



Rotary Retort Furnace Systems

The SECO/WARWICK rotary retort furnace is designed to maintain the consistently superior quench hardening performance required for fast, economical, uniform heat treating of small parts. It provides the process flexibility to be utilized for either single or multi-application production environments.

The rotary retort furnace can be built as a stand-alone quench hardening or annealing furnace with its metering loader and integral quench system, or part of a full harden-quench and draw line with tempering furnace, washer(s), atmosphere generator(s), analyzers, etc.



4,000 LB/HR (1,800 KG/HR) rotary retort system for annealing coin blanks

Process/ Product Applications

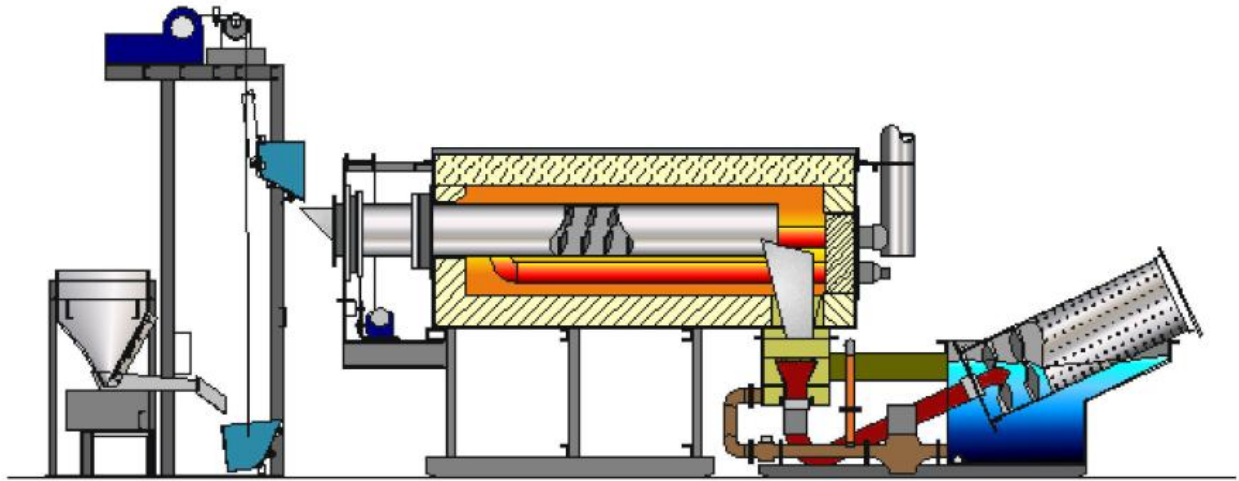
Rotary retort furnaces are used to process an exceptionally wide variety of small parts including screws, nuts, bolts, nails, washers and coins. The rotary retort furnace is particularly adaptable to controlled atmosphere hardening, carbonitriding, and carburizing operations in the range of 1,550 to 1,750°F (840 to 955°C).

Furnace Advantages

Standard Equipment - Furnace lines are pre-engineered in standard sizes with rated capacities from 500 LB (225 KG) to 1,000 LB (450 KG). They can be manufactured, delivered and installed quickly. Custom engineered systems have been provided up to 4,000 LB (1,800 KG) per hour.

Electric Design – The electrically heated design features bayonet heating elements that can easily be replaced from outside of the furnace.

Gas Design – The gas fired design is equipped with centrifugally cast alloy radiant tubes and complete combustion system.



Cross section of a complete rotary retort system equipped with a Whirl-A-Way quench

Retort – The cantilevered, one piece cast retort is supported at one end and sealed at the charge end of the furnace. There are no seals or bearings in hot areas or at the discharge end.

Rotary Mechanism – Auger flights convey the parts smoothly and quietly through the furnace. Rotation of the retort has a wide range of speed adjustments to provide complete flexibility of time processing cycles.

Atmosphere Tight – The retort is supported by a sealed bearing, and the quench is flange mounted to the furnace. Only the small load door opens momentarily with each rotation of the retort.

Low Maintenance – No baskets or trays are required. The retort is the only moving part exposed to heat.

Automation – Heat Treating is completely automatic after loading parts.

No Pits - The system requires no pits or special foundations; it is designed for floor level installation.

Superior Material Handling - The internal flights conveyance through the furnace retort, and the mechanism-free fluid-conveyance through the quench bath minimizes lost, mixed or damaged parts.

Factory Built

All equipment is completely factory assembled, piped, wired and mechanically tested before shipment to minimize installation time and expense. Fast connection to utilities is assured.



Product Bulletin

Hopper/Loader

The hopper/loader is designed to charge a predetermined load of parts into the furnace on each revolution of the retort. Parts stored in the hopper are automatically transferred into the load bucket upon its arrival at the bottom position of the elevator. The loaded basket is then elevated and the parts are automatically deposited into the furnace.

Whirl-A-Way Quench™

The Whirl-A-Way quench is a fast uniform quenching system that produces deeper case depths.

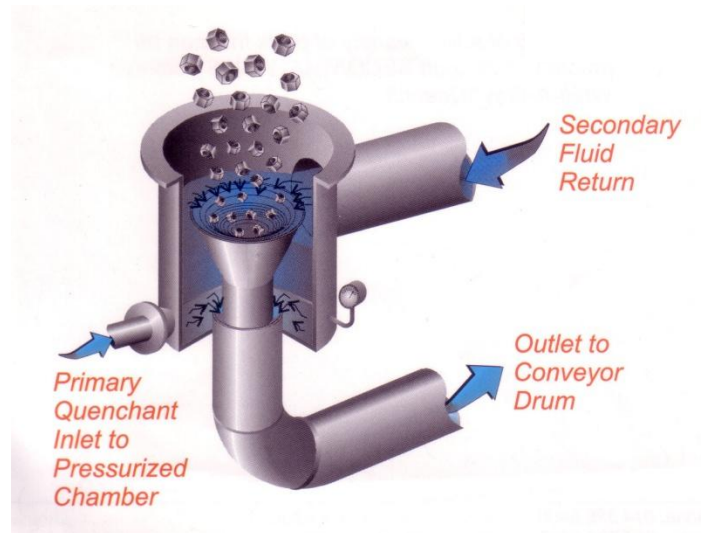
The Whirl-A-Way quench is designed to provide superior quench results with ferrous and nonferrous parts after they have reached temperature in the furnace.

Parts are discharged into the quench medium seconds after temperature has been achieved and are conveyed to the rotating discharge conveyor by the motion of the quench fluid. This motion allows the vapor barrier of each part to be instantaneously wiped away, resulting in excellent quench properties. On entry into the quench drum, parts are conveyed to the discharge point by the revolving motion of the drum flights. The quench fluid can be oil, water or synthetic media.

The patented Whirl-A-Way system is designed to prevent atmosphere contamination in the furnace. The system is capable of handling a wide variety of part configurations while constantly maintaining individual quench results, providing both deeper case depths and uniformity.

Industrial Services

A wide range of services are available for our equipment. These include rebuild projects, field service, spare parts, equipment supply, control and combustion upgrades and fabrication services. As a result of these services, we have provided our customers improved performance, lower emissions, better efficiency and enhanced product temperature uniformity.



Pressurized chamber generates fluid velocity for faster quench, consistent results and conveying of parts without a belt



Product Bulletin

About SECO/WARWICK

The SECO/WARWICK Group is one of the world's leading manufacturers of [heat treatment furnaces](#) and a technology leader. With our fully equipped research and development facility and cooperation with the leading academic centers in Europe, we are able to provide innovative solutions not offered anywhere else in the world.

The Group is made up of companies located in five countries on three continents, and we sell our products in 45 countries around the world. We supply furnaces to customers involved with steel, titanium and aluminum production as well as aluminum recycling, forging, automotive, aerospace, commercial heat treating, HVAC/R, electronics, wind energy, medical equipment and nuclear industries.

The latest design, materials, and equipment specifications should be obtained from the company before any reliance is placed on this standard bulletin since changes may occur due to product improvement.