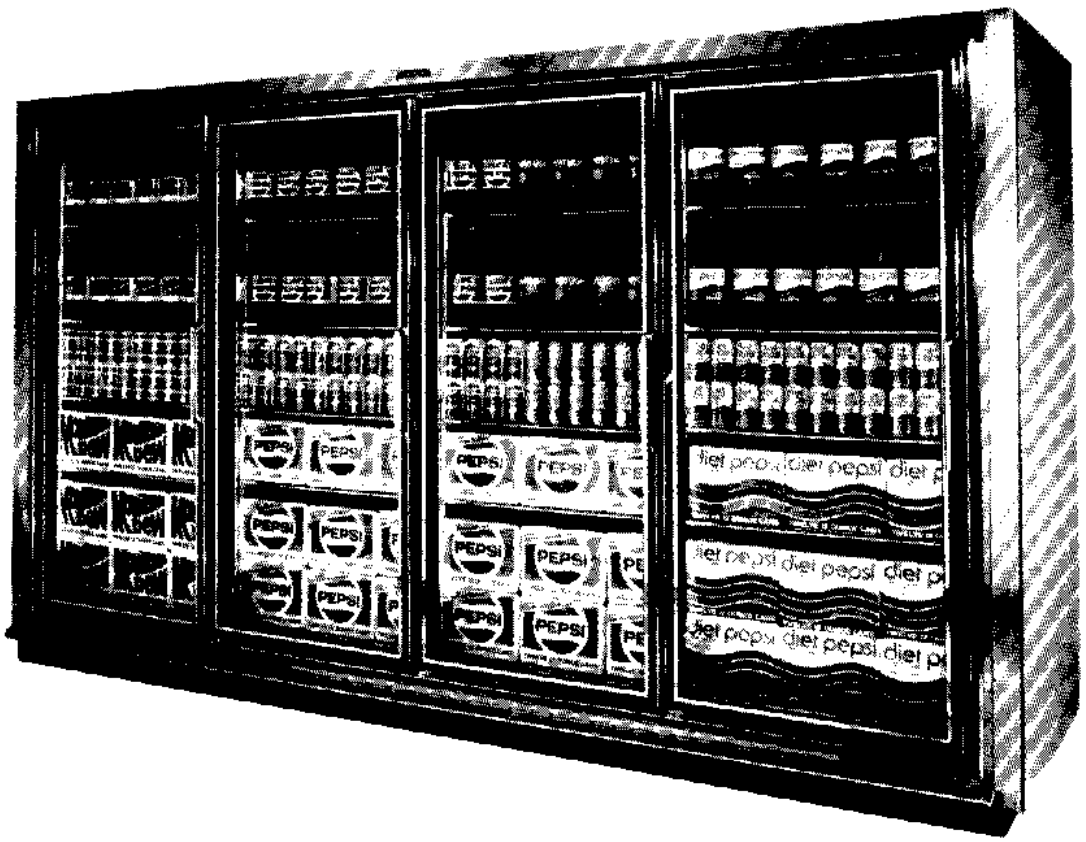
# INSTALLATION AND OPERATION MANUAL

# FOR REMOTE DISPLAY COOLERS

# AND

# REMOTE FLORAL COOLERS




**Retain this manual for future reference.**

ZERO ZONE
WAUKESHA WISCONSIN

**2, 3, 4 & 5 Door Sections**

ZERO ZONE
WAUKESHA WISCONSIN

## TABLE OF CONTENTS


| | | Page |
|---|---|---|
| I | GENERAL INFORMATION | 1 |
| II | OWNER'S INSTRUCTIONS | 1 |
| III | INSTALLATION | 2 |
| IV | SERVICE | 6 |
| V | TABLES | 8 |
| VI | SHELF PLACEMENT | 12 |
| VII | WARRANTY | Back Cover |

## GENERAL INFORMATION

This information pertains to the following models of upright, glass door coolers that use a remote compressor:

- RI-_____-DCR (24" x 63" Doors)
- RI-_____-DCR-GIA (30" x 66" Doors)
- RI-_____-DCRF (24" x 63" Doors)
- RI-_____-DCR-GIAF (30" x 66" Doors)

The Reach-In Display cooler with full vision glass doors, is designed to attractively display products while keeping them in good salable condition. This cooler is your silent salesman. How you use the cooler will determine the degree of sales success that you will enjoy. A properly displayed Reach-In will increase your sales.

The remaining instructions in this manual are for the benefit of the owner and the installation personnel. Be sure to read the instructions carefully before attempting to do any work on the cooler. Spending a few minutes to read the instructions will save hours of installation time and will result in years of satisfactory operation.

### INSPECTION

After your cooler has arrived, make the following checks:

1. Check the crate (if so ordered) for any shipping damage.
2. Check the unit over very carefully for any damage.
3. If any damage is found, report it to the transportation company immediately.

### LOCATION

Unlike open or chest type cases, the Reach-In Display cooler requires less valuable floor space. Locating the Reach-In near the source of a draft is not harmful. However, the Reach-In must not be positioned in the direct rays of the sun, or near a radiant heat source. The Reach-In must be placed on a floor with sufficient strength to prevent the floor from sagging beneath the weight of the cooler. Floor sagging will cause the frame of the cooler to sag and this may cause the doors to bind.

## OWNER'S INSTRUCTIONS

### LIGHTS

The Zero Zone cooler is equipped with F-60T12CW/HO fluorescent lights. These lights provide rapid starts and maximum illumination in a cool atmosphere. These lights will not dim or flicker like many slim line or fluorescent bulbs do in cool temperatures and will last longer and illuminate the display better. The light bulbs in the Reach-In Display can be removed for occasional cleaning or replacement without having to unload or remove any of the shelves. This aggravating nuisance has been engineered out of the Zero Zone cooler.

SWITCHES. Each individual Reach-In section is equipped with a light switch. The switch is located near the top of the vertical raceway that is located inside the cooler, just to the right of the right end door.

### MAINTENANCE AND CLEANING

Periodic cleaning will result in a much more attractive environment for your product display. The case interior should be wiped down periodically and the floor pan should be cleaned out if product is spilled on it. Use a good quality stainless steel cleaner/polish on all stainless steel surfaces, mild soap and water on painted surfaces.

DEFROSTING THE COIL. The slope front coil is automatically defrosted at each compressor off cycle. Therefore, it is important that the evaporator fan operates continuously, and that the pressure cut-in setting is not lower than 34° to 37°F. If the low pressure cut-in is set below 37°F, the coil will only partially defrost and it will eventually ice-up.

### LOADING SHELVES

Lay the products on the shelves in an orderly fashion. Wherever possible, leave a little space between rows of packages so that chilled air can filter over and around the product.

Load the shelves so that one inch of space remains between the top of the product and the shelf above it. This allows enough space for customers to easily remove product from the cooler.

## INSTALLATION

JOINING COOLERS

The Reach–In has been engineered for continuous display. This means that any number of Reach–In coolers can be joined together to create a display of any desired length. Reach–In coolers are built on permanent steel skids to promote easy installation. To install Reach–Ins, perform the following steps.

1. Set the first Reach–In into the desired position and level it. Check the gasketing around the open end of the Reach–In to see that it is intact. Fill in any torn areas with permagum. Run a heavy bead of caulk on top of the inner layer of gasketing.
2. Push the second Reach–In against the end of the first. Level the second Reach–In. Remove the rectangular pocket hole covers (C) from the four holes marked "A" in each cooler (see Figure 1). Carefully remove the insulation from the pocket holes and save it.
3. Start the joining bolt in the ceiling hole "A", but do not tighten it. Start the three joining bolts in the predrilled holes "A", along the rear joint of the cooler, but do not tighten them.
4. Line up the joint at the front and top, and tighten the front ceiling bolt "A". Snug up the three rear joint bolts "A".

**CAUTION**

**Never use the joining bolts to draw Reach–Ins together. This practice will result in damage to the coolers.**

Push the Reach–Ins together with care as the bolts are being tightened.

5. Remove the gray plastic plugs from the door frame to expose the joining holes. Clamp the front joint with a Jorgensen wood clamp and install the three #14 x 3 inch long flat head wood screws through the predrilled holes (B) in the door frame. Replace the plastic plugs in the door frame after the screws have been installed.

- To join more than two Reach–Ins at one time, use extension clamps of the Jorgensen pony type. Draw the entire line–up together with the extension clamps. Check to be certain that the end gasket is intact. If any part of the gasket has been torn off, staple it back on or fill the torn area with additional gasket. When installing the clamps, place one clamp at the bottom front of the cooler and one at the bottom rear. Then draw the coolers together uniformly. Move the clamps up, and draw the top front and top rear of the joint together. After all bolts have been tightened, replace the insulation and the covers for the pocket holes.

DRAIN LINE

The one inch PVC drain outlet is located at the center front of the cooler base. Glue a tee to the outlet pipe. Glue a drain trap to one end of the tee. The drain trap is necessary so that moisture and sewer gas will not be drawn up into the case. Glue the cleanout and plug to the other end of the tee. The drain line must be pitched down away from the case.

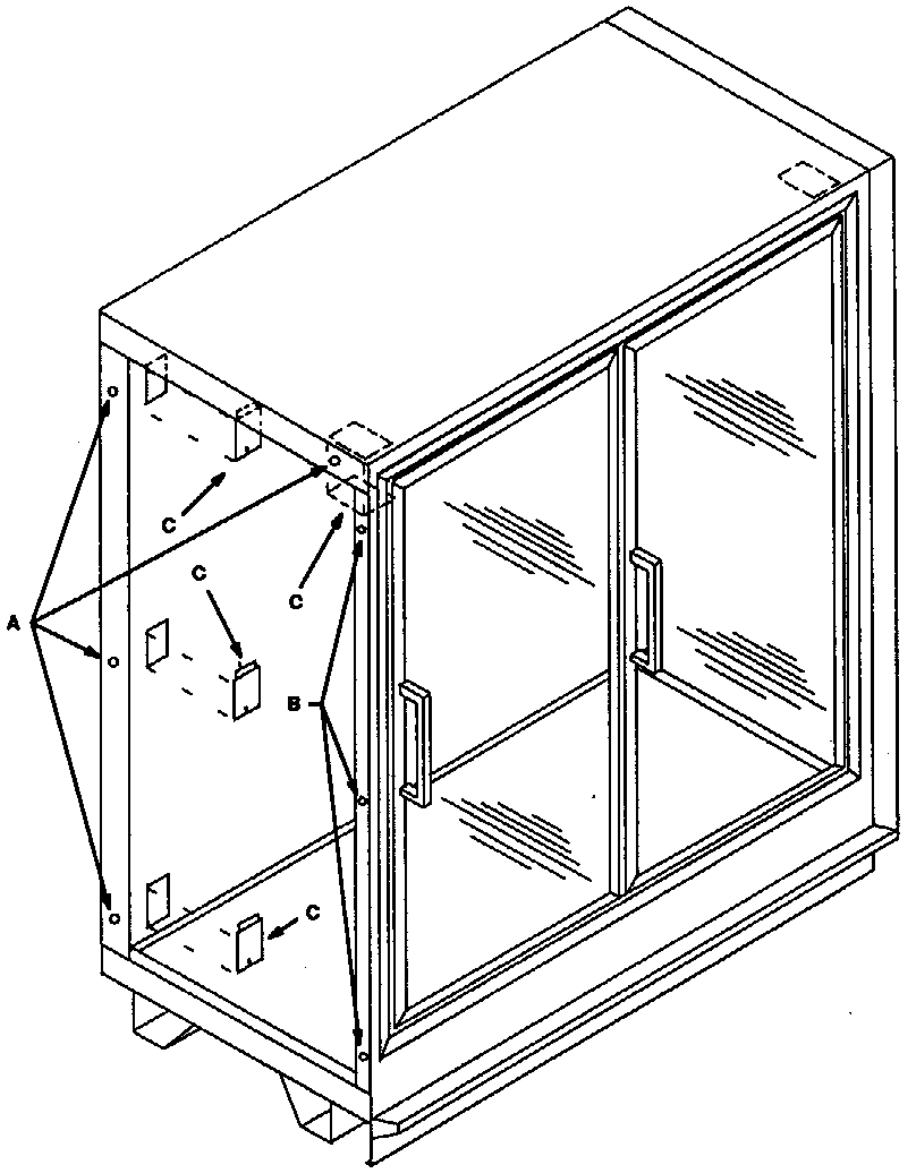



Figure 1. Joining Reach–In Coolers

REFRIGERATION CONNECTIONS

SELECTING THE PROPER TUBE SIZE. The use of the proper diameter refrigeration tubes is just as important as using the proper size expansion valve or compressor. The tables in Figures 2–5 show the proper tubing size to be used for installations of multiple coolers that are joined together. The tables in Figures 2 and 3 list tubing sizes for systems that use R–22 refrigerant. The tables in Figures 4 and 5 list tubing sizes for systems that use R–12 refrigerant. All four tables list tubing sizes for 50, 100, 150, and 200 feet of equivalent run.

CONNECTING REFRIGERATION TUBES TO COMPRESSOR

1. After the proper tube sizes have been selected, connect the tubes to the compressor and the evaporator. The suction line and the liquid line from the evaporator coil are located at the outside top of each Reach–In ceiling.
2. The compressor should be installed as close to the Reach–In as possible; this reduces pressure drop and saves on copper tubing. If the compressor will be installed 5 feet or more above the top of the Reach–In, use a tube for the suction riser (see the tube size charts for vertical tube size) and install a shallow P–trap at the bottom of the riser. Use a flexible connection (a loop of copper tubing or vibration eliminator) between the suction line and the compressor if the compressor is spring mounted.
3. Tape the suction line and the liquid line together. This will form an external heat exchanger which will reduce the possibility of condensation forming on the suction line, and reduce the possibility of vibration and rattle occurring.
4. Install a drier with ample capacity in the liquid line. Install a moisture indicating type of sight glass at the outlet of the drier. The drier should be installed vertically with the liquid being fed at the bottom to eliminate the possibility of channeling.

TEMPERATURE CONTROL. A good low pressure control is recommended for controlling cooler temperature. Use a dual pressure control if the compressor is air cooled and more than 1 HP, or if a water cooled compressor is used.

- To maintain a temperature of 36° to 38°F in the Reach–In, set the low pressure control to cut out at 18°F and cut back in at 40°F. This is an approximate setting. The setting may have to be changed due to variations in gauge accuracy, line pressure drop, or compressor efficiency. It is acceptable to raise or lower the cut–out pressure setting, but never set the cut–in pressure lower than 40°F. Recheck the control setting after the Reach–In has been loaded and the temperature of the cooler and the product load has stabilized.

CHECKING FOR LEAKS. After all component parts (sight glass, driers, pressure control etc.) and refrigerant tubes have been installed, check the entire system for leaks. Charge the system with refrigerant vapor and check all soldered and flared joints for leaks.

PREPARING SYSTEM FOR REFRIGERANT CHARGE. To prepare the system for refrigerant charge, perform the following steps.

1. If the system shows no leaks, remove the test charge of refrigerant vapor.
2. Connect a vacuum pump to the system and draw a deep vacuum in both the high and low side of the system.
3. The first two evacuations should be broken with dry nitrogen. Bring the system up to 2 PSIG and repeat the evacuation twice. The final evacuation should be broken with refrigerant charged through a drier.

CHARGING SYSTEM WITH REFRIGERANT. After the system has been thoroughly evacuated of all moisture and non–condensable gas, perform the following steps to charge the system with refrigerant.

1. If the sysem is to be charged through the suction gauge port, charge with gas vapor only while the compressor is running.

**CAUTION**

**Never pour liquid refrigerant into the suction gauge port. This will cause serious damage to the compressor.**

Temperature control settings 5/B 40 and 33 in the return air grille

2. If the system is still in a deep vacuum after the evacuation procedure, the system can be charged with liquid refrigerant through the high side for fast charging. To charge through the high side, keep the compressor power off.
3. Connect the charging hose to the discharge gauge port and the refrigerant drum.
4. Invert the drum so that the valve stem is on the bottom. Open the refrigerant drum valve and purge out the charging hose.
5. Open the discharge gauge port. The vacuum in the system will draw the liquid into the condenser and the receiver very rapidly through the discharge gauge port.
6. Weigh the drum before and after charging to be sure that you do not charge the system with more than 80% of the receiver capacity.

ELECTRICAL. The Reach–In Cooler is designed to operate on 115 Volt, 60 Cycle power. All internal wiring for cooler lights, fans, and door heaters has been done at the factory. The input power leads for the cooler are located in the ballast box that is located on the right front of the cooler, behind the bumper base plate.

1. To connect power to the cooler, remove the cover from the ballast box and connect power to the black and white wires. The black and white wires MUST NOT be connected to the store light switch.
2. The connection of the evaporator fan leads to the black and white power leads, is made inside the vertical raceway that is located inside the cooler, just to the right of the right end door (the same raceway that the cooler light switch is near).

## SERVICE

EVAPORATOR FAN POWER

- The evaporator fan must be connected to a source other than the circuit that is controlled by the store light switch. This will prevent the evaporator fan from being turned off when the store lights are turned off. The leads for the evaporator fan motor are connected in parallel to the black and white power leads, inside the vertical raceway. The raceway is located inside the cooler, just to the right of the right end door.
- When 115 Volt, 60 Cycle power is connected to the black and white leads in the ballast box, the evaporator fan will also be receiving power.

EVAPORATOR

A slope–front forced convection coil is attached to the inner ceiling of each Reach–In section. The coil is completely factory assembled and includes an expansion valve and a fan. The refrigeration tubes extend out of the cooler through a hole in the ceiling for convenient field connection.

EVAPORATOR FAN

The evaporator fan must be in operation at all times. It must not be connected to the light switch and it must not cycle on and off with the compressor.

EXPANSION VALVE

The thermostatic expansion valve has adjustable super heat and a "C" charge thermal bulb. Under certain operation conditions, it may be necessary to adjust the super heat setting of the expansion valve to get maximum cooling effect from the coil. To perform this adjustment, complete the following steps.

1. To adjust the valve, first remove the slope front coil cover. To remove the cover, remove the sheet metal screws that hold the slope front cover to the sides of the coil housing.
2. Remove the valve stem cap from the bottom of the valve.
3. To open the valve (which will reduce super heat), turn the valve stem counterclockwise when facing the stem. To close the valve (which will increase super heat), turn the valve clockwise.
4. Turn the valve stem only 1/4 turn at a time and allow 20 to 30 minutes to elapse before making another valve adjustment.
5. After the valve has been adjusted, wipe dry the threads at the end of the valve. Then install the cap on the valve stem.

ARDCO SWINGLINE III DOORS

DOOR REMOVAL. To remove an Ardco door, perform the following steps.

1. Open the door to the 45° position.
2. Remove the lok–clip from the top of the door.
3. Remove the screw that retains the power cord.
4. Lift the door up and out to disengage the bottom door pin. Rest the door on the mounting plate.
5. Unplug the electrical cord.
6. Lift the door out of the cooler.

ADJUSTING DOOR SPRING TENSION. The cooler doors close automatically from spring tension. Increase the spring tension until the door will close by itself when held open a distance of one inch.

To adjust spring tension, use the 5/16 inch allen wrench that is supplied with the cooler. Insert the tool into the ratchet adjusting nut. The ratchet adjusting nut is recessed into the center of the door, opposite the electrical plug.

Rotate the tool in the direction that the door opens (toward the glass). Moving the ratchet 3–4 clicks will give approximately the proper tension. Too much spring tension will cause the door to slam.

ANTHONY MODEL 100R DOORS

DOOR REMOVAL. To remove an Anthony door, perform the following steps.

1. Release tension on the Torquemaster by turning the front screw clockwise.

**CAUTION**

**The Torquemaster may be damaged if tension is not released.**

2. Insert a needle nose pliers into the 1/8 inch hinge pin plug hole. Compress the pliers and pull the hinge pin plug out of the frame.
3. Open the door and lock it into the open position. Use a flat tipped screwdriver to release the door stop. Also release the hold–open frame attachment from the slide channel. Remove the door stop and the hold–open from the door.
4. Lift the door out of the Torquemaster.

ADJUSTING DOOR SPRING TENSION. Anthony doors close automatically as a result of spring tension. The tension should be adjusted until the door closes by itself when held open a distance of one inch.

- Use a flat tipped screwdriver to turn the screw on the front of the Torquemaster. Turn the screw clockwise to decrease the force that closes the door. Turn the screw counterclockwise to increase the closing force. Do not over–tighten the screw; this will cause the door to slam.

# REMOTE REACH–IN COOLER
# W/30″ X 66″ DOORS
# REFRIGERANT R–22

| MODEL | BTU/HR. @ 20 DEGREE EVAPORATOR | COMPRESSOR HORSEPOWER R-22 | RECOMMENDED LIQUID LINE SIZES EQUIVALENT LENGTH, FEET | | | | RECOMMENDED SUCTION LINE SIZES EQUIVALENT LENGTH, FEET | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 50 | | 100 | | 150 | | 200 | |
| | | | 50 | 100 | 150 | 200 | H | V | H | V | H | V | H | V |
| RI-2-DCR-GIA | 4202 | 3/4 H | 1/4 | 3/8 | 3/8 | 3/8 | 1/2 | 1/2 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 |
| RI-3-DCR-GIA | 6073 | 1 H | 1/4 | 3/8 | 3/8 | 3/8 | 1/2 | 1/2 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 |
| RI-4-DCR-GIA | 7944 | 1.1/2 H | 1/4 | 3/8 | 3/8 | 3/8 | 1/2 | 1/2 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 |
| RI-5-DCR-GIA | 9815 | 1.1/2 H | 1/4 | 3/8 | 3/8 | 3/8 | 1/2 | 1/2 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 |
| RI-6-DCR-GIA | 11686 | 2 H | 1/4 | 3/8 | 3/8 | 3/8 | 1/2 | 1/2 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 |
| RI-7-DCR-GIA | 13557 | 3 H | 3/8 | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 | 7/8 | 7/8 |
| RI-8-DCR-GIA | 15428 | 3 H | 3/8 | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 | 7/8 | 7/8 |
| RI-9-DCR-GIA | 17026 | 3 H | 3/8 | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 | 7/8 | 7/8 |
| RI-10-DCR-GIA | 18897 | 3 H | 3/8 | 3/8 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 |
| RI-11-DCR-GIA | 20768 | 3 H | 3/8 | 3/8 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 |
| RI-12-DCR-GIA | 22639 | 4 H | 3/8 | 3/8 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 |
| RI-13-DCR-GIA | 24510 | 4 H | 3/8 | 1/2 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 | 1.1/8 | 7/8 |
| RI-14-DCR-GIA | 26381 | 4 H | 3/8 | 1/2 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 | 1.1/8 | 7/8 |
| RI-15-DCR-GIA | 28252 | 4 H | 3/8 | 1/2 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 | 1.1/8 | 7/8 |
| RI-16-DCR-GIA | 29852 | 4 H | 3/8 | 1/2 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 | 1.1/8 | 7/8 |
| RI-17-DCR-GIA | 31452 | 4 H | 3/8 | 1/2 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 | 1.1/8 | 7/8 |
| RI-18-DCR-GIA | 33052 | 5 H | 3/8 | 1/2 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 | 1.1/8 | 7/8 |
| RI-19-DCR-GIA | 34652 | 5 H | 3/8 | 1/2 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 | 1.1/8 | 7/8 |
| RI-20-DCR-GIA | 36252 | 5 H | 1/2 | 1/2 | 1/2 | 1/2 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.3/8 | 1.1/8 |

How To Use This Table

The table shows the main line sizes to be used for various combinations of Reach–In coolers. Although the table shows the main line sizes, it can also be used to select the proper branch line sizes.

The table gives not only the individual BTU/HR and approximate compressor size, but also liquid and suction line sizes for runs from 50 feet in length to 200 feet. The suction line column has also been broken into horizontal and vertical runs.

Figure 2. Refrigeration Tube Size Table For RI–DCR–GIA Coolers Using R–22 Refrigerant

# REMOTE REACH–IN COOLER
# W/24″ X 63″ DOORS
# REFRIGERANT R–22

| MODEL | BTU/HR. @ 20 DEGREE EVAPORATOR | COMPRESSOR HORSEPOWER R-22 | RECOMMENDED LIQUID LINE SIZES EQUIVALENT LENGTH, FEET | | | | RECOMMENDED SUCTION LINE SIZES EQUIVALENT LENGTH, FEET | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 50 | | 100 | | 150 | | 200 | |
| | | | 50 | 100 | 150 | 200 | H | V | H | V | H | V | H | V |
| RI-2-DCR | 2700 | 1/2 H | 1/4 | 3/8 | 3/8 | 3/8 | 1/2 | 1/2 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 |
| RI-3-DCR | 4300 | 3/4 H | 1/4 | 3/8 | 3/8 | 3/8 | 1/2 | 1/2 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 |
| RI-4-DCR | 5900 | 1 H | 1/4 | 3/8 | 3/8 | 3/8 | 1/2 | 1/2 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 |
| RI-5-DCR | 7500 | 1 H | 3/8 | 3/8 | 3/8 | 3/8 | 1/2 | 1/2 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 |
| RI-6-DCR | 9000 | 1.1/2 H | 3/8 | 3/8 | 3/8 | 3/8 | 1/2 | 1/2 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 |
| RI-7-DCR | 10500 | 1.1/2 H | 3/8 | 3/8 | 3/8 | 3/8 | 1/2 | 1/2 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 | 5/8 |
| RI-8-DCR | 12000 | 2 H | 3/8 | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 | 7/8 | 7/8 |
| RI-9-DCR | 13500 | 2 H | 3/8 | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 | 7/8 | 7/8 |
| RI-10-DCR | 15000 | 3 H | 3/8 | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 | 7/8 | 7/8 |
| RI-11-DCR | 16500 | 3 H | 3/8 | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 | 7/8 | 7/8 |
| RI-12-DCR | 18000 | 3 H | 3/8 | 3/8 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 |
| RI-13-DCR | 19500 | 3 H | 3/8 | 3/8 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 |
| RI-14-DCR | 21000 | 3 H | 3/8 | 3/8 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 |
| RI-15-DCR | 22400 | 4 H | 3/8 | 3/8 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 |
| RI-16-DCR | 23800 | 4 H | 3/8 | 3/8 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 |
| RI-17-DCR | 25200 | 4 H | 3/8 | 1/2 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 | 1.1/8 | 7/8 |
| RI-18-DCR | 26600 | 4 H | 3/8 | 1/2 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 | 1.1/8 | 7/8 |
| RI-19-DCR | 28000 | 4 H | 3/8 | 1/2 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 | 1.1/8 | 7/8 |
| RI-20-DCR | 29400 | 4 H | 3/8 | 1/2 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 | 1.1/8 | 7/8 |

How To Use This Table

The table shows the main line sizes to be used for various combinations of Reach–In coolers. Although the table shows the main line sizes, it can also be used to select the proper branch line sizes.

The table gives not only the individual BTU/HR and approximate compressor size, but also liquid and suction line sizes for runs from 50 feet in length to 200 feet. The suction line column has also been broken into horizontal and vertical runs.

Figure 3. Refrigeration Tube Size Table For RI–DCR Coolers Using R–22 Refrigerant

# REMOTE REACH–IN COOLER
# W/30″ X 66″ DOORS
# REFRIGERANT R–12

| MODEL | BTU/HR. @ 20 DEGREE EVAPORATOR | COMPRESSOR HORSEPOWER R-12 | RECOMMENDED LIQUID LINE SIZES EQUIVALENT LENGTH, FEET | | | | RECOMMENDED SUCTION LINE SIZES EQUIVALENT LENGTH, FEET | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 50 | | 100 | | 150 | | 200 | |
| | | | 50 | 100 | 150 | 200 | H | V | H | V | H | V | H | V |
| RI-2-DCR-GIA | 4202 | 1/2 M | 3/8 | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 |
| RI-3-DCR-GIA | 6073 | 3/4 M | 3/8 | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 |
| RI-4-DCR-GIA | 7944 | 1 M | 3/8 | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 |
| RI-5-DCR-GIA | 9815 | 1.1/2 H | 3/8 | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 |
| RI-6-DCR-GIA | 11686 | 1.1/2 M | 3/8 | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 |
| RI-7-DCR-GIA | 13557 | 2 H | 3/8 | 3/8 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 | 1.1/8 | 7/8 |
| RI-8-DCR-GIA | 15428 | 2 M | 3/8 | 3/8 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 | 1.1/8 | 7/8 |
| RI-9-DCR-GIA | 17026 | 2 M | 3/8 | 3/8 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 | 1.1/8 | 7/8 |
| RI-10-DCR-GIA | 18897 | 3 H | 1/2 | 1/2 | 1/2 | 1/2 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 |
| RI-11-DCR-GIA | 20768 | 3 H | 1/2 | 1/2 | 1/2 | 1/2 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 |
| RI-12-DCR-GIA | 22639 | 3 M | 1/2 | 1/2 | 1/2 | 1/2 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 |
| RI-13-DCR-GIA | 24510 | 3 M | 1/2 | 1/2 | 1/2 | 5/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.3/8 | 1.1/8 | 1.3/8 | 1.1/8 |
| RI-14-DCR-GIA | 26381 | 5 H | 1/2 | 1/2 | 1/2 | 5/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.3/8 | 1.1/8 | 1.3/8 | 1.1/8 |
| RI-15-DCR-GIA | 28252 | 5 H | 1/2 | 1/2 | 1/2 | 5/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.3/8 | 1.1/8 | 1.3/8 | 1.1/8 |
| RI-16-DCR-GIA | 29852 | 5 H | 1/2 | 1/2 | 1/2 | 5/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.3/8 | 1.1/8 | 1.3/8 | 1.1/8 |
| RI-17-DCR-GIA | 31452 | 5 H | 1/2 | 1/2 | 1/2 | 5/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.3/8 | 1.1/8 | 1.3/8 | 1.1/8 |
| RI-18-DCR-GIA | 33052 | 5 M | 1/2 | 1/2 | 1/2 | 5/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.3/8 | 1.1/8 | 1.3/8 | 1.1/8 |
| RI-19-DCR-GIA | 34652 | 5 M | 1/2 | 1/2 | 1/2 | 5/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.3/8 | 1.1/8 | 1.3/8 | 1.1/8 |
| RI-20-DCR-GIA | 36252 | 5 M | 1/2 | 5/8 | 5/8 | 5/8 | 1.3/8 | 1.1/8 | 1.3/8 | 1.3/8 | 1.3/8 | 1.3/8 | 1.5/8 | 1.3/8 |

How To Use This Table

The table shows the main line sizes to be used for various combinations of Reach–In coolers. Although the table shows the main line sizes, it can also be used to select the proper branch line sizes.

The table gives not only the individual BTU/HR and approximate compressor size, but also liquid and suction line sizes for runs from 50 feet in length to 200 feet. The suction line column has also been broken into horizontal and vertical runs.

Figure 4. Refrigeration Tube Size Table For RI–DCR–GIA Coolers Using R–12 Refrigerant

# REMOTE REACH–IN COOLER
# W/24" X 63" DOORS
# REFRIGERANT R–12

| MODEL | BTU/HR. @ 20 DEGREE EVAPORATOR | COMPRESSOR HORSEPOWER R-12 | RECOMMENDED LIQUID LINE SIZES EQUIVALENT LENGTH, FEET | | | | RECOMMENDED SUCTION LINE SIZES EQUIVALENT LENGTH, FEET | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 50 | | 100 | | 150 | | 200 | |
| | | | 50 | 100 | 150 | 200 | H | V | H | V | H | V | H | V |
| RI-2-DCR | 2700 | 1/3 M | 3/8 | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 |
| RI-3-DCR | 4300 | 1/2 M | 3/8 | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 |
| RI-4-DCR | 5900 | 3/4 M | 3/8 | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 |
| RI-5-DCR | 7500 | 1 M | 3/8 | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 |
| RI-6-DCR | 9000 | 1.1/2 H | 3/8 | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 |
| RI-7-DCR | 10500 | 1.1/2 H | 3/8 | 3/8 | 3/8 | 3/8 | 5/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 | 7/8 | 5/8 |
| RI-8-DCR | 12000 | 1.1/2 M | 3/8 | 3/8 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 | 1.1/8 | 7/8 |
| RI-9-DCR | 13500 | 2 H | 3/8 | 3/8 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 | 1.1/8 | 7/8 |
| RI-10-DCR | 15000 | 2 M | 3/8 | 3/8 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 | 1.1/8 | 7/8 |
| RI-11-DCR | 16500 | 2 M | 3/8 | 3/8 | 1/2 | 1/2 | 7/8 | 7/8 | 7/8 | 7/8 | 1.1/8 | 7/8 | 1.1/8 | 7/8 |
| RI-12-DCR | 18000 | 2 M | 1/2 | 1/2 | 1/2 | 1/2 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 |
| RI-13-DCR | 19500 | 3 H | 1/2 | 1/2 | 1/2 | 1/2 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 |
| RI-14-DCR | 21000 | 3 H | 1/2 | 1/2 | 1/2 | 1/2 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 |
| RI-15-DCR | 22400 | 3 M | 1/2 | 1/2 | 1/2 | 1/2 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 |
| RI-16-DCR | 23800 | 3 M | 1/2 | 1/2 | 1/2 | 1/2 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 |
| RI-17-DCR | 25200 | 3 M | 1/2 | 1/2 | 1/2 | 5/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.3/8 | 1.1/8 | 1.3/8 | 1.1/8 |
| RI-18-DCR | 26600 | 5 H | 1/2 | 1/2 | 1/2 | 5/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.3/8 | 1.1/8 | 1.3/8 | 1.1/8 |
| RI-19-DCR | 28000 | 5 H | 1/2 | 1/2 | 1/2 | 5/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.3/8 | 1.1/8 | 1.3/8 | 1.1/8 |
| RI-20-DCR | 29400 | 5 H | 1/2 | 1/2 | 1/2 | 5/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.1/8 | 1.3/8 | 1.1/8 | 1.3/8 | 1.1/8 |

How To Use This Table

The table shows the main line sizes to be used for various combinations of Reach–In coolers. Although the table shows the main line sizes, it can also be used to select the proper branch line sizes.

The table gives not only the individual BTU/HR and approximate compressor size, but also liquid and suction line sizes for runs from 50 feet in length to 200 feet. The suction line column has also been broken into horizontal and vertical runs.

Figure 5. Refrigeration Tube Size Table For RI–DCR Coolers Using R–12 Refrigerant

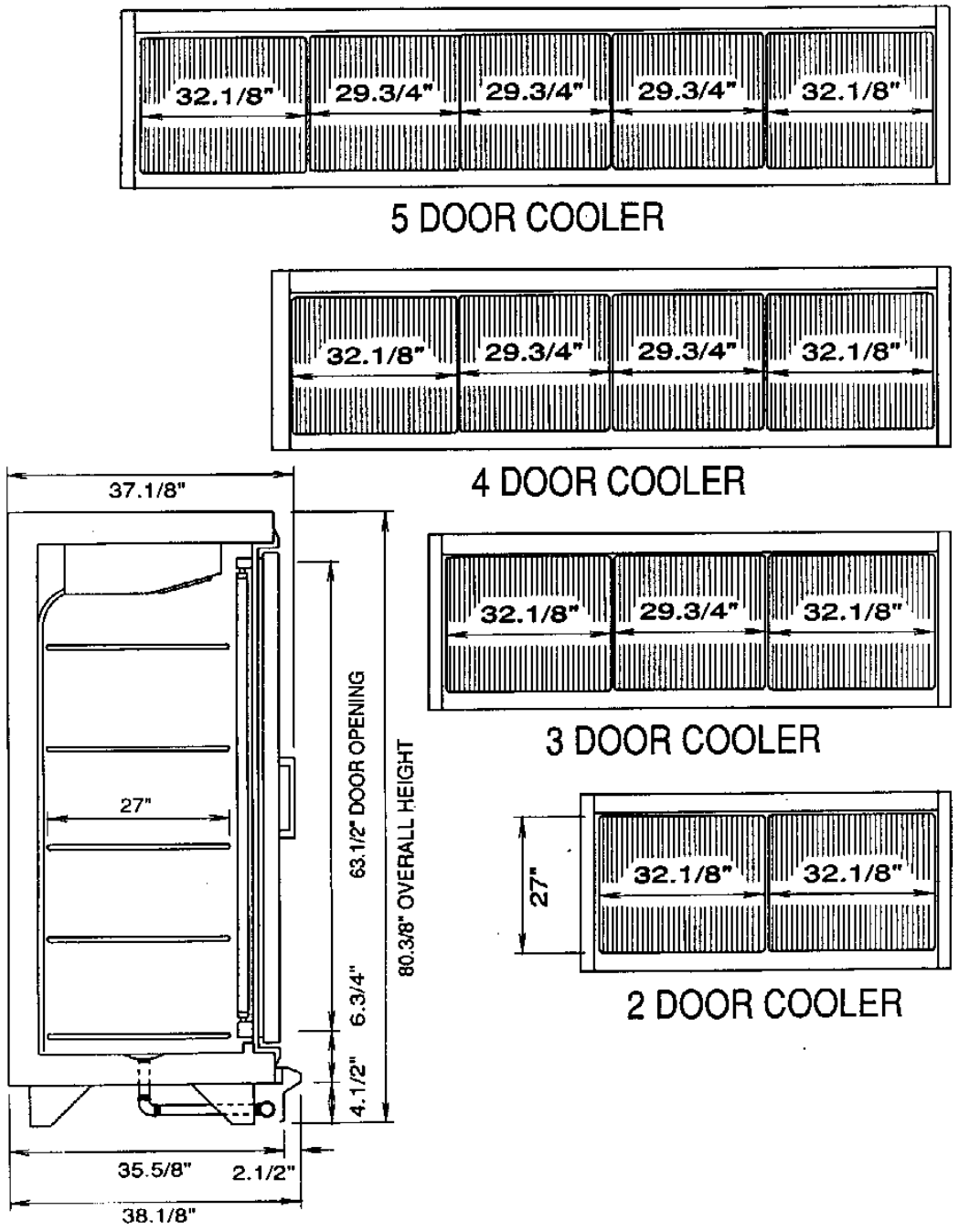



Figure 6. Shelf Placement And Arrangement Diagram For Model RI-DCR-GIA Reach-In Cooler With 30" x 66" Glass Doors. If a floral case only 3 shelves per door are needed.

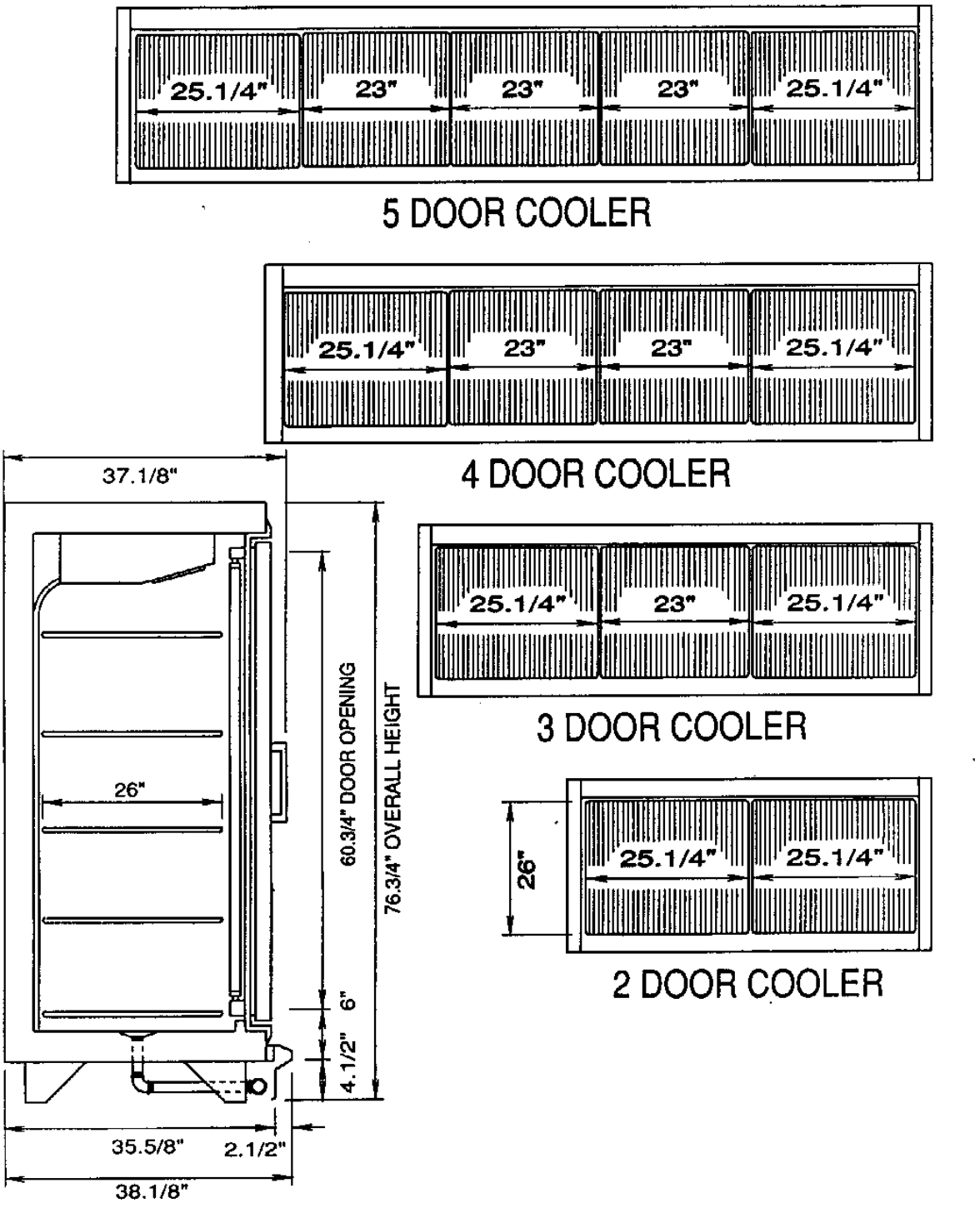



Figure 7. Shelf Placement And Arrangement Diagram For Model RI-DCR Reach-In Cooler With 24" x 63" Glass Doors. If a floral case only 3 shelves per door are needed.

| ZERO ZONE | CASE MODEL | NON-CYCLED LOAD | | | | | | CYCLED LOAD | | | | | | | | TOTAL 115/1/60 POWER FOR CASES | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | FANS | | LIGHTS | | SUB TOTAL | | ANTI-SWEAT HEATERS | | | | | | SUB TOTAL | | | |
| | | | | | | | | MULLIONS | | AUX. | | DOORS | | | | | |
| | | AMP | WATT | AMP | WATT | AMP | WATT | AMP | WATT | AMP | WATT | AMP | WATT | AMP | WATT | AMP | WATT |
| 24" WIDE DOOR COOLER | RI-2-DCR | 1 | 56 | 1.2 | 148 | 2.2 | 204 | .4 | 39 | .3 | 35 | .2 | 20 | .9 | 94 | 3.1 | 298 |
| | RI-3-DCR | 1 | 56 | 1.8 | 210 | 2.8 | 266 | .6 | 59 | .4 | 50 | .3 | 30 | 1.3 | 139 | 4.1 | 405 |
| | RI-4-DCR | 1.5 | 84 | 2.5 | 296 | 4 | 380 | .8 | 78 | .4 | 44 | .4 | 40 | 1.6 | 162 | 5.6 | 542 |
| | RI-5-DCR | 2.5 | 140 | 3.1 | 358 | 5.6 | 498 | 1 | 98 | .5 | 57 | .5 | 50 | 2 | 205 | 7.6 | 703 |
| 30" WIDE DOOR COOLER | RI-2-DCR-GIA | 1 | 56 | 1.2 | 148 | 2.2 | 204 | .6 | 77 | .2 | 18 | .2 | 18 | 1.2 | 148 | 3.4 | 352 |
| | RI-3-DCR-GIA | 1.5 | 84 | 1.8 | 210 | 3.3 | 294 | .9 | 116 | .3 | 27 | .3 | 27 | 1.6 | 187 | 4.9 | 481 |
| | RI-4-DCR-GIA | 2.5 | 140 | 2.5 | 296 | 5 | 436 | 1.2 | 154 | .4 | 35 | .4 | 35 | 2.1 | 247 | 7.1 | 683 |
| | RI-5-DCR-GIA | 5 | 280 | 3.1 | 358 | 8.1 | 638 | 1.5 | 193 | .5 | 44 | .5 | 44 | 2.6 | 310 | 10.7 | 948 |

NOTE: Lights for remote cases are listed for use in a multi–case lineup only. When adding a case end to the lineup, make the following additions to the Amp and Watt totals: DCR – 0.6 Amp, 72 Watts; DCR–GIA – 0.6 Amps, 72 Watts.

Figure 8. Electrical Requirements For Zero Zone Reach–In Coolers

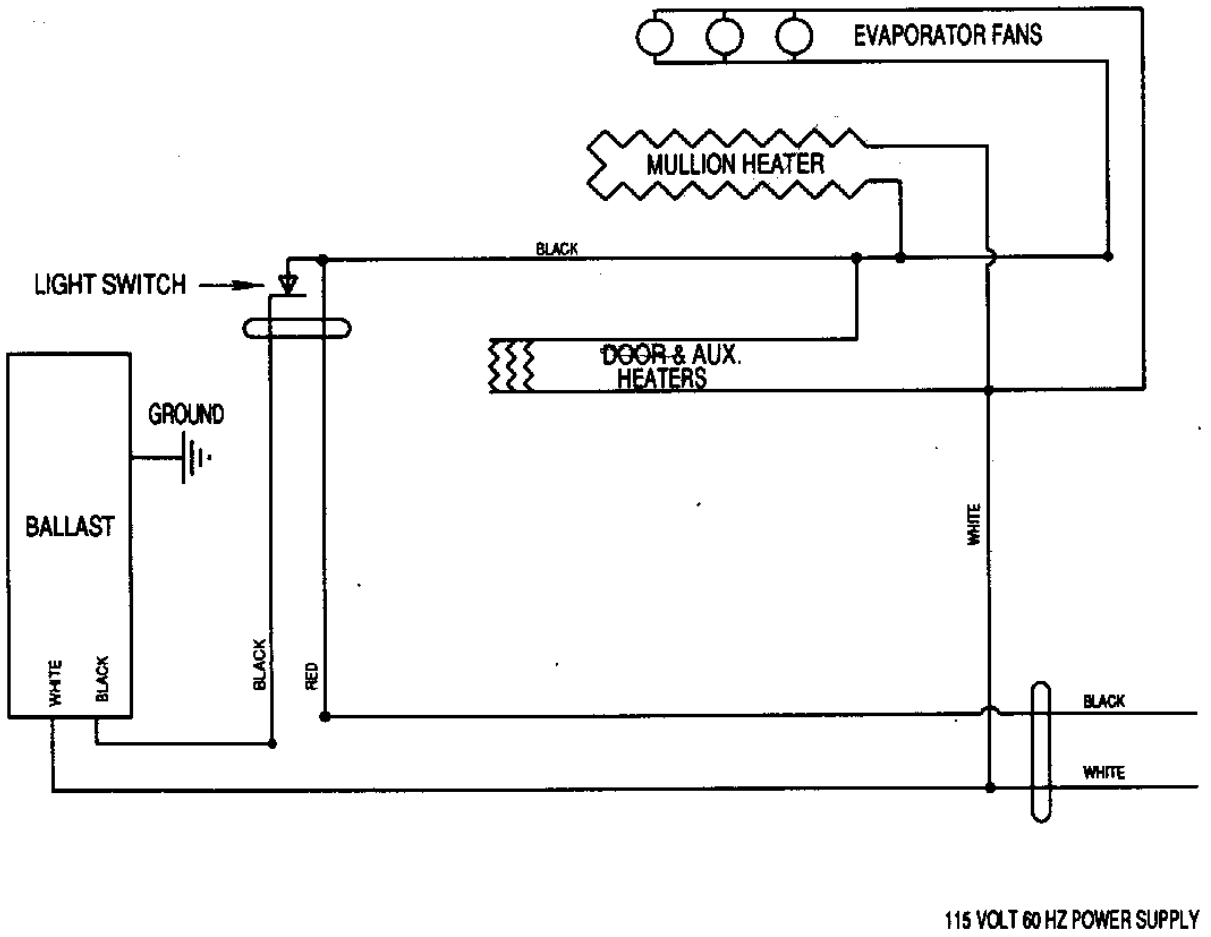



Figure 9. Electrical Schematic For Zero Zone Reach–In Coolers