Series Number:

4550

Type:
General Purpose

Stand:
Floor Stand or Cart

Mounting Style:
Moveable or Fixed Head

Vessel Sizes, Gallons (Liters):
1 (3.75) and 2 (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 Gallon

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 (3.75)	2 (7.99)	1 (3.75)	2 (7.99)
Maximum Pressure (MAWP)	1900 psi (131 bar)			
Maximum Temperature				
with FKM O-ring	225 °C			
with FFKM O-ring	300 °C			
with PTFE Flat Gasket	350 °C			
Reactor Details				
Mounting Style	Moveable		Fixed Head	
Stand type	Moveable Cart		Floor Stand	
Closure	Split-Ring (10 Compression Bolts for Flat Gasket, No Compression Bolts for O-ring)			
Valve Connections	1/4" NPT Male			
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	6.0 x 8.6	6.0 x 17.2	6.0 x 8.6	6.0 x 17.2
Vessel Assembly Weight, pounds	96	116	111	131
Cylinder Weight, pounds	33	52	33	52
Reactor/Stand Dimensions				
Width x Depth w/o Controller, inches	35 x 18		20 x 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.
Weights and dimensions are estimated from the base model. Final weights and dimensions will vary based on options selected.

Series Number:

4550

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

B Gasket / Maximum Temperature

-OV	FKM 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
-FMD2	Footless, Heavy Duty, 60 in-lb
-FMD3	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 bar
-1000	1000 psi / 69 bar
-600	600 psi / 40 bar
-200	200 psi / 14 bar
-100	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)
-A1925E4	RS-485 to USB Cable for 4848 Controller (required for data logging)
-A1925E6	RS-485 to USB Converter, isolated, 30-ft
-A3504HC	SpecView Software Package for 4838/4848

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

N Custom Options (List All Desired)

-AS	Anchor Stirrer
-PS	Paddle Stirrer
-SA	Spiral Stirrer
-GE	Gas Entrainment Stirrer
-BF	Removeable Baffle Set
-CAD	Internal Catalyst Addition Device
-XCAD	External Catalyst Addition Device
-SCP	Solids Charging Port (Ball Valve)
-RC	Reflux Condenser
-RTC	Reflux/Take-Off Condenser
-WJ	Welded Jacket
-ABH	Aluminum Block Heater w/ Cooling Channels

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.