DB-30 & DB-II-30
Conveyor Drying System
Assembly & Operating Manual

DB-30 Shown as table top model, optional legs available.
DB-II-30 is floor model only.

Year of Manufacture: 20____

Electrical Drawing #: __________________________ Rev:______

Serial Number: VTX __________________________ Date:_____/_____/_____

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

Safety

The Instruction Manual and Safety Instructions must be read and understood by anyone operating the Vastex Conveyor Drying 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 Drying 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.
- 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 Drying System and contact a qualified technician.
- Immediately turn off the VASTEX Conveyor Drying 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 Drying System.

Noise and vibration: This equipment does not produce noise in excess of 70 dB(A) at workstations.

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. When dryers are assembled onto legs, it is recommended that two or more people stand the unit upright after bolting legs on.

Safe handling, transport, and storage: Before storing the unit, follow the shutdown procedure on P. 8 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:

<table>
<thead>
<tr>
<th>DB-30:</th>
<th>DB-II-30:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Unit:</td>
<td>Main Unit:</td>
</tr>
<tr>
<td>265 lbs (120.2 kg)</td>
<td>465 lbs (210.9 kg)</td>
</tr>
<tr>
<td>Optional Legs:</td>
<td>Included Legs:</td>
</tr>
<tr>
<td>30 lbs (13.6 kg)</td>
<td>30 lbs (13.6 kg)</td>
</tr>
</tbody>
</table>

Optional locking casters are available for all DB-series dryers equipped with legs. When equipment is to be moved frequently, it is recommended that these be installed.
1) The conveyors are assembled in the same way for all DB-Series dryers. The DB-30 is being used for the pictures. Remove the conveyor parts from skid and lay out on a large table or the floor as shown.

2) Bolt together all sections of the conveyor. Each section is bolted to the next using (2) 3/8" x 3/4" bolts, serrated locknuts. Photo on right.

3) Install the (Optional) leg assemblies using (2) 3/8" x 3/4" bolts and serrated locknuts on each leg assembly.

4) Turn the conveyor right side up. Install the chain guard with the (2) black #8 machine screws. See Maintenance section for chain adjustment.

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Tools Needed: (2) 9/16" open end wrenches, (1) 7/16" open end wrench or socket, (1) 1/4" nut driver OR flat blade screw driver

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⚠️ Do not operate with Chain Guard removed. Serious Injury may result!
5) The belt needs to be installed as shown in the diagram below. Be sure the belt is routed under the brace found near the gear motor. To connect your belt, align the Alligator Lace and install the pin. Some belts will have a plastic flap over the Alligator Lace. Position it as shown in the diagram.

![Diagram of belt installation](image)

6) 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. Raise the Aligner until you have about 2"-2½" of slack as shown on right.

7) Install the three conveyor belt covers. See supplied document 01-01-014 for installation.

8) Place the Heat Chamber on the conveyor, centered between the belt’s rollers, with the Control Panel on the right side.

9) **Electrical Connections**
   - **Chamber:** Refer to the wiring diagrams included with your dryer. Several combinations available.
   - **Conveyor:** Refer to plug diagrams on the Control page. Conveyors are available in either 120V or 240V:
     - 120V, 1 Amp, 50/60Hz
     - 240V, .5 Amp, 50/60Hz

10) Tracking the belt is the final step in setting up your Dryer. The belt speed should be turned up during belt tracking. The model below shows how to track the belt. Be sure to adjust the Aligner bolts at 1/4 turn at a time. The dryer should be on a flat surface for proper belt tracking.
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 (149 deg. C). The belt should remain tracked in the center of each pulley. (See "Belt Installation and Tracking" for adjustment instructions.)

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.

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

A 90 Volt DC gear motor is located to the rear of the conveyor. It drives the rear pulley and belt with a roller and a #25 chain.
Heat on Light
This RED light is wired to the controller. It will illuminate when the control is turned on, even if the controller has failed.

Variable Heat Control
The control has positions LO-2-3-4-5-6 and HI. The controller turns the power to the heater on and off to vary the temperature. The higher the number on the controller the longer the on cycle and shorter the off cycle is. The HI position keeps the power on constantly.

Receptacle Configuration
The Diagrams below show the possible Receptacles needed for the conveyor and chamber of your DB-Series Dryer.
Dryer Operation

Startup Procedure

1. **Turn on Power**: Be sure your breaker is in the off position and the dryer’s dial controls are off. Plug the Conveyor and Chamber into their properly rated outlets and turn the breaker on.

2. **Check belt path**: Remove any objects from the conveyor and belt.

3. **Turn on Conveyor**: Set belt speed with the Belt Speed Control on the conveyor, near the motor.

4. **Turn on the Heat**: Turn the Variable Heat Control dial on HI for 10-15 minutes to allow the dryer to warm up.

**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.

**Discharge or water based**: (A powered exhaust is recommended) 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.

5. **Set the Heat**: With the dryer plugged in, rotate the Variable Control Timer to the desired setting. Often times, it is best to run the dryer on HI and adjust your belt speed and heater height to achieve a proper cure.

6. **Set the Heater Height**: Set the desired heater height for your job. On each side of the heating chamber, there is a knob to raise and lower the heater. On DB-II models, there are (2) knobs on each side. It is recommended to run the heater height at about 2” - 3” above the garment. The heater can be run at an angle for curing non-flat substrates such as hats.

7. **Set the Belt Speed**: Rotate the Belt Speed Control Knob clockwise to increase speed and counter-clockwise to decrease it. For Plastisol inks, a good starting point is 20-25 seconds in the chamber. The dial numbers are for reference only. They do not represent seconds in the chamber.

**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 Full temperature.
- If no garments are being run through the dryer for more than 10 minutes, it is recommended to lower the dryer to “4” or lower. 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 heating elements.

Shutdown Procedure

1. **Turn off Heat**: Turn the Variable Control Timer off. Allow the heaters to cool for 10-15 minutes before shutting the conveyor off. Belt damage may result from stopping the conveyor with hot elements.

2. **Turn off Conveyor**: 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 Breaker**: Turn off the breakers controlling your DB-series dryers at the end of each shift and unplug them from their outlets.
Caution! Power must be turned off at the external disconnect, or the machine unplugged, before entering any part of this machine. A qualified electrician should perform any internal testing requiring power on!

Electrical Connections
Electrical connections will loosen in time from heating and cooling. Every three (3) months the power should be turned off at the external disconnect, or unplugged, and all the points of connection should be inspected and tightened.

Lint Buildup
As with your clothes dryer at home lint will build up where ever air is flowing over garments.

Every six months
- The top cover should be removed to clean around the heater and any other visible debris buildup.

Every 2-3 months
- The optional exhaust blower, located on the rear of the machine, should be cleaned. To open the back panel of the exhaust blower, remove the (14) black #8 machine screws for access to the blower.

Motor Chain
Chains can loosen in time and should be inspected, adjusted, and lubricated when necessary. The motor chain is located in the rear of the conveyor behind the Chain Guard.

Drive Chain Adjustment

In order to adjust the chain tension or remove the control assembly, the chain guard must first be removed.

DO NOT RUN YOUR CONVEYOR WITHOUT THE CHAIN GUARD IN PLACE.

Chain Guard
To remove the chain guard:
Unfasten the two black sheet metal screws at the top. Be sure to replace the guard after adjustment is made.

To adjust the drive chain, loosen the (3) control assembly mounting screws. Adjust any slack out of conveyor chain and retighten screws.
Caution! Do not over tighten chain, damage to bearings may occur.

Control assembly mounting screws.

X-Series conveyor control assembly.
Model# XCB-DB-XXX
(XXX = 120 or 240 volt)

Caution:
With the control assembly removed there are open wires and electrical connections. Severe shock can occur if caution is not taken.
**Troubleshooting**

**IMPORTANT** Turn off and lock out power at the main disconnect before entering any part this equipment. Do Not operate with any covers or guards removed.

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**Belt Speed Controller adjustment**

*Setting the low speed pot adjustment:* (small screw driver with plastic handle is needed)

Turn the speed pots clockwise to increase the speed and counterclockwise to decrease. 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. The high setting is set so 90 VDC is the maximum voltage to the motor, a volt meter is needed for the high speed adjustment. The control assembly should be placed on a bench so the speed pots are up and accessible.

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

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**No Heat**

Please set controller to at least “5” for diagnostics.

<table>
<thead>
<tr>
<th>Possible Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Pilot Light out</td>
<td>Check connections</td>
</tr>
<tr>
<td>Loose connections</td>
<td>Check power at main disconnect</td>
</tr>
<tr>
<td>Customer power failed or outlet failed</td>
<td>Replacement controller</td>
</tr>
<tr>
<td>Controller bad</td>
<td></td>
</tr>
<tr>
<td>Red Light on</td>
<td>Check connections</td>
</tr>
<tr>
<td>Loose connections</td>
<td>Check connections</td>
</tr>
<tr>
<td>Bad controller</td>
<td>Replace controller</td>
</tr>
<tr>
<td>Bad Heater</td>
<td>Replace Heater</td>
</tr>
<tr>
<td>Heat not cycling on and off</td>
<td>Replace controller</td>
</tr>
<tr>
<td>Bad controller</td>
<td></td>
</tr>
</tbody>
</table>

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**Belt Stopped**

<table>
<thead>
<tr>
<th>Possible Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor still turning</td>
<td>Replace chain &amp; worn sprockets</td>
</tr>
<tr>
<td>Broken chain drive</td>
<td>Tighten sprocket set screws</td>
</tr>
<tr>
<td>Loose sprocket set screws</td>
<td></td>
</tr>
<tr>
<td>Motor &amp; drive pulley are turning</td>
<td>Clear jam</td>
</tr>
<tr>
<td>Obstruction in belt path</td>
<td>Tighten belt</td>
</tr>
<tr>
<td>Belt loose</td>
<td></td>
</tr>
</tbody>
</table>
Vastex Dryer & Exhaust Hood Ducting

IMPORTANT READ BEFORE OPERATING DRYER

Restricting the dryers exhaust will effect the operation of the dryer. Excessive heat buildup within the chamber may damage the exhaust blower. Proper venting is important.

EC-II SERIES SINGLE & DOUBLE CHAMBER DRYERS

The Exhaust Hood is an option for all Vastex Dryers

Exhaust blower damage will result

WRONG

ACCEPTABLE

SEPERATE EXHAUST DUCTS

ACCEPTABLE

45° TEE WYE DUCTING

WYE JOINT DUCTING

Acceptable

Note:
1.) CFM reduction from this point to end of ducting should not exceed 10%. Add auxiliary blower when necessary.

2.) Requires exhaust blower when venting dryer outside.

EC-I & DB SERIES DRYERS

ACCEPTABLE

SEPERATE EXHAUST DUCT

ACCEPTABLE

45° TEE WYE DUCTING

PREFERRED
Installation: Conveyor Belt Covers
DB Series and EC-I Series Dryers

Tools Required: 1/4” Nut Driver, or 1/4” socket and ratchet

Package Contents:
(3) Belt Covers (actual covers may differ from pictures)
(1) Chain Guard
(8) Sheet Metal Screws

Conveyor Front

Conveyor Rear

Tools Required: 1/4” Nut Driver, or 1/4” socket and ratchet

Package Contents:
(3) Belt Covers (actual covers may differ from pictures)
(1) Chain Guard
(8) Sheet Metal Screws

Conveyor Front

Conveyor Rear
Vastex Warranty

TERMS AND CONDITIONS OF SALE AND LIMITED WARRANTY    Doc.#01-00-015

1. Buyer’s order will constitute an offer in accordance with the terms hereof and such offer, upon acknowledgment of Seller, will constitute the agreement between Buyer and Seller. Buyer’s order after such acknowledgment by Seller will not be subject to cancellation, change or reduction in amount, or suspension by Buyer of deliveries, unless prior to such action Buyer has obtained Seller’s written consent contrary to Buyer’s Purchase Order or other communications, the parties agree to be bound by these Terms and Conditions. Acceptance of the product by the Buyer shall be deemed to constitute unconditional acceptance of these Terms and Conditions.

2. Any of these terms, conditions and provisions of Buyer’s order which are inconsistent with Seller’s acknowledgment and these Terms and Conditions of Sale shall not be binding on the Seller and shall be considered not applicable to any sale so made. No waiver, alteration or modification of any of the provisions on either side of the document shall be binding upon Seller unless agreed to in writing by Seller.

3. (a) All prices are F.O.B. Seller’s Plant and method of delivery and routing shall be at Seller’s discretion, unless specifically otherwise stated herein. Notwithstanding any agreement to the contrary in Buyer’s Purchase Order or other communications, the parties agree to be bound by these Terms and Conditions. Acceptance of the product by the Buyer shall be deemed to constitute unconditional acceptance of these Terms and Conditions.

(b) Terms of payment shall be as stated on invoice.

4. It is understood that deliveries will be made in accordance with Seller’s regular production schedule. Every reasonable effort will be made to meet the Buyer’s required delivery dates but Seller will not be liable for damages or be deemed to be in default by reason of any failure to deliver or delay in delivery due to any preference, priority, allocation or allotment order issued by the Government, whether Federal, State or local, or causes beyond its control including but not limited to, Acts of God or a public enemy, acts of Government, fires, floods, epidemics, quarantine restrictions, strikes, lockouts, freight embargoes, severe weather, unavailability of materials or shipping space, delays of carriers or suppliers or delays of any subcontractors. Should delay in delivery be caused by any of the circumstances mentioned in this paragraph, such extension of the delivery period shall be granted as is reasonable under the circumstances of the case. Should delay be caused by an event not specifically mentioned in this paragraph, damages will be limited to cancellation of the purchase order without penalty, and refund of any monies deposited or prepaid on the purchase order with no liability for any consequential or incidental damages.

5. Notwithstanding anything herein to the contrary, if the failure to accept delivery is due to any of the exceptions noted in Paragraph 4.

6. Unless otherwise stated in writing, Seller’s prices do not include sales, excise, value-added or other taxes. Consequently, in addition to the price specified herein, the amount of any present or future sales, use, excise, value-added or other tax applicable to the manufacture, sale, purchase or use of the products hereunder shall be paid by Buyer, or in lieu thereof, Buyer shall provide Seller with a valid tax exemption certificate acceptable to the taxing authorities.

7. Seller reserves the right, at any time, to revoke any credit extended to Buyer because of Buyer’s failure to pay for any products when due or for any other reason deemed good and sufficient by Seller and in such event, all subsequent shipments shall be paid for prior to at delivery by Seller’s option.

8. (a) SELLER’S LIABILITY SHALL BE LIMITED TO SELLER’S STATED SELLING PRICE PER UNIT OF ANY DEFECTIVE GOODS AND SHALL IN NO EVENT INCLUDE BUYER’S MANUFACTURING COSTS, LOST PROFITS, GOODWILL, OR ANY OTHER SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, ARISING OUT OF THE AGREEMENT, THIS CONTRACT, THE SALE OF THE PRODUCTS TO THE BUYER OR THE USE OR THE PERFORMANCE OF THE PRODUCTS. Seller may at its discretion repair, replace or give Buyer credit (pro-rated) for such defective products.

(b) Notwithstanding anything herein to the contrary, Seller shall have no liability for alleged defects with the products which are not specified in written notice from the Buyer to the Seller within thirty-six (36) months from the date of shipment of machines. Seller shall pass to Buyer any warranty received by Seller from the manufacturer of Limited Life only in most cases six (6) months.

(c) Seller shall have no liability under this Limited Warranty unless Buyer has paid in full for the products. Further, this Limited Warranty is expressly contingent on Buyer’s delivery to Seller, all costs prepaid, the defective part(s) within thirty-six (36) months of shipment to Buyer, together with a written statement specifying the alleged defect(s). Any replacement part(s) shall be shipped to Buyer on a C.O.D. basis.

(d) SELLER SPECIFICALLY EXCLUDES ALL WARRANTIES, EXPRESSED, IMPLIED OR OTHERWISE, EXCEPT AS STATED EXPLICITLY IN THESE TERMS AND CONDITIONS OF SALE. SELLER DISCLAIMS THE WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

9. The remedies herein reserved by Seller shall be cumulative and in addition to any other legal remedies. No waiver of a breach of any portion of this contract shall constitute a waiver of any other breach of such provision or of any other provisions hereof.

10. These Terms and Conditions constitute the entire agreement of the parties. No amendments, changes, revisions or discharges hereof in whole or in part shall have any force or effect unless set forth in writing and signed by the parties hereto. This contract shall not be assignable by Buyer voluntarily by operation of law or otherwise without Seller’s written consent.

11. This contract shall be governed and shall be construed according to the domestic laws of the Commonwealth of Pennsylvania.

12. Anything herein to the contrary notwithstanding, any action for alleged breach by Seller of the contract between the parties, including but not limited to any action for breach of the warranties herein set forth, shall be barred unless commenced by Buyer within one (1) year from the date such cause of action accrued.

13. The benefits to the party of the laws hereunder and beneficial use of the provisions hereof is and are intended for the respective successors and assigns of the parties hereto.