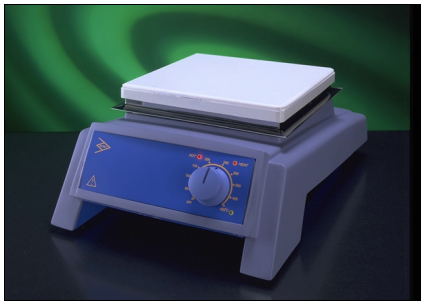
## Hotplates & Magnetic Stirrers

### Hotplate – Ceramic

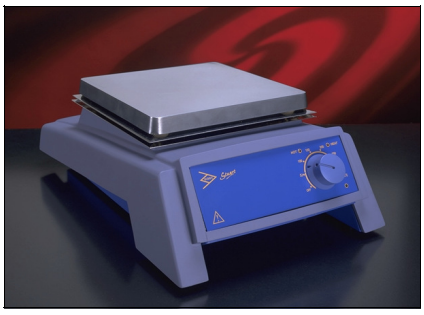


**CB160** (was SH6). Energy efficient, fast response and accurate.
The glass ceramic top gives excellent chemical and temperature resistance, is easy to clean and stays cool at the edges. The cast aluminium body is shaped for stability and also helps deflect spills away from the controls and the user. The instrument is built to a very high standard with fitting for detachable retort stand situated on the back of the instrument.
The "Hot" warning light will flash whenever the plate temperature is above $70^0$C and will operate even when the hotplate is turned off if the unit is still connected to the mains.
An independent safety circuit protects against overheating and internal electronic components are protected against corrosion.
The models featured have an analogue displayed temperature and speed control.

Maximum temperature 450°C. Heater power 500 watts. Plate area 16 x 16cm.
Overall dimensions – H11.0 x W19.0 x D30.0cm. Weight 3.4Kg.

| | | |
|---|---|---|
| **H063** | CB160 Ceramic top hotplate | each |
| **M131** | Retort rod, plated mild steel 600 x 12.5mm dia. | each |

### Hotplate



**SB160** (was SH1) Rugged and reliable hotplate with 16 x 16cm cast aluminium/silicon alloy top which will easily withstand the knocks of everyday use. The cast aluminium body is shaped for stability and also helps deflect spills away from the controls and the user. Fitting for detachable retort stand situated on the back of the instrument.
The "Hot" warning light will flash whenever the plate temperature is above $70^0$C and will operate even when the hotplate is turned off if the unit is still connected to the mains.
Maximum temperature is 450°C with heater power of 700W.
Overall dimensions – H11.0 x W19.0 x D30.0cm. Weight 3.4Kg

| | | |
|---|---|---|
| **H059** | SB160 Hotplate | each |
| **M131** | Retort rod, plated mild steel 600 x 12.5mm dia. | each |



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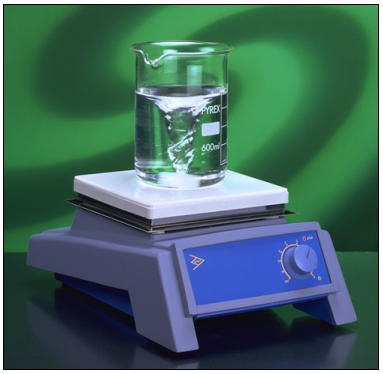
## Magnetic Stirrer – Ceramic

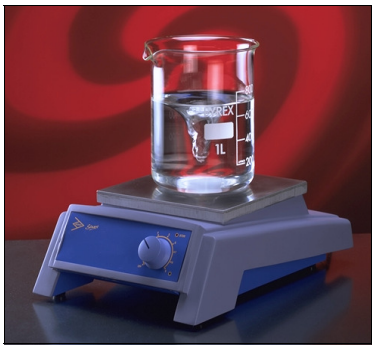


**CB161** (was SM20). The general description is the same as for the Ceramic Hotplate. Powerful magnets and motor give stirring speed up to 1500rpm and volumes up to 15 litres (based on 15 litres of water contained in a 20 litre flat bottom boiling flask). Supplied with two 25mm PTFE coated magnetic followers.

Speed range 100 – 1500 rpm. Overall top surface 16 x 16cm
Plate dimension - 16 x 16cm.
Overall dimensions – H11.0 x W19.0 x D30.0cm. Weight 3.4Kg

| | | |
|---|---|---|
| **M173** | CB161 ceramic magnetic stirrer | each |
| **M131** | Retort rod, plated mild steel 600 x 12.5mm dia. | each |

## Magnetic Stirrer



**SB161** (was SM1) A high quality reliable stirrer with powerful drive magnet. Variable speed from 100 – 1500 rpm . The cast aluminium body is shaped for stability and also helps deflect spills away from the controls and the user.
The stainless steel top plate is robust and unlike aluminium does not produce eddy currents so ensuring a very powerful coupling and stirring action.
With facility for retort rod and supplied with 2 x 25mm PTFE coated stirrer bars.
Overall dimensions – H11.0 x W19.0 x D30.0cm. Weight 3.4Kg

| | | |
|---|---|---|
| **M129** | SB161 magnetic stirrer | each |
| **M131** | Retort rod, plated mild steel 600 x 12.5mm dia. | each |

## Magnetic Stirrer – Battery

**SM27** (was SM7)**.** Battery operated magnetic stirrer, ideal for fieldwork or in incubators etc. where mains power is not available. Tough ABS case with easily accessible battery compartment. Variable speed control up to 1300 rpm. Supplied with four batteries and 1 x 25mm PTFE coated stirrer bar.
May also be powered from the mains supply or from a car battery using the accessory adapters, please enquire.
Overall dimensions – H7.0 x W15.0 x D16.0cm. Weight 1.3Kg.

| | | |
|---|---|---|
| **M133** | SM27 magnetic stirrer – battery | each |
| **M133/B** | Battery D size - 1.5 volt, pack of 4 | each |

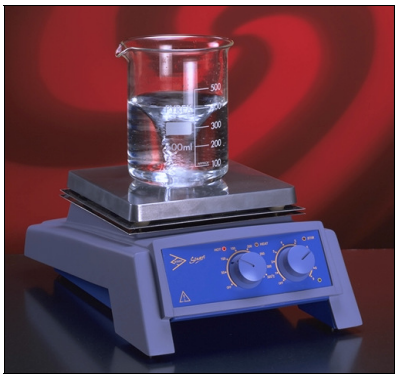
## Magnetic Stirrer Hotplate – Ceramic

Model **CB162** (was SM22) **.** This instrument has the specifications of the two individual units **H063** and **M173**
Weight 3.4Kg

| | | |
|---|---|---|
| **M174** | CB162 ceramic stirrer hotplate | each |
| **M131** | Retort rod, plated mild steel 600 x 12.5mm dia. | each |

# Specimen Preparation

## Magnetic Stirrer/Hotplate

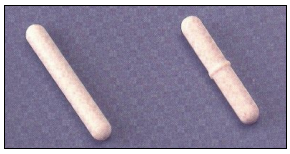


**SB162** (was SM3). This instrument has the same specifications as the two individual units **H059** and **M129**. Weight 3.4Kg.

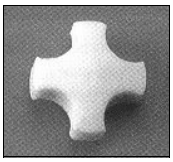
| | | |
|---|---|---|
| **M130** | SB162 magnetic stirrer/hotplate | each |
| **M131** | Retort rod, plated mild steel 600 x 12.5mm dia. | each |

## Magnetic Followers

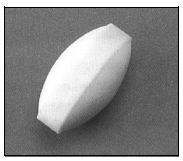
A range of **PTFE** encased magnetic stirrer followers.
**Cylindrical** - Plain or with centre pivot rim used for routine stirring operations, different lengths give different stirring characteristics.
**Crosshead** - Designed for tube-type containers.
**Oval** - designed for stability at high speeds in round bottom flasks or vessels.
**Triangular** - Particularly effective for dissolving solids and mixing sediments.



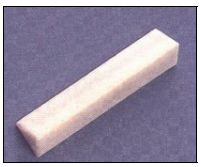
Cylindrical



Crosshead



Oval



Triangular

**Cylindrical - Plain & with Rim**

| Length mm | Plain | Rim | Quantity |
|---|---|---|---|
| 12 | **M132/5** | **M358/1** | 3 |
| 15 | **M132/1** | | 3 |
| 20 | **M132/2** | **M358/2** | 3 |
| 25 | **M132/3** | **M358/3** | 3 |
| 40 | **M132/4** | **M358/4** | 3 |

**Micro Flea with Rim**

| Length x Diam. mm | Rim | Quantity |
|---|---|---|
| 7 x 2 | **M359/1** | 3 |
| 10 x 3 | **M359/2** | 3 |

**Crosshead**

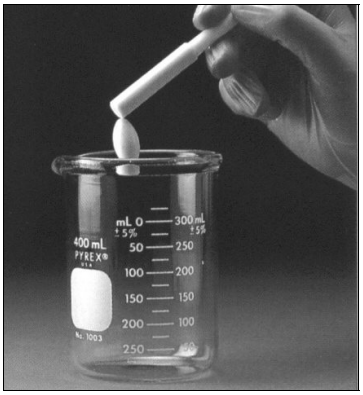
| Diameter mm | Cat. No | Quantity |
|---|---|---|
| 10 | **M360/1** | each |
| 14 | **M360/2** | each |
| 17 | **M360/3** | each |

**Oval**

| Length x Diam. mm | Cat. No | Quantity |
|---|---|---|
| 20 x 10 | **M361/1** | each |
| 25 x 12 | **M361/2** | each |
| 30 x 16 | **M361/3** | each |
| 40 x 20 | **M361/4** | each |

**Triangular**

| Length x Side. mm | Cat. No | Quantity |
|---|---|---|
| 12 x 6 | **M362/1** | each |
| 25 x 8 | **M362/2** | each |
| 40 x 14 | **M362/3** | each |



## Magnetic Retriever

Two types available coated in either polypropylene or PTFE. PTFE is only affected by fluorine containing compounds and molten alkali metals. Maximum working temperature of PTFE as coated on followers and retrievers is 300°C.
Both are 350mm long, the polypropylene coated retriever is 10mm diameter and the PTFE is 8mm diameter.

| | | |
|---|---|---|
| **M175** | Magnetic retriever – polypropylene | each |
| **M176** | Magnetic retriever – PTFE | each |



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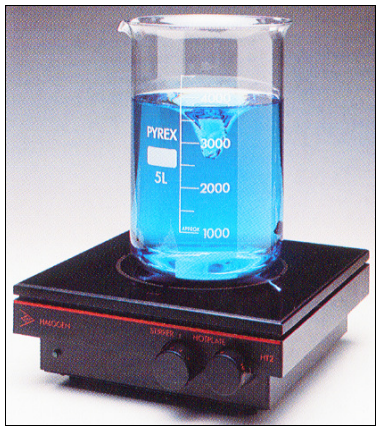
## Halogen Hotplate and Stirrer

Using the rapid heating characteristics of halogen, these latest hotplates and stirrers are **40% faster** and so **use 40% less energy** than conventional ceramic hotplates. Halogen heating is a recent innovation in laboratory hotplate technology resulting in faster and more efficient heating which is highly controllable. Unlike conventional hotplates most of the energy is used to heat the liquid in the container with minimal energy wasted heating intermediate surfaces such as the plate, air gap and vessel. The elegant glass/ceramic top is *attractive* and *practical.* It is easy to clean, chemical and thermal shock resistant and obviously will not rust or corrode. Safety warning lights alert the user to the top surface heating even after the heater is switched off. The efficiency of the Halogen Hotplate and Stirrer ensures that other surface remain cool even during heating.

## Halogen Hotplate and Stirrer




The Halogen Hotplate HT1 has been designed for maximum stability, providing a safe, convenient heating surface for a wide range of containers and liquid volumes. Vessels up to 5 litres can easily and confidently be accommodated. Halogen heating utilises infra-red energy which directly heats the liquid itself and does not rely on conduction.

**Specification:**

| | | | |
|---|---|---|---|
| *Heater type* | Twin infra-red halogen lamps | | |
| *Heater output* | 1.2Kw | | |
| *Top surface area* | 840$^2$cm | | |
| Heating area | 420$^2$cm | | |
| *Dimensions cm* | 30L x 30W x 10H | | |
| Maximum temp. | 450°C | *Weight* | *4.0Kg* |

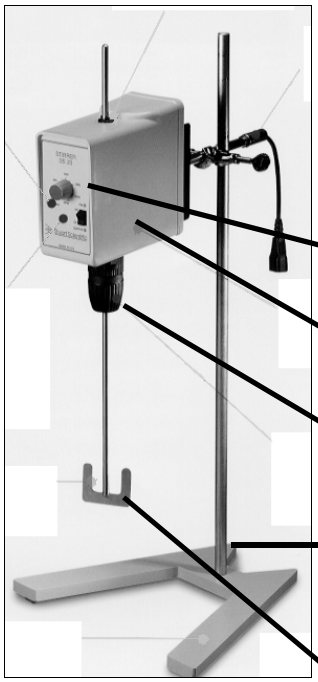
**H066** Halogen hotplate 220/240v 50/60Hz

The Halogen Hotplate and Stirrer has the same dimensions and heating specifications as the Halogen Hotplate but with a sophisticated stirring programme. Stirring speeds are adjustable between 100 and 1000rpm and in addition to automatic gradual acceleration of the bar (which reduces the possibility of decoupling and ensures smooth, continuous stirring on every start), the linear response speed scale makes stirring highly controllable over a wide range of speeds.

**H067** Halogen Hotplate/Stirrer 220v 50/60Hz *Weight* 5.2Kg

**Accessories**

**H068** Retort rod, clamp, boss-head and fixing brackets to suit all models



## Overhead Stirrers

An advanced range of overhead stirrers with the following features:

**Overload Protection**
Protects the stirrer from mechanical overloading and overheating. A microprocessor reduces the power to the motor under strain conditions and will stop the motor if overload becomes critical.

**Sophisticated Speed Control**
Advanced circuitry gives outstanding speed control and maintains the set speed even if the load conditions change. A soft start facility prevents splashing on start-up.

**Powerful Motor**
DC permanent magnet motor gives powerful stirring and reliable performance even when in continuous use.

**Keyless Chuck**
Chuck is very easy to use as the mechanism is operated by hand without the need for a chuck key or any other tool.

**Robust and Stable Stand**
Robust stainless steel support rod and accessory retort stand with H-pattern base for stability.

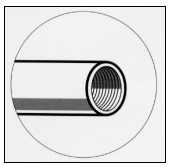
**Enclosed Power Lead**
Safety feature designed to keep lead away from moving parts and liquid splashes

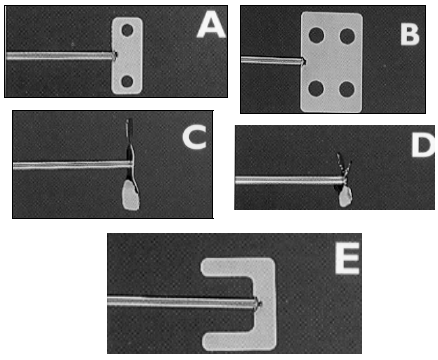
**Good Choice of Stirrer Paddles** (see next page)

# Specimen Preparation


**To assemble a system select:**

1) The type of stirrer (e.g. SS20)
2) The length of stirring rod(s)
3) The type of stirring paddle(s)






## SS10 General Purpose Overhead Stirrer

Easy to use and quiet running. Ideal for day to day laboratory use with aqueous and low viscosity liquids such as light oils up to 15 litres. Good speed control and overload protection, features usually found in more advanced models. Excellent value for money.

**S388** SS10 General purpose stirrer 230v 50/60Hz

## SS20 High Performance Overhead Stirrer

A powerful stirrer designed for demanding applications. Suitable for stirring liquids up to medium viscosity such as oils and media up to 25 litres. The SS20 features a hollow shaft arrangement for simple adjustment of the paddle height without moving the motor.

**S389** SS20 High performance stirrer 230v 50/60Hz

## SS30 Dual Torque Overhead Stirrer

A versatile heavy duty stirrer with the ability to mix high viscosity liquids including heavy oils, up to 40 litres. There are two modes of operation that can be easily alternated:
**Mode 1** gives high torque at lower speeds and is ideal for stirring very viscous liquids.
**Mode 2** has lower torque at higher speeds and provides brisk mixing of medium viscosity liquids. Also has hollow shaft for easy height adjustment without moving the motor.

**S390** SS30 Dual torque mixer 230v 50/60Hz

## Stirring Rods

There are two lengths of stainless steel paddle rod and five different paddle heads. The heads screw on so they can be mixed and matched according to stirring requirements.

**R089/350** Paddle rod 8mm Ø x 350mm
**R089/530** Paddle rod 8mm Ø x 530mm

## Stirring Paddles

**P499/A** Small Paddle Head **A** (total width 60mm) Provides gentle mixing of liquids with good tangential flow. For use at low to medium speeds.
**P499/B** Large Paddle Head **B** (total width 94mm). As P499/A but greater size to accommodate larger volumes.
**P499/C** Large Propeller Head **C** (total width 80mm). Two blade propeller giving vigorous mixing action pulling material from the bottom upwards.
**P499/D** Small Propeller Head **D** (total width 50mm. As P499/C but with smaller four blade propeller ideal for mixing very viscous liquids.
**P499/E** Anchor Paddle **E** (total width 60mm). Ideal for slow speed agitation.
Note: These overhead stirrers can also use Quickfit® glass and PTFE paddles.

## Technical Specifications

| | SS10 | SS20 | SS30 |
|---|---|---|---|
| Max. stirring capacity (litres) | 15 | 25 | 40 |
| Max. viscosity range | 10,000mPas | 20.000mPas | 80,000mPas |
| Max. torque at chuck | 15Ncm | 27Ncm | 90/27Ncm |
| Speed range | 100-2000rpm | 100-2000rpm | 50-500/100-2000rpm |
| Chuck range | 1.5-13mm Ø | 1.5-13mm Ø | 1.5-13mm Ø |
| Dimensions stirrer W x D x H | 85 x 175 x 230mm | 85 x 195 x 230mm | 85 x 195 x 230mm |
| Support bar (Ø x H) | 12.7 x 240mm | 12.7 x 240mm | 12.7 x 240mm |
| Stirrer stand WxDxH/rod Ø x L | 350 x 330 x30/16 x 700mm | 350 x 330 x30/16 x 700mm | 350 x 330 x30/16 x 700mm |



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