



**SERVICE &
INSTALLATION
MANUAL**

With Carel Digital Control

DIPPING CABINET

Model: KDC47

Model: KDC67

Model: KDC87

GLOBAL REFRIGERATION, INC

563 Corbin Road - Honea Path, SC 29654

864-260-6600 Fax 864-260-6601



Important information is contained in this manual which should be retained in a convenient location for future reference. Information in the manual is subject to change without notice.

ADDITIONAL INFORMATION OR TECHNICAL ASSISTANCE

For customer service or technical assistance, please call our manufacturing facility toll free number:

1-888-650-9799

Our Customer Service Representatives and Engineers are willing to assist you in any way possible. Office hours are from 8am to 5pm, Monday-Friday (Eastern Standard Time)

*****Copies of Installation and Maintenance Manual and for helpful videos, please visit our web site at; www.globalref.com*****

Corporate Offices: 5855 Grant Avenue, Cleveland, OH 44105. USA
Manufacturing Facility: 563 Corbin Road, Honea Path, SC 29654. USA
Phone: 1.864.260.6600 Toll Free 1.888.650.9799 Fax 1-864-260-6601

Installation Instructions – Illuminated Dipping Cabinets

FREIGHT DAMAGES AND SHORTAGES

IMPORTANT

The cabinet was inspected and packaged at the factory, and should have arrived in excellent condition. The transportation company or other parties involved in the shipment are responsible for loss and/or “damage”. Always make an inspection before and after uncrating, preferably at the point of unloading by the transportation company.

INSPECTING FOR DAMAGES

Note:

Always use care when removing shipping tape, blocks, pads, hardware or other material. Contact your dealer or distributor if technical assistance is required.

Check the cartons or containers. If these are damaged in any way, open them and inspect the contents in the driver's presence. If damage is detected, do the following:

1. Have the driver note the nature and extent of the damage on the freight bill.
2. Notify the transportation company's office to request an inspection. Carrier claim policies usually require inspections to be made within 15 days of delivery.
3. If damage is noticed, file a claim with the transportation company.

FILING A CLAIM

File a claim for loss at once with the transportation company for:

- A. A cash adjustment B. Repairs C. Replacement

When filing your claim, retain all packaging materials and receipts.

HANDLING THE CABINET

Note:

The refrigeration system of the cabinet is designed to operate with the cabinet located on a flat surface. **DO NOT tilt the cabinet more than 30° to any side.** If the cabinet must be tilted on an angle for handling or moving purposes, allow it to sit in an upright position 20 to 30 minutes prior to operating.

CHOOSING A LOCATION

This model cabinet should be situated to allow proper air circulation. The cabinet must be installed on sturdy, level floor and positioned so that it can be plugged into a properly grounded three-prong electrical wall outlet of 115 volt, 60 hz. The electrical outlet should not be controlled by a wall switch which might be turned off accidentally.

UNCRATING THE CABINET

The cabinet should be moved as close as possible to the operating location before removing the skid. Be sure to follow the steps in the “INSPECTING FOR DAMAGES” instructions.

INSTALLING THE CABINET

Whenever possible leave the crate skid on the cabinet until it is moved close to the final position. When it is necessary to move the cabinet through a doorway, it may be necessary to remove the crate skid.

IMPORTANT - Run the cabinet down to storage temperature before adding product.

CAUTION

- A. Do not locate cabinet where sunlight or drafts from fans, air conditioning or open doors can affect product temperature.
- B. Run cabinet before building in or attaching panels or accessories.
- C. Front and rear grills must be kept clear for adjustments and service.
- D. Cabinet must be installed on the finished floor to assure condensing unit (employee side) can be slid out, or removed for service. **DO NOT seal in with cover molding or caulking in the area where condensing unit pulls out.**
- E. **DO NOT use extension cords to power this equipment.**

GROUNDING INSTRUCTIONS

This appliance is equipped with a three-prong (grounding) plug for your protection against shock hazards. The appliance should be plugged directly into a properly grounded three-prong receptacle.

Where a two-prong wall receptacle is encountered, it must be replaced with a properly grounded three-prong receptacle in accordance with the National Electrical Code and local codes and ordinances. The work must be done by a licensed electrician.

IMPORTANT

Do not, under any circumstance, cut or remove the round grounding plug from the appliance plug.

WARNING

Consult a licensed electrician if you have any doubt about the grounding of your wall receptacle. Only a licensed electrician can determine the polarization of your wall receptacle. Only a properly installed three-pronged wall receptacle assures the proper polarization with the appliance plug.

Run necessary electrical, water supply and drain lines before setting the cabinet in position. Shim under the cabinet as necessary to level it.

IMPORTANT - Should two or more cabinets be set up in a row, space must be left between freezers so as to allow access to end glass and tightening lid mounting hardware.

Rivets are provided on the operator's side for mounting dipper well and other accessories.

CABINET START-UP

Once the cabinet has been located in its permanent location and the proper power and grounding have been provided, the following items must be checked or completed:

- A. Cut and remove the compressor hold-down band (if applicable) so the compressor "floats" freely.
- B. Check for traces of oil on the compressor pan which could mean a broken or leaking refrigeration line. If oil is present, call a service technician. **DO NOT** start the compressor.
- C. Check the refrigeration lines to see that they are "free" and no damage was done during shipping.
- D. Check fan blade for free operation.
- E. Turn on the main power switch. Once the compressor starts, the voltage should be checked at the compressor terminals to determine if there is proper voltage to the compressor. The voltage should not exceed 10% above or below the rated compressor voltage **EXAMPLE:** If the voltage reads 115 volts with no load and it drops below 103 volts when the compressor starts, it may indicate that the supply wiring is too small or that the wire run is too long.
- F. Listen for any unusual noise such as lines vibrating.
- G. **The electronic temperature controller is a Carel digitally controlled microprocessor located in upper RH corner of grill on the operator side. Please refer to separate instruction sheet, included with freezer, which details setting and operation of the digital controller.** Please note that a separate "OFF"

switch is provided for your convenience in defrosting the cabinet.

- H. Allow the cabinet to pull down and cycle prior to loading with product (approx. 12 hours).

IMPORTANT USAGE INSTRUCTIONS

Dipping Cabinets

The cabinet must be installed carefully, following the Installation Instructions mentioned above.

The front and rear grills must be clear of any obstructions so the intake and exhausting of air for the condensing unit can move freely.

Dipping cabinets are designed for use in an air conditioned store. This cabinet is designed for merchandising, not hardening of the product. The dipping cabinet is designed to run at 70-80 degrees F maximum and humidity level of 50-55% maximum in the store.

High humidity can cause fogging of the lid and front glass.

High temperatures, installation of warm product and heavy usage can cause the product to soften. This condition will be more noticeable at the top of the cans.

The corners of the cabinets are the coldest areas. These areas should be used for product that is more difficult to keep firm.

Frost and ice act as insulators. The need for defrosting will depend on usage and product firmness.

To minimize frost accumulation, it is important to close the lid immediately after each serving. **DO NOT** leave open or open unnecessarily.

If the frost is scraped daily with a plastic scraper, intervals between complete defrosting may be extended.

Digital Controller adjustments should be made incrementally, either warmer or colder, allowing 24 hours between adjustments, to allow the product to stabilize.

Usage Instructions (cont.)

Hand dipping is most profitable when it is correctly executed. Training should be intensive.

First you must have proper equipment. Don't handicap your employees with a dull scoop which has a tendency to squeeze the ice cream making it difficult to control. A sharp edged scoop on the other hand, cuts a nice "ribbon" of ice cream and rolls it lightly into an attractive round ball.

Let the scoop do the work. It should be started at the outside edge of the can... "rolled" around the can and then upward! Handling it this way will produce a neat, lightly compressed ball of ice cream that's consistent in weight – portion after portion. Never press the scoop against the side of the can as this will result in a small, heavy ball of ice cream and lend itself to "over scooping".

Every time you touch or handle ice cream some air is squeezed out. Air is important in ice cream just as in bread or cake, to make it light and fluffy enough for good eating. The air you press out will usually make you dip extra in order to gratify your customer's anticipated idea of size and shape.

The next scoop full should start where the last left off. Continue in the same circular pattern with the circles getting smaller as you approach the center of the can. This causes the ice cream to go down evenly and is important because keeping the ice cream level in the can eliminates smeared arms and reduces the need to scrape down the sides of the can with a spade.

Even in the best of operations, however, leveling off will be necessary. This should be done lightly and with the back of the spade turned toward the side of the can. When it is necessary to scrape down a can, the scraped ice cream will not dip as well nor will it taste as smooth.

Since transferred ice cream is difficult to dip in portioned control, it is necessary to dip as near to the bottom of the can as possible. Ice cream should not be transferred from one can to another if there is more than one inch in the bottom.

The ice cream cabinet is the hand dipper's workshop, as its importance to the retail operation is considerable and proper use will increase sales and profits.

One of the first orders of maintenance is proper dipping temperatures. Your cabinet representative can be a help in deciding the correct temperature for efficient scooping.

Some operators prefer to scoop from 5 to 9 degrees above zero, and still others up to 12 degrees. This question can be settled more efficiently as experience dictates the best answer for your individual operation.

If, for instance, most of the ice cream is served right in the store, it can be scooped at a higher temperature than that which goes outside in a drive-in operation. Although the formula used in making the ice cream makes a difference in the rapidity of melting, the conditions under which it is served are also important.

Sherbets, which are high in sugar content, will require much lower cabinet temperatures than ice cream. If possible, they should be stored in the coldest part of a general cabinet or in a separate cabinet to permit the lower temperature requirement. Because sherbets are heavier, the weight formula for scooping ice cream will not apply. Also, because the variation in recipes is much wider than in ice cream, it will be necessary for each store to work out an effective separate weight and cost ration on sherbets.

A flavor pattern for location of the ice cream in the cabinets must also be worked out. The aroma of certain flavors is strong enough to transfer to milder flavors. For example, any ice cream containing peppermint, licorice or banana should not be stored next to a mild flavor such as vanilla. Use your sense of smell in deciding where to locate the cans to avoid flavor transfer. Then make a chart and keep the cans in these established locations.

In locating the flavors in the cabinet it also is well to remember that the flavors with higher sugar content (candy, ripple, maple syrup) require a lower temperature for most effective scooping. Since temperature may vary slightly within the cabinet, it would be well to plan your high sugar content ice cream for the colder area. Here, too, a chart, based on experience, will be helpful. You will want to call on your cabinet representative once again for information about the best location for each of the various flavors.

It must be recognized that frost accumulation on the cabinet walls will impair refrigeration efficiency. The best approach to the problem is to keep the lid or cover closed whenever possible and to set up a regular schedule of cabinet defrosting. Daily wiping with terry towels is recommended.

Housekeeping is very important. Keep the outside of the cabinet sparkling clean with frequent cleaning. Be especially careful with the lids and covers...continually cleaning off drips of ice cream as they occur. Attendants should be trained to use slack time to wipe the cabinets.

There is always the fact that ice cream is occasionally dropped into the bottom of the cabinet. This dropped ice cream is unsanitary and a total loss and expense to the company. Carelessness is the biggest contributor; training and vigilance is the solution. An up-to-date can skirt system will eliminate the problem.

GENERAL OPERATIONS

All the dipping cabinet models are of the same basic design, consisting of a bare tube condenser and a cap tube fed tank wrap evaporator.

Ice formation on the walls over a period of time is normal. This frost should be scraped off periodically in order to maintain peak performance. These cabinets are electronic digitally controlled for various temperature requirements. The electronic controller is located in upper RH corner of grill on the operator side. Please refer to separate instructions for the digital controller, to change the temperature range.

These cabinets are manual defrost and a drain is provided for periodic cleaning. A garden hose can be attached to the drain plug for draining away any water that might have accumulated. This drain attachment is located in the front base rail of the cabinet. **NOTE:** The power supply cord must be disconnected when cleaning or servicing these cabinets.

NOTE: On initial cabinet pull down the bare tube condenser may become warm to the touch until the normal operating temperatures are achieved.

Refer to model serial data tag for cabinet amperage, refrigerant charge & type.

Compressors being used in these cabinets utilize Refrigerant 404A and polyester oil. Because of the Hygroscopic nature of this oil, extreme care must be taken when any component is changed within the system. In the case of compressor replacement, work should be completed before the caps are removed from the compressor.

Agitation of the oil should be kept to a minimum. Compressors should not be open to the atmosphere for more than 15 minutes max. Should contamination occur the oil can be removed and recharged (following compressor manufacturer's guidelines when performing this procedure). Because of the porous nature of plastic, polyester oil should be stored in a metal container. Moisture contained within the oil cannot be removed even under high vacuum conditions and must be replaced.



CLEANING & MAINTENANCE

CLEANING THE CABINET EXTERIOR

Wipe the exterior occasionally with a cloth dampened in mild detergent water; rinse, and wipe dry with a soft, dry cloth. **DO NOT use abrasive or caustic cleaners or scouring pads.**

CLEANING THE CONDENSER – FIG. 1

Periodic cleaning of the condenser can be easily accomplished by brushing the coils with a soft brush and/or using a vacuum cleaner with a brush attachment.

Be sure that dirt, dust, and collection of other debris do not build up to a point air circulation through the condenser is restricted.

CLEANING THE STORAGE COMPARTMENT

1. Remove product and store it in another suitable cabinet, if possible. Be sure to prevent spoilage of the product which may occur if it is left at room temperature.
2. Turn OFF the freezer and unplug the cabinet.
3. Remove the can skirts, and frost shields, if used.
4. Defrost completely prior to cleaning.
5. Wash the can skirts and the entire interior storage area with warm water and baking soda solution –

about a tablespoon of baking soda per quart of water. Rinse thoroughly with clean water and wipe dry.

6. A drain hose (FIG. 1) is provided in the compressor compartment. Connection is made to fit a standard garden hose for ease of draining water from inside of the tank area.

IMPORTANT: DO NOT use any objects or cleaners which may leave residues, odors, or particles. Avoid the use of strong chemicals or abrasive cleaners which may damage the interior surfaces and contaminate product within the storage area.

7. Wash, rinse, and dry the can skirts and frost shields, if used.
8. Be sure to correctly reinstall the can skirts and frost shields, if used, plug in the cabinet, and allow time for cooling of the storage area before storing product.

CONDENSER



DRAIN HOSE

Figure 1

WARNING:

To avoid the possibility of an electrical shock, turn OFF freezer and unplug the electric cord of the cabinet before cleaning or touching electrical connections or parts.

Cabinet Trouble Shooting Guide

TROUBLE	COMMON CAUSE	REMEDY
UNIT WILL NOT RUN	Blown Fuse	Replace fuse. Check outlet with voltmeter, should check 115 V plus or minus 10%. If circuit overloaded, either reduce load or have electrician install separate circuit. If unable to remedy any other way, install autotransformer.
	Faulty Digital Controller	Jumper across terminals of control if unit runs and connections are all tight, replace control.
	Broken Relay	Check relay, replace if necessary.
	Broken Overload	Check overload, replace if necessary.
	Broken Compressor	Check compressor, replace if necessary.
	Defective service cord	Check with test light at unit. If no circuit and current is indicated at outlet, replace or repair.
	Broken lead to compressor or cold control	Repair or replace broken leads.
CABINET TOO WARM	Fan Motor Not running	Check and replace fan motor if necessary
	Digital controller set too warm or broken	Check and replace if necessary.
	Shortage of refrigerant	Check for leaks. Repair, evacuate and recharge systems.
	Not enough air circulation around cabinet.	Relocate cabinet or provide clearance to allow sufficient circulation.
	Dirty condenser or obstructed condenser ducts.	Clean the condenser.
CABINET TOO COLD	Digital control improperly set.	Program to warmer position.

TROUBLE	COMMON CAUSE	REMEDY
UNIT RUNS ALL THE TIME	Not enough air circulation around cabinet, or air circulation is restricted.	Relocate cabinet or provide proper clearances around cabinet.
		.
	Refrigerant charge.	Undercharge or overcharge-check, evacuate and recharge with proper charge.
	Room temperature too warm.	Ventilate room as much as possible.
	Digital Controller.	Check control; if it allows unit to operate all the time, replace control.
NOISY OPERATION	Loose flooring or floor not firm	Tighten flooring or brace floor.
	Tubing contacting cabinet or other tubing.	Move tubing.
	Cabinet not level.	Level cabinet.
	Fan hitting shroud.	Move fan blade.
	Compressor mechanically grounded.	Replace compressor mounts.
UNIT CYCLES ON OVERLOAD	Broken relay.	Replace relay.
	Weak overload protector.	Replace overload protector.
	Low voltage	Check outlet with voltmeter. Under load voltage should be 115V plus or minus 10%. Check for several appliances on same circuit. Do not use extension cord under any circumstances.
STUCK MOTOR COMPRESSOR	Broken valve.	Replace motor compressor.
CABINET RUNS ALL THE TIME. TEMP TOO COLD	Faulty digital controller	Check controller- test and replace if necessary.
RAPID ICE BUILDUP ON TANK WALLS	lid left open, high humidity in room	Close lids when not serving, lower humidity in room
FREEZER WORKS, THEN WARMS UP.	Moisture in system.	Evacuate and recharge.

GLOBAL REFRIGERATION , INC