



Isotemp Flammable Materials Storage Refrigerator

Model 13-986-450R

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Safety Information

Your satisfaction and safety are important to Fisher Scientific and a complete understanding of this unit is necessary to attain these objectives.

As the ultimate user of this apparatus, 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 this unit 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 unit should be used for its intended application; alterations or modifications will void the Warranty.

This product is not intended, nor can it be used, as a sterile or patient connected device. In addition, this apparatus is 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.
(No symbol)	CAUTION	(Without Safety Alert Symbol) indicates a situation that may result in property damage.
	Shock Hazard	Use of this equipment involves power supplies which convert line voltage to low voltage power. 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.
	Frost bite/ Low Temperature	Avoid contact with cold freezer surfaces potential for cold burns or skin sticking to cold surfaces.



DANGER RISK OF CHILD ENTRAPMENT

Before you throw away your old refrigerator or freezer:

- 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.

Unpacking

Save all packing material if apparatus is received damaged. This merchandise was carefully packed and thoroughly inspected before leaving our factory.

Responsibility for its safe delivery was assumed by the carrier upon acceptance of the shipment; therefore, claims for loss or damage sustained in transit must be made upon the carrier by the recipient as follows:

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.

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. Should 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.

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

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

Performance Characteristics

Temperature Ranges

1° to 12°C (34° to 53.6°F)

Electrical Requirements

115 Volts $\pm 10\%$, 60 Hz, 9.1 Amps

Installation

Selecting a Location

Choose a location for the refrigerator that will provide at least three inches of clearance between the cabinet and any adjacent vertical surface at the sides and rear. Twelve inches of clearance is required above the grille. Appropriate electrical power must be available. Locate the refrigerator within eight feet of the power outlet so that no extension cord is required.

Leveling the Unit

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

There are four leveling legs – one for each corner. These legs are packed in the accessory carton from which they must be removed and installed onto the cabinet. In order to install the legs, carefully tip the cabinet rearward and add (4) two inch blocks underneath and simply screw the threaded leg studs into the case bottom front leg holes. Repeat this procedure by tilting the cabinet in the opposite direction and install the remaining legs. Make sure that the legs are tightened extremely well or the entire unit will sway or rock with each opening or closing of the doors, possibly causing damage to the case bottom. Level the cabinet front to rear and side-to-side using the corner leveling screws located at the bottom of the legs.

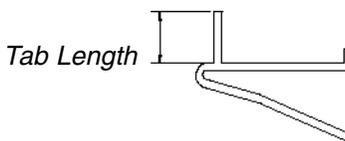
Shelves

Shipped inside each cabinet are shelves packed in plastic and a bag of shelf supports. Two different types of shelf supports are used. Refer to figure 1 for installation. Shelf spacing is adjustable to suit user requirements. Replacement shelves are available individually for the Laboratory Refrigerators.



Figure 1

Use 1/4" support in front of shelf and 1/2" support here



Shelf Support

Thermowell for adding external monitoring device

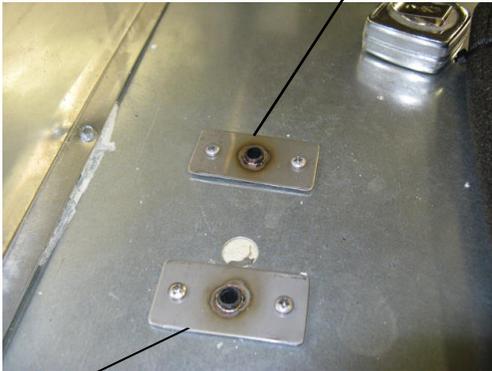


Figure 2: Thermowell location

Display Thermowell

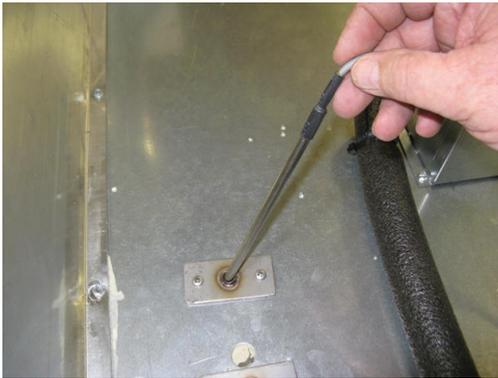


Figure 3: Inserting sensor in thermowell

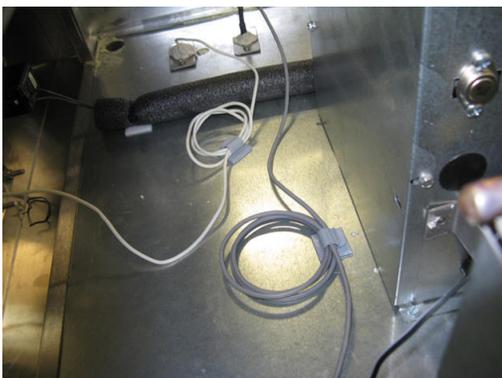


Figure 4: Securing excess wire

Install External probe in Thermowell

An external temperature monitoring device can be added to the thermowell beside the display thermowell mounted on top of the unit. See Figure 2 for location of the thermowell.

The size of the sensor must be less than 0.3 diameter to fit inside the thermowell.

Requirements to install the external probe:

- Glycol mixture (50-50% solution of glycerine & water)
- Permagem as required
- Cable clamp

To install the external probe in thermowell:

1. Unscrew the top panel and locate the thermowell beside the display thermowell on top of the unit.
2. Add 2-3 ml of glycol solution in thermowell.
3. Insert the sensor in thermowell as shown in Figure 3 and seal the opening with permagem.
4. Place the external monitoring device on top/side as per your convenience.
5. Secure the excess wire using a cable clamp as shown in Figure 4.
6. Assemble the top panel back to the unit.



Caution

Be sure that the power supply is the same voltage that is specified on the refrigerator's data plate.



Warning

For personal safety this unit must be properly grounded.



Caution

Do not use an extension cord. Use of an ungrounded cord or an overloaded circuit VOIDS the compressor warranty.



Warning

Do not under any circumstances cut or remove the third (ground) prong from the power cord.

Do not use a two-prong adapter plug.

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 interiors upper left side. Only plug the unit into a power 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.

The power cord of this instrument is equipped with a three prong (grounding) plug (NEMA 5-15P). This plug mates with a standard three prong (grounding) wall receptacle (NEMA 5-15R) to minimize the potential of an electrical shock hazard. The customer should have the wall receptacle and circuit checked by a qualified electrician to verify the receptacle is properly grounded and is connected to a minimum 15 amp service.

Where a two-prong wall receptacle is encountered, it is the personal responsibility and obligation of the user to have it replaced with a properly grounded three-prong receptacle.

Operation



Warning

If the unit is tilted in excess of 30 degrees, do not apply electrical power for a minimum of 12 hours.

Initial Startup

Turn power on and verify that the condenser fan is running. This model has a condenser fan located on the condensing unit on top of the cabinet.

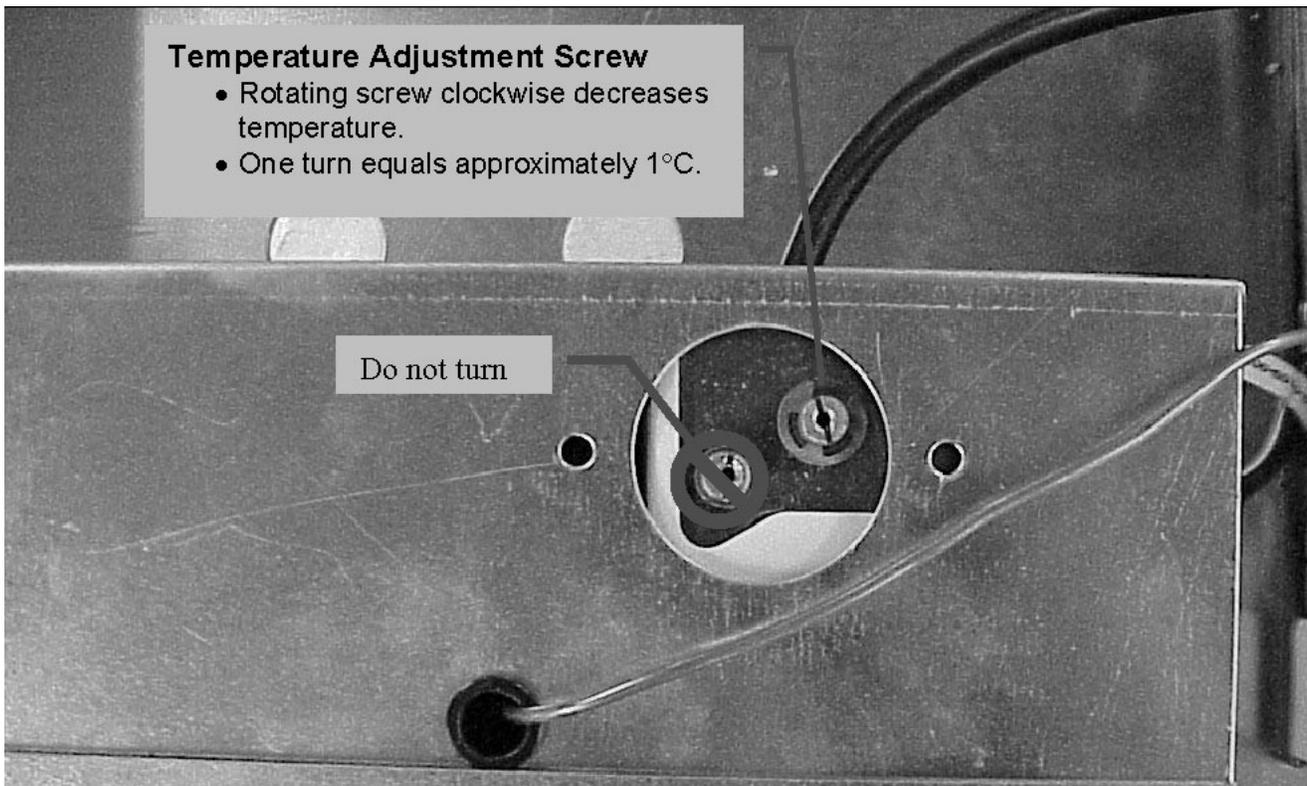
Temperature Control

The thermostat is factory set to provide an interior temperature of 38°F (4°C). To adjust the interior temperature, there is a hole in the top of the case to allow access the adjustment screw. For operation above an altitude of 3000 ft., have the thermostat adjusted by a technician. See photo below.

Temperature Display

Interior temperature is indicated in degrees C by the solar powered LCD display mounted in the header panel.

*Temperature Adjustment Instructions-
Model 13-986-450R FMS Refrigerator*



Material Compatibility

The interior cabinet of this unit is constructed of anodized aluminum. Care must be exercised when determining which chemicals may be stored in the refrigerator and freezer sections and which type of storage materials should be employed.

ABS Plastic deteriorates when exposed to, but not limited to, the following:

Aliphatic Hydrocarbons; Aromatic Hydrocarbons; Fully and Partially Halogenated Hydrocarbons; Alcohols Monohydric; Phenols; Ketones; Esters; Ethers; Organic Acids (concentrates and dilute); and Concentrated Oxidizing Acids. This information is taken from Plastics Edition 8 Thermoplastics and Thermosets published by D.A.T.A. and The International Plastics Selector, Inc.
Cordura Companies
9889 Willow Creek Road
P.O. Box 26637
San Diego, California 92126

Aluminum Alloys are susceptible to corrosion when exposed to but not limited to most inorganic acids, bases and salts with a pH outside of their passive range of pH 4 to 9. It is also important to recognize that the compatibility of aluminum alloys with mixtures of organic compounds cannot always be predicted from their compatibility with each of the compounds. For example, some aluminum alloys are corroded severely in mixtures of carbon tetrachloride and methyl alcohol, even though they are resistant to each compound alone. This information is taken from Corrosion and Corrosion Protection Handbook Second Edition
Published by
Marcel Dekker, Inc.
270 Madison Ave.
New York, NY 10016

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 Customer Service at 1-800-438-4851.

<u>Symptom</u>	<u>Probable Cause</u>	<u>Action</u>
Does Not Run	Unit Unplugged	Plug in Unit
	Blown fuse or tripped circuit breaker	Check fuse or circuit breaker at breaker box
Runs Continuously	Frost buildup on refrigeration coils	Defrost unit
Clicking Sound	The compressor is equipped with a thermal protector. This device shuts off the compressor when it becomes too hot. A clicking sound occurring about every 30 seconds indicates this protector is working	Disconnect power and call for service.
Insufficient Cooling	Thermostat set too high	Reduce thermostat setting
	Condenser coil dirty	Clean condenser coil with a vacuum cleaner
	Unit frosted	Defrost unit

Maintenance

**Warning**

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

**Caution**

Do not use any type of abrasive such as steel wool, or fluids such as gasoline, Naphtha, and thinner. These materials could be harmful to aluminum, plastic materials, door gasket, and painted surfaces.

Cabinet Cleaning

The cabinet interior should be cleaned frequently. Any spilled liquid should be wiped off immediately. Stains resulting from some spills can be permanent if not quickly removed. The most convenient time to clean the interior is after defrosting. The cabinet exterior should be cleaned occasionally. A mild detergent and lukewarm water or a solution of bicarbonate of soda (1 tablespoon per gallon of water) is recommended for cleaning the interior and exterior of the cabinet. All surfaces should be rinsed and thoroughly dried.

Condenser

The condenser coil is located behind the header panel. This should be cleaned at least once a year. Disconnect the refrigerator's electrical power. Remove the header panel and vacuum the condenser coil to remove any dirt build-up that may have accumulated there.

Warranty

Laboratory instruments and equipment manufactured by Fisher Scientific Company L.L.C. – Laboratory Equipment Division (hereinafter called “the Company”) are warranted only as stated below.

Subject to the exceptions and upon the conditions specified below, the Company agrees, at its election, to correct by repair, by replacement, or by credit to the purchaser, any defect of materials or workmanship which develops within one year (13 months for refrigerator and freezer products) from the date of purchase by the original purchaser by the Company or by an authorized dealer of the Company provided that investigation or factory inspection by the Company discloses that such defect developed under normal and proper use.

The exceptions and conditions mentioned above are the following:

- a. The Company makes no warranty concerning components or accessories not manufactured by it, such as tubes, batteries, etc. However, in the event of the failure of any component or accessory not manufactured by the Company, the Company will give reasonable assistance to the purchaser in obtaining from the respective manufacturer whatever adjustment is reasonable in the light of the manufacturer’s own warranty.
- b. The Company shall be released from all obligations under its warranty in the event repairs or modifications are made by persons other than its own service personnel or authorized dealer personnel unless such repairs by others are made with the written consent of the Company.
- c. **THE COMPANY MAKES NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, EITHER IN FACT OF BY OPERATION OF LAW,...STATUTORY OR OTHERWISE.**
- d. The above warranty and the above obligations to repair, replace, or credit are complete and exclusive and the Company expressly disclaims liability for lost profits or for special, indirect, incidental, consequential, or exemplary damages of any nature whether attributable to contract, warranty, negligence, strict liability, or otherwise even if the Company has been advised of the possibility of such damages.
- e. Representations and warranties made by any person, including dealers and representatives of the Company, which are inconsistent or in conflict with the foregoing warranty shall not be binding upon the Company unless reduced to writing and signed by an officer of the Company.

