

LabCore Three-Point Pressing Solid-State Battery Test Mold

Model: MOL5A100A Series

Overview

The LabCore MOL5A100A is a three-point pressing solid-state battery test mold designed for research groups that need uniform compression and a clear upgrade path to quantitative force monitoring. Unlike single-axis pellet dies, the three-point locking geometry distributes stack force more evenly across the electrode/electrolyte interface — a practical advantage when working with brittle oxide electrolytes, thin lithium-metal foils, or pressure-sensitive sulfide pellets.

The mold body uses a PEEK-ceramic composite core reinforced with alloy-steel structural parts. This combination delivers the electrical insulation and chemical inertness required for electrochemistry, together with the mechanical strength to reach 5 T of pressing force. The standard $\phi 10$ mm cavity covers the most common lab sample sizes, and the compact $\phi 36 \times 62$ mm mold body fits comfortably inside gloveboxes and environmental chambers.

Two variants share the same product page and experimental protocol. The Standard variant (MOL5A100A-STD) is a pure mechanical, manual mold for routine pressing and training. The With-Sensor variant (MOL5A100A-PS1) adds an integrated load module and PLC-based intelligent control, with optional 500 kg or 1000 kg sensor ranges, for teams that need to record stack force as an experimental variable.

Key Features

- Three-point pressing lock-ring geometry for more uniform stack pressure distribution across the electrode/electrolyte interface
- PEEK-ceramic composite core reinforced with alloy-steel structural parts for electrical insulation, chemical resistance, and mechanical stability up to 5 T
- Dual-seal split-cell structure compatible with multiple pressing modes and glovebox operation
- All-in-one research workflow: powder pressing, pellet forming, cell assembly, and ionic-conductivity testing in a single fixture
- Two variants in one listing — Standard (manual mechanical) or With-Sensor (500 kg / 1000 kg load module + PLC control)
- Standard $\phi 10$ mm working cavity; customizable cavity size available on request
- Compact $\phi 36 \times 62$ mm mold body fits common glovebox ports and environmental chambers

Specifications

Parameter	Value / Specification
Model	MOL5A100A
Product Name	LabCore Three-Point Pressing Solid-State Battery Test Mold
Variants	MOL5A100A-STD (Standard Mechanical) / MOL5A100A-PS1 (With Pressure Sensor)
Core Material	PEEK-ceramic composite, alloy steel, ceramic
Working Cavity Diameter	φ10 mm (customizable on request)
Mold Body Dimensions	φ36 mm × H62 mm
Mold Body Weight	180 g
Max Stack Force	5 T
Standard Fixture Dimensions	φ70 mm × H97 mm
Standard Fixture Weight	0.8 kg
With-Sensor Fixture Dimensions	φ70 mm × H128 mm
With-Sensor Fixture Weight	1.2 kg
Pressure Sensor Range	500 kg / 1000 kg (With-Sensor variant only)
Control Method	Manual mechanical (STD) / PLC intelligent control (PS1)
Max Operating Temperature	200 °C (mold body material rating)
Sealing	Dual-seal ring structure
Typical Applications	Solid-state battery research, electrolyte pellet pressing, cell assembly, ionic-conductivity testing, lithium-metal anode studies

Applications

- Solid-state electrolyte powder pressing and pellet forming
- All-solid-state battery assembly and interface contact optimization
- Lithium-metal anode / solid-electrolyte interface studies
- Oxide, sulfide, and polymer solid-electrolyte screening
- Glovebox-based fast sample loading and electrode swapping
- University teaching labs and student training
- Process development requiring quantitative stack-force feedback

Ordering Information

Available SKUs:

SKU	Description
MOL5A100A-STD	Standard mechanical variant — manual operation, no electrical system
MOL5A100A-PS1	With pressure sensor — 500 kg / 1000 kg load module + PLC control

Lead Time: 3-5 business days (standard); contact us for custom cavity size or OEM/white-label options

Packaging: 1 × test mold set with fixture, seals, and user guide (sensor and PLC unit included with PS1 variant)

Notes

Mold is shipped empty — no electrolyte or lithium metal included. Not classified as dangerous goods. The packaging dimensions provided by the supplier (70×70×97 cm / 70×70×128 cm) should be verified against the physical sample. Custom cavity sizes, sensor range selection, fixture options, and OEM/white-label branding are available on request. For quotation, bulk orders, or technical support, contact LabCore Materials.

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