

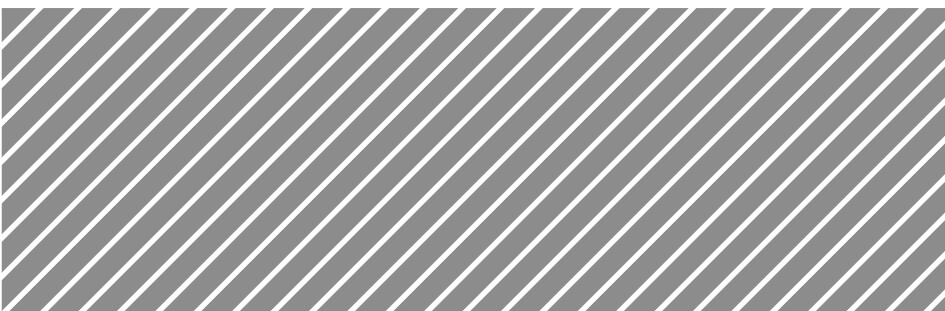
CORNING

Instruction Manual - 120V

Hot Plates

Stirrers

Stirrer/Hot Plates



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General Information

Corning® Hotware has been a laboratory standard for over 30 years. Our products have been engineered with customer input to be more reliable, precise, easier to use and safer.

Look for the features listed below:

- Exclusive microprocessor design provides superb control for both heating and stirring to insure consistent performance.
- Enclosed control electronics protect sensitive components from harsh environments and reduce maintenance time and costs.
- Exclusive Pyroceram® top is easy to clean, highly resistant to scratches, corrosion and chemical attack, flatter to provide faster, more uniform heating and whiter to provide better contrast during applications which require monitoring of color changes.
- Rigorous testing standards for electrical safety, EMI (Electro Magnetic Interference) and regulatory approvals. Corning hotware meets UL (USA), CUL (Canada and Mexico), IEC1010 and CE (Europe), GS (Germany) and FCC regulations where appropriate.
- All units show international symbols for power, heat, stir and hot top.

International Symbols

Symbol	Meaning
 power	Indicates unit is plugged in to power supply.
 hot top	Cautions unit top plate is too hot to touch (>140°F/60°C).
 heat	Indicates heat knob.
 stir	Indicates stir knob.

Product Description

Models	Top Style	Top Size	Dimensions
PC-200/210/220	Ceramic	4" x 5"	4.4H x 5.8W x 7.3D (inches) 11.2H x 14.7W x 18.5D (cm)
PC-400/410/420	Ceramic	5" x 7"	4.4H x 7.8W x 9.6D (inches) 11.2H x 19.8W x 24.4D (cm)
PC-600/610/620	Ceramic	10" x 10"	4.8H x 10.5W x 14.4D (inches) 12.2H x 26.7W x 36.6D (cm)

Operating Conditions

Corning PC-200, PC-400 and PC-600 Series Hotware is designed to be safe under the following conditions:



- Indoor use.
- Temperature of 5°C to 40°C (41°F to 104°F).
- Maximum relative humidity (non-condensing) of 80% for temperatures up to 32°C (90°F) decreasing linearity to 50% at 40°C (104°F).
- Position at least 12" from walls, 48" from ceilings and 12" between hot plates if using multiple units.
- Main supply voltage fluctuations not to exceed ± 10% of the nominal voltage.
- Pollution Degree 2 in accordance with IEC664.

Warnings

- **Always** wear safety glasses and other appropriate protection when operating this equipment.
- **Keep the Pyrocera[®] top plate clean.** Use non-abrasive cleaner. Spills may damage the top and lead to thermal failure. Unplug the unit and remove spills promptly. Should the top plate become damaged by etching, scratching or chipping, replace the top plate and element assembly **immediately** using complete assembly and instructions provided by the manufacturer.
- **Do not immerse the unit for cleaning.**
- **Do not heat or stir volatile materials.**
- **Do not** use foil, metal container, large heavy wall glass containers, fiberglass pads or other insulating materials on the top of the unit when heating. Heat settings above 5 are not recommended for sand bath applications.
- **Do not** modify or substitute the grounded power plug. Use only power cords supplied by the manufacturer. Use only properly grounded outlets to avoid shock hazard.
- **Do not** modify the unit electrically or mechanically as personal injury or product damage may occur.
- **Do not** use ring stand to support unit on lattice or for support of heavy loads. Gross weight on top of any unit should not exceed 75 lbs.
- **Not explosion or spark proof.**
- **Not for industrial use.** These units are designed for use in laboratory environments by persons knowledgeable in safe laboratory practices.
- **Do not** use equipment in a manner other than stated in Operating Conditions (page 3) since the protection provided by the equipment may be impaired.
- **Do not** turn heat or stir knobs counterclockwise from the “0” or off position.

Heating Operation and Controls

- Microprocessor ensures minimum heat-up times for samples by supplying maximum power to the heating element until set point is reached.
- Top quality insulation keeps the heat on the top, away from controls and the lab bench, saving more energy than competitive units.
- Hot Top Indicator light warns that the top is too hot to touch ($>140^{\circ}\text{F}$ or 60°C).
- Temperature sensor provides power cutoff in abnormal situations by limiting top plate temperature to 1022°F (550°C).
- Optional temperature controller features a digital display, automatic shut off, stainless steel probe, flashing heat light and tilt indicator. Hot Plates and Stirrer/Hot Plates (PC-400 and PC-600 Series Only) include a socket for an optional temperature controller (400188) for ability to control samples between 77°F and 390°F (25°C and 199°C) to an accuracy of $\pm 4^{\circ}\text{F}$ ($\pm 2^{\circ}\text{C}$).

Operation: Fill vessel with solution, place stir bar provided into vessel (stirrer/hot plates only) and set vessel in the center of the top plate. Plug line cord into a grounded power outlet; the green power indicator light  will illuminate. Turn heat knob clockwise to desired setting. Amber heat light to the left of the knob will illuminate. Hot top indicator light  will illuminate and remain on when temperature of the top plate reaches approximately 140°F (60°C). When the heat is turned off, the hot top indicator light will blink until top plate temperature is less than 140°F (60°C).



Dial Setting

0	OFF	OFF
1-2	77°F	25°C
3	194°F	90°C
4	338°F	170°C
5	446°F	230°C
6	572°F	300°C
7	770°F	410°C
8	860°F	460°C
9 - 10	896°F	480°C

NOTE: Temperatures listed above are typical under full top load condition. Actual temperatures will be governed by dial setting, top load and voltage.

Stirring Operation and Controls

- Exclusive closed-loop stirring control monitors and regulates the stirring speed, sensing your requirements whether you're stirring an aqueous, viscous or semi-solid solution.
- Stirring control provides a “cushioned” reaction to large increases in speed to minimize decoupling.

Operation: Fill vessel with solution, place stir bar provided into vessel (stirrers and stirrer/hot plates only) and set vessel in the center of the top plate. Plug line cord into a grounded power outlet, the green power indicator light  will illuminate. Turn stir knob  clockwise to desired setting. Amber stir light to the left of the knob will illuminate.

Dial Setting

0	OFF	
1-2	60 RPM	(1-2 second delay at low setting)
3	100 RPM	
4	155 RPM	
5	250 RPM	
6	380 RPM	
7	550 RPM	
8	870 RPM	
9 - 10	1100 RPM	

NOTE: RPM (revolutions per minute) listed above are typical and were taken with a top load of 400mL of water in a 600mL PYREX® beaker at room temperature. Actual speeds will be governed by dial setting, top load and voltage.

Inspection Procedures

- **Look for etching, scratching or chipping on top plate.** If any of these conditions are present, replace* the complete top plate and element assembly immediately.
- **Look for damaged power cord.** If cord is damaged, replace* immediately.

Preventive Maintenance

- **Disconnect power by unplugging unit before performing any maintenance or service*.**
- **Always use a grounded power outlet.**
- **Keep the Pyroceram top plate clean.** Unplug unit and use non-abrasive cleaner.
- **Clean spills promptly.** Unplug unit and use a non-abrasive cleaner.
- **Do not immerse unit for cleaning.**
- **Replace* a damaged top immediately** using complete top plate and element assembly.
- **Always** keep plug closure in socket when not using optional temperature controller.

* Refer to page 9 for appropriate part number. Service should always be done by qualified technicians using Corning parts and instructions.

Technical Specifications - 120V

Model	Catalog Number	Power (Volts/Hz/Watts/Amp)	Temp. Range	Stir Range	Weight
Hot Plates					
PC-200	6795-200	120V/60Hz/253W/2.2A	77-1022°F 25-550°C	-	4.0 lbs. 1.8 kg.
PC-400	6795-400	120V/60Hz/628W/5.3A	77-1022°F 25-550°C	-	6.0 lbs. 2.7 kg.
PC-600	6795-600	120V/60Hz/1043W/8.7A	77-1022°F 25-550°C	-	10.0 lbs. 4.5 kg.
Stirrers					
PC-210	6795-210	120V/60Hz/33W/0.3A	-	60-1100	4.5 lbs. 2.0 kg.
PC-410	6795-410	120V/60Hz/73W/0.7A	-	60-1100	6.5 lbs. 2.9 kg.
PC-610	6795-610	120V/60Hz/73W/0.7A	-	60-1100	10.0 lbs. 4.5 kg.
Stirrer/Hot Plates					
PC-220	6795-220	120V/60Hz/283W/2.4A	77-1022°F 25-550°C	60-1100	5.0 lbs. 2.3 kg.
PC-420	6795-420	120V/60Hz/698W/5.9A	77-1022°F 25-550°C	60-1100	7.0 lbs. 3.2 kg.
PC-620	6795-620	120V/60Hz/1113W/9.3A	77-1022°F 25-550°C	60-1100	11.5 lbs. 5.2 kg.

Service and Repair Information - 120V

Service and/or parts may be obtained from Corning. Service should always be done by qualified technicians using Corning parts and instructions.

Corning Number	Description	Usage
411007	Power Cord w/Plug	PC-200/210/220, 400/410/420
410956	Power Cord w/Plug	PC-600/610/620
410927	Top Plate/Element Assembly	PC-200/220
411008	Top Plate/Element Assembly	PC-400/420
410959	Top Plate/Element Assembly	PC-600/620
410951	Stirrer Top Plate Assembly	PC-210
410933	Stirrer Top Plate Assembly	PC-410
410958	Stirrer Top Plate Assembly	PC-610
400186	Heat Control Knob	PC-200/220, 400/420, 600/620
400187	Stirrer Control Knob	PC-210/220, 410/420, 610/620
410908	Control PC Board Set	PC-200
411003	Control PC Board Set	PC-400
410972	Control PC Board Set	PC-600
410945	Control PC Board Set	PC-210
410928	Control PC Board Set	PC-410
410975	Control PC Board Set	PC-610
410971	Control PC Board Set	PC-220
410949	Control PC Board Set	PC-420
410978	Control PC Board Set	PC-620
410946	Motor/Magnet Assembly	PC-210/220
410932	Motor/Magnet Assembly	PC-410/420
410911	Motor/Magnet Assembly	PC-610/620
410948	Temperature Socket Cover	PC-400/420, PC-600/620
N/A	Fuse, 1 Amp. Type GMA	PC-410/610/210
N/A	Fuse, 4 Amp. Type GMA	PC-200/220
N/A	Fuse, 8 Amp. Type GMA	PC-400/420
N/A	Fuse, 15 Amp. Type GMA	PC-600/620

Optional Accessories

Corning Number

Description

400430	Teflon® Coated Magnetic Stir Bar, 2" x 3/8" (5.08 x .95 cm)
401435	Teflon® Coated Magnetic Stir Bar, 1 " x 3/8" (2.54 x .95 cm)
400084	5/16" x 12" Ring Stand Rod (Models PC-200/210/220)
409830	5/16" x 18" Ring Stand Rod (Models PC-400/410/420)
409831	7/16" x 24" Ring Stand Rod (Models PC-600/610/620)
400188	Temperature Controller Kit* (Models PC-400/420/600/620)
440960	Guide to Heating and Stirring

* Requires ring stand rod. Order rod listed above for your model. Use your standard laboratory clamps.

Teflon is a registered trademark of E.I. du Pont Nemours and Co.

Warranty

Corning warrants this product to be free from defects in material and workmanship when used under normal laboratory conditions for two (2) years. Please complete and return the enclosed warranty card.

For your reference, make a note of the serial number, date of purchase and supplier here.

Serial No. _____ **Date Purchased** _____

Supplier _____

For further information, contact:

**Corning Incorporated
Science Products Division**

United States and Canada

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Phone: 1-800-492-1110

Fax: 1-607-974-0345

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**Customer Service and
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