

Convertible Refrigerator/Freezer

## KoolMore Stainless Steel Commercial Convertible Reach-In Refrigerator/Freezer

**Model:** KM-RIC-1DGD, KM-RIC-1DSS, KM-RIC-2DGD, KM-RIC-2DSS



***Before using, please read the operating instructions carefully to ensure proper application and achieve satisfactory results.***

For any service-related issues, please contact us:



718-576-6342



support@koolmore.com

***Stay informed with the latest information  
for your KoolMore Appliance.***

**If you need any assistance or have questions, our customer  
support team is here to help.**

# WARNING

Your safety and the safety of others are very important.

We have provided many important safety messages in this manual and on your appliance. Always read and obey all safety messages. Our product instructions will be uploaded on our company official website.

This is the Safety Alert Symbol. This symbol alerts you to potential hazards that can kill or injure you and others. All safety messages will follow the Safety Alert Symbol and either the words "DANGER", "WARNING" or "CAUTION".

## DANGER

Danger means that failure to heed this safety statement may result in severe personal injury or death.

## WARNING

Warning means that failure to heed this safety statement may result in extensive product damage, serious personal injury, or death.

## CAUTION

Caution means that failure to heed this safety statement may result in minor or moderate personal injury, or property or equipment damage.

All safety messages will alert you to what the potential hazard is, tell you how to reduce the chance of injury, and let you know what can happen if the instructions are not followed.

If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capacities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.

This appliance can be used by children aged from 8 years and above and persons with reduced physical sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

Keep the appliance and its cord out of reach of children less than 8 years.

Do not store explosive substances such as aerosol cans with a flammable propellant in this appliance.

The appliance uses flammable insulation blowing gas C5H10, disposal of the appliance shall in accordance with the regulations of local authorities.

The key for appliance electric box should be safe kept by qualified persons in order to avoid a hazard.

**WARNING:** Keep ventilation openings, in the appliance enclosure or in the built-in structure,

clear of obstruction.

**WARNING:** Do not use mechanical devices or other means to accelerate the defrosting process, other than those recommended by the manufacturer.

**WARNING:** Do not damage the refrigerant circuit.

**WARNING:** Do not use electrical appliances inside the food storage compartments of the appliance, unless they are of the type recommended by the manufacturer.

Handling, moving, and use of the refrigerator or freezer to avoid either damaging the refrigerant tubing, or increasing the risk of a leak.

**Caution – Risk of Fire or Explosion Due to Flammable Refrigerant Used. Follow Handling Instructions Carefully in Compliance with U.S. Government Regulations.**

Component parts shall be replaced with like components and that servicing shall be done by factory authorized service personnel, so as to minimize the risk of possible ignition due to incorrect parts or improper service.

**CAUTION – Risk Of Fire Or Explosion Due To Puncture Of Refrigerant Tubing; Follow Handling Instructions Carefully. Flammable Refrigerant Used**

**DANGER:** Risk of child entrapment. Before you throw away your old refrigerator or freezer:

Take off the doors

Leave the shelves in place so that children may not easily climb inside.

# INSTALLATION

## Location

Units represented in this manual are intended for indoor use only. Be sure the location chosen has a floor strong enough to support the total weight of the cabinet and contents. A fully loaded unit can weigh as much as 1500 pounds. Reinforce the floor as necessary to provide for maximum loading. For the most efficient refrigeration, be sure to provide good air circulation inside and out.

### Inside cabinet:

Do not pack the units so full that air cannot circulate. The refrigerated air is discharged at the top rear of the unit. It is important to allow for proper air flow from the top rear to the bottom of the unit. Obstructions to this air flow can cause evaporator coil freeze ups and loss of temperature or overflow of water from the evaporator drain pan. The shelves have a rear turn up on them to prevent this. However, bags and other items can still be located to the far rear of the cabinet. Air is brought into the evaporator coil with fans mounted to the front of the coil.

### Outside cabinet:

Be sure that the unit has access to ample air. Avoid hot corners and locations near stoves and ovens. It is recommended that the unit be installed no closer than 2" from any wall with at least 12" of clear space above the unit.

## Leveling

A level cabinet looks better and will perform better because the doors will line up with the frames properly. Use a level to make sure the unit is level from front to back and side to side. Units supplied with legs will have adjustable bullet feet to make the necessary adjustments. If the unit is supplied with casters, no adjustments are available. Ensure the floor where the unit is to be located is level.

## Stabilizing

All models are supplied with casters for your convenience. It is very important, however, that the cabinet be installed in a stable condition with the front wheels locked while in use. Should it become necessary to lay the unit on its side or back for any reason, allow at least 24 hours before start-up to allow compressor oil to flow back into place. Failure to meet this requirement can cause compressor failure and unit damage.

### NOTE

*Unit repairs will not be subject to standard unit warranties if due to improper installation procedures.*

## Electrical connection

Refer to the amperage data on page 3, the serial tag, your local code or the National Electrical Code to be sure the unit is connected to the proper power source.

### DANGER

*The unit must be turned OFF and disconnected from the power source whenever performing service, maintenance functions or cleaning the refrigerated area.*

# OPERATION

## CAUTION

Do not throw items into the storage area. Failure to heed these recommendations could result in damage to the interior of the cabinet.

## Refrigerated cycle

**Refrigerators:** During the refrigeration cycle, the evaporator fans will run continuously even when one or more doors are open. The door switch will activate the lights when opened.

1. Every 6 hours, the unit will turn off and to allow the evaporator coil to defrost. The controller now displays defrost symbol. When the coil temperature reaches 41°F or after 20 minutes of defrost, the unit will turn on again.
2. Anti-condensation heaters on door frames work in conjunction with the compressor.
3. The factory setting for the temperature range is 34°F to 38°F.

**Freezers:** During the refrigeration cycle, the controller supplies power to the condensing unit and evaporator fan motors. The evaporator fans will run at any time when the evaporator coil temperature is below 54°F. They will also keep running when door is open but cycle off during a defrost period. The door switch will activate the lights when opened.

1. Every 6 hours, the unit will turn off and electric heater will turn on to defrost. The controller now displays the defrost symbol. When the coil temperature reaches 45°F or after 20 minutes of defrost, the unit will turn on again.
2. Anti-condensation heaters on door frames work in conjunction with the compressor.
3. The factory setting for temperature range is -7 to -3°F

## On/Off Switch:

An on/off switch is located on the front of the bottom panel. When the unit is on, the switch will glow green.

## Thermostat Settings

SET: To display target set point; in programming mode it selects a parameter or confirm an operation.

❄️ (DEF) To start a manual defrost

▲ (UP) To view the last alarm occurrence; in programming mode it browses the parameter codes or increases the display value

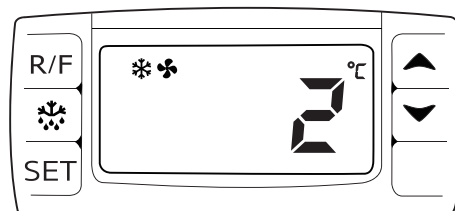
▼ (DOWN) To view the last alarm occurrence; in programming mode it browses the parameter codes or decreases the display value

## KEY COMBINATION






▲+▼ To lock & unlock the keyboard

SET +▼ To enter in programming mode

SET +▲ To return to the room temperature display



## 1.1 LED's


LED	MODE	SIGNIFICANCE
	On	Compressor enabled
	Flashing	Anti-short cycle delay enabled (AC parameter)
	On	Defrost in progress
	Flashing	Dripping in progress
	On	Fans output enabled
	Flashing	Fans delay after defrost
	On	Measurement unit
	Flashing	Programming mode
	On	Measurement unit
	Flashing	Programming mode

## MAIN FUNCTIONS

### 2.1 HOW TO SEE THE SETPOINT

Push and immediately release the SET key: the display will show the set point value.  
Push and immediately release the SET key or wait for 5 seconds to display the sensor value again.

### 2.2 HOW TO CHANGE THE SETPOINT

Hold the SET key for more than 2 seconds to change the set point value.  
The value of the set point will be displayed and the  LED starts blinking.  
To change the set value, push the ▲ or ▼ key within 10s.  
To set new point value, push the SET key again or wait 10s.

### 2.3 HOW TO START A MANUAL DEFROST

Hold the  key for more than 2 seconds and a manual defrost will start

### 2.4 HOW TO LOCK THE KEYBOARD

Hold the ▲ and ▼ keys for more than 3s.  
The "POF" message will be displayed and the keyboard will be locked. At this point, it will be possible only to see the set point or the MAX or Min temperature stored.  
If a key is pressed more than 3s the "POF" message will be displayed.

### 2.5 HOW TO UNLOCK THE KEYBOARD

Hold the ▲ and ▼ keys together for more than 3s until the "POF" message is displayed.

## ALARM SIGNALS

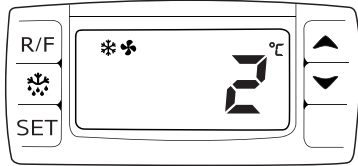
### HOW TO SEE THE ALARM AND RESET THE RECORDED ALARM

Push the ▲ or ▼ key to display the alarm signals.  
When the signal is displayed, hold the SET key until the "rst" message is displayed, and push the SET key again. The "rst" message starts blinking and the normal temperature will be displayed.

Message	Cause	Outputs
"P1"	Room probe failure	Compressor output according to par. "Con" and "COF"
"P2"	Evaporator probe failure	Defrost end is timed
"HA"	Maximum temperature alarm	Outputs unchanged.
"LA"	Minimum temperature alarm	Outputs unchanged.
"dA"	Door open	Compressor and fans restarts
"EA"	External alarm	Output unchanged.
"CA"	Serious external alarm (i1F=bAL)	All outputs OFF.
"CA"	Pressure switch alarm (i1F=pAL)	All outputs OFF

## HOW TO SWITCH BETWEEN FREEZER AND REFRIGERATOR MODE

1. The factory setting for this unit was a freezer.
2. The controller has a button R/F to switch between freezer and refrigerator.



### 2.1 How to change a refrigerator to freezer

Press the button R/F for 3 seconds, the controller will display LT, then the unit enter into freezer mode.



Please notice: There may be a switch near the controller, which use to control the frame heater/-glass heater, this should be turn on to ensure the operation of relevant functions for avoid ice or condensation.

While the switch pressed to "I", all heaters on.



### 2.2 How to change a freezer to refrigerator

Press the button R/F for 3 seconds, the controller will display NT, then the unit enter into refrigerator mode.



Please notice: There may be a switch near the controller, which use to control the frame heater/-glass heater, this should be turn off to disable the unnecessary function.

While the switch pressed to "O", all heaters off.



# MANTENANCE

## **DANGER**

*The unit must be turned OFF and disconnected from the power source whenever performing service, maintenance functions or cleaning the refrigerated area.*

## **Refrigerators and Freezers**

The interior and exterior can be cleaned using soap and warm water. If this isn't sufficient, try ammonia and water or a nonabrasive liquid cleaner. When cleaning the exterior, always rub with the "grain" of the stainless steel to avoid marring the finish.

Do not use an abrasive cleaner because it will scratch the stainless steel and plastic and can damage the breaker strips and gaskets.

## **Cleaning the Condenser Coil**

The condenser coil requires regular cleaning and it is recommended every 90 days. In some instances, you may find that there is a large amount of debris and dust or grease accumulated prior to the 90 day time frame. In these cases the condenser coil should be cleaned every 30 days.

If the build up on the coil consists of only light dust and debris, the condenser coil can be cleaned with a simple brush. Heavier dust build-up may require a vacuum or even compressed air to blow through the condenser coil.

If heavy grease is present, there are de-greasing agents available for refrigeration use and specifically for the condenser coils. The condenser coil may require cleaning with the de-greasing agent and then blown through with compressed air.

Failure to maintain a clean condenser coil can initially cause high temperatures and excessive run times. Continuous operation with dirty or clogged condenser coils can result in compressor failures. Neglecting the condenser coil cleaning procedures will void any warranties associated with the compressor or cost to replace the compressor.

## **DANGER**

*Never use a high pressure water wash for this cleaning procedure as water can damage the electrical components located near or at the condenser coil.*

In order to maintain proper refrigeration performance, the condenser fins must be cleaned of dust, dirt and grease regularly. It is recommended that this be done at least every three months. If conditions are such that the condenser is totally blocked in three months, the frequency of cleaning should be increased. Clean the condenser with a vacuum cleaner or stiff brush. If extremely dirty, a commercial-grade condenser cleaner may be required.

## **Stainless Steel Care and Cleaning**

To prevent discoloration of rust on stainless steel several important steps need to be taken. First, we need to understand the properties of stainless steel. Stainless steel contains 70-80% iron which will rust. It also contains 12-30% chromium which forms an invisible passive film over the steel surface which acts as a shield against corrosion. As long as the protective layer is intact, the metal is stainless. If the film is broken or contaminated, outside elements can begin

to breakdown the steel and begin to form rust or discoloration. Proper cleaning of stainless steel requires soft cloths or plastic scouring pads,

### **NEVER USE STEEL PADS, WIRE BRUSHES OR SCRAPERS!**

Cleaning solutions need to be alkaline based or non-chloride based. Any cleaner containing chlorides will damage the protective film of the stainless steel. Chlorides are commonly found in hard water, salts, and household and industrial cleaners. If cleaners containing chlorides are used, be sure to rinse and dry thoroughly.

Routine cleaning of stainless steel can be done with soap and water. Extreme stains or grease should be cleaned with a non-abrasive cleaner and plastic scrub pad. It is always good to rub with the grain of the steel. There are also stainless steel cleaners available which can restore and preserve the finish of the steel's protective layer.

Early signs of stainless steel breakdown can consist of small pits and cracks. If this has begun, clean thoroughly and start to apply stainless steel cleaners in attempt to restore the passivity of the steel.

#### **CAUTION**

*Never use an acid based cleaning solution! Many food products have an acidic content which can deteriorate the finish. Be sure to clean the stainless steel surfaces of ALL food products.*

### **Gasket Maintenance**

Gaskets require regular cleaning to prevent mold and mildew build up and also to keep the elasticity of the gasket. Gasket cleaning can be done with the use of warm soapy water. Avoid full strength cleaning products on gaskets as this can cause them to become brittle and prevent proper seals. Do not use sharp tools or knives to scrape or clean the gasket which could possibly tear the gasket and rip the bellows.

Gaskets can easily be replaced and don't require the use of tools or authorized service technicians. The gaskets are "Dart" style and can be pulled out of the grove in the door and replaced by pressing the new one back into place.

### **Door Hinges**

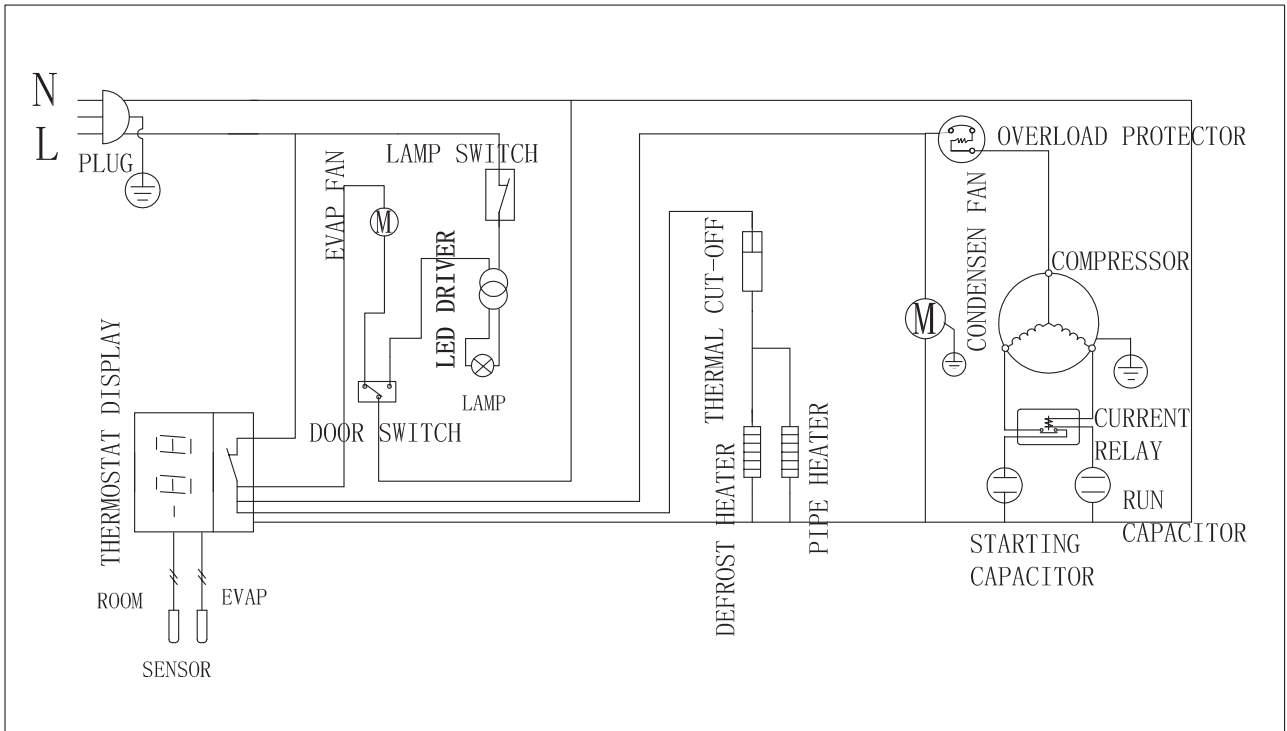
Over time and with heavy use, door hinges may become loose. If the door is beginning to sag, tighten the screws that mount the hinge brackets to the frame of the unit. If the doors are loose or sagging, this can cause the hinge to pull out of the frame which may damage both the doors and the door hinges.

### **Drain Maintenance**

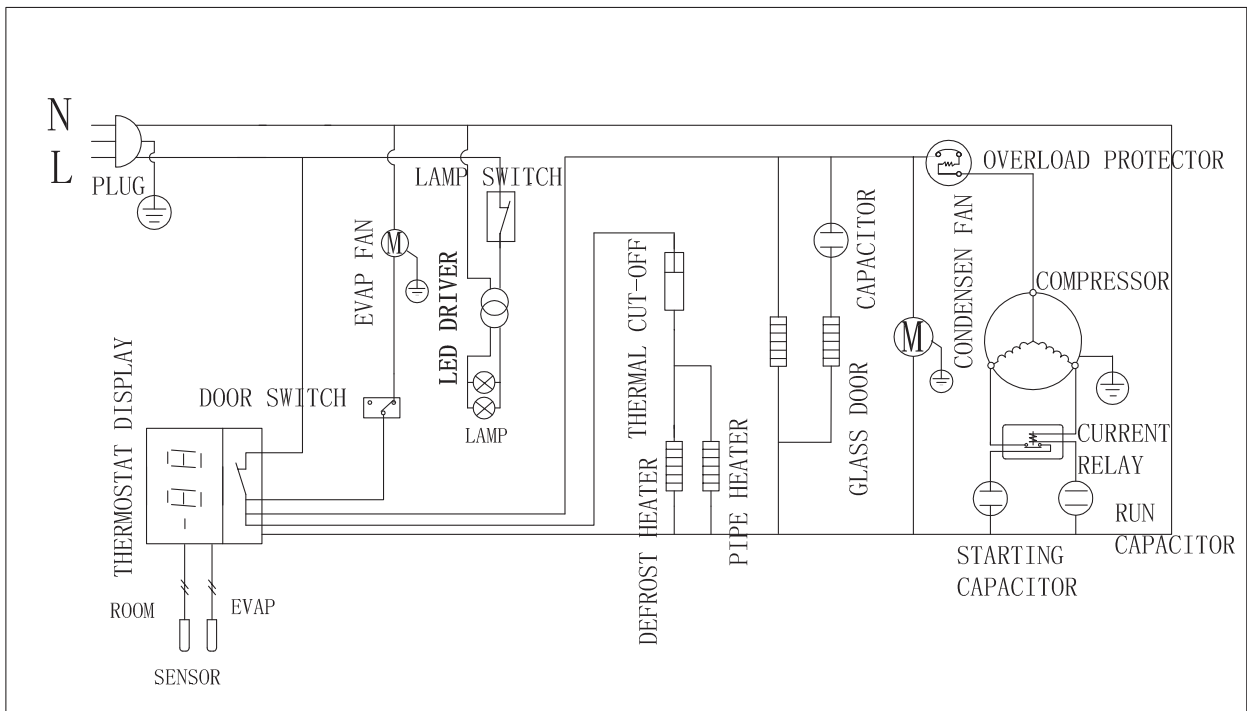
Each unit has a drain located inside the unit which removes the condensation from the evaporator coil and evaporates it into an external condensate evaporator pan. Each drain can become loose or disconnected from moving or bumping the drain. If you notice excessive water accumulation on the inside of the unit, be sure the drain tube is connected from the evaporator housing to the condensate evaporator drain pan. If water starts to collect underneath the unit, you may want to check the condensate evaporator drain tube to be sure it is still located inside the drain pan. The leveling of the unit is important as the units are designed to drain properly when on a level surface, if your floor is not level, this can also cause drain problems. Be sure all drain lines are free of obstructions because this may cause water to back up and overflow the drain pans.

# CIRCUIT DIAGRAM

MODEL: KM-RIC-1DSS



MODEL: KM-RIC-1DGD





# WARRANTY

## LIMITED WARRANTY

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Koolmore Supply, Inc. extends a limited warranty to the original purchaser, guaranteeing that this Koolmore product is free from manufacturing defects in material or workmanship for one year from the date of purchase. Should you discover any such defect within the warranty period, Koolmore Supply, Inc., reserves the right to repair or replace the product without charge, or to cover the cost of replacement parts and repair labor needed to correct defects present at the time of purchase or resulting from regular usage, when the appliance has been installed, operated, and maintained as per the instructions provided. At its sole discretion, Koolmore Supply Inc. may decide to replace the product. In such an event, your replacement appliance will carry the warranty for the remaining term of the original unit's warranty period. This warranty is valid exclusively to the original purchaser of the product and only applicable within the United States. The warranty commences from the date of original consumer purchase. Proof of the original purchase date will be required to obtain service under this warranty. Under this limited warranty, your sole and exclusive remedy will be product repair, as outlined above. All services must be provided by a Koolmore-designated service company. To claim warranty or request repair service: Email [support@koolmore.com](mailto:support@koolmore.com). Please include your name, address, phone number, warranty repair request, and a copy of your proof of purchase receipt. Alternatively, visit [koolmore.com](http://koolmore.com) and use the contact us page. A Koolmore customer service representative will promptly arrange service for your appliance. We thank you for choosing Koolmore.

## WARRANTY EXCLUSIONS

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This limited warranty will not cover:

1. Failure of the product to perform during power failures or interruptions, or due to inadequate electrical service.
2. Damage incurred during transportation or handling.
3. Damage caused by accidents, vermin, lightning, winds, fire, floods, or acts of God.
4. Damage resulting from accidents, alterations, misuse, abuse, improper installation, repair, or maintenance.

This includes using any external device that alters or converts the voltage or frequency of electricity.

5. Unauthorized product modifications, repairs by unauthorized centers, or use of non-approved replacement parts.
6. Abnormal cleaning and maintenance not aligned with the user's manual.
7. Use of incompatible accessories or components.
8. Any costs associated with repairs or replacements under these excluded circumstances shall be the responsibility of the consumer.

