

Carousel Work-Up Station™

Rapid parallel work-up using standard 70ml columns for efficient filtration, phase separation, liquid/liquid extraction or SPE.



 **radleys**
innovations for chemistry





SpeediFlow Booster allows pressurisation of individual columns to increase flow rates and speed up your work-ups

Technical Specifications

Height	225mm
Height (2 racks)	380mm
Width	250mm
Depth	180mm
Weight	1.4kg
Max Tube/Column OD	29mm
Max Tube Length	150mm
Max Column Length	155mm to tip
Capacity	12 x 70ml columns

SpeediFlow™

Safety Relief Valve	Vents at 6 to 8psi
Approx Dimensions	180mm x 60mm OD
Weight	580g

Racks lock together for ease of transportation



The Carousel Work-Up Station is designed to make your post synthesis work-up quick and easy, avoiding downstream bottlenecks.

The Carousel Work-Up Station accepts up to 12 x 70ml columns loaded in to one of two identical stackable racks. The lower rack supporting 12 corresponding Carousel Reaction Tubes or standard 1 inch boiling tubes for subsequent sample collection.

The Carousel Work-Up Station allows up to two levels of 70ml columns stacked one above the other. This enables parallel and/or sequential work-up in 12 samples, using filtration, phase separation, liquid/liquid extraction or SPE techniques.

Features & Benefits

- Designed for use with the 12 position Carousel Reaction Station or similar parallel synthesisers.
- Accepts 12 x Carousel Reaction Tubes or standard 1 inch boiling tubes (maximum tube dimensions 29mm OD x 150mm long)
- Accepts 12 x 70ml columns; including 20µm Filtration, Phase Separation, Liquid/liquid Extraction, Silica, SCX, Aminopropyl and SAX Acetate (maximum column dimensions 29mm OD x 155mm long to tip)
- Unique design uses no taps, valves or drip needles, making assembly and operation fast and simple. Minimising cleaning and consumable costs.
- Vacuum free operation also makes removal of collection tubes easy and prevents drying of columns.
- Use under gravity or with innovative SpeediFlow Booster, allowing precise individual control of solvent flow within each column.
- The unique SpeediFlow is a hand held pressuriser, easily inserted into columns. It features a mechanically expandable Viton O-ring, operated by a trigger with an integral locking device, for unsupported gas tight operation.
- SpeediFlow features a safety relief valve that vents at 6 to 8psi, preventing accidental over-pressure.
- Ergonomically designed, lightweight aluminium racks are easy to load with collection tubes or work-up columns. They are exceptionally stable, with good access and visibility of all columns and tubes.
- Identical racks lock together for ease of operation or transportation from location to location.
- An optional 3rd rack can be stacked above the 2nd rack for sequential work-up.



Solid Phase Extraction (SPE) Columns

RDT offer four standard types of SPE Columns that cover the vast majority of purification needs for the Carousel Work-Up.

Cat No	Description	Volume	Pk Qty
RR99870	Silica	10g/70ml	16
RR99871	Aminopropyl	10g/70ml	16
RR99872	SCX	10g/70ml	16
RR99873	SAX Acetate	10g/70ml	16

The following guidelines are intended to help in the initial selection of a column according to the main interactions of the solid phase, polar, non-polar or anion/cation exchange.

Silica

The main interaction is polar via the silanol functionality. Most useful for purifying moderately polar compounds where the impurities are either or both very non-polar (eluted first) or very polar (retained on column).

Aminopropyl

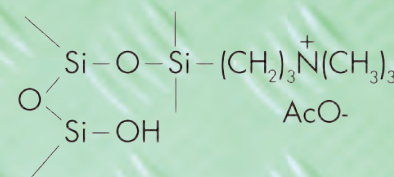
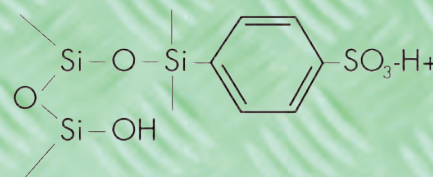
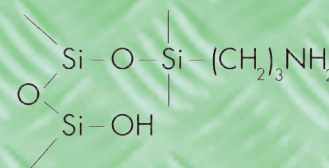
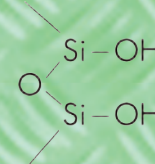
Normally used as a polar sorbent. The amino group can hydrogen bond with a variety of polar groups, e.g. hydroxyl, amino etc and will have polar interactions with polar groups. It will also function as a weak anion exchanger when protonated.

SCX

A strong cation exchanger used to extract basic compounds capable of holding a positive charge. Can be used for extracting basic impurities from non-basic products (which pass straight through), or for extracting basic products from non-basic impurities (which pass straight through). The basic products can then be eluted using a medium with a higher pH.

SAX Acetate

A strong anion exchanger used to extract compounds capable of carrying a negative charge (e.g. weak acids). Can be used for extracting acidic impurities from non-acidic products (which pass straight through), or for extracting acidic products from non-acidic impurities (which pass straight through). The acidic products can then be eluted using a medium with a lower



Insert SpeediFlow nozzle into the column.



Squeeze trigger and press the thumb button until it locks.



Release trigger. O-ring now forms a gas tight seal within the column.



In this position, a constant pressure is maintained in the column without holding the trigger.



Gas will now flow into the column speeding up the flow of your sample.



To release, squeeze trigger. The thumb button will release and the SpeediFlow may be withdrawn.



pH. 20µm PE Filtration Columns

Typical applications include:

- Isolation of precipitates or crystallites from the reaction mixture
- Filtration of resins prior to cleavage
- Filtration of solid supported reagents post synthesis
- Removal of solid impurities prior to SPE

Pressure can be applied to an individual column using the SpeediFlow to increase the flow rate, particularly if the column is slow or becomes blocked. Solid impurities, e.g. salts may be removed by using filtration columns prior to SPE.

Phase Separation Columns

Phase separation columns contain a hydrophobic frit and are designed to separate organic phases that are denser than water (e.g. dichloromethane). They can also be used for sequential purification, e.g. phase separation followed by SPE.

Following partition of a crude reaction mixture between, for example dichloro-methane and water, the mixture is transferred to the phase separation column where the lower organic layer will run through the frit leaving the upper aqueous layer for disposal.

It should not be necessary to apply pressure, indeed doing so can allow the aqueous layer to break through the hydrophobic frit.

Liquid/liquid Extraction Columns

The Liquid/liquid Extraction Columns contain a modified diatomaceous earth which efficiently absorbs water from aqueous samples. The diatomaceous earth is chemically inert and stable over the pH range 1-13.

Unlike Phase Separation Columns, these Liquid/liquid extraction Columns can be used with non-water miscible solvents that are either more or less dense than water. When a two phase mixture is applied to the column the aqueous phase is absorbed onto the diatomaceous earth and the organic phase runs through the column. The high surface area at the interface between the organic and aqueous phases increases efficiency and eliminates the possibility of emulsion formation. Further elution with more solvent elutes the organic compounds and the aqueous phase is retained on the column for disposal.



An optional 3rd rack can be stacked above the 2nd rack for sequential work-up, e.g. filtration followed by SPE.

Cat No	Description	Tube Volume	Pk Qty
RR99874	20µm PE Filtration	70ml	50
RR99875	Phase Separation	70ml	50
RR99877	Liquid/Liquid Extraction, 10ml Sample	70ml	50
RR99878	Liquid/Liquid Extraction, 20ml Sample	70ml	50

Carousel Work-Up Station™

Simple and convenient the Carousel Work-Up Station™ will reduce post synthesis bottle-necks.



An optional 3rd rack can be stacked above the 2nd rack for sequential work-up.



Identical racks lock together for ease of operation or transportation from location to location.

Ergonomically designed, lightweight aluminium racks are easy to load with collection tubes or work-up columns.

Aluminium racks are exceptionally stable, with good access and visibility of all columns and tubes.

To locate a second rack on top of the first, pull out the spring loaded knob and rotate 90°. The handle of the lower rack then slots into the base of the upper rack. Then rotate the knob until it clicks back in place. The two racks are now securely locked together

SpeediFlow Booster features safety relief valve which vents at 6 to 8psi, preventing accidental over-pressure.

SpeediFlow Booster allows pressurisation of individual columns to increase flow rates and speed up your work-ups. It features a mechanically expandable Viton O-ring, trigger operated with integral locking device, for unsupported gas tight operation.

Use under gravity or with the SpeediFlow, allowing precise individual control of solvent flow within each column.

Each position is numbered 1 to 12 for ease of identification. The racks will only locate in one orientation.

Accepts 70ml columns; including 20µm Filtration, Phase Separation, Liquid/liquid Extraction, Silica, SCX, Aminopropyl and SAX Acetate

Unique design uses no taps, valves or drip needles, making assembly and operation fast and simple. Minimising cleaning time and consumable costs.

Vacuum free operation also makes removal of collections tubes easy, and prevents drying of columns.

Accepts 12 x Carousel Reaction Tubes or standard 1 inch boiling tubes.





Cat No	Description	Pk Qty
Carousel Work-Up Station		
RR99830	Carousel Work-Up Station (Two racks and SpeediFlow)	1
Carousel Work-Up Station Components & Accessories		
RR99831	Carousel Work-Up Rack	1
RR99850	SpeediFlow	1
RR99860	Replacement Viton O-ring - 1in OD	5
RR99861	Replacement Perlast O-ring - 1in OD	2
RR99870	Silica 10g/70ml	16
RR99871	Aminopropyl 10g/70ml	16
RR99872	SCX 10g/70ml	16
RR99873	SAX Acetate 10g/70ml	16
RR99874	20µm PE Filtration 70ml	50
RR99875	Phase Separation 70ml	50
RR99877	Liquid/Liquid Extraction, 10ml Sample, 70ml	50
RR99878	Liquid/Liquid Extraction, 20ml Sample, 70ml	50
RR99840	SpeediFlow Gas Connection Tubing - 5m length	1

Save time and money by buying the popular Carousel Work-Up 'Systems', which include all the important components and accessories required for efficient operation.

Cat No	Description
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Carousel Work-Up Column Pack

RR99876	Column Pack Comprising of the following: RR99870 - Silica 10g/70ml, pack of 16 RR99871 - Aminopropyl 10g/70ml, pack of 16 RR99872 - SCX 10g/70ml, pack of 16 RR99873 - SAX Acetate 10g/70ml, pack of 16 RR99874 - 20µm PE Filtration 70ml, pack of 50 RR99875 - Phase Separation 70ml, pack of 50
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Carousel Work-Up System 25

RR99880	System 25 - Carousel Work Up Station Comprising of the following: RR99830 - Carousel Work-Up Station (Two racks and SpeediFlow) RR99874 - 20µm PE Filtration 70ml, pack of 50 RR99875 - Phase Separation 70ml, pack of 50 RR98062 - Threaded Glass Reaction Tube 24mm x 150mm, pack of 12 RR99840 - SpeediFlow Gas Connection Tubing - 5m length
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Carousel Work-Up System 26

RR99881	System 26 - Carousel Work Up Station Comprising of the following: RR99830 - Carousel Work-Up Station (Two racks and SpeediFlow) RR99831 - Carousel Work-Up Rack RR99870 - Silica 10g/70ml, pack of 16 RR99874 - 20µm PE Filtration 70ml, pack of 50 RR99875 - Phase Separation 70ml, pack of 50 RR98062 - Threaded Glass Reaction Tube 24mm x 150mm, pack of 12 RR99840 - SpeediFlow Gas Connection Tubing - 5m length
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Radleys is a parallel chemistry specialist.

As a dynamic organisation Radleys is best able to react to the needs of this constantly developing market sector. Radleys' specific areas of expertise are focused on apparatus and consumables for parallel synthesis, purification and work-up. The essential products that are the cornerstone of your parallel chemistry program.