

Technical information sheet - **Bonding**

General

In principal we recommended against bonding the thruster to the vessels Cathode Protection System.

Bonding of the thruster is not required in European or US regulations when using double insulation on the thruster motor.

Side-Power anodes are designed to protect the thruster gear leg only and are not designed to be a part of the vessels overall Cathode Protection System.

Bonding of the thruster can cause premature anode erosion.



Our SE model thrusters with Galvanic Isolation cannot effectively be bonded.

Aluminum Alloy Anodes

Side-Power now supplies aluminum alloy anodes for most models; zinc anodes are no longer available for SP, SE and SH model thrusters. Zinc anodes continue to be supplied for all HP model thrusters.

- Aluminum alloy anodes provide superior protection over zinc anodes in salt and brackish water.
- Aluminum alloy anodes work in fresh water and are the only anode that is safe for both salt and fresh water.
- Aluminum alloy anodes potentially last up to 50% longer than zinc anodes.
- Aluminum alloy anodes are now competitively priced.
- Aluminum alloy anodes are widely used in military and commercial fleet applications because of their superior protection and reduced maintenance cost.

Aluminum Alloy and Zinc in combination

Aluminum Alloy Anodes and Zinc Anodes should **not** be bonded in the same Cathode Protection System. When aluminum alloy and zinc anodes are bonded together in the same cathode protection system, the following will occur.

- Aluminum alloy anodes have higher negative potential than zinc anodes.
- Aluminum alloy anodes with higher negative potential will erode before the zinc anodes. (*In fact the aluminum alloy anodes will actually protect the zinc anodes from eroding.*)
- Aluminum alloy anodes will erode very quickly when bonded with zinc anodes.
- Once the aluminum alloy anode is gone, the zinc anodes will then start to provide cathode protection to all fittings that are bonded in the system.
- When the aluminum alloy thruster anodes erode prematurely they can fall apart and have potential to cause damage.