



Series Number:
4570-4580

Type:
**High Temperature,
High Pressure
Reactors**

Vessel:
**Moveable or
Fixed Head**

Sizes:
250 mL - 1.5 Gallon

Maximum Operating
Pressure:
**4570:
5000 psi (345 bar)
4580:
3000 psi (200 bar)**

Maximum Operating
Temperature:
**500 °C
w/ FG Flat Gasket**



Model 4575 High Temperature / High Pressure Reactor Bench Top, Moveable Vessel, 500 mL

Parr offers a number of different reactors in the 4570 and 4580 Series in a variety of sizes and with different mountings for operating pressures to 5000 psi (345 bar) and temperatures to 500 °C.

4571 - 4572 Reactors.

These are 1000 and 1800 mL moveable head reactors mounted in movable carts.

4577 - 4578 Reactors.

These are 1000 and 1800 mL fixed head reactors mounted on a floor stand.

4575 - 4576A Reactors.

These are 500 and 250 mL bench top reactors with 5000 psi (345 bar) and 500 °C ratings. They are available as either moveable or fixed head vessels.

4581 - 4582 Reactors.

These 1 gallon (3.75 L) and 1-1/2 gallon (5.5 L) cart mounted reactors are designed for 3000 psi (200 bar) maximum pressure with a 500 °C maximum working temperature and mounted on movable carts.

4583 - 4584 Reactors.

These are 1 gallon (3.75 L) and 1-1/2 gallon (5.5 L) fixed head reactors mounted on floor stands.

All of these reactors have been designed with suitable valves, fittings and modifications to the vessel itself to operate at the higher temperature and pressure ratings.

Flat, flexible graphite (FG) gaskets are used for temperatures in the higher range to 500 °C. These can be replaced with PTFE gaskets for procedures in which the temperature will not exceed 350 °C. All cart and floor stand models use ceramic heaters to achieve the higher operating temperatures.

Series 4570/80 Ordering Guide

A composite identification number to be used when ordering a 4570 or 4580 Series reactor can be developed by combining individual symbols from the separate sections.

Example: An 1800 mL, T316SS, fixed head reactor, heavy duty magnetic drive, 230 volt, 1/2 hp variable speed motor, 5000 psi gage, PID controller with tachometer, pressure display module and high temperature cutoff module would be listed as: **No. 4578-FG-HD-SS-230-VS.50-5000-4842-TDM-PDM-HTM**

A.	B.	C.	D.	E.	F.	G.	J.	K.
Model	Gasket	Stirrer	Material	Voltage	Motor	Gage	Controller	Options
No.4578	-FG	-HD	-SS	-230	-VS.50	-5000	-4842	-TDM-PDM-HTM

A. Base Model

Model	Size	Vessel Style
4571	1000 mL	Moveable Head, Cart
4572	1800 mL	Moveable Head, Cart
4575	500 mL	Moveable Head, Bench Top
4576	250 mL	Moveable Head, Bench Top
4575A	500 mL	Fixed Head, Bench Top
4576A	250 mL	Fixed Head, Bench Top
4577	1000 mL	Fixed Head, Floor Stand
4578	1800 mL	Fixed Head, Floor Stand

4581	1.0 Gallon	Moveable Head, Cart
4582	1.5 Gallon	Moveable Head, Cart
4583	1.0 Gallon	Fixed Head, Floor Stand
4584	1.5 Gallon	Fixed Head, Floor Stand

B. Gasket / Maximum Temperature

-FG	Flexible Graphite Gasket, 500 °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 .12	Variable Speed, 1/8 hp (4575-4576 Only)
-VS .25	Variable Speed, 1/4 hp
-VS .50	Variable Speed, 1/2 hp
-XP .25	Exposion Proof Variable Speed, 1/4 hp
-XP .50	Exposion Proof Variable Speed, 1/2 hp
-AM .25	Air Motor, 1/4 hp (4575-4576 Only)
-AM .50	Air Motor, 1/2 hp
-GDD	Geared Direct Drive (Fixed Head Unit Only)

G. Pressure Gage

-2000	2000 psi / 140 bar
-3000	3000 psi / 200 bar
-5000	5000 psi / 345 bar
-7500	7500 psi / 517 bar
-10000	10000 psi / 690 bar

H. 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

K. Custom Options (List All Desired)

-AS	Anchor Stirrer	-RC	Reflux Condenser
-SB	Static Catalyst Basket	-RTC	Reflux Take-off Condenser
-DB	Dynamic Catalyst Basket	-BF	Baffles
		-GE	Gas Entrainment Stirrer

M. Certifications

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



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Model 4571 High Pressure / High Temperature Reactor, Moveable Vessel, 1000 mL



500 mL Moveable Vessel Assembly for Model 4575 High Pressure / High Temperature Reactor

Series 4570/4580 Reactor Specifications

Shaded bar indicates specifications that change within series.

Model No., Moveable Vessel	4571	4572	4575	4576	4581	4582
Model No., Fixed Head	4577	4578	4575A	4576A	4583	4584
Reactor Mounting	Cart / Floor Stand		Bench Top		Cart / Floor Stand	
Sizes, mL	1000	1800	500	250	3750	5500
Maximum Pressure	5000 psi (345 bar)		5000 psi (345 bar)		3000 psi (200 bar)	
Maximum Temperature						
with FG Flat Gasket	500 °C					
Closure (Cap Screws)	Split Ring (12)		Split Ring (8)		Split Ring (16)	
Valves Mounted	Head					
Valve Connections	1/4" NPT Female					
Magnetic Stirrer, Model No.	A1120HC*		A1120HC*		A1180HC*	
Maximum Torque	16 Inch-Pounds		16 Inch-Pounds		60 Inch-Pounds	
Impeller(s), 6-Blade	2					
Pressure Gage, Size	4.5 inches					
Range	0-10,000 psi (700 bar)*		0-10,000 psi (700 bar)*		0-5,000 psi (345 bar)*	
Temperature Measurement	Thermowell					
Cooling Coil	Included					
Style	Serpentine		Single Loop		Serpentine	
Bottom Drain Valve	A177VB 1" NPS (Optional)					
Heater Style	Ceramic		Calrod		Ceramic	
Heater Power Watts	2250		1500		3000	3500
Stirrer Motor, Variable Speed	1/4 hp*		1/8 hp*		1/2 hp*	
Electrical Supply						
Volts	230		115 or 230		230	
Maximum Load, 115 / 230, amps	11		14 / 7		11	
Vessel Dimensions						
Inside Diameter, inches	3.75		2.5		5.5	
Inside Depth,inches	6.2	10.5	6.6	3.2	9.7	15
Weight of Vessel, pounds	70	85	35	29	100	130
	85	100				
Reactor Dimensions						
Moveable Head	4571	4572	4575	4576	4581	4582
Width x Depth x Height, inches	35 x 18 x 50		16 x 16 x 30		35 x 18 x 50	
Fixed Head	4577	4578	4575A	4576A	4583	4584
Width x Depth x Height, inches	20 x 33 x 75		17 x 24 x 44		20 x 33 x 75	
Weight, pounds	245	265	125	120	325	355
Spare Parts Kit	4579B		4579D		4589B	

* Other options available. See Options Section and Ordering Guide

* Other options available. See Options Section and Ordering Guide