MANUFACTURERS’ REPRESENTATIVE PHOTOBOOK
HIX Oven Categories

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RETURN SYSTEMS

This is a complete system to pre-heat, cure and cool stainless molds producing golf balls. There is a cooling system that required a chilled water bath to reach the desired temperature.

Customer Need: New curing process to be integrated into their existing production assembly line. This oven system installed over the top of their existing conveyor system and is used to cure plastic parts.
This is a custom oven designed to anneal plastic components and return them to the operator loading the oven. This type of system streamlines the process flow and permits true 1 operator use.

HIX worked with this customer to design a dual conveyor system used to cure a large quantity of small metal parts at a high temperature. The parts must tumble off the upper conveyor and fall onto the lower conveyor for return to the operators at the feed end of the oven.
URETHANE MOULDING OPERATION

HIX tapped into our design capabilities and manufacturing expertise to help this customer move away from an inefficient and labor intensive operation to our system of an automated line capable of handling molds from 8 to 800 pounds. The system pre-heats molds, urethane is then inserted and the 2nd oven cures the urethane. The urethane is then de-molded before starting the process over again. This unit utilized a combination of Infra Red heat and recirculation air flow for economic and reliable processing. Incorporated into this system is a custom designed inline cooling section.

*HIX has also produced a similar system for the production of golf balls.
This batch oven has been designed to accommodate three roll-in racks holding numerous medical grade parts that need to be dried.

**BATCH OVEN FOR COMPOSITES:** Custom Infra Red and combination recirculation airflow in a cabinet oven design for curing carbon fiber components. A more economical solution than a gas fired batch oven.
HOT AIR CONVECTION OVEN FOR CURING FIREARMS COATINGS:

The customer of this oven approached HIX, looking for an oven that was more efficient and more controllable. Their process was for curing proprietary coatings onto firearms. They had gas ovens, however, these were not getting the job done. Over time, the customer ordered a 2nd oven to handle an increase in business.
This large dual belt oven system is used to cure automotive glass coatings. To accommodate our customers’ need of variable speed and direction for the various pieces of glass it cures, duel belts were employed. Another example of HIX seeking to understand our customers’ needs and providing a solution meeting or exceeding their expectations.

CUSTOM OVEN SYSTEM FOR CONSUMER PRODUCT:
HIX was approached to do test work and design a complete oven and fixture system capable of producing millions of consumer products every year. This system processes six parts every 10-15 seconds.

The HIX design was such a success with this customer, they modified their orders to 11 oven systems versus their original plans of 4-5 systems.

HIX Ovens – Helping our customers solve their problems and save money in the process!
An automotive supply customer came to HIX to design an oven and cooler system that would handle a wiring harness assembly that needed to have a potting compound cured. HIX designed the carrier fixtures and automatic unloading of the harness. Another example of the custom designs HIX can offer to our customers.
This custom oven is used for curing coated textiles.

This custom designed oven system is over 60 feet long and is used for processing electronic components.
Custom designed automotive glass oven system to cure coatings onto the glass.

PAD PRINTING OVEN WITH LARGE OPENING:
Approached by a customer producing personalized sports balls, HIX came up with a solution which satisfied the customers need of simultaneously curing the inks printed on multiple shapes and sizes of sport balls.
CONVEYORIZED

HURRICANE GLASS LAMINATION OVEN SYSTEM: This in-line oven and cooler system is used for curing laminated hurricane proof glass. It has a 72” by 30’ overall footprint. The lamination cures quickly to ensure maximum strength of the hurricane resistant glass.

MUG OVEN TO CUSTOMER’S COLOR WITH WORK BENCHES:
HIX came up with a design for sublimating coffee mugs and other ceramic products in an efficient and economical process. This oven has been painted to customer’s spec and included custom work tables along the conveyor system for processing images onto the ceramic parts. In this application, the work tables were used for applying the transfers and wraps onto the mugs and then removing them after curing and cooling. The Optional HIX cooling tower seen in background at the end of the conveyor. This permits the parts to be “cool-to-touch” after the process is completed.
OVEN SYSTEM FOR MUNITIONS:

HIX can build ovens of various lengths and widths with nearly any design need or process control interface. Simply call us with your process needs and we will do the rest. This oven was designed to evaporate residual material and pre-heat molds for further processing in an ammunition production facility.

Humidity controlled oven system for automotive glass coating. Coating required heat and high humidity to get proper cure. Oven designed to interface with pick and place robots.
This gas fired oven system is used to cure pallet loads of foundry cores. It has a 48”x48” opening. It can process 800 pound pallets 2-3 at a time on a continuous operation. HIX Custom Oven Design in action!
A printing customer came to HIX with a problem, their six hot air units were not curing the conductive inks. HIX designed four gel cure ovens to replace these six hot air units, not only do the HIX gel cure ovens provide for complete cures, the printing speed has more than doubled. Another satisfied HIX customer!

WEB PRINT CURING OVEN FOR CONDUCTIVE AND OTHER INKS:

HIX was asked by one of our customers to design a tower oven for curing conductive inks. HIX took an innovative approach to the tower oven design and we corrected many of the problems commonly seen in other designs.

Our unit exhibited superior heat distribution over traditional tower designs and saved the customer money by being more energy efficient.
HUMIDITY CONTROLLED OVEN SYSTEM:
Steam is used in this oven to maintain a high humidity level at over 200°F. This oven measures 40 feet long and 60 inches wide. Another example of how HIX does Custom Ovens!

ORIGINAL HIX GEL CURE OVEN:
This oven was originally developed for a printing customer, as a cost savings and to solve curing problems associated with tower ovens. The units were far more productive than we thought. This solution replaced 40 feet of tower oven and cost less to operate.
This customer approached HIX looking for a 21st century solution to an ink curing process. They were using 60 foot long gas ovens and these large ovens were not getting the required cure accomplished. We replaced the 60 foot gas oven with an 11 foot gel/cure oven. With the HIX solution, our customer was able to obtain the required cure. As an added benefit of the HIX solution, they were also able to increase their run speed by 50%. This project was deemed so successful that they changed out two other 60 foot ovens and replaced them with four new line HIX ovens running at twice the speed.

OVEN AND COOLING UNIT FOR MUG DECORATION THRU SUBLIMATION OR SCREEN PRINTING. This unit was custom designed with Infra Red and combination recirculating air flow for economical and reliable processing of components. It contains a custom designed inline cooling section. HIX is the only oven supplier successfully serving this market.
PRESHRINK OVEN FOR WEB PRINTING APPLICATIONS: This is a custom designed tower oven for preshrinking various substrates used in web printing applications. HIX offers a unique design approach of utilizing Infra Red energy and a recirculating air flow in many different applications for more productivity and more economical operations.
ROBOT INTERFACED OVEN CURING SYSTEM: This is a custom designed, robotic interfaced oven system. HIX designed our system around having a robot place and remove the items and index the oven accordingly. Over 30 oven systems of various sizes were purchased. The controls for these systems varied from manual to robotic interface. This customer was performing automotive glass operations.
HIX Oven Categories

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1. Sensors/Monitoring – 1

- Integrated Sensors Automotive Glass with Robotic Interface
- Photo Eye Stop (sensor)

2. Infeed / Distribution – 1

- Seed Spreading ahead of Drying Chamber
- Product Dispersion across conveyor allowing even drying of the seeds
- Custom In-feed Chutes
3. Filtration – 1

Fume Hood Particle Filter & E-Stop

4. Control Panels – 1

Custom Control Box

Custom Burner Box
4. Control Panels – 2

Custom Gas Oven Control Panel

Custom Control Box

5. Air Knives – 1

Internal Shell Air Knives in the side of this large volume gas conveyor oven.

Close-Up of Air Knives
5. Air Knives – 2

Pull out air knives on tower oven permitting easy access for cleaning

Air Knives in side wall of Truck Oven

6. Heat Curtains – 1

Silicone Heat Curtains shown at the entrance/exit of a conveyor oven

Access Portal permitting access to oven during operation without any significant heat loss
7. Heater Elements – 1

Custom Shielding on Heater Elements

Close-Up View of Gel Cure elements

7. Heater Elements – 2

Custom Electric Heater Panels

Side Panel Heaters permitting heat distribution above and on the side of the part
8. Dual Feed – 1

Dual Belt Mold Cure Oven – Conveyors moving in opposite directions with independent speed controls

9. Multiple Configuration Blowers – 1

3 Blower Plenum – Spatial constraints required the use of 3 smaller motors vs. 1 large motor

Dual Circulation Blowers permitting more even heat distribution
10. Conveyor Belts & Systems – 1

- In Place 6 module gas continuous loop oven
- Custom Conveyor ball roller table
- 30’ Conveyor Oven w/ Side Work Tables

10. Conveyor Belts & Systems – 2

- Heavy Duty Drive Gear for 6,000# of capacity on a heavy duty Steel Belt
- Heavy Duty Belt inside 3 modular Gas Oven
11. Custom Fixtures – 1

Split Belt Glass with Support Pins – Shown with glass

Custom Pots - Fixtures

Shown without glass

12. Supplementary Items – 1

Turn Around Conveyor System

Auxiliary Conveyor with Side Work Tables

Custom Truck designed for customer’s parts and to be a perfect fit into the Batch Oven – Optimizing space in oven
12. Supplementary Items – 2

Water Chiller & Blow-Off System shown as installed next to the oven.

Air Chiller Unit

Air Chiller Unit

12. Supplementary Items – 3

Two Zone Oven

Upper & Lower Cooling on 36” Oven
12. Supplementary Items – 4

Printed Film in Vacuum Collection box of Tower Oven

Steam Injection Conveyor Oven required to increase humidity

Transformer for custom voltage

13. Other – 1

Clear Film Print traveling through tower oven on silicon belt

Tower Oven Inline with Web Printer

Tower/Pass through cabinet
13. Other – 2

- Drawer Oven
- Individual Gel Tower
- In-line Web Label Printer Gel Cure

13. Other – 3

- Sport Ball Print Oven – various sizes of ball in large opening oven
- Modular Design permitting interconnection
- Dual & Separate Drawer Heater, Blower & Controls
13. Other – 4

Customer Need: Improved curing process in same “footprint”. HIX Ovens Solution: Our Dual Tower 4-zone Gel Cure on Web Printer.