Platelet Incubator Service Manual
Pro Line Floor Model Incubator with i.Center® Plus

FLOOR MODEL

PC2200-Pro
PC3200-Pro
PC4200-Pro

Document History

Revision	Date	CO	Supersession	Revision Description
A	15 SEPT 2023*	26623	N/A	Initial Release
B	4 OCT 2023*	26681	B supersedes A	Parts pages added.

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

Document Updates

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This manual is intended as a guide to provide the operator with necessary instructions on the proper use and maintenance of certain Helmer Scientific products.

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The screenshots and component images appearing in this guide are provided for illustrative purposes only, and may vary slightly from the actual software screens and/or product components.

Contents

1   About this Manual

1.1   Intended Audience

This manual provides information on how to use the Pro Line platelet incubator. It is intended for use by end users of the platelet incubator and authorized service technicians.

1.2   Model Reference

This manual covers all Pro Line floor model platelet incubators which may be identified by size or model number.

1.3   Intended Use

ⓘ Note

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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.

1.4   Safety Symbols and Precautions

Symbols and precautions found in this document

The following symbols are used in this manual to emphasize certain details for the user:

Task Indicates procedures which need to be followed.

Note Provides useful information regarding a procedure or operating technique when using Helmer Scientific products.

NOTICE Advises the user against initiating an action or creating a situation which could result in damage to equipment; personal injury is unlikely.

Symbols found on the units

The following symbols may be found on the incubator or incubator packaging:

Caution: Risk of damage to equipment or danger to operator

Warning: Crushing of hands / fingers

Caution: Shock / electrical hazard

Refer to documentation

Warning: Flammable material

Earth / ground terminal

Caution: Hot surface

1.5   Avoiding Injury

⚠️

Do not damage the refrigerant circuit.

Review safety instructions before installing, using, or maintaining the equipment.
♦ Before moving unit, remove contents from the drawers (if applicable).
♦ Before moving unit, remove the installed agitator(s) (if applicable).
♦ Before moving unit, ensure doors are closed and casters 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.
♦ Do not open multiple drawers at the same time (if applicable).
♦ Never physically restrict any moving component.
♦ Avoid removing electrical service panels and access panels unless so instructed.
♦ Do not store or place objects or liquid containers on top of the incubator.
♦ 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 product from the platelet incubator.
♦ Use manufacturer supplied power cord only.
♦ Avoid risk of ignition by using only manufacturer supplied components and authorized personnel when servicing the unit.
♦ Using the equipment in a manner not specified by Helmer Scientific may impair the protection provided by the equipment.
♦ The platelet incubator is not considered to be a storage cabinet for flammable or hazardous materials.
♦ **REQUIRED:** Decontaminate parts prior to sending for service or repair. Contact Helmer Scientific or your distributor for decontamination instructions and a Return Authorization Number.

1.6   Product Labels

ℹ️ **Note**

Service information varies depending on the model and power requirements.

This information appears on the product specification label, on the back of the platelet incubator.

Sample Product Specification label.
(For illustration only: regulatory information and other content shown here may differ from that on the equipment label)

Label	Description
A	Model
B	Serial number (SN)
C	Power requirements

2   Installation and Configuration

2.1   Location Requirements

ℹ️ **Note**

Hot ambient temperatures with high humidity may cause condensation on the outside of the unit.

♦ 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.
♦ Meets limits specified for ambient temperature (15 °C to 35 °C) and relative humidity.
♦ Minimum 4" (102 mm) above for ambient temperatures of 15 °C to 28 °C and 24" (610 mm) for ambient temperatures of 28 °C to 35 °C.
♦ Minimum 4" (102 mm) to the left and right for ambient temperatures of 15 °C to 35 °C
♦ Minimum 4" (102 mm) behind for ambient temperatures of 15 °C to 28 °C and 12" (305 mm) for ambient temperatures of 28 °C to 35 °C.
♦ Given an input voltage of 90V (AC) (100V -10%), the maximum ambient allowed is 32 °C at a setpoint of 22 °C.

2.2   Placement and Leveling

⚠️

• The use of accessories other than those specified for the product by Helmer is not recommended. They may result in increased emissions or decreased immunity of the device. Refer to the Electromagnetic Compliance section for additional information.
• This device is not intended for use near patients or in patient areas.

ℹ️ **Notes**

• Ensure the AC power is turned off on the incubator prior to connecting an agitator (PC2200-Pro and PC3200-Pro models only).
• Rear stand-off brackets are provided with the unit and should be installed prior to placing the incubator in its location.
• Restraining brackets are recommended when unit is placed on a slick surface.
• Anchoring kits are available.

1. Align keyhole openings in stand-off bracket with screws on back of incubator and slide down to engage.
2. Tighten screws using a #2 Phillips screwdriver to secure.
3. Ensure all casters are unlocked.
4. Roll platelet incubator into place and lock casters.
5. Ensure platelet incubator is level.
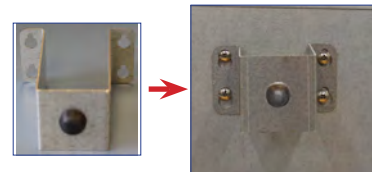
Rear Stand-off Bracket

2.3   Connect Back-Up Power

The monitoring and alarm system, and chart recorder each have a back-up battery, enabling a period of continuous operation if power is lost.

Battery life varies by manufacturer as well as voltage level remaining. The battery must have 48 consecutive hours of power to be fully charged. Providing full power is available and no battery-related alarms are active, back-up power for the monitoring system is available for up to 24 hours.

The battery is located on the top of the platelet incubator, under a removable access panel.

The back-up battery switch is **OFF** for shipping. Turn the back-up battery switch **ON** to provide the monitoring system with back-up power in the event of AC power failure.

🛈 Notes

- The monitoring system will start on battery power alone. If the platelet incubator was previously not connected to AC power and the batteries are connected, the monitoring system will begin running on battery power.
- If AC power is lost, the monitoring system will continue to collect data until battery power is depleted. The chart recorder will operate on its own non-rechargeable 9V battery.
- Use only a 12V 7AHr SLA battery for the standard monitoring and alarm system battery back-up.

⚠️

Before installing or replacing batteries, switch the main power switch to **OFF** and the back-up battery switch to **OFF**. Disconnect the power cord from the power receptacle.

2.4   Platelet Agitator and Platelet Incubator Compatibility (PC2200-Pro or PC3200-Pro)

Pro Line platelet incubators may only be fitted with Pro Line platelet agitators. The PC2200-Pro can hold two PF96-Pro agitators while three PF96-Pro agitators can be configured inside the PC3200-Pro. When installed in a Pro Line platelet incubator, the Pro Line platelet agitator can be monitored by the platelet incubator's AgiTrak™ system.

The AgiTrak™ system receives alarm information through a direct connection from the platelet agitator's alarm system to the platelet incubator's alarm system.
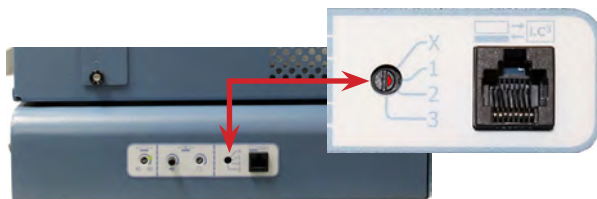
🛈 Note

Only Pro Line platelet incubators can monitor Pro Line platelet agitators.

2.5   Install Pro Line Platelet Agitator (PC2200-Pro or PC3200-Pro - Optional)

A Pro Line platelet agitator may be installed in a Pro Line platelet incubator. Connect the data cable and DC power cable supplied with the incubator prior to placing the agitator inside the incubator.

The communication switch on the agitator must be set correctly to ensure proper communication with the i.Center Plus on the Pro Line incubator. Each agitator communication switch must be set to a unique position that corresponds with its position in the incubator; either 1 or 2 when installed in a PC2200-Pro, or 1, 2 or 3 when installed in a PC3200-Pro incubator.

Agitator communication switch

🛈 Notes

- Use only DC power cord supplied with incubator when configuring agitator within incubator.
- Ensure elbowed end of DC power cord is attached to the agitator.
- Ensure AC power and backup battery power are turned OFF prior to connecting a Pro Line agitator to a Pro Line incubator.
- To avoid injury from heavy lifting, Helmer recommends using two people when installing agitators.
- Pro Line agitators should be installed one at a time ensuring shelf is fully inserted prior to loading an additional unit.
- Ensure the data cable is carefully positioned to the right of the agitator to prevent damage caused by agitation motion.
- The communication switch is fragile, do not use excessive force when changing the setting.
- **PC3200-Pro only**: when using fewer than three PF96-Pro agitators, ensure agitators are installed in the lower positions to optimize temperature uniformity.

Select the communication switch position and connect the data cable and DC power cable supplied with the incubator prior to placing the agitator inside the incubator.
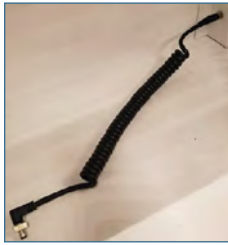
DC Power Cable
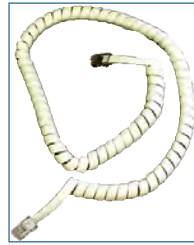
Communication Cable

Power Connection and Data Ports

Power connection

Data ports

☑ Connect Pro Line Platelet Agitator
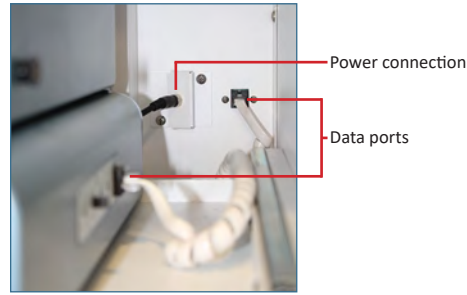
1. Select position 1, 2 or 3 on the Pro Line platelet agitator communication switch using a small flathead screwdriver. (Each agitator installed **must** have its own unique position. DO NOT DUPLICATE)
2. Attach the DC power cable to the rear of the platelet agitator, ensuring the elbowed end is attached to the agitator and the rotating lock is finger tight.
3. Insert the communication cable in the data port on the platelet agitator.
4. On the platelet incubator, carefully slide the shelf out and place the agitator allowing ample space on both sides for agitation motion. Ensure the shelf is fully inserted once the platelet agitator is in place.
5. Attach the DC power cable to the platelet incubator ensuring the rotating lock is finger tight.
6. Insert the communication cable in the data port on the rear wall of the platelet incubator.

2.6   Configure Drawers (PC4200-Pro)

Drawers can be removed and spacing adjusted in the PC4200-Pro. Each section of drawers is secured between the drawer guides on each side of the built-in agitator trolley. Two drawer stop knobs on each side of each section of drawers provides a means to secure or release drawers.

NOTICE
- Before moving drawers, ensure they are completely empty for safe lifting.
- Ensure agitator is turned off prior to removing or replacing drawers.
- Ensure drawer release handles are fully seated and secured to prevent drawers from being completely pulled out.

Drawer Stop Knob

Drawer Release Handle

Drawer Guides
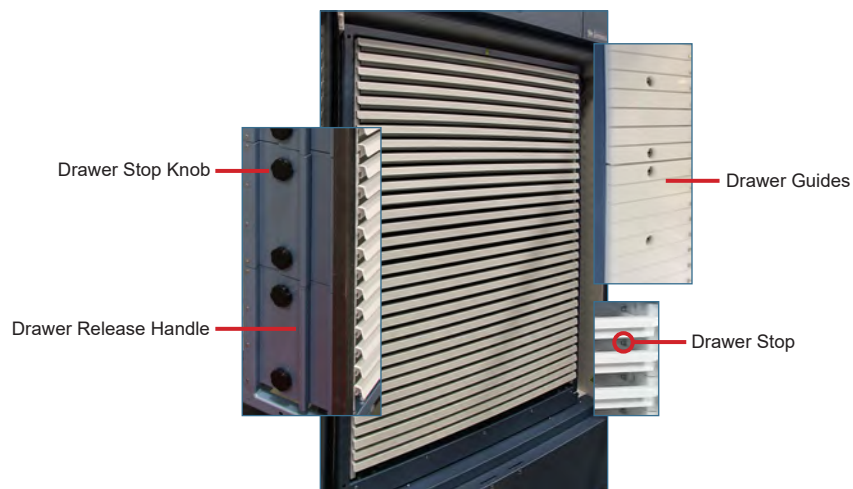
Drawer Stop

☑ **Remove/Install Drawers**

1. Switch the AC power switch to **OFF**; switch the back-up battery switch to **OFF**; disconnect the power cord from the power receptacle.
2. Pull the drawer out until it stops.
3. Turn the drawer stop knobs counterclockwise on the left and the right side of the trolley to release tension on the drawer stops. Ensure not to loosen the knobs completely.
4. Pull the drawer release handles away from the trolley and pull the drawer outward past the drawer stops to remove .
5. Align the drawer with the slots in the drawer guides.
6. With the drawer release handles away from the trolley, fully insert the drawer(s).
7. Ensure drawer release handles are engaged and turn the drawer stop knobs clockwise to tighten drawer stops. Take care to not overtighten.
8. Extend and insert drawer(s) one at a time to ensure smooth operation and drawer stops engage. Adjust drawer stop knobs as necessary.

2.7 Temperature Probes

ⓘ **Notes**

- Temperature probes are fragile; handle with care.
- Remote probes may also be introduced through the rear port.

The temperature monitor and chart recorder probes are located on the right side of the unit.

NOTICE

- The incubator power switch and battery back-up switch must be turned **OFF** and the AC power cord disconnected from the power receptacle prior to installing an external probe.
- DO NOT attach remote probe wires to the AC Terminal block wires or the AC power supply.
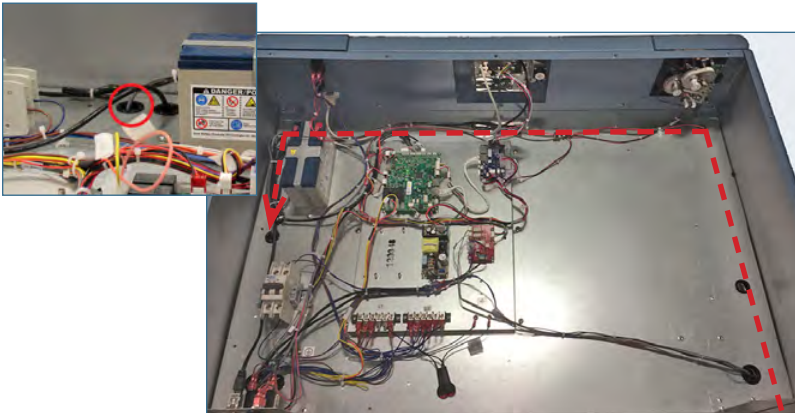
Remote probe routing path   *Mounting clip*

ⓘ **Note**

PC4200-Pro trolley must be stopped on the left side of the unit to access port and place probe.

☑ **Install Remote Probe**

1. Switch the AC power switch to **OFF**; switch the back-up battery switch to **OFF**; disconnect the power cord from the power receptacle.
2. Open incubator door and locate the access port at the top of the chamber.
3. Use a #2 Phillips screwdriver to remove the screws securing the top cover, and set top cover and screws aside.
4. Locate the access port on the top of the unit.
5. Install the remote probe through the access port located in the back of the unit in the upper right corner, then across the top front of the unit and down through the access port in the top of the unit into the chamber. *(See path in photo above.)*
6. Attach the remote probe to the plastic mounting clip inside the chamber.
7. Secure the remote probe wires to the wire bundle in the top of the unit using wire ties.
8. Reinstall the top cover and secure with screws using a #2 Phillips screwdriver.
9. Reconnect the power cord to the wall receptacle. Switch the main power switch to **ON**; switch the back-up battery switch to **ON**.
10. Allow the temperature to stabilize at the setpoint before moving inventory back into the incubator.

2.8   Chart Recorder

ℹ️ **Note**

For complete information, refer to the Temperature Chart Recorder Operation and Service Manual.

The chart recorder has a battery system, enabling a period of continuous operation if power is lost. Battery life varies by manufacturer as well as voltage level remaining. Providing full power is available, back-up power for the temperature chart recorder is available for up to 14 hours.

Prior to use:

♦ Install battery (9V).
♦ Add paper.
♦ Calibrate chart recorder to match upper chamber temperature.

Set up and Operation

Open the door by pressing and releasing.
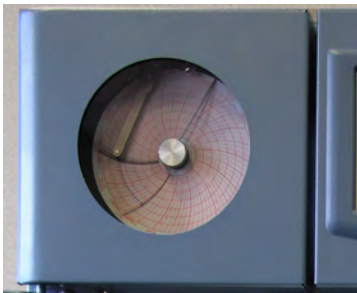
Chart recorder
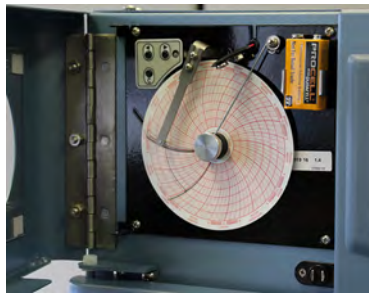
Chart recorder (door open)

☑ **Install Battery**

Connect the leads to the battery to provide back-up power to the chart recorder.

☑ **Install or Replace Chart Paper**

ℹ️ **Note**

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

Chart recorder stylus and time line groove

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.
3. Place 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 in place while making sure the chart knob is fully tightened. *(Failure to fully tighten the knob can result in paper slipping and losing time.)*
6. Confirm temperature range is set to the correct value.
7. Press and hold **C** button. When stylus begins to move right, release button.
8. Confirm stylus is marking temperature correctly.

2.9   External Monitoring Devices

The remote alarm interface is a relay switch with three terminals:
   ♦ Common (COM)
   ♦ Normally Open (NO)
   ♦ Normally Closed (NC)

Terminals are dry contacts and do not supply voltage. Interface circuit is either normally open or normally closed, depending on terminals used.

Requirements for your alarm system determine which alarm wires must connect to terminals.

> **NOTICE**
> • 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 30V (RMS) or 30V (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.

The terminals on the remote alarm interface have the following maximum load capacity:
   ♦ 1A at 30V (AC) RMS or 30V (DC)

☑ Connect to Remote Alarm Interface

1. Switch the Battery ON/OFF key switch **OFF**. Switch the AC ON/OFF switch **OFF**.
2. On the alarm panel, locate the remote alarm terminals.
3. Connect remote alarm wires to appropriate terminals, according to requirements for your alarm system.
4. Use a cable tie to relieve strain on alarm wires (as necessary).
5. Switch the Battery ON/OFF switch **ON**. Switch the AC ON/OFF switch **ON**.
6. Touch **MUTE** to disable the high temperature alarm while platelet incubator reaches operating temperature.

Remote alarm interface.

2.10   Manual Speed Adjustment (PC4200-Pro)

Agitation speed can be adjusted manually on the Variable Frequency Drive (VFD) of the PC4200-Pro. Agitation of the built-in agitator can be turned on or off through AgiTrak.

> ℹ **Note**
> • The chamber temperature may increase above the allowable temperature range for stored inventory while performing this procedure. Take precaution to protect items in the unit from extended exposure to adverse temperature.
> • Access to the rear of unit is necessary. Take care when repositioning the equipment.
> • Speed can be adjusted from 62 to 75 cpm (cycles per minute) +/- 2 cpm of set point.
> • Speed set at 62 cpm will never drop below 60 cpm.
> • Power may be turned off only when setting speed to 62 cpm (fully left) or 75 cpm (fully right).

> ⚠ The motor should be stopped before making any adjustments to the agitation speed. Use caution if accessing the VFD while AC power is ON.

☑ Adjust Speed

1. On the i.Center Plus display, select Settings then AgiTrak to view the current agitation speed.
2. Open the door(s) to stop agitation motion.
3. Using a #2 Phillips screwdriver, remove the screws securing the lower rear panel. Set the panel and screws aside.
4. Locate the VFD at the right side.
5. Turn the knob to the right to increase the agitation speed, or left to decrease the speed. *(The speed adjustment knob is sensitive. A slight turn may impact speed in larger increments than desired.)*
6. Close the door(s) to allow agitation to begin and view the new speed setpoint on the AgiTrak screen.
7. Repeat steps 5 and 6 until desired speed setpoint is reached.
8. Reinstall the rear cover and secure with screws using a #2 Phillips screwdriver.

3   Controls

Pro Line platelet incubators are equipped with the i.Center Plus monitoring and control system. The i.Center Plus system combines temperature control and monitoring into a single user interface.

> ℹ️ **Note**
>
>   Please refer to the i.Center Plus User Guide for complete information regarding the i.Center Plus User Interface.

3.1   Home Screen and Screensaver

The Home Screen is the default screen and is displayed when:
 ♦ The Home icon is touched from any other screen
 ♦ There is no interaction for two minutes on any screen other than those used to enter a password.

Home Screen
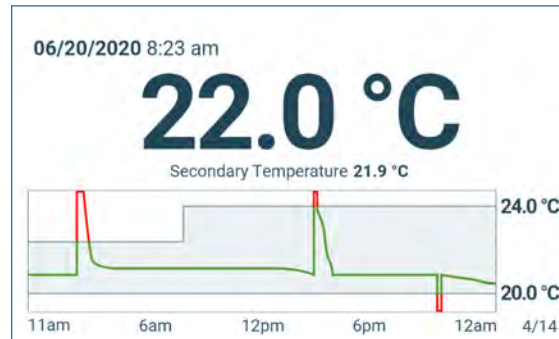
Screensaver

3.2   Home Screen Functions

> ℹ️ **Note**
>
>   Refer to the i.Center Plus User Guide for options available on all i.Center Plus screens.

 ♦ View current interior temperature readings
 ♦ View current system time and date
 ♦ Access any of four home screen applications (touch the up arrow in the App tray for additional applications)
 ♦ View information about current alarm events
 ♦ Mute audible alarms
 ♦ View a graph of the interior temperature
 ♦ Shortcut to Event Log

3.3   Event Log

Event Log screen   *Event Log Detail screen*

☑ View Event Log Detail

1. From the Home screen, touch the **Event Log** icon. The Event Log screen appears.
2. Touch the Info arrow. The Event Log Detail screen appears.
3. Select the **Back** arrow to return to the previous screen or the **Home** icon to return to the Home screen.

ⓘ Notes

- If **Other** is selected for the event cause or action taken, the alphanumeric keyboard is displayed. Use the keyboard to enter the cause or action taken in the space provided.
- All fields must be completed for data to be saved.

☑ Acknowledge an Event

1. Touch the Acknowledge button. The Event Cause screen with a drop-down list is displayed.
2. Select the cause of the alarm event *(Door Open; Alarm Test; Inventory; Other)*.
3. Touch the Continue button. The Action Taken screen appears.
4. Touch the Select Action drop-down list and select the action taken to correct the alarm event *(Closed Door; Completed Test; Removed Contents; Other)*.
5. Touch the Continue button. The Signature screen appears.
6. Use the alphanumeric keyboard to enter the user name or initials, and touch the return key.
7. Touch the Review button. The Review screen appears displaying the Acknowledgement Notes.
8. Select Save to save the event information entered. The Event Log Detail screen appears with a green check mark next to the Acknowledged button. Select Cancel to return to the Event Log Detail screen without saving event information added.

3.4   Alarm Reference

If an alarm condition is met, an alarm activates. Some alarms are visual only; others are visual and audible. Some Alarms are sent through the remote alarm interface. The table below indicates if an alarm is audible (A), visual (V), or sent through the remote alarm interface (R).

ⓘ Notes
- Agitator Alarms (shaded) are configured through AgiTrak™ and appear only when a platelet agitator is installed inside a platelet incubator and the agitator power switch is **ON**.
- Disconnecting the agitator will not clear active agitator alarms. All active agitator alarms will remain active on the monitor until disabled in the AgiTrak™ system or the agitator is reconnected and the problem is corrected.

Table 1. i.Center Plus Alarm Reference

Alarm	Alarm Type	Alarm	Alarm Type
Primary Monitor Probe High Temperature	A, V, R	No Battery	V, R
Primary Monitor Probe Low Temperature	A, V, R	Emergency Mode	V
Primary Monitor Probe Failure	A, V, R	Inverter Communication Failure	A, V, R
Primary Monitor Probe High Temperature Alarm Test	A, V	Control Board Memory Error	V, R
Primary Monitor Probe Low Temperature Alarm Test	A, V	Control Board Communication Failure	A, V
Secondary Monitor Probe High Temperature*	A, V, R	Control Board Setting Failure	A, V
Secondary Monitor Probe Low Temperature*	A, V, R	Configuration File Error	V, R
Secondary Monitor Probe Failure*	A, V, R	Drive Space Failure	V, R
Ambient Probe Failure	A, V, R	Drive Space is Low	V
Probe Calibration Warning	V	Drive Space is Full	V, R
Control Probe Failure	A, V, R	Agitator High Speed	A, V, R
Door Open	A, V, R	Agitator Low Speed	A, V, R
Power Failure	A, V, R	Agitator Communication Failure	A, V, R
Battery Charger Circuit Error	V	Agitator Maintenance Required	V
Low Battery	V		

Secondary probe alarms only apply to PC3200-Pro and PC4200-Pro if installed.

3.5   Settings

Through the i.Center Plus monitoring and control system, current settings may be viewed and changed. To view settings, touch Settings icon in the App tray or from the Applications menu. Scroll down to select the desired setting. Most settings can be viewed without entering a password. Password Configuration, Connectivity Settings, Restore Factory Settings and System Functions screens are all password protected.
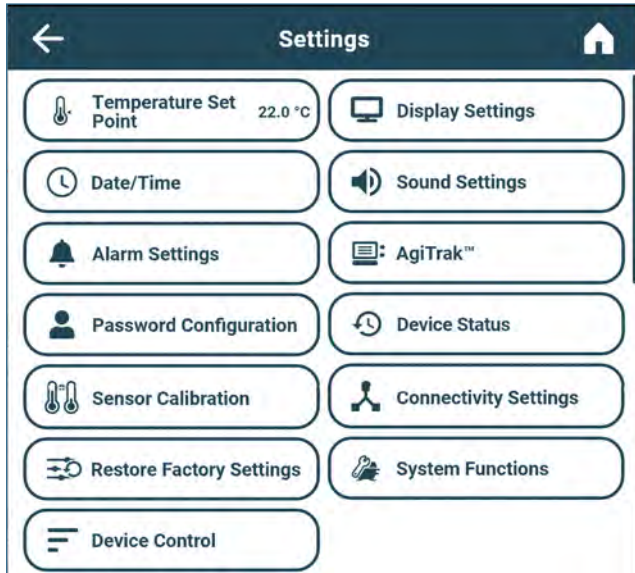
Settings screen

🛈 Notes
- Changing temperature settings affects operation of the incubator. Do not change settings unless instructed in product documentation or by Helmer Technical Service.
- The default Administrator password is 1234.

The i.Center Plus monitoring and control system is programmed at the factory. To change a setting, first enter the Settings screen, then select the setting. The method for accessing the Settings mode for each setting varies.

Temperature Setpoint

The setpoint is the temperature at which the incubator operates. The factory default setting for the primary monitor probe is 22.0 °C.

☑ Change Temperature Setpoint
1. From the Settings screen, touch the Temperature Set Point button. The Temperature Set Point screen appears.
2. Touch the Actions button. The Enter Password screen appears.
3. Use the keyboard to enter the password *(default password is "1234")*. The Temperature Set Point action screen appears.
4. Touch the minus (-) or plus (+) on the spin box to adjust the temperature set point.
5. Touch the Save button to save the new set point and return to the Temperature Set Point screen..

User Configurable Alarm Settings

The following alarm settings may be changed by the operator. The setpoint for temperature alarms may be changed (where applicable), as well as the time delay between when the alarm condition commences and when the visual and audible alarms are initiated.

ⓘ **Note**

Agitator Alarms (shaded) are configured through AgiTrak™ and appear only when a platelet agitator is installed inside a platelet incubator *(PC2200-Pro and PC3200-Pro)* and the agitator power switch is **ON,** or in units with a built-in agitator *(PC4200-Pro).*

Table 2. User Configurable Alarms

Alarm	Description	Default Setting 2200/3200	Default Setting 4200	Default Time Delay
Primary Monitor Probe High Temp	High temperature at which alarm condition occurs	24 °C		0 minutes
Primary Monitor Probe Low Temp	Low temperature at which alarm condition occurs	20 °C		0 minutes
Secondary Monitor Probe High Temp*	High temperature at which alarm condition occurs	24 °C		0 minutes
Secondary Monitor Probe Low Temp*	Low temperature at which alarm condition occurs	20 °C		0 minutes
Power Failure	Time after power failure occurs until alarm sounds	-		1 minute
Door Open (Time)	Time door remains open until alarm sounds	-		3 minutes
Agitator High Speed	High speed at which alarm condition occurs	75 CPM	67 CPM	1 minute
Agitator Low Speed	Low speed at which alarm condition occurs	65 CPM	60 CPM	1 minute

*Secondary probe alarms only apply to PC3200-Pro if installed and PC4200-Pro.

Alarm Settings screen

ⓘ **Notes**

- The Administrator password or Technician password is required to make changes to Alarm Settings. Multiple changes can be made after entering the password. Once changes have been selected and the Alarm Settings screen exited, the user must re-enter the password to make additional changes.
- The default Administrator password is 1234.

☑ **Set Primary Probe Alarm Parameters**

1. Touch the Primary Monitor Probe Actions button. The enter password screen appears.
2. Use the keyboard to enter the password *(default password is "1234")*. The Alarm Settings action screen appears.
3. Touch the minus (-) or plus (+) on the corresponding high or low temperature Alarm Limit spin box to change the alarm set point.
4. Touch the minus (-) or plus (+) on the corresponding high or low temperature Time Delay spin box to change the alarm time delay.
5. Touch the Save button to save the settings and return to the Alarm Settings screen.
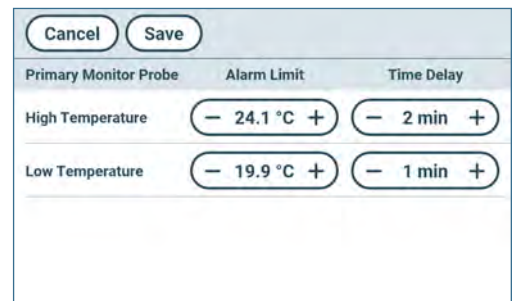
Alarm Settings action screen

☑ Set Secondary Probe Alarm Parameters (if installed)

1. Touch the Secondary Monitor Probe Actions button. The enter password screen appears.
2. Use the keyboard to enter the password *(default password is "1234")*. The Alarm Settings action screen appears.
3. Touch the minus (-) or plus (+) on the corresponding high or low temperature Alarm Limit spin box to change the alarm set point.
4. Touch the minus (-) or plus (+) on the corresponding high or low temperature Time Delay spin box to change the alarm time delay.
5. Touch the Save button to save the settings and return to the Alarm Settings screen.

☑ Enable/Disable Secondary Monitor Probe Alarm Notification (if installed)

1. Toggle the **Secondary Monitor Probe Alarm Notification** button **On** or **Off** to select desired setting.
   a) In the On position, the Secondary Monitor Probe alarm settings and Action button are enabled.
   b) In the Off position, the Secondary Monitor Probe alarm settings and Action button are disabled.

☑ Set Power Failure Time Delay

1. Touch the Power Failure Actions button. The enter password screen appears.
2. Use the keyboard to enter the password *(default password is "1234")*. The Alarm Settings action screen appears.
3. Touch the minus (-) or plus (+) on the corresponding power failure time delay spin box to set the alarm time delay.
4. Select the Save button to save the new setting and return to the Alarm Settings screen.

☑ Set Door Open Time Delay

1. Touch the Door Open Actions button. The enter password screen appears.
2. Use the keyboard to enter the password *(default password is "1234")*. The Alarm Settings action screen appears.
3. Touch the minus (-) or plus (+) on the corresponding door open time delay spin box to set the alarm time delay.
4. Select the Save button to save the new setting and return to the Alarm Settings screen.

Non-Configurable Alarms

The following alarms indicate operation conditions which require the attention of the operator or a qualified service technician.
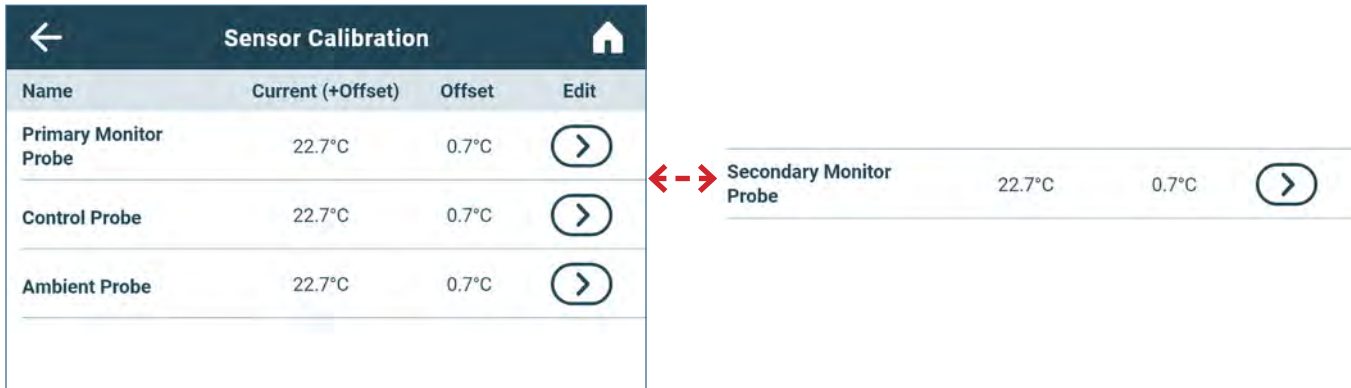
> ### ⓘ Note
> Agitator Alarms (shaded) are configured through AgiTrak™ and appear only when a platelet agitator is installed inside a platelet incubator and the agitator alarm switch is **ON**.

Table 3. User Non-Configurable Alarms

Alarm	Description
Agitator Communication Failure	Occurs if Agitator Alarm Monitoring Enabled is set to YES in the Agitator Setup screen and the Incubator cannot communicate with that agitator
Agitator Maintenance Required	• Occurs if Agitator Alarm Monitoring Enabled is set to YES in the Agitator Setup screen and the cycle count for that agitator reaches 75,686,400 counts *(the approximate number of cycles when operating at 72 CPM over a 2 year period)* • Resetting the count in the Agitator Status screen clears the alarm
Primary Monitor Probe Failure	• Indicates a problem with the Primary Monitor probe
Secondary Monitor Probe Failure	• Indicates a problem with the Secondary Monitor probe
Control Probe Failure	• Indicates a problem with the Control probe
Ambient Probe Failure	• Indicates a problem with the Ambient probe
Probe Calibration Error	• Triggered when an unexpected probe type has been connected
Inverter Communication Failure	• Indicates there is a problem with the refrigeration system that could lead to a high temperature within the chamber.
Control Board Memory Error	• Indicates there is a problem with the on board memory of the Control Board. • Control board replacement recommended if this alarm activates.
Control Board Communication Failure	• Control board is no longer communicating with the display board. • The system will continue to run using the last settings. • No temperature will be logged and no settings can be changed while alarm is active.
Configuration File Error	• Indicates a problem with the display board memory where settings are stored. • The system will continue to run using the last settings. • No temperature will be logged and no settings can be changed while alarm is active.
Drive Space Low	• Triggered if SD card containing downloadable historical date is approaching capacity • New data will continue to be saved for up to 3 more months • Data can be downloaded, but doing so will not free up capacity (SD card replacement recommended)
Drive Space Full	• Triggered if the SD card containing downloadable historical data has reached its capacity • No new data will be saved • Data can be downloaded, but doing so will not free up capacity (SD card replacement required)
Drive Space Failure	• SD card is corrupt.
Low Battery	• Triggered when monitoring system rechargeable battery voltage is low
No Battery	• Triggered when monitoring system rechargeable battery is dead or not connected
Battery Charger Circuit Error	• Indicates an issue with the circuit on the control board that charges the battery. • Control board replacement recommended if this alarm activates.
Emergency Mode	• Triggered when there is a Primary Monitor Probe and Control Probe failure. • The system will continue to run in a static state without temperature control which may lead to a high or low temperature within the chamber. • Also triggered when a technician level user activates the Full Cool or Full Heat test in the System Functions screen.
Database Integrity Error	• Indicates corruption of the historical data stored on the display. • Occurs when a corrupt database is saved, a new database is created and the display rebooted. • Historical data in the corrupt files are no longer available through the display. • Replacing the SD Card where this data is stored is recommended if this error occurs.

3.6   Sensor Calibration

All units include a pre-calibrated, self-test Primary Monitor probe. Sensor calibration values are programmed at the factory. Calibration values can be viewed and changed through the i.Center Plus monitoring and control system. A Sensor Calibration wizard provides guidance for the calibration process.

Sensor Calibration screen

ⓘ Notes
- Offset values are adjusted to the tenth of a degree (0.1).
- After two minutes of no interaction, the Home screen or Temperature Graph screensaver (if enabled) is displayed.

☑ View Sensor Calibration Values
1. Touch the Settings icon.
2. Touch Sensor Calibration button. Sensor offset values and their current temperature readings are displayed.
3. Touch the back arrow to return the previous screen or the Home icon to return to the Home screen.

Verify the primary monitor probe is reading chamber temperature correctly by comparing the primary probe reading to the temperature measured by a calibrated reference thermometer. The offset value is calculated by the i.Center Plus and the updated the values are displayed on the screen.

ⓘ Notes
- If the variance is within acceptable limits for your organization, changing probe settings is optional.
- Default setting for chamber temperature is 22.0 °C. Value is factory-preset.
- Value can be changed from 20.0 °C to 24.0 °C.
- The default Administrator password is 1234.
- Multiple changes can be made after entering the password. Once changes have been saved and the Sensor Calibration screen exited, the user must re-enter the password to make additional changes.
- If a Secondary Monitor Probe is installed, sensor calibration options will appear on the Sensor Calibration screen.
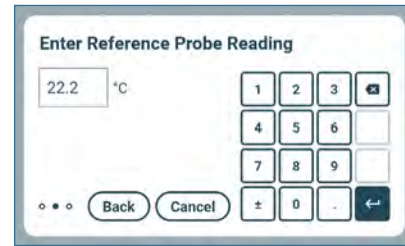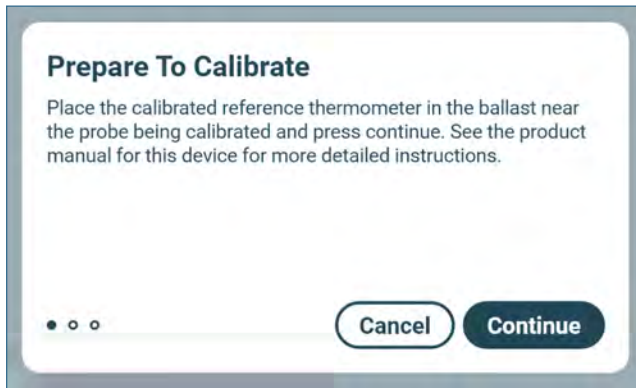
☑ Calibrate Primary Monitor Probe

1. Select the Primary or Secondary Monitor Probe Edit arrow. The Enter Password screen appears.
2. Use the keyboard to enter the password *(default password is "1234")*. The Prepare to Calibrate screen appears.
3. Per the instructions on the screen, place a calibrated independent reference thermometer traceable per national standards in the specified location and press Continue. The Enter Reference Probe Reading screen appears.
4. Close the door and allow the chamber temperature to stabilize for five minutes.
5. Observe the reading on the independent thermometer and use the numeric keypad to enter it in the Enter Reference Probe Reading screen and touch the return key. The Calibration Wizard will calculate the offset.
6. Touch the Save button to complete the calibration. The Sensor Calibration screen will appear showing the current temperature plus the new offset.
7. Remove the thermometer from the chamber and close the door.

Control Probe

The temperature controller senses chamber temperature through the control probe. Chamber temperature will be controlled as required to match the temperature set point based on the control probe reading. The i.Center Plus Calibration wizard walks the user through the control probe calibration process.
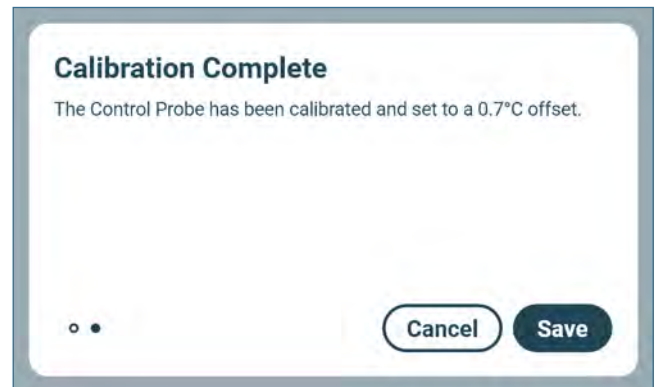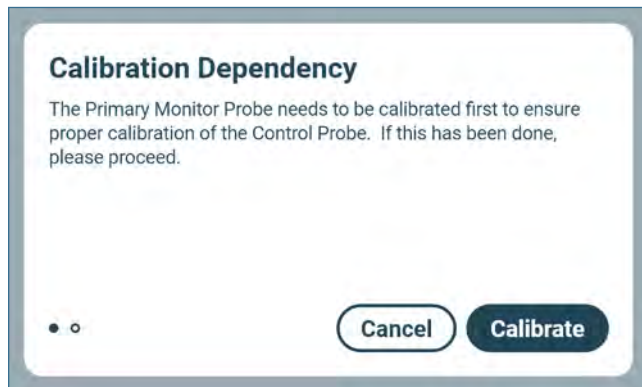
ⓘ Note

Adjusting the Control Probe offset manually for service or diagnostic purposes requires a Technician level password. Contact Helmer Technical Service for information regarding manual calibration of the Control Probe.

☑ Calibrate Control Probe

1. Select the Control Probe Edit arrow. The Enter Password screen appears.
2. Use the keyboard to enter the password *(default password is "1234")*.The Calibration Dependency screen appears.
3. Follow the instructions provided on the screen and touch the Calibrate button. The system applies the Primary Monitor Probe offset calculated to the Control Probe and the Calibration Complete screen appears.
4. Touch the Save button to save the new offset. The Sensor Calibration appears.

3.7   Restore Factory Settings

Factory Default Settings

Settings listed below may be simultaneously returned to factory default values.

> ℹ **Note**
>
> The factory default settings may not be the same as the settings that were factory-calibrated before the refrigerator was shipped.

Table 4.   Default Settings

Setting	Restored Value	
Home Screen Application Icons	Event Log, Settings, Temperature Graph, Temperature Alarm Test	
Min/Max Display	Off	
Display Brightness	6	
Password *(Administrator)*	1234	
Sounds	On	
Alarm Volume	100%	
Alarm Tone	3	
Mute Duration	15 minutes	
Temperature Calibration Values	Not affected (values previously entered during setup)	
Unit ID	Not affected (previously selected during setup)	
Date Format	MM/DD/YY	
Day	Not affected (maintained in real-time clock)	
Month		
Year		
Time Format	12-hour	
Minute	Not affected (maintained in real-time clock)	
Hour		
AM/PM		
Language	Not affected (Language previously selected during setup)	
Temperature Units	°C	
Password Protection *(for Settings screens)*	On	
Temperature Graph Screensaver	On	
High Temperature Alarm Setpoint	24.0 °C	
High Temperature Alarm Time Delay	0 minutes	
Low Temperature Alarm Setpoint	20.0 °C	
Low Temperature Alarm Time Delay	0 minutes	
Power Failure Alarm Time Delay	1 minute	
Probe Failure Alarm Time Delay	0 minutes	
Door Open Alarm Time Delay	3 minutes	
Chamber Setpoint	22.0 °C	
USB Port	On	
Agitator Speed Setpoint *(PC2200-Pro and PC3200-Pro)*	72 CPM	
Agitator High Speed Alarm	75 CPM *(PC2200-Pro and PC3200-Pro)*	67 CPM *(PC4200-Pro)*
Agitator Low Speed Alarm	65 CPM *(PC2200-Pro and PC3200-Pro)*	60 CPM *(PC4200-Pro)*
Agitator Motion Alarm Delay	1 minute	

☑ **Restore Settings**

1. Touch the Settings icon.
2. Scroll down and touch the Restore Factory Settings button. The Restore Factory Settings screen appears.
3. Touch the Continue button to restore the factory settings or the Cancel button to maintain the current settings.

3.8   AgiTrak™ System

The AgiTrak™ system is integrated into the i.Center Plus monitoring system. The AgiTrak™ system simultaneously receives motion information from the installed Pro Line platelet agitator(s).

The PC2200-Pro and PC3200-Pro have data ports for each platelet agitator position. The installed platelet agitator(s) transmit motion and speed information to the AgiTrak™ system through a data cable and the data port in the platelet incubator. The platelet incubator interprets the motion data and provides information regarding the status and state of the agitator. The incubator generates its own motion alarm, based on its own alarm delay period. The AgiTrak™ system monitors platelet agitator motion on/ off status, current agitation speed and cycle counts. The PC4200-Pro's built-in agitator transmits motion and speed information directly to the AgiTrak system without a separate data cable.

If motion is not detected for the pre-selected amount of time, the AgiTrak™ system activates an alarm and records the alarm event(s) in the event log. For agitation information to be monitored correctly, the platelet agitator position must be enabled in the AgiTrak interface. Disable a platelet agitator position through the AgiTrak interface if the position is not is use.

The Agitator Motion Alarm Delay specifies the longest length of time the agitator can be stopped prior to an alarm. If the time elapsed is greater than or equal to this value, an alarm activates. The default setting is one minute. The setting can be changed from 0 minutes to 99 minutes.

🛈 Notes

- The AgiTrak™ system is intended to replace each Pro Line platelet agitator alarm.
- The position number in AgiTrak corresponds to the position switch setting on the agitator. (PC2200-Pro and PC3200-Pro units only).

View Real-Time Agitator Status

Agitation speed and cycle counts may be viewed in real-time when a platelet agitator is installed in a platelet incubator. The cycle counter information is useful for troubleshooting problems with the agitation motion sensor, or for scheduling additional preventive maintenance functions.

🛈 Note

- Cycle count readings update frequently.
- AgiTrak can be accessed through the i.Center Plus Settings and the Applications menu.
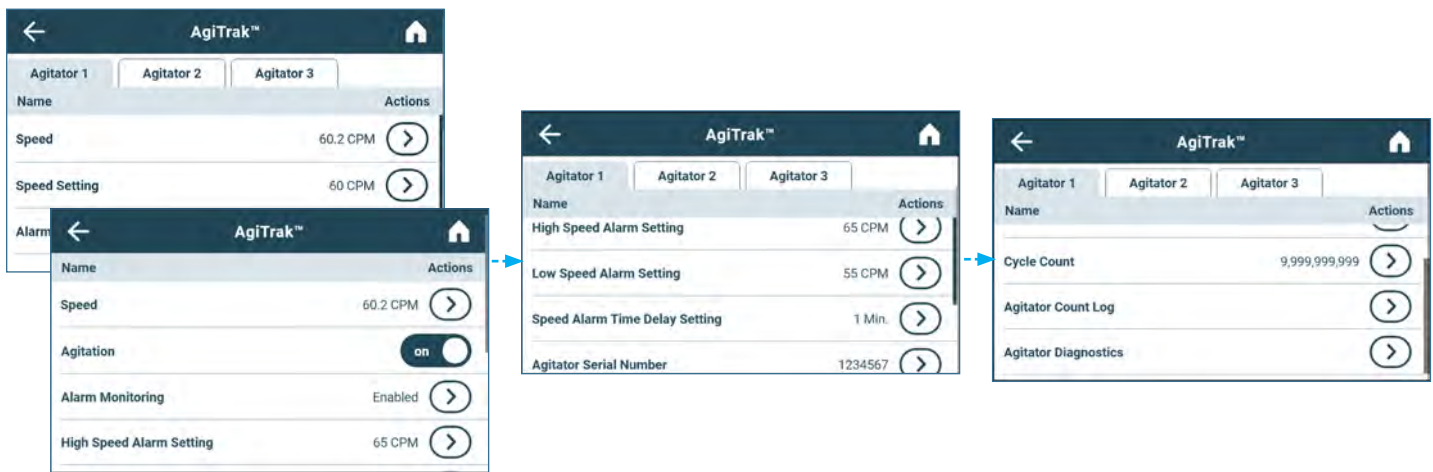
☑ View Agitator Speed

1. Touch the Speed Actions button. The corresponding agitator Speed Graph appears.
2. Touch the back arrow to return to the AgiTrak screen, or the Home button to return to the Home screen.
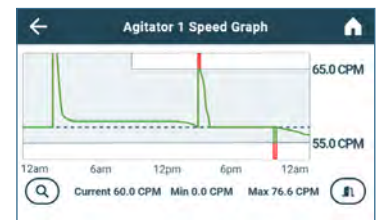
☑ View Agitator Count Log

1. Touch the Agitator Count Log Actions arrow. The Agitator Count Log is displayed.
2. Touch the back arrow to return to the AgiTrak screen, or the Home button to return to the Home screen.

☑ View Agitator Diagnostics

Agitator Diagnostics provides diagnostic and service information. Contact Helmer Technical Service for more information.

4   Maintenance

Maintenance tasks should be completed according to the schedule below. Refer to the i.Center Plus User Guide for more detail on completing various tasks.

NOTICE
- Before performing maintenance, protect items in platelet incubator from extended exposure to adverse temperature.
- Allow platelet incubator temperature to stabilize at setpoint after performing service or after extended door openings.

🛈 Notes
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.

Table 5. Preventive Maintenance

Task	Frequency		
	1 year	2 years	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.	✓		
Test the no battery alarm.	✓		
Test the motion alarm (PC2200-Pro and PC3200-Pro platelet incubators with platelet agitators installed, and PC4200-Pro platelet incubator).	✓		
Check temperature calibration for monitor probe(s). Change the calibration or replace the probe(s) with new certified pre-calibrated temperature probes* if necessary.	✓		
Check the monitoring and alarm system back-up battery after an extended power failure and change it if necessary. (qty 1, 12V 7 AHr SLA battery)		✓	
Check the back-up 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. (qty 1, 9V non-rechargeable battery)			✓
Clean the condenser grill.	✓		
Clean the exterior and interior.			✓
Clean the door gaskets.			✓
(PC4200-Pro) Check agitation wheels and drive bar assembly for wear. Clean moving parts.	✓		
Replace moving parts if worn or when prompted by the agitation maintenance reminder.			✓

* Precalibrated replacement temperature probe comes with a new certificate of calibration.

🛈 Notes
- During a power failure, the back-up battery provides power to the monitoring system and the power failure alarm. If the back-up battery is not functioning, the power failure alarm will not be activated.
- If the back-up battery does not provide power to the monitoring system during the power failure alarm test, replace the battery.
- Use only a 12V 7AHr SLA battery for the temperature monitoring and motion alarm system battery back-up.
- Use only a 9V high capacity non-rechargeable battery for the temperature chart recorder battery back-up.

NOTICE
- 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 30 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.
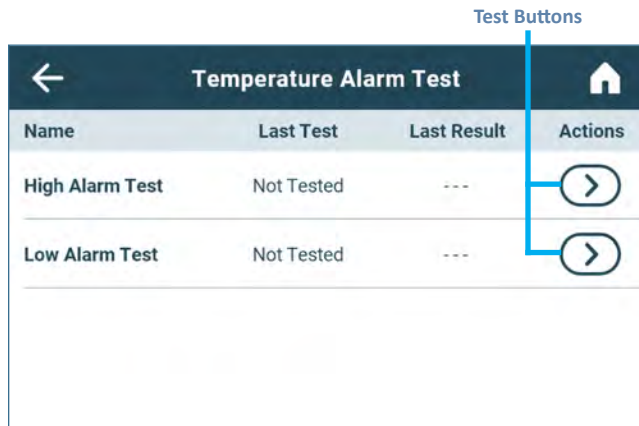
4.1   Alarm Tests

Test alarms to ensure they are working correctly. The platelet incubator has alarms for chamber temperature, door open (time), agitation motion (for installed Pro Line platelet agitator(s) and the PC4200-Pro agitation system), low battery, and power failure.

ℹ Note
- Some tests may impact the temperature inside the chamber. Protect stored items from extended exposure to adverse temperature, and allow the chamber temperature to stabilize before returning items to the incubator.
- The Event Acknowledgement feature may be used to add notes to the Event Log indicating these alarm events are test-induced.

Automatic Chamber Temperature Alarm Test

Initiate an automatic alarm test for high or low temperature alarms using the factory installed self-test probe. The automatic test temporarily warms or cools the probe without affecting the chamber temperature. A Test event is added to the Event Log to indicate a temperature alarm was activated. The Alarm Test icon is displayed on the Temperature Graph to indicate the temperature alarm was test-induced.

Temperature Alarm Test screen
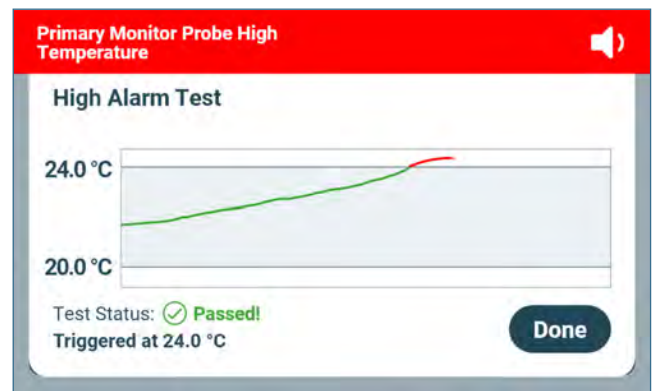
Temperature Alarm Test Operation screen

ℹ Note
- The Temperature Alarm test can be accessed from the App Tray at the bottom of the Home screen or the Applications menu.
- Automatic Temperature Alarm testing is only available for the primary monitor probe.
- The test can be aborted by touching **Cancel**.
- If the temperature alarm test takes longer than ten minutes, the Test Status message will display Failed.

☑ Initiate Alarm Test

1. Touch the **High Alarm Test** or **Low Alarm Test** button to begin the alarm test. The selected test begins.
    - Temperature changes are displayed in the Temperature Alarm Test Operation screen.
    - As the temperature moves into alarm condition, the temperature line turns red and the alarm activates displaying the banner at the top of the screen. The Test Status message "Warming (or Cooling) Probe" is displayed in the lower left corner of the screen.
    - When completed, the Test Status message will show Passed or Failed. If Passed, the temperature at which the alarm was triggered will be displayed below the Test Status.
2. Select **Done**. The Temperature Alarm Test screen appears showing the date and time of the last test as well as the results.

☑ Cancel Alarm Test

1. Touch the Cancel button to end the alarm test. **Cancel** appears in the *Last Result* field of the Temperature Alarm Test screen.

Manual Chamber Temperature Alarm Test

🛈 Notes

- Perform the low alarm test before the high alarm test to control the temperature more closely and complete the testing more quickly.
- Some tests may impact the temperature inside the chamber. Protect stored items from extended exposure to adverse temperature, and allow the chamber temperature to stabilize before returning items to the incubator.
- Temperature probes are fragile; handle with care.

☑ Test the Low Alarm:

1. Identify the current setting for the low alarm setpoint.
2. Remove the installed platelet agitator, if necessary, to allow access to the to the chamber probe.
3. Loosen the screws securing the chamber probe bracket to the chamber wall. Slide the bracket up and away from the wall.
4. Remove the probe from the bracket by unscrewing and removing the fitting securing the probe to the bracket.

5. Slide the probe tip upward and free the probe from the bracket.

6. Immerse the probe in a container with at least 2" (51 mm) of cold water until the low temperature alarm is activated. (Alarm should sound when the temperature drops below the low alarm setpoint.)

☑ Test the High Alarm:

1. Identify the current setting for the high alarm setpoint.
2. Immerse the probe in container with at least 2" (51 mm) of hot water until the high temperature alarm is activated. (Alarm should sound when the temperature rises above the high alarm setpoint.)
3. Remove the probe from the warm water.
4. Install the probe in the chamber probe bracket.
5. Install the fitting to secure the probe to the probe bracket, leaving approximately 1" (25 mm) of the probe exposed beyond the fitting.
6. Install the probe bracket in the chamber and tighten the screws.
7. If previously removed, reinstall the platelet agitator in the chamber.

Power Failure Alarm Test

🛈 Notes

During a power failure, the power failure alarm sounds and the battery provides power to the monitoring system.

☑ Test Power Failure Alarm

1. Ensure battery back-up switch is in the **ON** position.
2. Change Power Failure delay setting to 0 minutes by selecting **Settings** then touching the **Alarm Settings** button.
3. Touch the Power Failure Actions button. The Enter Password screen appears.
4. Enter the password *(default password is "1234")* and press the enter key.
5. Touch (**–**) on the Power Failure spin box to change the value to 0.
6. Switch AC power switch OFF. Power failure alarm will activate immediately.
7. Switch AC power switch ON. Power failure alarm will clear and audible alarm will cease.
8. Change Power Failure time delay to the original setting.

Door Open Alarm Test

1. Change Door Open delay setting to 0 minutes by selecting **Settings** then touching the **Alarm Settings** button.
2. Touch the Door Open Actions button. The Enter Password screen appears.
3. Enter the password *(default password is "1234")* and touch the return key.
4. Touch the (**–**) on the Door Time spin box to change the value to 0.
5. Open either door. The alarm will activate immediately.
6. Close the door. The alarm will clear, and audible alarm will cease.
7. Repeat steps 5 and 6 for the other door. Proceed to step 8 once both doors have been tested.
8. Change the Door Open (Time) setting to the original setting.

Battery Alarm Test

1. Turn the back-up battery switch OFF. Alarm will activate immediately.
2. Turn the back-up battery switch ON. Alarm will clear and audible alarm will cease.

Motion Alarm Test

1. Select **AgiTrak** from the Apps menu or Settings menu. The AgiTrak screen will appear.
2. Select the desired agitator tab at the top (1, 2 or 3) *(PC2200-Pro and PC3200-Pro only)*.
3. Scroll down to select the Speed Alarm Time Delay Setting Action arrow. The Enter Password screen appears.
4. Enter the Settings password *(default password is "1234")* and touch the return key.
5. Touch the (**–**) on the Agitator Speed Alarm Time Delay Setting spin box to change the value to 0.
6. Open either door. The agitator will stop and the alarm will activate immediately.
7. Close the door. The alarm will clear, and audible alarm will cease.
8. Change the Agitator Speed Alarm Time Delay Setting to the original setting.

4.2   Test and Replace Back-up Battery

On all i.Center Plus screens, screen brightness will automatically be reduced and **Power Failure** will appear in the Alarm Condition banner at the top of the screen when the system is running on battery power. The monitoring system will automatically disable some features to extend battery life.

🛈 Notes

- The monitoring system back-up battery provides power for up to 24 hours for monitoring and alarms when fully charged.
- Protect stored items from extended exposure to adverse temperature, and allow the chamber temperature to stabilize before returning items to the incubator.

☑ Check the Back-up Battery

1. Ensure battery switch is set to **ON**.
2. Switch AC power switch **OFF**.
3. The screen should continue to display information with reduced brightness and **Power Failure** will appear in the Alarm Condition banner at the top of the screen. If the display is blank, replace the battery.
4. When completed, switch AC power switch **ON**.

   #### NOTICE
   - Use only batteries meeting manufacturer's specifications.
   - Follow local guidelines for disposing of used batteries.

☑ Remove and Replace Monitoring System Back-up Battery

1. Switch the main power switch to **OFF**; switch the back-up battery switch to **OFF**; disconnect the power cord from the power receptacle.
2. Using a #2 Phillips screwdriver, remove the screws securing the top panel. Set the screws and top panel aside.
3. Using a #2 Phillips screwdriver, remove the (2) two screws securing the battery bracket to the battery. Remove the bracket and set the bracket and screws aside.
4. Disconnect the wires from the battery terminals.
5. Remove the battery and discard.
6. Install the new battery and attach the wires to the battery terminals.
7. Reinstall the battery bracket and secure with 2 (two) screws using a #2 Phillips screwdriver.
8. Reinstall the top cover and secure with screws using a #2 Phillips screwdriver.
9. Reconnect the power cord to the wall receptacle. Switch the main power switch to **ON**; switch the back-up battery switch to **ON**.
10. Allow the temperature to stabilize at the setpoint before moving inventory back into the incubator.

4.3   Upgrade System Firmware

Helmer may occasionally issue updates for the i.Center Plus firmware. Follow upgrade instructions included with the firmware update.

4.4   Clean the Platelet Incubator

ⓘ Note

Additional information can be found on Helmer website at **How to Properly Clean Your Helmer Scientific Refrigerator** or by scanning the QR code below.

NOTICE

Disconnect platelet incubator from AC power prior to cleaning.

Condenser Grill

If the incubator is located in an environment where it is exposed to excessive lint or dust, the condenser grill may require cleaning more frequently than stated in the preventive maintenance schedule.

Clean the external fan grill using a soft brush and a vacuum cleaner. Remove the lower rear panel to access the condenser grill.

Exterior

Clean glass surfaces with soft cotton cloth and glass cleaner. Clean exterior surfaces with soft cotton cloth and non-abrasive liquid cleaner.

Interior

Clean painted surfaces with mild detergent. Clean stainless steel surfaces with a general-purpose laboratory cleaner suitable for stainless steel. Clean glass surfaces with soft cotton cloth and glass cleaner.

Door Gaskets

Clean with soft cloth and mild soap and water solution.

i.Center® Plus Touchscreen

Clean touchscreen with a soft, dry cotton cloth.

5   Service

5.1   Report Download

Historical data from the incubator are downloaded in PDF, XLS or TXT formats depending on report type and placed on a removable storage device. All reports are generated on-demand. Device Summary, Agitation Summary, Alarm Activation Test Summary and Historical Data reports offer the option to enter a date range to provide data over a more focused time period.

Report	File Type
Device Summary	PDF
Agitation Summary	PDF
Alarm Activation Test Summary	PDF
Probe and Calibration Summary	PDF
Current Settings	TXT
Historical Data	XLS
System Diagnostics	XLS

ⓘ Notes

- The USB Port must be enabled prior to performing a download.
- Up to 31 days can be selected for reports that require a date range.
- Dates which are grayed out on the calendar do not contain recorded data and cannot be individually selected.

☑ Downloading Reports

1. Insert a flash drive into the USB port.
2. From the Applications screen, select the Report Download button. The Report Download screen appears.
3. Scroll to the bottom of the Report Download screen to select the Summary Paper Size.
4. Touch the desired reports Action button. The Select Date Range screen appears *(if applicable)*.
   If the date range is not required, proceed to Step 8.
5. Use the left and right arrows to select the month, then touch the desired start and end dates. The dates are highlighted on the calendar and the screen banner changes showing the selected date range and Reset and Save buttons.
6. Touch Save to save the date range. *(The Reset button will clear the highlighted dates.)*
7. The Review Date Range screen appears. Select Continue to begin the report download.
8. The Report Download status screen appears displaying the progress of the download.
9. Once the download process is complete, select the Done button to return to the Report Download screen.
10. Remove the flash drive from the USB port.

5.2   Clean and Inspect Internal Parts (PC4200-Pro)

NOTICE

Disconnect platelet incubator from AC power when inspecting internal parts.

Drive Bar Bearings

Inspect and clean drive bar bearing connections according to the preventive maintenance schedule.
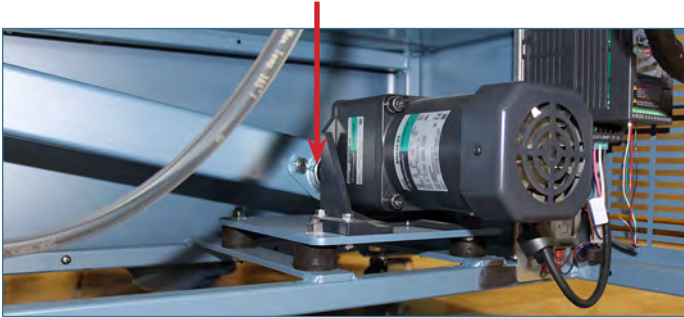
Drive rod bearing connection.

Wheels

Trolley Wheel Cover
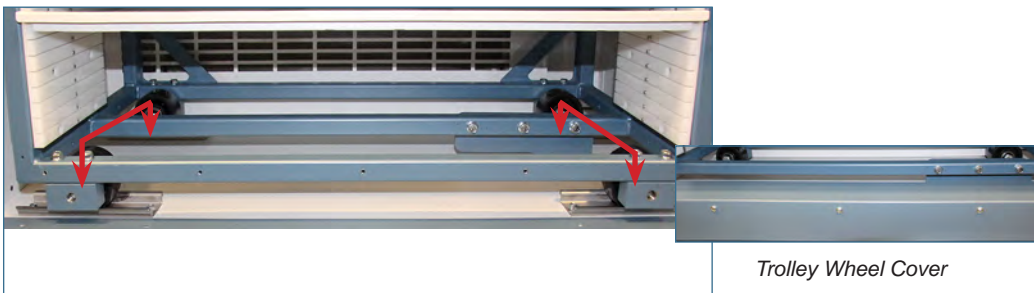
Trolley wheels

NOTICE

Helmer recommends using two people to lift trolley when replacing wheels.

Remove the cover to access the front wheels and bottom drawers to access the rear wheels for inspection and cleaning. Replace wheels as necessary.

6   Troubleshooting

NOTICE

Review all safety instructions prior to troubleshooting.

6.1   General Operation Problems

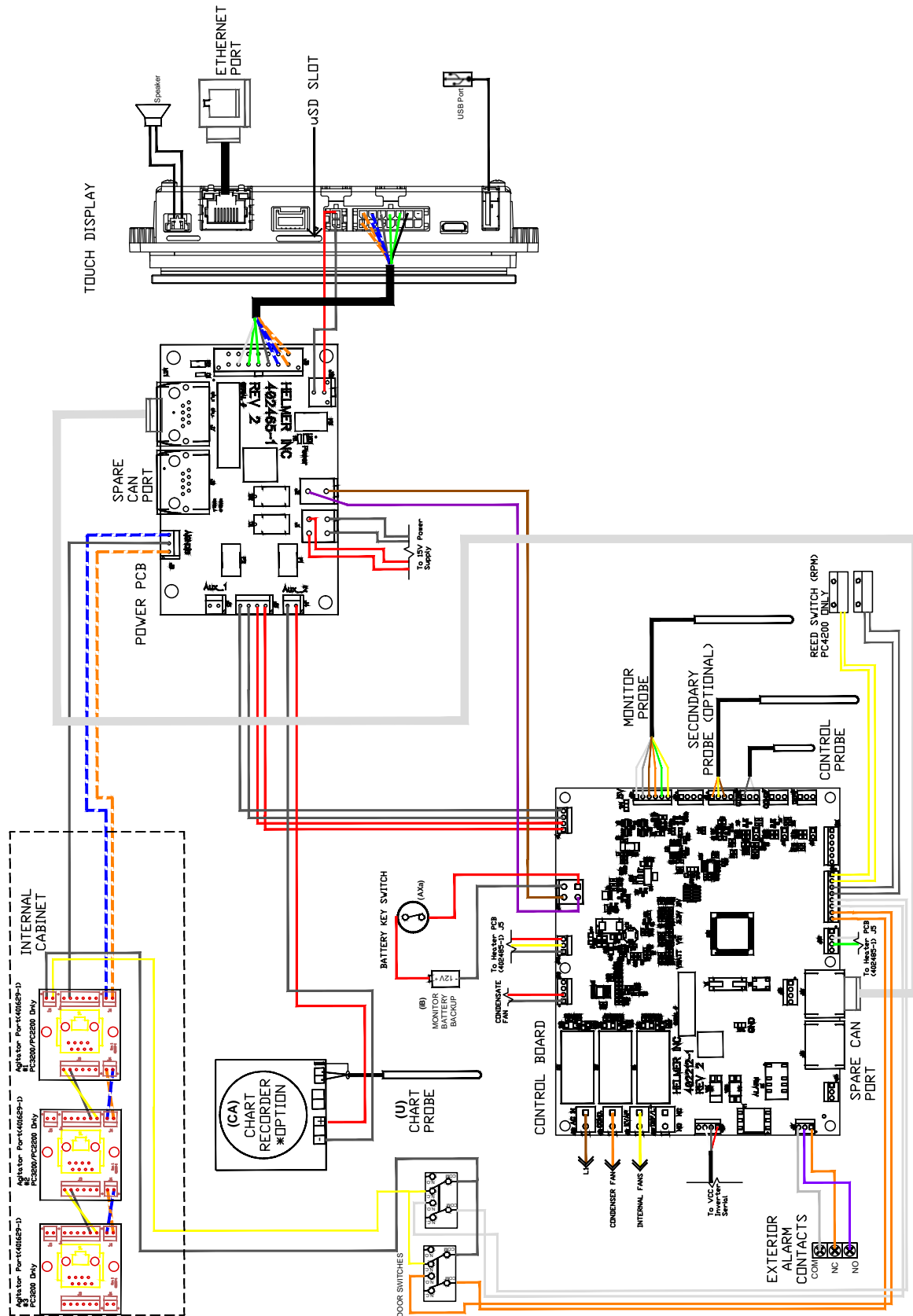| Problem	Possible Cause	Action
Door does not open.	Door lock is engaged	Unlock door with key
Main power switch is on, but nothing is working.	Outlet connection is faulty.	Verify power at the outlet. Repair original outlet or connect to a different outlet if necessary.
	Power cord is faulty.	• Check connections of power cord at outlet and incubator. • Check condition of the power cord. Replace if in poor condition. • Check that voltage through the cord is appropriate. If not, replace cord.
	Power switch is faulty.	Verify power output from the switch. Replace switch if necessary.
	GFI/GFCI outlet was tripped	Move to standard outlet. Helmer does not recommend operating this unit on a GFI outlet.
	Circuit breakers have been tripped.	Reset circuit breakers
Chart Recorder is losing time.	Chart Recorder hub is loose.	Check tightness of center hub and tighten if necessary.
Chart Recorder is inoperative/locked up.	Chart Recorder is not receiving main power or battery power.	Confirm LED status light is solid green. If not, check main power to the Chart Recorder and the 9V battery is connected.
	Chart Recorder is in (Chart Change) mode.	Confirm stylus is at correct temperature and the LED status light is solid green. If not, press the Chart Change button (C) to return the chart to normal operation.
	Chart Recorder is locked up.	Reset Chart Recorder by removing main power and 9V battery.
	Chart Recorder is in wrong range or calibration.	Check chart range (LED will single flash in chart change mode) Adjust temperature calibration if needed. Reference Chart Recorder manual.
Agitation does not stop when door(s) is open.	Door switch(es) or door cable(s) is damaged.	Check door switch(es) and cable(s) and replace if necessary.
	Door switch(es) are in override position.	Push the door switch(es) in.
Agitation of installed platelet agitator has stopped. *(PC2200-Pro and PC3200-Pro only)*	Incubator door is open.	Close incubator door.
	Agitator power switch is turned OFF.	Check agitator power switch and turn ON.
	Agitator coiled DC power cord is loose or disconnected.	Check connections from interior incubator outlet to agitator.
Incubator moving on support surface.	Support surface is slick.	Ensure casters are locked. Change location if necessary.
		Use Floor and Wall anchoring bracket kit if necessary.
	Internal agitator speed is set too high for incubator support surface.	Reduce agitator speed setting in AgiTrak. *(PC2200-Pro and PC3200-Pro only)*
		Manually reduce agitator speed setting on VFD. *(PC4200-Pro only)*
i.Center Plus screen displays firmware version as "Unknown" *(PC2200-Pro and PC3200-Pro only)*	Communication cable to the agitator is loose or disconnected.	Ensure communication cable is properly connected to the installed agitator.
	Agitator position switch is set to the wrong position.	Ensure communication position switch is set to the correct position. (position 1 or 2 when installed in a PC2200-Pro, or position 1, 2 or 3 when installed in a PC3200-Pro incubator)

6.2   Chamber Temperature Problems

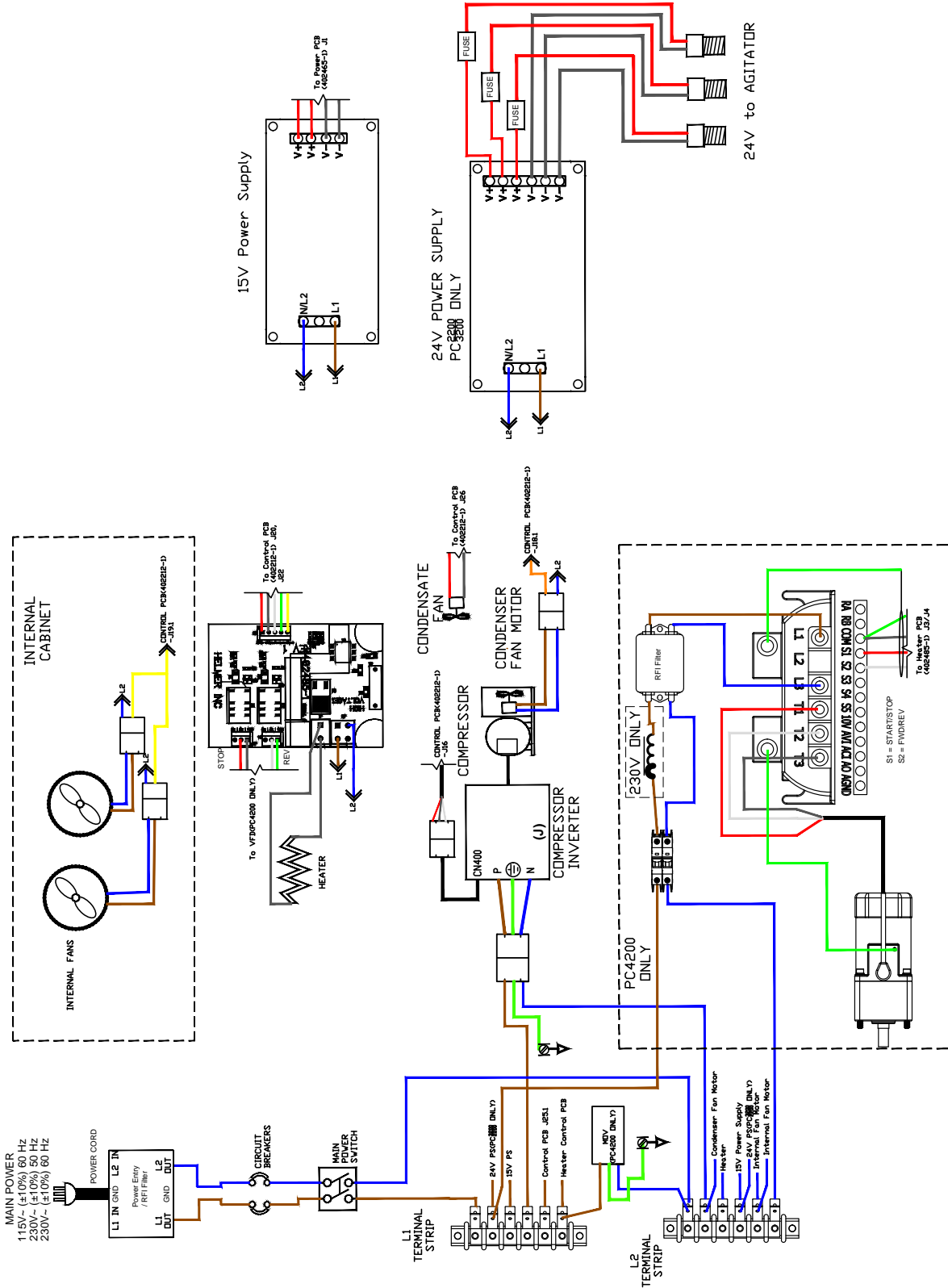| Problem	Possible Cause	Action
Chamber temperature displayed is out of range.	Monitor is not calibrated.	Confirm primary monitor probe is reading correctly. Calibrate probe if necessary.
	Probe is out of place or faulty.	Check probe location and connection. Replace probe if needed.
	Dirty condenser coil	Clean the condenser coil.
	Temperature settings are incorrect.	Check temperature settings and adjust accordingly.
	Ambient air temperature around platelet incubator is too high.	Confirm platelet incubator is placed appropriately.
	Internal chamber fans not running.	Check fan connections and voltage to fan. Replace if necessary.

6.3　Alarm Activation Problems

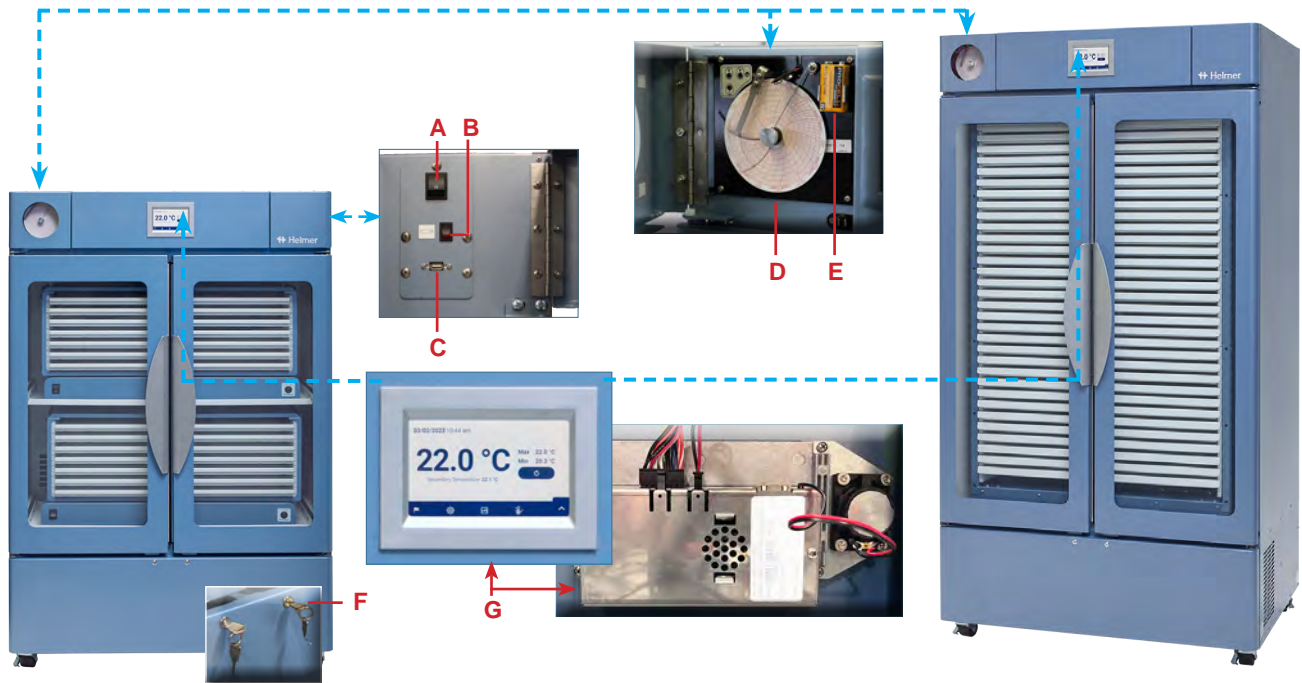| Problem	Possible Cause	Action
Agitation communication alarm is active. *(PC2200-Pro and PC3200-Pro only)*	i.Center Plus monitoring system is not receiving motion information from the platelet agitator	On platelet incubator's i.Center Plus display, verify agitation information is being received. Verify data cable is connected securely to platelet agitator and corresponding port in the platelet incubator. Tighten connections, replace if necessary.
	Agitator position switch is set wrong.	Check agitator position switch. Each agitator should be set to its own unique position of 1, 2 or 3 depending on the location in the incubator.
	Agitator is not on.	Ensure agitator power switch is ON and power cables are connected.
	Coiled black power cable to the agitator is loose or disconnected.	Ensure power cable is properly connected to the installed agitator.
	Communication cable to the agitator is loose or disconnected.	Ensure communication cable is properly connected to the installed agitator.
	Faulty door switch connection	Inspect door switch cable and its and connections.
	In-line fuses between the 24V power supply and agitators have blown.	Check fuses and replace as needed.
Agitator Communication Alarm/Control Board Communication Failure *(PC4200-Pro only)*	Communication alarm present while agitator is agitating.	Check Ethernet cable connections between control board and power board.
		Check communication cable connections between power board and display board. Replace if necessary.
Agitator Low Speed alarm is active. *(PC2200-Pro and PC3200-Pro only)*	Agitator is not agitating.	Ensure agitator power connection is properly connected to incubator.
		Ensure proper clearance is provided for agitation. Remove any obstruction.
	Shelf/drawers are overloaded or product is not placed evenly.	Reduce product load or place product load evenly.
	Low alarm setting is too high.	Ensure low speed alarm condition is set at least 2 CPM below setpoint.
	Agitator motor or gearbox is not functioning properly.	Inspect agitator motor/gearbox. Replace if necessary.
	Agitator Proximity Sensor or Reed Switch has failed.	Check position of proximity sensor and reed switch. Replace parts as necessary.
Agitator Low Speed alarm is active. *(PC4200-Pro only)*	Agitator is not agitating.	Ensure door is not ajar.
		Check door open alarm delay.
		Check for faulty door switch or wiring.
	Shelf/drawers are overloaded or product is not placed evenly.	Reduce product load or place product load evenly.
	Low alarm setting is too high.	Ensure low speed alarm condition is set at least 2 CPM below setpoint.
		Check settings of proximity sensors in Agitator Diagnostics.
	Agitator drive motor is not functioning properly.	Confirm the set speed is not below the low-speed agitation alarm on VFD Motor Driver. *The VFD display will flash the set speed (EX 65) when in a paused state (door(s) open).*
	Agitator Proximity Sensor or Reed Switch has failed.	Check position of proximity sensor and reed switch. Replace parts as necessary.
Agitator High Speed alarm is active.	High alarm setting is too low.	Ensure high speed alarm condition is set at least 2 CPM above setpoint.
Maintenance alarm is active.	Wheels are worn or out of round.	Inspect wheels. Replace if necessary.
	Wheel maintenance timer has timed out.	Inspect wheels and clear maintenance alarm if wheels are okay.

7   Schematics

8   Parts

Label	Description	Part Number
A	Power Switch	120478
B	Back-up Battery Switch	120202
C	USB Port	-
D	Temperature Chart Recorder	800971-1
E	Chart Recorder Battery	120218

Label	Description	Part Number
F	Door Lock with Key (qty 1)	220374
G	Display assembly	801189-1
Not Shown	SD Card	801190-1
Not Shown	Anchoring Bracket *(Floor/Wall; Non-Seismic)*	400472-1
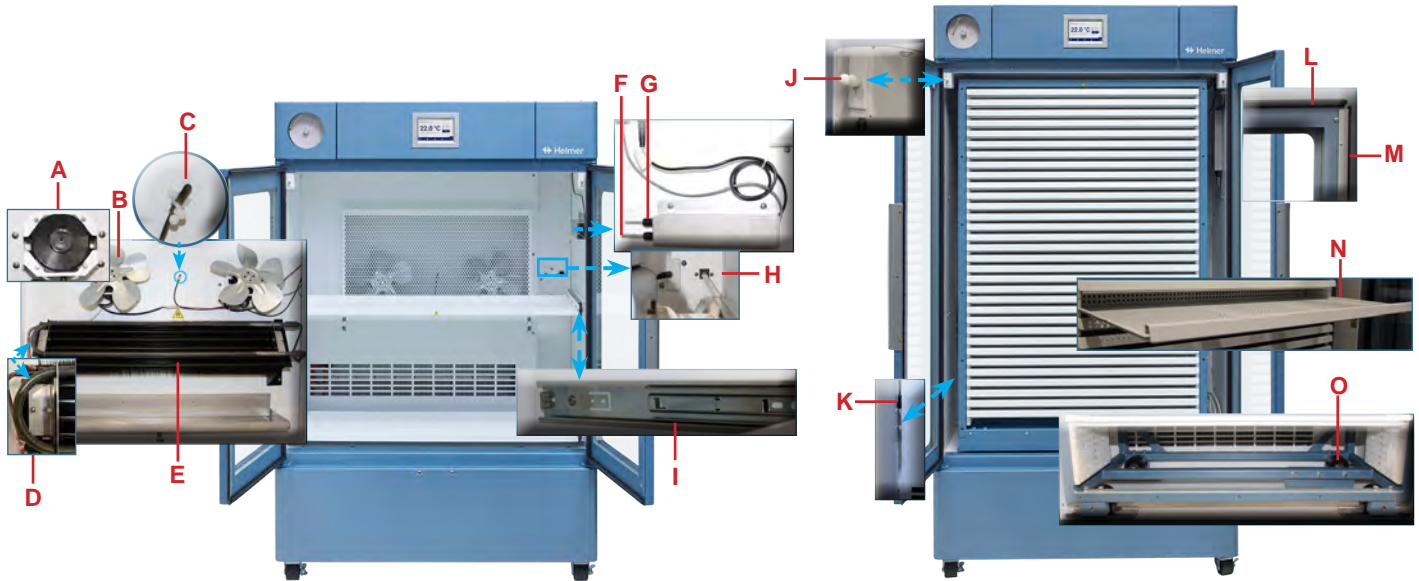
Label	Description	Model	Volts	Part Number	Label	Description	Model	Part Number
A	Interior Fan Motor		115V	801181-1	J	Door Switch	-	801193-1
			230V	801182-1	K	Secondary Monitor Probe	3200/4200	801098-1
B	Interior Fan Motor Blade	-		220177	L	Door Seals (qty 2 sets)	2200	400787-1
C	Control Probe	-		801192-1			3200/4200	400788-1
D	Chamber Heater	-		801183-1	M	Door brushes (qty 2)	2200	320920-2
E	Evaporator Assembly	-		801180-1			3200/4200	320920-1
F	Primary Monitor Probe	-		801097-1	N	Drawer	4200	801204-1
G	Chart Recorder Probe	-		400855-1	O	Wheel Assembly (qty 4)	4200	801199-1
H	Agitator Port Board	2200/3200	-	801203-1	Not Shown	Drawer divider/side guard	-	801205-1
I	Drawer Slides (qty 2)	2200/3200	-	801202-1	Not Shown	Drawer edge	-	801206-1
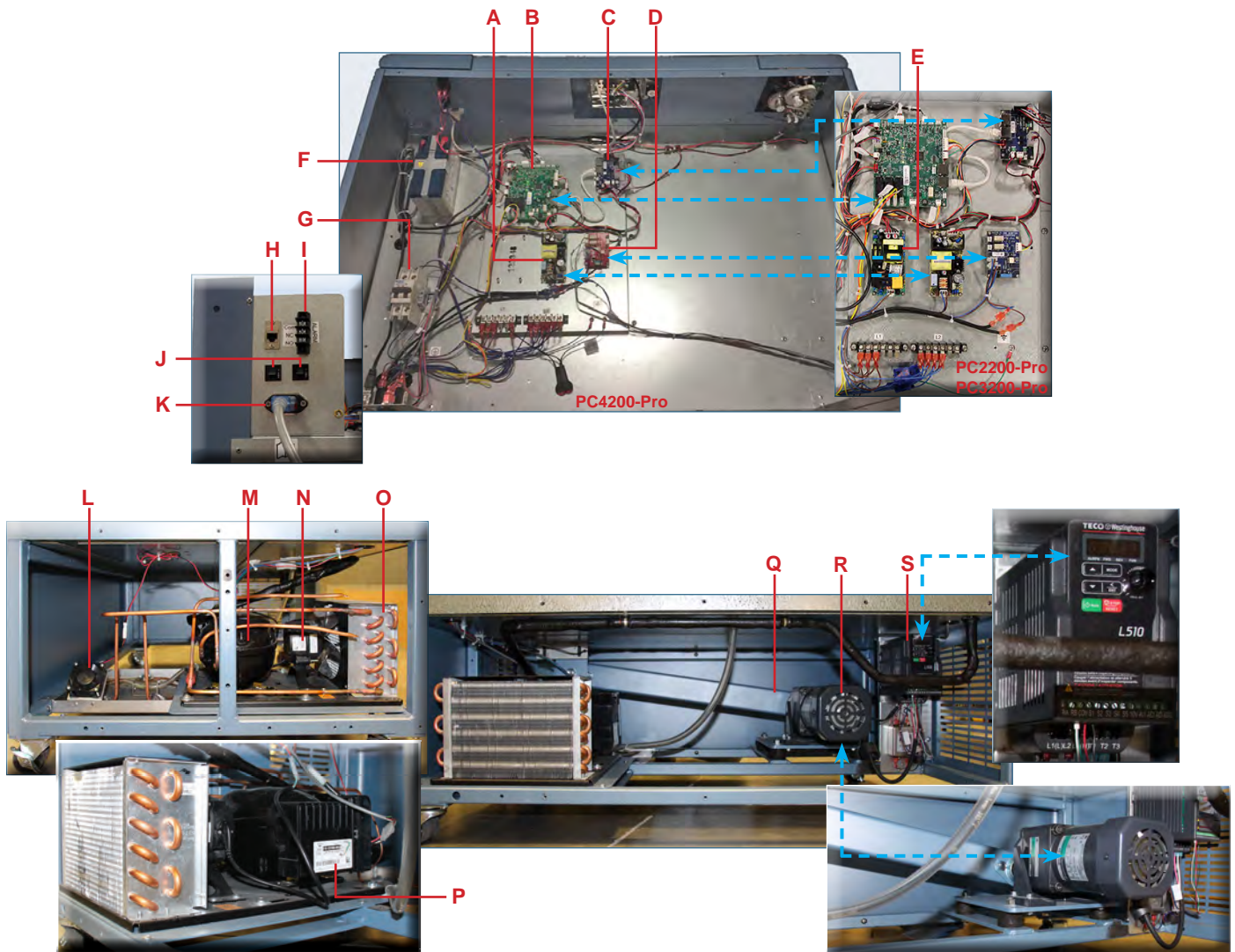
Label	Description	Model	Part Number	Label	Description	Volts	Model	Part Number
A	15VDC Power Supply	-	801187-1	M	Compressor	-	-	-
B	Control Board	-	801191-1	N	Condenser Fan Motor	-	-	801177-1
C	Power Distribution Board	-	801186-1	O	Condensing Unit	115	-	801175-1
D	Heater Control Board	-	801185-1			230	-	801176-1
E	24VDC Power Supply	3200/4200	801188-1	P	Compressor Inverter	115	-	801178-1
F	12V Battery	-	801194-1			230	-	801179-1
G	Drive Motor Breaker	4200	801201-1	Q	Drive Bar Assembly	-	4200	801200-1
H	RJ45 Ethernet Port	-	-	R	Drive Motor	-	4200	801196-1
I	Remote Alarm Contacts	-	-	S	VFD Motor Driver	115	4200	801197-1
J	Circuit Breakers (7 Amp)	-	120272			230	4200	801198-1
K	Power Entry Module	-	120299	Not Shown	Drive Motor Crank Block	-	4200	323099-1
L	Condensate Fan	-	801184-1	Not Shown	Proximity Sensor and Actuator	-	4200	801195-1

Appendix A: Warranty

For technical service needs, please contact Helmer at 800-743-5637 or www.helmerinc.com. Have the model and serial number available when calling.

Rapid Resolution

When a warranty issue arises it is our desire to respond quickly and appropriately. The service department at Helmer is there for you. Helmer will oversee the handling of your warranty service from start to finish. Therefore, Helmer must give advance authorization for all service calls and/or parts needs relating to a warranty issue. Any repeat service calls must also be authorized as well. This allows for proper diagnosis and action. Helmer will not be responsible for charges incurred for service calls made by third parties prior to authorization from Helmer. Helmer retains the right to replace any product in lieu of servicing it in the field.

Compressor

For the warranty period listed below, Helmer will supply the compressor, if it is determined to be defective, at no charge, including freight. Helmer will not be liable for installation, refrigerant or miscellaneous charges required to install the compressor beyond the first year of the warranty period.

♦ Pro Line model compressor warranty period is five (5) years.

Parts

For a period of two (2) years, Helmer will supply at no charge, including freight, any part that fails due to defects in material or workmanship under normal use, with the exception of expendable items. Expendable items include glass, batteries, and door gaskets. Inspection of defective parts by Helmer will be final in determining warranty status. Warranty procedures must be followed in all events.

Labor

For a period of one (1) year, Helmer will cover repair labor costs (including travel) and the cost of refrigerant and supplies necessary to perform authorized repairs. Repair service must be performed by an authorized Helmer service agency following the authorization process detailed above. Alternatively, your facility's staff may work with a Helmer technician to make repairs. Labor costs for repairs made by unauthorized service personnel, or without the assistance of a Helmer technician, will be the responsibility of the end user.

Additional Warranty Information

The time periods set forth above begin two weeks after the original date of shipment from Helmer. Warranty procedures set forth above must be followed in all events.

THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE SHALL APPLY.

THE LIABILITY, IF ANY, OF HELMER FOR DIRECT DAMAGES WHETHER ARISING FROM A BREACH OF ANY SALES AGREEMENT, BREACH OF WARRANTY, NEGLIGENCE, OR INDEMNITY, STRICT LIABILITY OR OTHER TORT, OR OTHERWISE WITH RESPECT TO THE GOODS OR ANY SERVICES IS LIMITED TO AN AMOUNT NOT TO EXCEED THE PRICE OF THE PARTICULAR GOODS OR SERVICES GIVING RISE TO THE LIABILITY. IN NO EVENT SHALL HELMER BE LIABLE FOR ANY INDIRECT, INCIDENTAL, CONSEQUENTIAL, OR SPECIAL DAMAGES, INCLUDING WITHOUT LIMITATION DAMAGES RELATED TO LOST REVENUES OR PROFITS, OR LOSS OF PRODUCTS.

This warranty does not cover damages caused in transit, during installation by accident, misuse, fire, flood, or acts of God. Further, this warranty will not be valid if Helmer determines the failure was caused by a lack of performing recommended equipment maintenance (per Helmer manual) or by using the product in a manner other than for its intended use. Installation and calibration are not covered under this warranty agreement.

Outside of USA and Canada

Consult your local distributor for warranty information.