



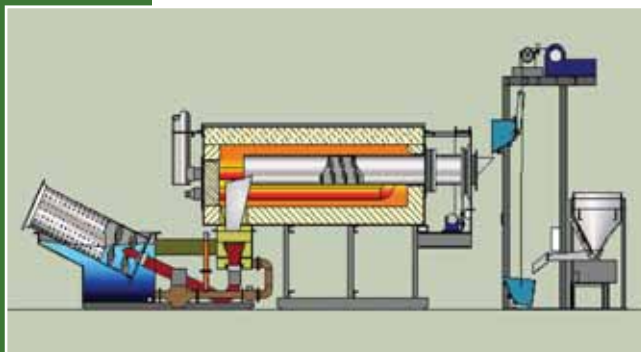
Rotary Retort Furnace Systems



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.



Standard 500 pound per hour Rotary Retort Furnace with metering loader and Whirl-A-Way quench.



Cross section of Rotary Retort Furnace and Whirl-A-Way quench

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.

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.

Ratings and Dimensions - Hardening Furnace and Quench Tank (Data based on 125 pound per cubic feet loading, based on case hardening)

Model No.	Retort		Heat Input		Quench Tank Capacity Gallons (Liters)
	Diameter Inches (mm)	Heating Length Inches (mm)	BTU	Kw	
RG-5, RE-5	15 (380)	96 (2440)	750,000	90	310 (1173)
RG-10, RE-10	25 (640)	112 (2840)	1,350,000	135	700 (2650)

*Actual production rate depends on part size and heat treating operation performed.

** Units up to 4,000 pounds per hour lines are available upon request, along with custom engineered options.



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.

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.

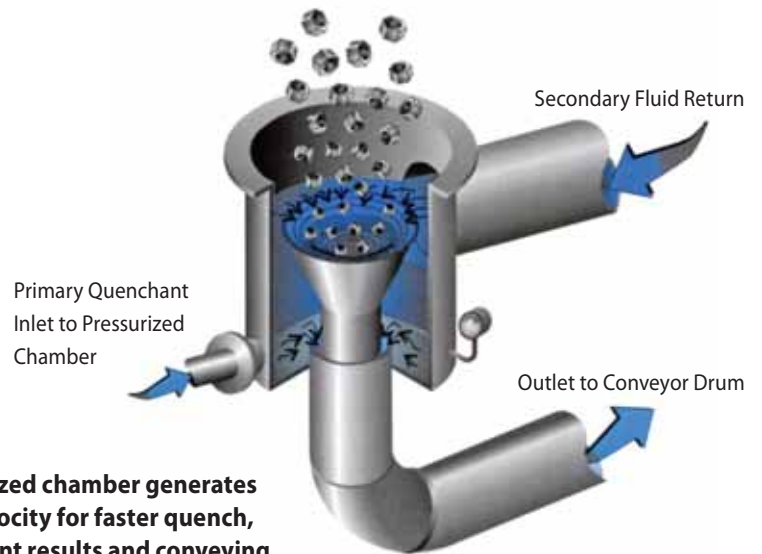
The Whirl-A-Way quench is a fast, uniform quenching system that produces deeper case depths.

Whirl-A-Way® Quench

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.



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

Production Rate*		Overall Dimensions for a furnace line including a loader, furnace and Whirl-A-Way quench			Shipping Weight		
Lb/hr	Kg/hr	Width Inches (mm)	Length Inches (mm)	Height Inches (mm)	Furnace Lbs (Kg)	Quench Lbs (Kg)	Loader Lbs (Kg)
500	227	88 (2240)	343 (8710)	124 (3150)	14625 (6648)	3200 (1455)	3260 (1482)
1,000	454	111 (2820)	408 (10360)	136 (3450)	19300 (8772)	3820 (1736)	3260 (1482)



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