Instructions

StarFish™

Water & Gas/Vacuum Distribution Manifolds

radleys
innovations for chemistry

Index

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Thank you for purchasing your StarFish Distribution Manifold

Please read this Instruction Manual thoroughly before operating your unit.

Introduction

The StarFish Distribution Manifolds form part of the StarFish family of products that enable you to perform productive heating and stirring experiments using existing glassware and stirring hotplates.

The versatile Distribution Manifolds allow a coolant or a gas / vacuum to be evenly distributed to up to five vessels simultaneously.

Space saving…..
Innovative compact design saves space.

Safe working……
Separate and easily identifiable Water and Gas / Vacuum Manifolds to prevent incorrect connection of fluid and gas supplies

Productivity…..
Quick release connectors on inlet and outlets for quick and easy connection to vessels

Versatility…..
All connectors feature leak proof shut off valves that automatically close when the couplings are parted,
allowing manifolds to be used with any number of condensers without daisy chaining.

Warranty

The Water and Gas Vacuum Manifolds include one year full parts and labour warranty from date of original purchase.
Warranty will only be valid if a completed **Warranty Email Back** is returned within 1 month of date of purchase (see last page).

In the event of product failure please contact your local distributor.
Please do not return any goods without prior agreement.

Safety Information

The following symbols are intended to assist the user in the safe and efficient
operation of the StarFish.

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Warning
Applies when there is a possibility
of personal injury.

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Important Note
Alerts the user to important facts.

Important WARNINGS

Please read these instructions completely before using your Distribution Manifold.

Operate only in a fume cupboard with protective safety sash.

To avoid the build up of lime scale in the Water Distribution Manifold, please avoid the use of hard water.

The Manifolds are only suitable for the distribution of water (RR95500) or inert gas/vacuum (RR95510).

The Distribution Manifold should only be operated by trained and competent personnel.
As with all chemistry, care should be taken to monitor your experiment at all stages.
The Manifold should not be left unattended unless in a supervised area.

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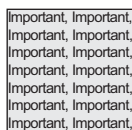Important, Important,

Important Note
Water Manifold RR95500 is fitted with a female inlet/outlet connector, whilst
the Gas/Vacuum Manifold RR95510 is fitted with a male inlet/outlet
connector. This prevents incorrect connection of fluid and gas supplies.

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Warning
The manifold can be used for both vacuum and gas purging.

The maximum operating pressure is 3psi above atmospheric pressure and
a vacuum of approximately 150 to 125mBar.

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Important Note
All of the connectors feature leak-proof shut-off valves that are automatically
closed when the couplings are parted. This enables the manifold to be used
with any number of vessels (up to five) without daisy-chaining.

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Warning
Acetal Quick release fittings may be adversley affected by direct exposure
to chemical solutions or vapours.

Products & Accessories

Cat No.	Description	Qty
StarFish 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 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 EKT3001 Temp Control 240v UK	1
RR95830	Stuart SB162 Stir Hotplate 240v UK	1
RR95835	Stuart SD162 Digital Stir Hotplate 240v UK	1
StarFish Bases		
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
Base Plate Handles		
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
StarFish 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
StarFish Support Rods		
RR95665	650mm Rod	1
RR95666	650mm Split Rod	1
StarFish Clamp		
RR95400	Universal Telescopic 5-way Clamp (with Velcro)	1
RR95430	Replacement Self Adhesive Velcro Pads	10
RR95440	Replacement Velcro Loop Strips 200mm	5
RR99613	Pivot Ring Stirring Bar 15mm	40
RR95925	Spinring Stirring Bar 31mm	1
RR95926	Spinring Stirring Bar 44mm	1
RR95927	Spinring Stirring Bar 57mm	1

Products & Accessories

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

Cat No.	Description	Qty

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

Set-Up & Operation - Water Distribution Manifolds

Water Distribution Manifold

Water Distribution Manifolds have been designed to allow 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 system, one to distribute water to the condensers and one to collect coolant for recirculation or to drain.

1. Confirm that the manifolds are Water Manifold RR95500 rather than Gas/Vacuum Manifolds. The Water Manifold is identified by the label and fitted with a female connector on the side of the manifold body.

Important Note

Water Manifold RR95500 is fitted with a female inlet/outlet connector, whilst the Gas/Vacuum Manifold RR95510 is fitted with a male inlet/outlet connector. This prevents incorrect connection of fluid and gas supplies.

2. Place both Water Manifolds over the top of support rod and slide down to the desired position and fix with the thumbwheel. (It does not matter which way up the manifolds are fitted to the support rod). The Manifold will accept support rods up to a maximum of 12mm OD.

3. Push the the large barbed connector RR95525 (supplied with the Water Manifold) into your water inlet tubing. (For suitable tubing please order RR95540 - 8mm x 15m clear Tygon Tubing).

    NB. The RR95525 connector has a 9.6mm OD barb with an 6.4mm bore and accepts flexible tubing with an 8mm ID.

4. Now the tubing is connected to the RR95525 connector, insert it into the female connector on the side of the lower of the two Water Manifolds. It will click in place.

5. Repeat the procedure with the water outlet/drain tubing. Connecting it to the RR95525 connector on the upper of the two Water Manifolds.

6. Connect the tubing from each of your condenser inlets to a right-angled connector RR95520 (5 are supplied with each Water Manifold). (For suitable tubing please order RR95535 - 6.4mm x 15m clear Tygon Tubing).

    NB. The RR95520 right-angled connector has a 6.4mm OD barb with an 3.2mm bore and accepts flexible tubing with an 6.4mm ID.

7. Now the tubing is connected to the RR95520 right angled connector, insert it into any one of the five female connectors on the top of the lower Water Manifold. It will click in place.

8. Repeat the procedure with the with the upper Water Manifold, connecting each of the condenser outlets to the manifold. <u>For best results coolant should always enter the bottom of you condenser and exit at the top.</u>

9. A water flow rate of at least 1.5 litres per minute should be used to maintain even distribution to each condenser.

Important Note

All of the connectors feature leak-proof shut-off valves that are automatically closed when the couplings are parted. This enables the manifold to be used with any number of condensers (up to five) without daisy-chaining.

Important Note

To avoid the build-up of lime scale in the Water Distribution Manifold, please avoid the use of hard water.

Set-Up & Operation - Gas/Vacuum Distribution Manifold

Gas/Vacuum Distribution Manifold

Gas/Vacuum Distribution Manifolds have been designed to allow gas or a vacuum from a single source to be evenly distributed to up to five vessels.

1. Confirm that the manifold is Gas/Vacuum Manifold RR95510 rather than a Water/Coolant Manifold. The Gas/Vacuum Manifold is identified by the label and fitted with a male connector on the side of the manifold body.

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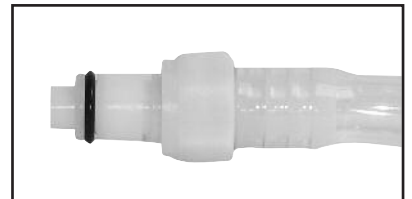
Important Note
Water Manifold RR95500 is fitted with a female inlet/outlet connector, whilst the Gas/Vacuum Manifold RR95510 is fitted with a male inlet/outlet connector. This prevents incorrect connection of fluid and gas supplies.

2. Place the Gas/Vacuum Manifold over the top of support rod and slide down to the desired position and fix with the thumbwheel. (It does not matter which way up the manifold is fitted to the support rod). The Manifold will accept support rods up to a maximum of 12mm OD.

3. Push the the large barbed connector RR95530 (supplied with the Gas/Vacuum Manifold) into your gas inlet tubing. (For suitable tubing please order RR95540 - 8mm x 15m clear Tygon Tubing).

   NB. The RR95530 connector has a 9.6mm OD barb with an 6.4mm bore and accepts flexible tubing with an 8mm ID.

4. Now the tubing is connected to the RR95525 connector, insert it into the male connector on the side of Gas/Vacuum Manifold. It will click in place.

5. Connect the tubing from each of your vessels to a right-angled connector RR95520 (5 are supplied with each Gas/Vacuum Manifold). (For suitable tubing please order RR95535 - 6.4mm x 15m clear Tygon Tubing).

   NB. The RR95520 right-angled connector has a 6.4mm OD barb with an 3.2mm bore and accepts flexible tubing with an 6.4mm ID.

7. Now the tubing is connected to the RR95520 right angled connector, insert the connector into any one of the five female connectors on the top of the Gas/Vacuum Manifold. It will click in place.

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Warning
The manifold can be used for both vacuum and gas purging.

The maximum operating pressure is 3psi above atmospheric pressure and a vacuum of approximately 150 to 125mBar.

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Important Note
All of the connectors feature leak-proof shut-off valves that are automatically closed when the couplings are parted. This enables the manifold to be used with any number of vessels (up to five) without daisy-chaining.
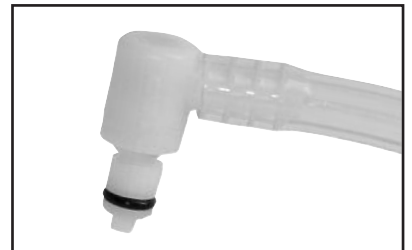
Warranty – Email Back

sales@radleys.co.uk

To qualify for your warranty please complete, scan and email this form to Radleys

Date of Purchase ....

Supplier's Name and Address

....

Product Batch/Serial No. (if shown) ....

Your Details

Mr   Mrs   Miss   Ms   Dr   Prof

Name ....

Position ....

Dept .... **Building** ....

Organisation ....

Address 1 ....

Address 2 ....

Town/City .... **County/State** ....

Country .... **Post/Zip Code** ....

Telephone .... **Ext** .... **Fax** ....

Email .... **Website** ....

Type of Organisation; please tick all boxes relevant

- ☐ Academic Institution
- ☐ Animal Health/Zoology
- ☐ Agrochemical
- ☐ Chemical Manufacture
- ☐ Consumer Goods
- ☐ Contract Lab
- ☐ Contract Synthesis
- ☐ Cosmetics
- ☐ Defence/Military/Forensic
- ☐ Environmental/Water
- ☐ Flavours/Fragrances
- ☐ Food/Beverages
- ☐ Government
- ☐ Hospital/Pharmacy
- ☐ Instrum/Elect & Mech
- ☐ Lab Equip Dealer/Mnf
- ☐ Manufacturing/Industrial
- ☐ Nuclear/Gas/Electric
- ☐ Petrochemical/Oil
- ☐ Pharma/Biotech/API
- ☐ Polymers/Plastics
- ☐ Process Engineering
- ☐ Research Institute
- ☐ Other.....................

Areas of Interest; please tick all boxes relevant

- ☐ Analytical Chemistry
- ☐ Automation/HTS
- ☐ Biochemistry
- ☐ Biological Sciences
- ☐ Catalysis
- ☐ Other...
- ☐ Chromatography
- ☐ Clinical/Medical/Pathology
- ☐ Construction
- ☐ Drug Discovery
- ☐ Environmental Health
- ☐ Estate & Facilities
- ☐ Food & Agriculture
- ☐ Formulation
- ☐ Geology
- ☐ Glassblower
- ☐ Health & Safety
- ☐ Inorganic/Metallurgy
- ☐ Liquid Handling/MicroPlates
- ☐ Material Science
- ☐ Medical Devices
- ☐ Medicinal Chemistry
- ☐ Organic Chemistry
- ☐ Parallel Chem/Combi-Chem
- ☐ Polymers & Oils
- ☐ Process Dev/Scale-up
- ☐ Process Safety/Calorimetry
- ☐ Purchasing/Stores
- ☐ QC/QA
- ☐ Sales & Marketing
- ☐ Separation/SPE
- ☐ Support/Engineering
- ☐ Temperature Control
- ☐ Veterinary

To request specific product information from Radleys please fill in below

Benchtop and Hotplates
- ☐ Findenser Air Condenser
- ☐ Heat-On Block System
- ☐ Cool-It Insulated Bowls
- ☐ StarFish Work Station
- ☐ Carousel Stirring Hotplates
- ☐ Overhead Stirrers

Jacketed Lab Reactors
- ☐ Reactor-Ready Lab Reactor
- ☐ Reactor-Ready Duo Lab Reactor
- ☐ Reactor-Ready Pilot Lab Reactor
- ☐ Custom Jacketed Reaction Systems

Parallel Reaction Stations
- ☐ Carousel 12 Plus Reaction Station
- ☐ Cooled Carousel 12 Reaction Station
- ☐ Carousel 6 Plus Reaction System
- ☐ Cooled Carousel 6 Plus Reaction Station
- ☐ Carousel Work-Up Station
- ☐ GreenHouse Plus Parallel Synthesiser
- ☐ GreenHouse Work-Up Station
- ☐ GreenHouse Blowdown Evaporator
- ☐ Tornado Overhead Stirring System
- ☐ Breeze Heating/Cooling Work Station
- ☐ Storm Heating/Cooling Work Station

Software
- ☐ AVA Lab Control Software
- ☐ Level 1/2
- ☐ Level 3/4
- ☐ Data Hub

Automated Reaction Stations
- ☐ Mya 4 Reaction Station

Other
- ☐ Huber...
- ☐ Heidolph...
- ☐ Other...