

Series Number:

5500

Type:
High Pressure, Compact

Stand:
Bench Top

Mounting Style:
Moveable

Vessel Sizes, mL:
25-600

Standard Pressure
MAWP, psi (bar):
3000 (207)

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

Series 5500 HP Compact Reactors, 25-600 mL

Familiar Parr Designs

All of the safety, convenience and reliability features which have been the hallmark of Parr pressure reaction equipment for more than 50 years have been incorporated into a new line of high pressure, compact laboratory reactors.

The Series 5500 Compact Reactors are based upon our popular micro and mini, Series 4590 & 4560 Reactors. There are several differences between these new reactors and their original counterparts. Primarily, these are:

- A smaller, more compact magnetic drive is installed.
- A smaller, more compact variable speed stirrer motor.
- The larger support stand, overarm and motor have been eliminated.
- An Aluminum Block Heater also serves as the support stand.

As a result of these changes, we are able to offer these reactors to users who do not require the wide variety of options and expandability provided by our Series 4560 and 4590 Reactors at a significantly lower cost. These designs will be welcomed by not only scientists with limited space or budgets, but also by those building multiple reactor installations for combinatorial chemistry or high throughput investigations.

The reaction vessels used in these reactors are identical to the ones furnished in the Series 4590 Micro and Series 4560 Mini Reactors and use the popular Parr split ring closure. These vessels are rated for a maximum working pressure of 3000 psi. The maximum operating temperature is dependent upon the seal selected, PTFE gasket for up to 350 °C; with FKM O-ring to 225 °C or FFKM O-ring to 300 °C.

The 25, 50, and 100 mL reactors are equipped with gas inlet and outlet valve, a liquid sampling valve, pressure gage, safety rupture disc, and internal thermocouple in addition to the internal stirrer. The 300, 450, and 600 mL reactors provide an optional internal cooling loop in addition to these fittings. In addition to the standard Type 316 Stainless Steel, the vessels for these reactors can also be constructed from any of the standard Parr materials of construction.

These vessels are designed, built and can be certified to the ASME Pressure Vessel Code, European Community

P.E.D. and other appropriate local codes. Electrical safety is certified by CSA and the EC-CE mark.

New Magnetic Drive

To take advantage of the new technology available in magnets today, Parr has designed a new compact, magnetically-coupled stirrer drive especially for these smaller vessels. Tests show that this new drive is sufficient to stir reaction mixtures with viscosities up to 10,000 centipoise in a 600 mL reaction vessel

Variable Speed Motor

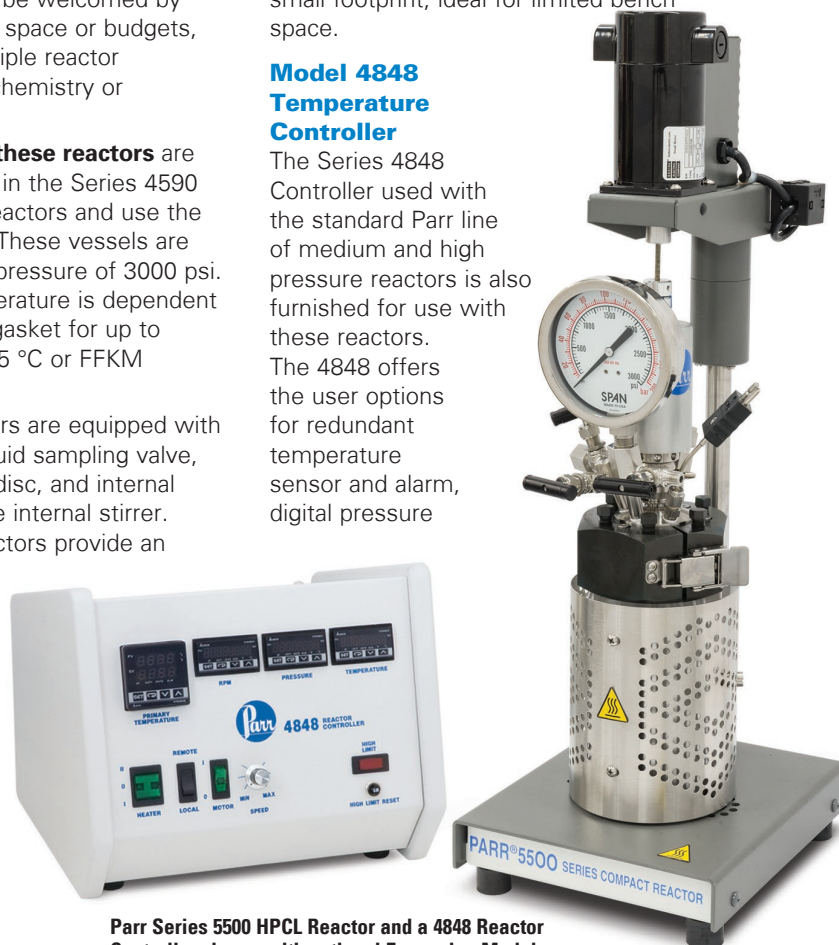
A 1/17 hp variable speed motor provides stirring speeds adjustable from 0 to 1700 rpm. An optional tachometer pickup provides a signal to the optional tachometer display module which can be installed in the 4848 Controller.

New Heater / Reactor Support

A new heater that also serves as the vessel support has been designed for these reactors. This is an aluminum block style heater for excellent thermal uniformity. The cartridge heaters used in this heating block are easily replaced if required. A stainless steel heat shield is provided around the heating block. This style of heater/reactor support provides a very small footprint, ideal for limited bench space.

Model 4848 Temperature Controller

The Series 4848 Controller used with the standard Parr line of medium and high pressure reactors is also furnished for use with these reactors. The 4848 offers the user options for redundant temperature sensor and alarm, digital pressure



Parr Series 5500 HPCL Reactor and a 4848 Reactor Controller shown with optional Expansion Modules.

5500

Series 5500 Pressure Reactor System Specifications								
Shaded bar indicates specifications that change within series.								
Model Number	5511	5512	5513	5521	5522	5523	5524	5525
Sizes, mL	25	50	100	300	450	600	160	100
Maximum Pressure	3000 psi (207 bar, 200 bar for CE orders)							
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							
Stand Type	Compact Bench Top							
Closure	Split-Ring (6 Compression Bolts for Flat Gasket, No Compression Bolts for O-ring)							
Valve Connections	1/8" Male NPT							
Maximum Torque	2.5 Inch-Pounds (0.28 Nm)							
Impeller(s), 4-blade	1 (0.81" dia.)			1 (0.81" dia.)		2 (1.38" dia.)		1 (0.81" dia.)
Stirrer Motor, Variable Speed	1/17 hp							
Pressure Gage, Size	3.5 inches							
Range	0-3000 psi (207 bar)							
Temperature Measurement	Fixed Thermocouple							
Cooling Coil	Coldfinger (optional)			Standard Single Loop			Spiral (optional)	
Bottom Drain Valve	N/A							
Heater Style	Aluminum Block (External Cooling optional)							
Heater Power, Watts	700		1000	700		1000		700
Electrical Supply								
Volts, AC	115 / 230							
Maximum Load, amps, 115 / 230	8 / 4		10 / 5	8 / 4		10 / 5		8 / 4
Cylinder Dimensions								
I.D. x Depth, inches	1.0 x 2.0	1.3 x 2.25	1.3 x 4.5	2.5 x 4.0	2.5 x 6.0	2.5 x 8.0	2.5 x 2.0	2.0 x 2.0
Vessel Assembly Weight, pounds	17	17	18	17	18	20	16	16
Cylinder Weight, pounds	3.5	3.1	4.2	3.7	4.9	6.2	2.4	3.3
Reactor/Stand Dimensions								
Width x Depth w/o Controller, inches	8.3 x 9.5							
Height, inches	23	23	25	23	25	27	23	23
Weight, pounds	25	25	25	26	28	30	25	25
Spare Parts Kit	5529SPK							
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.								

readout, stirring speed display or control, motor load, and bi-directional digital communication (RS-485).

Alternate Controllers Available

A single 4871 Process Controller can control up to eight high pressure, compact laboratory reactors.

Options

As shown in the ordering guide, a variety of options are available for these Series 5500 Reactors. In addition to the

options described here, there are a number of additional accessories such as glass or PTFE liners, special stirrers, gages, gas and liquid feed systems, custom valves, etc., as described in the Options Section of the Ordering Guide.

The Series 5500 Reactors have been designed and packaged to provide the basic functions of a small laboratory reactor and not all of the options available for the more versatile Series 4560 and 4590 Reactors can be incorporated into these units.