



Platelet Incubator Operation Manual

i.Series® and Horizon Series™



Model Group	i.Series	Horizon Series
Countertop	PC100i, PC900i, PC1200i (Version A)	PC100h, PC900h, PC1200h (Version A)
Floor	PC2200i, PC3200i, PC4200i (Version A)	PC2200h, PC3200h, PC4200h (Version A)

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Document History

Revision	Date	CO	Supersession	Revision Description
L	28 JUN 2013*	8414	Supersedes A, B, C, D, E, F, G, H, I, J, K	Revised layout for ease of navigation and locating information.
M	23 DEC 2013*	8965	M supersedes L	<ul style="list-style-type: none">▶ Added 100 V information.▶ Added caution note for remote alarm interface.▶ Revised section I for consistency with existing manuals.
N	31 JAN 2014*	9113	N supersedes M	Changed voltage for remote alarm contacts.

* Date submitted for Change Order review. Actual release date may vary.

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Section I: General Information

1 About this Manual

1.1 Intended Audience

This manual is intended for use by end users of the platelet incubator and authorized service technicians.

1.2 Model References

Generic references are used throughout this manual to group models that contain similar features. For example, “PC100 models” refers to all models of that size (PC100i, PC100h). This manual covers all platelet incubators, which may be identified singly, by their size, or by their respective “Series.”

1.3 Copyright and Trademark

Helmer®, i.Series®, Horizon Series™, AgiTrak™, and Rel.i™ are registered trademarks or trademarks of Helmer, Inc. in the United States of America. Copyright © 2014 Helmer, Inc. All other trademarks and registered trademarks are the property of their respective owners.

Helmer, Inc., doing business as (DBA) Helmer Scientific and Helmer.

2 Safety

The operator or technician performing maintenance or service on Helmer Scientific products must (a) inspect the product for abnormal wear and damage, (b) choose a repair procedure which will not endanger his/her safety, the safety of others, the product, or the safe operation of the product, and (c) fully inspect and test the product to ensure the maintenance or service has been performed properly.

2.1 Safety Definitions

The following general safety alerts appear with all safety statements within this manual. Read and abide by the safety statement that accompanies the safety alert symbol.



WARNING The safety statement that follows this safety alert symbol indicates a hazardous situation which, if not avoided, could result in serious injury.



CAUTION The safety statement that follows this safety alert symbol indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



NOTICE The safety statement that follows this safety alert symbol indicates a situation which, if not avoided, could result in damage to the product or stored inventory.

2.2 Product Labels

The following general safety and information alerts appear on the product to identify potential hazards to the operator or service technician.



Caution: Risk of damage to equipment or danger to operator



Caution: Unlock all casters



Caution: Hot surface



Earth / ground terminal



Caution: Shock/electrical hazard



Protective earth / ground terminal

2.3 Avoiding Injury

- ▶ Review safety instructions before installing, using, or maintaining the equipment.
- ▶ Before moving unit, remove contents from the drawers (if applicable).
- ▶ Do not open multiple drawers at the same time (if applicable).
- ▶ Before moving unit, ensure door(s) are closed and casters (if applicable) are unlocked and free of debris.
- ▶ Before moving unit, disconnect the AC power cord and secure the cord.
- ▶ When moving unit, use assistance from a second person.
- ▶ Never physically restrict any moving component.
- ▶ Avoid removing electrical service panels and access panels unless so instructed.
- ▶ Keep hands away from pinch points when closing the door or when agitation motion is enabled (if applicable).
- ▶ Avoid sharp edges when working inside the electrical compartment.
- ▶ Ensure biological materials are stored at recommended temperatures determined by standards, literature, or good laboratory practices.
- ▶ Proceed with caution when adding and removing samples from the platelet incubator.
- ▶ Use supplied power cord only.
- ▶ Using the equipment in a manner not specified by Helmer Scientific may impair the protection provided by the equipment.
- ▶ Decontaminate parts prior to sending for service or repair. Contact Helmer Scientific or your distributor for decontamination instructions and a Return Authorization Number.
- ▶ Ensure biological materials are stored safely, in accordance with all applicable organizational, regulatory, and legal requirements.
- ▶ The platelet incubator is not considered to be a storage cabinet for flammable or hazardous materials.

3 General Recommendations

3.1 Intended Use

Helmer platelet incubators are intended to provide the controlled temperature environment required for the storage of platelet products.

The devices are intended to be operated by personnel who have procedures in place for meeting FDA, AABB, EU or any other applicable regulations for the processing and storage of platelet products.

3.2 General Use

Allow platelet agitator to come to room temperature before switching power on.

During initial startup, motion alarm may sound if the motion is disabled, and low temperature alarm may sound while platelet incubator reaches operating temperature.

3.3 Initial Loading

After platelet incubator reaches room temperature, allow chamber temperature to stabilize at the setpoint before storing product.

4 Specifications

	PC100	PC900	PC1200	PC2200	PC3200	PC4200
Physical						
Height	25.00" (635 mm)	30.25" (768 mm)	30.25" (768 mm)	60.00" (1524 mm)	75.50" (1918 mm)	75.50" (1918 mm)
Width	21.25" (540 mm)	26.50" (673 mm)	40.75" (1035 mm)	40.25" (1022 mm)	40.25" (1022 mm)	40.25" (1022 mm)
Depth	23.50" (597 mm)	27.75" (705 mm)	27.75" (705 mm)	30.25" (768 mm)	30.25" (768 mm)	30.25" (768 mm)
Weight	105 lbs (48 kg)	159 lbs (72 kg)	208 lbs (94 kg)	363 lbs (165 kg)	431 lbs (196 kg)	663 lbs (301 kg)
Electrical						
Input Voltage and Frequency	100 V, 50/60 Hz / 115 V, 50/60 Hz / 230 V, 50/60 Hz			115 V, 50/60 Hz / 230 V, 50/60 Hz		
Voltage Tolerance	±10%					
Circuit Breakers	12.0 A (100 V, 115 V) 6.0 A (230 V, quantity 2)			15.0 A, 2 A (115 V)		20.0 A, 5.0 A (115 V)
Fuses	n/a			10.0 A (230 V, quantity 2)		10.0 A (230 V, quantity 2)
Power Consumption ⁽¹⁾	8.0 A (100 V, 115 V) 5.0 A (230 V)	8.0 A (100 V) 9.0 A (115 V) 4.5 A (230 V)	8.0 A (100 V) 9.0 A (115 V) 4.5 A (230 V)	11.5 A (115 V) 7.0 A (230 V)	12.0 A (115 V) 7.0 A (230 V)	14.5 A (115 V) 8.3 A (230 V)
Power Source ⁽²⁾	Varies (refer to product specification label)					
Agitation Speed ⁽³⁾ (cycles/minute)	n/a					60 (115 V) 60 (230 V, 50 Hz) 72 (230 V, 60 Hz)
Remote Alarm Capacity	i.Series: 0.5 A at 125 V (AC); 1.0 A at 24 V (DC) Horizon Series: 0.25 A at 60 V (AC); 0.25 A at 100 V (DC)					
Internal Outlet Maximum Current Draw ⁽⁴⁾	0.5 A					n/a
Control and Monitoring						
Interface	i.Series: Monitoring and display system and separate temperature control system Horizon Series: Temperature control and display system					
Alarms	i.Series: High, low, and condenser temperature; door open; low battery; no battery; AC power failure; change chart paper; agitator 1, 2, and 3 motion Horizon Series: High and low temperature; AC power failure; agitator motion (PC4200h)					

	PC100	PC900	PC1200	PC2200	PC3200	PC4200
Environmental						
Application	<ul style="list-style-type: none"> ▶ Indoor use only ▶ Altitude (maximum): 2000 m ▶ Ambient temperature range: 15 °C to 35 °C ▶ Relative humidity (maximum for ambient temperature): 80% for temperatures up to 31 °C, decreasing linearly to 50% at 40 °C ▶ Temperature control range: 20 °C to 35 °C 					

- (1) Power consumption is measured in full-load Amperes.
- (2) Product specification label is located on the back of the platelet incubator.
- (3) Agitation speed is $\pm 10\%$ of nominal speed.
- (4) PC4200 platelet incubators do not include an internal outlet(s).



CAUTION

- ▶ The interface on the remote alarm monitoring system is intended for connection to the end user's central alarm system(s) that uses normally-open or normally-closed dry contacts.
- ▶ If an external power supply exceeding 30 V (RMS) or 60 V (DC) is connected to the remote alarm monitoring system's circuit, the remote alarm will not function properly; may be damaged; or may result in injury to the user.

5 Compliance

5.1 Regulatory Compliance

This device complies with the requirements of directive 93/42/EEC concerning Medical Devices, as amended by 2007/47/EC.



Sound level is less than 70 dB(A).



Emergo Europe
 Molenstraat 15
 2513 BH
 The Hague, Netherlands

5.2 WEEE Compliance

The WEEE (waste electrical and electronic equipment) symbol (right) indicates compliance with European Union Directive WEEE 2002/96/EC and applicable provisions. The directive sets requirements for the labeling and disposal of certain products in affected countries.



When disposing of this product in countries affected by this directive:

- ▶ Do not dispose of this product as unsorted municipal waste.
- ▶ Collect this product separately.
- ▶ Use the collection and return systems available locally.

For more information on the return, recovery, or recycling of this product, contact your local distributor.

6 Installation

6.1 Location Requirements

- ▶ Has a sturdy, level surface.
- ▶ Has a grounded outlet meeting national electric code (NEC) and local electrical requirements.
- ▶ Is clear of direct sunlight, high temperature sources, and heating and air conditioning vents.
- ▶ Countertop models: Minimum 4" (102 mm) above and behind.
- ▶ Floor models: Minimum 4" (102 mm) on left and right sides.
- ▶ Meets limits specified for ambient temperature and relative humidity.

6.1.1 Placement



WARNING To prevent tipping, ensure the casters are unlocked (floor models).

- 1 Ensure all casters are unlocked (floor models).
- 2 Place platelet incubator on study surface or roll platelet incubator into place and lock casters (floor models).
- 3 Ensure platelet incubator is level.

6.2 Chart Recorder

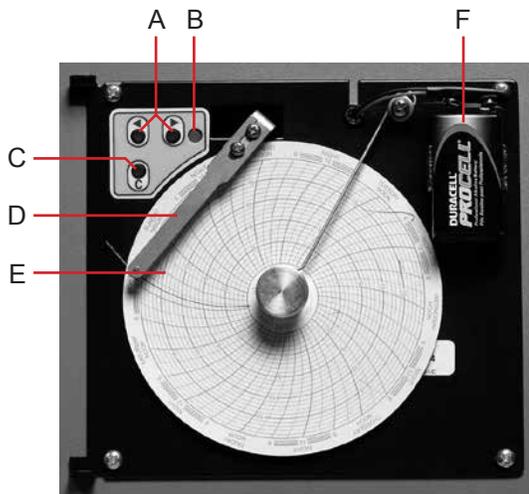
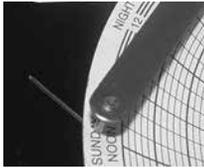


Chart recorder with paper and battery installed.

Label	Description	Function
A	Left and Right Arrow buttons	Adjust settings and stylus position
B	LED	Indicates status of chart recorder in operating mode, or selected temperature range in paper change mode
C	Chart change button	Adjust position of stylus when changing chart paper, or run a test pattern
D	Stylus	Mark temperature line on paper
E	Reset button	Restart chart recorder
F	Backup battery	Provides power during AC power failure. Connect prior to use.

6.2.1**Install and Change Chart Paper**

- 1 Press and hold C button. When stylus begins to move left, release button. The LED flashes to indicate current temperature range.
- 2 When stylus stops moving, remove chart knob then move knob up and away from chart paper.
- 3 Place new chart paper on chart recorder.
- 4 Gently lift stylus and rotate paper so current time line corresponds to time line groove.



- 5 Hold chart paper and reinstall chart knob.

NOTE For accurate temperature reading, ensure that current time is aligned with time line groove when chart knob is tightened.

- 6 Confirm the temperature range is set to the correct value.
- 7 Press and hold button **C**. When the stylus begins to move right, release the button.
- 8 Confirm the stylus is marking the temperature correctly.

7 Maintenance Schedule

Maintenance tasks should be completed according to the following schedule. Refer to the service manual for more detail on the various tasks.

NOTE These are recommended minimum requirements. Regulations for your organization or physical conditions at your organization may require maintenance items to be performed more frequently, or only by designated service personnel.

Task	Frequency		
	Quarterly	Annually	As Needed
Test the high and low temperature alarms.	✓		
Test the power failure alarm (as required by your organization's protocols).	✓		
Test the door open alarm.	✓(i.Series)		
Test the no battery alarm.	✓(i.Series)		
Test the motion alarm (i.Series platelet incubators with platelet agitators installed, and PC4200 platelet incubator).	✓		
Check the temperature calibration for the temperature monitor and change it if necessary.	✓		
Check the temperature calibration for the temperature controller and change it if necessary.	✓		
Check the backup battery for the motion alarm system after an extended power failure and change it if necessary, or change the battery if it has been in service for one year (PC4200).		✓	
(Models with chart recorders) Check the backup battery for the chart recorder after an extended power failure and change it if necessary, or change the battery if it has been in service for one year. Refer to the Temperature Chart Recorder Operation and Service Manual.			✓
Clean the condenser grill.	✓		
Clean the exterior and interior.			✓
Clean the door gaskets.			✓
(PC4200) Check agitation wheels, wheel bearings, and drive rod assembly for wear. Clean and lubricate moving parts.		✓	
Replace moving parts if worn or when prompted by the agitation maintenance reminder (i.Series).			✓

NOTE

- ▶ i.Series: During a power failure, the backup battery provides power to the monitoring system and the power failure alarm. If the backup battery is not functioning, the power failure alarm will not be activated.
- ▶ If the backup battery does not provide power to the monitoring system during the power failure alarm test, replace the battery.
- ▶ If batteries have been in service for one year, replace batteries.

Section II: i.Series® Models

8 Operation

8.1 Initial Start Up

- 1 Switch the AC ON/OFF switch **ON**.
- 2 Connect the backup batteries for the monitoring system and alarms.
- 3 Connect the backup battery for the temperature chart recorder.
- 4 Plug the power cord into a grounded outlet that meets the electrical requirements on the product specification label.
- 5 Install the alarm check tube (PC100i). Position the tube below the probe tip.
- 6 Select the display language.
 - ▶ When the platelet incubator is powered on, the System Options is displayed.
 - ▶ Press the **INC** or **DEC** buttons to select the language.
 - ▶ Press the **HOME** button.
- 7 Press the **MUTE** button if the Low Temperature alarm sounds.

-
- NOTE**
- ▶ When the door switch is bypassed, the incubator and door open alarm continue to operate as if the door is closed.
 - ▶ The door switch controls power to the built-in agitator on PC4200i platelet incubator, and controls power to the internal outlets on all other models.
 - ▶ The door switch may be bypassed by opening the door and pulling the switch cylinder.
-

8.2 Configure a Platelet Agitator for Use in an i.Series Incubator (Optional)

Helmer i.Series platelet agitators may be installed in a stand-alone configuration, or in Helmer i.Series platelet incubators.

- ▶ Motion data is transmitted from the platelet agitator, through the data cable, to the platelet incubator.
- ▶ The platelet incubator interprets the motion data and generates its own motion alarm, based on its own alarm delay period.
- ▶ If the motion alarm is not disabled on the platelet agitator, the motion alarms on both devices will sound.

-
- NOTE**
- ▶ Disable the platelet agitator motion alarm when installing the platelet agitator in a Helmer i.Series platelet incubator.
 - ▶ Refer to the platelet agitator service manual for information regarding the installation of a platelet agitator in a platelet incubator.
-

8.3 Main Screen Functions

All screens on the monitoring system are accessible from the Main screen. Press the **UP** or **DOWN** buttons to highlight a menu option, then press the **SELECT** button to display the selected option.



Left: Temperature graph screen (displayed by default). Center: Home screen. Right: Main screen.

Option	Function
Event Log	View historical information: alarms and operational events
System alarm test and status	<ul style="list-style-type: none"> ▶ Start or stop automatic alarm test ▶ View number of days left before TCR paper change ▶ View door status (open or closed) ▶ View condenser temperature
Edit configuration settings	Access the Configuration screen (with password) and edit: <ul style="list-style-type: none"> ▶ Text language ▶ Date and time and/or format ▶ Temperature units ▶ Volume and pattern of audible alarms ▶ Enable or disable chart paper timer ▶ Enable or disable temperature graph display ▶ Change alarm-related setpoints and timers ▶ Calibrate temperature probe monitor reading ▶ Change some settings to factory default values ▶ Change password ▶ Configure AgiTrak system to monitor agitation
View configuration	<ul style="list-style-type: none"> ▶ Date and time formats ▶ Alarm-related setpoints and timers ▶ Volume and pattern for audible alarms ▶ Setting for the chart paper timer ▶ Setting for the temperature graph display ▶ Settings for agitator alarms
Product/company information	<ul style="list-style-type: none"> ▶ Software versions for the control and display components of the monitoring system ▶ Helmer contact information
i.Help	<ul style="list-style-type: none"> ▶ View real-time agitation speed and cycle counts ▶ View historical agitation event logs and details ▶ Reset agitator cycle counters

NOTE Refer to the platelet incubator service manual for a complete list of i.Center monitoring system functions, settings, and screens.

8.4 Chamber Setpoint

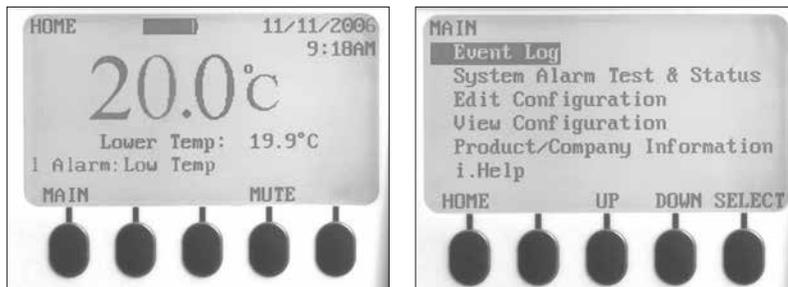


Temperature monitor/controller display and buttons.

- NOTE**
- ▶ Default setpoint is 22.0 °C
 - ▶ Displayed chamber temperature may be different than setpoint.
 - ▶ Refer to the service manual for program parameters and default parameter values.

- 1 On the temperature controller, press and hold *****.
 - ▶ The temperature controller displays the current setpoint.
- 2 While holding ***** press **Up Arrow** or **Down Arrow** to change the temperature setpoint.
 - ▶ Setpoint changes in 0.1 °C increments.
- 3 Release all buttons; the temperature setpoint is changed.

8.5 Temperature Monitor Setpoints



Left: Home screen. Right: Main screen.

Information displayed on the Home screen:

- ▶ Current readings from temperature probe(s)
- ▶ Remaining battery charge
- ▶ Current date and time
- ▶ Active alarm status

Features accessible from the Homescreen:

- ▶ Access the Main screen to view and change settings
- ▶ View active alarms
- ▶ Mute audible alarms
- ▶ View a graph of the chamber temperature (past 24 hours of operation)
- ▶ Adjust the screen contrast (center button)

Features accessible from the Main screen:

- ▶ View Event Log data
- ▶ Start or stop system alarm tests and view incubator status
- ▶ View and edit configuration settings
- ▶ View product and company information
- ▶ Access the i.Help system

8.5.1 Change System Password

The default password is **1234**. Passwords must be four digits, ranging from 1 to 5.

Change the password:

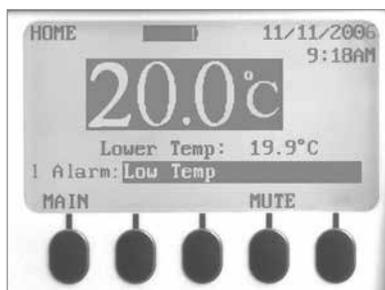
- 1 On the Home screen, press the **MAIN** button.
- 2 Press the **DOWN** button to select Edit Configuration. Press the **SELECT** button.
- 3 Enter the password when prompted.
- 4 Press the **DOWN** button to select Change Password. Press the **SELECT** button.
- 5 Enter the new password, then re-enter the new password when prompted.
 - ▶ If password entries match, the “update” message is displayed.
 - ▶ If password entries do not match, the “incorrect match” message is displayed. Repeat the procedure to change the password.

8.5.2 Temperature Alarm Setpoints

- 1 Press the **MAIN** button.
- 2 Press the **DOWN** button to highlight Edit Configuration. Press the **SELECT** button.
- 4 Enter the password when prompted.
- 5 Press the **DOWN** button to highlight Alarm Setpoints. Press the **SELECT** button.
- 6 Press the **DOWN** button to highlight the desired temperature alarm setting.
- 7 Press the **INC** or **DEC** buttons to set the temperature alarm setpoint.
- 8 Press the **BACK** button to return to the Edit Configuration screen, or press the **HOME** button to exit. The new settings are saved.

8.5.3 Active Alarms

The Home screen identifies active alarms. If multiple alarms are active, the display will indicate the number of alarms and will cycle through multiple alarms.



Home screen with one active alarm (Low Temp), highlighted.

8.5.4 Mute an Active Alarm

- ▶ By default audible alarms are set to ON.
- ▶ Alarms that are activated while existing alarms are muted are audible.
- ▶ The mute timer may be reset with each new active alarm.
- ▶ Muting an alarm does not clear the visual alarm.

NOTE Muting an alarm clears the signal sent through the remote alarm interface.

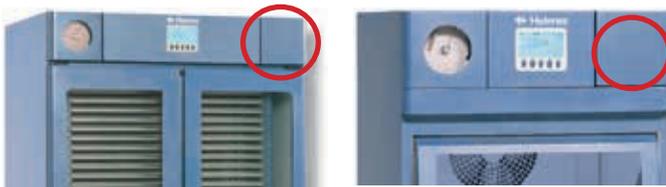
- ▶ If an alarm is still active when the mute timer expires, the active alarm is sent through the remote alarm interface.

Mute an active alarm:

- 1 On the Home screen, press the **MUTE** button once to mute the alarm for five minutes.
- 2 Press the **MUTE** button multiple times to extend the mute timer (up to 60 minutes).

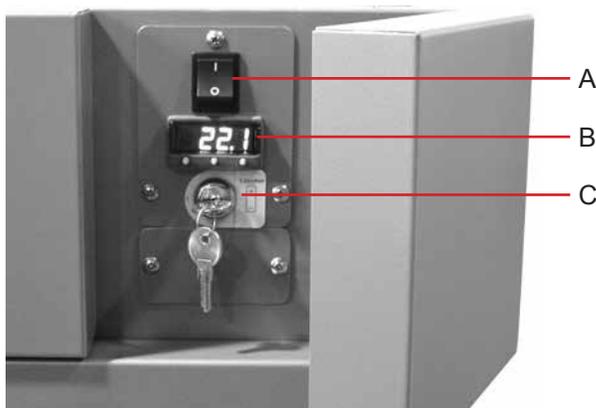
9 Components

9.1 Control Door



Control door (circled).

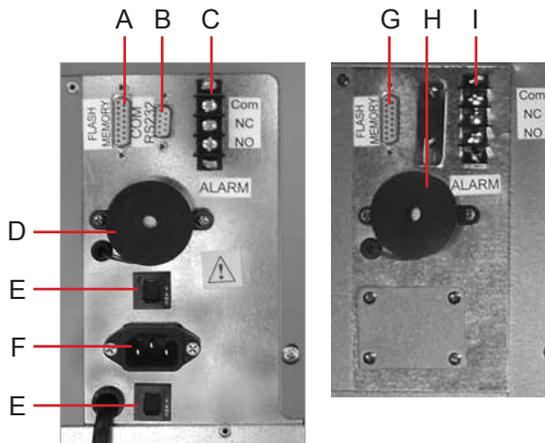
9.2 Control Panel



Control panel, behind control door.

Label	Description
A	Main power switch
B	Temperature controller
C	Backup battery key switch

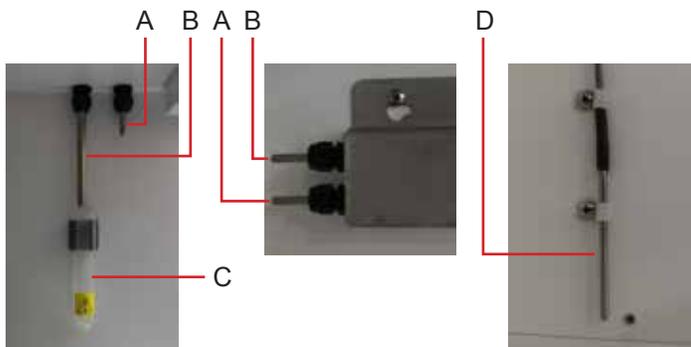
9.3 Alarm Panel



Left: PC1200i (230 V) alarm panel. Right: PC2200i alarm panel.

Label	Description
A	Flash port
B	RS-232 COM port (optional)
C	Remote alarm interface
D	Alarm buzzer
E	Circuit breakers
F	Power connector
G	Flash port
H	Alarm buzzer
I	Remote alarm interface

9.4 Chamber



Chamber probes (multiple models shown).

Label	Description
A	Temperature control and temperature chart recorder probe
B	Temperature monitoring probe
C	Tube for alarm checks (PC100i)
D	Lower probe (PC2200i, 3200i, and 4200i)

Section III: Horizon Series™ Models

10 Operation

10.1 Initial Start Up

- 1 Switch the AC ON/OFF switch **ON**.
- 2 Connect the backup battery for the Power Failure alarm.
- 3 Connect the backup battery for the Motion alarm (PC4200h only).
- 4 Connect the backup battery for the temperature chart recorder.
- 5 Plug the power cord into a grounded outlet that meets the electrical requirements on the product specification label.
- 6 Install the alarm check tube (PC100h). Position the tube below the probe tip.
- 7 Press the **MUTE** button if the Low Temperature alarm sounds.

-
- NOTE**
- ▶ When the door switch is bypassed, the incubator will continue to operate as if the door is closed.
 - ▶ The door switch controls power to the built-in agitator on PC4200h, and controls power to the internal outlets on all other models.
 - ▶ The door switch may be bypassed by opening the door and pulling the switch cylinder.
-

10.2 Configure a Platelet Agitator for Use in a Horizon Series Incubator (Optional)

Helmer Horizon Series platelet agitators may be installed in a stand-alone configuration, or in Helmer Horizon Series platelet incubators.

-
- NOTE** Refer to the platelet agitator service manual for information regarding the installation of a platelet agitator in a platelet incubator.
-

10.3 Chamber Setpoint



Temperature monitor/controller display and buttons.

-
- NOTE**
- ▶ Default setpoint is 22.0 °C
 - ▶ Displayed chamber temperature may be different than setpoint.
 - ▶ Refer to the service manual for program parameters and default parameter values.
-

- 1 On the temperature controller, press and hold *****.
 - ▶ The temperature controller displays the current setpoint.
- 2 While holding ***** press **Up Arrow** or **Down Arrow** to change the temperature setpoint.
 - ▶ Setpoint changes in 0.1 °C increments.
- 3 Release all buttons; the temperature setpoint is changed.

10.4 Temperature Monitor Setpoints



Temperature monitor/controller display and buttons.

Features accessible on the monitoring and control system:

- ▶ View current chamber temperature and active alarms
- ▶ View and change monitor temperature offset
- ▶ View and change temperature alarm setpoints
- ▶ View and change alarm delay settings

10.4.1 High Alarm Setpoint

-
- NOTE**
- ▶ Default setpoint is 24.0 °C.
 - ▶ Alarm activates if the chamber temperature is greater than the alarm setpoint
 - ▶ Refer to the service manual for program parameters and default parameter values.
-

Change the setpoint:

- 1 On the temperature monitor/controller, press and hold **Up Arrow** and **Down Arrow**. “tunE” and “oFF” will flash on the display.
 - ▶ The temperature monitor/controller is now in **Level 1** program mode.
- 2 Press **Up Arrow** or **Down Arrow** as necessary to select the “AL.HI” parameter.
- 3 Hold ***** and press **Up Arrow** or **Down Arrow** to change the parameter.
- 4 Release all buttons; the parameter value is changed.

Exit program mode:

- 1 Hold **Up Arrow** and **Down Arrow** until current chamber temperature setpoint is displayed.

10.4.2 Low Alarm Setpoint

-
- NOTE**
- ▶ Default setpoint is 20.0 °C.
 - ▶ Alarm activates if the chamber temperature is less than the alarm setpoint
 - ▶ Refer to the service manual for program parameters and default parameter values.
-

Change the setpoint:

- 1 On the temperature monitor/controller, press and hold **Up Arrow** and **Down Arrow**. “tunE” and “oFF” will flash on the display.
 - ▶ The temperature monitor/controller is now in **Level 1** program mode.
- 2 Press **Up Arrow** or **Down Arrow** as necessary to select the “AL.LO” parameter.
- 3 Hold ***** and press **Up Arrow** or **Down Arrow** to change the parameter.
- 4 Release all buttons; the parameter value is changed.

-
- NOTE** Repeat steps 2 through 4 to view or change additional parameter values.
-

Exit program mode:

- 1 Hold **Up Arrow** and **Down Arrow** until current chamber temperature setpoint is displayed.

10.5 Alarm Volume Settings

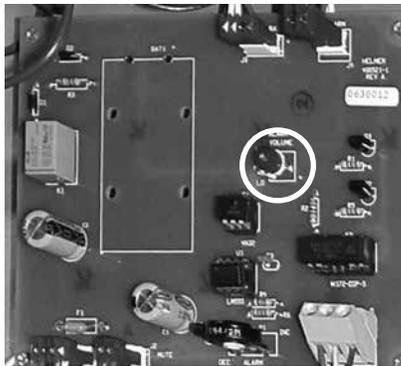
10.5.1 Temperature and Power Failure Alarm Volume



NOTICE

- ▶ Before changing the temperature alarm volume, protect items in the platelet incubator from extended exposure to adverse temperature.
- ▶ Allow platelet incubator temperature to stabilize at the setpoint after extended power down.

The alarm volume control is located on top of the platelet incubator, under the access panel.



Volume control for temperature and power failure alarms (circled).

The default alarm volume setting is set at the halfway point (medium). To change the alarm volume, use a small flat-head screwdriver.

- ▶ Rotate the control to the left (counterclockwise) to lower the alarm volume.
- ▶ Rotate the control to the right (clockwise) to raise the alarm volume.

Change the alarm volume:

- 1 Switch the AC ON/OFF switch **OFF**. Disconnect the platelet incubator from AC power. The Power Failure alarm will sound.
- 2 On the top of the platelet incubator, remove the access panel.
- 3 Increase or decrease alarm volume by turning the volume control to the appropriate position.
- 4 Reinstall the access panel on the platelet incubator.
- 5 Reconnect the platelet incubator to AC power. Switch the AC ON/OFF switch **ON**.

10.5.2 Motion Alarm Volume (PC4200h)

The alarm volume control for the motion alarm is located on the rear of the incubator.



Alarm volume control (circled).

- ▶ The motion alarm has three settings (low, medium, high).
- ▶ Default setting is medium (switch is in the middle position).
- ▶ Slide the motion alarm switch to the appropriate position for the desired volume level.

10.6 Alarm Delay Settings

10.6.1 Temperature Alarm Delay

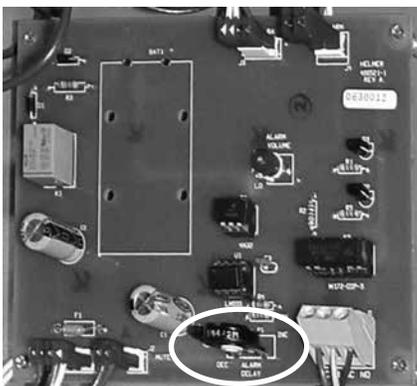


NOTICE

- ▶ Before changing the temperature alarm delay, protect items in the platelet incubator from extended exposure to adverse temperature.
- ▶ Allow platelet incubator temperature to stabilize at the setpoint after extended power down.

The default temperature alarm delay setting is set at the halfway point (approximately 4 to 5 minutes). To change the alarm delay, use a small flat-head screwdriver.

- ▶ Rotate the control to the left (counterclockwise) to decrease the alarm delay setting.
- ▶ Rotate the control to the right (clockwise) to increase the alarm delay setting.



Left: Alarm delay control for temperature alarms (circled).

Right: Backup battery for the power failure alarm and alarm key switch (PC100h shown).

- NOTE**
- ▶ The temperature alarm delay period affects high temperature and low temperature alarms.
 - ▶ If the alarm delay is set to 0, the Mute button will have no effect on temperature alarms.
 - ▶ Maximum alarm delay is 8 minutes.

Change the alarm delay:

- 1 Switch the AC ON/OFF switch **OFF**. Disconnect the platelet incubator from AC power.
- 2 On the top of the platelet incubator, remove the access panel.
- 3 Increase or decrease alarm delay by turning the delay control to the appropriate position.
- 4 Reinstall the access panel on the platelet incubator.
- 5 Reconnect the platelet incubator to AC power. Switch the AC ON/OFF switch **ON**.

10.6.2 Motion Alarm Delay (PC4200h)

The duration of time between when agitation stops and when the alarm sounds is the alarm delay.



Alarm delay control (circled).

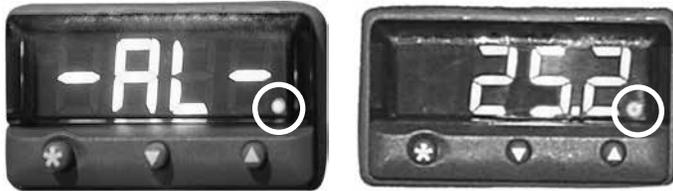
The default motion alarm delay is set at the halfway point (approximately 4 to 5 minutes). To change the motion alarm delay, use a small flat-head screwdriver.

- ▶ Rotate the control to the left (counterclockwise) to shorten the motion alarm delay.
- ▶ Rotate the control to the right (clockwise) to extend the motion alarm delay.

- NOTE**
- ▶ Do not set the alarm delay to 0 minutes.
 - ▶ Maximum alarm delay is 8 minutes.

10.7 Mute Audible Alarms

If the chamber temperature reaches the high temperature alarm setpoint or low temperature alarm setpoint, the temperature monitor/controller display alternates between “-AL-” and the temperature value and the red lamp at lower-right of the display flashes. The duration of the mute timer is equal to the preset alarm delay period.



Temperature monitor/controller in alarm condition (red lamp circled).

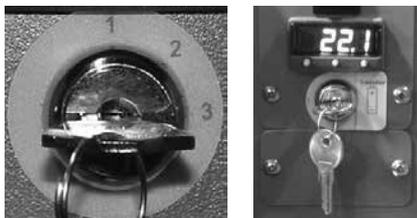
- NOTE**
- ▶ Refer to chapter **10.6** (Alarm Delay Settings) for information on setting the temperature alarm delay.
 - ▶ Muting an alarm does not disable visual alarm messages or the alarm signal sent through the remote alarm interface.

Mute an active alarm:

- 1 Open the control door.
- 2 Press the **MUTE** button.
 - ▶ The audible alarm is muted for the preset alarm delay period.
 - ▶ If the alarm is still active after the delay period has elapsed, the audible alarm resumes.

10.8 Enable or Disable Audible Alarms with the Alarm Key Switch

- NOTE** Disabling alarms with the alarm key switch does not disable alarm messages or the alarm signal sent through the remote alarm interface.



Left: Alarm key switch (PC4200h). Right: Alarm key switch (all other Horizon Series models).

Enable audible alarms:

- ▶ Turn the Alarm ON/OFF key switch **ON**
- ▶ Turn the Alarm ON/OFF key switch to position **1** (PC4200h)

Disable audible alarms:

- ▶ Turn the Alarm ON/OFF key switch **OFF**
- ▶ Turn the Alarm ON/OFF key switch to position **3** (PC4200h)

Disable the audible motion alarm (PC4200h):

- ▶ Turn the Alarm ON/OFF key switch to position **2**

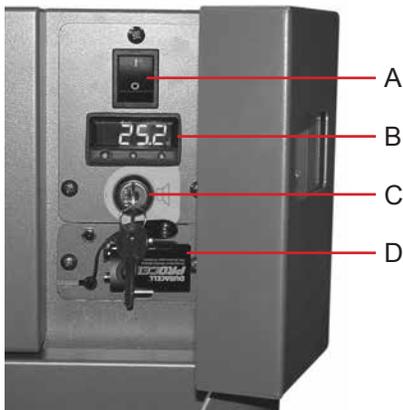
11 Components

11.1 Control Door



Control door (circled).

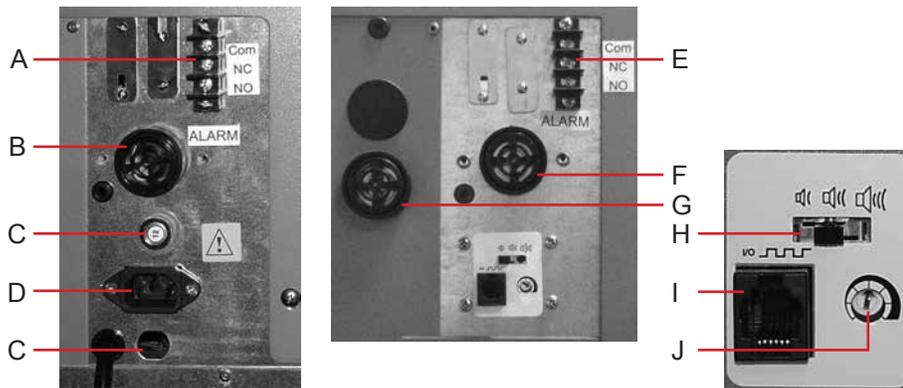
11.2 Control Panel



Horizon Series control panel, behind control door.

Label	Description
A	Main power switch
B	Temperature monitor/controller
C	Key switch
D	Alarm backup battery

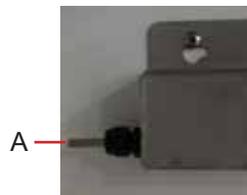
11.3 Alarm Panel



Left: PC100h alarm panel. Right: PC4200h alarm panel.

Label	Description
A	Remote alarm interface
B	Alarm buzzer
C	Circuit breakers
D	Power connector
E	Remote alarm interface
F	Alarm buzzer
G	Motion alarm buzzer (PC4200h)
H	Alarm volume control (PC4200h)
I	Data port (PC4200h)
J	Alarm delay control (PC4200h)

11.4 Chamber



Chamber probe.

Label	Description
A	Temperature control and temperature chart recorder probe

END OF MANUAL

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