FILTERING ELECTRICAL INTERFERENCE

Explanation

The potential exists for interference to occur with some sonars due to a trolling motor's pulse width modulation speed control. With LCD models the display may turn solid black or blank out the display when the trolling motor is turned on. When trolling motor is stopped the display returns to normal operation. With flashers, the flasher may "bloom" then turn blank (no flash at all) when the motor is turned on. Interference can also occur due to a variety of other causes on the boat. The severity of the interference can depend on the make of the depthfinder, its location, the transducer location, the boat wiring configuration and the condition of the boat wiring/connections. Interference is most prevalent when the transducer is on the trolling motor and the depthfinder is in the manual gain mode with the gain turned up high and the trolling motor running on one of its slower speeds.

Locate the source of the noise

- *Trolling Motor* - To verify that it is the trolling motor causing the interference, place the motor to the high bypass mode. If the interference disappears then the PWM is causing the interference. If the interference remains or decreases slightly, this indicates that there is a boat wiring problem or a shorted trolling motor.
  NOTE: If interference still exists on sonar screen when trolling motor is NOT operated then the trolling motor is not the problem.

- *Accessories* - The interference could also be caused by the bilge pump motors, the livewell aerators, the power trim/tilt and the tachometer leads. This can be determined by systematically turning each device on or off while watching for interference.

Should an interference situation exist on sonar when trolling motor is operating, proceed to page 2.

Recommended Cable Routing Suggestions

- Make sure trolling motor leads go **separately** from other wiring and **directly** to the trolling motor battery (Route trolling motor wires on opposite sides of the boat from other wiring.)

- Transducer installation should be installed accordance to the manufacturer's specifications, and in particular, **routed separately** from the trolling motor power cables. IMPORTANT!!! DO NOT ROUTE TRANSDUCER CABLE DOWN TROLLING MOTOR POWER CORD OR FOOT PEDAL ASSEMBLY CABLE. Route transducer cable down arm of mount then into bow console.

- Sensitive electronics (depth finders in particular) should be connected directly to the cranking battery. If only a one battery system, then connect with **separate** cables.

- Move the depth finder transducer to a location away from the trolling motor lower unit. A shoot thru hull" is very effective on fiberglass boats.

IMPORTANT!!

SECTION I *PROPER RIGGING FOR COMMON GROUND*

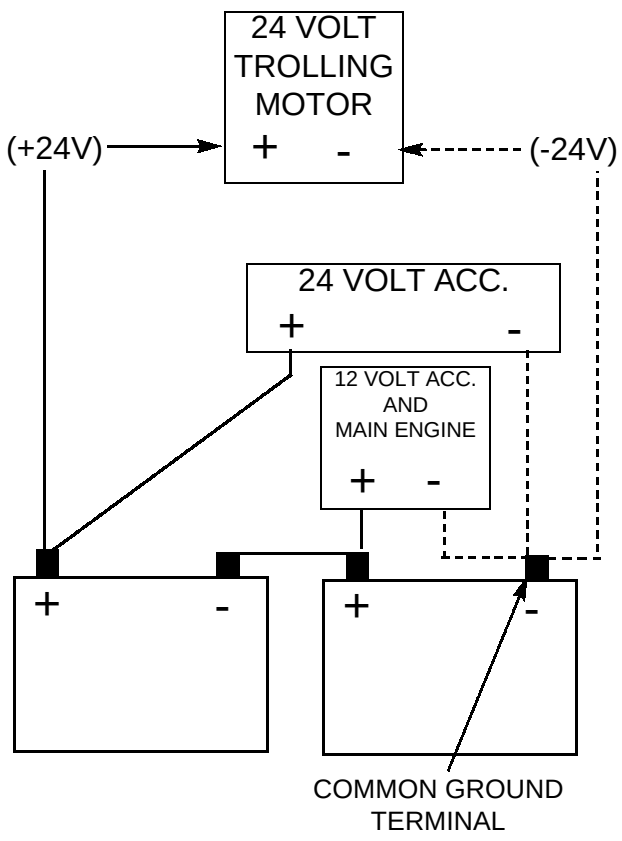
If you are running accessories (pumps, the main engine, an auxiliary motor, a power jack plate or mount, etc.) from the same batteries as the trolling motor, a common ground must be established between the trolling motor and these accessories to avoid electrolysis. The procedure in SECTION I will place the trolling motor shaft at electrical ground to help isolate electrical noise, allow increased sensitivity and improve detail on sonar display, care must be taken when connecting the trolling motor to battery power.

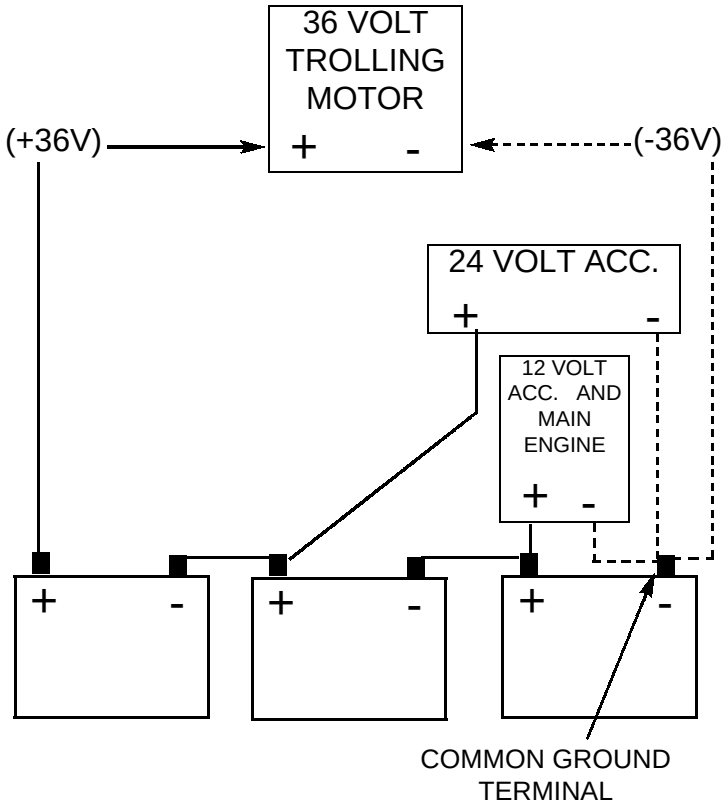
Electrolysis causes corrosion to the shaft of the motor that looks similar to the chalky buildup on the terminals of your automobile battery. If left unchecked, this problem will cosmetically damage your motor. This situation can be avoided through proper rigging. Common ground simply means the grounds for all accessories and your trolling motor must be connected to the same terminal.

➪ *If the above issue concerning "Common Ground" does not pertain to your battery system, proceed to Section II.*

⚠ **CAUTION!!:** Batteries contain sulfuric acid which can cause severe burns. Avoid contact with skin, eyes, and clothing. The battery also produces hydrogen and oxygen gases when being charged. This explosive gas escapes through the fill/vent cell caps and may form an explosive atmosphere around the battery for several hours after it has been charged. Sparks or flames can ignite the gas and cause an explosion which may shatter the battery and could cause blindness or other serious injury.

⚠ **CAUTION!!** If you are unfamiliar with battery configurations and using a voltmeter, this step should be performed only by a professional or someone knowledgeable and competent about boat wiring installation.





SECTION II *INSTALL JUMPER WIRE ON TROLLING MOTOR*

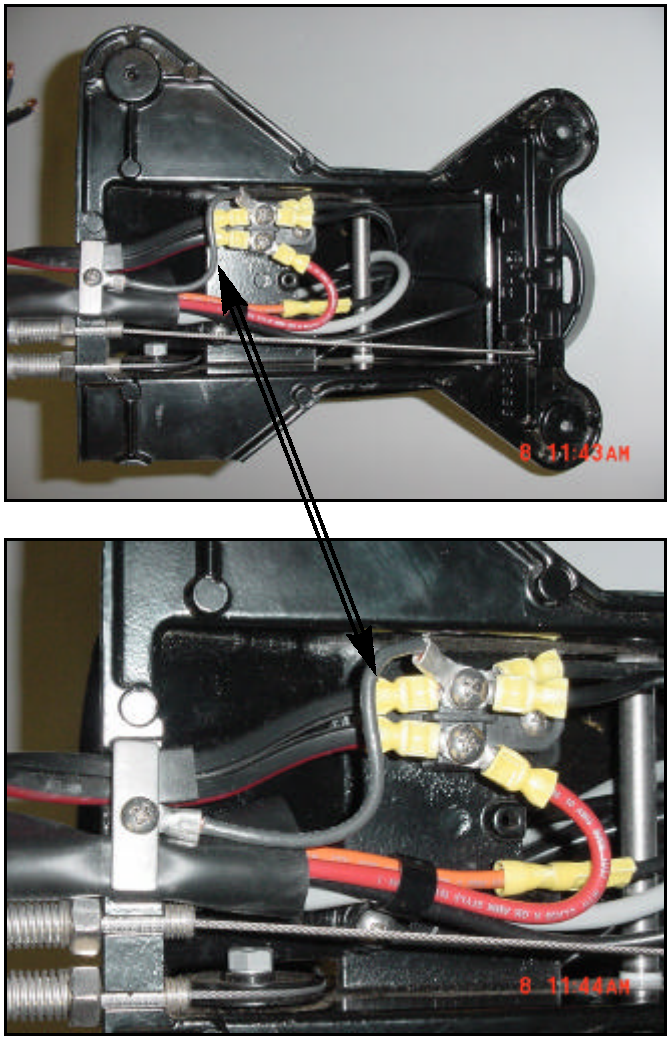
FOOT OPERATED MODELS
Models: *TOUR EDITION with metal pedal*

The purpose of adding this jumper wire is to connect the case of trolling motor to electrical ground.

Step 1
Disconnect power from trolling motor.

Step 2
Turn pedal assembly over to view bottom of pedal base. Install jumper wire as shown in figure at right. Shape jumper wire as shown and tighten terminals securely.

Step 3
Proceed to page 5.



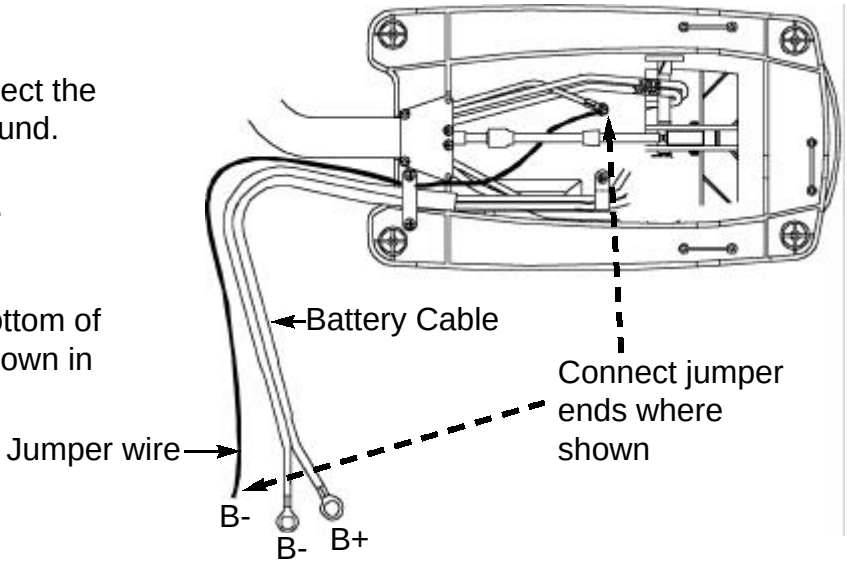
Models: *ALL 36V FOOT OP MODELS with ABS black plastic pedal.*

The purpose of this jumper is to connect the case of trolling motor to electrical ground.

Step 1
Disconnect power from trolling motor.

Step 2
Turn pedal assembly over to view bottom of pedal base. Install jumper wire as shown in figure at right.

Step 3
Proceed to page 5.



B+ = Battery Positive
B- = Battery Negative

HAND OPERATED MODELS

The purpose of this jumper is to connect the case of trolling motor to electrical ground.

Step 1

Disconnect power from trolling motor.

Step 2

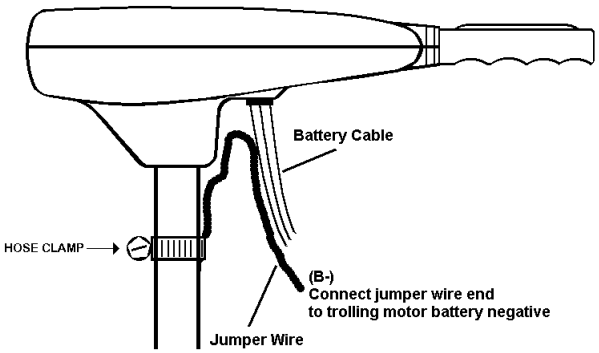
Connect one end of jumper wire to trolling motor shaft with a hose clamp. Route wire as desired.

Step 3

Connect other end of jumper wire to trolling motor BATTERY (-).

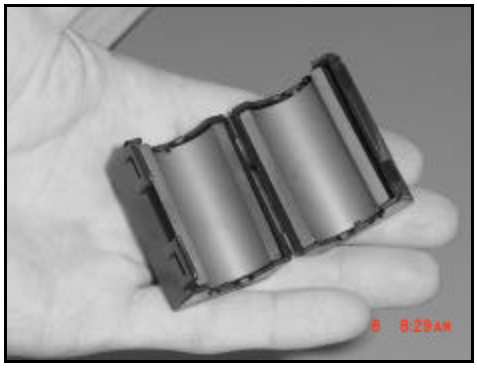
Step 4

Proceed to page 5.

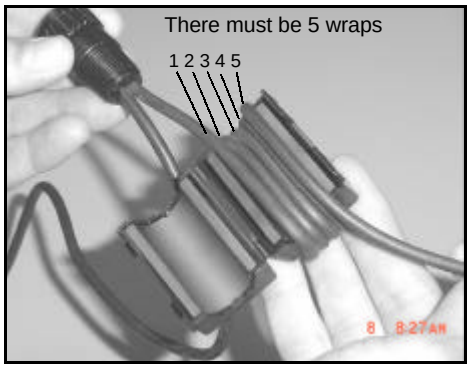


SECTION III *INSTALL RF CHOKE ON SONAR POWER CORD*

Step 1
Unplug power cord from sonar unit. You will need to access at least 15 inches of extra power cable to complete this step. If the power cable is not long enough you will need to lengthen the cable.

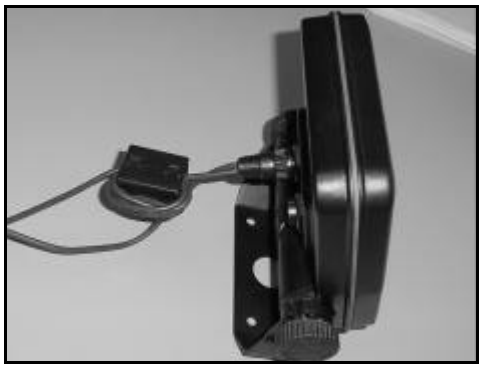


Step 2
Open clam shell of RF choke. Wrap power cable five times around one half of choke as shown in figure at right.
Snap clam shell closed.
For best results, install choke as close to sonar unit as possible. If there is not enough room for choke behind sonar unit, the choke can be tucked in with the rest of wiring just behind console panel. See figure at right.



Step 3
Clam shell must be stay closed in order to filter noise properly. Wrap a piece of electrical tape around clam shell to avoid clam shell from opening.

Step 4
Carefully tuck away any excess wiring and plug power cable back into sonar unit.



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