



# JUPITER SERIES

High Throughput Closed Microwave Digestion/Extraction Workstation



Safety And Convenient In Operation & High In Efficiency & Durable In Use



## *Safety And Convenient In Operation*

## *High In Efficiency*

## *Durable In Use*

- Satisfy the requirements of different samples' digestion/extraction processing;
- Up to 12 vessels high-throughput processing capacity;
- Exclusive patented multifunctional safety bolt design, instead of explosion-proof membrane and other consumables;
- Aerospace composite fiber outer vessel-the highest level of security measures;
- Large-screen color software interface, clear and direct-viewing in operation, bright in appearance and smart in performance;
- Connected to and controlled by computer, achieving secure remote operation, and unlimited program storage database;
- Small volume VS big chamber, which is advance in industrial design and provides perfect experience;
- Free lifetime warranty to the core components-magnetron of the microwave Digestion System;
- 20 years of industry experience with no life injury;
- Won China's top award-BCEIA GOLD four times and leads in the number of users nationally;



# JUPITER **SERIES**

## High Throughput Closed Microwave Digestion/Extraction Workstation

With more than 20 years experience in microwave chemistry instrument industry and the latest industrial technology, JUPITER series high throughput closed microwave digestion/extraction workstation can be widely used in routine laboratories and also applied under extreme conditions. The highest level of security measures adopted such as the use of aerospace composite fiber vessel and safety bolt (patented), simple and smart operating software and the use of high-quality materials such as corrosion-resistant ultra-long life industrial chamber show that Sineo is always striving for perfection and makes breakthrough in technology, process and materials. JUPITER series microwave digestion/extraction workstation, integrated with the latest industrial technology and materials set a new benchmark in the company, which together with MASTER series, forms the company's complete product line to meet the needs of various industries and strive to provide customers the safe, convenient, efficient, durable products and superior experience.

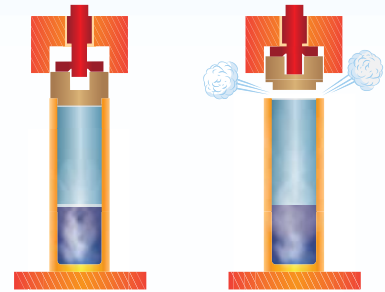


The outer vessel of JUPITER exclusively made by ultrastrength aerospace composite fiber is invincible in anti-explosion, and its performance indicators such as corrosion resistance, high temperature/impact/pressure resistance are far better than that of the widely used modified PEEK engineering plastics vessel (this material is fusible at high temperature, fragile at high pressure and explosive by chemical corrosion), fundamentally eliminating safety risks to operator in use.





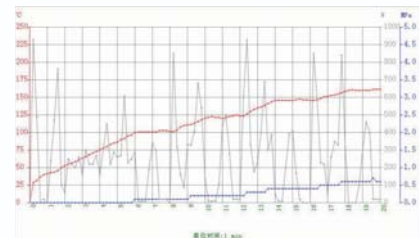
Quantified vertical blast/safety bolt design, ensures samples be closed completely and trigger a quantified pressure relief while over pressure; safety bolt (patent) unit, instead of safety membrane and other consumables, ensure the digestion vessel be sealed completely under normal working conditions. And only when the pressure is large enough and may constitute a danger to the safety, the safety bolt will automatically blow out vertically and the cover auto-up to release the pressure, achieving quantified vertical blast pressure-relief to guarantee its well operation. Under normal operation, the safety bolt won't blow out and requires no replacement. In addition, it is easy for venting to open the cover after completion of digestion.






The industrial-leading pressure measuring technology by piezoelectric crystal and high-precision Pt sensor temperature measurement and control, through closed-loop control of microwave power by inverter technique, ensure the accuracy of pressure and temperature monitoring and control. The application of patented piezoelectric crystal brings about complete isolation of samples from pressure measurement system in digestion process, thoroughly solving the problems of cross contamination of samples due to commonly used air pipe in market and of the limitation in digestion samples because of low-pressure proof of air pipe.



Automatic Frequency Control of Non-pulse Microwave Power ensures the accurate closed-loop control of the temperature and pressure, and also improves the efficiency of microwave transmitter of magnetron. 12 vessels per bath throughput capability, increase the efficiency of the pretreatment process in the lab.






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 The patented design that the whole set of digestion vessels in chamber always continuous rotates in one direction, breaks conventions of  $<360^\circ$  back and forth rotation of the digestion unit, avoiding uneven heating on vessels by microwave and reducing impact on turntable motor, extending service life.
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 The new digestion, changing its traditional bulky appearance, uses European industrial design, colorful and smart, that in line with the needs of modern laboratory building. It re-lays its internal structure more scientifically that it reduces the volume of the machine while providing 42L industrial reactor chamber to ensure uniform heating of the microwave and convenient operation.
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 Sturdy and durable industrial-grade chamber design strengthen its impact resistance; Professional focused microwave design make microwave heating more efficient; Multi-layer chemical resistant coating greatly improves the service life and safety of the system; the popup cushioning explosion-proof sliding chamber door builds a passive safety protection system, easing operation; double-locked self-checking system of the chamber door and the push-type open-door mechanism at the top make the operation simple and easy; efficient exhaust system design achieves fast and safe air-cooled cooling (20 min cooling from  $200^\circ\text{C}$  to  $60^\circ\text{C}$ ), improving operational efficiency.



***The Popup Cushioning Explosion Proof Sliding Chamber Door***

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 Jupiter series' software & remote control system have many advantages: safety external PC control; friendly windows interface that is easy to be operated; display digestion temperature, pressure and changes of microwave transmit power in real time; directly display its working process; through computer's remote control station, do operations such as setting, running, change time and power etc; the software can save unlimited amount of digestion solution, making it convenient for users. The user-friendly software operation like a chemist, who help you complete various operations, providing customers with safe, scientific and convenient operation experience (color software and computer connection are for Jupiter-A).



## Main Technical Parameters of JUPITER

|  |   |  |
|--|---|--|
| Power                                      | 220-240 VAC 50/60Hz 8A  |  |
| Microwave frequency                        | 2450MHz   |  |
| Installed power                            | 1800W   |  |
| Maximum output power                       | 1300W, non-pulse continuous automatic variable frequency control  |  |
| Turntable design                           | Load 12 JP-100 closed digestion vessels at same time (standard configuration is 10 vessels)                                 |  |
| Pressure measurement and control system    | Piezoelectric crystal pressure sensor, pressure control range :0-10MPa (1500 psi), accuracy $\pm 0.01$ MPa                  |  |
| Temperature measurement and control system | High-precision platinum resistor temperature sensor, temperature range :0-300°C, accuracy $\pm 1^\circ\text{C}$             |  |
| Outer vessel material                      | Explosion-proof outer vessel made of aerospace composite fiber  |  |
| Inner vessel material                      | Modified TFM material   |  |
| Software                                   | JUPITER-A apply JSs software. 5 inch color screen display, USB connection, can save unlimited amount of digestion solution. | Simplified JUPITER-B apply JSb software. 5 inch screen display and up to 50 methods can be stored. |
| Chamber exhaust system                     | High-power anticorrosion axial fan, exhaust speed: 3.1 m <sup>3</sup> /min  |  |
| Operating ambient temperature              | 0-40 °C   |  |
| Working environment humidity               | 15-80%RH  |  |
| Whole physical size                        | 450 × 600 × 620mm (W × D × H)   |  |
| Net weight                                 | 42 KG   |  |

**Standard configuration:** 10 JP-100 ultrastrength closed vessels with outer vessels and frames.

**Optional configuration:** 12 JP-100 ultrastrength closed vessels with outer vessels and frames.

### JP-100 ultrastrength frame closed reaction vessel

|                               |   |
|-------------------------------|---|
| Maximum Pressure              | 15MPa (2250psi)                         |
| Maximum working pressure      | 4Mpa(600psi)                            |
| Maximum sustained temperature | 300°C                                   |
| Maximum working temperature   | 250°C                                   |
| Inner vessel volume           | 100ml                                   |
| Outer vessel material         | ultrastrength aerospace composite fiber |
| Inner vessel material         | TFM (Modified PTFE)                     |
| Maximum batch capacity        | 12 vessels                              |

### Application area

Food and drug (milk and dairy products, health food), cosmetics, agricultural and sideline products, aquatic products, biological tissues, various types of feed, energy and petrochemical, geology and mineral resources, environmental resources (air, water, soil), metals, alloys, ceramics, RoHS, medicine, domestic wastes.

## JUPITER SERIES

High Throughput Closed Microwave Digestion/Extraction Workstation



JUPITER-A



JUPITER-B



Certificate No.1610/IN-IST-12



ISO9001: 2008 and UKAS certificate of quality system

**GB Editorial Unit:**

the national standard of the People's Republic of China "GBT 26814-2011 microwave digestion device"

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