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RTC-Emul  
智能真空乳化系统

Intelligent Vacuum Emulsification System

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## 关于镇田 About Jhenten



镇田机械创建于1986年，超过35年的不断积累，我们的业务范围遍及制药工程、食品饮料、精细化工、新能源等行业，并致力于为客户提供最具挑战性和核心价值的工艺罐体及工艺模块系统解决方案。镇田始终坚持以稳定的产品质量，严谨的工程设计和完善的客户服务，赢得客户的长期信赖，助力全球客户实现高效生产与持续发展。

Zhejiang Jhen Ten Machinery Co.,Ltd, established in 1986, has over 35 years of continuous innovation and expertise accumulation. Our solutions span across pharmaceutical engineering, food & beverage, fine chemicals, and the new energy sector, specializing in delivering highly challenging and value-driven process vessels and modular process systems. Committed to consistent product quality, rigorous engineering design, and comprehensive customer support, Jhen Ten has earned long-term trust from global clients. We empower industries worldwide to achieve efficient production and sustainable growth through cutting-edge technological integration.

在化妆品、药品及食品饮料的均质乳化加工过程中，如何将产品转化为更均匀的颗粒度，达到稳定极致均质的效果，是我们一直在深入思考的问题。

RTC-Emul真空乳化工艺模块通过真空脱气、高效均质剪切、精准温控技术，实现油相与水相的高效混合与稳定乳化，形成粒径均一、稳定性优异的乳状液或者膏霜产品。系统支持从预混、均质、脱泡到灌装的全程密闭生产，符合GMP、ISO 22716、FDA 21 CFR Part 211规范，适用于无菌、高活性成分的配方生产。

In the homogenization and emulsification processes for cosmetics, pharmaceuticals, and food/beverage products, achieving uniform particle distribution and ultra-stable homogenization has been a core focus of our research. The RTC-Emul module utilizes vacuum degassing, high-efficiency shear homogenization, and precise temperature control technologies to enable thorough mixing of oil and water phases, forming emulsions or cream-based products with monodisperse particle size and superior stability.

The system supports fully enclosed production from pre-mixing, homogenization, degassing, to filling, complying with GMP, ISO 22716, and FDA 21 CFR Part 211 regulations. It is specifically designed for manufacturing sterile formulations and products containing high-potency active ingredients.



35+

超35年行业制造经验  
With more than 35 years of industry manufacturing experience

300+

公司现有员工300多名  
The company currently has more than 300 employees

40000+

拥有现代化厂房40000多平方米  
It has a modern factory building of more than 40,000 square meters

日化  
Daily chemical

膏霜、乳液、防晒霜等  
Cream, lotion, sunscreen, etc

制药  
Pharmaceutical

外用软膏、纳米乳剂、软胶囊  
External ointment, nano emulsion, soft capsule

个人护理  
Personal care

洗发水、精华液、沐浴露等  
Shampoo, serum, body wash, etc

精细化工  
Fine chemicals

特种润滑剂、电子涂层材料等  
Special lubricants, electronic coating materials, etc

# RTC-Emul 智能真空乳化系统 Intelligent Vacuum Emulsification System

## 01 多种不同搅拌组合 Multi-mode Stirring Assemblies



螺带单搅拌  
Screw Single Agitator



螺带单搅拌+中心推进  
Single Agitator with Screw Belt  
+ Center Propulsion



外框式叶片内推进式双搅拌  
Outer Frame Type Blade Internal  
Propulsion  
Type Double Agitator



外框式螺带内推进式双搅拌  
Framed Screw Belt With Internal  
Propulsion  
Type Double Agitator

## 02 多种高剪切均质乳化 Various high shear homogenization



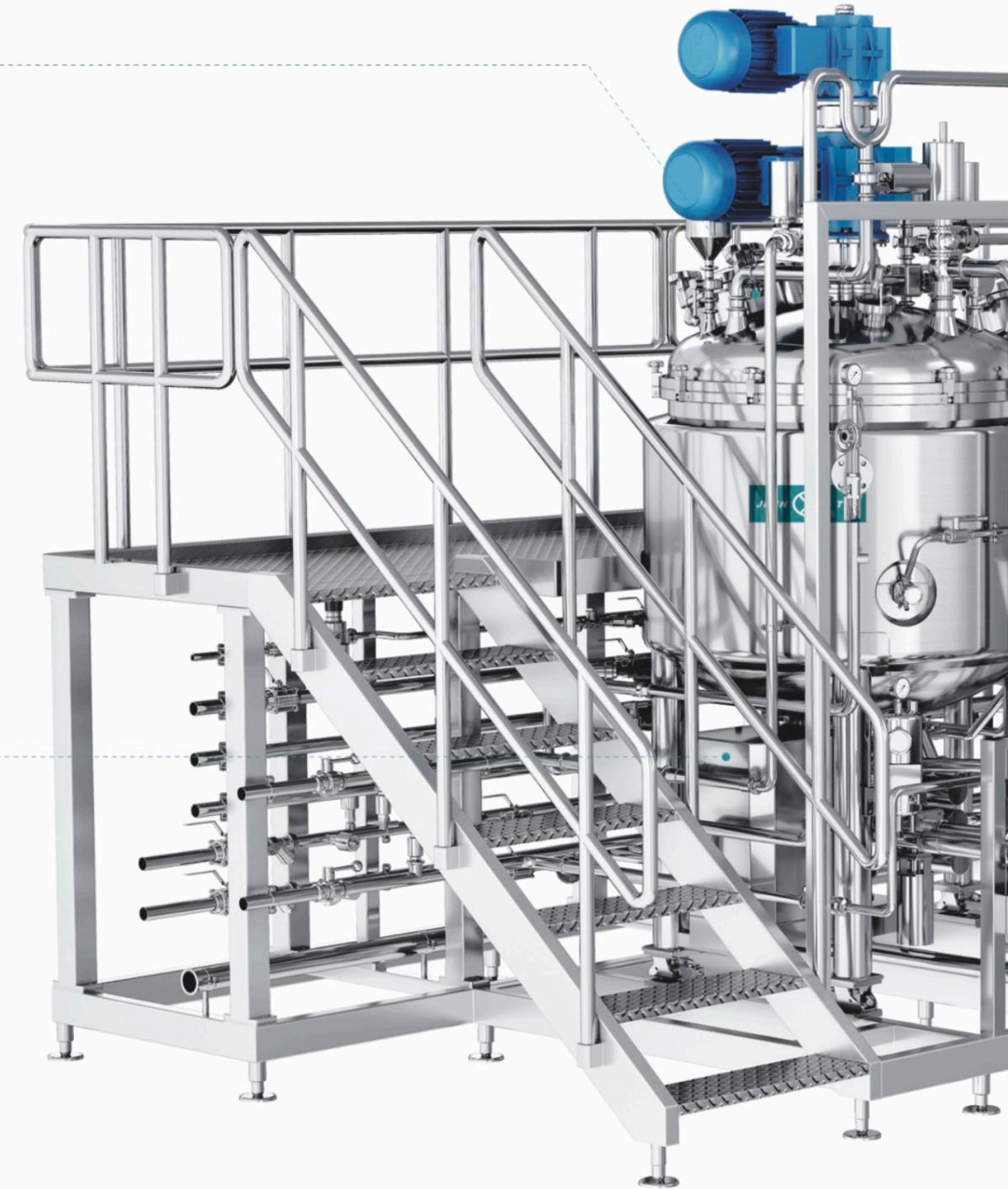
内循环均质头  
Internal Circulation Homogenizer



外循环均质头  
External Circulation Homogenizer



磁控内外循环均质头  
Magnetically controlled internal and external  
circulation homogenizing head



# RTC-Emul 智能真空乳化系统 Intelligent Vacuum Emulsification System



## 03 清洗系统 Cleaning system



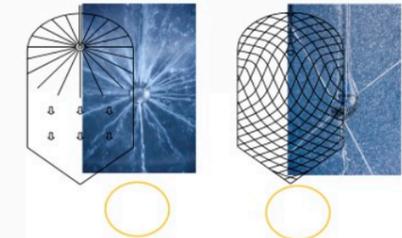
### 高压喷射系统 High pressure jet system

节约、环保，可针对罐体，管道外部位单独清洗，可同时清洗，可控度高。

### CIP在线清洗 CIP inline cleaning

#### 高速喷淋球

- 在能耗以及清洗效率上优势更明显
- 清洁覆盖率高达99%
- 耗水量比一般喷淋球减少接近60%



设备具有在线清洗，自清洗及原位清洗功能，清洗过程高效、彻底、节能、无死角。

The equipment has on-line cleaning, self cleaning and in situ cleaning process, which is efficient, thorough, energy saving and no dead angle.

Saving environmental protection, the tank and the outside part of the pipe can be cleaned at the same time with high controlling capacity.

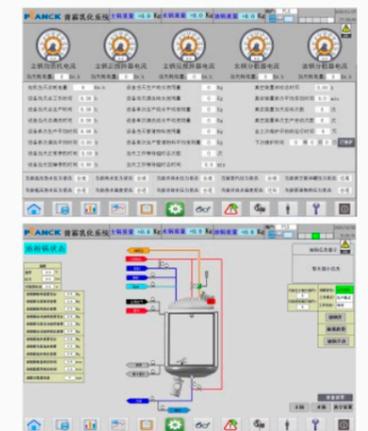
#### High speed spray ball

- More obvious advantages in energy consumption and cleaning efficiency
- Cleaning coverage is up to 99%
- The water consumption is nearly 60% less than that of the spray ball.

## 04 控制系统 Control system

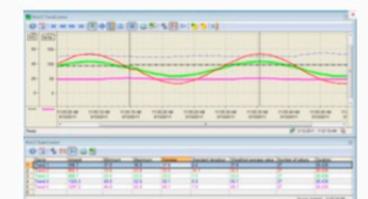
### 控制及可视化 Control and visualization

- 快速的生产组态
- 清晰的工艺显示界面
- 可精确控制
- 实时的压力、温度、重量、转速、阀门、流量及监控报警在线数据
- Rapid production configuration
- Clear process display interface
- Accurate control
- Real-time online data of pressure, temperature, weight, speed, valve, flow and monitoring alarm



## 05 温度精准调控 Precision Temperature Management

采用夹套式乳化釜配合PID精准控温(±0.5°C)，通过冷热媒循环系统实现快速升降温。  
A jacketed emulsifier is used to combine PID precise temperature control (±0.5°C) to achieve rapid cooling through the hot and cold media circulation system.



## RTC-Emul 真空乳化机 RTC-Emul Vacuum Emulsifier



RTC-Emul-AP艾普系列升降式乳化机  
RTC-Emul-AP Series Lifting Emulsifier

- 升降式设计，高精度均质，操作灵活。  
Lifting design with high-precision homogenization and adaptable operation.

型号 Type	AP200	AP300	AP500	AP1000	AP2000
工作容积(L) Working Volume (L)	200	300	500	1000	2000
单搅拌功率(KW)/转速(RPM) Single Agitator Power (KW)/Speed (RPM)	3/86	4/76	5.5/75	7.5/73	11/66
双搅拌功率(KW)/转速(RPM) Dual Agitator Power (KW) / Speed (RPM)	2.2/56	3/51	4/57	5.5/52	9.2/38
底装磁控内外循环功率(KW) Bottom-mounted Magnetic Drive Circulation Power (KW)	1.5/84	2.2/73	3/84	4/76	7.5/64
底装内循环功率(KW) Bottom-mounted Internal Circulation Power (KW)	4	11	11	22	22
底装内循环功率(KW) Bottom-mounted Internal Circulation Power (KW)	5.5	7.5	11	18.5	22
升降类型 Lifting Type	单立柱 Single Column	单立柱 Single Column	单立柱 Single Column	双立柱 Dual Column	双立柱 Dual Column



RTC-Emul-VP威普系列立式乳化机  
RTC-Emul-VP Series Vertical Emulsifier

- 稳定均质，精准乳化，助力品质提升。  
Stable homogenization and precise emulsification enhance product quality.

型号 Type	VP500	VP1000	VP2000	VP3000	VP5000
工作容积(L) Working Volume (L)	500	1000	2000	3000	5000
单搅拌功率(KW)/转速(RPM) Single Agitator Power (KW)/Speed (RPM)	5.5/75	7.5/73	11/66	15/59	22/53
双搅拌功率(KW)/转速(RPM) Dual Agitator Power (KW) / Speed (RPM)	4/57	5.5/52	9.2/38	11/39	15/30
底装磁控内外循环功率(KW) Bottom-mounted Magnetic Drive Circulation Power (KW)	3/84	4/76	7.5/64	9.2/63	11/53
底装磁控内外循环功率(KW) Bottom-mounted Magnetic Drive Circulation Power (KW)	11	22	22	37	45
底装内循环功率(KW) Bottom-mounted Internal Circulation Power (KW)	11	18.5	22	/	/



RTC-Emul-KP凯普系列升降式乳化机  
RTC-Emul-KP Series Lifting Emulsifier

- 升降式设计，灵活操作，稳定均质，提升生产精度与效率。  
Lifting mechanism design ensures flexible operation and stable homogenization, improving production precision and efficiency.

型号 Type	KP100	KP200	KP300
工作容积(L) Working Volume (L)	100	200	300
单搅拌功率(KW)/转速(RPM) Single Agitator Power (KW)/Speed (RPM)	2.2/90	3/86	4/76
双搅拌功率(KW)/转速(RPM) Dual Agitator Power (KW)/Speed (RPM)	2.2/56	2.2/56	3/51
底装外循环功率(KW) Bottom-mounted External Circulation Power (KW)	1.5/84	1.5/84	2.2/73
底装内循环功率(KW) Bottom-mounted Internal Circulation Power (KW)	3	5.5	7.5
底装内循环功率(KW) Bottom-mounted Internal Circulation Power (KW)	3	5.5	7.5



RTC-Emul-MP迈普系列升降倾式乳化机  
RTC-Emul-MP Series Lifting-Tilting Emulsifier

- 升降倾式设计，便捷清洗，高精度均质，适应高粘度物料。  
Lifting-tilting mechanism facilitates easy cleaning and high-precision homogenization, ideal for high-viscosity materials.

型号 Type	MP50	MP100	MP200	MP300	MP500	MP1000
工作容积(L) Working Volume (L)	50	100	200	300	500	1000
单搅拌功率(KW)/转速(RPM) Single Agitator Power (KW)/Speed (RPM)	1.5/93	2.2/90	3/86	4/76	5.5/75	7.5/73
双搅拌功率(KW)/转速(RPM) Dual Agitator Power (KW) / Speed (RPM)	/	2.2/56	2.2/56	3/51	4/57	5.5/52
底装内循环功率(KW) Bottom-mounted Internal Circulation Power (KW)	/	1.5/84	1.5/84	2.2/73	3/84	4/76
底装内循环功率(KW) Bottom-mounted Internal Circulation Power (KW)	3	4	5.5	7.5	11	18.5
升降类型 Lifting Type	单立柱 Single Column	单立柱 Single Column	单立柱 Single Column	单立柱 Single Column	双立柱 Dual Column	双立柱 Dual Column



RTC-Emul-LP力普系列上均质升降倾式乳化机  
RTC-Emul-LP Series Top-Homogenizing Lifting-Tilting Emulsifier

- 上均质设计，升降倾式操作，极致混合，适应高难度工艺。  
Top-mounted homogenization with lifting-tilting operation achieves ultimate mixing performance for challenging processes.

型号 Type	LP50	LP200	LP500
工作容积(L) Working Volume (L)	50	200	500
搅拌功率(KW)/转速(RPM) Agitator Power (KW)/Speed (RPM)	1.5/217	3/188	5.5/166
顶装均质功率(KW) Top-mounted Homogenization Power (KW)	3	5.5	11
升降类型 Lifting Type	单立柱 Single Column	单立柱 Single Column	双立柱 Dual Column

## AES 在线稀释模块 AES Online Dilution Unit

## 产品全生命周期服务 Product Life Cycle Service

### 日化行业的快速稀释专家

专为解决传统稀释过程中常见的问题而设计，为您提供理想的稀释解决方案。

#### AES Online Dilution System

Rapid Dilution Solutions for the Cosmetic & Household Chemicals Industry

Engineered to overcome challenges in conventional dilution processes, delivering optimal precision and efficiency.



高精度配比，误差 $\leq 1\%$   
High-precision proportioning  
with  $\leq 1\%$  deviation

镇田AES在线稀释设备，  
进口传感器精准控流，误差 $\leq 1\%$ 。  
Jhenten AES Online Dilution  
System: Imported sensors ensure  $\leq 1\%$   
flow control accuracy.

高效防泡，品质无忧  
High-efficiency antifoaming,  
guaranteed quality

德国先进分散混合技术，  
独特叶片设计高效混合，减少气泡生成。  
German-engineered dispersion  
technology: Unique blade design ensures  
efficient mixing with minimal air entrainment.

智能抗凝胶，稳定运行  
Smart anti-gelation technology  
ensures stable operation

精准调控AES稀释参数，  
快速稳定至20%–25%理想浓度。  
Precisely controls AES dilution parameters  
to rapidly stabilize at the ideal 20%–25%  
concentration.

可靠  
Reliable

信任  
Trust

承诺  
Commitment

#### 分析与咨询 Analysis & Consultation

- 工艺可行性评估 Process feasibility assessment
- 成本与能耗分析 Cost & energy consumption analysis
- 定制化方案设计 Customized solution design

#### 设计与开发 Design & Development

- 3D建模与仿真验证 3D modeling & simulation validation
- 材料选型 Material selection
- 模块化设计 Modular design

#### 制造与质检 Manufacturing & Quality Control

- 材料溯源 Material traceability
- 精密加工 Precision machining
- 特殊加工 Specialized processing
- 标准品控 Standardized quality inspection

#### 退役与循环 Decommissioning & Recycling

- 残值评估 Residual value evaluation
- 环保拆解 Environmentally compliant disassembly
- 技术迭代 Technology iteration

#### 运维与优化 Maintenance & Optimization

- 预防维护 Preventive maintenance
- 备件响应 Spare parts rapid response
- 远程监控 Remote monitoring
- 工艺优化 Process optimization

#### 交付与实施 Delivery & Implementation

- FAT测试 FAT (Factory Acceptance Testing)
- 全球服务 Global service network
- 操作培训 Operational training
- 智能集成 Smart system integration

