



MERCRUISER SERVICE BULLETIN

Section: XII (Bulletins)

Number: 68-1207

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MerCathode Installation and Service Information

A. REVISION OF MERCATHODE SPECIAL APPLICATIONS

(For Miscellaneous Section X)

NOTE: This information supersedes previous "Special Applications" information.

MERCATHODE SPECIAL APPLICATIONS

Checking Protection Output

A properly installed MerCathode System will function trouble-free; however, to assure proper corrosion protection, it is recommended that the system be checked with a MerCathode Tester (C-91-46802A1). A dealer or individual with a MerCathode tester and accompanying instructions will be able to measure, test and monitor the MerCathode System performance.

If the initial check indicates protection at or below a potential of 0.8 volts, another Protector Kit (C-46733A2) must be installed to bring the potential within the specified voltage potential.

Monitor the MerCathode System periodically after it has been installed. Check it where the boat is moored, especially if it is relocated in polluted or salt water areas. It is your only positive way to determine if your drive housings have adequate protection from your MerCathode System.

Metal Boats

Any metal boat, which uses the MerCathode System, requires that an Anode Insulating Kit (C-46733A3) be installed. The insulator disc (5" [12.7cm] diameter) provides a shield to protect the metal hull from over-protection in the area adjacent to the anode.

Painting Hulls

Wood or fiberglass boat bottoms, painted with a metal base anti-fouling paint, will accelerate corrosion. Since fresh anti-fouling paint is highly conductive, the MerCathode System capacity could not effectively protect the drive housings.

If a hull must be painted with conductive metal base anti-fouling paints, DO NOT PAINT the lower unit or housing, anode and reference electrodes. Leave an insulating median around the clamp brackets or drive housings, which is a non-conductive surface 1" (25.4mm) wide. It will help reduce some of the corrosion effects. A non-conductive bottom paint on any hull is more compatible with the aluminum drive housing units and more easily protected by a MerCathode System.

(OVER)

Large Metal Boats

Large aluminum or steel metal boats require a cathodic protection system capable of protecting the boat hull. The MerCathode System is not designed to protect such large metal surfaces. A MerCathode System, however, must be installed in addition to the cathodic system for steel boats, since aluminum requires slightly more potential for protection than does steel.

Electrical Shore Power Connections

Shore power plug-in connections should be polarized to prevent reversing ground polarity. Reversed ground polarity causes rapid metal deterioration by electrolysis within a very short period of time.

An isolation transformer in the boat's electrical system will assure proper system ground, regardless of fluctuations in shore power grounding. Marine systems, as a rule, have negatively grounded systems.

C-46733A1	MerCathode Kit	\$ 89.95 U.S. List
C-46733A2	MerCathode Protector Kit	
C-46733A3	Anode Insulating Kit	2.95 U.S. List
C-91-46802A1	MerCathode Tester	40.50 Net U.S.

B. ADDITION TO MERCATHODE INSTALLATION INSTRUCTIONS C-90-46735

The MerCruiser III is internally grounded.

C. TROUBLE-SHOOTING THE MERCATHODE SYSTEM

(For Miscellaneous Section X)

Continued metal erosion after installation of MerCathode indicates that hull potential is now -- or was at some time in the past -- below 0.8 volts. This low hull potential may be caused by the following:

1. MerCathode not installed or not operating properly. Refer to "MerCathode Installation Checks", following.
2. Stray current (sometimes referred to as "electrolysis") which is caused by an improperly wired device or power source. Refer to "Stray Corrosion Current Checks", following.
3. Excessive exposed metal, such as an aluminum hull or a non-metal hull painted with a conducting paint. See following paragraph, "Excessive Exposed Metal".

MERCATHODE INSTALLATION CHECKS

Be Certain That . . .

1. Splash-proof connections are secured according to installation instruction wiring diagram.
2. Protector leads are direct to battery and that fuses or switches are not in the system.
3. Spliced connections are soldered and waterproofed.
4. Protector control is mounted away from engine or manifold heat and bilge water.
5. Electrodes are mounted thru transom below water line, not painted and have not been cleaned with abrasives.

6. Battery(s), drive assembly(s) and engine(s) are to a common ground.
7. Battery(s) is fully charged, not disconnected or removed and hooked up properly to engine(s) and boat(s) electrical system.
8. Had any of these (in Paragraph 7 immediately preceding) occurred before? If so, it is possible that the corrosion occurred at that time.

STRAY CORROSION CURRENT CHECKS

If Hull Potential Meter Reads Below 0.8 Volts after Installation and Check of MerCathode . . .

1. Disconnect all shore connections except plastic rope. This includes AC shore power, water lines, salt water soaked lines, etc.
2. Disconnect all battery terminals with exception of MerCathode protector(s).
3. Repeat hull potential check. If potential increases, the problem was stray current.
4. Reconnect each wire to the system one-at-a-time, observing hull potential until offending connection is located.
5. If hull potential is still below 0.8 volts on tester, excessive exposed metal areas exist.

EXCESSIVE EXPOSED METAL

Hull Potential Meter Reads below 0.8 Volts with All Shore and Boat Power Disconnected . . .

1. Paint exposed metal surfaces to bring boat hull potential within capacity of the MerCathode System.
2. Metallic base, anti-fouling paints are not to be used on boat hulls constructed of aluminum or steel. It will greatly accelerate corrosion between hull and paint. Non-metallic vinyl base paints are best suited for metal hulls.
3. If a hull must be painted with conductive metal base anti-fouling paints, DO NOT PAINT the lower unit or housing, anode and reference electrodes. Leave an insulating median around the clamp brackets or drive housings, which is a non-conductive surface 1" (25.4mm) wide. It will help reduce some of the corrosion effects. A non-conductive bottom paint on any hull is more compatible with the aluminum drive housing units and more easily protected by a MerCathode System.

D. MERCATHODE KIT INSTALLATION (C-46733A1) ON STERN DRIVES

(For Miscellaneous Section X)

1. MerCruiser Stern Drive Units -- whenever equipped with MerCathode -- have shown good surface condition with no galvanic corrosion damage or deterioration to the drive and components. The elimination of the corrosion problem provides for far easier servicing of the unit after operation, thereby reducing service labor which results in a considerable savings to the customer. Sell this fact to your customers!
2. After numerous MerCathode installations, we have found that installation of the anodes thru the transom is simpler -- and in some cases more effective -- than thru the transom plates. It is recommended, therefore, that future MerCathode installations have anodes installed directly thru the transom of the boat. Refer to MerCathode Installation Procedure and Information Manual C-90-46735.