

Installing your zinc saver/galvanic isolator:

A zinc saver is simple to fit, however it involves working on the 230 v A/C/ input, if you have any worries about doing this then please contact a qualified electrician.

Disconnect the boat from shore power, and ensure all sockets are dead before attempting to install this or any other device on the a/c system

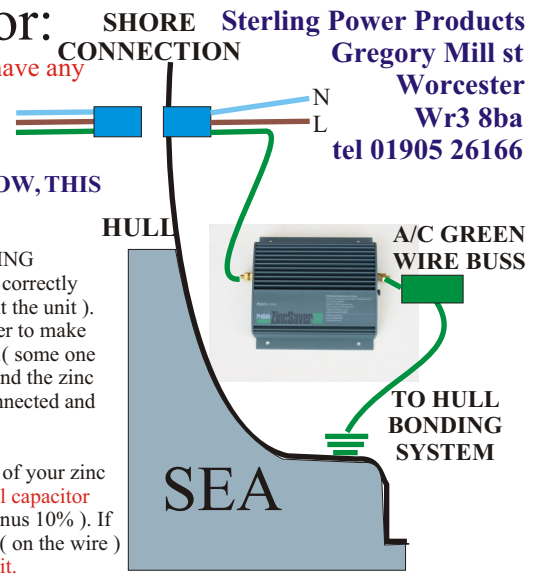
THE ZINC SAVER WORKS WITHOUT THE MONITORING SYSTEM DESCRIBED BELOW, THIS SYSTEM IS ONLY MANDATORY FOR BOATS BEING BUILT TO A.B.Y.C. STANDARDS

Mount the zinc saver between the shore power inlet and the A.C. panel green wire buss

The zinc saver is clearly marked on the side panel beside the gold stud (A/C. SHORE GROUND) and (BONDING SYSTEM) connect the zinc saver round the right way. (if the zinc saver is to be used by itself then the unit will correctly operate either direction, however if the monitoring system is fitted (see below) it is important to correctly mount the unit). Before connecting the Zinc saver in line on the A.C. green wire, visually check visually or with a continuity meter to make sure there is no other path for the A/C green wire to reach the bonding system on the shore side of the zinc saver.(some one may have put a sneaky cable which is not obvious). After installation to verify that there is no ground loop around the zinc saver , disconnect one side of the zinc saver and with your test meter place one probe on the wire which is disconnected and place the other probe on the other wire, there should be no continuity.

Testing Your Zinc Saver.

Disconnect the shore power. With your digital multi meter on DIODE CHECK- read across the input and output of your zinc saver. Readings will be about 900/1000 (depending on the meter) (This takes a few minuets as the new internal capacitor must charge and discharge). swap the probes over to the opposite way , readings should be the same (plus or minus 10%). If you get full continuity (000) Disconnect one wire from the zinc saver and read again. If it reads full continuity (on the wire) then your green wire ground is incorrectly wired by-passing your zinc saver. **You must find this problem and fix it.**



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Galvanic Isolators . What do they do?

European Standards require that all boats which have a 230-volt system installed by a professional electrician must have the earth wire bonded to the hull/bonding system. This connection is essential for safety reasons,(and is required under the Small Boat Dorective EN ISO 13297) however a major down side caused by this connection in the marine world is that stray electric currents on the earth line will cause excessive zinc loss on the anodes, and a major electrical fault on a neighbouring boat or house will result in major hull corrosion and depletion of the anodes . To avoid this happening, a galvanic isolator can be inserted in the earth line which prevents stray currents to run to earth via your boat hull/anode , and as such prevents corroding currents travelling to earth and brining small parts of your boat with it.

Until recently, both the European Standards and the American Boat and Yachting Council (ABYC) regulations have required that a galvanic isolator must be able to withstand 5,000 amps for a period of time until a fuse fails (EN ISO 13297 paragraph 4.9). The ABYC has now increased its specification and it is expected that the European Standards body will soon follow.

Like all other A.B.Y.C. manufacturers, Professional Mariner has had to increase the specification of the galvanic isolator in order to meet the new safety specification in order to maintain our world leading position and this has resulted in an increase in price.

What is the ABYC?

It is a governing body made up from Professional Boat builders and manufacturers who meet regularly in the U.S.A. to discuss safety issues. They review safety related events or complaints and, using their vast experience and knowledge in the field, try to predict a potential safety problem. At the end of the meeting, they vote on recommendations to try to prevent the problem occurring.

Manufacturers who wish to maintain the A.B.Y.C. logo on there product incorporate the recommendations and have their products independently tested to prove that the new standards have been implemented. Failure to comply with the recommendation means that the manufacturer can no longer supply the product to the vast majority of boat builders in the United States and the production boat builders in this county who build to the ABYC specification.

Why should I worry about the ABYC regulations or the European Standards for that matter? Simply because your life could depend on it. All the standards set by any safety council or government agency are for safety reasons only – performance is not the issue here. A galvanic isolator or an isolation transformer both break into your safety earth wire and interrupt the earth flow within a product which, if it failed, could kill you. It is therefore of the utmost importance that the product is safe – and legal

What are the new features in this new zinc saver which are responsible for the price increase?

There are three key additions to the specification –

Bi Polar capacitor. In July this year, the new specification will include the requirement for a Bi Polar Capacitor (we have used a 25,000 micro farad 2.5 volt capacitor which costs in excess of £30). This prevents the peaks from an AC stray current leak passing through the system.

On line current increase. The maximum current on a 30 amp system has been changed from a peak of 5000 amps until a fuse blows (about half a cycle) to a new standard of 5000 amps for one complete cycle. No current standard diodes could meet this specification economically so a new block diode was developed. The reason for this is to ensure that, if a live wire falls onto a metal surface, the Zinc Saver has a high enough specification to remain on line until some of the fuses on the boat or the pontoon fail in order to break the voltage. If the Zinc Saver fails under these conditions, then the boat/engine block will be live and touching either will result in electrocution. No low cost, non A.B.Y.C. approved products can reach this standard and, worse than this, they could be built to no standard at all. The question then is what dangers are inherent in these cheap products if no one has ever tested them? Apart from the product being illegal to use, remember it's your life at stake here.

Monitoring. With safety in mind , the new A.B.Y.C. specification requires the earth line to be monitored because, at the end of the day, you don't even know if the marina pontoon, or your extension lead have the earth connected. This monitoring device sends a signal up the neutral line to the local sub station/ transformer. The signal then returns down the earth line to the monitoring system on the boat, thus ensuring that this wire is connected and your boat is safe (see below circuit). It also checks that the galvanic isolator is working properly as it could have been hit by a lightning strike and failed and no one would know until its to late.

A galvanic isolator will save your boat, and the new standards could save your life.

The full A.B.Y.C. specification for this type of device can be down loaded from our web site. If you have any other system fitted, please ensure it is legal and meets European Standard EN ISO 13297 paragraph 4.

