

# Horizontal Stirred Reactors

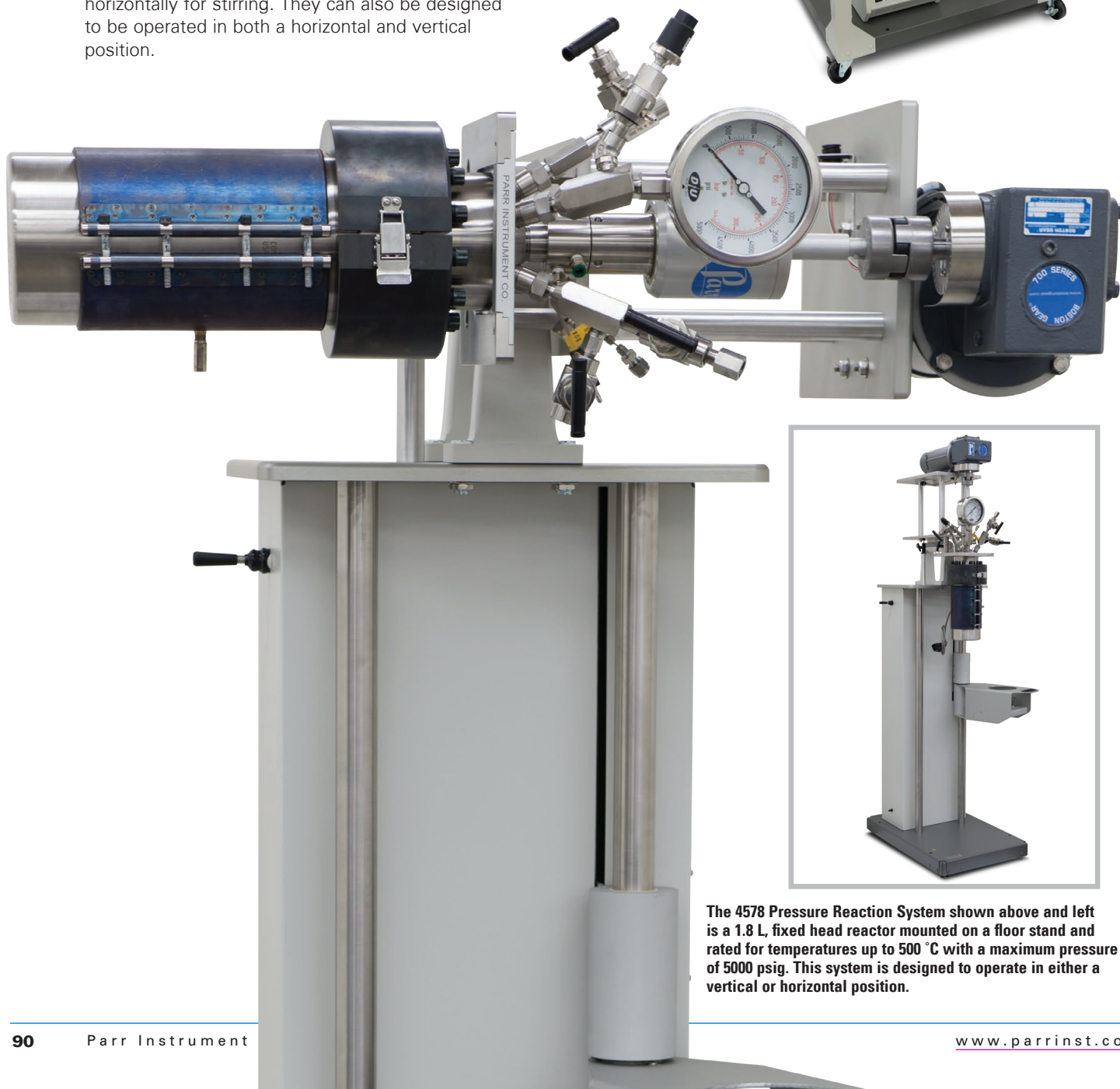
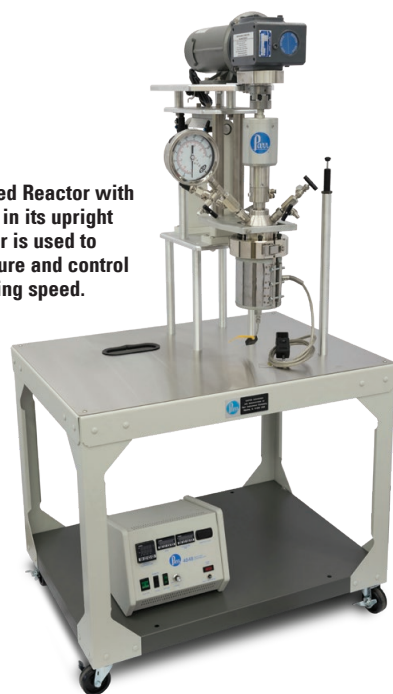
Stirring biomass is not easy to do in a vertical reactor. A line of reactors has been developed by Parr Instrument Company to function horizontally.

Horizontal reactors enable researchers to mix bio feed stock and other cellulosic materials such as:

- straw
- corn stover
- sugar cane
- grasses
- plants
- wood pulp
- wood chips
- fibers

In the horizontal position, the internal stirrers tumble the material rather than try to stir it with a standard vertical stirrer. These custom reactors are secured vertically for loading and then safely tilted horizontally for stirring. They can also be designed to be operated in both a horizontal and vertical position.

**One Liter Horizontal Stirred Reactor with heavy-duty stirring motor in its upright position. A 4848 Controller is used to monitor the system pressure and control the temperature and stirring speed.**



**The 4578 Pressure Reaction System shown above and left is a 1.8 L, fixed head reactor mounted on a floor stand and rated for temperatures up to 500 °C with a maximum pressure of 5000 psig. This system is designed to operate in either a vertical or horizontal position.**