



2,000 and 4,000 ml EZE-Seal Stirred Reactor

At a Glance

Volume:	2,000 or 4,000 ml
Vessel MAWP: (Design Pressure)	3,300 psi @ 850° F (227 Bar @ 454° C)
Material of Construction:	316 Stainless Steel or Hastelloy C-276

Principle of Operation

The Autoclave Engineers' EZE Seal Reactor has been designed to provide the researcher with an interchangeable 2-piece vessel design. The 2,000 ml and 4,000 ml units are identical in design except for the depth of the reactor. Conversion kits are available between the two sizes. Many combinations of standard components are available. The cover of the unit remains fixed in the stand to permit opening of the vessel without disassembling any process connections. The body is easily removed and drops away from the cover.



General Specifications

Maximum Allowable Working Pressure (MAWP)

3,300 psi @ 850° F*
 (227 Bar @ 454° C)*

Minimum Design Metal Temperature (MDMT)

-20° F @ 3,300 psi
 (-29° C @ 227 Bar)

Maximum Recommended Operating Pressure (MROP)

Varies based on gage, transducer, and rupture disk selection. Refer to Ordering Guide for Details.

Critical Dimensions:	2,000 ml	4,000 ml
Inside Diameter:	5.0" (127 mm)	5.0" (127 mm)
Straight Wall:	6.06" (153 mm)	12.31" (312 mm)
Approximate Dimensions:	Floor Stand	
Overall Height**:	59.4" (1508 mm)	
Width:	30.0" (762 mm)	
Depth:	38.0" (965 mm)	



4,000 ml EZE Seal Reactor Internals

* 850° F (454° C) rating is vessel mean wall temperature. Actual Process temperature will be lower.

** Overall height based on belt driven units. For actuals see standard drawings.

2,000 and 4,000 ml EZE Seal Stirred Reactors Connection Schedule

All of the connections shown will be provided. For any accessories not ordered, the corresponding connection will be plugged. All connections (except safety head) are adapted from an AE high temperature F437 Flat Bottom connection to the "External" connection listed below.

Opening	Purpose	Internal	External	Location
"A"	Charging Port	3/8" Port	3/8" Tube	Cover Top
"B"	Gas Inlet	1/4" Tube	1/4" Tube	Cover Top
"C"	Sparge Tube	1/4" Tube	1/4" Tube	Cover Top
"D" & "H"	Cooling Coil (1/8 FNPT at cover)	1/4" Tube	1/4" Tube	Cover Top
"E"	Thermowell	1/4" Tube	None	Cover Top
"F"	Safety Head (F750FB at Cover)	None	3/8" FNPT	Cover Top
"G"	Vent and Pressure Indication	None	1/4" Tube	Cover Top
"J"	Blow Pipe	1/4" Tube	1/4" Tube	Cover Top
"K"	Liquid Sample	1/4" Tube	1/4" Tube	Cover Top
"L"	MagneDrive® Agitator	None	AE Special	Cover Top

Technical Specifications

Autoclave Engineers provides a variety of optional accessories to custom configure each reactor. See the EZE-Seal Stirred Reactor Ordering Guide to configure a reactor for a specific application.

Seal Materials: Metal Gasket (vessel material, silver plated), Buna-N, Ethylene-Propylene, PTFE, Viton®, Silicone, or Kalrez® O-rings.

Approvals: Optional ASME Code Stamp, or CE Mark.

Stand: Floor Stand Only.

Body Lift: None or Manual Jack.

Agitator: MagneDrive® MAG075-01 Series with 7 in-lb (0.79 N-m) static torque, Purebon® (carbon graphite) bearings, or MagneDrive® MAG075-02 Series with 16 in-lb (1.8 N-m) static torque, Purebon® (carbon graphite) bearings.

Motors: 1/2 HP (0.37 KW) General Purpose DC with either: 90 V Armature (120 V unit), or 180 V Armature (240 V unit).
1/2 HP (0.37 KW) Explosion-Proof DC with either: 90 V Armature (120 V unit), or 180 V Armature (240 V unit).
Air Motor with manual or electric speed adjustment.

Impeller Styles: AE Dispersimax, Straight Turbine, Axial Flow-Up, or Axial Flow-Down; All 2.0 inch (50.8 mm) diameter.

Baffle: Two (2) blade spring loaded baffle bar (removable).

Speed Sensor: Magnetic Sensor General Purpose, or Intrinsically-Safe Magnetic Sensor (Barrier Required)

Heating: Furnaces: 120 VAC (2000 ml Only), Single Phase or 240 VAC, Single Phase; 2,000 ml - 2,000 Watt, 4,000 ml - 4,000 Watt.
Jacket: Removable, Spiral Baffled with O-ring Seals.

Internal Accessories Available: Liquid Sample Tube, 1/4" Valve
Blow Pipe, 1/4" Valve
Sparge Tube, 1/4" Valve
Cooling Coil, 1/4" Tube
Process Thermocouple, Type J or K

External Accessories Available: Vent Valve, 1/4" Valve
2.5" (63.5 mm) Dial Pressure Gage - Multiple ranges available
Pressure Transducers - Range Dependent on Gage
One or Two Gas Inlet, 1/4" Valves, Shared Connection
Catalyst Charging Valve, 3/8" Tube with 1/4" port
External Thermocouple, Type J or K
1/2" Port Manual Flush Valve

Supporting Information

Please refer to the following sections of the catalog for complimentary products and additional technical details.

- "EZE-Seal Stirred Reactor Ordering Guide" - Provides a step-by-step guide on how to configure the EZE-Seal Reactor to a specific application.
- "Instrumentation" - Details Autoclave Engineers' full line of control options for temperature, pressure and speed.
- "Agitation" - Provides additional specifications on the MagneDrive® magnetic agitator and available impeller systems.
- "Pressure Vessels" - Provides details on the EZE-Seal vessel assembly.
- "Stirred Reactor Selection Guide" - Provides general information on all of Autoclave Engineers' stirred reactors

Viton® and Kalrez® are registered trademarks of DuPont Dow Elastomers.
Purebon® is a registered trademark of Pure Carbon.

Autoclave Engineers 

Division of Snap-tite, Inc.

8325 Hessinger Drive
Erie, Pennsylvania 16509-4679 USA
PH: 814-860-5700 FAX: 814-860-5811
e-mail: aeclave_sales@snap-tite.com
www.autoclaveengineers.com

ISO-9001:2000 Certified



! WARNING !

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND/OR PROPERTY DAMAGE.

This document and other information from Snap-tite, Inc., its subsidiaries and authorized distributors, provides product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operation conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Snap-tite, Inc. and its subsidiaries at any time without notice.