

Looking for more flexible, productive heating and stirring apparatus?



RADLEYS  
DISCOVERY  
TECHNOLOGIES



**StarFish™**  
Multi-experiment work station...

[www.starfish-chemistry.com](http://www.starfish-chemistry.com)



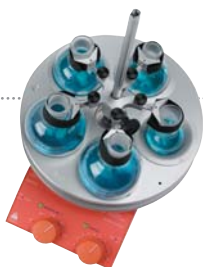


## StarFish - introduction

### Advantages...

#### StarFish offers many advantages over standard experimental set-ups...

- Money saving...**  
 Cheaper than using multiple stirrers, hotplates, heating mantles or oil baths. Also allows you to use your existing stirring hotplate and glassware.
- Compact...**  
 Uses less space than multiple heating and stirring set-ups.
- True versatility...**  
 Accommodates a wider range of vessel types and accessory glassware than any other system. Use it for one application today and a different one tomorrow.
- Simple set-up...**  
 Unique clamp and distribution manifolds mean less tubing and clamping and easier set-up.
- More flexible...**  
 Use as many or as few positions as you want.
- Easy to use...**  
 Simple design means it is easy to use and quick to assemble or disassemble. Requires minimal training to operate.
- Increased Productivity...**  
 Multiple positions allow you to heat and stir experiments in parallel for improved productivity.
- Safer, cleaner working...**  
 Eliminates the need for oil baths, reducing spills and accidents.



StarFish is a modular, general purpose heating and stirring work station designed to fit on all leading brands of stirring hotplate which accepts a wide range of standard glassware, including; vials, test tubes, beakers and round-bottomed flasks.

Whether you just want to heat and stir, or perform more complex experiments, StarFish really can make your life easier and improve the productivity of your lab. But don't take our word for it! Visit [www.starfish-chemistry.com](http://www.starfish-chemistry.com) or contact your local distributor to arrange a demonstration

### Key StarFish features...

- Fits on all leading brands of stirring hotplate.
- Powerful stirring and rapid heating of all positions equally.
- Accepts a wide range of standard glassware, including vials, test tubes, beakers and round-bottomed flasks.
- Perfect for both simple heating or stirring; and for more complex experiments.
- Universal 5-way Telescopic Clamp will hold a wide variety of glassware such as condensers, extractors etc
- Water Distribution Manifolds distribute cooling water to up to five condensers simultaneously
- Gas/Vacuum Distribution Manifolds allow gas or a vacuum from a single source to be evenly distributed to up to five positions or vessels.
- Set-up vessels individually or in parallel.

### StarFish applications...

- Stirring...**  
 StarFish will easily and powerfully stir the contents of vials, tubes, beakers, conical flasks and round bottomed flasks, making it ideal for almost any stirring application including: microbiology, tissue culture, biochemistry, analytical chemistry...
- Heating...**  
 All StarFish base plates and blocks are made from anodised aluminium, providing excellent heat transfer. Precision machining also ensures an excellent contact between the blocks and the base plate. In tests StarFish boiled five 250ml vessels with 150ml of water in each in less than 20 minutes.
- Synthesis...**  
 StarFish can be used for all types of chemical synthesis and will accommodate standard round bottomed flasks from 5ml to 250ml, as well as both 1 inch and 24mm boiling tubes. Use the versatile 5-way Telescopic Clamp to hold glass condensers of any size and the Water and Gas/Vacuum Distribution Manifolds to distribute cooling water or gas to a maximum of five vessels, without the fuss of glass manifolds, stopcocks and excessive tubing.
- Extraction...**  
 StarFish can be used to replace large, inflexible extraction apparatus. Accommodating any standard round bottomed flasks from 5ml to 250ml, StarFish can easily accept complete glassware assemblies for soxhlet, liquid-liquid, reverse liquid-liquid and reflux extraction methods.
- Concentration...**  
 Use StarFish to rapidly concentrate or evaporate samples. Use standard round bottomed flasks, tubes or vials.
- Distillation...**  
 StarFish can easily be configured for all common types distillation including; binary and multi-component, vacuum, fractional and azeotropic methods.
- Digestion...**  
 StarFish offers powerful, rapid heating making it ideal for many digestion methods, either individually or in parallel.



A typical StarFish set-up for a single soxhlet extraction



A typical StarFish set-up for parallel synthesis

# StarFish - select only the components you really need



## PolyBlocks

PolyBlocks can be mixed'n'matched to accommodate any combination of vessels (5 per StarFish)



Gas/Vacuum Distribution Manifold



Water Distribution Manifold  
(two required for most applications)



Universal 5-way Telescopic Clamp  
(two required for most applications)



Support Rod  
(650mm x 12mm)



Split Support Rod  
(650mm x 12mm)



Base Plate  
(handles are optional)



Choose your preferred Stirring Hotplate



## MonoBlocks

MonoBlocks are single blocks with multiple wells all of the same size



## Inserts

Aluminium inserts for flasks from 5ml to 150ml fit in PolyBlocks and MonoBlocks

## Custom blocks

If you don't see the block with the well sizes you want then please visit our website to download the 'StarFish Custom Block Ordering Guide'.

StarFish is a cost effective solution for almost any stirring or heating application...





## StarFish - making use of existing lab resources

### StarFish fits on all leading brands of stirring hotplate

With a choice of base plates, StarFish will fit on most stirring hotplates including; RDT, IKA, Heidolph, Eyela, Stuart and Barnstead making it the most versatile work station available.



RDT Carousel  
Stirring Hotplate



IKA  
RCT Basic



Heidolph  
MR 3001 K



Barnstead  
Cimarec 2



Eyela  
CCX-1000



Stuart  
SD162

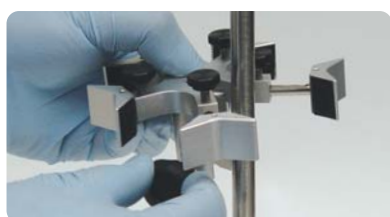
Description	IKA † RCT Basic	RDT Carousel Stirring Hotplate	Heidolph ✘ MR 3001 K	Barnstead Cimarec 2	Eyela CCX-1000	Stuart SD162
Maximum Temp	300°C	300°C	300°C	540°C	170°C	350°C
Heating Power	600 W	600 W	600 W	1200 W	500 W	750 W
Max Recommended Block Temp.	195°C	195°C	260°C	309°C	161°C	257°C
Time to boil 5 x 150ml water (250ml round bottom flasks)	27min	27min	27min	18min	86min*	23min
Max Stirring Speed	1100rpm	1100rpm	1250rpm	1200rpm	1200rpm	1300rpm
RDT Cat No.	3378700	RR98072	RR95820	SP13120-33	n/a	SD162
<b>StarFish Base Plate</b>	<b>RR95010</b>	<b>RR95010</b>	<b>RR95020</b>	<b>RR95040</b>	<b>RR95030</b>	<b>RR95050</b>
Base Plate Recess (Nominal)	135mm ID	135mm ID	145mm ID	184 x 184mm	150mm ID	160 x 160mm
Base Plate Recess (Actual)	136mm +/-0.1	136mm +/-0.1	146.5mm +/-0.1	189mm +/-0.1	151.5mm +/-0.1	154.5mm +/-0.1

\*Test performed with 5 x 100ml of water only. † Also fits on IKA RET basic and basic C, plus IKA RET control-visc and control-visc C ✘ Also fits on Heidolph MR 3000, MR 3001, MR 3002 & MR 3004 series.

#### Important Note

Information is correct at time of publication. No responsibility can be taken for inaccuracy of stirring hotplate data. All trade names are the property of their respective owners. No endorsement for the suitability of any stirring hotplate for use with the StarFish is given or implied by any of the respective stirring hotplate manufacturers.

### StarFish Universal 5-way Telescopic Clamp



**Universal 5-way Telescopic Clamp allows you to hold glassware of different sizes and shapes. Simple and easy to use, saving the need for multiple clamps...**

This versatile clamp is designed to neatly and conveniently support up to five round bottomed flasks, condensers, Soxhlet extractors etc. Each clamp features five telescopic arms with Velcro straps which can each be extended and locked in place to suit your needs. The detachable Velcro straps allow the clamping of a wide range of glassware from 20 to 60mm in diameter.



## StarFish - a truly modular and versatile system



**StarFish is both flexible and modular. Simply select the components or accessories that you want, as and when you need them...**

### Base Plates with optional handles

The range of StarFish base plates have been designed for use on the most popular brands of stirring hotplate shown opposite. Stirring hotplates from other manufacturers can be used as long as the base plate fits securely on to the top plate, thereby maintaining good thermal contact with the heated surface. The base plate's design allows it to be easily lifted on and off the stirring hotplate as required. Each plate is labelled with dimensions for quick identification.

Optional insulated handles can be fitted to facilitate the removal of the base plate; these are particularly useful for removing the StarFish from your stirring hotplate whilst still hot.



### Choose from MonoBlocks and PolyBlocks

StarFish is available with a choice of two block formats: MonoBlocks, which are single blocks with multiple wells all of the same size and are ideal for experiments using the same vessel. PolyBlocks, which are smaller segments (5 per StarFish) which can be mixed'n'matched to accommodate any combination of vessel; allowing the use of different vessel types and sizes at the same time. All blocks are stackable maximising lab space, have a 3.5mm hole for temperature probes and are individually labelled for quick identification. See overleaf for a full listing.



### Custom blocks are also available

If you don't see the block with the well sizes you want then please visit [www.starfish-chemistry.com](http://www.starfish-chemistry.com) to download the 'StarFish Custom Block Ordering Guide'.

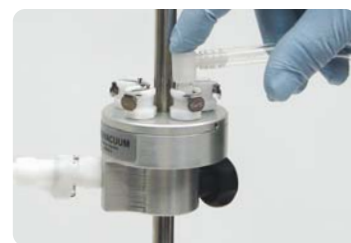
### Support Rods

There are a choice of two support rods, both 650mm x 12mm in diameter; the one piece rod and the two piece split rod. The split rod has threaded join half way along its body, which allows for shorter assemblies and easier storage.

*Save money, by using your own glassware... StarFish will accept all brands of standard glassware; including vials, test tubes, beakers and round bottomed flasks.*

## StarFish Distribution Manifolds for Gas/Vacuum and Water

**These versatile distribution manifolds make the connection of water and gas/vacuum to multiple vessels much simpler, neater and quicker, saving you time, space and money...**



- Innovative, compact design saves fume cupboard space.
- Simple screw-tightening allows manifolds to be located in any position on to any standard 12mm diameter support rod or lab scaffolding.
- Quick release connectors on inlet/outlets make attachment of tubing quick and easy.
- Connectors also feature leak proof shut-off valves, which automatically close when the couplings are parted, thus allowing the use of a single inlet/outlet whilst the others positions remain sealed.

### Water Distribution Manifold

Allows coolant from a single source to be evenly distributed to up to five condensers and then the flow re-combined to one outlet pipe. Two manifolds are used in each set-up, one to distribute water to the condensers and one to collect coolant for recirculation or to drain.




































### Gas/Vacuum Distribution Manifold

Allows gas or a vacuum from a single source to be evenly distributed to up to five positions or vessels. (Does not control or regulate gas/vacuum flow)









# StarFish - Quick Selection Guide

Vessels	RDT Vessels	PolyBlocks	MonoBlocks	Stirring Bars
 2ml Vial (12mm Ø x 35mm) RR94330	<p><b>Custom blocks</b></p> <p>If you don't see the block with the well sizes you want then please visit our website to download the 'StarFish Custom Block Ordering Guide'.</p>	 12mm Ø x 9 RR95270	 12mm Ø x 40 RR95170	 Cylindrical Stirring Bar 8mm RR95905
 1 Dram (15mm Ø x 45mm) RR94320		 15mm Ø x 9 RR95265	 15mm Ø x 40 RR95165	 Pivot Ring Stirring Bar 12mm RR99607
 2 Dram (17mm Ø x 60mm) RR94310		 17mm Ø x 7 RR95260	 17mm Ø x 40 RR95160	 Pivot Ring Stirring Bar 15mm RR99613
 4 Dram (21mm Ø x 70mm) RR94300		 21mm Ø x 3 RR95255	 21mm Ø x 20 RR95155	 Pivot Ring Stirring Bar 15mm RR99613
 Test Tube (12mm Ø x 100mm) RR94030 - without rim RR94025 - with rim	 GreenHouse Classic Reaction Tube (12mm Ø x 100mm) RR99603	 12mm Ø x 9 RR95250	 12mm Ø x 40 RR95150	 Pivot Ring Stirring Bar 12mm RR99607
 Test Tube (16mm Ø x 100mm) RR94020 - without rim RR94015 - with rim	 GreenHouse Plus Reaction Tube (16mm Ø x 100mm) RR99612	 16mm Ø x 9 RR95245	 16mm Ø x 40 RR95145	 Pivot Ring Stirring Bar 15mm RR99613
 Test Tube (24mm Ø x 150mm) RR94010 - without rim RR94005 - with rim	 Carousel Reaction Tube (24mm Ø x 150mm) RR98061	 24mm Ø x 3 RR95240	 24mm Ø x 16 RR95140	 Rare Earth Medium Cross Shaped RR98091 (7mm x 16.5mm)
 Test Tube (25mm/1 inch Ø)		 25mm Ø x 3 RR95235	 25mm Ø x 16 RR95135	 Rare Earth Medium Cross Shaped RR98091 (7mm x 16.5mm)

# StarFish - Quick Selection Guide



Vessels	RDT Vessels	PolyBlocks	MonoBlocks	Inserts	Stirring Bars
 5ml Round Bottom Flask RR94115 - 10/19 socket RR94110 - 14/23 socket	 5ml RDT Reaction Flask RR99151	 250ml x 1 RR95230	 250ml x 5 RR95130	 5ml Aluminium Insert RR95355	 Small Cross Shaped RR98075 (4.9mm x 10mm)
 10ml Round Bottom Flask RR94105 - 10/19 socket RR94100 - 14/23 socket	 10ml RDT Reaction Flask RR99148	 250ml x 1 RR95230	 250ml x 5 RR95130	 10ml Aluminium Insert RR95350	 Small Cross Shaped RR98075 (4.9mm x 10mm)
 25ml Round Bottom Flask RR94095 - 19/26 socket RR94090 - 24/29 socket RR94165 - 14/23 socket with 14/23 sidearm	 25ml RDT Reaction Flask RR99145	 250ml x 1 RR95230	 250ml x 5 RR95130	 25ml Aluminium Insert RR95345	 Rare Earth Medium Cross Shaped RR98091 (7mm x 16.5mm)
 50ml Round Bottom Flask RR94085 - 19/26 socket RR94080 - 24/29 socket RR94160 - 14/23 socket with 14/23 sidearm	 50ml RDT Reaction Flask RR99070 RR99071 - with B14/23 sidearm	 250ml x 1 RR95230	 250ml x 5 RR95130	 50ml Aluminium Insert RR95340	 Rare Earth Medium Cross Shaped RR98091 (7mm x 16.5mm)
 100ml Round Bottom Flask RR94075 - 19/26 socket RR94070 - 24/29 socket RR94155 - 24/29 socket with 19/26 sidearm	 100ml RDT Reaction Flask RR99054 RR99074 - with B14/23 sidearm	 250ml x 1 RR95230	 250ml x 5 RR95130	 100ml Aluminium Insert RR95335	 Rare Earth Elliptical RR99064 (25.1mm x 15.5mm)
 150ml Round Bottom Flask RR94065 - 19/26 socket RR94060 - 24/29 socket		 250ml x 1 RR95230	 250ml x 5 RR95130	 150ml Aluminium Insert RR95330	 Rare Earth Elliptical RR99064 (25.1mm x 15.5mm)
 250ml Round Bottom Flask RR94055 - 19/26 socket RR94050 - 24/29 socket RR94150 - 24/29 socket with 19/26 sidearm	 250ml RDT Reaction Flask RR99040 Long neck and sidearm versions are available	 250ml x 1 RR95230	 250ml x 5 RR95130	 Rare Earth Elliptical RR99064 (25.1mm x 15.5mm)	 Rare Earth Elliptical RR99064 (25.1mm x 15.5mm)

# StarFish - the affordable, flexible, multi-experiment work station...



## StarFish Components

### Stirring Hotplates

RR98072	Carousel Stirring Hotplate 230v UK Plug (similar to IKA RCT)	1
RR98073	Carousel Temperature Controller (similar to IKA RCT)	1
RR95810	Cimarec 2 Digital Stir Hotplate 240v UK	1
RR95820	Heidolph MR3001K Stir Hotplate 240v UK	1
RR95825	Heidolph EKT Hei-con Temperature Controller 240v UK	1
RR95830	Stuart SB162 Stir Hotplate 240v UK	1
RR95835	Stuart SD162 Digital Stir Hotplate 240v UK	1

### Bases Plates

RR95010	StarFish Base Plate 135mm (for RDT & IKA)	1
RR95020	StarFish Base Plate 145mm (for Heidolph)	1
RR95030	StarFish Base Plate 150mm (for Eyela)	1
RR95040	StarFish Base Plate 184mm x 184mm (for Cimarec)	1
RR95050	StarFish Base Plate 160mm x 160mm (for Stuart)	1
RR95100	StarFish Base Plate Handles (Pair)	1

### MonoBlocks

RR95130	MonoBlock for 5 x 250ml Flasks	1
RR95135	MonoBlock for 16 x 25mm Tubes	1
RR95140	MonoBlock for 16 x 24mm Tubes	1
RR95145	MonoBlock for 40 x 16mm Tubes	1
RR95150	MonoBlock for 40 x 12mm Tubes	1
RR95155	MonoBlock for 20 x 21mm Vials (4 dram)	1
RR95160	MonoBlock for 40 x 17mm Vials (2 dram)	1
RR95165	MonoBlock for 40 x 15mm Vials (1 dram)	1
RR95170	MonoBlock for 40 x 12mm vial (2ml)	1

### PolyBlocks

RR95230	PolyBlock for 1 x 250ml Flask	1
RR95235	PolyBlock for 3 x 25mm Tubes	1
RR95240	PolyBlock for 3 x 24mm Tubes	1
RR95245	PolyBlock for 9 x 16mm Tubes	1
RR95250	PolyBlock for 9 x 12mm Tubes	1
RR95255	PolyBlock for 3 x 21mm Vials (4 dram)	1
RR95260	PolyBlock for 7 x 17mm x Vials (2 dram)	1
RR95265	PolyBlock for 9 x 15mm x Vials (1 dram)	1
RR95270	PolyBlock for 9 x 12mm x Vials (2ml)	1

### Inserts

RR95330	150ml Flask Insert	1
RR95335	100ml Flask Insert	1
RR95340	50ml Flask Insert	1
RR95345	25ml Flask Insert	1
RR95350	10ml Flask Insert	1
RR95355	5ml Flask Insert	1

### Support Rods

RR95665	650mm Rod	1
RR95666	650mm Split Rod	1

### Universal Clamp

RR95400	Universal Telescopic 5-way Clamp (with Velcro)	1
RR95430	Replacement Self Adhesive Velcro Pads	10
RR95440	Replacement Velcro Loop Strips 200mm	5

### Distribution Manifolds

RR95500	Water Manifold with connectors	1
RR95510	Gas/Vacuum Manifold with connectors	1
RR95520	R/Angle 6.4mm Connector + shut-off	5
RR95525	Water Manifold 9.6mm Connector + shut-off	1
RR95530	Gas Manifold 9.6mm Connector + shut-off	1
RR95535	Tubing for Manifold outlets 15m x 6.4mm	1
RR95540	Tubing for Manifold inlets 15m x 8mm	1

### Stirring Bars

RR98075	Cross Shape Stirring Bar 10mm	40
RR98091	Cross Shape Stirring Bar 16.5mm RE	20
RR95910	Cross Shape Stirring Bar 30mm	5
RR98113	Cylindrical Stirring Bar 12mm RE	20
RR95905	Cylindrical Stirring Bar 8mm	40
RR98096	Elliptical Stirring Bar 10mm RE	40
RR98097	Elliptical Stirring Bar 15mm RE	20
RR99064	Elliptical Stirring Bar 25mm RE	10
RR95915	Hub Stirring Bar 45mm	1
RR95916	Hub Stirring Bar 62mm	1
RR95917	Hub Stirring Bar 70mm	1
RR98070	Octagonal Stirring Bar 13mm	20
RR99607	Pivot Ring Stirring Bar 12x4.5mm	40
RR98071	Pivot Ring Stirring Bar 12x6mm	40
RR99613	Pivot Ring Stirring Bar 15mm	40
RR95925	Spinning Stirring Bar 31mm	1
RR95926	Spinning Stirring Bar 44mm	1
RR95927	Spinning Stirring Bar 57mm	1

## StarFish Glassware

### Test Tubes

RR94005	24x150 T/Tube with Rim (Medium Wall)	100
RR94010	24x150 T/Tube without Rim (Medium Wall)	100
RR94015	16x100 T/Tube with Rim (Medium Wall)	100
RR94020	16x100 T/Tube without Rim (Medium Wall)	100
RR94025	12x100 T/Tube with Rim (Medium Wall)	100
RR94030	12x100 T/Tube without Rim (Medium Wall)	100

### Round Bottom Flasks

RR94050	250ml Round Bottom Flask 24/29 Socket	5
RR94055	250ml Round Bottom Flask 19/26 Socket	5
RR94060	150ml Round Bottom Flask 24/29 Socket	5
RR94065	150ml Round Bottom Flask 19/26 Socket	5
RR94070	100ml Round Bottom Flask 24/29 Socket	5
RR94075	100ml Round Bottom Flask 19/26 Socket	5
RR94080	50ml Round Bottom Flask 24/29 Socket	5
RR94085	50ml Round Bottom Flask 19/26 Socket	5
RR94090	25ml Round Bottom Flask 24/29 Socket	5
RR94095	25ml Round Bottom Flask 19/26 Socket	5
RR94100	10ml Round Bottom Flask 14/23 Socket	5
RR94105	10ml Round Bottom Flask 10/19 Socket	5
RR94110	5ml Round Bottom Flask 14/23 Socket	5
RR94115	5ml Round Bottom Flask 10/19 Socket	5

### Round Bottom Flasks with Sidearm

RR94150	250ml R/B Flask 24/29 with 19/26 Sidearm	2
RR94155	100ml R/B Flask 24/29 with 19/26 Sidearm	2
RR94160	50ml R/B Flask 14/23 with 14/23 Sidearm	2
RR94165	25ml R/B Flask 14/23 with 14/23 Sidearm	2

### Condensers

RR94180	Liebig Condenser 208mm 19/26	1
RR94185	Liebig Condenser 250mm 24/29	1
RR94195	Coil Condenser 165mm 19/26	1
RR94200	Coil Condenser 165mm 24/29	1
RR94210	Allihn Condenser 250mm 19/26	1
RR94215	Allihn Condenser 250mm 24/29	1

### Soxhlet

RR94230	20ml Soxhlet 19/26 Cone 24/29 Socket	1
RR94235	40ml Soxhlet 24/29 Cone 29/32 Socket	1
RR94240	60ml Soxhlet 24/29 Cone 34/25 Socket	1
RR94245	100ml Soxhlet 24/29 Cone 40/38 Socket	1

### Right Angle Adapters

RR94260	Adapter B19 Cone to SQ13 Screwthread	5
RR94265	Adapter B24 Cone to SQ13 Screwthread	5
RR94270	Adapter B29 Cone to SQ13 Screwthread	5
RR94275	Adapter B34 Cone to SQ13 Screwthread	5

### Beakers

RR94350	250ml Beaker	10
RR94355	150ml Beaker	10
RR94360	100ml Beaker	10
RR94365	50ml Beaker	10

### Conical Flasks

RR94380	250ml Conical Flask Narrow Neck	10
RR94385	150ml Conical Flask Narrow Neck	10
RR94390	100ml Conical Flask Narrow Neck	10
RR94395	50ml Conical Flask Narrow Neck	10

### Dropping Funnels

RR94450	250ml Dropping Funnel 19/26	1
RR94455	100ml Dropping Funnel 19/26	1
RR94460	50ml Dropping Funnel 14/23	1

### Vials

RR94300	4 Dram Vial 21x70mm	200
RR94310	2 Dram Vial 17x60mm	200
RR94320	1 Dram Vial 15x45mm	100
RR94330	2ml Vial 12x35mm	1000

## Ordering Information

Visit [www.starfish-chemistry.com](http://www.starfish-chemistry.com)  
for more information or to find  
your local distributor