

## Copper And Aluminium Anodes For Impressed Current Anti-Fouling System

The purpose of the Impressed Current Anti-Fouling system is to prevent blockages in seawater cooling systems caused by various forms of marine growth, primarily barnacles and mussels. Blockages are expensive and time consuming to remove, particularly when whole sections of pipe-work need to be cleaned or replaced.



There is also the risk that seawater valves and other important items of equipment are affected jeopardising the operational capability and safety of the vessel.

Even partial blockages can have serious consequences, making engines run at abnormally high temperatures and significantly increasing fuel usage. This has a direct bearing on the cost of vessel operation and profitability.

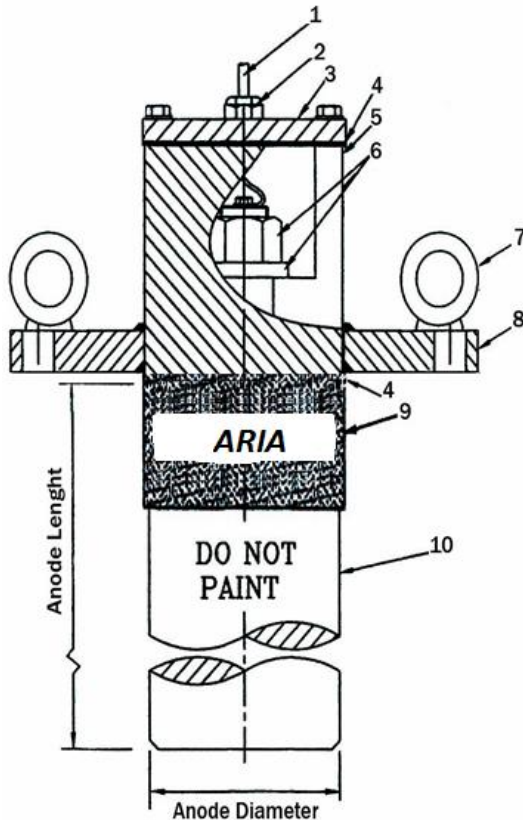
The system is based on the electrolytic principle and usually consists of pairs of copper and aluminium anodes which are mounted in seachests or strainers and wired to a control panel.



In operation, the copper anode produces ions which are carried by the flow of seawater, creating an environment in which barnacles and mussels will not settle or multiply. By introducing copper ions in very small concentrations, around 2 ppb, the Impressed Current Anti-Fouling

system interrupts the settlement sequence. The action of the copper ions is assisted by aluminium hydroxide created by aluminium anodes which flocculate the released copper ions. This highly gelatinous copper-aluminium hydroxide floc is carried throughout the system and tends to spread out into the slow moving areas closer to the pipe surfaces where marine larvae are most likely to settle.

As a result, marine growth larvae do not settle, instead passing direct to discharge. At the same time, a cupro-aluminium film is built up on the internal surfaces of pipes to suppress corrosion. In this way, the system has a dual action protecting seawater pipework against bio-fouling and corrosion.



NO.	Description
1	Anode Cable
2	Cable Gland
3	Lid For Mounting Sleeve
4	Gasket
5	Mounting Sleeve
6	Anode Mounting Accessory
7	Eyebolt For Lifting
8	Anode Mounting Flange
9	Tube
10	Anode