



# **BÜFFELPOST**

Banner **THE POWER COMPANY**

**E-MOBILITY:**

## **FULLY PREPARED FOR THE FUTURE**



**MODERN ENERGY  
MANAGEMENT**

**Bull power in  
the BMW i3**

**A BATTERY CHECK  
FOR TOMORROW**

**The decarbonisation  
perspective**

**GENUINE POWER PACKS  
ARE READY TO GO!**

**Brand-new types  
with value added**

## EDITORIAL

## EDITORIAL

Dear Partner,

The past year demanded all the strengths of an ideally coordinated team and the need for excellent cooperation, exceptional commitment, flexibility and perfect crisis management was never greater. We have the good fortune to have a truly "beefy" outfit, which possesses precisely these characteristics and not least for this reason, during the business year expired our sales actually increased.

Apart from the top quality of our products, the motivation of the entire workforce and the reliability of our deliveries, the weather also played a role in this connection. The very cold temperatures in Europe over a lengthy period resulted in rising demand and the prolonged standstills of vehicles due to the lockdowns frequently necessitated battery changes. Furthermore, we also received a very pleasing major order from the USA.

An autumn and winter season like that just past put many supply chains to the test and in Banner's case clearly demonstrated that the company is well equipped to deal with such situations. Accordingly, in spite of greater demand, delivery periods were only fractionally longer.

Another challenge posed by 2020 involved the retention of the usual intensity of our long-term customer

relationships. Thankfully, due to the digital possibilities available and the positive reception that they have received, we continue to enjoy stable business relations and solid contacts with our partners.

As a company, Banner has never been content to rest on its laurels, but instead has always had its gaze fixed on what lies ahead. Consequently, we are continuing to work at speed on innovations that relate to the mobility of tomorrow, which is something that we are already helping to design. Therefore, in this issue of our magazine you will discover numerous articles relating to the future topic of e-mobility, which is a major issue at Banner.

At this juncture, we would also like to express our gratitude to our employees for their innovative capabilities and untiring efforts in difficult times. Furthermore, we wish to thank our customers, who with their trust and loyalty contribute to the fact that we are able to head for the future with enthusiasm and buffalo power!



**Andreas Bawart**  
Commercial CEO



**Thomas Bawart**  
Technical CEO





## E-MOBILITY

## FIT FOR THE MOBILITY OF TODAY AND TOMORROW

With its powerful AGM and EFB batteries, Banner is contributing greatly to sustainable e-mobility. This is because all e-vehicles still require a 12V battery for the supply of their electrical systems.



Harald Fiebiger  
Business Area Manager  
OEM/OES



Amongst a number of European OEMs in the premium class, Banner also supplies the BMW Group with its top quality batteries. For example, a Banner Running Bull AGM BackUp stabilises the 12V electrical system of the BMW i3 in order that the car's navigation and infotainment systems, as well as additional comfort consumers, function perfectly. In turn, other vehicle manufacturers use Banner's back-up batteries for highly automated parking and driving.

### BULL POWER AS AN ENERGY STORE

Fuel-saving hybrid vehicles need a reliable energy store and especially in the case of

micro-hybrid concepts, owing to their high cyclical resistance, optimised lead-acid batteries such as the absorbent glass mat (AGM) and enhanced flooded battery (EFB) are the preferred choice. In particular, the AGM battery, which is fitted with a glass fibre mat separator, represents a highly efficient solution, as it facilitates flexible and extensive energy management, which is especially important for the hybrid and e-vehicles of today and tomorrow.

### Banner RESEARCH & DEVELOPMENT

At present, automotive manufacturers regard lithium-ion technology as possessing the greatest potential for full

hybrid and e-vehicles. By contrast, Banner is seen as a leading supplier of AGM and EFB batteries for micro-hybrids with start-stop systems and the company is currently involved in several development projects, which are aimed at enhancing the efficiency of these batteries. Using optimised cell design, additives to the active mass and various engineering measures, the intention is to improve power intake and output and thus make a sizeable contribution to environment protection. Thinking about tomorrow today has long been a Banner characteristic and is one reason why the company is now providing a massive input with regard to sustainable e-mobility.

**EXPERT ANALYSIS**

## **A CAR BATTERY CHECK: DIFFERING TECHNOLOGIES, ONE OBJECTIVE**

E-mobility is and will remain a hotly debated subject. For while the lead-acid battery has for many years been used successfully in both petrol- and diesel-driven vehicles, the lithium-ion battery for e-vehicles is still under public scrutiny. In fact, a great deal of research with regard to the safety and recyclability of this battery type remains to be completed and in the meantime, lead-acid technology can make a decisive contribution to decarbonisation.

**PRODUCTION****NEW BATTERY USE****COLLECTION & RECYCLING****USED BATTERIES**

Lead-acid batteries score due to recycling. They offer the highest collection percentage of all recyclable goods.

Diverse technologies are employed in the field of automotive and industrial batteries, and apart from the much discussed lithium version, there are also lead-, nickel- and sodium-based variants. All of these electrochemical systems possess their own individual characteristics, which qualify them for specific applications. For example, lead-acid technology has long been familiar as a 12 V starter and electrical system battery, while the lithium-ion battery replaces fossil fuels as a source of propulsion. However, as Thomas Bawart, Banner's CTO, explains, "Combinations of 12 V lead-acid starter batteries and lithium-ion-based, high-voltage drive batteries are standard to the latest e- and hybrid vehicles, and this will remain the case in the coming years." Lithium-ion technology can also be employed as starter and electrical system batteries, but the advantages of lead-acid types are evident at a glance:

#### ADVANTAGES OF LEAD-ACID BATTERIES:

- A closed product cycle for virtually complete, environment-friendly recycling
- Decades of experience in the operational, research and further development fields
- User safety
- Additional utilisation as a slow discharge battery in the hobby and leisure area
- No memory effect, which allows repeated recharging irrespective of the discharge status
- An extremely robust and favourably priced design with low maintenance costs
- Temperature stability

#### LIGHT & POWERFUL LITHIUM-ION BATTERIES

Parallel to the proven lead-acid version, lithium-ion batteries are being employed increasingly as a power source. Indeed, they have already long proven their worth in millions of mobile devices. Moreover, owing to their lightness and the strength

emanating from a high level of energy density, today they are being successfully utilised as starter, electrical system and vehicle batteries. In particular, their popularity is growing steadily in the racing and tuning scene, as well as for motorcycles, the premium sports car segment and in the hobby and leisure area.

#### RECYCLING

Considerable unexploited potential also remains with respect to the recycling of lithium-ion batteries. This is because with the processes currently available, to date only cobalt, nickel and partially manganese can be recovered economically. Up to now, lithium has only been extracted in experimental pilot plants and therefore generally remains in slag (Source: European Automobile Club Newsletter, December – January 2021).

By contrast, a functional collection system exists for used lead-acid batteries and the treated material is returned to the production chain in new products. Workshops and sales outlets issue new batteries and collect the used ones in special containers for collection by Banner. The battery materials are then returned to the production cycle in a process that has already been in operation for many years. Consequently, lead-acid batteries have the highest collection ratio of all the recyclable goods on the market, including glass and paper.

#### E-MOBILITY WITH FULL BULL POWER

As Austria's only manufacturer of starter batteries, Banner has monitored the trend to e-mobility from its beginnings and has acted accordingly. Every e-vehicle requires a 12V battery for the supply of its electrical system and with its absorbent glass mat (AGM) and enhanced flooded batteries (EFB), in this connection the company plays an important role with regard to sustainability.

Thomas Bawart, "With our environment-friendly start-stop batteries we help to save considerable quantities of fuel and thus make a considerable contribution to decarbonisation, which is why we are



Thomas Bawart  
Technical CEO

continuing to work systematically on the further development of the next generation of traditional start-stop batteries."

#### A FOCUS ON START-STOP BATTERIES

In closing, Thomas Bawart adds, "At the moment a number of development projects are in progress, which are aimed at raising the efficiency of start-stop batteries. We have set ourselves the task of achieving further improvements relating to charging and power output by means of optimised cell design and various design measures." Facts that underline Banner's intention to further actively shape the mobility of the future.

#### ADVANTAGES OF LITHIUM BATTERIES:

- Increased energy density and therefore high performance in a relatively small battery box
- Weight savings of up to 50 per cent as compared to lead-acid batteries
- Low self-discharge in combination with high performance after extended standstills
- High charging current and hence short charging procedures, although only with special charging devices
- A large number of possible charge cycles
- A memory effect that is not evident to the user

#### DISADVANTAGES OF LITHIUM BATTERIES:

- Danger of fire
- Increased temperature instability
- Higher costs
- The highly problematic mining of rare earths (cobalt, nickel)
- Considerable water requirements in the world's most arid regions
- No established recycling loop



## STARTER BATTERIES: RETROFITTING

# GENUINE POWER PACKS ARE READY TO GO!

Banner has always had a reputation for impressive, up-to-date products and the three new Running Bull EFB PROfessional types are no exception, as they are the most powerful EFB batteries for trucks in the aftermarket and outstrip those of all the other premium class producers. In turn, long-distance truck drivers will be delighted with the new Buffalo Bull AGM, which has a capacity of 210 Ah and offers 1,200A cold start power. This battery scores with extremely high cyclical resistance, reliability against failure and a long service life.



Günther Lemmerer  
Product Manager  
Starter Batteries







### THE RUNNING BULL EFB PROFESSIONAL

At Banner, the "PRO" tag stands for first fitter batteries, the specifications of which are also offered to the company's customers in the aftermarket. Fairly recently, instead of conventional products, we also began to deliver EFB and AGM batteries to the production lines of our automotive clientele. This change has now been accounted for in the aftermarket with the introduction of three Running Bull EFB PROfessional types, which possess the following characteristics:

- Identical features to the original batteries for BMW and Volkswagen
- Singular product design: transparent boxes / black lids
- Increased capacity and cold start capability

#### TYPE RANGE:

- Size H5/L2: EFB PRO 56511: 65 Ah / 640 A
- Size H6/L3: EFB PRO 57511: 75 Ah / 700 A
- Size H7/L4: EFB PRO 58511: 85 Ah / 780 A

As compared to the predecessor models, the price to the customer of these original Running Bull EFB PRO types has remained unaltered. Moreover, as compared to the other premium class suppliers, Banner now has the most powerful EFB truck batteries in the retrofitting market.



Symbol photo

### THE BUFFALO BULL AGM BATTERY

The Buffalo Bull EFB product line was launched onto the market three years ago and above all is highly popular amongst international fleet customers. However, the demands made upon the energy supply in modern long-distance trucks are constantly increasing owing to intensive hotel functions (e.g. 5 days per week) and a higher power requirement when stationary, e.g. through cooling when parked. Moreover, micro-hybrid features such as recuperative braking and so-called sailing, i.e. at a certain speed, the "foot off the gas" trigger element temporarily switches off the engine, as well installation near an axle, all create strains upon the battery.

### THE AGM BATTERY IS AN ALL-ROUND TALENT

For a number of years, manufacturers have been trying to use a dual system for the aforementioned applications. This involves the installation of two truck batteries, with a conventional starter version for the engine and several GEL or AGM power packs for the supply of the vehicle electrical system and various consumers when the truck is stationary. However, owing to the fact that such a dual system is not ideal from either a technical or economic perspective, the AGM truck battery has now come into its own, as it offers optimum starts and also feeds the various consumers with power. In autumn 2021, with the Buffalo Bull AGM, Banner will become the first European producer to bring a battery onto the market with a capacity of 210 Ah and 1,200 A cold starting. This new premium class battery will then solve the problems inherent to modern, long-distance trucks with features requiring large amounts of energy and in addition provide extended service life and enhanced failure resistance.

## AFTERMARKET

## E-MOBILITY: WHERE WILL THE ROAD LEAD US?

How will e-mobility affect the aftermarket? A forecast.



Franz Märzinger  
Head of Sale and Marketing



In the coming years, the sales of high-potential technologies such as stop-start systems will increase dramatically.

At present, Europe has a fleet of some 270 million vehicles and every year approximately another fifteen to twenty million are newly licensed. Owing to the fact that this latter figure exceeds the number of vehicles that are taken off the road, the total of vehicles increases annually by around two to three million. Furthermore, it looks likely that this trend will continue in the coming years.

### THE COMBUSTION ENGINE STILL DOMINATES

At present, over 99% of all vehicles have a conventional combustion engine as a powertrain. Roughly half of this figure (the younger 135 million) possesses a start/stop system with AGM or EFB battery and the current vehicle fleet serves as a basis for the estimation of the battery requirement in the coming years. However,

changes to the batteries in new vehicles only affect the battery aftermarket in Europe following an extremely long delay of at least five years. Therefore, although every second car in Europe has an original start-stop battery on board, the share of start-stop batteries in retrofitting business only amounts to approximately 10 to 15%.

EUROPEAN  
UNION : TOTAL  
VEHICLE FLEET  
270 MILLION

START-STOP VEHICLES  
135 MILLION

### START-STOP BATTERIES ON THE INCREASE

An enormous increase in the sales of start-stop batteries is awaited in the next five years. Soon, every fourth or third car battery sold will be an AGM or EFB type and hence on average larger and more powerful than was previously the case. Moreover, a lead-acid battery (mostly AGM technology) is installed in each newly sold e- or hybrid model for the supply of the 12V electrical system. These batteries are slightly smaller than the start-stop versions used at present and in a few years will also require replacement via the spare part business sector. Consequently, a slight, overall increase in demand for lead-acid batteries in the aftermarket is predicted for the coming decade in Europe and whatever the case, with its extensive range of AGM and EFB batteries Banner is ideally prepared for any of the changes that are expected to occur.



## SUPPLY CHAIN MANAGEMENT

## AFTER THE SEASON IS BEFORE THE SEASON

Having successfully mastered the challenges of the past year, Banner is now preparing itself for the next autumn/winter season.

The past twelve months have been dominated by the topic of COVID-19 and Supply Chain Management was also not immune to the effects of the pandemic. The consequences are well known, as the globally networked supply chains of the OEMs were disrupted in spring and our customers in the automotive branch were forced to shut down production at their plants for several weeks. This also meant that in order to compensate for the quantities of batteries lost owing to the closures initia-

ted across Europe by our first fitter clientele, Banner had no other choice but to introduce a period of short-time working that lasted until June.

### PUNCTUAL DELIVERY EVEN IN DIFFICULT TIMES

During the subsequent months, production resumed at a very positive level and as a result, Banner was able to supply sufficient batteries for the autumn season and thus fulfil all its stock delivery obligations. The 2020/21 autumn/winter season was challenging, but in the final analysis was actually more successful than expected. Indeed, since the autumn of 2020, a marked upturn in demand for Banner batteries has been evident in the aftermarket and growth rates are higher than in previous years. This is probably due to the



Far-sighted planning means already thinking about winter in spring!



Reinhard Bauer  
Supply Chain Manager

supply bottlenecks, as well as the weather during the past winter with several cold spells across Europe, which also led to a sizeable increase in the need for batteries.

### EQUIPPED FOR INCREASED DEMAND

In order to be able to cover this rise in demand, during the autumn production was stepped up by means of additional shifts. Such an autumn and winter season like the last also put numerous supply chains to the test. Equally, it demonstrated that Banner is well organised, but nonetheless the company continues to work on process optimisation. Moreover, production is already primed for the next autumn-winter season in order that Banner customers can continue to be supplied with top quality batteries in the usual manner.

## PURCHASING

## PURCHASING IN DIFFICULT TIMES

The COVID-19 crisis again illustrated the major importance of internal and external information flows.

In this journal, I have written repeatedly about the need for digitalisation and process improvements in the purchasing field and these topics continue to be highly significant. However, the past few months have demonstrated that the classic and fundamental tasks of purchasing may not be forgotten. These consist of sourcing the correct materials at the right time in the required quantity and desired quality, and precisely this was the major recent challenge.

In this regard, I merely wish to refer to a few examples such as the fact that in

particular, the supply chains in Asia were characterised by massive and unprecedented increases in transport costs. The available capacity was hopelessly overbooked and probably an improvement in this situation will only take place in the second half of 2021. Furthermore in Europe, apart from the topic of corona and the securing of supplies, Brexit also had to be dealt with.

What this situation made clear is that digital supplier meetings functioned extremely well and although these cannot entirely replace on-the-spot visits, they can



Thomas Schmidt  
Head of Purchasing and  
Logistics

be seen as an intelligent supplement. In closing, I would also like to mention our new and enlarged driverless transport system, which has been supplying battery assembly with materials since January 2021. A further extension is currently in the planning phase.

**E-MOBILITY**

## WHAT MUST BE NOTED WHEN CHANGING A BACK-UP BATTERY?

Depending upon the e-car manufacturer, the back-up battery must be exchanged every two to three years during the annual service.

The back-up battery is THE safety-relevant component per se. For if at night on the motorway, the high-voltage system suddenly shuts down for safety reasons at 130 km/h, the back-up battery must continue to feed the vehicle lights with a reliable supply of energy! Moreover, at the very latest, when the in-board computer display shows a "check ELEC system" (= check electrical/electronic system) error message, frequently in combination with the red battery warning light, it is really high time to think about replacing the back-up battery.

### PREPARATIONS

- The e-car must be in an electrical/electronic "deep sleep" in order to ensure that no error messages are produced.
- First unlock the front hood (but do not open it). The car doors should (stay) be shut and afterwards wait for around twenty minutes (with the keycard at a safe distance). Only then open the front hood, naturally without inserting the keycard. Please note! Many of the vehicle control devices are already activated when the keycard is merely near the e-car!
- Look for the electrical system battery or check the information contained in the vehicle operating instructions. The battery is not always installed at the front and may be inside, in the passenger compartment, or the trunk. However, the battery exchange procedure always remains the same.
- In numerous vehicles, the battery is fitted with a plastic cover, which must be removed.

### 1. REMOVE THE OLD BATTERY

You will recognise the back-up battery due to the shape of its box and the two



We will provide timely explanations regarding additional details and continually update this information online especially for you.

SCAN THE QR CODE FOR MORE INFOS:



terminals to which cables are connected. The terminal connections on batteries are often coloured red and blue, or red and black. The positive terminal is always red.

### Banner TIP!

Without exception, we recommend that prior to disconnecting and removing the old battery, a voltage retention device is used. This reliably prevents the loss of vehicle data by means of a voltage supply via the vehicle's on board diagnosis plug (OBD).

When changing the battery, care must be taken that the new battery is identical to the old one with regard to its technology, performance class and size.

### IS THE POSITIVE OR NEGATIVE TERMINAL TO BE DISCONNECTED FIRST?

Always disconnect the negative terminal first! Otherwise a spark or even a short circuit may be caused.

### PROCEED AS FOLLOWS:

- Separate the back-up battery from the high-voltage battery. As a rule, a plug-in connector is to be pulled apart.
- Loosen the nut from the negative terminal and pull out the black connecting cable.
- Loosen the nut from the positive terminal in order to remove the red cable.
- Loosen the screws of the anchorage system.
- Should there be a degassing hose; remove both it and the elbow from the battery.
- If the battery is now free, it can be removed.
- Warning! An electrical system battery weighs between roughly 3 and 15 kg. Take this into account when exchanging the battery.

### 2. INSTALLING THE NEW BATTERY

Once you have removed the old battery,



the next task is to install the replacement correctly. First, place the new battery in the battery compartment, then secure it with the help of the anchorage system and tighten the retaining screws. You can now connect the new battery.

### 3. CONNECTING THE NEW BATTERY

In order to connect the new battery, you must work in the reverse order to that used for disconnection. Therefore, you have to first attach the red cable to the positive terminal and tighten the nut. Then fix the black cable onto the negative terminal and also tighten the nut and screw. It is now the right moment to apply terminal grease or spray. Finally, connect the back-up battery with the high-voltage battery, which as a rule means pressing a plug-in connection together.

#### ADDITIONAL TIPS!

- Possibly transfer the required terminal adapter from the old to the new battery and replace the terminal covers.
- For all lead-acid batteries that are installed inside the vehicle, or in the passenger compartment, we stipulate the compulsory use of a degassing hose.
- Some vehicles are fitted with a hose and an attached elbow for the outlet of battery gases. If this applies to your vehicle, the hose is to be inserted in the appropriate degassing vent of the battery via the elbow. Should the degassing vent be on the other side, this must be plugged with a stopper.
- Finally, replace the battery cover. .

### 4. ONCE THE WORK HAS BEEN COMPLETED, CLOSE THE FRONT HOOD

Close the front hood, open the car doors, remove the voltage retention device and check the on-board computer display. Normally, an error message does not appear and the vehicle can be started as usual. If in exceptional cases the new battery must be registered in the battery energy management system (BEM), this is possible using our Banner Battery Service Tool (BBST).

## SALES

# Banner SPAIN GETS STARTED!

At the beginning of the year, Banner Spain was launched as an independent affiliate with José Luis de Cabo as the Branch Manager and Rafael Gallego as Area Sales Manager.



José Luis de Cabo heads Banner Spain.

José Luis de Cabo, the manager of the Banner Spain branch, has sizeable ambitions for the affiliate, as he revealed to the Spanish magazine MRyT, "The strategic growth plan is designed for five years, during which time the company should be enlarged to include a warehouse and its own administrative, logistics and sales personnel, etc." After five years, Banner Spain should thus be able to market over 100,000 batteries annually.

#### PREMIUM BRANDS ON THE MARCH

The positioning of Banner in Spain as a premium brand is an advantage because as José Luis de Cabo explains, "Premium brands are again capturing market shares owing to the fact that customers have recognised that price has a counterproductive effect upon quality. Banner is a quality brand, which may restrict our sales somewhat, but those that we acquire will be loyal and their clients satisfied." José Luis also sees opportunities with regard to e- and hybrid vehicles, "I think the delivery van segment in cities will be important, as these vehicles will have to possess a back-up battery, which is smaller than that used on motorcycles. This battery could employ AGM technology and supply the power needed by electrical and electronic components. Banner has a focus on such back-up battery technologies because these are just what automotive manufacturers require."

#### SELECTIVES SALES CONCEPT

At present, intensive efforts are being invested in the creation of a Banner Spain sales network and customers should be offered a 24-hour service by means of logistics specialists and company stocks. In addition, the customer spectrum is being continually enlarged and as José Luis de Cabo told MRyT, "Our sales concept is selective because we are aware of the fact that there are two battery manufacturers and affiliates of other producers in Spain. We do not intend to be a mass supplier, but wish to compete on the same level as these other affiliates." Moreover, a training project for workshops is planned and the close cooperation with AZ España, which has been an ex-works customer for over thirty years, will continue. José Luis de Cabo, "AZ will remain a preferred customer and have our support as a Banner affiliate via faster deliveries and various partnerships on which we are currently working."

## SUMMER GREETINGS



# FULL POWER AHEAD!

At the end of this issue, we would like to wish all of Banner's customers, partners and friends a super start to the summer!

**Banner *INSIDE*: BMW, VW, AUDI, PORSCHE, MERCEDES, SEAT, ASTON MARTIN, SUZUKI, ...**



# Banner

***THE POWER COMPANY***

**IMPRINT:**

Owner and publisher: Banner GmbH, 4021 Linz, Postfach 777, Salzburger Straße 298

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