

Operation

Electronic synchronizers work by comparing the pulse frequencies generated by the ignition systems, alternators, tach signal generators, or magnetic pickup senders of dual engine installations. The synchronizer is hooked up to +12VDC, Ground, and to each tachometer's signal source. By selecting the right synchronizer (magnetic pickup's use synchronizers that function only in that application) and setting the switch on the back to the correct position, you let the synchronizer compare the frequency of pulses sent per each engine's revolution. From this information, the synchronizer displays a variance in engine speed by swinging its pointer toward the slower engine. See Appendix I for synchronizer dimensions. Instrument part numbers are located on a label attached to the outside of the case (i.e. SY0000A).

Calibration

Start the engines and (after an appropriate warm-up period and with shifts in neutral) increase their speeds to the boat's normal cruising RPM. (**Both tach's must be properly calibrated**). Set the coarse adjustment switch to the proper position described on its label. Remove the stop-plug (at the 8-o'clock position on the rear of the case for most) and insert a 5/16" Allen wrench into the "fine adjustment" trimpot, rotating it CW or CCW as necessary to center the synchro.

Troubleshooting

Symptom:

A. Dead - This is usually caused by: a) No power applied, b) No signal supplied, c) Sync damaged by electrical transients caused by disconnecting the battery with the engine running.

1. Check to see if power is applied to sync by switching the instrument power supply switch on and off. As power is applied, the pointer should jump slightly. If it does not, check to see that the wires are installed on the correct terminals and that 12 volts are actually applied to the terminals themselves.

2. If sync indicates that power is applied, check for the presence of a signal on the signal terminals. Measure the signal between the signal and ground terminals. This should read in excess of 2 volts DC.

3. If power and signals are present, then it is possible that the sync has been damaged by electrical transients. See the enclosed technical bulletin for details. Replace the synchronizer.

B. Pegged (reading high/reading low) - This condition occurs when the synchronizer is in the wrong switch position or is not calibrated. Another adjustment on the rear of the synchronizer allows for fine tuning. See 'Calibration'.

C. Erratic - This symptom is caused 99% of the time by an intermittent connection between the wire and the ring or spade connector. Often the wire's insulation is pushed into the crimp area and crimped. The center conductor casually touches the connector allowing the sync to work most of the time but causing a nightmare for the technician. Electrical noise can also cause erratic readings. These noise spikes are counted by the sync as engine RPM's. The wire affected by the noise can be identified by connecting one wire at a time to the synchronizer directly from the battery or signal source on the engine.

D. Sticky - If the sync appears to "stick" during operation, slightly loosen nuts holding backclamp and check operation. If sync now operates properly and is not loose in panel, sync now should provide suitable service. If sync continues to stick during operation -- replace sync.