

Series 4550 1 & 2 Gallon Reactor Systems

Series Number:

4550

Type:

General Purpose

Stand:

Floor Stand

Vessel Mounting:

**Moveable or
Fixed Head**

Vessel Sizes, Gallons:

1 and 2

Standard Pressure
MAWP Rating, psi (bar):

1900 (131)

Standard Maximum
Operating Temp., °C:

225 w/ FKM O-ring

275 w/ FFKM O-ring

350 w/ PTFE Flat Gasket

These 4550 Reactors extend the size range of the 4530 Series to 1 and 2 gallon (3.75 and 7.5 liter) sizes, providing excellent facilities for pilot plant studies. They can be furnished with either a self-sealing O-ring closure for working temperatures up to 225 °C, or with a flat, PTFE gasket for higher temperatures to 350 °C. Both fixed head and moveable head designs are available. The moveable head, Model 4551 and 4552, reactors are designed so that they can be opened or closed conveniently without removing the cylinder from the heater and without auxiliary handling equipment. The split-ring cover clamp sections can be moved into place from the sides, and the cap screws can be tightened with the vessel in place in its heater. The fixed head versions, Model 4553 and 4554, allow the head (and the connections made to it) to remain in place while the cylinder and heater are lowered with the aid of the included pneumatic lift system.

The 1 gallon size is usually recommended for high viscosity polymer studies. An optional bottom drain valve may be added for convenient product recovery. As with the smaller floor stand models, these larger, self-contained systems can be equipped with a variety of attachments, such as: condensers, solids charging port, bottom drain, special motors, special heaters, jacketed vessels and automatic valves and regulators. Because of the higher wattage heaters for these reactors, all models in the 4550 Series require a 230 volt power supply.



Model 4554 Reactor Fixed Head, Two Gallon Vessel, Pneumatic Lift, Hinged Split Rings, opened to show Internal Fittings and Serpentine Cooling Coil, with 4848 Reactor Controller shown with optional Expansion Modules.



Series 4550 Pressure Reactor System Specifications				
Shaded bar indicates specifications that change within series.				
Model Number	4551	4552	4553	4554
Sizes, Gallon (Liter)	1 (3.75)	2 (7.50)	1 (3.75)	2 (7.50)
Maximum Pressure (MAWP)	1900 psi (131 bar)			
Maximum Temperature				
with FKM O-ring	225 °C			
with FFKM O-ring	275 °C			
with PTFE Flat Gasket	350 °C			
Vessel Style	Moveable		Fixed Head	
Reactor Mounting	Cart		Floor Stand	
Closure	Split-Ring (10 Cap Screws)			
Valve Connections	1/4" NPT Male			
Magnetic Stirrer, Model No.	A1180HC			
Maximum Torque	60 Inch-Pounds			
Impeller(s), 6-Blades	2 (3.85" dia.)			
Pressure Gage, Size	4.5 inches			
Range	0-2000 psi (140 bar)			
Temperature Measurement	Thermowell			
Cooling Coil	Optional			
Style	Serpentine or Spiral			
Bottom Drain Valve (Optional)	3/8" NPT			
Heater Style	Calrod			
Heater Power, Watts	2250	2700	2250	2700
Stirrer Motor	1/2 hp variable speed			
Lift Mechanism	Pneumatic Lift			
Electrical Supply				
Volts, AC	230			
Maximum Load, amps	13	15	13	15
Vessel Dimensions				
Inside Diameter, inches	6.0			
Inside Depth, inches	8.6	17.2	8.6	17.2
Weight of Vessel, pounds	95	120	115	140
Reactor Dimensions				
Width, inches w/o Controller	35		20	
Depth, inches	18		31	
Height, inches	50		75	
Weight, pounds	265	295	315	345
Spare Parts Kit	4559M			
Other options available. See Ordering Guide, visit www.parrinst.com , or call for more information.				

Series 4550 1 & 2 Gallon Reactor Systems

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The innovative Parr Hinged Split-Rings on the 4553 and 4554 add to a safe vessel removal routine. Simply loosen the compression bolts, unlatch the split-ring closures, and pivot the split-rings out of the way.



4551 Floor Stand Reactor, 1 Gallon, with Bottom Drain Valve, and a 4848 Temperature Controller shown with optional Expansion Modules.

4553 Floor Stand Reactor with Gear Drive, Hinged Split Rings, and heater attached.



Series 4550 Ordering Guide

The Order No. for the Base System is: **455__-T-SS-HD-230-VS.50-2000-4848**

A composite identification number to be used when ordering a 4550 Series Reactor can be developed by combining individual symbols from the separate sections below. For more information on how to use this ordering guide, please see page 27.

A Base Model		
Model No.	Size	Vessel Style
4551	1 Gallon	Moveable, Cart
4552	2 Gallon	Moveable, Cart
4553	1 Gallon	Fixed Head, Floor Stand
4554	2 Gallon	Fixed Head, Floor Stand

B Gasket / Maximum Temperature	
-OV	FKM O-ring / 225 °C
-OK	FFKM O-ring / 275 °C
-T	PTFE Compression Gasket / 350 °C

C Materials of Construction	
-SS	T316 Stainless Steel
-MO	Alloy 400
-IN	Alloy 600
-HB	Alloy B-2
-HC	Alloy C-276
-CS	Alloy 20
-TI2	Titanium Grade 2
-TI4	Titanium Grade 4
-NI	Nickel 200
-ZR	Zirconium Grade 702 or 705

D Magnetic Stirrer Drive	
-HD	Heavy Duty, 60 in-lb
-XHD	Extra Heavy Duty, 120 in-lb
-FMD2	Footless, Heavy Duty, 60 in-lb
-FMD3	Footless, Extra Heavy Duty, 120 in-lb

E Mag. Drive Material of Construction	
-No Symbol	Same Material As Vessel
-MOC Symbol	Indicate Material of Construction

F Electrical Supply	
-230	230 VAC

G Motor Option	
-VS .50	Variable Speed, 1/2 hp
-XP .50	Explosion Proof Variable Speed, 1/2 hp
-AM .50	Air Motor, 1/2 hp
-GDD	Geared Direct Drive (Fixed Head Units Only)

H Pressure Gage	
-2000	2000 psi / 137 bar
-1000	1000 psi / 70 bar
-600	600 psi / 40 bar
-200	200 psi / 14 bar
-100	100 psi / 7 bar

I Internal Cooling Coil	
-No Symbol	No Coil
-CC	Spiral Coil
-SC	Serpentine Coil

J Bottom Drain Valve	
-No Symbol	No Bottom Drain Valve
-BDV	Bottom Drain Valve 3/8" NPT

K Controller	
-4848	PID Control, Ramp & Soak Programming, Motor Speed Control, and Data logging with Software
-A1925E4	Optional RS485 to USB Cable for 4848 Controller
-4871	Process Controller

L 4848 Expansion Modules	
-TDM	Tachometer Display Module
-MCM	Tachometer w/Motor Control Module
-PDM	Pressure Display Module
-HTM	High Temperature Cut Off Module
-ETLM	External Temperature Limit Module
-MTM	Motor Torque Module

M 4848 Cooling Control: Solenoid Valve Module	
-SVM1	Not Available
-SVM2	230 VAC

N Custom Options (List All Desired)	
-AS	Anchor Stirrer
-BF	Baffles
-GE	Gas Entrainment Stirrer
-RC	Reflux Condenser
-RTC	Reflux Take-off Condenser
-ABH	Aluminum Block Heater
-WJ	Welded Jacket
-SCP	Solids Charging Port
-SA	Spiral Agitator

O Certifications	
-No Symbol	No Certification
-ASME	ASME Certification
-CE/PED	European Community Certification
-CH	China Certification
-P	Parr Certification

P Spare Parts Kit	
-4559M	Spare Parts Kit for 4550 Series