

BOLTZMANN REACTOR

Innovation by LATTICEPT

Optimizing Production with Advanced Digital Twins.

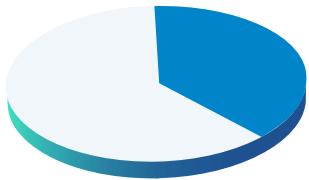
The Boltzmann Reactor features a fully butt-welded Omega Jacket for enhanced reliability, a patented head design for improved heat transfer and automated ultrasonic inspection to ensure integrity. Available in corrosion-resistant materials like 316L stainless steel and C-276 nickel superalloy, this reactor comes with complimentary metallurgical and process optimization support.



Key Features and Benefits:

30%

Boost in heat transfer efficiency!



Increased surface area for superior heat transfer and improved hydraulic performance.

up to **10x**

Longer life during thermal cycling!



Automated welding and inspection reduces uncertainty in manufacturing and extends reactor life.

IMPROVE HEAT TRANSFER:

Fully Butt-Welded Omega Jacket provides up to 30% higher heat flux through an increased surface area for heat exchange, leading to efficient thermal management and improved production rates.

IMPROVE RELIABILITY:

The patented Omega Jacket optimizes heat transfer and fluid flow for more uniform temperature distribution, improving process control and product quality.

Section 8, Division 2, Part 5 Fatigue Calculations ensure long-term durability and reliability under cyclic loading, extending vessel lifespan.

VERIFIABLE INTEGRITY:

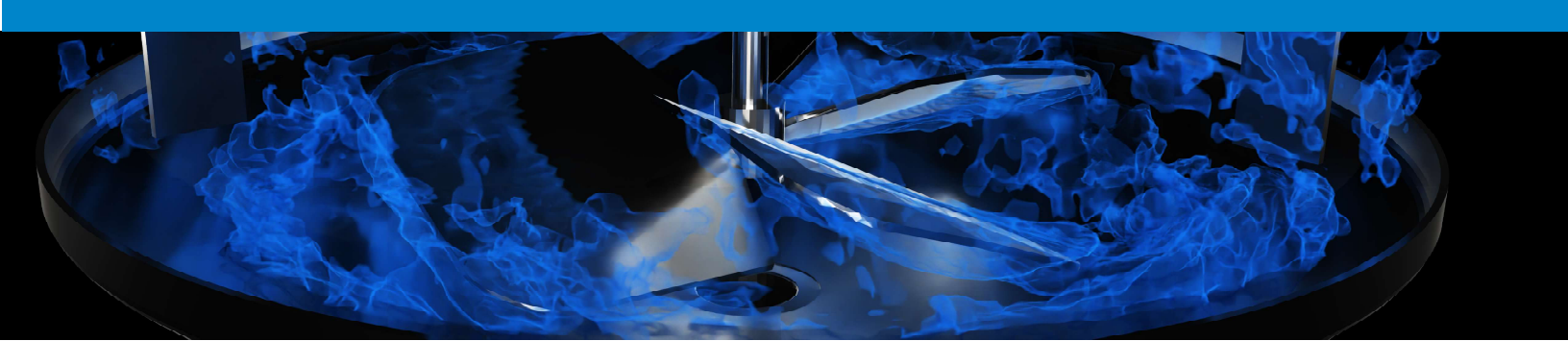
The ultrasonic inspection of jacket welds ensure weld integrity, meeting stringent ASME standards for safety and reliability. The Boltzmann Reactor has up to 10x longer life during thermal cycling.

IMPROVED LEAD TIMES:

Automated welding reduces lead times by months by removing manual welding. Enhances consistency and precision with robotic welding processes, reducing human error and improving structural integrity.

REDUCED CAPITAL EXPENDITURE:

Automated manufacturing processes allow The Boltzmann Reactor to provide superior performance while reducing the cost of equipment.



The Boltzmann Reactor, powered by M-STAR Digital Twin technology, is a breakthrough in reactor simulation. Powered by Nvidia GPUs, it delivers unmatched reliability, efficiency, and analysis speed for demanding industrial applications. Our partnership with Exxact Corporation allows scalable computing resources to meet the most demanding analysis challenges.



Fully Automated & Inspected:

- ✓ **NON-DESTRUCTIVE EXAMINATION:**
Ensures structural integrity without damaging the vessel.
- ✓ **HIGH SENSITIVITY:**
High resolution ultrasonic scans ensure safety and compliance.
- ✓ **AUTOMATION:**
Reduces cost and improves lead time using next-generation manufacturing processes.
- ✓ **SAFETY & RELIABILITY:**
Inspectable weld joint allows easy access for predictive maintenance.

Improved Hydraulic Performance:

- ✓ **ENHANCED SURFACE AREA:**
Increases thermal transfer efficiency.
- ✓ **OPTIMIZED FLUID DYNAMICS:**
Reduces pressure drop and lowers ancillary equipment costs.
- ✓ **PATENTED HEAD JACKET:**
Further improves heat transfer and reliability, enhancing overall process efficiency in the most critical area of the reactor.

Materials & Support:



Available in stainless steel and corrosion-resistant nickel superalloys.



Complimentary metallurgical assistance from corrosion experts.



Free process optimization consultations with heat transfer specialists.



Free fatigue rating and reliability consultation.

Visit our website at [LATTICEPT.COM](https://www.latticept.com) to learn more about LATTICEPT and all we have to offer!
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