

Linz, October 13, 2009

Battery tips from Banner

- **Battery check by experts**
- **Gentle cold starts through the switching off of additional consumers**
- **Short trips and stop-and-go driving harm the battery**
- **Safety instructions for servicing and maintenance work**
- **Installation and removal of a starter battery**
- **Tough, climatic conditions demand a quality battery**

According to the 2008 breakdown statistics from the German motoring club, ADAC, 40% of all vehicle defects occur in the vehicle electrical system and in turn, approximately 60% of these failures can be traced to the battery. The unpleasant consequences are standstills, waits for assistance and delays. The following are a series of useful tips from Banner, the only Austrian starter battery manufacturer, as to how drivers can get through the coming winter without any problems.

The starter battery is subject to a normal ageing process and in general drivers are unaware of the condition of their batteries. These are generally first exchanged shortly before, or after a breakdown. Under these circumstances, a battery check by experts (motoring club, garage, quick service station, car parts supplier, tyre specialists, etc.) can prove of help, as modern testing devices can determine the "health" of a battery in seconds.

In very cold weather, engines are subject to high levels of friction due to the viscosity of the engine oil. At the same time, the battery suffers from power losses, as chemical reactions are slowed by the low temperatures. When it so cold that starting problems occur, ignition of the engine should be carried out as follows. Repeated start attempts should not last more than five to ten seconds and subsequently, the battery should be allowed to rest for a minute, before the start procedure is resumed. Incidentally, the zero-maintenance Power Bull, Uni Bull and Running Bull batteries from Banner have lower internal resistance, which means that the ignition voltage is higher and starting easier.

Modern vehicles can contain as many as 100 electrical motors. However, very few of these, e.g. the windscreen wiper drive are essential to vehicle mobility, the majority serving the areas of safety and comfort. During the starting procedure, these motors consume valuable energy, which should in fact be used by the starter. Ideally, one should only switch on the lights, radio, heating, etc. after the engine has been successfully started. Additional reserves of power can be created by the use of the next

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dimensional grade of battery, for which there is generally sufficient space. Moreover, the price difference is minimal.

Particularly in winter, cars require peak power and above all, stop-and-go and short trips burden the starter battery. Indeed, the power balance in the vehicle can tilt very quickly to the detriment of the starter battery as the dynamo generates less energy than the vehicle needs. This situation is frequently reached at engine speeds of less than 2,000 rpm and permanent damage to the starting battery, caused by deep discharging, is the result. If the vehicle is regularly used for long drives, then the starter battery charges itself up to the appropriate extent.

Safety measures must be observed during service and maintenance work. For example, the gases created during charging are explosive. Therefore, when charging no smoking is allowed, sparks must be prevented and open flames are absolutely forbidden. Battery acid is also extremely caustic and the battery must be firmly installed and the battery terminals properly tightened. A clean battery does not suffer from creepage, which causes gradual discharge, or from faulty contacts. The battery surface should be kept dry and clean, as should the terminals, which also have to be greased.

The electrolyte must constantly cover the plates by a few millimetres. When topping up, liquid spills should be avoided. The stopper strip and the screws must always be well closed. Naturally, the zero-maintenance Power Bull, Uni Bull and Running Bull batteries from Banner can be used subject to the credo, "install and forget". In fact a Uni Bull or a Running Bull may not be opened, as this would lead to lasting battery damage.

In the case of modern vehicles, the ill-considered removal of starter batteries may have unpleasant and expensive consequences. The interruption of the power supply can lead to the loss of stored program data and drive-away locks, while in-board computers and car radios will be put out of action. The reprogramming of these systems by a specialist garage can cost three times the price of a new battery. In this situation, chargers with voltage bridging can be of assistance, although as in the case of private starting assistance, care should be exercised as a defect battery can damage other control devices such as those of the airbag and ABS systems.

Ideally, an expert (motoring club, garage, quick service station, car parts supplier, tyre specialists, etc.) should decide whether or not the battery is defect and if necessary, carry out a battery change.

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The demands made on starter batteries are very closely related to the prevailing climatic conditions. Therefore, starter batteries in Europe face a special challenge in the shape of cold winters and hot summers. Accordingly, cheap batteries are often an expensive solution and therefore, it is no surprise that the quality batteries from Banner have established themselves all over the world. This is because they combine maximum starting power with optimum cold starting and a long service life.

Banner GmbH is an innovative, steadily expanding producer of top quality starter batteries. The company, which is based in Linz, Austria, has been manufacturing batteries for all types of vehicles since 1937. The family-owned firm, which is headed by Andreas Bawart and Thomas Bawart, employs a workforce of around 690 across Europe. Banner produces and sells over 3.6 million starter batteries annually. In other words, Banner numbers among the oldest, most experienced and important brands in the battery field. Banner batteries are used for the first fitting of numerous models from BMW, Chrysler, Mitsubishi, smart, VW, Liebherr, MAN, Dethleffs, Kässbohrer and Jungheinrich. In Austria, Germany, Switzerland, France, the Netherlands, the UK, Denmark, Poland, the Czech and Slovak Republics, Hungary, Russia, Romania and Bulgaria, sales take place via Group companies with a total of 29 branches. Moreover, Banner products are sold in a further 40 European, African and Asian states via direct importers. Future-oriented technology and outstanding quality underline the international reputation of these exemplary products with "buffalo power", which are also characterised by the Banner logo. Further information and photos are available under: www.bannerbatterien.com

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