

Battery Maintenance

It is important that DIVELINK customers understand that there is a maintenance procedure associated with DIVELINK battery packs to ensure that full operating time is achieved.

Battery Conditioning

Every 3 to 6 months it is important to fully discharge and then fully recharge the battery in the belt pack:

1. If the unit HAS NOT undergone a full discharge and full charge during normal use of the communicator, OR
2. If the unit HAS NOT been used for several months.

This is done by removing the transducer, then turning ON the belt pack for 36 hours, then fully charged.

Note: The transducer is removed so that the belt pack will turn on properly if the pack is already close to full discharge.

If this procedure is not followed then according to the battery manufacturer, it is possible that the battery can develop a shorter operating time as it will be undergoing partial charge/discharge or self discharge over time as opposed to full cycle charge/discharge conditioning. This effect is entirely reversible, and has to do with Nickel type batteries. It is more noticeable with NiMH batteries as compared with NiCad.

Why?

Nickel type batteries are used in the DIVELINK product line because they reliably supply the system with power, do not produce gas, are light weight and have no "memory". Memory has much to do with cell reversal due to poorly matched cells in a pack, which over time will cause a pack to malfunction irreversibly. DIVELINK uses only SANYO matched cell battery packs, the best in the industry. These are tested for a complete cycle in the communicator before leaving the factory.

Although the Nickel type batteries used in DIVELINK products have no "memory", it is important that Nickel batteries are conditioned every three to six months (as described above) to prevent the growth of crystalline formation in the chemistry of the battery. Crystalline growth consumes chemical resources of the battery and will therefore degrade how long the battery will last during use. It can also cause the battery status lights to become incorrect over a period of years unless the batteries are conditioned regularly.

Other Concerns

The Time Factor

It is important to be aware that Nickel type batteries lose charge over time. This is a phenomenon called "self discharge". Self-discharge is reliably tracked by the battery indicator lights on the DIVELINK, as well as true capacity based on other factors including temperature.

After a full charge, the pack will lose 10% charge after 24 hours. Every month thereafter an additional charge loss occurs at a rate of 10% for NiCad and up to 15% for NiMH.

After Taking Out of Storage

A common mode of operation is the use of DIVELINK equipment after long-term storage. When the unit is turned on after for example 3 months in storage, two lights may be on, indicating 40% charge. It is best in this case to leave the unit ON until fully discharged (over 24 hours), then to place the unit on charge, as opposed to charging the unit up from 40% to 100%. This automatically provides battery conditioning and prevents the build-up of crystalline formation in the battery chemistry.

This knowledge is meant to assist customers in planning operations using DIVELINK equipment, and may greatly extend the service life of battery packs as well as ensure reliable operation over many years.