

DIN Tubular Motive Power Batteries

Low Maintenance and Extended Watering Intervals

Design Features and Benefits

- High capacity tubular constructed design for **high cycle applications**
- Optimized surface area to allow **higher voltages** in high rate and cold storage applications
- **Longer run times** between charging intervals
- Hadi High pressure die cast positive splines **resist corrosion** which improves battery life (Dense grain structure of tubular grid using pressure die casting)
- Computer designed negative plate provides **more efficient current flow** to increase performance
- Uniform distribution of active material and weight is achieved through a wet filling process which **enhances plate uniformity**



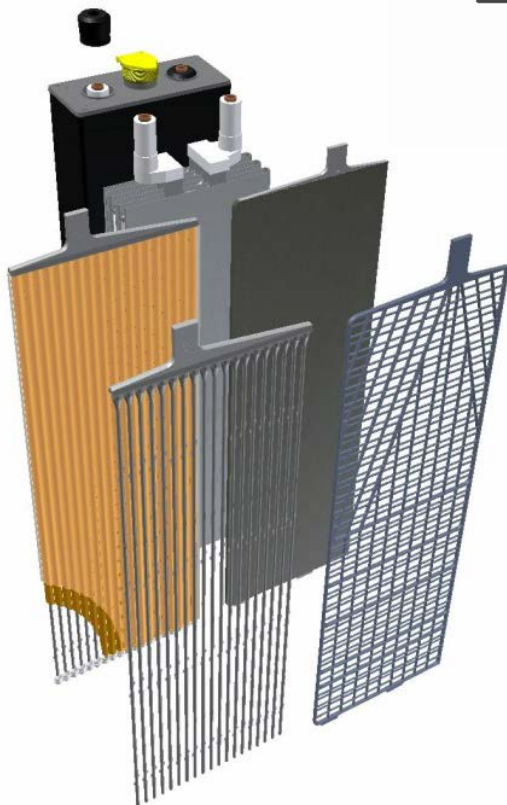
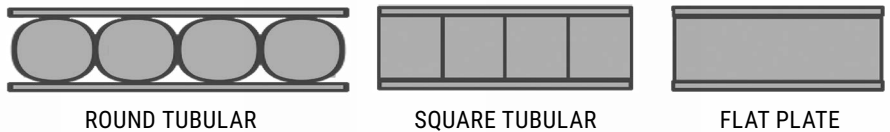
Cells built according to DIN IEC 60254-1

Applications

- Forklifts
- Pallet Jacks
- Automated Guided Vehicles

Greater Acid Circulation

SBS's round tube design has greater acid circulation than square tube or flat plate positive plates. The round tube allows it to retain its shape as the plate expands during discharge.



Other Features and Benefits

- **Round tubular gauntlets** provide superior resistance to active material shedding
- **Fully enveloped separators** reduce the chance of short circuiting
- Rubber terminal bushings absorb impact and shock
- **1" thick posts with brass insert** which connects to a highly conductive copper cell connector that allows for greater operating and charging current loads; ideal for opportunity and rapid charge applications
- Completely insulated copper cell connectors **prevent short circuiting** and have far less voltage leakage to the truck, this is especially important in higher voltage vehicles
- **Acid resistant** bolt on cell connectors and cables allow for field replacement of cells and cables by in-house maintenance or field personnel
- Powder coated epoxy steel trays



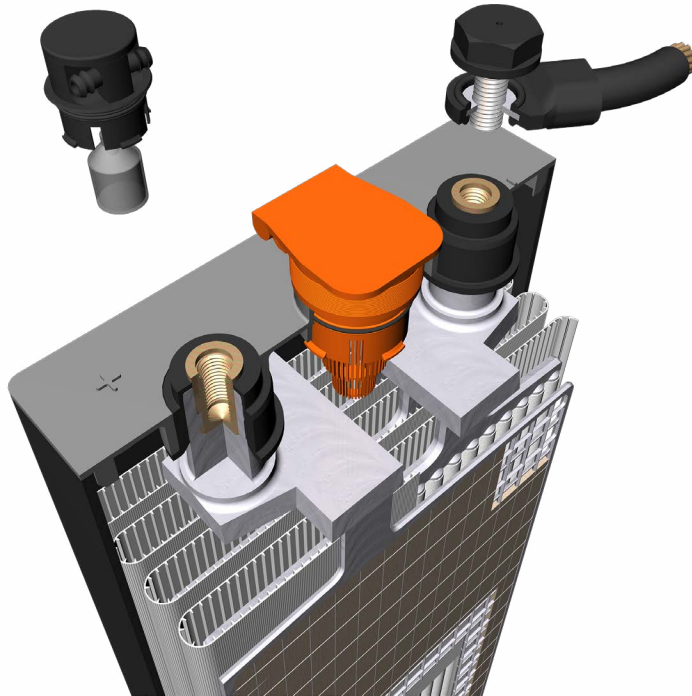
Pull Resistant Cables

9002, UL 583 E, EOE, EE approvals

Special Features

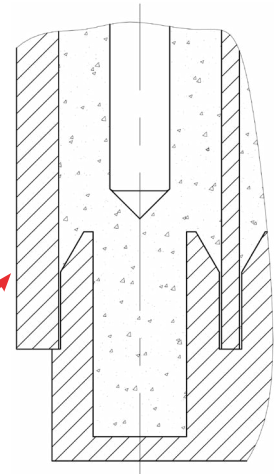
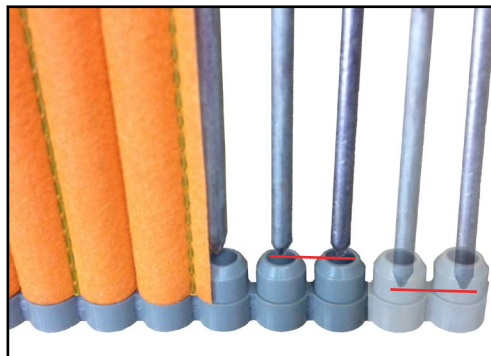
Bolt On Connector

- Raised rubber bushing keeps connector from direct contact with electrolyte, reducing corrosion
- Fully insulated bolt-on connector reduces voltage leakage to ground which affects higher voltage systems
- Bolt-on connection forms water-tight seal



Positive Plate Design – Bottom Bar (Exclusive)

- Specially-designed bottom boot allows for positive plate growth during heavy use without loss of material
- Tube is ultrasonically welded to bottom bar
- Longer plastic piece on bottom bar allows for growth of positive spine into bottom bar's cavity during opportunity charging
- Result is longer service life, especially when opportunity charged



Additional Options



Plastisol Coated Steel Tray

- Heavy plastic inner coating prevents corrosion
- Reduces voltage leakage
- Now standard on 72V and higher forklift batteries; optional on all models



Optional Sealed Tray

If the occasional dripping fluid which arises from overwatering or washing poses a contamination or housekeeping issue or if electrical equipment is located directly under the battery compartment, SBS can provide a sealed tray option.

Instead of excess fluids draining from the bottom of the battery, excess fluid can be suctioned out through a vertical tube located between the battery cells.

Available only with Plastisol coated trays.

Optional Air Lift Mixing System

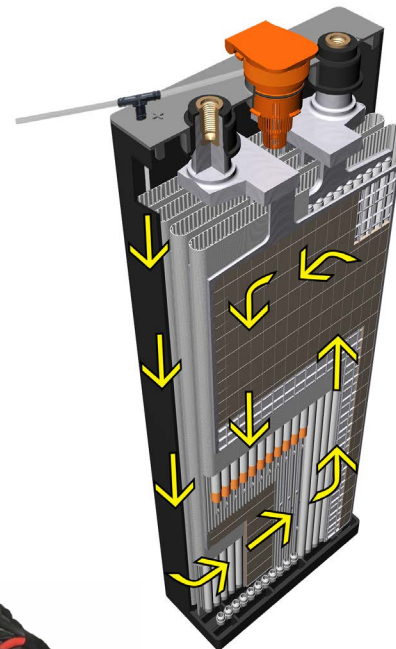
- During charging, concentrated sulfuric acid is formed, which is heavy and sinks to the bottom of the cell, resulting in acid stratification.
- The Air Lift Mixing System pumps air bubbles into the electrolyte to circulate air throughout the electrolyte. While on charge the system injects measured amounts of air via a battery or charger-mounted air pump systems which is activated at specific voltage levels
- Prevents stratification
- Faster recharging times
- Extends watering intervals
- Operates cooler
- Reduces equalization frequency

Additional Benefits

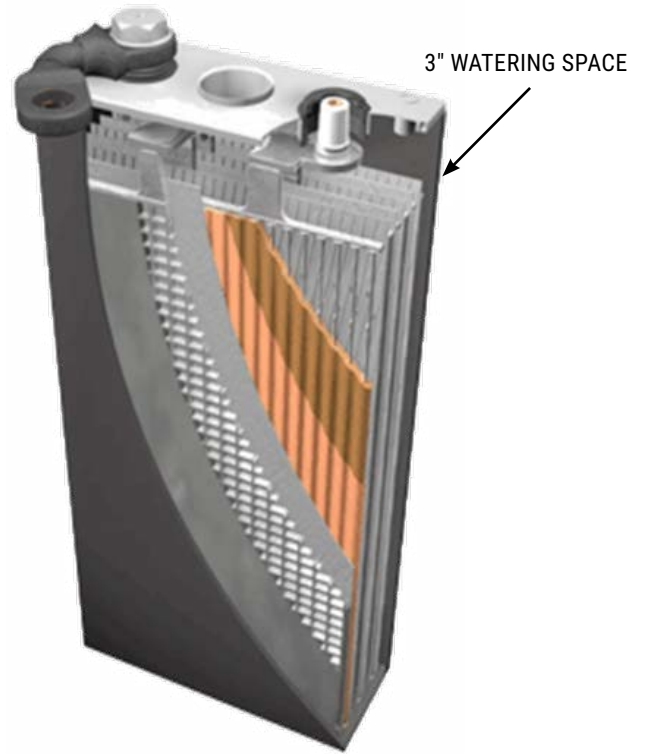
- Low charging factor: 1.07
- Less water consumption (up to 60%)
- Extra energy savings



This technology is particularly recommended for heavy duty battery usage situation, such as short charge times, boost or opportunity charging.



Battery Watering



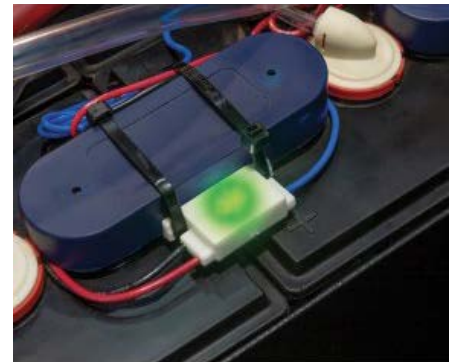
Battery Watering Benefits - Low Maintenance

- **Flip top vent caps** for easy filling
- Over 3" of watering space **reduces watering intervals** (most other standard tubular and flat plates have between 1" and 2")

DIN TUBULAR BATTERIES

Optional Electrolyte Indicator

Ultra-reliable electrolyte level indicator with green blinking light and single wire connection



Clear No-Freeze Tubing

Enables view of water flow and surplus water drains into cells after filling is complete



Optional Single-Point Watering System

Can fill an entire battery in less than 30 seconds

Optional Single Point Filling System