

ENGINES WITH UNREGULATED VOLTAGE SYSTEMS OR FAILING VOLTAGE RECTIFIERS

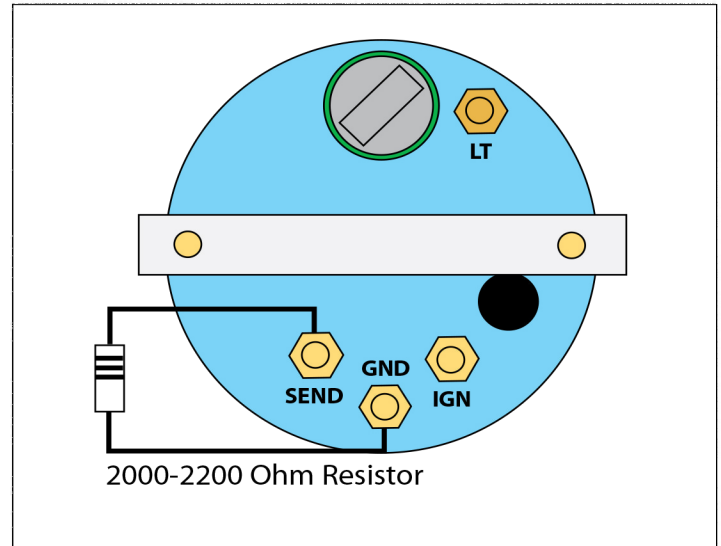
In certain instances Veethree Marine tachometers work only partially on the above engines. As the engine accelerates, the tachometer gains RPM. Some where around 3000 RPM (but not limited to that RPM). Sometimes it occurs at a lower RPM), as the engine continues to accelerate, the tachometer RPM drops towards zero RPM. When the engine decelerates to below around 3000 RPM, the tachometer again tracks properly. This is a cycle that is repeated.

The Evinrude/Johnson SPL 48, 88, and 112 are engines that have no voltage regulators and therefore have an unregulated voltage and charging system. In some cases the voltage rectifier used to convert the alternators AC output voltage to a DC voltage can operate marginally with the tachometer. Our research indicates the tachometer's signal, taken from the rectifier's AC side, can be affected by a marginal rectifier signal.

Other engines that have a voltage regulator have much less problems with marginal or faulty rectifiers. However, rectifiers do occasionally fail so this can still be a problem on aged engines with a voltage rectifier.

A healthy system should be producing 5 volts AC or higher at idle or while running. The tachometers signal threshold is approximately 3.5 volts AC. If the rectifier's voltage drops below 3.5 volts AC the tachometer pointer begins to return to zero or may even zero. You can test this by attaching a multi test meter (set to AC voltage scale) to the SEND and GND terminals on the rear of the tachometer.

The above symptoms by the tachometer can in most cases be resolved by adding a 2000 or 2200 ohm resistor (any wattage or tolerance) between the SEND terminal and GND terminal on the rear of the tachometer. The resistor can be obtained



very inexpensively from outlets such as Radio Shack. This resolves a high number of cases. If the problem is not resolved, a new rectifier will need to be installed. Veethree recommends the resistor method but does not guaranty it as the sole resolution.