

Miniwind Benchtop Single-Use Magnetic Mixing System

Shaft-seal-free, GMP-ready benchtop mixing

The Miniwind Benchtop Single-use Magnetic Mixing System is a highly integrated, compact smart platform available in two models—LXB-E and LXB-P—covering full application needs from basic R&D to GMP pilot-scale production. The LXB-P is purpose-built for biopharmaceutical manufacturing with full GMP compliance, data traceability and integrity management, while the LXB-E offers user-friendly, cost-efficient performance for routine lab and process development work.

Integrating core functions including weighing, magnetic mixing, temperature control and pH/conductivity monitoring, it enables efficient liquid-liquid and solid-liquid blending. Compatible with LeKrius® single-use mixing bags, the system enhances process safety, accuracy and standardization to support a smooth transition to GMP manufacturing.



LXB - P

Advantages

- Benchtop split-type controller for easy operation and mobility
- Compact footprint with comprehensive functionality and broad compatibility
- Cost-efficient consumables with rapid mixing performance
- Intuitive color touchscreen interface
- Magnetically driven impeller, shaft-seal-free design with zero contamination risk
- Designed to meet GMP cleanroom management requirements



LXB-E

Applications

- Homogenization of intermediate products in purification processes
- Laboratory-scale mixing applications including QC buffer preparation and sample pre-treatment
- Vaccine adjuvant preparation
- Bulk intermediate preparation
- Virus inactivation
- Pre-filling homogenization

Design & Functional Features

The LXB-P benchtop system is purpose-built for aseptic liquid mixing, supporting working volumes from 500 mL to 30 L, effectively bridging the gap in small-volume mixing applications.

The system utilizes magnetic coupling to transfer torque between the drive unit and the impeller within the mixing bag, eliminating shaft seals and minimizing contamination risk.

Pre-sterilized single-use bags eliminate cleaning steps, while the transparent bag design allows real-time visual monitoring, ensuring efficient, safe, and aseptic mixing of small-volume fluids.

Design Features

- Compact structural design with small footprint
- Lightweight: mixer ≤ 10 kg, suitable for benchtop operation
- Magnetic coupling drive (seal-free design)
- Pre-configured ports for flexible sensor integration
- Resistant to repeated disinfection (e.g., 75% ethanol, isopropyl alcohol)

Software Control & Functionality

- Proprietary software with high-speed performance
- Bilingual interface (Chinese / English)
- 15.6" HD touchscreen (1920 $\times$ 1080), glove-compatible operation
- Layered UI design with real-time display of:
 - Mixing speed
 - Temperature
 - pH / conductivity trends
 - Weight data

Functional Modules

Weighing Module

- High-precision load cell
- Range: 0–35 kg
- Accuracy: $\pm 0.3\%$ FS

pH Monitoring

- Range: 0–14
- Accuracy: ± 0.05 pH
- Automatic temperature compensation

Conductivity Monitoring

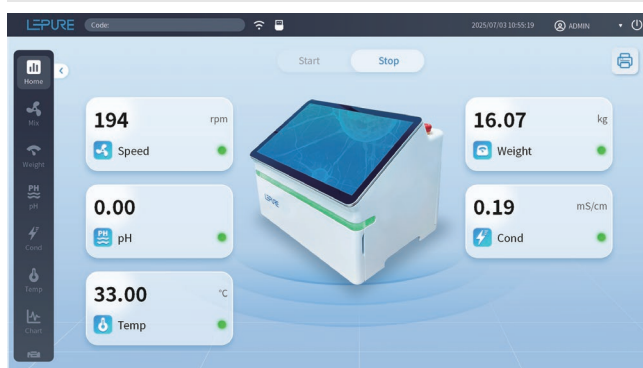
- Range: 1 μ S–300 mS/cm
- Accuracy: $\pm 5\%$

Temperature Control

- Range: 0–60 °C
- Accuracy: ± 0.5 °C (with PT100 probe)

Mixing Drive

- Brushless DC motor
- Speed: 0–600 rpm (± 5 rpm)
- Torque: ≥ 5 N·m



Process Monitoring Module

pH Detection

Range: 0–14 pH, Accuracy: ± 0.05 pH, with automatic temperature compensation (ATC).

Conductivity Monitoring

Range: 1 μ S/cm – 300 mS/cm;
Accuracy: $\pm 5\%$ of full scale (FS).

Software & HMI (Human-Machine Interface)

- Custom-developed, high-performance software
- Bilingual support (Chinese/English)
- 15.6" HD glove-friendly touchscreen, 1920 × 1080 resolution
- UI Design: Layered menu structure with real-time display of mixing speed, temperature, pH/conductivity curves, and weight data
- Built-in functions: Access control, audit trails, data logging, batch reporting, and more
- Connectivity: Supports integration with SCADA, MES, and other central control systems via a reserved Ethernet interface

Compliance

- 4-level access control system; 7 types of automatically generated records (including audit trails and operation logs) can be exported in encrypted format
- Fully compliant with GMP requirements
- Dual-level electronic signature functionality, meeting 21 CFR Part 11 requirements for electronic data integrity
- CE certified, conforming to EU regulatory standards

Technical Specifications

Item	Specification
Controller Dimensions	P: 377 × 279 × 297 mm / E: 260 × 280 × 175 mm
Controller Weight	P: ~10.5 kg / E: ~3 kg
Mixing Base Dimensions	450 × 450 × 204 mm
Mixing Base Weight	~10 kg
Materials	ABS and SS304
Container Material	Acrylic / Stainless Steel
Power Supply	100–240 V AC, 50/60 Hz
Power	200 W / 1.1–5 A
Working Volume	0.5–30 L
Weighing Sensor	C3 grade, ± 0.3 % FS
Mixing	Magnetic coupling, 0–600 rpm
pH	0–14, ± 0.05
Conductivity	1 μS–300 mS/cm
Temperature	0–60 °C, ± 0.5 °C
Ports	RJ45, USB 3.0
Printer	Built-in needle printer
Storage	1 TB
Data Output	USB / Network
Format	Raw data / PDF
Environment	5–40 °C, ≤60 % RH

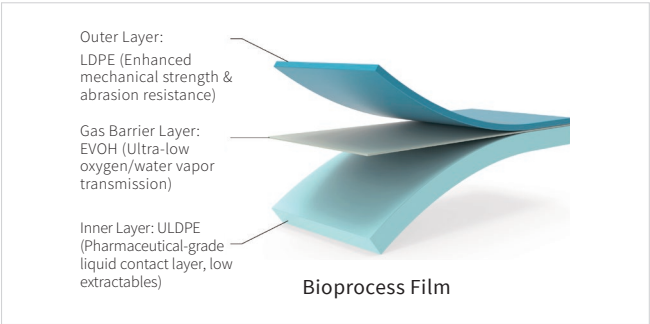
Ordering Information

System Configurations	Containers (Acrylic)	Containers (Stainless Steel, Jacketed)
LXB-E1: Base model (without weighing)	1 L (side outlet, 0.5–1 L working volume)	1 L (Bottom or side outlet available)
LXB-E2: Base model (with weighing)	5 L (bottom outlet, 2–5 L)	5 L (Bottom or side outlet available)
LXB-P1: Advanced model (without weighing)	10 L (bottom outlet, 4–10 L)	10 L (Bottom or side outlet available)
LXB-P2: Advanced model (with weighing)	20 L (bottom outlet, 5–20 L)	20 L (Bottom or side outlet available)
LXB-Cable: Optional 3 m connecting cable	30 L (bottom outlet, 8–30 L)	30 L (Bottom or side outlet available)

LeKrius® Bioprocess Film

LeKrius® single-use mixing bags are manufactured using LePure’s proprietary, independently developed LeKrius® bioprocess film, purpose-built for biopharmaceutical mixing and storage application.

Multi-layer co-extruded structure: LDPE / EVOH / ULDPE	Thickness: 400 µm	Gamma-sterilized (≥25 kGy, max. 50 kGy)
TSE/BSE-free	Low extractables and leachables	Excellent mechanical strength and gas barrier properties



Key Advantages

- Process Safety & Biocompatibility
- Superior Mechanical & Sealing Performance
- Reliable Supply & Scalable Manufacturing
- Global Compliance & Validation Support

Bag Specifications

Bag Code	Volume	Outlet	Dimensions	Working
STM001-2K	1 L	Side	140 × 140 × 95 mm	0.5–1.1 L
STM005-2K	5 L	Bottom	220 × 220 × 160 mm	1–5.5 L
STM010-2K	10 L	Bottom	260 × 260 × 220 mm	2–11 L
STM020-2K	20 L	Bottom	320 × 320 × 260 mm	4–22 L
STM030-2K	30 L	Bottom	370 × 370 × 310 mm	6–30 L

Safety	Robust	Sustainable
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