

Minterchim



Patented Design

Innovative, patented, low cost, reaction work stations for glass vessels from 100 ml to 5 litres



8



230°C



www.interchim.com

Reactor-Ready Lab Reactor







Replace multiple reaction set-ups with a single universal system that accepts vessels from 100 ml to 5 litres









Individual manifolds

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

Change to Reactor-Ready

It improves your chemistry by saving space, time and money



- slide and glide
- set and lock



- drop in
- no tools
- no fuss



- 250 ml to 5 litres
- · vacuum jacketed option

Process vessels

- mimic plant scale geometry
 - 100 ml to 5 litres
 - · vacuum jacketed option

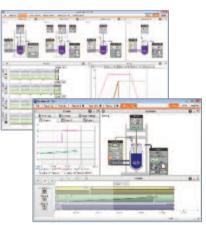
Reactor-Ready Duo accepts two vessels and allows reactions in parallel or series





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











Compatible with all leading brands of circulator or thermoregulator



Reactor-Ready

Swap reaction vessels in minutes, NOT hours

Reactor-Ready is designed as a universal reactor work station that can be used for different vessel sizes and different experiments. Reactor-Ready can easily and

quickly be configured to suit the chemistry and scale you need for each project.

The beauty of Reactor-Ready is that this one reactor work station can replace many, saving you money and fumehood space.

Features include

- Rapid vessel exchange with guick-release vessel clamp and hose couplings.
- Range of single and vacuum jacketed vessels from 100 ml to 5 litres.
- Range of process vessels to mimic larger scale plant or manufacturing reactors.
- · Accepts all leading brands of overhead stirrer and allows easy, tool-free adjustment.
- · Triple support stand features heavy duty stainless steel support rods for strength and stability.
- · Self aligning stirrer coupling engages without the need for tools.
- Temperature range: -70 °C to +230 °C (jacket temperature)
- Innovative hose manifolds allow easy thermofluid drain down.
- · Wide range of accessory glassware including condensers, dropping funnels etc.
- Optional software allows you to log and control stirrers, circulators, balances, pumps, temperature sensors and other devices.

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.













Stainless steel vessel support collar

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.
- The stainless steel collar locks securely into the support plate on the framework and allows the vessel to remain supported, even when not clamped.
- 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 10mm diameter)
- Powerful stirring up to 500 rpm, or 800 rpm for short periods (subject to motor selected).









Choice of PTFE stirring shafts

- Reactor-Ready is offered with a choice of PTFE stirring shafts: anchor, retreat curve and turbine/propeller styles.
- · PTFE anchor stirring shaft is included with all standard reaction vessel kits
- PTFE turbine stirring shaft is included with all process reaction vessel kits.

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.
- Adjustable safety stop collars located below the I-beam allow the user to lower the stirrer motor to a set position for ease of operation and safety.
- Reactor-Ready accepts all leading brands of motor or air-powered overhead stirrer with support rods up to 16 mm in diameter.





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 -70 °C to +230 °C (jacket temperature).
- · Quick-release, screwthread design allows rapid exchange of vessels without the use of tools.
- Simply tighten by hand for a leak-tight seal.
- PEEK with Viton O-rings ensures all wetted parts are chemically resistant.
- 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.
- · Low thermal conductivity of PEEK reduces frosting when cooling.

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:
 - 1. Support the hoses running from the vessel, thereby eliminating stress on the glass sidearms.
 - 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.



PTFE anchor

PTFE retreat curve stirrer

PTFE turbine/ propeller stirrer





PTFE stirrer









Case study: Accelerating process optimisation in a busy chemical development lab

Researchers at a leading US pharmaceutical company invested in Reactor-Ready for use in their chemical development lab. The process R&D group, specialising in small molecule research, are using Reactor-Ready for optimising new or existing chemistry, identifying and eliminating impurities, and screening process variables for transfer to kilo-labs, pilot plant and manufacturing sites.

Commenting on their existing methods the Lead Scientist said, "We use round bottom flasks, but temperature control via mantles or oil baths is poor. Alternatively, when we use traditional jacketed reactor vessels, we need a different set up for every scale change. Even changing a reactor of the same size takes ages."

"So I liked Reactor-Ready the minute I saw how easy it was to change reactors. Reactor-Ready does it all. I get one stand which fits all sizes up to 5 litres. I get overhead stirring on all scales. I get vacuum jacketed vessels, which provide excellent temperature control with minimum heat loss, which is a real advantage at low temperatures, and I get the ability to rapidly change out my reactors."

"The first time I changed vessels, it took about 5 minutes but now I can change in less than 2 minutes. That includes removing and attaching the heating fluid hoses. Occasionally I lose a drop or two of heat transfer fluid but most times I lose none. The thing I like about the system is the control and speed. I get better control of my reactions and I can vary my work or scale immediately".





2. Choose the vessel kit or kits you require by selecting the vessel volume and style.

Select the overhead stirrer you need.



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

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



Reactor-Ready in detail

It is the attention to detail and wealth of innovative features that makes Reactor-Ready so much better



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.



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

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

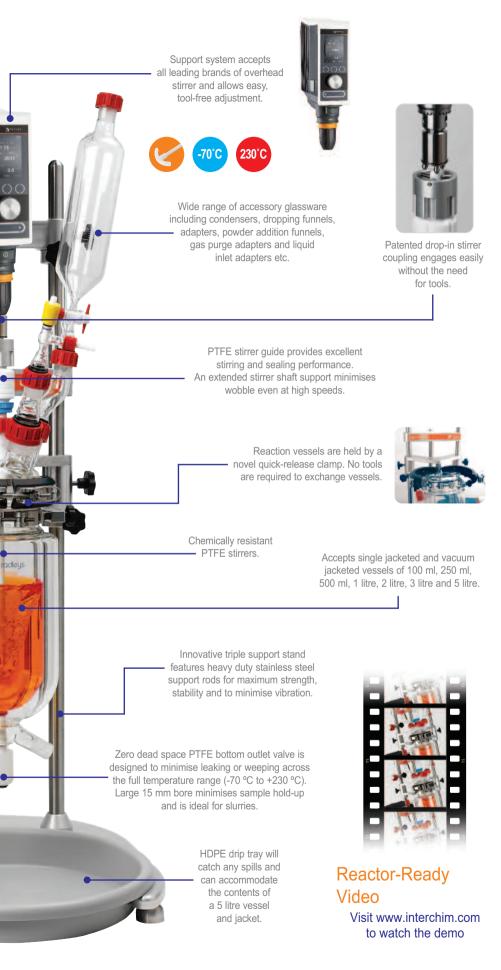
Quick-release PEEK coupling allows rapid exchange of vessels without the use of tools. Operates over the temperature range -70 °C to +230 °C (jacket temperature).





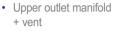
Thermofluid may be drained back to the thermoregulator or decanted via a fluid drain tap on the inlet manifold.

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



Reactor-Ready core system includes

- Stand with base, support rods, bosses and all clamps
- · 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



- · PTFE stirrer guide
- · Stainless steel drop-in stirrer guide coupling



· Locking rod for support rod bosses



Reaction vessel kits make ordering vessels simple and more cost effective

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

- · Reaction vessel with PTFE stopcock
- · Sidearm couplings Pt100 PTFE temperature

probe with LEMO connector PTFE temperature

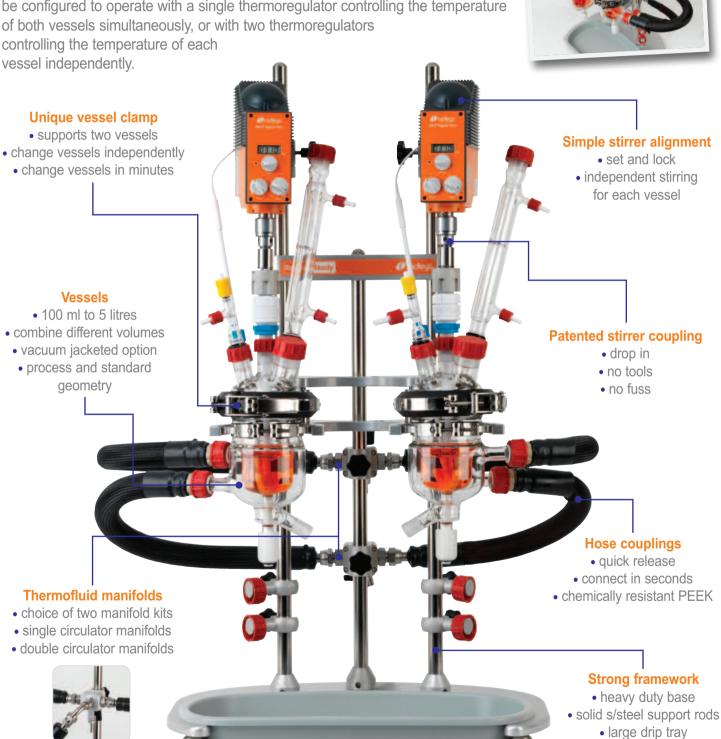
PTFE stirrer



Reactor-Ready Duo

Supports two glass reaction vessels of different or same volume from 100 ml to 5 litres

Reactor-Ready Duo shares the same unique features as Reactor-Ready, except that it supports two separate jacketed glass reaction vessels. The system can be configured to operate with a single thermoregulator controlling the temperature of both vessels simultaneously, or with two thermoregulators controlling the temperature of each vessel independently.



Why Reactor-Ready Duo?

All the benefits of Reactor-Ready with two vessels in parallel or series

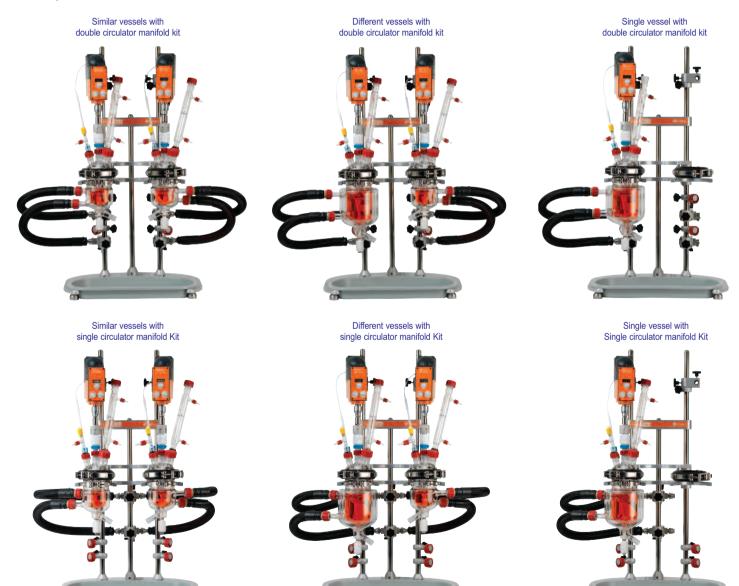
Features include

- · Rapid exchange of both vessels independently, with quick-release vessel clamp and hose couplings.
- · Choice of manifold kits allow two vessels to run from a single thermoregulator or two separate thermoregulators.
- System accepts two overhead stirrers which can be operated and moved independently.

Applications

- Parallel synthesis or reaction optimisation: use the same or different size vessels and vary stirring speed, stirrer shape and temperature between vessels as appropriate.
- Two stage reaction: transfer reactant from one vessel to the other using vacuum or a pump.
- Single reaction vessel: using the second vessel as either a receiving or feed vessel (where reagents can be pre-heated or pre-cooled prior to addition).
- · Use optional AVA Software to control fluid transfer between vessels.





How to order Reactor-Ready Duo...







4. Select the overhead stirrers.



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

6. If you need automation, add the AVA Software and data hub.



Reactor-Ready Duo core system

Easy-to-order Reactor-Ready Duo core system includes all the framework components required for operation

Features include

 Robust heavy-duty framework features solid stainless steel support rods.

 Two separate quick release clamps support each of the vessels independently.

· Large drip tray will retain vessel contents.

· Manifold and hose kits must be ordered separately.

Core system (RR121300) includes

• Stand with base, support rods, bosses and all clamps

• 2 x glass reaction vessel lids

2 x vessel FEP O-ring seals and PTFE centering collars

• 2 x PTFE stirrer guides and couplings

- HDPE drip tray
- 2 x stainless steel stirrer drop-in couplings
- 2 x stainless steel vessel support collars
- locking rod for support rod bosses



Reactor-Ready Duo manifolds and hoses

A choice of manifold kits for use with one or two thermoregulators

Double thermoregulator manifold and hose kit (RR121310)
This double thermoregulator kit is designed to work with two
separate thermoregulators controlling the temperature of each

- R/H upper return manifold with vent valve
- · L/H upper return manifold with vent valve
- R/H lower supply manifold with drain valve
- L/H lower supply manifold with drain valve
- 4 x quick-release insulated hoses, 60 cm4 x sealing caps for hoses





Single circulator manifold and hose kit (RR121305)

This single circulator kit is designed to work with one thermoregulator controlling the temperature of both vessels simultaneously. With this set-up both vessels would operate at the same temperature. The manifolds are supplied with blanking plugs should you wish to run only one vessel.

- · central upper return manifold with vent valve
- · central lower supply manifold with drain valve
- 4 x quick-release insulated hoses, 70 cm
- 4 x sealing caps for hoses
- 2 x stainless steel blanking plugs



Hei-Torque overhead stirrers

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

ncludes



Stirrer models include

- Powerful stirring from 10 to 2000 rpm (Max. recommended speed with Reactor-Ready is 500 rpm).
- · Available with basic (Value) or advanced (Precision) 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.
- New features for Precision range: set speed limit, adjustable acceleration, set a torque limit.
- New unique Quick-chuck for immediate and convenient 'one-hand' impellor changes, without tools,

	Hei-Torque Core	Hei-Torque Value 200	Hei-Torque Value 400	Hei-Torque Precision 200	Hei-Torque Precision 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 ₂ 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 and Reactor-Ready Duo 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.

Description	Temperature range °C	Heating power (kW)	Cooling power at 0 °C (kW)	Application Examples		
Huber	-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	
Ministat 230	-45 C to 200 C			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	
	-40 C to 200 C			1 Litre	Heat to 150 °C, then cool to 0 °C at > 2.5 K/min	
Huber	-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	
Unistat Tango	-45 C t0 250 C			2 Litre	Heat to 180 °C, then cool to 20 °C in approx 1 hr	
Huber	45 10 4 050 10	3.0	1.0	2 Litre	Cool to -20 °C in <30 mins, then heat to 100 °C in <30 mins	
Unistat 405	-45 °C to 250 °C			5 Litre	Control at 20 °C, then cool to -20 °C in approx 70 mins	
Huber Unistat 705	-75 °C to 250 °C	3.0	0.65	1 Litre	Control at 20 °C, then cool to -50 °C in 40 mins	
	-75 C t0 250 C			5 Litre	Cool to -40 °C at approx 1 K/min, then heat to 150 °C in <1 hr	

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.



Huber Unistat 405



Huber Petite Fleur - Baby Tango

Reaction vessels

Single jacketed, vacuum jacketed and process styles

Features include

- · Precision engineered borosilicate glass vessels can be used with Reactor-Ready and Reactor-Ready Duo.
- · DN100 ground and polished flat flange combines with the FEP-encapsulated O-ring and our unique self centering PTFE collar to offer a leak-tight seal between the vessel and lid.
- · Convenient and cost-effective vessel kits include stirrer, temperature probe and adapter.

Vessels feature zero dead space PTFE bottom outlet valve

- Exclusive stopcock design prevents over-tightening that can cause glass breakage.
- · Piston design allows quick and safe removal, eliminating the cleaning and assembly problems associated with other stopcock styles.
- Glass-filled PTFE piston minimises leaking or weeping across the full temperature range (-70 °C to +230 °C)
- Interchangeable between vessels with a full range of replacement parts and FEP O-rings.
- The large 15 mm bore minimises sample hold-up and is ideal for slurries (25 mm available on request).

Glass vessel lids

- DN100 5 neck glass lid fits all vessel sizes.
- 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 fit all vessel sizes.
- · 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.

Standard Vessels

250 ml single iacketed vessel



1000 ml single

iacketed vessel

250 ml vacuum Jacketed vessel



1000 ml vacuum iacketed vessel



500 ml single iacketed vessel



2000 ml single iacketed vessel



500 ml vacuum

iacketed vessel



2000 ml vacuum iacketed vessel



5000 ml single iacketed vessel



5000 ml vacuum iacketed vessel



Process Vessels - mimic the geometry of plant scale reactors

Feature a 1.25 to 1 ratio of internal height to internal diameter, with dish-shaped bottom.

100 ml single jacketed process vessel



1000 ml single jacketed process vessel



Note: 3 litre vessels not shown

100 ml vacuum jacketed process vessel



1000 ml vacuum jacketed process vessel



250 ml single jacketed process vessel



2000 ml single jacketed process vessel



250 ml vacuum jacketed process vessel



2000 ml vacuum jacketed process vessel



500 ml single jacketed process vessel



5000 ml single jacketed process vessel



500 ml vacuum jacketed process vessel



5000 ml vacuum jacketed process vessel



Reaction vessel kits

Reaction vessel kits make ordering vessels and accessories simple and much more cost effective



probe port B14





How to order Reactor-Ready

- 1. Select the Reactor-Ready core: RR121000.
- 2. Choose the vessel kit or kits you require by selecting the vessel volume and style.
- Select the overhead stirrer you require.
- If you need a thermoregulator, hoses, hose adapters, thermofluid or accessory glassware, then select from the accessory list opposite.
- 5. If you need automation, add the AVA Software and Data Hub.

Reactor-Ready core system

RR121000

Reactor-Ready core system includes:

- Stand with base, drip tray, 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
- · Glass reaction vessel lid with Rodaviss sealing caps
- Vessel FEP O-ring seal and PTFE centering collar
- · 2 x Stainless steel vessel support collars

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.

Standard Reaction Vessel Kits

Kits include: standard vessel, PTFE anchor stirrer paddle, PTFE Pt100 temp probe (with LEMO plug for connection to the thermoregulator) and PTFE temp probe adapter.

RR120010	250ml Single Jacketed Vessel Kit
RR120015	250ml Vacuum Jacketed Vessel Kit
RR120020	500ml Single Jacketed Vessel Kit
RR120025	500ml Vacuum Jacketed Vessel Kit
RR120030	1000ml Single Jacketed Vessel Kit
RR120035	1000ml Vacuum Jacketed Vessel Kit
RR120040	2000ml Single Jacketed Vessel Kit
RR120045	2000ml Vacuum Jacketed Vessel Kit
RR120042	3000ml Single Jacketed Vessel Kit
RR120047	3000ml Vacuum Jacketed Vessel Kit
RR120050	5000ml Single Jacketed Vessel Kit
RR120055	5000ml Vacuum Jacketed Vessel Kit



Kit includes Anchor Stirrer

Process Reaction Vessel Kits

Kits include: process vessel, PTFE turbine stirrer paddle, PTFE Pt100 temp probe (with LEMO plug for connection to the thermoregulator) and PTFE temp probe adapter.

RR120105 RR120107 RR120110 RR120115 RR120120 RR120125 RR120130 RR120135 RR120140 RR120145 RR120147 RR120147 RR120150	100ml Single Jacketed Process Vessel Kit 100ml Vacuum Jacketed Process Vessel Kit 250ml Single Jacketed Process Vessel Kit 250ml Vacuum Jacketed Process Vessel Kit 500ml Single Jacketed Process Vessel Kit 500ml Vacuum Jacketed Process Vessel Kit 1000ml Single Jacketed Process Vessel Kit 1000ml Vacuum Jacketed Process Vessel Kit 2000ml Single Jacketed Process Vessel Kit 2000ml Vacuum Jacketed Process Vessel Kit 3000ml Single Jacketed Process Vessel Kit 3000ml Vacuum Jacketed Process Vessel Kit 5000ml Single Jacketed Process Vessel Kit
RR120150	5000ml Single Jacketed Process Vessel Kit
RR120155	5000ml Vacuum Jacketed Process Vessel Kit



Kit includes **Turbine Stirrer**

How to order Reactor-Ready Duo

- 1. Select the Reactor-Ready Duo core: RR121300.
- 2. Choose manifold and hose kit for one or two circulators.
- Choose the vessel kit or kits you require by selecting the vessel volume and style.
- Select the overhead stirrers you require.
- If you need a thermoregulator, hoses, hose adapters, thermofluid or accessory glassware, then select from the accessory list opposite.
- 6. If you need automation, add the AVA Control Software and Data Hub.

Reactor-Ready Duo core system

Reactor-Ready Duo core system includes:

- Duo stand with base, drip tray, support rods, bosses and all clamps
- 2 x PTFE stirrer guides and drop-in couplings
- 2 x Glass reaction vessel lids with Rodaviss sealing caps
- 2 x Vessel FEP O-ring seal and PTFE centering collars
- 2 x Stainless steel vessel support collars

Important: Hoses to connect the Reactor-Ready Duo 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.

Double Circulator Manifold and Hose Kit

RR121310

Double Circulator Manifold and Hose Kit includes:

- R/H Upper Return Manifold with Vent Valve
- L/H Upper Return Manifold with Vent Valve
- R/H Lower Supply Manifold with Drain Valve
- L/H Lower Supply Manifold with Drain Valve
- 4 x Quick-Release Insulated Hoses, 60cm
- 4 x Sealing Caps for Hoses

Single Circulator Manifold and Hose Kit

Single Circulator Manifold and Hose Kit includes:

- Central Upper Return Manifold with Vent Valve
- Central Lower Supply Manifold with Drain Valve
- 4 x Quick-Release Insulated Hoses, 70cm
- 4 x Sealing Caps for Hoses
- · 4 x Stainless Steel Blanking Plugs

Hei-Torque Overhead Stirrers

501-60410-00 Hei-Torque Core 501-62010-00

Hei-Torque 200 Value 501-62020-00 Hei-Torque 200 Precision (USB/RS232)

501-64010-00 Hei Torque 400 Value

501-64020-00 Hei-Torque 400 Precision (USB/RS232)

General Maintenance Accessories

RR121150	Reactor-Ready Maintenance Kit (includes items listed below)
RR121027	Oil Wipe for Support Rods, Pack 10
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

Reactor-Ready Duo reaction vessel compatibility guide

The following combinations of reaction vessel sizes can be used in the Reactor-Ready Duo.

	100ml	250 ml	500 ml	1000 ml	2000 ml	3000 ml	5000 ml	
Standard Vessel, Single Jacketed								
250 ml	250 ml n/a • • • • • •							
500 ml	n/a	•	•	•	•	•	•	
1000 ml	n/a	•	•	•	•	•	•	
2000 ml	n/a	•	•	•	•	•	•	
5000 ml	n/a	•	•	•	•	•	•	
		Proce	ess Vessel,	Single Jac	keted			
100 ml								
250 ml	•	•	•	•	•	•	•	
500 ml	•	•	•	•	•	•	•	
1000 ml	•	•	•	•	•	•	•	
2000 ml	•	•	•	•	•	•	•	
3000 ml	•	•	•	•	•	•	•	
5000 ml	•	•	•	•	•	n/a	n/a	

	100ml	250 ml	500 ml	1000 ml	2000 ml	3000 ml	5000 ml	
Standard Vessel, Vacuum Jacketed 250 ml n/a • • • • •								
								500 ml
1000 ml	n/a	•	•	•	•	•	•	
2000 ml	n/a	•	•	•	•	•	•	
5000 ml	n/a	•	•	•	•	n/a	n/a	
Process Vessel, Vacuum Jacketed								
100 ml								
250 ml	•	•	•	•	•	•	•	
500 ml	•	•	•	•	•	•	•	
1000 ml	•	•	•	•	•	n/a	n/a	
2000 ml	•	•	•	•	•	n/a	n/a	
3000 ml	•	•	•	•	•	•	•	
5000 ml	•	•	•	n/a	n/a	n/a	n/a	

```
Glass DN100 Vessel Lid
Huber Thermoregulators (Circulators)
                                                                                                                                             5 Neck Glass Lid - 1 x B19, 2 x B24, 1 x B29, 1 x B34
                           Ministat 240 Pilot ONE Controller
HB2016 0005 01
                                                                                                                          RR136000
                                                                                                                                              Includes Rodaviss sealing caps
                           Petite Fleur Pilot ONE Controller
HR1030 0001 01
                           Petite Fleur with 4 Litre Expansion Tank
HB1030 0001 01FT
                                                                                                                          PTFE DN100 Vessel Lids
                           Unistat Tango Pilot ONE Controller
HB1000 0037 01
                                                                                                                                             5 Neck PTFE Lid with 2 Blanked Ports. 1 x B19, 2 x B24, 1 x B29, 1 x B34 Includes Rodaviss sealing caps
                           Unistat 405 Pilot ONE Controller
HB1002.0045.01
                           Unistat 705 Pilot ONE Controller (230V or 400V)
HB1001.0041.01
                                                                                                                         RR136110
                                                                                                                                             7 Neck PTFE Lid with 7 Threaded Ports. 2 x \frac{1}{4}" NPT, 5 x \frac{3}{4}" NPT PTFE inserts not included - select from below
Thermoregulator Hoses, Adapters and Thermofluid
                    M24x1.5 Insulated Hose NW12 100cm -60°C to +260°C
HR9325
                                                                                                                          PTFE Rodaviss Sockets, Compression Fittings and Blanking Plugs for PTFE Lids
                    M24x1.5 Insulated Hose NW12 150cm -60°C to +260°C M24x1.5 Insulated Hose NW12 200cm -60°C to +260°C
HR9326
                                                                                                                                             Rodaviss B19 Socket Adapter
Rodaviss B24 Socket Adapter
HR9327
                                                                                                                          RR136301
                                                                                                                                                                                       ND.
                                                                                                                          RR136302
                                                                                                                                              Rodaviss B29 Socket Adapter
HB9328
                    M24x1.5 Insulated Hose NW12 300cm -60°C to +260°C
                                                                                                                          RR136303
                                                                                                                                             Rodaviss B34 Socket Adapter (3/4" NPT Rodaviss B45 Socket Adapter (3/4" NPT
Insulated Hose with Metal Inner
                                                                                                                          RR136304
HR9274
                    M24x1.5 Insulated Hose NW12 100cm -100°C to +350°C
                                                                                                                          RR136314
                                                                                                                                              3mm Bore Compression Fitting 1/4"
HB9275
                    M24x1.5 Insulated Hose NW12 150cm -100°C to +350°C
                                                                                                                                             6mm Bore Compression Fitting ½" NPT 8mm Bore Compression Fitting ½" NPT
                                                                                                                          RR136315
HB9276
                    M24x1.5 Insulated Hose NW12 200cm -100°C to +350°C
                                                                                                                          RR136316
                    M24x1.5 Insulated Hose NW12 300cm -100°C to +350°C
HB9277
                                                                                                                          RR136317
                                                                                                                                              12mm Bore Compression Fitting
                                                                                                                                              14mm Bore Compression Fitting 3/4" NP7
                                                                                                                          RR136318
HB6724
                    M24x1.5 Female to M16x1 Male Adapter
                                                                                                                          RR136319
                                                                                                                                              16mm Bore Compression Fitting 3/4"
                                                                                                                          RR136320
RR136327
                                                                                                                                             19mm Bore Compression Fitting 3/4" NPT PTFE Blanking Plug 1/4" NPT
HB6945
                    M24x1.5 Male to M16x1 Female Adapter
HB6723
                    M24x1.5 Female to M30x1.5 Male Adapter
                                                                                                                          RR136328
                                                                                                                                             PTFE Blanking Plug 3/4" NPT
                    M16x1 90° Adapter
HR6195
                    M24x1.5 90° Adapter
HB9256
                                                                                                                          Standard Reaction Vessels Only
HB6089
                    M16x1 Nut
                                                                                                                          RR130250
RR130255
                                                                                                                                             250ml Single Jacketed Vessel
250ml Vacuum Jacketed Vessel
HB12634
                    M24x1.5 Nut
HB6086
                    M16x1 Hose Connector NW8
                                                                                                                                              500ml Single Jacketed Vessel
HB9471
                    M24x1.5 Hose Connector NW12
                                                                                                                                             500ml Vacuum Jacketed Vessel
1000ml Single Jacketed Vessel
                                                                                                                          RR130550
HB6091
                    M16x1 Isolating Ball Valve -20°C...+140°C (max. 6 bar at +140°C)
                                                                                                                          RR131000
                    M24x1.5 Isolating Ball Valve -10°C...+180°C (max. 6 bar at +180°C)
                                                                                                                          RR131050
RR132000
                                                                                                                                             1000ml Vacuum Jacketed Vessel
2000ml Single Jacketed Vessel
HB9236
 Thermofluio
                                                                                                                                              2000ml Vacuum Jacketed Vessel
HB6161
                    SilOil M20.195/235.20. 5 Litre
                                                              -20°C to +195°C/235°C
                                                                                                                                             3000ml Single Jacketed Vessel
3000ml Vacuum Jacketed Vessel
                                                                                                                          RR133000
                    SilOil M20.195/235.20, 10 Litre
                                                             -20°C to +195°C/235°C
HB6162
                                                                                                                          RR133050
                                                              -40°C to +165°C/220°C
HR6163
                    SilOil M40 165/220 10 5 Litre
                                                                                                                          RR135000
                                                                                                                                              5000ml Single Jacketed Vessel
                                                             -40°C to +165°C/220°C
HB6164
                    SilOil M40 165/220 10 10 Litre
                                                                                                                          RR135050
                                                                                                                                              5000ml Vacuum Jacketed Vessel
HB6165
                    SilOil M60.115/200.05. 5 Litre
                                                             -60°C to +115°C/200°C
HB6166
                    SilOil M60.115/200.05, 10 Litre
                                                             -60°C to +115°C/200°C
                                                                                                                          PTFE Stirrer Shafts (for Standard Vessels)
HB6479
                    DW-Therm M90.200.02, 10 Litre -90°C to +200°C (Unistats only)
                                                                                                                                              Anchor PTFE Stirrer Shaft - 250ml vessels
Retreat Curve PTFE Stirrer Shaft - 250ml vessels
                                                                                                                          RR150255
                                                                                                                                             Turbine PTFE Stirrer Shaft - 250ml vessels
Anchor PTFE Stirrer Shaft - 500ml vessels
Anchor PTFE Stirrer Shaft - 500ml vessels
Retreat Curve PTFE Stirrer Shaft - 500ml vessels
Turbine PTFE Stirrer Shaft - 500ml vessels
Glassware Accessories
                                                                                                                          RR150260
RR150500
RR139005
                    Condenser Liebig 250mm B29 + GL14 + fittings
RR139007
                    Condenser Double Surface 200mm B29 + GL14 + fittings
                                                                                                                          RR150505
                                                                                                                          RR150510
RR139009
                    Condenser Jacket Coil Rodaviss B29 + GL14 + fittings
                                                                                                                                             Anchor PTFE Stirrer Shaft - 1000ml vessels
Retreat Curve PTFE Stirrer Shaft - 1000ml vessels
Turbine PTFE Stirrer Shaft - 1000ml vessels
                                                                                                                          RR151000
RR139011
                    Right Angle Adapter B29 + GL14 + PTFE fittings
                                                                                                                          RR151005
RR139013
                    50ml Graduated Dropping Funnel Equalising Arm B24
                                                                                                                          RR151010
RR139015
                    100ml Graduated Dropping Funnel Equalising Arm B24
                                                                                                                                             Anchor PTFE Stirrer Shaft - 2000ml vessels
Retreat Curve PTFE Stirrer Shaft - 2000ml vessels
Turbine PTFE Stirrer Shaft - 2000ml vessels
                                                                                                                          RR152000
RR139017
                    250ml Graduated Dropping Funnel Equalising Arm B24
                                                                                                                          RR152005
                    500ml Graduated Dropping Funnel Equalising Arm B24
RR139019
                                                                                                                          RR152010
RR139021
                    1000ml Graduated Dropping Funnel Equalising Arm B24
                                                                                                                                             Anchor PTFE Stirrer Shaft - 3000ml vessels
Retreat Curve PTFE Stirrer Shaft - 3000ml vessels
Turbine PTFE Stirrer Shaft - 3000ml vessels
Anchor PTFE Stirrer Shaft - 5000ml vessels
                                                                                                                          RR153000
RR153005
                    Swan Neck Adapter Angled B24 to Vertical B24
RR139023
                    Gas Purge Adapter B24 + GL14 + fittings
                                                                                                                          RR153010
RR139025
                                                                                                                          RR155000
RR139027
                    Glass Cone Stopper B19
                                                                                                                                              Retreat Curve PTFE Stirrer Shaft - 5000ml vessels
RR139029
                    Glass Cone Stopper B24
                                                                                                                          RR155010
                                                                                                                                              Turbine PTFE Stirrer Shaft - 5000ml vessels
RR139031
                    Glass Cone Stopper B29
RR139033
                    Glass Cone Stopper B34
                                                                                                                          Process Reaction Vessels Only
                                                                                                                                              100ml Single Jacketed Process Vessel
100ml Vacuum Jacketed Process Vessel
RR139035
                    Enlarging Adapter B24 to B29
                                                                                                                          RR130102
RR130152
                    Enlarging Adapter B29 to B34
RR139037
RR139039
                    Reducing Adapter B24 to B19
                                                                                                                          RR130252
RR130257
                                                                                                                                             250ml Single Jacketed Process Vessel 250ml Vacuum Jacketed Process Vessel
                    Reducing Adapter B29 to B19
Reducing Adapter B29 to B24
RR139041
                                                                                                                                             500ml Single Jacketed Process Vessel
500ml Vacuum Jacketed Process Vessel
1000ml Single Jacketed Process Vessel
RR139043
                                                                                                                          RR130502
                                                                                                                          RR130552
RR139045
                    Reducing Adapter B34 to B19
RR139047
                    Reducing Adapter B34 to B24
                                                                                                                          RR131052
RR132002
                                                                                                                                             1000ml Vacuum Jacketed Process Vessel 2000ml Single Jacketed Process Vessel
RR139049
                    Reducing Adapter B34 to B29
RR139051
                    Oil Bubbler Type 1 B24 + GL14 + fittings
                                                                                                                          RR132052
                                                                                                                                              2000ml Vacuum Jacketed Process Vessel
RR139053
                    Solid Additions Funnel B34 (with extended tube)
                                                                                                                                             3000ml Single Jacketed Process Vessel 3000ml Vacuum Jacketed Process Vessel
                                                                                                                          RR133002
RR139057
                    Valved Liquid Inlet Adapter B24 to GL14
                                                                                                                          RR133052
RR139063
                    PTFE Hose Adapter B19 for 12mm ID Tubing
                                                                                                                          RR135002
                                                                                                                                              5000ml Single Jacketed Process Vessel
                                                                                                                          RR135052
                                                                                                                                              5000ml Vacuum Jacketed Process Vessel
RR139067
                    Boss Head
                   3-Prong Clamp
PTFE Flexible Bellows B24
RR139069
                                                                                                                         PTFE Stirrer Shafts (for Process Vessels)
RR150102 Anchor PTFE Stirrer Shaft - 100ml Process Vessels
RR150112 Retreat Curve PTFE Stirrer Shaft - 100ml Process Vessels
Turbine PTFE Stirrer Shaft - 100ml Process Vessels
Turbine PTFE Stirrer Shaft - 100ml Process Vessels
STEE Starter Shaft - 100ml Process Vessels
STEE Starter Shaft - 100ml Process Vessels
RR139079
                    PTFE Flexible Bellows B29
RR139081
RR139083
                    PTFE Flexible Bellows B34
RR139150
                    Reflux Divider Head B29 + GL18 + PTFE Fitting
                                                                                                                                             Anchor PTFE Stirrer Shaft - 250ml Process Vessels
Retreat Curve PTFE Stirrer Shaft - 250ml Process Vessels
Turbine PTFE Stirrer Shaft - 250ml Process Vessels
RR139152
                    Reflux Divider Head B29 + GL18 + Temp Probe Port B14
                                                                                                                          RR150257
RR139190
                    Reflux Divider Kit
                                                                                                                          RR150262
                                                                                                                                             Anchor PTFE Stirrer Shaft - 500ml Process Vessels
Retreat Curve PTFE Stirrer Shaft - 500ml Process Vessels
Turbine PTFE Stirrer Shaft - 500ml Process Vessels
Anchor PTFE Stirrer Shaft - 100ml Process Vessels
Retreat Curve PTFE Stirrer Shaft - 100ml Process Vessels
RR139192
                    Reflux Divider Kit with Vapour Temp Kit
                                                                                                                          RR150502
RR150507
RR139154
                    250ml Receiver Flask 2 x B24 Socket, + B24 Cone and Tap
                                                                                                                          RR150512
RR139324
                    500ml Receiver Flask 3 x B24 Socket, + B24 Cone and Tap
                                                                                                                          RR151002
RR139326
                    1000ml Receiver Flask 3 x B24 Socket, + B24 Cone and Tap
                                                                                                                          RR151007
                                                                                                                          RR151012
RR152002
                                                                                                                                              Turbine PTFE Stirrer Shaft - 1000ml Process Vessels
Anchor PTFE Stirrer Shaft - 2000ml Process Vessels
PTFE Pt100 Temperature Probes and Adapters
                    Probe 8mm with LEMO Plug - 100ml, 250ml + 500ml Vessels
Probe 9mm with LEMO Plug - 1000ml, 2000ml + 3000ml Vessels
RR140250
                                                                                                                          RR152007
                                                                                                                                              Retreat Curve PTFE Stirrer Shaft - 2000ml Process Vessels
RR141000
                                                                                                                          RR152012
RR153002
                                                                                                                                              Turbine PTFE Stirrer Shaft - 2000ml Process Vessels
Anchor PTFE Stirrer Shaft - 3000ml Process Vessels
RR145000
                    Probe 9mm with LEMO Plug - 5000ml Vessel
RR140010
                    PTFE Temperature Probe Adapter - 8mm
                                                                                                                          RR153007
                                                                                                                                              Retreat Curve PTFE Stirrer Shaft - 3000ml Process Vessels
RR140015
                    PTFE Temperature Probe Adapter - 9mm
                                                                                                                                             Turbine PTFE Stirrer Shaft - 3000ml Process Vessels
Anchor PTFE Stirrer Shaft - 5000ml Process Vessels
Retreat Curve PTFE Stirrer Shaft - 5000ml Process Vessels
Turbine PTFE Stirrer Shaft - 5000ml Process Vessels
                                                                                                                          RR155002
Reaction Vessel Support Collar
                                                                                                                          RR155007
                    Vessel Support Collar
                                                                                                                          RR155012
```

AVA Lab Control Software - take control of your chemistry

Control multi-device jacketed reaction system

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

Data Hub

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



Data Hub Specifications

- 4 x RS232 ports
- 2 x Pt100 temperature sensor ports with LEMO connection
- 1 x Ethernet port
- 2 x Ethernet cables

AVA Software Kit includes:

- AVA Software
- Laptop controller
- 4 Port data hub
- 1 year AVA Care Support

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

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 AVA Demo







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.

























World leaders in innovative productivity tools for chemists

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

We have been manufacturing scientific glassware and laboratory instruments for over 50 years and our customers include leading blue-chip industrial and academic research facilities around the world. Our areas of expertise are focused on equipment for chemical synthesis, process development, work-up and evaporation.

Visit www.interchim.com to see our full range of chemistry productivity tools.



211 bis av JF Kennedy - BP1140 03103 Montluçon cedex - France t: +33 4 70 03 88 55 Hot-Line: +33 4 70 03 73 01 f: +33 4 70 03 82 60

e: interfine@Interchim.fr e: germany@interchim.fr