

Specialty/Custom Reactors





5100 Glass Reactor with Cover Off



5500 Compact Reactor & 4836 Controller



5000 Multi Reactor System (MRS) with 4870 Controller



Custom Multiple Reactor Configuration

Parr offers both specialty reactors and custom modifications to our line of stirred reactors and pressure vessels. See the Tenth Edition of the Parr Stirred Reactors and Pressure Vessels Catalog as well as our website for more details on these vessels.

Glass Reactors

Parr Series 5100 Low-Pressure Reactors feature transparent glass vessels designed for operating pressures to 150 psi (10 bar) and temperatures to 225 °C. These reactors are offered in six different sizes ranging from 160 to 1500 mL. Interchangeable metal vessels are available which will raise the operating pressure limit to 1000 psi (69 bar).

These reactors are equipped with magnetically driven internal stirrers, inlet and sampling valves, circulating jackets and controllers as well as safety relief devices and protective shielding.

Compact Reactors

Parr Series 5500 High Pressure Compact Reactors are available in seven sizes ranging from 25 to 600 mL. They are designed for operating pressures to 3000 psi (200 bar) and temperatures to 350 °C. The vessels are available in a variety of materials of construction.

The reactors feature an aluminum block heater, which also serves as the vessel support system. This heater system and the included

4836 Temperature Controller each take up less than one square foot of bench space. They can easily be set up or stored away when not in use.

The vessels are available with either a flat PTFE gasket for temperatures to 350 °C or a self-sealing O-ring for temperatures up to 225 °C. A compact magnetic drive and a directly coupled motor provide vigorous stirring at speeds up to 1800 rpm. The 4836 Temperature Controller provides PID control with ramp and soak programming and digital communication to any connected PC.

Multiple Reactor System

The 5000 Multiple Reactor System has been designed for rapid screening of catalyst and similar parallel or combinatorial studies. Six individual reactors are provided for operating pressures to 3000 psi and temperatures to either 225 °C with a self-sealing O-ring or 300 °C with a PTFE gasket.

The control system is based on the Parr 4870 Process Controller. This system provides individual temperature monitoring, individual pressure monitoring, constant stirring speeds, computer control, display, logging, and data reduction.

Vessels are available with volumes designed for heterogeneous catalysis: 75 or 45 mL. A magnetic stirrer bar provides sample mixing. The vessels can be furnished in

special materials if unusual corrosive conditions are expected.

The manifold system permits the rapid purging and filling of all vessels to the same starting pressure. Alternately, these vessels can be filled with varying initial starting pressures.

A variety of custom modifications are available for this system. The valves can be mounted either directly on the vessel head or remotely on the manifold panel. Sample valves with dip tubes are available for sampling liquids during the reaction.

Parr also offers parallel systems which can incorporate any of our stirred reactors.

Custom Reactors

Each year the Parr Technical Sales and Engineering Departments design hundreds of custom vessels for our customers. These may be simple modifications of standard vessels such as adding or changing valves, adjusting volumes, or adding windows, condensers or gas or liquid charging systems. At the other end of the development spectrum are completely new vessel designs within our manufacturing range for systems involving automatic control and measurement of gas inlet, liquid feeds, and product recovery.

Inquiries for custom vessels or systems are always welcome and they will receive our prompt and detailed response.

Guide to Parr Specialty / Custom Reactors

Model No.	Vessel Style	Nominal Size	Maximum Pressure psi (bar)	Maximum Temperature °C	Catalog
5101-5112	Low Pressure, Glass & Metal	160 - 1500 mL	150 (10) or 1000 (69)	225	4500
5511-5525	High Pressure Compact Vessels	25 - 600 mL	3000 (200)	225 - 350	4500
5000	Multiple Reactor System (Six Vessels)	45 - 75 mL	3000 (200)	225 - 300	4500
4600-4700	Non-Stirred Pressure Vessels	22 - 18.75 L	Range up to 5000 (350)	Range up to 500	4500
Custom	Design to User's Specifications	25 - 18.75 L	Range up to 5000 (350)	Range up to 500	4500