

VWR General Purpose, Explosion-Proof and Flammable Materials Storage Laboratory Refrigerators and Freezers

Installation and Operation

057-658-00 • Rev C • February 2019



IMPORTANT Read this instruction manual. Failure to follow the instructions in this manual can result in damage to the unit, injury to operating personnel, and poor equipment performance.

CAUTION All internal adjustments and maintenance must be performed by qualified service personnel.

Material in this manual is for informational purposes only. The contents and the product it describes are subject to change without notice. VWR makes no representations or warranties with respect to this manual.

In no event shall VWR be held liable for any damages, direct or incidental, arising from or related to the use of this manual.

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For your future reference and when contacting the factory, have the following information readily available. It will be found on the dataplate attached to your unit.

Model Number: _____

Serial Number: _____

The following information, if available, is helpful for contacting the factory.

Date Purchased: _____

Purchase order number: _____

Source of Purchase: _____

(manufacturer or specific agent/representative organization)

Contents

Models.....	1
Safety Information	2
Alert Signals	2
Intended Use	3
Explosion-Proof Refrigerator & Freezer.....	4
Flammable Materials Storage Refrigerators & Freezers.....	6
General Purpose Refrigerator & Freezer	7
Unpacking and Inspection.....	8
Shipping Carton	8
Visible Loss or Damage	8
Concealed Loss or Damage	8
Operating Standards.....	9
Installation.....	10
Selecting a Location	10
Leveling the Unit.....	10
Electrical Connection.....	10
Be Advised.....	10
How to Seal Killark® Box Conduit	11
Electric Connection Check Points.....	12
Operation.....	13
Start-Up Procedure	13
Restart Procedure	13

How to Save Energy.....	13
Safety Tips	13
Maintenance	14
Cleaning the Unit.....	14
Cleaning Interior/Exterior/Door Gaskets.....	14
Cleaning the Condenser	14
Troubleshooting	15
Wiring Diagram	16
End of Life Care	17
Warranty	18

Models

The table below shows the units covered in this operation and installation manual by model number.

Table 1. Applicable Models

Refrigerators and Freezers	
Explosion-Proof	10ECEEVWA
Flammable Materials Storage	10FCEEVWA
Standard Series	10LCEEVWA





Safety Information




Your satisfaction and safety are important to VWR and a complete understanding of these units is necessary to attain these objectives.

As the user of these products, it is your responsibility to understand its proper function and operational characteristics. This instruction manual should be thoroughly read and all operators given adequate training before attempting to place these units in service. Awareness of the stated cautions and warnings, and compliance with recommended operating parameters – together with maintenance requirements – are important for safe and satisfactory operation. The units should be used for its intended application; alterations or modifications will void the Warranty.

These products are not intended, nor can they be used, as a sterile or patient connected device. In addition, these units are not designed for use in Class I, II or III locations as defined by the US National Electrical Code, unless otherwise noted.

Alert Signals

I	ON
0	OFF
	Safety Alert: Important operating instructions. To reduce the risk of injury or poor performance of the unit. Read the user manual before putting the equipment into operation.
	WARNING: Indicates an immediately hazardous situation, which if not avoided, will result in death or serious injury.
	CAUTION: Indicates an immediately hazardous situation, which if not avoided, may result in minor to moderate injury.
	WARNING: Avoid contact with cold freezer surfaces potential for cold burns or skin sticking to cold surfaces.

	WARNING: Use of this symbol involves risk of electric shock. Do not modify or use power supplies other than OEM equipment. Connection of the power supply may require a properly grounded receptacle. Potential for electrical shock or equipment damage exists if precautions are not followed.
Note:	Notes alert you to pertinent facts and conditions.
	DANGER RISK OF CHILD ENTRAPMENT Before you throw away your old refrigerator or freezer: <ul style="list-style-type: none">• Take off doors.• Leave the shelves in the place so that children may not easily climb inside.
	If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Intended Use

The General Purpose refrigerator/freezer described in this manual is for professional use only.

The Flammable Materials Storage and Explosion-Proof refrigerators/freezers described in this manual are for use in the storage of flammable inventory/samples. These models have been listed to the appropriate standards.

These products are intended for use in research for the storage of samples or inventory in the following temperature ranges:

Refrigerators	33.8°F to 53.6°F (+1°C to +12°C)
Freezers	-4°F to 10.4°F (-20°C to -12°C)

These units are not considered medical devices and have therefore not been registered with a medical device regulatory body (e.g. FDA): that is, these have not been evaluated for the storage of samples for diagnostic use or for samples to be re-introduced to the body.

Note: Do not store corrosive materials in these units. Any damage which occurs due to storage of corrosives will not be covered under warranty claims.

Corrosive Materials Requiring Refrigerated or Frozen Storage:

- Only use models rated as Corrosion Resistant.
- Corrosion Resistant does not mean Corrosion Proof – Care in storage is still required.
- Store only corrosive reagents/samples which truly need reduced temperature storage.
- Flammable corrosive materials require Flammable Materials Storage or Explosion-Proof models labeled for the storage of corrosives
- Containers must be wiped clean of moisture and chemical residue before being introduced into the unit and upon return from use.
- Containers must be sealed with either vinyl tape or Parafilm®.
- Reagents/samples which release HX (X= F, Cl, Br, I) on contact with moisture (e.g. Acyl halides, Organosilyl halides etc.) are particularly damaging to metals.
- Volatile amines will react with HX depositing salts which will lead to corrosion of metal surfaces.
- Volatile organic acids can exacerbate metal surfaces already compromised, be sure these are securely sealed.
- Refrigerated compartments are cool or cold areas but they are not to dry seal your reagents and samples.

- Bleach solutions release chlorine gas which can react with other volatiles in the cooling chamber or directly attacks metal surfaces.
- Periodically clean the interiors, clean up spills or leaking containers.
- Failure to take precautionary actions may lead to damage not covered by warranty claims.

Parafilm® is a registered trademark of Bemis Company, Oshkosh, WI.

Explosion-Proof Refrigerator & Freezer

Conventional refrigerators and freezers are not suitable for storing flammable materials. Such units have components in their electrical and refrigeration systems that can trigger explosions of flammable air-vapor mixtures inside the unit and/or in the immediate surrounding area.

VWR Scientific offers the largest explosion-proof selection in the industry, including single and 2-door upright refrigerator undercounter refrigerators.

Motors and thermostats are designed to prevent the arcing which can ignite a flammable air-vapor mixtures. In addition, each unit has wiring, splices, a thermostat, a relay and a compressor motor safely housed within an explosion-proof enclosure of construction suitable for use in Class I, Groups C and D. This means that things like the surface temperature of compressors will remain below the flashpoint of any flammable material likely to be found in Class I, Groups C and D, Class I Zone 1 and Group IIB locations.

All models have heavy-gauge, rigid, braced-steel construction with a durable enamel finish. Interiors have epoxy enamel or ABS plastic construction. Each unit is insulated throughout for energy-efficient operation.

These VWR Scientific units will prevent potentially destructive explosions in any facility by meeting the standards established by Underwriters' Laboratory, Inc., OSHA and National Fire Protection Association for storage of hazardous materials.

Explosion-proof models are specifically designed and engineered to prevent the triggering of an explosion inside or outside of the unit in a Class I, Groups C and D hazardous material environment. These models feature stainless steel refrigeration components that are more resistant to attack from corrosive vapors than are aluminum or epoxy-coated aluminum.

It is important to note that Explosion-Proof models must be connected to the power supply source by rigid metal conduit or mineral-insulated cable with proper fittings suitable for Class I, Groups C and D hazardous locations. In addition, the wires inside the conduit must be sealed.



For Explosion-Proof units where flammable materials are stored in the cooling chamber, the cooling chamber is considered a Class I Div1 or Class I Zone 1 hazardous location. Any monitoring devices placed in the cooling chamber must have an intrinsically safe rating from an appropriate certification body, such as UL, CSA, FM etc. (this includes battery or solar powered devices).

Thermocouples for building monitoring systems must be wired through an electrical barrier designed to provide isolation against voltage and current spikes, which could cause a spark resulting in fire or explosion. It is the your responsibility to meet these requirements. VWR cannot assist with the selection of devices, recommend, approve or design any device or monitoring circuit.

MODEL 10ECEVWA - 10.1 Cu. ft.

23.63" Wide, Two-door Refrigerator/Freezer

Features:

- Refrigerator: 3 Adjustable Shelves
- Freezer: 1 Adjustable Shelf
- Hydraulic thermostat
- Adjustable natural air-flow vent
- Manual defrost
- ABS plastic interior
- White color

10ECEVWA

Refrigerator Chamber Dimensions H x W x D inches (cm)	38.25" x 19.75" x 18.25" (97.2 x 50.2 x 46.4 cm)
Freezer Chamber Dimensions H x W x D inches (cm)	18.25" x 18" x 11.25" (46.3 x 45.7 x 28.6 cm)
Exterior Dimensions H x W x D inches (cm)	59.75" x 23.63" x 28.6" (151.77 x 60 x 76.2 cm)
Electrical Characteristics Volts/Hz, Amps	115/60, 1.9
Refrigerator Temp. Range °F (°C)	33.8° to 53.6° (1° to 12°)
Freezer Temp. Range °F (°C)	-4° to 10.4° (-20° to -12°)
Net Weight lbs. (kg)	120 (55)
Shipping Weight lbs. (kg)	150 (68)

Note: Amps listed are at normal run mode, starting amps may be higher.

VWR Scientific reserves the right to change specifications without prior notice.

Explosion-Proof units require being hard wired into the building electrical system and therefore require a qualified electrician to install as per the “local electrical requirements and NEC Standard” or “Canadian Electrical Standard”.

Note: If any questions pertaining to electrical safety arise, please refer to article 501 of the US National Electrical Code.

Flammable Materials Storage Refrigerators & Freezers

These VWR Scientific units will prevent potentially destructive explosions in any facility by meeting the standards established by Underwriter’s Laboratory, Inc. OSHA and National Fire Protection Association for storage of hazardous materials. They also are designed to comply with National Fire Protection Association Standards Nos. 45 and 99, as well as OSHA Article No. 29 CFR 1910.307. VWR Scientific Flammable Materials Storage Refrigerators/Freezers are manufactured for safe, cold storage of volatile materials.

Refrigerators/Freezers will prevent an explosion from occurring inside the unit. These units have no internal electrical components that could trigger an explosion of hazardous materials inside the unit. (They are NOT designed for use in class I, Groups C and D environments — for these locations use a VWR Scientific Explosion-Proof Refrigerator.) However, FMS units are not suitable for use in Class I, Group C and D environments.

This complete line includes single and 2-door upright refrigerators and freezers, horizontal chest freezers, and under counter refrigerators.

These units are ideal for storing cyclopropane, ethyl ether, ethylene, acetone, alcohol, benzene, butane, gasoline, hexane, lacquer solvent vapors, naphtha, natural gas or propane along with many other potentially hazardous materials.

All cabinets have heavy-gauge steel construction with a durable exterior finish of epoxy enamel. A well insulated cabinet and tight sealing magnetic door prevent air leaks along with helping to lower operating costs. The interior is made of porcelain enameled steel or ABS plastic.

VWR Scientific offers the largest selection of FMS units. All models are delivered with 3-wire line cord and molded plug. All 115-volt FMS models are UL listed.



WARNING: For Flammable Materials Storage units where flammable materials are stored in the cooling chamber, the cooling chamber is considered a Class I Div 1 or Class I Zone 1 hazardous location. Any monitoring devices placed in the cooling chamber must have an intrinsically safe rating from an appropriate certification body, such as UL, CSA, FM etc. (this includes battery or solar powered devices).

Thermocouples for building monitoring systems must be wired through an electrical barrier designed to provide isolation against voltage and current spikes, which could

cause a spark resulting in fire or explosion. It is the your responsibility to meet these requirements. VWR cannot assist with the selection of devices, recommend, approve or design any device or monitoring circuit.

MODEL 10FCEEVWA - 10.1 cu. ft.
23.63" Wide, Two-door Refrigerator/Freezer

- Features:
- Refrigerator: 3 Adjustable Shelves
 - Freezer: 1 Adjustable Shelf
 - Manual defrost
 - ABS plastic interior
 - White color

10FCEEVWA	
Refrigerator Chamber Dimensions H x W x D inches (cm)	38.25" x 19.75" x 18.25" (97.2 x 50.2 x 46.4 cm)
Freezer Chamber Dimensions H x W x D inches (cm)	18.25" x 18" x 11.25" (46.3 x 45.7 x 28.6 cm)
Exterior Dimensions H x W x D inches (cm)	59.75" x 23.63" x 28.6" (151.77 x 60 x 76.2 cm)
Electrical Characteristics Volts/Hz, Amps	115/60, 1.9
Refrigerator Temp. Range °F (°C)	33.8° to 53.6° (1° to 12°)
Freezer Temp. Range °F (°C)	-4° to 10.4° (-20° to -12°)
Net Weight lbs. (kg)	120 (55)
Shipping Weight lbs. (kg)	150 (68)

Note: Amps listed are at normal run mode, starting amps may be higher.

VWR Scientific reserves the right to change specifications without prior notice.

General Purpose Refrigerator & Freezer

These are general purpose units available in all refrigerator and freezer.

MODEL 10LCEEVWA - 10.1 Cu. ft.

23.63" Wide, Refrigerator and Freezer,

Features:

- Refrigerator: 3 Adjustable Shelves
- Freezer: 1 Adjustable Shelf
- Manual defrost
- White color

10LCEEVWA	
Refrigerator Chamber Dimensions H x W x D inches (cm)	38.25" x 19.75" x 18.25" (97.2 x 50.2 x 46.4 cm)
Freezer Chamber Dimensions H x W x D inches (cm)	18.25" x 18" x 11.25" (46.3 x 45.7 x 28.6 cm)
Exterior Dimensions H x W x D inches (cm)	59.75" x 23.63" x 28.6" (151.77 x 60 x 76.2 cm)
Electrical Characteristics Volts/Hz, Amps	115/60, 1.9
Refrigerator Temperature Range °F (°C)	33.8° to 53.6° (1° to 12°)
Freezer Temperature Range °F (°C)	-4° to 10.4° (-20° to -12°)
Net Weight lbs. (kg)	120 (55)
Shipping Weight lbs. (kg)	150 (68)

Note: Amps listed are at normal run mode, starting amps may be higher.

Unpacking and Inspection



CAUTION: DO NOT REMOVE, Under any circumstance, the grounding prongs from the 3-prong power cord supplied with all units.



CAUTION: DO NOT USE electrical extension cords that may result in voltage loss and possible hazardous operation.

If you follow the above instructions carefully, we will guarantee our support of your claim to be compensated for loss from concealed damage.

DO NOT – FOR ANY REASON – RETURN THIS UNIT WITHOUT FIRST OBTAINING AUTHORIZATION.

Shipping Carton

This should be inspected upon delivery. When received, carefully examine for any shipping damage before unpacking. If damage is discovered, the delivering carrier should both specify and sign for the damage on your copy of the delivery receipt.

Visible Loss or Damage

Note any external evidence of loss or damage on the freight bill, or express receipt, and have it signed by the carrier's agent. Failure to adequately describe such external evidence of loss or damage may result in the carrier's refusing to honor your damage claim. The form required to file such a claim will be supplied by the carrier.

IMPORTANT: Failure to request an inspection of damage within a few days after receipt of shipment absolves the carrier from any liability for damage. You must call for a damage inspection promptly.

Concealed Loss or Damage

Concealed loss or damage refers to loss or damage, which does not become apparent until the merchandise has been unpacked and inspected. If either occur, make a written request for the carrier's agent within 15 days of the delivery date; then file a claim with the carrier since the damage is the carrier's responsibility.

Operating Standards

The units described in this manual are classified for use as stationary equipment in a Pollution Degree 2¹ and Over voltage Category II environment.

These units are designed to operate under the following environmental conditions:

- Indoor use
- Altitude up to 2000 m (6512 feet)
- Maximum relative humidity 80%, non-condensing
- Temperatures: 59°F to 90°F (15°C to 32°C)
- Main supply voltage fluctuations should not exceed by $\pm 10\%$ of the nominal voltage.

1. Refer to IEC 6641

Installation

Selecting a Location

Choose a location for the refrigerator/freezer that will provide a clearance of 4 in. at the top, 8 in. at the rear and 3 in. at each side.

Appropriate electrical power must be available. Locate the refrigerator/freezer within eight feet of the power outlet so that no extension cord is required. Attach the refrigerator/freezer to the facility's electrical supply as directed by the National Electrical Code.

Leveling the Unit

This refrigerator/freezer must be level in order to provide adequate condensate drainage as well as proper door alignment and operation. The refrigerator/freezer should be in its final operating location and set so that it is firmly positioned on the floor.

Electrical Connection

Determine the total amount of current presently being used by other apparatus connected to the circuit that will be used by this refrigerator. It is critical that this added current demand and other equipment on this circuit not exceed the rating of the fuse or circuit breaker in use.

The frequency and nominal voltage requirements for the unit are specified on the data plate, which is located on the door's exterior. Only supply this unit with an electrical source that meets these requirements. Low line voltage is often the cause of service complaints. With the unit running, check that the line voltage is within $\pm 10\%$ of that specified on the data plate.



CAUTION: Be sure the voltage supplied to the refrigerator/freezer is equal to that specified on the data plate.



WARNING: For personal safety, this unit must be properly grounded before use.

Flammable Materials Storage and General Purpose units must be connected to a grounded outlet matching the nameplate and /or the information furnished in this manual. If you are not sure about the outlet, you should contact a

qualified electrician for assistance. Explosion-Proof units must be hardwired by a qualified electrician.

Explosion-Proof unit should always be connected to a dedicated power source.



WARNING: DO NOT REMOVE, under any circumstance, the grounding prongs from the 3-prong power cord supplied with all units.



WARNING: DO NOT USE electrical extension cords, it may result in voltage loss and possible hazardous operation.

Be Advised



WARNING: Storage by user of any materials in the product that may cause a deterioration of the product shall be deemed to constitute abnormal and improper usage of the product for purposes of this warranty.



WARNING: Before connecting the final power supply, check the electrical characteristics of the unit nameplate to see that it is in agreement with the power supplied. In addition, power should be wired to the unit according to the electrical schematic and all applicable codes. Only qualified electricians should work on the electrical portion of any unit installation.



CAUTION: Solutions used to clean coils or neutralize bacteria growth must not be corrosive to metals (enamel-coated steel) and materials used in the maintenance of this equipment — damage can result: use a soft cloth and warm water to clean



WARNING: RISK OF CHILD ENTRAPMENT
Before you discard your old refrigerator or freezer:

- Remove door(s).
- Leave the shelves in place so that children may not easily climb inside.

How to Seal Killark® Box Conduit

To Seal Killark® Box Conduit with Fiber and Sealing Compound to Help Protect Against Explosions (Explosion-Proof Units Only):

The purpose of the procedure that follows is to build fiber rope dams on the left and right hubs of the horizontal conduit. The fiber rope dams will surround conduit wiring that is housed inside the horizontal conduit. When both the left and right fiber rope dams have been pressed into place, sealing compound is poured between the two and forms into an airtight plug.

All of this is done in order to prevent the very real threat of gas entering the Killark box and a resulting serious explosion. After the unit wires have been pulled through the horizontal conduit the following procedure is required:

- Turn power off at the circuit breaker before proceeding.
- Place a small amount of sealing compound granules, enclosed, into a clean mixing vessel. Add small amounts of water while stirring until a thick paste is formed, then carefully continue adding smaller amounts of water until a thick gravy consistency is achieved—NOT WATERY. Discard any material that becomes too stiff to use. Never attempt to restore workability by stirring in more water.
- Locate silver Killark box, back/top-center of unit.
- Unscrew conduit domed-cover.

Note: KILLARK® is a registered trademark of Hubbell Incorporated, Shelton, CT, USA.

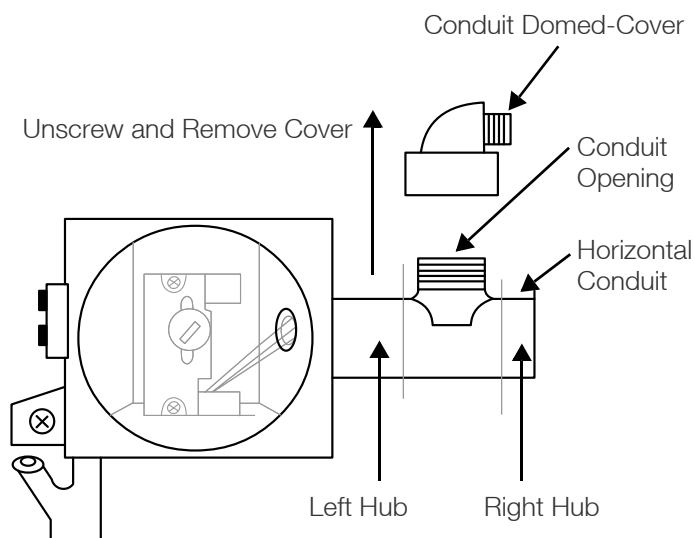


Figure 1. Sealing the Killark Box

Note: Wires must be kept separated as shown in the **Figure 2**.

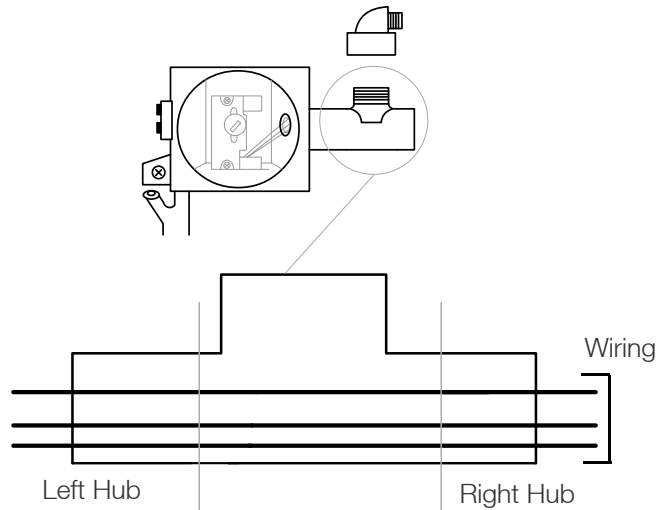


Figure 2. Horizontal Conduit, Cutaway

- Insert fiber rope material down into horizontal conduit opening. Pressing down firmly, work the material into the left hub and—most importantly—being sure the material **COMPLETELY SURROUNDS THE WIRING**, from the top to the bottom, completely blocking this end of the horizontal conduit.

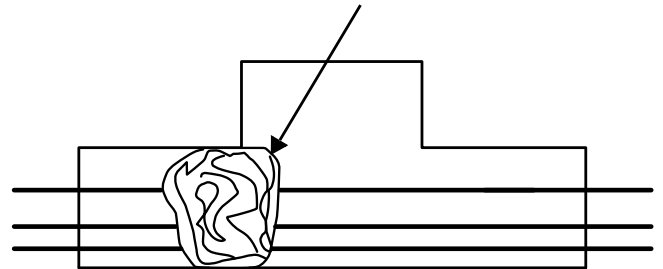


Figure 3. Fiber rope material in left hub

- Insert fiber rope material down into horizontal conduit opening. Pressing down firmly, work the material into the right hub and—most importantly—being sure the material **COMPLETELY SURROUNDS THE WIRING**, from the top to the bottom, completely blocking this end of the horizontal conduit.

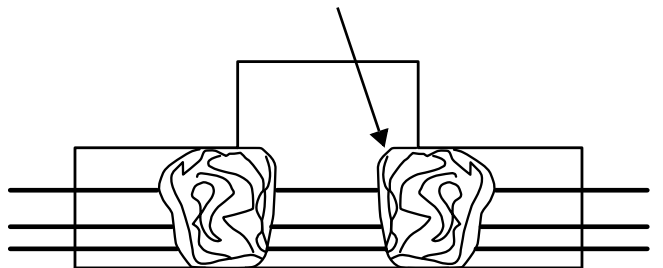


Figure 4. Fiber rope material in right hub

- Pour sealing compound down in between the two fiber rope dams filling the remaining space. Pour slowly, being careful not to trap air bubbles. Immediately wipe off any spilled sealing compound.

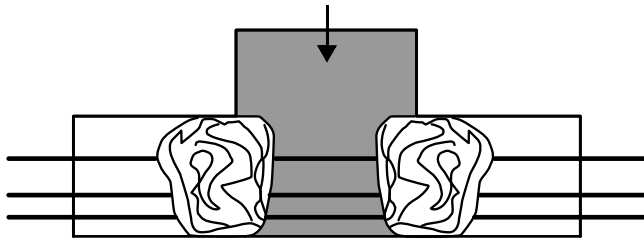


Figure 5. Adding sealing compound

- Screw conduit domed-cover back onto conduit opening.

Note: Initial setup of sealing compound will occur in approximately 30 minutes. However, the sealing compound requires a minimum of 8 hours above 32°F (0°C) to develop sufficient strength to withstand explosions.

Note: Wires must be kept separated as shown in the figure before addition of the sealing compound.

Electric Connection Check Points

- Have proper connections been made at the junction box?
- Is the junction box lid fastened tightly to the junction box?
- Are all wire connections secure?
- Are the service conductor sizes adequate to carry rated load?
- Is the unit properly grounded?
- Is the unit connected to a properly fused branch circuit?

Operation



CAUTION: Do not use in the presence of flammable or combustible materials or explosive gases. Fire or explosion could result, causing death or severe injury.

Start-Up Procedure

Rotate the control knob clockwise to lower the temperature and counterclockwise raise it.

To check chamber temperature, place a dial thermometer on a shelf in the center of the chamber. Initially, rotate the temperature control knob to an arbitrary setting. Allow approximately 2 hours for the temperature to initially stabilize. Check the temperature and compare with the dial setting.

Adjust dial further to reach the desired operating temperature. After chamber initially stabilizes, allow 1/2 to 1 hour for the chamber temperature to stabilize after subsequent temperature adjustments.

Because the markings on the dial do not indicate specific temperatures, use them AS REFERENCE POINTS ONLY for any future setting of the temperature.

If the room thermostat is turned below 60°F at night, consider setting the temperature control one step colder. It should be left at this setting for the nighttime period; return temperature control to original setting when the room thermostat is returned to its normal setting.

Restart Procedure

If unit is unplugged or turned off, allow 3 minutes before restarting or plugging it back in.

How to Save Energy

- Be sure to follow location suggestions as mentioned in the section **Installation**.
- Wipe moisture from glassware or other materials before placing them in a unit.
- Don't overcrowd the unit. Too many items can increase electrical energy demand in order to keep everything cool.

- Close the door as soon as possible in hot, humid weather.
- Make certain that the door is closed tightly.
- As soon as frost has accumulated to 1/4", defrost.
- Keep containers covered, when possible, to reduce moisture buildup.
- Set operating temperature no colder than necessary for the items being refrigerated.

Safety Tips



- After a unit is in operation, do not touch the cold surfaces, particularly when hands are damp. Skin may adhere to the cold surfaces.

We recommend handling samples by wearing gloves to avoid frost bite.



- Never disconnect your unit by pulling the power cord. Always grip the plug securely and pull straight out from the outlet.
- Do not use a power cord that shows cracks or abrasions. Have a qualified electrician repair or replace damaged cords immediately.



Maintenance



CAUTION: When servicing the unit, disconnect from the electrical power source.



CAUTION: Refer servicing to qualified personnel.

Cleaning the Unit

Before beginning cleaning unit follow these instruction listed below:

- Disconnect power cord from its outlet.
- Set the temperature control to the OFF position.
- The unit designs permit easy and rapid cleaning and should not take more than a few minutes. Remember to wear protective gloves to prevent frost bite, especially when removing items from freezer units.
- Do not use abrasive scouring powders, waxes, solvents, furniture polish, undiluted detergents or cleansers containing petroleum products on the surfaces of units.

Cleaning Interior/Exterior/Door Gaskets

A solution of mild soap/detergent and lukewarm water can be used for cleaning the interior, exterior and door gaskets with a soft, clean cloth. Rinse with clean water and dry thoroughly before reconnecting and turning on the unit.

The cabinet interior should be cleaned frequently. Any spilled liquid should be wiped off immediately since stains resulting from some spills could be permanent if not quickly removed. The most convenient time to clean the interior is after defrosting.

Cleaning the Condenser

With forced-fan vented units, remove the screws that mount the grill to the unit. Pull temperature control knobs straight out—this will expose condenser for cleaning.

These surfaces may be warm to the touch. The condenser should be cleaned before becoming clogged with dirt/dust. Construction or other dirt causing environments may significantly increase the required frequency. The condenser should be cleaned at least once a year.



CAUTION: Never clean around the condensers with your fingers. Some surfaces are sharp.

Troubleshooting

This table is intended to assist in resolving user-correctable Refrigerator problems by relating symptoms to their likely causes. If service beyond the scope of this table is required, contact your nearest VWR Service Office.

Symptom	Probable Cause	Action
Unit does Not Run	Unit Unplugged	Plug in Unit
	Blown fuse or tripped circuit breaker	Check fuse or circuit breaker at breaker box
	Temperature control knob is turned to OFF	Turn temperature control knob to ON
Runs Continuously	Frost build up on refrigeration coils.	Defrost unit
	Dust or lint buildup on condenser	Clean the condenser with a dry brush or vacuum
	Door gasket worn out.	A leak around the door gasket will allow cold air to escape. This causes unit to work harder than necessary to maintain cold temperatures. Re-seat or replace the gasket if worn
	Temperature too low	This may cause unit to run continuously. Check optimum running temperature
	Ambient temperature over 109°F (43°C)	Is the ambient air over 109°F (43°C), or the units located close to heat sources? If possible, move to a different location
	Door opening frequency is high	An unusually high frequency of door openings and closings can increase operating load. Unit will stabilize as these are decreased
Noise problems	Contents of unit set too close and rattling against each other	Rearrange contents as needed.
	Hissing or gurgling noise is caused by refrigerating fluid circulating	This is normal
	Unit is not level on floor	Check the level of unit
	Fan noise	Airflow can cause this. This is normal

Wiring Diagram

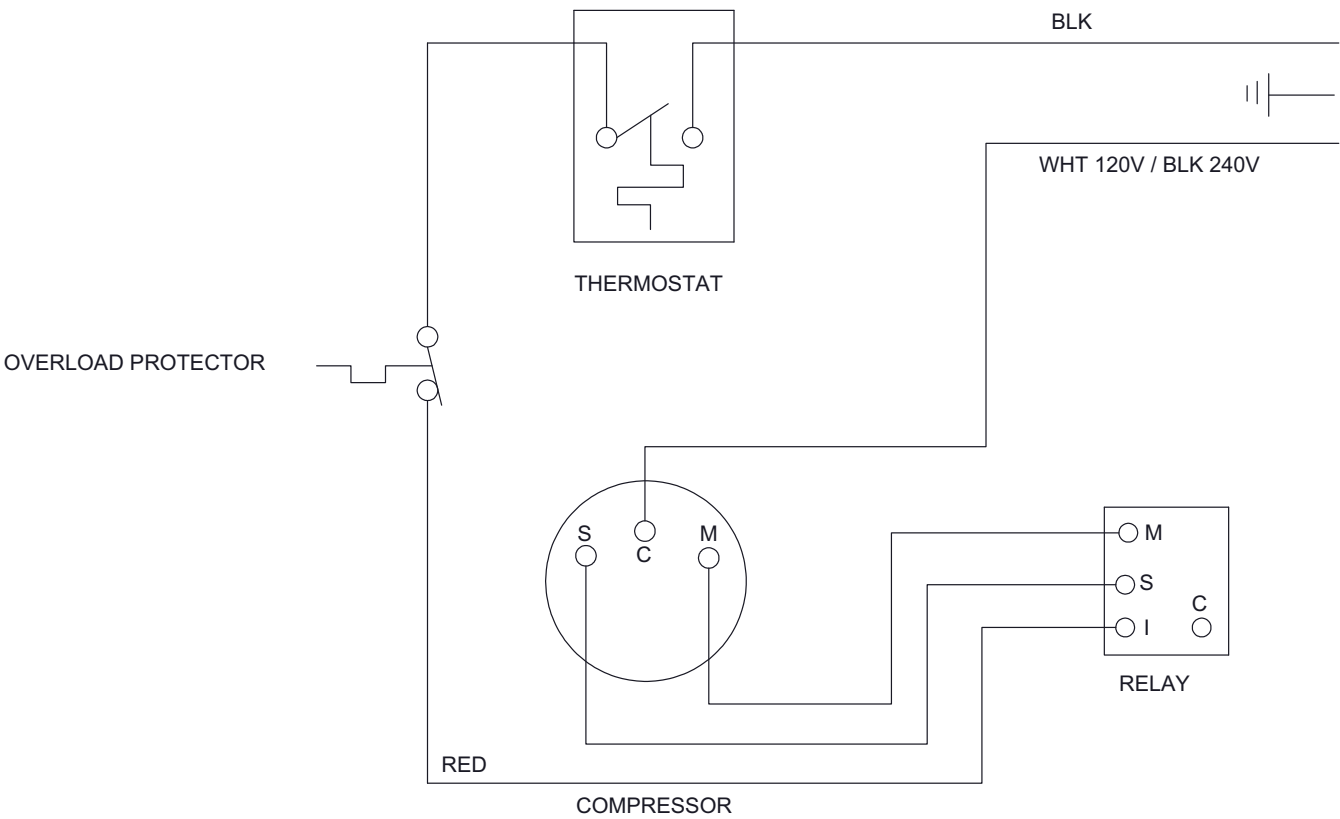


Figure 6. Wiring diagram for 10FCEEVWA and 10ECEEVWA

End of Life Care

Be sure to follow local regulations when disposing of an old unit. Some suggestions are listed below:

1. Remove items and defrost unit. Be sure to clean up any biological safety hazards.
2. Remove the cabinet door to help prevent entrapment inside of a unit.
3. Have a certified technician remove the refrigerant and compressor, then drain the compressor and oil from the system. Dispose of components following local regulations.

Warranty

Domestic Warranty • 24 Months Parts and Labor

International Warranty • 24 Months Full Warranty Parts

During the first twenty four (24) months from shipment, VWR Inc, through its authorized Dealer or service organizations, will at its option and expense repair or replace any part found to be non-conforming in material or workmanship. VWR Inc reserves the right to use replacement parts, which are used or reconditioned. Replacement or repaired parts will be warranted for only the unexpired portion of the original warranty.

This warranty does not apply to damage caused by (i) accident, misuse, fire, flood or acts of God; (ii) failure to properly install, operate or maintain the products in accordance with the printed instructions provided, (iii) causes external to the products such as, but not limited to, power failure or electrical power surges, (iv) improper storage and handling of the products, (v) use of the products in combination with equipment or software not supplied by VWR; or (vi) installation, maintenance, repair, service, relocation or alteration of the products by any person other than VWR or its authorized representative. To obtain proper warranty service, you must contact the nearest authorized service center or Dealer. VWR, Inc's own shipping records showing date of shipment shall be conclusive in establishing the warranty period. At VWR's option, all nonconforming parts must be returned to VWR postage paid and replacement parts are shipped FOB VWR's location.

Limitation of Liability:

THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL, OR IMPLIED. NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL APPLY. VWR DOES NOT WARRANT THAT THE PRODUCTS ARE ERROR-FREE OR WILL ACCOMPLISH ANY PARTICULAR RESULT.

VWR SHALL NOT BE LIABLE FOR ANY INDIRECT OR CONSEQUENTIAL DAMAGES INCLUDING, WITHOUT IMITATION, DAMAGES TO LOST PROFITS OR LOSS OF PRODUCTS

IF YOU NEED ASSISTANCE:

VWR International products are backed by a global technical support team ready to support your applications. We offer cold storage accessories, including remote alarms, temperature recorders, and validation services. Visit www.vwr.com or Call:

Countries	Services
North America	+1 866 984 3766
India toll free	1800 22 8374
India	+91 22 6716 2200
China	+800 810 5118, +400 650 5118
Japan	+81 3 5826 1616
Australia	+61 39757 4300
Austria	+43 1 801 40 0
Belgium	+32 53 73 42 41
France	+33 2 2803 2180
Germany international	+49 6184 90 6000
Germany national toll free	0800 1 536 376
Italy	+32 02 95059 552
Netherlands	+31 76 579 55 55
Nordic/Baltic/CIS countries	+358 9 329 10200
Russia	+7 812 703 4215
Spain/Portugal	+34 93 223 09 18
Switzerland	+41 44 454 12 22
UK/Ireland	+44 870 609 9203
New Zealand	+64 9 980 6700
Other Asian Countries	+852 2885 4613
Countries not listed	+49 6184 90 6000



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