

## High Power Industrial Microwave Thawing Equipment LD1703

Microwave thawing quickly heats the frozen product from -42 to -18 degrees celsius to -2 degrees celsius and become a non-drip state that makes use of microwave penetration and selective heating characteristics.



### **The necessity of high power industrial microwave thawing equipment:**

At present, most of the thawing equipment is 2450MHz 1kW, which is synthesized by multi-tube power. The efficiency is low, and the penetration depth of the meat package is shallow. Most of them need to be equipped with steam heating and thawing function before and after thawing. The process is complicated and the operation is inconvenient. However, the domestically produced 915MHz thawing equipment has a power of 20-40kW, the processing capacity of a single unit is limited, which is insufficient to meet the industrial production needs of the food industry.

LD1703 high power industrial microwave thawing equipment uses 915MHz microwave energy generator, which can synthesize power up to 150kW and process 10t per hour. It has high safety. The microwave thawing equipment that meets the demand for high-power production in industrial equipment.



**Features of LD1703 high power industrial microwave thawing equipment:**

1.A high-power industrial microwave thawing apparatus comprises a frame, a microwave cavity that is mounted on the frame, a rotary feed waveguide that is mounted on the microwave cavity and connected to the microwave transmission system, The microwave transmission system is connected to the microwave head, and the microwave head is connected to the microwave energy generator, the microwave energy generator is connected to the control system.

2.A material conveying system is installed on the frame, and the material conveying system passes through the microwave cavity.Microwave feed port suppressor and amicrowave discharge port suppressor are respectively installed at the inlet end and the outlet end of the microwave cavity.

3.LD1703 high-power industrial microwave thawing equipment, microwave output cabinet includes 915MHz magnetron, filament transformer, electromagnet, cooling device and excitation cavity. The magnetron is located in the electromagnet, the electromagnet is mounted on the excitation cavity, and the magnetron is driven by the microwave power source. The microwave is generated by the filament transformer and the electromagnet, the microwave is transmitted in the waveguide through the excitation cavity, wherein the cooling device (which may be water cooling) dissipates heat to the microwave output cabinet, the whole microwave output cabinet has high output efficiency and stable and reliable output, it can be used for industrialized large-scale microwave heating and defrosting microwave

output.

4.The LD1703 uses a BJ-9 flange in series with a circulator, a water load, an E-face 90° circular waveguide, a straight waveguide, a H-face 90° circular waveguide waveguide, a dual directional coupler, and a rotary feed waveguide. The circulator and water load in the transmission system absorb the microwave reflected power and protect the microwave generator while ensuring stable operation of the equipment. The dual directional coupler cooperates with the remaining waveguides to realize real-time monitoring of the reflected power, the signal is transmitted to the control system so that the power of the whole machine is better matched with the defrosted material, the microwave heating and thawing efficiency is more than 2 times.

5.The upper and bottom of the LD1703 microwave cavity are respectively provided with one or two feed ports, which can achieve more than 150KW large microwave function output.It quickly thaws foods such as meat and seafood.

6.LD1703 highpower industrial microwave thawing equipment is a material conveying system, including a frame, a drive motor that is mounted on the frame, a polypropylene gear that is connected to the transmission motor, and a polypropylene chain conveyor belt that is mounted on the polypropylene gear. The bottom of the polypropylene chain conveyor belt is provided with a polypropylene material support member. The polypropylene material conveying structure can prevent the fire in the microwave cavity and is safe and sanitary.

7.The control system of LD1703 high-power industrialized microwave defrosting equipment includes PLC and touch screen connected with PLC. The touch screen is used to operate the host computer and ste instructions such as operation, alarm and stop.This system establishes the defrosting material process package database, executes the corresponding process according to different materials, controls the microwave generator through the ethernet configuration, controls the inverter connected to the motor as the device transmission, collects the material signal detected by the photoelectric switch, and judges the microwave opening according to the transmission speed. Microwave power size, the drive is turned on, the material is automatically thawed, and the unattended mode with no material automatic standby.

8.The initial end of the material conveying system of LD1703 high-power industrial

microwave thawing equipment is equipped with metal detecting device and rejecting device, with independent transmission motor and conveyor belt, detecting and alarming materials containing metal, and adopting hydraulic rod and other culling device. The metal-containing material should be removed from the conveyor belt.

**Accessories name of LD1703 high-power industrial microwave thawing equipment:**

Machine frame 1, microwave cavity 3, rotary feed waveguide 2, microwave transmission system 8 connected, microwave head 6 connected, microwave energy generator 5, control system 4 connected, microwave feed port suppressor (9), magnetron (5-4), filament transformer (5-3), Electromagnet (5-2), cooling device (5-5), excitation chamber (5-1), magnetron (5-4), electromagnet (5-2), filament transformer (5-3), and Electromagnet (5-2)

**LD1703 high-power industrial microwave thawing equipment includes:**

Rack (1), a microwave cavity (3) mounted on the frame (1), a rotating feed waveguide (2) mounted on the microwave cavity, (3), a rotary feed waveguide (2) and a microwave The transmission system (8) is connected, the microwave transmission system (8) is connected to the microwave head (6), the microwave head (6) is connected to the microwave energy generator (5), and the microwave energy generator (5) is connected to the control system (4). A material conveying system (7) is installed on the frame, and a material conveying system (7) passes through the microwave cavity (3), and a microwave inlet port is respectively installed at the inlet end and the outlet end of the microwave cavity (3). Suppressor (9) and microwave outlet suppressor (10).

**Below are more details on the industrial microwave thawing equipment:**

Capacity	6T	8-10T	15-20T	Customized
Total power	30KW	60KW	80KW	Customized
Feed per hour	500KG	800-1000KG	1500-2000KG	Customized
Operational pressure	Atmospheric pressure			
Service life	5-8 years			
Working method	Completely continuous			
Heating method	Electric energy			
Leakage value	$\leq 3\text{mw/m}^3$			
Microwave frequency	2450/915MHz			
Transmission speed	0-5m/min(adjustable)			
Cooling method	Water cooling			

### **Working principle of LD1703 high power industrial microwave thawing equipment:**

When the microwave penetrates the food, the polar molecules such as water molecules in the food oscillate to generate inter-molecular friction. This friction occurs simultaneously in the millions of molecules inside the food, which generates heat in the material. Since the microwave can penetrate into the frozen material in a large amount, the ice crystals are almost simultaneously heated and melted in the frozen block of the pork during the microwave thawing process.

During this period, the temperature difference between the thawed materials is small, and the difference in water pressure between the muscle fiber cells inside and outside is not large, so there is no obvious problem of juice loss caused by water movement.

### **All in all:**

LD1703 high power industrial microwave thawing equipment has reasonable structure design and convenient operation. It adopts 915MHz microwave energy generator. The combined power of the equipment can reach 150kW, and the processing capacity can reach 10t per hour, which can meet the demand of industrial equipment for production output.

The high power rotating waveguide feed port of the device can not only solve the high power and reliable feeding energy of the device, but also facilitate the uniform distribution of the electric field on the surface of the defrosted material.

LD1703 high power industrial microwave thawing equipment has the characteristics of high power control precision, rich functions, stable and reliable.

LD1703 high power industrial microwave thawing equipment adopts PLC intelligent control system, which can realize unattended automatic defrosting function of equipment and adopt corresponding process for thawing treatment for different materials.

LD1703 high power industrial microwave thawing equipment material conveying system inlet and outlet port set opening height of 300mm suppressor to achieve microwave leakage protection during continuous operation of the equipment. Moreover, the belt speed of the material conveying system is infinitely adjustable and different operating speeds can be adjusted according to different processing techniques.

LD1703 high power industrial microwave thawing equipment has a metal detection and rejection mechanism, which can filter out metal-containing materials at the source end and

has high safety.

**If you customize the Leader Microwave Equipment Company's high power industrial microwave thawing machine,LD1703 or Microwave Seafood Thawing Equipment LD1702 , you will enjoy the following services:**

1. One- year warranty service.
2. 24-hour online service system to ensure the convenience of new and old customers before and after the sale.
3. When the user purchases the device, the manufacturer will present the installation and maintenance video.
4. Our technical staff will provide technical support at any time.

Advanced technology and precise manufacturing are our principles and characteristics. Our equipment has passed ISO9001:2008 international quality management system to ensure excellent mechanical performance. Welcome to contact us.