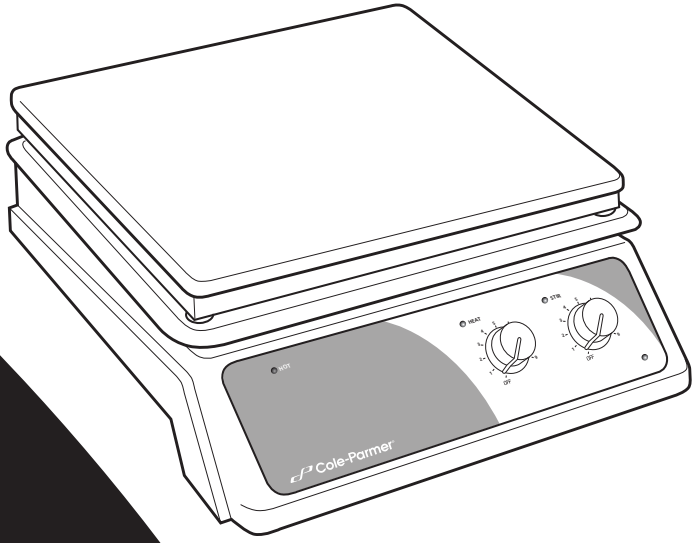
Range of Large-Format Hot Plates & Stirrers



User Guide

Cole-Parmer®

Version 1.1

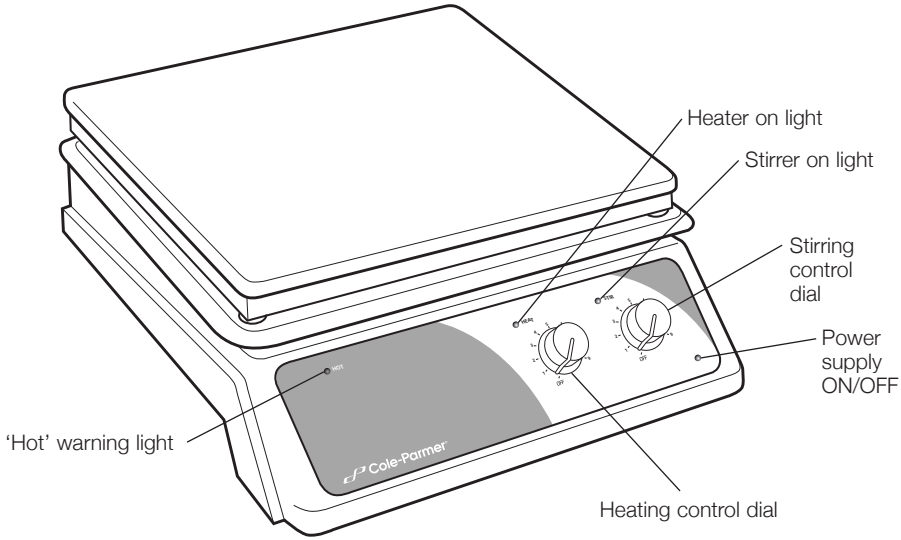


Figure 1 - Front view

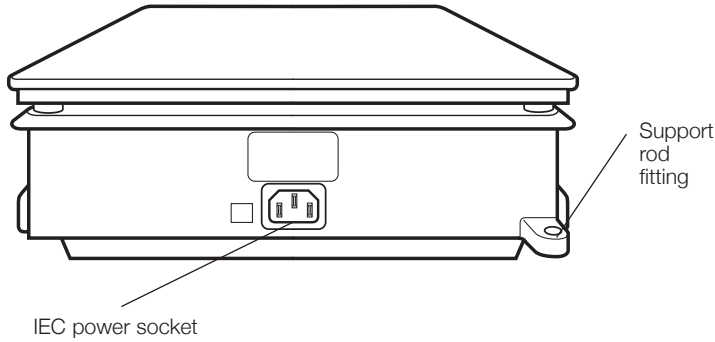


Figure 2 - Rear view

Large-Format Hot Plates & Stirrers

Introduction

Thank you for purchasing this Cole-Parmer product. To get the best performance from the equipment, and for your own safety, please read these instructions carefully before use. Before discarding the packaging check that all parts are present and correct.

This equipment is designed to operate under the following conditions:

- For indoor use only
- Use in a well ventilated area
- Ambient temperature range +5°C to +40°C (+41°F to +104°F)
- Altitude to 2000 m (6500 ft)
- Relative humidity not exceeding 80%
- Power supply fluctuations not exceeding 10% of nominal
- Overvoltage category II IEC60364-4-443
- Pollution degree 2 IEC664
- Use with a minimum distance all round of 200 mm (8 in.) from walls or other items

If the equipment is not used in the manner described in this manual and with accessories other than those recommended by the manufacturer, the protection provided may be impaired.

Electrical Installation

THIS EQUIPMENT MUST BE GROUNDED

Before connection please ensure that the line supply corresponds to that shown on the rating plate located on the base of the unit.

Power requirements:

230V Models	**Power**
04801-63	600 W
04805-44	600 W
04805-28	650 W
04807-02	1200 W
04807-14	1250 W

The 230 V Models are provided with a UK 3-pin and a “Schuko” 2-pin plug. At the time of this printing, there are no 120 V models available for purchase. Please contact Cole-Parmer for further information about the availability.

Should the cable not be suitable for connecting to the power supply, replace the plug with a suitable alternative.

THIS OPERATION SHOULD ONLY BE UNDERTAKEN BY A QUALIFIED ELECTRICIAN.

NOTE: Refer to the equipment rating plate to ensure that the plug and fusing are suitable for the voltage and wattage stated.

The wires in the power cable (230 V) are colored as follows:

BROWN - HOT/LIVE
BLUE - NEUTRAL
GREEN/YELLOW - EARTH

Should the power cable need replacing, a cable of 1mm^2 of harmonized code H05W-F connected to an IEC320 plug should be used.

IF IN DOUBT CONSULT A QUALIFIED ELECTRICIAN

The appropriate power cable should be connected BEFORE connection to the power supply.

Safety Advice

- HIGH TEMPERATURES ARE DANGEROUS as they can cause serious burns to operators and ignite combustible material. Users should be aware of the following safety advice:
- USE CARE AND WEAR PROTECTIVE GLOVES TO PROTECT HANDS.
- DO NOT use combustible substances near hot objects.
- NEVER lift or carry the instrument until it has been switched off and allowed to cool for at least 30 minutes. The hot warning light will give guidance.
- The unit should be carried using both hands with the fingers under the side edges.
- NEVER move or carry the unit with containers on the top plate or while still connected to the power supply.
- There is a danger of liquid spillage if containers are over-filled and stirred at high speed. Always build stirrer speed slowly and never stir more rapidly than necessary.
- NEVER place a cold glass vessel onto a hot plate which is already hot.
- NEVER use a support rod longer than 600 mm (23.6 in.).
- When a support rod is installed with apparatus attached, or when swivelling support rods, take care that there is sufficient weight on the plate to prevent the whole unit tipping over.
- When using a support stand, in order to provide the unit with adequate ventilation the base of the support stand must NOT exceed 19.5 mm (0.75 in.) in height and 125 mm (5 in.) in width.

Hot Surfaces

WARNING: When the surface becomes too **HOT** to touch the red **"HOT"** warning light on the front panel will begin to flash (see Figure 1). This will continue to flash while the plate temperature is above 50°C (122°F) for a maximum of 30 minutes, even if the unit is switched OFF on the heat control dial.

WARNING: Do NOT disconnect or switch off the electricity supply until the **"HOT"** warning light has ceased flashing. The "**HOT**" warning light will NOT operate if the power supply is removed or otherwise disconnected.

WARNING: The plate may still be **HOT** beyond 30 minutes when large masses are left on the plate, even though the **"HOT"** warning light has gone out.

WARNING: The top surface of the instrument may be **HOT**, especially in free air when a surface temperature of 450°C (842°F) can be achieved on the ceramic top models and 300°C (572°F) on the metal top models.

DO NOT leave heaters switched on when not in use.

General Description

Cole-Parmer Large-Format Hot Plates and Stirring Hot Plates give very even plate temperature and uniform heating conditions. The large capacity allows it to accommodate multiple vessels or microscope slides.

Aluminum Analog Hot Plate 04801-63

Rugged aluminum heats quickly and has excellent conduction with easy-to-use temperature control dial.

Aluminum Digital Hot Plate 04805-44

The digital hot plate uses microprocessor control for more accurate plate temperature monitoring.

Ceramic Analog Hot Plate 04807-02

Glass ceramic hot plate has excellent chemical resistance and allows for higher plate temperatures when compared to the metal top units.

Aluminum Analog Stirring Hot Plate 04805-28

The stirring hot plate uses powerful magnets and motor support to support large-volume mixing.

Ceramic Analog Stirring Hot Plate 04807-14

Glass ceramic hot plate has excellent chemical resistance and allows for higher plate temperatures when compared to the metal top units. Also uses powerful magnets and motor support to support large-volume mixing.

Available separately are lab support rods to allow different size vessels. Please visit the Cole-Parmer website www.coleparmer.com for further information.

Operation

Analog Hot Plate Models

Switch the unit on using the control dial and turn the dial clockwise to the desired plate temperature (see Figure 3). The dial is graduated from 1 to 9 and increasing the value results in an increase of plate temperature. The HEAT indicator light will illuminate and it will cycle on and off when the desired temperature has been achieved.

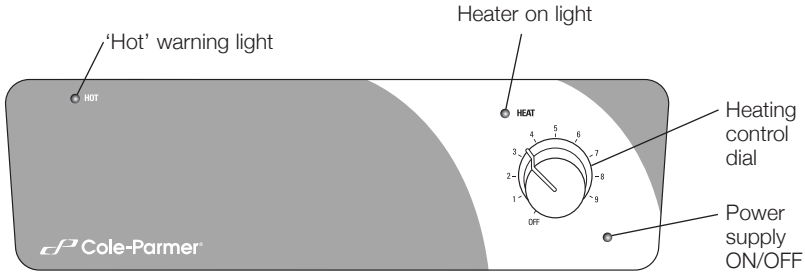


Figure 3 - Control Panel for Analog Models

Digital Hot Plate Models

Switch the unit on by pressing the ON/OFF button to the left of the digital display (see Figure 4).

NOTE: When connected to the power supply, the digital display will illuminate and show the word OFF or the actual plate temperature in degrees Celsius.

To set the temperature, press and hold the PRESS TO SET button and the display will show the set plate temperature. Adjust the set temperature by holding the PRESS TO SET button while concurrently turning the control dial clockwise to the desired plate temperature before releasing. The display will revert to show the actual plate temperature and the top plate will begin to heat. Any movement of the control dial, without the use of the PRESS TO SET button, will have no effect on the set temperature.

NOTE: The set temperature may be observed at any time by pressing the PRESS TO SET button.

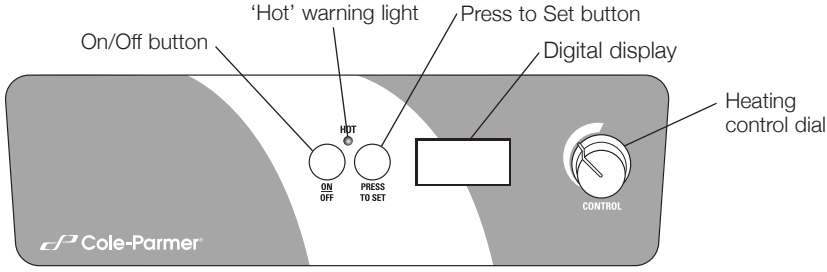


Figure 4 - Control Panel for Digital Model

Stirring Hot Plate Models

Your unit is provided with two 25 mm (1 in.) PTFE stirrer bars. These should be placed in the liquid to be stirred. They are suitable for liquid volumes up to 15 L (500 fl oz). To set the stirring speed, turn the stir dial clockwise from the OFF position (see Figure 5). The dial is graduated from 1 to 9 and increasing the value results in an increase of the stirring speed.

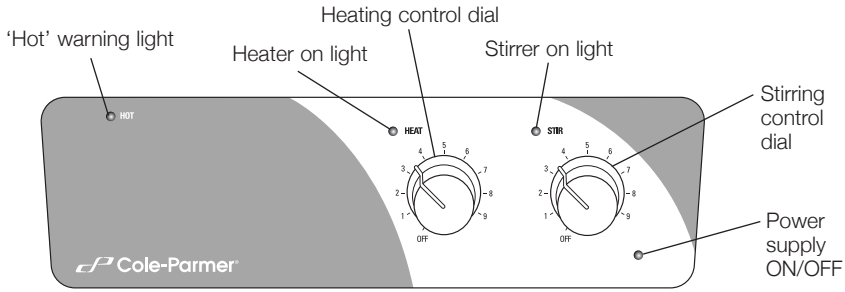


Figure 5 - Control Panel for Stirring Models

Cleaning and Care

Before Attempting Cleaning:

Ensure that the top is cool, disconnect from the power supply.

WARNING: Ensure the unit is disconnected from the power supply before attempting maintenance or servicing.

Metal Casework:

The metal casing should be cleaned using a damp cloth and a mild detergent solution.

Ceramic Top Units:

A damp cloth will normally remove most types of contamination. For more difficult stains a domestic cream cleanser is recommended.

Cleaning is made easier if spillages are attended to promptly. In any case, spillages of alkali, phosphoric acid and hydrofluoric acid MUST be removed immediately as these chemicals can attack and damage the glass ceramic. Ensure that the appropriate safety precautions are observed.

During cleaning and general operation take care not to scratch the surface of the top plate as this could result in subsequent thermal breakage.

WARNING: A ceramic top which is scratched, chipped, chemically etched or damaged must not be used.

Metal Top Units:

The metal top plate should be cleaned using a damp cloth and a mild detergent solution.

Cleaning is made easier if spillages are attended to promptly. In any case, spillages of acids and alkalis MUST be removed immediately as these chemicals can attack and damage the surface of the coated aluminum alloy. Ensure that the appropriate safety precautions are observed.

Preparation of Media

Take particular care when heating liquids having a high viscosity. Viscous liquids can act as thermal insulators and can cause thermal breakage of the glassware. This is very important with media solutions as the viscosity will usually increase as the temperature rises.

- ❖ Check that the stirring action is sufficient to agitate the whole of the liquid. Unstirred areas in the liquid can result in uneven heat transfer and “hot spots” in the glassware. This can induce thermal stress and so cause failure.
- ❖ Check the stirring action regularly to ensure that it remains adequate as the viscosity of the solution increases.
- ❖ ALWAYS use the largest magnetic stirrer bar possible and, if necessary, use a mechanical overhead stirrer.
- ❖ Do NOT use glass vessels with thick walls, e.g. Pyrex Heavy Duty Ware or standard beakers and flasks having capacities of 15 liters (4 gal.) or greater.
- ❖ NEVER heat glass bottles on a hot plate.
- ❖ Ensure that the heat is built up slowly to avoid localized overheating.
- ❖ Ensure the glassware is completely free from scratches or other defects.
- ❖ Place the hot plate in a tray large enough to contain the liquid in the event of glassware failure.
- ❖ Wear the appropriate safety clothing, e.g. gloves, goggles, protective apron etc.

Accessories

Lab Support Rods

Optional lab support rods are available to support apparatus used with the instrument. All models are equipped with a fitting on the rear to accept the support rod accessory (see Figure 2). To fit the rod to your instrument, first isolate unit from the power supply and allow to cool. Screw the threaded end of the support rod into the fitting on the rear of the instrument. The shape of the base also allows for rectangular-shaped support stands to be placed directly underneath the unit.

Please visit the Cole-Parmer website www.coleparmer.com for further information.

Servicing and Repair

This product range does not require any routine servicing.

Note: There are no internal user replaceable parts.

In the event of product failure it is recommended that any repair is only undertaken by suitably qualified personnel. For advice, please contact Cole-Parmer quoting the model and serial number.

Only spare parts supplied by the manufacturer or its agent should be used. Fitting of non-approved parts may affect the performance of the safety features of the instrument.

Note: The magnetic stirrer drive utilizes strong magnets.

If in doubt, please contact Cole-Parmer.

Warranty

Cole-Parmer warrants this equipment to be free from defects in material and workmanship, when used under normal laboratory conditions, for a period of **three (3)** years. In the event of a justified claim, Cole-Parmer will replace any defective component or replace the unit free of charge.

This warranty does NOT apply if:

- A ceramic top has broken due to mechanical impact, scratching, chipping or chemical etching.
- Any repair has been made or attempted other than by the manufacturer or its agent.
- Any minor coating chips or scratches occur during normal use (i.e., wear and tear).
- Damage is caused by fire, accident, misuse, neglect, incorrect adjustment or repair, damage caused by installation, adaptation, modification or fitting of non-approved parts.

Technical Specification

Model	HOT PLATE 230 V: 04801-63	HOT PLATE 230 V: 04807-02
Plate material	Coated Aluminum/Silicon	Ceramic
Control method	Analog	Analog
Platform dimensions (w x l)	300 x 300 mm (12 x 12 in.)	300 x 300 mm (12 x 12 in.)
Heated area (w x l)	300 x 300 mm (12 x 12 in.)	200 x 200 mm (8 x 8 in.)
Maximum plate temperature	300°C (572°F)	450°C (842°F)
Overall dimensions (w x d x h)	300 x 365 x 105 mm (11.8 x 14.4 x 4.1 in.)	300 x 365 x 105 mm (11.8 x 14.4 x 4.1 in.)
Net weight	6 kg (13.2 lb)	6 kg (13.2 lb)
Electrical supply	230 V, 50/60 Hz, 600 W	230 V, 50/60 Hz, 1200 W

Model	DIGITAL HOT PLATE 230 V: 04805-44
Plate material	Coated Aluminum/Silicon
Control method	Digital
Plate dimensions (w x l)	300 x 300 mm (12 x 12 in.)
Heated area (w x l)	300 x 300 mm (12 x 12 in.)
Minimum plate temperature	50°C
Maximum plate temperature	300°C
Display resolution	1°C
Overall dimensions (w x d x h)	300 x 365 x 105 mm (11.8 x 14.4 x 4.1 in.)
Net weight	6 kg (13.2 lb)
Electrical supply	230 V, 50/60 Hz, 600 W

Model	STIRRING HOT PLATE 230 V: 04805-28	STIRRING HOT PLATE 230 V: 04807-14
Plate material	Coated Aluminum/Silicon	Ceramic
Control method	Analog	Analog
Plate dimensions (w x l)	300 x 300 mm (12 x 12 in.)	300 x 300 mm (12 x 12 in.)
Heated area (w x l)	300 x 300 mm (12 x 12 in.)	200 x 200 mm (8 x 8 in.)
Maximum plate temperature	300°C (572°F)	450°C (842°F)
Maximum stirring capacity	15 L (4 gal.)	15 L (4 gal.)
Overall dimensions (w x d x h)	300 x 365 x 105 mm (11.8 x 14.4 x 4.1 in.)	300 x 365 x 105 mm (11.8 x 14.4 x 4.1 in.)
Net weight	7 kg (15.4 lb)	7 kg (15.4 lb)
Electrical supply	230 V, 50 Hz, 650 W	230 V, 50 Hz, 1250 W

**No 120 V models at time of printing.*

CE These products meet the relevant EC harmonized standards for radio frequency interference and may be expected not to interfere with, or be affected by, other equipment with similar qualifications. We cannot be sure that other equipment used in their vicinity will meet these standards and we cannot guarantee that interference will not occur in practice. Where there is a possibility that injury, damage or loss might occur if equipment malfunctions due to radio frequency interference, or for general advice before use, please contact the manufacturer.

Declaration of Conformity

Catalog Number:	Description:
04801-63	ANALOG HOT PLATE, ALUMINUM, LARGE, 230 V
04805-28	ANALOG STIRRING HOT PLATE, ALUMINUM, LARGE, 230 V
04805-44	DIGITAL HOT PLATE, ALUMINUM, LARGE, 230 V
04807-02	ANALOG HOT PLATE, CERAMIC, LARGE, 230 V
04807-14	ANALOG STIRRING HOT PLATE, CERAMIC, LARGE, 230 V

These products comply with the requirements of the EU Directives listed below:

2004/108/EC	**EMC Directive**
2014/35/EU	**Low Voltage Directive (LVD)**
2011/65/EC	**RoHs Directive**

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