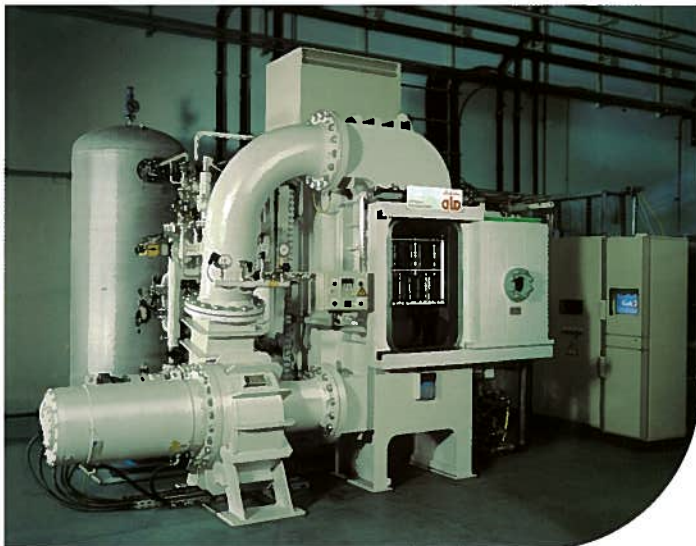
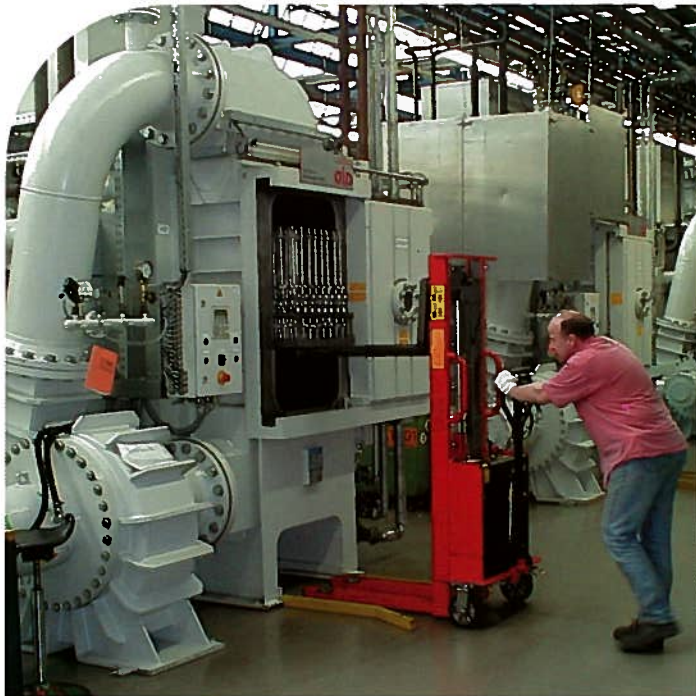


# DualTherm

## Vacuum Processing Systems

- **Multiple Treatment Options**
- **Integrated Gas Quenching**
- **Programmable Cycles**
- **Expandable Capacity**
- **Compact Design**



*DualTherm furnaces can operate independently or be linked to form a continuous, automated heat treat line.*

### **Flexible Vacuum Heat Treating Performance.**

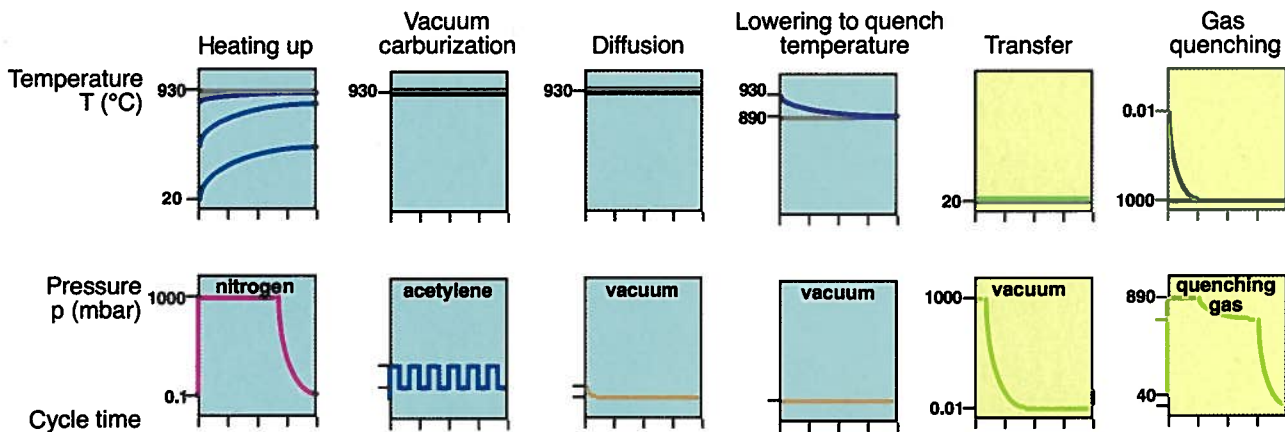
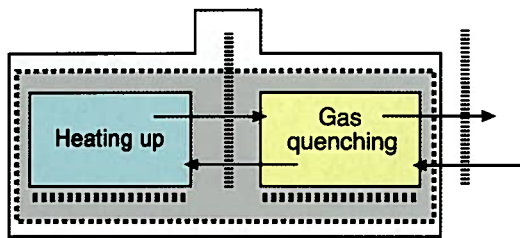
DualTherm® is a vacuum-based heat treating system offering exceptional processing flexibility. An integrated vacuum treatment chamber and high pressure gas quenching module supports vacuum annealing, normalizing, hardening, aging, and sintering, as well as vacuum carburizing and high pressure gas quenching operations.

### **Dual Chamber Design Shortens Cycle Time.**

DualTherm furnaces employ a dual chamber, in/out design that reduces treatment cycle times and minimizes floor space requirements. Loads are placed in the front cold chamber of the furnace by a fork loader. The chamber is then evacuated, and the load is moved into the treatment chamber by an internal transfer mechanism. The treatment chamber is heated by convection and always under vacuum and at operating temperature. At the end of the treatment cycle, the load is transferred back to the front chamber, which now functions as a gas quenching chamber, and the load is quenched at pressures up to 20 bar using helium or nitrogen. At the end of the quench cycle, the cold chamber is returned to normal pressure, and the load is removed by the fork loader. Because repeated thermal cycling in the hot zone is eliminated, and because only the load is cooled, furnace maintenance and operating costs are significantly lowered. For continuous, unmanned operation, load/unload, thermal treatment, and quench operations can be fully automated.

### **Engineered To North American Standards.**

ALD-Holcroft manufactures vacuum-based heat treating systems for the North American market. Projects are managed on a turnkey, single supplier basis, with each installation engineered to user requirements. ALD-Holcroft offers customers more than 80 years of vacuum processing experience, proven technology, and unmatched engineering and service support. To learn more, call ALD-Holcroft at **248.668.4130**.



## DualTherm Vacuum Carburizing System With High Pressure Gas Quenching

### DualTherm User Benefits:

- Multiple heat treatment capabilities
- Eliminates intergranular oxidation
- Precise case depth control
- Easily automated process parameters
- Single or linked furnace configurations
- Easily integrated into production flow
- Multiple part geometry processing
- Easily expanded processing capacity
- Repeatable load-to-load results
- Rugged, low maintenance operation
- Clean, safe work environment

### DualTherm Features and Options:

- Up to 2200 lbs. charge capacity
- 40" l x 24" w x 30" h treatment chamber
- Convection-heated treatment chamber
- Up to 2285° F processing temperature
- Up to 180 kW heating power
- Nitrogen or helium gas quenching
- Up to 20 bar gas quenching pressure
- Quench gas recovery systems
- External quench gas circulating fan
- Single or dual heat exchangers
- Efficient in/out charge load/unload

*ALD-Holcroft Vacuum Technologies Co., Inc. manufactures vacuum-based thermal processing systems compatible with automotive, aerospace, gear manufacturing, and commercial heat treating practices in the United States, Canada, and Mexico. The parent companies of ALD-Holcroft are ALD Vacuum Technologies AG, Hanau, Germany, and AFC-Holcroft, LLC, Wixom, MI. ALD is a global leader in vacuum heat treating and furnace systems. AFC-Holcroft is one of the world's largest manufacturers of atmosphere furnace systems.*

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