



## Baking Equipment Supplied

The Henry Group manufactures baking equipment for many varieties of bakery products. Specific products supported are listed below. We supply complete engineered baking systems for the products listed. For equipment that The Henry Group does not supply directly we work with the best supplier within the industry to meet your specific needs and make unbiased recommendations. If a custom piece of equipment is required and standard solution does not exist, THG performs custom design build equipment services when needed. We have designed and built a wide range of custom equipment from custom slicers, custom dough make-up, to custom packaging solutions.

### Proofers

Proof Boxes - Caster Rack, Mono-Rail Automatic Traveling Rack  
Final Tray Proofers - Floor Mounted And Overhead  
Final Proofers - Pita Bread And Pizza Shells  
Final Tunnel Proofers - Danish, Buns, Bread Etc  
Spiral Conveyor Proofer  
Parts - All Replacement Parts For Existing Chubco Proofers

### Ovens

DGF - Traveling Tray Oven single lap, (also convection heat)  
DGF - Mesh Hearth and Plate Hearth  
IGF - Indirect fired Mesh Hearth  
Hybrid DGF / IGF  
Steam Sections  
E4 - IGF / Hybrid with Integrated Catalytic Oxidizer  
Automatic loading and unloading systems  
Oven Loaders and Unloaders  
Wing Loader - Peel Board Unloader/ Oven Loaders  
Combo Pan and Hearth Product Loaders/Unloaders

### Coolers

In-Pan Tunnel Cooler for product in pan or product only.  
Spiral Cooler Conveyors  
Ambient Dwell-Time Cooler Conveyors

### Conveyors

Pan/Peel Board Conveyors – all types  
Product Conveyors – all types

### Bagel Systems

Proof Boxes, manual and automatic retarders, manual and automatic  
Cookers, Steam or DGF heated  
Transfer Conveyor with Seeders and Seed Recovery capability  
Dryer  
Bagel Oven

### Unit Equipment

Depanner - sweet yeast raised - foil or paper or both  
Cantilevered Suction Depanner – Bread and Rolls  
Pan Cleaners – Bread and Bun various sizes  
Peel board - Stacker, Unstacker, Duster and Indexer  
Product Elevator – pies and cakes  
Reciprocator - food products  
Shortening Butter Fat Pumps  
Horizontal Bun and Product Slicers (Single or Double Cut)  
Bread Slicers and Bread Baggers  
Bulk Case Packers (Bag in Box configurations by weight)

### Fabricated Products

Proof Box Racks (Monorail or Caster) (10 or 17 Shelf)  
Aluminum Proofing Racks (Monorail or Casters)  
Pan Trucks – all materials  
Work/Access Platforms – all materials  
Conveyor Crossovers – all materials  
Mixer Structural Frames and Bases  
Ceiling Supported Conveyor Hanging Back-2-Backs

### Engineering Services

Engineering Consulting Services for Best Solutions  
Electrical Controls for Existing Equipment  
Plant Layout Design Services  
Custom Equipment Design Engineering Services  
Custom Equipment/Research and Development Projects

### Oven, Proofer, and Cooler Services

Annual Oven OSHA and Mechanical Inspections Contracts  
Oven Rebuilds al major types of Ovens  
Oven Replacements Parts for many major Ovens  
Proofer Replacement Parts  
Proofer Rebuilds, Upgrades, Extensions  
Ovens Upgrades and Extensions  
Oven Relocations  
For existing Ovens - turbulence system, burner and drive safety  
New Loader and Unloaders for Existing Ovens  
DSI "Direct Spark Ignition" Systems Upgrades to Existing Ovens  
Replacement Proofer Air Conditioning Units, Duct Work and Enclosures  
Oven Replacement Parts For Existing Chubco Tray and Tunnel Ovens

# Baking Systems

Proofing • Retarding • Baking • Cooling



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## Proofing Technology

### PROOFERS:

**Rack Proofers** - Rack Proofers lend themselves well to certain specialized products and processes. Bagel lines require long time periods for retarding and proofing. The slow moving rack system is a natural for these applications. Continuous flow of dedicated pan/carrier are necessary requirements for this equipment. Works well in a fully automated line but can also be used with manual loading and/or unloading.

**Tray Proofers** - Tray Proofers provide a much more versatile Proofer approach than the Rack Proofer. The Tray Proofer can easily accommodate changes in pan sizes. This type of Proofer is equally suited in a plant making small runs of different products as well as running large runs of continuous product. Tray Proofers are designed as an integral part of a fully automated line. They also benefit from the ability to utilize space efficiently. The design variations allow the tray Proofer to be built over the top of existing equipment such as ovens or to be fully floor mounted.

**Manual Boxes** - Manual Proof Boxes are usually for lower production rate plants that are not ready to fully automate or plants with many small (cat and dog) items. These boxes can offer product flexibility but will lack the product consistency and throughput of an automated system. Manual boxes if planned for correctly can often be easily retrofitted as an automatic Rack Box later. Monorail systems are available for our manual proof boxes for improved efficiency.

**Spiral Proofers** - Single or Double Spiral Proofer configurations are available depending on required production rates. Spiral belt surfaces utilize USDA plastic belting with high open area for increased airflow. Enclosure Systems, Ductwork, and Conditioning Units are proofer conditioning are provided. Belt Washing Systems are available upon request. Temperature control is controlled through the provided PLC controller located in a Main Operator Control Panel.

## Loaders and Unloaders

The Henry Group designs and manufactures Oven Loaders and Unloaders that are designed to load and unload bread, bun, sheet, or specialty pans directly into Traveling Tray and Tunnel Ovens. Our Traveling Tray Loader Unloader is available with same or opposite load and unload configurations. We also provide Tunnel Oven Loaders and Unloaders for hearth products that load proofed products directly onto the baking surface. Our Wing Loaders transfer proofed products directly from peel boards to the baking surface. And Hearth Unloaders can be configured in a variety of methods depending on product specifications. Our Combination Loaders and Unloaders offer the versatility to hearth bake products directly on the tunnel oven hearth or to load and unload panned products for baking. Our Combination Unloaders are offered with dual discharge product conveyor systems. THG also manufactures Overhead Proofer Elevators, Loaders, and Unloaders along with In-Pan Cooler Transfer Loaders.



### Loaders/Unloaders

- Pan Loaders/Unloaders
- Hearth Product Loaders/Unloaders
- Combination Pan and Hearth Loaders/Unloaders
- Wing Loader Peel Board Unloader/Oven Loader
- In-Pan Cooler Transfer Loaders
- Overhead Proofer Elevator Loaders
- Overhead Proofer Lowerater Unloaders/Oven Loaders
- Proofer Rack Automated Widget Loaders
- Retarder Rack Automated Widget Loaders
- Crossing Conveyors
- Tilting Bed Unloaders
- Hearth Slide Discharge Conveyor Unloaders



## Installation Services

### Equipment Installation

When it comes to millwright services and installation, The Henry Group is likely the largest and most trusted company serving the wholesale baking industry.

We install new or used lines for Bakeries of all types including Bread, Bun, Cracker, Cookie, Snack, Hearth, Cake, Muffin, and more. THG works seamlessly with your equipment vendors and your general contractor to accomplish a smooth project and minimize costly errors or downtime. We can relocate entire lines or plants from one location to another and recommission in the same arrangement or make modifications or upgrades.

## Oven Services and Parts

### Rebuilds, Upgrades and Repairs

Over the years we have always been involved in oven rebuilds, upgrades, and repairs as a part of our Construction and Installation services. From installation and modification to fabrication and manufacturing support, our crews have the expertise and support to get the job done right.

### Annual OSHA Oven Inspections

The Henry Group offers annual OSHA inspections for most Direct-Fired, Direct Re-circulating, and Indirect Re-circulating ovens used in wholesale bakeries and prepared food facilities. We provide a detailed analysis of each oven based on OSHA recommendations. Upon request we will provide written estimates for repairs, maintenance, or general oven service.

### Oven Installations and Relocations

The Henry Group provides complete oven Installations and relocations within a plant or cross country. We handle everything from start to finish. From installation and modification to fabrication and manufacturing support, our crews have the expertise and support to get the job done right.

### Oven Replacement Parts

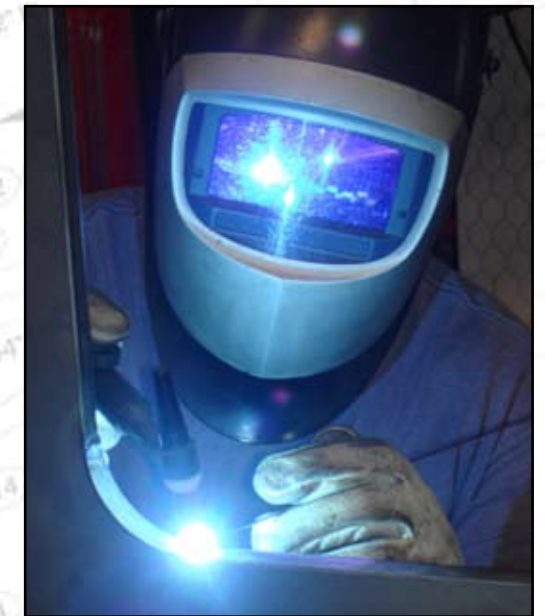
The Henry Group manufactures many oven replacement parts for various Direct-Fired, Direct Re-circulating, and Indirect Re-circulating ovens used today in bakery and food process facilities. We maintain a fabrication and manufacturing support organization in Greenville, TX to support our Oven Crews.

- Ignitor Flags
- Oven Insulation
- Return Track Bridge
- Loader and Unloaders
- Burners
- Trays and Tray Repair
- Spark Monitors
- Fabricated Oven Vent Stacks
- DSI Systems

- Oven Turning Points
- Trunnion Assemblies
- Oven Chain and Sprockets
- Thermocouple Assemblies
- Hearth Plates
- Pressure Gas Switches
- Gas Valves
- Oven Chain
- Panel Upgrades

### Ovens Serviced

Chubco, Baker Perkins, APV, Universal, Readco, Teledyne Readco, FME, BEW, Werner Pflieder, Warner Lahara, Winkler,



## Cooling Technology

### SPIRAL COOLERS

Single or Double Spiral Cooler configurations are available for ambient or conditioned cooling environments. Spiral belt surfaces utilize USDA plastic belting with high open area for increased airflow. Enclosure Systems, Ductwork, and Conditioning Units are available for conditioned cooling when required. Belt Washing Systems are available upon request. Temperature control, when required is controlled through the provided PLC controller located in a Main Operator Control Panel.



### IN-PAN TUNNEL COOLERS

The Henry Group designs and manufactures In-Pan Tunnel Ambient Coolers used for cooling products in foils or pans. These Coolers will have a mesh belt conveyor surface and typically are direct horizontal transfer from a tunnel oven. Optional Stainless Insulated Enclosure Systems, Ductwork, and Conditioning Units are available for conditioned cooling when required. Cooling Temperature Control Temperature control is maintained utilizing the System PLC with all required information for setup, maintenance and monitoring displayed on the System Operator interface.

## Support Equipment

### UNIT EQUIPMENT:

The Henry Group manufactures a variety of unit bakery equipment for high volume bakeries. Our bakery equipment is in production in some of America's largest bakeries. We manufacture a large variety of Bread, Bun, and Sheet Pan Cleaners for virtually every need within the wholesale baking industry. We also design and build Vacuum Bun Slicing Systems as well as custom horizontal slicers, with single or dual blade configurations. THG offers high speed Bread Baggers for traditional sliced bread applications. The THG Cantilevered Vacuum Depanner is designed for versatile depanning applications. THG also fabricates Proofer Racks, Pan Trucks, Conveyor Crossovers and Platforms.



Shown: THG2000 Bread Bagger

### CUSTOM EQUIPMENT:

The Henry Group has long been a supplier of Custom Design Build Equipment Projects for the Wholesale Baking and Grain Based Foods Industry. When encountered with a unique situation THG offers creative solutions to provide automation through custom equipment. We provide one-off designs or development proprietary equipment solutions to help our clients achieve a competitive edge in the marketplace. Our engineers work closely with your internal engineering personnel to incorporate the best methods of existing designs and development new innovative solutions. Our designs are built around your current and future production needs and developed to maintain or improve product quality and production efficiency.



Shown: THG Bread and Bun Pan Cleaners

## Retarding Technology

### RETARDERS:

Retarder boxes generally follow the same format as the Proofers. There may be Automatic or Manual Rack Retarder or Automatic Tray Retarders. Typically an automatic Retarder will work in conjunction with an automatic Proofer. These systems may combine common components as the drive section or control system for reduced cost. Boxes of course can also be fully independent providing layout flexibility.



Rack Retarders lend themselves well to certain specialized products and processes. Bagel lines require long time periods for retarding and proofing. The slow moving rack system is a natural for these applications. Continuous flow of dedicated pan/carrier are necessary requirements for this equipment. Works well in a fully automated line but can also be used with manual loading and/or unloading.

Manual Retarder Boxes are usually for lower production rate plants that are not ready to fully automate or plants with a large variety of small run items. These boxes can offer product flexibility but will lack the product consistency and throughput of an automated system. Manual boxes if planned for correctly can often be easily retrofitted as an automatic Rack Box latter.

Mono-Rail Retarder Boxes are usually for moderate production rate plants that are not ready to fully automate. These boxes can offer product flexibility but improved efficiency over a rolling rack manual box. The steel I-beam monorail is designed in a complete production loop for transporting racks throughout the system. Monorail boxes still lack the product consistency and throughput of an automated system. Monorail boxes if planned for correctly can often be easily retrofitted as an automatic Rack Box latter.

## Conveyor Systems

The Henry Group offers a wide array of conveyors and conveyor systems for a broad range of applications. THG makes conveyors for the most common applications to convey Pans, Peel Boards, Boxes, Cartons, and Baskets. We also offer Product Conveyors for Raw, Cooked, and Finished Goods in washdown or non-washdown designs. We custom design build conveyors to meet your specific needs. We make unique conveyors like reciprocating, indexing, sorting, merging, or vertical switch conveyors. We manufacture Oven and Proofer Grouping and load on conveyors as well as discharge conveyors that integrate with our Oven Loaders and Unloaders. We manufacture conveyors for most every application and configuration to be floor mounted or ceiling hung.



# Baking Technology

## Traveling Tray Oven

### Direct Gas Fired

The Henry Group's Direct Gas Fired Traveling Tray Oven is designed for baking a vast variety of products in pans, as well as products baked directly on transite trays.

Pre-assembled and insulated ceiling and wall panels along with modular design allow for easy installation and future expansion. Individually controlled burners allow for operation of all or a few burners depending on specific product needs.



## Indirect Fired Tunnel Oven

### Indirect Gas/Oil Fired (Mesh, Plate, or Grid Hearth)

The Henry Group's Indirect Gas, Propane, or Oil Fired Tunnel Oven is designed for baking a vast variety of products in pans, as well as products baked directly on the hearth.

Automatic natural gas or oil burners fire into a combustion chamber which is completely lined with high quality, high temperature Inconel and 310 stainless steel. The heat exchanger system keeps combustion by-products outside the baking chamber allowing products to bake in heated ambient air. The mesh hearth allows complete air circulation and uniform pattern on bottom of products.

Pre-assembled and insulated exterior panels along with modular design concepts allow for faster and easier installation. Also available with electric heating elements or propane gas burners.

## Direct Fired Tunnel Oven

### Direct Gas Fired (Mesh, Plate, or Grid Hearth)

The Henry Group's Direct Gas, Propane, or Oil Fired Tunnel Oven is designed for baking a vast variety of products in pans, or directly on the hearth. Air turbulence provides a uniform bake with strong product side walls and shorter bake time. The baking chamber is formed of steel lining sheets with expansion joints for internal expansion without movement of the oven as it is heated.

Multiple thermocouple sensors determine bake chamber temperature and provide zoned temperature control for complete flexibility. Individually controlled burners are located above and below the hearth for even heat distribution. The mesh hearth allows for air circulation and uniform pattern on the bottom of products. Hearth plates are made of stainless which forms an interlocking, self-supporting level baking surface.

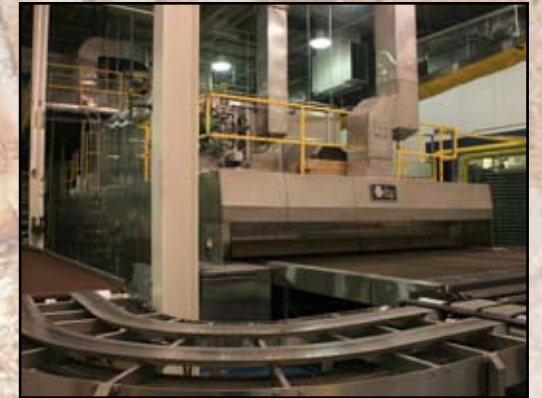
## High Temperature Pita Bread Ovens

### Direct Gas Fired (Mesh, Plate, or Grid Hearth)

The Henry Group's Direct Gas, Propane, or Oil Fired High Temperature Pita Bread Ovens are designed for baking Greek or Syrian pita bread and/or pizza crust baked directly on the hearth. The hearth is composed of Hi-Carbon (Stainless option also available) balanced weave steel wire mesh belt or hearth plates made of stainless which forms an interlocking, self-supporting level baking surface. Efficient baking with greater moisture retention is accomplished with infrared heat produced from ceramic grids.

Thermocouple sensors detect upper and lower bake chamber temperatures providing automatic operation of upper and lower firing rate control motors.

Walls and ceiling bake chambers are lined with ceramic fiberboard designed for continuous operation at 2400 degrees Fahrenheit. Densely packed mineral wool insulation is contained in the roof and side walls.



## Meter Wide Tunnel Ovens

### Direct Gas Fired (Mesh, Plate, or Grid Hearth)

The Henry Group's Direct Gas, Propane, or Oil Fired Meter Wide Ovens are designed for baking inline baking process like pizza crust baked directly on the hearth. The hearth is composed of Hi-Carbon (Stainless option also available) balanced weave steel wire mesh belt or hearth plates made of stainless which forms an interlocking, self-supporting level baking surface.



# SpaceSaving Designs



Shown: Overhead Proofer/Tunnel Oven Combination



## Greener Oven Designs

### Integrated Catalytic Oxidizer

Exhaust gases from the bake chamber which carry ethanol released by yeast-raised products during baking are ducted directly to the inlet of the oxidizer, which is mounted directly on the oven. The burner on the oxidizer raises the exhaust gas temperature to a level that allows proper levels of destruction of the ethanol across the catalyst. This exhaust gas is directly re-introduced into the first Bake Chamber for energy savings.

### Oven Radiator System

The Henry Group oven uses a high volume recirculation blower to move the heating gases through the top and bottom radiators of the bake chamber. THG oven radiator system is engineered to operate with uniform heat delivery and enable a very accurate heat profile to be maintained throughout the oven eliminating cool spots. We incorporate more radiator tubes, ducts, and dampers to insure an even distribution of heat for energy savings, temperature control, and peak baking performance.

### Fuel Savings With Full Control

The heat from the oxidizer alone is insufficient to meet the total heat requirement of the first zone but the ethanol component does provide about 17% of the total energy required for baking. This varies with the amount of ethanol present and released from the product. The auxiliary burner provides the additional heat requirement.

### NO Flash Heat

Our relatively short radiator length, high volume of recirculating air flow and generous radiation surface area all contribute to an extremely low differential between the temperature of the heating gases and the bake chamber. With these low differential temperatures flash heat is essentially non-existent. Multiple thermocouples in each zone detect the quenching effect of product as it passes through the oven and enable an early response to the firing rate of the auxiliary burner in the zone for precise heat regulation.

## TurboTherm<sup>e4</sup> Tunnel Oven



The E4 (Ethanol Emission free Energy Efficient) designation is given to The Henry Group ovens that incorporate an integrated catalytic oxidizer

to provide ethanol emission abatement and use the energy released by the oxidizer as a heat source for the oven. (Ethanol, a volatile organic compound (VOC) reacts in the atmosphere to produce ground level

