



# INSTALLATION AND OPERATION MANUAL

## GARLAND PHD PLUS PRODUCT HOLDING DRAWER



**FOR YOUR SAFETY:**  
DO NOT STORE OR USE GASOLINE  
OR OTHER FLAMMABLE VAPORS OR  
LIQUIDS IN THE VICINITY OF  
THIS OR ANY OTHER  
APPLIANCE

**WARNING:**  
IMPROPER INSTALLATION, ADJUSTMENT,  
ALTERATION, SERVICE OR MAINTENANCE  
CAN CAUSE PROPERTY DAMAGE, INJURY,  
OR DEATH. READ THE INSTALLATION,  
OPERATING AND MAINTENANCE  
INSTRUCTIONS THOROUGHLY  
BEFORE INSTALLING OR  
SERVICING THIS EQUIPMENT

PLEASE READ ALL SECTIONS OF THIS MANUAL  
AND RETAIN FOR FUTURE REFERENCE.

THIS PRODUCT HAS BEEN CERTIFIED AS  
COMMERCIAL COOKING EQUIPMENT AND  
MUST BE INSTALLED BY PROFESSIONAL  
PERSONNEL AS SPECIFIED.

INSTALLATION AND ELECTRICAL CONNECTION  
MUST COMPLY WITH CURRENT CODES:  
IN CANADA - THE CANADIAN ELECTRICAL  
CODE PART 1 AND / OR LOCAL CODES.  
IN USA - THE NATIONAL ELECTRICAL CODE  
ANSI / NFPA - CURRENT EDITION.

ENSURE ELECTRICAL SUPPLY CONFORMS WITH  
ELECTRICAL CHARACTERISTICS SHOWN ON  
THE RATING PLATE.

Users are cautioned that maintenance and repairs must be performed by a Garland authorized service agent using genuine Garland replacement parts. Garland will have no obligation with respect to any product that has been improperly installed, adjusted, operated or not maintained in accordance with national and local codes or installation instructions provided with the product, or any product that has its serial number defaced, obliterated or removed, or which has been modified or repaired using unauthorized parts or by unauthorized service agents. For a list of authorized service agents, please refer to the Garland web site at <http://www.garland-group.com>. The information contained herein, (including design and parts specifications), may be superseded and is subject to change without notice.

GARLAND COMMERCIAL INDUSTRIES  
185 East South Street  
Freeland, Pennsylvania 18224  
Phone: (570) 636-1000  
Fax: (570) 636-3903

GARLAND COMMERCIAL RANGES, LTD.  
1177 Kamato Road, Mississauga, Ontario L4W 1X4  
CANADA  
Phone: 905-624-0260  
Fax: 905-624-5669

Enodis UK LTD.  
Swallowfield Way, Hayes, Middlesex UB3 1DQ ENGLAND  
Telephone: 081-561-0433  
Fax: 081-848-0041

## **IMPORTANT INFORMATION**

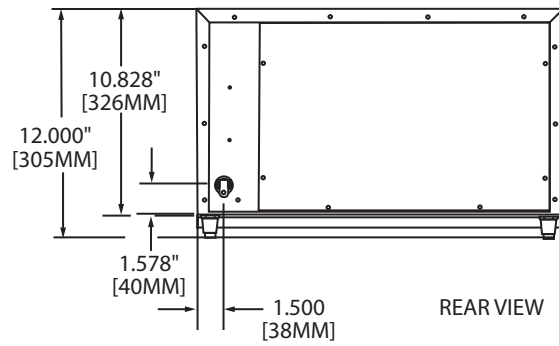
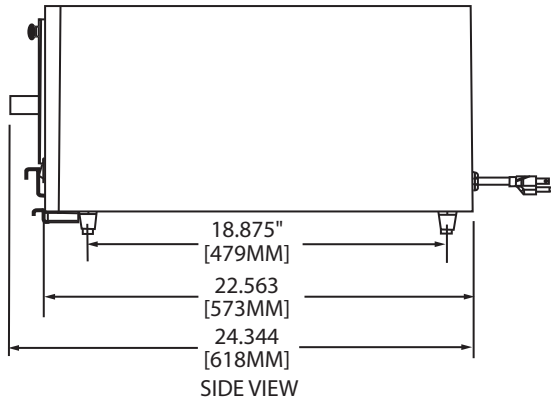
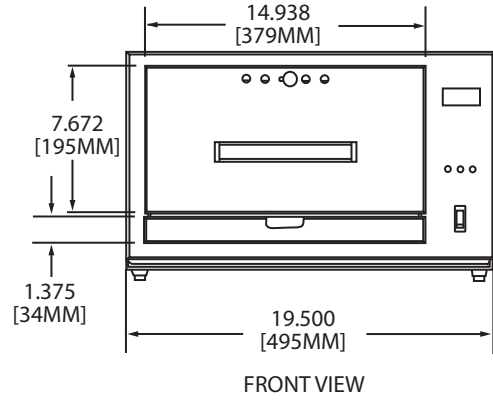
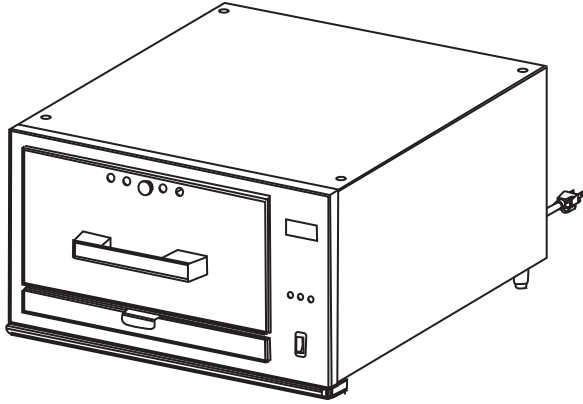
**WARNING:**

**This product contains chemicals known to the state of California to cause cancer and/or birth defects or other reproductive harm. Installation and servicing of this product could expose you to airborne particles of glass wool/ceramic fibers. Inhalation of airborne particles of glass wool/ceramic fibers is known to the state of California to cause cancer.**

# TABLE OF CONTENTS

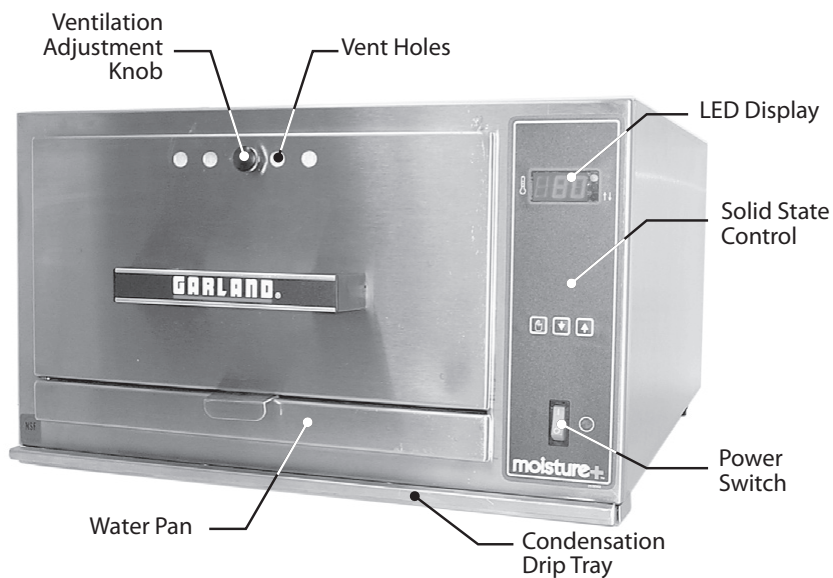
<b>IMPORTANT INFORMATION.....</b>	<b>2</b>
<b>DIMENSIONS AND SPECIFICATIONS .....</b>	<b>4</b>
<b>PRODUCT INFORMATION.....</b>	<b>5</b>
<b>INTRODUCTION.....</b>	<b>6</b>
Rating Plate.....	6
Safety .....	6
<b>OPERATING INSTRUCTIONS.....</b>	<b>7</b>
Explanation of Controls:.....	7
Control Basics.....	7
Getting Started .....	7
Setting Air Temperature (default mode).....	8
Setting Humidity (default mode):.....	8
Programming Menu Presets .....	9
Selecting Menu Presets .....	10
Reviewing Operating Setpoints.....	10
Alarm .....	10
Calculating the Water Temperature .....	10
<b>MAINTENANCE &amp; CLEANING.....</b>	<b>11</b>
<b>GETTING MORE INFORMATION .....</b>	<b>11</b>

# DIMENSIONS AND SPECIFICATIONS

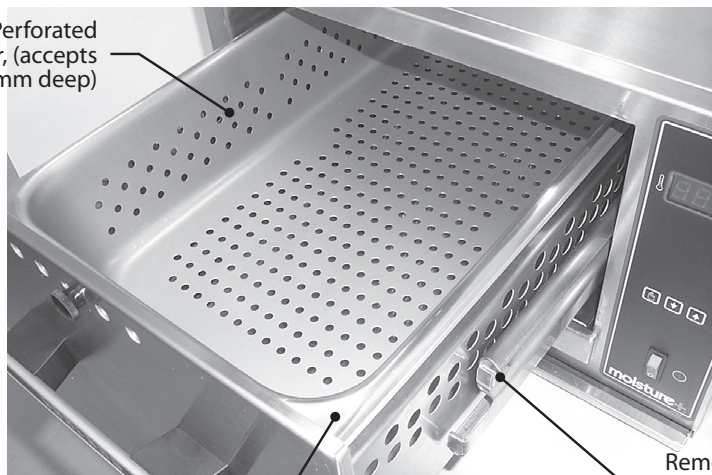


Electrical Characteristics	Watts	Amps	Plug Configuration
120V/60Hz/1 Phase	900	7.50	NEMA 5-15P
230V/50Hz/1 Phase	900	3.92	—
240V/50Hz/1 Phase	980	4.08	—

# PRODUCT INFORMATION



2" (50mm) deep Perforated Pan, standar, (accepts pans up to 4"/100mm deep)



Removable Drawer Guides with Stainless Steel Ball Bearings

Removable Drip Tray keeps contaminants out of Water pan



# PRODUCT INFORMATION Continued

The PHD holding drawer is intended to keep cooked food warm and fresh. It is not intended for cooking or steaming food. The product allows food to be cooked ahead of incoming orders at peak periods and maintain freshness and quality while the food is being serviced.

The humidity set point is intended to approximate a Relative Humidity scale not replicate it. There are many factors that limit the accuracy of an RH scale that can be achieved. Settings will however be repeatable under consistent circumstances and our humidity scale will be consistent with all PHD products.

Air temperature and humidity settings will have to be determined experimentally for optimal product life and quality. As a guide we provide the following typical data:

PRODUCT	HOLDING TEMP.		TYPICAL MAXIMUM HOLDING TIME
	°C	°F	
Hamburger Patties	70	158	60 minutes
Chicken Pieces	85	185	45 minutes
Chicken Chunks	85	185	45 minutes
Bread	60	140	60 minutes +

**NOTE: For Safe hot food holding, NEVER allow food temperatures to be less than 140°F or 60° C.**

For those foods that require additional moisture during the holding period, water can be added to the interior pan. For those foods that do not require additional moisture, the bottom control and heating element can still be utilized without the additional of water to the pan. It is suggested that the drawer be closed during the heat up and holding process to minimize heat loss, also to assure proper temperature control.

It is suggested prior to holding prepared foods that the drawer or drawers be preheated for approximately 60 minutes.

## INTRODUCTION

### Rating Plate

For proper operation, the information on the rating plate of your new equipment must match your electrical supply.

When corresponding with the factory or your equipment dealer regarding service problems or replacement parts, be sure to refer to the particular unit by the correct model number, including prefix and suffix letters and numbers and serial number. The rating plate affixed to the unit contains this information.

### Safety

It is the responsibility of the supervisor or equivalent person to ensure that users of this equipment wear suitable protective clothing and to draw attention to the fact that some parts will by necessity, become very hot and will cause burns if touched accidentally.

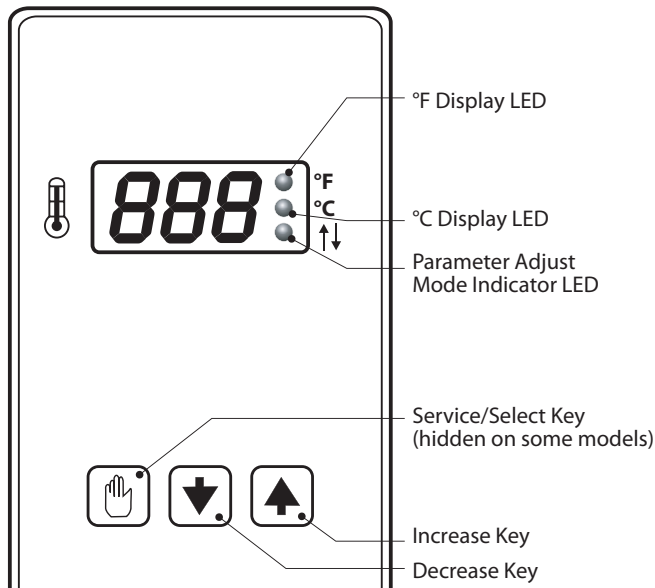
# OPERATING INSTRUCTIONS

The PHD PLUS provides two heating zones. The upper element rated at 350 Watts is the primary air heat source. The lower element rated at 550 Watts is used to heat the water when operating the humidity mode and assists in heating the air in dry operating modes.

The temperature control provides the following features:

- Continuous actual air temperature display provides an accurate indication for food safety.
- The temperature can be displayed in Celsius or Fahrenheit degrees.
- Four Menu settings. Up to four preset air and humidity setting can be made.
- A unique humidity program provides an accurate and repeatable method of controlling the humidity throughout the air temperature range.
- Air temperature settings up to 200°F/93°C.
- Humidity settings up to 90%.

## Explanation of Controls:



**°F DISPLAY LED:** Indicates that the °F display is selected.

**°C DISPLAY LED:** Indicates that the °C display is selected.

**PARAMETER ADJUST MODE LED:** Indicates that the parameter adjust mode is selected.

**DIGITAL DISPLAY:** Normally displays the actual air temperature and pre-programmed menus. In set mode displays other parameters.

**SERVICE / SELECT KEY (Hidden on some models):** Used to enter the parameter adjust mode or select a preprogrammed menu.

**INCREASE KEY:** Increases the selected parameter value. Views the air temperature set point in operation mode.

**DECREASE KEY:** Decreases the selected parameter value. Views the humidity set point in operation mode.

**NOTE** The display parameters may be changed in steps by pushing the **↑** or **↓** keys repetitively, or automatically by holding down the same key longer. Digits will increment or decrement at accelerating rates as the **↑** or **↓** keys is continually pressed.

## Control Basics

There are a number of control features, which need to be understood before proceeding with programming and operating the PHD PLUS.

1. Default air temperature of 150°F or 66°C and 50% humidity has been programmed in.
2. No preset temperature and humidity has been programmed.
3. When the unit powers up the control defaults to the last programmed setting.

## Getting Started

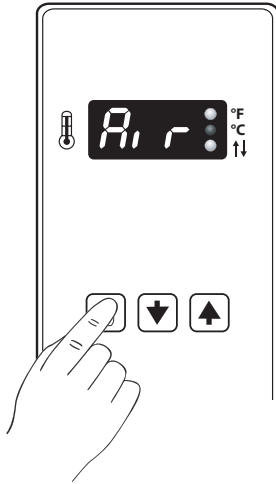
Connect the power supply and turn the power switch to the "1" position.

When power is first applied to a factory unit: the display will show [888] and the 3 status LED's will come on for 10 seconds and then go off for 1 second.

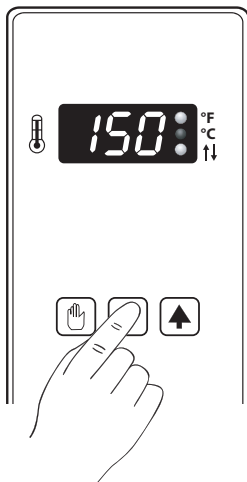
The actual air temperature will be displayed.

# OPERATING INSTRUCTIONS Continued

## Setting Air Temperature (default mode)

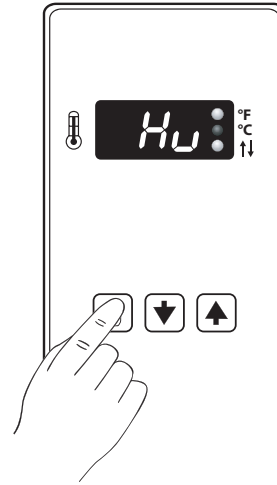


1. Press the Select Key until "Air" appears on the display. Notice the  $\uparrow\downarrow$  LED is illuminated and will remain illuminated until the set mode is exited. You will exit set mode automatically when no key has been pressed for 5 seconds. The last value entered will be stored in memory.
2. Press the  $\uparrow$  or  $\downarrow$  key to increase or decrease the displayed air temperature. The factory default is 150°F or 66°C.

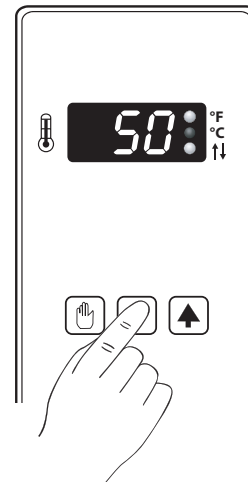


NOTE: The temperature programmed here will become the default setting. This setting will be restored even after the power has been turned off.

## Setting Humidity (default mode):



1. Press the Select Key until "HU" appears on the display. Notice the  $\uparrow\downarrow$  LED is illuminated and will remain illuminated until the set mode is exited. You will exit set mode automatically when no key has been pressed for 5 seconds. The last value entered will be stored in memory.



2. Press the  $\uparrow$  or  $\downarrow$  key to increase or decrease the displayed humidity setting. To activate the humidity the setting must be greater than 10. To operate in dry mode set the display to 10. The factory default is 50.

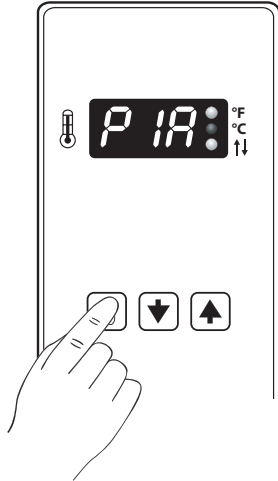
NOTE: The temperature programmed here will become the default setting. This setting will be restored even after the power has been turned off.



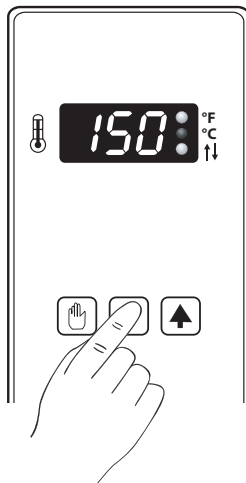
# OPERATING INSTRUCTIONS Continued

## Programming Menu Presets

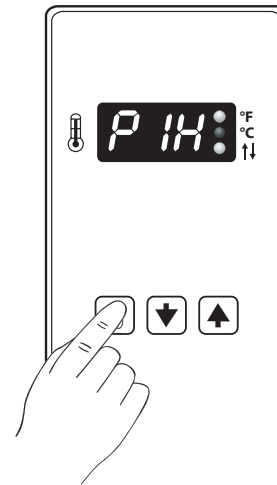
1. Press the Select Key until "Air" appears on the display. Notice the  $\uparrow\downarrow$  LED is illuminated and will remain illuminated until the set mode is exited. You will exit set mode automatically when no key has been pressed for 5 seconds.



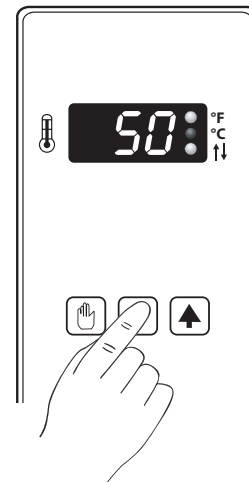
2. Press the Select Key momentarily and scroll through the "Hu" display until the display reads "PIA".



3. Press the  $\uparrow$  or  $\downarrow$  key to increase or decrease the displayed air temperature. The factory default is 150°F or 66°C.



4. Press the Select Key again to program the humidity.



5. Press the  $\uparrow$  or  $\downarrow$  key to increase or decrease the displayed humidity setting. To activate the humidity the setting must be greater than 10, to operate in dry mode set the display to 10. The factory default is 50. Continue the same procedure to program menu presets P2, P3 and P4. Note that in user mode P1-P4 does not appear unless a value has been programmed.

# OPERATING INSTRUCTIONS Continued

## Selecting Menu Presets

When menu presets have been programmed they are then available in operation mode. To select a preset, press the select key momentarily. The first preset "P\_" will appear. Press the Select key momentarily again to select another menu preset or continue to press the Select key momentarily to scroll through the menu presets.

## Reviewing Operating Setpoints

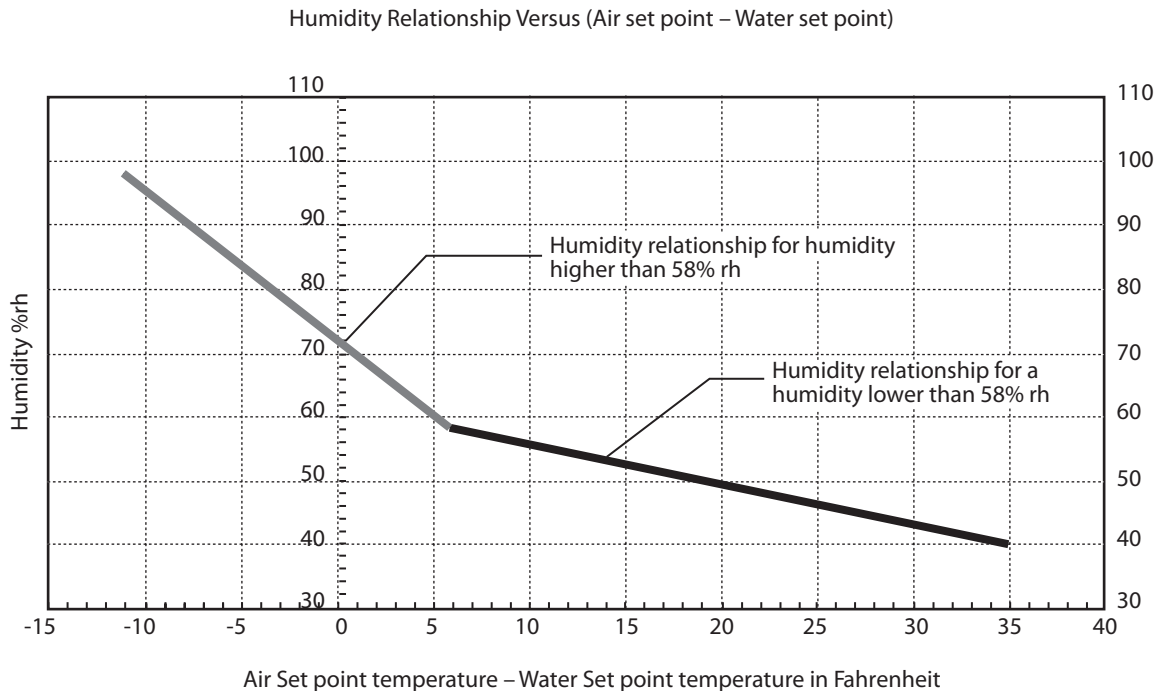
In operation mode, press the  $\uparrow$  key to view the air temperature set point. Press the  $\downarrow$  key to view the humidity set point

## Alarm

If air temperature is  $<$  (less than the (Air setpoint  $- 10^{\circ}\text{C}$  or  $18^{\circ}\text{F}$ ) or  $>$  (greater than) the (Air setpoint  $+ 10^{\circ}\text{C}$  or  $18^{\circ}\text{F}$ ), the air temperature display will flash. Pressing any key will stop the display from flashing.

## Calculating the Water Temperature

To provide a simple and consistent means of setting the chamber humidity we have created a relationship between the water temperature and the air temperature where the lower heat source is scaled in percent relative humidity. By setting the humidity to minimum (10%), the lower temperature will match the air temperature. In applications where it is necessary to set the lower element temperature less than the air temperature in dry mode or for a reference is humidity mode we provide the preceding chart to calculate the set point.



## MAINTENANCE & CLEANING

**WARNING: This appliance is not protected against water jets. Do not clean with water jets**

Keep your cabinet clean by simply wiping the interior and exterior, as needed with a damp cloth or sponge of mild soapy solution. Never use abrasives, acids, or strong cleaners. Do not flood or allow electrical parts to become wet. The interior pans and humidifier pan are removable for easy cleaning. A stainless steel cleaner/polish may be applied to the exterior to maintain a like-new appearance. Do not use wax or strong cleaners on vinyl trim or overlays.

Regular servicing by a competent person is recommended to ensure the continued safe and efficient performance of the appliance.

Wherever possible avoid overheating idle equipment, as this is the primary cause for increased service cost.

**WARNING:** Disconnect the appliance from electrical supply before commencing any servicing work.

## GETTING MORE INFORMATION

The Authorized Dealer from whom you purchased your Garland PHD has an interest in your continued satisfaction. Questions regarding accessory items that are available for use with this equipment or any unusual conditions should be discussed with your dealer. Of course you may always contact Garland if you have questions or require further information about this equipment or desire literature covering our other fine quality products.

 **Garland**<sup>®</sup>