

Type:

General Purpose

Stand:

FloorStand orCart

Mounting Style:  
Moveable or  
Fixed Head

Vessel Sizes, Gallons (Liters):  
1(3.75) and2(7.99)

Standard Pressure  
MAWP Rating, psi  
(bar):

1900 (131)

Standard Maximum  
Operating Temp., °C:  
225 w/ FKM O-  
ring  
300 w/ FFKM O-  
ring  
350 w/ PTFE Flat  
Gasket

## Series 4550 Floor Stand Reactors, 1 & 2 G

**These 4550 Reactors extend the size range of the 4530 Series** to 1 and 2 gallon (3.75 and 7.99 liter) sizes, providing excellent options for pilot plant studies.

These reactors are available with an FKM O-ring seal for operating temperatures to 225 °C, and FFKM O-ring for temperatures to 300 °C, or with a flat, PTFE gasket for operating temperatures up to 350 °C maximum.

Both fixed head and moveable head designs are available. The moveable head, Model 4551 and 4552, cart 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 sections can be moved into place from the sides, and the compression bolts 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 ports, bottom drain valves, special motors, custom 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 Floor Stand Reactor, Two Gallon, Fixed Head, Pneumatic Lift, Hinged Split-Rings, opened to show Internal Fittings and Serpentine Cooling Coil, with 4848 Reactor Controller shown with optional Expansion Modules.**

## 4550

Series 4550 Pressure Reactor System Specifications				
Shaded bar indicates specifications that change within series.				
Model Number	4551	4552	4553	4554
Approximate Volume, Gallon (Liter)	1	2 (7.99)	1 (3.75)	2
Maximum Pressure (MAWP)	(3.75)	1900 psi (131 bar) (7.99)		
Maximum Temperature				
with FKM O-ring	225			
with FFKM O-ring	°C			
with PTFE Flat Gasket	300			
Reactor Details		°C		
Mounting Style	Moveable	350	Fixed	
Stand type	Moveable Cart	°C	Head	
Closure	Split-Ring (10 Compression Bolts for Flat Gasket, 5 for O-ring)			
Valve Connections	1/4" NPT Male		Stand	
Magnetic Stirrer, Model No.	A1180HC General Purpose or A2160HC Footless			
Maximum Torque	60 Inch-Pounds			
Impeller(s), 6-Blades	2 (3.85" dia.)			
Stirrer Motor	1/2 hp variable speed			
Pressure Gage, Size	4.5 inches			
Range	0-2000 psi (138 bar)			
Temperature Measurement	Thermowell			
Cooling Coil (optional)	Serpentine			
Bottom Drain Valve (BDV) (optional)	3/8" NPT			
Lift Mechanism (optional)	N/A		Pneumatic	
Heater Style	Calrod			
Heater Power, Watts	2250	2700	2250	2700
Electrical Supply				
Volts, AC	230			
Maximum Load, amps, 230	13	15	13	15
Cylinder Dimensions				
I.D. x Depth, inches				
Vessel Assembly Weight, pounds	6.0 x 8.6	6.0 x 17.2	6.0 x 8.6	6.0 x 17.2
Cylinder Weight, pounds	96	116	111	131
Reactor/Stand Dimensions	33	52	33	52
Width x Depth w/o Controller, inches				
Height, inches	35 x 18		20 x 31	
Weight, pounds	50		75	
	265	295	315	345
Spare Parts Kit	4559M			
Other options available. See Ordering Guide, visit <a href="http://www.parrinst.com">www.parrinst.com</a> , or call for more information. Weights and dimensions are estimated from the base model. Final weights and dimensions will vary based on options selected.				

# Series 4550 Floor Stand Reactors, 1 & 2 Gallon

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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 Moveable Head Reactor on Moveable Cart, 1 Gallon, with Bottom Drain Valve, and a 4848 Temperature Controller shown with optional Expansion Modules.



4553 Floor Stand Reactor, 1 Gallon, Fixed Head, with Gear Drive, Hinged Split-Rings, and heater engaged.

# 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 1	Vessel Style
4551	Gallon	Moveable Head, Moveable Cart
4552	2	Head, Moveable Cart
4553	Gallon	Fixed Head, Stationary Floor Stand
4554	1	Fixed Head, Stationary Floor

B Gasket / Maximum Temperature	
-OV	FFKM O-ring, 225 °C
-OK	FFKM O-ring, 300 °C
-T	PTFE Flat Gasket, 350 °C

C Materials of Construction	
-SS	T316 Stainless Steel
-MO	Alloy 400
-IN	Alloy 600
-HB	Alloy B-2 / B-3
-HC	Alloy C-276
-CS	Alloy 20
-Ti2	Titanium Grade 2
-Ti4	Titanium Grade 4
-ZR702	Zirconium Grade 702
-ZR705	Zirconium Grade 705

See page 10 or 24 for complete list of available alloys.

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

E Mag. Drive Material of Construction	
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
-VS .75	Variable Speed, 3/4 hp
-GDD	Geared Direct Drive (Fixed Head Units Only)

H Geared Direct Drive Ratio*	
-3D	3:1, 0-600 rpm
-5D	5:1, 0-360 rpm
-10D	10:1, 0-180 rpm

\* For Geared Direct Drive Motor Option Only.

I Pressure Gage	
-2000	2000 psi / 138
-1000	bar 1000 psi /
-600	69 bar 600 psi
-200	/ 40 bar 200
-100	psi / 14 bar
	100 psi / 7 bar

J Internal Cooling Coil	
-SC	Serpentine Coil

K Bottom Drain Valve	
-BDV	Bottom Drain Valve 3/8" NPT

L Controller	
-4848 (included in base system)	PID Control, Ramp & Soak Programming, Motor Speed Control, and Data logging with Software. (RS-485 to USB cable not included) For use with up to three additional display modules.
-4848B	Same as above but for use with up to six additional display modules.
-A2110E	Motor Controller
-4871	Process Controller (for enhanced control options)
See Chapter 6 for a complete list of controllers and options.	

M 4848 Controller Options	
-TDM -	Tachometer Display Module
MCM -	Motor Control Module w/Tachometer
PDM -	Pressure Display Module
HTM -	High Temperature Cut Off Module
ETLM -	External Temperature Limit Module
MTM* -	Motor Torque Module
SVM	Solenoid Valve Module (for cooling control)
-	RS-485 to USB Cable for 4848 Controller (required for data logging)
A1925E	RS-485 to USB Converter, isolated, 30-ft
See Chapter 7 for a complete list of optional accessories.	

\* The MTM must be installed in conjunction with the MCM.

N Custom Options (List All Desired)	
-AS -	Anchor Stirrer
BS -	Paddle Stirrer
SA -	Spiral Stirrer
A2504H	Gas Entrainment Stirrer
GE	Removeable Baffle Set
BF -	Internal Catalyst Addition Device
CAD -	External Catalyst Addition Device
XCA	Solids Charging Port (Ball Valve)
D -	Reflux Condenser
SCP -	Reflux/Take-Off Condenser
RC -	Welded Jacket
RTC -	Aluminum Block Heater w/ Cooling Channels
WJ -	
See Chapter 7 for a complete list of optional accessories.	

O Certifications	
-ASME	ASME Documentation
-CE	CE Documentation
-P	Parr Certification

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

Please note that all options and combinations are not compatible with all models.