

3.8 MICROWAVE OVEN

PRINCIPLE:

High powered microwaves are generated and are allowed to fall on the food stuff. These waves heat the molecules in the food particles evenly and cook the food.

CONSTRUCTION

It consists of a microwave generator called a magnetron, which is used to take electricity from the power outlet and converts it into high powered micro waves, as in fig

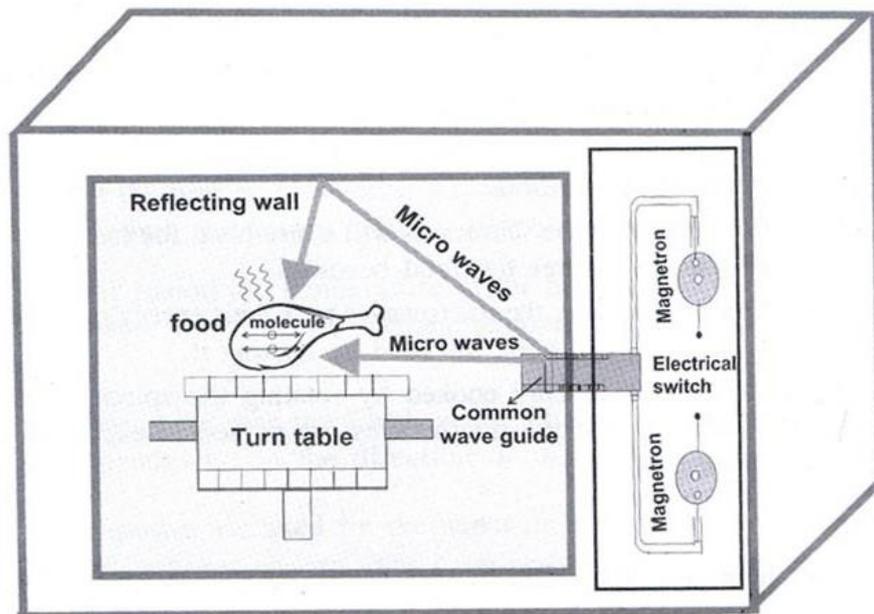


Fig 3.8.1 Microwave oven

The food compartment is made up of reflective metal walls, just like a mirror, to have effective focusing of microwaves onto the food particles. A rotating spinning arrangement, so called turn table is used to rotate the food stuff so as to cook the food evenly.

A channel of common wave guide is used to transfer the microwaves from the magnetron to the food compartment.

The total setup is completely surrounded by strong metal boxes for safety.

A timer display is also provided in the modern microwave ovens to choose various options in cooking variety of food items like Grill, Tandoor etc.

WORKING:

- Food to be cooked is placed on the turn table and the electricity is switched ON.
- The magnetron converts the electrical energy into high powered radio waves,so called microwaves.
- The magnetron blasts these microwaves into the food compartment through a channel called a common wave guide.
- Microwave bounces back and forth between the reflective metal walls and reaches the food.
- This Micro wave penetrates inside the food and makes the molecules in the food to vibrate.
- The vibrations will cause heat then faster the molecules vibrate, the food becomes hotter.
- Thus in this way micro wave pass their energy onto the molecules in the food and cook the food by heating it.
- The food is evenly cooked by rotating the spinning or turn table slowly ,so that the micro waves are passed in each and every part of the food.

ADVANTAGES:

- It is portable,small in size.
- Easy and faster to cook, with high efficiency.
- Micro wave can penetrate more than two centimetres into the food.
- Cost of micro wave oven is less.

DISADVANTAGES

- Microwaves are dangerous and so there should not be any leakage.
- Every time the lock of the door should be checked properly
- We should not use cell phone in microwave oven cooking areas.
- Uneven heating (or) cooking of food is not good for health.