



# OWNERS GUIDE

MARVEL UNDERCOUNTER REFRIGERATION



FOR MODEL # MLRE224



THE ORIGINAL REFRIGERATION EXPERTS SINCE 1892

# IMPORTANT SAFETY INSTRUCTIONS

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## Important Safety Instructions

Warnings and safety instructions appearing in this guide are not meant to cover all possible conditions and situations that may occur. Common sense, caution, and care must be exercised when installing, maintaining, or operating this appliance.

### Recognize Safety Symbols, Words, and Labels.

#### **WARNING**

**WARNING** - You can be killed or seriously injured if you do not follow these instructions.

#### **CAUTION**

**CAUTION**-Hazards or unsafe practices which could result in personal injury or property / product damage.

#### **NOTE**

**NOTE**-Important information to help assure a problem free installation and operation.

#### **WARNING**

**State of California Proposition 65 Warning:**  
This product contains one or more chemicals known to the State of California to cause birth defects or other reproductive harm.

#### **WARNING**

**State of California Proposition 65 Warning:**  
This product contains one or more chemicals known to the State of California to cause cancer.

#### **WARNING**

**WARNING**-This unit contains R600a (Isobutane) which is a flammable hydrocarbon. It is safe for regular use. Do not use sharp objects to expedite defrosting. Do not damage refrigerant circuit.

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# UNPACKING YOUR APPLIANCE



## WARNING

### EXCESSIVE WEIGHT HAZARD

Use two or more people to move product.  
Failure to do so can result in personal injury.

### Remove Interior Packaging

Your appliance has been packed for shipment with all parts that could be damaged by movement securely fastened. Remove internal packing materials and any tape holding internal components in place. The owners manual is shipped inside the product in a plastic bag along with the warranty registration card, and other accessory items.

### Important

Keep your carton and packaging until your appliance has been thoroughly inspected and found to be in good condition. If there is damage, the packaging will be needed as proof of damage in transit. Afterwards please dispose of all items responsibly.



## WARNING

**WARNING** - Dispose of the plastic bags which can be a suffocation hazard.

### Note to Customer

This merchandise was carefully packed and thoroughly inspected before leaving our plant. Responsibility for its safe delivery was assumed by the retailer upon acceptance of the shipment. Claims for loss or damage sustained in transit must be made to the retailer.

## NOTE

DO NOT RETURN DAMAGED MERCHANDISE TO THE MANUFACTURER - FILE THE CLAIM WITH THE RETAILER.



## CAUTION

If the appliance was shipped, handled, or stored in other than an upright position for any period of time, allow the appliance to sit upright for a period of at least 24 hours before plugging in. This will assure oil returns to the compressor. Plugging the appliance in immediately may cause damage to internal parts.



## WARNING

### WARNING - Help Prevent Tragedies

Child entrapment and suffocation are not problems of the past. Junked or abandoned refrigerators are still dangerous - even if they sit out for "just a few hours".

If you are getting rid of your old refrigerator, please follow the instructions below to help prevent accidents.

Before you throw away your old refrigerator or freezer:

- Take off the doors or remove the drawers.
- Leave the shelves in place so children may not easily climb inside.

# ELECTRICAL

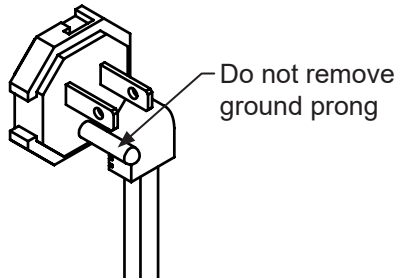


Figure 2

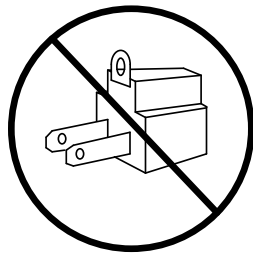


Figure 3

## Electrical Connection

A grounded 115 volt, 15 amp dedicated circuit is required.

This product is factory equipped with a power supply cord that has a three-pronged, grounded plug. It must be plugged into a mating grounding type receptacle in accordance with the National Electrical Code and applicable local codes and ordinances (see Figure 4). If the circuit does not have a grounding type receptacle, it is the responsibility and obligation of the customer to provide the proper power supply. The third ground prong should not, under any circumstances, be cut or removed.

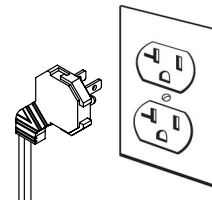


Figure 4

## NOTE

Ground Fault Circuit Interrupters (GFCI) are prone to nuisance tripping which will cause the appliance to shut down. GFCI's are generally not used on circuits with power equipment that must run unattended for long periods of time, unless required to meet local building codes and ordinances.



## WARNING

### Electrical Shock Hazard

- Do not use an extension cord with this appliance. They can be hazardous and can degrade product performance.
- This appliance should not, under any circumstances, be installed to an un-grounded electrical supply.
- Do not remove the grounding prong from the power cord. (See Figure 2).
- Do not use an adapter. (See Figure 3).
- Do not splash or spray water from a hose on the appliance. Doing so may cause an electrical shock, which may result in severe injury or death.

# INTERIOR ADJUSTMENTS



## CAUTION

Shelf load limit is 35 lbs. Overloading the shelf could result in deflection and risk of injury.

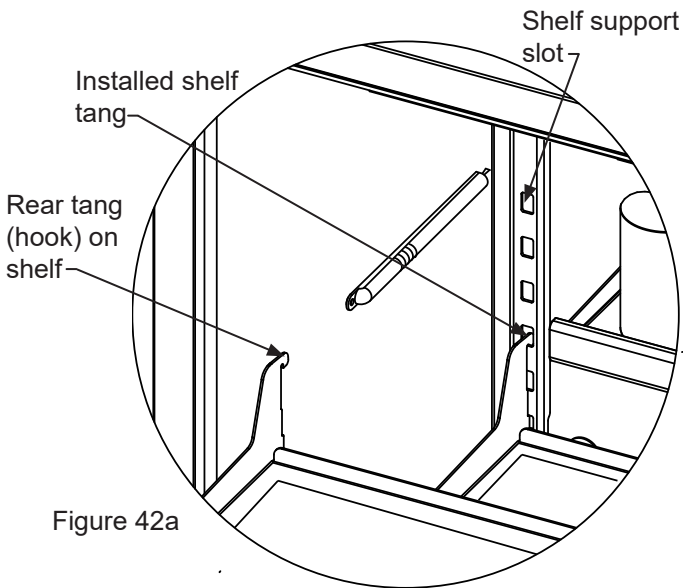


Figure 42a

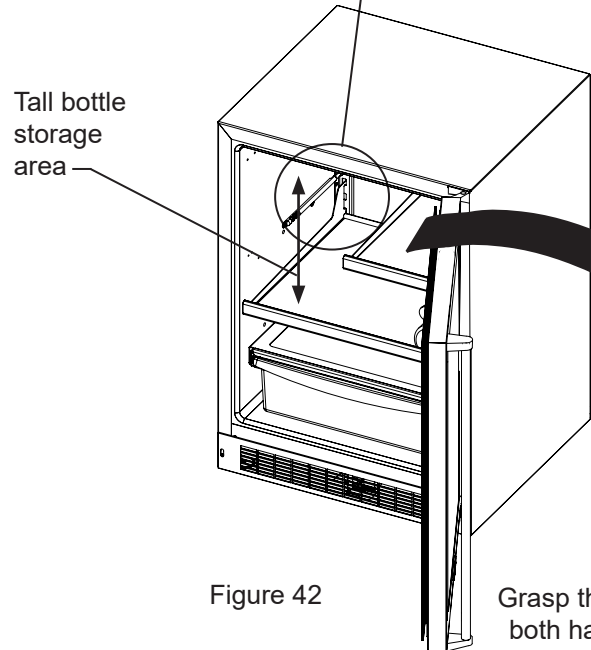


Figure 42

Grasp the shelf by the front with both hands and rotate the front of the shelf up, then lift the shelf up and remove the shelf from the shelf ladders.

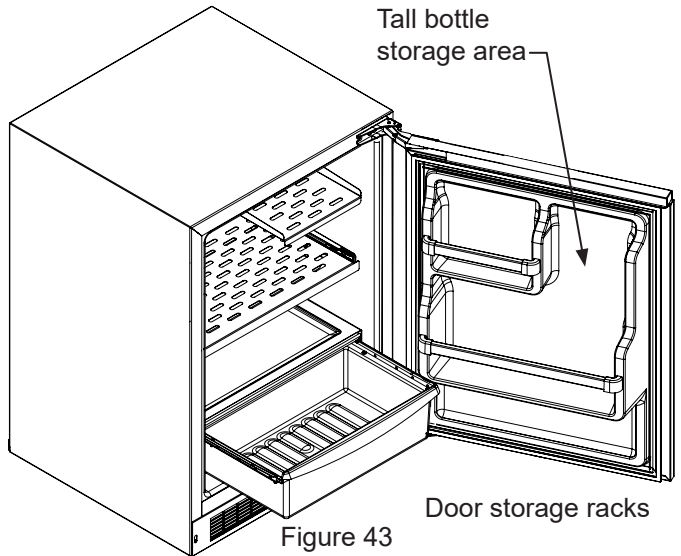


Figure 43

### To remove the crisper :

Pull out until it stops. Lift up on the front of the pan, and remove it from the frame.

### To Add or Remove a Shelf

Remove stored product from the shelf. Do not try to remove a loaded shelf from the appliance. Grasp the shelf front with both hands, rotate the front upward and lift out. (See Figure 42b). To install a shelf insert the shelf in the appliance and insert the top hooks into the shelf support slots and drop the shelf down so the hooks drop over the bottom of the slots.

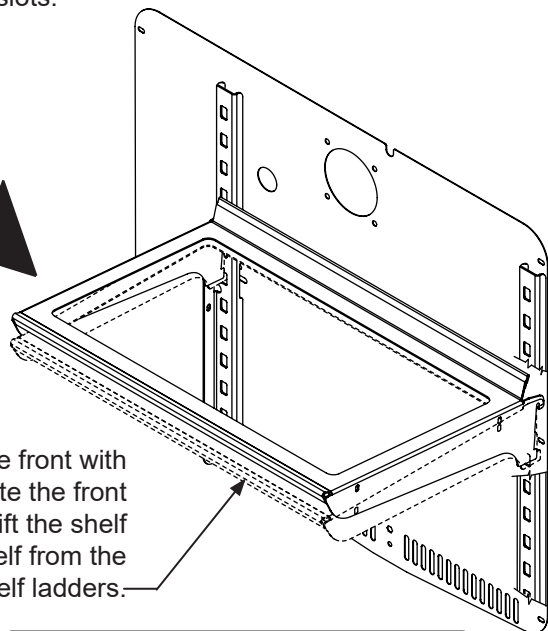


Figure 42b



## CAUTION

Make sure your cantilever shelf is secure on the shelf supports by pressing down on the shelf before loading the shelf.



## CAUTION

Never try to move a loaded shelf, remove everything from the shelf before moving. Use both hands when moving a shelf.

## CARE AND CLEANING

### Front Grille

Be sure that nothing obstructs the required air flow openings in front of the cabinet. At least once or twice a year, brush or vacuum lint and dirt from the front grille area (see page 8).



### CAUTION

**SHOCK HAZARD:** Disconnect electrical power from the appliance before cleaning with soap and water.

### Cabinet

The painted cabinet can be washed with either a mild soap and water and thoroughly rinsed with clear water. NEVER use abrasive scouring cleaners.

### Interior

Wash interior compartment with mild soap and water. Do NOT use an abrasive cleaner, solvent, polish cleaner or undiluted detergent.

### Care of Appliance

1. Avoid leaning on the door, you may bend the door hinges or tip the appliance.
2. Exercise caution when sweeping, vacuuming or mopping near the front of the appliance. Damage to the grille can occur.
3. Periodically clean the interior of the appliance as needed.
4. Periodically check and/or clean the front grille as needed.

### In the Event of a Power Failure

If a power failure occurs, try to correct it as soon as possible. Minimize the number of door openings while the power is off so as not to adversely affect the appliance's temperature.

### Light assembly replacement

All models use an LED to illuminate the interior of the appliance. This component is very reliable, but should it fail, contact a qualified service technician for replacement of the LED.

### The following suggestions will minimize the cost of operating your refrigeration appliance.

1. Do not install your appliance next to a hot appliance (cooker, dishwasher, etc.), heating air duct, or other heat sources.
2. Install product out of direct sunlight.
3. Ensure the front grille vents at front of appliance beneath door are not obstructed and kept clean to allow ventilation for the refrigeration system to expel heat.
4. Plug your appliance into a dedicated power circuit. (Not shared with other appliances).
5. When initially loading your new product, or whenever large quantities of warm contents are placed within refrigerated storage compartment, minimize door openings for the next 12 hours to allow contents to pull down to compartment set temperature.
6. Maintaining a relatively full storage compartment will require less appliance run time than an empty compartment.
7. Ensure door closing is not obstructed by contents stored in your appliance.
8. Allow hot items to reach room temperature before placing in product.
9. Minimize door openings and duration of door openings.
10. Use the warmest temperature control set temperature that meets your personal preference and provides the proper storage for your stored contents.
11. When on vacation or away from home for extended periods, set the appliance to warmest acceptable temperature for the stored contents.
12. Set the control to the "off" position if cleaning the appliance requires the door to be open for an extended period of time.
13. For wine storage products:  
When serving temperatures are not required, return the compartment(s) set temperature to the ideal red and white wine long term storage temperature of 13°C / 55°F.

## ENERGY SAVING TIPS

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## EXTENDED NON-USE

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### **Vacation/Holiday, Prolonged Shutdown**

The following steps are recommended for periods of extended non-use:

1. Remove all consumable content from the unit.
2. Disconnect the power cord from its outlet/socket and leave it disconnected until the unit is returned to service.
3. If ice is on the evaporator, allow ice to thaw naturally.
4. Clean and dry the interior of the unit. Ensure all water has been removed from the unit.
5. The door must remain open to prevent formation of mold and mildew. Open door a minimum of 2" (50 mm) to provide the necessary ventilation.

### **Winterization**

If the unit will be exposed to temperatures of 40° F (5° C) or less, the steps above must be followed.

For questions regarding winterization, please call Marvel at (616) 754-5601.



Damage caused by freezing temperatures is not covered by the warranty.

# OBTAINING SERVICE

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## If Service is Required:

- If the product is within the first year warranty period please contact your dealer or call Marvel Customer Service at 616.754.5601 for directions on how to obtain warranty coverage in your area.
- If the product is outside the first year warranty period, Marvel Customer Service can provide recommendations of service centers in your area. A listing of authorized service centers is also available at [www.marvelrefrigeration.com](http://www.marvelrefrigeration.com) under the service and support section.
- In all correspondence regarding service, be sure to give the service number, serial number, and proof of purchase.
- Try to have information or description of nature of the problem, how long the appliance has been running, the room temperature, and any additional information that may be helpful in quickly solving the problem.
- Table "B" is provided for recording pertinent information regarding your product for future reference.

For Your Records	
Date of Purchase	
Dealer's name	
Dealer's Address	
Dealer's City	
Dealer's State	
Dealer's Zip Code	
Appliance Serial Number	
Appliance Service Number	
Date Warranty Card Sent (Must be within 10 days of purchase).	

Table B



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## Ordering Replacement Parts

**Parts may be ordered online at [www.partsformarvel.com](http://www.partsformarvel.com)**

Or contact:

[www.marvelrefrigeration.com](http://www.marvelrefrigeration.com) (Servicers choose "Login" for service account)

Phone Number: +1.616.754.5601

### **NOTICE**

**Use only genuine Marvel replacement parts. The use of non-Marvel parts can reduce performance, damage the unit, and void the warranty.**

Warranty parts will be shipped at no charge after Marvel confirms warranty status. Please provide the model, serial number, part number and part description. Some parts will require color or voltage information.

If Marvel requires the return of original parts, we will inform you when the parts order is taken. This requirement will be noted on your packing list. A prepaid shipping label will be emailed to you. Please enclose a copy of the parts packing list and be sure the model and serial numbers are legible on the paperwork. Tag the part with the reported defect.

Customers and non-authorized servicers may order non-warranty parts at [www.marvelrefrigeration.com](http://www.marvelrefrigeration.com). Authorized servicers with a servicer login may order non-warranty parts at [www.marvelrefrigeration.com](http://www.marvelrefrigeration.com).



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# R-600A Specifications & Handling

**WARNING**

Flammability warnings for a pure-iso-butane refrigerant.



Gloves and Eye Protection must be used.



R-600a is considered non-toxic, but is flammable when mixed with air.

Keep a dry powder type fire extinguisher in the work area.



R-600a is heavier than air, do not allow any leakage/migration to low areas such as basements and stairs.

Never use a torch on a fully charged refrigeration system.

Never substitute Marvel OEM replacement parts or methods of construction.

R-600a must be stored and transported in approved containers.

**⚠ WARNING**

**Only skilled and well trained service technicians permitted to service R-600a equipped products.**

**All tools and equipment must be approved for use with R-600a refrigerant.**

**Local, state and federal laws, standards must be observed along with proper certification and licensing.**

**Ventilation is required during servicing.**

**No conversions to R-600a from any other refrigerants. OEM R-600a equipped unit only.**

**Service area must be free of ignition sources.**

**No smoking is allowed in the service area.**

**All replacement electrical components must be OEM and installed properly (sealed and covered).**

**If the evaporator is cold prior to service, it must be thawed prior to service.**

**When using a vacuum pump, start pump before opening refrigeration system.**

**Vacuum pump and recovery equipment should be at least 10 feet from the work area.**

**It is recommended that a simple LPG gas detector is on site during service.**

**Ensure that all R-600a is removed from the system prior to brazing any part of the sealed system.**

**Only a clean, dry leak free system should be charged with R-600a.**

### **R-600A SPECIFICATIONS/LABELING**

R-600a equipped products are labeled (both the unit and the compressor).

R-600a is colorless and odorless.

R-600a is considered non-toxic, but is flammable when mixed with air.

Do not remove or alter any R-600a labeling on the product.

Use only a refrigerant grade R-600a from a properly labeled container.

### **RECOVERING/RECLAIMING R-600A**

(R-600a has been exempted from recovery/reclaiming requirements by the US EPA)

Recovery/Reclaiming equipment must be approved for use with R-600a.

Ensure the evaporator is at room temperature prior to recovery/reclaiming R-600a.

Use a common piercing pliers or piercing valve to remove R-600a from the compressor process tube. (Note: Piercing devices must not be left on the system and must be replaced with a Schrader type valve.)

Evacuate/reclaim via the piecing pliers to ensure the system is empty of R-600a before any system work is performed.



The recovery cylinder must be evacuated (no air inside) prior to accepting R-600a.

The recovery cylinder must not be filled more than 45% safe fill level and refrigerants must not be mixed.

The recovery cylinder must be clearly marked with R-600a and Flammable Warning labels.

Ensure proper ventilation during recovery/reclaiming of R-600a.

Start vacuum pump/recovery pump prior to piercing the compressor process tube.

Follow recovery/reclaim OEM instructions for the specific equipment used.

### SYSTEM REPAIR

Ensure no residual R-600a refrigerant is left within the system prior to repair (simple venting is not sufficient).

Evacuate and charge with dry nitrogen for leak checks.

Repair leaks or replace system parts as required.

When re-brazing, the system must be purged with dry nitrogen and at least one access point open to the atmosphere.

When re-brazing, proper ventilation is required along with constant monitoring for the presence of R600a refrigerant.

The filter dryer must be replaced any time the sealed system is serviced.

No system should be open to the atmosphere for longer than 15 minutes to avoid moisture migration into the system components.

### LEAK DETECTION

After removal of the R-600a, the unit can be charged with dry nitrogen or helium.

Electronic leak detection or soap solution can be used to check for nitrogen/helium leaks.



Never use a halide torch or lighted match to check the system for leaks at any time.

The high side of the refrigeration system (compressor discharge to outlet of drier) must be leak tested with the compressor running.

The low side of the refrigeration system (evaporator, compressor and suction line) must be leak tested with the compressor off (equalized pressure).

### **RECHARGING**

No air is ever to be allowed inside the refrigeration system (R-600a refrigerant or dry nitrogen only).

Never use a torch on a fully charged refrigeration system.

Install a Schrader Type access port on the compressor process stub.



Evacuate the system to 100 microns prior to charging.

Weigh in the R-600a charge using a refrigerant scale. (run compressor an extra two minutes to clear the charging hoses).

Seal the Schrader Type access port, a proper cap and seal must be used to close the system.



### **SUMMARY**

Safely handling R-600a requires proper procedures and training.

R-600a approved service tools must be used.

R-600a labeling must not be removed or altered.

Proper ventilation during service is required.

Never apply a torch to a charged R-600a refrigeration system.

Use OEM replacement service parts and do not alter the construction of the unit.

## System Diagnosis Guide

### REGRIGERATION SYSTEM DIAGNOSIS GUIDE

<b>System Condition</b>	<b>Suction Pressure</b>	<b>Suction Line</b>	<b>Compressor Discharge</b>	<b>Condenser</b>	<b>Capillary Tube</b>	<b>Evaporator</b>	<b>Wattage</b>
<b>Normal</b>	Normal	Slightly below room temperature	Very hot	Very hot	Warm	Cold	Normal
<b>Overcharge</b>	Higher than normal	Very cold may frost heavily	Slightly warm to hot	Hot to warm	Cool	Cold	Higher than normal
<b>Undercharge</b>	Lower than normal	Warm-near room temperature	Hot	Warm	Warm	Extremely cold near inlet - Outlet below room temperature	Lower than normal
<b>Partial Restriction</b>	Somewhat lower than normal vacuum	Warm-near room temperature	Very hot	Top passes warm - Lower passes cool (near room temperature) due to liquid	Room temperature (cool) or colder	Extremely cold near inlet - Outlet below room temperature backing up	Lower than normal
<b>Complete Restriction</b>	In deep vacuum	Room temperature (cool)	Room temperature (cool)	Room temperature (cool)	Room temperature (cool)	No refrigeration	Lower than normal
<b>No Gas</b>	0 PSIG to 25"	Room temperature (cool)	Cool to hot	Room temperature (cool)	Room temperature (cool)	No refrigeration	Lower than normal

## Compressor Specifications



**Electrocution can cause death or serious injury. Burns from hot or cold surfaces can cause serious injury. Take precautions when servicing this unit.**

**Disconnect the power source.**

**Do not stand in standing water when working around electrical appliances.**

**Make sure the surfaces you touch are not hot or frozen.**

**Do not touch a bare circuit board unless you are wearing an anti-static wrist strap that is grounded to an electrical ground or grounded water pipe.**

**Handle circuit boards carefully and avoid touching components.**

	<b>EMX20CLC</b>
REFRIGERANT	R600A
VOLTAGE	115 VAC
FREQUENCY	60 Hz
START WINDING	7 Ohm at 77° F
RUN WINDING	13 Ohm at 77° F
RUN TO START	20 Ohm at 77° F
LRA	3.7 A
FLA	0.55 A
STARTING DEVICE	Run Cap 12VF 250V P2
OVERLOAD	OLP 4TM302KFBYY5

\*All resistance readings are  $\pm 10\%$

# HOUSEHOLD PRODUCT WARRANTY

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## Marvel Refrigeration (Marvel) Limited Warranty

### ONE YEAR LIMITED PARTS & LABOR WARRANTY

For one year from the date of original purchase, this warranty covers all parts and labor to repair or replace any part of the product that proves to be defective in materials or workmanship. For products installed and used for normal residential use, material cosmetic defects are included in this warranty, with coverage limited to 60 days from the date of original purchase. All service provided by Marvel under the above warranty must be performed by a Marvel factory authorized servicer, unless otherwise specified by Marvel. Service provided during normal business hours.

### TWO YEAR LIMITED PARTS & LABOR WARRANTY (MARVEL PROFESSIONAL PRODUCTS)

For two years from the date of original purchase, this warranty covers all parts and labor to repair or replace any part of the product that proves to be defective in materials or workmanship. For products installed and used for normal residential use, material cosmetic defects are included in this warranty, with coverage limited to 60 days from the date of original purchase. All service provided by Marvel under the above warranty must be performed by a Marvel factory authorized servicer, unless otherwise specified by Marvel. Service provided during normal business hours.

### AVAILABLE THIRD YEAR LIMITED WARRANTY (MARVEL PROFESSIONAL PRODUCTS)

For designated Marvel Professional product, Marvel offers a one year extension of the two year warranty coverage from the date of purchase, free of charge. To take advantage of this third year warranty, you must register your product with Marvel within 60 days from the date of purchase at [marvelrefrigeration.com](http://marvelrefrigeration.com) and provide proof of purchase.

### LIMITED FIVE YEAR SEALED SYSTEM WARRANTY

For five years from the date of original purchase, Marvel will repair or replace the following parts, labor not included, that prove to be defective in materials or workmanship: compressor, condenser, evaporator, drier, and all connecting tubing. All service provided by Marvel under the above warranty must be performed by a Marvel factory authorized servicer, unless otherwise specified by Marvel. Service provided during normal business hours.

### WARRANTY TERMS

These warranties apply only to products installed in any one of the fifty states of the United States, the District of Columbia, or the ten provinces of Canada. The warranties do not cover any parts or labor to correct any defect caused by negligence, accident or improper use, maintenance, installation, service, repair, acts of God, fire, flood or other natural disasters. The product must be installed, operated, and maintained in accordance with the Marvel User Guide.

The remedies described above for each warranty are the only ones that Marvel will provide, either under these warranties or under any warranty arising by operation of law. Marvel will not be responsible for any consequential or incidental damages arising from the breach of these warranties or any other warranty, whether express, implied, or statutory. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. These warranties give you specific legal rights, and you may also have other rights which vary from state to state.

Any warranty that may be implied in connection with your purchase or use of the product, including any warranty of merchantability or any warranty fit for a particular purpose is limited to the duration of these warranties, and only extends to five years in duration for the parts described in the section related to the five year limited warranty above. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

- The warranties only apply to the original purchaser and are non-transferable.
- These warranties cover products installed and used for normal residential use only.
- The warranties apply to units operated outside only if designed for outdoor use by model and serial number.
- Replacement water filters, light bulbs, and other consumable parts are not covered by these warranties.
- The start of Marvel's obligation is limited to four years after the shipment date from Marvel.
- In-home instruction on how to use your product is not covered by these warranties.
- Food, beverage, and medicine loss are not covered by these warranties.
- If the product is located in an area where Marvel factory authorized service is not available, you may be responsible for a trip charge or you may be required to bring the product to a Marvel factory authorized service location at your own cost and expense.
- Units purchased after use as floor displays, and/or certified reconditioned units, are covered by the limited one year warranty only and no coverage is provided for cosmetic defects.
- Signal issues related to Wi-Fi connectivity are not covered by these warranties.

For parts and service assistance, or to find Marvel factory authorized service near you, contact Marvel Refrigeration:

[MarvelRefrigeration.com](http://MarvelRefrigeration.com) • [techsupport@MarvelRefrigeration.com](mailto:techsupport@MarvelRefrigeration.com) • +616.754.5601

1260 E. Van Deine St., Greenville, MI 48838