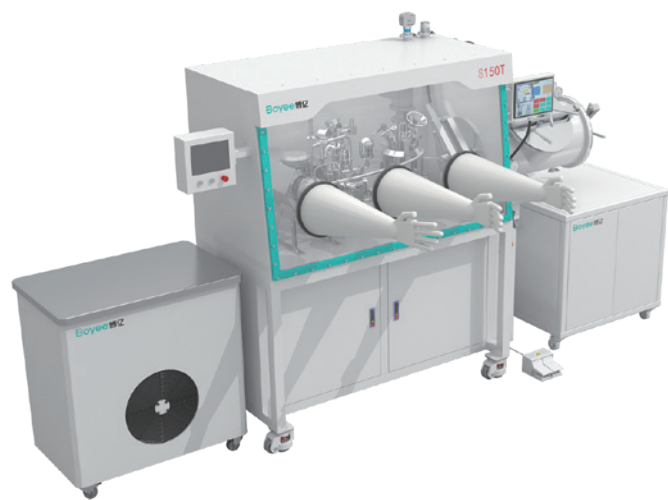


Glovebox Sealed Integrated Bead Mill

A fully integrated system combining a high-performance bead mill with an inert gas-protected glovebox.



In a fully enclosed inert environment, oxygen and moisture are isolated to achieve efficient grinding, dispersion and mixing of materials.

Industry Preparation Pain Points

Material sensitivity and vulnerability issues

Leakage pollution risk

Sealing detection difficult

Uneven particle size distribution

Low grinding efficiency

Material agglomeration issues

Material Sensitive Protection

Integrated Sealed Environment

Embed the core grinding unit of the bead mill into the glove box to create an inert environment throughout process from feeding to discharging. It is equipped with a circulating fan, purification column and organic solvent absorber to purify the air in the cavity in real time, blocking the contact path between the material and air or moisture, and eliminating the risks of oxidation and hydrolysis.

Multiple Sealing Reinforced Glovebox

The operating surface of the glove box adopts butyl rubber gloves, with high-efficiency filter elements, to ensure the sealing performance during personnel operation.

Special Materials and Devices

The double-end face mechanical seal with a closed loop cleaning and cooling device (oil cooling) is adopted. The grinding chamber is made of corrosion-resistant materials such as silicon carbide and zirconia ceramics, achieving full-area sealing from the grinding area to the glove box, which is suitable for high-sensitive material scenarios.

Overcoming 3 Key Sealing Challenges: Leakage, Detection, and Compatibility

01

High-strength wear-resistant sealing components

With an adaptive compensation structure monitor sealing pressure in real time and automatically fill gaps, minimizing wear and aging caused by frequent opening, closing or vibration, while oxygen and moisture intrusion are blocked.

Embedded high-precision pressure and gas concentration sensors

Enable real-time data acquisition and automatic alert upon detecting a micro-leakage.

02

Configure adjustable flexible sealing module

The suitable sealing material can be replaced according to the temperature and pressure requirements across industries.

03

Solving Uneven Particle Size Problem in the Grinding Process

1 The turbine structure is used to optimize the flow field & wear-resistant ceramic grinding component

The turbine structure precisely regulates the movement of materials in the grinding chamber, making the flow field distribution more uniform. The ceramic grinding zone (silicon carbide cylinder + zirconia disperser) features high hardness and wear resistance, ensuring consistent particle size after grinding and reducing distribution deviation.

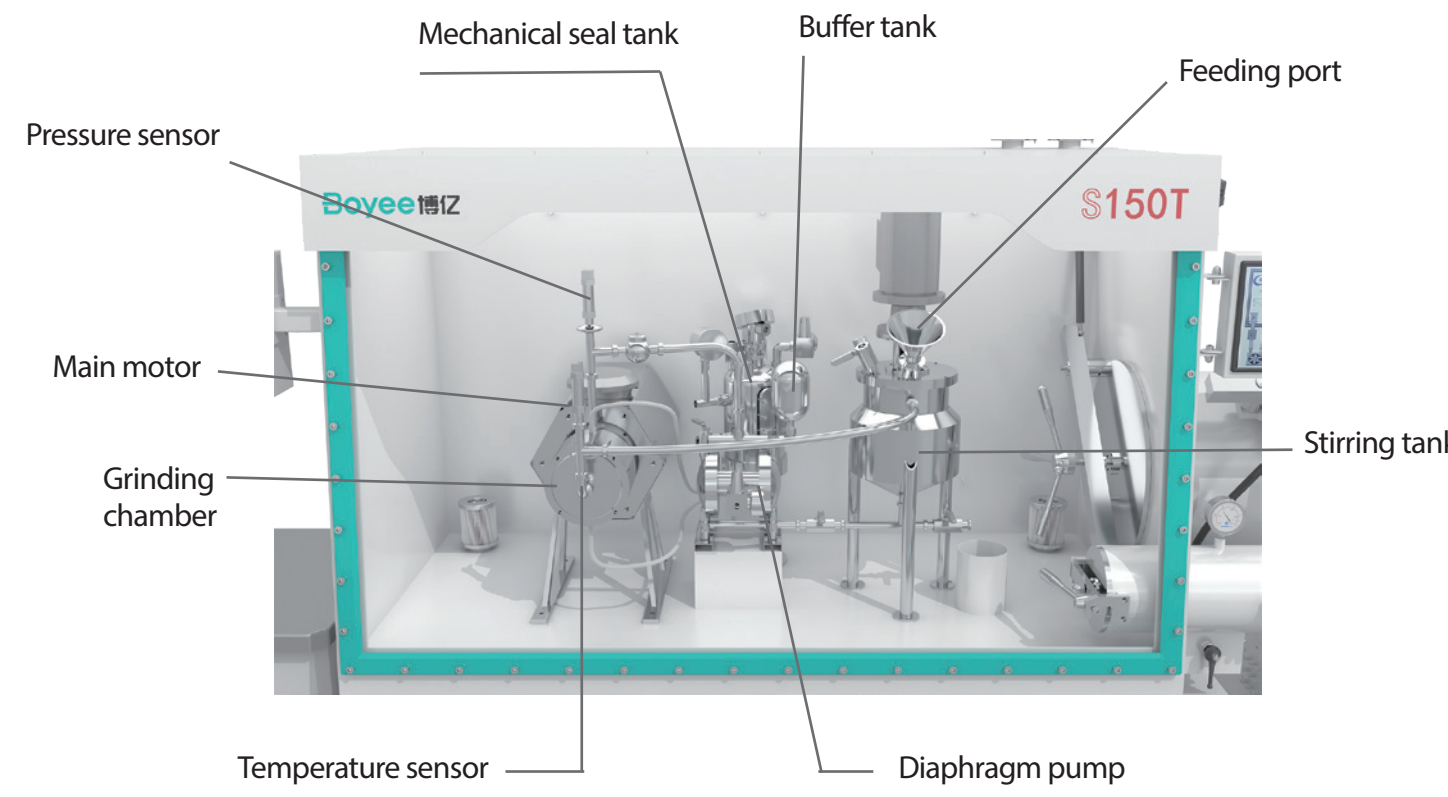
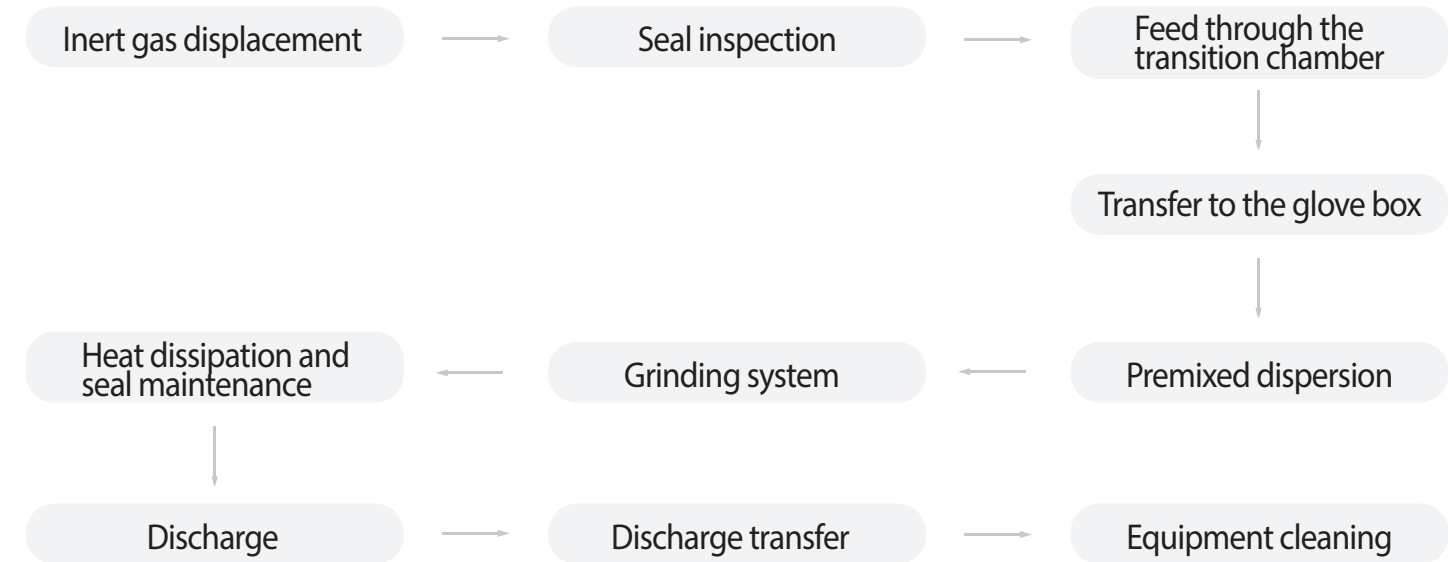
2 Customized motor direct drive & nano-level adaptive grinding system

Power transmission without loss, with the adaptation of suitable zirconium beads, strengthens the grinding force, shortens the grinding time, and reduces energy consumption.

3 Zirconia ceramic dispersion & double end face seal control environment

The zirconia ceramic disperser is equipped with an "anti-agglomeration" surface characteristic. It features a double-end face mechanical seal with a cooling and cleaning closed-loop system, maintaining a low water and oxygen environment inside the glove box and inhibiting the agglomeration of nanoparticles caused by humidity and oxidation.

Working Principle Process

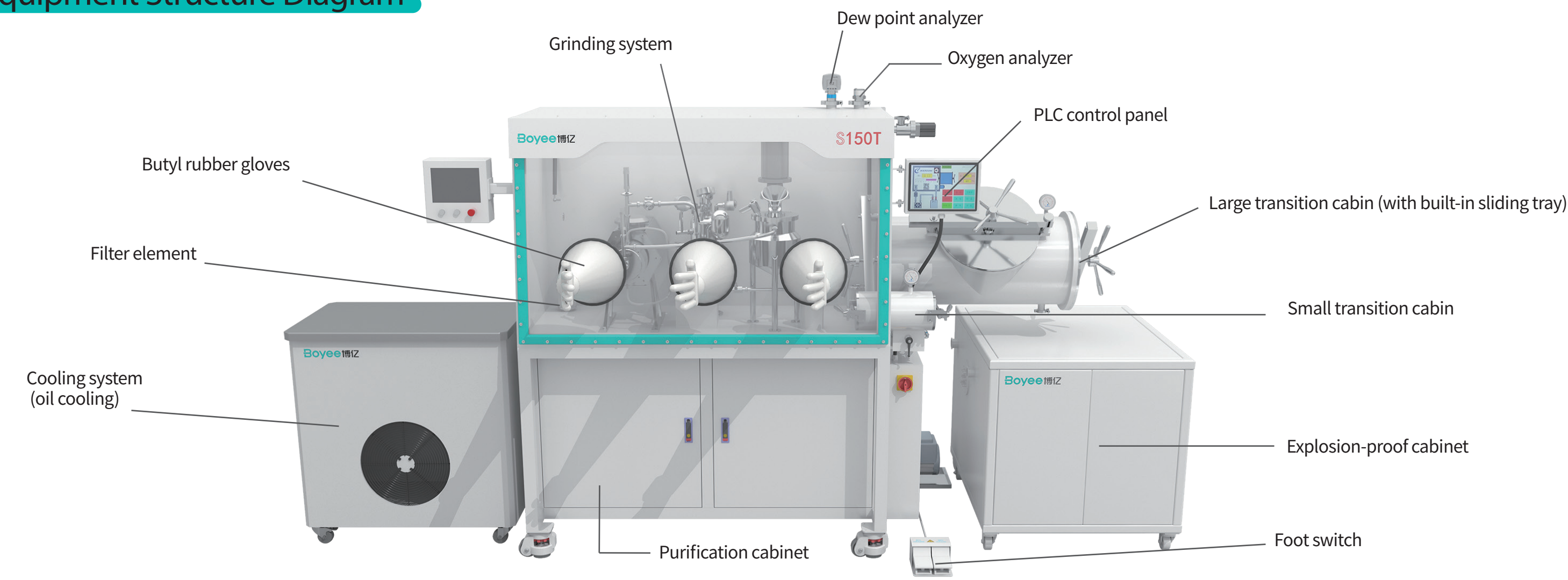


Application Area

- Sulfide solid-state electrolyte, solving the problems of oxidation and hydrolysis
- Highly active and easily oxidized materials (ensuring stable components and controllable efficacy)
- Chip grinding and packaging materials (eliminating particle contamination and purity deficiencies issues)



Equipment Structure Diagram



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