

# SubliPro

Sublimation Mug Oven with Cooler

## OWNER'S MANUAL



SubliPro-2414



SubliPro-4827

**HIX** CORPORATION  
For Customer Service, Call 1-800-835-0606  
or Visit [www.hixcorp.com](http://www.hixcorp.com)

### CONTENTS

Initial setup / installation .....	2-7
Time & Temperature Control.....	8
Operation.....	9
Using Hix Sublimation Wraps .....	10-11
Maintenance .....	14
Notes for Substrates.....	15
Warranty .....	16

**BEFORE warranty repair you MUST get Prior Authorization:**

# INITIAL SETUP / INSTALLATION

## INSTALLATION AND SET UP INSTRUCTIONS

### 1. Leg Assembly

- A) Remove four nuts on inside of dryer frame that secures the dryer to crate bottom.
- B) Raise dryer from crate bottom with forklift to allow access to four corner posts.
- C) Insert legs to paint line.
- D) Secure each leg bolt, lower forklift to allow dryer to rest on legs.

### 2. Top Exhaust Blower Motor

- A) Secure housing to dryer top using provided #14 x 1/2" HEX head tap screws with #14 Star Washer.
- B) Attach black wires to flex conduit tan colored wires using orange wire nuts. Polarity is not important.

### 3. Bottom Blower Motor

- A) Secure to bottom of dryer using 4 Greer lock nuts. Align point of arrow in motor plate to point of arrow on bottom of dryer.
- B) Match wire numbers of blower motor to flex conduit tan colored wires using orange wire nuts. Polarity is not important. Also attach the two green ground wires together.

### 4. Duct Work

- A) Run duct from the exhaust stack on the dryer to the outside of building. Install a rain cap to prevent water damage to the dryer. Maximum duct length 30 feet ( 9 meters) from dryer to where it exists the building. If longer duct runs are required a booster fan must be installed.

### 5. Extensions

- A) If the oven is shipped to you crated, remove the extension and cooler section from the crate and mount to the oven body.
- B) Plug the gear motor and encoder plugs into their respective receptacles on the exit end of the oven.

### 6. Conveyor Belt

- A) Refer to the separate instructions supplied with the wire belt to show the proper installation and splicing of the wire belt ends back together.

# INITIAL SETUP / INSTALLATION

1. Both the oven and cooler crates have duplex nails (pic 1) on all four sides which need to be removed. This allows the top to be removed at one time (either with four people or by using a fork lift).



2. The oven section has two 3/8-16 hex nuts directly under the door openings (pic 2), which need to be removed.



3. Next, position the forks of the forklift completely under the side frame rail (pic 3) until they protrude at the other end, capable of picking up the entire main body of the oven. Once positioned and well centered, lift the oven body up and off the crate base.



4. Remove the legs from the bottom of the crate and bolt them in the frame holes (pic 4).

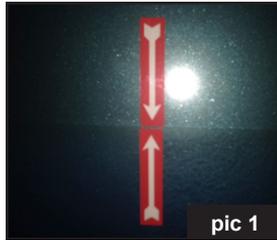


5. The bottom blower motor attaches with four 3/8" NC locknuts (pic 5a) located in a packet inside the control box.

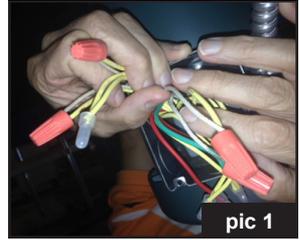


# INITIAL SETUP / INSTALLATION

Red/white arrow decals should point toward each other when the configuration is correct (pic 5b). Similarly numbered wires connect together with the orange wire nuts (also in pack)(pic 5c).



pic 1

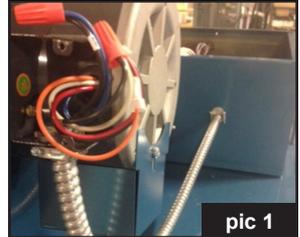


pic 1

- The exhaust fan assembly attaches to the top with ten #14 x 1/2" hex head tap screws. (pic 6a). The wires to the assembly are not numbered and can be fastened either way with the orange wire nuts.



pic 1



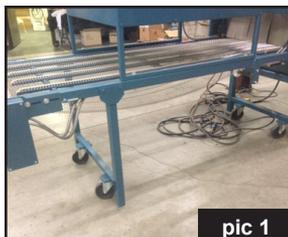
pic 1

- The cooler section has four 3/8" headed lag screws to be removed before lifting the unit off the crate base.



pic 1

- The 2414 model has only one set of legs (pic 8a) with angle iron tabs on the exit side only. The entry side has arm extensions only (pic 8b). Fasten the two sections together with the 3/8-16 x 1" bolts already in the tabs.



pic 1

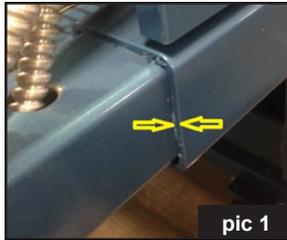


pic 1

## INITIAL SETUP / INSTALLATION

9. The 3626 model has two sets of legs on the exit side, both self-supporting once installed. The 4827 model has 3 sets of self-supporting legs.

The telescope tubing (pic 9a) slides into the oven frame until it hits the metal stops (pic 9b and c). Next, tighten the four 9/16" headed bolts to secure them together (pic 9d).



10. Insert the gear box quick-connectors into the handy box, located under the oven's fume hood at the exit side. One connects with a twist lock, the other with a snap lock (pic 10).

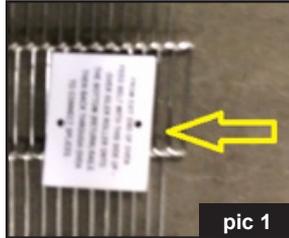


11. The cooler unit's wires are numbered to match up with the wires in the electrical handy box. Remove handy box cover, run the wires and flex conduit into the 90° Romex connector and tighten the screws. Tie the similarly numbered wires together with orange wire nuts (pic 11). Then replace the handy box cover.



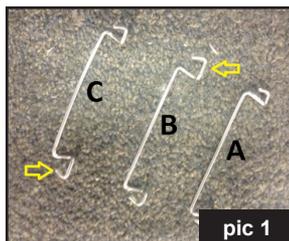
# INITIAL SETUP / INSTALLATION

12. To install the belt, place the rolled up belt under the cooler section on the floor. The belt's front is marked (pic 12a). Start feeding the belt through the oven by guiding it first over the idler pulley(s) at the exit side, then over the bottom rails (pic 12b, c). When arrived at the front end of the oven, loop the belt up and back through the oven, all the way back to the exit end.



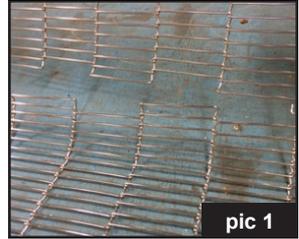
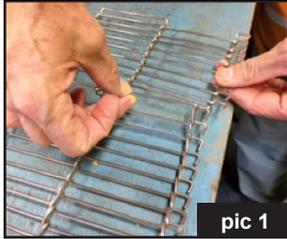
13. At the exit end, connect the two ends of the belt together with the provided belt splices. The splices are taped onto the belt's edge. An extra set is in the envelope with the belt.

Attention: there are 3 types of splices (pic 13a): one for the left end (B), one for the right end (C) - both with one large and one small hook - and one type for all center splices (A). The larger hook (yellow arrows) is to be positioned on the outside edge of the belt.

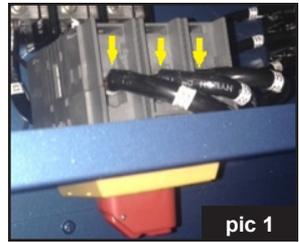
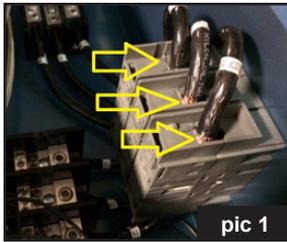


# INITIAL SETUP / INSTALLATION

Using needle-nose pliers and flathead screwdriver works best when weaving the link splices together (pic 13b, c and d).

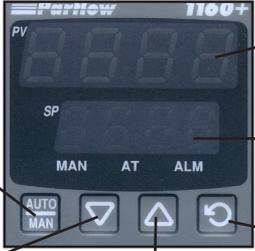


14. When hooking up the electric connection to the main rotary switch, be sure the wire connection is tight (pic 14a and b). Rotary switches fail when this connection is no longer secure. Check periodically for tightness.



# TIME & TEMPERATURE CONTROL

## TEMPERATURE CONTROL



Not functional.

Upper display shows current value of process (oven) temperature.

Lower display shows setpoint temperature.

Pressing this function button once will allow "SP" to be displayed enabling the operator to change the setpoint by pressing the "up" and "down" buttons located below. Pressing once again will return the displays to their normal mode.

Will decrease setpoint (SP) when "SP" is displayed.

Will increase setpoint (SP) when "SP" is displayed.

The image shows a Parlow 1100+ temperature controller. It has a top display labeled 'PV' showing '22.2' and a bottom display labeled 'SP' showing '22.2'. Below the displays are three indicator lights: 'MAN', 'AT', and 'ALM'. At the bottom are three buttons: 'AUTO MAN', a left arrow, and an up arrow.

## PROCESS TIME CONTROLLER

1. Controls belt speed and maintains a constant speed by monitoring the motor RPM via a Hall-effect Sensor attached to the motor shaft. Not effected by varying belt loads.
2. Displays process time in Minutes and Seconds.  
Examples: 1.30 = 1 minute, 30 seconds  
1.59 = 1 minute, 59 seconds
3. When the oven is turned off, the controller will remember the last setting. Resetting the controller is not necessary each time the dryer is turned on.
4. Function buttons detailed below:



Nonfunctional (factory only)

Decreases process time (increases belt speed)

Increases process time (slows belt speed)

The image shows an HX Corporation process time controller. It has a digital display showing '1.30'. Above the display are four indicator lights: 'Auto Man', 'Item Alm1', 'Valu Alm2', and 'Tach Error'. To the right of the display are three buttons: 'ENTER', an up arrow, and a down arrow.

## RECIRCULATING AIR CONTROL

The dryer is equipped with a very effective top delivery/bottom recovery variable flow air recirculating system. One zone is provided on models 24" and 36" belt models. Two zones are provided on 48" models.

# OPERATION

## **OVEN OPERATION**

General Oven operation for applying sublimation transfers to mugs, cups and ceramic items. This information is for reference only and actual settings will vary depending on image quality, image size, the size of mug or ceramic item, and quality of coating on item, ink and type of wrap being used. It is very important that your dryer electric source is supplied with the maximum voltage required; 240v  $\pm$  5v.

Your dryer may not operate to full potential if running below 235v. Electric power does vary. Many power companies simply can not deliver consistent power at ratings also power supply consumed in your grid by other companies can cause intermittent and inconsistent power. Your power company or electrician can assess your particular power supply.

## **TYPICAL TEMPERATURE SETTING:**

370°-410°F

## **BELT SPEED.**

Is dependent on image size, quality of graphic and size type of ink, paper used and weight of object imaged. A general starting place is 11-13 minutes.

### **Typical Times with HIX Mug Wrap (Other wraps may take longer)**

11 oz Mug.....10-13 minutes

15 oz Mug.....11-18 minutes

## **AIR SPEED**

6-8 on dial.

## **OVEN SETUP AND SPACING:**

Establish spacing by first using scrap or blank mugs with wrap and blank paper (bond paper will work). If your oven does not maintain consistent temperature ( $\pm$  30°F) slow your oven down and/or increase spacing. Generally, running oven hotter will not help. In fact, items may get too hot and scorch the image closest to the heater. Begin with items spaced at least 2" apart and 2" from side of dryer. Thicker/larger/heavier items will require greater spacing.

## **APPLYING THE TRANSFER**

With some wraps including the HIX tool-less "Snap" clasp wrap, you will be able to image virtually top to bottom and handle to handle. While full top to bottom and handle to handle imaging is possible it is not recommended until you have a firm understanding and experience with imaging mugs. To achieve consistent results and reduce waste keep your transfer width limited to 3/16" from the top rim and the bottom taper of the mug and at

# USING HIX SUBLIMATION WRAPS

least a ¼" away from the handle you should see consistent quality. As you become more experienced there are tips and tricks that will make full wrap imaging more successful; not fool proof but more consistent results can be achieved with proper preparation of the transfer. Also quality mugs must be purchased, while a mug wrap helps to cover some imperfections in the mug itself, nothing can help a poorly made, wavy or irregular surface and/or coated mug.

## TO USE YOUR WRAP

- 1. TRIM TRANSFER:** Before applying the transfer trim the transfer so there is no excess paper above or below the mug. **TIP:** Trimming the transfer with a straight edge will assist in lining the transfer with the top of the mug and help eliminate crooked transfers.
- 2. APPLY TRANSFER:** Secure the ends of your transfer to the mug using heat tape. **TIP:** Fold one end of the heat tape to make for quick and easy removal of transfer.

### **3. WRAP MUG:**

- a) Hold the "loop end" of the mug wrap in your hand.



- b) Hold the mug with the handle pressed against the "loop end" at the point where the silicone rubber wraps around the round bar.



- c) With your other hand, grasp the "hook end" of the mug wrap, and wrap the silicone rubber around the mug.



- d) Insert the bent up portion of the "hook end" into the rectangular opening on the "loop end."



- e) With both hands, squeeze the two halves of the mug wrap together until it locks together. You will hear a 'snap' sound when the "hook end" is fully inserted into the "loop end".



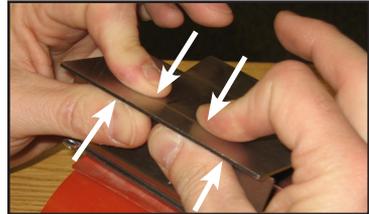
- 4. PLACE IN OVEN:** Set oven to 400°F. Place your wrapped mugs in the oven top down to allow heat to be trapped inside of the mug improving transfer quality. Space each mug at least 2 inches apart to allow for maximum airflow between mugs and more even heating of the entire mug.

# USING HIX SUBLIMATION WRAPS

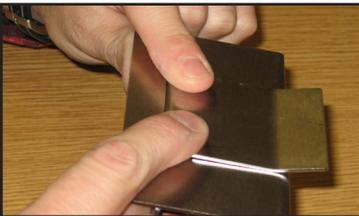
## 5. REMOVE AND COOL:

**CAUTION:** Wear heat protective gloves to handle the finished wraps and mugs.

- a) Remove mug from oven
- b) Press thumbs against the bottom lip of the “loop end.”
- d) With one motion, press thumbs up and index fingers down. This will release the mug from the wrap.



- c) Press index fingers against the top edge of the “hook end.”
- e) Place mug in room temperature water to cool mug and stop sublimation process.



**CAUTION:** Wrap will be hot use care when applying wrap to another mug. It is recommended to allow wrap to cool before using again.

## **INCREASING THE LIFE OF YOUR WRAP:**

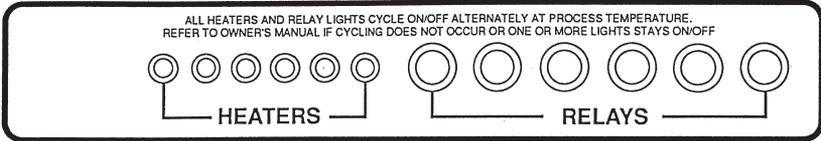
The following actions will increase the life of your wrap and help to prevent premature failure.

- Space your mugs at least 2” apart in oven, this will allow for more even heating and airflow between mugs. Also this will prevent mugs from banging together reducing the life of your wrap.
- Do not drop or bang mugs with wraps together. This can cause small tears in your wrap leading to tearing of the wrap.
- Only use on items the wrap is rated for; the standard HMWIII is designed for both 11oz and 15oz mugs. Use of these wraps for anything else may shorten the life of the wrap and could result in damage such as tearing. For unusually sized or shaped items please utilize a wrap custom made for your application.
- Sharp fingernails and rings can snare/tear a wrap.

If the above procedures are followed and care is taken when handling these wraps you should expect to get hundreds of cycles from your HMWIII.

# DIAGNOSTICS

## HEATER AND RELAY LIGHTS



### 1. **Heater LED's: Cycle On When Heaters Are On**

Small (1/8") light-emitting diodes (LED's) are driven by a current sensor (one for each heater in the dryer). They can, in conjunction with relay lights explained below, determine if heater(s) are burned out or if a relay is at fault.

### 2. **Relay Lights: Cycle Off When Heaters Are On**

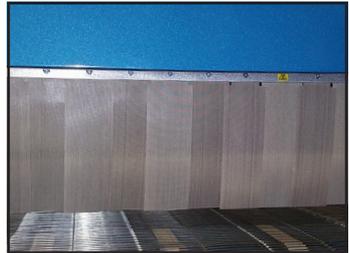
Large (1/4") neon lights indicate proper opening and closing of each heater relay. When relay lights are "on", the relays are "open" and no power is applied to the heaters (Heater LED's Off). When relay lights are "off", the relays are "closed" and power is applied to the heaters (Heater LED's On). If one relay light stays "on" while the others are off, then that pole is stuck "open" and should be replaced. The heater LED's will still function as normal as they are "double switched".

**NOTE:** If all relay lights operated normally yet one of the heater LED's will not come on, check the suspected heater with an amp clamp. Normal reading should be 9 - 12 amps depending on element size and voltage available. If readings indicate no current flowing, then the heater will require replacing.

## OVEN OPENINGS

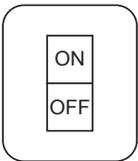
This oven is supplied with "Air Curtains" on each end of the oven chamber.

They are designed to retain heat inside the oven chamber to improve energy efficiency and also eliminate air drafts from entering the oven chamber resulting in better temperature regulation.



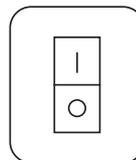
Air Curtains

## ON/OFF POWER BREAKER



Turns all dryer power and control circuits on and off. Provides protection to contactor coil only. Dryer **MUST** be externally fused with appropriate size fuse or circuit breaker (FLA x 125% = fuse size). See the following sheet for fuse size to be used for each dryer.

## IN/OUT (I/O) CIRCUIT BREAKERS



Provide protection for control and heater circuits only! **DO NOT** use for ON/OFF control! If a breaker trips, determine the cause before resuming operation.

# OPERATING PRECAUTIONS

## GENERAL OPERATING PRECAUTIONS

While the below information will not cover every operating situation, these guidelines should be understood and general common sense applied when operating the equipment. Failure to do so could cause a fire hazard, explosion hazard and possible serious personal injury or death.

### **Intended Use:**

HIX electric conveyor ovens may be used to cure or dry a number of inks, substrates or products such as textiles, wood, plastic, glass or any other similar substrates. The oven process temperature is to be set within the safe temperature limitations of the ink or substrate. Research of the temperature limitation of the particular ink or substrate is solely the responsibility of the end user and not of HIX Corporation. HIX Corporation will not be responsible for any damages to product, oven, facilities or personnel caused by product being exposed to temperatures exceeding their limitations or operating the oven in any manner in which it was not intended.

### **Proper Venting:**

Never block any of the air vents leading into or out of the control box. Likewise never block any of the air vents located in the sheet metal side covers along the lower frame rails. Blocking any of these vents can cause overheating of the unit and create a fire hazard. The top mounted exhaust on the oven shall be vented outside of the building. See instructions in this manual for additional information on proper venting of the exhaust.

### **Safe Operation:**

Pay careful attention to the adjustable doors located on each end of the oven. Ensure that the door on the exit end of the oven is raised higher than that on the entrance end of the oven so there is no possibility that product may get accumulated or lodged inside the oven chamber and create a fire hazard.

Keep aerosol spray cans away from the oven. If they accidentally fall on the belt and enter the oven chamber they can overheat and explode inside the oven chamber causing a fire hazard and or personal injury.

Never introduce any flammable liquid into the oven to evaporate, such as solvents, including, but not limited to alcohol, MEK, acetone, toluene, etc. without consulting the specific application with HIX Corporation to determine what amount can be safely introduced into the oven without causing a dangerous situation. Failure to do so can cause fire, personal injury or death.

# MAINTENANCE

## MAINTENANCE SCHEDULE

### Every month:

Remove and clean or replace filters located on each side of control box.

### Every 6 months:

1. Vacuum any lint/dust accumulation around air intake holes on both sides of oven and on fume hoods.
2. Check tension on the wire conveyor belt and tighten if necessary.

### Every Year: (Disconnect power at main panel)

1. Remove top chain guard cover and lightly lubricate the conveyor drive chain; with SAE 20 weight oil. Replace after lubricating. **DO NOT leave off!**
2. Have a qualified electrician check all heater elements to specifications shown on wiring diagram.
3. Check brushes on conveyor drive motor.
4. Check/tighten all electrical connections on relays and contactor inside control box.
6. Check thermocouples with ohm meter disconnected from temperature control. Cold resistance should be between .5 to 2 ohms. Higher resistance readings indicate possible problems with the thermocouple and in this case it should be replaced.

### TO ADJUST THE TENSION OF THE SILICONE RUBBER ON WRAPS:

When the mug wrap is closed around a mug, if the rubber is too loose or too tight, loosen the two Phillips headed screws and adjust the rubber length to achieve the desired tension. Re-tighten the screws to provide tension to hold the rubber in the wrap ends. Do not over tighten the screws, as damage to the silicone rubber can result. (Pic 9)



### TO REPLACE THE SILICONE RUBBER ON WRAPS:

If the rubber in the mug wrap has become damaged, or you are replacing the rubber for a different sized mug, loosen the two Phillips headed screws and remove the rubber from the wrap ends. Thread the rubber between the round bar and wrap itself. Re-tighten the screws to provide tension to hold the rubber in the wrap ends. Do not over tighten the screws, as damage to the silicone rubber can result.



# WARRANTY

**(Effective 3/1/2020)**

HIX will automatically register the equipment on the date it was shipped to you or your distributor. If the equipment was not purchased directly from HIX, but through a distributor (either domestic or foreign), please keep a copy of their sales invoice showing the serial number and date it was sold/shipped to you with this warranty. In this case, we will use the distributor's invoice date as the beginning warranty date. **STAPLE A COPY OF YOUR PROOF OF PURCHASE TO THIS WARRANTY** and keep in a safe place to provide verification of your warranty should a problem occur. Thank you.

Please fill in the following information and attach a copy of your receipt for your records.

Date Purchased: \_\_\_\_\_ From: \_\_\_\_\_  
Model #: \_\_\_\_\_ Serial #: \_\_\_\_\_

This warranty applies to equipment manufactured by the HIX Corporation (HIX), Pittsburg, Kansas, U.S.A. HIX warrants to the original purchaser, its Ovens and Dryers, Heat Transfer Machines, Textile Printers, Spot Heaters, and Exposure Units against defects in workmanship and material, except for wear and tear for a period of "One Year" from the date of purchase. HIX warrants Accessories for a period of 90 days from the date of purchase. doughXpress products are covered under separate warranty.

In the event of a defect, HIX, at its option, will repair, replace or substitute the defective item at no cost during this warranty period subject to the limitations of insurance and shipping costs stated below (excludes labor).

In the case of heat transfer presses (except the Hobby Lite and Large Format presses), HIX warrants the heat casting for the "Life" of the machine for the original purchaser. If a part becomes obsolete at the time for repair, and/or cannot be reasonably substituted for, HIX will credit, at half the then current list price or last recorded price, only that part toward a new machine or any product HIX offers. This credit offer shall be the sole responsibility of the HIX Corporation in the event of an obsolete part.

This warranty does not cover belts, rail tape, pads, mug wraps, canvas, rubber blankets, bulbs, glass. Warranty does not cover damages due to accident, misuse/abuse, alterations or damage due to neglect, shipping or lack of proper lubrication or maintenance. HIX shall not be responsible for repairs or alterations made by any person without the prior written authorization by HIX. This warranty is the sole and exclusive warranty of HIX and no person, agent, distributor, or dealer of HIX is authorized to change, amend or modify the terms set forth herein, in whole or in part.

In the case of a problem with the equipment identified herein, HIX Corporation should be contacted during regular business hours to discuss the problem and verify an existing warranty. HIX personnel will assist the customer to correct any problems which can be corrected through operation or maintenance instructions, simple mechanical adjustments, or replacement of parts. In the event the problem cannot be corrected by phone, and upon the issuance of a return authorization by HIX, the equipment shall be returned to HIX or an authorized service representative. All insurance, packaging and shipment/freight costs are solely the responsibility of the customer, and not that of HIX, and HIX shall not be responsible for improper packaging, handling or damage in transit. Contact HIX customer service for complete return authorization information. Correct shipping boxes are available from HIX.

This expressed warranty is given in lieu of any and all other warranties, whether expressed or implied, including but not limited to those of merchantability and fitness for a particular purpose, and constitutes the only warranty made by HIX Corporation.

In no event shall HIX's liability for breach of warranty extend beyond the obligation to repair or replace the nonconforming goods. HIX shall not be liable for any other damages, either incidental or consequential, or the action as brought in contract, negligence or otherwise.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.



1201 E. 27th Terrace • Pittsburg, KS 66762 • U.S.A.  
Web site: [www.hixcorp.com](http://www.hixcorp.com) • Phone: (800) 835-0606 • Fax: 620-231-1598  
E-Mail: [customerservice@hixcorp.com](mailto:customerservice@hixcorp.com) • E-Mail: [sales@hixcorp.com](mailto:sales@hixcorp.com)