

4550

Series 4550 1 & 2 Gallon Reactors



Series Number:
4550

Type:
**General Purpose Floor
Stand Reactor**

Vessel:
Moveable or Fixed

Sizes:
1 & 2 Gallon

Maximum Operating
Pressure:
1900 psi (130) bar

Maximum Operating
Temperature:
**225 °C
w/ FKM O-ring**
**275 °C
w/ FFKM O-ring**
**350 °C
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, Models 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, Models 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, with a bottom drain valve

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.



4551 Floor Stand Reactor, 1 Gallon, with Bottom Drain Valve, and 4842 Temperature Controller

Series 4550 Ordering Guide

A composite identification number to be used when ordering a 4550 Series reactor can be developed by combining individual symbols from the separate sections.

Example: A 2 Gallon, T316SS, moveable head cart mounted reactor with a heavy duty magnetic drive, PTFE gasket, 230V, variable speed 1/2 hp motor, 2000 psi gage, serpentine internal cooling coil, bottom drain valve, PID controller with tachometer, pressure display module and high temperature cutoff module would be listed as: **No. 4552-T-HD-SS-230-VS.50-2000-SC-BDV-4842-TDM-PDM-HTM**

A.	B.	C.	D.	E.	F.	G.	H.	Etc.
Model	Gasket	Stirrer	Material	Voltage	Motor	Gage	Cooling Coil	
No.4552	-T	-HD	-SS	-230	-VS.50	-2000	-SC	

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

-O	FKM O-ring, 225 °C FFKM O-ring, 275 °C
-T	PTFE Compression Gasket 350 °C

C. Magnetic Stirrer Drive

-HD	Heavy Duty, 60 in.-lb.
-XHD	Extra Heavy Duty, 120 in.-lb.
-FMD1	Footless, Heavy Duty, 60 in.-lb.
-FMD3	Footless, Extra Heavy Duty, 120 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
-ZI	Zirconium 702 or 705

E. Electrical Supply

-230	230 Volt, 50/60Hz
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F. 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)

G. Pressure Gage

-3000	3000 psi / 200 bar
-2000	2000 psi / 140 bar
-1000	1000 psi / 70 bar
-600	600 psi / 40 bar
-200	200 psi / 14 bar
-100	100 psi / 7 bar

H. Internal Cooling Coil

-No Symbol	No Coil
-CC	Spiral 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 4550 Options



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Model 4554 Reactor, Fixed Head, Two Gallon Vessel

Model 4554 Reactor Fixed Head, Two Gallon Vessel, Opened to Show Internal Fittings and Serpentine Cooling Coil

Series 4550 Reactor 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	1900 psi (130 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 (Cap Screws)	Split-Ring (10)			
Valve Connections	1/4" Male NPT			
Magnetic Stirrer, Model No.	A1180HC*			
Maximum Torque	60 Inch-Pounds			
Impeller(s), 6-Blades	2			
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	A465VB 3/8" NPT (Optional)			
Heater Style	Calrod			
Heater Power Watts	2250	3750	2250	3750
Stirrer Motor	1/2 hp variable speed*			
Electrical Supply				
Volts	230			
Maximum Load	16 amps	18 amps	16 amps	18 amps
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		30	
Height, inches	50		75	
Weight, pounds	265	295	315	345
Spare Parts Kit	4559M			
* Other options available. See Options Section and Ordering Guide				