

StarGazer Systems

2009 – 2016

BASIC TROUBLE SHOOTING ***(PERFECTPASS FOR MECHANICAL ENGINES)***

How PerfectPass Works

Through the in-dash display the driver sets the desired boat speed or engine RPM depending upon which mode of operation the driver has selected. The master module computer calculates the speed of the boat from the GPS signal and the engine RPM from the engine tachometer signal. The servo motor control cable is connected to the throttle arm of the engine, which allows the servomotor to control the engine's power. This control cable operates the throttle in cooperation with the manual throttle cable so that both the driver and the servo motor are able to change the engine output.

As the driver advances the throttle handle to bring the boat up to speed, the servo motor prepares to take control, at the point where the boat speed or engine RPM has reached the desired level, the system beeps to indicate it is beginning to control and the driver stops moving the throttle handle. The servo motor adjusts the engine throttle as required to continuously maintain the set speed or RPM. The driver is able to change the set speed or RPM while the system is engaged by simply pressing the up or down keys for each ¼ mph change in speed or 25 RPM change desired. At any time the driver may pull back on the manual throttle to slow the boat down, the PerfectPass system immediately stops controlling the engine and the driver once again has full control.

Start Up Procedure

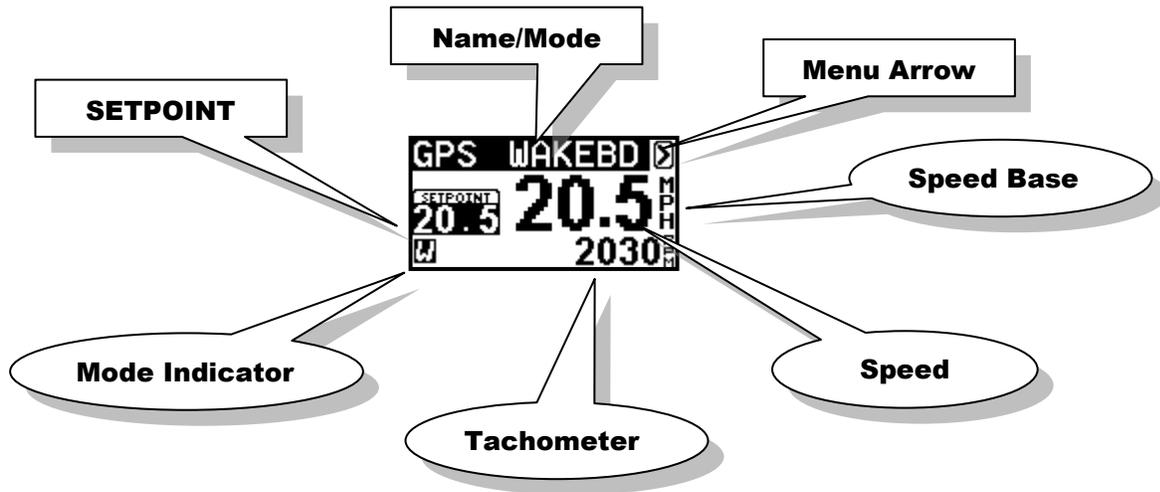
The Master Module is the heart of the system and requires a solid and continuous 12 volts before the "relay" will allow the Processor to start. Upon proper start up, the Dash Display will become active and the servomotor will power up and perform an "auto-tighten" rotation check.

A great deal can be confirmed from visually watching this routine start up. If the key is moved to the on position, the PerfectPass Display should become active & beep and servo motor is powered.

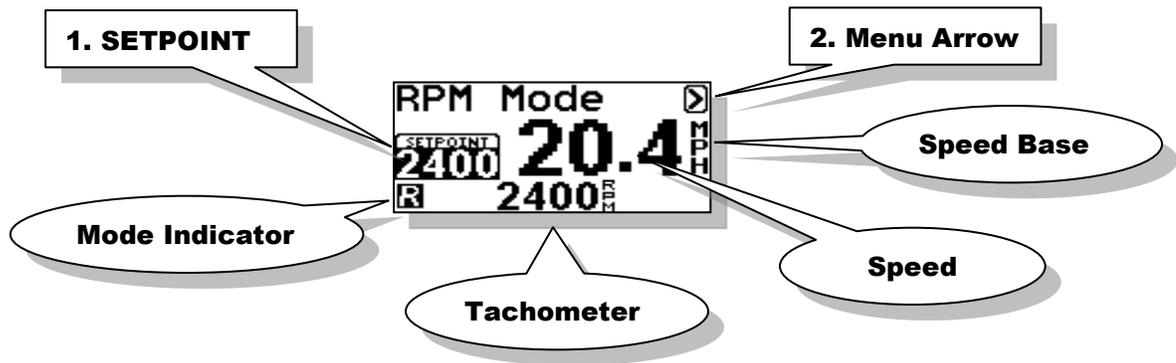


The StarGazer Wake has two main operating modes:

1. Speed Based Wakeboard designed primarily for surfing/wakeboarding in the 10 – 28 mph range. User sets a speed on the main screen.



2. RPM Mode where the user sets an rpm value. Designed for higher speed use such as open water skiing or cruising.



GPS Receiver

The high speed Garmin weather proof receiver is very accurate and updates 5 times per second.

On the top left side of the screen the following messages for the GPS may be displayed:

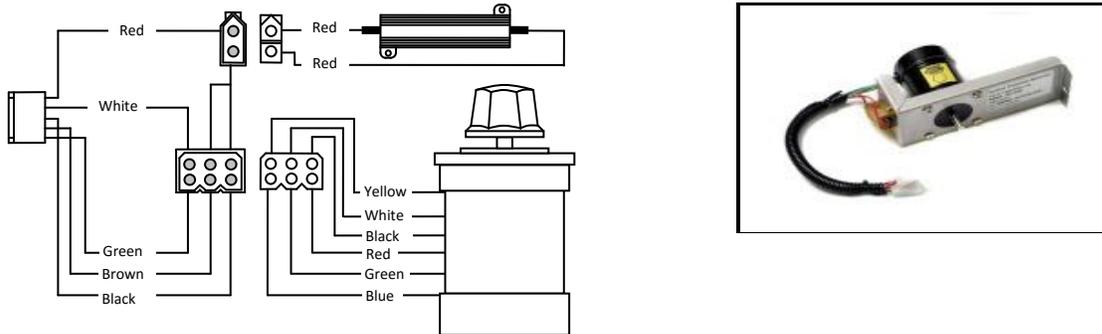
GPS – Once the receiver has a lock, GPS will be displayed which means a digital speed will be shown.

NO GPS DATA – This means the GPS Receiver is not seen by the Module. Check the connection of the GPS at the Master Module. If properly connected in the right location, the GPS Receiver may require replacement.

NO GPS LOCK - This means the system is searching for a satellite fix. Expect to see this upon start up each time key is turned on for a few seconds. Upon initial start up on a new system or after battery has been disconnected, GPS Lock may take 5 – 7 minutes.



Servo Motor



The 4 – Phase servo motor can make hundreds of adjustments per second to maintain the correct speed. It is vitally important that the throttle cable has free movement and the brass L Adapter (Volvo only) connecting the PerfectPass throttle cable to throttle arm can swivel and rotate smoothly.

If a servo motor is not installed in the correct location, the throttle cable may have too much of a bend or may jam against the engine cover which will cause improper operation.

Anytime you suspect the system is not controlling properly, a Servo Motor Test should be performed as follows. If servo motor test is successful, perform a linkage test on page 10.

Servo Motor Test / Auto Tighten Test

Every time you return the boat to neutral when PerfectPass is on, the servo will wind in the cable until snug in a clockwise direction. This is the normal starting point for the servo.

Each time you turn the key on or start the boat, PerfectPass becomes powered and the servo will perform an “auto tighten” function and will attempt to wind in the cable to confirm it is in normal position. (If in proper position, it will appear simply as a “click”, “click”, click”).

To check servo and servo power wire, with key off turn black knob on servo motor counter clockwise $\frac{3}{4}$ of a turn. Now turn key on and black knob should turn clockwise about $\frac{3}{4}$ of a turn as part of auto tighten. If it does, repeat procedure, except this time hold black knob gently to apply some resistance to auto tighten. If it rotates with good strength then it would appear servo and servo power cable are fine.

If it does not rotate or just vibrates, then a wiring phase coming to the servo may be loose or broken. Inspect all wiring around servo. Pull both white plugs apart at servo and inspect pins to ensure they are in place. Gently tug on each wire to ensure they are securely in crimp. Check at Master Module where cable is connected.

If you cannot locate problem, contact PerfectPass at (902) 468-2150.