

**16 - 500 ml
HP Reactor
Systems**

Miniature High Pressure Reactors

Individual Vessels & Parallel Systems



Individual Reactors

- | Choice Of 16 - 50 ml and 75 to 500 ml
- | Up to 200 bar & 350 °C
- | Stainless Steel 316 and Hastelloy C276/C22



Manual Systems

Heating And Stirring At The Setting With Manual Control



Automated Systems

Parallel Reactor Systems With Software Control and Data Logging

Small-Scale High Pressure Reactor Solutions

Standalone Reactors

Mini Range



- | 16, 25 & 50 ml
- | Common Head Design With 4 x 1/16" NPT Ports
- | 100 - 200 bar
- | Agitation With "Suspended" Magnetic Impeller
- | Head Supplied As Standard With Relief Valve, Pressure Gauge, Thermocouple, Sampling Dip Tube & Stirrer

Midi Range



- | 75, 125, 300 & 500 ml
- | Common Head Design With 4 x 1/8" + 1 x 1/4" NPT Ports
- | 100 - 200 bar
- | Choice Of Agitation Designs
- | Head Supplied As Standard With Relief Valve, Pressure Gauge, Thermocouple, Sampling Dip Tube & Stirrer
- | Option Of Wide Port Head To Allow Use Of PAT Probes

Innovative Head Design

Mini and Midi head designs allow a range of vessel volumes to be interchanged easily. Design gives easy access to all ports. Custom designs available.



Suspended Magnetic Stirring

Allows use of mechanical stirring impellers without overhead motor. Excellent mixing in Mini reactors and an inexpensive option for the Midi range.



Overhead Stirring

High torque Mag-drives allows leak free agitation in all the Midi reactors at wide speed ranges - this is ideal for high viscosity applications.



Small-Scale High Pressure Reactor Solutions

Parallel Reactor Systems



DigiCAT Manual System

A simple system which includes agitation and heating of one or three vessels, all at the same conditions.

Mini and Midi reactors are inserted into heat transfer block placed on a digitally controlled stirring and heating plate. Temperature to 300 °C is possible.

Up to three Mini reactors can be inserted on a single block, but only one midi size reactor.

A gas manifold is also added complete with the necessary valves and piping to allow purging and pressurising with reactive gases at individual pressures.

PolyCAT Semi-Automated System

This extends the DigiCAT so that either 4 or 8 reactors in parallel can be used. Each reactor can be independently set at different pressures (up to 200 bar), temperatures (up to 250 °C)* and agitation speeds.

Gas manifolds allow reactors to be purged and then pressurised with reactive gas at individual pressures (determined using pressure gauges). System comes with feature rich software control offering real-time data logging and graphical data display.

Versions based on both the Mini and Midi reactors are available.

* Cooling possible with the addition of a circulator.



8 Reactor PolyCAT

4 Reactor PolyCAT



Parallel Process Development Platforms

Fully Automated With Wide Range Of Features

High Pressure ChemSCAN

This is a highly automated platform that allows parallel screening of catalytic reactions. Each sample can be at a different temperature and pressure and the reaction process (in term of gas consumption) is tracked in real time which provides information on reaction kinetics. Pressure of 200 bar and temperature up to 250 °C is possible.

This is normally built around the **Mini** reactor range (16 ml is the most common size)



High Pressure AutoMATE

The AutoMATE is a flexible and customisable chemistry platform, designed to offer a cost-effective, compact and modular solutions for process optimisation.

The AutoMATE offers volumes from 50 to 400 ml and pressure of 200 bar and temperature up to 500 °C.

This is normally built around the **Midi** reactor range.



About HEL

HEL is an international company that specialises in chemical reactors, bioreactors and related data/logging tools for process R&D in the pharmaceutical, fine chemical, biotechnology and petrochemical industries. Established in 1987 and with the clients worldwide our key strengths are:

Knowledgeable staff – highly qualified and experienced chemical engineers and chemists

Quality – underpinned by ISO9001 certification for over 16 years

Service – choice of service contracts backed by an established culture of unmatched client support

Range of products – both off-the-shelf and custom designs, manual and fully automated controls, low and high pressure/temperature applications, single and parallel/multi-vessel products

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