

OPERATION MANUAL



LAB-LINE
FRIGID-CAB
EXPLOSION-PROOF REFRIGERATOR, FREEZER
AND REFRIGERATOR-FREEZER

Models 3557, 3557SS, 3557LHSS, 3557-2, 3557-4

At Lab-Line, we take pride in the design and workmanship of the equipment you have purchased. We feel that our equipment is the best in the world. If something is wrong or if you have suggestions for improvements, please write to the attention of our president.

Catalog No. 3557 Serial No. 688 1310

Test Approval _____ Date 6-18-88

Final Inspectional Approval _____ Date 6-20-88

Inspected & Packed By _____ Date 8/8



LAB-LINE INSTRUMENTS, Inc.
 DESIGNERS AND MANUFACTURERS
 15th and Bloomingdale Avenues, Melrose Park, Illinois 60160
 1 (800) 323-0257 • Fax: 450-0943 • Telex: 6871028 LB LIN UW

LAB-LINE INSTRUMENTS, Inc.

Designers and Manufacturers
 15th & Bloomingdale Avenues
 Melrose Park, Illinois 60160
 U.S.A.

Phone 312-450-2600 (in Illinois)
 800-323-0257 (elsewhere)
 Telex 68-710-28 LB·LIN·UW

[The text in this block is extremely faint and illegible, appearing as a dense cluster of small black specks.]

We are pleased with your choice of LAB-LINE INSTRUMENTS for your equipment needs. For maximum value and ease of start-up, please proceed as follows:

1. Inspect the carton and contents for shipping damage. Notify the carrier immediately if damage is found.
2. Use the "ACCESSORY CHECK LIST" when unpacking to verify that the complete unit has been received. Do not discard packing material until everything is accounted for.
3. Read this operation Manual thoroughly before deciding on an appropriate location for the unit. You must consider the availability of power, water and/or gas hook-ups, drains and other unit requirements, as well as user convenience.
4. Carefully follow directions in the "INSTALLATION" section of this manual.
5. Insist that each operator of the unit is familiar with the "OPERATION" section of this manual.
6. Fill out the WARRANTY REGISTRATION CARD and mail it in to Lab-Line Instruments, Inc. within seven business days after receiving the unit.
7. Keep this manual in a safe location for ready reference to the "OPERATION" and "MAINTENANCE" sections when needed.
8. If, after reading this manual, you have any difficulty with installation, operation or maintenance, please call:

LAB-LINE CUSTOMER RELATIONS DEPARTMENT
(312) 450-2600 (in Illinois)
(800) 323-0257 (elsewhere)

ALL RIGHTS RESERVED

The information contained in this manual is the exclusive property of LAB-LINE INSTRUMENTS, INC., and has been provided solely to enable the users of the equipment described herein to operate and maintain such equipment. Any other use of this information, or the reproduction or transmission of all or any portion of this manual, without prior written consent of the manufacturer is expressly prohibited.

CONTENTS

PAGE	TITLE
1-1	DESCRIPTION
2-1	SPECIFICATIONS
3-1	INSTALLATION
3-1	Unpacking
3-1	Location
3-1	Clearance
3-1	Ventilation
3-1	Electrical Requirements
4-1	OPERATION
5-1	MAINTENANCE
5-1	Defrosting
5-1	Cleaning
5-2	Servicing and Repairs
6-1	SERVICE GUIDES
6-1	Compressor Replacement
7-1	REPLACEMENT PARTS

DESCRIPTION

The Lab-Line units covered in this manual are designed and constructed for explosion-proof operation. Components that might create sparks or arcing -- relay, thermostat, compressor, wiring -- have been enclosed and insulated against volatile, explosive fumes and gases that might escape from containers in the interior or envelop the exterior. This makes the Frigid-Cab compatible with the National Electrical Code as Class I, Groups C and D.

They are designed for recessed as well as free-standing installation.

The units covered in this manual include:

Models 3557, 3557SS, 3557LHSS: Refrigerator

Model 3557-2: Freezer

Model 3557-4: Refrigerator-Freezer

The refrigerator units differ from each other only with respect to the door: Model 3557 has a standard, white enamel door; Model 3557SS has a stainless steel door; and Model 3557LHSS has a left-hand opening stainless steel door.

The cabinet is constructed of heavy-gauge, braced steel and finished with a durable white enamel. The plastic interior and plastic door liner are resistant to cracking, chipping and fumes. Urethane foam insulation contributes to close temperature control and uniformity. Slide-out shelves rest on brackets and can be removed for easy cleaning. Door shelves provide convenient storage area for small containers.

SPECIFICATIONS

ELECTRICAL REQUIREMENTS

120 VAC, 60 Hz



 * **WARNING:** In order to maintain hazardous-location integrity of these *
 * units, electrical power must be supplied by Class 1, Division 1 *
 * wiring, per National Electrical Code, to the unit. Failure to do *
 * may produce explosion hazards resulting in injury and/or death to *
 * those in proximity to the unit. *

TEMPERATURE RANGE

Models 3557,
 3557SS & 3557LHSS (Refrigerator): -1 to 9 C (30 to 48 F)
 Model 3557-2 (Freezer): -20.6 to 9.4 C (-5 to 15 F)
 Model 3557-4 (Refrigerator): -4 to 7 C (25 to 45 F)
 (Freezer): -20.6 to -4 C (-5 to 25 F)

CAPACITY

Models 3557, 3557SS & 3557LHSS: 6.1 cubic feet
 Model 3557-2: 4.5 cubic feet
 Model 3557-4: 6.1 cubic feet

SHELVES

Adjustable: Two in the main compartment
 Fixed: Three on door

EXTERIOR DIMENSIONS

Width	Depth	Height
23-7/8"	25-1/2"	34-1/2"
60.6 cm	64.7 cm	87.6 cm

SHIPPING WEIGHT

120 lbs (54.5 kg)

INSTALLATION

1. UNPACKING

Examine shipping carton and contents for damage. If any damage is found, call the carrier immediately and file a claim.

Unpack the unit carefully. Do not discard packing materials, until all parts are accounted for.

2. LOCATION

Select a convenient location that is away from direct sunlight and free of drafts, strong air currents, other heat sources and extraneous vibration. Locate near a grounded outlet.


3. CLEARANCE

Position the Frigid-Cab so that there is at least 12" clearance on the top, 2" on each side and 3" at the rear. It is advisable to allow even more space at the rear, in the event maintenance is required.

4. VENTILATION

When installing these units under a counter, provision should be made for free air circulation or venting at the rear and out the top rear of the refrigerator over the finned condenser. A grille covered opening of not less than 3" by 18" should be provided in the counter top for venting. DO NOT back the unit up to heat ducts or hot water lines. The counter vent will not be necessary where adequate ventilation is provided at the rear of the cabinet.

5. ELECTRICAL REQUIREMENTS

 * **WARNING:** Any deviation from the procedure described below can produce *
 * explosion hazards with possible injury and/or death. *

Connect the unit to a properly fused and grounded outlet with the same electrical characteristics indicated on nameplates of these units. Installation of electrical wiring must be made in an approved manner by a qualified electrician with experience in explosion-proof wiring for use in Hazardous Locations, Class I, Groups C and D. Reference Chapter 5, Articles 500 and 501 of the National Electrical Code.

Use UL-listed and threaded metal conduit and fittings. DO NOT connect through a flexible cord, attachment plug and receptacle. User must provide and install an explosion-proof disconnect switch. Connect switch directly to the two-wire leads provided at the rear of the unit.

OPERATION



* CAUTION: These units are NOT designed for storage of corrosive *
* materials. The interior can be seriously damaged by storing *
* corrosive materials inside. *
* *
* Use of the units to store corrosive materials, or operation in *
* corrosive environments, voids the warranty. *

1. Place a thermometer on a shelf in the unit, near the center of the chamber.
2. Turn on the power switch and allow time for the interior temperature of the unit to stabilize.
3. Adjustments in the temperature can be made by resetting the control thermostat located in the grille at the bottom front of the unit.
 - A. Turn off power to the unit.
 - B. Turn the thermostat knob clockwise for colder and counterclockwise for warmer temperatures. The correct position will have to be approximated.
 - C. Turn on power to the unit.
 - D. Allow temperature of the unit to stabilize. Read the thermometer. If another adjustment is needed, repeat the procedure in Steps A through D.

MAINTENANCE

```

*****
*   Make no attempt to service or repair a Lab-Line product *
*   under warranty before consulting your Lab-Line dealer.   *
*   After the warranty period, such consultation is still    *
*   advised, especially when the repair may be technically  *
*   sophisticated or difficult.                               *
*                                                             *
*   In order to maintain the hazardous-location integrity    *
*   of this unit, any work performed must adhere exactly to *
*   the requirements specified in this manual.  Otherwise,  *
*   explosion hazards can result in accidents, injury       *
*   and/or death.                                           *
*                                                             *
*   If assistance is needed beyond what the distributor can *
*   provide, please call the Lab-Line Customer Relations    *
*   Department: 312-450-2600 (inside Illinois) or at        *
*   800-323-0257 (outside Illinois).                         *
*                                                             *
*   No merchandise, however, should be returned directly to *
*   Lab-Line without prior approval.                         *
*****

```

A. DEFROSTING

Defrost the unit when frost builds up to 1/4-inch in thickness.

1. Remove temperature-sensitive materials from the refrigerator.
2. Turn off power to the unit.
3. Open the door and allow ambient air to melt the frost.
4. Do not use any type of external heating source to hasten the melting process.
5. Water from the defrosting process will drain into a trough at the back of the unit into a drain hose. The hose comes out the back of the unit and can be directed into a shallow pan or extended to a floor drain.
6. Sponge up any remaining water and dry interior surfaces thoroughly.
7. Turn power back on to the unit.

B. CLEANING

Clean the interior, exterior, door liner and gasket with a solution of warm water and a mild soap or detergent. Rinse and dry thoroughly.

* DO NOT USE cleaning waxes, concentrated detergents, bleaches or *
* cleaners containing petroleum products to clean the door gasket or *
* plastic parts. Do not use abrasive or harsh cleansers on any part of *
* the unit. *

C. SERVICING AND REPAIRS

Before calling for service, review the following:

If unit does not run.


1. Is the power switch on?
2. Is the temperature control set correctly?
3. Check circuit breaker or fuse to see if it has blown.

If unit runs continuously or frequently.

1. Check for heavy frost accumulation.
2. Check condenser for dust or lint.
3. Check door gasket for proper seal.
4. Have there been an unusually large number of door openings?
5. Is control set too low?
6. Is temperature environment over 110 F?
7. Is unit too close to heat source?

SERVICE GUIDES

Refrigeration and electrical repairs must be performed by qualified service personnel with experience on explosion-proof equipment located in Hazardous Locations, Class I, Groups C and D.


 * **WARNING:** No repair or servicing of the unit should be attempted (1) *
 * before power to the unit is disconnected, (2) while the unit is in *
 * a hazardous location, or (3) while there are hazardous materials *
 * inside or near the unit. Severe injury or death from an explosion *
 * may result if this warning is ignored. *

A. COMPRESSOR REPLACEMENT

1. Disconnect power from unit before servicing.
2. Loosen union at compressor enclosure and disconnect three wire leads.
3. Pierce the HI and LOW tubes leading to the condenser and let the gas escape.
4. Cut these tubes to the compressor at a place where they will be easy to reconnect to the tubing of the replacement compressor.
5. Remove four mounting screws and remove compressor from the unit.
6. Mount new compressor with screws.
7. Resolder tubes, evacuate system, and then recharge with refrigerant specified on the nameplate.
8. Reconnect leads according to the wiring diagram; then tighten union at compressor enclosure.

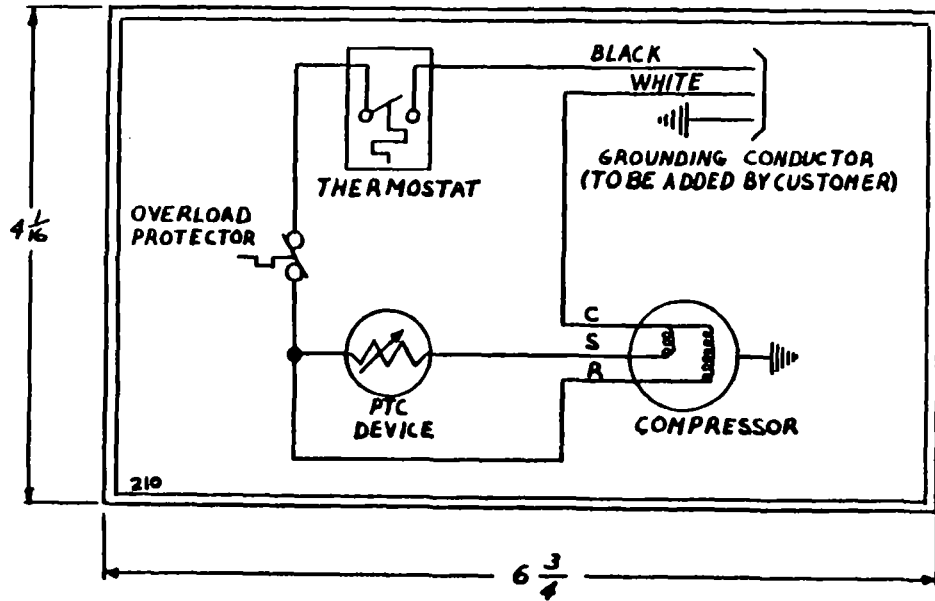
REPLACEMENT PARTS

Relay	400-222-00
Switch, Overload Protector	400-223-00
Wiring Diagram	2-227-210-00

For any other Replacement Parts, call the Lab-Line Customer Relations Department (at 312-450-2600 inside Illinois or 800-323-0257 outside Illinois). Please be prepared to provide: (1) Model No. and Serial No. from nameplate on the back of the unit; (2) the Refrigerator or Freezer Manufacturer's Model No.

4/12/88

PART & DRAWING NO.
2-227-210-00



This drawing is the property of LAB-LINE INSTRUMENTS, Inc. and is loaned with the express agreement that the drawing and information contained therein will not be reproduced or copied in whole or in part, or transmitted in any way directly or indirectly except upon written permission from LAB-LINE INSTRUMENTS, Inc. The acceptance of this drawing will be construed as an acceptance of the foregoing.

ECN DATE

SHEET NO. <u>1</u> OF <u>1</u> SHEETS	LAB-LINE INSTRUMENTS, INC. LAB-LINE PLAZA/MELROSE PARK, ILL.	
	PART NAME WIRING DIAGRAM AND PRESSURE SENSITIVE LABEL	MATERIAL
SUBMITTAL NO. _____ DATE _____	USED ON <u>3557, 3557-10</u>	DATE WITH <u>3557, 3557-10</u>
	DRAWN BY <u>J. J. ...</u>	DATE <u>5/8/78</u>
	UNLESS OTHERWISE SPECIFIED: FRACTIONS \pm 1/64 DECIMALS \pm .001 ANGLES \pm 30'	SCALE <u>X</u>
	ALL DIMS. ARE TO FACE UNLESS OTHERWISE SPECIFIED DO NOT SCALE DRAWING	PART & DRAWING NO. 2-227-210-00

WARRANTY

LAB-LINE INSTRUMENTS, Inc., for itself and all of its subsidiaries ("Lab-Line"), does hereby warrant for a period of 15 months from the date of receipt by the User, under normal and proper usage, all of its products (except P.A.C.E. anaerobic chambers) against defects in workmanship and material, and will repair or replace any defective part(s) without charge when same is shipped prepaid to the authorized Lab-Line distributor from which the product was originally purchased. P.A.C.E. anaerobic chambers are warranted for a period of 12 months, except the vinyl front panel and rubber sleeves/ gloves which are warranted for 30 days, from the date of receipt by the User.

Should the nature of any defect require that the product or any constituent portion thereof be returned by such authorized distributor to Lab-Line's factory at Melrose Park, Illinois, prepaid, for service, a condition precedent to any return shall be the procurement by such dealer of written authorization from Lab-Line assigning a Return Goods Number to the product or part requiring service.

Parts and accessories manufactured by others are warranted only to the extent of the regular warranty of the manufacturer or supplier of such materials and only insofar as Lab-Line is able to transfer the benefits of warranty coverage, if any, to the User. Any adequately warranted defective part or accessory manufactured or supplied by others may be exchanged through an authorized Lab-Line dealer for a replacement part, and no charge in respect thereof shall be assessed if the defective part is shipped prepaid and received at Lab-Line's factory within 30 days from the date any replacement part is obtained by the User.

This warranty supersedes and is given in lieu of all implied warranties, and is void if the User does not provide the unit with continuous ample electrical power at constant voltage, consistent with the specifications of the product.

With respect to all Explosion-Proof and Flammable Material Storage (FMS) Refrigerators and Freezers, storage by User of any materials in the product which may cause deterioration of any components of the product shall be deemed to constitute abnormal and improper usage for the purposes of this warranty.

TO OBTAIN THE BENEFITS CONFERRED BY THIS WARRANTY, USER MUST RETURN THE WARRANTY CARD TO LAB-LINE WITHIN SEVEN (7) BUSINESS DAYS AFTER RECEIPT OF THE PRODUCT.

LAB-LINE INSTRUMENTS, Inc.
(and all of its subsidiaries)



FIRST IN INSTRUMENTS
SERVING SCIENCE, INDUSTRY, RESEARCH AND EDUCATION
SINCE 1908

6538

At Lab-Line, we take pride in the design and workmanship of the equipment you have purchased. We feel that our equipment is the best in the world. If something is wrong or if you have suggestions for improvements, please write to the attention of our president.

Catalog No. 4625 Serial No. 1193

Test Approval [Signature] Date 11-12-93

Final Inspectional Approval [Signature] Date 11-15-93

Inspected & Packed By [Signature] Date _____

cx



LAB-LINE INSTRUMENTS, Inc.

DESIGNERS AND MANUFACTURERS

15th and Bloomingdale Avenues, Melrose Park, Illinois 60160-1491 USA
(708) 450-2600 • Fax: (708) 450-0943 • 1 (800) LAB-LINE

609

— NOTICE —

PLEASE RETURN CARD TO VALIDATE WARRANTY

Catalog No. _____ Serial No. _____ Purch. Date / /

Name of Dealer _____

Your Name _____ Title _____

Company _____ Dept. _____

Address _____

City _____ State _____ Zip _____

Application: Educational Industrial Clinical Governmental

Does your company own other Lab-Line Products? Yes No

How did you find out about this product? Advertising Trade Show

Salesman Recommended by a Friend Other: _____

Please Have A Sales Representative Call () _____

Please Send Information on: Environmental Chambers

Explosion Proof Refrigerator/Freezers Furnaces General Apparatus

General Catalog Heaters, Mixers, Stirrers Incubators CO₂

Incubators, Standard Oven Shakers Water Baths

Other (Please Specify) _____



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO. 377 MELROSE PARK, IL

POSTAGE WILL BE PAID BY ADDRESSEE

LAB-LINE INSTRUMENTS INC
N 15TH AND BLOOMINGDALE AVE
MELROSE PARK ILLINOIS 60160-9984



RETAIN THIS CARD FOR YOUR RECORD

Name of Product _____ Cat. No. _____
Serial No. _____ Date Rec'd _____ Purchased from (Dealer) _____
City _____ State _____

WARRANTY Lab-Line Instruments, Inc., for itself and all of its subsidiaries ("Lab-Line"), does hereby warrant for a period of fifteen (15) months from date of receipt by User, under normal and proper usage, all of its products against defects in workmanship and material, and will repair or replace any defective part(s) without charge when same is shipped prepaid to the authorized Lab-Line distributor from which the product was originally purchased. Should the nature of any defect require that the product or any constituent portion thereof be returned by such authorized distributor to Lab-Line's factory at Melrose Park, Illinois prepaid, for service, a condition precedent to any return shall be the procurement by such dealer of written authorization from Lab-Line assigning a "Return Goods Number" to the product or part requiring service.

Parts and accessories manufactured or supplied by others are warranted only to the extent of the regular warranty of the manufacturer or supplier of such materials and only insofar as Lab-Line is able to transfer the benefits of warranty coverage, if any, to the User. Any adequately warranted defective part or accessory manufactured or supplied by others may be exchanged through an authorized Lab-Line dealer for a replacement part, and no charge in respect thereof shall be assessed if the defective part is shipped prepaid and received at Lab-Line's factory within thirty (30) days from the date any replacement part is obtained by User.

This Warranty supersedes and is given in lieu of all implied warranties, and is void if User does not provide unit with continuous ample electrical power at constant voltage, consistent with the specifications of the product.

With respect to all Explosion Proof and Flammable Material Storage (FMS) Refrigerators and Freezers, storage by User of any materials in the product which may cause a deterioration of any components of the product shall be deemed to constitute abnormal and improper usage for purposes of this warranty.

TO OBTAIN THE BENEFITS CONFERRED BY THIS WARRANTY, USER MUST RETURN THE WARRANTY CARD TO LAB-LINE WITHIN SEVEN (7) BUSINESS DAYS AFTER RECEIPT OF THE PRODUCT.