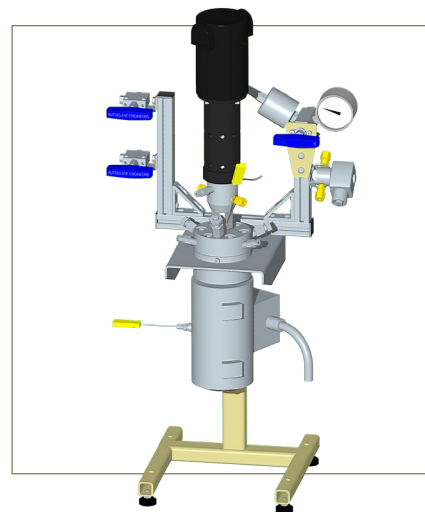


Bench Top EZE-Seal Reactors

150 ml and 300 ml

ID = 1.81" (46mm)

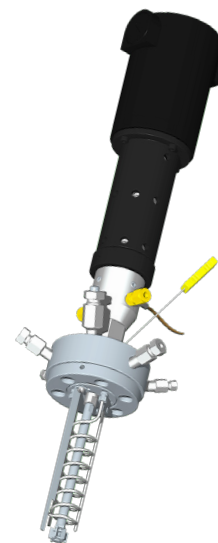


Principle of Operation:

The Parker Autoclave Engineers' EZE-Seal Reactor has been designed for reliable high pressure operation, yet requires low torque for sealing. The seal can be a metal gasket machined from the same material as the vessel or an elastomeric seal. 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. The EZE-Seal stirred laboratory reactor is used for chemical synthesis of corrosive, hazardous and very reactive chemicals/petrochemicals as well as solvothermal reactions.

General Specifications:

Maximum Allowable Working Pressure: (MAWP)
2,900 psi @ 850°F (200 Bar @ 454°C) Note
Maximum Recommended Operating Pressure:
2,500 psi @ 750°F (172 Bar @ 398°C)
Material of Construction:
316 Stainless Steel
Hastelloy® C

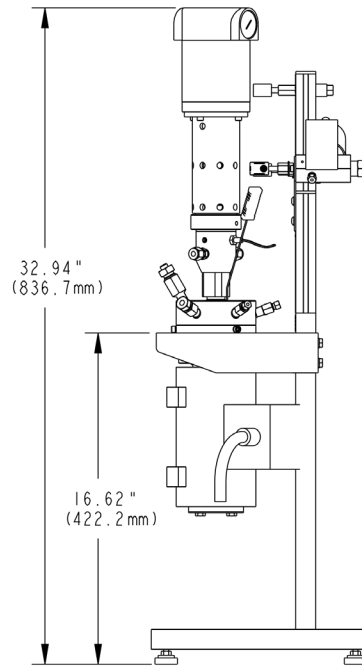
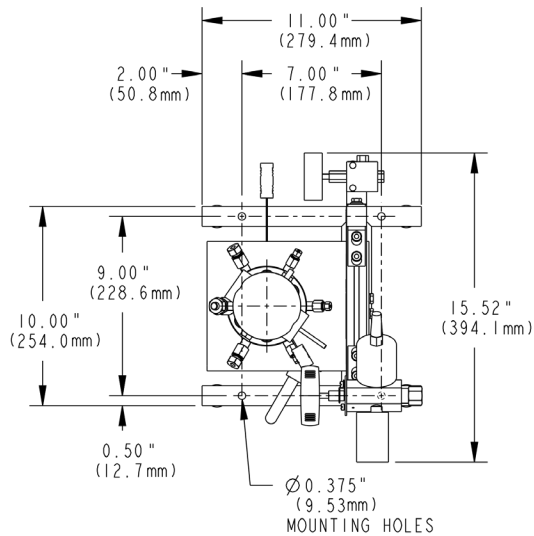


300 ml EZE-Seal Reactor
Internals

Standard/Optional Unit Features:

- Low torque metal seal
- Electric heater with over-temperature thermocouple
- Bench top stand
- Process thermocouple (Type K)
- Process Cooling Coil
- Liquid sample tube with valve
- Gas inlet valve
- Vent valve with pressure gauge/transducer and safety rupture disc (0-3000 PSI gauge, 0-5000 PSI, 24VDC, 4-20mA pressure transducer)
- F437FB (.195" ID) Charging Port (see Charging Port Option if needed)
- Optional: ASME code stamp or CE mark
- Optional: 150/300 ml companion volumes with common closure geometry
- Optional: Elastomer seal for lower temperature operation
- Optional: i2Mag in-line MagneDrive with 1/8 hp motor with Dispersimax Impeller

Drawing Details:



Ordering Information:

Part Number Example	PH-E	030	SS	—	MM	NS	—	XP
Category		1	2		3	4		5

Example: PH-E030SS-MMNS-XP

Description: 300 ml EZE-Seal Stirred Reactor, 316 Stainless Steel with Drive, No Code Requirements with Explosion Proof Option

1 - Vessel Volume Code	
015	150 ml
030	300 ml
2 - Vessel Material Code	
SS	316 Stainless Steel
HC	Hastelloy® C
3 - Mixer Code	
NS	No Mixer (port plugged)
MM	In-Line MagneDrive Mixer (w/Dispersimax Impeller - pg. 31)
4 - Pressure Code Requirement (unit voltage)	
NS	No Code (120 VAC)
AS	ASME Code Stamped (120 VAC)
CE	CE Marked (240 VAC)
NE	Export with CRN (240 VAC)
5 - Explosion Proof (option)	
XP	Explosion proof with slip-on jacket and air motor

Hastelloy® C is a registered trademark of Haynes International, Inc.

Note The user should be aware that the 850°F (454°C) vessel temperature rating is the maximum mean wall temperature of the vessel, as defined by the ASME B&PV Code. Many variables can affect the thermal capabilities of the vessel. These factors can include, but are not limited to, the use of insulation, whether the process is batch or continuous flow, or even a chemical process itself. These factors may have bearing on heat up rate, maximum process temperature, and the cool down rate of the reactor. These factors should be considered by the user when purchasing a system in order to verify that the equipment will reach desired operating temperature in a reasonable time period. Please consult Parker Autoclave Engineers if assistance is required.

Optional Feature Kits/Spare Parts

(purchased separately but assembled as part of purchased Reactor if required)

- Soft Seat Vessel Closure Seal Kits
- MagneDrive Bearing Option Kits
- Internal Tube Kits
- Process Cooling Component Kits
- Solid or Liquid Catalyst Charging Kit
- Tool Kits (matched to vessel type)

For complete description of kit contents please see pages 16-19

Universal Reactor Controller (URC)

We recommend that our Reactors be operated using our URC-II control package. It provides an interface to control and monitor heater & process temperature, MagneDrive speed, and Pressure. See page 41 for information on ordering the URC-II controller.

Floor Stand EZE-Seal Reactors

500ml & 1000ml - ID = 3.00" (76mm)
2000ml & 4000ml - ID = 5.00" (127mm)

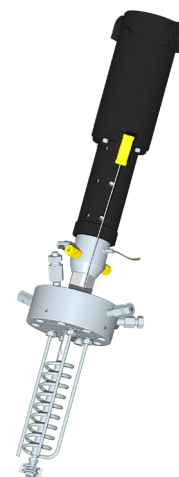


Principle of Operation:

The Parker Autoclave Engineers' EZE-Seal Reactor has been designed for reliable high pressure operation, yet requires low torque for sealing. The seal can be a metal gasket machined from the same material as the vessel or an elastomeric seal. 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. The EZE-Seal stirred laboratory reactor is used for chemical synthesis of corrosive, hazardous and very reactive chemicals/petrochemicals as well as solvothermal reactions.

General Specifications:

Maximum Allowable Working Pressure: (MAWP)
2,900 psi @ 850°F (200 Bar @ 454°C)
Note
Maximum Recommended Operating Pressure:
2,500 psi @ 750°F (172 Bar @ 398°C)
Material of Construction:
316 Stainless Steel
Hastelloy® C

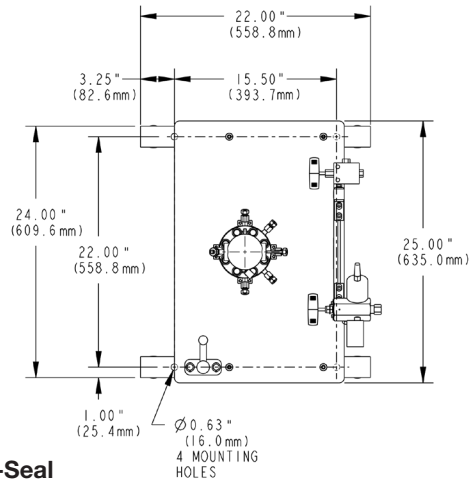


1000 ml EZE-Seal Reactor
Internals

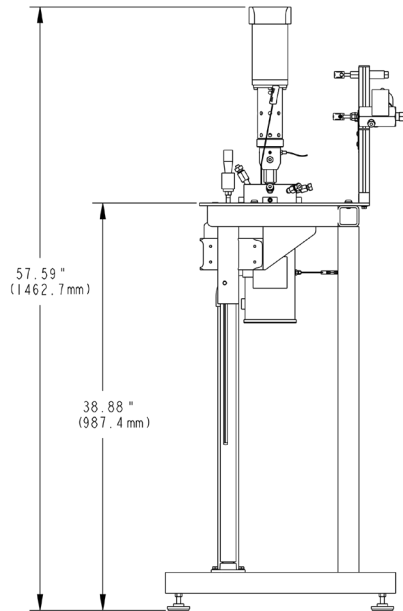
Standard/Optional Unit Features:

- Low torque metal seal
- Electric heater with over-temperature thermocouple and easy body removal
- Floor stand with swing-away body lift
- Process thermocouple (Type K)
- Process Cooling Coil
- Liquid sample tube with valve
- Gas inlet valve
- Vent valve with pressure gauge/transducer and safety rupture disc (0-3000 PSI gauge, 0-5000 PSI, 24VDC, 4-20mA pressure transducer)
- F437FB (.195" ID) Charging Port (see Charging Port Option if needed)
- Optional: Mini flush valve
- Optional: ASME code stamp or CE mark
- Optional: 500/1000, and 2000/4000 ml companion volumes with common closure geometry
- Optional: Elastomer seal for lower temperature operation
- Optional: i2Mag in-line MagneDrive with 1/3 hp motor speed sensor with Dispersimax Impeller

Drawing Details:



1000ml EZE-Seal



Ordering Information:

Part Number Example	PH-E	400	SS	-	MM	NS	-	XP
Category		1	2		3	4		5

Example: PH-E400SS-MMNS-XP

Description: 4000 ml EZE-Seal Stirred Reactor, 316 Stainless Steel, With Drive, No Code Requirements with Explosion Proof Option

1 - Vessel Volume Code	
050	500 ml
100	1000 ml
200	2000 ml
400	4000 ml

2 - Vessel Material Code	
SS	316 Stainless Steel
HC	Hastelloy® C

3 - Mixer	
NS	No Mixer (port plugged)
MM	In-Line Magnedrive Mixer (w/Dispersimax Impeller - pg. 31)

4 - Pressure Code Requirement (unit voltage)	
NS	None (240 VAC)
AS	ASME Code (240 VAC)
CE	CE Mark (240 VAC)
NE	Export with CRN (240 VAC)

5 - Explosion Proof (option)	
XP	Explosion proof with slip-on jacket and air motor

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Note The user should be aware that the 850°F (454°C) vessel temperature rating is the maximum mean wall temperature of the vessel, as defined by the ASME B&PV Code. Many variables can affect the thermal capabilities of the vessel. These factors can include, but are not limited to, the use of insulation, whether the process is batch or continuous flow, or even a chemical process itself. These factors may have bearing on heat up rate, maximum process temperature, and the cool down rate of the reactor. These factors should be considered by the user when purchasing a system in order to verify that the equipment will reach desired operating temperature in a reasonable time period. Please consult Parker Autoclave Engineers if assistance is required.

Optional Feature Kits/Spare Parts

(purchased separately but assembled as part of purchased Reactor if required)

- Soft Seat Vessel Closure Seal Kits
- Magnedrive Bearing Option Kits
- Internal Tube Kits
- Process Cooling Component Kits
- Solid or Liquid Catalyst Charging Kit
- Tool Kits (matched to vessel type)

For complete description of kit contents please see pages 16-19

Universal Reactor Controller (URC)

We recommend that our Reactors be operated using our URC-II control package. It provides an interface to control and monitor heater & process temperature, Magnedrive speed, and Pressure. See page 41 for information on ordering the URC-II controller.