



# Conveyor Dryer

With Teflon™ Belt

Document # 16-400

## Assembly and Operating Instructions

Please review all of these instructions prior to assembling, installing or operating the equipment. Verify the proper tools, materials, and personnel are available for the safe and successful use of the dryer.

The Conveyor Oven is attached to a skid for shipping purposes.

The following **assembly** procedure is recommended for this equipment:

Unpack, inspect and identify all of the shipped equipment and parts. Immediately report any suspected lost or damaged items to Customer Service 800 654 4205

### **PRIOR TO CONNECTING POWER TO THE OVEN CHAMBER**

A dedicated circuit disconnect is required for proper operation / protection of this oven.

See the chart on page 2 for proper voltage and amperage.

- A dedicated electrical (earth) ground is required for proper operation of the equipment.
- Confirm the power disconnect switch on control panel is in the OFF position with the red lock out in the locked position.
- **Note:** Assure that all appropriate “**LOCK-OUT / TAG-OUT**” procedures are followed to prevent power from being distributed to the control panel before called for in these instructions.
- Conveyor switch on the control panel must be in the off position.
- Speed control dial must be rotated fully counterclockwise to the “**OFF**” position.

Power may be connected to the disconnect switch by removing the small cover of the control panel (right side front). Power cable may be run thru the access hole provided in the bottom of the control panel.

Wiring must be compatible with existing building receptacles and local electrical codes.

<b>Model</b>	<b>Voltage</b>	<b>Frequency</b>	<b>Recommended Disconnect</b>
24T08-4	208/240	50/60 Hz	40 amp
24T10-5	208/240	50/60 Hz	70 amp
24T08-5	208/240	50/60 Hz	70 amp
24T10-4	208/240	50/60 Hz	40 amp
36T08-4	208/240	50/60 Hz	70 amp
36T10-5	208/240	50/60 Hz	90 – 100 amp
36T08-5	208/240	50/60 Hz	90 – 100 amp
36T10-4	208/240	50/60 Hz	70 amp
48T08-4	208/240	50/60 Hz	80 amp
48T10-5	208/240 3-PH	50/60 Hz	70 amp
48T08-5	208/240 3-PH	50/60 Hz	70 amp
48T10-4	208/240	50/60 Hz	80 amp

An eight-inch exhaust collar has been provided for an exhaust fan to be added. This unit may be purchased through BBC Industries, p/n 08-510. A reducer (8"-6") will be required with this fan model.

Cooling Fan Banks may be added to your conveyor dryer. Exiting garments will cool as much as 100° F. Plugs directly into the control panel.  
Part numbers: FB-24, FB-36 or FB-48

### **Connecting the unit to power**

**Have a certified electrician connect the unit to power in accordance with local electrical codes.**

Before servicing or cleaning, switch power off at service panel and lock service panel to prevent oven from being switched on accidentally. If service panel cannot be locked, securely fasten a prominent warning device, such as a tag, to the service panel.

**Initial Set-Up** procedure recommended for this equipment:

#### **IMPORTANT**

CONVEYOR BELT MUST BE MOVING WHILE HEAT IS ON  
BELT WILL BE DESTROYED IF OVERHEATED

- 1) Turn the disconnect switch (on control panel) to the on position. If knob will not turn be sure the red "lock out" tab is pressed all the way in.
- 2) Set temperature control to 800 Degrees F.
- 3) Move the Rocker switch marked conveyor to the ON position.

- 4) Rotate the conveyor speed control knob to 5 on the reference dial.
- 5) Observe the operation of the conveyor belt. Verify it is tracking in the center of both the drive and take-up rollers at each end of the conveyor bed.

If the belt does not stay centered on the take-up roller:

- a.) Turn the conveyor OFF using the rocker switch and turn the main disconnect switch to the OFF position, pull out the red lock and follow your internal procedures for locking out the machine.

**Note:** Never perform any adjustments to the conveyor assembly when power is connected to the unit.

- b.) Check that the take-up roller is parallel to the end of the conveyor bed by measuring the distance between the end of the bed and the nylon retaining block on each side of the take-up roller. The distance should be equal.
- c.) **IF** the take-up roller is correctly positioned, adjust the centering roller under the conveyor bed. On the side the belt is moving towards, loosen the screws holding the centering roller, raise that end of the centering roller and retightening the retaining screws.
- d.) Reapply power to the conveyor and follow the initial set up procedure above. Restart the belt operation, check the tracking. Repeat steps b and c immediately above if further adjustment is required.

- 6) Check operation of the heating chamber as follows:

**Note:** To avoid damage to the conveyor belt, the heating chamber should never be operated unless the belt is moving.

At the control panel:

- a.) Turn the disconnect switch to ON
- b.) Observe the temperature controller display is illuminated.
- c.) Using the up and down arrows, on the digital temperature controller, set the desired operating temperature (GREEN Display) to 200 degrees.

**Note:** The actual temperature is displayed in RED above the set temperature number displayed in GREEN.

- d.) After approximately 2-minutes of operation verify that the RED numerical readout on the temperature controller is close to the 200-degree set point and the elements have cycled off and back on at least

once. Cycling is determined by observing the small red 01 located below the green set temperature. This 01 will be lit when power is being applied to the elements it will not be seen when the elements are not receiving power.

- 7) Place a scrap garment (or rag) on the conveyor belt. Measure and record the amount of time elapsed between its entry into and exit from the oven chamber while the speed control remains at number 5 on the dial.

Repeat this measuring and recording procedure for chamber exposure time at both the 2.5 and 7.5 speed settings. Retain this information for future reference in selecting and establishing production rates.

**Note:** The speed of the conveyor will vary slightly with fluctuations in the power / voltage servicing the equipment.

- 8) Using scrap material, run a series of tests.  
Use the same imprint and ink to determine the minimum time and temperature settings needed to fully cure the imprint.

Suggested start settings for Plastisol ink:

Temperature:	825 degrees F
Time:	30 seconds
Exhaust:	ON
Conveyor:	ON
End Curtains:	As low as possible, approx. 1.5" (4cm) <i>Do not turn the conveyor OFF when heaters are on for more than 5.0 minutes or the belt may be damaged</i>
CAUTION:	<i>heaters are on for more than 5.0 minutes or the belt may be damaged</i>

**Note:** Use in house test method to determine if an imprint is fully cured.

Begin test by selecting a conveyor speed to meet your production needs.

- a.) Temperature Control, start by setting the temperature control to 800 degrees Fahrenheit (GREEN numbers)
- b.) Adjust in 25 degree increments until the desired minimum temperature is achieved (RED numbers)
- c.) Run your product and record results for each test temperature and speed.
- d.) Repeat procedure 'a' or 'b' above to find the optimal temperature and speed for your specific job.

Maintain a **permanent** log of all these recorded start-up settings for future reference in operating / evaluating this equipment.

- 9) Turn OFF the main power at the control board. Measure the belt slack by lifting the belt at the cross member near the entrance to the heat chamber. If this

measurement exceeds 1” adjust belt tension (see Preventative Maintenance Section).

The conveyor dryer is now ready for normal **Use and Operation**.

**Use and Operation** of this equipment:

**IMPORTANT**

CONVEYOR BELT MUST BE MOVING WHILE HEAT IS ON  
BELT WILL BE DESTROYED IF OVERHEATED

- 1.) Refer to the “settings log” created under the *Set-Up* portion of these instructions and subsequent records from processing orders to determine the desired conveyor speed and oven temperature.
- 2.) Start the conveyor and adjust to the desired speed.
- 3.) Adjust temperature control to the desired *Temperature*

This device senses and controls the surface temperature of the emitters. The desired temperature (displayed in green) needs to be selected using the up and down arrows on the controller. The actual temperature is displayed in red. The 01 below the green desired temperature illuminates whenever the heating elements are energized.

- 4.) While the equipment is warming-up, adjust the sliding heat shields on the entrance and exit ends of the chamber to allow unobstructed passage of the item to be cured while also minimizing the open area above the belt.
- 5.) Allow approximately 10 minutes for the heating chamber to reach the desired operating temperature. It is recommended that a test garment be processed prior to the actual production run. Use your in house standards and testing to determine if the materials have reached a full cure.

**Note:** The oven chamber should **never** be energized unless the conveyor belt is moving. Failing to do so will permanently damage the belt.



Proper tension = belt should easily lift 1” off of cross bar near the chamber entrance.

**Note:**

- Take-up roller must be parallel to the end of the conveyor bed.
- Distance between the end of the bed and the retaining collar on each take-up roller shaft must be equal.
- Operating the belt without the rollers parallel will irregularly stretch the belt and ultimately cause non-adjustable tracking problems.

**Basic Trouble Shooting**

Oven does not reach the temperature set point:

- A. Make sure the set point is below 850 deg F
- B. Confirm the oven is getting proper voltage. A drop in voltage will decrease the temperatures in the oven.
- C. Reduce any drafts or air currents such as open doors, fans, air conditioners that could be blowing into the chamber. Do not direct fans at the oven this will cause temperature variations in the chamber.
- D. Check that thermocouple probe is touching the black heater face of the first heater.
- E. Check to see if the thermocouple is broken (call electrician). Replace if necessary.
- F. Check to see if a contactor is “dead” (call electrician). Replace if necessary.

Conveyor belt stops:

- A. Check to make sure the amber rocker switch is in the ON or up position.
- B. Check to see if the fuse is blown. See electrical drawing, control panel.

Conveyor belt does not track properly:

- A. Adjust centering roller. (see Initial Set-up)
- B. After 5 or 6 years the belt may stretch and wear to the point of needing replacement.

Conveyor belt is torn:

- A. A Teflon mesh belt cannot be repaired. Over time the torn area may gradually increase to the point where the belt will need replacement.

Please contact the service department at *BBC Industries* (800-654-4205) or [service@bbcind.com](mailto:service@bbcind.com) with any questions regarding these instructions.