

Installation & Operators Manual

HURRiCHiLL simple controller blast chillers & shock freezers

MODELS COVERED:

AP3BCF30-1

AP5BCF45-2



*Please read this manual
before installing or
operation of this equipment.*



Versatile, Dependable Walk-Ins & Blast Chillers

5800 SE 78th St. Ocala, FL 34472 • 352.245.7055 • service@americanpanel.com



Simple Controller HURRICHILL Installation & Operations Manual

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Contacts and Information

Customer service - +1(800) 327-3015 or +1(352) 245-7055

Service department. - service@americanpanel.com

Parts department. - parts@americanpanel.com

Website - www.americanpanel.com

For all blast chiller information requests, please have the Model and Serial Number available as stated on the equipment tag (pg 5) on the exterior of the cabinet.



American Panel Warranty

American Panel Corporation products are warranted to the original user installed within the United States, Canada and Puerto Rico to be free from defects in materials and workmanship under normal use and service for the applicable period shown in the chart below.

NOTE: This Warranty does not apply to altered or misused parts.

Self-Contained Units		
WARRANTY COVERS	PARTS	LABOR
Cabinet Assembly	1 Year from date of shipment	1 Year from date of shipment
Refrigeration Components	1 Year from date of shipment	1 Year from date of shipment
Refrigeration Compressor	5 Years from date of shipment	1 Year from date of shipment
Food Temperature Probes & Lights	None	None
Remote Refrigeration Units		
Cabinet Assembly	1 Year from date of shipment	1 Year from date of shipment
Refrigeration Components	1 Year from date of shipment	None
Refrigeration Compressor	5 Years from date of shipment	None
Food Temperature Probes & Lights	None	None

Note: Refrigeration compressor warranty is valid for one time replacement.

American Panel Corporation agrees to repair or replace at its option, FOB Factory, any part which proves to be defective due to defects in material or workmanship during the warranty period, providing the equipment has been properly installed, maintained and operated in accordance with the HurriChill™ User's Manual. Refer to the above chart for details and exceptions for various equipment items. Labor covered by this warranty must be authorized by American Panel Corporation and performed by a factory authorized service agency or factory preferred service company. Contact American Panel Corporation for a list of agents in your area.

This warranty does not apply to remote or pre-assembled remote refrigeration systems requiring electrical inter-wiring or refrigerant piping provided by others. In no event shall American Panel Corporation be liable for the loss of use, revenue or profit or for any other indirect, incidental, special or consequential damages including, but not limited to, losses involving food spoilage or product loss. American Panel Corporation reserves the right to withdraw this warranty if it is determined that equipment is not being operated properly. There are no other warranties expressed or implied.

During the warranty period, all requests for service MUST be made before any work is begun. Such requests must be directed to American Panel Corporation Service Department, which will issue written authorization when applicable. Without this authorization, the Warranty may be voided. The service department can be contacted by mail at **American Panel Corp., 5800 S.E. 78th Street, Ocala, Florida 34472-3412**; by telephone at **1-800-327-3015**; by fax at **(352) 245-0726**; or via email at **service@americanpanel.com**.

Service department hours - **Monday - Friday 8am-5pm EST.**

Proper installation is the responsibility of the dealer, the owner-user, or the installing contractor. It is not covered by this warranty.

Basic Safety Information

Do not touch or operate the machine with damp or wet feet and hands.

Do not insert screwdrivers, kitchen tools or other items between the protections and the moving parts.

Before carrying out cleaning operations or routine maintenance, disconnect the machine from the power supply mains, switching the master switch off and removing the plug.

If the power supply cable is damaged, it must be replaced by a service provider or similarly qualified staff, in order to avoid risks.

This unit must be equipped with a disconnection device incorporated in the fixed connection in compliance with local regulations.

When loading the machine, the use of kitchen gloves is recommended in order to prevent burns on contact with the hot trays and trolleys.

Use gloves suitable for trays and cold trolleys. During cleaning operations, of the condenser in particular, always wear protective gloves, safety glasses and mask for the respiratory protection.

The core probe must only be used for the purpose for which it has been designed: detect the temperature at the center of the food stuffs to be blast chilled and/or frozen.

It is prohibited to remove the protections and safety devices in order to perform routine maintenance.

Do not block the ventilation openings of the unit and of the structure in which it is positioned.



WARNING - Please read the entire installation procedure before attempting to install the unit. Failure to follow the procedures listed in this manual may result in voiding the warranty.



IMPORTANT - Due to the size and weight of this equipment, a minimum of two people are required to install this equipment safely. All OSHA regulations must be followed while on the job site.

- This manual is an integral part of the product, it supplies all of the indications necessary for correct installation, correct use and maintenance of the machine.
- It is mandatory for the user to read this manual carefully and always make reference to it. It must be kept in a place that is known and accessible to the authorized operators (installer, user, maintenance technician)
- The blast chiller is intended for professional use and therefore only qualified staff can use it
- The blast chiller is destined only for the use for which it has been designed.
- The manufacturer declines all responsibility for any damage caused by incorrect or unreasonable use, as for example:
 - improper use by untrained staff.
 - modification or interventions that are not specific for the model.
 - use of non-original spare parts or that are not specific for the model.
 - failure to comply, even partial, with the instructions in this manual.


- The manufacturer disclaims all responsibility for problems related to an incorrect installation of the blast chiller.
- The blast chiller must be installed by an authorized service/install provider.

Equipment Tag

The equipment tag is located on the exterior of the unit and displays the following information that is unique to the unit:

- Model Number
- Serial Number
- Refrigerant Charge
- Refrigerant Pressure (Low & High)
- Electrical Volts, Phase, Hertz and Amps
- Minimum Circuit Amps
- Maximum Fuse Size (Amps)

Please have this information on hand when contacting service or parts.

American Panel		5800 S.E. 78th STREET, OCALA, FL. 3447 FOR SERVICE CALL: 800-327-3015	
MODEL NO.	SERIAL NO.		
XXXXXXX	XXXXXXX		
REFRIGERANT:	<input type="text"/>	DESIGN PRESSURE (LOW):	<input type="text"/>
CHARGE IN OZ:	<input type="text"/>	DESIGN PRESSURE (HIGH):	<input type="text"/>
VOLTS:	<input type="text"/>	PH:	<input type="text"/>
		HZ:	<input type="text"/>
		AMPS:	<input type="text"/>
MINIMUM CIRCUIT AMPS:	<input type="text"/>	MAX FUSE SIZE:	<input type="text"/> A
		COMMERCIAL REFRIGERATOR AND/OR FREEZER 28E3	

Pre-installation Checks

- **Check components against the packing list.** The packing list is located inside the accessory box.
- **Check the integrity of the components once unpacked.**
- **Check for proper location**
 - Ambient temperature no greater than 90°F
 - Do not install near heat source
 - Do not install near vapor source
 - Do not install near grease source
 - Do not install in direct sun light
 - Do not install in closed areas with insufficient air change
- **Check for proper clearances**
 - See page 6 for clearances.
- **Check for unobstructed air flow at the condensing unit**

Installation

American Panel Corporation equipment has been shipped in a package designed to sufficiently protect from damage under normal shipping circumstances. Upon receiving the shipment, carefully inspect the package for visible damage and check the number of packages against the Bill of Lading. Notify the carrier immediately of any shortage or damage to your shipment. Claims must be filed promptly with the carrier.

After receipt of shipment, carefully and safely remove the unit from the package. Check the contents of the package against the packing list. Under no circumstances may a damaged piece of equipment be returned to American Panel Corporation without first obtaining written permission.

To assure proper installation carefully read and comply with the following instructions.



WARNING - Please read the entire installation procedure before attempting to install the unit. Failure to follow the procedures listed in this manual may result in voiding the warranty.



IMPORTANT - Due to the size and weight of this equipment, a minimum of two people are required to install this equipment safely. All OSHA regulations must be followed while on the job site.

Installation Checklist

Check the integrity of the unit once it is unpacked.

On remote refrigeration units only, the cabinet and the condensing unit is shipped with a nitrogen charge, Make sure the charge is still present.

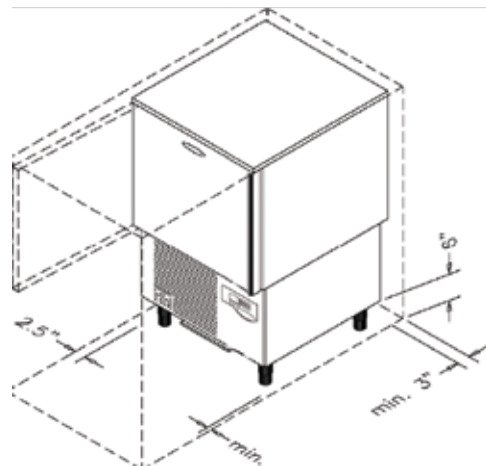
Check for proper location.

- Ambient temperature no greater than 90oF (to ensure rated performance)
- Do not install near heat source
- Do not install near vapor source
- Do not install in direct sun light
- Do not install in closed areas with insufficient air change

Check for proper clearances

Reach-In Models:

- 1" clearance on the door handle side of the unit
- 2 ½" clearance on the door hinge side of the unit
- 3" clearance on the back of the unit
- Provide enough space in front to allow door opening
- Check for unobstructed air flow at the condensing unit



Prepare the location.

- Check that the floor is level
- Place a layer of water resistant caulk around the perimeter of the entire footprint of the unit (roll-in units only)
- Place the unit in the chosen location and level it.



Note: Keep the unit in the upright position at all times. If you must tilt the unit for clearing door ways, do so for a very short period of time. Once in place, keep the unit in upright position for a period of minimum 24 hours prior to powering the unit. Failure to comply with the above note may cause severe damage to the unit and will void the warranty.

Verify the electrical service to be in accordance with the manufacturer label located on the right side of the unit.



Connect the unit to the mains.

- Plug the unit into the wall receptacle

Condensate Drainage

- Install drain pan or drain line. Install the drain pan by sliding the pan on the guides located on the bottom of the unit.
- When installing the drain line the drainage connection must be carried out in conformity with the local regulation. As a standard configuration, all reach-in Hurrichill units are provided with 3/4" ID flexible tubing drain line.

Install wire shelves (if so equipped).

Operate the unit in Hard Chill / Manual mode for approximately 20 minutes to verify temperature pull down, see chapter Unit Operation – Manual Mode any Cycle.

Verify proper airflow direction.

- Evaporator – front to back
- Condenser – front to back



Note: American Panel Corporation blast chillers are equipped with a short cycle protection. If the unit is stopped or the door is opened and closed during a chilling cycle more than once, the compressor will not start for a period of 3 to 5 minutes.

Inspect liquid-line sight glass to ensure is clear and dry.

When possible, inspect the oil level within the compressor, minimum ½ full on level indicator window.

Engage, operate and verify effectiveness of manually engaged defrost cycle, see chapter Unit Operation – Defrost Cycle.

Inform the factory if any functional and performance issues were found following the completion of the above tests.

Verify that the operator has all necessary operation manuals, menus and instructions. Contact factory with any questions, Monday-Friday 8:00 a.m. to 5:00 p.m. ET at 800-327-3015 or consult the website at www.americanpanel.com

Specifications and Performance

Blast chilling - Capable of lowering the core temperature of product from 160°F to 38°F within 90 minutes.

Shock freeze - Capable of lowering the core temperature of product from 160°F to 0°F within 240 minutes.

Model	Type	Pan Capacity Sheet/Steam	Chilling Capacity (90 min)	Freezing Capacity (240 min)
AP3BCF30-1	Blast Chiller/Shock Freezer	0/3	30	36
AP5BCF45-2	Blast Chiller/Shock Freezer	0/5	45	54

* Standard configuration sized for 202 Rational rolling rack. other combi configurations are available; consult factory for details.



Note: Each unit was designed for a specific product capacity as shown above. Overloading the unit could significantly reduce its service life.

General Operating Instructions

Panning and Loading

Follow the methods below for faster cooling, freezing and thawing:

- Place the food in shallow pans.
- Do not use food pans deeper than 2 ½” and do not fill the pan with more than 2” of product.
- Separate the food in smaller or thinner portions.
- Do not cover the containers unless danger of overhead contamination.
- Loosely cover the containers if necessary. Allow the cover material (aluminum foil) to touch the surface of the food.
- Arrange the pans for optimum air circulation within the cabinet.
- Know the capacity of the unit. Do not overload the unit.

Probing (for chilling and freezing cycles)

Follow the methods below to ensure correct probing of the product:

- Insert the food probe into the thickest part of the product.
- The tip of the food probe will have to be located at the core of the food.
- Always place the available food probe in the hardest to cool product.
- It is a good practice to restart the cycle every time food is added.
- Clean and sanitize the food probe after each use.

Modes Explained

There are three different cycles available **Soft Chill**, **Hard Chill**, and **Shock Freeze**.

Cycle 1 - Soft Chill: Used for delicate items and salad items. Items with low fat or moisture content such as bakery goods should also be chilled using this cycle.

The air temperature will cycle between 28°F and 35°F until the food core temperature will reach 38°F, at this point the blast chiller will switch into holding mode meaning that the air temperature will cycle between 35°F and 42°F. until the food is removed from the cabinet and/or the cycle is stopped by the operator.

The soft chilled cycle is timed, if the temperature of the product does not reach 38°F within the 4 hours the unit will continue to work except that the display will show “OCF” alarm.

Cycle 2 - Hard Chill: Used for all foods. Some freezing on the food surface may occur, especially with thicker items; if this is not acceptable use Soft cycle as described above.

In the first part of the cycle the air temperature will cycle between 0°F and 10°F until the food core temperature will reach 60°F, after that the controller will switch to the second part of the cycle. In the second part of the cycle the air temperature will cycle between 28°F and 35°F until the food core temperature will reach 38°F, at this point the blast chiller will switch into holding mode meaning that the air temperature will cycle between 35°F and 42°F until the food is removed from the cabinet and/or the cycle is stopped by the operator.

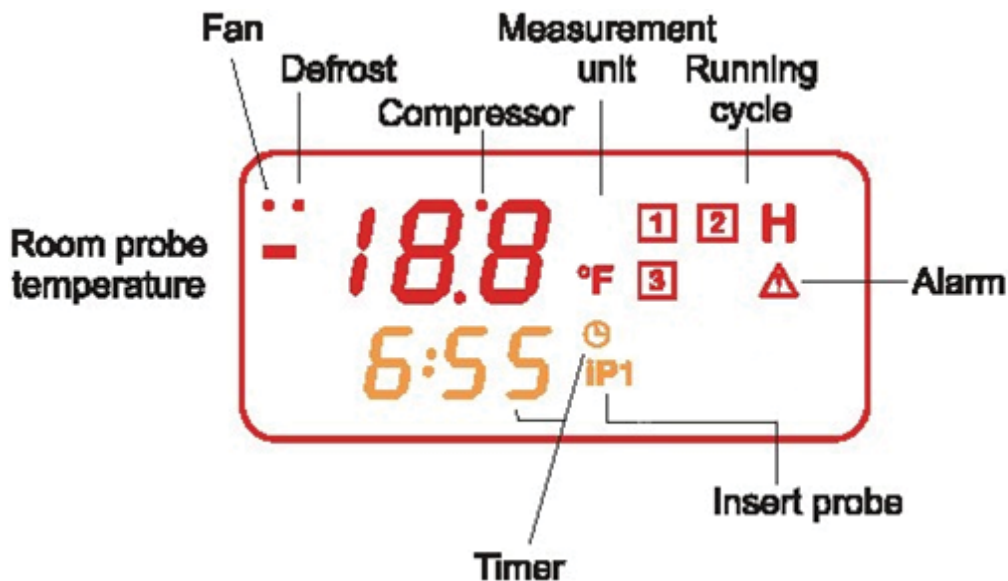
The first part and the second part of the hard cycle are individually timed at 2 hours. If timers for the first or the second part of the cycle expire before the food temperature reaches the target temperatures (60°F for first part and 38°F for the second part) the unit will continue to work except that the display will show “OCF” alarm.

Cycle 3 - Shock Freeze: Used for all freezing needs. When using the Shock Freeze Cycle the ice crystals that form within the product are very small. The quality and the texture of the product is preserved. For that reason, the Shock Freeze Cycle is suitable even for delicate products such as sushi meat and prime meat cuts. Shock Freeze Cycle will give excellent results when used in the process of Ice Cream and Gelato hardening, it will give a smooth texture to the product.

The air temperature will cycle between -25°F and -15°F until the food core temperature will reach 0°F, at this point the blast chiller will switch into holding mode meaning that the air temperature will cycle between -4°F and 3°F until the food is removed from the cabinet and/or the cycle is stopped by the operator.

The shock freeze cycle is timed, if the temperature of the product does not reach 0°F within the 6 hours the unit will continue to work except that the display will show “OCF” alarm.

Display



Starting a cycle

With the display showing “OFF” push the power button, the display will show the air temperature inside the cabinet and the available cycles 1, 2, and 3 (SOFT, HARD, and SHOCK respectively). Push the button corresponding to the desired cycle SOFT, HARD, or SHOCK to select it and then push it again to start the cycle. The number corresponding to the selected cycle will remain lit on the screen, on the lower part of the display the controller will show the food temperature (iP1), and on the top part of the display the controller will show the air temperature inside the cabinet.

To stop a cycle press and hold the button for that cycle or press and hold the power button.

At the end of the cycle the unit will engage the holding mode (see Cycles Explained), “H” will be displayed on the upper right corner.

Defrosting the Unit:

American Pane Corporation recommends defrosting the unit every 8 hours of continuous operation. Due to the nature of the blast chilling operation the defrost cycle cannot be carried while chilling the food, because of that the defrost cycle must be engaged manually when unit is not in operation.

With the display showing “OFF” press the power button, the display will show the air temperature inside the cabinet. Press and hold the up-arrow button to engage the defrost cycle.

The defrost will end when the evaporator temperature probe will detect no ice on the evaporator, maximum defrost cycle time is 60 minutes.

Alarm Codes

Display Code	Description
EE	Data or memory failure
rPF	Air probe failure - replace air probe
EPF	Evaporator probe failure - replace evaporator probe
i1P	Food probe failure - replace food probe (unit will run based on time until the probe will be replaced)
rtC	Real time clock data lost
HA	Maximum temperature alarm - Contact technician to check the refrigeration system
LA	Minimum temperature alarm - Contact technician to check the refrigeration system
FF	Cycle interrupted by short power failure
PFA	Cycle interrupted by long power failure
OCF	Maximum duration of the cycle expired (see Cycles Explained)
CA	High pressure alarm - Contact technician
dA	Door open alarm - Door has been open too long, close door to clear

Maintenance Instructions

Daily Maintenance

- Defrost the unit daily or as needed (see instructions 3.6, 4.9 and 4.10).
- Wipe clean the interior and the exterior of the unit using a solution of mild soap and water.
- Wipe clean the door gasket



IMPORTANT!

Do not use any corrosive chemicals to clean the unit!
Do not use any abrasive materials to clean the unit!
Do not spray water on the unit!

Quarterly Maintenance

The quarterly maintenance should be done by a service technician or by trained maintenance personnel.

- Inspect door hinge for proper operation.
- Inspect door gasket for proper seal.
- Inspect the drain line for proper flow.
- Use vacuum and brush to clean the condenser coil.
- Clean the evaporator coil.
- Inspect the site glass to ensure it's clean and dry
- Use an 80/20 ice/water bath to check the accuracy of the probes.



IMPORTANT!

Do not use water jet to clean the condenser coil!
Do not use any sharp or abrasive materials to clean the coils!

Annual Maintenance Checklist The quarterly maintenance should be done by a service technician or by trained maintenance personnel.

- Verify unit is properly installed
 - Unit is to be firmly situated and level.
 - Verify minimum clearances, see chart below.
 - Front to back air flow, at the condenser, is to be unobstructed.
 - Unit must not be situated near grease, heat, or vapor source.

Blast Chiller Model	Min. Sides Clearance	Min. Rear Clearance	Min. Top Clearance
AP3BCF30-1	2.5"	3"	NA
AP5BCF45-2	2.5"	3"	NA

- Verify the electrical service to be in accordance with the manufacturer label located on the exterior of the unit.
- Verify proper drain pan installation (clean if necessary) or hard plumbed. Inspect drain lines for integrity and proper flow.
- Check door hinges and gasket for proper operation and seal. Use mild soapy warm water to clean the door gasket. Adjust sweep gasket if needed.
- Inspect integrity of the unit, exterior and interior
- Verify evaporator fans are firmly mounted, balanced, free-turning and properly aligned.
- Disconnect unit from the main power and clean the evaporator coil, see the evaporator coil cleaning procedure at the end of this checklist.



Maintenance & Cleaning - *continued*

- Wipe down cabinet interior with soapy water and rinse. Do not use any abrasive or corrosive materials!
- Inspect and clean the condenser coil
 - Disconnect the unit from power and remove the front and back air inlet/outlet panels. With great care given to electrical connections and moving parts, inspect the integrity of the condensing unit.
 - Lightly brush clean/vacuum any lint and/or dust in cavity with special attention given to the condenser. **Do not use any abrasive or corrosive materials/**
 - Re-install the front and back air inlet/outlet panels.
- Connect the unit to power supply.
- Use an 80/20 ice/water bath to check the accuracy of the probe. To do so, close the door of the unit with the probe hanging on the outside of the cabinet and start a manual hard cycle. Use the probe to continually stir the ice-water bath and observe the readings for approximately 3 minutes. The temperature of the ice-water mixture should be 33 to 34°F.
- Verify the accuracy of the air probe against a calibrated thermocouple or against an accurate food probe.



Note: *American Panel Corporation blast chillers are equipped with a short cycle protection. If the unit is stopped during a chilling cycle more than once, the compressor will not start for the following 3 minutes.*

- Operate the unit in the hard chill / manual mode, for approximately 20 minutes, to verify temperature pull down.
- Verify the functionality of the evaporator fans. The direction of the air flow for the evaporator should be from the front of the unit towards the back of the unit.
- Verify the functionality of the condenser fans. Air direction should be from the front of the unit towards the back.
- Inspect sight glass to ensure it is clear and dry
- Check oil level in compressor base to a minimum if 1/2 full on indicator.
- Engage, operate, and verify effectiveness of manual defrost cycle.
- Turn unit off, wipe down the exterior with mild soap and water.
- Inform the customer and the factory of any functional and performance issues found following the completion of the above checks.
- Complete inspection paperwork and verify consumer has all necessary operation manuals, menus, and instructions. Contact factory with any questions. Monday-Friday 8am to 5pm EST. 1-800-327-3015 or through the website at www.americanpanel.com.



The above maintenance procedure should be done twice a year and is not a substitute for an efficient local maintenance schedule such as daily and quarterly maintenance schedule.

Recommended Cleaning Solution

When cleaning the evaporator use only the cleaning agent listed below and follow the directions on the container for proper mixing and cleaning.

Enviro-Coil Concentrate Home Depot Supply
<http://www.hdsupplysolutions.com>
 Part No: H-ECO1
 Enviro-Coil Concentrate Hydro-Balance Corporation
 Tel: (972) 394-9422

Evaporator Coil Cleaning

The following cleaning procedure is recommended as part of routine maintenance activity for all American Panel Corporation blast chillers.



IMPORTANT: Do not use any sharp or abrasive tools to clean the evaporator coil!

Before cleaning the evaporator coil run the defrost cycle to make sure the coil is completely free of ice.

When cleaning the evaporator coil particular attention must be paid to the kind of cleansing agent used. The following products **MUST NEVER BE USED**:

- Ammonia or detergents which contain ammonia (ammoniac solutions)
- Bleach or products containing bleach (chlorinated liquids)
- Acid detergents such as anti-lime scale, various anti-incrustations, muriatic acid, sulfuric, hydrochloric and acetic acid liquids, etc. (highly acidic liquids)
- Acetone, trichloro-ethylene (organic solvents)
- Caustic soda and other highly alkaline substances (high basicity liquids)

All the above substances can damage the protective coating and/or corrode the metal components and seriously damage the coil.



WARNING: Disconnect and lock the main power switch prior to cleaning the unit.

Monthly

- Open the evaporator door by removing the screws that secure the door to the vertical frame and swing the door open.
- Use a vacuum cleaner or a soft non-metallic bristle to remove the surface loaded fibers and dirt. Apply the tool in the direction of the fins.
- Rinse the coil finned area and the return bends with plenty of clean warm water. To avoid damaging the fins and the coating, it is important that the water temperature is below 130oF and the water pressure is below 100 PSI.
- Close and secure the evaporator door.

Quarterly

- Open the evaporator door by removing the screws that secure the door to the vertical frame and swing the door open.
- Use a vacuum cleaner or a soft non-metallic bristle brush to remove the surface loaded fibers and dirt. Apply the tool in the direction of the fins.
- Spray the coil finned area and the return bends with a generous amount of the recommended coil cleaner (see below) using a pump-up sprayer or conventional spray bottle. Refer to the manufacturer's directions on the container for proper mixing ratio.
- After cleaning the coil use the approved chloride remover (see below) to remove soluble salts and revitalize the unit. Use a pump-up sprayer or a conventional spray bottle to soak the finned area and the return bends. Refer to the manufacturer's directions on the container.
- Rinse the coil finned area and the return bends with plenty of clean warm water. To avoid damaging the fins and the coating, it is important that the water temperature is below 130oF and the water pressure is below 100 PSI.
- Close and secure the evaporator door.

Recommended Coil Cleaner

Enviro-Coil Concentrate
Hydro-Balance Corporation
Tel. (972) 394-9422

Recommended Chloride Remover

CHLOR*RID DTS
CHLOR*RID International, Inc.
Tel. (800) 422-3217

Notes



Versatile, Dependable Walk-Ins & Blast Chillers



American panel is your trusted manufacturer for all your cold storage, blast chilling and shock freezing needs. Building on a 57-year family owned and operated heritage, American panel provides versatile, dependable custom crafted walk-in coolers, freezers, combination cold rooms and blast chillers.

American Panel is proud to offer the largest line of blast chillers and shock freezers on the market. 37 different freestanding models and an infinite number of integral configurations. HURRiCHiLL offers the easiest to use controls in the industry, blast chilling is complex but controlling it doesn't have to be. American Panel is the go-to source for all your blast chilling/shock freezing needs.

Find out more at www.americanpanel.com