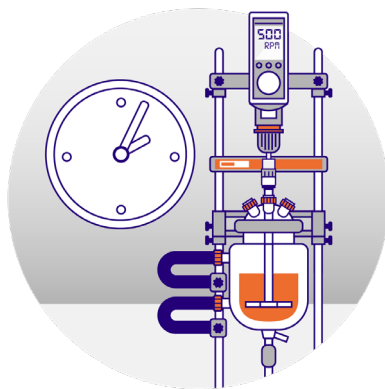


# Reactor-Ready Flex

## Jacketed Lab Reactor



# Why choose Reactor-Ready Jacketed Lab Reactors?



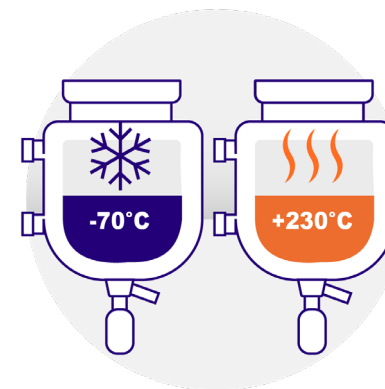
## Compact and flexible for busy labs

Save time, space and money with a single workstation. Swap vessels between projects in minutes and without tools.



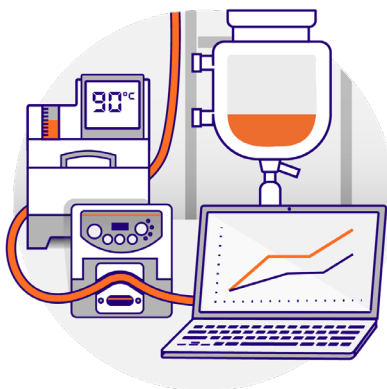
## Scale without compromise

Run reactions from 100 ml to 5 litre in one versatile system, with no need for multiple setups.



## Precise temperature control

Accurate and consistent temperature control thanks to optimised vessel geometry and jacket design.



## Control multi-device reactions

Effortlessly integrates with AVA software for safe and precise automated reaction control and data logging.



## Proven success worldwide

Over 2000 systems installed around the world. Trusted by top pharmaceutical companies.



## Expert support at every step

Our experienced team offers practical advice to help accelerate your chemistry.

# Reactor-Ready Flex

## At a glance



### Glass and PTFE lids

- Vacuum-tight sealing with FEP-encapsulated O-ring
- DN100 flange across all vessels sizes



### PTFE vessel clamp

- Rapid vessel exchange
- Quick release and tool-free
  - Self centering
- No metal-on-glass contact



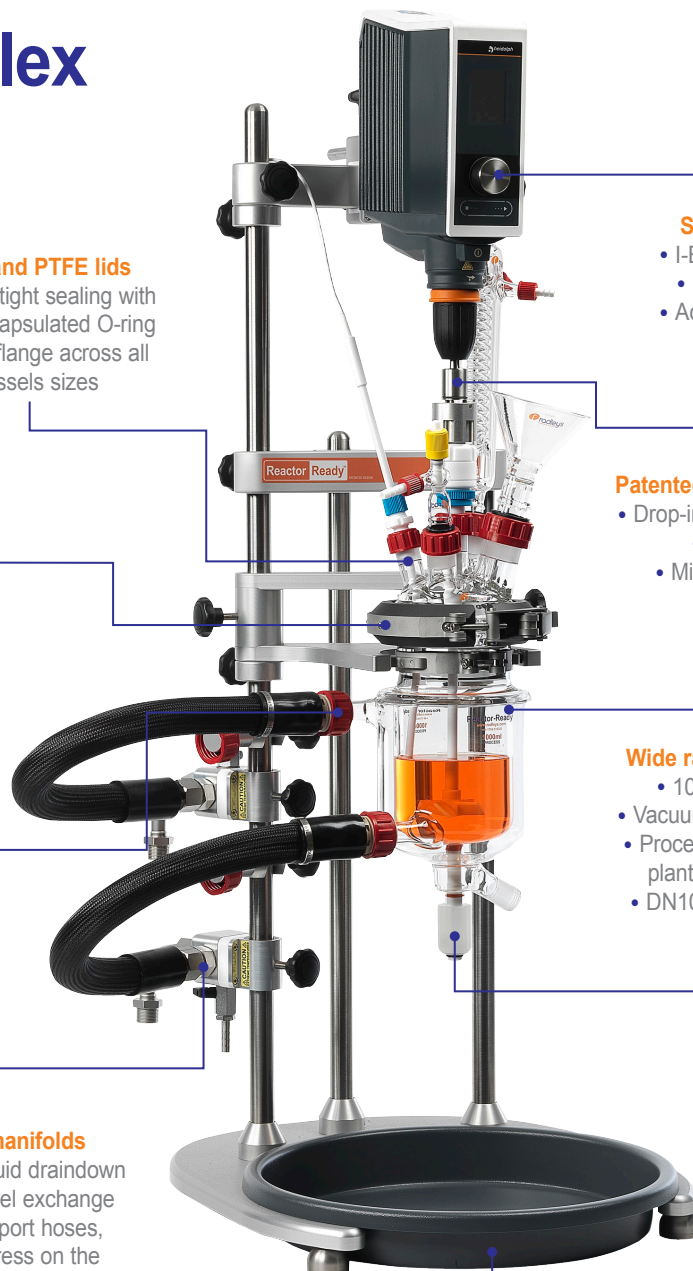
### PEEK hose couplings

- Quick release - connect in seconds without tools
- Chemically resistant PEEK
- Lightweight and metal-free
- Jacket temperature range -70 °C to +230 °C



### Draindown manifolds

- Rapid thermal fluid draindown
- Mess-free vessel exchange
- Manifolds support hoses, eliminating stress on the vessel sidearms



### Simple stirrer alignment

- I-Beam 3-axis stirrer support
- Easy, tool-free alignment
- Accepts all overhead stirrers



### Patented stirrer coupling

- Drop-in and self-aligning
- Tool-free
- Minimises PTFE shedding



### Wide range of accessories

- Including condensers, stirrer shafts, baffles, funnels, adapters etc.

### Wide range of vessels

- 100 ml to 5 litre
- Vacuum jacketed option
- Process shape mimics plant scale geometry
- DN100 flange across the range



### Zero dead space drain valve

- 15 mm bore - ideal for draining slurries
- Glass filled PTFE with replaceable FEP O-rings
- Design prevents over-tightening that can cause breakage
- 25 mm version available



### U-shaped base plate

- Compact and sturdy
- 6 litre polypropylene drip tray

# Why choose Reactor-Ready Jacketed Lab Reactors?



## Reactor-Ready helped CatSci streamline crystallisation scale-up

“The changing over of vessels is probably my favourite thing about Reactor-Ready. It’s a very easy, one-person job. We use Reactor-Ready to scale-up crystallisation. Because the vessels are all standardised, it makes modelling in our process development software really easy.”

**Dr Elise Rochette, Senior Scientist, CatSci**



## The Reactor-Ready range allows Sai Life Sciences to replicate plant conditions and change projects in under 30 mins

“The Reactor-Ready and Reactor-Ready Pilot platforms allow us to use vessels which mimic those in our pilot plants and manufacturing plants. They also have great data logging capabilities, and the flexibility to switch between vessels on that platform in under 30 minutes. When we’re moving from Reactor-Ready into Reactor-Ready Pilot, one of the things that’s great is that it looks exactly the same to the users.”

**Jono West, Head of Safety & Scale-Up, Sai Life Sciences**



## Reactor-Ready made scale-up, unattended reactions and workups easier at Cardiff University

“The Reactor-Ready is very easy to use and easy to manoeuvre and also allows scale-up far more accessible from the 1 ml scale that we’re used to. We’re able to set the temperature control really easily, and it gives us confidence to leave it for long periods of time. My favourite feature of the Reactor-Ready is the bottom outlet valve. This allows for workups of our polymerisations to be very efficient and very easy. Because we work with very large volumes of solvent, we can easily precipitate our polymer out at the end.”

**Taylor Young, PhD student in the Ward Group, School of Chemistry at Cardiff University**



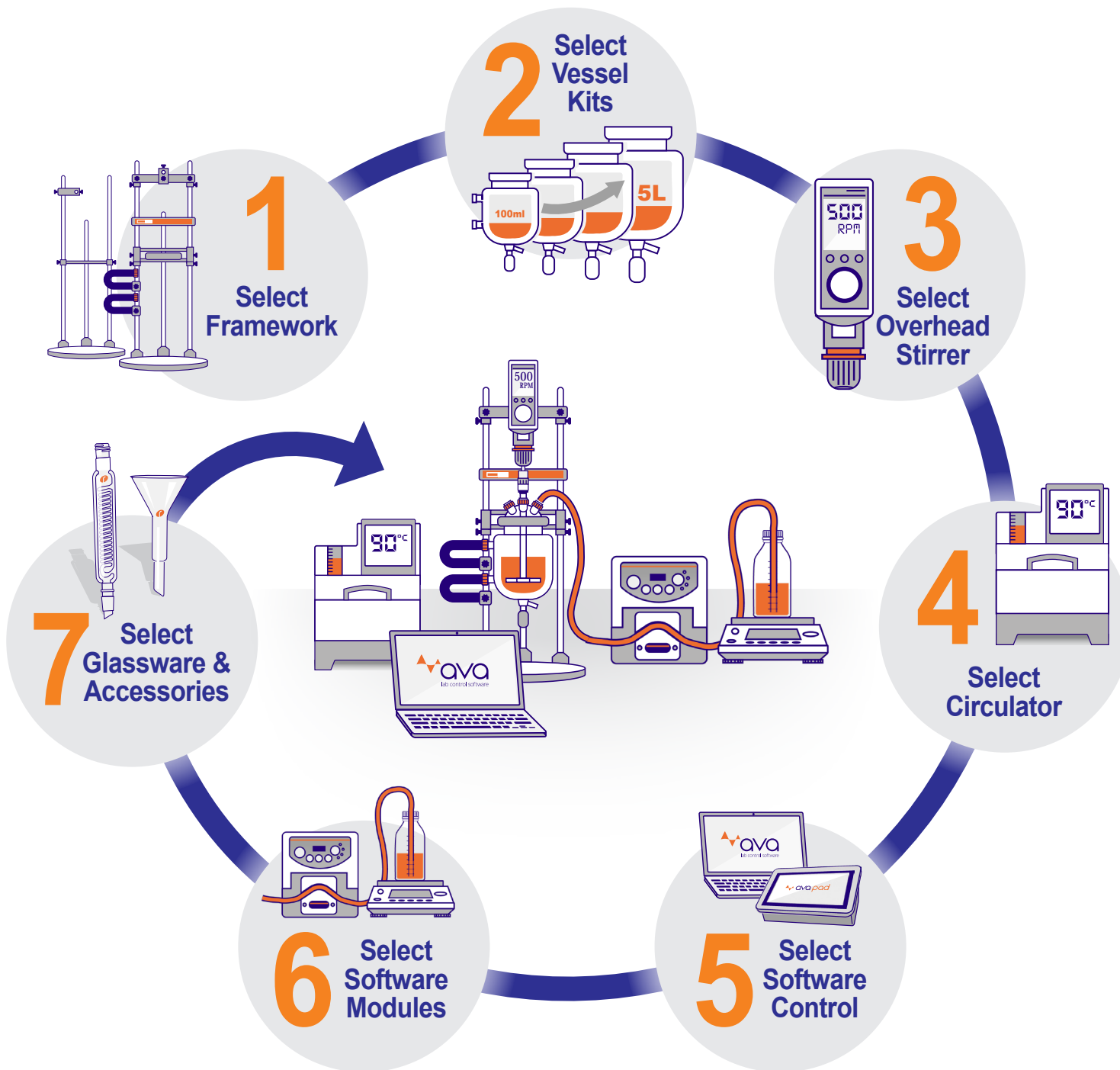
# Some of our valued customers



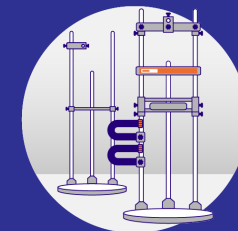
# It's easy to configure your Reactor-Ready Flex

## 7 simple steps

1. Select Framework
2. Select Vessel Kits
3. Select Overhead Stirrer
4. Select Circulator
5. Select Software Control
6. Select Software Modules
7. Select Glassware & Accessories



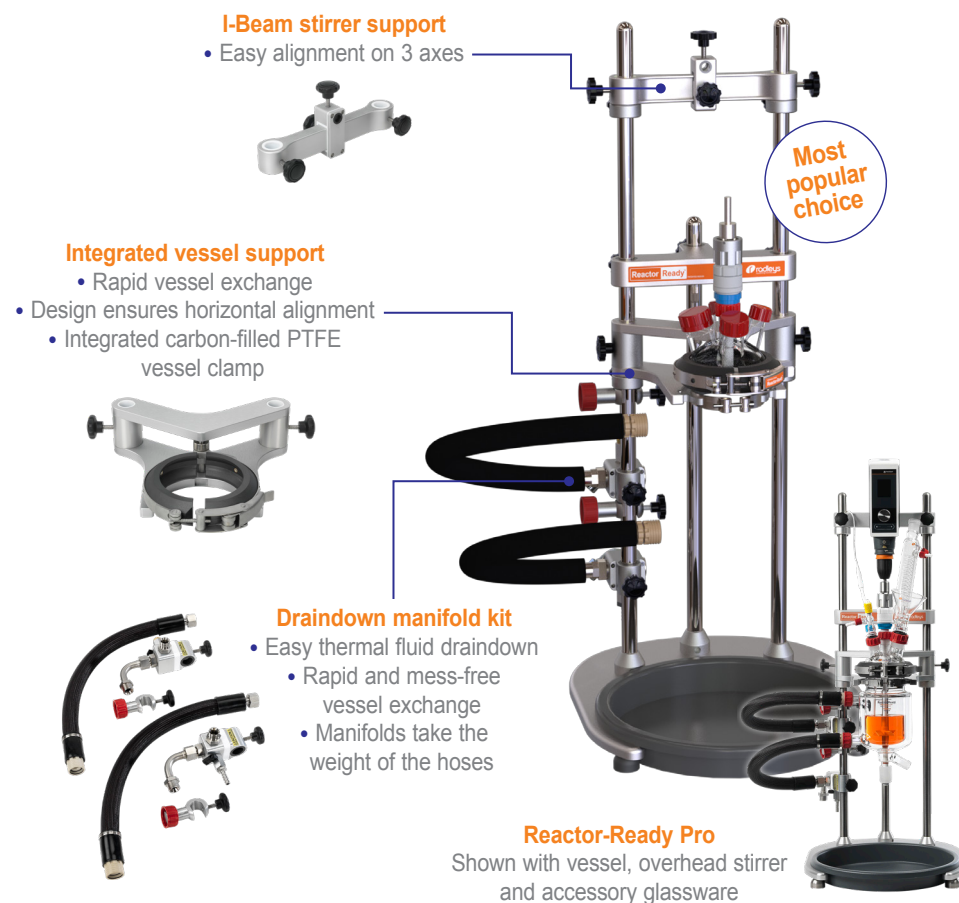
# 1. Select Framework



## Reactor-Ready Pro

Feature rich for maximum flexibility and rapid vessel exchange

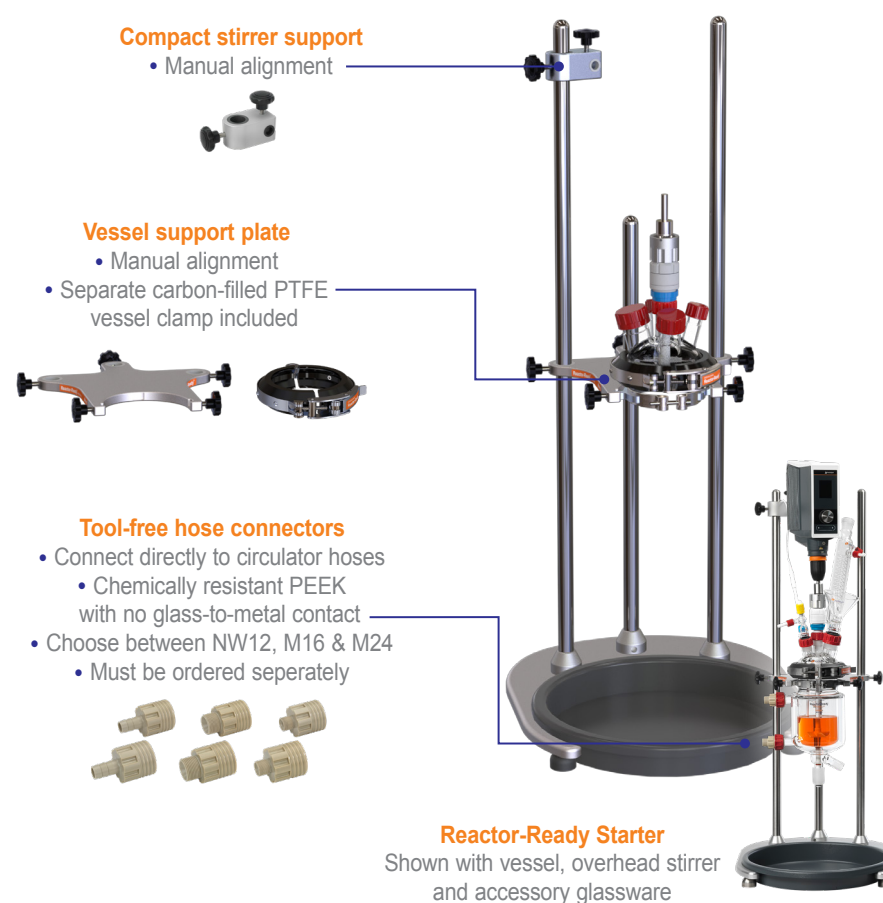
Cat No	RR121000
Stirrer Alignment	3-axis
Vessel Clamp	Integrated
Draindown Kit	Yes



## Reactor-Ready Starter

Core functionality for those with limited budgets

Cat No	RR121001
Stirrer Alignment	Manual
Vessel Clamp	Separate
Draindown Kit	No

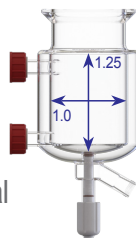


## 2. Select Vessel Kits



### Vessel highlights:

- Scale-up friendly process geometry with 1.25:1 height-to-diameter ratio and dish-shaped base
- Wide-bore tangential sidearms for enhanced heat transfer
- DN100 polished flat flange ensures a reliable, vacuum-tight seal
- 15 mm bore minimises sample hold-up and is ideal for slurries; 25 mm bore available on request



### Vessel kits make ordering vessels and accessories simple

Reaction Vessel Kits include:

- Glass reaction vessel with sidearm couplings
- PTFE turbine stirrer shaft (other types available separately)
- Pt1000 PTFE temperature probe with LEMO connector
- PTFE temperature probe adapter

### Single Jacketed Vessel Kits



100 ml



250 ml



500 ml



1 litre



2 litre



3 litre



5 litre

Cat No	RR120105	RR120110	RR120120	RR120130	RR120140	RR120142	RR120150
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### Vacuum Jacketed Vessel Kits



100 ml



250 ml



500 ml



1 litre



2 litre



3 litre

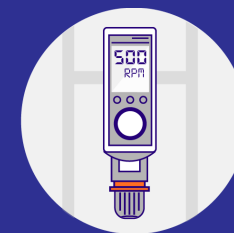


5 litre

Cat No	RR120107	RR120115	RR120125	RR120135	RR120145	RR120147	RR120155
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### 3. Select Overhead Stirrer



Refer to  
Component  
Catalogue for full  
product details  
and options



**Hei-TORQUE  
Core**



**Hei-TORQUE  
Expert 200**



**Hei-TORQUE  
Ultimate 200**



**Hei-TORQUE  
Expert 400**



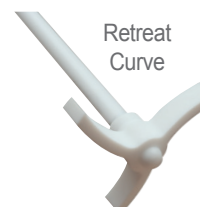
**Hei-TORQUE  
Ultimate 400**

	Lightweight, compact stirrer for smaller volumes and lower viscosities	Powerful stirring for a wide range of volumes and viscosities	Powerful stirring for a wide range of volumes and viscosities with software control and ramping options	Most powerful stirring for demanding applications	Most powerful stirring for demanding applications with software control and ramping options
<b>Cat No</b>	<b>501-60410-00</b>	<b>501-62010-00</b>	<b>501-62020-00</b>	<b>501-64010-00</b>	<b>501-64020-00</b>
<b>Torque</b>	40 Ncm	200 Ncm	200 Ncm	400 Ncm (2 gears)	400 Ncm (2 gears)
<b>Recommended Volumes</b>	100 ml - 2 L	1 - 5 L	1 - 5 L	1 - 5 L	1 - 5 L
<b>Software Control</b>	No	No	Yes (USB and RS232)	No	Yes (USB and RS232)
<b>Weight</b>	2.3 kg	5.1 kg	5.1 kg	5.3 kg	5.3 kg

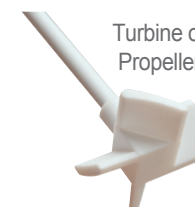
**A choice of popular  
PTFE stirrer paddles**



Anchor



Retreat  
Curve



Turbine or  
Propeller

## 4. Select Circulator



Refer to  
Component  
Catalogue for full  
product details  
and options



**Huber  
CC-K6**



**Huber  
Ministat 230**

Ideal for  
small to  
medium  
vessels



**Huber  
Ministat 240**



**Huber  
Petite Fleur**



**Huber  
Unistat Tango**

	Compact open bath unit suitable for small vessels	Open bath unit with good heating and cooling capability	The most popular Ministat, powerful and compact temperature control for small to medium vessels	The smallest Unistat, rapid temperature control for medium sized vessels	Unistat with powerful heating and cooling, suitable for vessels up to 5 L
<b>Cat No</b>	<b>HB2008.0005.01</b>	<b>HB2015.0005.01</b>	<b>HB2016.0005.01</b>	<b>HB1030.0001.01</b>	<b>HB1000.0037.01</b>
<b>Temperature Range</b>	-25 to +200 °C	-40 to +200 °C	-45 to +200 °C	-40 to +200 °C	-45 to +250 °C
<b>Example Performance (Process Temperature)</b>	1 L vessel: 20 °C to 150 °C in 38 min 150 °C to 20 °C in 117 min	500 ml vessel: 20 °C to -20 °C in ~ 30 min -20 °C to 150 °C in <30 min	2 L vessel: 100 °C to -20 °C in 95 min -20 °C to 100 °C in 40 min	1 L vessel: 20 °C to 150 °C, then cool to 0 °C in <120 min	2 L vessel: 20 °C to 180 °C, then cool to 20 °C in ~ 60 min
<b>Heating capacity</b>	1.6-2.1 kW	1.6-2.1 kW	1.8-2.1 kW	1.6-2 kW	3 kW (16 A power supply)
<b>Cooling capacity</b>	0.15 kW @ 0 °C	0.38 kW @ 0 °C	0.55 kW @ 0 °C	0.45 kW @ 0 °C	0.70 kW @ 0 °C
<b>Connections</b>	M16	M16	M16	M16	M24



## 4. Select Circulator Accessories

Refer to  
Component  
Catalogue for full  
product details  
and options

\* Pick a side arm connector size for  
Reactor-Ready Starter ONLY (not included)



**PEEK Vessel Side Arm Connectors**



**Insulated Hoses - Metal**

**Insulated Hoses - PTFE**

Cat No	RR121233*	RR121230*	RR121236*	HB9609	HB9610	HB9275	HB9276	HB9326	HB9327
Description	NW12 Barb	M16	M24	M16 / 1.5 m 12mm ID	M16 / 2 m 12mm ID	M24 / 1.5 m 12mm ID	M24 / 2 m 12mm ID	M24 / 1.5 m 12mm ID	M24 / 2 m 12mm ID
Temperature Range	-70 to +230 °C	-70 to +230 °C	-70 to +230 °C	-50 to +200 °C	-50 to +200 °C	-100 to +350 °C	-100 to +350 °C	-60 to +260 °C	-60 to +260 °C



RR121210	HB6195	HB9256	HB6724	HB55018	HB6164	HB6162
Hose Supports	M16/1 90° Adapter	M24/1.5 90° Adapter	M24/1.5 Female to M16/1 Male Adapter	Control Cable (3m) RS232 / PC	SilOil 10 Litre M40.165/220.10	SilOil 10 Litre M20.195/235.20
Support the weight of the hose when connecting directly to the vessel	M16/1 Female to M16/1 Male	M24/1.5 Female to M24/1.5 Male	-	For software control with AVA	Temperature range -40 °C to 220 °C	Temperature range -20 °C to 235 °C

## 5. Select Software Control



### AVA Software - designed to control jacketed lab reactors

- Pad Controller or PC-based software
- Enhance Health & Safety
- Improve productivity with unattended chemistry
- Reduce manual errors and increase reproducibility
- Automatically log all process data
- Manage multiple devices and complex experiments



Take control of  
your chemistry  
with AVA



AVA Pad  
Reactor Controller



AVA PC  
Reaction Control Software



Rear view of AVA  
Pad Controller



Rear view  
of Data Hub

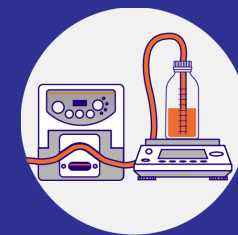
Cat No	Coming soon	RR20308
<b>Control &amp; Log</b>	Up to 16 Devices	Up to 16 Devices
<b>Device Connectivity</b>	Integrated: RS232 x4 and Temp Sensor Ports x2	Via separate Data Hub
<b>Placement</b>	Within fume hood: benchtop, stand or frame mounted	External to fume hood: via dedicated laptop or PC
<b>Multiple reactor control</b>	No	Up to 4

### Control and log

- Overhead Stirrers
- Circulators
- Temperature Sensors
- Peristaltic Pumps
- Syringe Pumps
- Piston Pumps
- Balances
- pH Sensors
- Vacuum Pumps
- Gas Flow Controllers
- Gas Flow Meters
- Pressure Sensors
- Conductivity Sensors



## 6. Select Software Modules



Reactor-Ready  
Pro with  
AVA Pad



**pH  
Module**



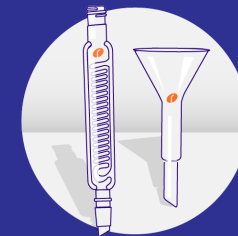
**Syringe Pump  
Additions Module**



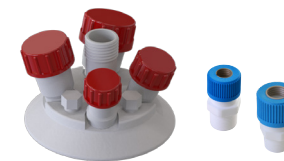
**Gravimetric  
Additions Module**

	For the monitoring and logging of pH. Can be used for pH control when combined with an additions module.	For controlled, automated liquid dosing (by volume). Ideal for smaller volumes.	For controlled, automated liquid dosing (by mass). Ideal for larger volumes or continuous additions.
<b>Cat No</b>	<b>RR20502</b>	<b>RR20504</b>	<b>RR20500</b>
<b>Dosing</b>	pH control (acid or base dosing) possible with the addition of a syringe or peristaltic pump	0.1 µl - 60 ml	up to 5 L
<b>Flow Rate</b>	n/a	up to 35 ml/min	up to 4000 ml/min
<b>Continuous</b>	n/a	No	Yes
<b>Includes</b>	pH meter, cables and adapters (pH probe not included)	Syringe pump, tubing, cable, adapters	Peristaltic pump, balance, cables, tubing, adapters, bottle
<b>Safety</b>	Safety feedback loops can be incorporated within the AVA Lab Control software to minimise exotherms.		

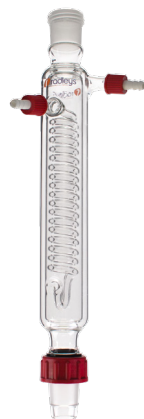
## 7. Select Glassware & Accessories



Refer to  
Component  
Catalogue for full  
product details  
and options



Cat No	RR136000	RR136100*	RR136121*
Description	DN100 Glass 5 Neck Lid 1xB19 2xB24 1xB29 1xB34 (supplied with Framework as standard)	DN100 PTFE 5 Neck Lid 1xB19 2xB24 1xB29 1xB34 & 2 Blanked Ports	DN100 PTFE 5 Neck Blaze Lid 1xB19 2xB24 1xB29 1xB34 & 2 Blanked Ports

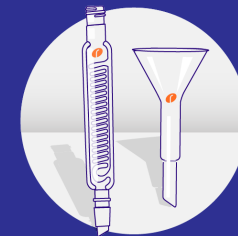


RR139011*	RR139035*	RR139039*	RR139063*	RR139033*
Right Angle Adapters	Enlarging Adapters	Reducing Adapters	PTFE Hose Adapter	Glass Cone Stoppers



RR139190*	RR139009*	RR139019*	RR139324*	RR139051*	RR139057	RR139025	RR139023	RR139053
Reflux Divider Kits	Condensers	Dropping Funnels	Collection Flasks	Oil Bubblers	Valved Liquid Inlet Adapter	Gas Purge Adapter	Swan Neck Adapter	Solid Additions Funnel

## 7. Select Glassware & Accessories



RR145000*	RR140015*	RR257100 & RR257112*	RR149000*	RR20512	RR20510
Pt100 PTFE Temp Probes	PTFE Temp Probe Adapters	Removable PTFE Baffles	Fixed Additions Tube Kits	Control Pad Support Rod	Control Pad Stand



RR121055	RR121051	RR121090*	RR136327*	RR136303*	RR136316*	RR166100*
Vessel Support Collar	Vessel Support Alignment Tool	Vessel O-rings	PTFE Lid Blanking Plugs	PTFE Lid Socket Adapters	PTFE Lid Compression Fittings	Piston O-rings



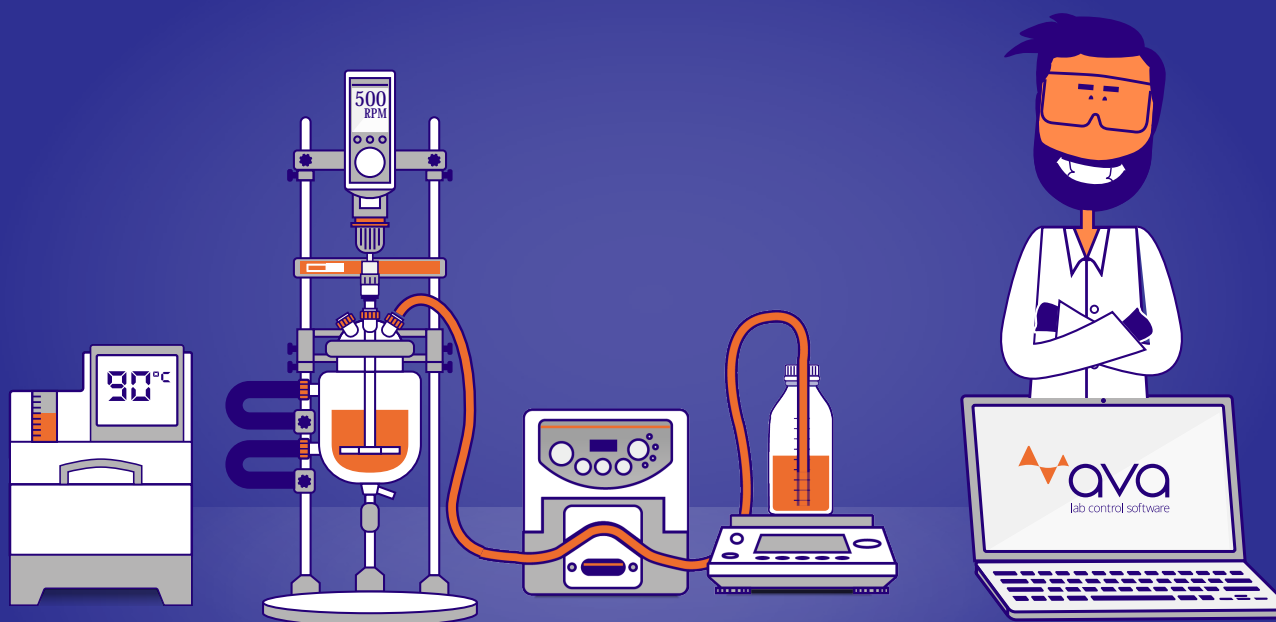
RR161100*	RR121150	RR20518	RR139067	RR139374	RR139069	RR139376
Replacement Piston	Maintenance Kit	Boss Head	Boss Head	Universal Clamp	3-Prong Clamp	Support Ring

\*Other styles and/or sizes are available

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