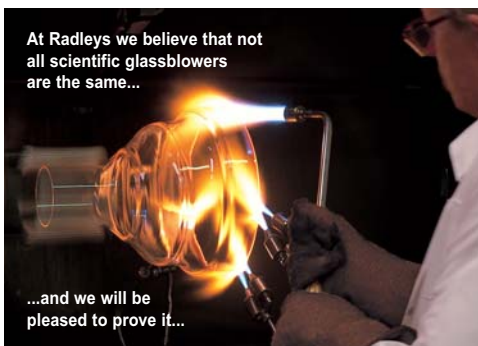




radleys

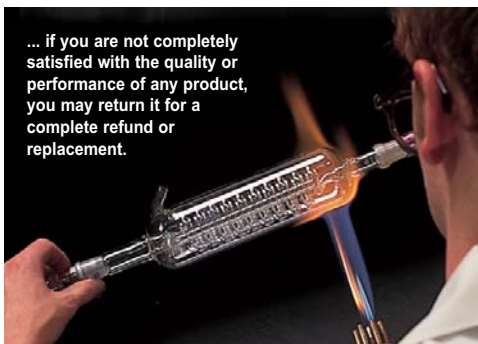
Reaction Systems International Catalogue

Unpriced



At Radleys we believe that not all scientific glassblowers are the same...

...and we will be pleased to prove it...



... if you are not completely satisfied with the quality or performance of any product, you may return it for a complete refund or replacement.



Specialist Scientific Glassblowing

Radleys first established a glassblowing facility in 1968.

Whilst there have been many changes since then, specialised scientific glassblowing still remains a highly skilled hand craft.

Indeed it takes years to perfect the skill of glassblowing to any degree of proficiency and our team of highly skilled glassblowers and glass technologists have many years of glassblowing experience to their credit.

Flexibility...

In the last 35 years Radleys have been asked to make a multitude of diverse items, for a wealth of industries and applications - from pharmaceuticals to agrochemicals, from medical research to environmental monitoring, from hospitals to refineries, from mechanical engineering to electronics, from power stations to universities and from dairies to breweries.

Quality Assurance

Quality is the essence of good scientific glassblowing and our customers quite rightly demand the best. Indeed, we are proud to say, that some of our best customers are glassblowers.

Product excellence comes from strict quality standards; and as such Radleys operate a ISO9002 approved Quality Assurance System.

A commitment to safety...

Safety is a very important factor in the manufacture of laboratory glassware. We ensure that all our glassware is annealed and stress free before leaving our factory, and that any important safety requirements that may have been specified, have been complied with in full.

Working to your precise scientific specifications...

Precision goes hand in hand with quality. Regardless of whether we are working from a sketch, drawing or a sample, precision is our highest priority. Throughout the glassblowing process constant checks are made on tolerances, seals, joint sizes, wall thickness and any other important specifications. Ensuring that the end product meets your requirements exactly. All our glassware is hand-made and free of imperfections, such as: air lines, scratches, stones and strain. Giving you consistent and reliable glassware that you can trust in.

Fast delivery...

Our large team of skilled scientific glassblowers means that we have the capacity to deal with your urgent projects. Whether you need a quick repair or urgently require a new or replacement item, we will be pleased to accommodate your needs.

No Hassle Policy...

At Radleys, our customers are our future. Customer care is our first priority and we aim to keep it that way. Therefore, if you are not completely satisfied with the quality or performance of any product purchased, you may return it for a complete refund or replacement.

Versatility...

Whether you require a small, precision made specialised item or a large vessel, for single or large contract quantities... Radleys will provide you with an unrivalled scientific glassblowing service...

t: +44-(0)1799-513320

f: +44-(0)1799-513283

e: sales@radleys.co.uk

Custom Glassblowing Service

Radleys' team of glass technologist and product specialists have a vast experience in the design of all types of scientific glassware.

Fax us a sketch and we'll send you a quote...

Free quotations are given for any item regardless of size or complexity. Simply fax or send us a sketch, or sample, with the relevant dimensions and specifications, and we will provide you with a detailed faxed quotation by return. Alternatively, describe what you want and we will provide you with a drawing to approve.

OEM/Contract enquiries welcome...

We will be pleased to quote for your OEM equipment requirements. FREE quotations are given for any quantity.

Need a modification or something slightly different...

If you have an existing piece of glassware you want modified or would like a new item altered during manufacture to suit your requirements, we can help.

Glassware Design Service

Need some help designing your glassware or system?

Give us a call...

Whether you require a large process rig or have a small prototype project, we will be happy to assist in all aspects of the design stage. Our experienced glass technologists and product specialists have many years of experience in project development and problem solving.

We have a particular expertise in the design and manufacture of glass reaction vessels, from 250ml to 30 litres - including the full range of reaction system accessories such as frameworks, overhead stirrers, lids, thermoregulators and probes.

We can also provide custom engineering solutions in a wide range of materials, including: PTFE, PEEK, Acrylic, Aluminium, Stainless Steel, Polycarbonate, HDPE and Polypropylene.

Advice can be given **FREE of Charge** by telephone, email or via on-site visits.

Scope of Our Services

Glassware Repairs

Our glassware repair service will save you money and reduce unnecessary waste. FREE of charge quotations, with a collection and delivery service available. Please see overleaf for more details.

Services

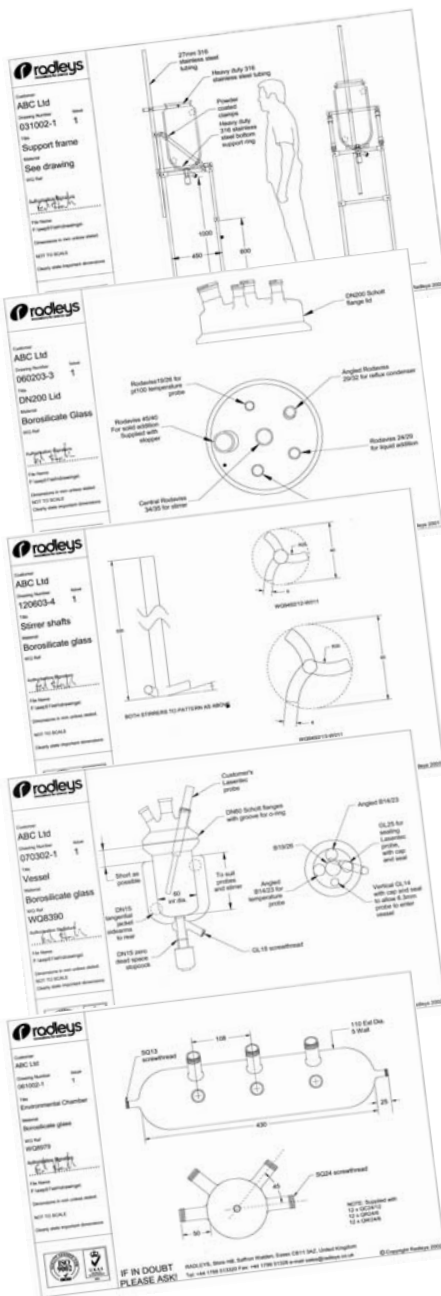
- Borosilicate & Quartz Scientific Glassblowing
- Custom Glass Fabrication
- Prototype & Development Projects
- Large Production Runs
- Graduating, Grinding & Cutting
- Enamel Transfers & Screen Printing
- Amber Staining & Plastic Coating
- Installation of large systems or complex assemblies
- Glassware safety audits

Contact us today on...

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e: sales@radleys.co.uk



Specialist Scientific Glassblowing



Glassware Repair Service

Save £££'s on our glassware repair service..

We believe that the quality of our manufactured glassware is second-to-none, and it is with the same attention to quality that we undertake to repair broken glassware. As a rule-of-thumb, it generally costs between a 1/3 and 1/2 of the new price to repair a broken glass item.

Our Repair Service includes:-

- We can arrange for a regular collection and delivery.
- We will provide a heavy duty plastic Repairs Collection Box.
- Included with each Repairs Box will be a dedicated sheet for the listing of items for repair. This helps departmental costing and avoids any confusion within departments with regard to ownership of returned items.
- Included with each Repairs Box is a full set of safety instructions for the safe handling, packing and cleaning of broken glassware. Plus a pair of cut resistant Polysafe Glass Gloves.
- We will provide a free of charge written quotation, which will be faxed to you by return.
- If an item is unrepairable or it is not economical to repair, we will inform you and either return the glassware to you, or dispose of it.
- We will proceed with the repairs only on receipt of your authorisation.



Amber Staining Service

Amber staining is cost effective to apply to one or a hundred pieces of glassware...

Amber stained glassware is often essential when working with photosensitive substances. It has been shown that glass which has been ambered can absorb short wavelengths up to approximately 500nm. The quantities of glassware requiring ambering are usually small, making production in coloured glass, both impractical and uneconomic. Amber staining overcomes these problems, because it is as cost effective to apply to one or a hundred pieces of glassware.

We undertake to amber all types of glassware, including that supplied by the customer, in addition to specialising in the manufacture and ambering of our own glassware. Some of the most common items we amber are Separating Funnels, Reaction Vessels, Burettes, Flasks, Beakers, Cylinders, Test Tubes, Bottles etc. However this is by no means a complete list and we will be pleased to amber stain any standard or specialist item you may require.

Contact us today for a FREE quotation



NEW Fluoralon® 'G' Safety Coating for Glassware

This unique Fluoropolymer coating can be applied to almost any borosilicate scientific glassware item and offers exceptional chemical resistance and temperature range...

The Fluoralon 'G' safety coating has been developed to protect users of glassware from dangerous shards and contamination of work areas in the event of breakage. The coating is applied to the exterior surfaces of the glassware providing an immensely strong 'plastic' safety barrier.

Fluoralon 'G' is sprayed on and then heat cured. It is therefore capable of following the most complex geometry with complete integrity, unlike conventional protective sleeving which tends to 'web'. Fluoralon 'G' has an exceptionally wide temperature tolerance from -200°C to +250°C.

Benefits

- Reduces risk of injury due to glassware cuts
- Reduces liability risk for schools
- Improves the resistance of the glass to thermal shock
- Protects user from hazardous spilled liquids

Contact us today on +44-(0)1799-513320 for more information

Certificates of Conformity

Available for all standard and custom glassware items...

Single certificates for complete orders or single certificates for each item @ £12.50 per certificate. Cat No. 810001.

A single certificate with each item individually numbered, @ £12.50 per certificate plus £2.50 per item. Cat No. 810002.

Contact us today on [+44-\(0\)1799-513320](tel:+44-01799-513320) for more information



On-site Glassblowing Service

Need an on-site temporary or back-up glassblower? Give us a call...

Even glassblowers need to have holidays... so if you need temporary cover we can help. Skilled glassblowers are provided on a daily or weekly basis. Glassblowers are also available for on-site work such as assembling vacuum rigs, on-site emergency repairs, glassware safety audits etc.

Contact us today on [+44-\(0\)1799-513320](tel:+44-01799-513320) for more information



Pressure & Vacuum Safety Procedures - Testing of Glassware

Subjecting laboratory glassware to pressure can be very hazardous, and should therefore be avoided if possible.

If you do wish to subject your glassware to pressure or vacuum, the following safety precautions should be taken...

- Obtain independent pressure/vacuum certification of individual vessels.
- Always enclose vessels with safety shields.
- Use safety netting or plastic coatings.
- Avoid over-clamping, which can cause stress within the vessel.
- Check glassware for damage, such as chips or cracks. Even the smallest defects can significantly affect the strength of your glassware.
- Always apply or release the pressure or vacuum gradually.
- Generally speaking, flat bottomed vessels should not be used under vacuum as they are likely to implode.

Pressure & Vacuum Testing

We are pleased to be able to offer this service for all types of vessel. Individual glassware items are independently tested to; twice the maximum working pressure; or in the case of a vacuum, at a predetermined level. Certification includes an individual record for each item and certification of equipment used, traceable to national standards. Quotations are given for individual or multiple items on request.

Please note that whilst pressure/vacuum testing and certification will indicate the performance of the glassware under specific test conditions, no guarantee of its performance under actual operating conditions can be given or implied. The nature of glass and the variability of operating conditions make this impractical.

For advice on working with vacuum/pressure, or for more information on vacuum or pressure testing please contact us today on [+44-\(0\)1799-513320](tel:+44-01799-513320) for more information

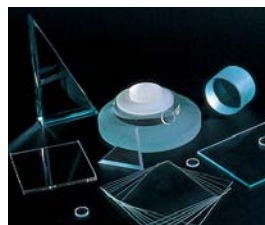


Cold Glass Working

Our range of specialist cold glass working services include...

Drilling, cutting, flat grinding, parallel grinding of tube ends, centreless grinding, polishing, etching, graduating, sand blasting, optical discs and prisms, glass plate, screen printing, enamel transfers and much more...

Contact us today on [+44-\(0\)1799-513320](tel:+44-01799-513320) for more information



Specialist Scientific Glassblowing









Glassware For Standard Test Methods

Manufacture of glassware to meet the requirements of international test methods including, BS, ASTM, IP, EPA, FDA, European and British Pharmacopea...

Whatever your specialist area we will be pleased to quote for complete glassware systems to meet the requirements of a large range of standard test methods, both in the UK and abroad. Our service includes the sourcing of methods and where requested, the certification of conformance with those methods.

Contact us today on +44-(0)1799-513320 for more information

Sintered Glassware Porosity Grade Guide

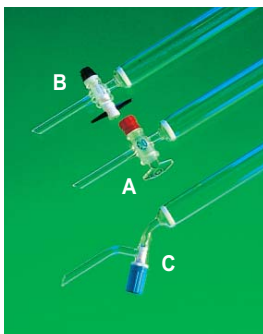
POROSITY	ISO 4793 DESIGNATION	NOMINAL PORE SIZE	EXAMPLE APPLICATIONS	POROSITY	ISO 4793 DESIGNATION	NOMINAL PORE SIZE	EXAMPLE APPLICATIONS
	P250	160 - 250µm	Coarse filtration, Gas Distribution		P40	16 - 40µm	Analytical filtration of medium precipitation. Fine gas filtration, Extraction apparatus for fine grained material
	P160	100 - 160µm	Coarse filtration, Gas Distribution Extraction apparatus for Coarse grained material		P16	10 - 16µm	Analytical work with fine precipitates
	P100	40 - 100µm	Preparative fine filtration, Mercury filtration, Gas washing, Crystalline precipitate filtration		P10	4 - 10µm	Ultrafine filtration



Clear Fused Quartz Glassware

Fused Quartz Glass is a unique material with an unrivalled combination of purity, high temperature resistance, thermal shock resistance, high electrical insulation, optical transparency and chemical inertness. Whether you require a simple beaker, furnace tube or a more complicated photo-chemical reactor, we will be pleased to help.

Contact us today on +44-(0)1799-513320 for a FREE quotation



Stopcock Selection Guide

A PTFE Key Stopcock

This stopcock has a highly polished borosilicate glass barrel with a PTFE key which will not stick or seize. Does not need grease and therefore avoids problem of blockage or contamination.

B Glass Key Stopcock

General purpose stopcock with interchangeable borosilicate glass key and barrel. Must be lightly lubricated with a good quality stopcock grease before use

C Rotaflo® Stopcock

The Rotaflo stopcock combines an all borosilicate glass and PTFE pathway with fine flow control. Vacuum capability to 10⁴ Torr.

Prices for these and other stopcocks and spare keys etc are available on request, please call +44-(0)1799-513320 for more information

Sidearm Selection Guide

Radleys glassware is typically offered with a choice of sidearm types: 11mm olive, SQ13 screwthread or GL14 screwthread.

Olive - The most basic form of connection (see Fig 1). Also known as a nipple or hose barb. This traditional style allows rubber tubing to be pushed directly onto the glassware. This option is considered to be the least safe due to the risk of injury due to glass breakages when connecting or removing the tubing.

SQ13 and GL14 - are both screwthreads, which are intended for use with plastic hose connectors. The rubber tubing is pushed onto the plastic hose connector and the connector is, in turn, screwed onto the thread – a much safer alternative.

So, which one to choose, SQ13 or GL14? They are actually almost identical!

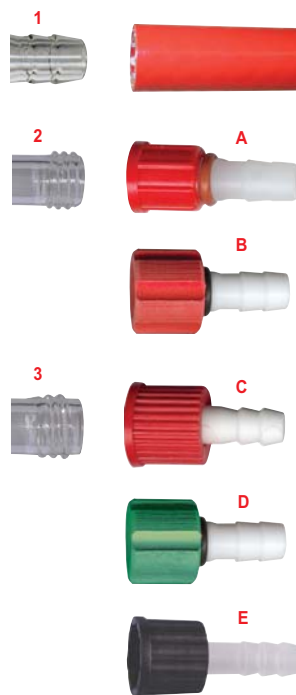
If you have used Quickfit® apparatus, then you may already be familiar with SQ13 (Fig 2) which is commonly supplied on all Quickfit condensers. The standard SQ13 hose connector (Fig A) has a maximum operating temperature of 80°C. The cap is made from glass filled polypropylene, the hose connector is polyacetal and the O-rings are silicone.

An alternative hose connector (Fig B) is available for applications which demand better chemical resistance and a higher temperature range. The red cap is glass filled PTFE, the hose connector is pure PTFE and the O-rings are viton. Max operating temperature is 200°C.

Alternatively, you may be familiar with the GL14 type (Fig 3), which is used on equipment from continental Europe e.g. Buchi® or Schott (Duran®). This standard GL14 hose connector (Fig C) has a maximum operating temperature of 140°C. The cap is PBTP, the hose connector is polypropylene and the sealing washer is silicone.

An alternative high performance GL14 hose connector (Fig D) is available for applications which demand better chemical resistance and a higher temperature range. The green cap is glass filled PTFE, the hose connector is pure PTFE with an O-ring. Max operating temperature is 200°C.

A third GL14 connector is available (Fig E) which has a maximum operating temperature of 250°C. The black cap is glass-fibre reinforced PPS, the hose connector is PFA with an elastomer PFA sealing lip with FPM O-ring.



Safe Handling of Laboratory Glassware

Handled with care your laboratory glassware will last a lifetime...

To ensure the maximum life for your glassware and to protect users from injury please consider the following...

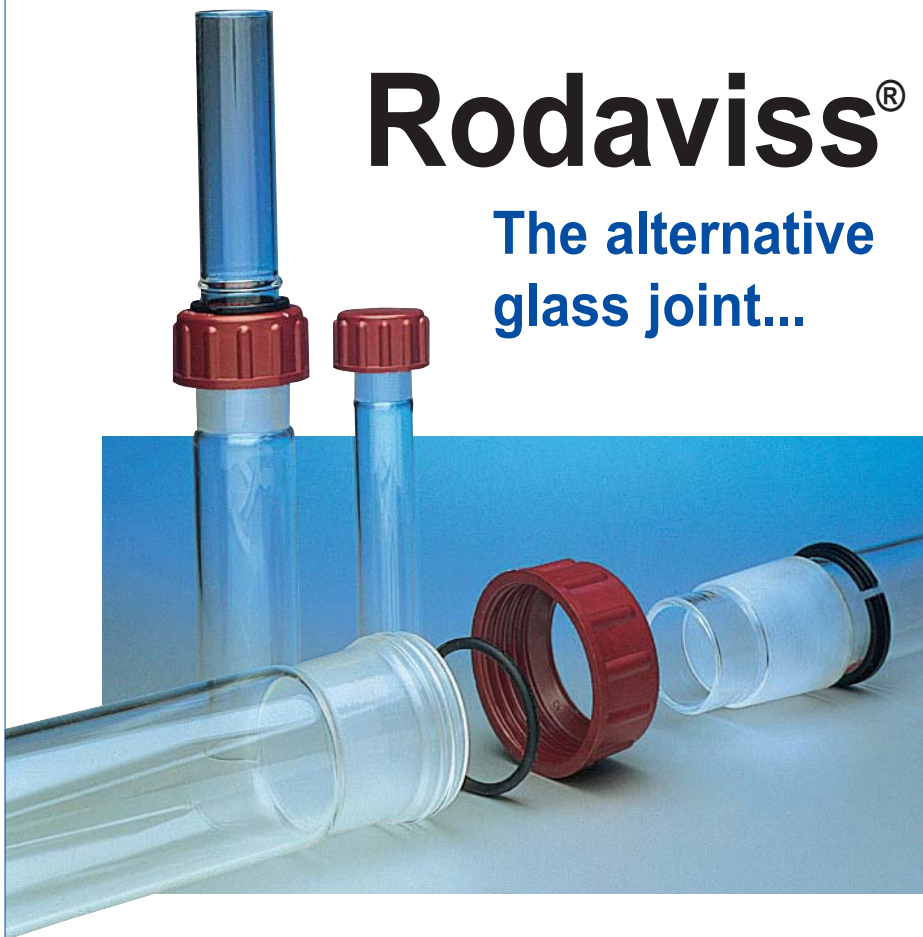
- Always wear the appropriate protective clothing e.g. cut resistant gloves, eye protection, lab coats etc when undertaking experiments using glassware.
- Use safety shielding, plastic netting or plastic coatings to protect you and your glassware.
- Check all glassware for damage, such as scratches, chips or cracks. Even the smallest defects can significantly affect the strength of your glassware.
- Never heat glassware with scratches, chips or cracks, as such defects can make the glass prone to premature failure.
- Avoid subjecting laboratory glassware to pressure or vacuum (See page 567 for further advice).
- Never force tubing onto sidearms. Use the GL or SQ plastic screwthread type hose connectors where possible.
- If jointed glassware becomes stuck or frozen, do not use excessive force to free the joints. A gentle tapping or rocking of the two sides of the joint can often release them. If you are unsuccessful please call for advice.
- The use of Rodaviss® safety joints will prevent frozen joints (please see pages 570 & 571).
- Do not lift or carry glassware by the rim or side arm, always support the main body.
- Whilst borosilicate glassware offers superior chemical resistance, the use of hydrofluoric acid, hot phosphoric acid and strong alkalis should be avoided.
- When heating or autoclaving glass bottles always slightly loosen the cap to allow venting.
- Whilst borosilicate glass has excellent heat resistance, it should not be subjected to sudden temperature changes or thermal shock.
- Always heat glassware slowly and evenly.
- The maximum recommended working temperature for borosilicate glass is 500°C. Care should always be taken when heating above 150°C to ensure that heating and cooling is done in a slow and uniform manner.

For more information on any aspects of glassware safety please call +44-(0)1799-513320



Rodaviss®

The alternative
glass joint...



Interchangeable

Will Not Stick or Jam

Leakproof Under Vacuum and Pressure

Grease Free - Maintaining Sample Integrity

Safe and Extremely Strong

Remains Secure for Temperatures up to 200°C

Convenient Sealing Caps

Competitively Priced

Rodaviss® Interchangeable Glass Joints



Rodaviss the alternative joint...

Rodaviss is a revolutionary, new, extra-safe borosilicate glass joint for connecting laboratory glassware. Rodaviss is safe under vacuum or pressure, grease free, interchangeable with standard 1:10 tapered ground joints, will not stick or jam, is extremely strong, can be used up to 200°C and is competitively priced.

Interchangeable

Rodaviss is completely interchangeable with ordinary 1:10 tapered

ground glass joints. Both the cone and socket joints of Rodaviss will fit perfectly with any ordinary glass joint of equal size. This means that to change to Rodaviss, you do not have to throw away all your old glassware. Simply specify Rodaviss joints on all your new glassware, and very soon you will have a comprehensive range of laboratory glassware giving you all the benefits of Rodaviss many safety features.

Will not stick or jam

Rodaviss incorporates a patented non-jam method which prevents the male and female joints from becoming 'frozen' together. The combination of a small glass rim on the outside of the male joint and a plastic loosening ring, allows you to free the two parts of the joint should they become jammed, without the need to apply dangerous pressure.



Leak-proof under vacuum and pressure

The combination of a screwthread connecting cap and O-ring

gives the Rodaviss joint a perfect airtight seal, ideal for work involving vacuum or pressure, remaining leak-proof even without grease or PTFE surfacing.



Grease free, maintaining sample integrity

Ordinary ground glass joints require either grease or a PTFE sleeve to ensure a good seal and to prevent jamming, but Rodaviss patented design requires neither, maintaining absolute sample integrity.

Extremely Strong

Because Rodaviss joints are so secure, they improve apparatus stability and rigidity, thus reducing the need for as many clamps and supports as conventional connecting methods. With Rodaviss there is no need for additional lugs or clips. Rodaviss sockets are available in two wall thicknesses, with the heavy wall option being particularly useful for larger apparatus assemblies.

Convenient Sealing Cap

The convenient screwthread design on the outside of the Rodaviss female joint enables you to easily and safely seal your vessel with a Rodaviss screwthread sealing cap. All Rodaviss sealing caps have an internal PTFE face for an air-tight seal.

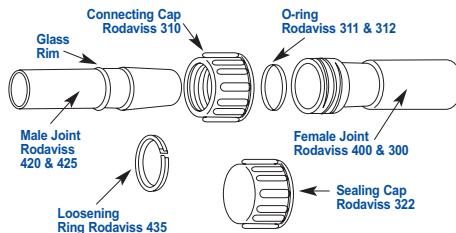


Rodaviss assembly...

Place the male cone through the connecting cap, and then through the O-ring. After matching up the cone and socket halves of the joint, screw down the connecting cap to compress the O-ring, thus ensuring a perfect seal, and a good rigid assembly. Clip the loosening ring between the connecting cap and glass rim on the male joint. In the event of any difficulty in undoing the joint because the surfaces are jammed, simply unscrew the connecting cap back onto the loosening ring, which will push the joints easily apart. This system will release even the most 'frozen' joints. A Rodaviss sealing cap may then be screwed onto the threaded socket to close the apparatus or vessel.

Get your old glassware modified...

We will be pleased to quote to modify your existing glassware to incorporate Rodaviss joints. It can be particularly cost effective to make such conversions during the repair of your glassware.



CAT NO	JOINT SIZE	TUBE OD	TOTAL LENGTH	PACK SIZE	PRICE PER PK
Rodaviss 400 Medium Wall Sockets					
400-1423	14/23	18mm	120mm	10	
400-1926	19/26	22mm	127mm	10	
400-2429	24/29	28mm	130mm	10	
400-2932	29/32	34mm	140mm	10	
400-3435	34/35	38mm	140mm	10	
400-4540	45/40	50mm	150mm	10	
Rodaviss 300 Heavy Wall Sockets					
300-1423	14/23	20mm	125mm	10	
300-1926	19/26	24mm	125mm	10	
300-2429	24/29	30mm	135mm	10	
300-2932	29/32	34mm	140mm	10	
300-3435	34/35	40mm	150mm	10	
300-4540	45/40	50mm	165mm	10	
Rodaviss 310 Connecting Cap					
310-1423	14/23			10	
310-1926	19/26			10	
310-2429	24/29			10	
310-2932	29/32			10	
310-3435	34/35			10	
310-4540	45/40			10	

CAT NO	JOINT SIZE	TUBE OD	TOTAL LENGTH	PACK SIZE	PRICE PER PK
Rodaviss 420 Medium Wall Cones					
420-1423	14/23	13mm	115mm	10	
420-1926	19/26	16mm	130mm	10	
420-2429	24/29	22mm	125mm	10	
420-2932	29/32	26mm	135mm	10	
420-3435	34/35	32mm	140mm	10	
420-4540	45/40	40mm	155mm	10	
Rodaviss 425 Medium Wall Drip Cones					
425-1423	14/23	13mm	125mm	10	
425-1926	19/26	16mm	128mm	10	
425-2429	24/29	22mm	135mm	10	
425-2932	29/32	26mm	140mm	10	
425-3435	34/35	32mm	140mm	10	
425-4540	45/40	40mm	165mm	10	
Rodaviss 322 Sealing Cap (with PTFE face)					
322-1423	14/23			10	
322-1926	19/26			10	
322-2429	24/29			10	
322-2932	29/32			10	
322-3435	34/35			10	
322-4540	45/40			10	

CAT NO	JOINT SIZE	PACK SIZE	PRICE PER PK
Rodaviss 311 Nitrile O-Rings			
311-1423	14/23	10	
311-1926	19/26	10	
311-2429	24/29	10	
311-2932	29/32	10	
311-3435	34/35	10	
311-4540	45/40	10	
Rodaviss 312 Viton O-ring			
312-1423	14/23	10	
312-1926	19/26	10	
312-2429	24/29	10	
312-2932	29/32	10	
312-3435	34/35	10	
312-4540	45/40	10	
Rodaviss 435 Loosening Ring			
435-1423	14/23	10	
435-1926	19/26	10	
435-2429	24/29	10	
435-2932	29/32	10	
435-3435	34/35	10	
435-4540	45/40	10	

Reaction System Examples



Custom Reaction Vessels & Systems

Custom made reaction systems - to your specific design...

The vast majority of the reaction vessels that we manufacture are custom designed in close cooperation with our customers. Whether you require a large multi-vessel process system or a single benchtop vessel, we will be happy to assist in all aspects of the design stage. Our team of highly skilled glass technologists and product specialists have many years of experience in project development.

Scope of our services...

- Heating/Cooling Thermoregulators; supply, servicing and support
- Single jacketed reaction vessels to 50 litre.
- Vacuum jacketed reaction vessels to 10 litre.
- Multi-reactor systems for parallel synthesis.
- Solid phase reactors with sinters.
- Fermenters and bioreactors.
- Photochemical and UV reactors.
- Software and semi-automated control.
- Benchtop stands/supports.
- Complex process frameworks.
- Overhead stirrers; electrical, air powered and Ex-rated.
- Scrubbers, condensers and distillation assemblies.
- Installation and training.



Heating and cooling via high performance Huber Thermoregulators.



Simply tell us what you want...

The combination of different features and design variations for vessel systems is almost limitless. Therefore please contact our specialists on production@radleys.co.uk for FREE technical advice and design service.

Reaction Vessel Options

- Vessel sizes from 100ml to 50 litres.
- With or without cooling/heating jacket.
- Optional vacuum jacket.
- With or without stopcock drain outlet.
- New split jacketed vessels.
- Cylindrical or spherical vessel shapes, tall or squat.
- Vessel graduations.
- A wide range of vessel sidearm options; olives, SQ and GL screwthread fittings, Rodaviss sockets, process couplings etc.
- Lids with any number and style of ports.

Reaction Vessel Accessories

- Huber Thermoregulators; microprocessor temperature control from -120°C to 400°C.
- A comprehensive design service for support structures for single vessels or complex fume cupboard installations, including custom metalwork design and fabrication.
- Stirrer guides, shafts, propellers, connectors, fittings and adapters (standard and custom).
- Overhead stirrers; electrical, air powered and Ex-rated.
- Custom made PTFE components; lids, probes, adapters and connectors.
- Integral baffles; glass, stainless steel or PTFE.
- Acrylic and polycarbonate safety shields.
- Ancillary equipment; temperature, pH control and monitoring, pumps, balances, level control etc.
- Insulated hoses and connectors.

Need a vessel modification or repair?

If you have an existing piece of glassware you want modified or repaired we can help.

Please call Tel: +44-(0)1799-513320 or Fax: +44-(0)1799-513283 for a quotation or for FREE technical support...

NEW Standard Reaction Systems - see following pages

We are pleased to introduce a new range of standard Reaction Systems. From small 250ml benchtop systems, to large 20 Litre floor mounted reactors

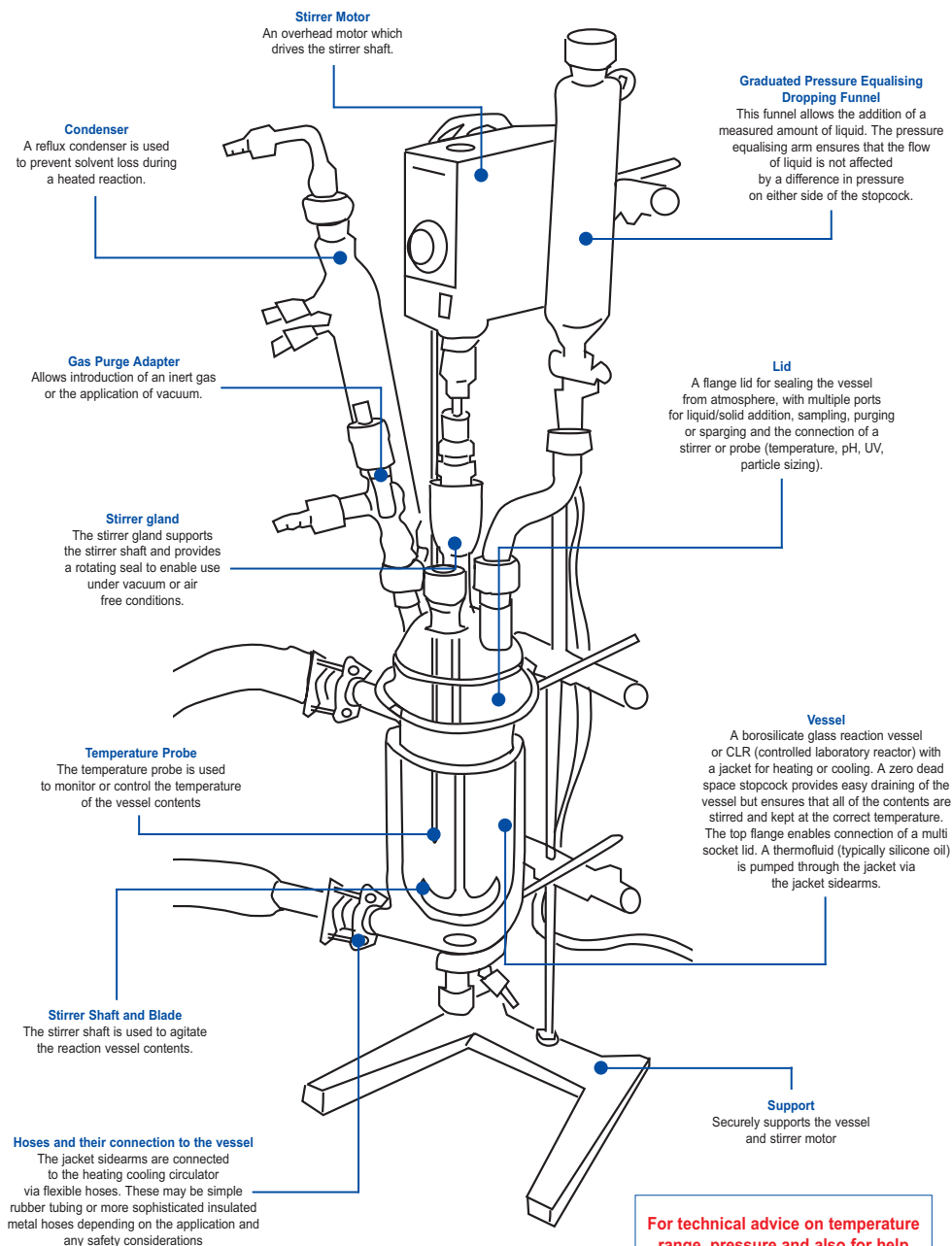
These standard laboratory reactors make the selection of an appropriate system much easier and affordable. When used in conjunction with an appropriate Thermoregulator they offer precise temperature control.

For advice with selecting your system and Thermoregulator please contact us on Email: production@radleys.co.uk or Tel: +44-(0)1799-513320



Reaction Systems

NEW Small Benchtop Reaction Systems - 250ml to 2 Litre



For technical advice on temperature range, pressure and also for help in specifying the appropriate Thermoregulator and thermofluid for your application, please Email: production@radleys.co.uk

NEW Small Benchtop Reaction Systems - 250ml to 2 Litre

The temperature range for these systems is +200°C to -50°C. The vessels are suitable for use under vacuum, but not for pressurised reactions.

Vessel

A borosilicate glass reaction vessel or controlled laboratory reactor with a jacket for heating or cooling. A zero dead space stopcock provides easy draining of the vessel but ensures that all of the contents are stirred and kept at the correct temperature. The top flange enables connection of a multi socket lid. A thermofluid (typically silicone oil) is pumped through the jacket via the jacket sidearms.

Standard System comprises:

Vessels have a grooved Schott flange for use with an FEP coated o-ring and stainless steel quick-release clamp. The jacket sidearms are tangential DN15 flanges and the drain stopcock is 15mm zero dead-space. The bottom run-off is fitted with a GL18 screwthread with sealing cap and PTFE hose connector.

Vessel Options:

- Different working volume e.g. 1500ml
- Vacuum jacket for insulation and to prevent frosting during cooling below ambient.
- Variations in shape, e.g. squat or shaped to mimic a larger plant vessel for process development.
- Different type of flange e.g. ordinary flat flange, different jacket sidearm type or position, indented baffles, graduation, thermofluid jacket drain

Lid

A flange lid for sealing the vessel from atmosphere, with multiple ports for liquid/solid addition, sampling, purging or sparging and the connection of a stirrer or probe (temperature, pH, UV, particle sizing).

Standard System comprises:

Lids have Rodaviss sockets and Schott flanges for use with an FEP coated o-ring and stainless steel quick release clamp.

Lid Options:

- Any number or configuration of necks to match the application, different flange type e.g. ordinary flat flanges, different type of joint e.g. ordinary sockets or greaseless spherical joints.
- Custom made PTFE lids.

Hoses and their connection to the vessel

The jacket sidearms are connected to the heating cooling circulator via flexible hoses. These may be simple rubber tubing or more sophisticated insulated metal hoses depending on the application and any safety considerations

Standard System comprises:

10mm bore stainless steel DN15/M16 hose connector which connects to a Huber NW10 insulated flexible metal hose. A coupling consisting of epoxy coated metal backing flanges, plastic inserts, bolts and PTFE gasket is used to connect the hose connector to the vessel. Couplings and hose connections are included in Reaction Systems, but hoses need to be ordered separately. Please call for advice.

Hose Options:

- Various other forms of hose connection are available. The most basic is to have glass hose barbs on the vessel and push rubber tubing straight on to these. Detachable hose connectors are obviously safer and several different types and sizes are available. SQ13 and GL14 may be suitable for smaller vessels.
- If rubber tubing is to be used with the larger vessels in this range, the 10mm bore PTFE hose connector is recommended. A heavy wall Rodaviss 19/26 socket should be specified for the vessel jacketed sidearm.
- Stainless steel couplings are available for DN15 sidearms.

Temperature Probe

The temperature probe is used to monitor or control the temperature of the vessel contents

Standard System comprises:

PTFE PT100 temperature probe, which is fitted with a Lemo plug for connection to a Huber heating cooling circulator. A PTFE joint adapter and Rodaviss fittings are used to provide a seal to the lid socket.

Probe Options:

- If simple monitoring is required then a Type 'K' PTFE temperature probe may be used which can be connected to a digital thermometer, recorder or datalogger.

Stirrer Motor

An overhead motor which drives the stirrer shaft.

Standard System comprises:

IKA electrically driven stirrer motor.

Stirrer Options:

- Available with an RS232 interface to monitor or control stirring speed and viscosity. By using Labworldsoft controlling software a degree of automation may be achieved.
- Air driven motors are available for use in hazardous areas.

Stirrer Shaft & Blade

The stirrer shaft is used to agitate the reaction vessel contents.

Standard System comprises:

A PTFE anchor or removable blade stirrer depending on the vessel size.

Stirrer Shaft & Blade Options:

- Different shapes of blade e.g. propeller, turbine or retreat curve, detachable blades which may be re-positioned.
- Different materials e.g. glass, PTFE coated steel, stainless steel or hastelloy. Glass is particularly suitable for the manufacture of scale down stirrers for process development work. Custom made stirrers of any shape or material are available

Stirrer Gland

The stirrer gland supports the stirrer shaft and provides a rotating seal to enable use under vacuum or air free conditions.

Standard System comprises:

PTFE stirrer guides have an internal precision glass and PTFE seal. Rodaviss fittings are provided to connect to central lid socket.

Stirrer Gland Options:

- Various other types of gland are available including magnetic coupling, all-glass stirrer guides for use with precision ground glass stirrer shafts

Graduated Pressure Equalising Dropping Funnel

This funnel allows the addition of a measured amount of liquid. The pressure equalising arm ensures that the flow of liquid is not affected by a difference in pressure on either side of the stopcock.

Standard System comprises:

Dropping funnel with Rodaviss joints and a PTFE key stopcock. It is connected to the vessel via a swan neck adapter. A PTFE faced Rodaviss sealing cap seals the top of the funnel.

Dropping Funnel Options:

- A Rotaflo stopcock may be used if a more controlled rate of addition is required.
- Dropping funnels are available ungraduated, or without the pressure equalising arm.

Condenser

Used to prevent solvent loss during a heated reaction.

Standard System comprises:

A jacketed coil reflux condenser with Rodaviss joints. GL14* plastic hose adapters provide the cooling water connection. The top of the condenser is fitted with a right angle adapter complete with GL14 PTFE hose connector.

*SQ13 screwthread may be fitted if preferred. See page 569 for further information.

Condenser Options:

- Other types of condenser are available e.g. Liebig or double surface.
- Distillation apparatus may be fitted to enable solvent evaporation and collection.

Gas Purge Adapter

Allows introduction of an inert gas or the application of vacuum.

Standard System comprises:

Gas purge adapter with Rodaviss cone, PTFE stopcock and GL14* screwthread with PTFE connector. *SQ13 screwthread may be fitted if preferred. See page 569 for further information.

Support

Securely supports the vessel and stirrer motor.

Standard System comprises:

A Support Stand consisting of a sturdy H-shape base, 1000mm upright, Viton covered lower support ring and stainless steel top support clamp. The support ring, top support clamp and stirrer motor are held in place with heavy duty bossheads.

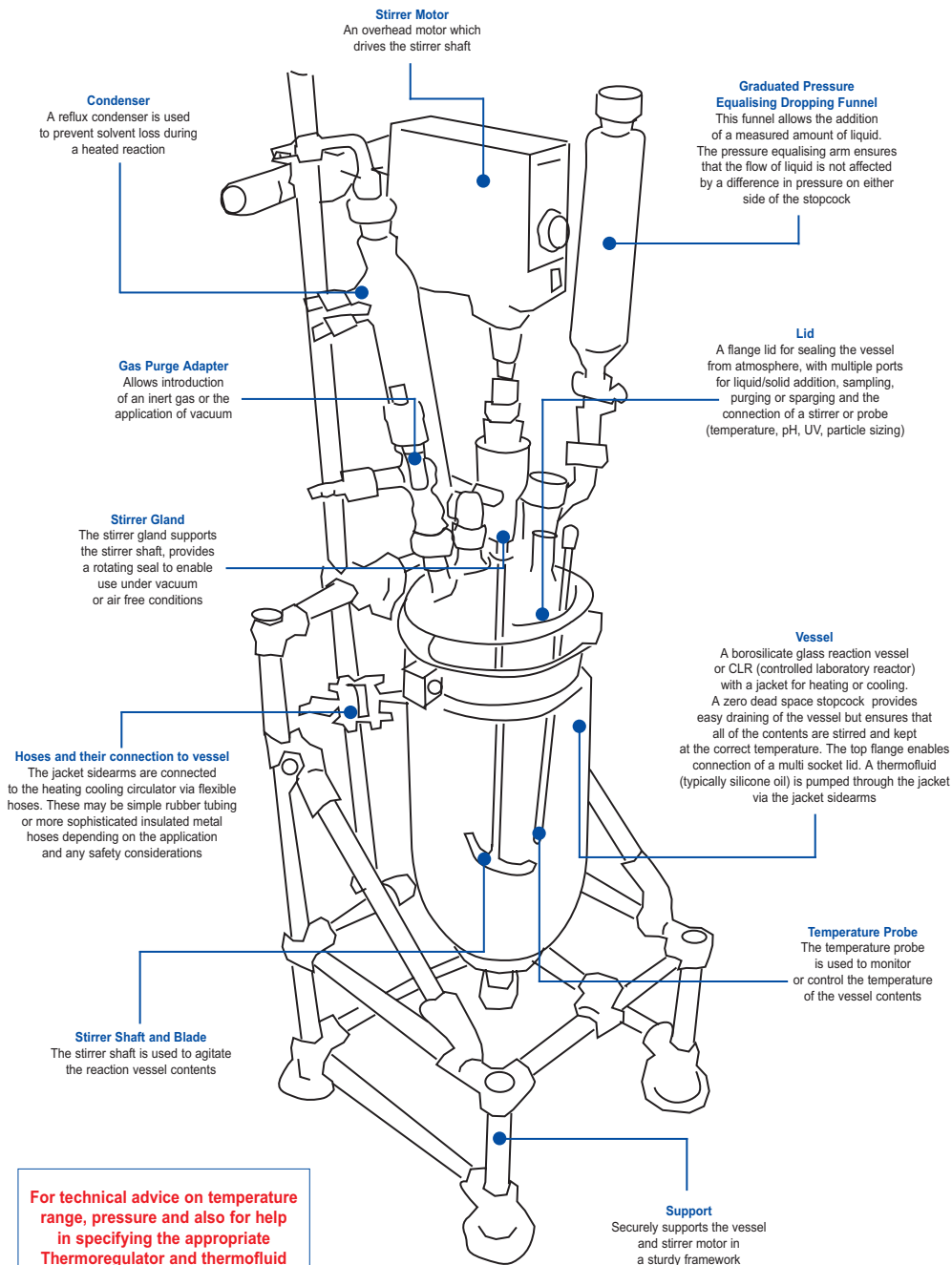
Support Options:

- Clamps, support rings and bossheads are available separately to enable small vessels to be connected to an existing laboratory framework.
- Custom made frameworks may support multiple vessels.
- Polycarbonate or acrylic safety screens may be easily fitted.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
500112	250ml Jacketed Reaction System DN15 Jacket sidearm, M16 Hose Connection DN60 Lid Flange, IKA RW16 Basic Overhead Stirrer, 50ml Dropping Funnel	1	
500114	500ml Jacketed Reaction System DN15 Jacket sidearm, M16 Hose Connection DN60 Lid Flange, IKA RW16 Basic Overhead Stirrer, 100ml Dropping Funnel	1	
500116	1 Litre Jacketed Reaction System DN15 Jacket sidearm, M16 Hose Connection DN100 Lid Flange, IKA RW16 Basic Overhead Stirrer, 250ml Dropping Funnel	1	
500118	2 Litre Jacketed Reaction System DN15 Jacket sidearm, M16 Hose Connection DN100 Lid Flange, IKA RW16 Basic Overhead Stirrer, 500ml Dropping Funnel	1	

Reaction Systems

NEW Intermediate Benchtop Reaction Systems - 2 to 5 Litres



For technical advice on temperature range, pressure and also for help in specifying the appropriate Thermoregulator and thermofluid for your application, please Email: production@radleys.co.uk

NEW Intermediate Benchtop Reaction Systems - 2 to 5 Litres

The temperature range for these systems is +200°C to -50°C. The vessels are suitable for use under vacuum, but not for pressurised reactions.

Vessel

A borosilicate glass reaction vessel or controlled laboratory reactor with a jacket for heating or cooling. A zero dead space stopcock provides easy draining of the vessel but ensures that all of the contents are stirred and kept at the correct temperature. The top flange enables connection of a multi socket lid. A thermofluid (typically silicone oil) is pumped through the jacket via the jacket sidearms.

Standard System comprises:

Vessels have a grooved Schott flange for use with an FEP coated or silicone O-ring and stainless steel quick-release clamp. The jacket sidearms are tangential DN15 flanges. 2 litre vessel has a 15mm zero dead space drain stopcock and GL18 screwthread on run-off with sealing cap and PTFE hose connector. 5 litre vessel has a 25mm zero dead space drain stopcock and a Rodaviss 24/29 heavy wall socket, catchpot and PTFE hose connector.

Vessel Options:

- Different working volume e.g. 2.2 litre, vacuum jacket for insulation and to prevent frosting during cooling below ambient. Variations in shape, e.g. squat or shaped to mimic a larger plant vessel for process development.
- A different type of flange e.g. ordinary flat flange, different jacket sidearm type or position, indented baffles, graduations and thermofluid jacket drain.

Lid

A flange lid for sealing the vessel from atmosphere, with multiple ports for liquid/solid addition, sampling, purging or sparging and the connection of a stirrer or probe (temperature, pH, UV, particle sizing).

Standard System comprises:

Reaction system lids have Rodaviss sockets and Schott flanges for use with an FEP coated o-ring and stainless steel quick release clamp.

Lid Options:

- Any number or configuration of necks to match the application, different flange type e.g. ordinary flat flanges, different type of joint e.g. ordinary sockets or greaseless spherical joints.
- Custom made PTFE lids.

Hoses and their connection to vessel

The jacket sidearms are connected to the heating cooling circulator via flexible hoses. These may be simple rubber tubing or more sophisticated insulated metal hoses depending on the application and any safety considerations

Standard System comprises:

10mm bore stainless steel DN15/M16 hose connector which connects to a Huber NW10 insulated flexible metal hose. A coupling, consisting of epoxy coated metal backing flanges, plastic inserts, bolts and PTFE gasket, is used to connect the hose connector to the vessel. Coupling and hose connections are included in Reaction Systems, but hoses need to be ordered separately. Please call for advice.

Hose Options:

- If rubber tubing and a simple hose connector are to be used, the 10mm* bore PTFE hose connector catalogue number 451010 is recommended. A heavy wall Rodaviss 19/26 socket should be specified for the vessel jacket sidearm.
- Stainless Steel couplings are available for DN15 sidearms.

*Please note that some circulators require a high flow rate, particularly during cooling, and a 10mm bore would be insufficient.

Temperature Probe

The temperature probe is used to monitor or control the temperature of the vessel contents

Standard System comprises:

PTFE PT100 temperature probe, which is fitted with a Lemo plug for connection to a Huber heating cooling circulator. A PTFE joint adapter and Rodaviss fittings are used to provide a seal to the lid socket.

Probe Options:

- If simple monitoring is required then a Type 'K' PTFE temperature probe may be used which can be connected to a digital thermometer, recorder or datalogger.

Stirrer Motor

An overhead motor which drives the stirrer shaft.

Standard System comprises:

IKA electrically driven stirrer motors.

Stirrer Options:

- IKA stirrer motors are available with RS232 interface to monitor or control stirring speed and viscosity. By using Labworldsoft controlling software a degree of automation may be achieved.
- Air driven motors are available for use in hazardous areas.

Stirrer Shaft & Blade

The stirrer shaft is used to agitate the reaction vessel contents.

Standard System comprises:

A PTFE anchor stirrer.

Stirrer Shaft & Blade Options:

- Different shapes of blade e.g. propeller, turbine or retreat curve.
- Detachable blades which may be repositioned.
- Different materials e.g. glass, PTFE coated steel, stainless steel or hastelloy. Glass is particularly suitable for the manufacture of scale down stirrers for process development work.
- Custom made stirrers of any shape or material are available

Stirrer Gland

The stirrer gland supports the stirrer shaft, provides a rotating seal to enable use under vacuum or air free conditions.

Standard System includes:

PTFE stirrer guides as standard. These have an internal precision glass and PTFE seal. Rodaviss fittings are provided to connect to central lid socket.

Stirrer Gland Options:

- Various other types of gland are available including magnetic couplings, or all-glass stirrer guides for use with precision ground glass stirrer shafts.

Graduated Pressure Equalising Dropping Funnel

This funnel allows the addition of a measured amount of liquid. The pressure equalising arm ensures that the flow of liquid is not affected by a difference in pressure on either side of the stopcock.

Standard System includes:

A dropping funnel which has Rodaviss joints and a PTFE key stopcock. It is connected to the vessel via a swan neck adapter. A PTFE faced Rodaviss sealing cap seals the top of the funnel.

Dropping Funnel Options:

- A Rotaflo stopcock may be used if a more controlled rate of addition is required.
- Dropping funnels are available ungraduated, or without the pressure equalising arm.

Condenser

Used to prevent solvent loss during a heated reaction.

Standard System includes:

A jacketed coil reflux condenser with Rodaviss joints. GL14* plastic hose adapters provide the cooling water connection. The top of the condenser is fitted with a right angle adapter complete with GL14* PTFE hose connector.

*SO13 screwthread may be fitted if preferred. See page 569 for further information.

Condenser Options:

- Other types of condenser are available e.g. Liebig or double surface.
- Distillation apparatus may be fitted to enable solvent evaporation and collection.

Gas Purge Adapter

Allows introduction of an inert gas or the application of vacuum.

Standard System includes:

Gas purge adapter with Rodaviss cone, PTFE stopcock and GL14* screwthread with PTFE connector. *SO13 screwthread may be fitted if preferred. See page 569 for further information.

Support

Securely supports the vessel and stirrer motor.

Standard System comprises:

Supported within a benchtop framework constructed from heavy gauge 27mm diameter 316 stainless steel tubing and powder coated clamps. The vessel sits on a Viton cushioned heavy-duty support ring and a sturdy top support clamp holds the vessel securely below the flange. The stirrer motor is supported from an extended central upright post.

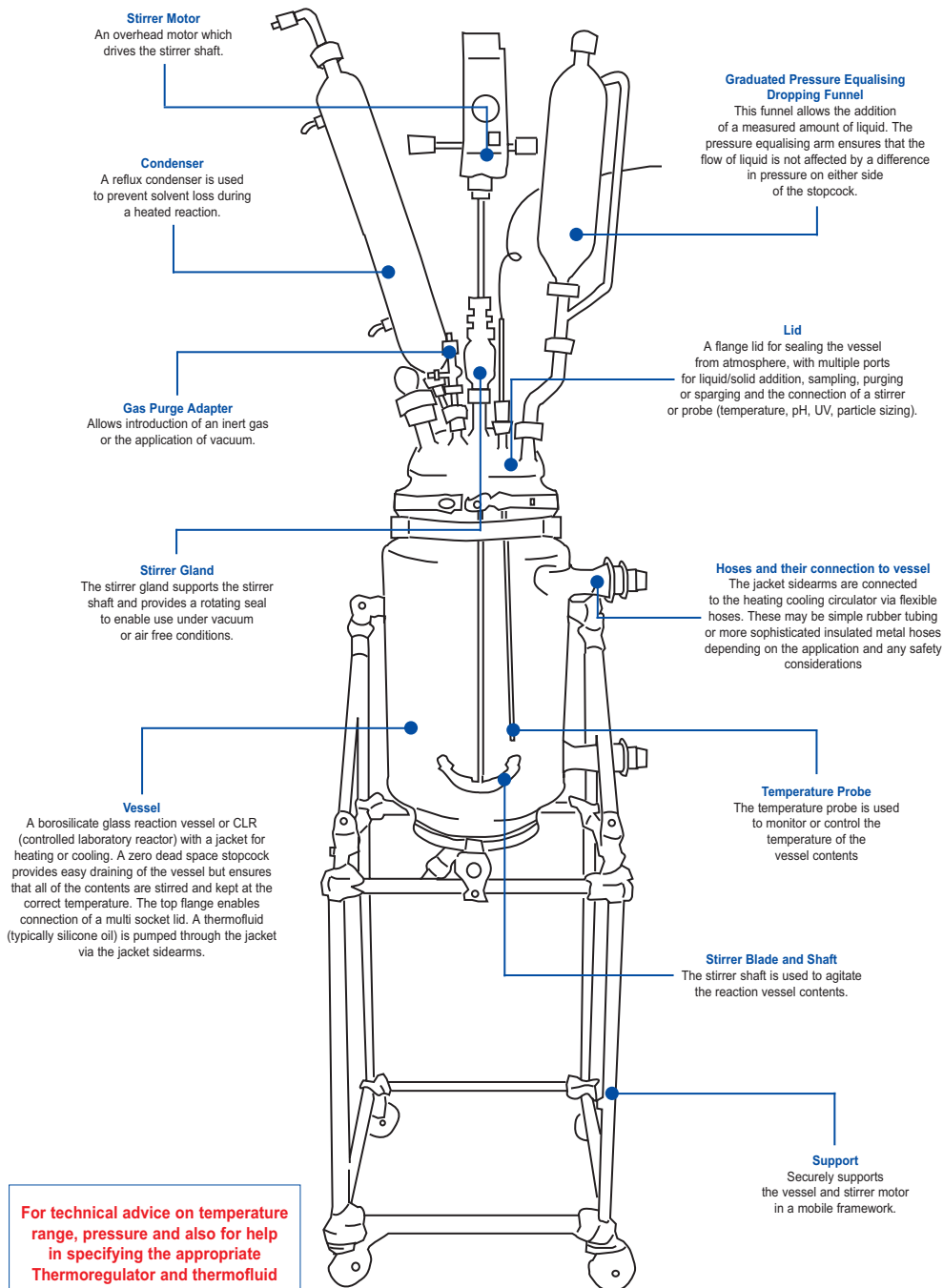
Support Options:

- Custom frameworks can be designed and manufactured to suit restricted space or a particular vessel height requirement.
- Stainless steel drip trays/bands may be fitted below the vessel.
- Custom made frameworks may support multiple vessels e.g. feeder vessels, receiver vessels or separators.
- Polycarbonate or acrylic safety screens may be easily fitted.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
500218	2 Litre Jacketed Reaction System DN15 Jacket sidearm, M16 Hose Connection, DN150 Lid Flange, IKA RW16 Basic Overhead Stirrer 500ml Dropping Funnel	1	
500124	5 Litre Jacketed Reaction System DN15 Jacket sidearm, M16 Hose Connection, DN150 Lid Flange, IKA RW16 Basic Overhead Stirrer 500ml Dropping Funnel	1	

Reaction Systems

NEW Large Mobile Reaction Systems - 10 to 20 Litres



For technical advice on temperature range, pressure and also for help in specifying the appropriate Thermoregulator and thermofluid for your application, please Email: production@radleys.co.uk

NEW Large Mobile Reaction Systems - 10 to 20 Litres

The temperature range for these systems is +200°C to -50°C. The vessels are suitable for use under vacuum, but not for pressurised reactions.

Vessel

A borosilicate glass reaction vessel or controlled laboratory reactor with a jacket for heating or cooling. A zero dead space stopcock provides easy draining of the vessel, whilst ensuring that all of the contents are stirred and kept at the correct temperature. The top flange enables connection of a multi socket lid. A thermofluid (typically silicone oil) is pumped through the jacket via the jacket sidearms.

Standard System comprises:

A grooved Schott flange for use with an FEP O-ring and stainless steel quick-release clamp. The jacket sidearms are tangential DN25 flanges and the drain stopcock is 25mm zero dead-space. The bottom run-off is fitted with a Rodaviss 24/29 heavy wall socket, a catch pot and PTFE hose connector.

Vessel Options:

- Different working volume e.g. 12 Litres
- Vacuum jacket for insulation and to prevent frosting during cooling below ambient.
- Variations in shape, e.g. squat or shaped to mimic a larger plant vessel for process development.
- A different type of flange e.g. ordinary flat flange, different jacket sidearm type or position, indented baffles, graduations and thermofluid jacket drain

Lid

A flange lid for sealing the vessel from atmosphere, with multiple ports for liquid/solid addition, sampling, purging or sparging and the connection of a stirrer or probe (temperature, pH, UV, particle sizing).

Standard System comprises:

Lids have Rodaviss sockets and Schott flanges for use with an FEP coated O-ring and stainless steel quick release clamp.

Lid Options:

- Any number or configuration of necks to match the application, different flange type e.g. ordinary flat flanges, different type of joint e.g. ordinary sockets or greaseless spherical joints.
- Custom made PTFE lids.

Hoses and their connection to the vessel

The jacket sidearms are connected to the heating cooling circulator via flexible hoses. These may be simple rubber tubing or more sophisticated insulated metal hoses depending on the application and any safety considerations

Standard System comprises:

Large reaction systems use a 20mm bore stainless steel DN25/M30 hose connector which connects to a Huber NW20 insulated flexible metal hose. A coupling, consisting of epoxy coated metal backing flanges, plastic inserts, bolts and PTFE gasket, is used to connect the hose connector to the vessel. Coupling and hose connections are included in Reaction Systems, but hoses need to be ordered separately.

Hose Options:

- If rubber tubing and a simple hose connector are to be used, the 10mm* bore PTFE hose connector Cat No. 451010 is recommended. A heavy wall Rodaviss 19/26 socket should be specified for the vessel jacket sidearm.
- Stainless Steel couplings are available for use with DN25 sidearms.

*Please note that some circulators require a high flow rate, particularly during cooling, and a 10mm bore would be insufficient.

Temperature Probe

The temperature probe is used to monitor or control the temperature of the vessel contents.

Standard System comprises:

PTFE pt100 temperature probe, which is fitted with a Lemo plug for connection to a Huber heating cooling circulator. A PTFE joint adapter and Rodaviss fittings are used to provide a seal to the lid socket.

Probe Options:

- If simple monitoring is required then a Type 'K' PTFE temperature probe may be used which can be connected to a digital thermometer, recorder or datalogger.

Stirrer Motor

An overhead motor which drives the stirrer shaft.

Standard System comprises:

IKA electrically driven stirrer motors.

Stirrer Options:

- IKA stirrer motors are available with RS232 interface to monitor or control stirring speed and viscosity. By using Labworldsoft controlling software a degree of automation may be achieved.
- Air driven motors are available for use in hazardous areas.

Stirrer Shaft & Blade

The stirrer shaft is used to agitate the reaction vessel contents.

Standard System comprises:

PTFE anchor stirrer.

Stirrer Shaft & Blade Options:

- Different shapes of blade e.g. propeller, turbine or retreat curve.
- Detachable blades which may be repositioned.
- Different materials e.g. glass, PTFE coated steel, stainless steel or hastelloy. Glass is particularly suitable for the manufacture of scale down stirrers for process development work.
- Custom made stirrers of any shape or material are available.

Stirrer Gland

The stirrer gland supports the stirrer shaft and provides a rotating seal to enable use under vacuum or air free conditions.

Standard System comprises:

PTFE stirrer guides as standard. These have an internal precision glass and PTFE seal. Rodaviss fittings are provided to connect to central lid socket.

Stirrer Gland Options:

- Various other types of gland are available including magnetic couplings, or all-glass stirrer guides for use with precision ground glass stirrer shafts.

Graduated Pressure Equalising Dropping Funnel

This funnel allows the addition of a measured amount of liquid. The pressure equalising arm ensures that the flow of liquid is not affected by a difference in pressure on either side of the stopcock.

Standard System comprises:

Dropping funnel which has Rodaviss joints and a PTFE key stopcock. It is connected to the vessel via a swan neck adapter. A PTFE faced Rodaviss sealing cap seals the top of the funnel.

Dropping Funnel Options:

- A Rotaflo stopcock may be used if a more controlled rate of addition is required.
- Dropping funnels are available ungraduated, or without the pressure equalising arm.

Condenser

A reflux condenser is used to prevent solvent loss during a heated reaction.

Standard System comprises:

Large double coil reflux condenser with Rodaviss joints, GL18 plastic hose adapters provide the cooling water connection. The top of the condenser is fitted with a right angle adapter complete with GL18 PTFE hose connector.

Condenser Options:

- Other types of condenser are available e.g. Liebig or double surface.
- Distillation apparatus may be fitted to enable solvent evaporation and collection.

Gas Purge Adapter

Allows introduction of an inert gas or the application of vacuum.

Standard System comprises:

A gas purge adapter with Rodaviss cone, PTFE stopcock and GL18 screwthread with PTFE connector.

Support

Securely supports the vessel and stirrer motor in a mobile framework.

Standard System comprises:

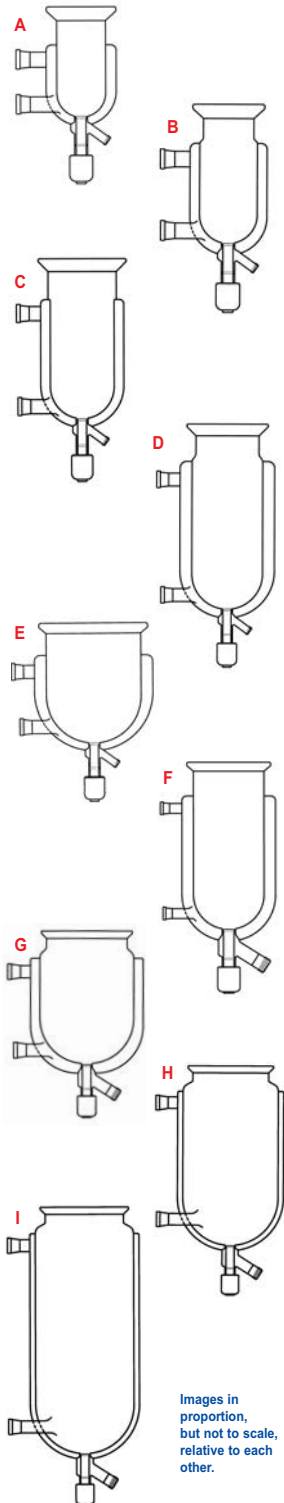
Supported within a mobile framework constructed from heavy gauge 27mm diameter 316 stainless steel tubing, and powder coated clamps. Four castors provide mobility, two of which have brakes to hold the framework in position. The vessel sits on a viton cushioned heavy-duty support ring, and a sturdy top support clamp holds the vessel securely below the flange. The stirrer motor is supported from an extended central upright post.

Support Options:

- Custom frameworks can be designed and manufactured to suit restricted space or a particular vessel height requirement.
- Stainless steel drip trays/bunds may be fitted below the vessel.
- Custom made frameworks may support multiple vessels e.g. feeder vessels, receiver vessels or separators.
- Polycarbonate or acrylic safety screens may be easily fitted.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
500128	10000ml Jacketed Reaction System DN25 Jacket sidearm, M30 Hose Connection, DN200 Lid Flange, IKA Eurostar Digital Overhead Stirrer 1000ml Dropping Funnel	1	
500132	20000ml Jacketed Reaction System DN25 Jacket sidearm, M30 Hose Connection, DN200 Lid Flange, IKA Eurostar Power Basic Overhead Stirrer 1000ml Dropping Funnel	1	

Reaction Vessels



Images in proportion, but not to scale, relative to each other.

A 250ml Reaction Vessel

Jacketed Borosilicate Reaction Vessel, with DN60 Schott flange with groove for O-ring, 15mm zero dead space stopcock, tangential DN15 jacket sidearms, GL18 screwthread on run-off with PTFE hose connector and sealing screwcap.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
379012	250ml Jacketed Reaction Vessel	1	

B 500ml Reaction Vessel

Jacketed Borosilicate Reaction Vessel, with DN60 Schott flange with groove for O-ring, 15mm zero dead space stopcock, tangential DN15 jacket sidearms, GL18 screwthread on run-off with PTFE hose connector and sealing screwcap.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
379014	500ml Jacketed Reaction Vessel	1	

C 1 Litre Reaction Vessel

Jacketed Reaction Vessel, with DN100 Schott flange with groove for O-ring, 15mm zero dead space stopcock, tangential DN15 jacket sidearms, GL18 screwthread on run-off.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
379016	1 Litre Jacketed Reaction Vessel	1	

D 2 Litre Reaction Vessel

Jacketed Reaction Vessel, with DN100 Schott flange with groove for O-ring, 15mm zero dead space stopcock, tangential DN15 jacket sidearms, GL18 screwthread on run-off.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
379018	2 Litre Jacketed Reaction Vessel	1	

E 2 Litre Squat Form Reaction Vessel

Squat Form Jacketed Reaction Vessel, with DN150 Schott flange with groove for O-ring, 15mm zero dead space stopcock, tangential DN15 jacket sidearms, GL18 screwthread on run-off with PTFE hose connector and sealing screwcap.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
380018	2 Litre Squat Jacketed Reaction Vessel	1	

F 5 Litre Reaction Vessel

Jacketed Reaction Vessel, with DN150 Schott flange with groove for O-ring, 25mm zero dead space stopcock, tangential DN15 jacket sidearms, heavy wall Rodaviss 24/29 socket on run-off.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
379024	5 Litre Jacketed Reaction Vessel	1	

G 10 Litre Reaction Vessel

Jacketed Reaction Vessel, with DN200 Schott flange with groove for O-ring, 25mm zero dead space stopcock, tangential DN15 jacket sidearms, heavy wall Rodaviss 24/29 socket on run-off.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
379028	10 Litre Jacketed Reaction Vessel	1	

H 20 Litre Reaction Vessel

Jacketed Reaction Vessel, with DN200 Schott flange with groove for O-ring, 25mm zero dead space stopcock, tangential DN15 jacket sidearms, heavy wall Rodaviss 24/29 socket on run-off.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
379032	20 Litre Jacketed Reaction Vessel	1	

I 30 Litre Reaction Vessel

Jacketed Reaction Vessel, with DN200 Schott flange with groove for O-ring, 25mm zero dead space stopcock, tangential DN15 Jacket sidearms, heavy wall Rodaviss 24/29 socket on run-off.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
379034	30 Litre Jacketed Reaction Vessel	1	

J 250ml Vacuum Jacketed Reaction Vessel

Vacuum Jacketed Reaction Vessel, with DN60 Schott flange with groove for O-ring, 15mm zero dead space stopcock, tangential DN15 jacket sidearms, GL18 screwthread on run-off.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
379712	250ml Vacuum Jacketed Reaction Vessel	1	

K 500ml Vacuum Jacketed Reaction Vessel

Vacuum Jacketed Reaction Vessel, with DN60 Schott flange with groove for O-ring, 15mm zero dead space stopcock, tangential DN15 jacket sidearms, GL18 screwthread on run-off.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
379714	500ml Vacuum Jacketed Reaction Vessel	1	

L 1 Litre Vacuum Jacketed Reaction Vessel

Vacuum Jacketed Reaction Vessel, with DN100 Schott flange with groove for O-ring, 15mm zero dead space stopcock, tangential DN15 jacket sidearms, GL18 screwthread on run-off.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
379716	1 Litre Vacuum Jacketed Reaction Vessel	1	

M 2 Litre Vacuum Jacketed Reaction Vessel

Vacuum Jacketed Reaction Vessel, with DN100 Schott flange with groove for O-ring, 15mm zero dead space stopcock, tangential DN15 jacket sidearms, GL18 screwthread on run-off.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
379718	2 Litre Vacuum Jacketed Reaction Vessel	1	

N 5 Litre Vacuum Jacketed Reaction Vessel

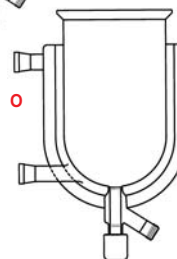
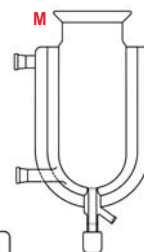
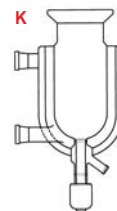
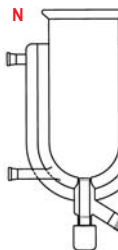
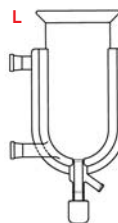
Vacuum Jacketed Reaction Vessel, with DN150 Schott flange with groove for O-ring, 25mm zero dead space stopcock, tangential DN15 jacket sidearms, heavy wall Rodaviss 24/29 socket on run-off.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
379724	5 Litre Vacuum Jacketed Reaction Vessel	1	

O 10 Litre Vacuum Jacketed Reaction Vessel

Vacuum Jacketed Reaction Vessel, with DN200 Schott flange with groove for O-ring. 25mm zero dead space stopcock, tangential DN15 jacket sidearms, heavy wall Rodaviss 24/29 socket on run-off.

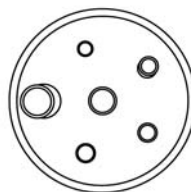
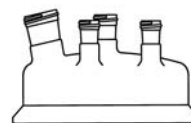
CAT NO	DESCRIPTION	PK QTY	PRICE EACH
379728	10 Litre Vacuum Jacketed Reaction Vessel	1	



Images in proportion, but not to scale, relative to each other.

NEW Reaction Vessel Lids - with Rodaviss sockets

CAT NO	DESCRIPTION	NO. NECKS	CENTRAL	SIDE VERTICAL	SIDE ANGLED	PRICE EACH
376006	DN60 Schott Flange Lid	4	1 x B19/26	-	3 x B19/26	
376005	DN60 Schott Flange Lid	5	1 x B19/26	-	4 x B19/26	
376001	DN100 Schott Flange Lid	5	1 x B24/29	1 x B19/26 1 x B24/29	1 x B24/29 1 x B29/32	
376000	DN100 Schott Flange Lid	6	1 x B24/29	2 x B19/26 1 x B24/29	1 x B24/29 1 x B29/32	
376016	DN150 Schott Flange Lid	5	1 x B34/35	1 x B29/32 1 x B19/26	1 x B29/32 1 x B45/40	
376015	DN150 Schott Flange Lid	6	1 x B34/35	1 x B29/32 1 x B19/26 1 x B24/29	1 x B29/32 1 x B45/40	
376021	DN200 Schott Flange Lid	5	1 x B34/35	1 x B29/32 1 x B19/26	1 x B29/32 1 x B45/40	
376020	DN200 Schott Flange Lid	6	1 x B34/35	1 x B29/32 1 x B19/26 1 x B24/29	1 x B29/32 1 x B45/40	



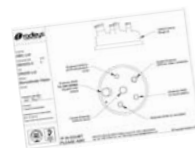
Reaction Vessel Lids & Accessories



Custom Reaction Vessel Lids - with Rodaviss

Selecting the lid you require is simple:-

1. Select the lid flange size.
2. Select the number and size of sockets.
3. Select the position and angle of the sockets.
4. Attach this information to your purchase order.
5. On receipt of your instructions we will contact you to confirm your requirements.
6. If you find it easier, simply sketch what you want and we will do the rest.



CAT NO	DESCRIPTION	NO. OF NECKS	PRICE EACH
376453	DN 60 Schott O-ring Flange	3	
376454	DN 60 Schott O-ring Flange	4	
376423	DN 100 Schott O-ring Flange	3	
376424	DN 100 Schott O-ring Flange	4	
376425	DN 100 Schott O-ring Flange	5	
376433	DN 150 Schott O-ring Flange	3	
376434	DN 150 Schott O-ring Flange	4	
376435	DN 150 Schott O-ring Flange	5	
376443	DN 200 Schott O-ring Flange	3	
376444	DN 200 Schott O-ring Flange	4	
376445	DN 200 Schott O-ring Flange	5	



Complete Rodaviss connections...

All apparatus which incorporates a Rodaviss cone will come supplied with the appropriate O-rings, Loosening Rings and Connecting Caps required for assembly.

If you prefer ordinary joints...

Whilst Rodaviss joints are completely interchangeable with ordinary joints, we will be pleased to offer any item from our range with ordinary ground joints instead of Rodaviss at no extra charge



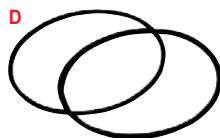
A Stainless Steel Clamps for Schott® Flanges - fast release

CAT NO	DESCRIPTION	PK QTY	PRICE
378405	DN 60 Schott Fast Release Clamp	1	
378410	DN 100 Schott Fast Release Clamp	1	
378415	DN 150 Schott Fast Release Clamp	1	
378420	DN 200 Schott Fast Release Clamp	1	



B FEP Coated O-Rings for Schott® Flanges

CAT NO	DESCRIPTION	PK QTY	PRICE
378605	DN 60 FEP O-Ring	1	
378610	DN 100 FEP O-Ring	1	
378615	DN 150 FEP O-Ring	1	
378620	DN 200 FEP O-Ring	1	



C Silicone O-Rings for Schott® Flanges

CAT NO	DESCRIPTION	PK QTY	PRICE
378005	DN 60 Silicone O-Ring	1	
378010	DN 100 Silicone O-Ring	1	
378015	DN 150 Silicone O-Ring	1	
378020	DN 200 Silicone O-Ring	1	

D Viton® O-Rings for Schott® Flanges

CAT NO	DESCRIPTION	PK QTY	PRICE
378105	DN 60 Viton O-Ring	5	
378110	DN 100 Viton O-Ring	5	
378115	DN 150 Viton O-Ring	5	
378120	DN 200 Viton O-Ring	5	

Benchtop Support Stand - for small reaction vessel

This benchtop stand is suitable for 250ml to 2000ml reaction vessels. It incorporates a cast iron, blue acrylic coated base with rubber feet. Choose from a 700mm or 1000mm x 18mm diameter nickel plated steel upright. The (555250) lower support ring (76mm ID) and (555280) stainless steel top support clamp (100mm ID) are held in position with anodised aluminium bossheads. Stand is supplied complete with allen keys for positioning and tightening of supports.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
555310	Complete support stand with 700mm upright	1	
555315	Complete support stand with 1000mm upright	1	



Jumbo™ Top Support Clamp - for large reaction vessels

This two piece heavy duty top support clamp fits below the flange of larger reaction vessels. Made from 316 stainless steel the supporting rod is 27mm O.D. x 200mm long. The inside of the clamp is cushioned with heat resistant covering.



CAT NO	DESCRIPTION	PK QTY	PRICE EACH
555230	Two piece heavy duty top support clamp to fit DN 150 flange	1	
555240	Two piece heavy duty top support clamp to fit DN 200 flange	1	

NEW Top Support Clamp - for DN 60 Flange

This two piece top support clamp fits below the flange of smaller reaction vessels. Made from 316 stainless steel the supporting rod is 12.5mm O.D. x 200mm long. The inside of the clamp is cushioned with heat resistant covering.



CAT NO	DESCRIPTION	PK QTY	PRICE EACH
555265	Two piece top support clamp to fit DN 60 flange	1	

Jumbo™ Lower Support Ring - for large reaction vessels

This heavy duty lower support ring is made from 316 stainless steel. The support rods are 27mm O.D. Overall length is 525mm. The ring is cushioned by heat resistant covering.



CAT NO	DESCRIPTION	PK QTY	PRICE EACH
555210	Lower support ring, inside Ø 120mm	1	
555220	Lower support ring, inside Ø 190mm	1	

Single Piece Top Support Clamp - for reaction vessels

This single piece top support clamp fits below the flange of the reaction vessel. Made from stainless steel the rod is 12.5mm O.D. x 200mm long. The inside of the clamp is cushioned with heat resistant covering and is supplied with its own allen key to tighten securing bolt.



CAT NO	DESCRIPTION	PK QTY	PRICE EACH
555280	Single piece top support clamp to fit 100mm flange	1	
555290	Single piece top support clamp to fit 150mm flange	1	
555300	Single piece top support clamp to fit 200mm flange	1	

Lower Support Ring - for small reaction vessels

This lower support ring has an opening for easy insertion of the reaction vessel. The rod dimensions are 12.5mm O.D. x 200mm long.



CAT NO	DESCRIPTION	RING I.D.	SLOT I.D.	PK QTY	PRICE EACH
555250	Lower support ring for small vessels	76mm	38mm	1	
555260	Lower support ring for small vessels	100mm	44mm	1	

NEW Rodaviss Gas Purge Adapter

Allows application of vacuum or purging of an inert gas.

CAT NO	DESCRIPTION	CONE SIZE	SIDEARM	PISTON	PK QTY	PRICE EACH
386000	Rodaviss Gas Purge Adapter	19/26	GL14	10mm	1	
386010	Rodaviss Gas Purge Adapter	24/29	GL18	10mm	1	



NEW Rodaviss Swan Neck Adapter - Rodaviss cone & socket

Swan neck adapter is used to connect dropping funnel to reaction vessel where space around the lid is restricted.

CAT NO	DESCRIPTION	CONE SIZE	SOCKET SIZE	PK QTY	PRICE EACH
311000	Rodaviss Swan Neck Adapter	24/29	24/29	1	
312000	Rodaviss Swan Neck Adapter	29/32	24/29	1	
313000*	Rodaviss Swan Neck Adapter	19/26	19/26	1	

*This item is angled to suit lids 376005 & 376006 not vertical as picture.



Reaction Vessel Accessories



NEW Rodaviss Cone Stopper

Rodaviss cone stopper used to blank off unused reaction vessel lid ports.

CAT NO	DESCRIPTION	CONE SIZE	PK QTY	PRICE EACH
480514	Rodaviss Glass Stopper	14/23	1	
480519	Rodaviss Glass Stopper	19/26	1	
480524	Rodaviss Glass Stopper	24/29	1	
480529	Rodaviss Glass Stopper	29/32	1	
480534	Rodaviss Glass Stopper	34/35	1	
480545	Rodaviss Glass Stopper	45/40	1	



NEW Right Angle Adapter - Rodaviss cone

Right angle adapter with a Rodaviss 29/32 cone and GL18 screwthread.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
312804	Right Angle Adapter	1	



NEW DN Sidearm Hose Couplings

These couplings securely clamp stainless steel DN hose connector to glass DN sidearm on vessel jacket. These couplings ensure bolt load applied to joint is sufficient to make an effective seal, whilst not unduly stressing the glass. Couplings include: backing flanges, inserts, sprung bolt assembly and PTFE gasket.



CAT NO	DESCRIPTION	PK QTY	PRICE EACH
555411	DN 15 Stainless Steel	1	
555431	DN 25 Stainless Steel	1	
555415	DN 15 Replacement PTFE Gasket	2	
555435	DN 25 Replacement PTFE Gasket	2	



NEW Stainless Steel DN Hose Connectors

Stainless steel hose connectors for use with standard DN vessel sidearms and Huber flexible insulated metal hoses. See Huber Thermoregulators accessories page 470 for hose details.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
555400	DN 15 to M16 x 1, cone seat, male	1	
555401	DN 15 to M24 x 1.5, cone seat, male	1	
555420	DN 25 to M30 x 1.5, cone seat, male	1	
555440	DN 25 to M16 x 1 cone seat, male	1	



NEW Stainless Steel Hose Connector - with drain valve

This modified hose connector incorporates a drain valve to aid draining of thermofluid from reaction systems.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
555405	DN15 to M16	1	
555425	DN25 to M30	1	



NEW Replacement Zero Dead Space Pistons - PTFE

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
A 380415	MK4 15mm Replacement Drain Valve Piston for Single Jacket Reaction Vessel	1	
B 380515	MK4 15mm Replacement Drain Valve Piston for Vacuum Jacket Reaction Vessel	1	
C 380025/4	MK4 25mm Replacement Drain Valve Piston for Single Jacket Reaction Vessel	1	
D 382025/4	MK4 25mm Replacement Drain Valve Piston for Vacuum Jacket Reaction Vessel	1	



Please contact your distributor for details of replacement pistons for vessels purchased before January 2005.



Jumbo™ Support Systems

Versatile heavy duty framework, ideal for when ordinary laboratory retort stands, rods and bossheads are not up to the job.

Assembly

Structures are assembled using heavy duty 27mm steel tubing (316 stainless steel) which is connected with cast iron Jumbo clamps. Hexagonal screws lock the clamps firmly in position. Jumbo clamps are supplied with a hard wearing blue gloss polyester coating (as shown below) for improved protection and appearance.

Accessories

Heavy duty Jumbo support rings and clamps are designed to compliment our range of reaction equipment (see page 619). Other custom components include;

- Stainless steel spill trays.
- Lightproof cabinets for photochemical reactors.
- Acrylic or polycarbonate safety shields.
- Custom clamps and supports.

Design Service...

You can either design and build your own structure by ordering components listed below, or take advantage of our in-house design service, which can provide you with specifications and a quotation to meet your exact requirements. Please call for more information.



90° Crossover



Swivel



Short Tee



3 Way 90° Elbow



90° Elbow



Corner with Centre



Sleeve Joint



Long Tee



Locking Collar



Hook



Round Base Flange



Long Base Flange



Side Outlet Tee



2 Socket Cross with Centre



Castor with Swivel



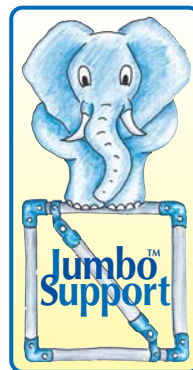
Castor with Swivel and Brake



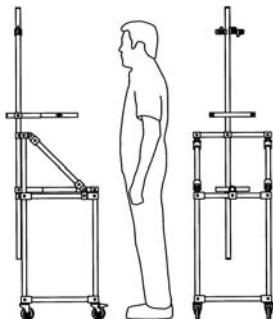
Plastic End Stopper



Polished 316 Stainless Steel



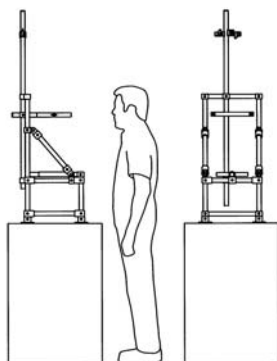
Reaction Vessel Accessories



NEW Jumbo™ Mobile Vessel Support Frame

Constructed from heavy duty 27mm \varnothing 316 stainless steel tubing and powder coated clamps, with top support clamp for DN200 flange and 190mm \varnothing Viton cushioned support ring. Fitted with 4 castors, 2 of which are able to be braked. Bosshead on back upright for supporting stirrer motor.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
555750	Heavy Duty Mobile Reaction Vessel Support Frame	1	



NEW Jumbo™ Benchtop Vessel Support Frame

Constructed from heavy duty 27mm \varnothing 316 stainless steel tubing and powder coated clamps, with top support clamp for DN150 flange and 120mm \varnothing Viton cushioned support ring. Bosshead on back upright for supporting stirrer motor.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
555650	Heavy Duty Benchtop Reaction Vessel Support Frame	1	



NEW Combination PTFE Baffle/Temperature Probe

This item allows the insertion of a baffle to improve agitation of the vessel contents, and combines this with a PT100 sensor which is moulded into the tip, thus saving port space in the vessel lid. The baffle/probe is supplied as standard with a Rodaviss 29/32 fitting and two metres of cable fitted with a Lemo plug for connection to a suitable thermoregulator. Please specify a vertical Rodaviss 29/32 socket on the vessel lid to enable use of this probe. Please contact us by email on production@radleys.co.uk with the vessel specifications or required length and we will provide a quotation by return.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
555800	Combination PTFE baffle/Temperature Probe	1	



NEW Lemo Plug Fitting Service

Supply and fit lemo plug to PT100 temperature probes for connection to Huber thermoregulators.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
555600	Lemo Plug Fitting Service	1	



Type-K Thermocouple Probes - PTFE, up to 300°C

Solid PTFE temperature probes bring a whole new dimension to temperature measurement technology. Accuracy: $\pm 1.5^\circ\text{C}$ or $\pm 0.004^\circ\text{C}$. Isostatic molding techniques are used to manufacture probes which are inert to virtually all chemicals, and which have unsurpassed non-stick properties. Probes will not contaminate your sample and are suitable for use from cryogenic temperatures up to $+300^\circ\text{C}$. Probe bodies have a metal core for rigidity, but can be bent. Thermocouple is Type K, Class 1 to BS4937 DIN 43710 and IEC581 with a PTFE insulated cable with PFA over-sheath.

Supplied with 1 metre of cable and Type K flat pin mini plug. Extra cable is £4.34 per metre. Please put cable length in metres as last number in Cat No. e.g. 600.201.4 for four metres.

CAT NO	DESCRIPTION	DIMENSIONS	PK QTY	PRICE EACH
600.101.1	PTFE Type-K Thermocouple Probe	7mm \varnothing x 100mm body length	1	
600.201.1	PTFE Type-K Thermocouple Probe	7mm \varnothing x 200mm body length	1	
600.301.1	PTFE Type-K Thermocouple Probe	8mm \varnothing x 300mm body length	1	
600.401.1	PTFE Type-K Thermocouple Probe	8mm \varnothing x 400mm body length	1	
600.501.1	PTFE Type-K Thermocouple Probe	9mm \varnothing x 500mm body length	1	
600.601.1	PTFE Type-K Thermocouple Probe	9mm \varnothing x 600mm body length	1	
600.701.1	PTFE Type-K Thermocouple Probe	9mm \varnothing x 700mm body length	1	

Platinum Resistance Temperature Probes - PTFE, up to 300°C

Solid PTFE platinum resistance probes offer superior accuracy: $\pm 0.3^\circ\text{C}$ or $\pm 0.002^\circ\text{C}$. Isostatic molding techniques are used to manufacture probes which are inert to virtually all chemicals, and which have unsurpassed non-stick properties. Probes will not contaminate your sample and are suitable for use from cryogenic temperatures up to $+300^\circ\text{C}$. Probe bodies have a metal core for rigidity, but can be bent. Sensor is Class A to BS1904, DIN43760 and IEC751 with a 4 core PTFE insulated cable with PFA over-sheath. Connection may be 2, 3 or 4 wire.



Supplied with 1 metre of cable, but without plug. Extra cable is £4.34 per metre. Please put cable length in metres as last number in Cat No.e.g. 500.200.4 for four metres.

CAT NO	DESCRIPTION	DIMENSIONS	PK QTY	PRICE EACH
500.100.1	PTFE Platinum Resistance Temperature Probe	7mm ϕ x 100mm body length	1	
500.200.1	PTFE Platinum Resistance Temperature Probe	7mm ϕ x 200mm body length	1	
500.300.1	PTFE Platinum Resistance Temperature Probe	8mm ϕ x 300mm body length	1	
500.400.1	PTFE Platinum Resistance Temperature Probe	8mm ϕ x 400mm body length	1	
500.500.1	PTFE Platinum Resistance Temperature Probe	9mm ϕ x 500mm body length	1	
500.600.1	PTFE Platinum Resistance Temperature Probe	9mm ϕ x 600mm body length	1	
500.700.1	PTFE Platinum Resistance Temperature Probe	9mm ϕ x 700mm body length	1	

NEW Probe & Thermometer Holders - PTFE

Enables standard probes and thermometers to be assembled in standard taper laboratory glassware. The body is pure PTFE and is fully adjustable with a replaceable Viton seal. Contact materials are glass and PTFE only.



CAT NO	DESCRIPTION	PROBE ϕ	SEAL CAT NO.	PK QTY	PRICE EACH
021.146.1	14/23 Cone	6mm	021.06S	1	
021.147.1	14/23 Cone	7mm	021.07S	1	
021.148.1	14/23 Cone	8mm	021.08S	1	
021.149.1	14/23 Cone	9mm	021.09S	1	
021.196.1	19/26 Cone	6mm	021.06S	1	
021.197.1	19/26 Cone	7mm	021.07S	1	
021.198.1	19/26 Cone	8mm	021.08S	1	
021.199.1	19/26 Cone	9mm	021.09S	1	

Huber High Precision Thermoregulators

Huber are world leaders in the field of thermoregulation - finding simple solutions to a complex problem. The results are "Tango Technology", "Plug and Play Technology" and the Unistat range of thermostats.

- Unistats, Polystats and Ministats
- Compatible Control Thermostats
- Unichillers
- Calibration Bath Equipment

Based on passive components and the laws of physics, the "Tango Technology" is so sound in its concept that the same principle is used from the smallest benchtop system (Unistat Tango) to a unit that delivers 60kW @ -40°C (Unistat 1060).

Following their introduction in 1991, Huber Unistats soon became the thermostat of choice for accurate and responsive control of a wide variety of applications in the pharmaceutical, chemical, petrochemical and semiconductor industries.

The Unistats' low volume, hydraulically sealed system has set a high bench mark in the level of control and response to dynamic thermal loads. It has raised the possibilities and expectations of the industry.

12 years on, the Unistats and the Tango Technology have been refined, the range has grown and the possibilities increased. More power, wider temperature range, easier to use.

Three interchangeable, intuitive, easy to use controllers with practical features and flexibility to keep up to speed with ever changing demands.

Focusing on the application - Huber offer power and response where and when needed... at the process!

Controllers using "Plug and Play" technology are now used on all products except Unistats. This brings a level of familiarity, flexibility and ease of use that is unequalled in our industry.

See the Huber Thermoregulator section of ChemScience Catalogue for more information...



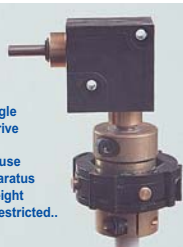
huber

Supply ✓
 Servicing ✓
 Support ✓

Reaction Vessel Accessories

Right Angle
Stirrer Drive

Ideal for use
with apparatus
where height
may be restricted..



NEW Right Angle Stirrer Drive - for 9.5mm diameter shafts

This unit combines a right angle drive and a coupling which compensates for misalignment. Suitable for use where space above a vessel is limited. Accepts PTFE or metal 9.5mm shafts.

CAT NO	DESCRIPTION	PK QTY	PRICE EACH
555320	Right Angle Stirrer Drive	1	



Eurostar power basic
Overhead Stirrer



RW 20 DZM.n
Mechanical
Overhead Stirrer

NEW IKA® Overhead Stirrers

IKA overhead stirrers are powerful slimline, laboratory and process stirrers for stirring tasks up to the "high viscosity" range. Features include:

- Microprocessor control
- Infinitely adjustable without gear shifting
- Slim casing, quiet running
- Non-locking, overload capabilities
- Push through stirring shafts

For prices and specifications on IKA Stirrers please see ChemScience Catalogue



PLR Compressed
Air Stirrers from
Buddeberg

NEW Compressed Air Stirrer - Buddeberg

Compressed Air Stirrers are ideal for all kinds of lab stirring tasks. Features include:-

- Explosion proof
- Very high power to weight ratio
- Can be overloaded to a standstill without causing damage
- Well suited to continuous operation

For prices on Compressed Air Stirrers please see ChemScience Catalogue



Version 5 PTFE
Stirrer Guide



Version 6 PTFE
Stirrer Guide

NEW PTFE Stirrer Guides

These PTFE Stirrer Guides are designed to provide a reliable and safe means of entry for stirrer shafts into reaction or fermentation vessels. They are suitable for all types of stirrer shaft of 6, 8, 9.5, 10, 12 and 16mm diameter.

Note: All stirrer shafts may whip at certain speed, therefore to avoid damage to shaft or vessel, always ensure that the speed elected is 'whip free'

Two versions of PTFE stirrer guide are available, Version 5 and Version 6.

For prices and specifications on PTFE Stirrers Guides please see ChemScience Catalogue



Propeller Stirrer, 4-bladed

NEW Stirrer Shafts & Blades

A wide range of PTFE, glass and metal stirrer shafts and guides.

- PTFE - Chemically inert, unbreakable, easy to clean, useable up to 280°C
- Glass - Chemically inert, easy to clean, non-shedding
- Metal - Robust up to high speeds, rigid, easy to clean, non-shedding

For prices and specifications on these Stirrers Shafts please see ChemScience Catalogue



Borosilicate Glass Stirring
Shafts and Guides



PTFE Screw Propeller Stirrer



PTFE Centrifugal Stirrer



Maxi Propeller Stirrer Shaft

Prices

All Prices are in Pounds Sterling and subject to alteration without prior notice. We reserve the right to invoice goods at prices ruling at the date of despatch. Prices are exclusive of carriage, packing, insurance and VAT. Our preferred minimum order value is £30 net.

Delivery of Goods

We will despatch all goods by the most cost effective method of transport unless otherwise specified by the customer. Please advise of any special shipping requirements. For details of carriage, packing and insurance charges please contact our Sales Office on Tel: +44-(0)1799-513320.

Quotations

All offers, written or verbal, are valid for 30 days, unless otherwise specified. The right is reserved to amend any accidental errors.

Damage or Shortage of Delivered Goods

Within three working days advise the carrier both in writing and verbally. Immediately advise us both in writing and verbally. Retain goods and packaging for inspection. Deliveries offered ex-stock are subject to the goods being unsold at the date of receipt of customer's order.

Payment of Accounts

Our terms of payment are strictly 30 days from date of invoice, subject to approved trade and bankers' references.

Responsibility

Our responsibility is limited to the supply of goods in the kind and quality ordered. All goods should be checked before use as no subsequent liability can be accepted.

Free-Issue Materials and Repairs

We are not responsible for damage to articles sent to us for repair or examination, nor for incidental damage to glass apparatus and delicate instruments during the course of repair whilst on our premises, or during transit, to or from our premises. Time involved in the preliminary examination of any article may be charged in the event of no subsequent order being placed. Goods for repair should be sent carriage paid and clearly labelled with the sender's name and address; at the same time a note should be included detailing the work required. Any goods sent for repair, maintenance or return should be free from physical, chemical and biological hazards.

On-site Work

No responsibility can be accepted for any accident, however caused, whilst our employees are on the customer's premises. Safety precautions are the hirer's responsibility.

Tools or Moulds

Unless otherwise agreed between the purchaser and ourselves, in the case of orders where special tools, moulds, gauges etc, are required for the manufacturer of the parts to be supplied, the purchaser will be charged with a part cost of the manufacture or purchase of such tool, as and when samples for approval are being submitted. We reserve the right to retain possession of all such tools.

Return of Goods

Return of correctly supplied goods will not be accepted unless agreed arrangements have been made. A separate advice of despatch should be sent to us for all items. No responsibility will be accepted for items damaged or lost in transit.

Illustrations and Specifications

Subject to alteration without notice. They are not binding and are only intended to represent generally the type of goods offered, as owing to improvements and revision of design and/or change of service, apparatus may not conform to them in detail.

Bank Details

Lloyds Bank plc, 25 East Gate, Harlow Town Centre, Harlow, Essex. CM20 1LD. United Kingdom Account Name: R. B. Radley & Co. Ltd.
Account Number: 0149739. Bank Sort Code: 30-93-89

New Customers

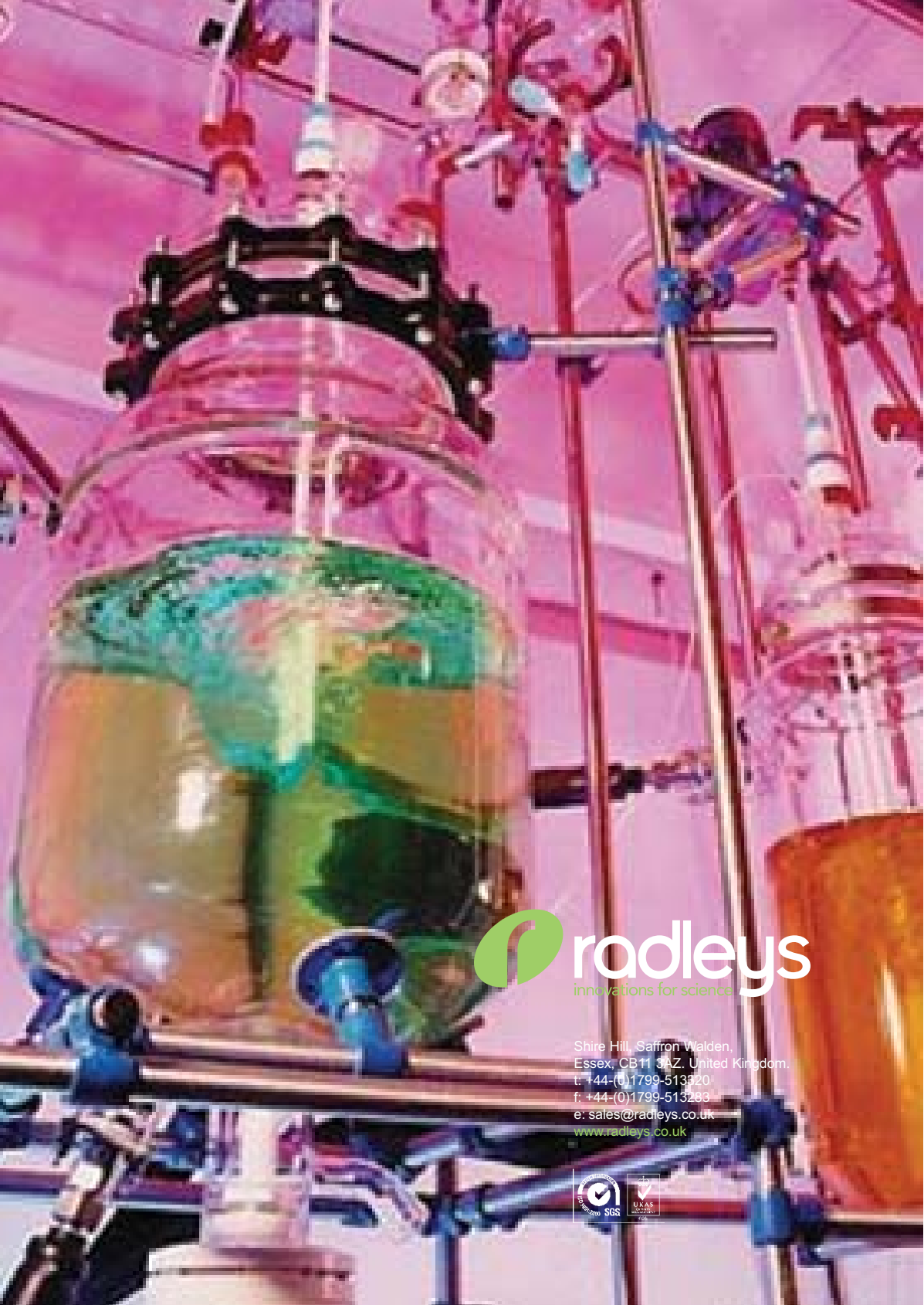
For new customers there may be some delay in despatching goods until credit has been approved. To avoid the delay customers may remit on Proforma invoice, where goods will be despatched after remittance is received.

Export Customers

Our terms of payment are strictly 30 days from date of invoice, subject to credit approval. All invoices will be in Pounds Sterling and should be remitted in Sterling. Payment should be made by Bankers Draft drawn in Sterling and sent direct to ourselves or by International Money Transfer, direct to our bank. When remitting by IMT please advise us of details in advance.

Pay by Credit Card

For your convenience we accept payment by all leading credit or debit cards. Credit card orders are accepted by telephone, fax, post or email. Please provide your card number, card holders name, address and expiry date when placing your order. Payment is debited when your goods are despatched.



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innovations for science

Shire Hill, Saffron Walden,
Essex, CB11 3AZ, United Kingdom.
t: +44-(0)1799-513520
f: +44-(0)1799-513263
e: sales@radleys.co.uk
www.radleys.co.uk

