

IMPORTANT USER INFO/F.A.Q.

We are pleased to enclose your Star Gazer System.

After installation, you should be up and running in a matter of minutes. Simply run your Baseline Calibration passes in "CAL MODE" (Or manually enter your baselines if you have made a note of them) then switch to "GPS AUTO MODE" and go skiing. Refer to your Quick Reference Guide for fast access to features.

A few common questions:

Q. In GPS Slalom Mode without a skier, I see a fast mid course segment time (at 34.2 a time of about 7.08) Is this normal?

A. Yes, the system assumes in this mode that you have a skier in tow. Once in the course it will realize there is no skier and will reduce the speed accordingly and run a good full course time.

Remember, in CAL Mode the system is designed to simply run the baseline rpm value, there is no GPS control. On the other hand, in GPS Mode it assumes you have a skier in tow so it will run fast outside the course and through the first half if you do not have a skier in tow.

Q. Do I need to enter Crew Weight?

A. Ideally, Crew Weight should be entered for Calibration passes and when skiing if you are a high end skier. If you do not use Crew Weight, times will be accurate; however the entrance pull may not be optimal in a short course set up.

Q. Can I use the "One Ball Timing Method" if I use my boat in a course with 6 magnets?

A. Yes, as long as there is a magnet at entrance gate to start timer, the other magnets are ignored by PerfectPass.

PerfectPass defaults upon initial start up or after a System Reset to the "One Magnet Method".

Q. Do I need to "map" my course in the system to run the "One Magnet Method"?

A. No.

Q. Are there driving tips to achieve optimal performance?

A. Ideally, throttle up smoothly until you hear the beep. There is no need to advance the handle any further. On mechanical boats with servo motors, if you advance the throttle well past the engagement point the system has a lot of work to do to slow down and settle in. If your boat is under powered and you need excessive throttle to get the skier up, feather the handle back as the boat comes on plane. The less the servo needs to work the faster the engagement and the times will be better balanced.

Q. Why is Classic Slalom Mode still present?

A. As this mode is still fully approved by USA Water Ski, it has been included for this season.

Q. Why is there a “Practice Mode”?

A. The “Auto GPS Mode” mode is designed to run near actual times every pass. To train at a slower speed (or higher speed) you can simply switch to “Practice Mode” and adjust set speed in .1 mph increments. NOTE: Practice Mode is only for 24 mph speeds and higher.

Q. Is Tournament Mode still present?

A. Yes. If you press Up & Down Keys at the same time, the Tournament Mode will appear. Only those that wish to see the time displayed in a larger font will utilize this feature. The pull is exactly the same. (Press Up & Down keys to exit this mode)

Q. In Multi Magnet Mode I am seeing different full course times vs. One Magnet Method.

A. Many, many courses are in tolerance but are long or short. The One Magnet Method times are based on a perfectly accurate course. A course out just one 18 inches will throw times off by a few 100ths. One magnet mode is recommended for best performance.

Q. Why are there letters beside the speed setting?

*A. Next to the speed setting you will see an **N (Normal)**. This setting is designed for most skiers weighing 160–200 pounds. For smaller lighter skiers (120-160) you can set this at **L (Light Skiers)**. Due to the fact that there are such a vast variety of skiers, we found it necessary to have these settings to ensure that the lighter and heavier skiers all get a fair pull and a good time.*

*In addition to the above, you will see: **F** (Feather weight, for skiers under 120 pounds.*

***X** (Heavy skiers over 200 pounds)*

***O** (No Skier. This mode allows you to do a timing pass to confirm system operation is OK. If your baselines are good in this O setting, you should see near actual times at each segment). If you see unstable times, go back to CAL Mode and run a timing pass.*

Q. My times in GPS Mode are not consistent?

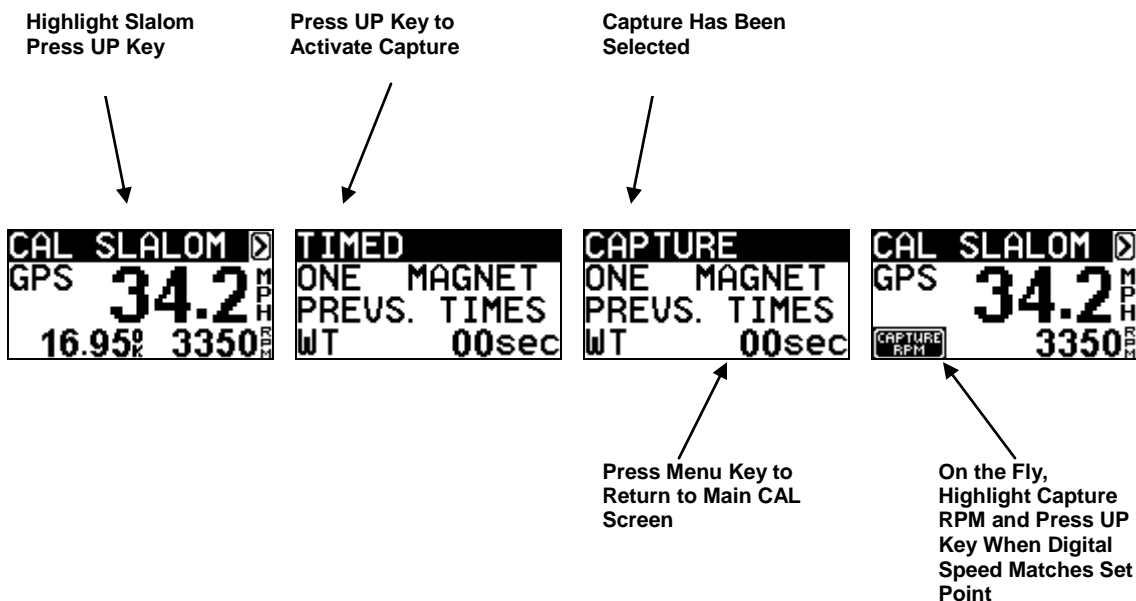
A. Before contacting PerfectPass or changing any internal settings, please do the following:

- 1. Run several passes in CAL BASELINE Mode without a skier at 34.2 mph. (Aggressively throttle up just like when towing a skier). As you enter the course, the digital speedometer on PP should show about 34.2 mph and stay stable all through the course. At the end of the pass press the down key and review the times. Ball one should be about 1.77 and ball three about 7.13. If they are off by more than a few 100ths, then the baselines may be off or mechanically something is not smooth. (See linkage Test in manual for non DBW engines).*

A. Have you tried running the boat with RPM set as “INVERTED”? See Page 6.

Calibrating without a course, The new CAPTURE Mode.

This version allows you to set your baseline values in open water without a course and timing. In the Slalom CAL Mode, you can highlight the word SLALOM and press the Up Key. At the top you will see "TIMED" which means you will calibrate your baselines using magnetic timing. If you press the Up Key you can change this to "CAPTURE" which means you can calibrate in open water. (After setting to Capture, use Menu Key to return to main screen).



After selecting CAPTURE, select your speed (such as 34.2) and drive up and engage system. It will engage and then the speed will slowly adjust and after a few seconds the digital speed will show 34.2. At this point, press the Menu Key to highlight the word CAPTURE, press the Up Key to confirm. The system will **beep twice** to confirm it has captured the correct RPM.

Change speeds and repeat process for each speed you wish to set up.

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Background Adjustable Slalom Settings

In order to handle the very wide variety of skiers for a given speed, the control can be set as follows: **Normal (N)** 160 – 200 pound skiers. **Light (L)** for skiers under 130 pounds. **Heavy (X)** Heavy skiers over 200 pounds. **Feather weight (F)** for very light pullers under 120 pounds. In the background, there are internal settings that affect the Gate Entry Speed, Ball One Time and Ball Three Times. These are found in tables for each of these control settings.

Given the vast variety of new and older boats using Star Gazer, you may need to adjust these slightly. If your times are not nicely balanced on your boat in the front end of the course after towing several skiers, you can tweak these values or try a lower letter. Access these tables by pressing the **ON/OFF Key and Up Key** at the same time.

These values can only be tweaked and results confirmed when towing skiers. DO NOT attempt to change values until you have data derived after several passes with skiers and you have confirmed the times are perfect in Cal Baseline mode.. If you are seeing wild swings in speed, do not attempt to change settings, something else is wrong. These are designed to be tweaks only.

On some strong boats, you may find that a 170 pound skier set on letter “N” is recording fast ball one and ball three times. In this case, it may be necessary to run at a lower letter such as “L”.

Available Settings:

Pre Gate – This controls the speed of the boat approaching the course. Stock values on Normal Setting is about 70. In the event your Ball One Times are a little slow, increase this value by 10 or 20 points which speeds up the boat outside the course. If they are a little fast, reduce this setting slightly.

Ball One Time – This setting controls the Ball One Time and also has some affect on the Ball Three Time. In the event your Ball One Times are a little slow after tweaking the Pre Gate value, you can increase this slightly (Adjust by 3 or 4 points at a time)

Ball Three Time – This setting adjusts the Ball Three Time. A higher setting speeds up the boat, a lower setting will slow the boat. (Adjust by 3 or 4 points at a time)

The above settings should be tweaked independently until you feel you have a nice balance.

MECHANICAL GPS SETTINGS

	Pre Gate	Ball1	Ball 3
Feather	30	15	10
Light 34.2 & below	40	24	20
Light 36.0	65	18	14
Normal 34.2 & below	70	22	18
Normal 36.0	60	15	10
Xtra Large	90	24	20

DBW GPS SETTINGS

	Pre Gate	Ball 1	Ball 3
Feather	30	12	8
Light 34.2 & below	40	17	15
Light 36.0	65	16	11
Normal 34.2 & below	60	13	10
Normal 36.0	50	14	10
Xtra Large	90	17	15

Star Gazer Three Event RPM Setting vs. Inverted

The vast majority of boats with mechanical Star Gazer Systems operate with a Standard V8 tachometer setting. The odd boat will run smoother and maintain a “tighter” control when the signal is set as “inverted”.

To determine which is ideal for your boat, do the following:

1. Watch the digital PP tachometer at idle. Should be steady at about 650. If it is reading high, or is “bouncing”, your boat may run better as INVERTED.
2. Set the system in RPM Mode at 3400 RPM and run in open water. The system should engage and lock on 3400 very quickly and maintain a very steady RPM digital tachometer readout. (Should not move more than 10 rpm)

If during this test your PerfectPass digital tachometer does not settle well, or you see spikes (particularly on the high side of 3400) you may wish to try the “inverted” setting and perform this same test.

Go to USER SETTINGS (Menu & Up Keys together) and move to ENGINE SET UP. Press the Up Key to select Standard or Inverted V8. (See Page 7).

Ultimately, you should set this at whatever setting gives the smoothest tach reading.

PerfectPass User/Engine Settings

v7.062 Software

The new software gives users the ability to change the internal user and engine settings on PerfectPass. If you need to change the way the system reads your Rpm signal or simply want to change between Mph and Kph follow these instructions.

Press the “**Menu and up**” keys together to access the settings screen. Press the “**Menu**” key to highlight “USER SETTINGS” then press the “**Up**” key.



Speed will now be highlighted, if you press the “**Up**” key you will cycle between reading in Mph and Kph. Press the “**Menu**” key to highlight “ENGINE SETUP” then press the “**Up**” key.



“V8 4STROKE” will be highlighted, press the “**Up**” or “**Down**” keys to cycle through the different engine selections. See below for a list of common engines. **The majority of engines use the V8 4 Stroke setting.**

Press the “**Menu**” key to highlight “Standard RPM” then press the “**Up**” key to change to toggle to “Inverted RPM”, See below for a list of common engines that use an Inverted Rpm signal.



List of Common Engines

Manufacturer	Engine	PerfectPass setting	Rpm Signal
Indmar / PCM	6.0L /8.1L (Pre 2007)	V8 4 Stroke	Inverted
	5.7L	V8 4 Stroke	Standard
Mercruiser	5.0L / 5.7L / 6.2L / 8.1L	V8 4 Stroke	Standard
	4.3L	V6 4 Stroke	Inverted
Volvo	5.0L / 5.7L / 6.2L / 8.1L	V8 4 Stroke	Standard
	4.3L	V6 4 Stroke	Inverted
Bombardier	ALL	V6 2 Stroke	Standard
Toyota	ALL	V4 4 Stroke	Inverted
Yamaha	210 (220 Hp)	V6 2 Stroke	Standard
	212 / 23X	V4 4 Stroke	Standard
Diesel	Diesel	Special	Standard