



Carousel 12 Plus

Simultaneously heats/cools, stirs and refluxes multiple samples under an inert atmosphere



Carousel 12 Plus Reaction Station

The patented Carousel simultaneously heats/cools, stirs and refluxes multiple samples under an inert atmosphere.



Avoid post synthesis bottlenecks with the complementary Carousel Work-Up Station.



Carousel Stand is ideal for use between reactions when changing tubes and for reactions that require rapid air cooling.



The world's most popular parallel synthesiser

Temperature Control

- Heated via hotplate
- Precise temperature control $\pm 1^\circ\text{C}$
- Optional Pt1000 temp. sensor
- Up to 180°C (220°C for short periods)

Aluminium Reflux Head

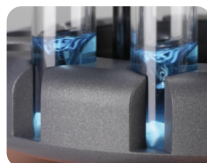
- Efficient refluxing
- Water-cooled
- Easy quick-release couplings

Reaction Tubes

- 12 heavy duty glass tubes
- Reaction volume of 5 to 20ml (1ml with reduced volume tubes)

Viewing Slots

- Good visibility of tube contents
- Easy to rotate round design gives access to all tubes



Insulating PTFE Plate

- Removable PTFE insulation plate
- Faster heating and energy savings of up to 36%



Radleys Shire Hill, Saffron Walden, Essex, CB11 3AZ. United Kingdom

Central Vacuum/Gas Quick-Release inlet/outlet

- Use for vacuum or inert gas
- Radial vacuum/gas distribution system
- Perform reactions under an inert atmosphere



Easy-on PTFE Caps

- Chemical-resistant
- Quick-thread for fast attachment
- Push-on connections to the stainless steel gas outlets



Quick-Release Water Couplings

- Push fit couplings connect cooling water supply to reflux head without leaks
- Shut-off valves prevent dripping

Chemical-Resistant

- Fluoropolymer coating
- Easy to clean

Aluminium Heated Base

- Compact design improves heat transfer and provides energy savings
- Maximum operating temperature 180°C (220°C for short periods)

Powerful, Even Stirring

- Patented design - uses the magnetic field of the stirring hotplate to stir all the positions evenly and powerfully
- Rare earth cross shaped stirring bars for more vigorous stirring



Carousel Core+ Stirring Hotplate

- Single rotating magnetic field to stir all positions
- Speed range 100 to 1400rpm

Compact

- Small bench-top footprint
- Easy to store



Fits on a standard Carousel Stirring Hotplate.



Removable water-cooled aluminium reflux/inerting head provides efficient refluxing within individual reaction tubes.



Transfer the reflux/inerting head to the Cooled Carousel for cooling to -78°C.



Carousel features and benefits

Cost effective personal synthesis station for parallel solution phase chemistry and solid supported reagent based synthesis.

-78°C

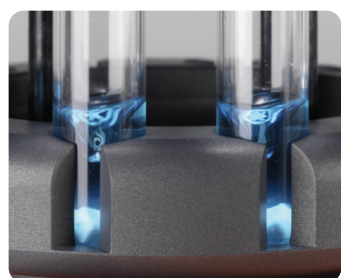
220°C



The innovative Carousel 12 Plus is quick to set-up and easy to use; providing heating/cooling, stirring and refluxing with inert gas control of 12 reaction tubes simultaneously. Whether using a single position or all 12, the Carousel 12 is a compact and efficient way to perform chemical synthesis; providing productivity benefits at a fraction of the cost of automated synthesis.

Features

- Accepts up to 12 tubes with a reaction volume from 1 to 20ml.
- Powerful, even stirring - fits on to a Carousel Stirring Hotplate.
- Rapid heating to 220°C and cooling to -78°C.
- Quick to set-up and easy to use.
- Easy viewing of tube contents during experiments.
- Removable water-cooled reflux head.
- Perform reactions under an inert atmosphere.
- Fluoropolymer coating for chemical resistance and easy cleaning.
- PTFE caps feature a 'quick-thread' for fast attachment to tubes.
- Removable reflux head allows reaction tubes to be transferred between heated base, cooled base or stand.



Rapid, efficient heating

Locating onto the Carousel Stirring Hotplate, the Carousel 12 Plus will simultaneously heat up to 12 reactions from ambient to 180°C (220°C for short periods) with an accuracy of $\pm 1^\circ\text{C}$. The temperature can be controlled using the hotplate's integral digital control or for greater accuracy, via an optional Pt1000 temperature sensor. The Pt1000 temperature sensor allows users to control by block or solution temperature. Either insert the temperature sensor into the aluminium base or through the Suba-Seal in the cap, directly into the reaction solution.

Powerful, even stirring

The Carousel's patented design ensures powerful and equal stirring in all 12 reaction tubes. By positioning the tubes and magnetic stirrer bars equidistant from the stirring hotplate's centrally located magnet, the Carousel ensures that all tubes are stirred at the same speed. This simple design coupled with high performance stirring bars provides powerful magnetic stirring from 100 to 1400rpm.

Efficient refluxing

The Carousel's integral water-cooled reflux/inerting head provides efficient cooling to all tubes; minimising solvent evaporation and loss. Water circulates inside the reflux head creating a cooling zone within the upper part of each tube, where vapours cool and condense back into the reaction. Quick-release water couplings with integral shut-off valves aid the connection of the water supply and minimise leaks.



Fast
Efficient
Easy to use
Modular



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Chemical-resistant Easy-On PTFE caps feature push-on connections to the stainless steel gas outlets.



Central quick release inlet/outlet for vacuum and gas allow reactions under an inert atmosphere.



Easy viewing of tube contents

Viewing slots in the heated base allow a view of tube contents during synthesis. The Carousel 12's circular design allows easy rotation of the unit providing access to all tubes without having to lean into the fume hood.

Operate under an inert atmosphere

An integral radial gas distribution system in the Carousel 12 Plus reflux/inerting head combines with individual gas-tight Easy-On PTFE caps, which screw directly onto each reaction tube, to distribute inert gas to all 12 tubes. To purge the tubes simply connect the central gas inlet via flexible tubing to a two-way stopcock then, by alternating between vacuum and inert gas, the tubes are quickly purged of unwanted air. This easy to use inerting feature is ideal for reactions requiring an air or moisture-free environment.

Easy-On PTFE caps

The PTFE caps are an essential component of the Carousel 12 Plus system. Manufactured from a chemically-resistant PTFE the caps are attached to the reaction tube using a quick-thread and feature an Easy-On push connection to the radial gas system. The caps include an on/off valve for isolation and removal from the inert gas system. A replaceable silicone Suba-Seal septum allows the addition or removal of reagents or samples using a suitable syringe.

Durable glass reaction tubes

Manufactured from high quality, heavy-walled borosilicate glass, the tubes are precision engineered to maximise heat transfer from the heated base and cooled reflux head. This ensures that all tubes are heated and cooled at the same rate. Standard tubes have a reaction volume of 5 to 20ml. Reduced volume tubes have a reaction volume of 1 to 5ml.

Removable reflux/inerting head

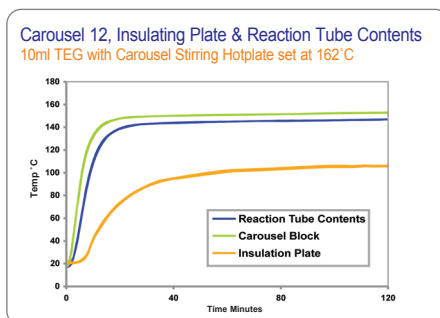
An innovative removable reflux/inerting head allows the removal of the head with the tubes in situ. This allows the reflux/inerting head to be easily transferred between the heated base, the stand or the cooling reservoir, providing the user with maximum flexibility.

Chemical-resistant fluoropolymer coating

The Carousel 12's fluoropolymer coating offers heightened chemical resistance, minimises the effects of chemical attack and makes the surface easier to clean.

Insulating plate improves heating and energy efficiency

The 2-piece PTFE insulating plate sits over the Carousel's heated base and acts as a barrier to heat loss for faster heating and energy savings of up to 36%.



Cooled Carousel 12 Plus

Cost effective low temperature parallel synthesis from ambient down to -78°C.



HDPE lid keeps reactions cooler for longer

Upgrade your Carousel to perform cooled chemistry

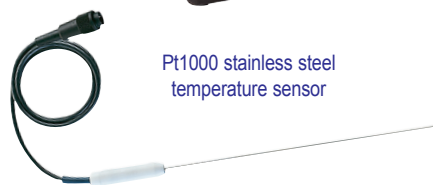
The innovative Cooled Carousel 12 Plus reservoir is designed to accept the removable reflux/inerting head from the Carousel 12 Plus, allowing reaction tubes to be easily and rapidly transferred between heating and cooling bases.

Features

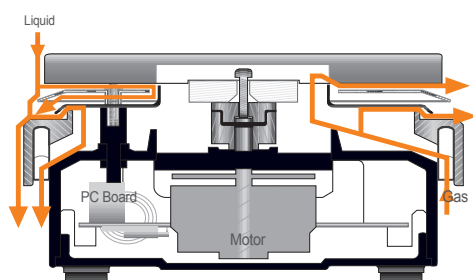
- Simultaneously performs 12 cooled and stirred reactions to -78°C.
- Powerful, even stirring. Reservoir fits onto a Carousel Stirring Hotplate.
- Robust HDPE cooling reservoir is compatible with a wide range of cooling mixtures, including dry ice/acetone for manually controlled cooling from ambient down to -78°C.
- Features a non-drip spout and handle for disposal of waste solvents.
- Insulated foam core maintains low temperatures for long periods whilst protecting the stirrer from freezing. Reduces condensation and ice formation on outer surfaces.
- HDPE lid keeps your reaction cooler for longer, minimises ice formation on your tubes (maintaining visibility of the contents) and prevents spitting from the cooling mixture.
- The robust HDPE reservoir is virtually unbreakable.

Carousel Stirring Hotplates

Powerful stirring and fast heating with a chemically-resistant top plate and built-in safety features.



Pt1000 stainless steel temperature sensor



Hermetically sealed housing for long life

Features include

- Hotplate temperature range: 20 to 300°C.
- Speed range 100 to 1400rpm.
- Digital display of temperature and speed with both set and actual values.
- Temperature and rotation knobs can be locked to prevent changing of set values.

Includes
10 YEAR
Warranty

Model	Carousel Core+ Stirring Hotplate
Display	LCD display
Speed range	100 – 1,400 rpm
Adjustment accuracy	5 rpm
Heating power	800 W at 230 V (EU) 600 W at 115 V (US)
Heating temperature range	20 – 300 °C
Heating control	PID
Adjustment accuracy	± 1 Kw
Measurement accuracy (DIN IEC 751 Class a)	± 0.2 K, plus tolerance Pt1000
Measurement resolution	± 1 K
Dimensions (W × H × D)	168 × 101 × 299 mm
Usable surface top plate	Ø 135 mm
Weight approx.	3 kg
Maximum permissible load	25 kg
Drive	EC motor, left-turning
Protection class	(EN 60529) IP42
Acoustic pressure	< 50 db(A)

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Accessories

Support stand, magnetic stirring bars, septa, reaction tubes, caps and tube racks.

Support stand

The Carousel stand **RR91038** is designed to support the reflux/inerting head either with or without reaction tubes. The heavy duty metal stand is fluoropolymer coated for improved chemical resistance and ease of cleaning. The integral tray catches any dripping condensation from tubes and gives excellent stability.



RR98095

PTFE magnetic stirring bars

- **RR98091** Medium Cross Shaped Rare Earth bar creates a deep vortex and is ideal for stirring resins and viscous samples.
- **RR98096** and **RR98097** Elliptical Rare Earth stirring bars facilitate powerful stirring with a good vortex even in viscous samples. Available in both small and large sizes.
- **RR98070** and **RR98071** General purpose octagonal stirring bars are available in small and large sizes.
- **RR98075** Small Cross Shaped stirring bar creates a vortex at slow speeds.
- **RR98113** Medium Cylindrical Rare Earth stirring bar, a small, powerful, general purpose stirring bar.
- **RR98095** Stirring bar evaluation kit contains 3 of each of the above.
- **RR98094** PTFE stirring bar retriever. Retrieve stirring bars from reaction tubes. 350mm long.
- **RR98114** PTFE stirring bar restrainer. Hold your stirring bar within your tube when dispensing liquids.



RR98091



RR98096



RR98097



RR98070



RR98071



RR98075



RR98113



RR98094

Glass reaction tubes and inserts

150mm x 24mm Ø tubes manufactured from heavy walled borosilicate glass feature a unique quick-thread for fast attachment to the caps. The **RR91080** reaction tube has a reaction volume of 5ml to 20ml and the **RR91088** reduced volume tube has a working volume of 1 to 5ml. The lower part of these tubes tapers to 16mm OD. The reduced volume tubes require the **RR91089** aluminium insert to reduce the well size accordingly.

- **RR91080** Quick-Thread glass reaction tube, pk 6
- **RR91081** Quick-Thread glass reaction tube, pk 12
- **RR91088** Quick-Thread reduced volume reaction tube, pk 6
- **RR91089** Carousel 12 Plus reduced volume aluminium inserts, pk 6



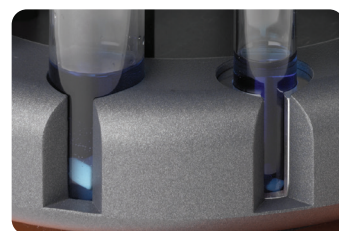
PTFE caps and glass tubes provide an inert, gas tight seal



Easy-On PTFE reaction caps

PTFE caps are attached to the reaction tube using a quick thread and feature an Easy-On push connection to the radial gas system. The **RR91070** cap features a Suba-Seal septa and on/off valve for isolation and removal from the inert gas system. The **RR91072** Easy-On storage cap features the quick-thread and Suba-Seal septa, but with no sidearm or valve. Caps include a replaceable Nitrile o-ring with an optional Viton replacement. Replaceable septa allow the addition of reagents or removal of samples. All septa are silicone as standard (Viton is available).

- **RR91070** Easy-On cap with valve, pk 6
- **RR91072** Easy-On storage cap, pk 6
- **RR98076** Silicone Suba-Seal for caps, pk 100
- **RR98176** Viton Suba-Seal for caps, pk 100



Tube racks and Lab Marker pen

- **RR98901** Zinc plated wire rack for 36 x 24mm tubes
- **RR98902** Zinc plated wire rack for 40 x 24mm tubes
- **RR98903** Zinc plated wire rack for 80 x 24mm tubes
- **RR98906** Black Lab Marker, pk 10 (writes on glass, metal and plastic)



Carousel 12 Plus Ordering Information

Carousel 12 Plus - Basic System

RR91091 Carousel 12 Basic Plus System

The system includes:

- RR91030 Carousel 12 Plus Reaction Station
- RR91080 Quick-Thread Glass Reaction Tube, pk 6
- RR91081 Quick-Thread Glass Reaction Tube, pk 12
- RR91070 Easy-On PTFE Cap, pk 6 (Includes 2 packs)
- RR98070 Octagonal Stirring Bar 13mm, pk 20
- RR98091 Cross Shape Stirring Bar 16.5mm RE, pk 20
- RR98094 PTFE Magnetic Stirring Bar Retriever 350mm
- RR98095 PTFE Magnetic Stirring Bar Evaluation Kit, pk 30
- RR98076 Silicone Suba-Seals for all caps, pk 100
- RR98901 Zinc Plated Wire Rack for 36 x Tubes



Carousel 12 Plus - Standard System

RR91092 Carousel 12 Standard Plus System

The system includes:

- RR91030 Carousel 12 Plus Reaction Station
- RR91080 Quick-Thread Glass Reaction Tube, pk 6
- RR91081 Quick-Thread Glass Reaction Tube, pk 12
- RR91070 Easy-On PTFE Cap, pk 6 (Includes 2 packs)
- RR98070 Octagonal Stirring Bar 13mm, pk 20
- RR98091 Cross Shape Stirring Bar 16.5mm RE, pk 20
- RR98094 PTFE Magnetic Stirring Bar Retriever 350mm
- RR98095 PTFE Magnetic Stirring Bar Evaluation Kit, pk 30
- RR98076 Silicone Suba-Seals for all Caps, pk 100
- RR98901 Zinc Plated Wire Rack for 36 x Tubes
- RR91038 Carousel 12 Plus Stand
- RR91216 Carousel Core+ Stirring Hotplate + Pt1000, 230V UK Plug*



Carousel 12 Plus - Complete System

RR91093 Carousel 12 Complete Plus System

The system includes:

- RR91030 Carousel 12 Plus Reaction Station
- RR91080 Quick-Thread Glass Reaction Tube, pk 6
- RR91081 Quick-Thread Glass Reaction Tube, pk 12
- RR91070 Easy-On PTFE Cap, pk 6 (Includes 2 packs)
- RR98070 Octagonal Stirring Bar 13mm, pk 20
- RR98091 Cross Shape Stirring Bar 16.5mm RE, pk 20
- RR98094 PTFE Magnetic Stirring Bar Retriever 350mm
- RR98095 PTFE Magnetic Stirring Bar Evaluation Kit, pk 30
- RR98076 Silicone Suba-Seals for all Caps, pk 100
- RR98901 Zinc Plated Wire Rack for 36 x Tubes
- RR91038 Carousel 12 Plus Stand
- RR91216 Carousel Core+ Stirring Hotplate + Pt1000, 230V UK Plug*
- RR91040 Carousel 12 Plus cooling reservoir & lid
- RR99905 Digital Thermometer (-250°C to +400°C) & 200mm Probe
- RR99908 Dry Ice Scoop



* Hotplates are available in other voltages and plugs please add /EURO or /USA to end of Cat No.

