

January 1999 Issue 1

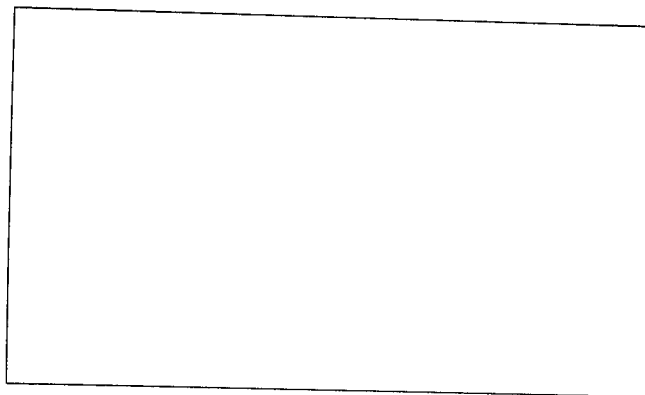
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carousel reaction stations™

instructions

RR98040
12 Place PTFE
Carousel Reaction Station

Your Local Distributor



RADLEYS

innovative solutions for Combinatorial Chemists

Radleys, Shire Hill, Saffron Walden, Essex, CB11 3AZ, United Kingdom.
Telephone: +44-(0)1799-513320, Facsimile: +44-(0)1799-513283
Web Site: <http://www.radleys.co.uk>, E-mail: sales@radleys.co.uk

PATENT PENDING



Thank you for purchasing your Carousel Reaction Station

Introduction

The 12 place Carousel Reaction Station is designed for parallel synthesis, and is suitable for **applications or reactions undertaken at ambient temperatures**, and which do not require reflux cooling. The Carousel holds 12 x 24mm diameter reaction tubes and features a gas distribution system, permitting reactions to be performed under inert atmospheres.

Your Carousel will mount on a standard stirring hotplate, with a circular top plate having a diameter of not more than 135mm. The single rotating magnetic field created by the stirrer, uniformly stirs individual PTFE magnetic stirring bars in each of the Carousel's 12 glass Reaction Tubes.

The Carousel was originally designed and tested for use with the IKA RCT Basic stirring hotplate. However it can be operated successfully on other stirring hotplates having similar specifications.



Warranty

Carousels include one year full parts and labour warranty from date of original purchase. Warranty will only be valid if a completed warranty card is returned within 2 months of date of purchase.

In the event of product failure please contact your local distributor.
Please do not return any goods without prior agreement.

Safety Information

The following symbols are intended to assist the user in the safe and efficient operation of the Carousel.

	WARNING Applies when there is a possibility of personal injury.
	IMPORTANT NOTE Alerts the user to important facts.

Products Enclosed

The items enclosed in this package, should include:

- 1 x PTFE Carousel
- 12 x Flexible Tubing
- 1 x Operating Instructions

Additional Equipment & Consumables

RR98072 RCT- Basic Stirring Hotplate

Or similar magnetic stirring hot plate, with a top plate diameter of not greater than 135mm.

RR98063/RR98064 - Plain Glass Reaction Tubes

Plain glass reaction tubes 24mm x 150mm. RR98063 (pack of 6) or RR98064 (pack of 12).

or

RR98061/RR98062 - Threaded Glass Reaction Tubes

Threaded glass reaction tubes 24mm x 150mm. RR98061 (pack of 6) or RR98062 (pack of 12).

RR98070 - Octagonal Magnetic Stirring Bar

Large Octagonal PTFE Magnetic Stirring Bar. Pack 20.

or

RR98074 - Cross Shaped Magnetic Stirring Bar

Large High Speed Cross Shaped PTFE Magnetic Stirring Bar. Pack 20. (maximises vortex)

RR98067 - Gas Tight Threaded PTFE Cap, with Valve

These Gas Tight Threaded PTFE are used with threaded glass reaction tubes RR98061/2 to allow full control over atmosphere including the ability to remove reaction tubes individually whilst other reaction tubes remain under inert conditions (pack of 6).

RR98068 - Gas Tight Threaded PTFE Cap

These Gas Tight Threaded PTFE are used with threaded glass reaction tubes RR98061/2, allowing reaction tubes to remain under inert conditions during synthesis (pack of 6).

RR98069 - Push-on PTFE cap

For use with plain glass reaction tubes RR98063/4. These caps do not offer a reliable gas tight seal.

RR98076 - Replacement Suba-Seals, (pack of 100)

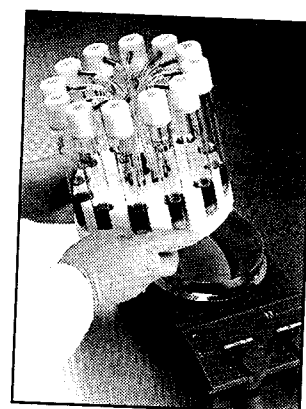
All PTFE caps are supplied with replaceable Suba-Seal septums allowing addition of reagents or the removal of aliquots during synthesis. Suba-Seals will require periodic replacement.



WARNING

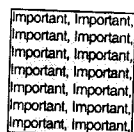
Carousel Reaction Stations should always be used in a fume cupboard.

- 1 **Connect loose flexible tubing** lengths (supplied) to the 12 radial gas hose barbs. The tubing has been cut to length to optimise the gas flow to the individual reaction tubes by avoiding kinks etc. Should you ever need to replace this tubing please be sure to use exactly the same length.
- 2 **The Carousel is simply placed on top of the stirring hotplate.** The circular recess in the base of the Carousel is designed to fit snugly around the top plate of your stirring hotplate (maximum top plate diameter 135mm).
- 3 The Carousels modular design allows it to be lifted on and off the hotplate stirrer as required. Being circular, it can be rotated when in place to facilitate access to all reaction tubes. This removes the need to 'lean' into the fume cupboard during operation.



WARNING

This PTFE Carousel is not designed for heating. Whilst gentle heating can in some cases be applied (ambient to +40°C), PTFE is an insulator and therefore not suited to heat conduction.

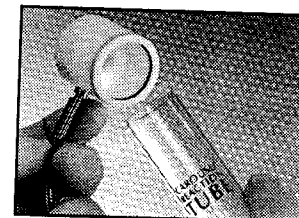


IMPORTANT NOTE

Please note that the recess in the base of the Carousel is designed to be a tight fit with the top of your hotplate. Furthermore, when cold PTFE will contract, and this may result in the PTFE Carousel being too tight to fit over the hotplate top. To avoid this happening sufficient time should be allowed for the PTFE Carousel to warm up to 'room temperature' prior to use.

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- 4 **The reaction tubes** are placed in position by simply being placed into the individual wells. The individual Reaction Tubes are precision engineered to ensure a good fit into the individual wells. The RR98061/2 threaded Reaction Tubes are recommended for reactions requiring an inert atmosphere.
- 5 **The PTFE stirring bars** should now be placed in the individual Reaction Tubes. We recommend the cross shaped stirring bar for vigorous stirring. For efficient stirring and to maintain optimum coupling of stirring bars, please turn up the stirring speed on the hotplate stirrer slowly.
- 6 Reagents, compounds etc may now be added before caps are positioned, or afterwards via a syringe through the Suba-Seal septum
- 7a **Push-on PTFE Caps RR98069** - Before attaching the cap to the Reaction Tube, firstly connect the flexible tubing to the stainless steel side arm of the cap. The PTFE caps are now gently, but firmly, pushed into place on the Reaction Tubes. The nitrile o-ring will form a good seal directly with the outside of the glass tube.
- 7b **Gas Tight Threaded PTFE Caps RR98068** - Before attaching the cap to the Reaction Tube, firstly connect the flexible tubing to the stainless steel side arm of the cap. The PTFE caps are now gently, but firmly, screwed onto the threaded Reaction Tubes. The nitrile o-ring will form a gas tight seal directly with the outside of the glass tube.
- 7c **Gas Tight Threaded PTFE Caps with Valve RR98067** - Before attaching the cap to the Reaction Tube, firstly connect the flexible tubing to the stainless steel side arm of the cap. The PTFE caps are now gently, but firmly, screwed onto the threaded Reaction Tubes. The nitrile o-ring will form a gas tight seal directly with the outside of the glass tube.



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IMPORTANT NOTE

Please note that the screw threaded caps 'seal' on the nitrile o-ring before they are fully tightened. Fully tightening the caps will effect a double seal on the PTFE cap and nitrile o-ring.



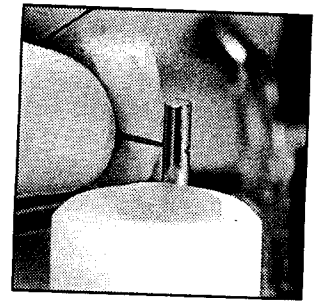
WARNING

Do not over tighten PTFE caps, as this may damage the cap and cause fracture of the glass Reaction Tube.

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IMPORTANT NOTE

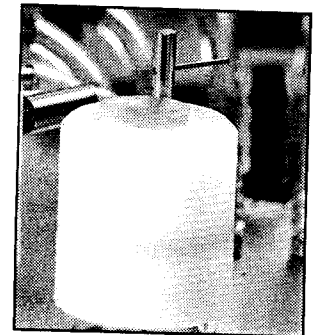
The threaded PTFE caps now feature a stainless steel outer ring, designed to prevent the cap from popping if over-tightened. These outer rings are an interference fit and therefore may rotate independently of the cap if forced (this is quite normal).



8 **PTFE Caps with Valve RR98067** - when using these caps to ensure the flow of inert gas, the valve must be in the 'OPEN' position - this is where the valve bar lines up with the flexible gas inlet tube. A quarter turn (anti-clockwise or clockwise) will 'CLOSE' the valve, isolating the Reaction Tube from the system.

9 **A Suba-Seal Septum** located in the top of each PTFE cap, which permits either reaction monitoring through the withdrawal of aliquots or the addition of reagents during synthesis. Suba-Seals will require periodic replacement.

10 **Gas Inlet System.** A central gas inlet and radial distribution system combined with gas tight PTFE caps allows reactions to be performed under an inert (nitrogen/argon) atmosphere.



For use under inert atmosphere, attach the centre port of the manifold to a suitable tubing. You will require a two way valve to allow switching from vacuum to inert gas.



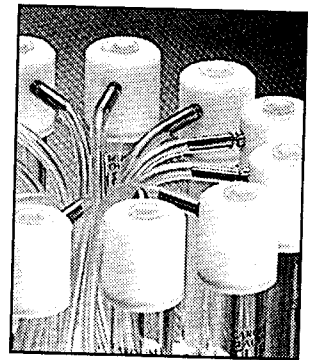
WARNING

When applying gas to the reaction station gas inlet system do not exceed 1 (one) psi as the Reaction Tube and PTFE Caps are not rated for pressure, (they are however suitable for applying a rough vacuum).

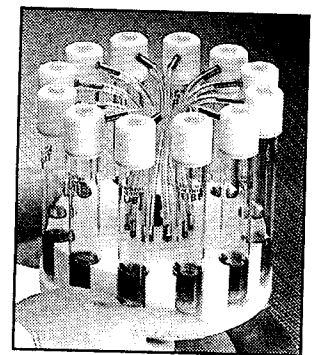
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IMPORTANT NOTE

When applying inert gas, the valve on the PTFE cap must be in the 'OPEN' position - this is where the valve bar lines up with the flexible gas inlet tube. A quarter turn (anti-clockwise or clockwise) will 'CLOSE' the valve, isolating the Reaction Tube from the system.



11 **The Reaction Tubes can be isolated** or removed during synthesis by simply closing the valve on the PTFE Cap ensuring the other reaction remain under controlled inert conditions.



IMPORTANT WARNING

In the event of leak from a broken reaction tube - please stop using the unit immediately. **DO NOT TOUCH THE CAROUSEL OR HOTPLATE.** Switch off all power supply to the hotplate at the mains. Remove the power plug from the mains.



IMPORTANT WARNING

The Carousel should only be operated by trained and competent personnel. As with all chemistries, care should be taken to monitor your reactions at all stages. The Carousel should not be left unattended unless in a supervised area.



IMPORTANT WARNING

Carousel Reaction Stations should always be used in a fume cupboard.



carousel reaction stations™

ordering information

Cat No	Description	Pk Qty
RR98030	12 Place PTFE Carousel Reaction Station*	1

Carousel Consumables

RR98061	Threaded Glass Reaction Tube, 24mm x 150mm	6
RR98062	Threaded Glass Reaction Tube, 24mm x 150mm	12
RR98063	Plain Glass Reaction Tube, 24mm x 150mm	6
RR98064	Plain Glass Reaction Tube, 24mm x 150mm	12
RR98068	Gas Tight Threaded PTFE Cap + Inlet	6
RR98069	Push-on PTFE Cap + Inlet	6
RR98070	Large Octagonal PTFE Magnetic Stirring Bar	20
RR98074	Large High Speed Cross Shape PTFE Magnetic Stirring Bar	20
RR98076	Replacement Suba-Seals for Caps	100

Stirring Hotplate

RR98072	RCT-Basic Stirring Hotplate, 240 volt	1
RR98072/115V	RCT-Basic Stirring Hotplate, 115 volt	1

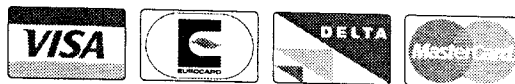
* Please note reaction Tubes, Caps, Stirring Bars or Stirring Hotplate are not included with reaction Stations.

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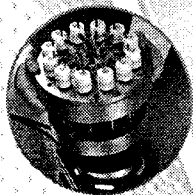
Radleys, Shire Hill, Saffron Walden, Essex, CB11 3AZ. United Kingdom.
 Telephone: +44-(0)1799-513320, Facsimile: +44-(0)1799-513283
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We now also accept American Express

12 Place Heated + Reflux
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24 Place PTFE
Reaction Station

