Fisher Scientific

Isotemp® Premium Ovens 700 Series

Operation Manual and Parts List

Gravity Ovens
OV700G (Small)
13-247-725G & -726G

OV701G (Medium)
13-247-737G & -738G

OV702G (Large)
13-247-750G & -751G

Forced Air Ovens
OV700F (Small)
13-247-725F & -726F

OV701F (Medium)
13-247-737F & -738F

OV702F (Large)
13-247-750F & -751F

LT2042X1 • 3/30/09

*Serial Number*_____

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Introduction

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.

Fisher Isotemp 700 Series premium ovens are available in three sizes: small (OV700F and OV700G), medium (OV701F and OV701G) and large (OV702F and OV702G). All ovens provide PID Microprocessor control at operating temperatures ranging from 50°C (122°F) to 275°C (527°F).

The forced air ovens provide improved temperature uniformity and control, as well as faster drying. In these ovens, fresh air enters through an air intake on the bottom of the oven, then is heated in a plenum below the chamber. A blower circulates the heated air into the wall plenums and the oven chamber itself in uniform flow patterns. Exhaust air is vented through a port at the top of the oven.

Gravity flow ovens inlet air through a port located under the oven floor. Heat generated convection then gently moves the air in a vertical circulation pattern. Exhaust air is vented through a port at the oven top.

Temperature readouts and control parameters are shown on red LEDs. Three additional LEDs indicate when heater power is being applied, an error condition is encountered, or the temperature is being set.

The OV700F and OV700G ovens accommodate a maximum of five shelves. The OV701F and OV701G ovens hold eight shelves, while the OV702F and OV702G ovens each hold eleven.

Isotemp ovens incorporate a variety of safety features. A safety backup is built into the controller software: if the primary heater control fails, the backup will maintain control at 5°C above the set point. An alarm LED then indicates that the backup controller is operating the oven. A circuit breaker protects the oven from power surges. If primary and backup heater controls fail, an independent Over Temperature Device will disengage heater operation. The silicon rubber gasket supplied with the oven is good for continuous use up to 250°C and intermittent use to 275°C. This gasket provides a better seal than the high temperature gasket and is supplied with is supplied with the unit. An optional high temperature braided gasket is available for customers using the oven frequently above 250°C. The part numbers of the supplied and optional gasket are listed below:

Oven	Silicon Rubber Gasket Part # (Supplied with Oven)	Braided Gasket Part # (High Temp Gasket Optional)
OV700F, OV700G	SPN 101908	SPN 95782
OV701F, OV701G	SPN 101909	SPN 95783
OV702F, OV702G	SPN 101910	SPN 95784

Specifications

Performance Characteristics

Operating Range	50 to 275°	
Average Uniformity	@ 200°*	
Forced Air Ovens	+/-3°C	
Gravity Ovens	+/-4°C	
Control Resolution	1°C	
Control Sensitivity	+/-0.5°C	
Recovery Time @ 200°C**		
OV700F	1.0 minutes	
OV700G	2.0 minutes	
OV701F	2.0 minutes	
OV701G	3.0 minutes	
OV702F	2.5 minutes	
OV702G	4.0 minutes	
Rise Time to 275°C		
OV700F	70 minutes	
OV700G	40 minutes	
OV701F	80 minutes	
OV701G	80 minutes	
OV702F	80 minutes	
OV702G	100 minutes	
Air Exchanges per Hour*		
OV700F	43	
OV700G	24	
OV701F	29	
OV701G	16	
OV702F	22	
OV702G	12	
BTU/hr Output	@100°C	@200°C
OV700F	1125	2750
OV700G	470	1325
OV701F	1325	2925
OV701G	1040	2025
OV702F	1325	3095
OV702G	1150	2040

**as per ASTM E145*
***door open one minute*

Electrical Requirements

OV700F ovens	
13-247-725F	120 V, 11.5A, 1380W, 60 Hz
13-247-726F	240 V, 5.8A, 1392W, 50/60 Hz
OV700G ovens	
13-247-725G	120 V, 11A, 1320W, 60Hz
13-247-726G	240 V, 5.5A, 1320W, 50/60Hz
OV701F ovens	
13-247-737F	120 V, 15.5A, 1860W, 60 Hz
13-247-738F	240 V, 7.8A, 1870W, 50/60 Hz
OV701G ovens	
13-247-737G	120 V, 15A, 1800W, 60Hz
13-247-738G	240 V, 7.5A, 1800W, 50/60Hz
OV702F ovens	
13-247-750F	120 V, 15.5A, 1860W, 60 Hz
13-247-751F	240 V, 7.8A, 1872W, 50/60 Hz
OV702G ovens	
13-247-750G	120 V, 15A, 1800W, 60Hz
13-247-751G	240 V, 7.5A, 1800W, 50/60Hz

Chamber Volumes

OV700F & OV700G ovens	2.5 cu ft
OV701F & OV701G ovens	3.8 cu ft
OV702F & OV702G ovens	5.0 cu ft

Chamber Dimensions (W x D x H)

OV700F & OV700G ovens	18 x 18 x 13.5 in
OV701F & OV701G ovens	18 x 18 x 20 in
OV702F & OV702G ovens	18 x 18 x 26.5 in

Environmental Conditions

Operating:	17°C to 27°C; 20% to 80% relative humidity, non-condensing. Installation category II (overvoltage) in accordance with IEC 664. Pollution degree 2 in accordance wth IEC 664. Altitude Limit: 2,000 meters.
Storage:	-25°C to 65°C 10% to 85% relative humidity

Installation

Warning
Do not use top of oven as a shelf.

Do not cover oven vent hole.

Keep combustible materials away from oven vent hole.

Hot Surface
Oven vent and exiting air are hot. Keep hands away.

Note
If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Selecting a Location

The oven requires an area approximately 2 ft. x 2 ft. The bench selected must be capable of supporting at least 120 lbs. for the OV700F and OV700G ovens, 130 lbs. for the OV701F and OV701G ovens, or 135 lbs. for the OV702F and OV702G ovens. Proper electrical power must be available. Locate the oven such that no extension cord is required. The oven shall have a 2” air clearance on all sides (6” if combustible materials) and a minimum of 24” air clearance on top to allow heat dissipation and prevent temperature build ups.

Unpacking

Fisher Isotemp® ovens are shipped in a single carton. After unpacking, locate each item shown in the list below. Report any missing items, by name and part number, to your Fisher branch. In the event of shipping damage, retain the shipping material and file a claim with the final carrier.

Item
Oven Assembly
- OV700F & OV700G (small)
  - 120 V, 50/60 Hz
  - 240 V, 50/60 Hz
- OV701F & OV701G (medium)
  - 120 V, 50/60 Hz
  - 240 V, 50/60 Hz
- OV702F & OV702G (large)
  - 120 V, 50/60 Hz
  - 240 V, 50/60 Hz

Shelves
- OV700F, OV700G, OV701F, OV701G (one provided)
- OV702F, OV702G (two provided)

Shelf Supports
- OV700F, OV700G, OV701F, OV701G (two provided)
- OV702F, OV702G (four provided)

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Caution
See data plate on oven for voltage, current and line frequency specifications. Check that the power requirements of the oven will not overload the circuit to which it will be connected.

Preparing the Oven

To prepare the oven for operation, perform the following procedures:

1. Install the shelf.

2. Make certain all packing material has been removed from oven chamber.

3. Connect the line cord to an appropriate electrical outlet.

4. The oven is now ready for operation. No preliminary adjustments or calibrations are required. Depending on the customer application and customer laboratory procedures an initial calibration may be done at this point. (See **Display Offsets**)

Power Switch

The 700 Series ovens feature a front panel mounted power switch which is a Switch combination power switch and circuit breaker, eliminating the need for separate fusing. The circuit breaker will interrupt power in the event of an oven heater malfunction. Press the I (upper) half of the rocker-type power switch to the in position to turn the oven on. Press the 0 (lower) half to the in position to turn off oven power. To reset the breaker, first place the switch to the off position, then return it to the on position.

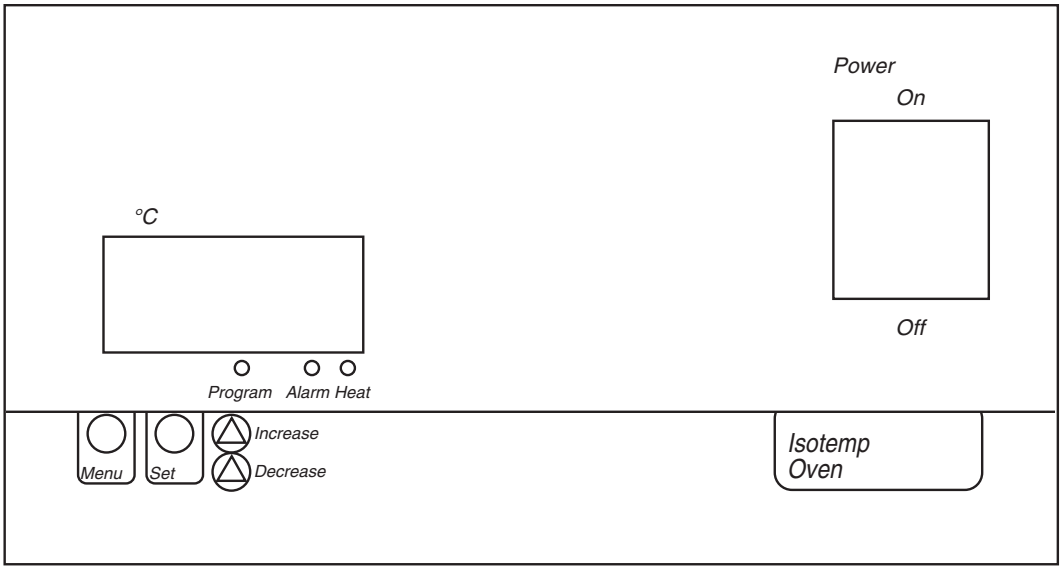
Controls

The following sections briefly describe the locations and functions of various display fields and keypad controls. More detailed descriptions are provided, when required, in the operating sections of the manual.

Display

The 700 Series controller features a bright, one-half inch LED numeric display which reads out the oven temperature. Three smaller LEDs indicate, respectively, an alarm condition, that power is being applied to the oven heaters or that the control temperature is being set. Each display field is discussed separately below.

Figure 1: Display Fields



Temperature Display — In the normal operating mode, shows the current oven temperature. During programming, indicates the oven set temperature target.

Heat Indicator — Lights when power is being supplied to the oven heater.

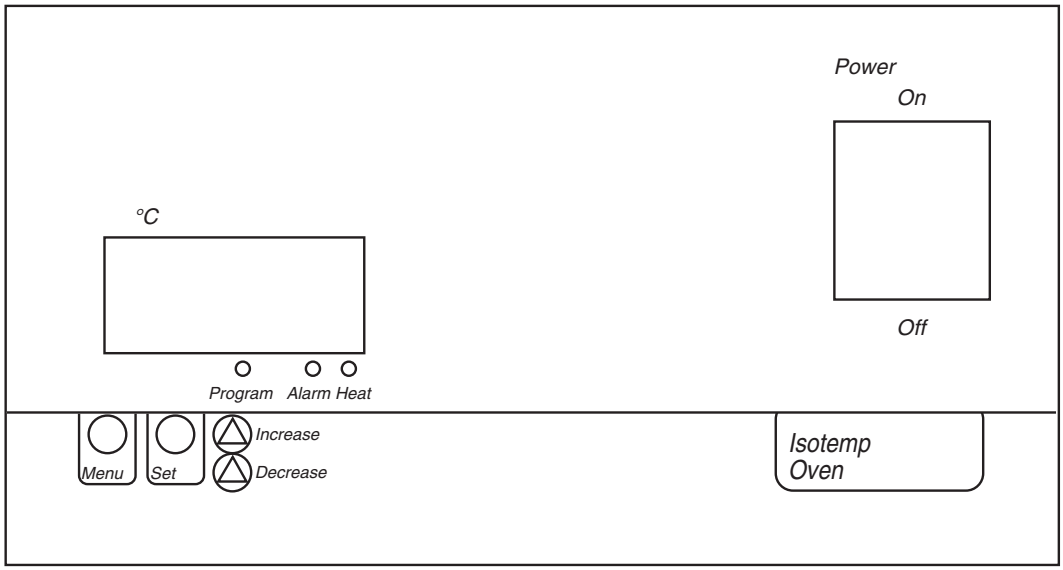
Alarm Indicator — Lights if the actual oven temperature exceeds the alarm temperature. The alarm temperature is factory-adjusted to be 5°C above the set temperature.

Program Indicator — Lights when the control temperature is being set.

Keypad

The 700 Series incorporates a four-key, tactile keypad. The function of each key is discussed individually below.

Figure 2: The Keypad



Pressing **MENU** while holding down the **SET** key decreases the oven set temperature, as indicated on the temperature display.

Pressing **INCREASE** while holding down the **SET** key increases the oven set temperature, as indicated on the temperature display.

Pressing **DECREASE** while holding down the **SET** key decreases the oven set temperature, as indicated on the temperature display.

Pressing **SET** causes the display to show the set temperature. Used with **INCREASE** and **DECREASE** to change the set temperature. With **MENU** to access entry of a temperature display offset.

Operation

The 700 Series ovens maintain a set temperature until that set temperature is changed. To set a temperature, perform the following:

1. Place the power switch in the ON position. All 8s will flash as a test of the display.
2. Press and hold the SET.
3. Observe the set temperature in the display window.
4. To decrease the set temperature, press DECREASE while holding SET.
5. To increase the set temperature, press INCREASE while holding SET.
6. When the desired set temperature is shown, release the INCREASE or DECREASE keys. Finally, release the SET key. The oven automatically begins to control at the set temperature.

Note
To rapidly increase or decrease the set temperature press and hold the appropriate arrow key. To slowly increment or decrement the set temperature one degree at a time, press and immediately release the arrow key.

Safety Precautions

- This unit is not explosion proof. Do not use in the presence of flammable or combustible materials; Fire or explosion may result. Unit contains components that may ignite such materials. Before operating ovens, always observe the following safety precautions:
- Fumes and spillage from acidic solutions cause corrosion of the stainless steel chamber. Care should be taken to maintain a neutral PH at all times.
- The heater for the unit is in the bottom of the unit. Surface temperatures at the bottom cover of the unit may be higher than set point temperature. For example: A plastic container on the heater cover may become hot enough to melt/burn the container at settings below the melting point of plastic. Do not place items on the heater cover.
- Wear insulated gloves.
- Use tongs.
- Never stand in front of an open oven.
- Use safety goggles.

Limit Alarms

The 700 Series controllers feature a deviation alarm which alerts the operator and and interrupts heater power whenever the actual oven temperature differs from the set temperature by more than 5°C. The set limit is built in to the controller and cannot be changed.

- If the actual temperature exceeds the alarm limit, the alarm indicator LED will light and the display will indicate EEE.

- The reference point for the alarm is the set temperature. Any change in the set temperature will cause a corresponding shift in the alarm temperature.

  Example:If the set temperature is 150°C, the alarm will trip at 155°C. If the set temperature is changed to 200°C, the alarm will follow the set temperature and trip at 205°C.

- Changing the set temperature to a value more than 5°C below the present oven temperature will trip the alarm. Power is removed from the heaters when an alarm condition occurs.

  Example: First experiment samples were being soaked at 160°C. Experiment completed and oven reset to 140°C. The oven immediately goes in to alarm once the set point is reset to 140 from 160. The oven will stay in alarm until the oven temperature cools down to 144.9° (140+5-.1).

Display Offsets

The 700 Series controllers permit the operator to select a display offset Offsets temperature. With a display offset entered, the temperature displayed will be the actual oven temperature (measured at the control thermocouple) plus or minus the display offset selected. Functionally, the offset feature permits the operator to measure and calibrate such that the display will indicate the temperature at a specific point or zone within the oven. To enter a display offset, carry out the following steps:

1. Press the MENU, the display will indicate CAL

2. To view the present offset value, press and hold the SET key.

3. To change the display offset, press and hold the SET key. Press INCREASE or DECREASE until the display indicates the desired offset.

4. Release the SET key.

5. Press MENU once to return to normal temperature control.

Examples:

1. The displayed temperature is the result of algebraically adding the actual temperature to the offset value. Thus, if an offset of -3 degrees is being used, a measured temperature of 50 degrees will be displayed as 47 degrees.

2. A test is to be performed at 150°C in the center of the oven and temperature is critical. Place a thermometer or thermocouple (calibrated) at the critical point and set the oven to 150°C and allow the oven to stabilize. The calibrated thermometer reads 151°C. A display offset of 1 is entered. The immediate display reads 151. The oven cools to 150°C the display reads 150 and the calibrated thermometer reads 150.

Service

Caution
Service procedures requiring access to the electronics compartment involve exposure to line voltage and should be done only by qualified service personnel. Disconnect oven from power source before attempting repairs.

Caution
Only factory authorized components should be used for all repairs. Failure to use factory authorized replacement components will void warranty and could result in unit malfunction and or hazardous operating conditions.

Caution
Allow oven to cool to ambient temperature before attempting repair.

The following sections describe procedures for servicing the 700 Series ovens. The first procedure, Replacing the Door Gasket, may be performed by most users. However, all other service procedures involve potential exposure to line voltage. These procedures should be undertaken only by qualified service personnel. The second section, Accessing the Electronics Compartment, describes procedures required for subsequent service sections and is referenced by these later sections when required.

In the event service is required beyond that available by the customer, or for warranty service, contact Fisher Service Dept. at 1-800-395-5442.

For technical assistance call 1-800-926-0505.

Replacing the Door Gasket

The Isotemp 700 Series ovens incorporate a durable, silicone door gasket to minimize heat loss. Should the gasket become defective or be damaged, it may be replaced by following the procedures below.

1. Set the power switch to off position and open chamber door.

2. Open door fully. Carefully remove *and retain* hardware from door hinges (case side). Lay door on a flat surface with the handle over the edge.

3. Note the joint position of the old gasket. This is where the new gasket installation will start.

NOTE: Study the method of door gasket attachment before starting disassembly. This understanding will avoid confusion later in this process.

4. Bend back the old door gasket and remove the Phillips head screws attaching the gasket.

5. Remove the old door gasket.

6. Loosely install two screws through the stainless steel liner and into the door wrap to align these pieces.

7. Begin installing the replacement gasket at the joint position of the old gasket. Stretch the

replacement gasket around the corners of the liner to avoid bunching up of the gasket material.

8. Install a Phillips head screw as the gasket rounds each corner to keep the gasket properly stretched. (The screw goes through the liner, pierces the gasket and threads into the door wrap.)

9. After all four corners are secured, install the remainder of the Phillips head screws. Make sure there is no gap at the gasket joint; stretch the gasket slightly if necessary.

10. Reinstall the door onto the case with hinges.

Replacing the Door Handle

To replace a defective door handle, perform the steps below: NOTE: See caution above.

1. Remove the two mounting screws holding latch cover in place.

2. Remove the two mounting screws holding defective handle in place.

3. Mount the replacement handle using two screws.

4. Adjust bottom nut (13/16) from end of shaft.

5. Secure latch cover in place with two screws.

Caution
Allow oven to cool to ambient temperature before attempting repair.

Adjusting the Door Cam

Due to handling in shipment or to heat distortion with use, the door cam may require adjustment. To facilitate proper closing and sealing of door, steps 1 through 6 may have to be performed concurrently.

To adjust the door cam, perform the following:

1. Open door and remove screws holding latch cover in place.

2. Locate nuts securing tongue on cam shaft.

3. Loosen but do not remove outside nut.

4. Adjust inside nut, one full turn clockwise draws door 1/16” closer to cabinet when door is closed.

5. Secure cam tongue in place by tightening outside nut.

6. Secure latch cover in place with two screws.

Caution
Service procedures requiring access to the electronics compartment involve exposure to line voltage and should be done only by qualified service personnel. Disconnect oven from power source before attempting repairs.

Accessing the Electronics Compartment

To access the electronics compartment, proceed as follows: (See sketch on next page.)

1. Disconnect power cord from the electrical outlet.

2. Open the chamber door. Carefully remove *and retain* hardware from door hinges (case side). Set door aside.

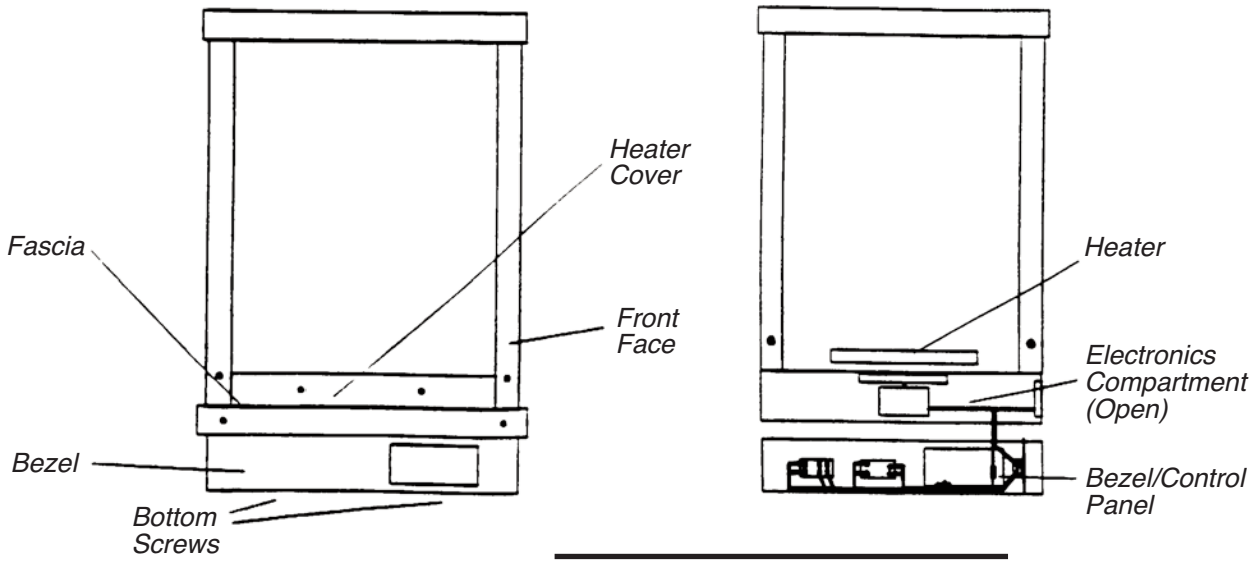
3. Slide the oven forward until the front of the bezel (control panel) is at least three inches from the edge of the bench top (or the oven feet are at the edge of the bench).

4. Prop up the oven front by placing a shim under each front foot. Use shims between one and one-half and two inches in thickness.

5. Remove the screws securing bezel from bottom of oven.

6. Slide the oven back on the table plus a few inches (to set the bezel on the bench) and rotate the bottom of the bezel out from the oven. The top clips will come loose but the wiring will still be connected.

7. Carefully set the bezel on the bench.



Caution
Allow oven to cool to ambient temperature before attempting repair.

Caution
Service procedures requiring access to the electronics compartment involve exposure to line voltage and should be done only by qualified service personnel. Disconnect oven from power source before attempting repairs.

Replacing the Heater

To replace a defective heater, proceed as follows:

1. Disconnect power cord from the electrical outlet.

2. Remove the two screws that secure the heater cover. Remove the cover by lifting and sliding it forward. It may be necessary to use a flat-blade screwdriver to assist in lifting the cover upward. Set heater cover aside.

3. Remove the two nuts and shake proof washers securing the heater leads, then pull the lead terminals off the heater studs.

4. Remove the two screws securing heater to cabinet. Slide heater forward to disengage back heater clips, lift back of heater up, then slide heater back and lift out.

5. Install replacement heater and reassemble oven by generally reversing the steps above.

Replacing the Cooling Fan

To replace a defective cooling fan, proceed as follows:

1. Complete the procedures discussed in **Accessing the Electronics Compartment**.
2. Remove the two fan power wires from push-on terminals located on fan housing.
3. Remove the three mounting screws holding the fan in place.
4. Install replacement fan and reassemble oven by generally reversing the steps above.

Note
When installing the replacement fan, make certain air flow arrow molded into fan housing points ***into*** the oven chassis.

Replacing the Circulating Fan Motor

To replace a defective circulating fan motor, proceed as follows:

1. Complete the procedures discussed in **Accessing the Electronics Compartment** and **Replacing the Heater** steps 1 & 2 (remove the heater cover). Note and observe all Caution statements.
2. Using an Allen wrench, loosen set-screw holding the fan blade onto the motor shaft. Observe the shaft has a flat side to prevent the set-screw from turning on the shaft.
3. Locate the two electrical leads from the fan motor. Remove the leads from the push-on terminal strip located in the front of the oven bezel.
4. Lay the oven on its back with the oven bottom facing forward.
5. Detach the controller housing (oven bottom) by removing the eight screws which fasten it to the cabinet. Two screws are located on each side of the oven and four on the bottom of the oven.
6. Locate the two access holes for the motor

Caution
Sheet metal in this area is sharp. Work carefully.

mounting nuts located in the oven floor, in front of and in back of the motor shaft.

7. Push an 11/32-in nut driver through the front access hole, gently pushing aside the oven insulation until the nut driver reaches the front motor mounting nut.

8. Remove front nut and washer, then repeat process using back access hole to remove back motor mounting nut and washer.

9. Remove the fan motor by sliding it out.

10. Install replacement fan motor by generally reversing the steps above.

Caution
Allow oven to cool to ambient temperature before attempting repair.

Caution
Service procedures requiring access to the electronics compartment involve exposure to line voltage and should be done only by qualified service personnel. Disconnect oven from power source before attempting repairs.

Replacing the Controller

To replace a defective controller, proceed as follows:

1. Complete the procedures discussed in **Accessing the Electronics Compartment.**

2. Locate terminal blocks on controller, remove all wires connected to controller. Note color and location of wires.

3. Remove four screws that hold controller to bezel, then remove old controller.

4. Install new replacement controller and reattach wires previously removed.

5. Check wiring connections against schematic, making sure that the line power wire is attached to the proper terminal, i.e., 120V or 240V.

6. Check switch DS1 setting: If forced air, set switch A to ON, otherwise; set to OFF for gravity. Switch B should always be OFF.

Caution
Allow oven to cool to ambient temperature before attempting repair.

Caution
Service procedures requiring access to the electronics compartment involve exposure to line voltage and should be done only by qualified service personnel. Disconnect oven from power source before attempting repairs.

Replacing the Solid State Relay

To replace a defective solid state relay, proceed as follows:

1. Complete the procedures discussed in Accessing the Electronics Compartment.
2. Consult the schematic and locate the solid state relay (mounted on bezel).
3. Remove four lead wires from their screw-down terminals.
4. Remove two Phillips screws which mount the solid state relay to the bezel.
5. Lift out the solid state relay. Put new solid state relay in place, making certain that the thin, conductive pad remains between the solid state relay and the bezel.
6. Generally reverse the steps above to re-assemble oven.

Replacing the Safety Relay

To replace a defective safety relay, proceed as follows:

1. Complete the procedures discussed in **Accessing the Electronics Compartment.**
2. Consult the schematic and locate the safety relay (mounted on bezel).
3. Remove four lead wires from their push-on terminals.
4. Remove two Phillips screws which mount the safety relay to the bezel.
5. Lift out the safety relay.
6. Generally reverse the steps above to install the replacement safety relay and re-assemble oven.

Caution
Allow oven to cool to ambient temperature before attempting repair.

Caution
Service procedures requiring access to the electronics compartment involve exposure to line voltage and should be done only by qualified service personnel. Disconnect oven from power source before attempting repairs.

Caution
Verify the yellow thermocouple conductor is under the (+) tab and the red thermocouple conductor is under the (-) tab.

Replacing the Control Thermocouple

To replace a defective control thermocouple, proceed as follows:

1. Complete the procedures discussed in **Accessing the Electronics Compartment,** observing all Caution statements.

2. Remove thermocouple wires from the controller 6 terminal connector by loosening the two screws.

2. On roof of oven, locate the clip, which holds thermocouple in place. Remove thermocouple from clip.

3. Pull thermocouple forward into oven chamber, exposing roughly a 6-inch section of the thermocouple wire.

4. Cut the thermocouple wire to remove the thermocouple sheath.

5. Securely loop together the cut end of the defective thermocouple with the two leads of the replacement thermocouple. Wrap tape over the length of the loops to secure them.

6. Gently pull the defective thermocouple out through the electronics compartment while guiding (“fishing”) the replacement thermocouple into place.

7. Consult schematic at end of this manual. Then, generally reverse steps 1 through 3 to complete installation of new thermocouple and reassemble oven.

Troubleshooting

This table is intended to assist in resolving oven problems by relating symptoms to their likely causes. The service discussed below is beyond the scope of most users and should be performed by qualified and trained personnel. In the event service is required beyond that available by the customer, contact Fisher Service Dept. at 1-800-395-5442. For technical assistance call 1-800-926-0505.

Symptom	Probable Cause	Action
No power	Unit not plugged in or turned on	Plug in or turn on
	Defective circuit breaker	Replace circuit breaker
Oven temperature erratically high	Defective control thermocouple	Replace control thermocouple
Failure to heat	Set temperature less than actual temperature	Refer to Operation
	Defective control thermocouple	Replace control thermocouple
	Poor heater connections	Tighten connections at terminal strip
	Defective heater element	Check heater resistance on schematic at back of manual. Replace heater unless approximately the same as schematic.
	Defective controller	Replace controller
	Defective solid state relay	Refer to schematic and replace relay or safety relayOver
	Temperature Device Disengage or Defective	Reset or replacement of the Over Temperature Device is to be performed by factory authorized personnel only. Disconnect power and contact Thermo Fisher.
Alarm LED stays on and control is higher than set temperature	Set temperature has been changed to a value less than the actual temperature minus the high alarm limit	Wait for actual temperature to cool to the set temperature
	Defective controller	Replace controller
	Defective solid state relay or safety relay	Refer to schematic and replace relays
Set display shows “EEE”	Set temperature has been changed to a value less than the actual temperature minus the high alarm limit	Wait for actual temperature to cool to the set temperature
	Defective control thermocouple	Replace control thermocouple
	Faulty or broken connections	Check thermocouple connections at rear of temperature controller
Temperature off from Independent thermometer	Calibration off set needs adjusted.	Begin by setting offset to 0. See **Display Offsets.**

Replacement Parts

Note
Only factory authorized components should be used for repair.

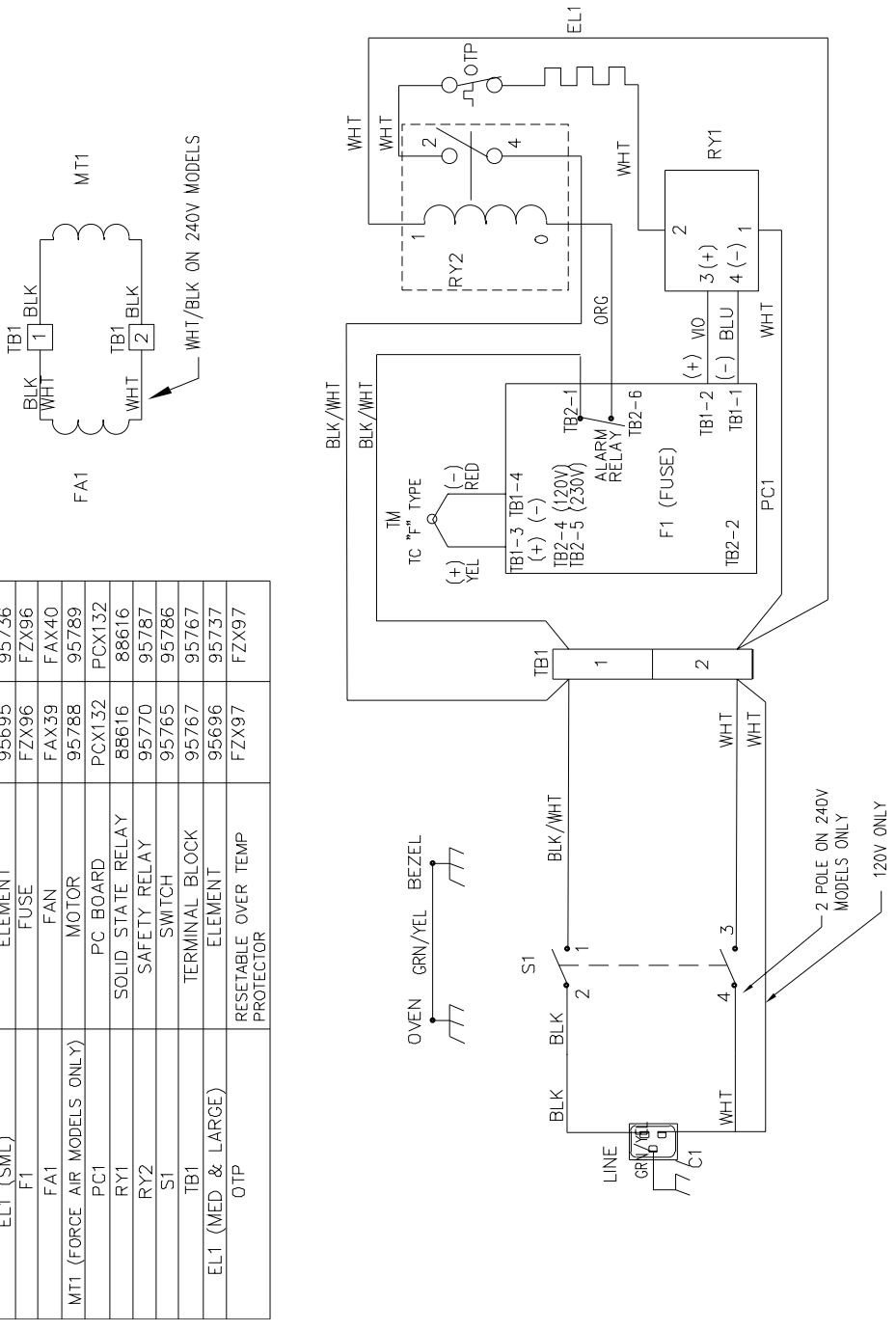
Replacements for oven parts may be ordered, by part number, from Fisher Customer Service at 1-800-766-7000.

Item	Part Number (ref)
Line Cord and Plug	
OV700, OV701, OV702 (120 V)	CRX121
OV700, OV701, OV702 (240 V Int'l)	CRX123
Temperature Controller (120 V / 240 V)	PCX132
Thermocouple Assembly	SPN 95603
Cooling Fan	
120 V	FAX39
240 V	FAX40
Circulating Fan Motor	
120 V	SPN 95788
240 V	SPN 95789
Door Handle	SPN 104976
Shelf Kit (Fits All Ovens)	13-247S
Heater Assembly	
OV700F, OV700G (120 V)	SPN 95695 (HTR)
OV700F, OV700G (240 V)	SPN 95736
OV701F, OV701G, OV702F, OV702G (120 V)	SPN 95696
OV701F, OV701G, OV702F, OV702G (240 V)	SPN 95737
Door Gasket	
OV700	SPN 101908
OV701	SPN 101909
OV702	SPN 101910
Door Gasket Gray Silicon Optional High Temp	
OV700	SPN 95782
OV701	SPN 95783
OV702	SPN 95784
Solid State Relay	SPN 83917 (SSR)
Safety Relay	
OV700, OV701, OV702 (120 V)	SPN 95770 (K1)
OV700, OV701, OV702 (240 V)	SPN 95787
Circuit Breaker Single Pole (120 V)	SPN 95765 (S1)
Double Pole (240 V)	SPN 95786
Door Assembly	
OV700 (Small)	DR2034X6
OV701 (Medium)	DR2033X6
OV702 (Large)	DR2032X6

Schematic

COMPONENT CHART
FOR OV700F & OV700G MODELS

REFERENCE	DESCRIPTION	120V	240V
C1	POWER ENTRY MODULE	CEX421	CEX421
EL1 (SML)	ELEMENT	95695	95736
F1	FUSE	FZX96	FZX96
FA1	FAN	FAX39	FAX40
MT1 (FORCE AIR MODELS ONLY)	MOTOR	95788	95789
PC1	PC BOARD	PCX132	PCX132
RY1	SOLID STATE RELAY	88616	88616
RY2	SAFETY RELAY	95770	95787
S1	SWITCH	95765	95786
TB1	TERMINAL BLOCK	95767	95767
EL1 (MED & LARGE)	ELEMENT	95696	95737
OTP	RESETABLE OVER TEMP PROTECTOR	FZX97	FZX97



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.

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