

The Ultimate Guide To Microwave Herb Medicine Drying Equipment in 2024

Detail Introduction :

Working Principle of Microwave Herb Medicine Drying Equipment

What Is Microwave Herb Medicine Drying Equipment?

The Difference between Microwave Herb Drying and Traditional Herb Drying

Advantages of Using Microwave Herb Medicine Drying Equipment

Microwave Herb Drying Machine Operating Instructions

Using Microwave Technology to Improve Herb Medicine Drying Production Efficiency

Choosing The Right Machinery of Microwave Herb Medicine Drying Equipment

Exploring Types of Industrial Microwave Dryers for Herb Medicine Drying

Key Features To Consider In Microwave Herb Medicine Drying Equipment

Selecting The Best Microwave Herb Medicine Drying Equipment

The Expertise of Engineers in Microwave Herb Medicine Drying

Importance of Quality Control in Microwave Herb Medicine Drying Equipment

Exploring the Latest Innovations and Trends in Industrial Microwave Herb Medicine Drying

Advances in Microwave Herb Medicine Drying Equipment

Utilizing YouTube As A Knowledge Source for Industrial Microwave Herb Medicine drying

References

Microwave Herb Medicine Drying Equipment Frequently Asked Questions (FAQs)

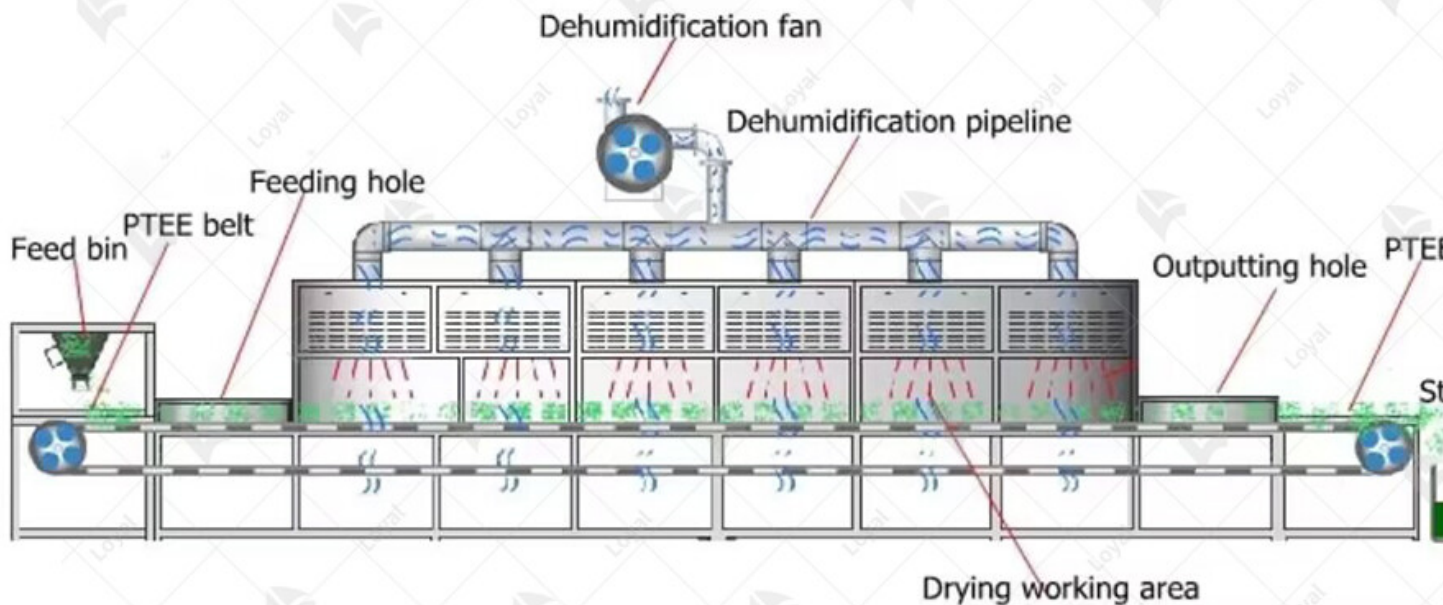
Working Principle of Microwave Herb Medicine Drying Equipment

Microwave herb medicine drying equipment employs an innovative technique that harnesses microwave radiation to efficiently dry medicinal herbs. The process involves placing the herbs within the equipment, where they are subjected to microwave radiation. This radiation penetrates the herbs, causing the water molecules within them to oscillate rapidly. As a result, the water molecules generate heat, leading to the evaporation of moisture from the herbs.

The working principle of microwave herb medicine drying equipment revolves around the selective heating of water molecules present in the herbs. Unlike traditional drying methods which rely on convection or conduction to remove moisture, microwave drying targets

molecules specifically. This selective heating not only accelerates the drying process also helps preserve the medicinal properties of the herbs.

Continuous Microwave Equipment Working Process



What Is Microwave Herb Medicine Drying Equipment?

Microwave Herb Medicine Drying Equipment is a state-of-the-art solution designed for precise drying of herbal medicines using microwave technology. This industrial microwave dryer employs electromagnetic waves to heat and dehydrate herbs, preserving their medicinal properties and enhancing overall quality.

The Microwave Herb Medicine Drying Equipment is a game-changer in the field, offering unparalleled efficiency and speed. Its advanced design ensures uniform drying, reduces processing time and increases the overall yield of high-quality herb medicines.

The Difference between Microwave Herb Drying and Traditional Herb Drying

Microwave herb medicine drying equipment employs electromagnetic waves to rapidly dehydrate herbs, ensuring preservation of their medicinal properties. In contrast, traditional herb drying often involves air drying or sun drying, which can be time-consuming and lead to nutrient loss. One significant disparity lies in the speed of the drying process. Microwave drying is notably faster than traditional methods, reducing processing time from days to mere hours. This rapid drying not only enhances efficiency but also minimizes the risk of mold or bacterial growth, ensuring the quality and safety of the herbs. Moreover, microwave drying allows for precise control over temperature and humidity levels, thereby preserving the herbs' volatile compounds and medicinal efficacy. Traditional drying methods, on the other hand, may subject herbs to fluctuating environmental conditions, potentially compromising their potency. From an economic standpoint, microwave herb drying

equipment offers cost-saving benefits in the long run. While the initial investment may be higher compared to traditional methods, the efficiency and consistency of microwave drying result in lower energy consumption and reduced labor costs over time.



Advantages of Using Microwave Herb Medicine Drying

Equipment

Embracing Microwave Herb Medicine Drying Equipment brings forth a myriad of advantages for herb medicine producers. The following highlights key benefits that set this technology apart:

1. **Efficiency:** The speed of microwave drying significantly reduces overall processing time, leading to increased productivity.
2. **Quality Preservation:** Traditional drying methods may compromise the medicinal quality of herbs. Microwave drying preserves the integrity and potency of the herbs, ensuring a high-quality end product.
3. **Energy-Efficiency:** The focused and controlled heating of the microwave technology results in less energy consumption compared to conventional drying methods.
4. **Uniform Drying:** The equipment ensures uniform drying across all herbs, eliminating the risk of uneven quality and inconsistency in the final product.

Space Optimization: Compact design allows for space-efficient installation, catering to diverse production setups.



Microwave Herb Drying Machine Operating Instruction

Microwave herb drying equipment revolutionizes the process of preserving medicinal herbs, ensuring their potency and longevity. With precise operation, users can maximize the benefits of this innovative technology. Here are comprehensive operating instructions for the optimal utilization of microwave herb drying machines:

1. **Setup and Preparation:** Begin by placing the microwave herb drying equipment on a stable surface in a well-ventilated area. Ensure that the power cord is securely connected to a compatible power source.
2. **Loading the Herbs:** Prior to loading, ensure that the herbs are thoroughly cleaned and free from any dirt or debris. Spread the herbs evenly on the drying tray, avoiding overcrowding to facilitate uniform drying.
3. **Setting Time and Power:** Refer to the user manual to determine the appropriate drying time and power level based on the type and quantity of herbs being dried. Typically, a lower power setting is preferred to prevent overheating and preserve the herbs' natural properties.
4. **Starting the Drying Process:** Close the microwave herb drying machine's door securely and start the drying cycle according to the predetermined settings. Monitor the process periodically to ensure optimal results.
5. **Safety Precautions:** Never operate the microwave herb drying equipment unattended. Keep children and pets away from the machine during operation to prevent accidents. Additionally, avoid overloading the machine beyond its specified capacity.
6. **Monitoring Progress:** Throughout the drying process, periodically check the herbs for signs of readiness. They should feel dry to the touch and brittle, indicating that the moisture has been adequately removed.
7. **Cooling and Storage:** Once the drying cycle is complete, allow the herbs to cool down before handling them. Transfer the dried herbs to airtight containers or resealable bags, ensuring they are stored in a cool, dry place away from direct sunlight.

8. Cleaning and Maintenance: After each use, thoroughly clean the drying trays and interior of the machine to remove any residue or buildup. Follow the manufacturer's instructions for proper maintenance to prolong the equipment's lifespan and ensure optimal performance. By adhering to these operating instructions, users can effectively harness the power of microwave herb drying equipment to preserve the potency and freshness of medicinal herbs for extended periods, promoting sustainable healthcare practices and holistic wellness.

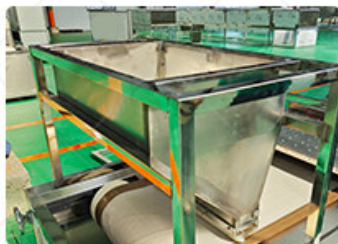
1. PLC control system



6. Machine Material : 304 stainless steel



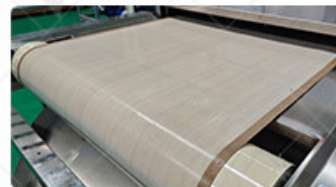
5. The observation window is equipped with a travel switch to prevent microwave leakage and improve safety.



2. Material Feeder : Customizable according to your materials, both Liquid & Powder & Pellet available



3. Belt: Customizable mesh belts of various materials



4. Control cabinet: Add a control box, neat and easy to clean.

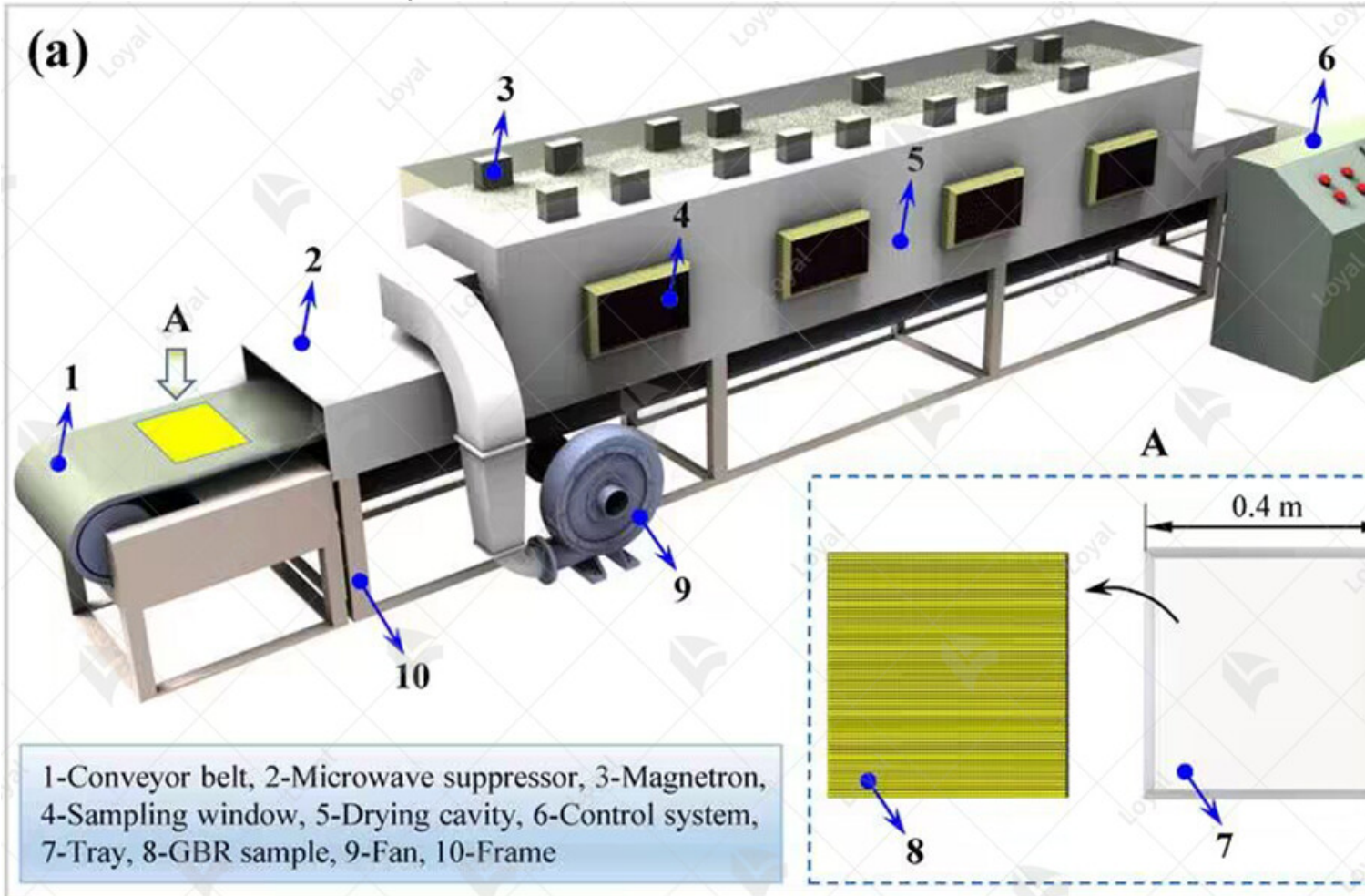


Using Microwave Technology to Improve Herb Medicines Drying Production Efficiency

Leveraging microwave technology is a groundbreaking approach to enhance the efficiency of herb medicine drying production. By incorporating microwave technology into the drying process, we can achieve remarkable improvements in both speed and precision. The capability of microwaves to penetrate and evenly distribute energy throughout the herbs accelerates the drying time significantly.

One key advantage lies in the enhanced production efficiency derived from the rapid and uniform drying achieved with microwave technology. Traditional drying methods often face challenges related to uneven moisture removal and prolonged processing times, leading to potential degradation of the herbs' medicinal properties. However, with the utilization of microwaves, we can address these issues head-on.

Microwave technology allows for precise control over the drying parameters, such as temperature and power, ensuring that the herbs are subjected to optimal conditions. It not only accelerates the drying process but also safeguards the essential compounds within the herbs, preserving their inherent medicinal qualities. Furthermore, the adaptability of microwave technology makes it suitable for various types of herbs, accommodating the diverse needs of the herb medicine industry. Whether drying leaves, flowers, roots, or seeds, the technology ensures consistent results, contributing to a streamlined and efficient production workflow.



Choosing The Right Machinery of Microwave Herb Medicine Drying Equipment

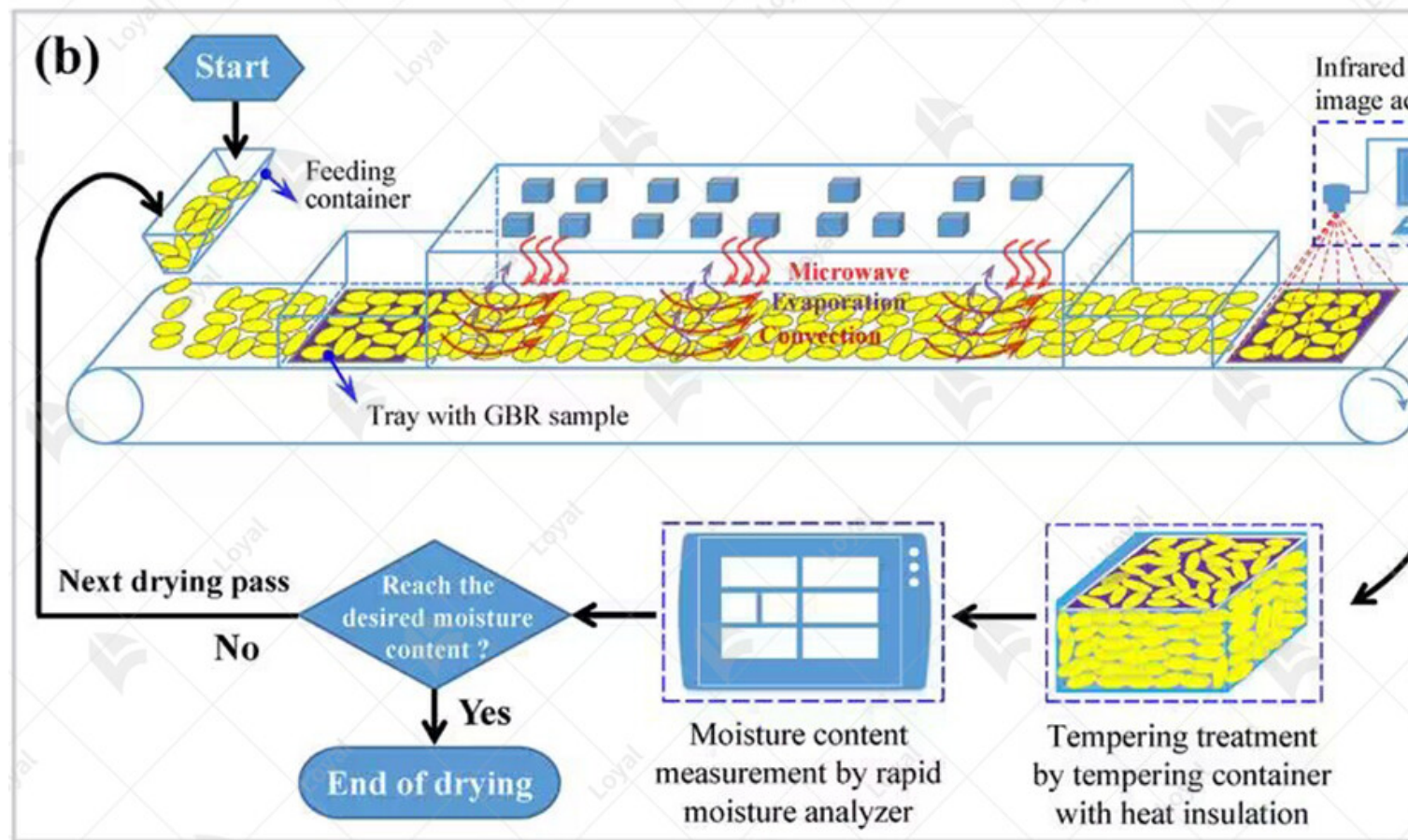
Technical Parameters Of Continuous Microwave Dryer Industrial Microwave Dryer					
Model	Size L*W*H(Can be customized according to the customer's requirements)	Output power	Dewaterability	Sterilization capacity	Batch capacity (kg)
LY-10KW	5000mm*825mm*1750mm	10KW	10KG/Hour	100KG/Hour	300KG

LY-20KW	8000mm*825mm*1750mm	?20KW	20KG/Hour	200KG/Hour	6
LY-30KW	8500mm*1160mm*1750mm	?30KW	30KG/Hour	300KG/Hour	9
LY-40KW	10000mm*1160mm*1750mm	?40KW	40KG/Hour	40KG/Hour	1
LY-50KW	12500mm*1160mm*1750mm	?50KW	50KG/Hour	500KG/Hour	1
LY-60KW	13500mm*1450mm*1750mm	?60KW	60KG/Hour	600KG/Hour	1
LY-70KW	13500mm*1500mm*1750mm	?70KW	70KG/Hour	700KG/Hour	2
LY-80KW	13500mm*1650mm*1750mm	?80KW	80KG/Hour	800KG/Hour	2
LY-100KW	16800mm*1650mm*1750mm	?100KW	100KG/Hour	1000KG/Hour	3
LY-150KW	22400mm*1850mm*1750mm	?150KW	150KG/Hour	1500KG/Hour	4
LY-200KW	27000mm*1850mm*1750mm	?250KW	250KG/Hour	2500KG/Hour	7
LY-300KW	32000mm*1850mm*1750mm	?300KW	300KG/Hour	3000KG/Hour	9
Power Supply		380V±10% 50Hz±1% Three-Phase			
Microwave Output Frequency		2450±50Mhz			
Microwave Input Apparent Power		?168Kva			
Microwave Output Power		?120Kw			
Microwave Power Adjustment Range		0-30Kw(Adjustable)			
Ambient Temperature		-5-40°C			
Relative Humidity		?80%, Surrounding Environment:No Co Conductive Dust And Explosive			
Transmission Speed		0-10m/Min(Adjustable)			

Exploring Types of Industrial Microwave Dryers for Herbs and Medicine Drying

1. Batch Microwave Dryers: These systems are suitable for small to medium-scale herb processing, offering precise control over the drying parameters.
2. Continuous Microwave Dryers: Ideal for large-scale production, these systems ensure a continuous and automated herb drying process, maximizing efficiency.

3. Vacuum Microwave Dryers: Employing the benefits of vacuum technology, these dryers enhance the drying rate and maintain the quality of herb medicine.
4. Fluidized Bed Microwave Dryers: Offering enhanced heat transfer, these dryers are effective in preventing overheating during the drying process.
5. Belt-Type Microwave Dryers: Known for their versatility, these dryers are suitable for a wide range of herb medicine varieties, ensuring uniform drying.
6. Tunnel Microwave Dryers: Designed for high-volume processing, these systems ensure a streamlined and consistent herb drying operation.
7. Hybrid Microwave-Infrared Dryers: Combining microwave and infrared technologies, these dryers provide a balanced approach, ensuring optimal drying outcomes.
8. Multi-Mode Microwave Dryers: With versatile operation modes, these dryers adapt to varying herb characteristics, delivering customized drying solutions.
9. Pulse-Wave Microwave Dryers: Incorporating pulsating microwave energy, these dryers offer precise control, minimizing the risk of over-drying.
- Innovative Microwave Vibration Dryers: Utilizing vibration technology, these dryers ensure the uniformity of drying, catering to the specific requirements of herb medicine.



Key Features To Consider In Microwave Herb Medicine

Drying Equipment

When delving into the realm of Industrial Microwave Dryers, it's imperative to understand the key features that distinguish these advanced systems. These features not only define

efficiency of the drying process but also contribute significantly to the overall quality of the end product. Here are some crucial aspects to consider:

1. Microwave Herb Medicine Drying Equipment Integration:

The seamless integration of microwave technology into the drying equipment is fundamental. It facilitates rapid and uniform drying, preserving the medicinal properties of herbs effectively.

2. Microwave Efficiency:

Industrial microwave dryers capitalize on the efficiency of microwave energy, drastically reducing drying times compared to conventional methods. This not only enhances productivity but also ensures energy conservation.

3. Precision Control Over Drying Parameters:

The ability to exercise precise control over temperature and humidity settings is a pivotal feature. This ensures that herb medicines are dried under optimal conditions, preserving their potency and quality.

4. Energy-Efficient Design:

Sustainability is a key consideration, and modern industrial microwave dryers are engineered for energy efficiency. This not only reduces operational costs but also aligns with eco-friendly practices.

5. Uniform Drying Across Batches:

Achieving uniform drying is paramount for maintaining the consistency and efficacy of herb medicines. Industrial microwave dryers excel in this regard, providing even drying across different batches.

6. Automated Operation:

To streamline processes and enhance operational efficiency, these dryers often come equipped with automated features. This minimizes manual intervention, reducing the likelihood of errors and improving overall workflow.

7. Quality Preservation:

The design of industrial microwave dryers focuses on preserving the quality and bioactive compounds of herb medicines. This is crucial for producing medicinal products with maximum efficacy and health benefits.

8. Versatility in Handling Different Herb Medicines:

A noteworthy feature is the equipment's ability to handle a diverse range of herb medicines, from delicate leaves to robust roots. This versatility ensures that the drying equipment can adapt to various botanicals.

9. Easy Maintenance:

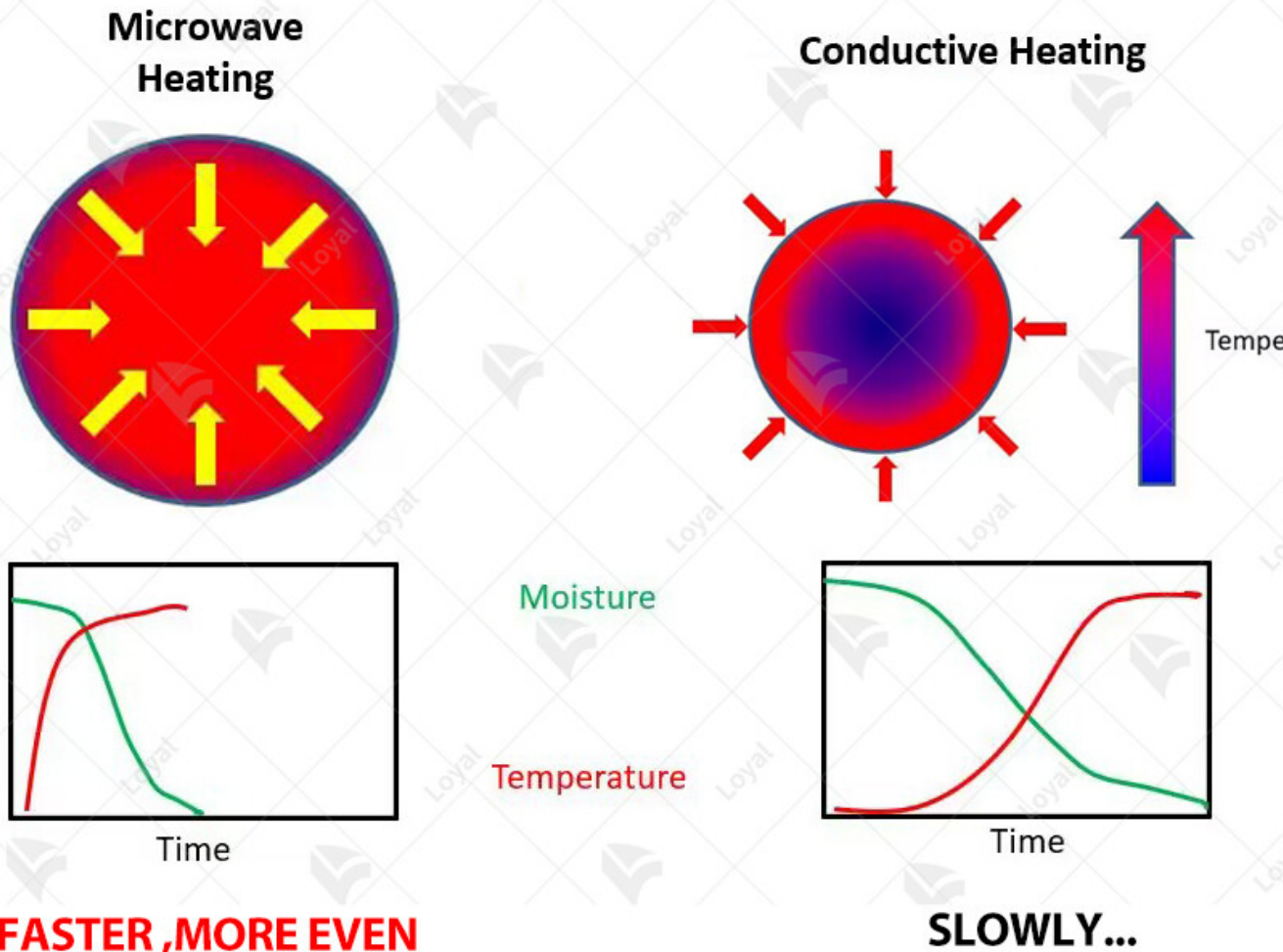
To minimize downtime and extend the lifespan of the equipment, industrial microwave dryers are designed for easy maintenance. This user-friendly aspect adds to the overall reliability and cost-effectiveness of the system.

10. Compliance with Industry Standards:

Meeting and exceeding industry standards is non-negotiable. Industrial microwave dryers are designed to comply with regulatory requirements, ensuring the production of high-quality medicinal products that meet stringent standards.

In essence, the key features of Industrial Microwave Dryers collectively contribute to a technologically advanced and efficient system for drying herb medicines. Whether it's precision, or sustainability, these features make industrial microwave dryers an indispensable choice for those seeking top-notch performance in herb medicine processing.

LOYAL'S MICROWAVE ADVANTAGES



Selecting The Best Microwave Herb Medicine Drying Equipment

While choosing the best microwave herb drying equipment for your processing needs, there are several factors to consider such as technology and functionality, quality preservation, customer support and training, compliance with standards and cost-effectiveness, etc. Among the leading companies in this field, Loyal Stands out for its commitment to innovation and quality in herbal drying technology.

Loyal has become a trusted name in microwave herb drying equipment. With a focus on technical excellence and customer satisfaction, Loyal's products are known for their reliability, efficiency and innovative features. By choosing Loyal, you're not only investing

cutting-edge drying solutions, but you're also benefiting from a company that values continuous improvement and innovation. Always at the forefront of industry development. Make an informed decision by choosing the best microwave herb drying equipment, leading the way in providing excellence for your processing requirements.



The Expertise of Engineers in Microwave Herb Medicine

Drying

Behind the seamless operation and efficiency of Microwave Herb Medicine Drying Equipment lies the invaluable expertise of skilled engineers. These professionals play a crucial role in designing, developing, and fine-tuning the intricate systems that power the industrial microwave drying process for herb medicines.

Engineers specializing in this field bring a deep understanding of microwave technology coupled with a nuanced knowledge of herb medicine characteristics. Their expertise enables them to optimize the design of the drying equipment, ensuring it meets the specific requirements of various medicinal herbs. Precision is paramount in herb medicine processing, and engineers leverage their knowledge to create systems with advanced controls. This expertise enables them to design equipment that can maintain precise temperature and humidity levels, safeguarding the potency and quality of the herbs.

throughout the drying process. The versatility of Microwave Herb Medicine Drying Equipment also owes much to the ingenuity of these engineers. Their ability to adapt and innovate allows the equipment to accommodate different herb varieties, from fragile leaves to roots, with equal efficiency. Furthermore, engineers play a pivotal role in incorporating automation features into the drying process. This not only streamlines operations but also enhances the overall reliability and repeatability of the drying process, ensuring consistent results with minimal manual intervention.

In essence, the expertise of engineers in microwave herb medicine drying is a cornerstone of the success of this advanced technology. Their skills not only contribute to the efficiency and precision of the equipment but also underscore the commitment to producing high-quality herbal products that meet the demands of modern industry standards. As the technology continues to evolve, the dedication and proficiency of these engineers remain instrumental in pushing the boundaries of what is achievable in microwave herb medicine drying.

DETAIL CHARACTERISTICS



01 ENVIRONMENTAL POLLUTION-FREE

Microwave drying equipment does not produce environment of high temperature, dust and noise, without waste water and exhaust gas in the process of operation, no waste is generated.



03 ADVANCED TECHNOLOGY EASY TO USE

Microwave heating just have the need of water, electricity, as long as the microwave which can realize the control of heating process is.



HEATING UNIFORMITY

02

Material can generate heat at the same time under the action of electromagnetic waves from microwave, there will be no coke endogenous phenomenon.



SMALL FOOTPRINT SAFE AND HARMLESS

04

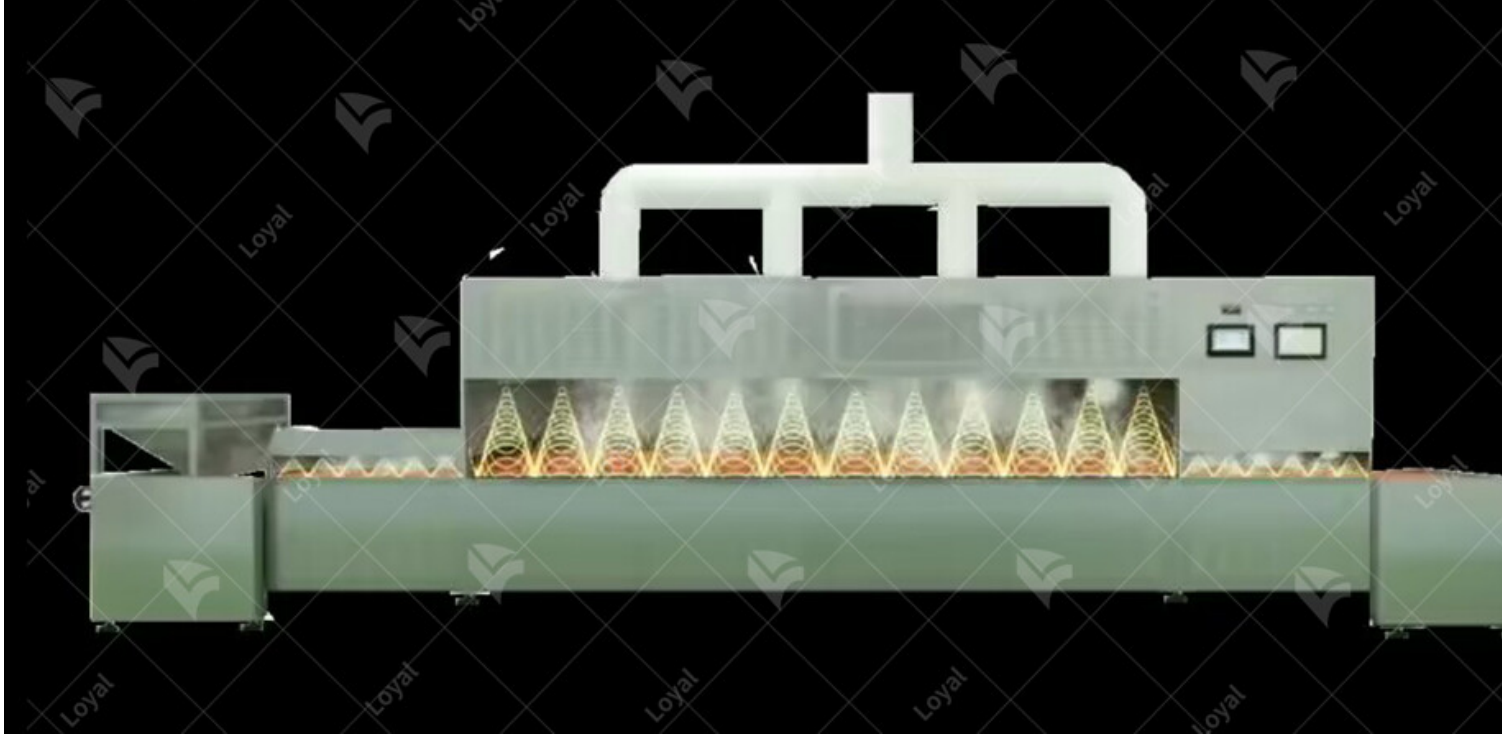
Because the microwave energy is control in metal heating indoor and work in the waveguide tube, so rarely microwave leak, no radiation damage and harmful gas emissions, and does not produce waste heat and dust pollution.

Importance of Quality Control in Microwave Herb Medicine Drying Equipment

Microwave drying equipment operates on the principle of utilizing electromagnetic waves to generate heat and dry materials efficiently. However, without stringent quality control measures, the functionality of such equipment may be compromised. The first and foremost benefit of quality control lies in ensuring the safety of the equipment. Rigorous testing and inspection protocols help identify and rectify any potential malfunctions, reducing the risk of accidents and ensuring a secure working environment.

Moreover, quality control directly impacts the efficiency of microwave drying processes. Precise calibration and regular checks guarantee that the equipment operates at its optimal capacity, leading to faster and more effective drying. This not only enhances productivity

also contributes to energy efficiency, a crucial factor in sustainable industrial practice. In the context of microwave drying, where precision is key, the quality of the final product heavily depends on the accuracy of the drying process. Quality control measures ensure that the equipment maintains the required parameters, resulting in consistent and high-quality output. This is particularly crucial in industries such as food processing, where uniform drying is essential for product quality and safety.



Exploring the Latest Innovations and Trends in Industrial

Microwave Herb Medicine Drying

In the ever-evolving landscape of herb medicine processing, the integration of industrial microwave technology has emerged as a groundbreaking trend, revolutionizing the drying methods and setting new standards for efficiency. This article delves into the latest innovations and trends in industrial microwave herb medicine drying, highlighting its transformative impact on the industry.

Microwave technology, once primarily associated with kitchen appliances, has found a new application in herb medicine processing due to its ability to provide rapid and uniform drying. This innovation addresses the challenges posed by traditional drying methods, such as slow processing times and potential degradation of medicinal properties. With industrial microwave herb medicine drying, the preservation of active compounds is optimized, ensuring a higher quality end product.

One of the key trends in this domain is the integration of smart control systems. Modern drying equipment is equipped with advanced sensors and automation features, allowing for precise monitoring and control of the drying process. This not only enhances the overall efficiency but also contributes to resource conservation by minimizing energy consumption.

Moreover, the use of specialized microwave frequencies tailored to the unique characteristics of different herbs has gained prominence. This targeted approach ensures that the drying process is optimized for each herb, maximizing the preservation of medicinal properties while reducing processing time. The customization of microwave frequencies is a testament to the industry's commitment to precision and quality in herb medicine drying. In conclusion, the industrial microwave herb medicine drying sector is experiencing a paradigm shift with continuous innovations and evolving trends. The integration of microwave technology, coupled with smart control systems and customized frequencies, is reshaping the landscape of herb medicine processing. As the industry embraces these advancements, we can anticipate a future where herb medicine drying is not only more efficient but also sets new benchmarks for quality and precision. Embracing these trends is crucial for businesses looking to stay at the forefront of this dynamic and progressive sector.



Advances in Microwave Herb Medicine Drying Equipment

One noteworthy innovation lies in the integration of smart technology into microwave drying equipment. This allows for precise control of temperature and moisture levels, ensuring optimal conditions for the drying process. The incorporation of sensors and automated systems has not only streamlined operations but has also led to a more sustainable and eco-friendly approach to drying.

Furthermore, breakthroughs in material design have played a pivotal role in enhancing microwave drying efficiency. Novel materials with enhanced microwave absorption properties facilitate faster and more uniform drying, reducing processing times and improving the overall quality of the dried products. These advancements have been particularly beneficial in industries such as food processing and pharmaceuticals, where maintaining product integrity is paramount. The continuous evolution of microwave drying equipment has ushered in a new era of efficiency and sustainability. The integration of advanced technology and innovative materials has not only accelerated drying processes but has also elevated the quality standards across various industries. As we look towards the future, these advancements promise even more groundbreaking developments in microwave drying technology.



**3-5min
Extremely
Fast Drying**



**Simultaneous
Heating Inside
And Outside**



**Temperature
Sensing
Prevents
Overheating**



**Synchronous
Sterilization &
Disinfection
Function**



**Cooling System
Has Long
Service Life**



**Micr
Ant**

Utilizing YouTube As A Knowledge Source for Industrial Microwave Herb Medicine drying

As a vast repository of user-generated content, YouTube is a valuable source of knowledge about the process of industrial microwave drying of herb medicine medicines. It comes with rich video content - from detailed descriptions of manufacturing workflows to equipment reviews and practical demonstrations of industrial microwave drying of herb medicine medicines. Therefore, YouTube is creating opportunities for both novices and experienced professionals to improve their understanding and skills in industrial microwave drying of herb medicine medicines.

References

The following are five authoritative foreign literature websites in the field of industrial microwaves:

1. IEEE Xplore Digital Library

Website: [<https://ieeexplore.ieee.org/>]

2. ScienceDirect

Website: [<https://www.sciencedirect.com/>]

3. SpringerLink

Website: [<https://link.springer.com/>]

4. Wiley Online Library

Website: [<https://onlinelibrary.wiley.com/>]

5. PubMed

Website: [<https://pubmed.ncbi.nlm.nih.gov/>]

Microwave Herb Medicine Drying Equipment Frequently Asked Questions (FAQs)

1. What is Microwave Herb Medicine Drying Equipment?

Microwave herb medicine drying equipment utilizes microwave technology to efficiently and evenly dry medicinal herbs. This equipment accelerates the drying process, preserving the quality and potency of the herbs.

2. How does Microwave Drying differ from Conventional Drying Methods?

Microwave drying is faster and more energy-efficient compared to conventional methods. It uses electromagnetic waves to heat the herbs directly, reducing drying time and minimizing nutrient loss.

3. Are there specific herbs suitable for Microwave Drying?

Microwave drying is versatile and can be applied to a wide range of medicinal herbs. However, the suitability may vary, and it's recommended to consult guidelines for each herb to ensure optimal results.

4. What are the Benefits of Microwave Herb Medicine Drying Equipment?

Benefits include faster drying times, improved product quality, energy efficiency, and preservation of medicinal properties. The equipment also offers precise control over temperature and humidity.

5. Is Microwave Drying Equipment Cost-Effective for Small-Scale Operations?

Yes, microwave herb medicine drying equipment is available in various sizes, making it suitable for both small-scale and large-scale operations. It provides a cost-effective solution for herb processing.

6. Does Microwave Drying Affect the Medicinal Properties of Herbs?

When used correctly, microwave drying minimally affects the medicinal properties of herbs. The controlled and rapid drying process helps retain essential compounds, ensuring the product's efficacy.

7. What Safety Measures should be Considered when Operating Microwave Drying Equipment?

Operators should follow safety guidelines provided by the equipment manufacturer. This may include proper ventilation, monitoring of temperature and humidity, and regular equipment maintenance.

8. Can Microwave Drying be Used for Organic Herb Medicine Production?

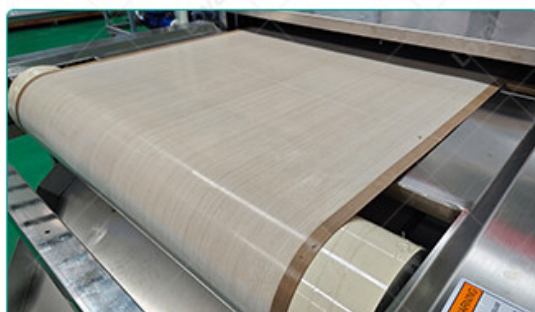
Yes, microwave drying is suitable for organic herb medicine production. It offers a clean, efficient method, free from the use of chemicals, making it compliant with organic production standards.

9. How to Optimize Drying Conditions for Different Types of Herbs?

Optimization involves adjusting parameters such as power level, drying time, and moisture content based on the specific characteristics of each herb. Manufacturers often provide guidelines for optimal drying conditions.

10. Are there Regulatory Standards for Microwave Herb Medicine Drying Equipment?

Depending on the region, there may be regulatory standards and certifications for equipment used in herb processing. It's important to ensure that the equipment meets relevant safety and quality standards.



1 Rapid heating, safe and environmentally friendly, sterilization time period, fast Save energy and heat evenly and thoroughly.



2 Timely heat control, sensitive response, strong microwave heating penetration ability.



3 High voltage power supply for microwave oil Suitable for any environment long lasting Energy saving and environmental protection.



4 Use the dedicated high-voltage power supply for microwave air cooling in a dust-free environment long lasting Energy saving and environmental protection.



5 Microwave waveguide has long corrosion resistance and long service life.



6 Cooling fan, good heat dissipation effect.