

**BAE *Nova trans***  
**Batteries as motive power**



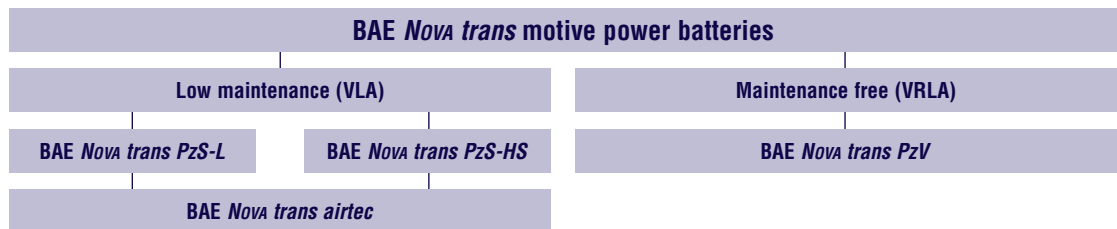
ENERGY FROM BATTERIES



# BAE motive power batteries – Individual solutions in series

## The right battery for every application

High performance, reliability, low maintenance – these are the prime qualities of BAE batteries. Modular in design, they are more powerful than DIN standards require and can be used in numerous applications. Independent of use in standard, heavy duty or universal load and even for particular applications, requiring maintenance free batteries, BAE *Nova trans* batteries are the first choice. The modular construction and system technology allows this wide application variety.



## Our programme:

### Low maintenance batteries

- ***Nova trans PzS-L***
  - Motive power batteries for standard applications
- ***Nova trans PzS-HS***
  - High performance batteries
  - Approx. 10 % higher energy density

Both lines meet the requirements for motive power batteries according to IEC EN 60254-2.

### ***Nova trans airtec***

- ***Nova trans PzS-L***
- ***Nova trans PzS-HS***
  - For heavy duty application
  - Because of short and efficient charging ideal as swap battery in shift operations.

BAE *Nova trans airtec* convinces due to high efficiency. The charging factor (Relation of charged capacity to taken capacity) is about 15 % better than for batteries without electrolyte circulation.

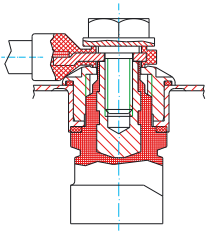
### Maintenance free batteries in unique GEL-technology

- ***Nova trans PzV***
  - Maintenance free: no topping up water during life.



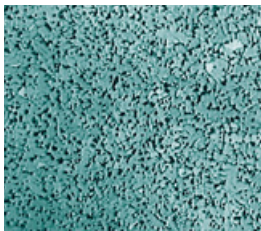


# BAE *Nova trans* Battery technology



## 1. BAE pole bushing

The BAE pole bushing is a robust 100 % acid-tight connection of the pole and the lid, independent if a connector is screwed onto or not. It is excluded that acid can destroy the pole or the connector. The BAE pole has a machined lead shoulder below its thread. In this thread the BAE pole nut intervenes and presses the O-ring in axial direction between the lid and the lead shoulder of the pole. The pressing is limited by a stop on the pole. An additional O-ring within the pole nut stops any tracking current between the cell poles of a battery. A plastic-headed steel pole screw assures a safe contact between the connector and the pole. In the middle of the plastic head a lead protected contact point is provided for an easy measurement of the cell voltage.



## 2. Low antimony alloy for positive grids

The BAE low antimony alloy for positive grids is reducing the ageing effects of BAE *Nova trans* batteries. During corrosion of the positive grid the low antimony alloy releases less antimony into the electrolyte. Antimony will be deposited on the surface of the negative grid. There it can reduce the final charging voltage, increase the hydrogen evolution and increase the temperature during charging.

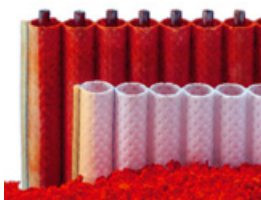
Less antimony in BAE batteries means:

- Higher final charging voltage over life time
- Lower hydrogen evolution, lower water loss
- Lower temperatures at the end of charging



## 3. Gauntlet made of reinforced non-woven Polyester

The purpose of the gauntlets is to keep the active material together and to avoid mass shedding. BAE best choice are the reinforced non-woven polyester gauntlets. Its improved oxidation resistance and stability provides high cycle numbers. Their small pores of 30  $\mu$  diameter guarantee a high reduction of mass shedding. A special protection at the edges of the gauntlet guard against short circuits between the plates.



## 4. Dry filling with 100% red lead

The particle structure of the active mass is important if uniform high capacity has to be achieved. During manufacture, the particle size distribution has to be precisely adjusted for this purpose. In order to restrict deposits to a minimum, the filling density must be kept within narrow tolerance limits. Dry filling with 100 % red lead guarantees this much better than any other type of filling.

## 5. Negative Electrode

For the negative electrode of BAE *Nova trans* batteries a long-term expander is used to assure a high cycle life.

## 6. Container and lid made of PP

The container and lid of BAE *Nova trans* cells are made of high impact, temperature resistant polypropylen. Container and lid are welded gas – and electrolyte tight.

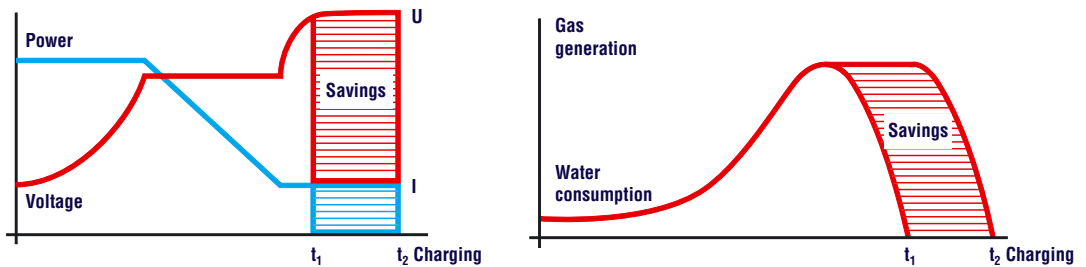
# BAE Acid circulation

## Cost reduction every day

### BAE *Nova trans airtec* – steady movement

Compared to conventional batteries where 17% of the charging time is required for electrolyte circulation, BAE *Nova trans airtec* saves energy, charging time and water by injecting circulation air into each cell during main charge. Using this technology also reduces battery heating.

### Charging with and without electrolyte circulation



#### The advantages:

- 20–30% reduced charging time
- No need of high electrical charge ration
- Substantially low interim charging time
- 15–20% reduced energy costs
- 50–80% reduced gas release and water consumption
- Reduction of operating temperature

The BAE *Nova trans airtec* system is adapted to the BAE controlled charger. This technology can be used for heavy duty as well as for decentralized operation. Pressure monitoring and patented leak monitoring facilities guarantees safe electrolyte circulation. And even after years in use, your charger can be equipped with the BAE *Nova trans airtec* system.

### BAE *Nova trans PULS lift* – flexibility for all PzS batteries

The from BAE, in cooperation with German charger manufacturers, developed charging regime combines almost all advantages of the BAE *Nova trans airtec* system with the easy operating and safety requirements of a low maintenance VLA battery without electrolyte circulation. Charging time, energy consumption and heat development are significantly lower, as well as at the classic electrolyte circulation system, compared to all other charging regimes without any electrolyte circulation support. The gas volume, necessary for the electrolyte circulation is generated by current pulses during the final charging phase. No connections of any additional parts to the charger are required. A weekly equalizing charge is requested!

#### The advantages:

- Applicable for all low maintenance VLA batteries
- No need of additional components
- Low maintenance due to increased water refilling intervals
- Reduced charging time
- Reduction of operating temperature
- Reduced energy consumption

### BAE *Nova trans aquamatic*

Topping up water is carried out manually by the BAE vent plug. BAE *Nova trans aquamatic* technology allows the water refilling automatically by the water refilling system during the charging process. This system is equipped with a special vent plug with swimmer.

## Not just batteries ...

For forklift trucks, pallet trucks and automatic guided trucks, *BAE Nova trans* prove itself on a daily basis even under harshest conditions.



*Authorized Distributor*



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is completed:**

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- Guaranteed returnability and recyclability