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TIPS ON THE CARE OF NICAD BATTERY PACKS

OPERATING INSTRUCTIONS

THIS BATTERY REQUIRES CHARGING BEFORE USE. USE ONLY MANUFACTURER'S APPROVED CHARGERS DESIGNATED FOR THIS MODEL.

This familiar statement appears in almost all instruction booklets for battery operated products and is often seen as a way of supplying chargers that people feel they may already have. However, there is a **good reason** for the above statement especially when the products are INTRINSICALLY SAFE to an approved standard such as EEX or ATEX.

Charging at the wrong rate can damage the integrity of the circuits in the sampling pump and has the potential of producing excess heat which may cause an explosion. In addition to this each Intrinsically Safe battery pack must be equipped with a protection fuse to prevent charge or discharge rates that may cause any damage. If a charger is used that supplies an excess to the accepted rate, this fuse will be destroyed hence making the battery pack unusable. Unless the charger has been designed for the cells used in SKC products, loss of performance may be experienced as explained in the following points.

The Real Story

Each of the following points have been blamed on 'memory'. None of them however represents a true memory problem, although they all have a measurable effect on the battery output.

1. Cut off voltage set too high.

All SKC pumps have a cut off voltage set to optimise battery output.

2. Operation at high or low temperatures.

If a cell is discharged at low temperatures, it will exhibit a reduction in available capacity. Similarly if a cell is charged at high temperatures, it will suffer from a reduced charging efficiency and will also have its capacity reduced.

3. Voltage depression.

Probably the factor most often confused with memory effect. Voltage depression is caused by long term overcharging in sintered plate NiCad cells. SKC chargers are designed to eliminate this problem by automatically switching to a 'trickle' charge level preventing overcharge.

The above factors are why we specify the use of SKC chargers with our products and why the often dismissed statement 'USE ONLY MANUFACTURER'S APPROVED CHARGERS DESIGNATED FOR THIS MODEL' is a valid one.



FACT OR FICTION?

Fiction

Nicad batteries suffer from a memory effect which will cause a loss of capacity.

Fact

Memory effect originates from an aero-space application where a computer controlled cycle for discharging/charging caused a loss in capacity. This was easily overcome by reprogramming the computer.

Fact

Well designed chargers will not produce a memory effect in a NiCad battery.

Fiction

If you only use a NiCad battery for 2 hours a day, every day, after a while it will only perform for 2 hours in the future.

Fact

If a NiCad battery is charged with its designed charger previous discharge times will not influence future performance.

Fact

For the vast majority of applications, including the parameters an air sampling pump is used in, memory effect will NOT be a factor in NiCad performance.

Fact

NiCads when left without being used, lose approximately 10% of their charge per month. If an instrument is to be stored for an extended period it is best to fully charge before storage. It is also advisable that every 3 months or so the unit is run for around 16 hours WITH A FILTER OR TUBE IN LINE, after which it is placed on charge for 16-18 hours. This is 'cycling' the battery pack, and keeps it in top condition.

BATTERY WARRANTY

The warranty period for SKC battery packs, when sold as a replacement, is six months from the date of the invoice.

During this period the battery pack will be repaired or replaced free of charge, but must be returned to SKC Ltd.

The warranty does not cover damage to the battery pack caused by misuse, failure to use the equipment in accordance with the manufacturer's instructions and in accordance with industry standards, and the use of a non-SKC approved charger to charge the battery.

Refer to the manufacturer's Terms and Conditions of Sale for full warranty details.

NICAD BATTERY DISPOSAL

The EC Battery Directive requires that all NiCad batteries and battery packs are disposed of correctly at the end of their working life. This means that they must be collected and treated separately from other waste to ensure that the harmful cadmium they contain does not enter the environment via landfill sites.

Please ensure that any end-of-life SKC battery packs are collected and recycled or disposed of correctly.