

BLAST CHILLERS MODEL NUMBERS

CCBC-4-35

CCBC-12-75

CCBC12-UA-100

INSTALLATION, OPERATION & SERVICE MANUAL



TABLE OF CONTENTS

<u>BLAST CHILLER INTRODUCTION</u>	<u>Page 1</u>
<u>SECTION 1 DESCRIPTION</u>	<u>Page 2</u>
Chill Processing	
CCBC-4-35	
Features and Specifications	Page 3
CCBC-12-75	
Features and Specifications	Page 5
CCBC-12-UA-100	
Features and Specifications	Page 7
Control Panel Layout	Page 9
<u>SECTION 2 INSTALLATION</u>	<u>Page 10</u>
Unpacking and Installation Instructions	
<u>SECTION 3 OPERATION</u>	<u>Page 13</u>
Start-Up Information	"
How to Operate	"
Blast Chill Cycle/Modes	Page 14
Loading of Product	Page 15
Defrosting Blast Chill	"
Printer	Page 17
<u>SECTION 4 MAINTENANCE</u>	<u>Page 18</u>
How to clean the Blast Chiller	
<u>SECTION 5 TROUBLESHOOTING</u>	<u>Page 19</u>
<u>SECTION 6</u>	<u>Page 24</u>
Expanded Drawings of Units & Parts List	
<u>Rules of Thumb And Guidelines</u>	<u>Page 31</u>
<u>Contact & Warranty Registration Information</u>	<u>Page 32</u>
<u>Preparation Guidelines</u>	<u>Page 34</u>

BLAST CHILLER INTRODUCTION

THE **BLAST CHILLER** is the easiest and simplest way to chill foods safely without additional labor. All food service operators prepare foods in advance or chill foods at the end of a workday. More often than not the foods are chilled in standard refrigeration, often creating an unsafe time and temperature environment. In using a **BLAST CHILLER** food products are produced in the same manner and with the same equipment which is used for conventional food preparation and chilled in a **BLAST CHILLER**. The **BLAST CHILLER** resembles a reach in refrigerator. The **BLAST CHILLER** is a unit that moves cool air at a high circulation over the top and bottom of each pan thus ensuring a rapid even chilling time. Almost all foods are chilled within 2 hours out of the danger zone 140°F to 41°F. The time necessary to bring the internal food temperature to 41°F. (5°C) is affected by the food density, moisture content and the food's ability to retain heat. Blast chilled food has a shelf life of five days, including day of production and service. Blast chilling works well with a wide range of menu items. Nearly any food product that can be portioned into a standard 2-1/2" hotel pan can be successfully blast chilled. These systems are used for services from 50 to 10,000 meals per day.

STEPS IN THE BLAST CHILL PROCESS

1. Prepare all food products to the point of consumption. Within 30 minutes, portion into 2-1/2 inch deep half-full pan or sheet pan at a depth of no more than 2 inches and weight of no more than 8 lbs.
2. Place pans of cooked product in the **BLAST CHILLER** and strategically place probe in the center of the pan where the internal temperature is brought down to approximately 41°F (5°C) within 90 minutes.
3. At the completion of the "chill cycle" the pans of food product are removed and covered with either a film wrap or stainless steel lid and labeled.
4. The product is stored in a refrigerator and maintained at a temperature between 33°F (1°C) and 38°F (3°C).
5. The food product is rethermed just prior to the required meal service in bulk or individual portion.

Chill Processing Under-Counter and Reach-In Refrigerator/Storage Cabinet

CCBC-4-35

The CCBC-4-35 is ideal for food service operations, which require a small volume blast chiller. This model is capable of chilling 35 lbs. of food product to 38°F in approximately 90 minutes. Daily capacity is over 140 lbs. Of processed product.

The comprehensive control panel features built in-alarms and can control the chilling process with the food core temperature probe or the digital timer.

At the end of the blast chill cycle the cabinet automatically reverts to a 38°F storage refrigerator.

CCBC-12-75 & CCBC-12-UA – 100

The CCBC-12-75 and CCBC-12-UA-100 are ideal for small to medium size food service operations, which require a blast chilling capability. The CCBC-12-75 is capable of chilling 75 lbs. of food product to 38°F in approximately 90 minutes. The daily capacity is over 300 lbs. of processed product. The CCBC-12-UA-100 is capable of chilling 100 lbs. of food product to 38°F in approximately 90 minutes. Daily capacity is over 400 lbs. of processed product

The comprehensive control panels feature built-in alarms and can control the chilling process with three food core temperature probes or the digital timer.

At the end of the chill cycle the cabinet automatically reverts to a 38°F storage refrigerator.

CCBC-4-35 Chill Temp Blast Chiller



Standard Features:

- Stainless Steel Exterior and Interior
- Two Operational Features:
 - Blast Chill Processing Refrigerator
 - 38°F Storage Refrigerator
- Operational Indicator Panel with Microprocessor:
 - Blast Chill Cycle Controlled Automatically by Either a Food Probe or Digital Timer
 - Four (4) Preset Chilling Times: 30, 60, 90, and 240 minutes
 - Cabinet Temperature Digital Display
 - Food Temperature Digital Display
 - Defrost Mode Indicator
 - On/Off, Blast Chill Cycle and Cancel Buttons
- Power Failure Alarm
- Stainless Steel Top, Front, Sides, Door and Interior

(continued)

- Flush Mounted Doors, Anti-Condensation Heaters and Removable Magnetic Door Gaskets
- Four (4) Pairs of Adjustable Panslides for 12" x 20" x 2 1/2" Pans
- Heavy Duty Casters
- Hot Gas Condensate Vaporization
- Large Surface Area Evaporator and High Velocity Fan
- CFC Free R-134A Refrigerant

SPECIFICATIONS			ELECTRICAL DATA		
Capacity (lbs/90 mins)		35 lbs.	Voltage		208/230V - 60/1
Width		28"	Amperage		7
Depth		32"	Feed Wires & Ground		2
Open Door Depth		58 3/4"	*10 Ft. Cord Installed		NEMA 6-15P
Height		34.5"	*Requires dedicated 15Amp. Service		
Clear Door Width		21 1/4"			
Clear Door Height		15"	WEIGHT		
Number Of Tray Slides		4 Sets (2ea)	Crated		275 lbs
REFRIGERATION DATA			Uncrated		265 lbs
R134a refrigerant			CRATED DIMENSIONS		
Compressor HP		3/4 HP	Width		31"
BTU/HR		3,706	Depth		34"
100°F Ambient		Evaporating@+5°F	Height		39"

CCBC-12-75 Reach-In Blast Chill



Standard Features:

- Stainless Steel Exterior and Interior
- Two Operational Features:
 - Blast Chill Processing Refrigerator
 - 38°F Storage Refrigerator
- Operational Indicator Panel with Microprocessor:
 - Blast Chill Cycle Controlled Automatically by Either Food Probes or Digital Timer
 - Four (4) Preset Chilling Times: 30, 60, 90, or 240 Mins.
 - Cabinet Temperature Digital Display
 - Defrost Mode Indicator

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- Power Failure Alarm
- Three (3) Food Probes with Digital Temperature indicator
- Seven (7) Day Temperature Recorder with Printout Demand
- Stainless Steel Front, Sides, Door and Interior
- Flush Mounted Doors, Anti-Condensation Heaters and Removable Magnetic Door Gaskets
- Twelve (12) Pairs of Adjustable Panslides on 3 1/2" Centers for 18" x 26" Sheet Pans
- Six (6) Wire Racks.
- Heavy Duty Swivel Casters with Locking Brakes on the Front
- Condensate Disposed of Automatically
- Large Surface Area Evaporator and High Velocity Fan Contained in a Separate Service Compartment
- Automatic Defrost
- CFC Free R-134A Refrigerant

SPECIFICATIONS			ELECTRICAL DATA			
Capacity		75 lbs.	Voltage		208/230V 60/1	
Width		35 1/2"	Amperage		15	
Depth		32"	Feed Wires & Ground		2	
Open Door Depth		58 1/4"	*10 Ft. Cord Installed		NEMA 6-20P	
Height		77 1/2"	*Requires separate 20Amp. Service			
Clear Door Width		18 1/4"	WEIGHT			
Clear Door Height		48 1/2"	Crated		598 lbs	
Number Of Tray Slides		12 Sets (2ea)	Uncrated		548 lbs	
Number of Wire Racks		6				
REFRIGERATION DATA			CRATED DIMENSIONS			
Compressor HP		1.5 HP	Width		37 1/2"	
BTU/HR		7,188	Depth		38"	
100°F Ambient		Evaporating @ +5°F	Height		79"	

The CBBC-12-UA-100 Reach-In Blast Chiller



Standard Features

Stainless Steel Exterior and Interior

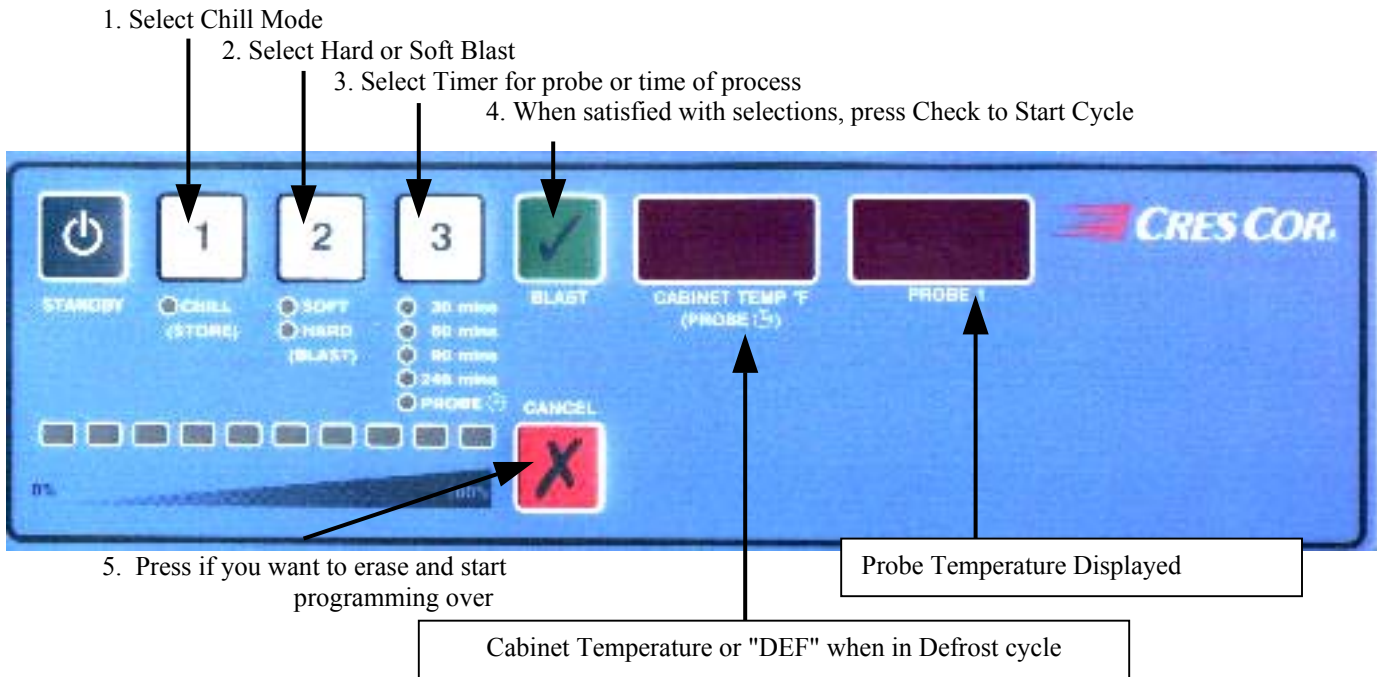
- Two Operational Features:
 - Blast Chill Processing Refrigerator
 - 38°F Storage Refrigerator
- Operational Indicator Panel with Microprocessor:
 - Full Microprocessor Controlled by a Digital Timer

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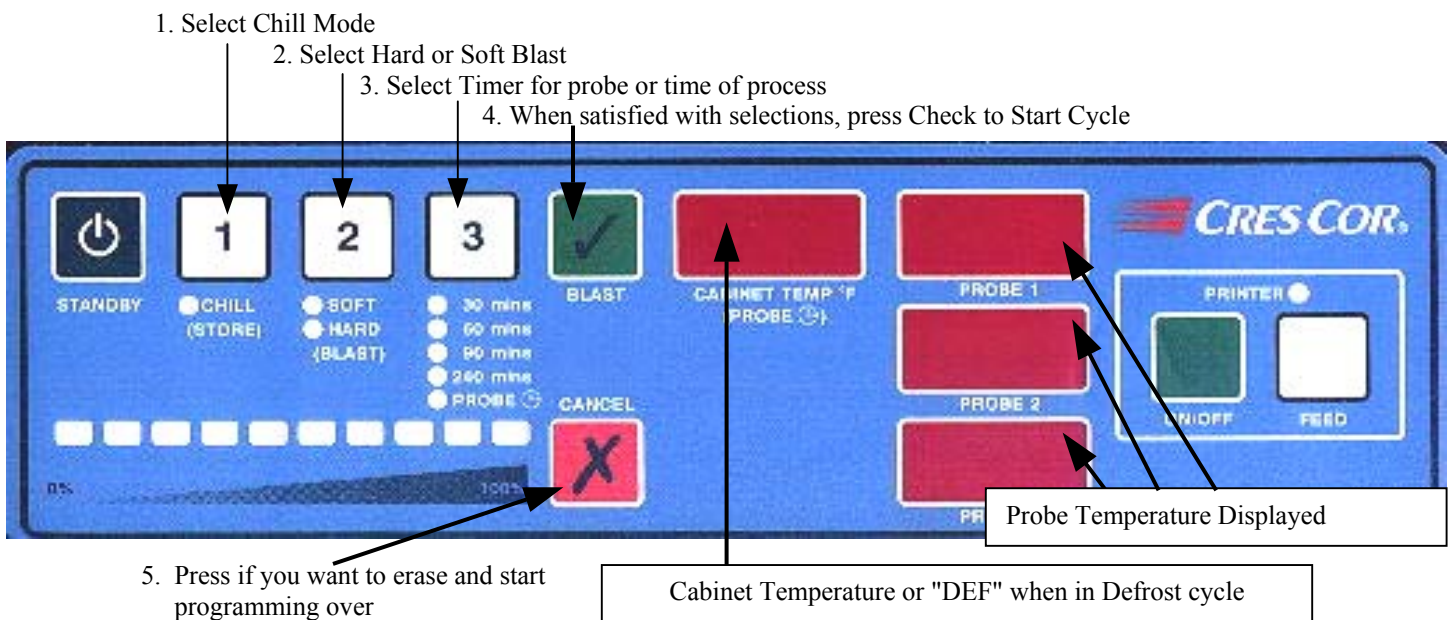
- On/Off Switch with Blast Cycle and Cancel Button
 - Digital Temperature Display and Defrost Indicator
 - Power Failure Alarm
 - Food Probe with Digital Temperature Indicator
- Galvanized Steel Top Stainless Steel Top, Front, Sides, Door and Liner
 - Flush Mounted Doors, Anti-Condensation Heaters and Removable Magnetic; Gaskets
 - Twelve (12) Adjustable Universal Angles
 - Heavy Duty Swivel Casters with Locking Brakes on the Front
 - Automatic Defrost
 - Condensation Disposed of Automatically
 - Large Surface Area Evaporator and High Velocity Fan Contained in a Separate Compartment
 - CFC Free R-404A Refrigerant

SPECIFICATIONS				ELECTRICAL DATA			
Capacity			100 lbs.	Voltage			208/230 - 60/3
Width			47"	Amperage			15.5
Depth			39 3/8"	Feed Wires & Ground			2
Height			84"				
Number Of Tray Slides			12 Sets (2ea)				
				WEIGHT			
				Crated			659 lbs
				Uncrated			648 lbs
REFRIGERATION DATA				CRATED DIMENSIONS			
R404A refrigerant				Width			47"
Compressor HP			2 HP	Depth			39.375"
BTU/HR			10,400	Height			84"
100°F Ambient			Evaporating@+5°F				

Control Panel For CCBC-4-35



Control Panel For CCBC-12-75 & CCBC-12-UA-100



UNPACKING INSTRUCTIONS

IMPORTANT:

It is **highly recommended** that your refrigerator or freezer be installed by an authorized CresCor Service Agency (List enclosed)

A. Receiving Shipment

Upon arrival, examine the exterior of the shipment packaging for any signs of rough handling.

If the cabinet is damaged, it should be noted on the delivery slip or bill of lading and signed to that effect. A claim must be filed immediately against the carrier indicating the extent and estimated cost of damage incurred.

All units are performance tested and thoroughly inspected prior to shipment. Upon leaving the factory all units are in perfect condition and the carrier signs to this effect.

B. Uncrating Procedure

WARNING:

DO NOT, Under any Circumstances, Lay Your New Equipment Down on Either The Back, Front, or Sides!!!

1. Check for any instructions printed on shipping carton.
2. Remove protective cardboard corners, sides and top.
3. Next remove the shipping skid.
4. **If any concealed damage is discovered at this time, notify the carrier *in writing*, and retain all carton and packing materials until an inspection has been made or waived by the carrier. Taking a photo of the damage is recommended.**

CAUTION:

Exercise extreme caution when removing the wooden skid.

5. Please Note the Model and Serial Number located on the inside right hand wall of the unit. Please take the time to write these numbers down and keep in a safe place. A space has been supplied for this purpose on the last page of this manual. This will assure you quality service and support in the future. Also take the time to register your equipment to activate the warranty.

C. Removing Plastic Film

Stainless steel surfaces are protected with plastic film when shipped. The film is easily removed by grasping an edge corner of the film and pulling it off.

D. Locating Your new Blast Chill Unit

The cabinet should not be placed in the immediate vicinity of ranges, ovens and other heat radiating equipment. This will help to increase efficiency as well as lower operating costs. Self-contained refrigeration is standard on reach-in chillers. **Adequate air ventilation is mandatory** for the condensing unit in order to operate efficiently and to prevent excessive and damaging operating temperatures. The Blast Chiller should be in an ambient room temperature of 85° or less.

E. Leveling

The cabinet must be standing level on all four casters for the self-closing doors to operate properly and for proper drainage of condensation from the evaporator. Casters are non-adjustable, therefore the floor must be level.

F. Cleaning (refer to section 4)**G. Electrical Supply**

All models (except the CCBC12-UA-100) are furnished with an electrical power cord & NEMA plug, merely requiring that the appropriate NEMA receptacle is available at the installation location. Model CCBC12-UA-100 requires a qualified electrician to furnish and install wiring for the power supply. This must be connected to the identified terminals provided inside the control panel. Refer to the appropriate wiring diagram furnished with the cabinet for guidance. Electrical power of the current voltage, phase and ampacity must be supplied to the Blast Chiller. The Chiller must have its own separate electrical circuit breaker with no other equipment or appliance connected to that breaker. (Dedicated Circuit) See the cabinet data plate located on the interior wall for the electrical requirements.

CHECK LIST (WITH POWER TURNED OFF)

******* EXAMINE THE FOLLOWING BEFORE START-UP! *******

CAUTION: Make sure the power to chiller is turned off prior to making these checks to avoid the possibility of unexpected injury !!!

1. Check that above installation recommendations have been adhered to. Pay particular attention to installation location for any potential excessive heat sources (oven, range, etc.) or inadequate air ventilation conditions which can cause compressor overheating problems and/or failure. If any such condition exists notify the owner to have the installer correct before continuing.
2. Check refrigeration tubing for damage and that they are not touching or rubbing against anything.

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3. Make sure cabinet is sitting level with all four (4) casters (or legs) in contact with the floor.
4. Also make sure the door stays open when opened past 90 degrees.
5. Inspect magnetic door gasket to be sure it is making contact on all four (4) sides. Also make sure it is not cut, torn, twisted or otherwise deformed.
6. Check installation of shelves or pan slides .
7. Check electrical power source for correct voltage, phase and ampacity. Refer to cabinet data plate for requirements.
8. Remove electrical control box cover and check all wiring connections for a secure hold. On rare occasions, rough shipping and handling conditions can result in loosening of connections resulting in electrical problems.
9. Make sure all miniature circuit breakers are turned on.
10. Check all fan blades. They should turn freely without touching anything as they spin.
11. Check electrical power supply cord and plug for any damage and be sure it is not routed in a way that would permit anyone to trip over it.

GENERAL OPERATION OF BLAST CHILLER

All **CRESCOR BLAST CHILLERS** have 3 basic modes:

1. Normal refrigeration storage 1°C/34°F to 3°C/38°F
2. Blast chill hard -10°C/14°F
3. Blast chill soft 1°C/34°

Normal Cycle 1°/34°F to 3°C/38°F

This is the storage temperature at which the food can be held.

Blast Chill Cycle (hard or soft)

During the blast chill hard cycle the air temperature inside the cabinet should go down to approximately -10°C/14°F. This is for the timed or probe chilling cycle. **Most applications will use the hard cycle mode.** During soft chill the air temperature stays above 0°C/32°F.

START UP INFORMATION

After you have completed all eleven (11) steps of the checklist, you are now ready to perform the following steps:

1. Sanitize the inside of the cabinet and probes.
2. Turn on **BLAST CHILLER** left standby button-Display panel will indicate cabinet temperature.
3. There may be an indicator "A7". This indicates that there has been a power failure.
4. Press the red "x" cancel button to cancel alarm.
5. Allow the cabinet to chill in standard refrigerator mode for at least 30 minutes.
6. Run **BLAST CHILLER** (See HOW TO OPERATE below) without food product to ensure all equipment is performing correctly. Use warm pans of water and place probe tips in water to make sure the system is operating.

Do not submerge probes!

HOW TO OPERATE

The following instructions apply to all modes of **CRESCOR BLAST CHILLERS**

1. Turn on the chiller at least one half hour before use.
2. Check that the chiller is operating at storage temperature. Cabinet temp should be 40°F or lower.
3. Load the products to be chilled (see Loading Section page 4)
4. By pressing button '1', select the 'Chill' mode
5. By pressing button '2', select the desired blast function: "Hard Blast" or "Soft Blast".
(Use Hard Blast unless otherwise advised.)

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- 6) By pressing button '3', select the Timer for the desired duration or probed blast. Default to probe blast unless it is known how long a product will chill.
- 7) If a variety of products are used make sure one probe is strategically placed near the top shelf, 1 in the center and 1 at a lower shelf. If a variety of products are used make sure one probe is in the **largest item to be chilled**. Place the CCBC-4-35 probe in the **most difficult** to chill item located on shelf 2 or 3.
- 8) When you are happy with your selected program press the "✓" to start the blast cycle.
- 9) If you are not happy with your selection press the "x" button to cancel your 1/2/3. If cancelled repeat the above steps.
- 10) The blast chilling will begin.

TIP: You may open the door during blast chilling. This will not interrupt the cycle. If you add additional food product make sure to use an Unused Clean probe in the product.

On completion of the blast chill cycle, when the product has reached 37°F, a buzzer will sound, and "DEF" will be displayed in the "CABINET TEMP" window of the control panel. "DEF" indicates the unit is defrosting. The blast chiller converts to a standard refrigerator.

During the defrost operation the temperature in the chiller will not exceed +3°C/38°F and it is therefore safe to leave products in the chiller during the defrost cycle.

NOTE: Product can be set for blast chilling at the end of the labor shift. The products will store safely in refrigeration hold mode until the next shift up to 24 hours.

BLAST CHILL CYCLE/MODES

All **BLAST CHILLERS** allow the operator to use any of the 4 pre-programmed timed cycle and a probe control blast chilling cycle with the option of soft or hard blast.

PROBE CONTROLLED

The probe blast chill cycle functions with the internal probe(s) supplied. The probe monitors the core temperature of the food and will not permit the blast cycle to stop until the default temperature of 3°C/38°F is reached. The **last** product to reach 3°C 38°F will discontinue the blast chill cycle.

When controlling the cycle with the food probe, make certain that the probe or probes are located in the center of the product before the blast cycle is started. On **BLAST CHILLERS** equipped with three food probes the cycle will not finish until all three probes have reached the correct temperature.

CAUTION:

Easier to chill items may actually freeze prior to the end of the blast chill cycle of the harder to chill item.

To activate a blast chill cycle you must:

1. Choose the required store mode with button 1
2. Choose the require blast type with button 2
(select hard blast unless all items chilling are delicate)
3. Choose the blast duration or probe with button 3
(select probe unless you know how long it takes the product to chill)

As each selection is made the indicator LED will illuminate to show what is chosen. Press the “✓” to accept, or “x” to cancel.

At the end of the blast chill cycle there will be an audible alarm, which will cancel automatically after 15 minutes. **(It may also be cancelled with the “x” button.)**

After the blast chill cycle the cabinet will revert to a standard refrigeration mode appropriate to store the foods until ready to use or transfer.

LOADING OF PRODUCT

1. All food products should be placed in either a 2-1/2” hotel pan or a sheet pan.
2. With the exception of roasted meats, all products should not be more than 2” in depth. 1-1/2” is recommended for very dense items such a lasagna and beef stew.
3. There should not be more than 7 lbs. of product per shelf.
4. Roast meats should be cut in ½ or 1/3 to allow for more effective chilling.
5. All Products should be blast chilled uncovered unless a “skin” may be formed (in cream soups and sauces).*
6. Creamed soups and sauces should be covered with plastic wrap. The plastic wrap should be touching the product to allow quick chilling. *
7. Probe(s) should be placed in the center of the pan or roast meat.

DEFAULT MODE

To save time for repeated identical blast operations, the blast selections are remembered, so when 1-2-3 are pressed again, the selections automatically adopt the previous settings on the first push. So to repeat a blast chill mode, just push 1 2 3 “✓”.

DEFROST

At the end of each cycle, the defrost cycle will automatically clear any ice from the evaporator.

During operation in storage mode a defrost will be performed automatically at the factory pre-set interval of 6 hours.

*see general rules of thumb pg. 30 for more information.

If a blast cycle is cancelled and the defrost thermostat is measuring 1°C/32°F or less, the **BLAST CHILLER** automatically goes into a defrost cycle.

When the **BLAST CHILLER** is in the defrost mode the “Cabinet Temp” window of the control panel will display “DEF” During the defrost cycle some fans will stop running. This is normal. When the defrost cycle is finished the compressor will run for approximately 90 seconds before the fans operate.

Following every defrost period there is a 3 minute period during which a blast cycle cannot be selected. This short interval is to allow for the water created by the defrost mode to dissipate. The cabinet is now ready to start another blast cycle if desired. During the defrost operation it is safe to leave products inside the blast chiller.

PRINTER

If equipped, the printer is activated after each blast cycle. The printer provides hard copy historical data of cabinet performance or warning tickets to archive or act upon.

The following formats are available:

Midnight Ticket

At midnight, a ticket is automatically printed for archiving in the morning. The midnight ticket provides the following information:

- Time and date of printout and cabinet number
- Cabinet temperature at time of printout
- A graph of cabinet temperature over the preceding 24 hours

Demand Ticket

A ticket may be requested from the control panel by holding the printer 'On/Off' button for five (5) seconds. This ticket provides the same information as the midnight ticket except that up to seven (7) days of historical data are printed.

Alarm or Warning Ticket

A ticket is automatically printed if any condition is detected by the microcontroller, which may need attention. The print function may be terminated by pressing the printer 'On/Off' button.

Main Power Failure Ticket

If the main power fails for more than five (5) seconds a ticket is automatically printed which gives the time of power failure and the time at which power is stored.

Sensor Failure Ticket

If the controller detects that one of its sensors has failed, then a warning ticket will be printed.

Power Failure

A power cut does not cause the loss of any accumulated historical data and no re-programming is necessary. The controller's battery is continually charged and provides emergency back up under normal power failure conditions.

Installing New Paper and/or Ribbon

Paper:

1. Lift Up and pull Out the printer cover.
2. Remove old cardboard roll, insert new paper roll in position so paper is fed unrolling from the bottom backside.
3. Fold paper end into a V shape and thread it through the slot over the ribbon cartridge.
4. Press "FEED" button on panel....paper should feed through slot, If not, redo step 4 and try again until paper feeds through. Check for proper operation.

Ribbon:

To Remove:

Hold ribbon cartridge between thumb and pointer finger, pull gently but firmly out (towards you)

To replace:

Snap new cartridge in place and re-feed paper. Check for proper operation.

How to Clean the Blast Chiller

CAUTION !

1. Turn Off Blast Chiller
2. Allow Cabinet to warm slightly.
3. Do not hose Blast Chiller.

- Wipe up spills as soon as possible.
- Clean regularly to avoid heavy dirt buildup.

HINTS:

1. Use the mildest cleaning product that will do the job
2. Always rub in the direction of polish lines to Avoid scratching the surface.
3. Use only a soft cloth, sponge, fibrous brushes, Plastic pads for cleaning and scouring.
4. Rinse thoroughly with fresh water after every Cleaning operation.
5. Always wipe dry to avoid watermarks.

SOIL	CLEANER	METHOD
Routine Cleaning	Soap, ammonia or detergent* and water.	1. Sponge on with cloth. 2. Rinse.
Stubborn spots and stains	Mild abrasive made for stainless steel.	1. Apply with damp sponge or cloth. 2. Rub lightly.
Probe	Antibacterial soap, ammonia or detergent* and water.	1. Remove excess food from probe. 2. Clean and sanitize.
Hard Water Spots and Scale	Vinegar.	1. Swab or wipe with cloth. 2. Rinse and dry.

* Mild detergents include soaps and non-abrasive cleaners.

SERVICE & TROUBLESHOOTING

➤ Setting or Resetting Time and Date

SET UP PROCEDURE	
SWITCH	FUNCTION IN SPECIAL SWITCH MODE
I/O	ON/OFF SWITCH
1	When held in, displays the code for current parameter
2	Step back to previous parameter, and while held in displays the parameter code. When released, displays the value of the parameter.
3	Advance to the next parameter. (same as above)
▣	Increase the value of the current parameter.
X	Decrease the value of the current parameter

To set the parameters complete the following steps:

1. This can **only** be entered from the panel **OFF** mode.
2. Press and **HOLD IN** any key **EXCEPT** the **ON/OFF** key for three seconds.
3. **While Holding key**, press and release the **ON/OFF** key.

You will now be in the programming mode.

CODE	PARAMETER	SET AT:
bss	Blast Soft Stat	33
bhs	Blast Hard Stat	12
bfs	Blast Freeze Stat	-16
sss	Store Soft Stat	33
shs	Store Hard Stat	33
sfs	Store Freeze Stat	-8
bsd	Blast Soft Differential	35
bhd	Blast Hard Differential	35
bfd	Blast Freeze Differential	35
ssd	Store Soft Differential	35
sfd	Store Freeze Differential	35

bd1	Blast Duration 1 (normally 30 min.)	30
bd2	Blast Duration 2 (normally 60 min.)	60
bd3	Blast Duration 3 (normally 90 min.)	90
bd4	Blast Duration 4 (normally 240 min)	240
cab	Cabinet Number	1
ala	Alarm Duration	900 (15 min)
ddc	Defrost Duration for Cabinet	Hex. Switch
dic	Defrost Interval for Cabinet	Hex. Switch
ddp	N/A defrost Duration for PoD minutes, Set Manually	
dip	N/A defrost Interval Hours, Set Manually	
det	Defrost Target Temperature	39

yr	Calander Year Setting	Set Accordingly
nth	Calander Month Setting	Set Accordingly
day	Calander Day Setting	Set Accordingly
hr	Calander Hour Setting	Set Accordingly
ute	Calander Minute Setting	Set Accordingly

ALARM CODES

7-Segment Display

The left hand window shows the cabinet wall temperature.

The right hand displays show the probe temperatures during a blast cycle, and are normally blank during store. If a probe fails it will indicate **pf** (probe failure) during a blast.

Cab temp window also acts as a count up timer in probe blast.

If there is an alarm condition, the top probe display will show an alarm number **a0** to **a7** during store (see table below), but will still show the probe temperature during blast.

7-Seg Display	Alarm Condition
a0	AIR ON SENSOR FAILURE
a1	WALL SENSOR FAILURE
a2	FIN SENSOR FAILURE
a3	FOOD PROBE 1 FAILURE *
a4	FOOD PROBE 2 FAILURE
a5	FOOD PROBE 3 FAILURE
a6	SPARE
a7	POWER CUT DETECTED

*** (Top Display On Front Panel Used For 3 Probe Systems)**

Note: for each probe only one audible alarm and alarm printout is allowed to be issued each day. This is to prevent excessive paper use and noise nuisance in the event of an intermittent probe failure. However, repeated probe failures are displayed on the probe display window, (top window in the case of 3 probe panels)

- Cabinet has no power to controller-display not lit:
 1. Make sure the power is connected to the cabinet that the cord is plugged in on the models with power cord and plug.
 2. Check main circuit breaker at power supply panel; make sure it is on.
 3. Model CCBC-12-UA-100 only, has an "isolator" (disconnect) switch on the control box, make sure it is on.
 4. Check circuit breakers inside cabinet control box; make sure all are on.
Check control power supply circuit safety klixon (some models). If tripped due to having exceeded 158°F, some models must be manually reset by pushing the red reset button (make sure power is turned off before doing this to avoid any unexpected injury!). Other models will reset automatically.
 5. Check fuse on PC board.
 6. Check for loose wiring.
 7. Check plug in connectors for interconnecting cords and cables from main to front "Touch Pad" operators panel.
 8. Defective communications ribbon cable.
 9. Defective main or front PCB.

- Cabinet has power, display shows "OFF". Turn cabinet "on" by pressing "OFF/ON" button.
 1. Compressor not running:
 - (a) Manually close compressor contactor (if utilized) temporarily to see if compressor runs.
 - (b) If compressor runs, check compressor control circuit for problem.
 - (1) Is the Dual Pressure Control open?
 - Check for correct settings
 - Low or no refrigerant charge
 - Liquid Line Solenoid Valve (if used) not opening?
 - (c) If the compressor doesn't run, check if you have power to compressor terminals.
 - (1) If no power to terminals, trace back until power is found. Correct problem.
 - If single phase, check start relay and capacitor(s).
 - (2) If power is present at compressor terminals, check for stripped compressor overload and/or "open" or grounded compressor-motor windings.
 2. Compressor does run:
 - (a) Compressor short cycles.
 - (1) Check DPC settings. Cut-in and/or differential may need to be adjusted.
 - (2) Check refrigerant charge may be low.
 - If low, or no charge, check for leaks, repair and recharge as necessary.
 - (3) Check if thermostatic expansion valve is feeding properly.
 - (4) Check Chiller Store Thermostat ("St 1") and Differential ("Dt 1") settings.
 - (5) Check the "fin" and "air on" thermocouples at main PCB to make sure they are not interchanged.

(continued)

3. Compressor runs continuously.
 - (1) Check compressor for "pumping" efficiency.
 - (2) Door not closed tight or gasket leaking.
 - (3) If no DPC, or if DPC set too low to open, check refrigerant charge and/or thermostatic expansion valve for adequate feeding.
- Cabinet has power, display shows "Sto", but load of hot food takes extremely long to chill:
1. "Sto" is the storage mode and cannot chill food properly. You must first choose a "PROGRAM" and then press "BLAST" in order to make the machine do a blast chill cycle to quickly chill hot food.
- In "BLAST" mode, unit runs, but doesn't chill the food fast enough.
1. Food too "thick" - limit 2 inches maximum for optimum performance.
 2. Food too hot when placed inside - temperatures above 160°F increase pull-down time proportionally.
 3. Too much food - exceeding rated pounds of capacity increases pull-down time proportionally.
 4. Food covered (air trapped between food and cover is an insulator).
 5. Container too large (distance from outside of container to center of food within is too great, shouldn't exceed 2 inches for optimum performance).
 6. Container material is plastic (an insulator) instead of metal (a conductor).
 7. If cabinet was off did not pre-chill before loading with hot food.
 8. If using timed program, incorrect amount of time being selected.
 9. Mechanical problem:
 - (a) Inadequate refrigerant charge.
 - (b) Thermostatic Expansion Valve defective.
 - (c) Evaporator fan(s) not working.
 - (d) Evaporator coil iced (see below for possible causes).
 - (e) Inadequate refrigeration (BTUH) capacity:
 - Condensing unit ambient, or too high
 - Condenser fan not working (if air cooled)
 - Condenser dirty
 - Compressor inefficient (or defective)
 - Refrigerant line restriction

Evaporator coil iced:

1. Check how cabinet is being operated:
 - (a) Placing load of hot food inside and merely closing door is *improper use*. Doing this keeps unit in the storage ("Sto") mode resulting in extremely long pull-down times and does not initiate an automatic defrost. As a result the evaporator coil becomes heavily iced.
 - (b) Must run a "BLAST" cycle for automatic defrosting to occur.

(continued)

2. Door not shut tight
3. Gaskets leaking
4. Check defrost heater operator (if used):
 - (a) Defective heater
 - (b) Blown fuse (if used)
 - (c) Defective "klixon" if used
5. Check defrost settings:
 - (a) Check defrost thermostat ("St 5") setting
 - (b) Check defrost differential ("dt 5") setting
 - (c) Check Defrost Period Switch on main PCB inside control box
 - (d) Check Defrost Length Switch on main PCB control box.
6. Check that ambient temperature has not exceeded 100°F or 100% humidity.

➤ Display reads - 58° F

1. Thermocouple is "open" :
 - (a) If food probe, check the make sure it's plugged into probe receptacle properly
 - (b) Check for loosened thermocouple wire connection at all connections
 - (c) Check for broken or cut thermocouple wire
 - (d) Temperature display not believable - responds in reverse:
 - Polarity of thermocouple wire is reversed

➤ Evaporator won't run:

1. Breaker not on (if equipped)
2. Motor overload tripped (if equipped)
3. In post-defrost "Drip" period
4. "Fan door" switch is open (if equipped)
5. Blown fuse (if used)
6. Defective contactor (if equipped)
7. Motor defective

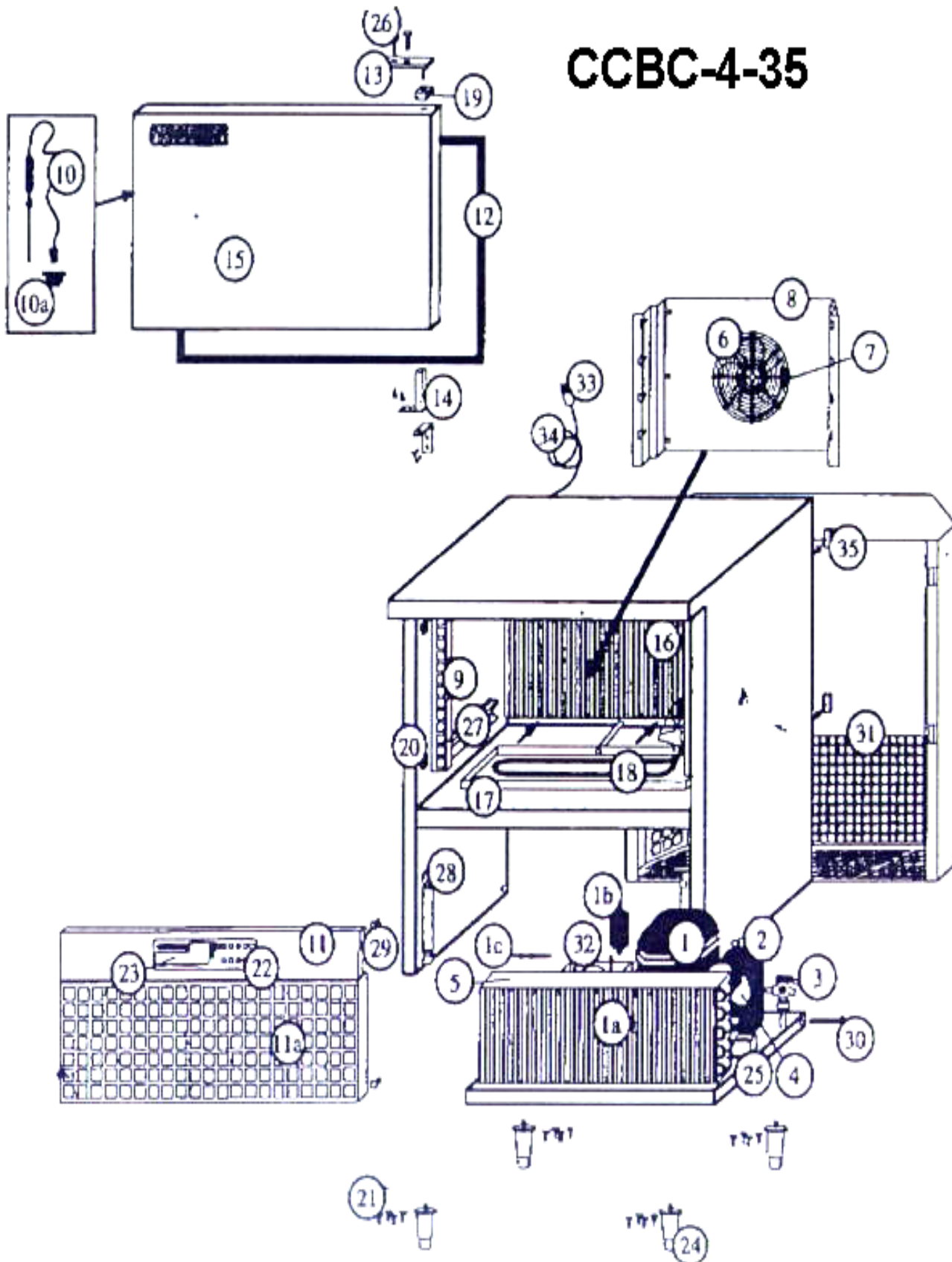
➤ Printer problems (if equipped) :

1. Printer doesn't run:
 - (a) "Link" (jumper) on main PCB not installed
 - (b) Damaged communications "ribbon" cable
 - (c) Defective printer
 - (d) Defective PCB
2. Printer "runs", but no paper comes out:
 - (a) Check if paper roll is loaded
 - (b) Check for jammed paper tape -
 - Before loading a new roll, make sure free end of tape is pulled completely away from the roll. Remove any paper residue. (The residue will undoubtedly result in a paper jam).
 - Carefully remove any paper residue from printer platen, otherwise another jam could occur.
 - (c) Check for proper tape feed
3. Printer runs, but paper comes out with no printing:
 - (a) Check if printer has ribbon cartridge installed
 - (b) Check ribbon - condition may be out of ink, dried out, or torn

- (c) Check make sure ribbon cartridge is properly installed - both sides snapped in place
 - 4. Printer is printing backwards and all characters reversed
 - (a) Paper tape is feeding incorrectly over top of printer ribbon. This can readily occur when inserting a ribbon cartridge with paper tape still protruding from the printer. ***The ribbon must be on top of the paper in order to print correctly.***
 - 5. Paper rolls and ribbon cartridges are available from CresCor Authorized Parts Distributors.
- Odors inside cabinet:
- 1. Spilled food inside - clean as required
 - 2. If not being used for a long period of time, turn off, clean interior and keep door open to ventilate. Alternatively after cleaning, place and odor absorbent such as baking soda inside with the door kept closed. Remove before restarting.
- Alarm conditions:
- 1. Cabinet wall temperature above 38°F more than 60 minutes
 - 2. Defrost termination on time instead of temperature
 - 3. Compressor overheating (if temperature is greater than 217°F for 1 minute)
 - 4. Compressor run (if the compressor runs continuously for more than 6 hours in either blast mode or storage mode)
 - 5. Faulty sensor (including food probe)
 - 6. Loss of power for 5 seconds or more
 - 7. Dead battery
- Food dried out
- 1. Uncovered containers
 - 2. Left in storage too long
- Food frozen
- 1. Too long blast cycle
 - (a) Choose a shorter timed program
 - (b) Use the probe program
 - 2. Uneven food portions-thinner foods can freeze by the time thicker portions reach temperature
 - 3. Monitor temperatures more frequently if uneven food loads and remove those when reaching end temperature
 - 4. Food probe defective
 - 5. Stat 1 set too warm
- Food not cold enough
- 1. Timed cycle too short
 - 2. Stat 1 set too warm
 - 3. Food probe tip not in center of food
 - 4. Defective probe

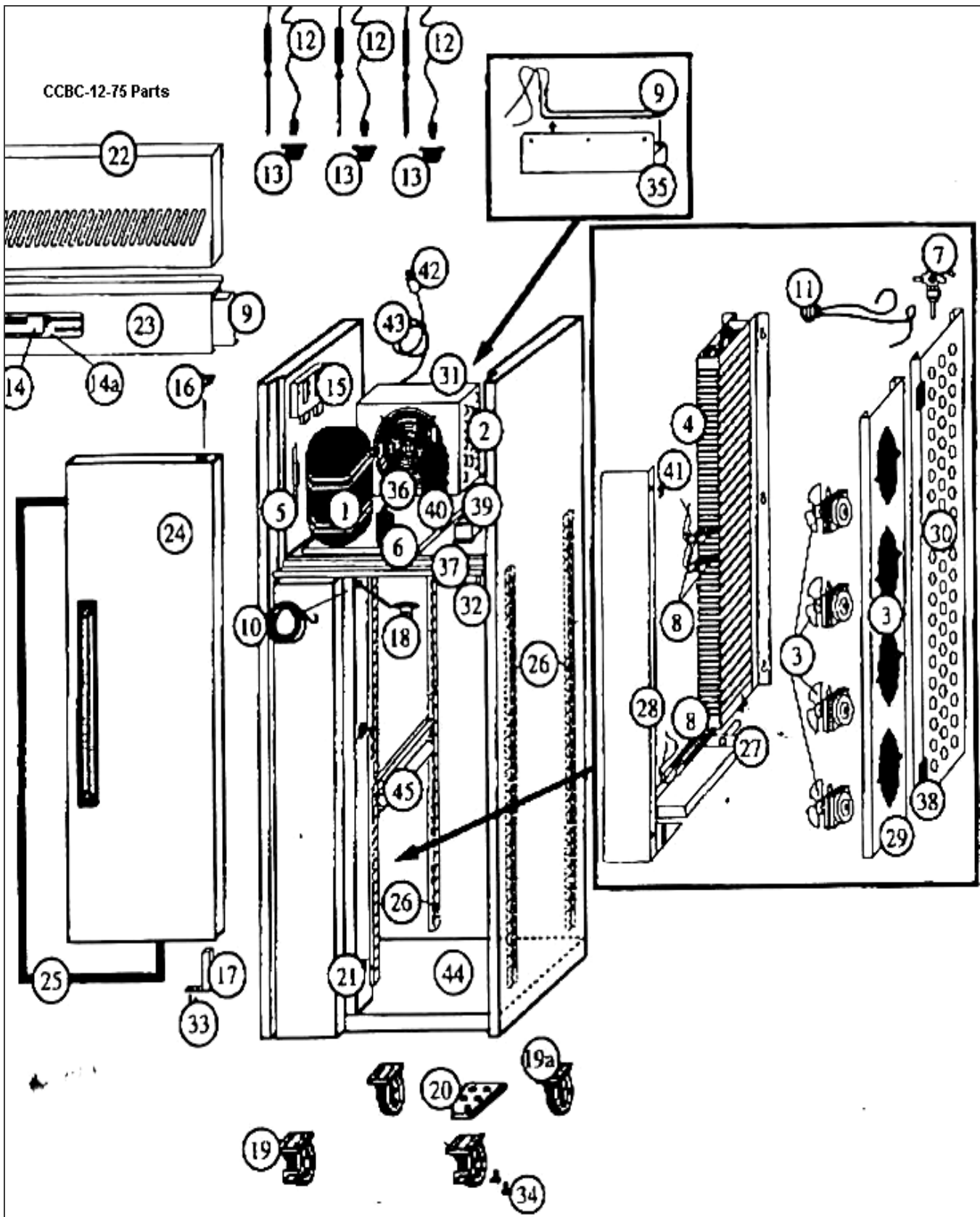
Parts List and Breakdown Drawing of Blast Chillers

CCBC-4-35



PARTS LIST CCBC-4-35 BLAST CHILLER 208V 60HZ SINGLE PHASE

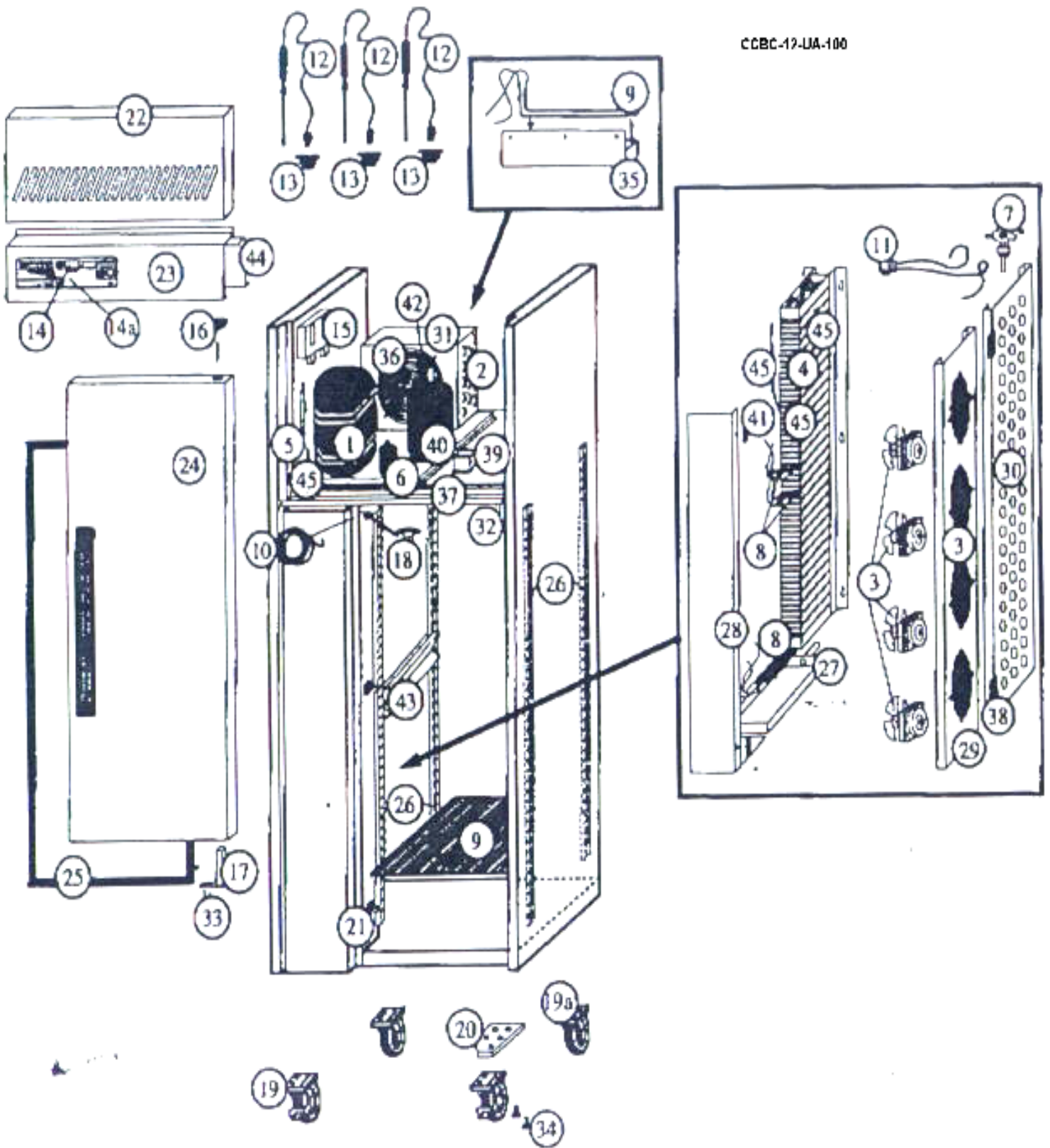
Drawing Number	Description	Part Number
1	COMPRESSOR CAJ 4492Y R134A	WCOMP 345
1a	CONDENSER 3X11X21	WCOND 250
1b	DRIER 1/4 X 3/16 SWEAT T R134A	WDRIER 110
1c	SIGHT GLASS 1/4" SWEAT	WSIGHT 020
2	RECEIVER 2.2 L	WRECEIVER 060
3	EXPANSION VALVE BODY TEN 2 R134A	WVALVE 196
3	1/4" SOLDER ADAPTOR	WVALVE 198
3	ORIFICE NO. 3	WVALVE 201
4	CONDENSOR FAN MOTOR 16 WATT	WMOTOR 270
4	CONDENSOR FAN BLADE 10" 27° PITCH	WBLADE 070
5	CONDENSOR FAN PLATE	WCFP/WBC35/99/1
6	EVAPORATOR FAN 315MM AXIAL FAN (ZIEHL EBM)	WMOTOR 420
7	EVAPORATOR WIRE FAN GUARD 50MM DEEP	WGUARD 090
8	EVAPORATOR FAN PLATE	WEFP/WBC35/99/1
9	RACKING	WLR/WBC35/99/1
10	FOOD PROBE	WPROBE 100
10a	FLANGED SOCKET	WPROBE SOCKET 010
11	UNIT COVER (TOP)	WUCT/WBC35/99/1
11a	UNIT COVER (BOTTOM)	WUCB/WBC35/99/1
12	GASKET: 680MM X 430MM	WGASKET 905
13	HINGE PLATE: R7 OPAL-TOP	WHINGE 020
14	HINGE: SPRING LOADED	WHINGE 290
15	STANDARD DOOR	WWBC35 STD DOOR/99/1
16	EVAPORATOR 4X13X17	WEVAP 485
17	DRIP TRAY	WDT/WBC35/99/1
18	DEFROST HEATER 3 BEND 300W	WHEATER 030
19	NEW DOOR NYLON	WDOOR NYLON NEW
20	LADDERRACK MOUNTING BLOCK	WLADDERACK 020
21	SCREW: M6 X 12 POZI PAN ZINC T/T	WSCREW 140
22	WBC/SPEC B1 WITHOUT PT. NO 4253	WLABEL 701
23	AARDWARE FRONT PANEL	WAARDWARE 010
23	AARDWARE BACK BOARD NO PRINTER	WAARDWARE 030
23	1M RIBBON TO CONNECT TO FRONT & BACK	WLOGGER RIBBON 010
24	LEGS: S/S 4" SHORT STUD C/C PLATE	WLEG 050
25	KLOCKNER MOELLER DIL 00M 190V 50HZ/220V 60HZ	WCONTACT 190
26	6MM X 25MM ZINC POZI PAN TAP TIGHT SCREWS	WSCREW 180
27	S/S/ SLIDE 585MM (2 OFF PER SLIDE 276MM)	WS/SLIDE 060
28	LATCH: UNIT COVER (CLIP)	WLATCH 030
29	STRIKE: UNIT COVER (CLIP)	WSTRIKE 010
30	8MM X 20MM ZINC SET SCREWS	WSCREW 585
31	REAR COVER	WRC/WBC35/99/1
32	HOT GAS VAPORIZER	WHGV/335X185/88/1
33	PLUG	WPLUG 170
34	CORD	WCABLE 520
35	LADDERRACK MOUNTING BLOCKS	WLADDERACK 010



PARTS LIST CCBC-12-75 BLAST CHILLER 208V 60HZ SINGLE PHASE

Drawing Number	Description	Part Number
1	COMPRESSOR FH4518Y 208/220V 60HZ	WCOMP 365
1	CONDENSER 4X17X17.5	WCOND208
3	EVAPORATOR FAN MOTOR 4X200MM AXIAL FAN ZIEHL	WFAN 115
3	FLAT GUARD	WGUARD 080
3	1.5 UF CAPACITOR 230V 60HZ	WCAPACITOR 050
4	EVAPORATOR 4X12X41	WEVAP311
5	SIGHT GLASS 3/8" SWEAT	WSIGHT 010
6	DRIER 3/8" SUITABLE FOR H134A	WDRIER 080
7	EXPANSION VALVE TEN 2 R134A	WVALVE 196
7	3/8" SOLDER ADAPTOR 068-2060	WVALVE 197
7	ORIFICE NO. 3	WVALVE 231
8	DEFROST HEATER 2X500 WATT 1 BEND	WHEATER 400
9	VAPORIZER HEATER 115 WATT 3 BEND	WHEATER 010
10	HEATER WIRE 4.35M 240V (57 WATT)	WHEATER WIRE 340
11	KLIXON 14T31 30210 L13C 9651	WSTAT 410
12	FOOD PROBE	WPROBE 100
13	PROBE SOCKET	WPROBE SOCKET 010
14	AARDWARE FRONT PANEL C/W PRINTER	WAARDWARE 020
14	AARDWARE BACK BOARD	WAARDWARE 010
14	1.5M RIBBON TO CONNECT TO FRONT & BACK	WAARDWARE RIBBON 020
14a	LABEL: 3 PROBE F°	WLABEL 746
15	HIGH / LOW PRESSURE STAT	WSWITCH 360
16	NEW DOOR NYLON	WDOOR NYLON NEW
17	HINGE: SPRING LOADED	WHINGE 290
18	SWITCH: THERMAL HEATED 331-528	WSWITCH 200
19	CASTOR 6" W/BRAKE	WCASTOR 040
19a	CASTOR 6" NO BRAKE	WCASTOR 030
20	HINGE PLATE: R4 OPAL/T2U	WHINGE 070
21	LADDERACK BLOCKS	WLADDERACK 020
22	UNIT COVER	WUC/WBC75/99/1
23	CONTROL PANEL	WCP/WBC75/99/1
24	DOOR	WWBC75 STD DOOR/99/1
25	GASKET 1295MM X 565MM	WGASKET 900
26	LADDERACK (1SET)	WLR/WBC75/99/1
27	DRIP TRAY	WDT/WBC75/99/1
28	BAFFLE PLATE	WBP/WBC75/99/1
29	EVAPORATOR FAN PLATE	WEFP/WBC75/99/1
30	EVAPORATOR BAFFLE PLATE	WEBP/WBC75/99/1
31	CONDENSER FAN PLATE	WCFP/WBC75/99/1
32	BIGHEAD M/4T38 6X26	WBIGHEAD 010
33	SCREW M6X25 POZI COUNTERSUNK	WSCREW 200
34	SCREW M6X25 POZI PAN ZINC T/T	WSCREW 180
35	ELECTRIC VAPORIZER	WEV/800X235/88/I
36	CONDENSOR FAN 120W MOTOR	WMOTOR 410
36	3.0 UF CAPACITOR 230V 60HZ	WCAPACITOR 060
37	CONTROL PANEL BOTTOM	WCPB/WBC75/99/1
38	HINGE: BLACK PLASTIC	WHINGE 560
39	KLOCKER MOELLER DIL OM 190V 50HZ/220V 60 HZ	WCONTACT 160
40	RECEIVER 2.2 LT	WRECEIVER 060
41	BIGHEAD 316-F2/ST38 M5X5	WBIGHEAD 060
42	MAINS PLUG	WPLUG 160
43	MAINS LEAD	WCABLE 510
44	LINER BASE	WS/SBASE 180
45	TRAY SLIDE	WTS/WBC75/99/1
46	CONTROL PANEL REAR COVER	WCPRC/WBC75/99/1

CCBC-17-UA-100



PARTS LIST CCBC-12-UA-100 BLAST CHILLER 208V 60HZ 3 PHASE

Drawing Number	Description	Part Number
1	COMPRESSOR TFH 4524Z 208/230V 60HZ	WCOMP 833
2	CONDENSER 4X17X17.5	WCOND208
3	EVAPORATOR FAN MOTOR 4X200MM AXIAL FAN ZIEHL	WFAN 115
3	FLAT GUARD	WGUARD 080
3	1.5 UF CAPACITOR 230V 60HZ	WCAPACITOR 040
4	EVAPORATOR 5X45X16	WEVAP348
5	SIGHT GLASS 3/8" SWEAT	WSIGHT 010
6	DRIER 3/8"	WDRIER 080
7	EXPANSION VALVE TES 2 R404A	WVALVE 191
7	3/8 SOLDER ADAPTOR 068-2060	WVALVE 197
7	ORIFICE NO. 3	WVALVE 231
8	DEFROST HEATER 2X500 WATT 1 BEND	WHEATER 500
9	VAPORIZER HEATER 115 WATT 3 BEND	WHEATER 010
10	HEATER WIRE 4.35M 240V (57 WATTS)	WHEATER WIRE 340
11	KLIXON 141T31 30210 L13C 9651	WSTAT 410
12	FOOD PROBE (3 EACH)	WPROBE 100
13	PROBE SOCKET	WPROBE SOCKET 010
14	AARDWARE FRONT PANEL C/W PRINTER	WAARDWARE 070
14	AARDWARE BACK BOARD	WAARDWARE 040
14	LOGGER CHIP	WLOGGER CHIP 170
14	1.M RIBBON TO CONNECT FRONT & BACK	WAARDWARE RIBBON Sm
14a	NEW BLAST CHILL 3 PROBE C/W PRINTER	WLABEL 918
15	HIGH / LOW PRESSURE STAT	WSWITCH 360
16	NEW DOOR NYLON	WDOOR NYLON NEW
17	HINGE: SPRING LOADED	WHINGE 290
18	SWITCH: THERMAL HEATED	WSWITCH 200
19	CASTOR 6" W/BRAKE	WCASTOR 040
19a	CASTOR 6" NO BRAKE	WCASTOR 030
20	HINGE PLATE: R4 OPAL/T2U	WHINGE 070
21	LADDERACK BLOCKS	WLADDERACK 020
22	UNIT COVER	WUC/WBC110/99/1
23	CONTROL PANEL	WCP/WBC110/99/1
24	DOOR	WWBC110 STD DOOR/99/1
25	GASKET: 1354MM X 627MM C/C	WGASKET 895
26	LADDERACK (1SET)	WLR/WBC110/99/1
27	DRIP TRAY	WDT/WBC110/99/1
28	BAFFLE PLATE	WBP/WBC110/99/1
29	EVAPORATOR FAN PLATE	WEFP/WBC110/99/1
30	EVAPORATOR BAFFLE PLATE	WEBP/WBC110/99/1
31	CONDENSER FAN PLATE	WCFP/WBC110/99/1
32	BIGHEAD M/4T38 6X26	WBIGHEAD 010
33	SCREW M6 X 25 POZI COUNTERSUNK	WSCREW 200
34	SCREW M6 X 25 POZI PAN ZINC T/T	WSCREW 180
35	ELECTRIC VAPORIZER	WEV/800X235/88/I
36	CONDENSER FAN 120W MOTOR	WMOTOR 410
37	CONTROL PANEL BOTTOM	WCPB/IWBC/110/99/1
38	HINGE: BLACK PLASTIC	WHINGE 560
39	KLOCKER MOELLER DIL OM 190V 50HZ/220V 60HZ	WCONTACT 160
40	RECEIVER 3.3 LT	WRECEIVER 070
41	BIGHEAD 316-F2/ST38 M5X5	WBIGHEAD 060
42	CONDENSER FAN COWL (BEHIND FAN)	WCFC/WBC110/99/1
43	UIVERSAL ANGLES (24 PER CABINET)	WSLID/WBC110/99/1
44	CONTROL PANEL REAR COVER	WCPRC/WBC110/99/1
45	THERMOCOUPLE TYPE T PTFE 2M	W THERM 230
46	SHELF GARNET WHITE COATED (X12)	WSHELF 185

- ☞ Pre-Chill the cabinet for thirty (30) minutes before you do first load.
(to remove interior residual heat)
- ☞ Doubling the food thickness triples the pull-down time.
- ☞ Don't stack food or containers on top of or alongside of each other.
(this increases the "thickness")
- ☞ Covering the food increases pull-down time by 10%-30%.
- ☞ Pull-down rate initially is about 2°F per minute and approaching final temperature is about 2 minutes per degree F.
- ☞ **"A watched pot never boils"**
- ☞ Factors affecting blast chill pull-down times:
 - (A) Initial food temperatures
(The hotter the initial food temp., the longer the pull-down time)
 - (B) Final food temp. (the colder the final temp., the longer the pull-down time)
 - (C) Food "thickness"(the greater the distance from geometric "core" center of food to its surface, the longer the pull-down time)
 - (D) Food density (the greater the density, the longer the pull-down time)
 - (E) Container surface area(the smaller the surface area, the longer the pull-down time)
 - (F) Container material (metals are conductors which will shorten the length of pull-down time, while plastics are insulators which will increase pull-down time)
 - (G) Covering material (metal preferred, same reasons as above)
 - (H) Covering method (Covering which is in direct contact with the food will pull-down quicker than covering that is stretched tight leaving a "dead air" space between cover and food. Air acts as an insulator and will increase the pull-down time)
 - (I) Amount (weight) of food put in as compared to rated capacity (exceeding rated capacity will lengthen the time of pull-down)

Please Send Serial registration information to :

Fax: (800) 378 – 8333

E-mail to: parts&service@crescor.com

***Or
Mail To:***

CresCor

5925 Heisley Road

Mentor, OH 44060

Toll Free: 877-273-7267 Fax: 440-350-7267

See us online at: <http://www.crescor.com>

Questions?

Call and Speak To One Of Our

Friendly Service Counselors:

Ellery @ Ext. 319

Pat @ Ext. 214

Blast Chill Preparation Guidelines

MEATS*

Roasted Meats

Roasted meats should be prepared according to the recipe using roast guidelines for each product.

Roast Beef (top round) - Follow recipe and roast guidelines. Recommended doneness for rethermalization is about 140° F. (60° C.). Top round should be quartered and placed in the blast chiller. If roast beef is used for cold sandwiches, the end cooking temperature may be higher. If medium doneness is desired, roast to 150° F. (65° C.). Do not overcook.

Pork Roast - Follow recipe and roast guidelines. Recommended doneness for rethermalization is 165° to 170° F. (74° to 76° C.). Do not overcook or product will be dry.

Lamb Roast - Follow recipe and roast guidelines. Recommended doneness for rethermalization is 155° F. (68° C.). Do not overcook.

Proportioned Meats (hamburger patty, pork chop, Salisbury steak, etc.)

Cook according to recipe. If sauce or gravy is required, it should be prepared and chilled separately from the portioned meat.

Steak (filet, strip, ribeye) - Broil steak to medium rare or preferred stage of doneness. Blast chill immediately.

Salisbury Steak - Bake to 165° F. (74° C.) Drain well, remove all grease. Blast chill. Add gravy after steak is chilled.

Pork Chops/Cutlets - Breaded, baked, or broiled chop is heated only to 165° F. (74° C.) and blast chilled immediately. Add sauce or gravy after chilling.

Turkey/Chicken

Cook turkey or chicken whole or breasts according to directions to 170° F. (76° C.). Blast chill immediately. Slice product to a 1/4" thickness, single layered. Pre-cooked turkey products do not require roasting.

Seafood

Fish - Prepare all fish fillets according to recipe for breaded, baked, broiled, steamed, etc. Be careful not to overcook. Blast chill immediately.

Shrimp/Scallops/Shellfish - Prepare according to recipe and blast chill immediately. Be careful not to overcook. If prepared with a sauce (creole, etc.), cook the sauce separate and mix together prior to retherm.

Casseroles and Stews

Stew and casseroles are very successful in cook/chill and rethermalization. Most recipes should require little change for cook/chill. Products should be moist but hold form when plated. Prepare and blast chill in 2-1/2" full pans.

Lasagna - Brown off convenience lasagna to remove extra moisture and blast chill. Prepared from scratch, follow the recipe; do not overcook. Blast chill.

Beef Stew/Stroganoff, etc. - Cook/steam meat until tender. Prepare as stated in recipe. Blast chill.

Chicken/Turkey/Beef Pot Pie - Prepare the chicken/turkey/beef and vegetable sauce separately from the crust, pastry, or biscuit. Top product after chilling or at point of rethermalization.

Stir Frys – Sauté / steam until meat is done and vegetables are crisp.

Pasta Casserole (Mac & Cheese, Turkey Tetrazzini) - Prepare sauce separately from pasta. Blast chill. Mix product together chilled and rethermed.

Sauces and Gravies

For conventionally prepared gravies and sauces, substitute a portion of the flour or cornstarch with a modified starch. A substitute of 30 to 50% by weight is recommended. In preparing these sauces and gravies with the modified starch, the product must reach 170° F. (76° C.) and be held at the temperature for a minimum of 5 minutes. If this is not done, the gravy or sauce will thicken during the chilled storage. To reduce the risk of rancidity during refrigerated storage, use broth bases rather than meat or poultry drippings. Commercial gravy or sauce bases contain modified starches and can be substituted for conventionally prepared products.

Sandwiches/Specialty Items

See *CresCor* Retherm Oven Time and Temperature chart on Page 60 in *CresCor* cookbook.

SOUPS

Conventional Soup

Prepare conventionally. For creamed soups, substitute a modified starch for a portion of the thickening agent by 30 to 50%.

Canned Soup

No cooking is necessary for broth based soups. Cream soups should be diluted with milk or water, mixed completely, and blast chilled.

Frozen Soup

Follow instructions on the soup container for preparing soup, blend thoroughly, and blast chill.

VEGETABLES

Add seasonings to vegetables prior to panning. If margarine is added, a more even distribution will occur with liquid margarine.

Frozen Vegetables

Frozen vegetables do not require cooking before rethermalization.

For bulk rethermalization, vegetables do not need to be cooked or blast chilled before service and should be prepared as in conventional production.

Canned Vegetables

Canned vegetables do not require any cooking. All canned vegetables can easily be bulk rethermed with little liquid remaining.

Fresh Vegetables

Many fresh vegetables can be used in cook/chill. The desired texture of the product will determine the preparation procedure.

Zucchini/Yellow Squash Steam or stir fry to desired consistency then blast chill.

Broiled Tomato Slice in half and sprinkle on topping. Broil to brown topping and blast chill immediately. Tomato will continue baking during rethermalization.

Broccoli/Cauliflower/Green Beans/Carrots Prepare green beans and carrots in bite size and broccoli and cauliflower in flowerets. Steam to desired doneness, then blast chill.

Stuffed Vegetables (eggplant, zucchini) Prepare stuffing and blast chill. Steam shell and blast chill or place in ice bath. Stuff vegetable shell and blast chill to bring temperature down from time of assembly.

Grilled Vegetables

Grill according to recipe. Place in 2-1/2" pan and blast chill.

POTATOES

Occasionally, "graying" or slight darkening of the cut surfaces of some cooked potatoes will occur during chilling. This is an oxidation reaction and varies with the variety of potato, soil, and weather conditions. Varieties that most often exhibit darkening are: Irish, Ontario, Norland, and Red Pontiac.

Potatoes are fully cooked before blast chilling. Canned potatoes, well drained, can be used without further cooking.

Mashed Potato (flakes or powder)

Follow recipe according to the package. Product should be smooth, easy to scoop, and hold its form loosely at the point of blast chilling. Product should stay at that consistency after blast chilling. If the product becomes stiff or dry, add water and stir into product.

Mashed Potato (fresh)

Follow recipe. Potatoes should be very soft before mashing and adding liquid. Follow same consistency rule as for flake or powder potatoes. Cover with plastic and blast chill. Fresh mashed potatoes should not be made more than 48 hours in advance to prevent discoloration.

Baked Potato

Depending on the size of the potato, cut in half or fourths. Boil, steam, or bake potato to complete doneness, then chill.

French Fried Potato

For best results, oven bake vs. deep fat frying is recommended. Steak fries are preferred over a crinkle cut or shoe string potato. Tator tots and potato wedges also rethermalize well. Bake according to recipe or package and blast chill.

RICE

Prepare according to standardized recipe, then blast chill. If rethermalized product is dry, liquid may be added.

PASTA AND NOODLES

Cook to al dente, rinse well with cold water, then chill. Chill in 2-1/2" pans with water with ice added. Drain partially before retherming. The best way to heat pasta is to run it under hot water or dunk it into boiling water for 30 seconds.

FRIED FOODS

It is difficult to achieve a crispy, chewy fried product with an advanced preparation food process. For best results, oven frying is recommended. If deep fat frying is still your choice, use crumb breading instead of batter. Fry in clean, hot oil, and drain well before chilling. Do not attempt to prepare further than one day ahead to avoid excess moisture. Use meat items with little or no bone to get a drier product. Fried foods should be produced conventionally when possible.

CEREALS

Cooked cereals such as oatmeal and grits continue to thicken when chilled and held under refrigerated storage. To obtain a desirable product, follow the following procedures.

Cream of Wheat / Grits

Prepare recipe according to the directions. At the end of cooking, add 50% more water and use a wire whip to stir in the water. Blast chill. The product should be the consistency of pudding. If it is not, add water. Use a wire whip and stir to a pudding consistency.

Oatmeal

Add 30% more liquid and follow recipe.

EGGS

Poached Egg

If a poached egg must be served, cook to firm stage.

Procedure:

- Spray a 1/2 steam table pan (2" deep) with any type release agent (e.g. Pam™)
- Fill with cold water, add 1/4 cup vinegar.

- Add a 2" perforated insert to pan.
- Break eggs (25-30) in separate bowl and slip onto the 1/2 pan insert.
- Steam a maximum of 3 minutes (time should be tested at each facility as equipment performance will vary at each location).
- Lift perforated insert out of pan and plunge into ice water to retard cooking. The whites will still have a wet, glossy look, but should hold shape.
- Lift eggs out with slotted spoon and drain well before plating on trayline. Chill and store until trayline.
- Eggs could be left to chill on perforated insert, drain well.

Scrambled Egg

A pasteurized egg product is recommended. Prepare to a soft, loose consistency. Remove from heat source, cover with plastic wrap, and immediately blast chill.

Omelets

Frozen convenience product must be fully tempered prior to assembly. For omelets prepared conventionally, follow existing standardized recipe. Omelet should be slightly undercooked, then blast chilled.

Hard Cooked Egg

Cook in usual manner and chill immediately. Store covered in walk-in cooler.

PANCAKES/FRENCH TOAST/WAFFLES

For pancakes/French toast prepared conventionally, shingle, stack, and blast chill for a short period of time (approximately 15 minutes). French toast made with Texas toast blast chills and retherms with the best quality.

BREAKFAST MEAT

Sausage

Sausage patties are preferred over links for best heating. Cook sausage to 165° F. (74° C.), then drain well. Blast chill.

Bacon

Cook to point of service. Presentation is best if bacon is cooked to the crisp stage, drained, and patted dry with paper towels to remove excess fat. Blast chill.

BREAKFAST BURRITOS/CREPES

Burrito and crepe filling is prepared conventionally and chilled. When filling is chilled, then fill crepes and burritos. Blast chill filled products.

BREAKFAST SANDWICHES

Prepare sandwich filling separately and chill. Assemble sandwiches, wrap, and blast chill for additional 15-20 minutes.

HASH BROWNS/OVEN FRIES

For both convenience and freshness, prepare to the point of complete doneness, then blast chill. Product should not be too dry.

***Please note: The internal temperatures may continue to increase in the beginning of the blast chill cycle.**

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