryers, it is **VERY** important that the Fresh Air Filters are kept clean to prevent overheating of the dryer.



Drive Chain Adjustment

1) To remove the chain guard, unfasten the five black sheet metal screws. Be sure to replace the guard after adjustment is made.



Chain Guard
Sprocket and Drive Chain Length noted inside of Guard

Do not operate with Chain Guard removed. Serious Injury may result!

Pulley Sprocket
(w/ 2 set screws)

View with Chain Guard removed

(4) Mounting Screws

Drive Sprocket
(w/set screw and cap screw)

2) To adjust the drive chain you will need to loosen the four mounting screws. The gear motor mounting plate is slotted to allow for chain adjustment. Adjust the chain so there is a max of 1/4" horizontal movement in the chain.

CAUTION! Do not over tighten chain, damage to bearings may occur.

3) Check that both set screws/ bolts on each sprocket are tight before re-installing the Chain guard. A 1/8" and 3/16" Allen Key is required.

Troubleshooting

Caution! **Power must be turned off at the external disconnect, or the machine unplugged, before entering any part of this machine. The red Power Light labeled "Power" must be off!! A qualified electrician should perform any internal testing requiring power on!**

Belt Speed Min/Max Adjustment

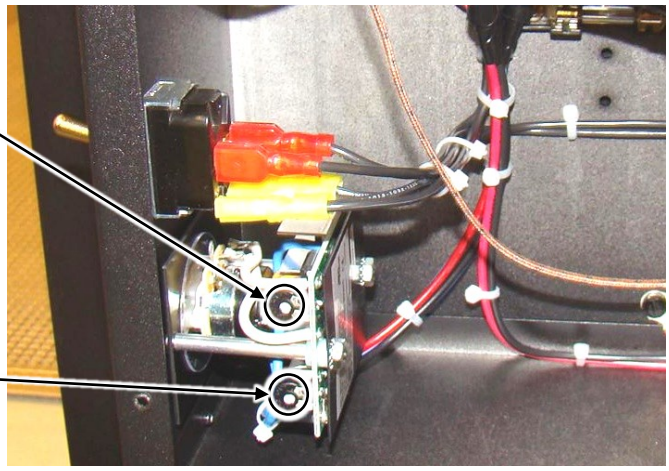
Setting the low speed pot adjustment: The low speed pot should be set so the belt (or sprocket) moves very slow at the lowest setting on the controller, just before the controller is clicked in the off position.

Setting the High speed pot adjustment: The high setting is set so 130 VDC is the maximum voltage to the motor, a volt meter is needed for the high speed adjustment.

Pot near the white wires LOW SPEED

Caution: Do not touch the open wires around the controller and the fuse holder!!

Pot near the blue wires HIGH SPEED



Troubleshooting

Symptom	What to check:
No Heat & power light is off	• Incoming power. • Shop Disconnect, Fuses, or breakers. • Power cord and it's connections
No Heat & power light is on	• Check for burned out heater • System fuses on control panel • Note operation of pilot lights, Call Vastex
Heat too high	• Note operation of pilot lights (Relay can stick on or off)
Heat too low	• Note operation of pilot lights (Relay can stick on or off)
Temperature fluctuates	• Check sensor location • Clean sensor connections • Eliminate Wind or Draft in shop • Note operation of pilot lights, Call Vastex
Belt Stopped or is erratic	• Check plug at motor power cord • Check sprocket and chain • Check output voltage at plug (90VDC) • Check for obstruction in belt path • Check belt tension • Check brushes on motor (Optional HD motor)

Temperature Controller Error Codes

Symptom	Cause (s)	Solution (s)
SbEr	Sensor break error	Replace RTD or sensor. Use manual mode operation
LLEr	Process display beyond the low range set point	Re-Adjust LL, E value
HLEr	Process display beyond the high range set point	Re-adjust HL, E value
AHEr	Analog hybrid module damage	Replace module. Check for outside source of damage such as transient voltage spikes
AtEr	Incorrect operation of auto tune procedure Prop. Band set to 0	Repeat procedure. Increase Prop. Band to a number larger than 0
oPEr	Manual mode is not allowable for an ON-OFF control system	Increase proportional band
CSEr	Check sum error. Values in memory may have changed accidentally	Check and reconfigure the control parameters

Temperature Controller

Auto Tuning Automatic Tuning has been performed at factory for all machines. Automatic Tuning must be performed by the customer for the following reasons; When equipment is other than 240v (e.g. 208v), replacing a controller, replacing a sensor, and/or new heating elements. Controller set point value must be set to 500°F (260°C) for 120V units, for all other units set to 700°F (372°C). Set point value must be entered before going to the auto tuning selection screen. Auto tuning should only be performed when the heater temperature is below 300° F (150° C).

Procedure
1) Press and hold the scroll button until A-T is displayed. Release the button.
2) Press and hold the scroll button again until the output indicator displays TUNE and is flashing. Release the button.
3) After releasing the button, the work PASS will be displayed. Press the scroll button one time and the word will disappear.
4) TUNE will continue to flash on the output indicator until the auto tuning process is complete.
5) The process can take as long as 30 minutes.

Manual Mode In the event of a faulty sensor, the display will read "SbEr" and the controller will automatically go into manual mode. Directly below the "SbEr" will be H0.00 and the output indicator will display MAN and be flashing. (Display on controller will show H0.00. Press the up or down arrow to set percentage of time the heater will cycle on and off. (i.e. a setting of 80.0 will cycle heater on 80% of time and off 20%). Controller can remain in this mode while resuming production.)

If the need arises to put the controller in manual mode for any reason other than a faulty sensor, follow the procedure below.

Procedure
1) Press and hold the scroll button until the work HANd is displayed. Release the button.
2) Press and hold the scroll button again until the output indicator displays MAN and is flashing.
3) After releasing the button, the work FILE will be displayed. Press the scroll button one time and the word will disappear.

Celsius / Fahrenheit The temperature controller on your Vastex Infrared dryer is normally set to Fahrenheit as a default. Follow the procedure below to switch the controller from Fahrenheit to Celsius.

Procedure
1) Press and hold the scroll button until the word SEt is displayed. Release the button.
2) Press the scroll button 5 times until the word UNIt is displayed. Below the word UNIt you will see °F in green. This indicates that the temperature displayed in in Fahrenheit. If °F is displayed, press the down arrow button to change to °C (Celsius). If °C is displayed, press the up arrow button one time to change to °F (Fahrenheit). If PU is displayed in green, don't panic, just press the down arrow button to either °F or °C.

NOTE: The temperature controller was updated on or around mid November 2020. Model number changed from a TEC-9090 to TEC-9400.