



**NEW**  
Filter  
Reactor

# Reactor-Ready™

## Filter Lab Reactor



Reaction and filtration in a single jacketed vessel setup, ideal for crystallisation, reaction workups and product isolation

# Reactor-Ready Filter Lab Reactor



Combine your jacketed lab reactor and filtration setup into a seamless workstation for synthesis and product isolation

A single reaction system that accepts a range of jacketed filter vessels



1 Litre Filter Vessel



2 Litre Filter Vessel

Also compatible with the full range of Reactor-Ready standard and process vessels

Filter vessels are offered with a turbine impeller



PTFE Turbine or Propeller Stirrer



Convenient filter vessel kits make ordering vessels and accessories easy and cost effective

## Unique vessel clamp

- self centering
- quick release
- change vessels in minutes

## Hose couplings

- quick release
- connect in seconds
- chemically resistant PEEK

## Individual manifolds

- easy connection
- easy drain down
- reduces stress on vessel sidearms

Upgrade your existing Reactor-Ready framework to accept filter vessels or invest in a dedicated Filter Reactor



# Synthesise and filter in the same vessel

Our unique jacketed filter vessels allow for precise temperature control of the entire vessel contents during synthesis and filtration

## Simple stirrer alignment

- slide and glide
- set and lock

## Patented stirrer coupling

- drop in
- no tools
- no fuss

## Filter Vessels

- 1 litre and 2 litre
- fully jacketed

## Filter support plate

- aligns filter plate with vessel
- supports filter cake

## Removable filter base

- easy solid removal
- fits a range of filter membranes

Optional AVA Control Software allows you to log and control stirrers, circulators, balances, pumps, temperature sensors and other devices



Accepts all leading brands of overhead stirrer



Compatible with all leading brands of circulator or thermoregulator

## Filter assembly allows efficient solid-liquid separations

- Reusable filter membranes are available in a range of porosities and materials.
- Filter plate with removable clamp allows for easy product collection and reassembly after filtrations.



# Reactor-Ready Filter Lab Reactor

## Stirred, temperature-controlled, contained filtrations

Reactor-Ready Filter Lab Reactor combines a jacketed lab reactor and a filter into one system. This allows users to isolate their product without having to manually transfer their material from reactor to a separate filter, saving time and reducing product losses.

You can easily upgrade an existing Reactor-Ready to a filter reactor or have a standalone filter system.



### Features include

- Rapid vessel exchange with quick-release vessel clamp and hose couplings.
- Filter vessels are fully jacketed down to base for accurate temperature control.
- Range of jacketed filter vessels in 1 and 2 litre volumes.
- Temperature range of filter vessels: -30 °C to +180 °C (jacket temperature).
- Also accepts full range of Reactor-Ready Standard and Process vessels.
- Innovative hose manifolds allow easy thermofluid drain down.
- Accepts all leading brands of overhead stirrer for agitated slurring and filtrations.
- Filter base accepts pre-cut filter membranes or you can cut your own membranes to size.
- Filter support plate aligns the base with the vessel for tool-free assembly.

### Patented vessel clamp allows rapid vessel exchange without tools

- Unique clamp design allows vessel to be supported and clamped by a single operator in less than a minute.
- Use the same clamp to hold all vessel sizes; plus the vessels remain supported even when the clamp is unlocked.



### Vessel support collar aids vessel loading

- Reactor-Ready uses an innovative support collar fitted to the neck of each vessel, which allows the vessels to be swapped in and out of the Reactor-Ready core like a cartridge.
- Vessel exchange is tool free and can easily be undertaken by one person.

### Unique self aligning stirrer coupling saves time when changing vessels

- Patented drop-in stirrer coupling engages easily without the need for tools.
- Simply lower the stirrer coupling to engage with the stirrer guide below.
- The stainless steel stirrer coupling will fit in any standard stirrer chuck (for 10 mm diameter)



Stainless steel vessel support collar

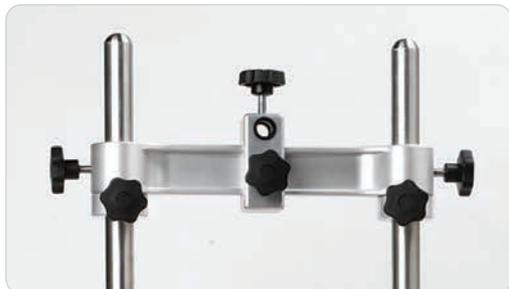


## Choice of PTFE stirring shafts

- Reactor-Ready Filter Reactor is offered with a PTFE turbine stirring shaft
- Other impeller styles are available on request

## I-beam support allows the stirring motor to be positioned with ease

- I-beam allows the stirrer motor to be raised or lowered without needing to remount the stirrer.
- Reactor-Ready accepts all leading brands of motor or air-powered overhead stirrer with support rods up to 16 mm in diameter.



PTFE turbine stirrer



PTFE stirrer guide provides whip-free agitation



## PTFE Stirrer Guide

- The Reactor-Ready's PTFE stirrer guide screws directly on to the glass lid and features a unique extended support which minimises wobble even at high speeds.
- The stirrer guide is chemically inert, gas-tight and suitable for work under vacuum.

## Quick release PEEK hose couplings

- Operates over the temperature range -30 °C to +180 °C (jacket temperature).
- Quick-release, screwthread design allows rapid exchange of vessels without the use of tools.
- Lightweight, metal-free design prevents chipping and minimises strain on the glass fitting.
- All hoses have a 12 mm ID, maximising thermofluid flow and heating/cooling performance.

## Hose manifolds allow easy thermofluid drain down

- The inlet and outlet hoses from the Reactor-Ready vessel connect to manifolds attached to the support rod. These manifolds serve two important functions:
  - a. Support the hoses running from the vessel, thereby eliminating stress on the glass sidearms.
  - b. Allows thermofluid drain-down, which provides a quick and clean method of removing the thermofluid from the vessel jacket when changing vessels.
- By opening the venting valve on the (upper) outlet manifold, thermofluid drains from the vessel back to the thermoregulator under gravity.
- Opening the drain tap on the (lower) inlet manifold allows drainage to an external reservoir.



## Filter assembly is quick and easy

1. Aluminium filter plate cup supports your choice of PTFE or PEEK filter plate, giving wide solvent and temperature compatibility.
2. Removable 15 mm bore glass bottom outlet valve allows for easy cleaning.
3. Sintered glass membrane support prevents filter media from being damaged during filtrations.
4. Pre-cut filter membranes are available in a selection of materials and porosities.
5. Filter kits include a Silicone (-30 °C to +180 °C) and Viton (-20 °C to +180 °C) O-ring.
6. Gasket (available in PTFE or PEEK) combines with the O-ring to ensure efficient sealing.
7. The swivel aluminium filter plate support allows for simple alignment of filter with the vessel and supports the filter plate and filter cake even when the clamp is unlocked.
8. Filter clamp design allows the filter assembly to be clamped to the vessel lower flange with ease.
9. Vessel and filter assembly exchange is tool free and can be undertaken in minutes.



## How to order Reactor-Ready Filter...

1. Select the Reactor-Ready Filter Core.



2. Select the Filter Plate Clamp.



3. Choose the Filter Vessel Kit you require by selecting the vessel volume.



4. Choose the Filter Plate Kit you require.



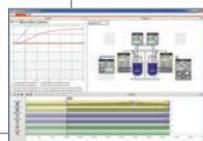
5. Select the overhead stirrer you need.



6. If you need a thermoregulator, hoses, hose adapters, thermofluid or accessory glassware, then select from the accessory list.



7. If you need automation add the AVA Control Software and data hub.



# Reactor-Ready Filter Reactor in detail

## An innovative workstation based on our popular Reactor-Ready platform



Precision ground lid and vessel flanges combine with PTFE collar and FEP-encapsulated O-ring to offer superior sealing performance.

Vessel clamp support allows easy vertical repositioning of the vessel whilst maintaining the stirrer coupling alignment.

Vessel-to-manifold hoses are supported by the manifolds and frame, eliminating stress on the vessel.

Venting stopcock on the outlet manifold allows quick and easy draining of the thermofluid during vessel exchange.



Quick-release PEEK coupling allows rapid exchange of vessels without the use of tools. Operates over the temperature range -30 °C to +180 °C (jacket temperature).



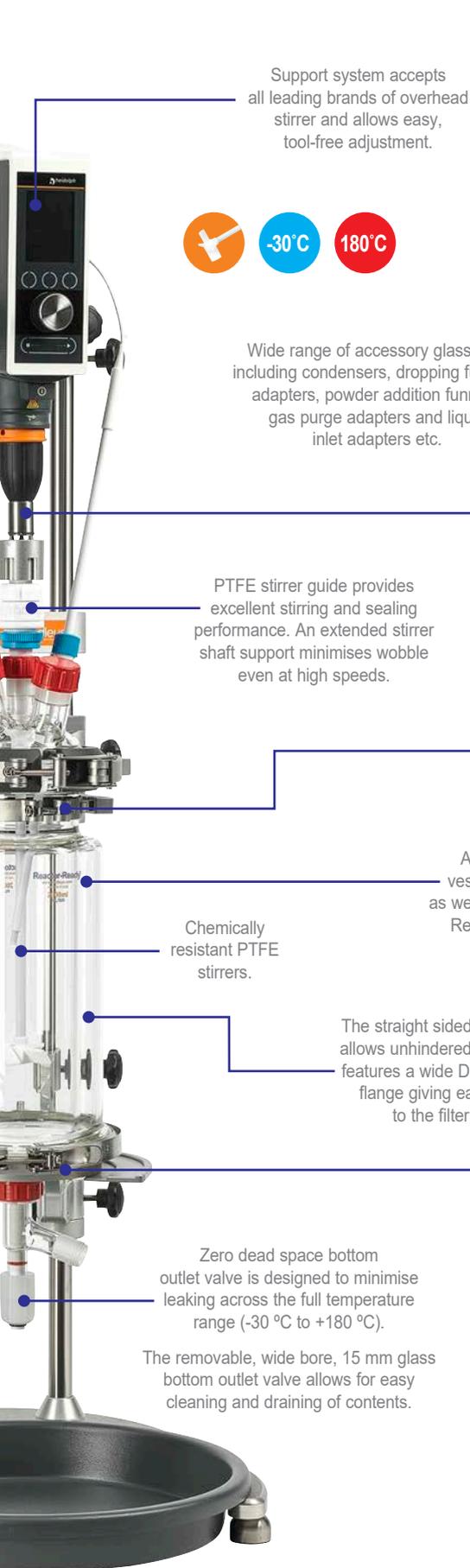
Thermofluid may be drained back to the thermoregulator or decanted via a fluid drain tap on the inlet manifold.

Heavy-duty base plate with levelling feet ensures that the Reactor-Ready support stand is secure and stable.

HDPE drip tray will catch any spills and can accommodate the contents of a 5 litre vessel and jacket.

Stirrer support I-beam allows the stirrer motor to be easily raised and lowered.





Support system accepts all leading brands of overhead stirrer and allows easy, tool-free adjustment.



Wide range of accessory glassware including condensers, dropping funnels, adapters, powder addition funnels, gas purge adapters and liquid inlet adapters etc.

PTFE stirrer guide provides excellent stirring and sealing performance. An extended stirrer shaft support minimises wobble even at high speeds.



Patented drop-in stirrer coupling engages easily without the need for tools.



Reaction vessels are held by a novel quick-release clamp. No tools are required to exchange vessels.

Accepts jacketed filter vessels of 1 and 2 litres as well as the full range of Reactor-Ready vessels



1 litre Filter Vessel

Chemically resistant PTFE stirrers.

The straight sided vessel inner allows unhindered filtration and features a wide DN150 bottom flange giving easy access to the filter cake.

Zero dead space bottom outlet valve is designed to minimise leaking across the full temperature range (-30 °C to +180 °C).

The removable, wide bore, 15 mm glass bottom outlet valve allows for easy cleaning and draining of contents.

Filter assembly allows for efficient solid-liquid separation by gravity or under vacuum with minimal hold-up.



## Reactor-Ready Filter Core system includes

- Stand with base, extended support rods, bosses and all clamps
- Filter plate support
- Glass reaction vessel lid
- Vessel FEP O-ring seal and PTFE collar
- HDPE drip tray
- Vessel-to-manifold insulated hoses with quick-release connections
- Lower inlet manifold + drain
- Upper outlet manifold + vent
- PTFE stirrer guide
- Stainless steel drop-in stirrer guide coupling
- Two stainless steel vessel support collars
- Locking rod for support rod bosses



## Filter Plate Kit includes

The Filter Plate Kit includes everything you need to get started with your filtrations, simply select what material you require for the filter base. Each Filter Plate Kit includes:

- Filter Plate in PTFE or PEEK
- Filter Plate Gasket in PTFE or PEEK
- Aluminium Filter Plate Cup
- Filter Plate O-ring (Viton and Silicone)
- Sintered Glass Membrane Support Disc
- Glass BOV and Piston
- Filter Membrane Evaluation Kit (1 each of 6 membranes)



# Jacketed glass filter vessels

Fully jacketed glass filter vessels for precise temperature controlled filtrations

## Features include

- Precision engineered borosilicate glass vessels feature a jacket design that extends right down to the filter plate for precise temperature control of your entire vessel contents.
- The upper DN100 polished flat lid flange combines with a FEP-encapsulated O-ring and PTFE collar to offer a leak-tight seal between the vessel and lid.
- The straight sided vessel inner allows unhindered filtration and features a wide DN150 bottom flange giving easy access to the filter cake.

## Glass vessel lids

- DN100 5 neck glass lid fits all filter vessel sizes and standard (non-filter) Reactor-Ready reaction vessels.
- DN100 lid with 5 x Rodaviss, grease-free, safety joints. B24 centre, B34, B29, B24 and B19 side joints.
- Rodaviss glass sockets will accept any glassware with traditional A, B or C length conical cones.

## PTFE vessel lids

- DN100 7 neck PTFE lids fits all filter vessel sizes and standard (non-filter) Reactor-Ready reaction vessels.
- More robust and less likely to break than glass.
- Ideal for use with analytical probes.
- Lids accept a range of removable Rodaviss sockets and compression fittings.
- Rodaviss PTFE sockets will accept any glassware with traditional A, B or C length conical cones.



2 litre  
Filter Vessel



1 litre  
Filter Vessel



	1 litre Filter Vessel	2 litre Filter Vessel
Cat No. (Reaction Vessel Only)	RR171100	RR171200
Cat No. (Reaction Vessel Kit)	RR170100	RR170200
Nominal Capacity	1 litre	2 litre
Total Working Volume	1.1 litres	2.2 litres
Internal Diameter	100 mm	100 mm
External Jacket Diameter	155 mm	155 mm
Jacketed Height	145 mm	285 mm
Total Vessel Height	205 mm	345 mm
Thermofluid Jacket Volume	0.94 litres	1.9 litres
Heat Transfer Area	0.05 m <sup>2</sup>	0.1 m <sup>2</sup>
Lid Flange (upper)	DN100	DN100
Base Flange (lower)	DN150	DN150
Sidearm	20 mm ID	20 mm ID

## Filter vessel kits

Filter vessel kits make ordering vessels and accessories simple and more cost effective

These vessel kits include the vessel and accessories you need to get started. The Pt100 probe and turbine stirrer included in each kit are matched to the vessel size. Each vessel kit includes:

- Filter vessel
- PTFE turbine stirrer
- Sidearm couplings
- Pt100 PTFE temperature probe with LEMO Connector
- PTFE temperature probe adapter



# Filter plate assembly

The Reactor-Ready filter plate assembly enables efficient filtrations with easy solid recovery

## Filter Plate Kits include:

The Filter Plate Kit includes everything you need to get started with your filtrations, simply select the materials you require for the filter assembly.

- Filter Plate in PTFE or PEEK
- Filter Plate Gasket in PTFE or PEEK
- Filter Plate O-rings in Silicone and Viton
- Aluminium Filter Plate Cup
- Sintered Glass Membrane Support Disc
- Glass BOV and Piston
- Filter Membrane Evaluation Kit



### Sintered Glass Membrane Support

- Prevents filter media from being damaged during filtrations.

### Filter Membrane

- All kits include a Filter Membrane Evaluation Kit which includes one each of 6 styles of membrane pre-cut to size.
- Users can also cut their own filter membrane material to size.

### Filter Plate and Gasket

- Available in PTFE or PEEK.
- PTFE (-30 to +120 °C) gives excellent chemical compatibility.
- PEEK (-30 to +180 °C) gives wider range of temperature and good chemical compatibility.

### Gasket O-ring

- Kits include both:
- Silicone (-30 to +180 °C)
- Viton (-20 to +180 °C)

### Aluminium Filter Plate Cup

- Holds filter plate rigidity during filtrations to ensure tight sealing of filter plate and vessel flange.

### Glass Bottom Outlet Valve

- Easily removable for cleaning.
- 15 mm bore allows easy run off.
- Zero dead space design minimises material loss below filter media during reactions.
- Threaded outlet allows for connection to a collection vessel and vacuum pump for vacuum assisted filtrations.



- Innovative gasket and O-ring seal design reduces the risk of leaking.

- The wide bottom flange and swivel filter support plate make cake retrieval and reassembly of the system quick and easy.



# Glassware and accessories

Other styles and sizes of glassware are available, please see full listing.

Wide choice of standard glassware to suit your application

Glassware features Rodaviss joints and is compatible with Reactor-Ready lids

Condenser liebig, B29

Condenser double surface, B29

Condenser jacket coil, B29

Dropping funnel equalising arm, B24

Oil bubbler, B24

Solid additions Funnel, B34

Two-piece Cold Trap B34 with GL14 Sidearms + Fittings

Cold Trap High Vacuum 500ml, GL14 Sidearms + Fittings

Valved liquid inlet adapter, B24

Gas purge adapter, B24

Swan neck Adapter, B24

Boss Head

Filter Plate Clamp - DN150

Filter Plate Support

1180 mm Extended Support Rod Kit

Rubber Belt Clamp, 10 mm rod, 60-170 mm

3-Prong Clamp

Boss Head to 16 mm

Retort Stand, 2 Position Base + 12 x 750 mm SS Rod

Glass BOV Body for Filter Vessel (piston not included)

15 mm Piston for Filter Vessel BOV

Vessel Support Collar

Dry Ice 500 ml Cold Trap Kit

Small Cold Trap Kit

Bung 67 mm + Hole 12 mm Ø Tubing, Nat Rubber

Filtrate Collection Vessel 5000 ml

Filtrate Collection Vessel 5000 ml with Bung, Elbow and PTFE tubing

Dry Ice 500 ml Cold Trap Kit with 5000 ml Filtrate Collection Vessel and Tubing

Small Cold Trap Kit with 5000 ml Filtrate Collection Vessel and Tubing

S/S Elbow Fitting for 12 mm OD Tubing

Adapter Rodaviss B19 to GL25

GL25 HT Compression Fitting for 12 mm OD Tubing

# Hei-Torque overhead stirrers

The powerful Hei-Torque range can accomplish the most demanding mixing tasks whilst providing the highest safety

Includes  
3 YEAR  
warranty



## Stirrer models include

- Powerful stirring from 10 to 2000 rpm (Max. recommended speed with Reactor-Ready is 500 rpm).
- Available with basic (Expert) or advanced (Ultimate) features, and a choice of up to 40, 200 or 400 Ncm torque.
- Intuitive control panel for easy operation, safe start and stop to avoid accidental start-up.
- Ultimate range features: set speed limit, adjustable acceleration, set a torque limit.
- Unique Quick-chuck for immediate and convenient 'one-hand' impeller changes, without tools.

	Hei-Torque Core	Hei-Torque Expert 200	Hei-Torque Expert 400	Hei-Torque Ultimate 200	Hei-Torque Ultimate 400
Power rating, motor input/output (W)	105/75	120/80	150/90	120/80	150/90
Number of gears	1	1	2	1	2
Speed range (rpm)	20 to 2000	10 to 2000	10 to 400 and 200 to 2000	10 to 2000	10 to 400 and 200 to 2000
Speed indicator	digital monochrome 2"	digital monochrome 2.4"	digital monochrome 2.4"	digital colour 3.2"	digital colour 3.2"
Speed control	electronic	electronic	electronic	electronic	electronic
Torque, maximum (Ncm)	40	200	400	200	400
Torque indicator (Ncm)	symbol	symbol	symbol	precise value	precise value
Overheat protection	automatic cut-out	automatic cut-out	automatic cut-out	automatic cut-out	automatic cut-out
Viscosity up to (mPa s)	10,000	100,000	250,000	100,000	250,000
Stirring cap. H <sub>2</sub> O max. (L)	25	50	100	50	100
Shaft diameter, max. (mm)	10.5	10.5	10.5	10.5	10.5
Dimensions (W x H x D) (mm)	70 x 281.5 x 195	86 x 350 x 247	93 x 350 x 247	86 x 350 x 247	93 x 350 x 247
Weight (kg)	2.3	5.1	5.3	5.1	5.3
Set speed limit, Torque limit, Adjustable acceleration	-	-	-	Yes	Yes
Analogue/digital interface	-	-	-	USB and RS232	USB and RS232

For Reactor-Ready the maximum speed is 500 rpm for continuous use for 800 rpm for short periods.

# Thermoregulators/circulators

## Which thermoregulator should you choose?

- Radleys are a Huber distribution and service partner, so we recommend the Huber range of thermoregulators, circulators, chillers and waterbaths. However, Reactor-Ready is compatible with all leading brands of thermoregulator including Julabo, Lauda, Polyscience, Haake and many others.
- Also available are a range of hoses, adapters, temperature probes and thermofluid for all applications.



Huber Unistat 405



Huber Petite Fleur

Description	Temperature range °C	Heating power (kW)	Cooling power at 0 °C (kW)	Application Examples	
Huber Ministat 230	-45 °C to 200 °C	2.0	0.38	250 ml	Cool to -10 °C in <1 hr, then heat to 130 °C in <30 mins
				1 litre	Control at 0 °C, then heat to 100 °C in 20 mins
Huber Petite Fleur	-40 °C to 200 °C	1.5	0.45	500 ml	Cool to -20 °C in approx 30 mins, then heat to 150 °C in <30 mins
				1 litre	Heat to 150 °C, then cool to 0 °C at > 2.5 K/min
Huber Unistat Tango	-45 °C to 250 °C	3.0	0.7	1 litre	Cool to -30 °C in <1 hr, then heat to 180 °C in <1 hr
				2 litre	Heat to 180 °C, then cool to 20 °C in approx 1 hr
Huber Unistat 405	-45 °C to 250 °C	3.0	1.0	2 litre	Cool to -20 °C in <30 mins, then heat to 100 °C in <30 mins
				5 litre	Control at 20 °C, then cool to -20 °C in approx 70 mins

The above applications are intended as a guide to the relative performance of each Huber thermoregulator with a range of vessel sizes and are not a prediction of actual performance. To achieve optimum performance the use of vacuum jacketed vessels is recommended for below ambient temperature applications. For comprehensive advice on thermoregulator selection please contact your local Radleys distributor.

## How to order Reactor-Ready Filter Reactor

1. Select the Reactor-Ready Filter Core: RR171000.
2. Select the Filter Plate Clamp.
3. Choose the Filter Vessel Kit you require by selecting the vessel volume.
4. Choose the Filter Plate Kit you require by selecting the filter base material you want, PEEK or PTFE.
5. Select the overhead stirrer you require.
6. If you need a thermoregulator, hoses, hose adapters, thermofluid or accessory glassware, then select from the accessory list opposite.
7. If you need automation, add the AVA Software and Data Hub.

### Reactor-Ready Filter Core

- RR171000 Reactor-Ready Filter Core  
Includes:
- Stand with base, drip tray, extended support rods, bosses and all clamps
  - Vessel to framework insulated hoses with quick-release connections
  - Upper and lower drain-down manifolds
  - PTFE stirrer guide and drop-in coupling
  - RR136000 - 5 Neck Glass Lid
  - RR121090 - FEP Encapsulated Silicone Vessel O-Ring
  - RR121095 - PTFE Support Collar for FEP O-Ring
  - RR121048 - Vessel Support Collar
  - RR171002 - Filter Plate Support

**Important:** The Filter Plate Clamp is not included and must be ordered separately.

### Filter Plate Clamp

- RR171004 Filter Plate Clamp - DN150



**Important:** Hoses to connect the Reactor-Ready framework to your thermoregulator are NOT included. You will require hoses with an M24x1.5 female connection or appropriate adapters. See opposite for hoses, adapters and suitable thermoregulators.

**Important:** The Filter Vessel Kits are not included with the Reactor-Ready Filter Core and must be ordered separately.

### Filter Vessel Kits

- RR170100 1000ml Single Jacketed Filter Vessel Kit - DN150  
Includes:
- RR171100 - 1000ml Single Jacketed Filter Vessel - DN150
  - RR171020 - Turbine PTFE Stirrer Shaft - 1000ml Filter Vessels
  - RR141000 - Temp Probe 9mm + LEMO Plug - 1000ml & 2000ml Vessels
  - RR140015 - PTFE Temperature Probe Adapter - 9mm
- RR170200 2000ml Single Jacketed Filter Vessel Kit - DN1500  
Includes:
- RR171200 - 2000ml Single Jacketed Filter Vessel - DN150
  - RR171022 - Turbine PTFE Stirrer Shaft - 2000ml Filter Vessels
  - RR141000 - Temp Probe 9mm + LEMO Plug - 1000ml & 2000ml Vessels
  - RR140015 - PTFE Temperature Probe Adapter - 9mm



To order kit components individually please refer to below:

### Filter Vessels Only

- RR171100 1000ml Single Jacketed Filter Vessel - DN150  
RR171200 2000ml Single Jacketed Filter Vessel - DN150



### PTFE Impellers (for Filter Vessels)

- RR171020 Turbine PTFE Stirrer Shaft - 1000ml Filter Vessels  
RR171022 Turbine PTFE Stirrer Shaft - 2000ml Filter Vessels



### PTFE Pt100 Temperature Probes and Adapters

- RR141000 PTFE Temp Probe 9mm + LEMO Plug - 1000ml & 2000ml Vessels  
RR140015 PTFE Temperature Probe Adapter - 9mm

### Hei-Torque Overhead Stirrers

- 501-60410-00 Hei-Torque Core  
501-62010-00 Hei-Torque 200 Expert  
501-62020-00 Hei-Torque 200 Ultimate (USB/RS232)  
501-64010-00 Hei-Torque 400 Expert  
501-64020-00 Hei-Torque 400 Ultimate (USB/RS232)



## Upgrade your existing Reactor-Ready

1. Select the Filter Upgrade Kit: RR171010.
2. Select the Filter Plate Clamp.
3. Choose the Filter Vessel Kit you require by selecting the vessel volume.
4. Choose the Filter Plate Kit you require by selecting the filter base material you want, PEEK or PTFE.
5. You should already have an overhead stirrer and circulator etc.

### Reactor-Ready Filter Upgrade Kit

- RR171010 Reactor-Ready Filter Upgrade Kit  
Includes:
- RR170015 - 1180mm Extended Support Rod Kit
  - RR171002 - Filter Plate Support



**Important:** Filter Plate Clamp is not included and must be ordered separately.

### Filter Plate Clamp

- RR171004 Filter Plate Clamp - DN150



**Important:** The Filter Plate Kits are not included with the Reactor-Ready Filter Core and must be ordered separately.

### Filter Plate Kits

- RR170020 Filter Plate Kit PTFE - DN150  
Includes:
- RR171028 - Filter Plate - PTFE (-30 to +120C) DN150
  - RR171036 - Filter Plate Cup - Aluminium DN150
  - RR171040 - Filter Plate Gasket - PTFE (-30 to +120C) DN150
  - RR171048 - Filter Plate O-ring - Silicone (-30 to +180C) DN150
  - RR171050 - Filter Plate O-ring - Viton (-20 to +180C) DN150
  - RR171056 - Sintered Glass 100µm Membrane Support - DN150
  - RR171060 - Glass BOV Body for Filter Vessel 15mm Piston
  - RR171062 - Piston 15mm for Filter Vessel BOV
  - RR170030 - Filter Membrane Evaluation Kit for DN150
- RR170022 Filter Plate Kit PEEK - DN150  
Includes:
- RR171030 - Filter Plate - PEEK (-30 to +180C) DN150
  - RR171036 - Filter Plate Cup - Aluminium DN150
  - RR171042 - Filter Plate Gasket - PEEK (-30 to +180C) DN150
  - RR171048 - Filter Plate O-ring - Silicone (-30 to +180C) DN150
  - RR171050 - Filter Plate O-ring - Viton (-20 to +180C) DN150
  - RR171056 - Sintered Glass 100µm Membrane Support - DN150
  - RR171060 - Glass BOV Body for Filter Vessel 15mm Piston
  - RR171062 - Piston 15mm for Filter Vessel BOV
  - RR170030 - Filter Membrane Evaluation Kit for DN150

To order kit components individually please refer to below:

### Filter Plate Kit Components

- RR171028 Filter Plate - PTFE (-30 to +120C) DN150  
RR171030 Filter Plate - PEEK (-30 to +180C) DN150  
RR171036 Filter Plate Cup - Aluminium DN150  
RR171040 Filter Plate Gasket - PTFE (-30 to +120C) DN150  
RR171042 Filter Plate Gasket - PEEK (-30 to +180C) DN150  
RR171048 Filter Plate O-ring - Silicone (-30 to +180C) DN150  
RR171050 Filter Plate O-ring - Viton (-20 to +180C) DN150  
RR171056 Sintered Glass 100µm Membrane Support - DN150  
RR171060 Glass BOV Body for Filter Vessel 15mm Piston  
RR171062 Piston 15mm for Filter Vessel BOV



### Filter Membranes

- RR170030 Filter Membrane Evaluation Kit for DN150, Pk 6 (includes one each of filter membranes below)  
RR171064 Polyester Filter Membrane 1µm for DN150, Pk 3  
RR171066 Polyester Filter Membrane 5µm for DN150, Pk 3  
RR171068 Polyester Filter Membrane 10µm for DN150, Pk 3  
RR171070 Polyester Filter Membrane 20µm for DN150, Pk 3  
RR171072 Polyester Filter Membrane 40µm for DN150, Pk 3  
RR171074 PEEK Filter Membrane 35µm for DN150, Pk 3



### Reactor-Ready Filter Core Accessories

- RR170015 Reactor-Ready - 1180mm Extended Support Rod Kit  
RR171002 Filter Plate Support



**Important:** The Vessel Support Collar IS INCLUDED with your Reactor-Ready Filter Core, however if you require a spare it can be ordered separately.

### Reaction Vessel Support Collar

- RR121048 Vessel Support Collar



### Filtrate Collection Kits

- RR170042 2000ml Filtrate Collection Kit  
Includes:
- RR171602 - Filtrate Collection Vessel 2000ml
  - RR171606 - Bung 57mm + Hole 12mm Ø Tubing - Nat Rubber
  - RR139354 - PTFE Tubing 10mm ID x 12mm OD - 1m length
  - RR171610 - Elbow Fitting for 12mm OD Tubing - Stainless Steel
  - RR139085 - Adapter Rodaviss B19 to GL25
  - RR139350 - GL25 HT Compression Fitting for 12mm OD Tubing
  - RR171608 - Rubber Tubing 6.5mm ID x 16.5mm OD - 2m long

- RR170044 5000ml Filtrate Collection Kit  
Includes:
- RR171604 - Filtrate Collection Vessel 5000ml
  - RR171607 - Bung 67mm + Hole 12mm Ø Tubing - Nat Rubber
  - RR139354 - PTFE Tubing 10mm ID x 12mm OD - 1m length
  - RR171610 - Elbow Fitting for 12mm OD Tubing - Stainless Steel
  - RR139085 - Adapter Rodaviss B19 to GL25
  - RR139350 - GL25 HT Compression Fitting for 12mm OD Tubing
  - RR171608 - Rubber Tubing 6.5mm ID x 16.5mm OD - 2m long

To order components individually please refer to below:

### Filtrate Kit Components

- RR171602 Filtrate Collection Vessel 2000ml  
RR171604 Filtrate Collection Vessel 5000ml  
RR171606 Bung 57mm + Hole 12mm Ø Tubing - Nat Rubber  
RR171607 Bung 67mm + Hole 12mm Ø Tubing - Nat Rubber  
RR139354 PTFE Tubing 10mm ID x 12mm OD - 1m length  
RR171610 Elbow Fitting for 12mm OD Tubing - Stainless Steel  
RR139085 Adapter Rodaviss B19 to GL25  
RR139350 GL25 HT Compression Fitting for 12mm OD Tubing  
RR171608 Rubber Tubing 6.5mm ID x 16.5mm OD - 2m long



### Cold Trap Kits

- RR170046 Dry Ice 500ml Cold Trap Kit  
Includes:
- RR722414 - Cold Trap High Vacuum 500ml
  - RR31210 - Retort Stand
  - RR71115 - Boss Head
  - RR139364 - Rubber Belt Clamp

- RR170048 Small Cold Trap Kit  
Includes:
- RR724011 - Two-piece Cold Trap B34
  - RR31210 - Retort Stand
  - RR71115 - Boss Head
  - RR139069 - 3-Prong Clamp



To order components individually please refer to below:

### Cold Trap Kit Components

- RR722414 Cold Trap High Vacuum 500ml, GL14 Sidearms + Fittings  
RR724011 Two-piece Cold Trap B34 with GL14 Sidearms + Fittings  
RR31210 Retort Stand, 2 Position Base + 12x750mm SS Rod  
RR71115 Boss Head to 16mm  
RR139364 Rubber Belt Clamp - 10mm rod, 60-170mm  
RR139069 3-Prong Clamp



### Glassware Accessories

- RR139005 Condenser Liebig 250mm B29 + GL14 + fittings  
RR139007 Condenser Double Surface 200mm B29 + GL14 + fittings  
RR139009 Condenser Jacket Coil Rodaviss B29 + GL14 + fittings  
RR139011 Right Angle Adapter B29 + GL14 + PTFE fittings  
RR139013 50ml Graduated Dropping Funnel Equalising Arm B24  
RR139015 100ml Graduated Dropping Funnel Equalising Arm B24  
RR139017 250ml Graduated Dropping Funnel Equalising Arm B24  
RR139019 500ml Graduated Dropping Funnel Equalising Arm B24  
RR139021 1000ml Graduated Dropping Funnel Equalising Arm B24  
RR139023 Swan Neck Adapter Angled B24 to Vertical B24  
RR139025 Gas Purge Adapter B24 + GL14 + fittings  
RR139035 Enlarging Adapter B24 to B29  
RR139037 Enlarging Adapter B29 to B34  
RR139039 Reducing Adapter B24 to B19  
RR139041 Reducing Adapter B29 to B19  
RR139043 Reducing Adapter B29 to B24  
RR139045 Reducing Adapter B34 to B19  
RR139047 Reducing Adapter B34 to B24  
RR139049 Reducing Adapter B34 to B29  
RR139051 Oil Bubbler Type 1 B24 + GL14 + fittings  
RR139053 Solid Additions Funnel B34 (with extended tube)  
RR139057 Valved Liquid Inlet Adapter B24 to GL14  
RR139063 PTFE Hose Adapter B19 for 12mm ID Tubing  
RR139067 Boss Head



### Glass DN100 Vessel Lid

- RR136000 5 Neck Glass Lid  
1 x B19, 2 x B24, 1 x B29, 1 x B34  
Includes Rodaviss sealing caps



### PTFE DN100 Vessel Lids

- RR136100 5 Neck PTFE Lid with 2 Blanked Ports.  
1 x B19, 2 x B24, 1 x B29, 1 x B34  
Includes Rodaviss sealing caps

- RR136110 7 Neck PTFE Lid with 7 Threaded Ports. 2 x ¼" NPT, 5 x ¾" NPT  
PTFE inserts not included - select from below

### PTFE Rodaviss Sockets, Compression Fittings and Blanking Plugs for PTFE Lids

- RR136300 Rodaviss B19 Socket Adapter (¾" NPT)  
RR136301 Rodaviss B24 Socket Adapter (¾" NPT)  
RR136302 Rodaviss B29 Socket Adapter (¾" NPT)  
RR136303 Rodaviss B34 Socket Adapter (¾" NPT)  
RR136304 Rodaviss B45 Socket Adapter (¾" NPT)  
RR136314 3mm Bore Compression Fitting ¼" NPT  
RR136315 6mm Bore Compression Fitting ¼" NPT  
RR136316 8mm Bore Compression Fitting ¼" NPT  
RR136317 12mm Bore Compression Fitting ¼" NPT  
RR136318 14mm Bore Compression Fitting ¼" NPT  
RR136319 16mm Bore Compression Fitting ¼" NPT  
RR136320 19mm Bore Compression Fitting ¼" NPT  
RR136327 PTFE Blanking Plug ¼" NPT  
RR136328 PTFE Blanking Plug ¾" NPT



### General Maintenance Accessories

- RR121150 Reactor-Ready Maintenance Kit (includes items listed below)  
RR121063 Stirrer Guide Bearing Seal B24 10mm  
RR121064 Stirrer Guide Ferrule and Shaft Seal B24 10mm  
RR121071 23mm Viton O-Rings for Quick Release Hose Coupling, Pack 2  
RR121072 28mm Viton O-Rings for Quick Release Hose Coupling, Pack 2  
RR121090 FEP Encapsulated Silicone Vessel O-Ring  
RR166100 Replacement 15mm Piston Top O-Ring  
RR166102 Replacement 15mm Piston Middle O-Ring  
RR121027 Oil Wipe for Support Rods, Pack 10



### Huber Thermoregulators (Circulators)

- HB2016.0005.01 Ministat 240 Pilot ONE Controller  
HB1030.0001.01 Petite Fleur Pilot ONE Controller  
HB1030.0001.01ET Petite Fleur with 4 Litre Expansion Tank  
HB1000.0037.01 Unistat Tango Pilot ONE Controller  
HB1002.0045.01 Unistat 405 Pilot ONE Controller



### Thermoregulator Hoses, Adapters and Thermofluid

#### Insulated Hose with PTFE Inner

- HB9325 M24x1.5 Insulated Hose NW12 100cm -60°C to +260°C  
HB9326 M24x1.5 Insulated Hose NW12 150cm -60°C to +260°C  
HB9327 M24x1.5 Insulated Hose NW12 200cm -60°C to +260°C  
HB9328 M24x1.5 Insulated Hose NW12 300cm -60°C to +260°C

#### Insulated Hose with Metal Inner

- HB9274 M24x1.5 Insulated Hose NW12 100cm -100°C to +350°C  
HB9275 M24x1.5 Insulated Hose NW12 150cm -100°C to +350°C  
HB9276 M24x1.5 Insulated Hose NW12 200cm -100°C to +350°C  
HB9277 M24x1.5 Insulated Hose NW12 300cm -100°C to +350°C

#### Adapters

- HB6724 M24x1.5 Female to M16x1 Male Adapter  
HB6945 M24x1.5 Male to M16x1 Female Adapter  
HB6723 M24x1.5 Female to M30x1.5 Male Adapter  
HB6195 M16x1 90° Adapter  
HB9256 M24x1.5 90° Adapter  
HB6089 M16x1 Nut  
HB12634 M24x1.5 Nut  
HB6086 M16x1 Hose Connector NW8  
HB9471 M24x1.5 Hose Connector NW12  
HB6091 M16x1 Isolating Ball Valve -20°C...+140°C (max. 6 bar at +140°C)  
HB9236 M24x1.5 Isolating Ball Valve -10°C...+180°C (max. 6 bar at +180°C)

#### Thermofluid

- HB6161 SiOil M20.195/235.20, 5 Litre -20°C to +195°C/235°C  
HB6162 SiOil M20.195/235.20, 10 Litre -20°C to +195°C/235°C  
HB6163 SiOil M40.165/220.10, 5 Litre -40°C to +165°C/220°C  
HB6164 SiOil M40.165/220.10, 10 Litre -40°C to +165°C/220°C  
HB6165 SiOil M60.115/200.05, 5 Litre -60°C to +115°C/200°C  
HB6166 SiOil M60.115/200.05, 10 Litre -60°C to +115°C/200°C

# Reactor-Ready Pilot Lab Reactor

Scale-up  
your synthesis

Find out more @  
[www.radleys.com](http://www.radleys.com)

For scaling up your benchtop reactions from 5 litres to 35 litres  
- ideal for process development, scale-up, pilot and kilo labs.

## Features

- Rapid vessel exchange with quick-release vessel clamp and wide bore hose couplings.
- Single jacketed vessels available in 5, 10, 15, 20, 30 and 35 litres.
- Vacuum jacketed vessels available in 5 and 10 litres.
- Vessels have 1.25 to 1 ratio of internal height to diameter to mimic plant scale reactors.
- DN200 vessel flange.
- Accepts all leading brands of overhead stirrer and allows easy, tool-free adjustment.
- Compact stainless steel framework accepts all vessel sizes.
- Self-aligning stirrer coupling engages without the need for tools.
- Jacket temperature range: -70 °C to +230 °C.
- Innovative hose manifolds allow easy thermofluid drain down.



Reactor-Ready Pilot with 20 litre jacketed vessel



### Simple stirrer alignment

- 6 axis adjustment
- Slide and glide
- Set and lock

### Unique vessel clamp

- Self-centering
- Quick-release
- Change vessels in minutes

### Universal stirrer support

- Accepts all leading brands of overhead stirrer

### Patented stirrer coupling

- Drop in
- No tools
- No fuss

### Standard jacketed vessels

- Single jacketed vessels 5, 10, 15, 20, 30 and 35 litres
- Vacuum jacketed vessels 5 and 10 litres
- Zero dead space bottom outlet valve Ratio 1.25:1

### Custom vessels

- To your specific size and style
- In-house manufacturing
- Mimic plant scale geometry

### Compact, mobile framework

- Corrosion-resistant stainless steel, anodised aluminium or powder-coated steel
- Option for wheels or feet

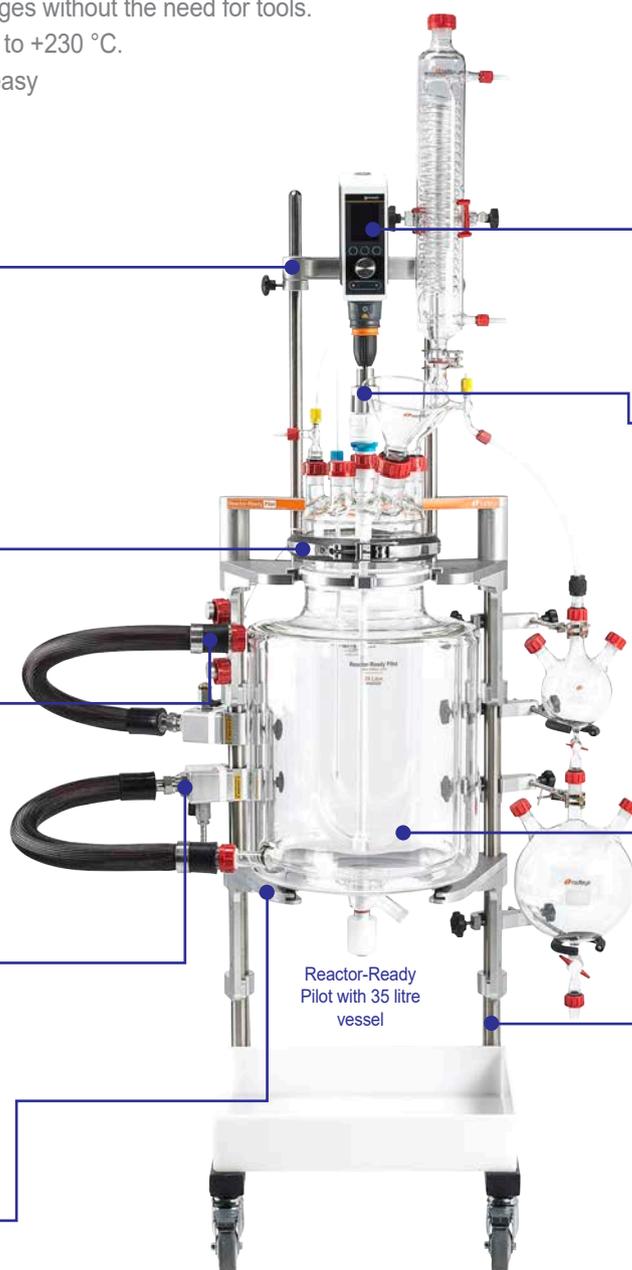
- ### Hose couplings
- Quick-release
  - Connect in seconds
  - Chemical resistant PEEK
  - 20 mm ID for good heat exchange

### Thermofluid manifolds

- Easy connection
- Easy drain down
- Reduces stress on the vessel sidearms

### Lower Support Plate

- Required for 30 and 35 litre vessels
- Easily adjustable without tools



Reactor-Ready Pilot with 35 litre vessel

# AVA Lab Control Software

## Automate your Reactor-Ready Filter Lab Reactor

### AVA Level 4 controls multi-device jacketed reaction systems

- Unattended chemistry for improved productivity
- Automatically log your process data
- Improve safety and reduce manual errors
- Control any reactor



Automate  
your synthesis

Find out more @  
[www.radleys.com](http://www.radleys.com)

### Control multi-device reactions

- Control up to 4 reaction systems with up to 16 devices on one screen
- Create complex experiments with any number of steps in series or in parallel
- Pre-program multi-step recipe, with the flexibility to make and track on-the-fly adjustments
- Interlink devices and set feedback/control loops, end-point conditions and safety limits

### No more manual data logging or manual errors

- Automatically record reaction parameters and log what you do, as you do it
- Repeat experiments accurately for reproducible and consistent results
- Create reports in a few clicks or export data as a CSV file for further analysis
- Share results between users to improve research and collaboration

### Safe unattended chemistry

- Automate cooling during exothermic events
- Link devices such as balances and pumps for controlled, unattended reagent additions
- Define safety overrides and cut-off conditions
- Configure audio and visual alarms

## Download and try the software for FREE

### Learn how AVA software works - try before you buy

- Simulate control of devices
- Set up apparatus and control experimental Schedules
- Share setups and schedules with other AVA users
- Analyse results and create reports for real or simulated data
- Find out more about AVA Level 1-3 on our website

Download  
Free Demo  
[www.radleys.com](http://www.radleys.com)

### AVA Care Support

- Free support for 1st year
- Free priority email and telephone support
- Free set up and application support
- Free software updates during support period, keeping software current

### Data Hub

Using the Data Hub, AVA can control and log multiple 3rd party devices with a RS232 serial interface.



### Level 4



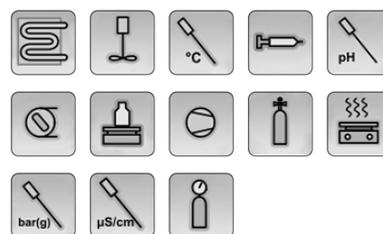
Control and log reaction systems  
with multiple devices



### Control a variety of devices

AVA software includes a library of pre-configured driver files allowing easy integration with a wide range of 3rd party devices.

Radleys also provide a 'New Driver Configuration Service' if required.



# Accelerating chemistry



## International Product Guide

Innovative tools for chemical synthesis, process development, work-up and evaporation.



## Reactor-Ready Lab Reactors

Patented, low cost, reaction work stations for glass vessels from 100 ml to 5 litres.



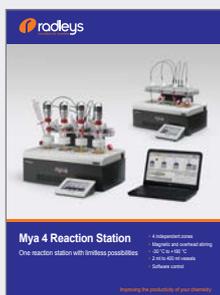
## Reactor-Ready Pilot

Process scale reaction work stations for jacketed glass reaction vessels from 5 to 35 litres.



## AVA Lab Control Software

Control and log multiple devices including stirrers, circulators, balances, pumps and temperature sensors.



## Mya 4 Reaction Station

A 4-zone reaction station offering safe and precise heating, active cooling, software control and data-logging for 24/7 unattended chemistry.



## Carousel 6 Plus

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

Radleys provide innovative chemistry equipment for safer, cleaner, greener and more productive chemical research.

Visit [www.radleys.com](http://www.radleys.com) to see our full range of chemistry productivity tools.



Shire Hill, Saffron Walden,  
Essex, CB11 3AZ, United Kingdom.  
t: +44 1799 513320  
f: +44 1799 513283  
e: [sales@radleys.co.uk](mailto:sales@radleys.co.uk)