















# Set-Up & Operation - Base Plate & Optional Handles

## Fitting optional insulated handles to base plate

Optional insulated handles facilitate the convenient removal of the base plate.

These handles are insulated from the base plate by a peek spacer which allows the base plate to be picked up when hot. The handles also allow the base plate to be placed on to a suitable laboratory surface without causing damage by the heat of the base plate.



### Warning

When lifting using the handles, always be sure to touch only the insulated handle and not the metal plate, which may be too hot to touch and may cause injury.

The handles are fitted to the base plate with two screws (see exploded view at right).

1. The handles are fitted with captive nuts retained in peek bushes which insert into the aluminium base of the plate handle and then protrude through the upper surface.
2. Peek spacers are then located from above on to each of the two protruding bushes.
3. To fit the handle, present the handle plate to the underside to the base plate.
4. A fixing screw is then inserted from the top, through the base plate top, through the peek spacer and then screws into the captive nut located in the lower peek bush.
5. The screws are then screwed securely with a flat-head screwdriver.
6. The same procedure is then repeated for the other handle



### Warning

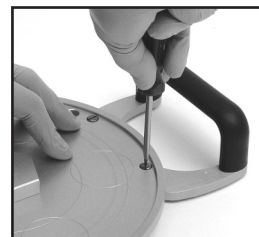
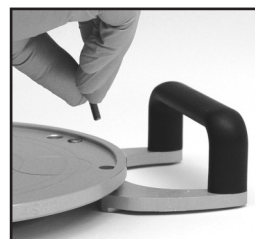
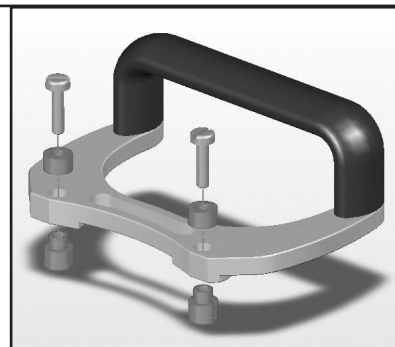
Repeated heating and cooling of the base plate and handles may cause the handles to loosen with time. Always check handles are tight before each use.



### Warning

Extreme caution should always be used when lifting hot vessels or objects. Please check with your laboratory safety officer to ensure that you are complying with all relevant safety procedures.

Many laboratories do not permit the handling of hot liquids or objects and therefore the use of the optional StarFish handles may not be permitted within such a laboratory.



# Set-Up & Operation - Locating MonoBlocks & PolyBlocks

## Locating Monoblocks on to the base plate

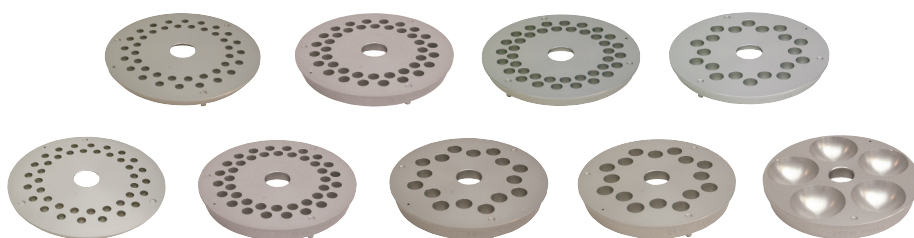
The Monoblocks are designed to locate on to the StarFish base plate to give a secure base for your experiments.

1. Select the appropriate MonoBlock for your chosen vessels. Each MonoBlock is designed for a specific size of glassware and is identified accordingly with engraving on the side of the block.
2. Present the MonoBlock to the base plate and place your fingers around the top rim of the MonoBlock.
3. Rotate MonoBlock until the three feet of the MonoBlock locate into the holes in the base plate.
4. The MonoBlock will drop down to allow good thermal contact with the Base Plate.



### Warning

Take care not to catch your fingers between the base plate and MonoBlock.



## Locating Polyblocks on to the base plate

The Polyblocks are designed to locate on to the StarFish base plate to give a secure base for your experiments.

1. Select the appropriate Polyblocks for your chosen vessels - note that it is possible to mix different sized blocks simultaneously. Each PolyBlock is designed for a specific size of glassware and is identified accordingly with engraving on the side of the block.
2. Place the PolyBlock onto the base plate with the flat edge of the PolyBlock against one of the flats of the pentagonal centre post.
3. Ensure that the Polyblock is completely contained within the rim of the base plate to allow good thermal contact.



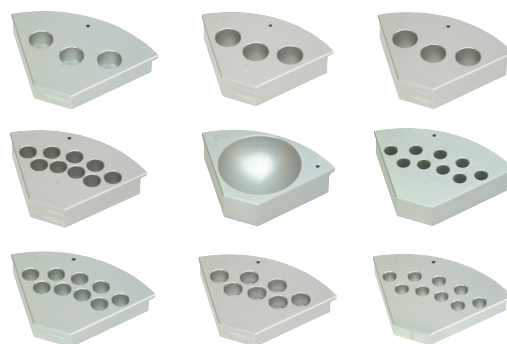
### Warning

Take care not to catch your fingers between the base plate and PolyBlock.

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### Important Note

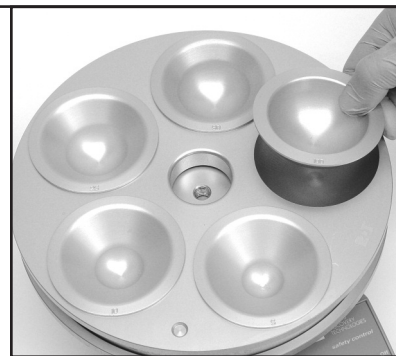
Please see pages 15 and 16 (StarFish Quick Selection Guide) for assistance in selecting the appropriate MonoBlocks and PolyBlocks.



# Set-Up & Operation - Aluminium Flask Inserts

Aluminium inserts are designed to adapt the 250ml MonoBlock or PolyBlock to accept 5ml, 10ml, 25ml, 50ml, 100ml, 150ml and 250ml round bottomed flasks.

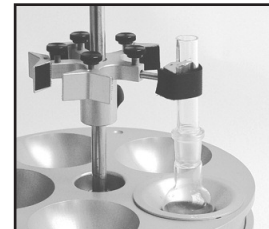
1. Select appropriate insert. The insert size is engraved on the rim.
2. Place correct insert in the 250ml well, taking care to make sure it is fully located.
3. The aluminium inserts are designed in such a way that should the flask fall over it will still remain supported at such an angle as to retain the typical working volume of that flask. However we recommend the use of the **505-81020-00** Universal Telescopic 5-Way Clamp when using any round bottomed flasks.
4. When clamping smaller flasks the use of a glass joint adapter to extend the neck of the flask will assist in clamping.



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## Important Note

The aluminium inserts are designed in such a way that should the flask fall over it will still remain supported at such an angle as to retain the typical working volume of that flask.



## Fitting central support rod to base plate

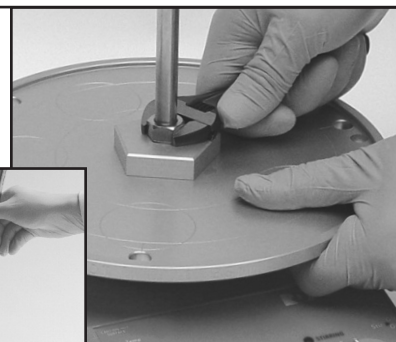
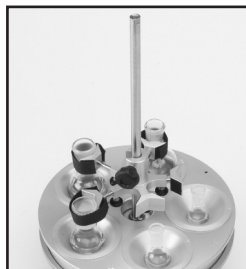
There are a choice of two support rods; the **505-81050-00** 650mm one piece rod and the two piece **505-81060-00** 650mm split rod. The split rod allows for shorter assemblies.

1. Screw the rod into the tapped central hole at the centre of the base plate
2. Using a suitably sized adjustable spanner, tighten the captive nut attached to the rod to securely mount the rod to the base assembly.



## Warning

It is important to ensure that the rod is tighten securely using a spanner, otherwise the assembly may unscrew and become unstable during use.



# Set-Up & Operation - Universal Telescopic 5-Way Clamp

## Universal Telescopic 5-Way Clamp

The StarFish clamping system is designed to neatly and conveniently support round bottomed flasks, condensers etc when used with PolyBlocks & MonoBlocks.

Each clamp features five telescopic arms with Silicone or Hook & Loop straps which can each be extended and locked in place to suit your needs. The detachable Silicone or Hook & Loop straps allow the clamping of a wide range of glassware diameters (approximately 20mm to 60mm  $\varnothing$ ).

1. Present clamp to rod. It may be necessary to extend the arms nearest to the slotted opening to allow the support rod to pass through to centre of the clamp.
2. Position at the desired height and tighten boss thumbwheel.
3. Adjust length of telescopic arms to maintain centre point of glassware above wells in base plate.
4. The glassware is retained by placing the Silicone or loop strap around the glassware and fixing it to the screw or on the outside surface each side of the clamp end piece.

Nylon Hook & Loop straps and self adhesive pads are consumable items and will need periodic replacement. Should you need to replace them please order:

**505-81070-00** Replacement Self Adesive Velcro Pads (pack of 10)

**505-81080-00** Replacement Velcro Loop Strips 200mm (pack of 5)

**505-81090-00** Replacement Silicone Strap 200mm (pack of 5)

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### Important Note

Nylon Hook & Loop straps and self adhesive pads offer temperature resistance to 140°C with a melting point of 260°C. They will also resist strong alkalis, trichlorethylene, acetone, acids, hydrocarbons and alcohols.

Exposure of Hook & Loop to sunlight for extended periods is not recommended

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### Important Note

The telescopic arms are retained within the body of the clamp in normal use. To remove the arm, completely unscrew the arm-fixing thumbwheel.

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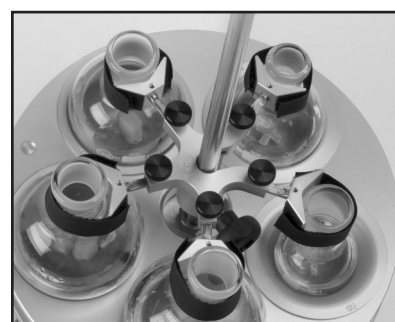
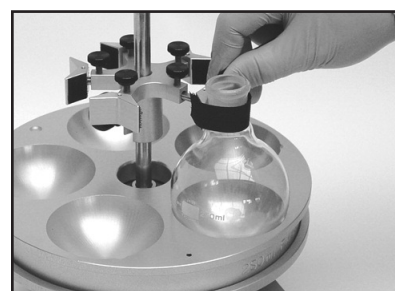
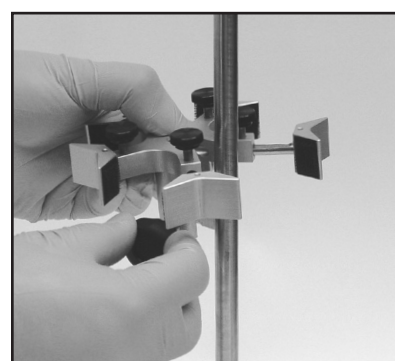
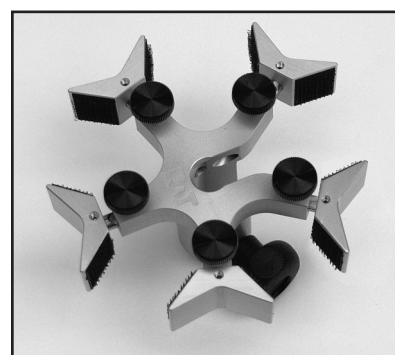
### Important Note

When clamping smaller flasks the use of a glass joint adapter to extend the neck of the flask will assist in clamping.



### Warning

The Hook & Loop strapping system is not designed to suspend unsupported glassware.



# 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 505-81030-00 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.

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### Important Note

Water Manifold 505-81030-00 is fitted with a female inlet/outlet connector, whilst the Gas/Vacuum Manifold 505-81040-00 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).
3. Push the the large barbed connector (supplied with the Water Manifold) into your water inlet tubing. (For suitable tubing please order - 8mm x 15m clear Tygon Tubing).

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

*NB. The 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 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. For best results coolant should always enter the bottom of you condenser and exit at the top.
9. A water flow rate of at least 1.5 litres per minute should be used to maintain even distribution to each condenser.

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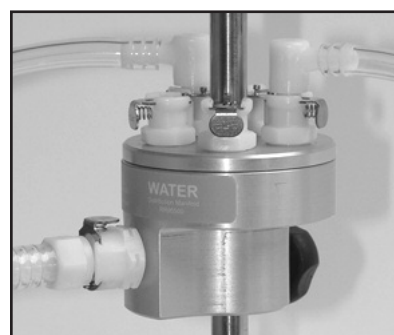
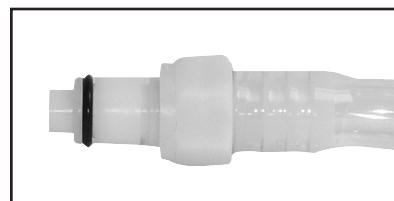
### Important Note

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 condensers (up to five) without daisy-chaining.

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### 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 505-81040-00 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 505-81030-00 is fitted with a female inlet/outlet connector, whilst the Gas/Vacuum Manifold 505-81040-00 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).
3. Push the the large barbed connector (supplied with the Gas/Vacuum Manifold) into your gas inlet tubing. (For suitable tubing please order - 8mm x 15m clear Tygon Tubing).

*NB. The 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 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 (5 are supplied with each Gas/Vacuum Manifold). (For suitable tubing please order 6.4mm x 15m clear Tygon Tubing).

*NB. The 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 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.



### Warning

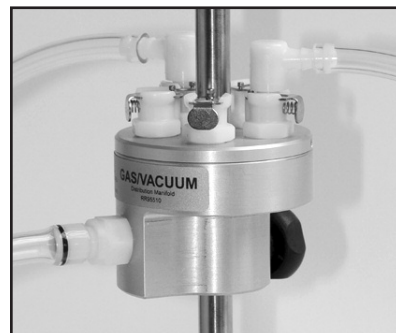
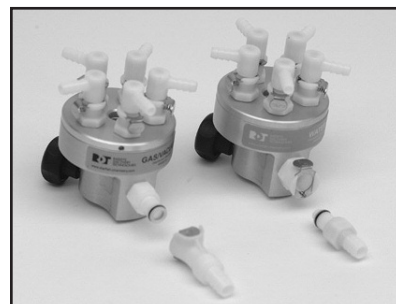
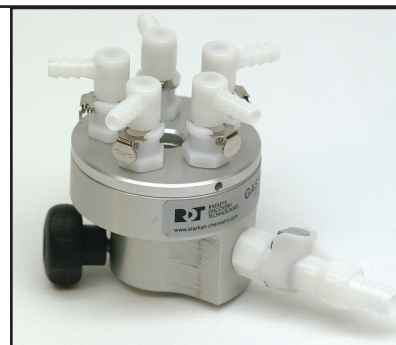
The manifold can be used for both vacuum and gas purging.

The maximum operating pressure is 0,2mbar above atmospheric pressure and a vacuum of approximately 150 to 125mbar.





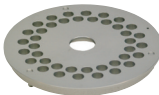









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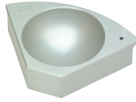





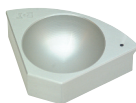





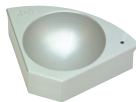

















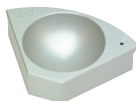








All of the connectors feature leak-proof shut-off valves that are automatically closed when the couplings are parted. This enables the manifold to be used with any number of vessels (up to five) without daisy-chaining.



# StarFish Quick Selection Guide

Vessels	RDT Vessels	PolyBlock	MonoBlock	Stirring Bar
<b>Vials from 12 to 21mm Ø</b>				
 2ml Vial (12mm Ø x 35mm)		 12mm Ø x 9 505-80029-00	 12mm Ø x 40 505-80010-00	 Cylindrical Stirring Bar 8mm
 1 Dram (15mm Ø x 45mm)		 15mm Ø x 9 505-80028-00	 15mm Ø x 40 505-80009-00	 Pivot Ring Stirring Bar 12mm
 2 Dram (17mm Ø x 60mm)		 17mm Ø x 7 505-80027-00	 17mm Ø x 40 505-80008-00	 Pivot Ring Stirring Bar 15mm
 4 Dram (21mm Ø x 70mm)		 21mm Ø x 3 505-80026-00	 21mm Ø x 20 505-80007-00	 Pivot Ring Stirring Bar 15mm
<b>Tubes from 12 to 25mm Ø</b>				
 Test Tube (12mm Ø x 100mm)	 GreenHouse Classic Reaction Tube (12mm Ø x 100mm)	 12mm Ø x 9 505-80024-00	 12mm Ø x 40 505-80005-00	 Pivot Ring Stirring Bar 12mm
 Test Tube (16mm Ø x 100mm)	 GreenHouse Plus Reaction Tube (16mm Ø x 100mm)	 16mm Ø x 9 505-80023-00	 16mm Ø x 40 505-80004-00	 Pivot Ring Stirring Bar 15mm
 Test Tube (24mm Ø x 150mm)	 Carousel Reaction Tube (24mm Ø x 150mm)	 24mm Ø x 3 505-80022-00	 24mm Ø x 16 505-80003-00	 Cross Shaped Stirring Bar 16.5mm RE
 Test Tube (25mm/1 inch Ø)		 25mm Ø x 3 505-80021-00	 25mm Ø x 16 505-80002-00	 Cross Shaped Stirring Bar 16.5mm RE

# StarFish Quick Selection Guide

Vessels	RDT Vessels	PolyBlock	MonoBlock	Inserts	Stirring Bar
<b>Round Bottom Flasks from 5ml - 250ml...</b>					
 5ml Round Bottom Flask	 5ml RDT Reaction Flask	 250ml x 1 505-80020-00	 250ml x 5 505-80001-00	 5ml Aluminium Insert 505-80045-00	 Small Cross Shaped (4.9mm x 10mm)
 10ml Round Bottom Flask	 10ml RDT Reaction Flask	 250ml x 1	 250ml x 5	 10ml Aluminium Insert 505-80044-00	 Small Cross Shaped (4.9mm x 10mm)
 25ml Round Bottom Flask	 25ml RDT Reaction Flask	 250ml x 1	 250ml x 5	 25ml Aluminium Insert 505-80043-00	 Rare Earth Medium (7mm x 16.5mm)
 50ml Round Bottom Flask	 50ml RDT Reaction Flask	 250ml x 1	 250ml x 5	 50ml Aluminium Insert 505-80042-00	 Rare Earth Medium (7mm x 16.5mm)
 100ml Round Bottom Flask	 100ml RDT Reaction Flask	 250ml x 1	 250ml x 5	 100ml Aluminium Insert 505-80041-00	 Rare Earth Elliptical (25.1mm x 15.5mm)
 150ml Round Bottom Flask	 150ml RDT Reaction Flask	 250ml x 1	 250ml x 5	 150ml Aluminium Insert 505-80040-00	 Rare Earth Elliptical (25.1mm x 15.5mm)
 250ml Round Bottom Flask	 250ml RDT Reaction Flask	 250ml x 1	 250ml x 5		 Rare Earth Elliptical (25.1mm x 15.5mm)

# Warranty & Liability

## Warranty

Heidolph Scientific Products GmbH provides a three-year warranty against material and manufacturing defects. Glass and wear parts, transportation damage, and damage resulting from improper handling or non-intended use of the product are excluded from the warranty. The warranty period for registered products begins on the date of purchase.

Register the product with the enclosed warranty card or on our homepage [www.heidolph.com](http://www.heidolph.com). For non-registered products, the warranty period begins with the date of the serial production (to be determined by the serial number). In the event of material or manufacturing defects, the product will either be repaired or replaced free of charge within the warranty period.

Misuse, abuse, neglect or improper installation are not covered by this warranty promise.

Alterations to the present warranty promise need Heidolph Scientific Products GmbH consent in writing.

## Exclusion of liability

Heidolph Scientific Products GmbH cannot be held liable for damage from improper use or misuse. Remedy for consequential damage is excluded.

## Questions & Repairs

If any aspect of installation, operation or maintenance remains unanswered in the present manual, please contact: [Sales@heidolph.de](mailto:Sales@heidolph.de)

For equipment repair jobs please contact [service@heidolph.de](mailto:service@heidolph.de)

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### Important Note

When returning instruments for repair that have come in contact with hazardous substances, please provide precise information on the relevant medium, take protective measures to ensure the safety of our receiving and maintenance personnel and mark the package as appropriate for hazardous materials.



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