



Isotemp[®] Explosion-Proof Refrigerators and Freezers

Refrigerator Model 153, 153HK
Freezer Model 150, 150HK

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Safety Information

Alert Signals



Warning

Warnings alert you to a possibility of personal injury.



Caution

Cautions alert you to a possibility of damage to the equipment.



Note

Notes alert you to pertinent facts and conditions.



Hot Surface

Hot surfaces alert you to a possibility of personal injury if you come in contact with a surface during use or for a period of time after use.



Warning

As a routine laboratory precaution, always wear safety glasses when working with this apparatus.



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.

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 apparatus is designed for use in Class I, II or III locations as defined by the National Electrical Code, unless otherwise noted.

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**

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 four inches at the rear. Four inches of clearance is required above the top. Appropriate electrical power must be available. Attach the refrigerator to the facility's electrical supply as directed by the [National Electrical Code Article 440](#).

Leveling the Unit

This 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.

After discarding crating screws and wood base, level the freezer side to side and front to back by adjusting the supplied leveling feet (Part Number - SPN 105192). The leveling feet can be adjusted so the front of the unit is slightly higher than the rear – this will allow the door to close easily if it is left halfway open.

Shelves

Shipped inside each cabinet are four fixed shelves which also serve as part of the evaporator coil.

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.



Caution

DO NOT under any circumstances, attach a line cord to this unit. This refrigeration equipment is intended for a hard-wire connection to the facility power supply.

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

This unit is not equipped with a power switch. Turn the applicable facility circuit breaker off during installation. Simply turn power on the facility's circuit that supplies the unit.

Temperature Control

To adjust the interior temperature down, simply turn the thermostat knob clockwise. The adjustment knob is located behind the front cover of the blue temperature control unit that is on the top exterior on the cabinet. Remove the two screws with a flat blade screw driver for access. For operation above an altitude of 3000 ft., have the thermostat adjusted by a technician.

Condensate Disposal

The condensate drain is at the center of the interior floor. The condensate drain tube is connected to this drain and is attached to the left front bottom of the unit behind the front sheet metal. Unhook and place the drain tube into a suitable pan and remove the drain plug. Turn the temperature control up or remove power to the unit and allow the unit to defrost.

Material Compatibility

The interior cabinet of this unit is constructed of epoxy-coated steel. 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 your nearest Fisher Scientific Service Office.

<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. Allow refrigeration system time to equalize, then try again. If problem persists, call for service.
Insufficient Cooling	Thermostat set too high	Reduce thermostat setting
	Unit frosted	Defrost unit

Maintenance

**Caution**

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/or painted surface.

Cabinet Cleaning

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.

The exterior of the cabinet should be cleaned occasionally. A mild detergent and lukewarm water or 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 sides and top exterior panel. These surfaces may be warm to the touch. This is necessary to the operation of the refrigeration equipment and is normal.

Performance Characteristics and Replacement Parts

Performance Characteristics

Temperature Ranges

150: - 20°C to -12°C (- 4°F to +10°F)

153: 2°C to 10°C (36°F to 50°F)

Temperature Stability

at 4°C: $\pm 4^\circ\text{C}$

at -20°C : $\pm 4^\circ\text{C}$

Electrical Requirements

13-986-150 115 Volts $\pm 10\%$, 60 Hz, 5.0 Amps

13-986-150HK 220 Volts $\pm 10\%$, 50 Hz, 5.0 Amps

13-986-153 115 Volts $\pm 10\%$, 60 Hz, 5.0 Amps

13-986-153HK 220 Volts $\pm 10\%$, 50 Hz, 5.0 Amps

Replacements Parts

Replacement starter kit for Model HK (220V) only:
SPN106706

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 OR 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.



Fisher Scientific

2555 Kerper Boulevard
Dubuque, Iowa 52001
Phone: 800-926-0505
Fax: 563-589-0516
www.fishersci.com