



Banner

THE POWER COMPANY

INDUSTRIAL BATTERIES

***ENERGY SOLUTIONS FOR TRACTION,
EMERGENCY POWER SUPPLY.***



DEAR PARTNERS,

Banner, "The Power Company", has been a battery market technology pioneer and innovator since 1937 and in our enterprise customer advantages have always taken absolute priority. Indeed, our unbending will to constantly improve upon the already excellent has made Banner what it is today; one of the world's leading battery manufacturers.

By means of drive and know-how, we are also making every effort to ensure that this status is retained. We constantly monitor the market and accept fresh challenges, which offers great potential for ongoing innovations with regard to both products and internal efficiency. At the same time, we also attach the greatest value to both personal and environmental safety and offer outstanding services and maintenance.

All these principles apply equally to Banner industrial batteries and in this brochure you can become acquainted with our power-packed products for drives, machinery and stationary applications.



Andreas Bawart
Commercial CEO



Mag. Thomas Bawart
Technical CEO

Banner possesses ISO/TS 14001:2004, ISO 9001:2008 and ISO 14001:2004 certification from Quality Austria. As a result, the company also meets the stringent stipulations of the automotive industry.



A STORY OF SUCCESS

Founded in 1937 by Artur Bawart in Rankweil/Vorarlberg, Austria, Banner has developed into one of the world's leading suppliers of a complete range of batteries. Now, after more than 80 years, Banner can look back on a success story that is still very far from over.

INNOVATION

At Banner, innovation is a matter of tradition. "The Power Company" sets standards with new technologies and patented safety systems that have taken it to the very top. Indeed, the first class quality of Banner products has convinced the world's leading automotive manufacturers. Accordingly, today Porsche, Aston Martin, Morgan, BMW, VW and VOLVO cars, as well as many other makes, all roll off the production line with a Banner battery on board.

MOTIVATION

The top qualifications and motivation of the Banner workforce represent a guarantee for excellent know-how and maximum customer advantages. In fact, the exceptional readiness of employees to undertake further training and the correspondingly large choice of courses available, ensures that our know-how is constantly expanding and of the highest standard.

SAFETY

It is self-evident that even the most outstanding innovation is of little use when personal and environmental safety is neglected. Consequently, at Banner safety constitutes the most important prerequisite during the development of new products.

SERVICE & MAINTENANCE

Service and maintenance form an interface to the customer and in many cases decide the success or failure of a product. Therefore, we at Banner also think along original lines in this regard, as exemplified by a rental system and service packages, which lend customer relations an extremely direct contact dimension.



Banner
THE POWER COMPANY

TRACTION BULL WET - THE OPTIMUM SOLUTION FOR HIGH CYCLICAL LOADS.

The Banner Traction Bull PzS/PzB is a lead-acid battery containing liquid electrolyte. This battery is employed wherever long service life, maximum reliability and cyclical resistance are required. PzS batteries are generally recognised as the most cost-efficient and best-proven solution for the storage of electrical power for industrial trucks, haulers and other e-vehicles with high energetic and cyclical requirements.



APPLICATIONS

- ▶ Industrial trucks
- ▶ Sweeping machines
- ▶ Lifting platforms
- ▶ Special applications (AGVs, haulers)
- ▶ Etc.



OPTIONAL: FILLING SYSTEM

In order to replace the water consumed during electrolysis automatically, Banner Traction Bull batteries can be fitted with a system that ensures quick, safe and clean refilling. This system reduces the maintenance requirement and prolongs the service life of the battery.

OPTIONAL: ELECTROLYTE CIRCULATION

In the case of extreme loads, during charging a pump module ensures homogeneous mixing, thereby preventing electrolyte and temperature stratification. In practice this means a reduction in the energy requirement of up to 20 per cent, a 30 per cent cut in charging times and a lowering of water consumption by as much as 80 per cent.

TRACTION BULL EX – CERTIFIED, EXPLOSION-SAFE POWER.

The Traction Bull Ex, which is manufactured in accordance with the ATEX, is the ideal answer for industrial truck drives in areas subject to the danger of explosions. The new drive batteries in this series possess special certification for employment in Zones 1-2 (gas) and 21-22 (dust).

APPLICATIONS

- ▶ Industrial trucks
- ▶ Sweeping machines
- ▶ Lifting platforms
- ▶ Special applications (AGVs, haulers)
- ▶ Etc.



TRACTION BULL GEL – RELIABLE SAFE AND MAINTENANCE-FREE.

The Banner Traction Bull PzV/PzVB is a maintenance-free, gel technology drive battery, which is used wherever long service life, great reliability, high performance and cyclical resistance are required. PzV batteries are ideal for forklifts, e-vehicles, cleaning and sweeping machines and driverless transport systems (AGVs). Due to its high levels of operational safety, this series is especially suitable for applications in the foods, pharmaceutical and chemicals industries.

APPLICATIONS

- ▶ Industrial trucks
- ▶ Sweeping machines
- ▶ Lifting platforms
- ▶ Special applications (AGVs, haulers)
- ▶ Etc.



TRACTION BULL BLOC – THE INEXPENSIVE ALTERNATIVE.

The Banner Traction Bull Bloc series is especially suitable for problematic tasks in the small traction area and represents a very favourably priced alternative to standard drive batteries. Moreover, Traction Bull Bloc batteries stand out due to their extremely robust design, extended service life and, first and foremost, high cyclical resistance. The Traction Bull Bloc range also offers a choice of technologies in the form of the Traction Bull Bloc Gel, AGM and Wet variations.

TRACTION BULL BLOC DRY BULL GEL VALVE-REGULATED WITH GELLED ELECTROLYTE.

The Banner Traction Bull Bloc DB is a sealed, valve-regulated lead battery containing gelatinised electrolyte. The closed battery system prevents electrolyte leakage and as a result of minimum self-discharge, the zero-maintenance Traction Bull Bloc Gel can be stored for longer than standard lead-acid batteries.

APPLICATIONS

- ▶ Golf carts
- ▶ Lifting platforms
- ▶ Cleaning machines
- ▶ Driverless transport systems
- ▶ Camping/caravans
- ▶ Wheelchairs
- ▶ Boats
- ▶ Etc.



TRACTION BULL BLOC GIS – THE SMALL TRACTION SPECIALIST.

Banner Traction Bull Bloc GiS batteries with liquid electrolyte and flat plate technology represent a powerful and favourably priced alternative to conventional traction batteries. GiS batteries are characterised by robust design that incorporates extremely strong flat plates and a special alloy.

APPLICATIONS

- ▶ Small stackers
- ▶ Lifting platforms
- ▶ E-vehicles
- ▶ Cleaning machines
- ▶ Golf carts
- ▶ Etc.



TRACTION BULL BLOC PzF POWERFUL.

Banner Traction Bull Bloc PzF batteries with liquid electrolyte and tubular plates represent a powerful and reasonably priced alternative to conventional drive batteries. PzF batteries are characterised by robust, positive clad plates and demonstrate additional advantages such as a long service life and high cyclical resistance. In general, these batteries are employed in the small traction area.

APPLICATIONS

- ▶ Lifting platforms
- ▶ Golf carts
- ▶ Small stackers
- ▶ Cleaning machines
- ▶ Etc.



TRACTION BULL BLOC AGM DEEP CYCLE ABSORBENT GLASS MAT TECHNOLOGY.

Banner Traction Bull Bloc AGM batteries are valve-regulated, lead batteries for cyclical applications. As zero-maintenance block batteries, they are especially suited to the small traction segment. The use of absorbent glass mat technology (microfibre nonwoven web) binds in the electrolyte and therefore the batteries are maintenance-free and leak-proof.

APPLICATIONS

- ▶ Rehabilitation
- ▶ Wheelchairs
- ▶ Camping
- ▶ Golf carts
- ▶ Scooters
- ▶ Boats
- ▶ Etc.



STAND BY BULL

Stand-by batteries from Banner are a reliable energy source. **They provide electricity when the primary supply fails, or voltage fluctuations and power peaks occur.** These batteries are characterised by the safety derived from the use of top quality materials, the latest technology and production methods. Banner offers stand-by batteries in both block and single-cell design.

GiV BLOC SYSTEM SUPPORT AND STORED POWER.

Banner's GiV bloc batteries employ web technology, which involves the use of special, thin fibreglass separators that have been soaked with electrolyte. The electrolyte into a non-woven web bound and in combination with the permanent separation of the electrodes, this means that the battery can be operated in any position without a loss of capacity.

GiV batteries are used both for large systems, for which a power loss cannot be tolerated, as well as in central and decentralised communications technology.

APPLICATIONS

- ▶ UPS systems
- ▶ Fire alarm systems
- ▶ Medical facilities
- ▶ Measurement and instrumentation technology
- ▶ Safety lighting



SBX BLOC THE HIGH-CURRENT SPECIALIST.

Banner Stand by Bull Bloc web batteries are sealed, valve-controlled lead batteries containing electrolyte bound into a nonwoven. A unique active mass and special glass fibre separators guarantee extremely high energy density. Thin plate technology design also ensures excellent discharge current in combination with minimum internal resistance.

These batteries are to be recommended for use in the high-current segment for UPS systems and start-up applications.

APPLICATIONS

- ▶ UPS systems
- ▶ High-current supply
- ▶ Safety lighting



STAND BY BULL **SECURITY FOR LARGE SYSTEMS.**

These batteries are genuine, stationary emergency power packs for large areas of relevance to security. Accordingly, should the primary supply fail, they ensure an uninterrupted flow of electricity.

APPLICATIONS

- ▶ Large computer systems
- ▶ Security systems (alarms, emergency exits)
- ▶ Solar power systems
- ▶ Emergency systems (switchgear, transmitters)
- ▶ Telecommuniacion



THREE DIFFERENT TECHNOLOGIES **FOR DIFFERENT APPLICATIONS**

LEAD-ACID

Types:

OPzS cell, OPzS block, OGI bloc

Applications:

Telecommunications, safety power supply, directional radio, safety lighting, power plant operation, diesel generator starts, UPS systems

GEL

Types:

SBG bloc, OPzV cell

Applications:

Power plant operation, mobile radio, solar power systems, safety power supply, remote control systems, UPS systems, telecommunications, safety lighting

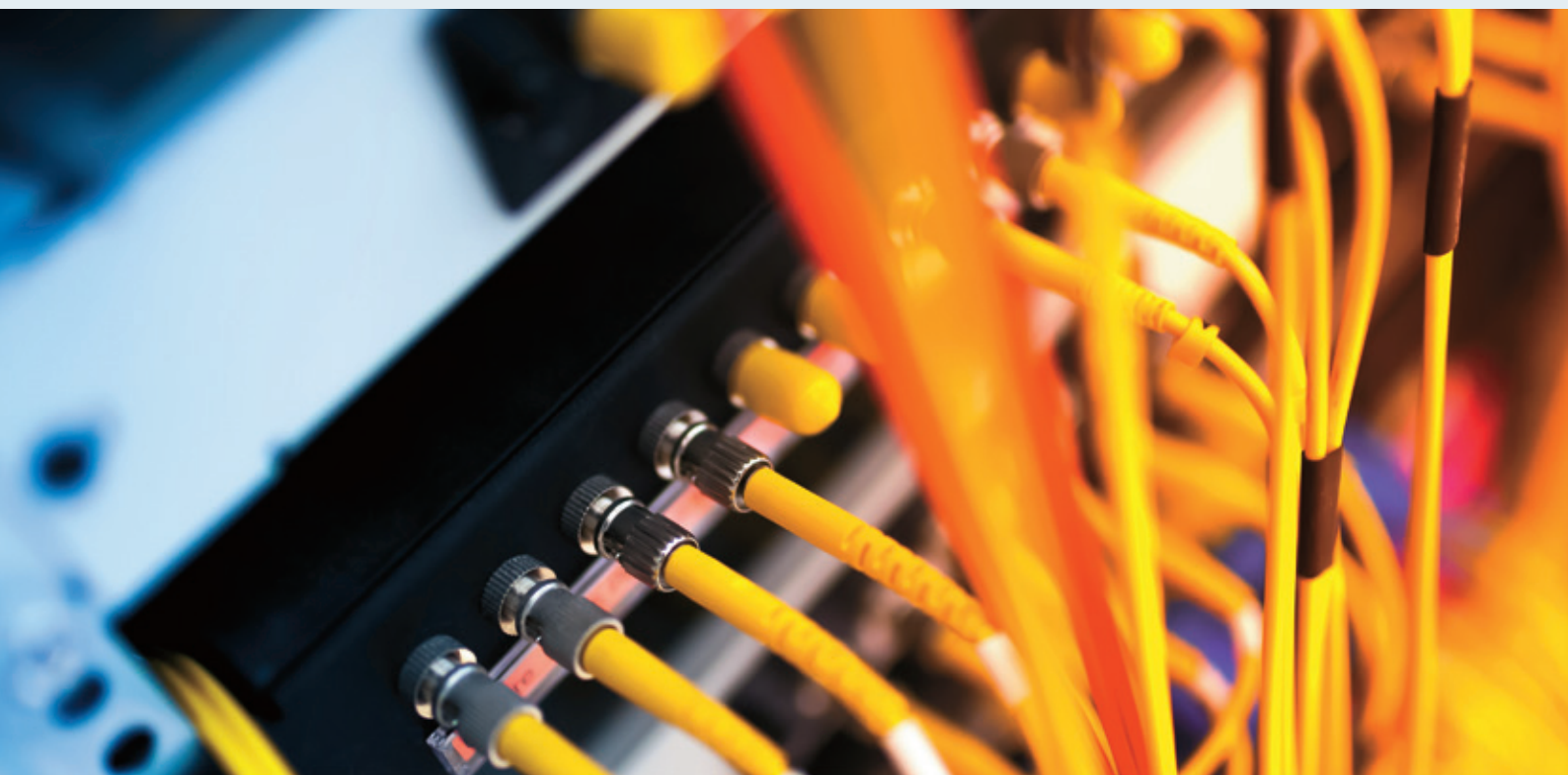
AGM

Types:

SCV cell, SBV bloc, FAV bloc, FPL bloc, SBX bloc

Applications:

UPS systems, switchgear, safety lighting, diesel generator starts, telecommunications



SERVICE BY Banner

We are more than just a battery producer because we think in terms of customer advantages. This approach commences with the quality and technical superiority of the products. Moreover, the acceptance of fresh challenges creates a wealth of potential for innovations and ongoing improvements, not just with regard to products, but also internal efficiency.

Consequently, Banner offers its clientele a full service package and during every phase, from the requirement analysis and project design, to implementation and after sales support, is constantly at hand. Moreover, the company is continually developing new features such as the Banner Rental Service.

SPARE PARTS

Only original spare parts are able to prevent premature wear, offer optimum safety, minimum downtimes and maintain reliable operational readiness. Banner provides a comprehensive spare part service and by means of a highly modern EDP system, which is networked across Europe, can ensure first class availability.

SERVICE

Banner does not simply provide its clients with repairs. In fact, customers can assemble service packages that are exactly in line with their personal requirements.

You can select from regular maintenance, or opt immediately for the Banner Full Service-Package on a quarterly, half- or full-yearly basis. You decide on the frequency and hence the cost of maintenance, and should a fault occur this is no problem! Via the service hotlines in each country with a sales network, high-qualified and experienced technicians are immediately at your disposal.

CHARGING TECHNOLOGY AND ACCESSORIES

Banner sees itself as a full-line supplier. Therefore, naturally enough, we offer the correct charger for every battery.

HIGH-FREQUENCY TECHNOLOGY

High-frequency technology means the use of clocked, high-performance power sources. The results is a smooth charging flow, which ensures limited heating. This protects the battery and is therefore suitable for repeated recharging.

The advantages of HF technology: prolonged service life, pre-programmed load identification, suitability for wet and gel technology and heavy loads in daily use with limited operating costs.

50 Hz TECHNOLOGY

These devices function using conventional thyristors, which makes them ideal for situations in which daily charging is not a must, and in particular for wet Banner batteries. An especially favourable price-performance ratio is another advantage of 50 Hz devices.

ACCESSORIES

- ▶ Testing and measurement devices
- ▶ Battery cables & cable shoes
- ▶ Terminal covers
- ▶ Battery service devices
- ▶ Screw connections
- ▶ Etc.
- ▶ Battery and equipment plugs
- ▶ Connectors and terminals



INDUSTRIAL BATTERIES

POWER NOW.

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