Technical Information

batterie füllungs systeme gmbh
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General Description and Information on the use of the bfs-plug with central degassing

1. General
   The bfs plug III is a precision device which does not only ensure a precise electrolyte level in the battery cell but also provides the air-gas exchange.
   The bfs special plug with central degassing is used for the automatic filling of batteries where the battery gas is drawn off at the same time in a specific direction. Otherwise the design and function of this plug are identical with the bfs standard plug.

2. Degassing
   The gas of the battery cell normally is escaping via an opening on the side of the bfs plug into the surrounding air. A special solution is the bfs plug with central degassing. Instead of the opening on the side of the plug there is a possibility to connect a degassing hose to the plug to catch and centrally guide the gas.

3. Filter for gas/filterEX
   Highly explosive hydrogen gas (H2) is developing in the battery cell due to a chemical reaction. When using a bfs plug with central degassing it is recommended for safety reasons to install a so-called gas filter (FilterEX).
   The use of the filterEX on batteries can prevent:
   - a flash-back of Hydrogen fire
   - a chain reaction between the battery cells

   The filterEX (09FEX1) is used for gaseous medium only, not for liquids.
   The filter can be installed in different ways, this depends on the actual situation in the field.

   See also our separate Technical Information.

4. Cleanliness
   The bfs plug and its pertinent connecting parts and the piping must be kept clean. Clean the plugs and of all bfs-parts only with tap water. Cleaning agents might cause damage to the plastic materials used!!
   Dirty water topping-up devices will clog vent slots, inspection glasses will no longer show the correct level and foreign matter will enter the plug whose function will be impaired.

5. Waterfilter
   The filter cartridge (bfs-part No. 09FIL1) ensures cleanliness of the topping-up water. Even purified water contains foreign matter which is filtered out by the bfs-fine filter which is attached to the hose NW10 on the battery.

6. Dust cap
   On principle, a dust cap (bfs-part No. 09STAC) should be provided on the quick-action connection on the battery (connection male bfs-part No. 09KUV1). It is the only means to prevent foreign matter from entering the battery hose.

7. Filling

It is recommended to water the batteries toward the end of the charging time.

Never fill distilled water in a battery before it has been charged.

The topping up of battery water should only be done if needed. If you water too often there is a danger of creeping overfill the battery cells.

In general, the white indicators of the bfs plugs are in the lower part before the filling is started with. The flow indicator (bfs-part No. 09FLI1) indicates the start and end of the filling process. After the filling all white indicators must be in the upper part.

At the end of the filling process, i.e. the flow indicator is still, the water supply must be disconnected immediately.

8. Electrolyte level indication

The cover of the bfs plug has a round field for visual inspection. Here the current electrolyte level can be checked by means of the white indicator. When the indicator is in the lower position, the cell must be topped up with water.

9. Acid density

Use the hydrometer (bfs-part No. 09HYDR) to measure the acid density of the electrolyte through the bfs plug when the lid is open.

10. Plumbing

Hoses with two different sizes are used to feed the water to the cell.

From the water tank to the battery through a PVC hose NW10 (bfs-part No. 08SCH1) and from cell to cell through a PVC hose NW6 (bfs-part No. 08SCH6).

The hoses must be installed so that they do not have any sharp bends. All connections should be fixed with hose clamps.

11. Hose clamps

Fix the entire piping system for watering with hose clamps. The hose NW6 from cell to cell with hose clamp NW6 (bfs-part No. 08KLE6). The hose NW10 from the respective water source (tank or pump) to the battery with hose clamp NW10 (bfs-part No. 08KLE1).

Make sure that the end piece (bfs-part No. 08END6) is mounted at the end of the piping on the battery - except in the case of endless-loop piping.

A mounting tool (bfs-part No. 09WE16) can be used to make mounting of the hose clamps easier.

12. Floats

In order to be able to precisely control the electrolyte level in the cell, total 16 different floats are available.

The correct float is the condition for the proper function of the system.

There must be a clearance of min. 5mm (0.2inch) between the separator upper edge and the float bottom.

Selection of the proper float is based on the measure T1, i.e. the distance between the edge of the cell cover and the moos shield or separator upper edge.