Single & Parallel Pressure Reactors





Standard or custom built

Laboratory pressure reaction systems available in convenient standard configurations, or fully customised to meet your requirements.

Designed to be used in conjunction with a simple magnetic stirrer or stirrer hotplate, this is a cost effective lightweight unit suitable for numerous stirred or non stirred applications including hydrogenations, carbonylations and applications where air sensitive materials are used,. Indeed any other reaction where pressure or temperature are required.

Pressure units can also be customised to accommodate multiple temperature zones, operate at exceptionally high temperature and be built to house plant scale if required.



ñCompact design for space saving in the laboratory fume hood, light enough to move around with Health & Safety implications, and readily configured to your custom specificationò

- **Features for standard units:**
  - One simple closure
  - Fail safe mechanism
  - In parallel, 10 x 30ml vessel in 316 stainless steel
  - Single reactors from 50 ml to 1000 ml as standard
  - Up to 100 bar at 300°C (higher temperature & pressure units available)
  - 316 Stainless steel (other materials available)
  - Gas uptake and pressure control /data logging options
- **Chemistry**
  - Carbonylations
  - Hydrogenations
  - Homogeneous and heterogeneous catalysis
  - Catalyst Screening, reaction optimisation & materials testing
  - Parallel synthesis
  - Super critical studies
  - Corrosion testing





Parallel



A cost effective, lightweight unit suitable for numerous stirred or non stirred applications. These include hydrogenations and applications where air sensitive materials are used or any other reaction where pressure or temperature are required.

The Standard Parallel Pressure Reactor:

⇒ 10 cells, each 30ml (20.2mm bore x 95mm deep)

⇒ Working pressure of 50 bar

⇒ Maximum working temperature of 200°C

⇒ Machined from solid bar

⇒ Closure through specialist locking ring

⇒ Stainless Steel 316 as standard

⇒ Glass & PTFE liners available on request

⇒ Many options for customisation:

- Single or ten individual cell temperature measurement
- Single or ten individual sealed sample/ additions valve
- Condenser / heater jacket
- Single or ten individual electrical heating zones
- Liquid charging system
- Liquid sampling system
- Air driven overhead stirrer
- Purged chamber for heaters
- Individual isolation and pressure relief valves
- Material options of Alloy C276 and C22 as standard options
- Additional heating capacity to 350°C
- Variation in pressure up to 100 bar
- Cell size from 2 to 100 ml

Single



Easy charging, product recovery, and cleaning.

In the smaller and mid-sized model the entire vessel is simply lifted out of the heater by hand! With no elaborate set up required this is a simple, but very effective, unit.



The Standard Single Pressure Reactor:

⇒ Fits on a standard laboratory hotplate, with temperature control via PT100

⇒ Use standard DrySyn base with high pressure reactor inserts for 50, 100 and custom made base for other sizes

⇒ Fail safe mechanism and bursting disc

⇒ Agitation via magnetic flea

⇒ Maximum standard working temperature of 250°C (can achieve higher if required)

⇒ Low pressure model to 50 bar

⇒ High pressure model to 200 bar

⇒ Clean safe synthesis without the requirement of oil as your heating media

⇒ Stainless Steel 316 as standard

⇒ Glass & PTFE liners available on request

⇒ Ideal for homogeneous and hydrogenation reactions

⇒ Gas insertion feed excellent for hydrogenation reactions

⇒ Many options for customisation:

- From 50 to 1000 ml as standard
- Add stainless steel inserts to reduce size to additional smaller capacity or multiple reaction vessel
- Material options of Alloy C276 and C22 for higher temperature work
- Alternative material O-rings to suit

PressureSyn



Cost effective and lightweight, it is an ideal solution for the safety conscious laboratory user.

The easy to open clamp mechanism features a unique Safety Key designed by the chemists and engineers that does not allow the vessel cover to be removed without first releasing any residual pressure.

Each Safety Key and vessel clamp are unique therefore ensuring that it cannot be undone with a spare key, only the Safety Key that is used to release any residual pressure of the reactor in use will open the clamp.

The PressureSyn Safety Reactor:

Even with an operator opening the standard pressure relief valve in the correct manner it is possible to have a small blockage in a valve leading to some residual pressure.

This required a safety design feature to be developed for the reactors to ensure that this was not possible; therefore each Safety Key valve assembly has a pin at its tip ensuring that when extracted will leave behind a small hole for any residual pressure to be released.



- ⇒ Features unique Safety Key & locking clamp designed by the chemists and engineers.
- ⇒ Standard safety features include a double pressure relief system, including bursting disk and pressure relief valve
- ⇒ Certified and rated to maximum pressure of 200bar
- ⇒ Certified and rated to maximum temperature of 200°C
- ⇒ 125ml capacity reactor vessel
- ⇒ Fits on a standard laboratory hotplate using a DrySyn Adapter Plate for enhanced temperature transfer with temperature control via PT100
- ⇒ Agitation via magnetic flea