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# RapidClave™ 2

**Next Generation RapidClave™  
Technology for Thermoset Prepregs  
Aerospace, Automotive, and Industrial**

RapidClave™ Technology by  
**LIGHTWEIGHT  LABS**

## RapidClave™ Technology:

- High Pressure Rapid Curing Systems for Out-of-Autoclave Composites Manufacturing (Patents Pending)
- 0 – 350 psi pressure
- Integrated rapid heating, cooling, vacuum, and automated tool and materials handling
- 17 minute and less part-to-part cycle time on thermoset epoxy prepreg



*Tool photo courtesy of Janicki Industries*

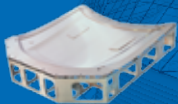
## Industrial Advantages:

- Reduced tooling requirements
- Reduced scrap rates for interrupted cure cycles
- Flexibility in manufacturing
- Lower energy costs
- Reduced processing time



## Features:

- A thermal processing and consolidation system and method
- NEW controlled top and bottom zoned heating and cooling
- Heating, cooling, pressure, and vacuum all independently controlled according to a set of process parameters
- Processes the same materials and resin systems designed to be processed in an autoclave
- System size optimized for the tool size
- 1 minute tool exchange time



*Tool photo courtesy of Weber Manufacturing Technologies*



**Making production of high quality carbon fiber parts possible with our patents pending, production-tested, RapidClave™ System**

### Autoclave

- Batch parts process
- Different tool/part processed with only one recipe
- Manual connection of services to each tool
- Inefficient use of space and energy
- 90+ minute minimum processing cycle

### Globe's RapidClave™ System

- Single tool/part process (lean manufacturing)
- Each tool/part can be processed with a different recipe
- Automatic fast connection of services to tool
- Highly efficient use of space and energy
- 17 minutes or less processing cycle (part-to-part)

**Globe Machine Manufacturing Company**  
Tacoma, Washington, USA  
[www.globemachine.com](http://www.globemachine.com)



**E**stablished in 1915 in Tacoma, Washington, USA, Globe Machine Manufacturing Company is approaching 100 years as a machinery systems designer and builder, with expertise in high capacity automated production systems. Globe is a fully integrated manufacturer with project management, mechanical engineering, controls engineering, fabrication, machining, assembly, testing, and UL listed panel shop. Today Globe designs and manufactures automated equipment and systems for industries that include plastic composites, automotive, aerospace, military, pulp and paper, and building products, with major installations in

North America, South America, Europe, and Asia. In 2011, Globe opened their new composites R&D lab within their Tacoma operations. The new facility, operated by Lightweight Labs, is providing ongoing composite materials testing and trials for the development of composites manufacturing technology and equipment packages. Recent developments in high capacity, automated manufacturing systems include *Globe's RapidClave™ System (a thermal processing and consolidation system and method, patents pending) for thermoset fiber reinforced composites, Ultra-high Pressure Presslines for Plastic Armor, and Wind Turbine Blade Manufacturing Automation.*



An industrial machine manufacturer with expertise in all aspects of process equipment and systems fulfillment, including Development, Engineering, Sourcing, Fabrication, Machining, Assembly, Commissioning, Project Management, and After-Market Support.



An engineering and technology company that develops materials, manufacturing technology, and equipment packages for fiber reinforced plastics including carbon fiber products.

### Company & Facilities

- Globe founded in 1915 in Tacoma, Washington, USA
- Lightweight Labs founded in 2010
- 120,000 square feet manufacturing facilities
- 20,000 square feet engineering and administration
- R&D lab
- First-class products known world-wide
- Demonstrated domestic and international professionalism in both product offerings and business approaches
- Located on Tacoma's industrial tide flats within 2 miles of the Port of Tacoma and Interstate-5, 20 miles from Sea-Tac International Airport (SEA), 32 miles from the Port of Seattle, and 142 miles from the Port of Portland

### Systems & Processes

- Consistent system procedures and management of all jobs of all types and sizes
- Enterprise resource planning
- FEA, 2D, 3D modeling
- Dedicated project management
- Single point project contact

### Engineering & Development

- Product design
- Systems design
- Mechanical engineering
- Electrical engineering
- Hydraulic & pneumatic engineering
- Controls engineering
- PLC and HMI programming
- Research and development

### Manufacturing

- Fabrication
- Machining
- Assembly
- UL panel shop
- Industrial robot integration
- Global materials sourcing
- Equipment and systems fully assembled and tested before shipment
- Customer demonstration & Factory Acceptance Tests

### Installation, Commissioning & After-Market Support

- Full-time mechanical & electrical technicians supervise installations
- Commissioning performed by same team who design and program the equipment and systems
- Factory & onsite training
- Full-time mechanical & electrical technicians provide ongoing maintenance, support, and training
- 24 hour parts & service department

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