

WEISS
SOLUTIONS

Weiss Pharmatechnik features:

WIBObarrier refilling and weighing system

- robust containment system for battery production.

Challenges due to high dust content.

Protecting people and the environment during the manufacture of zinc-air batteries presents a particular challenge. The process of weighing and filling anode materials results in high dust levels. Depending on the product, workstation limits of $1.1 \mu\text{g}/\text{m}^3$ to $1 \text{mg}/\text{m}^3$ must be met. The task at hand also required that the target container must not be externally contaminated and that empty removal containers can be discharged with minimal internal contamination.

WIBObarrier safety workstation in a customized design.

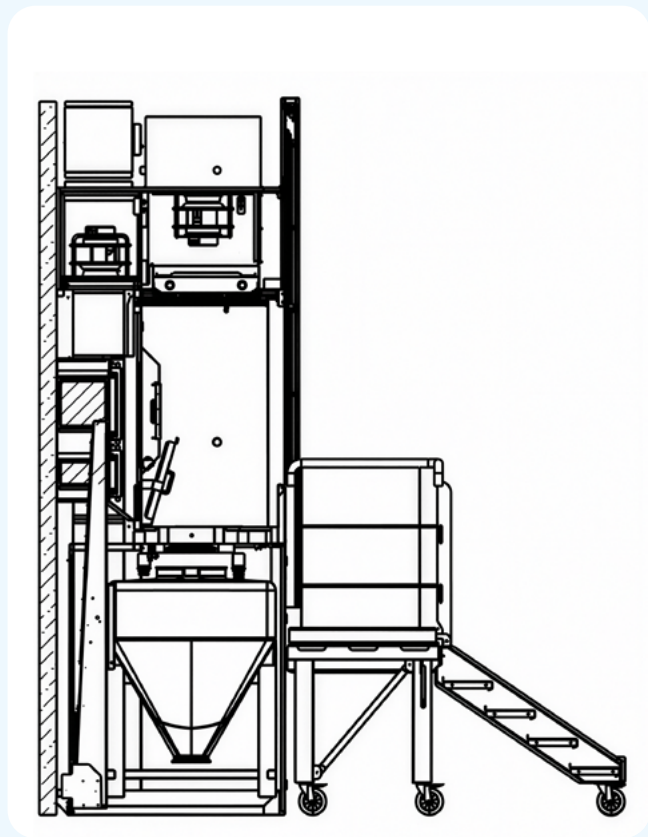
In a preliminary mock-up study, the work steps and ergonomics were first reviewed. This resulted in the design of a safety workstation divided into three sections. A WIBO barrier system is hereby used, comprising the product feeding, weighing and filling of containers, and the discharge of empty containers. The work area is reliably shielded from the surrounding area by a vertical clean air curtain. The targeted airflow captures airborne particles, achieving a robust containment performance in accordance with ISPE-SMEPAC guidelines.

Customized processes.

The individual process steps are supplemented by corresponding modules. These include an integrated lift for the containers, a weighing cell with a lifting table for the servo-lift container located in the base frame, a docking port in the work surface for dust-proof filling and an endless liner system for disposing of empty containers. The sliding disc can be moved across the entire width of the system and is fitted with glove grips. It serves to protect against splashing and carryover. The system is secured during idle operation by a position-monitored front slide lock.

Technical data:

Air supply	100% supply air and exhaust air mode via an on-site ventilation system
Exhaust air volume flow rate	4320 m ³ /h
Supply air volume flow rate	3760 m ³ /h
Fresh air leaving the room	560 m ³ /h
Outer dimensions (WxDxH)	3450 x 1350 x 4227 mm
Pre-filter class supply air	ePM2,5 ≥ 70% (F7)
Exhaust air filter class	ISO ePM1 ≥80% (F9)/H14



System features:

- Work area divided into three sections for low-contamination process steps
- Extensive module system for ergonomic implementation of the entire process
- LED lighting and light barriers for monitoring the docking process and for when using lifting equipment
- Console for on-site monitor
- Sockets, data sockets and cable bushings for connecting on-site equipment
- Switch cabinet for system control
- Differential pressure monitoring of the supply and exhaust air as well as filters

Services at a glance:

- Safe personal and environmental protection for weighing and filling anode materials for zinc-air batteries
- WIBObarrier air supply system according to 3-zone principle
- Robust containment performance according to ISPE-SMEPAC
- Mock-up study to review the ergonomics
- Qualification review as part of a FAT

Weiss Pharmatechnik is a competent supplier of sophisticated clean-air and containment solutions. The product portfolio includes barrier systems, laminar-flow units, safety workbenches, isolators, air-lock systems, and stability testing systems. A comprehensive service network in the D-A-CH region ensures smooth operation at all times. Weiss Pharmatechnik is a subsidiary of the Schunk Group, which employs more than 9,000 people worldwide.

Weiss Pharmatechnik. Experience Safety.



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