Stirred Reactors

Series Number:

4590

Type:

Bench Top Micro Reactor

Vessel:

Removable

Sizes:

25-100 mL

Maximum Operating Pressure 3000 psi (207 bar)

Maximum Operating Temperature

275° C w/ FFKM O-ring

hese are the smallest of all Parr Stirred Reactors. They will be a good choice for chemists working with very expensive materials or materials only available in small amounts. They will also appeal to users who wish to minimize the risks associated with hazardous materials or reactions by restricting the reactants or products to a minimum. They also minimize the quantities of waste products which may require special disposal procedures.

These micro reactors have been designed to provide as many of the features of the larger vessels as possible in the limited space available. All of the standard head fittings are provided, but cooling is not available unless some of the normal fittings are eliminated. A convenient screw cap and O-ring closure allows these small vessels to be closed by simply turning down a screw cap until it is hand tight. No wrenches or other tools are required. Normal heating rates are achieved using heaters

Series 4500 Bench Top Micro Reactors



4592 Micro Reactor, 50 mL, with 4842 Controller

which clamp directly onto the limited surface area available for heat transfer. The 225° C maximum working temperature with an FKM O-ring can be increased to 275° C by substituting a high temperature, FFKM O-ring at added cost. These micro reactors can be easily converted from one size to another by simply substi-

tuting a larger or smaller cylinder with the corresponding internal fittings. The support system can also be readily adapted to accept any of the vessels from the 4560 Mini Reactor Series. The opportunity to modify these small reactors is restricted because of the limited space available.



Series 4590



Series 4590 Reactor Spec	cifications	Indicates specificatio	ns that change within models
Model Number	4591	4592	4593
Sizes, mL	25	50	100
Maximum Pressure, psi (bar)	3000 (207)		
Maximum Temperature °C			
with FFKM O-ring	275		
Vessel Style	Removable		
Reactor Mounting	Bench Top		
Closure	Screw Cap		
Valve Connections, NPT	1/8" Male		
Magnetic Stirrer, Model No.	A1120HC6		
Maximum Torque, Inch-Pounds	16		
Impeller(s), number (blades)	1 (4)		
Pressure Gage, Size, inches	3.5		
Range, psi (bar)	0-3000 (207)*		
Temperature Measurement	Fixed T.C.		
Cooling Coil	Not Available		
Style	N/A		
Bottom Drain Valve	None		
Heater Style	Clamp-on		
Heater Power Watts	400		
Stirrer Motor, hp, type	1/8 V.S.*		
Electrical Supply			
Volts	115 or 230		
Maximum Load, amps, 115/230	10/5		
Vessel Dimensions			
Inside Diameter, inches	1	1.3	1.3
Inside Depth, inches	2	2.25	4.5
Weight of Vessel, pounds	6	6	7
Reactor Dimensions			
Width, inches w/o Controller	11.5		
Depth, inches	17.5		
Height, inches	25.5		
Weight, pounds	55	55	56

^{*} Other options available. See Options Section and Ordering Guide



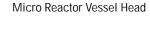
Stirred Reactors

Series 4590 Options

Series 4590 Options

INDEX TO OPTIONS Option Materials of Construction 9-12 Stirrer Motor 66 Temperature Control 90-93 Control Options 94-95 Process Control 96-99 Certification 14-15 **Custom Options** Stirrers 70-71 Heaters 68-69 External Valves and Fittings 83 Windows 80-81 Explosion Proof Options 64-65 Accessories Spare Parts Kits 84 Pressure Hoses 79 Check Valves 80







50 mL, 100 mL, and 25 mL Cylinders



Series 4590

Ordering Guide

Series 4500 Ordering Guide

A composite identification number to be used when ordering a micro reactor can be developed by combining individual symbols from the separate sections.

EXAMPLE

A 50 mL, T316SS, reactor with an O-ring, 115V explosion proof motor, 3000 psi gage and PID controller with pressure display module would be listed as:

No. 4592-O-SS-115-XP-3000-4842-PDM

Νο.	Model 4 5 9 2 —		Material S S —	Voltage 115—	Motor X P —	Gage 3 0 0 0 —	Controller 4 8 4 2 —	Control Options P D M
	A.	В.	C.	D.	E.	F.	G.	H.

A.	BASE		
	Model No.	Size	Head Style
	4591	25 mL	Removable
	4592	50 mL	Removable
	4593	100 mL	Removable

Model No.	Size	Head Style
4591	25 mL	Removable
4592	50 mL	Removable
4593	100 mL	Removable

B.	GAS	KET/MAXIMUM	TEMP.
	-O	O-Ring	275° (

C.	MATE	RIALS OF CONTRUCTION
	-SS	T316 Stainless Steel
	_N/\	Alloy 400

-MO	Alloy 400
-IN	Alloy 600
-HB	Alloy B-2
-HC	Alloy 276
-HC2	Hastelloy C-2000
-CS	Alloy 20Cb
-TI2	Titanium Grade 2
-TI4	Titanium Grade 4
-NI	Nickel 200
–71	7irconium 702 or 705

D.	ELECT	RICAL SUPPLY
	-115	115 Volt, 50/60 Hz
	-230	230 Volt, 50/60 Hz

E.	MOTOF	ROPTION
	-VS	Variable Speed, 1/8 hp
	-AM	Air Motor
	-XP	Explosion Proof
		Variable Speed, 1/4 hp

PRESS	URE GAGE	
-2000	2000 psi/140 bar	
-3000	3000 psi/207 bar	
-1000	1000 psi/70 bar	
-600	600 psi/40 bar	
-200	200 psi/14 bar	
-100	100 psi/7 bar	

G.	TEMPE	RATURE CONTROLLER
	-4842	PID Control
	-4843	Programable Control
	-4861	Process Controller
	-4862	Expanded Process Controller

H. CONTRO	OL OPTIONS
(LIST A	LL DESIRED)
-TDM*	Tachometer Display Module
-PDM*	Pressure Display Module
-HTM*	High Temperature Cut-off Module
-AMM*	Ammeter Display Module
-*(A)	Add to above for Analog Output (0-5 or 0-10 VDC or 4-20 mA)
-SVM	Solenoid Valve Module
-CM	Communications Module.

I.	CUSTOM OPTIONS
	(LIST ALL DESIRED)
	Gas Entrainment Stirrer
	Condenser

J.	CERTIFICATION		
	No Symbol	No Certification	
	-ASME	ASME Certification	
	-TUV	TUV Certification	
	-CE	European Community Standard	
	-P	Parr Certification	