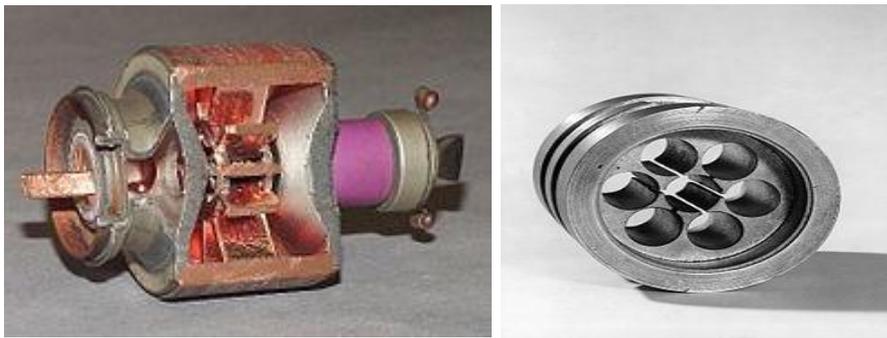


Evolution of Microwave Heating System in Industrial heating and Drying Application

Microwave heating systems are popular for its household applications, where cavity magnetrons are used to produce very high frequency electromagnetic fields, then these electromagnetic fields collides with conductive molecules of substance need to be heated and the collision of waves resulted movement of molecules same movements of molecules were then converted into heat. This process of heat generation had gained huge popularity since it generates massive amount of controlled heat with very lesser input. The amount of heat dissipated is easily controllable with the use of microwaves.



Magnetron

Increasing popularity of Microwave in heating system had touched the industrial segment also, which resulted in vast business areas those were looking after for application of Microwaves for their specialized heating needs.

Advantage offered over traditional means of heating systems:

- ✓ Microwave heating process is clean.
- ✓ Microwave heat penetrates both on the surface as well as internally within the object placed for the Treatment.
- ✓ High speed of heating reduces total time of processing.
- ✓ Microwave heating process is highly controllable.

Contribution of KERONE in Microwave Heating:

Being pioneer in providing heating, cooling and drying solution, KERONE always tried to help its clients to with best quality product with latest technology to fulfill their specialize needs at affordable cost.

In KERONE, at our research and development wing, we have highly experienced team of professionals who made us equipped with the varied rang of Microwave Heater that can be implemented across different verticals.

1. Batch Oven/ Dryers

2. Semi Batch Ovens/Dryers
3. Continuous (conveyorised) Oven/Dryers.

Microwave Batch Oven/Dryers (Industrial):

Microwave Batch Oven is intended to have a suitable door for loading and unloading trays of the material to be pre-heated or dried. Its build with an extensive mixed container of shapes and sizes as per the application. It's consolidated with both, basic operation and high solidness. Microwave cluster stoves are utilized to achieve the uniform warming all through.



Microwave Semi Continuous Oven/Dryers:

This is a hybrid mixture of Batch and Continuous conveyor microwave heaters, where the object is loaded in batches and with the help of conveyor system hot object is unloaded for the further processing. KERONE designs Semi continuous Microwave oven/dryers post studying varied need of customers.

Microwave Continuous Oven/Dryers:

Conveyorised Microwave Oven are useful for the application areas where the complete manufacturing is on continuous flow, and a conveyor object needed to travel continuously on belt from process stages to stages. It's mostly used for the pre-heating in textile industry.



Feature of Microwave Oven/Dryers:

- ✓ High Quality Magnatron manufactured by Panasonic(Japan)/IBF(Germany)/Hitachi (Japan)
- ✓ PID Indicator/controller
- ✓ RF/MW choke/timer provision
- ✓ Stainless steel chamber
- ✓ Required electrical & thermal safety features for microwave generator
- ✓ Variable frequency (Belt speed control)
- ✓ Variable Power output (selectable) up to 100%
- ✓ Temperature Control

Area of Application:

Both Batch and Continuous type of Microwave manufactured by KERONE find it application in diverse industrial segment.

Industrial Vertical	Application
Pharmacy lab/ Production Scale	Assisted fixation, Moisture removing, Tablet drying.
Medical laboratory	heating applications, ideal for immunochemistry, history, low volume pathology, Cytology
Research & University	Antigen Retrieval, Removal of fixed tissues, Microwave tissue processing and cell images, Immunohistochemistry / Immunocytochemistry, Heating applications in various insulating materials
Laboratory/Production scale:	Chemical formulation under certain temperature, Ideal for chemical processing, Drying and moisture eliminating, settling EM material examples utilizing polymer based setting results, vulcanizing, Paper & Ink drying.

Food Industries	Microwave pasteurization and sterilization, Microwave blanching, Microwave cooking, Microwave baking, Thawing and Tempering, Waste dealing in microwave irradiation, Heating or temperature rise can be achieved without changing the important factor "TASTE". Purification of food items or sanitization of food containers. Improvements in the food preservation techniques.
Industrial quality labs	To study and understand the effect of temperature changes in the substance/ materials in order to maximize the performance of the product.
Agriculture industries	Crop drying, Dried timber, nuts and fruits are commonly treated by chemical fumigation to control field and storage pests, controlling insects by pre heating, Microwave heating results in increased germination and strength of the emerging seedlings