

## Multi-Reactor Systems

Autoclave Engineers integrates custom, automatic controls with high temperature & high pressure, laboratory reactors into a pressure reactor system for chemical / petrochemical research.

The customer specifies features desired. Autoclave Engineers integrates computer, process controls / actuators, electronic process measurement instrumentation, with data acquisition hardware & software to create custom process equipment & research systems



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**Multi-Reactor Systems :** ▶ Laboratory Reaction Systems  
*Laboratory reactor system simulates production chemical processes*

### FEATURES

- Continuous stirred tank reactor (*CSTR*), tubular fixed bed, or internal recycle catalyst reactor designs are offered
- Materials of construction, capacity, pressure rating & temperature rating are selected by choosing an AE reactor
- Mass flow controls &/or metering pumps feed reactive gases or liquids into mixing, vaporizing or trickle feed port
- Controls offer recipe/process sequence automation & failsafe, unattended, operation: Operator input & errors are minimized
- Standard data acquisition & data analysis features include trending, data history, alarms & data export
- Incorporate automatic reactant purification / pretreatment, process controls & product separation for repeatable research
- The high temperature & high pressure stirred reactor system is delivered assembled & tested for fast & easy start-up
- The design conforms to the ASME Boiler & Pressure Vessel Code Section VIII Division 1: An ASME code stamp is optional
- Pressurized isothermal reactor systems have been successfully used as laboratory polymerization reactors (*solvent based*)
- Obtain expert custom equipment advice from the manufacturer & ongoing support from the local, factory approved supplier

## **BENEFITS**

Simulate a complete chemical plant in a laboratory scale. Evaluate new chemistries & processes in a cost-effective model of production chemical equipment. Automatic control increases repeatability in complex chemical processes. Allowing unattended 24 hour 7 day per week operation increases productivity. Labor costs are reduced since the process sequence, process control & data logging are automated. Increase accuracy of the research by using actual data & avoid transcription.