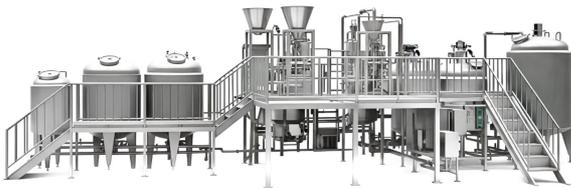


BREAD LIQUID FERMENTATION SYSTEM AUTOMATED REFERMENT TECHNOLOGY

面包液体发酵系统 - 自动化预发酵技术



This advanced liquid fermentation system revolutionizes bread production by automating the traditional sponge-dough method through controlled liquid preferment technology. Engineered for consistency, efficiency, and superior bread quality, this fully automated system delivers authentic artisan flavor profiles while eliminating manual labor and ensuring repeatable results across every batch.

这种先进的液体发酵系统通过受控的液体预发酵技术实现了传统“中种法”的自动化，从而彻底改变了面包生产。该全自动系统专为一致性、高效率 and 卓越的面包质量而设计，在消除人工劳动的同时，提供纯正的工匠级风味，并确保每一批次的结果都可重复。

REVOLUTIONARY TECHNOLOGY / 革命性技术

Liquid Fermentation Method: 液体发酵法:

- **Modern interpretation of time-honored sponge-dough baking techniques**
对悠久的“中种法”烘焙技术的现代解读
- **Converts solid preferment processes into pumpable liquid systems**
将固体预发酵过程转化为可泵送的液体系统
- **Maintains traditional flavor development in automated format**
在自动化形式下保持传统的风味开发
- **Combines old-world quality with new-world efficiency**
将旧世界的品质与新世界的效率相结合

KEY ADVANTAGES / 核心优势

1. Authentic Sponge-Dough Quality & Flavor / 纯正的中种品质与风味

Traditional Character, Modern Production / 传统特色, 现代生产

- **Complex Flavor Development: Extended fermentation creates rich, nuanced bread flavor.**
复杂风味开发: 延时发酵创造丰富、细腻的面包深度。
- **Superior Aroma: Natural fermentation produces aromatic compounds.**
卓越香气: 自然发酵产生与手工中种面包一致的芳香化合物。
- **Clean Label: Reduces or eliminates artificial dough conditioners.**
清洁标签: 减少或消除人工面团改良剂和风味增强剂。

Sponge-Dough Benefits Without the Labor / 无需人工的中种效益

Traditional requires: Manual mixing, physical handling. Liquid delivers: Automated production, pump transfer.
传统方式需要: 人工混合、体力搬运。液体系统提供: 自动化生产、泵送传输。

2. Fully Automated Pump Conveying / 全自动泵送输送

Automated Material Flow: Liquid preferment pumped directly to mixing stations. **Precise Dosing:** Programmable controls deliver exact quantities. **No Physical Labor:** Eliminates heavy lifting and carrying.

自动化物料流：液体预发酵物直接泵送到搅拌站。精确计量：可编程控制提供精确数量。无体力劳动：消除重物提拉和搬运。

Labor Savings: Eliminates 2-4 workers per shift. / 节省人工：每班减少2-4名搬运工。

3. Advanced Cooling & Storage System / 先进的冷却与储存系统

Heat Exchanger Cooling / 换热器冷却

Rapid Temperature Reduction: Efficiently cools from peak to storage temperature.

快速降温：高效地从发酵峰值温度冷却至储存温度。

Cold Storage (0-4°C) / 冷藏稳定

Extended Holding Time: Maintains quality for 24-72 hours. **Yeast Activity Control:** Arrests fermentation.

延长存放时间：保持品质24-72小时。酵母活性控制：抑制过度发酵。

4. Monitoring & Control / 监测与控制

Online tracking of Temperature, pH, Dissolved Oxygen, and Fermentation Time. PLC manages recipes and data logging.

在线追踪温度、pH值、溶解氧和发酵时间。PLC管理配方和数据记录。

5. CIP (Clean-In-Place) System / 在线清洗系统

Fully automated cleaning cycles. Push-button operation. Reduced water and chemical usage by 50-70%.

全自动清洗循环。一键式操作。减少50-70%的水和化学品使用量。

COMPARISON: TRADITIONAL VS. LIQUID / 对比：传统 VS. 液体系统

Aspect / 方面	Traditional Sponge-Dough / 传统中种	Liquid Fermentation System / 液体发酵系统
Labor Required / 所需人工	2-4 workers per shift / 每班2-4人	Minimal supervision / 极少监管
Material Handling / 物料搬运	Heavy lifting, carrying / 重体力搬运	Automated pump transfer / 自动化泵送
Cleaning Time / 清洗时间	4-6 hours manual / 4-6小时人工	1-2 hours automated CIP / 1-2小时自动
Hold Time / 存放时间	Limited (few hours) / 有限 (数小时)	Extended (24-72 hours) / 延长 (24-72小时)

IDEAL APPLICATIONS / 理想应用场景



Soft Rolls / 软面包



Sliced Bread / 切片面包



Artisan Breads / 工匠面包



Bagels & Pizza / 贝果与披萨

SYSTEM SPECIFICATIONS / 系统规格

Vessels: 1,000-3,000L SS304/316. Cooling: Plate heat exchanger. Control: Allen-Bradley/Siemens PLC. CIP: Automated wash/sanitize.

罐体：1,000-3,000L 不锈钢304/316。冷却：板式换热器。控制：AB/西门子PLC。CIP：自动清洗/消毒。

ROI ANALYSIS / 投资回报分析

Direct labor savings by eliminating 2-4 workers. 0.5-1% ingredient waste reduction. Increased capacity and consistency.

消除2-4名工人的直接人工节省。减少0.5-1%的配料浪费。提高产能和一致性。

Artisan flavor. Automated efficiency. Consistent excellence.

工匠风味。自动化效率。始终如一的卓越。

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Note: Custom configurations available based on requirements.