

4540

Series 4540 600-1200 mL High Pressure Reactors



Series Number:
4540

Type:
**Bench Top and
Floor Stand High
Pressure Reactor**

Vessel:
Moveable or Fixed

Sizes:
600-1200 mL

Maximum Operating
Pressure:
5000 psi (345) bar

Maximum Operating
Temperature:
**350 °C
w/ PTFE Flat Gasket**

This series of stirred reactors has been designed for users who need higher operating pressures than the 2000 to 3000 psi offered by the General Purpose Reactor, but do not require the high operating temperatures provided by the Series 4570 High Pressure-High Temperature Reactors. These reactors offer working pressures to 5000 psi (345 bar) at temperatures to 350 °C.

These vessels have been designed with outside dimensions comparable to the Series 4520 and 4530 Reactors so that they can use the same support system, stirrer drive and heater as these popular general purpose models. This provides not only an attractively priced high pressure/moderate temperature system, but also reactors that can be interchanged with the 1 and 2 liter sizes. The thicker walls required for higher operating pressures reduce the volumes of these reactors to 600 and 1200 mL.

These reactors can be furnished in either the bench top or floor stand mountings. While the 1200 mL reactor is offered as a "bench top model", it is too tall and too heavy to be handled comfortably on a standard height bench top. It is recommended that the floor stand support option should be selected unless the user has an "adjustable bench top" which will accommodate the overall height of the 1200mL systems.



Model 4544 High Pressure Reactor, 600 mL, Moveable Style Vessel, with Heater Lowered, and a 4842 Controller

Series 4540 Ordering Guide

A composite identification number to be used when ordering a 4540 Series reactor can be developed by combining individual symbols from the separate sections.

Example: A 600 mL, T316SS, moveable head bench top reactor with general purpose footless magnetic drive, PTFE Gasket, 115V, explosion proof 1/4 hp motor, 5000 psi gage and PID controller with pressure display module would be listed as: **No. 4544-T-FMD1-SS-115-XP.25-5000-4842-PDM**

A.	B.	C.	D.	E.	F.	G.	J.	K.
Model	Gasket	Stirrer	Material	Voltage	Motor	Gage	Controller	Options
No.4544	-T	-FMD1	-SS	-115	-XP.25	-5000	-4842	-PDM

A. Base Model		
Model No.	Size	Vessel Style
4544	600 mL	Moveable Bench Top
4544A	600 mL	Moveable Floor Stand
4544C	600 mL	Moveable Cart
4545	600 mL	Fixed Head Bench Top
4545A	600 mL	Fixed Head Floor Stand
4546	1200 mL	Moveable Bench Top
4546A	1200 mL	Moveable Floor Stand
4546C	1200 mL	Moveable Cart
4547	1200 mL	Fixed Head Bench Top
4547A	1200 mL	Fixed Head Floor Stand

B. Gasket / Maximum Temperature	
-T	PTFE Compression Gasket, 350 °C

C. Magnetic Stirrer Drive	
-GP	General Purpose, 16 in.-lb.
-FMD1	Footless, General Purpose, 16 in.-lb.

D. Materials of Construction	
-SS	T316 Stainless Steel
-MO	Alloy 400
-IN	Alloy 600
-HB	Alloy B-3
-HC	Alloy C-276
-HC2	Hastelloy C-2000
-CS	Alloy 20Cb3
-TI2	Titanium Grade 2
-TI4	Titanium Grade 4
-NI	Nickel 200
-Zl	Zirconium 702 or 705

E. Electrical Supply	
-115	115 Volt, 50/60Hz
-230	230 Volt, 50/60Hz

F. Motor Option	
-VS .12	Variable Speed, 1/8 hp
-VS .25	Variable Speed, 1/4 hp
-XP .25	Explosion Proof, Variable Speed, 1/4 hp
-AM .25	Air Motor, 1/4 hp

G. Pressure Gage	
-3000	3000 psi / 200 bar
-5000	5000 psi / 345 bar
-7500	7500 psi / 517 bar
-10000	10000 psi / 700 bar

H. Internal Cooling Coil	
-No Symbol	No Coil
-SC	Serpentine Coil

I. Bottom Drain Valve	
-No Symbol	No Bottom Drain Valve
-BDV	Bottom Drain Valve

J. Temperature Controller	
-4842*	PID Control
-4843*	Programmable Control
-4870	Process Controller
-(A)	Add to above for Analog Output (0-5 or 0-10 VDC or 4-20mA)

K. Control Options (List All 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 4-20mA)
-SVM	Solenoid Valve Module
-CM	Communications Module
-4846	Data Acquisition System

L. Custom Options (List All Desired)			
-AS	Anchor Stirrer	-RC	Reflux Condenser
-SB	Static Catalyst Basket	-RTC	Reflux Take-off Condenser
-CAD	Catalyst Addition Device	-GE	Gas Entrainment Stirrer
-BF	Baffles		

M. Certifications	
-No Symbol	No Certification
-ASME	ASME Certification
-CE/PED	European Community Certification
-P	Parr Certification

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Series 4540 Options



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Model 4546C Reactor, 1200 mL, Moveable Head Style, on a Moveable Cart



1200 mL Fixed Head, and 600 mL Moveable Reaction Vessels

Series 4540 Reactor Specifications

Shaded bar indicates specifications that change within series.

Model No. - Moveable Vessel	4544	4546	4544A	4546A	4544C	4546C
Model No. - Fixed Head	4545	4547	4545A	4547A		
Sizes, mL	600	1200	600	1200	600	1200
Maximum Pressure	5000 psi (345 bar)					
Maximum Temperature						
with FFKM O-ring	NA					
with PTFE Flat Gasket	350 °C					
Reactor Mounting	Bench Top		Floor Stand		Moveable Cart	
Closure (Cap Screws)	Split-Ring (8)					
Valve Connections	1/4" Male NPT					
Magnetic Stirrer, Model No.	A1120HC*					
Maximum Torque	16 Inch-Pounds					
Impeller(s), 6-Blade	2					
Pressure Gage, Size	4.5 inches					
Range	0-10,000 psi (700 bar)*					
Temperature Measurement	Thermowell					
Cooling Coil	Included					
Style	Single Loop					
Bottom Drain Valve	A177VB 1" NPS					
Heater Style	Calrod					
Heater Power Watts	1500	2000	1500	2000	1500	2000
Stirrer Motor, hp	1/8*	1/8*	1/8*	1/8*	1/4*	1/4*
Electrical Supply						
Volts	115 or 230					
Maximum Load 115 / 230	16 / 8 amps					
Vessel Dimensions						
Inside Diameter, inches	3.25					
Inside Depth, inches	4.7	9.8	4.7	9.8	4.7	9.8
Weight of Vessel, pounds	51	57	51	57	51	57
Reactor Dimensions						
Width, inches	16		18		35	
Depth, inches	23		23		18	
Height, inches	36		75		50	
Weight, pounds	125	135	175	185	175	185
Spare Parts Kit	4549MA		4549MB		4549MB	

* Other options available. See Options Section and Ordering Guide