



MICROWAVE OVEN

MODEL: E8528X-Y

SERVICING MANUAL

PRECAUTIONS TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

- A. Do not attempt to operate this oven with the door open since open-door operation can result in harmful exposure to microwave energy. It is important not to defeat or tamper with the safety interlocks.
- B. Do not place any object between oven front face and the door or allow soil or cleaner residue to accumulate on sealing surfaces.
- C. Do not operate the oven if it is damaged. It is particularly important that the oven door close properly and that there is no damage to the (1) Door (bent), (2) hinges and latches (broken or loosened), (3) door seals and sealing surfaces.
- D. The oven should not be adjusted or repaired by anyone except properly qualified service personnel.

SAVE THESE INSTRUCTIONS

IMPORTANT SAFETY INSTRUCTIONS

When using electrical appliances, basic safety precautions should be followed, including the following:

WARNING—To reduce the risk of burns, electrical shock, fire, injury to persons or exposure to excessive microwave energy:

1. READ ALL THE INSTRUCTIONS BEFORE USING THE APPLIANCE.
2. Read and follow the specific "Precautions to avoid possible exposure to excessive microwave energy" found above.
3. This appliance must be grounded and properly polarized. Connect only to a properly grounded and polarized outlet. See "Grounding Instructions" on page 3.
4. Install or locate this appliance only in accordance with the installation instructions described in this manual.
5. Some products such as whole eggs and sealed containers, such as closed glass jars, may explode and should not be heated in this oven.
6. Use this appliance only for its intended use as described in the manual. Do not use corrosive chemicals or vapors in this appliance. This type of oven is specifically designed to heat, cook, dry, or defrost food. It is not designed for industrial, laboratory, or commercial use. It is intended for home use only. Do not use for drying clothes, linens, newspaper, or similar non-food type items.
7. Make sure that all persons using this appliance, especially children, are closely supervised and properly instructed on how to use this appliance.
8. Do not operate this appliance if it has a damaged cord or plug, if it is not working properly, or if it has been damaged or dropped.
9. This appliance should be serviced only by qualified service personnel. Contact the nearest authorized service facility for examination, repair or replacement. Do not attempt to service or repair this appliance.
10. Do not cover or block any openings on the appliance. Do not store items on top of microwave oven if there are louvers on top of oven.
11. Do not store this appliance outdoors. Do not use this product near water—for example, near a kitchen sink, in a wet basement, or near a swimming pool, and the like.
12. Do not immerse cord or plug in water.
13. Keep cord away from heated surfaces.
14. Do not let cord hang over edge of table or counter.
15. When cleaning surfaces of door and oven that come together on closing the door, use only mild, nonabrasive soaps or detergents applied with a sponge or soft cloth.
16. To reduce the risk of fire in the oven cavity:
 - a. Do not overcook food, especially starchy items such as potatoes and fatty items such as bacon. Carefully attend appliance if paper, plastic, or other combustible materials are placed inside the oven to facilitate cooking.
 - b. Remove wire twist-ties from paper or plastic bag before placing bag in oven.
 - c. If materials inside the oven should ignite, keep oven door closed, turn oven off, and disconnect the power cord, or shut off power at the fuse or circuit breaker panel.
 - d. Do not use the cavity for storage purposes. Do not leave paper products, cooking utensils, or food in the cavity when not in use.
 - e. Do not put metal inside the oven, except as specifically described in the manual or cookbook if supplied with this oven.

TABLE OF CONTENTS

clause	contents	page
00	Introduction and Safety precautions	
1	Introduction	1
2	Safety Precautions	2
3	Exploded Views	3
4	Schematic Diagrams	4
5	Parts List	5
1.0	Heating Principle of Microwave	6
2.0	Troubleshooting Procedures	7
3.0	Common breakdown and means of repairing	12
	Critical Parts Servicing	13
1	important things to do prior to critical parts servicing	13
2	interlock assembly replacement and adjustment	13
3	door and hinge replacement and adjustment	13
4	magnetron replace ment	13
5.0	Safety checks and tests after servicing	14
1	constructional checks	14
2	insulation resistance test	14
3	microwave leakage test	15

INTRODUCTION

This Microwave Oven Service Manual is printed in a loose leaf format. Each part is divided into sections relating to a general group of components and each section is subdivided into various parts describing a particular component or service procedure.

The subdividing of the subject matter plus the loose leaf form will facilitate the updating of the manual as new or revised components and service procedures are introduced.

Each page of this service manual will be identified in the lower right hand corner and as new or revised pages are published it will be easy to keep the manual up to date by following the filing instructions on the cover letter.

This Service Manual is a valuable service tool and care should be taken to keep it up to date by prompt and proper filling of subsequent pages as they are issued.

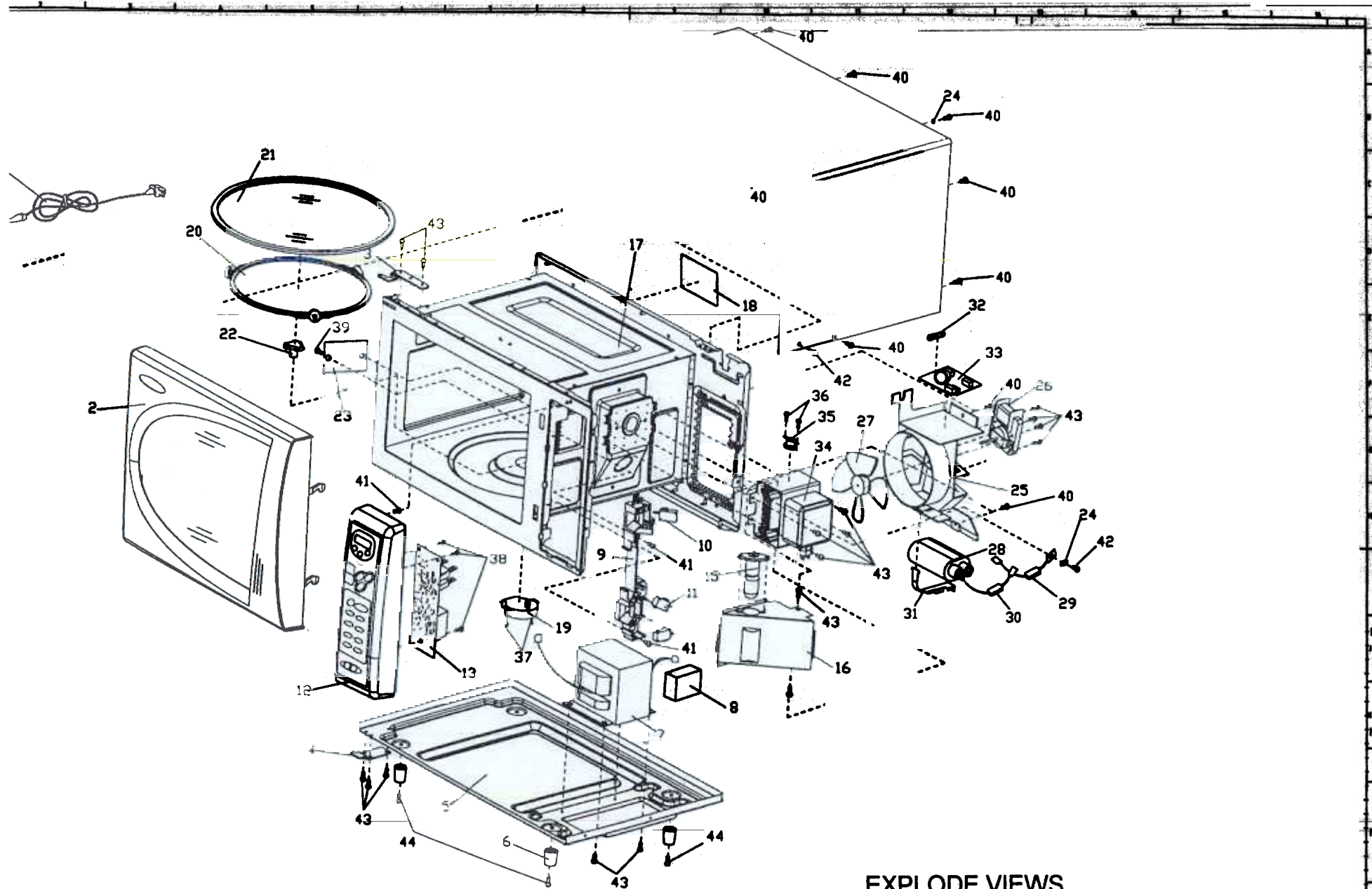
SAFETY PRECAUTIONS

PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY:

- A. Do not operate or allow the oven to be operated with the door open.**
- B. Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary.**
 - (1) Interlock operation**
 - (2) Proper door closing**
 - (3) Seal and sealing surfaces (arcing, wear, and other damage).**
 - (4) Damage to or loosening of hinges and latches.**
 - (5) Evidence of dropping or abuse.**
- C. Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, wave guide or transmission line, and cavity for proper alignment, integrity, and connections.**
- D. Any defective or misadjusted components in the interlock, monitor, door seal and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.**
- E. A microwave leakage check to verify compliance with the Federal performance standard should be performed on each oven prior to release to the owner.**
- F. Operate the oven from a properly grounded AC outlet capable of supplying 120 volts at 15 amperes.**

THIS MANUAL, AS WELL AS THE INFORMATION CONTAINED IN IT, IS TO BE USED ONLY BY AN AUTHORIZED SERVICE TECHNICIAN FAMILIAR WITH AND KNOWLEDGEABLE OF PROPER SAFETY AND SERVICING PROCEDURES AND POSSESSING HIGH QUALITY TEST EQUIPMENT ASSOCIATED WITH MICROWAVE AND ELECTRICAL APPLIANCE REPAIR.

ALL INDIVIDUALS WHO ATTEMPT REPAIRS BY IMPROPER MEANS OR ADJUSTMENT, SUBJECT THEMSELVES AND OTHERS TO THE RISK OF SERIOUS OR FATAL INJURY.



EXPLODE VIEWS
MODEL: E8528X-Y

THE HEATING PRINCIPLE OF MICROWAVE

Microwave is one kind of radio wave whose wavelength is very short, frequency is very high. Therefore, it is called ultrahigh frequency electromagnetic wave. Microwave can heat food mainly result in the mutual affect of the food in the microwave field and the microwave field itself.

under the affect of microwave field, the thermal effect mechanism produced from the mutual affect of the microwave and the food includes two aspects: One is Dielectric loss of polar molecule, the other is conductive loss of ion.

Usually, food is constitute of organism(plant and animal). The organism is formed by all kinds of polar water molecule, polar protein molecule, and all sorts of salt ion. The center of gravity of the positive and negative charge in the molecule is not coincide. In normal condition, the molecule is in irregular order due to its thermal action, thus the food do not appear polarity. (FIG.1 - 1a). Under the action of outer electric field, the positive end of the polar molecule trend to the negative electric field, the negative end of polar molecule trend to the positive electric field, and somewhat arrange in order through the direction of the electric field(FIG.1 - 1c). This phenomenon usually be called "TORQUE POLARITY". When the outer electric field apply for the opposite polarity, the polar molecule then arrange an opposite direction order accordingly(FIG.1 - 1b). If the direction of the outer electric field changed repeatedly, the polar molecule would repeatedly sway accordingly. During the swaying, it is understanding that the polar molecule would produce heat due to somewhat similar friction among them. When

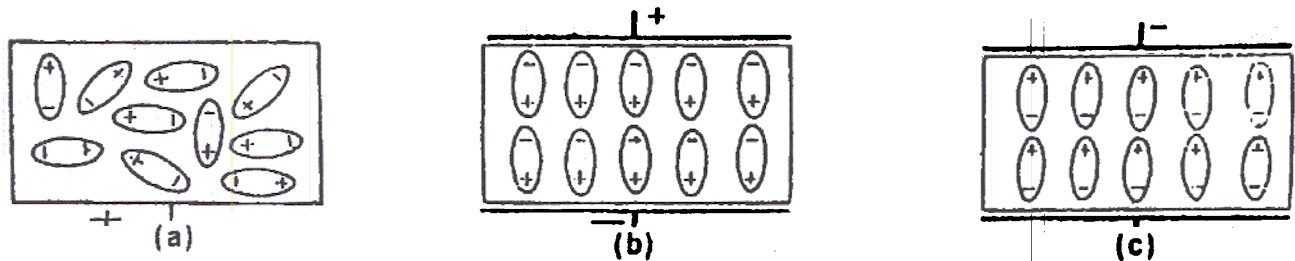


Fig1 - 1

the electric field is applied for ultrahigh frequent microwave field from the outside, its direction would change tens billion times per second, so do the molecule. This kind of molecule swaying producing similar frictional heat from the interference and block of the action strength among the molecule, and changed to microscopical microwave heating. Microwave heating not only concerned the nature of the matter itself, but also closely connected with the electric field strength and frequency. When the frequency is low, the molecule swaying rate and the acute degree of the mutual friction among the molecule is low, and would produce much heat. When the frequency is too high, as the swing of the polar molecule is with rotating inertia, it made the swing do not in line with the changing rhythm of the electric field because of the friction drag, thus, actually lowered the polar molecule swaying speed. The friction dragging degree is concerning about the magnelectric wave frequency, polar molecule shape, and the matter's sticky degree. To different matter's molecule, there are different special frequency zone. Those who absorb microwave energy from these zone are most capable to turn microwave energy to heat energy.

Apart from the above said action, there is another action which is electric ion under the action of microwave field, act fiercely accompanied with the acceleration of electric field. The positive ion transfer to the negative polarity of the field while the negative ion do opposite. Accompanying with the changing electric field, the electric ion changing accordingly. During the transferring, heat produced with the crash among the ion. This kind of action take the main effect to those microwave heating of high salt molecule.

No matter it is the polar molecule swaying or the ion transferring, they both are turning the microwave energy which the heating matter got from the microwave field to heat energy. From the analysis of theory, we can draw such a conclusion that the power which a unit of volume matter absorbed from the microwave field as the following formula:

$$P_a = KE f \epsilon \rho \delta$$

P_a Stands for the power the heated matter absorbed from the microwave field.

K Stands for a constant

E Stand for microwave field strength

f Stands for the microwave frequency.

$\epsilon \rho \delta$ Stands for loss angle tangent of the heated matter