

4530

## Series 4530 1 and 2 Liter Floor Stand Reactors



Series Number:  
**4530**

Type:  
**General Purpose Floor  
Stand Reactor**

Vessel:  
**Moveable or Fixed**

Sizes:  
**1000-2000 mL**

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**

This series of reactors will appeal to users who have any of the following needs:

- Reactors Configured for Polymer Studies.** The reactors in this series are mounted on a sturdy floor stand which will accommodate larger stirrer drive motors and stronger power trains than are generally available for the bench top models. With these options it is possible to provide the high torque and low stirring speeds required for work with polymers and other mixtures with a viscosity of 1 million centipoise and more. These mountings are also better suited for the installation of a drain valve in the bottom of the vessel for convenient removal of the reaction mixture while it is still hot.

- Reactors Requiring Extensive Modifications.** Floor stand mountings provide a good base for reactor modifications and for the addition of accessories, such as: condensers, packed columns, special motors, special heaters, jacketed vessels, automatic valves or regulators, and many others.

- Reactors that Need to be Moved.** These reactors are designed for use in an area where a bench top is not available. Users who wish to move the reactor to storage when not in use, will appreciate the moveable floor stand design of the Series 4531 and 4532. All of the 1 and 2 liter reactors in this series 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 vessel designs are available.



4532 Floor Stand Reactor, 2000 mL, Moveable Vessel on Cart, with 4843 Temperature Controller and Expansion Modules



4642 Moveable Stirred Vessel Assembly, 2000 mL, with Pressure Transducer

# Series 4530 Ordering Guide

A composite identification number to be used when ordering a 4530 Series reactor can be developed by combining individual symbols from the separate sections.

**Example:** A 2000 mL, T316SS, moveable head reactor with heavy duty magnetic drive, PTFE gasket, 115V variable speed 1/4 hp motor, 2000 psi gage and PID controller with tachometer, pressure display module and high temperature cutoff module would be listed as:

**No. 4532-T-HD-SS-115-VS.25-2000-4842-TDM-PDM-HTM**

A.	B.	C.	D.	E.	F.	G.	J.	K.
Model	Gasket	Stirrer	Material	Voltage	Motor	Gage	Controller	Options
No. 4532	-T	-HD	-SS	-115	-VS.25	-2000	-4842	-TDM -PDM -HTM

A. Base Model		
Model No.	Size	Vessel Style
4531	1000 mL	Moveable, Cart
4532	2000 mL	Moveable, Cart
4533	1000 mL	Fixed Head, Floor Stand
4534	2000 mL	Fixed Head, Floor Stand
4535	1000 mL	Moveable, Floor Stand
4536	2000 mL	Moveable, Floor Stand

B. Gasket / Maximum Temperature	
-0	FKM O-ring, 225 °C    FFKM O-ring, 275 °C
-T	PTFE Compression Gasket, 350 °C

C. Magnetic Stirrer Drive	
-GP	General Purpose, 16 in.-lb.
-HD	Heavy Duty, 60 in.-lb.
-XHD	Extra Heavy Duty, 120 in.-lb.
-FMD1	Footless, General Purpose, 16 in.-lb.
-FMD2	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
-Zl	Zirconium 702 or 705

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

F. Motor Option	
-VS .25	Variable Speed, 1/4 hp
-VS .50	Variable Speed, 1/2 hp
-XP .25	Explosion Proof, Variable Speed, 1/4 hp
-XP .50	Explosion Proof, Variable Speed, 1/2 hp
-AM .25	Air Motor, 1/4 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
-CB	Catalyst Basket	-RTC	Reflux Take-off Condenser
-CAD	Catalyst Addition Device	-WJ	Welded Jacket
-BF	Baffles	-SA	Spiral Stirrer
-GE	Gas Entrainment Stirrer	-PS	Paddle Stirrer
-ABH	Aluminum Block Heater		

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

# 4530

## Series 4530 Options



### INDEX TO OPTIONS

OPTION	PAGE
Gasket Systems	20
Magnetic Drive	16
Materials of Construction	11-14
Electrical Supply	45
Stirrer Motor	78-79
Pressure Gage	85
Rupture Disc	84
Cooling Coil	90
Bottom Drain Valve	91
Temperature Control	104-108
Control Options	107-108
Process Control	110-114
Certification	9-10

### CUSTOM OPTIONS

Stirrers	80-81
Heaters	76-77
External Valves and Fittings	98
Solids Charging Ports	89
Condensers	83
Electrical Leads	96-97
Catalyst Addition Devices	89
Catalyst Baskets	82
Relief Valves	85
Windows	96
Gear Drives	78-79
Explosion Proof Options	94-95

### ACCESSORIES

Liners	90
Spare Parts Kits	98
Pressure Hoses	93
Check Valves	92
Liquid Pipettes	89
Gas Burettes	88



4534 Floor Stand Reactor, 2000 mL, Fixed Head, with Spiral Cooling Coil and Liquid Charging Pipette, in the Open Position



4534 Reactor, Assembled with Heater Raised



4534 Reactor, Assembled with Heater Lowered

Series 4530 Reactor Specifications						
Shaded bar indicates specifications that change within series.						
Model Number	4531	4532	4533	4534	4535	4536
Sizes, mL	1000	2000	1000	2000	1000	2000
Maximum Pressure	1900 psi (130 bar)					
<b>Maximum Temperature</b>						
with FKM O-ring	225 °C					
with FFKM O-ring	275 °C					
with PTFE Flat Gasket	350 °C					
<b>Vessel Style</b>	Moveable		Fixed Head		Moveable	
Reactor Mounting	Cart		Floor Stand		Floor Stand	
Closure (Cap Screws)	Split-Rings (6)					
Valve Connections	1/8" Male NPT					
Magnetic Stirrer, Model No.	A1120HC*					
Maximum Torque	16 Inch-Pounds					
Impeller(s), 6-Blade	2					
Pressure Gage, Size	4.5 inches					
Range	0-2000 psi (140 bar)*					
Temperature Measurement	Thermocouple					
Cooling Coil	Optional					
Style	Serpentine or Spiral					
Bottom Drain Valve	A465VB 3/8" NPT					
Heater Style	Calrod					
Heater Power Watts	1500		1000	1500	1000	1500
Stirrer Motor	1/4 hp Variable Speed*					
<b>Electrical Supply</b>						
Volts	115 or 230					
Maximum Load, 115 / 230	12 / 8 amps*					
<b>Vessel Dimensions</b>						
Inside Diameter, inches	4.0					
Inside Depth, inches	5.4	10.5	5.4	10.5	5.4	10.5
Weight of Vessel, pounds	28	32	32	36	28	32
<b>Reactor Dimensions</b>						
Width, inches w/o Controller	35		21		21	
Depth, inches	18		28		28	
Height, inches	50		62		62	
Weight, pounds	200	215	225	240	225	240
<b>Spare Parts Kit</b>	4539M (General Purpose) or 4539MA (Heavy Duty)					
* Other options available. See Options Section and Ordering Guide						