Helmer
SCIENTIFIC

Compartmental Access Refrigerator Maintenance & Service Manual

CE

0086

ISO 13485:2003 CERTIFIED

Helmer

Document History

Notes and Disclaimers

Confidential / Proprietary Notices

Use of any portion(s) of this document to copy, translate, disassemble or decompile, or create or attempt to create by reverse engineering or otherwise the information from Helmer Scientific products is expressly prohibited.

Disclaimer

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.

Any failure to follow the instructions as described could result in impaired product function, injury to the operator or others, or void applicable product warranties. Helmer Scientific accepts no responsibility for liability resulting from improper use or maintenance of its products.

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.

Document Updates

The document is furnished for information use only, is subject to change without notice and should not be construed as a commitment by Helmer Scientific. Helmer Scientific assumes no responsibility or liability for any errors or inaccuracies that may appear in the informational content contained in this material. For the purpose of clarity, Helmer Scientific considers only the most recent revision of this document to be valid.

Contents

Section I: General Information

1   About this Manual

1.1   Intended Audience

This manual is intended for use by end users of the Compartmental Access System which consists of the iBX080 refrigerator, ACX001 Access Console, and CCX001 Consumable Cart. For information on how to use the BloodTrack Courier® software which runs on the BloodTrack® Kiosk and provides blood product management to the HaemoBank™, please refer to the BloodTrack Courier® User Guide (part number 113463-IE).

1.2   Model References

The Compartmental Access System becomes a HaemoBank™ after the BloodTrack Courier® software is installed. References are used throughout this manual to denote the individual components of the HaemoBank™. The iBX080 component is referenced as Compartmental Access Refrigerator. The ACX001 component is referenced as the Access Console, and the CCX001 is referenced as the Consumable Cart.

1.3   Copyright and Trademark

Helmer®, i.Series®, i.C³®, and Rel.i™ are registered trademarks or trademarks of Helmer, Inc. in the United States of America. Copyright © 2015 Helmer, Inc. BloodTrack®, HaemoBank™ and BloodTrack Courier® are trademarks of Haemonetics Corporation in the United States and//or other countries. 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

⚠ (orange)	Caution: Risk of damage to equipment or danger to operator
⚠ (hot surface)	Caution: Hot surface
⚠ (shock)	Caution: Shock/electrical hazard
📖ⓘ	Consult instructions for use

UNLOCK ALL CASTERS BEFORE PUSHING TO PREVENT OVERTURNING — OUVREZ TOUTES LES ROULETTES AVANT LE DEPLACEMENT POUR EMPÊCHER LE RENVERSEMENT — Caution: Unlock all casters

⏚ Earth / ground terminal

⏛ Protective earth / ground terminal

2.3   Avoiding Injury
► Review safety instructions before installing, using, or maintaining the equipment.
► Before moving unit, ensure door(s) is closed and casters are unlocked and free of debris.
► Do not move a unit whose load exceeds 900 lbs / 408 kg.
► Before moving unit, disconnect the AC power cord and secure the cord.
► Do not disconnect the Access Console while the HaemoBank™ is powered on.
► 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.
► Avoid sharp edges when working inside the electrical compartment and refrigeration compartment.
► Avoid staring into the tray illumination LEDs for extended periods of time as eye injury may occur.
► Ensure guard panel is installed above compartment assembly to prevent biological materials from being improperly stored.
► 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 refrigerator.
► 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 Haemonetics® Corporation BloodTrack® Customer Support (877.996.7877) 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 refrigerator is not considered to be a storage compartment for flammable or hazardous materials.

3   Compliance

3.1   Regulatory Compliance

Pollution degree: 2 (for use in USA and Canada only)

This product is certified to applicable UL and CSA standards by a NRTL.

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

CE **0086**

Sound level is less than 70 dB(A).

Applies to iBX080 refrigerator only.

| EC | REP | Emergo Europe
Molenstraat 15
2513 BH
The Hague, Netherlands |

RoHS COMPLIANT

3.2   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

3.3   Electromagnetic Compliance

This device is suitable for use in a specific electromagnetic environment. The end user of this device is responsible for ensuring the device is used in compliance with the following European Union directives and standards regarding EMC (electromagnetic compliance):

EMC Directive 2004/108/EC
► EN 55011:2009
► EN 61000-3-2:2006
► EN 61000-3-3:2008
► EN 61000-6-1:2007

3.4   Manufacturer

Helmer Scientific is the manufacturer as defined in 93/42/MDD of the iBX080 and for which the CE mark on the cover of this manual applies.

Haemonetics Corporation is the manufacturer as defined in 93/42/MDD of the BloodTrack Courier® software and maintains sole responsibility for placing the HaemoBank™ in its final configuration on the market.

4   Model and Input Power

Model	Voltage	Frequency	Current Draw
iBX080	115 V	60 Hz	11.9 A
	230V	50 Hz/60 Hz	9.5 A/10.9 A
ACX001	115 V	60 Hz	2.85 V
	230V	50 Hz/60 Hz	2.8 A/2.75 A

The iBX080 information is displayed on the product specification label located on the top of the Compartmental Access Refrigerator next to the electrical box. The model information is also displayed on a label in the chamber on the upper right side wall.

The ACX001 information is displayed on the product specification label located on the back of the Access Console toward the top of the unit.

The CCX001 information is displayed on the product specification label located on the back of the Consumable Cart toward the bottom of the unit
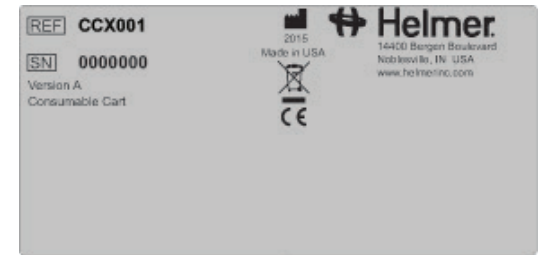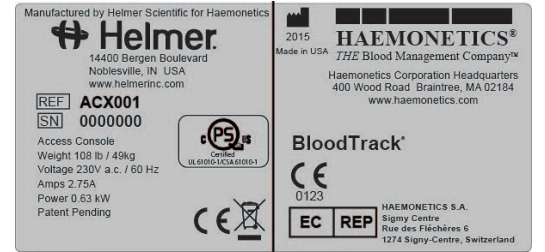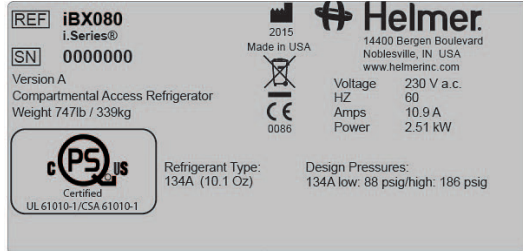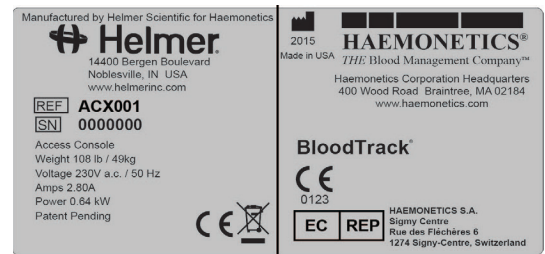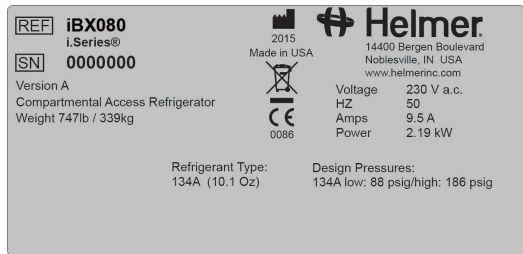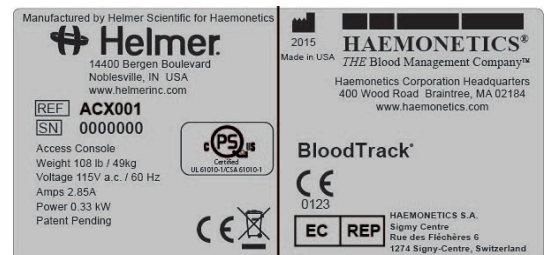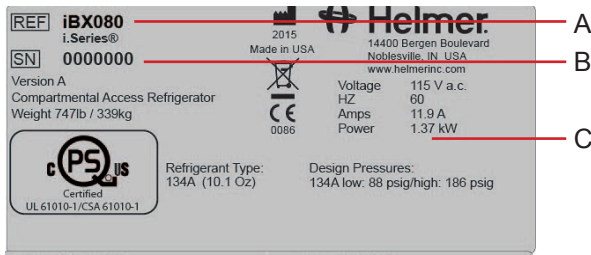
Label	Description
A	Model (REF)
B	Serial number
C	Power Requirements
D	Version (Shown on chamber label only)

Section II: Installation & Configuration

5   Location Requirements

► Meets the limits specified for ambient temperature (15 °C to 32 °C) and relative humidity (80% for temperatures up to 31 °C, decreasing linearly to 50% at 40 °C).

► Is clear of direct sunlight, high temperature sources, heating vents, and air conditioning vents.

► Minimum 8" (203 mm) above, minimum of 1" (25mm) behind.

6   Install Components

⚠️ **WARNING**   To prevent tipping, ensure the casters are unlocked and the doors are closed before moving the Compartmental Access Refrigerator.

6.1   Packing List

Shipped on a separate skid are the following:
   • Access Console with hardware for assembly
   • Consumable Cart with hardware for assembly
   • Chart recorder (optional; box will include chart recorder paper)

6.2   Place Compartmental Access Refrigerator

NOTE   Pliers may be useful when unlocking and locking casters on the Compartmental Access Refrigerator.

1 Remove the Compartmental Access Refrigerator from the shipping carton.
2 Remove and discard the interior packing material.
3 Remove the accessory package from the top of the Compartmental Access Refrigerator.
4 Remove all materials from the accessory package and file them in a secure location.
5 Ensure all casters are unlocked and doors are closed.
6 Roll Compartmental Access Refrigerator into place and lock casters.
7 Ensure Compartmental Access Refrigerator is level.
8 Ensure that trays are locked in place inside compartments.

NOTE   The Access Console must be configured by designated service personnel. Please refer to **Section 2, Item 6.3** of the service manual for installation instructions for the Access Console, connecting external monitoring devices, and connecting Access Console AC power and ethernet cable.

6.3   Configure the Access Console

NOTE   The Access Console may be installed to the left or right of the Compartmental Access Refrigerator, dependent upon how the unit was ordered. It may also be mounted to the wall or placed on a table or cabinet. Instructions for wall or table mounting are supplied with each mounting kit.

6.3.1 **Attach the Access Console to the Compartmental Access Refrigerator**

| NOTE | The Access Console is shipped with mounting brackets installed. Screws will be included with the accessory package. |

| ⚠ | CAUTION | The Access Console is heavy. When attaching the Access Console to the Compartmental Access Refrigerator, two people are required for a team lift. |

Required tools:
► #2 Phillips screwdriver or electric screwdriver
► 4' step ladder

1 Remove the Access Console and screws from the shipping carton.
2 Lift the Access Console to the Compartmental Access Refrigerator.
   a   Place the Access Console so the bracket on the top of the Access Console rests on the top edge of the Compartmental Access Refrigerator.
   b   The slotted brackets on the Access Console must align with the corresponding brackets on the Compartmental Access Refrigerator.
   c   Move the Access Console forward or backward as necessary to align the five holes in the bracket with the corresponding threaded holes on the Compartmental Access Refrigerator.

Compartmental Access Refrigerator and Access Console assembly

3 Attach the Access Console bezel to the Compartmental Access Refrigerator bezel.
   a   Remove the cover from the top of the Access Console.
   b. Loosen four (4) screws in the Access Console bezel.
   c. Align the Access Console bezel and Compartmental Access Refrigerator bezel so that they are flush across the front.

    d. Hand-thread four screws in the Access Console bezel and into the corresponding threaded holes.

Attach Access Console bezel to Compartmental Access Refrigerator bezel

    e. Using a screwdriver, tighten the four screws.

    f Hand-thread four screws in the Compartmental Access Refrigerator bezel and into the corresponding threaded holes on the Access Console bezel.

    g Using a screwdriver, tighten the four screws.

    h Replace the cover on top of the Access Console.

4 Attach the upper bracket to the Compartmental Access Refrigerator.

    a Hand-thread five (5) screws through the upper Access Console bracket and into the threaded holes on the Compartmental Access Refrigerator.

    b Using a screwdriver, tighten the five screws.
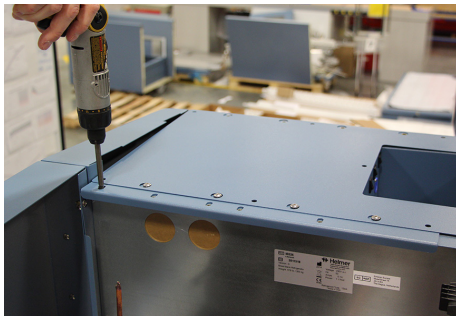
Attach upper bracket to Compartmental Access Refrigerator

5 Attach the lower bracket to the Compartmental Access Refrigerator.

    a Hand-thread two (2) screws through the lower Access Console bracket and into the threaded holes on the Compartmental Access Refrigerator.

    b Using a screwdriver, tighten the two screws.

Attach lower bracket to Compartmental Access Refrigerator

⚠️	**CAUTION**	► Amperage for printer should not exceed 2.5 A.

NOTE	Printer is not included with the Compartmental Access System.

6 Place the printer in the Access Console drawer.

    a Open printer drawer and attach the cables provided to the printer.
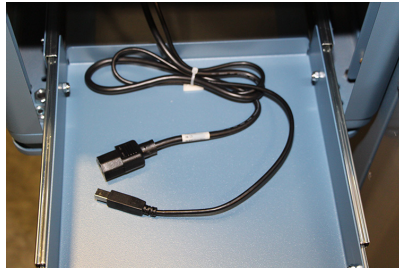
Cables provided for printer

6.3.2   **Place the Consumable Cart**

    1 Remove the Consumable Cart from the shipping carton.

    2 Attach the two (2) L brackets to the back of the cart.

        a Hand-thread one (1) screw through the L bracket into the threaded hole in the cart.

        b Using a #2 Phillips screwdriver, tighten the screw.
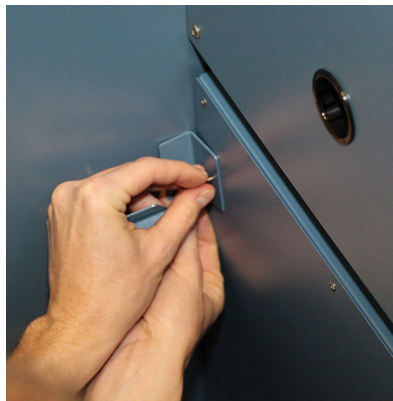
Attach L bracket to cart

3   Attach the flat bracket to the bottom front of the cart.

    a   Hand-thread one (1) thumb screw and tighten.

Attach flat bracket to cart

4   Roll the cart next to the Compartmental Access Refrigerator.

5   Attach the two (2) L brackets to the Compartmental Access Refrigerator.

    a   Hand-thread one (1) screw through the L bracket into the threaded hole in the Compartmental Access Refrigerator.

    b   Using a #2 Phillips screwdriver, tighten the screw.
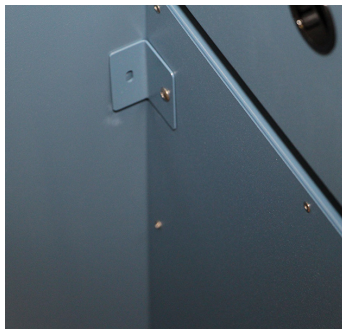
Attach L bracket to Compartmental Access Refrigerator

6   Attach the flat bracket to the Compartmental Access Refrigerator.

    a   Hand-thread one (1) thumb screw and tighten.

Attach flat bracket to Compartmental Access Refrigerator

7 Attach waste basket to Consumable Cart.

Attach waste basket to cart

8 Close and lock the door.

6.3.3 Attach the Access Console to a Wall

A wall mounting kit is required to attach the Access Console to the wall. Refer to the instructions included with the wall mounting kit for installation information. Contact Haemonetics® Corporation BloodTrack® Customer Support. Part number 401323-1.

6.3.4 Attach the Access Console to a Table

A table mounting kit is required to attach the Access Console to a table Refer to the instructions included with the table mounting kit for installation information. Contact Haemonetics® Corporation BloodTrack® Customer Support. Part number 401322-1.

6.4 Connect External Monitoring Devices

⚠️ **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.

Required tools:
- ► #2 Phillips screwdriver
- ► Cable tie

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

The terminals on the remote alarm interface have the following maximum load capacity:
- ► 0.5 A at 30 V (RMS); 1.0 A at 60 V (DC)

Connect to the alarm interface:
1 On the electrical box, locate the remote alarm terminals.
- ► Terminals are located on the electrical box, on top of the Compartmental Access Refrigerator

2 Using a #2 Phillips screwdriver, connect remote alarm wires to appropriate terminals, according to requirements for your alarm system.

3 Use a cable tie to relieve strain on alarm wires (if necessary).
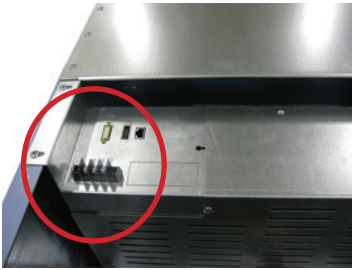
Remote alarm terminals (circled)

6.5 **Connect AC Power Cord and Ethernet Cable for Access Console**

1 Confirm the Compartmental Access Refrigerator is at room temperature.

2 Connect the Access Console AC power cord to the blue receptacle on the back of the Access Console.

► Insert plug into receptacle

► Turn plug 1/4 turn to the right, plug will lock in place

3 Connect the Access Console Ethernet cable to the (LAN1) RJ-45 Ethernet port on the back of the Access Console.

Access Console RJ-45 Ethernet port and Access Console AC power receptacle

NOTE	Spare electronic components are stored inside the Compartmental Access Refrigerator cover. Ensure cover is carefully set aside while connecting cables.

4 Using a #2 Phillips screwdriver, remove the cover from the top of the Compartmental Access Refrigerator.

5   Route both cables through the holes in the Access Console and through the holes in the Compartmental Access Refrigerator compartment.

   ► Holes are located on the side of the Compartmental Access Refrigerator, at the top
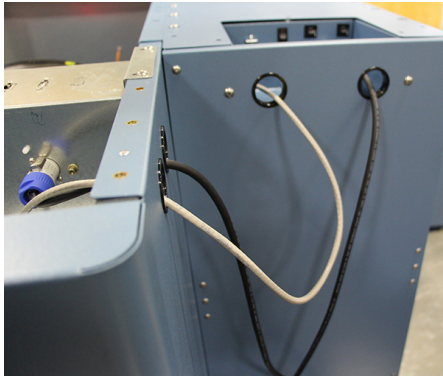
Holes for cable routing

6   Connect the opposite end of the Access Console power cord to the grey receptacle on the Compartmental Access Refrigerator.

   ► Insert plug into receptacle

   ► Turn plug 1/4 turn to the right, plug will lock in place
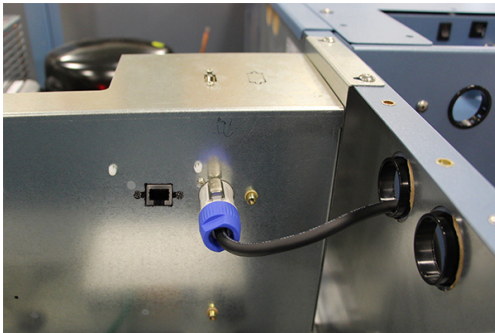
Compartmental Access Refrigerator AC output power receptacle

7   Connect the opposite end of the Access Console Ethernet cable to an open yellow port on the RJ-45 Ethernet router in the top of the Compartmental Access Refrigerator.
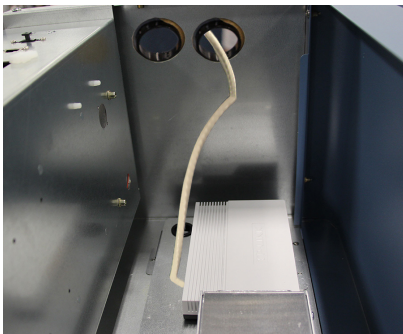
Compartmental Access Refrigerator RJ-45 Ethernet port

6.6   **Connect AC Power Cord for Compartmental Access Refrigerator**

NOTE   The Detachable AC Power Cord for the refrigerator is shipped in the accessory box included in the top of the Compartmental Access Refrigerator.

---

1   Connect the Compartmental Access Refrigerator AC power cord to the receptacle on top of the refrigerator.
2   Connect the Compartmental Access Refrigerator AC power cord to a grounded outlet meeting the electrical requirements stated in **Section I, Item 4**.

6.7   **Connect Backup Power**

6.7.1   **Power-up i.C³ Backup Battery**

The i.C³ Monitoring System and Access Control magnetic lock have a backup battery system, enabling a period of continuous operation if power is lost.

The backup battery ON/OFF switch is located on the top of the Compartmental Access Refrigerator.
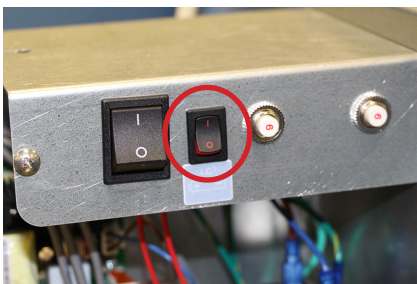
i.C³ Monitoring System / Access Control backup battery ON/OFF switch (circled)

The backup battery is switched OFF for shipping. Switch the backup battery ON/OFF switch **ON** to provide backup power to the monitoring system and Access Control magnetic lock.

NOTE   The i.C³ Monitoring System and Access Control magnetic lock will start on battery power alone. If the Compartmental Access Refrigerator is not connected to AC power and the battery is switched on, the i.C³ Monitoring System and Access Control magnetic lock will begin running on battery power.

Battery life varies by manufacturer as well as voltage level remaining. If full battery power is available and no battery-related alarms are active, backup power for the i.C³ Monitoring System and Access Control magnetic lock is available for up to 20 minutes.

The Low Battery alarm will activate when battery power is almost depleted.

⚠ **NOTICE**   **During a power failure:**
►   The backup battery does not provide continued refrigeration of the chamber. The chamber temperature may rise above the established limits necessary to maintain integrity of stored product.
►   The backup battery provides power to the monitoring system and Access Control magnetic lock until battery power is depleted.
►   The backup battery is rapidly depleted by the Access Control magnetic lock.
►   To preserve battery life during extended power failure, switch the backup battery ON/OFF switch **OFF** and use the door key to manually secure the exterior door.

NOTE	If AC power is lost, the monitoring system will automatically disable some features to prolong battery power. Data collection will continue until battery power is depleted.

6.7.2 **Power-up Access Console Backup Battery**

NOTE	Backup power is available when the main Compartmental Access Refrigerator AC power is turned on.

1 Switch the Access Console backup battery ON/OFF switch **ON** to provide backup power to the Access Console.
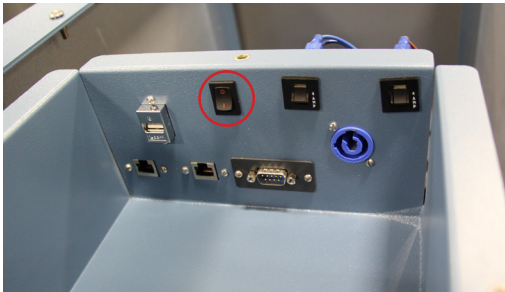
Access Console backup battery ON/OFF switch (circled)

7 Prepare For Monitoring

7.1 Temperature Probes

NOTICE	Temperature probes are fragile; handle with care.

NOTE	Remote probes may also be introduced through the existing top port.

Three types of temperature probes are included on the Compartmental Access Refrigerator, air probe, upper chamber probe and condenser probe.
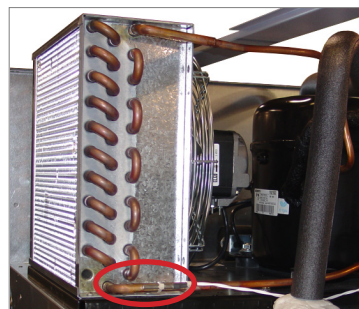
Air probe (left)
Upper chamber probe, probe bottle and bottle holder (center)
Condenser probe (right)

7.1.1   **Air Probe**

The air probe is located in the back of the unit near the PC boards behind the compartment assembly.

7.1.2   **Upper Chamber Probe**

The upper chamber probe is located in the top right corner of the Compartmental Access Refrigerator chamber.

For each probe bottle, use:
►   Approximately 4 oz. (120 mL) of product simulation solution (10:1 ratio of water to glycerin)

Fill Temperature Probe Bottle
1   Remove all probes from bottle and remove bottle from bracket.
2   Remove cap and fill with approximately 4 oz. (120 mL) of product simulation solution.
3   Secure cap on bottle and place in bracket.
4   Replace probes, immersing at least 2" (50 mm) in solution.

7.1.3   **Condenser Probe**

The condenser probe attaches to the condenser discharge line.

7.1.4   **Install Additional Probe Through Top Port**
1   Peel back putty to expose port.
2   Insert probe through port into chamber.
3   Insert probe into bottle.
4   Replace putty, ensuring a tight seal.

7.2   **Chart Recorder (Optional)**

If installed, refer to the Temperature Chart Recorder Operation and Service Manual included on your Compartmental Access System CD.

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

NOTE   If chart recorder is operated on battery power, the battery should be replaced to ensure the backup source has proper charge.

Prior to use:
►   Place probe in bottle with upper chamber probe

7.2.1 **Chart Recorder Access**

Open door by pressing and releasing the door.

Chart recorder door

7.2.2 **Install Chart Paper**

1 Press and hold **C** button. When stylus begins to move left, release button. The LED flashes.

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.
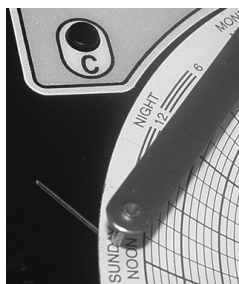
Chart recorder stylus and time line groove

5 Hold chart paper and reinstall chart knob.

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

---

6 Press and hold **C** button. When stylus begins to move right, release button.

7 Confirm stylus is marking temperature correctly.

7.2.3 **Reorder Chart Paper**

Contact Haemonetics ® Corporation BloodTrack® Customer Support. Chart paper: Part number 220366 (52 sheets)

8   **i.C³® Control System**

The Compartmental Access System is equipped with the i.C³ monitoring and control system. The i.C³ system combines temperature control and monitoring into a single user interface.

| NOTE | ► | Please refer to the i.C³® User Guide for Compartmental Access Refrigerators for information regarding network communications for BloodTrack®. |
| | ► | Refer to i.C³® User Guide for Compartmental Access Refrigerators for complete information on the User Interface. |

8.1   **Home Screen and HaemoBank™ Screensaver**

The Home screen is the default screen and is displayed when:
- ► The **Home** button is touched from any other screen
- ► There is no interaction for two minutes on any screen other than those used to enter a password
- ► The HaemoBank™ screensaver is automatically displayed after two minutes of inactivity on the Home Screen
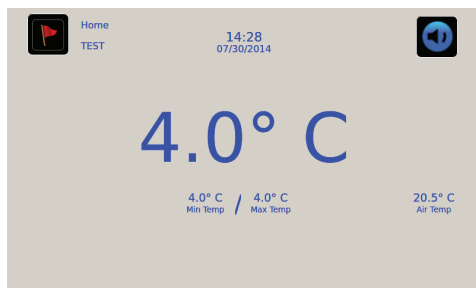
HaemoBank™ screensaver   *Home screen.*

8.1.1   **Home Screen Functions**
- ► View current interior cabinet and air temperature readings
- ► View minimum and maximum chamber temperature (recorded at the upper chamber probe) since the last power-on event, or since the last reset
- ► View the current system time and date
- ► Access any of the five preset applications (touch **i.C³ APPS** for additional applications)
- ► View information about current alarm events
- ► View whether the monitoring system is running on battery power
- ► Mute audible alarms
- ► Shortcut to Event log
- ► View Unit ID

8.2   **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.

| NOTE | During initial pull-down, high temperature alarm may activate while refrigerator reaches operating temperature. |

The table indicates if an alarm is audible (A), visual (V), or sent through the remote alarm interface (R).

Alarm	Alarm Type
High Temperature	A, V, R
Low Temperature	A, V, R
Air Temperature	A, V, R
Compressor Temperature	A, V, R
Door Open (Time)	A, V, R
Power Failure	A, V, R
Low Battery	V
No Battery	A, V, R
Probe Failure	A, V, R
Communication Failure	A, V, R

8.3 Settings

Current settings may be viewed and changed through the i.C³ monitoring and control system. The i.C³ temperature monitor and controller is programmed at the factory.

NOTICE Changing temperature settings affects operation of the HaemoBank™. Do not change settings unless instructed in product documentation or by Haemonetics® Corporation BloodTrack® Customer Support.

NOTE ► If the Settings screen is password protected or if viewing settings for the first time, enter factory default password of "1234".
► Default values for general settings, alarm settings, and display settings are available in Appendix B of the i.C³ User Guide.
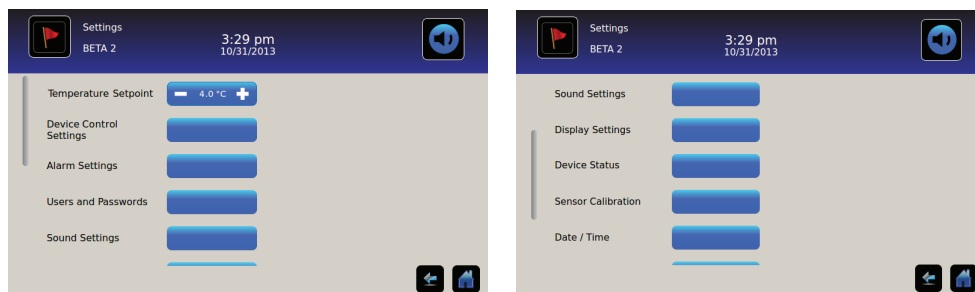
Settings screens

To change a setting first access the Settings screen, then the Setting.

8.3.1 Temperature Settings

Temperature settings are programmed at the factory. The Temperature Setpoint can be accessed, viewed and changed through the i.C³ Settings screen by touching the Settings icon and entering the current password. If accessing the i.C³ for the first time, use the factory-originated password (1234).

8.3.1.1   **Temperature Setpoint**

NOTE	► Default chamber temperature setpoint is 4.0 ºC.
	► Setpoint can be changed from the i.C^3 and from the Haemonetics® BloodTrack® interface.

The temperature setpoint is the desired temperature of the HaemoBank™ for stored product.

Change the temperature setpoint if:

► Your organization requires a chamber temperature other than 4.0 ºC

Perform the following:

1   Touch **Home**, **i.C³ APPS**, **Settings**.
2   Enter the Settings password.
3   Touch **+** or **–** on the **Temperature Setpoint** spin box to select desired setting.
4   Touch **Home**.

8.4   **Sensor Calibration**

Sensor calibration values are programmed at the factory. Calibration values can be viewed through the i.C³ Sensor Calibration screen.
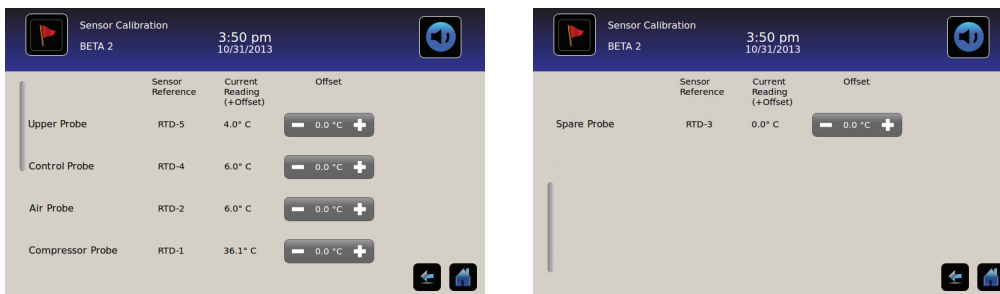
Sensor Calibration screens

8.4.1   **View Sensor Calibration Values**

1   Touch **Home**, **i.C³ APPS**, **Settings**.
2   Enter the Settings password.
3   Touch **Sensor Calibration**.
    ► Sensor offset values and their current temperature readings are displayed
4   Touch **Home**.

Setting	Initial Factory Value
Simulated product probe	Varies (set at the factory to match a NIST traceable independent thermometer)
Control probe	
Air probe	
Compressor probe	

8.4.2   Change Sensor Calibration Offset Values

NOTE	► Contact Haemonetics® Corporation BloodTrack® Customer Support for instructions on changing sensor calibration offset values.

8.5   Factory Default Settings

Factory settings may be simultaneously returned to factory default values.

NOTE	► The Factory Default Settings may not be the same as the settings that were factory-calibrated before the Compartmental Access Refrigerator was shipped. ► If Factory Default Settings are restored, all calibration values and User PINs will be lost.

General Settings	Restored Value
Home Screen Application Icons	i.C³ APPS, Settings, Temperature Graph, Automatic Alarm Test, Information Logs
Temperature Setpoint	4.0 ºC
Password (for Settings screen)	1234
Password Protection (for Settings screen)	On
Sounds	On
Alarm Volume	9
Alarm Tone	2
Unit ID	No default value
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	English
Temperature Units	ºC
Temperature Graph Screensaver	Off
Alternate Screensaver	On
Min/Max Temperature Display	On
Air Probe Temperature Display	Off
Air Probe Temperature Alarm	Off
Display Brightness	High (3 symbols)
Temperature Calibration Settings	Values entered at the factory
Access Control Touchpad	On
Alarm Settings	**Restored Value**
Upper Probe High Temperature (Setpoint)	5.5 ºC
Upper Probe High Temperature (Time Delay)	0 minutes

Alarm Settings	Restored Value
Upper Probe Low Temperature (Setpoint)	2.0 ºC
Upper Probe Low Temperature (Time Delay)	0 minutes
Air Probe High Temperature (Setpoint)	14.0 ºC
Air Probe High Temperature (Time Delay)	3 minutes
Air Probe Low Temperature (Setpoint)	-6.0 ºC
Air Probe Low Temperature (Time Delay)	3 minutes
Compressor Temperature (Setpoint)	50.0 ºC
Compressor Temperature (Time Delay)	5 minutes
Power Failure	1 minute
Probe Failure	0 minutes
Door Open (Time)	10 minutes

8.6   **Restore Factory Default Settings**

⚠️   **NOTICE**   ► If Factory Default Settings are restored, all calibration values and User PINs will be lost.

► Contact Haemonetics® Corporation BloodTrack® Customer Support prior to restoring Factory Default Settings.

Restore settings:

1 Touch **Home**, **i.C³ APPS**, **Settings**.

2 Enter the Settings password.

3 Touch **Restore Factory Settings**.

► The *"Are you sure you want to restore factory settings?"* message is displayed

► Touch √. The message screen closes and factory settings are restored

► Touch **X**. The message screen closes and factory settings are not restored

4 Touch **Home**.

8.7   **View System Information**

1 Touch **Home**, **i.C³ APPS**, **Contacts**.

► The Contacts screen is displayed

2 Touch **More Info**.

► The Versions screen is displayed, including software configuration, software revision numbers, hardware serial numbers, i.C³ IP address, and i.C³ MAC address

3 Touch **Home**.

Section III: Maintenance & Service

⚠	**CAUTION**	Review all safety instructions prior to performing maintenance. Refer to **Section I, Item 2**.

⚠	**NOTICE**	► Before performing maintenance, protect items in HaemoBank™ from extended exposure to adverse temperature. ► Allow HaemoBank™ to stabilize at setpoint after performing service or after the door has remained open for an extended period of time.

	NOTE	► Refer to the Compartmental Access Refrigerator Operation Manual for the preventive maintenance schedule. ► For service information or to order replacement parts, contact Haemonetics® Corporation BloodTrack® Customer Support at 877.996.7877.

9   Maintenance

9.1   Alarm Tests

Test alarms to ensure they are working correctly. The HaemoBank™ has alarms for chamber temperature, door open (time), probe failure, and power failure.

9.1.1   Automatic Chamber Temperature Alarm Test

	NOTE	► If the Settings screen is password protected or if viewing settings for the first time, enter factory default password of "1234". ► Test can be aborted by touching **Cancel Test**. ► Test is only applicable to the upper chamber probe. ► Test takes less than five minutes. ► If the temperature alarm test does not automatically complete within 10 minutes, the "Test Stopped" and "Test failed because it took too long and shut off for safety" messages are displayed.
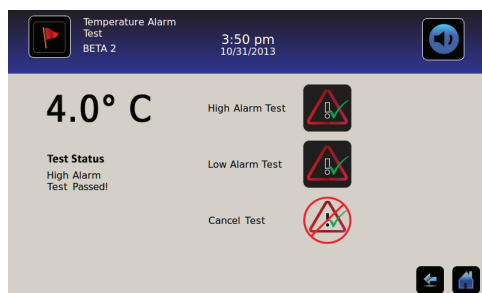
Temperature Alarm Test screen

When performing an automatic temperature alarm test, the Peltier device heats or cools the temperature probe until the high or low alarm setpoint is reached. An 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 caused by testing.

Test the high alarm:

1   Identify current setting for high alarm setpoint.

2 Touch **Home**, **Temperature Alarm Test**.

3 Touch **High Alarm Test**.

► The "Peltier Test Probe Warming" message is displayed

► When displayed temperature reaches the alarm setpoint, the temperature reading turns red

► When completed, the "High Alarm Test Passed!" message is displayed

4 Touch **Home**.

Test the low alarm:

1 Identify current setting for low alarm setpoint.

2 Touch **Home**, **i.C³ APPS**, **Temperature Alarm Test**.

3 Touch **Low Alarm Test**.

► The "Peltier Test Probe Cooling" message is displayed

► When displayed temperature reaches the alarm setpoint, the temperature reading turns red

► When completed, the "Low Alarm Test Passed!" message is displayed

4 Touch **Home**.

Cancel the test:

1 Touch **Home**, **i.C³ APPS, Temperature Alarm Test**.

2 Touch **Cancel Test**.

► The "Test Cancelled" message is displayed

NOTE	When cancelling an automatic test, the message indicating the test is in progress clears immediately. If an alarm setpoint was reached before the test was cancelled, the alarm activates and clears, and the Alarm Test icon is displayed on the Temperature Graph to indicate the temperature alarm was caused by testing as described earlier.

9.1.2 **Manual Chamber Alarm Test**

NOTICE	► Perform the low alarm test before the high alarm test to control the temperature more closely and complete the testing more quickly.
	► Before testing alarms, protect items in HaemoBank™ from extended exposure to adverse temperature.
	► Temperature probes are fragile; handle with care.

Obtain:

► (1) glass filled with 1/2 crushed ice and 1/2 water

► (1) 8 oz. (250 mL) glass of luke warm water

Test the low alarm:

1 Identify setting for low alarm setpoint.

2 Remove chamber temperature probe from bottle.

3 Immerse probe in glass filled with water and crushed ice mixture.

4 When low temperature alarm sounds, note the temperature on the i.C³ display.

Test the high alarm:

1 Identify setting for high alarm setpoint.

2 Immerse probe in glass of luke warm water.

3 When high temperature alarm sounds, note the temperature on the i.C³ display.

4 Remove probe from warm water.

5 Place temperature probe in probe bottle, immersing it at least 2" (50 mm).

Helmer

9.1.3   Power Failure Alarm Test

1   Change the Power Failure delay setting to 0 minutes.

    a   Touch **Home**, **i.C³ APPS**, **Settings**.

    b   Enter the Settings password.

    c   Touch **Alarm Settings**.

    d   Touch **–** on the Power Failure spin box to change the value to 0.

2   Switch the AC ON/OFF switch **OFF**.

    ►   Power Failure alarm will activate immediately

3   Switch the AC ON/OFF switch **ON**.

    ►   Power Failure alarm will clear and audible alarm will cease

4   Change the Power Failure time delay to the original setting.

    a   Touch **Home**, **i.C³ APPS**, **Settings**.

    b   Enter the Settings password.

    c   Touch **Alarm Settings**.

    d   Touch **+** on the Power Failure spin box to change the value to the original setting.

5   Touch **Home**.

9.1.4   Door Open Alarm Test

1   Change the Door Open (Time) delay setting to 0 minutes.

    a   Touch **Home**, **i.C³ APPS**, **Settings**.

    b   Enter the Settings password.

    c   Touch **Alarm Settings**.

    d   Touch **–** on the Door Open (Time) spin box to change the value to 0.

2   Open the door.

    ►   Door Open alarm will activate immediately

3   Close the door.

    ►   Door Open alarm will clear and audible alarm will cease

4   Change the Door Open (Time) setting to the original setting.

    a   Touch **Home**, **i.C³ APPS**, **Settings**.

    b   Enter the Settings password.

    c   Touch **Alarm Settings**.

    d   Touch **+** on the Door Open (Time) spin box to change the value to the original setting.

5   Touch **Home**.

9.2   Upgrade System Firmware

Helmer may occasionally issue updates for the i.C³ firmware. Follow the upgrade instructions included with the firmware update.

9.3   Test and Replace Backup Batteries

9.3.1   Test the i.C³® Monitoring System / Access Control Backup Battery

Required tools:

►   4' ladder or step stool

Test the battery:

1 Switch the AC ON/OFF switch **OFF**.
   - ► i.C³ screen should continue to display information with reduced brightness
   - ► The battery icon will appear on the screen
   - ► If the Low Battery alarm activates, or the display is blank, replace the battery
2 Switch the AC ON/OFF switch **ON**.

9.3.2   Replace the i.C³® Monitoring System / Access Control Backup Battery

⚠️ **NOTICE**   Replacement battery must meet the following specifications: 12V, 7Ah, rechargeable, sealed, lead acid. Contact Haemonetics® Corporation BloodTrack® Customer Support for replacement battery. Service Kit Part number 800251-1.

Required tools:
- ► #2 Phillips screwdriver
- ► 4' ladder or step stool

Replace the battery:

1 Switch the i.C³ battery ON/OFF switch **OFF**. Switch the AC ON/OFF switch **OFF**.
2 Disconnect the power wires from the battery terminals.
3 Using a #2 Phillips screwdriver, remove the screws securing the battery strap to the top of the compartment.
4 Remove the strap and set it aside.
5 Remove the battery from the HaemoBank™.
6 Place the new battery on the top of the compartment, in the same orientation as the original battery.
7 Place the strap over the battery.
8 Using a #2 Phillips screwdriver, install the screws to attach the strap to the top of the compartment.
9 Connect the power wires to the battery terminals, ensuring the wires are connected to the correct terminals:
   - ► Red (+) wire connected to the red (+) battery terminal
   - ► Black (-) wire connected to the black (-) battery terminal
10 Switch the AC ON/OFF switch **ON**. Switch the i.C³ battery ON/OFF switch **ON**.

9.3.3   Check the Access Console Backup Battery

Check the battery:

1 With the BloodTrack® kiosk operational, switch the HaemoBank™ AC ON/OFF switch **OFF.**
   - ► BloodTrack® kiosk should continue to display information
   - ► If the display is blank, replace the battery
2 Switch the HaemoBank™ AC ON/OFF switch **ON**.

9.3.4   Replace the Access Console Backup Battery

⚠️ **NOTICE**   Replacement battery must meet the following specifications: 12V, 7Ah, rechargeable, sealed, lead acid. Contact Haemonetics® Corporation BloodTrack® Customer Support for replacement battery. Service Kit Part number 800215-1.

Required tools:
- ► #2 Phillips screwdriver
- ► 4' ladder or step stool

Replace the battery:

1   Switch the Access Console battery ON/OFF switch **OFF**.
2. Switch the AC ON/OFF switch **OFF.**
3. Using a #2 Phillips screwdriver, remove the screws (9) from the top cover of the Access Console.
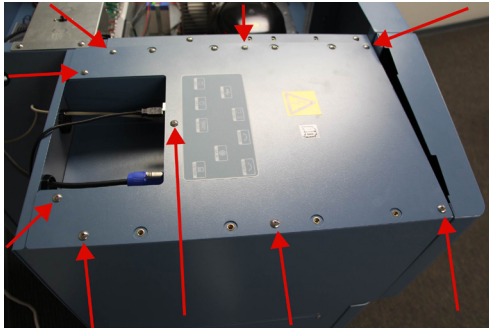
Access Console (screw locations)

⚠️ **CAUTION**   Do not remove screws that secure top mounting bracket to HaemoBank™.

---

4   Disconnect the power wires from the battery terminals.
5   Using a #2 Phillips screwdriver, remove the screws securing the battery strap to the top of the Access Console and set aside.
6   Remove the strap and set aside.
7   Remove the battery from the Access Console.
8   Place the new battery on the top of the Access Console, in the same orientation as the original battery.
9   Place the strap over the battery.
10 Using a #2 Phillips screwdriver, install the screws to attach the strap to the top of the Access Console.
11 Connect the power wires to the battery terminals, ensuring the wires are connected to the correct terminals:
    ►   Red (+) wire connected to the red (+) battery terminal
    ►   Black (-) wire connected to the black (-) battery terminal
12 Using a #2 Phillips screwdriver, reinstall the screws in the top cover of the Access Console.
13 Switch the AC ON/OFF switch **ON**.
14 Switch the Access Console battery ON/OFF switch **ON**.

9.3.5   **Check the Chart Recorder Backup Battery (If installed)**

Check the battery:

1   Open the chart recorder door by pressing and releasing the door.
2   Observe the LED on the front of the chart recorder.
    ►   Green LED (constant pattern): Battery charge is sufficient
    ►   Red LED (constant pattern): Battery charge has been depleted and the battery must be replaced
3   Close the chart recorder door by pressing and releasing the door.

9.3.6   **Replace the Chart Recorder Backup Battery**

NOTE	A replacement battery is available from Haemonetics® Corporation BloodTrack® Customer Support. Order Part number 120218

Replace the battery:
1   Open the chart recorder door by pressing and releasing the door.
2   Remove the battery from the battery holder.
3   Disconnect the power leads to the battery.
4   Connect the power leads to the new battery.
5   Install the new battery in the battery holder.
6   Close the chart recorder door by pressing and releasing the door.

9.4   **Check Probe Bottle**

9.4.1   **Check Probe Bottle Solution**

Check solution:
1   Visually inspect the contents of the upper chamber probe bottle.
     ► Probe(s) should be immersed at least 2" (50 mm) in solution
     ► If solution is low, clean and refill the probe bottle

9.4.2   **Inspect and Replace Probe Bottle**

NOTE	► A kit that includes a probe bottle and glycerin is available from Haemonetics® Corporation BloodTrack® Customer Support. Order Service Kit Part number 400922-1.

⚠	NOTICE	Temperature probes are fragile; handle with care.

Required supplies:
► 4 oz. probe bottle
► 4 oz. (120 mL) of product simulation solution per bottle
     ► 10:1 ratio of water to glycerin

Inspect probe bottle:
1   Visually inspect the probe bottle for cleanliness, discoloration, and damage.
     ► If probe bottle is damaged, replace the probe bottle and solution
     ► If probe bottle is dirty, clean the bottle and refill the solution as outlined in **Section III, Item 9.6.7**

Replace probe bottle:
1   Remove probe(s) from bottle.
2   Remove bottle from bracket.
3   Discard the bottle and solution.
4   Fill new bottle with 4 oz. (120 mL) of product simulation solution.
5   Cap bottle tightly to minimize evaporation.
6   Place bottle in bracket.
7   Replace probe(s), immersing at least 2" (50 mm).

Helmer

9.5   **Inspect and Secure Electrical Wiring and Terminals**

⚠️ **WARNING**   Disconnect HaemoBank™ from AC power when inspecting and securing wiring terminals.

Required tools:
► #2 Phillips screwdriver
► small blade screwdriver
► 4' ladder or step stool

Inspect components and secure terminals:

1. Switch the Compartmental Access Refrigerator and Access Console battery ON/OFF switches **OFF**. Switch the AC ON/OFF switch **OFF**. Disconnect the power cord from AC power.
2. Using a #2 Phillips screwdriver, loosen the screws securing the cover to the electrical box.
3. Lift the cover upward and remove from the electrical box.
4. Visually inspect the wiring in the electrical box for discoloration.
   ► If any discoloration is found, contact Haemonetics® Corporation BloodTrack® Customer Support
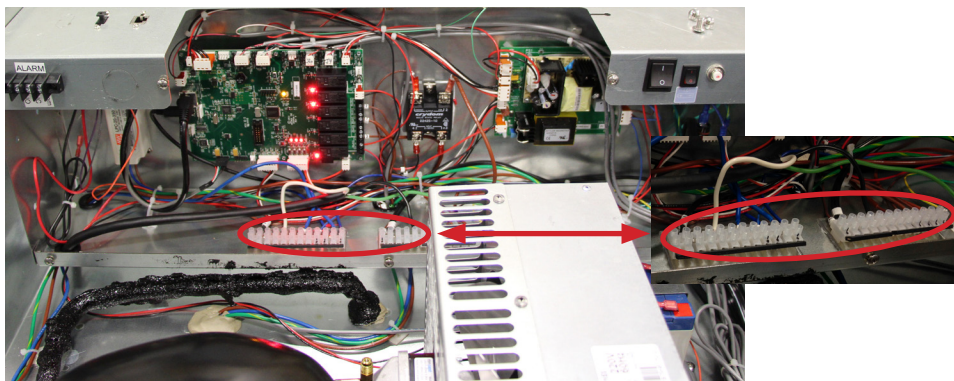
Terminal Strips

5. Gently pull on all wires which are terminated with a connector.
   ► If any wires are loose in the terminal connector, replace the connector
   ► If any terminal connectors are loose in the terminal strip(s), use a small blade screwdriver to tighten the screw in the terminal strip
6. Replace the cover on the electrical box.
7. Using a #2 Phillips screwdriver, tighten the screws securing the cover.
8. Reconnect the power cord to AC power. Switch the AC ON/OFF switch **ON**. Switch the Compartmental Access Refrigerator and Access Console battery ON/OFF switch **ON**.

9.6   Clean the Compartmental Access Refrigerator and Access Console

9.6.1   Compartmental Access Refrigerator Condenser Grill

⚠ **NOTICE**   In environments where the Compartmental Access Refrigerator is exposed to excessive lint or dust, condenser grill may require cleaning more frequently than stated in preventive maintenance schedule.

⚠ **CAUTION**   Switch the AC ON/OFF switch **OFF** when cleaning the condenser grill.

Required tools:
► Vacuum cleaner with soft brush attachment
► 4' ladder or step stool

Clean the condenser grill:
1   Switch the AC ON/OFF switch **OFF**.
2   Clean the condenser grill using a vacuum cleaner with soft brush attachment.
3   Switch the AC ON/OFF switch **ON**.

9.6.2   Compartmental Access Refrigerator Exterior

Required supplies:
► Soft cotton cloth (2)
► Glass cleaning solution
► Non-abrasive liquid cleaner

Clean the door glass:
1   Apply glass cleaner to the exterior surfaces of the glass door.
2   Using a cotton cloth, wipe the door dry.

Clean the exterior surfaces:
1   Apply non-abrasive liquid cleaner to the exterior surfaces.
2   Using a cotton cloth, wipe the exterior surfaces dry.

9.6.3   Access Console and Consumable Cart Exterior

Required supplies:
► Soft cotton cloth (2)
► Non-abrasive liquid cleaner

Clean the exterior surfaces:
1   Apply non-abrasive liquid cleaner to the exterior surfaces.
2   Using a cotton cloth, wipe the exterior surfaces dry.

9.6.4   Compartmental Access Refrigerator Interior

NOTE   Avoid cleaning electrical components such as the IRACS and VIB boards.

Required supplies:
► Soft cotton cloth (2)
► Mild detergent solution
► General-purpose laboratory cleaning solution, suitable for stainless steel

Clean painted interior surfaces:
1   Apply mild detergent solution to the painted interior surfaces.
2   Using a cotton cloth, wipe the interior surfaces dry.

Clean stainless steel interior surfaces:
1   Apply general-purpose laboratory cleaner to the stainless steel interior surfaces.
2   Using a cotton cloth, wipe the interior surfaces dry.

9.6.5   Door Gaskets

NOTE	Avoid getting water in the Access Control magnetic lock.

Required tools:
► Soft cotton cloth (2)
► Mild soap and water solution

Clean the door gaskets:
1   Using a soft cotton cloth, apply soap and water solution to the door gaskets and gasket crevices.
2   Using a second clean and dry cotton cloth, wipe the door gaskets clean.

9.6.6   Clean the Tray Assembly

NOTE	► Refer to **Section III, Item 10.3.1,** for instructions on removing the tray from the compartment assembly.

Required supplies:
► Soft cotton cloth
► Mild detergent solution

Clean trays and covers:
1   Apply mild detergent solution to the tray and cover.
2   Using a cotton cloth, wipe the tray and cover dry.

9.6.7   Clean Probe Bottle and Refill Solution

Required supplies:
► Fresh water-bleach solution
   ► 1:10 ratio of bleach to water
   ► Bleach is 5% solution of commercial sodium hypochlorite (NaOCl) (Equivalent oxidizing cleaner/ disinfectant approved by your organization may be substituted)
► 4 oz. (120 mL) of product simulation solution per bottle
   ► 10:1 ratio of water to glycerin

Clean and refill bottle:
1   Remove probe(s) from bottle.
2   Remove bottle from bracket.
3   Clean bottle with water-bleach solution.
4   Rinse bottle thoroughly with tap water.
5   Fill bottle with 4 oz. (120 mL) of product simulation solution.
6   Cap bottle tightly to minimize evaporation.
7   Place bottle in bracket.
8   Replace probe(s), immersing at least 2" (50 mm).

9.6.8   **i.C³® Touchscreen**

⚠️	**NOTICE**	The i.C³ touchscreen is sensitive to excessive pressure when touched. Use light pressure when cleaning the touchscreen.

Required tools:
► Soft cotton cloth

Clean the screen:
1 Using a soft cotton cloth, wipe the screen clean.

9.6.9   **BloodTrack® Kiosk**

⚠️	**NOTICE**	The BloodTrack® kiosk is sensitive to excessive pressure when touched. Use light pressure when cleaning the touchscreen.

Required tools:
► Soft cotton cloth

Clean the screen:
1 Using a soft cotton cloth, wipe the screen clean.

9.7   **Bypass System Check and Reset**

⚠️	**NOTICE**	► Please refer to the BloodTrack Courier® User Guide for details on preparing the HaemoBank™ refrigerator for service. This will include instruction on how to open the main door. ► If trays are not latching or releasing properly, rotate the Bypass Release handle between the locked and unlocked position. If this does not release or correct the problem, an inspection of the latching mechanism will be required and must be done from the rear of the unit. Contact Haemonetics® Corporation BloodTrack® Customer Support for further assistance.

1 Insert key into Bypass Release handle and unlock handle.

2 Rotate the Bypass Release handle 90 degrees, unlatching the compartments.

3 Verify all trays are unlatched by pulling the trays approximately half way out of the compartment. Leave trays in this position.

4 If all trays are unlatched, secure the Bypass Release handle by rotating 90 degrees back to the locked position.

5 Push each tray back into position and ensure they cannot be pulled back out.

6 Listen for the lock to engage.

7 From the BloodTrack® interface, confirm return to normal operation and ensure the Bypass Alarm has cleared.

⚠️	**NOTICE**	Refer to the BloodTrack Courier® User Guide for details on returning the HaemoBank™ refrigerator to normal use.

10   Service

10.1   Refrigerant Charge

⚠ **NOTICE**   Use only non-CFC R-134A refrigerant.

Full initial refrigerant charge varies by model and power requirements, which can be found on the product specification label.

Model	Power Requirements	Initial Charge	Design Pressures
iBX080	115 V, 60 Hz, 230 V, 50/60 Hz	10.1 oz. (286 g)	low 88 psig high 186 psig

10.2   Replace Chamber LED Lamp Strip

⚠ **CAUTION**   Switch the AC ON/OFF switch **OFF** when replacing the lamp strip.

NOTE   Contact Haemonetics® Corporation BloodTrack® Customer Support for replacement LED lamp strip. Order Service Kit Part number 800023-1.

Required tools:
► #2 Phillips screwdriver

Replace the lamp strip:
1 Switch the AC ON/OFF switch **OFF**.
2 Using a # 2 Phillips screwdriver, detach lamp strip from chamber.
3 Unsnap the defective lamp strip and disconnect wires.
4 Connect new lamp strip to the wires.
5 Reattach lamp strip to chamber.
6 Switch the AC ON/OFF switch **ON**.

10.3   **Maintaining Tray Assembly**

10.3.1   **Remove and Install a Tray and Cover**

⚠️ **NOTICE**   Please refer to the BloodTrack Courier® User Guide for details on preparing the HaemoBank™ refrigerator for service.

Remove a tray:
1   Open the exterior door, unlock, and rotate the Bypass Release handle counterclockwise 90 degrees.
2   Pull the tray out until it stops.

Tray fully extended

3   With one hand on each side of the tray, near the cover (at the rear of the tray), gently spread the top edges of the tray outward.
4   While holding the top edges of the tray outward, use your thumbs to press the forward edge of the tray cover upward.
   ► The tabs on the outer edges of the tray cover will disengage from the corresponding slots on the top edges the tray
   ► The front of the tray cover will lift from the tray
5   Lift the tray cover upward.
   ► The rear of the tray cover will lift from the tray
6   Remove the tray cover from the tray.
7   While keeping the tray level, lift the tray upward in the compartment location.
8   Pull the tray out of the compartment location.

Install a tray:

NOTE   The tray must be partially installed in the compartment location before the cover can be installed.

1   While keeping the tray level, slide the tray partially into the compartment location until the groove on the bottom of the tray crosses the tray bumper.
2   Set the tray down in the compartment location.

3 Insert the tray cover into the compartment location, on top of the tray.

Insert tray cover
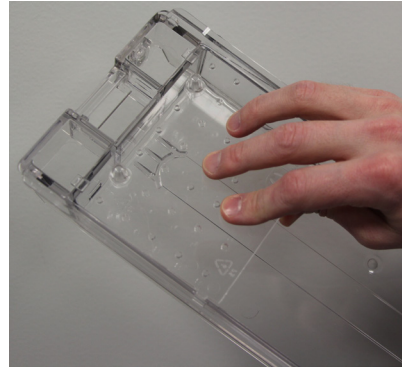
Posts oriented upward; tabs engaged in slots

> ► The posts on the tray cover must be oriented upward
> ► The tabs on the rear of the tray cover should engage the corresponding slots on the back of the tray

4 Lower the front edge of the tray cover.

5 With one hand on each side of the tray, near the cover, gently spread the top edges of the tray outward.

6 While holding the top edges of the tray outward, use your thumbs to press the forward edge of the tray cover downward.

> ► The tabs on the outer edges of the tray cover will engage the corresponding slots on the top edges of the tray

Tab on outer edge engaged with slot

7 Push the tray completely into the compartment location until it locks.

8 Close the exterior door.

⚠️ **NOTICE** Refer to the BloodTrack Courier® User Guide for details on returning the HaemoBank™ refrigerator to normal use.

10.3.2 **Replace Tray Bumpers**

NOTE
► Refer to **Section III, Part 10.3** for instructions in removing the tray from the compartment assembly.
► Only use tray bumpers supplied with the Compartmental Access Refrigerator. The use of non-Compartmental Access Refrigerator tray bumpers may allow the tray to be removed without following the proper protocols of the BloodTrack® system.
► Contact Haemonetics® Corporation BloodTrack® Customer support for replacement bumpers. Part number 800267-1.

Remove a tray bumper:
1 Remove the tray from the compartment location. **(Refer to Section III, Item 10.3.1)**.
2 Slide the rubber tray bumper toward the side of the Compartmental Access Refrigerator.
3 Lift the tray bumper upward to disengage it from the keyhole in the bottom of the compartment location.
4 Discard the tray bumper.

Install a tray bumper:
1 Insert the post on the new rubber tray bumper through the wide end of the keyhole in the bottom of the compartment location.
2 Slide the tray bumper to the narrow end of the keyhole.
3 Grip the tray bumper and pull it upward to ensure it is installed correctly.
   ► The tray bumper should not be able to be removed
   ► If the tray bumper can be removed by pulling it upward, ensure it is toward the small hole of the keyhole
4 Reinstall the tray in the compartment location.

✛ Helmer

Section IV: Troubleshooting

11   Troubleshooting

⚠ **WARNING**   Rear door must remain shut and locked while unit is in operation to protect the integrity of stored product.

⚠ **CAUTION**   Review all safety instructions prior to troubleshooting. Refer to **Section I**, **Item 2**.

NOTE   For service information or to order replacement parts, contact Haemonetics® Corporation BloodTrack® Customer Support at 877.996.7877.

11.1   Compartment Access Circuit Boards and Sensors Diagnostic References

11.1.1   IRACS Horizontal Circuit Board LED Indicators

⚠ **NOTICE**   The IRACS horizontal circuit board is sensitive to static electricity and can be damaged by electrostatic discharge. Use proper ESD precautions when handling the board.

NOTE   If the IRACS horizontal circuit board must be replaced, contact Haemonetics® Corporation BloodTrack® Customer Support for replacement parts. Part number 800262-1.

The IRACS horizontal circuit board includes several labeled LEDs which indicate the status of the circuit board, the status of the multiple voltages used on the circuit board, and the status of the diagnostic functions available on the circuit board.

11.1.2   Check Circuit Board Status

The "heart beat" (HRTBT) LED indicates the operational status of the circuit board.

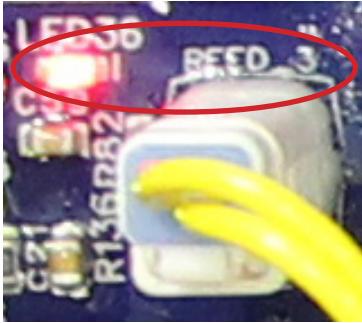*HRTBT LED illuminated*

► Single flash of "HRTBT" LED indicates board is functioning normally.
► Double flash of "HRTBT" LED indicates board is not functioning normally, because the board recognizes its row address as being outside of a valid, pre-determined range of addresses.

| 11.1.3 | **Check Proximity Sensor Status** |

The "reed switch" LED indicates the status of the tray proximity sensor. Each proximity sensor connector includes a status LED (labeled "REED_1", "REED_2", "REED_3", or "REED_4").

REED_3 with LED illuminated

► If the "REED_1", "REED_2", "REED_3", or "REED_4" LED is on, the proximity sensor status LED is indicating that a tray is detected in the compartment location.
► If the "REED_1", "REED_2", "REED_3", or "REED_4" LED is off, the proximity sensor status LED is indicating that a tray is not installed (or is partially removed) in the compartment location.

| 11.1.4 | **Check Solenoid Status** |

The circuit board includes multiple LEDs to indicate whether the individual solenoids are energized or not energized. An LED (labeled "LED32", "LED31", "LED30", or "LED29") above each solenoid indicates the status of the solenoid.
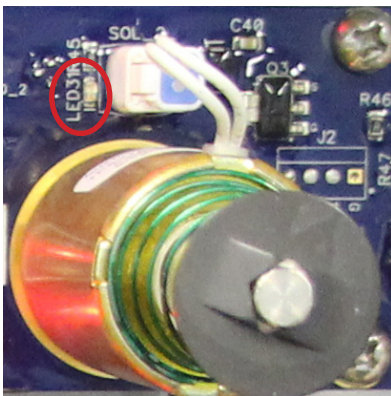
LED31

► If the "LED32", "LED31", "LED30", or "LED29" LED is on, the solenoid circuit is energized and the tray is unlocked.
► If the "LED32", "LED31", "LED30", or "LED29" LED is off, the solenoid circuit is not energized and the tray is locked.

11.1.5 **Check Voltage Conversion Status**

The circuit board includes multiple LEDs to indicate whether the board is receiving and converting voltages to support multiple components on the board.

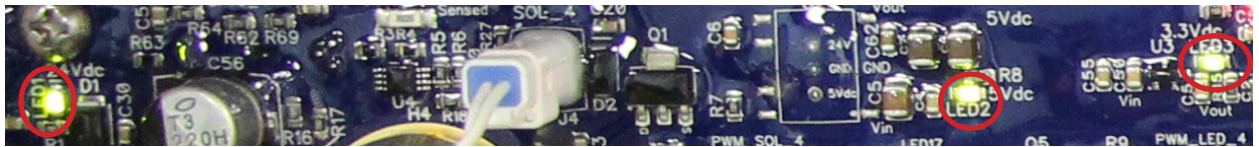*LED1, LED2 and LED3 illuminated*

► If the "LED1" LED is on, then the board is receiving 24 V power.
► If the "LED2" LED is on, then the board is converting 24 V power to 5 V.
► If the "LED3" LED is on, then the board is converting 5 V power to 3.3 V.

11.1.6 **IRACS Addresses**

Row	LED43	LED39	LED40	LED41	LED42
1	0	0	0	0	1
2	0	0	0	1	0
3	0	0	0	1	1
4	0	0	1	0	0
5	0	0	1	0	1
6	0	0	1	1	0
7	0	0	1	1	1
8	0	1	0	0	0
9	0	1	0	0	1
10	0	1	0	1	0
11	0	1	0	1	1
12	0	1	1	0	0
13	0	1	1	0	1
14	0	1	1	1	0
15	0	1	1	1	1
16	1	0	0	0	0
17	1	0	0	0	1
18	1	0	0	1	0
19	1	0	0	1	1
20	1	0	1	0	0

1=ON
0=OFF

LED43, 39, 40, 41 and 42 shown
LED41 illuminated

Each IRACS board has a unique address, shown in binary format via LED 39, 40, 41, 42, and 43. The table represents vertically from top to bottom the order in which the LEDs should be illuminated. 1 means the LED should be illuminated, 0 means the LED should be off.

**NOTE** No two IRACS boards should have the same order of LEDs illuminated.

11.2 **Initiate Diagnostic Mode**

The circuit board includes buttons which initiate a diagnostic mode. While diagnostic mode is initiated, the functions for each compartment location can be tested. When the circuit board is in diagnostic mode, the board will not recognize inputs from the BloodTrack® touchscreen/computer.

1 Press the "DIAG MODE" button to initiate diagnostic mode.

  ► The "DIAG MODE" LED33 will turn on (the "DIAG MODE" LED33 is located below the "HRTBT" LED).
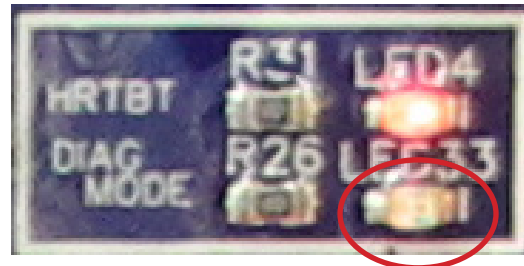
DIAG MODE button   *DIAG MODE LED*

2 Press the "1-STEP" button to select Position 1.

  ► Position 1 corresponds to the compartment location in column "A", when viewed from the front of the Compartmental Access Refrigerator™.

  ► With Position 1 selected, the solenoid powers on, and the red and blue LEDs turn on briefly.

  ► If the optical sensor for Position 1 is interrupted, the red LED will turn off for the duration that the sensor is interrupted.

3 Wait until the red and blue LEDs turn off, then press the "1-STEP" button again to select Position 2.

  ► Position 2 corresponds to the compartment location in column "B", when viewed from the front of the Compartmental Access Refrigerator™.

  ► With Position 2 selected, the solenoid powers on, and the red and blue LEDs turn on briefly.

  ► If the optical sensor for Position 2 is interrupted, the red LED will turn off for the duration that the sensor is interrupted.

4 Wait until the red and blue LEDs turn off, then press the "1-STEP" button again to select Position 3.

  ► Position 3 corresponds to the compartment location in column "C", when viewed from the front of the Compartmental Access Refrigerator™.

  ► With Position 3 selected, the solenoid powers on, and the red and blue LEDs turn on briefly.

  ► If the optical sensor for Position 3 is interrupted, the red LED will turn off for the duration that the sensor is interrupted.

5 Wait until the red and blue LEDs turn off, then press the "1-STEP" button again to select Position 4.

  ► Position 4 corresponds to the compartment location in column "D", when viewed from the front of the Compartmental Access Refrigerator™.

  ► With Position 4 selected, the solenoid powers on, and the red and blue LEDs turn on briefly.

  ► If the optical sensor for Position 4 is interrupted, the red LED will turn off for the duration that the sensor is interrupted.

6 After Position 4 check ends, IRACS will exit from diagnostic mode and return the circuit board to normal operation.

NOTE   With diagnostic mode initiated, if 30 seconds elapse without any actions (button presses), the circuit board will automatically exit diagnostic mode and return to normal operation.

11.3   Network Communications Reference Guide

11.3.1   BloodTrack® Interfaces

The i.C³ user interface is in 1 of 3 states at all times. Please refer to the table below for BloodTrack® access levels for each i.C³ state.

i.C³ Communication State	i.C³ Screens	BloodTrack® to i.C³ Network Access Level
Receiving commands/Receiving status requests	Home screen Haemonetics screensaver Temperature graph screensaver	Tier 1; Tier 2; Tier 3
Receiving status requests only	All other operating screens	Tier 3
Will not receive commands or status requests	Initial startup Firmware updates	No access

a   Tier 1 - i.C³ accepts requests to activate ethernet communication which can impose date and time changes on the i.C3, as the BloodTrack® system keeps the master date and time.

b   Tier 2 - i.C3 accepts requests to change parameters. These include:
   •   Product temperature setpoint
   •   Product high alarm setpoint
   •   Product low alarm setpoint
   •   Air high alarm setpoint
   •   Air low alarm setpoint

c   Tier 3 - i.C³ accepts requests for status information only (Example: current refrigerator temperature). No changes can be made.

11.4   **General Operation Problems**

Problem	Possible Cause	Action
The exterior door does not open easily.	Debris in the hinges	► Confirm the hinges are free of debris. Clean the hinges if necessary.
	Door hinges are not lubricated	► Using a general-purpose grease, lubricate the pivots in the hinges.
	Hinge cam is faulty	► Confirm the hinge cam is not damaged. Replace the cam if necessary.
The monitor display is difficult to read.	Screen brightness is set too low	► Change the screen brightness. Touch i.C³ APPS, Brightness. Touch the icon corresponding to the desired brightness setting.
The monitoring system is not responding.	Digital electronics are locked because of an interruption in power	► Reset the monitoring system by first turning battery power off, then AC power OFF and back ON.
"Probe Failure" alarm is displayed on the monitor.	One or more of the temperature probes has failed, or probe wiring is an open circuit	► Check the i.C³ Event Log Detail screen for the specific probe failure. Touch i.C³ APPS, Information Logs, Event Logs. Touch the individual event to view the probe failure code. ► Check the probe wire connection to the control board and secure the connection if necessary. ► Confirm the probe is providing resistance in the range of 86 Ω to 110 Ω. Replace the probe if resistance is outside of specified range.
The chart recorder is not marking the temperature.	The chart paper knob is not tight	► Tighten the chart paper knob.
	Stylus pressure is not correct	► Confirm stylus is pressing firmly against the paper.
	The chart recorder motor has stopped running	► Remove the chart paper and press the reset button (behind the chart paper). Reinstall the chart paper. ► Verify the chart recorder is not in change paper mode.
	The chart recorder is defective	► Replace the chart recorder.

11.5   **Chamber Temperature Problems**

Problem	Possible Cause	Action
The chamber temperature displayed is higher or lower than the actual temperature.	Probe bottle is empty, or the amount of solution is too low	► Check the level of product simulation solution in the bottle. Refill the bottle if necessary.
	Upper chamber probe is not calibrated	► Confirm the upper chamber probe is reading correctly. ► Contact Haemonetics® Corporation BloodTrack® Customer Support if the probe is reading incorrectly.
	Digital electronics are locked because of an interruption in power	► Reset the monitoring system by first turning Compartmental Access Refrigerator battery power OFF, then AC power OFF and then both back ON.
	Connections for the upper chamber probe are loose	► Check the probe wire connection to the control board and secure the connection if necessary. ► Check the continuity of the probe wiring. Replace the probe if necessary. ► At the CP board, place jumper across J13 pin associated with chamber probe. Display should read 4C +/-2C. ► Confirm the probe is providing resistance in the range of 86 Ω to 110 Ω. Replace the probe if resistance is outside of specified range. ► Contact Haemonetics® Corporation BloodTrack® Customer Support.
The chamber temperature meets an alarm condition, but the appropriate temperature alarm is not active.	Temperature alarm setpoint was changed.	► Check the current setpoints for the temperature alarms. Change the setpoints if necessary (refer to **Section II, Item 8.3.1**).

Problem	Possible Cause	Action
The compressor runs continuously.	Compartmental Access Refrigerator setpoint is set too low	► Confirm the setpoint is set within the operating range and change it if necessary (refer to **Section II, Item 8.3.1**).
	Temperature control probe inaccuracy	► Verify control offset value is displaying between -3 to +3. ► Value displayed for the control probe is close to display temperature. ► Confirm the probe is providing resistance in the range of 98 Ω to 110 Ω. Replace the probe if necessary. ► Contact Haemonetics® Corporation BloodTrack® Customer Support.
	Compressor solid state relay is faulty	► Confirm the control indicates the compressor should not be running. Touch i.C³ APPS, Settings (enter the Settings password), Device Status. ► If the compressor should not be running, check the compressor solid state relay. ► If the compressor solid state relay is closed, replace the relay.
	No air flow across condenser	► Clean condenser. ► Verify condenser fan motor is operating.
	Improper air flow across evaperator	► Verify evaporator fan motors are operating.
	i.C³ control board is faulty	► Confirm the control indicates the compressor should be running. Touch i.C³ APPS, Settings (enter the Settings password), Device Status. ► If the compressor should be running, no further action is needed. ► If the compressor should not be running, check the control board compressor relay for SSR1. If the relay is closed, replace the control board.

Problem	Possible Cause	Action
The chamber temperature does not stabilize at the Compartmental Access Refrigerator setpoint.	Upper chamber probe bottle is not at proper solution level	► Refill bottle if necessary (refer to **Section II, Item 7.1.2**).
	Ambient air temperature around the Compartmental Access Refrigerator is too warm	► Confirm the Compartmental Access Refrigerator is placed appropriately (refer to the **Section II, Item 5** for location requirements).
	Air circulation at the top of the chamber is not adequate	► Ensure that the guard panel and recirculation panel are installed between the unit cooler and the compartment assembly. ► Ensure no obstructions have been placed on the guard panel.
	Condenser grill is dirty	► Check the condenser grill. Clean the grill if necessary (refer to **Section III, Item 9.6.1)**.
	Condenser fan is not running	► Check the condenser fan wiring connection. Secure the connection if necessary. ► If the wiring connection is secure, replace the fan motor.
	Unit cooler fan is not running	► Check for voltage to the fan when door switch is closed at CP board J44 NO pin. ► If voltage is present when switch is closed, replace the fan motor. ► Contact Haemonetics® Corporation BloodTrack® Customer Support.
	Refrigerant level is too low	► Check the refrigeration lines for leaks and repair them if necessary. Check the refrigerant level. Recharge the refrigerant if necessary.
	Compressor solid state relay is faulty	► Confirm the control board indicates the compressor should be running. Touch i.C³ APPS, Settings (enter the Settings password), Device Status. ► If the compressor should not be running, check the compressor solid state relay. ► If the compressor solid state relay is closed, replace the relay.
	Compressor motor has seized	► Replace the compressor. ► Contact Haemonetics® Corporation BloodTrack® Customer Support.
	A component is faulty or internal connections are loose	► Contact Haemonetics® Corporation BloodTrack® Customer Support.

11.6   **i.C³ Alarm Activation Problems**

Problem	Possible Cause	Action
The Compartmental Access Refrigerator is in an alarm condition, but alarms are not audible.	Audible alarms have been muted	▶ Verify audible alarms are not muted. Touch the Mute button repeatedly until the Mute timer indicates no time delay. ▶ Check alarm volume level and tone selection. Touch i.C3 settings (enter password) / sound settings.
	Temperature monitor/ control board is faulty	▶ Replace parts with those included in the control board kit, or replace the monitor/control board.
	A component is faulty or internal connections are loose	▶ Contact Haemonetics® Corporation BloodTrack® Customer Support.
The chamber temperature meets an alarm condition, but the appropriate temperature alarm is not active.	Temperature alarm setpoint was changed	▶ Check the current setpoints for the temperature alarms. Change the setpoints if necessary (refer to **Section II, Item 8.3.1**).
The Compartmental Access Refrigerator meets an alarm condition, but the appropriate alarm is not active.	Alarm setpoint was changed	▶ Check the current setpoints for the alarms. Change the setpoints if necessary (refer to **Section II, Item 8.3.1**).
	A component is faulty or internal connections are loose	▶ Contact Haemonetics® Corporation BloodTrack® Customer Support.
The High Temperature alarm activates when the door is opened, then clears shortly after the door is closed.	Probe bottle is empty	▶ Check level of product simulation solution in the bottles. Refill bottle if necessary (refer to **Section II, Item 7.1.2**).
	High temperature alarm setpoint is set too low	▶ Check the setpoint. Change the setpoint if necessary (refer to **Section II, Item 8.3.1**).
	Connections for the chamber temperature probe are loose	▶ Test the probe connections. Secure the connections if necessary.
	Chamber temperature probe is faulty	▶ Test the probe. Replace the probe if necessary.
	Unit cooler fan continues to run while the door is open	▶ Test the door switch and unit cooler fan connections. Secure the connections if necessary. Replace the door switch or fan motor if necessary.
	A component is faulty or internal connections are loose	▶ Contact Haemonetics® Corporation BloodTrack® Customer Support.

Problem	Possible Cause	Action
The Compartmental Access Refrigerator is connected to power, but the AC Power Failure alarm is active.	Circuit breaker is tripped or faulty	► Reset or replace the circuit breaker.
	AC ON/OFF power switch is OFF	► Turn the ON/OFF AC power switch to the ON position.
	AC ON/OFF power switch is faulty	► Replace the ON/OFF AC power switch.
	Power cord is faulty	► Confirm the power cord is connected securely. Secure the power cord if necessary. Replace power cord if necessary.
	Outlet connection is faulty	► Verify power at the outlet. Repair the original outlet or connect to a different outlet if necessary.
	A component is faulty or internal connections are loose	► Contact Haemonetics® Corporation BloodTrack® Customer Support.
The Door Open alarm is activating sporadically.	Doors are not closing completely	► Confirm hinges are free of dirt or debris. Clean if necessary. ► Confirm the hinge cams are not damaged. Replace the cams if necessary. ► Confirm rear door is locked.
	Connections for the door switch are faulty	► Test the switch connections. Secure the connections if necessary. ► Ensure door sensor bracket pushes switch closed.
	One or both door switches are faulty	► Replace the door switch or switches.
	Compartmental Control PCB assembly is faulty	► Contact Haemonetics® Corporation BloodTrack® Customer Support.
The Condenser alarm is active.	Condenser alarm setpoint is too low	► Confirm the alarm setpoint is at the appropriate value (refer to **Section II, Item 8.3**).
	Compressor is overheating due to a lack of air flow	► Check the condenser grill and clean if necessary (refer to **Section III, Item 9.6.1)**. ► Confirm the Compartmental Access Refrigerator is correctly located (refer to **Section II, Item 5** for location requirements).
	Condenser fan motor is faulty	► Replace the condenser fan motor.
	Connections for the condenser temperature probe are loose.	► Test the probe connections. Secure the connections at CP board if necessary.
	Condenser temperature probe is faulty	► Test the probe. Replace the probe if necessary. ► Confirm the probe is providing resistance in the range of 78 Ω to 120 Ω.
	A component is faulty or internal connections are loose	► Contact Haemonetics® Corporation BloodTrack® Customer Support.

Problem	Possible Cause	Action
The Low/No Battery alarm is activating sporadically.	Battery voltage level on the rechargeable backup battery for the monitoring system is low	► Ensure battery has had 24 hours to recharge after an extended use. ► Replace the backup battery for the monitoring system.

11.7 Testing Problems

Problem	Possible Cause	Action
The automatic temperature tests do not work.	High Alarm setpoint is set significantly higher than the default value, or the Low Alarm setpoint is set significantly lower than the default value	► Confirm the alarm setpoints are set at the appropriate values. ► Test the temperature alarms manually.
	Connections for the upper chamber temperature probe are loose	► Test the probe connections. Secure the connections if necessary.
	Upper chamber temperature probe is faulty	► Confirm the probe is reading correctly. Calibrate the probe if necessary. ► Confirm the probe is providing resistance in the range of 98 Ω to 110 Ω. Replace the probe if necessary.
	Control board is faulty	► Replace parts with those included in the control board kit, or replace the monitor/control board.

11.8 Condensation Problems

Problem	Possible Cause	Action

There is excessive water in the water evaporation tray.	Heater in the condensate evaporator tray is faulty	► Confirm the heater is hot and is drawing the appropriate current.
		  ► For 115 V Compartmental Access Refrigerator, the current should be approximately 0.43 A to 0.55 A.
		  ► For 230 V Compartmental Access Refrigerator, the current should be approximately 0.21 A to 0.27 A.

	Condensate evaporator tray fan is faulty	► Confirm both fans are running. ► Contact Haemonetics® Corporation BloodTrack® Customer Support.
	Humid air is entering the chamber	► Confirm the Compartmental Access Refrigerator is level, and the doors are aligned, closing tightly, and sealing correctly. Correct issues as necessary. ► Ensure cabinet penetrations are sealed.
	Condensate evaporator tray fan blower is faulty	► Confirm fan is running. ► Contact Haemonetics® Corporation BloodTrack® Customer Support.

Problem	Possible Cause	Action
There is excessive water in the chamber.	Connection between the unit cooler and the drain tube is loose	▶ Confirm the connection is secure. Tighten the connection if necessary.
	Drain line is plugged	▶ Confirm the drain tube is free of debris. Remove debris if necessary. ▶ Replace drain tube if necessary.
	Humid air is entering the chamber	▶ Confirm the Compartmental Access Refrigerator is level, and the doors are aligned, closing tightly, and sealing correctly. Correct issues as necessary. ▶ Ensure penetrations at the top of the cabinet are sealed.
There is excessive humidity on the doors.	Humid air is entering the chamber	▶ Confirm the Compartmental Access Refrigerator is level, and the doors are aligned, closing tightly, and sealing correctly. Correct issues as necessary.
	Heated glass door is not functioning properly	▶ Confirm the door is plugged into the cabinet outlet. ▶ Check voltage at cabinet outlet. ▶ Check amperage for door glass (115V = 0.53 - 1.05 Amps; 230V = 0.29 - 0.55 Amps).
	Relative humidity around the Compartmental Access Refrigerator is above 80%	▶ Confirm the Compartmental Access Refrigerator is placed properly. Refer to **Section II, Item 5**.
Water leaks from the bottom of the Compartmental Access Refrigerator.	Humid air is entering the chamber	▶ Confirm the Compartmental Access Refrigerator is level, and the door is aligned, closing tightly, and sealing correctly.
	Excessive water is found in the evaporation tray	▶ See action steps listed previously in **Section IV, Item 11.8**. ▶ Contact Haemonetics® Corporation BloodTrack® Customer Support to correct issues as necessary.

11.9   Access Control Lock Problems

Problem	Possible Cause	Action
Exterior door does not unlock when barcode is scanned.	Compartmental Control PCB assembly is unresponsive	▶ Switch the AC power switch and the backup battery switch **OFF** and then **ON** again to reboot. ▶ Contact Haemonetics® Corporation BloodTrack® Customer Support.
	Barcode scanner does not work or is not functioning properly	▶ Ensure barcode scanner is connected to BloodTrack® interface. ▶ Contact Haemonetics® Corporation BloodTrack® Customer Support.
	BloodTrack® interface is unresponsive	▶ Reset interface using reset button located in the top of the Access Console. ▶ Switch the AC power switch and the backup battery switch **OFF** and then **ON** again to reboot. ▶ Contact Haemonetics® Corporation BloodTrack® Customer Support.

Problem	Possible Cause	Action
Exterior door does not re-lock after door is closed.	BloodTrack® has not commanded door to lock	► Ensure no trays are illuminated.
	Compartmental Control PCB assembly is unresponsive	► Verify LED9 on Compartmental Control PCB assembly is off. ► Switch the AC power switch and the backup battery switch **OFF** and then **ON** again to reboot. ► Contact Haemonetics® Corporation BloodTrack® Customer Support.
	i.C³ CP board is not functioning correctly	► Verify voltage at J16 PIN2. Replace board if no voltage present. ► Contact Haemonetics® Corporation BloodTrack® Customer Support.
	Magnetic lock is defective	► Contact Haemonetics® Corporation BloodTrack® Customer Support.

11.10   Compartment Assembly Problems

Problem	Possible Cause	Action
Tray does not unlock when barcode is scanned.	Barcode scanner does not work or is not functioning properly	► Ensure barcode scanner is connected to BloodTrack® interface. ► Contact Haemonetics® Corporation BloodTrack® Customer Support.
	Compartmental Control PCB assembly is unresponsive	► Switch the AC power switch and the backup battery switch **OFF** and then **ON** again to reboot. ► Contact Haemonetics® Corporation BloodTrack® Customer Support.
	BloodTrack® interface is unresponsive	► Reset interface using reset button located in the top of the Access Console. ► Switch the AC power switch and the backup battery switch **OFF** and then **ON** again to reboot. ► Contact Haemonetics® Corporation BloodTrack® Customer Support.
	IRACS board is not functioning properly	► Verify refrigerator 24V DC power supply output is at 24V DC (±1V DC). ► Verify solenoid LED is on when tray is illuminated.
	Solenoid is faulty	► Ensure LED above the solenoid is illuminated to verify solenoid is receiving power. ► Ensure solenoid is not loose. Tighten if necessary.
	Latch mechanism is faulty	► Replace latch mechanism.
Tray does not re-lock when closed.	Obstruction in the compartment	► Remove obstruction.
	Latch mechanism is faulty	► Replace latch mechanism.
	Solenoid is faulty	► Inspect return spring on solenoid. Replace solenoid if necessary.

Problem	Possible Cause	Action
Bypass Release handle and lock do not release.	Lock is engaged	► Ensure correct key has been inserted and is in the unlock position.
	Bypass Release handle is broken	► Replace handle.
LED indicator lamp does not illuminate to indicate which tray is unlocked.	IRACS board is not functioning properly	► Contact Haemonetics® Corporation BloodTrack® Customer Support.
Multiple LED indicator lamps illuminate to indicate multiple trays are unlocked.	IRACS board is not functioning properly	► Contact Haemonetics® Corporation BloodTrack® Customer Support.
Unlocked trays can be completely removed.	Tray bumper is not installed	► Install the tray bumper.
	Non-factory tray bumper is installed	► Install a factory-supplied tray bumper.
Incorrect compartment unlocks.	VIB is not set correctly or is faulty	► Check that each row shows a unique address (Refer to Section IV, Item 11.1.6) - If not, check and set rotary switch on each VIB accordingly and then cycle refrigerator AC and battery power. Topmost VIB rotary switch is position 0; second from top VIB rotary is position 1; third from top VIB rotary switch is position 2; bottom VIB rotary switch is position 3. ► Contact Haemonetics® Corporation BloodTrack® Customer Support.

11.11 Access Console Problems

Problem	Possible Cause	Action
Speaker is not audible.	Audible sounds are not functioning properly on the BloodTrack® kiosk	► Confirm speaker connections are secure at P1 on amplifier board and at speaker. ► Confirm 12V DC at P2 on amplifier board. ► Confirm audio jack on LINE OUT of ACCESS CONSOLE DISPLAY. ► Replace speaker and amplifier if necessary. ► Contact Haemonetics® Corporation BloodTrack® Customer Support.

Section V: Parts & Schematics

12	**Parts**

NOTE	► Removing and replacing parts may only be performed by designated service technicians.
	► Replacement parts that are included in a service kit are designated with an "800-level" part number (800XXX-X).
	► Individual replacement parts are designated with part numbers other than "800-level" part numbers.
	► Service kits and replacement parts are available from Haemonetics® Corporation BloodTrack® Customer Support at 877.996.7877.

⚠ CAUTION	► Review all safety instructions prior to troubleshooting. Refer to **Section I**, **Item 2**.
	► Maintenance should only be performed by designated service technicians.

| ⚠ NOTICE	► Before replacing parts, protect items in the Compartmental Access Refrigerator from extended exposure to adverse temperature.
	► Allow the Compartmental Access Refrigerator to stabilize at temperature setpoint after replacing parts or after extended door opening.

12.1 Front

Front features.

Label	Description	Part Number / Service Kit Number
A	Access Console	Call for part number. Dependent on voltage and mounting option.
B	BloodTrack® kiosk	800223-1
C	Barcode scanner	800216-1
D	Keyed printer drawer lock	Call for part number.
E	Alternate label chute	Call for part number.
F	Rotating shelf	800218-1
G	Consumable cart	Call for part number.
H	Keyed door lock (consumable cart)	Call for part number.
I	Temperature chart recorder (optional)	800229-1
J	i.C³ monitoring and control system	Refer to **Section V, Item 12.1.1** for part numbers.
K	Caster (swivel with brake)	800227-1
L	Chart recorder door (included with kit)	800229-1
M	Chart paper (52 sheets)	220366
N	Chart recorder backup battery (9 V, non-rechargeable, alkaline)	120218

**12.1.1**   **Control System and Display**

| ⚠ | **NOTICE** | ► | The i.C³ display assembly is sensitive to static electricity and can be damaged by electrostatic discharge. Use proper ESD precautions when handling the display assembly. |
| | | ► | Although the touchscreen and display board may be replaced independently of the i.C³ display assembly, Helmer recommends replacing the complete assembly. |
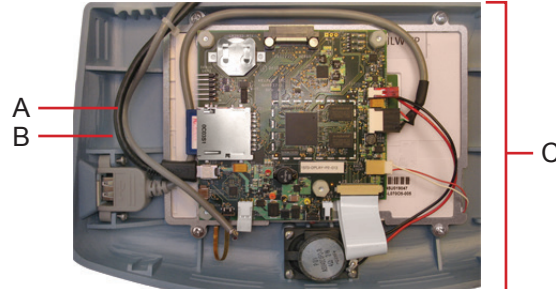
Front view, LCD touchscreen (left)
Rear view of display, showing display board (right)

Label	Description	Part Number / Service Kit Number
A	Interface communication cable	800253-1
B	Power cable	800253-1
C	Display assembly (includes touchscreen, display board, interface cable, speaker)	800254-1

12.2   **Refrigeration Components**
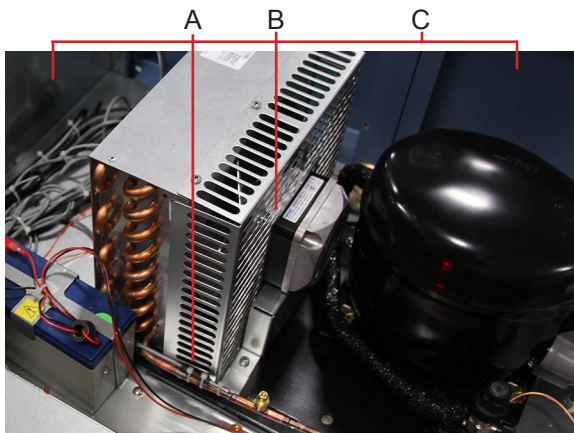
Refrigeration components

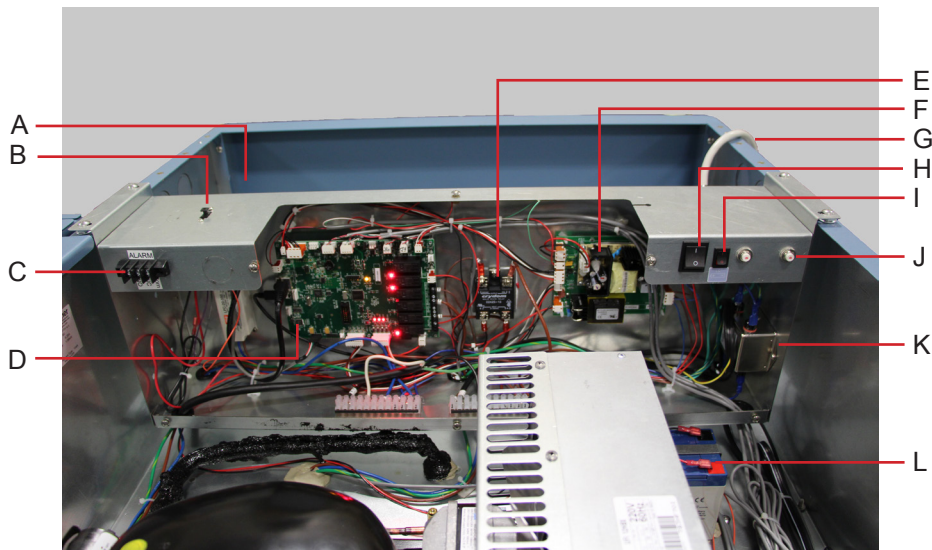| Label	Description	Part Number / Service Kit Number
A	Condenser temperature probe	800238-1
B	Condenser fan motor	115 V, 60 Hz: 800236-1 230 V, 50/60 Hz: 800237-1
C	Condensing Unit	115 V, 60 Hz: 800239-1 230 V, 50 Hz: 800241-1 230 V, 60 Hz: 800240-1

12.3 **Electrical Box Components**

| ⚠	WARNING	Switch the Compartmental Access Refrigerator AC ON/OFF switch **OFF** and disconnect the AC power cord from AC power before opening the electrical box.

⚠	NOTICE	The i.C³ control board is sensitive to static electricity and can be damaged by electrostatic discharge. Use proper ESD precautions when handling the board.

Electrical box components.

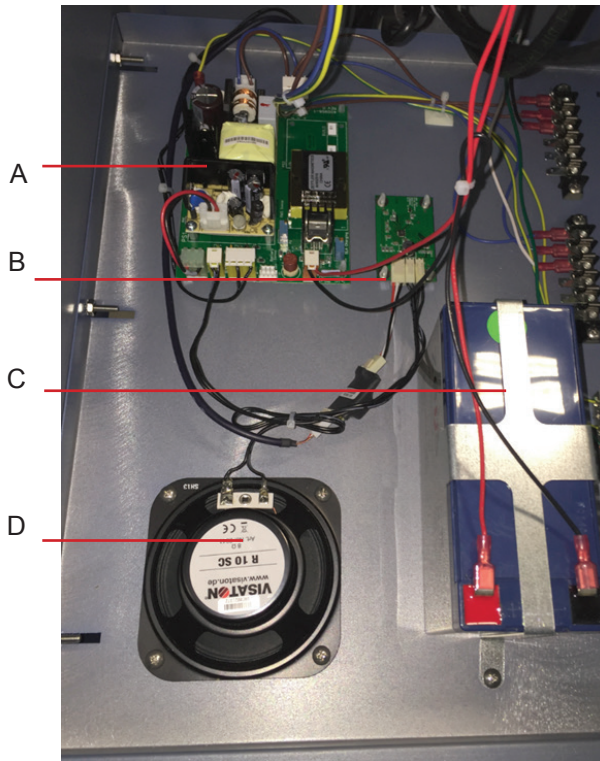| Label	Description	Part Number / Service Kit Number
A	RJ-45 Ethernet port (located behind electrical panel)	Call for part number.
B	USB port	Call for part number.
C	Remote alarm contacts	Call for part number.
D	i.C³ control processor board	800252-1
E	Compressor relay	800232-1
F	i.C³ power supply board	800255-1
G	AC power cord	Call for part number.
H	AC ON/OFF switch	800214-1
I	Monitoring system / Access Control backup battery ON/OFF switch	800259-1
J	Circuit breakers (for 230V units only)	800231-1
K	Power line filter	Call for part number.
L	i.C³ Monitoring System / Access Control backup battery	800251-1

12.4   Compartment Access Components
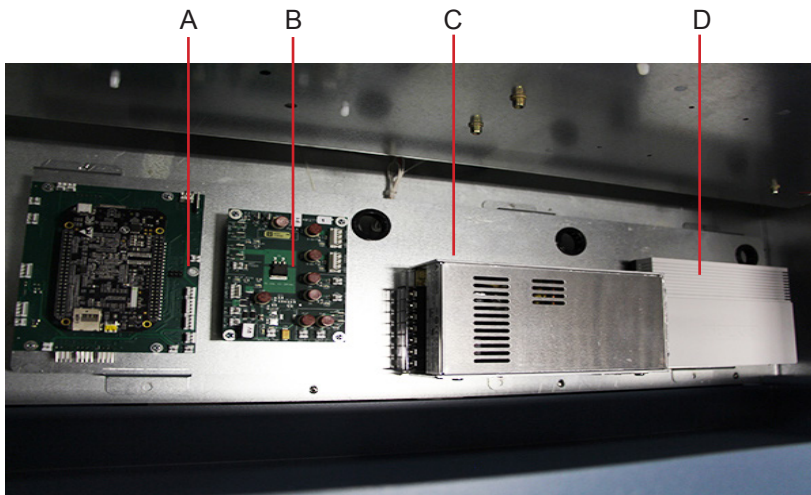
Compartment access components.

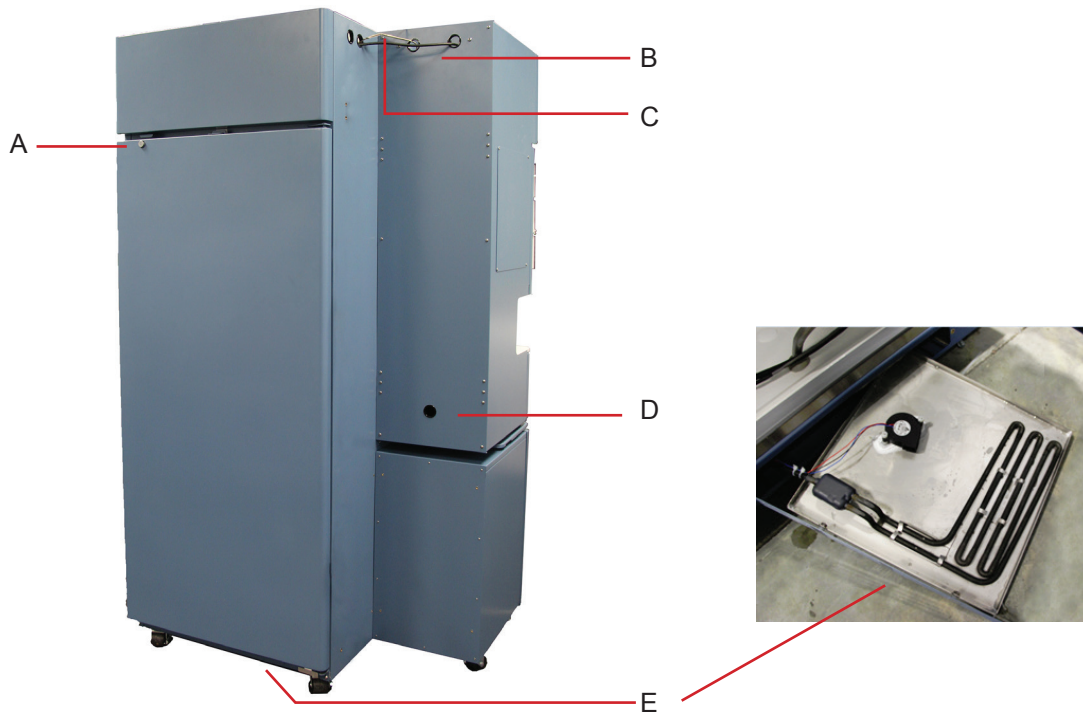| Label	Description	Part Number / Service Kit Number
A	Compartment control PCB assembly	800222-1
B	Power distribution board	800257-1
C	24V DC power supply	800213-1
D	Router	800260-1
Not Shown	Spare IRACS board with solenoids (under compartment cover)	800262-1

12.5   Access Console Components

Access Console components.

Label	Description	Part Number / Service Kit Number
A	Access Console power supply board	800217-1
B	Amplifier board (includes speaker)	800265-1
C	Access Console backup battery	800215-1
D	Speaker (includes amplifier board)	800265-1
Not Shown	Access Console backup battery ON/OFF switch	800259-1

12.6   **Rear**

⚠️ **CAUTION**   The condensate evaporator and water evaporation tray are hot.

Rear features.

Label	Description	Part Number / Service Kit Number
A	Keyed door lock (rear)	800271-1
B	Access Console AC power cable (6 ft)	401293-1
C	Access Console RJ-45 Ethernet cable (5 ft cable included with side mount option; 20 ft cable included with table or wall mount option)	401294-1
D	Printer drawer cable access hole	-
E	Condensate evaporator (includes condensate evaporator, fan, and evaporation tray)	115 V, 60 Hz: 800233-1 230 V, 50/60 Hz: 800234-1

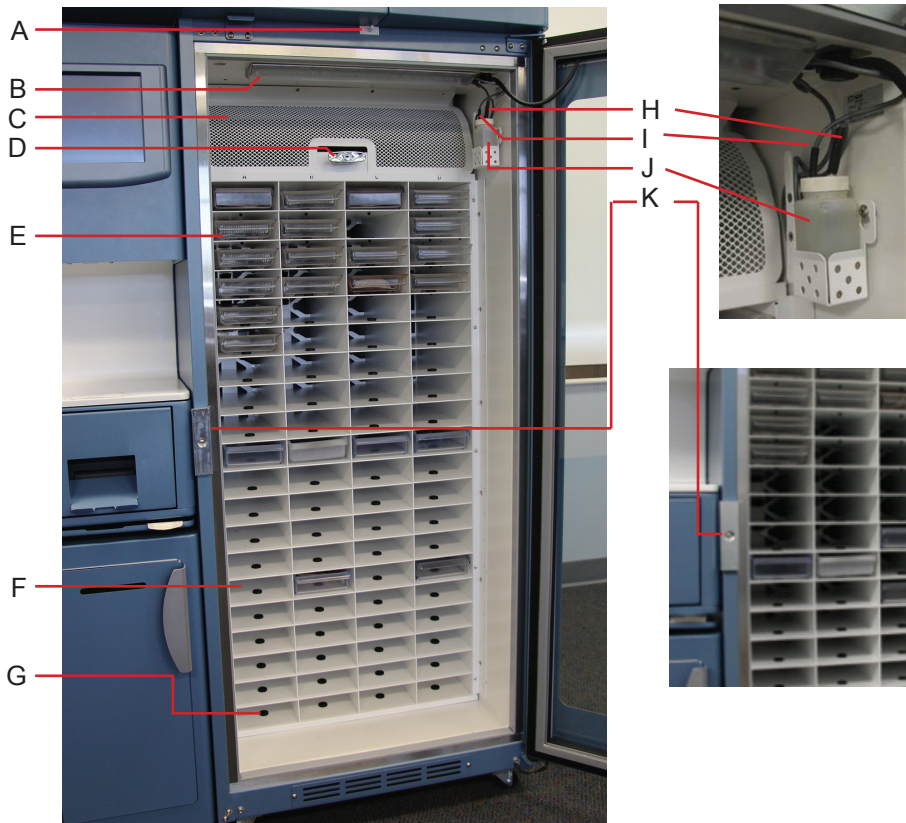**12.7**   **Interior**

12.7.1   **Unit Cooler**
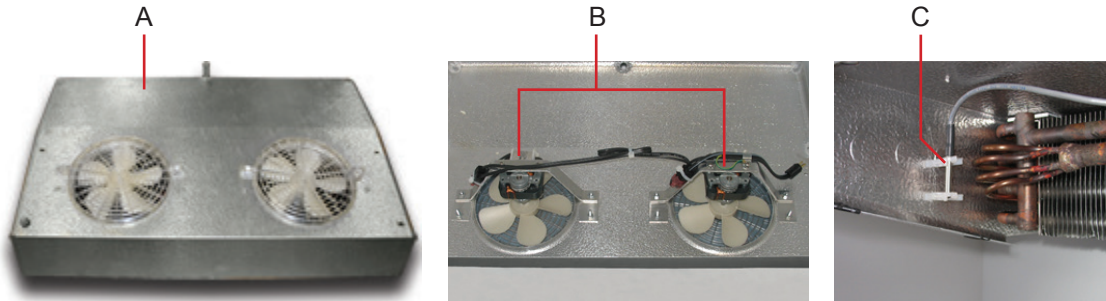
Unit cooler components.

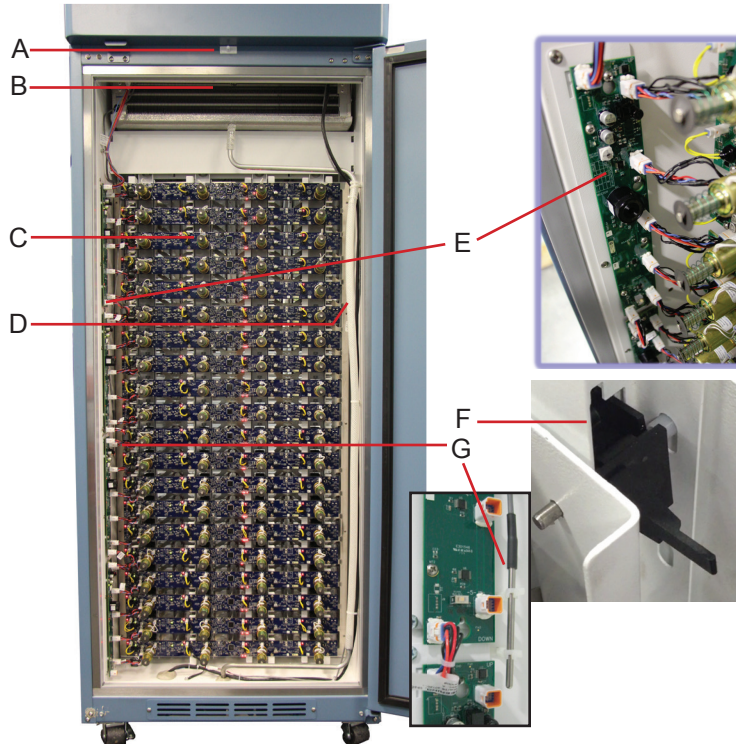| Label	Description	Part Number / Service Kit Number
A	Unit cooler assembly	115 V, 60 Hz: 800247-1 230 V, 50/60 Hz: 800248-1
B	Unit cooler fan motor	115 V, 60 Hz: 800249-1 230 V, 50/60 Hz: 800250-1
C	Temperature control probe	800243-1

12.7.2   Front

Interior (front) features.

Label	Description	Part Number / Service Kit Number
A	Door switch	800246-1
B	Chamber light (includes circuit board and cover)	800228-1
C	Guard panel	401314-1
D	Bypass Release handle and lock	220642
E	Tray	800266-1
F	Compartment assembly	Call for part number.
G	Tray bumper (includes 4 bumpers)	800267-1
H	Upper chamber probe	800269-1
I	Chart recorder probe (optional)	800219-1
J	Probe bottle and glycerin kit	400922-1
K	Access Control door lock (inside door frame/handle)	800220-1

12.7.3   **Rear**

Interior (rear) features.

Label	Description	Part Number / Service Kit Number
A	Door switch (rear)	800246-1
B	Unit cooler with fan guard	Refer to **Section 5, Item 12.7.1** for part numbers
C	IRACS horizontal board with solenoids	800262-1
D	Condensate drain line	800235-1
E	VIB board	Call for part number.
F	Tray latch mechanism	800268-1
G	Air probe	800221-1

12.8   Door and Hinge

Door and hinge features.

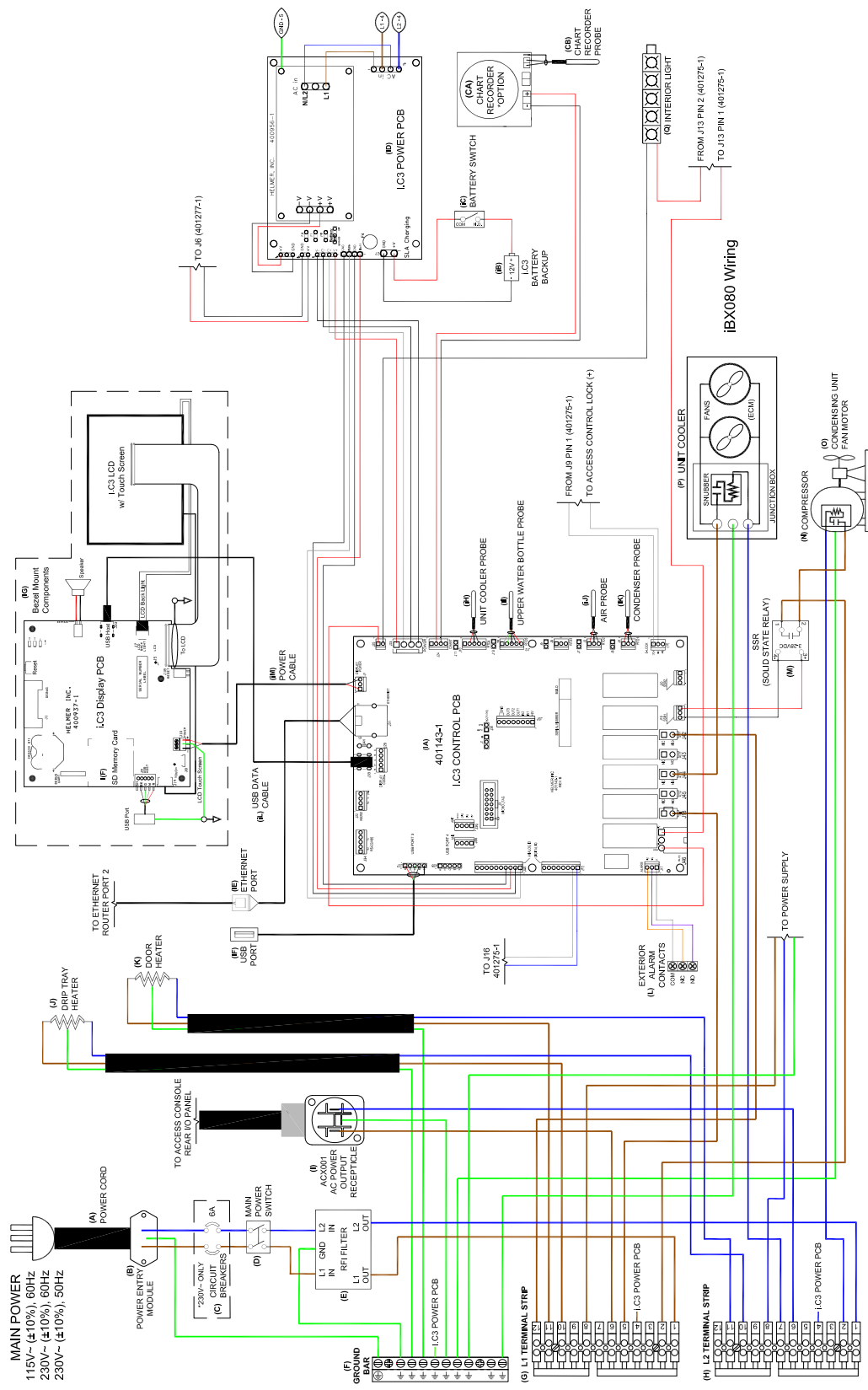| Label	Description	Part Number / Service Kit Number
A	Door lock (front)	800270-1
B	Door handle pad	320684-1
C	Hinge assembly (includes upper and lower)	Right hinge: 800245-1 Left hinge: 800264-1
D	Upper hinge bearing	220541
E	Door gasket	800244-1
F	Lower hinge cam (quantity 2)	320742-1
G	Lower hinge bearing	220375
H	Door stop	320763-1
I	Hinge bracket (includes upper and lower)	Included with 800245-1 and 800264-1
J	Ground strap	Call for part number.

NOTE   ► The rear door is not shown, however the rear door features the same components and part numbers as noted in **Section V, Item 12.8** (Door and Hinge), except items B and J.
► The front door is available in left-hinged or right-hinged configuration.
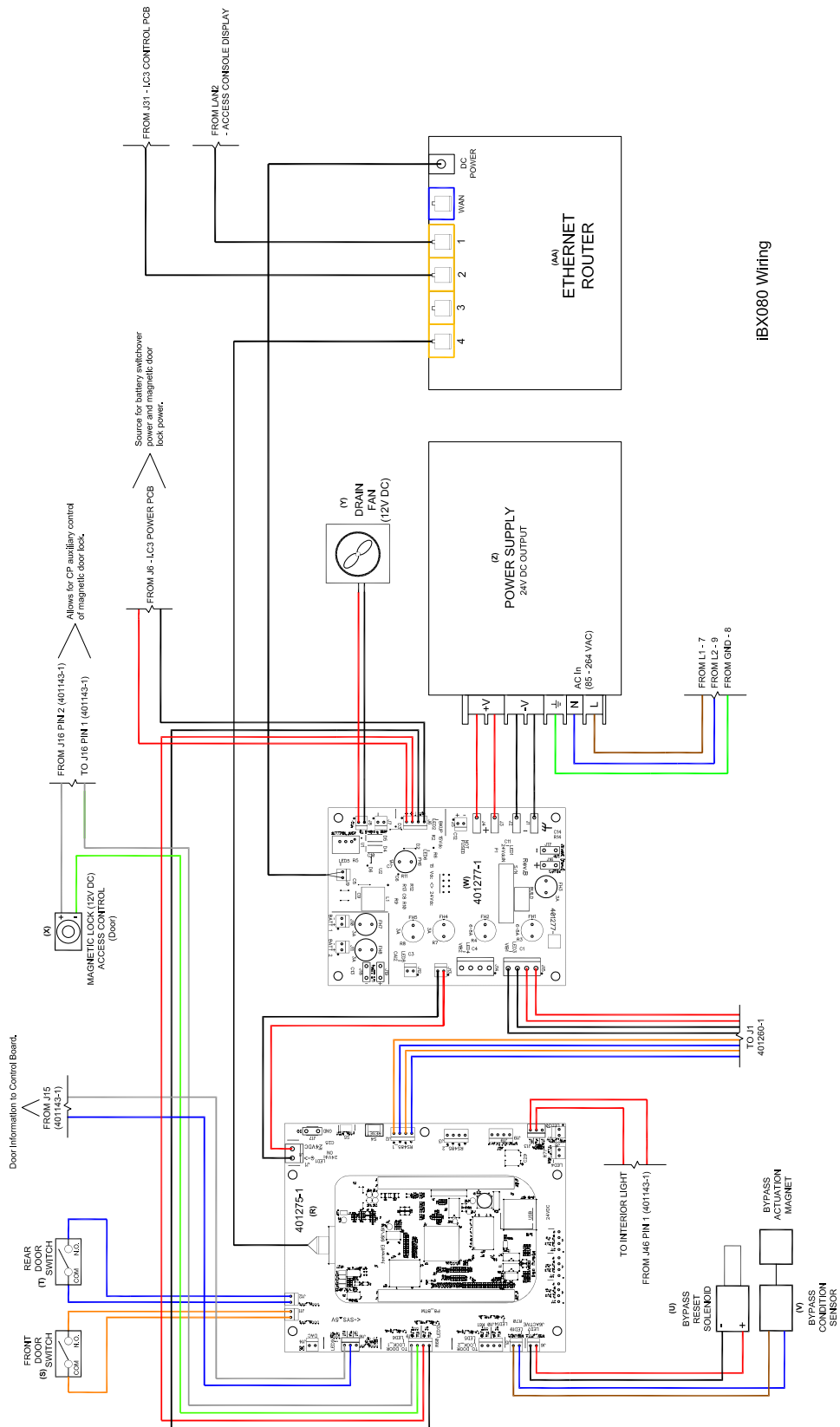► The rear door is available in right-hinged configuration only.
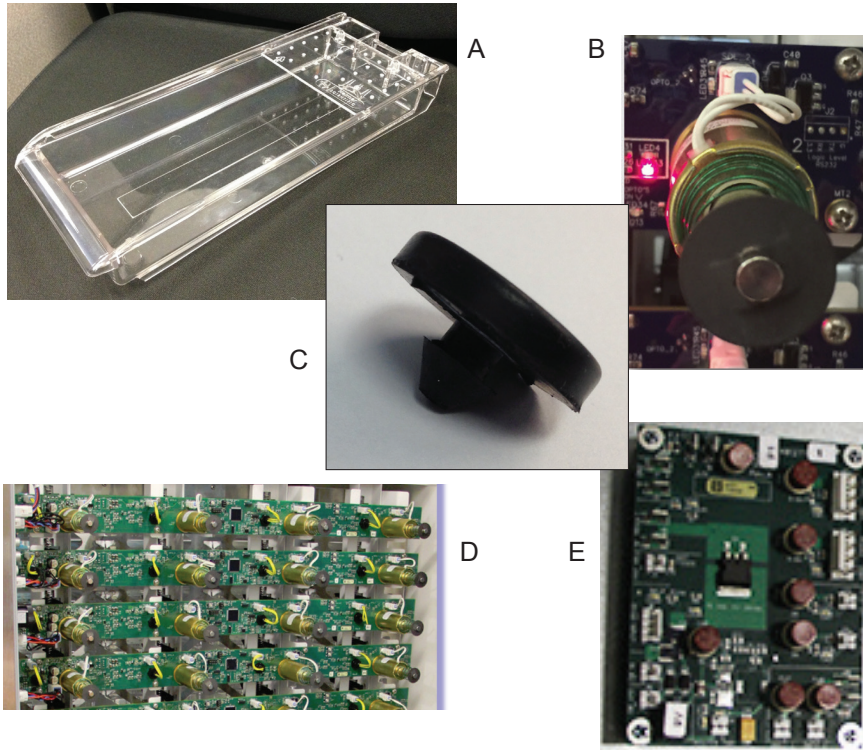
Label	Description	Part Number / Service Kit Number
A	Tray	800266-1
B	Tray lock solenoid	800261-1
C	Tray bumpers (quantity 4)	800267-1
D	IRACS horizontal board	800262-1
E	PDB (Power Distribution Board)	800257-1

13 Schematics

13.1 Compartmental Access Refrigerator Schematic

iBX080 Wiring

FROM J31 - LC3 CONTROL PCB

FROM LAN2
- ACCESS CONSOLE DISPLAY

DC POWER

WAN

1

2

3

4

(AA)
ETHERNET ROUTER

Source for battery switchover power and magnetic door lock power.

FROM J6 - LC3 POWER PCB

Allows for CP auxiliary control of magnetic door lock.

FROM J16 PIN 2 (401143-1)

TO J16 PIN 1 (401143-1)

(Y)
DRAIN FAN
(12V DC)

POWER SUPPLY
24V DC OUTPUT

+V

-V

N

L

AC In
(85 - 264 VAC)

FROM L1 - 7
FROM L2 - 9
FROM GND - 8

(X)
MAGNETIC LOCK (12V DC)
ACCESS CONTROL
(Door)

(W)
401277-1

Door Information to Control Board.

FROM J15
(401143-1)

TO J1
401260-1

REAR
(T) DOOR
SWITCH

N.O.

COM

401275-1
(R)

TO INTERIOR LIGHT

FROM J46 PIN 1 (401143-1)

BYPASS
ACTUATION
MAGNET

FRONT
(S) DOOR
SWITCH

N.O.

COM

(U)
BYPASS
RESET
SOLENOID

(V)
BYPASS
CONDITION
SENSOR

VIB Position 1

ROW

1 2 3 4 5

A

B

C

D

(CC) 401259-1 (X20)

GROUND, Solenoid to Chassis (X80) -Each Solenoid Location~

(DD) SOLENOID (X80)

(EE) TRAY PROXIMITY SENSOR (X80)

iBX080 Wiring

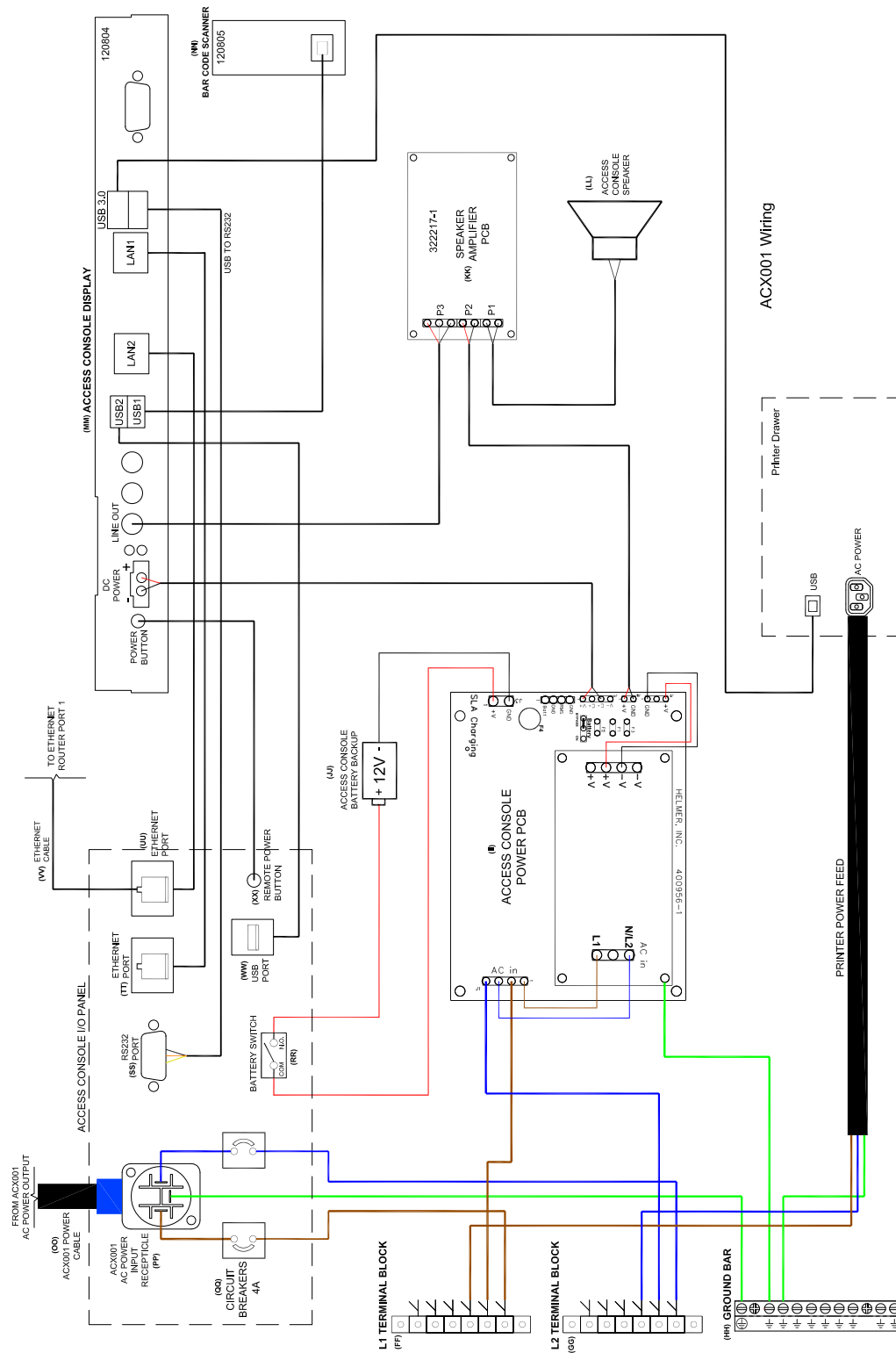ABOVE WIRING IS REPEATED X4 FOR CONNECTING 401259-1 BOARDS TO 401260 BOARD FOR THE REMAINING ROWS 6 – 20.

THESE DRAWINGS AND SPECIFICATIONS ARE THE SOLE PROPERTY OF HELMER INC. AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR MANUFACTURE OR SALES OF APPARATUS WITHOUT THE APPROVAL OF HELMER INC.

UP DOWN

BUZZER

RS485 A B

(BB) 401260-1 (X5)

401260- Rev. B

UP

FROM J2 (401275-1) & J15 (401277-1)

Use to configure VIB position 1,2,3,4

13.2   Access Console Schematic

END OF MANUAL