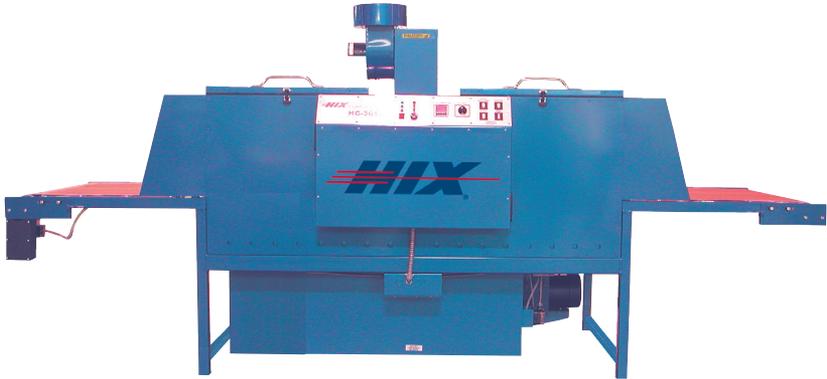


HG GAS CONVEYOR DRYER

Micro-Processor Controlled

OWNER'S MANUAL



HIX CORPORATION
For Customer Service, Call 1-800-835-0606
or Visit www.hixcorp.com

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**BEFORE warranty repair you MUST get Prior Authorization:
Call 1-800-835-0606**

INSTALLATION / SETUP

NOTE: This unit is designed for installation on non-combustionable flooring only (no wood or carpet). Also maintain the following minimum distances to other structures: Back - 18 inches, Ends - 40 inches, Front - 48 inches, Exhaust Flue To Surface - 18 inches.

1. LEVELING PAD INSTALLATION

- Raise oven off floor by positioning a forklift at each end of the oven. Raise the oven only enough to allow access to the four casters (One on each corner). Keep the oven level during the lifting and lowering process.
- Remove casters from leg cross tubes.
- Assemble leveling pads with provided threaded rod and (2) jam nuts.
- Screw one leveling pad into each corner post.
- Lower oven almost to floor level. Check belt height above floor and adjust leveling pads as needed.

NOTICE: Belt height must be a minimum of 34" above floor. Attempting to adjust the leveling pads for lower than 34" belt height will cause interference between the floor and the burner box mounted under the oven.

- Lower forklift to allow machine leveling pads to rest on the floor. Check for clearance between the burner box and floor. There must be a minimum clearance of 1/2". Do not allow the burner box to rest on the floor. It is not designed to support the weight of the oven. Tighten all leveling pad jam nuts.

2. EXHAUST DUCT WORK

- Run duct from the exhaust stack on the oven to the outside of the building.

CAUTION: DO NOT operate this oven without ductwork in place. All gas ovens give off Carbon Dioxide and dangerous Carbon Monoxide fumes as a by-product of combustion. Operating any gas-fired equipment without proper ducting in place could result in serious risk to workers health or even death.

- All duct installation must be done in compliance with Federal, State and local codes for venting gas-fired equipment.

3. CONVEYOR BELT

- Remove casters from the belt extension leg cross tubes if present.
- Assemble leveling pads with provided threaded rod and (2) jam nuts
- Screw one leveling pad into each extension leg.
- Unroll the conveyor belt from each end of the oven. Do not remove the belt from the oven.

INSTALLATION / SETUP

- Pull the end of the conveyor belt around the end pulley and over the top of the frame extension on each end of the oven.
- Push or pull one end of the belt through the oven chamber. This may be easier if a couple of long rods or poles are first pushed through the oven and the belt is temporarily attached to the ends of the poles. This will allow the belt to be pulled through the oven chamber from one end.
- Loosen the end plate bolts and adjust the end plates in to their closest position. Refer to the Belt Tracking Adjustment section of this manual.
- Bring the ends of the belt together. Align the teeth of the alligator clips on each end of the belt and insert the provided splicing rod. Make certain the alligator clips stay together while inserting the rod. Do not force the rod and make certain the ends of the rod are flush with the ends of the alligator clip.
- Adjust the end plates back to their original positions. Align the punch marks on the top edge of the end plates with the punch marks on the frame extension. Tighten the end plate bolts.
- Run the belt and check for belt tracking. If necessary, adjust according to the instructions in the Belt Tracking Adjustment section of this manual.

4. GAS HOOKUP

- **GAS TYPE:** Refer to the serial number I.D. plate to identify the proper gas type of “natural” or “propane”. **NOTE:** The dryer is set up from the factory to run only on the gas type indicated on the I.D. tag.
- **GAS PRESSURE:** Refer to the serial number I.D. plate to identify proper inlet pressure. Normally 4.5” - 10.5” W.C. for natural gas or 10.0” - 15.0” W.C. or (“1/2 PSI / 34mbar) for propane gas.
- Compliance with all relevant Federal, State & Local building codes in the installation of gas service to the oven is the responsibility of the end user.

5. ELECTRICAL SERVICE

- Electrical service to the oven must be installed according to applicable State & Local building codes. Refer to the nameplate on the side of the control box just above the electrical service entrance for voltage, phase and rated full load amperage requirements.

INSTALLATION / SETUP

INITIAL GAS STARTUP INSTRUCTIONS

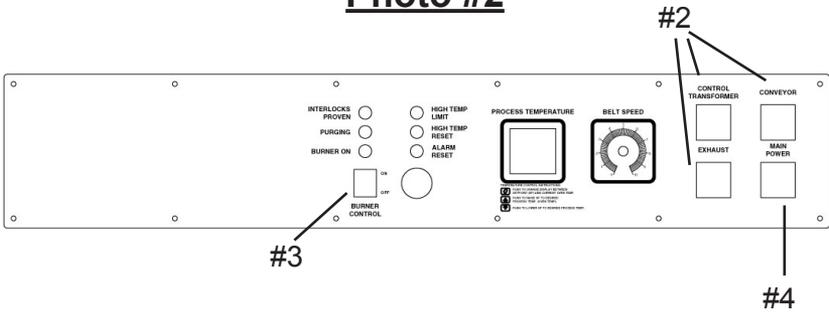
1. Verify that the proper inlet gas pressure is supplied to the unit. Refer to the ratings decal on the side of the control box for this information.
2. Ensure that the gas supply ball cock valve is “open” (See Photo #1).
3. For 220V models only, ensure that the three “I/O” circuit breakers on the front panel, (Conveyor, Transformer, and and Exhaust) are in the “I” position. (See Photo #2, Ref #2). 110V models use internal fuses and do not have panel mounted circuit breakers.
4. Ensure that the “Burner Ignition” switch is turned “OFF”. (See Photo #2, Ref #3)
5. Apply power to the machine by turning the power switch (See Photo #2, Ref. #4) “ON”.
6. After it is confirmed that you have power to the panel (evident by the temperature and belt speed controls illuminating and hearing the blower fans running), turn the “Burner Ignition” switch to the “ON” position (See Photo #2, Ref. #3).
7. With the burner switch on and with all interlocks proven (3 total), the “Green” lamp labeled “Interlocks Proven” will illuminate. At the same time the “Green” lamp labeled “Purging” will illuminate. The “Purging” lamp will remain lit for 2 minutes at each start (or restart) of the unit to exhaust any raw gas out of the oven chamber before the main burner is attempted to be ignited. After 2 minutes the Green “Purge” lamp will go out.
8. After purging the Green “Purge” lamp will go out and power will be supplied to the burner pack. After a 20 second delay the combustion air blower will start running. After another 40 second purge the flame pack will ignite the burner and the “Amber” lamp labeled “Burner On” will illuminate.
9. The “Process Temperature” controller can now be set to control the oven operating temperature between 250 – 400 degrees F(120 - 204 degrees C).
10. If the flame pack control does not sense that the burner has established an adequate flame, then the gas valves will close. In this event, the “burner” light will go out. If this occurs, turn the “Burner Control” switch off and back on to reset the system. This fault is common in first installations until all of the air is purged out of the gas line. Attempt to restart the unit by following steps #6-#9. If after three attempts you are unable to get the unit to start properly, go to the troubleshooting section of this manual to determine the problem.

INSTALLATION / SETUP

Photo #1



Photo #2



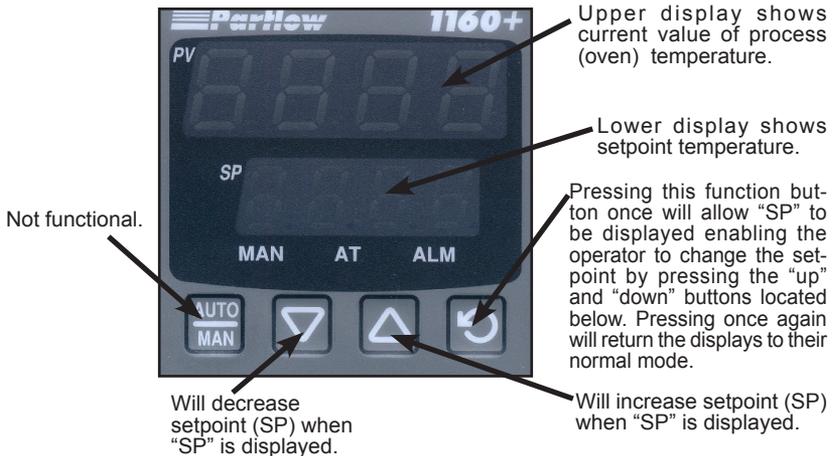
OPERATION

DIGITAL PID TEMPERATURE CONTROLLER

1. Can be set to accurately control temperature between 250° - 400°F (120° - 204°C).

NOTE: Gas ovens will not control temperatures set below 250°F.

2. To set desired dryer operating temperature, press the “↻” button until “SP” is indicated on the lower LED display. Press the “△” or “▽” button until desired temperature (setpoint) is shown on the upper LED Display. Press the “↻” button again to return to process temperature (actual oven temperature).



3. Allow 15-20 minutes at initial startup for the dryer to stabilize at setpoint before using to cure products.
4. When through for the day, first turn the “burner ignition” switch off and then the “main power” switch may be turned off to shut the entire unit down.

OPERATION

HIGH LIMIT TEMPERATURE RESET

In the event there is a malfunction of the temperature control or gas burner control system, a high temperature safety control is provided.

If the temperature of the oven exceeds 420°F, this limit control will activate and shut the main and block gas valves off.

In the event this ever happens it should be determined why the limit was tripped.

To reset this limit, you must press the “High Temp Reset” button located on the front panel of the control box.

Once reset, the unit will go through its normal purge cycle and then relight the burner again.



OPERATION

RECIRCULATING AIR

The dryer is equipped with a very effective top delivery/bottom recovery variable flow air recirculating system.

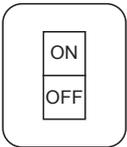
Air recirculation provides these functions:

1. Drives off water/solvents from the garment and ink to provide quicker and more effective drying and curing.
2. Minimizes scorching of delicate fabrics and paper.

DOOR ADJUSTMENT

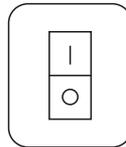
The dryer is equipped with adjustable doors located at each end of the oven chamber inside the fume hoods. The maximum opening is 6 inches and may be pulled down to belt level on standard dryers. Always run the doors as far closed as safely possible (typically allow 1-1/2" above product height) to contain the oven heat and help eliminate problems caused by air drafts in the shop. Exercise caution when adjusting the door height when the oven is hot, use a rag or wear a glove to prevent burning your fingers.

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. See the serial number I.D. plate next to the electrical service entrance for proper fuse size.

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.

BELT TRACKING ADJUSTMENT

1. Make sure the oven is level (from side to side). Use a carpenter's level.
2. Slightly loosen the pulley adjustment end plates (leave snug yet allow the plates to move with the adjustment screws) shown in the diagram.
3. The belt has a label that shows the direction of travel and which side to mount face up. Verify the travel and face up direction label are correct and then connect belt with the supplied spline pin.
4. For ovens made prior to October 2007, verify that the two set screws on side B only (that is the side opposite of the belt drive motor side of oven) and on both ends of the oven are removed. (set screws are located in the flange bearing into the belt roller shaft) See figure 1
5. Adjust the adjustment screw until the punch marks on each side line up, these are located on the pulley adjustment plates and the top at the end of the dryer frame. These marks are used to set the belt tension and initial tracking adjustment settings. See figure 2
6. Bring the dryer up to your desired operating temperature, at low belt speed, until you reach temperature. The belt will track differently when hot than when cold.
7. Set the belt speed to maximum/high speed; setting #10.
8. If the belt is moving to the left, tighten (1/2 turn-clockwise) the adjustment screw on that side. If tracking to the right, tighten the right side adjustment screw. Allow the belt to make at least 3 full revolutions before making further adjustments. If the belt is quickly moving to the side it can be adjusted every belt revolution. Check the position at the same location on the belt each time. The seam is a convenient place to make this check. Repeat this procedure until the belt is tracking straight. Do not tighten the adjustment screws more than 5 full revolutions. Do not over-tighten the belt or damage could occur that is not covered under warranty. Make smaller, (tighter or looser) adjustments for final tracking. As the belt ages with time/heat, further minor adjustment may be necessary.
9. Tighten the end plate bolts and verify the belt is still tracking correctly.

NOTE: Belt travel is always toward the belt drive motor, keeping the belt under tension. Do not attempt to reverse the motor rotation or belt travel direction as proper belt tracking will not be possible.

BELT TRACKING ADJUSTMENT

Figure 1

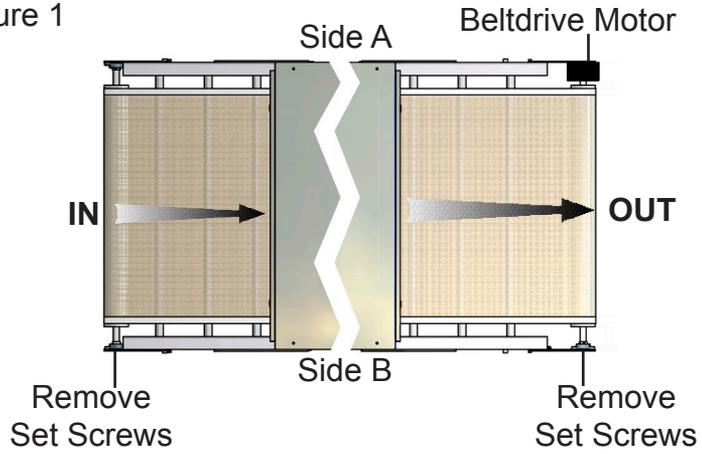
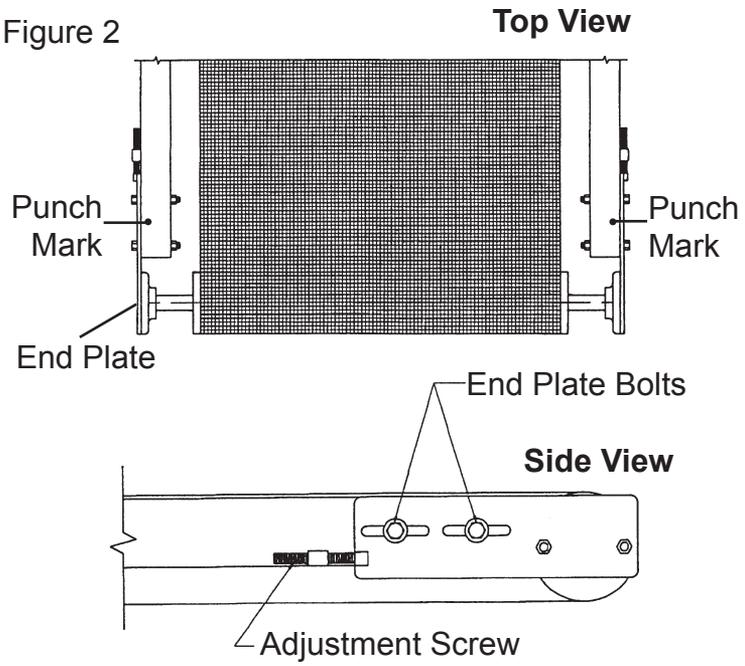


Figure 2



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 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. All cover plates, enclosures, and guards must be in place at all times except during maintenance and servicing.

MAINTENANCE SCHEDULE

EVERY WEEK:

1. Check or clean the combustion (1) and recirculation air filters (1). For high volume operations or where high amounts of dirt or lint are in the air, daily cleaning may be necessary.

EVERY MONTH:

1. Remove and clean or replace filters located on each side of control box.
2. Inspect belt tracking and adjust tension if necessary as outlined in this manual.

EVERY 6 MONTHS:

1. Vacuum any lint/dust accumulation around air intake holes on both sides of oven and on fume hoods.
2. Remove top panels and vacuum any lint/dust accumulation from around plenum covers and inner frame work.
3. Remove plenum access panels and vacuum any lint/dust accumulation inside the upper plenum and between the nozzles.

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 cover off!
2. Check brushes on conveyor drive motor.
3. Check/tighten all electrical connections on relays and contactor inside control box.
4. Check thermocouple 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.

TROUBLESHOOTING

WARNING: These checks must be performed by a qualified licensed electrician as power inside the control box must be present to perform these tests. Dangerous voltages are present and if proper precautions are not taken electric shock can result in serious injury or death.

Problem: Interlocks Proven or Purging Light Will Not Illuminate.

Solution: With power applied, check for voltage drop across all the following interlock switches (refer to the wiring diagram inside the main control panel).

- A. High temperature limit switch (Push to reset)
- B. Recirculating Air #1 proving switch
- C. Exhaust Purge proving switch

Problem: Interlocks Proven but “Burner On” light will not illuminate and the alarm sounds after purging time elapses and burner won’t ignite.

Solution: Check the following.

- A. Check manifold pressure. Should be set at 3.0” W.C. for Natural Gas or 9.0” W.C. for
- B. Propane Gas.
- C. Check ignition transformer to ensure it is supplying high voltage to the spark plug for 5 seconds after purge cycle.

Problem: Oven runs for a while then the burner shuts off and the alarm sounds. Sometimes you hear the gas valves “chatter” and the interlocks proven lights flicker.

Cause: An interlock opened.

Solution: Determine which interlock opened. Check all interlocks as outlined above. This is most likely the exhaust/purge or the recirculating air blower motor proving switches. Check for any lint accumulation at the end of the proving tube and clean if necessary.

Problem: Audible Alarm sounding

- Causes:**
- A. Temperature outside the +/- 15°F (10°C) band alarm. This alarm is normal to sound if you change the process temperature more than 10 degrees in which case you only need to press the “Alarm reset” button.
 - B. Flame failure. See previous troubleshooting steps.

TROUBLESHOOTING

Problem: Temperature control displays “OPEN” on the digital display and the oven will not heat properly.

Solution: Replace the thermocouple.

Problem: Motor protection fuse blows.

Solution: Verify that motor starter is working properly and measure the amperage drawn by the motor with an amp clamp to ensure it is within it's ratings (refer to the wiring diagram or motor nameplate for ratings). Determine if motor is being overloaded. Never replace fuse with higher amperage than indicated on wiring diagram.

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 • Phone: (800) 835-0606 • Fax: 620-231-1598
E-Mail: customerservice@hixcorp.com • E-Mail: sales@hixcorp.com