

REACTION BLOCKS



Heating & Stirring

RS600 and RS900 Reacto Stations

The **STEM** Heating and Stirring Reacto Stations range can be used for a wide range of applications from simple synthesis to process optimization. The **STEM** Reacto Stations provide powerful magnetic stirrers located beneath each sample position ensuring maximum coupling between the stirrer bar in the sample and the powerful motor. The Range accommodates Sample sizes from 2ml to 250ml in a wide range of vessel sizes and heating formats. Adapter sleeves can be used to accommodate non-standard vessel sizes. The well insulated reaction block keeps the casework cool-to-touch, gives quick heat-up times, excellent temperature uniformity across the block, and a thermal cutout eliminates runaway conditions. This combination of precise electronic control and rugged design ensures the safety to the operator, whilst a teflon coating protects the block from chemical spills. **STEM** introduces a range of Reacto Stations to fit your application.

RS600

Six position Reaction Block designed for 57.5mm diameter vessels (also 40mm and other diameter vessels with appropriate adapter sleeves), and sample sizes up to 250ml. Controlled temperature range from ambient +5°C to 150°C. Powerful Stir speed from 400 to 2,000 rpm, including a bi-directional stirring option. Manual control or external control is via the RS232/RS485 interface port. Optional pc-based external control software is available to schedule stir/heat profiles over varying time delays. Reflux and Inerting head accessory, plus a range of accessories including rotary evaporator adapters, phase separation heads, filtration adapters, glass condensers, temperature probes, and a selection of stirrer bars. High temperature RS600H option with temp. range from ambient +5°C to 255°C.

RS900

Ten position Reaction Block designed for 24mm/25mm diameter vessels (also 16mm and other diameter vessels with appropriate adapter sleeves), and sample sizes from 10ml to 30ml. Controlled temperature range from ambient +5 °C to 150°C. Powerful Stir speed from 400 to 2,000 rpm. Manual control unit, see the RS1000 for robotic control.



RS1000

Ten position Reaction Block designed for 24mm/25mm diameter vessels (also 16mm and other diameter vessels with appropriate adapter sleeves), and sample sizes from 10ml to 30ml. Controlled temperature range from ambient +5°C to 150°C. Powerful Stir speed from 400 to 2,000 rpm. Manual, and external control via the RS232/RS485 interface port. Compact footprint for easy integration onto a robotic platform. High temperature RS1000H option with temp. range from ambient +5°C to 300°C

RS2400/2500/5000

Reaction Blocks designed for 24, 25 and 50 position 24mm/25mm diameter vessels (also 16mm and other diameter vessels with appropriate adapter sleeves), and sample sizes from 10ml to 30ml. Controlled temperature range from ambient +5°C to 150°C. Powerful Stir speed from 400 to 2,000 rpm.



Product specifications

MODEL	RS600	RS900	RS1000	RS2400	RS2500	RS5000
No. of stirred positions	6 x 57.5mm	10 x 24mm	10	24	25	50
Tube diameter available	24 or 25mm	24 or 25mm	24 or 25mm	24 or 25mm	24 or 25mm	24 or 25mm
Stir speed range (rpm)	400 to 2000	400 to 2000	400 to 2000	400 to 2000	400 to 2000	400 to 2000
Soft start (minutes to full ramp)	adjustable 0 - 10	adjustable 0 - 10	fixed	adjustable 0 - 10	adjustable 0 - 10	adjustable 0 - 10
Temperature range (°C)	ambient +5 to 150°C	ambient +5 to 150°C	ambient +5 to 150°C	ambient +5 to 150°C	ambient +5 to 150°C	ambient +5 to 150°C
Temperature stability (°C)	+/- 0.5	+/- 0.5	+/- 0.5	+/- 0.5	+/- 0.5	+/- 0.5
Time to max./min. temp. (mins)	15	15	15	30	30	30
Interface	none	none	RS232/485	RS232 and switched	RS232 and switched	RS232 and switched
Overall dimensions (Inches) WxHxD	9.6 x 5.3 x 12.2	6.3 x 5.3 x 9.6	3.1 x 5.5 x 11.8	9.56 x 5.3 x 12.2	9.56 x 5.3 x 12.2	56 x 5.3 x 17.9
Shipping weight	5kg	7kg	4.5kg	15kg	15kg	15kg

Accessories

CAT #	DESCRIPTIONS
PS80041	Adapter sleeve, 57.5mm to 47mm, 6 pack
PS80011	Adapter sleeve, 24mm to 20mm, 10 pack
PS80012	Adapter sleeve, 24mm to 16mm, 10 pack
PS80011A	Adapter sleeve 25mm to 20mm, 10 pack
PS800112A	Adapter sleeve 25mm to 16mm tubes, 10 pack
PS80026	Reflux unit, 25x24mm vessels, RS2500
PS80027	Reflux unit, 50x24mm vessels, RS5000
PS80026A	Reflux unit, 125x25mm vessels, RS2500
PS80027A	Reflux unit, 50x25mm vessels, RS5000

DID YOU KNOW!

The STEM product line was designed and developed in collaboration with the pharmaceutical industry - but with the applicability to all laboratories working with natural products.

Heating & Shaking

Compact Incubated Shaker for bench-top and robotic operation

The **STEM RS9000** Reaction Rack can be used within a robotic workstation or as a stand-alone apparatus, free-standing on a bench. Heating and Shaking cycles can be controlled by external software or as part of a fully automated system through the **RS232/RS485/GSIOC** port, or it can be controlled via the easy-to-operate touch-screen for stand-alone use. The **RS9000** reaction blocks can be easily changed giving you total versatility over the selection of vessel sizes and formats that can fitted within the working footprint. The reaction blocks can be customized to accept different vessel and tray sizes.



RS9000

Features include

- **Auto-Park** The RS9000 has a unique 'auto-park' feature, which ensures the platform always stops in the same x-y co-ordinate.

Allows automated sampling and additions.

- **Soft Start Feature.**

This uniquely designed ramping feature allows slow build-up to the set speed (from 0-10 minutes) This feature minimizes splashing of vessel contents, wetting of flask closures and fragmentation of specimens.

- **Eccentric Drive, Orbital Agitation** The RS9000 features a robust two axis slide plate mechanism, which handles heavy workloads and 24 hour continuous operation, provides uniform agitation.

Safety features include

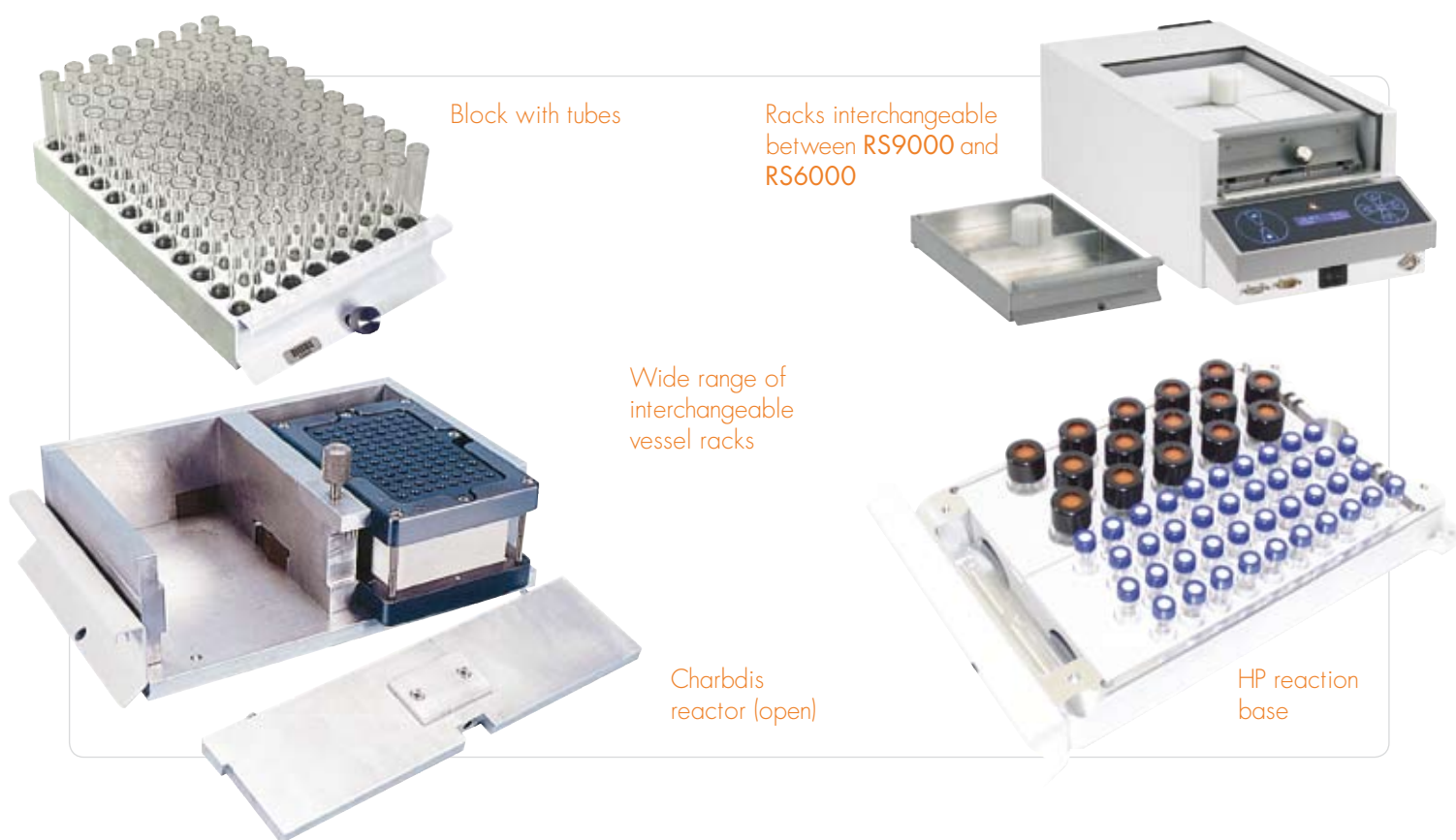
- **Thermal Cut-off.** The thermal cut-off eliminates runaway conditions

- **Door Safety Interlock.** Ensures the platform stops if the door is open.

- **Hot Block Warning.** Always know when the block temperature is above 50°C, even when the apparatus is unplugged from the power supply, with the highly visible warning display icon.

DID YOU KNOW!

That the same **STEM** unit can be used for both parallel synthesis and combinatorial chemistry - two techniques designed to complement each other in their applications.



The ability of a product to be versatile in its use is paramount - it must be able to be used as a stand alone product or easily incorporated into an automatic or robotic system. **STEM** products can be used in most situations as a stand-alone piece of equipment, part of a chemical workstation or as part of a full robotic system. The **STEM** units are not only compact but are light too and can easily be slid in and out of a workstation or a robotic system enabling you to use these units as a manual system in the morning and part of a workstation or robotic system in the afternoon. These units are well insulated so will not interfere with other components in the laboratory or on the robotic platform.

Product specifications

MODEL	RS9000
Stir speed range (rpm)	100 to 600 rpm
Soft start (minutes to full ramp)	adjustable 0 - 10
Temperature range (°c)	ambient +5 to 150°c
Temperature stability (°c)	+/- 0.5
Ramp rate	25 to 80°c in 30 mins, 25 to 150°c in 60 mins
Backlit LCD display	resolution to 1°c and 1rpm
Overall dimensions (cm) WxHxD	23.5 x 16.5x 50.8
Shipping weight	14kg

Accessories

CAT #	DESCRIPTIONS
PS80052	Reaction block, shaker, 16mm OD vessels, 96 positions
PS80064	Reaction block, shaker, for vessels 24mm OD, 40 position
PS80074	Reaction block, shaker, for 4 standard microtitre plates
PS80047	Reaction block, shaker, for 4-off, 96 well PTFE microtitre plates
PS80065	Reaction block, shaker, for Charbdis Calypso System (holds 2 blocks)
PS80048	Microtitre plate, 96 well
PS80049	Lid, microtitre plate, 96 well
PS80051	Microtitre plate, 96 well, complete with lid

Chilling & Stirring

RS1050, Ten-position Reacto Station

The **STEM** Chilling, Heating and Stirring Reacto Station range can be used for a wide range of applications from simple synthesis to process optimization. The **STEM** Reacto Stations provide powerful magnetic stirrers located beneath each sample position ensuring maximum coupling between the stirrer bar in the sample and the powerful motor. The Range accommodates Sample sizes from 2ml to 30ml in a range of vessel sizes and Reacto Station formats. Adapter sleeves can be used to accommodate non-standard vessel sizes. The well insulated reaction block gives quick heat-up and chill-down times, excellent temperature uniformity across the block, and a thermal cutout eliminates runaway conditions. This combination of precise electronic control and rugged design ensures the safety to the operator, whilst a teflon coating protects the block from chemical spills. **STEM** introduces a range of Reacto Stations to fit your application.

RS1050

Ten position Reaction Block designed for 24/25mm diameter vessels (and other diameter vessels with appropriate adapter sleeves), and sample sizes up to 30ml. Controlled temperature range from ambient -30°C to +70°C. Powerful Stir speed from 400 to 2,000 rpm. Manual control or external control is via the RS232/RS485 interface port. The Reacto Station precision controller uses a refrigerated gas chiller and electrical resistance heaters to rapidly reach and maintain set temperatures.

Ice formation around the block and samples vessels is eliminated by introducing inert gas to drive moisture up and out through a spring-loaded closure system around the neck of the sample vessels. Chilling, Heating and Stirring can be controlled by external software, as part of an automated system.



RS1050
with purge
hood open



RS2550

Twenty Five position Reaction Block designed for 24/25mm diameter vessels (and other diameter vessels with appropriate adapter sleeves), and sample sizes up to 30ml. Controlled temperature range from ambient -30°C to + 50°C. Powerful Stir speed from 400 to 2,000 rpm. Manual control or external control is via the RS232/RS485 interface port. The Reacto Station precision controller uses a refrigerated gas chiller and electrical resistance heaters to rapidly reach and maintain set temperatures. Ice formation around the block and samples vessels is eliminated by introducing inert gas to drive moisture up and out through a spring-loaded closure system around the neck of the sample vessels. Chilling, Heating and Stirring can be controlled by external software, as part of an automated system.

RS5050

Fifty position Reaction Block designed for 24/25mm diameter vessels (and other diameter vessels with appropriate adapter sleeves), and sample sizes up to 30ml. Controlled temperature range from ambient -30°C to + 50°C. Powerful Stir speed from 400 to 2,000 rpm. Manual control or external control is via the RS232/RS485 interface port. The Reacto Station precision controller uses a refrigerated gas chiller and electrical resistance heaters to rapidly reach and maintain set temperatures. Ice formation around the block and samples vessels is eliminated by introducing inert gas to drive moisture up and out through a spring-loaded closure system around the neck of the sample vessels. Chilling, Heating and Stirring can be controlled by external software, as part of an automated system.

Product specifications

MODEL	RS1050	RS2550	RS5050
No. of stirred positions	10 x 24mm	10 x 24mm	10 x 24mm
Tube diameter available	24 or 25mm	24 or 25mm	24 or 25mm
Stir speed range (rpm)	400 to 2000	400 to 2000	400 to 2000
Soft start (minutes to full ramp)	Fixed	adjustable 0 - 10	adjustable 0 - 10
Temperature range (°c)	-30°c to +70°c	-30°c to +50°c	-30°c to +50°c
Temperature stability (°c)	+/- 0.5	+/- 0.5	+/- 0.5
Time to max./min. temp. (mins)	40	40	40
Interface	RS232, RS485	RS232, RS485	RS232, RS485
Overall dimensions (cm) WxHxD	15.9 x 16.9 x 30.7	15.9 x 16.9 x 30.7	15.9 x 16.9 x 30.7
Shipping weight	20kg	20kg	20kg

Accessories

CAT #	DESCRIPTIONS
PS80053	Purge hood for RS1050
PS80079	Purge hood for RS2550

DID YOU KNOW!

Safety is paramount for STEM products - with well-insulated blocks and thermal cut-off features on all units

Solubility & Crystallisation

IR Probe Solutions Solubility and Crystallization Station

The Solubility/Crystallization Station is a screening tool designed for determining the solubility of compounds.

RS10 with accessories:

- Solubility
- Crystallization
- High pressure
- Drug degradation



RS10

RS10 plus accessories

Obtaining accurate and meaningful solubility and crystallization data can be tedious and time consuming, particularly if done manually or by observation methods. You can utilise your RS10 to give both Solubility and Crystallization data. Whether it's for Solvent screening, Crystallization Process Design, Polymorphism Studies or Solvent Recovery the easy to use Clarity System will allow you to collect and process accurate solubility and crystallization data from your RS10. Automate the drug stability testing process with the RS10 reaction block. Perform, heat, oxidative, pH and light stressing in the 10 individually controlled reaction wells. The light stressing box allows you to conduct degradation studies on solid or in solution without having to use a separate chamber. Each cell of the unit can be individually controlled either externally via a robotic platform, or through PC control software, controlling temperature (-30°C to +150°C), Stirring, Temp Ramp Rate, Time scheduling and other data processing features associated with Solubility, Crystallization, etc.

RS12

The RS12 has been specifically designed for screening of chemical reactions using small samples, Reducing the amount of product, reagent or solvents used to gather needed information. Each reaction vessel is only 12mm in diameter and has a working volume of 250 to 2000 micro-liters. With a stirring range from 250 to 1200rpm, the stirring for the RS12 is achieved by energizing stationary magnetic coils creating a rotating electromagnetic field. Specially selected stir bars ensure maximum coupling between the stir bar in the sample and the electromagnetic field. The well-insulated heat block keeps the casework cool-to-the-touch while the thermal cutout eliminates runaway conditions. This combination of precise electronic control and rugged design ensures the safety of the end-user. Due to their low profile and compact footprint, all STEM reaction blocks can fit into most robotic systems without interfering with the other components on the platform. Heating and stirring cycles can be controlled by external software as part of a fully automated system through the RS232, RS485 or GSIOC port. Each zone of the unit can be individually controlled either externally via a robotic platform, or through PC control software, controlling temperature



Accessories

CAT #	DESCRIPTIONS
ATS10002	Multi-IR, 10 IR Dip Probes and Multi-IR software
ATS10232	Multi-IR box
ATS10230	Clarity Solubility Dip Probes (1-off)
ATS10231	Clarity Solubility Dip Probe (10-off)
ATS10209	Glass Vial, 1ml working volume (10-off)
ATS10055	Glass Vial, 5ml working volume, 10-off)
ATS10360/10	Clarity Crystallization External Probe for hplc vials (10-off)
ATS10070	Reflux Head Viton
ATS10106	Reflux Head Chem-Raz

CAT #	DESCRIPTIONS
ATS10071	Vials RS12 100-pack
ATS10073	Caps, vials RS12 100-pack
ATS10072	Stir-bars, RS12, 100-pack
ATS10074	Stir-bars, RS12, 1000-pack
ATS10001	MultiTemp
ATS10000	Reflux Head RS10
RA1501X1	Hi-Press Reaction Vessel, St/St, 0-2000psi
RA1501X2	Hi-Press Reaction Vessel, Hastelloy, 0-1000psi
RA1501X3	Hi-Press Reaction Vessel, St/St, 0-600psi

ProSense

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