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RTC-Extra 茶/咖啡/骨素提取工艺模块

Tea, Coffee and Bone Extract Process Module

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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用户服务，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.



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

RTC-Extra 茶/咖啡/骨素提取工艺模块
Tea, Coffee and Bone Extract Process Module

01 原料处理模块
Raw Material Processing Module

- 茶叶/咖啡豆：清洗分选机→烘干机→超微粉碎机组。
- 动物骨骼：高压破碎机→离心脱脂机→预煮灭酶罐。
- Tea/Coffee Beans: Cleaning/sorting machine → dryer → superfine grinding unit.
- Animal Bones: High-pressure crusher → centrifugal degreasing machine → pre-cooking enzyme inactivation tank.

02 提取模块
Extraction Module

- 多功能提取罐：带夹套加热、变频搅拌(10-100rpm可调)、CIP清洗球。
- 溶剂循环系统：溶剂回收塔+冷凝器(溶剂损耗率≤3%)。
- Multi-functional extraction tank: Jacketed heating, variable-frequency stirring (10-100 rpm adjustable), CIP cleaning balls.
- Solvent circulation system: Solvent recovery column + condenser (solvent loss rate ≤3%).

03 固液分离模块
Solid-Liquid Separation Module

- 卧螺离心机(骨汤渣液分离)
- 板框过滤机(茶/咖啡粗滤)
- 膜分离机组(精制)
- Decanter centrifuge (bone broth residue separation)
- Plate and frame filter (tea/coffee coarse filtration)
- Membrane separation unit (refinement)

04 浓缩及纯化模块
Concentration & Purification Module

- 降膜式蒸发器(预浓缩)
- 刮膜式蒸发器(高粘度及热敏物料)
- 喷雾干燥塔(产能100-2000kg/h)
- Falling-film evaporator (pre-concentration)
- Scraped-film evaporator (high-viscosity & heat-sensitive materials)
- Spray drying tower (capacity: 100-2000 kg/h)

05 自动化控制模块
Automation Control Module

- PLC+SCADA系统：可预设提取及浓缩工艺配方，中央控制室集中控制。
- PLC + SCADA system: Pre-programmable extraction/concentration recipes, centralized control via central control room.

06 清洁与环保模块
Cleaning & Environmental Module

- CIP在线清洗系统：酸碱清洗液自动配比，清洗覆盖率≥99%。
- CIP system: Automatic acid/alkali cleaning solution proportioning, cleaning coverage ≥99%.



RTC-Extra 茶/咖啡/骨素提取工艺模块
Tea, Coffee and Bone Extract Process Module

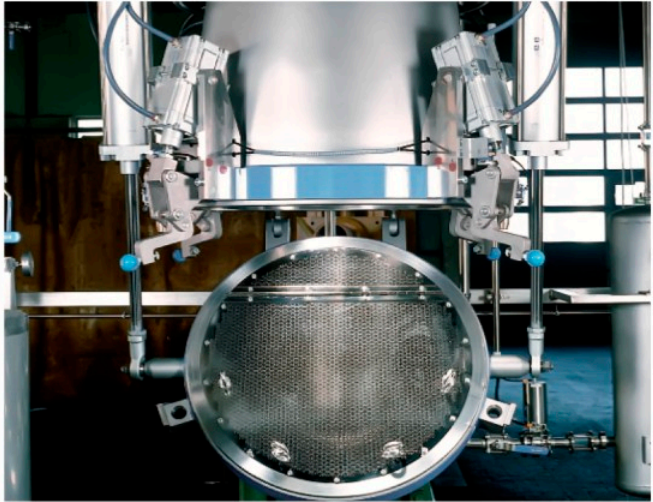


底部排渣门配置高压清洗头，避免茶/咖啡渣积料
A high-pressure cleaning head is configured at the bottom slag discharge door to prevent the accumulation of tea or coffee residues.

桨叶式及双螺带等多种搅拌形式，可实现搅拌高度升降，有效提高萃取效率，搅拌具备平料功能，满足不同物料处理量要求。

Multiple stirring forms such as paddle type and double screw ribbon type are available. The stirring height can be raised and lowered, which effectively improves the extraction efficiency. The stirring function includes leveling the materials, meeting the requirements of different material processing volumes.

出渣门结构 Structure of the slag discharge door



旋转式出渣门及大口径多爪式设计
Rotary type & Large-diameter residue discharging door

全自动开闭罐盖；可以实现高温高压提取，转环式可达到3Bar以上，给提取工艺提供了更多的选择，也可以适应一些特殊的工艺要求，安全可靠，具有充分的安全保障功能、提取罐无泄漏。

The tank cover can be automatically opened and closed. High temperature and high pressure extraction can be realized, and more than 3Bar can be achieved in the swivel type product. It provides more selection for extracting technology. It can also meet some special technological requirements. With good safety and reliability, it has sufficient safety guarantee functions and the extracting tank has no leakage.

过滤方式 Filtering method

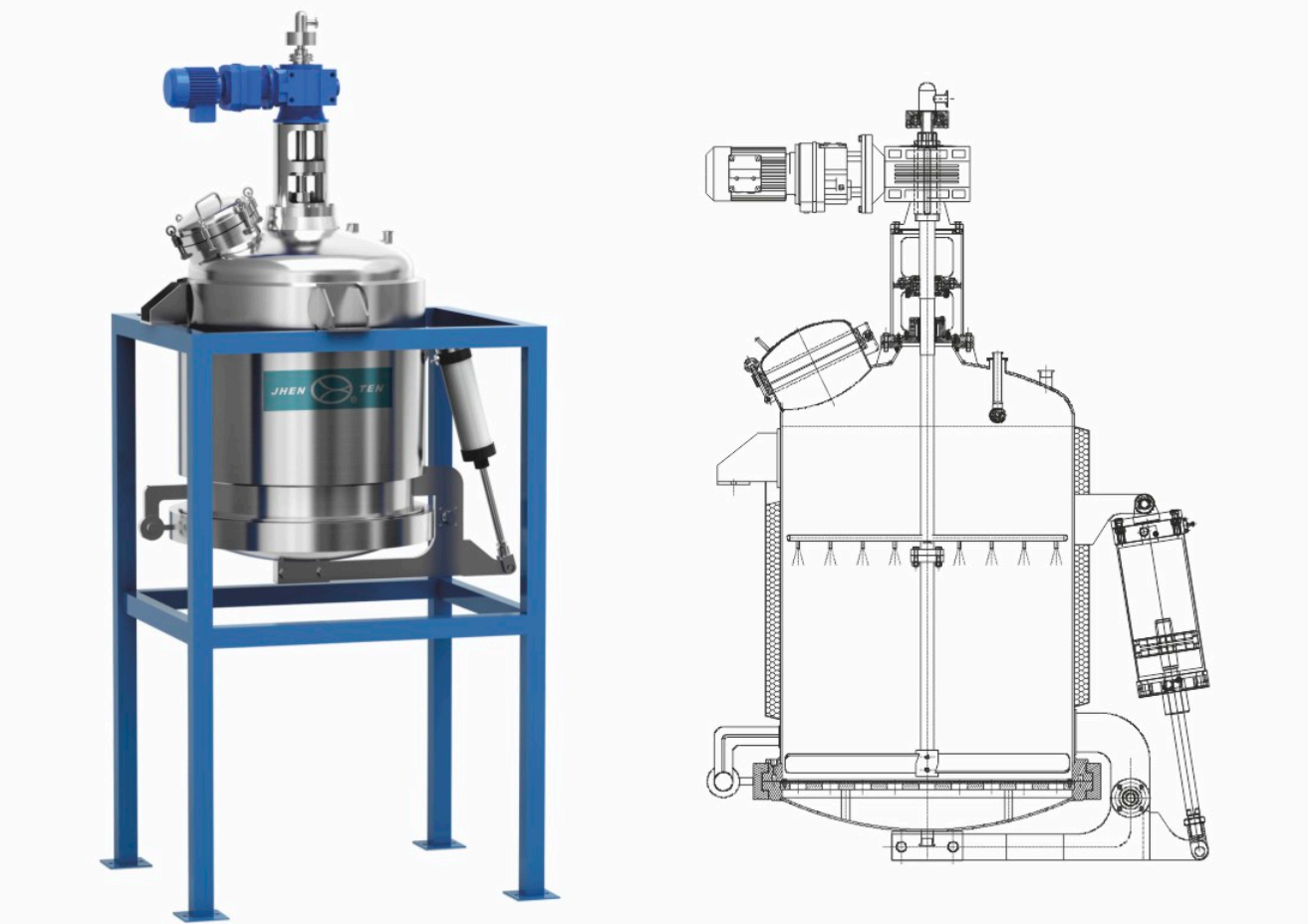
筒体侧过滤方式及底部排渣门过滤网
Cylinder side & bottom drain door filtration

对于粘性大较难过滤的药液采取罐体侧过滤方式，过滤网安装在筒体壁上药材不会紧压粘糊在过滤网上，所以过滤器更加通畅。过滤网为激光加光的长孔形不锈钢网。底部过滤采用两层，下部支撑网，上部不锈钢网板，网板上密布0.6×10mm的长孔，相比较席形编织网，长孔网板更易堵塞，过滤通畅，不锈钢抛光处理耐用时间6-8年不要更换。

For the liquid with high viscosity and difficult to be filtered, the tank side filtering method is adopted. The strainer is installed on the cylinder wall and the medicinal materials will not press and paste on the filter net, so the filter is more unobstructed. The filter is a long hole - shaped stainless steel mesh with laser glazing. The bottom of the filter using two layers, lower support mesh, upper stainless steel mesh board, net board covered with 0.6×10mm long hole, compared with mat woven mesh, long hole mesh board is more difficult to block, filter unobstructed, stainless steel polishing durable for 6-8 years do not replace.

立式萃取罐
Vertical Extraction Tank

咖啡萃取罐
Coffee Extraction Tank



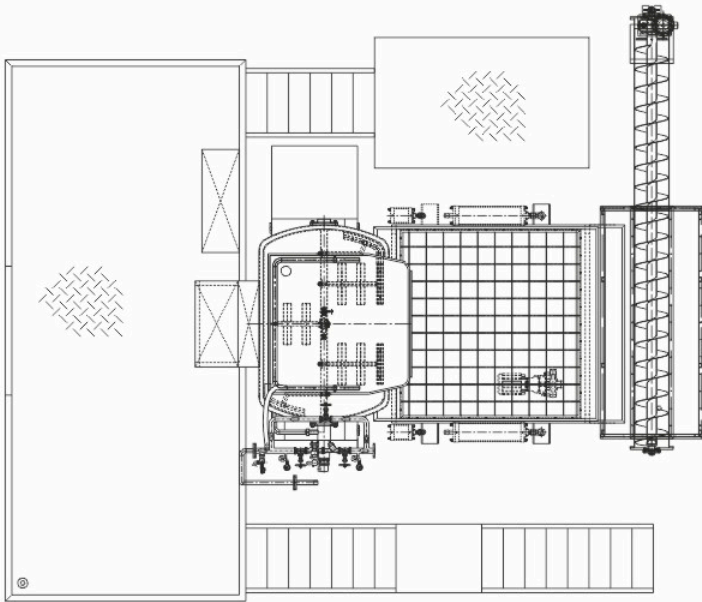
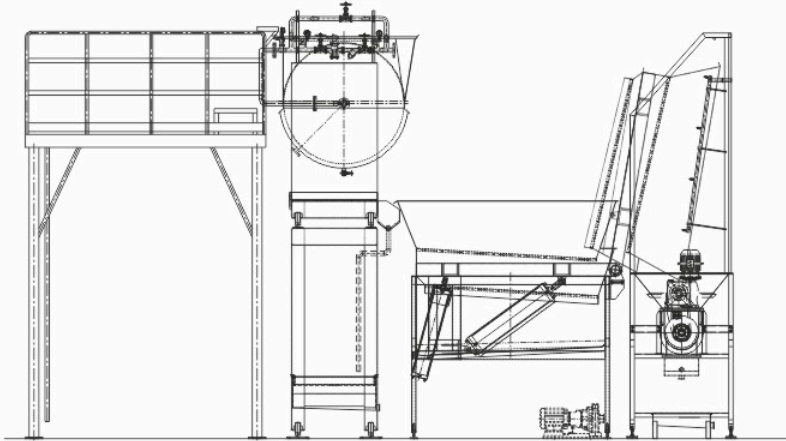
参数 Parameters		型号 Model	JTRDC-2000	JTRDC-3000	JTRD-5000	JTRDC-6000	JTRDC-8000
有效容积 Effective volume (L)			2000	3000	5000	6000	8000
罐体 Tank	直径 Diameter (mm)		Φ 1300	Φ 1600	Φ 1800	Φ 1900	Φ 2000
	高度 Height (mm)		1500	1500	1800	2000	2200
搅拌 Agitator	电机功率 Power (kW)		2.2	3	4	5.5	7.5
	搅拌工作转速 RPM (r/min)		35(螺带式) (可根据客户使用情况进行调整设计) 35(screw) (Can adjust the design according to the customer's usage)				

上表数据为标准型，仅供参考，可根据客户要求定制
The above-mentioned data is the standard, it can customize according to customer's requirements.

参数 Parameters		型号 Model	JTRKC-1000	JTRKC-1500	JTRKC-2000	JTRKC-3000	JTRKC-5000
有效容积 Effective volume (L)			1000	1500	2000	3000	5000
罐体 Tank	直径 Diameter (mm)		Φ 1100	Φ 1250	Φ 1300	Φ 1600	Φ 1800
	高度 Height (mm)		1000	1200	1500	1500	1800
搅拌 Agitator	电机功率 Power (kW)		1.5	1.5	2.2	3	4
	搅拌工作转速 RPM (r/min)		60(倾叶开启涡轮式)(可根据客户使用情况进行调整设计) 60(Special open turbine impellers) (Can adjust the design according to the customer's usage)				

上表数据为标准型，仅供参考，可根据客户要求定制；
The above-mentioned data is the standard, it can customize according to customer's requirements.

卧式萃取罐
Horizontal Extraction Tank



性能特点 Characteristics

- 卧式搅拌节省高度空间限制；
 - 翻倒式结构节省出料和过滤时间，提升批次效率；
 - 柔性化布局，根据现场可灵活调节；
 - PLC+触摸屏控制，可实现远程操控。
- The horizontal stirring saves the limitation of height space;
 - The tilting structure saves the discharging and filtering time and improves the batch efficiency;
 - With flexible layout, it can be flexibly adjusted according to the site;
 - Controlled by PLC + touch screen, remote operation can be realized.

型号 Model	JTRHC-5	JTRHC-10	JTRHC-15	JTRHC-20	JTRHC-28	JTRHC-36	JTRHC-X
规格 Specification	500L	1000L	1500L	2000L	2800L	3600L	可指定 Can be specified
直径 Diameter(A)	800	1100	1200	1300	1400	1500	
长度 Length(B)	1200	1400	1600	1900	2306	2437	
总长 Total length (H)	1050	1350	1450	1550	1650	1750	
搅拌速度 Agitator speed (Rpm)	30~40	30~40	30~40	30~40	30~40	30~40	

骨汤提取系统
Bone Soup Extraction System

骨汤、骨素及骨肽智能化生产系统
Bone soup, ossein and ossotide intelligent production system



提取工段
Extraction section



浓缩工段
Concentration section



乳化调和工段
Emulsification and reconciliation section

主要组成 Main composition
原料骨破碎系统、提取系统、水回收系统、汤液分离系统、浓缩系统、调配灭菌系统、美拉德反应系统、成品暂存系统、罐装系统、残骨系统、电控系统等组成。

Raw bones grinding system, extraction tank system, water recovery system, soup separation tank system, concentrating system, preparing and pasteurizing system, maillard reaction tank system, finished product storage system, filling system, residue broken bones treating system, electrical control system.

工艺流程 Procedure flow
禽畜骨→粉碎→预处理→提取→分离→浓缩→调配→干燥→罐装、袋装→成品。

Raw animal bones → Grinding → Pre-processing → Extracting → Separating → Concentrating → Blending → Drying → Filling/packing → Finished → Product

低温浓缩系统
Low temperature concentration system

适用范围 Application range
该系统适用于各类骨汤溶液的浓缩。根据骨汤的成分和物化性质，利用现代技术、MVR等技术实现骨抽提物的分离和浓缩，来生产高附加值的骨产品。

- 性能特点 Characteristics**
- 运行稳定、高效节能，蒸汽耗量低；
 - 浓缩比大，浓缩时间短；
 - 适用于热敏性物料的浓缩；
 - 传热系数高，可防止“干壁”现象。
- Stable working, energy-saving, low steam consumption.
- High concentration factor, short concentration time.
- Workable for heat sensitive material.
- High heat transfer coefficient, can prevent the "Drywall" phenomenon.

This system is applicabe in concentraing of all kinds of bone extracts solution According to the content and physico-chemical property of bone extracts solution, we adopt the technology of membrane filtration or MVR to achieve the separating and concentrating the bones extract, and produce the bone products with high additional value.



乳化调和系统
Emulsification and reconciliation system



萃取中试模块
Extraction Pilot Plant

产品全生命周期服务
Product Life Cycle Service

- 低温高效萃取技术
Low-Temperature High-Efficiency
Extraction Technology
- 精准控温
 - 灵活调控压力和萃取时间
 - 动态萃取
 - Precision temperature control
 - Flexible pressure and extraction time adjustment
 - Dynamic extraction process

- 柔性生产与稳定品控
Flexible Production & Stable
Quality Control
- 模块化拓展
 - 支持小试到量产放大
 - 智能化品控
 - Modular expansion capability
 - Scalable from pilot to mass production
 - Intelligent quality monitoring

- 全流程清洁与防污染设计
Full-Process Hygiene & Contamination
Prevention
- 卫生级构造
 - 安全材质
 - Sanitary-grade construction
 - Safety-certified materials

- 智能化节能降耗体系
Intelligent Energy-Saving System
- 能量循环
 - 溶剂零浪费
 - Energy recycling
 - Zero solvent waste

- 便捷运维与合规保障
Easy Maintenance & Compliance
- 远程智控
 - 合规认证(GMP/FDA)
 - Remote smart control
 - Compliance certifications (GMP/FDA)



- 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

- 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

- 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

