



## **Service Manual**

### **ELITE AND REFLECTIONS**

**Bloomington Cold Mechanical Refrigerated Tables**

**BCM and R-BCM Models**

For Service Information, call 800-544-3057

Please have the following information available before calling. Information can be found on the identification/certification tag:

- Model Number
- Serial Number
- Date of Purchase
- Part Description and number as shown in parts list

Piper Products, Inc.  
300 South 84<sup>th</sup> Avenue  
Wausau, WI 54401  
Phone: 715-842-2724 / Fax 715-842-3125



**IMPORTANT INFORMATION  
READ BEFORE USE**

9/3/2015

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## INTRODUCTION

Congratulations! You have just purchased one of the finest pieces of equipment on the market today. Before installing or operating your new Piper Products, Inc. equipment, you should read through this manual. This manual should be retained for further reference as it contains installation and operating instructions, service tips, part lists and warranty information.

For your safety, read and follow all cautions and warnings.

## FREIGHT DAMAGE CLAIMS

Your Piper Products equipment was carefully inspected and packed before leaving our factory. The transportation company assumes full responsibility for safe delivery of this equipment. Piper Products cannot assume responsibilities for damage or loss incurred in transit. Visible damage or loss should be noted on the freight bill and signed by the person making the delivery.

A freight claim should be filed immediately with the transportation company. If damage is unnoticed or concealed until equipment is unpacked, notify the transportation company immediately and tell them you want to file a concealed damage claim. This must be done within five (5) days after delivery was made. Be sure to retain all packing material and cartons.

## WARNING

Installation of this equipment should be done only by persons qualified or licensed to install electrical equipment.

Adjustments and service work should be performed only by a qualified service technician. Service is available through Authorized Piper Products Parts and Service Distributors throughout the United States. For a complete listing of these call or write Piper Products, Inc. for the name of the nearest distributor.

This equipment is intended for commercial use only. Not for household use.

Use of other than genuine Piper Products replacement parts or service work performed by other than an authorized Piper Products service agent will void the warranty.

Do not use any corrosive cleaners. Piper only approves soap and water for cleaning stainless steel.

## INSTALLATION



### ELECTRICAL CONNECTION

**WARNING!!!! DO NOT USE EXTENSION CORDS (VOIDS WARRANTY)**

#### Ground:

The electrical outlet must be provided with an efficient ground, and the voltage and the frequency of the electrical line matches those indicated on the data plate.



If unsure about the efficiency of the ground, have your electrical circuit checked by a qualified technician

#### Supply Voltage :

When the cooler is operating, check that the supply voltage is not dropping or increasing under/over + 10% the rated voltage (98 Volts to 127 Volts) OR (198 Volts to 243 Volts)



**The manufacturer is not responsible for damages or accidents arising from the misuse or disregard of electrical connections.**

#### Outside Storage: ATTENTION!

- The cooler is not designed for outdoor use.
- The cooler should not be stored outside in direct sun or rain.

#### Ambient (Environmental) Conditions:

- Only locate the cooler in a maximum condition of 80°F (27°C) and 60% Relative Humidity

#### Positioning:

- Keep away from heat sources, such as radiators or air conditioning pipes.
- The ambient temperature must not be higher than 80°F (27°C).

#### Air Flow:

- When installing unit, make sure there is a minimum of 2 inches air space at the louvered panel located at the end of the unit.
- 12 inches air space at the louvered panel front and rear of the cabinet.

#### Cooler Leveling:

- To provide the best performance the cooler must remain level.

## START-UP AND OPERATION

### OPERATING THE COOLER

#### Before Operating the Cooler

- Ensure that the electrical outlet is connected effectively to earth (ground), suitable to provide the voltage indicated on the data plate.
- Ensure proper air flow to the front rear and sides.
- Ensure the cooler is level.

#### Electrical Service Switch: Turn the control panel switch to the "ON" position.

- The pilot light will light and the condensing unit will start.
- Note: After 30min (+/-) the bottom of the cold pan should be cold to the touch and start to frost over.

#### Energy Savings / Product Performance Location Tips:

- When possible, DO NOT place the cooler near air conditioning vents or returns.
- When possible, place the cooler the maximum distance from the exit or entrance door.

## THEORY OF OPERATION

The Mechanically Refrigerated Bloomington Cold Food Table (BCM, R-BCM) is designed to be used with or without ice to display cold foods and salads during the meal period. The mechanical refrigeration system uses a 1/3 horsepower compressor and thermostat control to provide cooling to copper coils mounted to the exterior walls of the food well. Food pans rest on adjustable rails below the top surface of the unit to allow cool air above the food level. Crushed ice should be used along with the mechanical refrigeration system to achieve the optimum control of food temperatures over longer periods of time.



**NOTE:** Bloomington Cold Food Tables are NOT refrigerators and will NOT keep food cold for long periods of time. Food should always be placed into the table directly from the refrigerator. When the food in the table reaches a temperature of 38° to 40° Fahrenheit it should be placed back into the refrigerator and replaced with cold food from the refrigerator.

## THERMOSTAT SETTINGS

### TEMPERATURE CONTROL:

- **Setting:** (Factory set) Temperature control is set at 25°F with a 12 degree differential.
- **Defrost:** Defrost is not installed in this unit and needs to be turned off after service.
- **Changes in the Settings:** Adjustments to the settings may be needed but should not be set below 13°F for temperature with a 12 degree differential. If you are below this range damage may occur to the controller and will need to be replaced.

Note: With 25°F for temperature and 12 degree differential, the cut in will be 25°F and the cut out will be 13°F.

## MAINTENANCE

To obtain the best performance from your equipment, it should be cleaned daily and maintained in good condition.



### SAFETY / ENVIRONMENTAL CAUTION

#### PERSONAL PROTECTION:

Check your company safety and environmental policy before cleaning or servicing.



**Safety Tip!** : Utilize protective gloves and safety glasses

#### ELECTRICAL POWER:



Before performing **EXTENDED CLEANING** where electrical components can become wetted, the power switch must be turned to **OFF** and the unit disconnected from the power source.



**WARNING:** Do not use any chlorinated or highly caustic cleaners, acids, ammonia or other corrosive cleaners. These may cause corrosion and/or damage to the stainless steel. Piper only approves soap and water for cleaning stainless steel. Do not allow water to stand in wells for long periods of time. Well must be emptied and cleaned after every serving period.

#### REQUIRED MONTHLY MAINTENANCE:

- Check that the condenser fan works properly
- Check thermostat settings
- Check operating temperature of unit
- Clean entire refrigerated case
- Clean condenser coils
- Check and clean drainage lines
- Check electrical connection



## STAINLESS STEEL AND GENERAL CLEANING

### Stainless Steel and Aluminum:

- Piper only approves soap and water for cleaning stainless steel.
  - **NOTICE:** Do **NOT** use chlorinated cleaners.

### General Surfaces, Fiberglass:

- Clean surfaces with a soft cloth or sponge utilizing a mild detergent. Rinse completely with warm water and then dry.
  - **NOTICE:** Do **NOT** use steel wool

### Hardened Foods or Scale Deposits:

- Clean hardened foods or scale deposits by utilizing a **plastic** scouring pad and a mild detergent. Rinse completely with warm water and dry.
  - **NOTICE:** Do **NOT** use steel wool

## CLEANING CONDENSING UNIT (BCM)

**NOTICE: FAILURE TO PROPERLY CLEAN THE CONDENSER WILL VOID THE WARRANTY**

**Monthly** cleaning of the condensing unit is essential for product temperature and refrigeration system performance.

### Cleaning Method:

- **WARNING:** Disconnect electrical power to the cooler by turning master switch to the "OFF" position and unplugging cooler from electrical receptacle
- Remove the louvered panels from the condensing unit compartment.
- Clean condenser by using a brush and vacuum cleaner to remove all dust and dirt.



**CAUTION:** The fins on the condensing unit coils are *sharp!*  
**Safety Tip!** : Utilize protective gloves and safety glasses



**WARNING:** Refrigerant is under high pressure. Do **NOT** bend, kink or damage any tubing or condensing unit coil.

## TROUBLESHOOTING GUIDE

If problems are not found by the following checks, then you should contact your Authorized Parts and Service Dealer for service. They have the necessary parts and training to repair your unit quickly and efficiently.

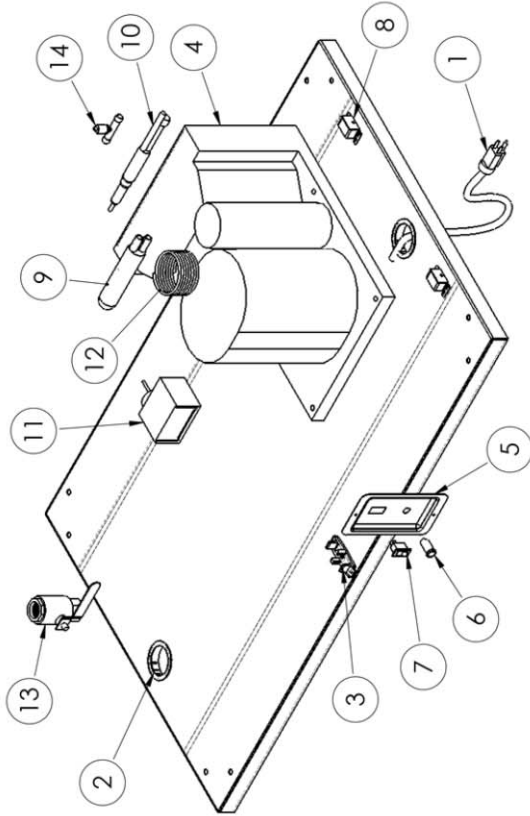


**DANGER:** Disconnect all power to unit before servicing.

| Symptoms  | Possible Cause             | Remedies   |
|---|----------------------------|--|
| Pilot light is off and condensing unit does not run | No electrical supply       | Is the unit plugged in?  |
|   |                            | Check circuit breaker and fuse.  |
|   |                            | Check switch on control panel is in "on" position.                             |
| Pilot light is on but condensing unit does not run  | Thermostat Control         | Is the thermostat control set properly?  |
| Unit does not cool to proper temperature            | Ducting                    | Are there heating or A/C ducts, make-up air ducts or fans causing cool drafts? |
|   | Not pre-cooled             | Has the unit been allowed to pre-cool for at least 30 minutes?                 |
|   | Thermostat Control         | Is the thermostat control set properly?  |
|   | Voltage                    | Call a service technician.   |
| Does not maintain food temperature                  | Air flow                   | Check condenser coils for proper air flow.                                     |
|   | Ducting                    | Are there heating or A/C ducts, make-up air ducts or fans causing cool drafts? |
|   | Food longer than 2 hours   | Food should not be kept in BCM units for long periods of time.                 |
|   | Not pre-cooled             | Has the unit been allowed to pre-cool for at least 30 minutes?                 |
|   | Food Temperature           | Were pans of food placed into the unit at or below 38°F?                       |
|   | Pans covered               | Remove pan covers to achieve proper air flow.                                  |
|   | Thermostat Control         | Is the thermostat control set properly?  |
| Voltage   | Call a service technician. |  |

**Call Piper Products directly at 800-544-3057 if you need further assistance.**

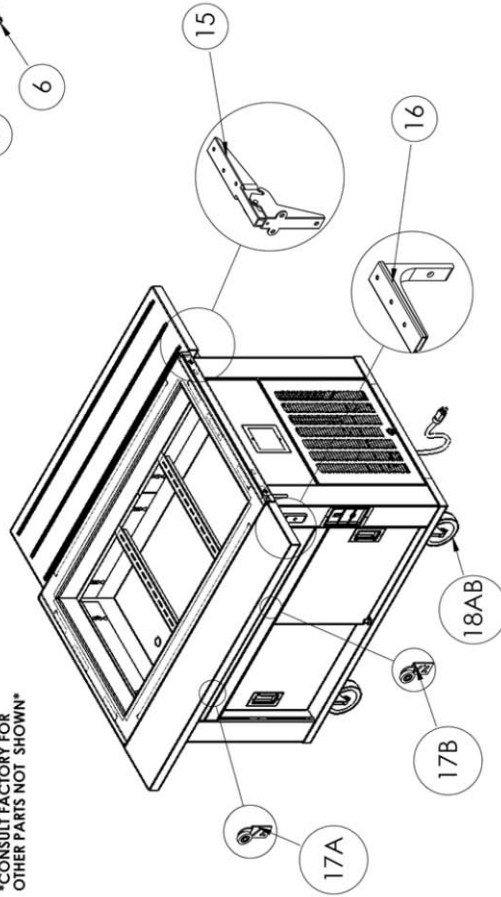
# BCM EXPLODED VIEW



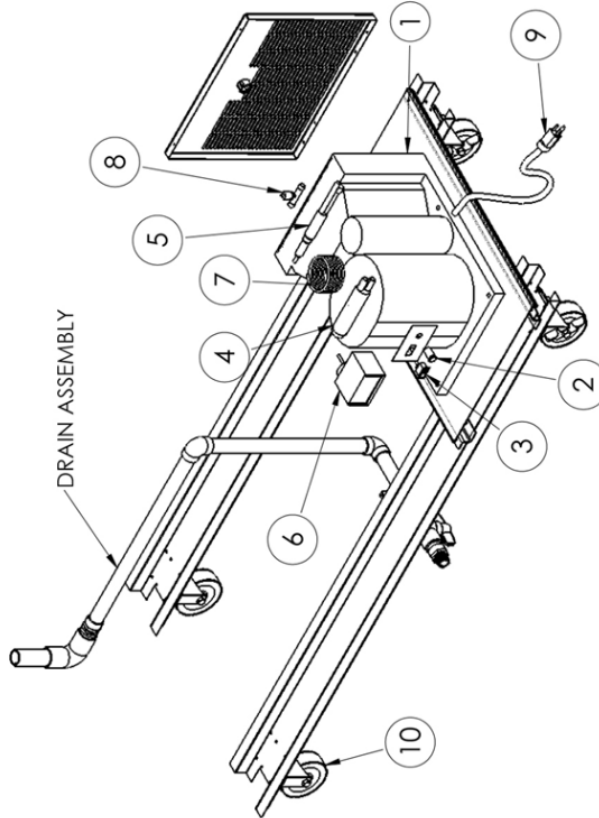
BLOOMINGTON COLD MECHANICAL (BCM)

| ITEM NO. | PART NO.  | DESCRIPTION                            |
|----------|-----------|--|
| 1        | 0111877   | MOLDED CORD AND PLUG                   |
| 2        | 0036795   | BUSHING - 2.5"                         |
| 3        | 0161093   | NYLON DOOR GUIDE                       |
| 4        | 0112900   | CONDENSING UNIT                        |
| 5        | 0832050   | CONTROL PANEL                          |
| 6        | 0189500   | INDICATOR LIGHT                        |
| 7        | 0331350   | ON/OFF SWITCH                          |
| 8        | 0056950   | MAGNET                                 |
| 9        | 0112083   | ACCUMULATOR                            |
| 10       | 0112143   | DRIER                                  |
| 11       | 0112037   | THERMOSTAT                             |
| 12       | 0112144   | CAPILLARY TUBE                         |
| 13       | 0375725   | VALVE - SERVICE 3/8 ODF TEE            |
| 14       | 0112174   | VALVE - SERVICE 3/8 ODF TEE            |
| 15       | 0817060   | TRAY SLIDE BRACKET                     |
| 16       | 028800    | CUTTING BOARD BRACKET                  |
| 17A      | 0271005   | SLIDING DOOR ROLLER (REAR DOOR)        |
| 17B      | 0271006   | SLIDING DOOR ROLLER (FRONT DOOR)       |
| 18A      | CSTR-5PP  | 5" CASTER WITH BRAKE                   |
| 18B      | CSTR-5PPB | 5" CASTER WITH BRAKE                   |
| 1501109  |           | 6" S/S LEG IN LIEU OF CSTR (NOT SHOWN) |

\*CONSULT FACTORY FOR OTHER PARTS NOT SHOWN\*



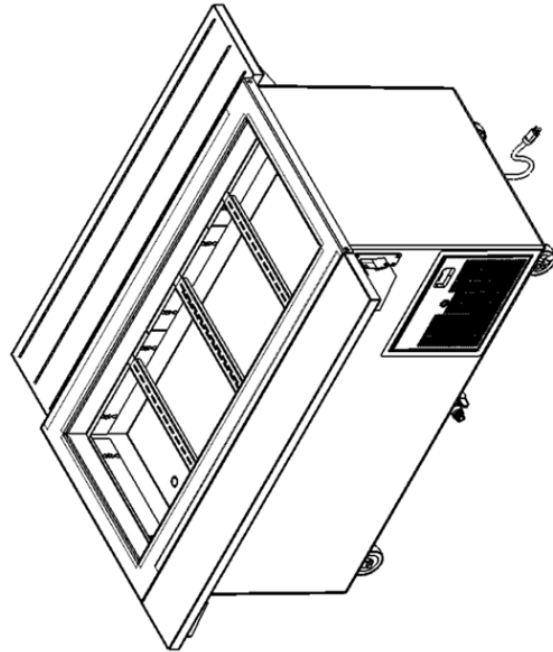
# R-BCM EXPLODED VIEW



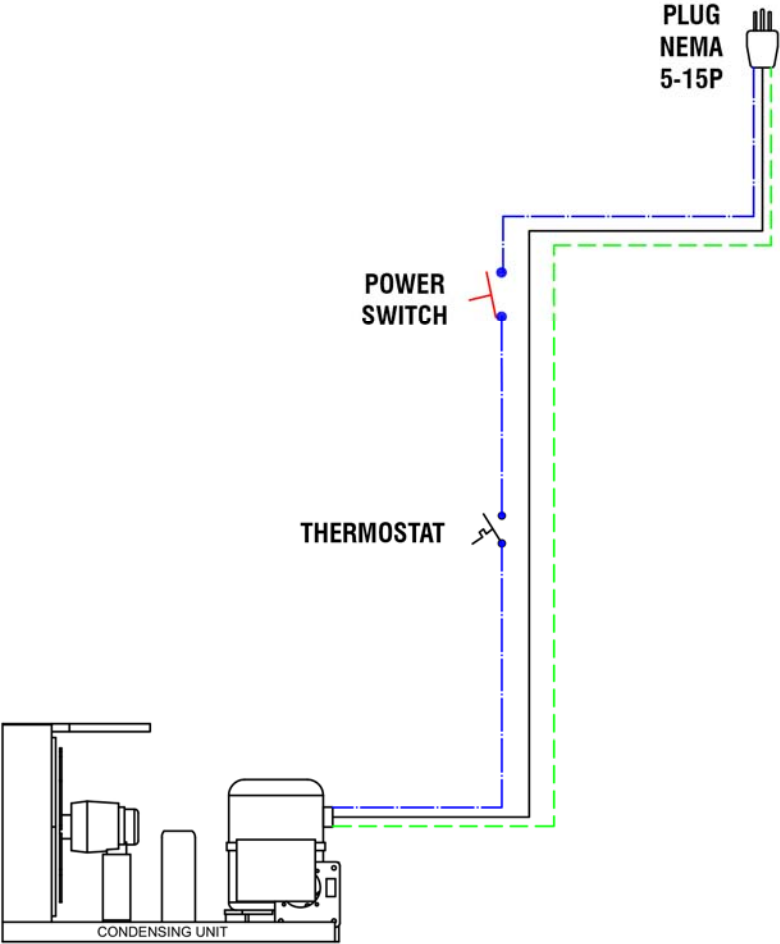
REFLECTIONS BLOOMINGTON COLD  
MECHANICAL (R-BCM)

| ITEM NO. | PART NO.   | DESCRIPTION                            |
|----------|------------|--|
| 1        | 0112900    | CONDENSER:1/3 HP LO 134A 120V          |
| 2        | 0189500    | Indicator Light                        |
| 3        | 0331350    | SWITCH: TA201-TB-B ON/OFF Tab          |
| 4        | 0112083    | ACCUMULATOR - 5.8 CU IN 3/8ODF         |
| 5        | 0112143    | DRIER - REFRIG - 1.87 X .09 ODF        |
| 6        | 0112037    | THERMOSTAT - RANCO 010-1416            |
| 7        | 0112144    | TUBE - CAPILLARY 040 X 120 X 087       |
| 8        | 0112174    | VALVE - SERVICE 3/8ODF TEE             |
| 9        | 0111877    | S/TOW 14/3 WIRE AC POWER CORD          |
| 10       | CSTR-4POPB | 4" CASTER WITH BRAKE                   |
|          | 1501109    | 6" S/S LEG IN LIEU OF CSTR (NOT SHOWN) |

\*CONSULT FACTORY FOR  
OTHER PARTS NOT SHOWN\*



# WIRING DIAGRAM



## PIPER PRODUCTS, INC. LIMITED WARRANTY

Piper Products, Inc. warrants to the original purchaser that its equipment will be free from defects in the materials and/or parts for a period of 12 months from date of shipment and reported to the factory.

The purchaser is responsible for having equipment properly installed, operated under normal conditions with proper supervision and to perform periodic preventative maintenance. Equipment failures caused by inadequate water quality, improper cleaning, harsh chemicals, or acids are not covered under warranty.

The manufacturer's obligation under this warranty shall be the replacement or repair of defective parts within the warranty period. Excessive labor (more than 1/2 hour) required to access Piper equipment built into cabinets, tables or structures by others, is NOT covered under labor warranty. Example: Piper multiple- or single-well food wells. All labor shall be performed during regular working hours. Overtime premium will be charged to buyer. After thorough examination, the decision of the Piper Products Service Department shall be final.

Any defective parts to be repaired or replaced must be returned to Piper Products, Inc., 300 South 84th Avenue, Wausau, WI 54401, transportation charges prepaid, and they must be properly packed and tagged. The serial and model number of the equipment and date of original installation of such equipment must be given. However, after one year we will not assume any responsibility for any expenses (including labor) incurred in the field incidental to the repair or replacement of equipment covered by this warranty. Our obligation hereunder to repair or replace a defective part is the exclusive remedy for breach of this warranty; and we will not be liable for any other damages or claims, including consequential damages.

If, upon inspection by Piper Products, Inc. or its Authorized Service Agency, it is determined that this equipment has not been properly installed or has not been used in an appropriate manner, has been modified, has not been properly maintained, the warranty will be void. Also, if the nameplate or other identifying marks have been removed, defaced or changed or the unit has been repaired or altered by persons other than expressly approved by Piper Products, Inc., the warranty will be void. If the equipment has been subjected to misuse or misapplication, neglect, abuse, accident, damage during transit or delivery, fire, flood, riot or acts of God, then this warranty shall also be void. When any situation occurs which voids the warranty the manufacturer shall not be liable for any damage to any person or any property which may result from the use of the equipment thereafter.

Warranty is limited to Piper manufactured products only and does not apply to other equipment which may be connected to or installed within.

No representative, dealer, distributor or any other person is authorized or permitted to make any other warranty or obligate Piper Products, Inc. to any liability not strictly in accordance with this policy.

This warranty is in lieu of all other warranties expressed or implied, including any warranty of merchantability, and fitness for a particular purpose. Piper Products does hereby exclude and shall not be liable to purchaser for any consequential or incidental damages including but not limited to damages to property, damages for loss of use, loss of time, loss of profits or income, resulting from any breach of warranty.

9/3/2015

## NOTES

9/3/2015



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Phone: 715-842-2724 / Fax 715-842-3125