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3-Event Mechanical

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2/14/2023

USER'S GUIDE

Section 1. GETTING STARTED

<u>INITIAL SETUP</u> **- The display will guide you through this set up. Read slowly and carefully.**

Your new PerfectPass system must now complete a short set up procedure to familiarize itself with your particular boat and engine. *(This may have been performed by your dealer if factory installed)*

Step (1) INITIAL HRS 000 You can enter the number of hours on your boat using the UP Key if you wish to use the PerfectPass hour meter. Press Menu to proceed.

Step (2) The display will now show [read in MPH ^ = Yes]. It is asking you if you would like the display to operate in mph.   If you do, confirm by pressing the **UP** key. If you want kph press the **DOWN** key. (We have selected mph for illustration purposes)

Step (3) [WAKE Edition ^ = Y] The display will now ask if want the system to be a Wake Edition or a 3-event Edition: For WakeEdition Press UP, **for Three Event press DOWN**.

Step (4) The display will now move into the CALIBRATE Slalom mode, described in the next section.

<u>GENERAL SYSTEM INTERFACE</u>

➢ The System will always be powered & screen active, even when in the OFF Mode.
➢ Turn Control ON or OFF while boat is in neutral or at idle is recommended.
➢ Engaging System- Once you select speed, simply throttle up smoothly and when the actual speed reaches the set speed, PerfectPass will take over automatically and you will hear an audible beep. (Do not over throttle)
➢ Disengage System – Simply pull back on the throttle.

<u>BUTTON USE</u>

➢ ON/Off is used to turn control ON or OFF while boat is at idle or in neutral.
➢ The Menu Button is similar to a mouse, the Menu button moves the cursor around the PerfectPass screen.
➢ UP & DOWN buttons are used to change speeds, settings, etc.
➢ Anytime you see the "^" used in a question such as "Read in MPH ^ = Yes" means press the UP Button "^" to confirm. The UP Key means Yes.

IMPORTANT: It is recommended you watch the following Star Gazer Three Event User Videos found under "Support" at www.perfectpass.com.
- **Navigating the Display Screen**
- **Calibrating Slalom in a Course**
- **Course Mapping**

<u>CHANGING SCREENS / MODES</u>

To change to a different mode, simply press the Menu Button until the Menu Arrow Icon ▶ in the upper right hand corner is highlighted. When the Menu Arrow in upper right corner is dark, press the UP Key.

Menu Arrow
(Highlight and Press Up to Change Modes)

Once you press the UP Key and move from the Slalom Screen, the following screen will appear:

To change modes press the **MENU** key until the desired mode is highlighted. Press the **UP** key to go into the highlighted mode. In this example, you would press Up Key to enter Trick Mode.

UP key to Select Highlighted Mode (Trick)

The Menu Key moves the highlighted screen to the next Mode on the list, when highlighted press the UP Key to select.

Section 2.   SLALOM MODE

SELECTING SLALOM MODE

There are several slalom modes to choose from:
- **CAL BASELINE – GPS Slalom MUST be calibrated for accuracy in this mode before skiing**
- **GPS Slalom** (Official Slalom Speeds)
- **Practice Slalom** (Same as above but in between speeds available)
- **Classic Slalom** (Same as 2007 version, RPM Control only)
- **Simple Slalom** (A new simple to use GPS Slalom Mode for up to 28 off). No Calibration required.

To select the Slalom Mode of your choice, simply highlight the word SLALOM at the top of the page using the Menu Key, then press the UP Key.

Highlight Slalom and Press UP Key**.**

Use Menu Key to highlight Desired mode, UP to select.
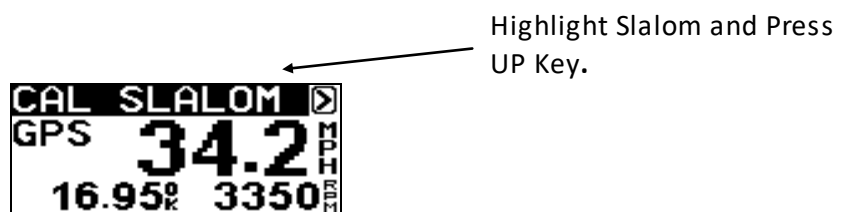
Each individual Slalom Speed MUST BE CALIBRATED for accuracy in the <u>CALIBRATE BASELINE MODE</u>. (The correct RPM must be set for each speed) Once calibrated, the calibration settings are transferred automatically to the other modes. Therefore you must CALIBRATE your system at each speed in this mode before moving to GPS Slalom.

<u>Crew Weight</u>

Most users do not need to worry about using the Crew Weight feature. If you calibrate with a crew of 2 people, then you should be fine leaving it at 0. If you wish to use Crew Weight, enter the weight of the full crew before calibrating baselines. To access, highlight the word Slalom and press the DOWN KEY.

<u>CALABRATING BASELINES</u> (IN A COURSE USING TIMING)

MUST BE PERFORMED IN CALM WATER - NO WIND

3

To calibrate in a course you must first "**MAP"** your course using the NO MAG method on Page 20. (The system uses the times to calibrate itself).
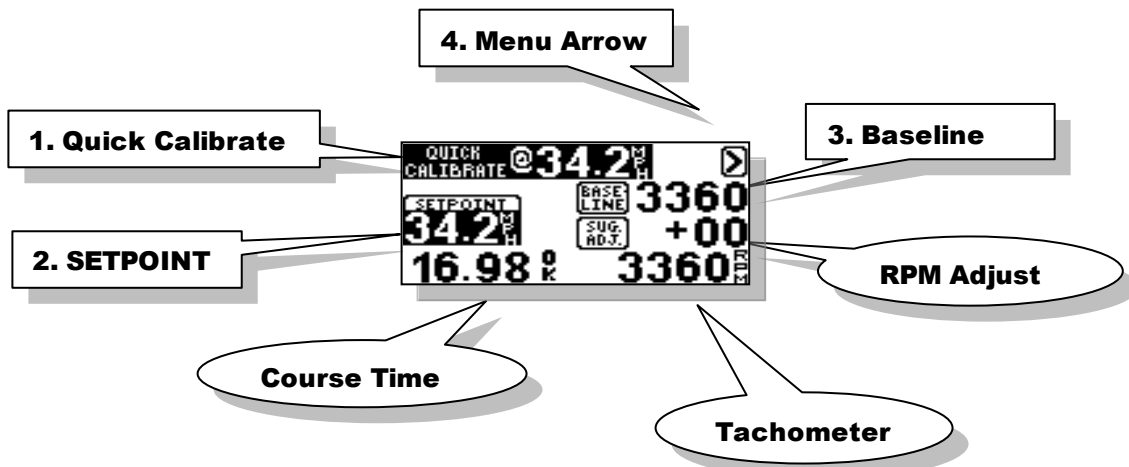
Enter the CAL BASELINE Mode to initially set up your baseline RPM settings.

CAL MODE SCREEN

```
CAL SLALOM ▷
GPS  34.2 M
             P
             H
16.95° 3350 R
       K     P
             M
```

Each official speed that you intend to use (24.9 – 36 mph) must be calibrated for accuracy without a skier using timing through the course. There is no need to calibrate the lower speeds. (23 mph & lower)

Step. 1   Select Set Speed (Example: 34 mph). Ideally have 2 people in the boat.

Step. 2   Throttle up smoothly and engage system prior to entering course. You will hear the timing beep and timer scrolling on the screen as you pass entrance gate.

Step. 3   The boat should be engaged and very steady by the entrance gates and steady all through the course.

Step. 4   Stop boat and review the time on screen (Example 16.90 seconds)
Use Menu Key to highlight the Menu Arrow Icon ▷ in upper right hand corner and press the Down Key to access the "Quick Calibrate Screen". In this screen, quickly press the **UP Key** to perform the Calibration. System will confirm "RPM Baseline & Speedo Calibrated".

4. Menu Arrow

1. Quick Calibrate

3. Baseline

```
QUICK @34.2 M
CALIBRATE    P
             H
SETPOINT  BASE 3360
34.2 M    LINE
      P   SUG. +00
      H   ADJ.
16.98 °       3360 R
      K            P
                   M
```

2. SETPOINT

**RPM Adjust**

Course Time

Tachometer

The system has now been calibrated for 34.2. If you run another pass at this speed, the displayed speed on the screen and the course time should be near perfect in calm conditions.

Now switch to the next speed you wish to calibrate and repeat.

GPS SLALOM MODE

GPS Slalom Mode or Practice Mode are the most commonly used.

GPS SLALOM ▷
34.2 N
.00   3350

Skier Size

(N=Normal)
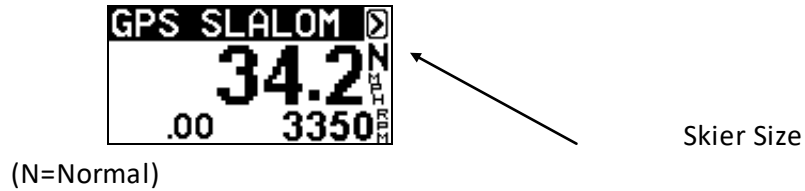
Step.1   Select GPS SLALOM.
Step.2   Select Speed (Use Menu Key to highlight speed).
Step.3   Set Skier Size (ex: N)
Step 4   Tow Skier. (Pull skier up smoothly, do not over throttle in a short set up)

At the end of the course the full segment time will be on the screen. For mid course or "all buoy"times, press the Down Key.

SKIER SIZE –Remember in GPS Slalom or Practice Slalom, you must have a Skier Size Letter selected (F,L,N,X) when towing a skier. To change letters, simply highlight the letter (Ex; N) and press the up or down keys to make a change.

FEATHER – For very small skiers.
LIGHT – For skiers 120 – 160 pounds
NORMAL – 160 – 200 Pounds
XLARGE – For 200 + pounds.

PRACTICE MODE

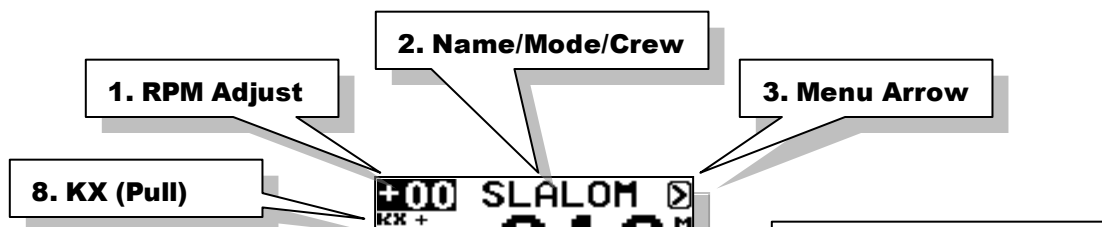In this mode, you can tweak the set speed so you can train at in-between speeds.

Highlight and adjust
running speed

GPS PRATCE ▷
ADJUST
+0.0   **34.2** N
.00   3350

You can set an "Adjust value", for example" -.5". With" -.5" set the actual running speed would be 33.7.

USING CLASSIC MODE (Non GPS Enhanced)

2. Name/Mode/Crew

1. RPM Adjust

3. Menu Arrow

8. KX (Pull)

+00 SLALOM ▷
KX +

Step.1   Select speed and enter weight of crew. (Highlight slalom heading & press DOWN key).
Step.2   Enter the Skiers Weight on screen.
Step.3   Tow skier through course.
Step.4   At the end of course, review times and if slow or fast, use the RPM Adjust in upper left hand corner to tweak speed. (ie: More rpm if slow, less if fast)

SIMPLE SLALOM

Slalom Mode

1. Select Slalom Mode. Simply set your speed and go.

2. If you wish to time your passes in a slalom course, you must "MAP" the course.

3. You can select speeds in 1 mph (1.5 kph) increments. The official speeds in MPH are: 24.9, 26.7, 28.6, 30.4, 32.3, 34.2, 36.0

4. The only adjustment to the pull is a value called "Pull Factor" found by highlighting the Menu Arrow > in upper right corner, then press UP KEY. The word SLALOM is now highlighted, press DOWN KEY for "Pull Factor". Standard is 50, a higher value is more aggressive. (Range is 25 – 100). We do not expect that you will need to adjust this.

5. Timing – If you "MAP" your course, the screen will show your Ball 3 and full course times as you exit the course.

Section 3.   JUMP MODE

USING JUMP MODE

WARNING: (Timing **must** be used in Jump mode and a proper two segment jump course is required for system to work properly. Do not use PerfectPass in Jump mode without a proper course, integrated timing and experienced operator. Because the counter cut pull and cut to the ramp are different, you must have timing activated and running as the boat heads towards the ramp.

MAP COURSE – Prior to calibrating baselines, to MAP your GPS coordinates, you must select Course #3 and idle into the Jump Course and press the UP Key as the rear of the engine box passes by the entrance timing gate. This is the only position you need to MAP.

*The Jump mode is RPM based and therefore baseline values must be established just as in Slalom mode. Setting the jump baseline values must be done in a proper two segment jump course.   Jump Letter must be set at **A** for this process.*

The Jump mode main screen will appear as follows:
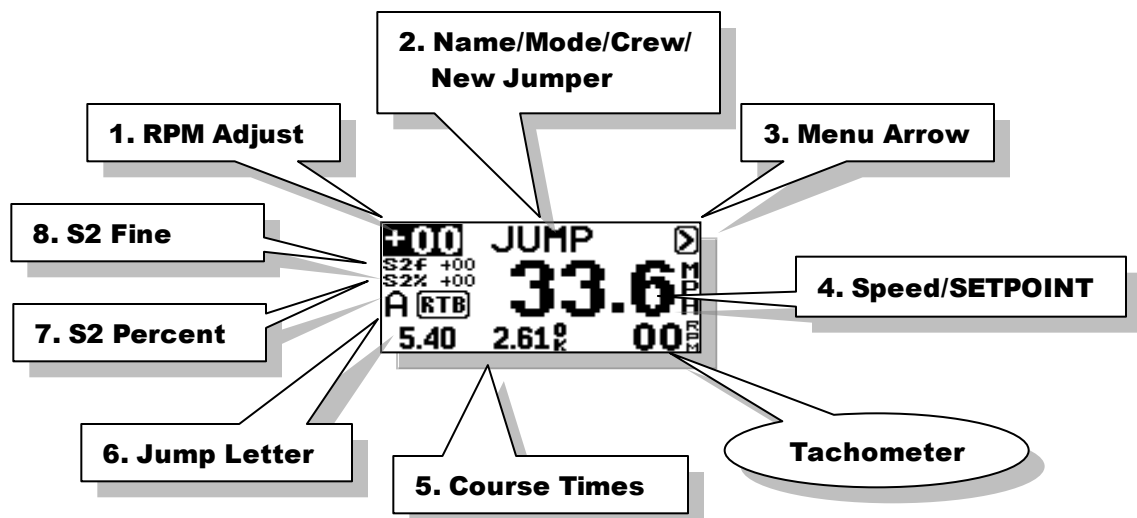
1.   RPM Adjust
   RPM adjust allows the driver to increase or decrease the overall times (1st & 2ng segment) by putting in a positive or negative RPM adjustment.
   Example: If the times are running consistently slow on both segments, you could add a value such as +20 rpm and the speed will be increased. You may wish to do this for a particular jumper (a heavy puller) or for a number of jumpers if the times are drifting in a certain direction

2.   Name/Mode/Crew/New Jumper
   This section of the screen displays either the Mode Name or a Skier's Name pulled from the Name List.
   Press **UP** key to access the Name List:

Name List is discussed in Section

8.

Press **DOWN** key to access the New Jumper and Crew Weight

Press the UP key to enter a new jumper or DOWN key to enter or edit the crew weight. New Jumper is covered

below.

*Enter the Crew Weight in pounds using the **UP** and **DOWN** keys. Press the **MENU** key to confirm and continue.*

3. Menu Arrow

Press **UP** key to change modes or mode settings:

This allows you to change modes and mode settings. The Additional Jump Settings will be discussed below.

Press **DOWN** key to Calibrate system:
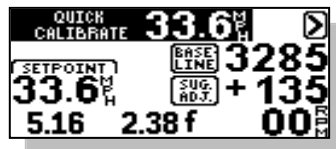
The calibration screen is described below in this section.

4. Speed/SETPOINT

The speed readout will turn into the SETPOINT when the engine is below 1500 RPM or the Speed/SETPOINT is highlighted. When this is highlighted the metric conversion will appear in this area of the screen.

Press **UP** or **DOWN** keys to select desired **SETPOINT**.

8

5. **Course Times**
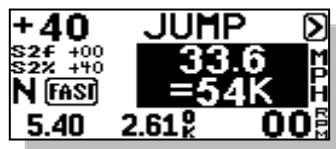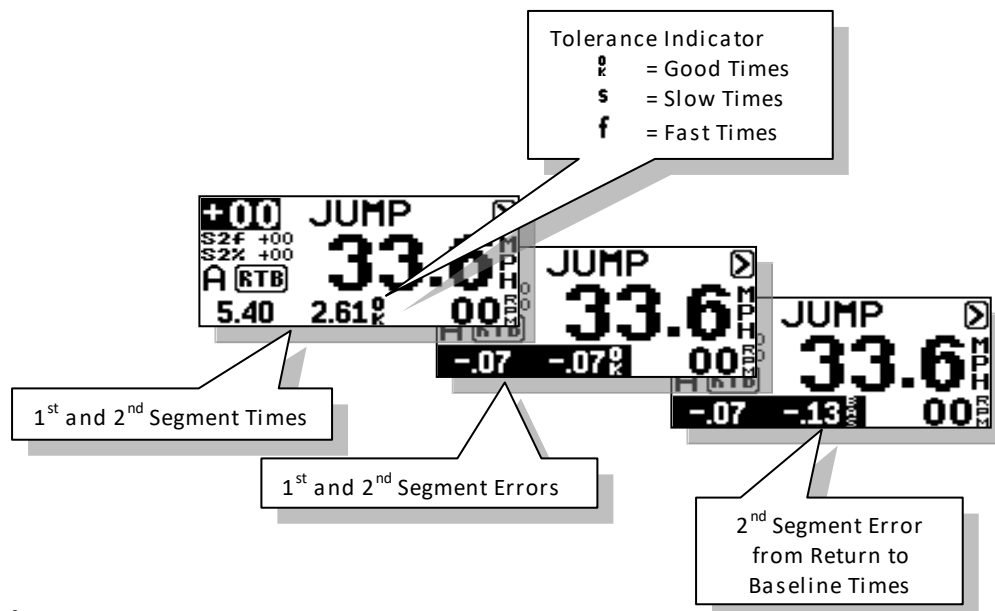   This section of the screen displays the timing information from the last pass. If Jump Letter is set to A and RTB, the second segment error from Return to Baseline will be displayed after segment errors as seen below:

Tolerance Indicator
$_R^O$ = Good Times
s = Slow Times
f = Fast Times

1st and 2nd Segment Times

1st and 2nd Segment Errors

2nd Segment Error from Return to Baseline Times

6. **Jump Letter**
   The Jump Letter is a combination of Jumper Weight, Jumper Distance and ability. . This Jump Letter represents how much throttle will be applied once the Rope Switch is closed as the skier pulls. The higher the Jump Letter selected the more aggressive the pull will be. If you are unsure what Jump Letter you should use then start by using the 'New Jumper' feature as described below. This will automatically generate a Jump Letter based on your weight and distance.

7. **Second Segment Percent (S2%)**
   This is a percent of the Jump Letter RPM that is applied once the boat enters the 2nd segment. Under IWSF and AWSA rules, the boat is permitted to speed up in the 2nd segment. The higher the number, the more the boat will accelerate. A typically value for S2% is +60, the higher the value, the faster the 2nd segment.
   Example: If the 1st segment times are good, but the 2nd is a little slow, you would raise the number.

   S2 RTB – Works similar to S2%. Used when "Return to Baseline" is selected. Only applicable if skiers are activating switch and use a Jump Letter of J or higher.

8. **Second Segment Fine Adjust (S2 Fine)**
   This adjustment allows the driver to effectively fine adjust the 2nd segment only. It comes set at 0, which means a neutral effect. A number such as 30 would increase the 2nd segment by 30 rpm. Higher number speeds up the second segment. If skier does not trigger switch or has a letter less than J, S2 fine should be used to speed up second segment.
   Example: A jumper that does not cut and does not fully activate the switch may require extra rpm in the 2nd segment to keep the 2nd segment in tolerance. (In this case, S2 Fine is more effective than S2%).

Entering a New Jumper – To enter a new jumper highlight the NAME/MODE/CREW/NEW JUMPER section of the screen and press the **DOWN** key. Then press the **UP** key to confirm you would like to enter a New Jumper.

You will be asked to enter and answer the following information after which a Jump Letter will be calculated for you and displayed on the main screen. Move to the next selection by pressing **MENU**.

Select desired SETPOINT

Enter jumper weight in pounds

Enter typical jumping distance in feet

Toggles between Fast Second Segment and Return to Baseline
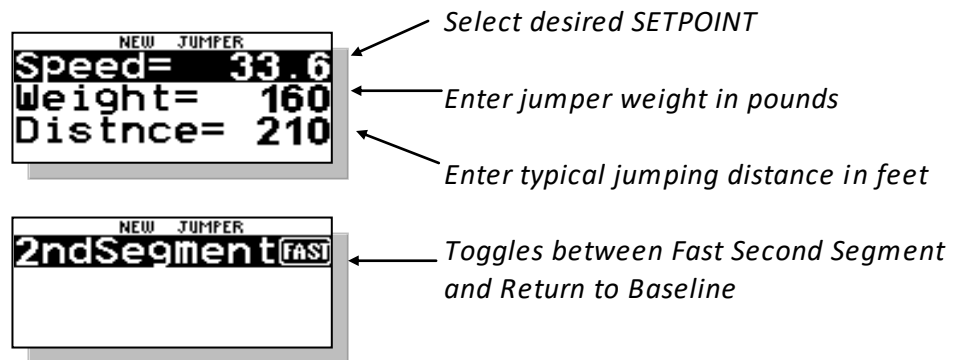
Return to Baseline (RTB) – If you selected Return to Baseline the screen will show ⟦RTB⟧ to the right of the Jump Letter. When RTB is selected the boat speed will immediately go to the baseline value as boat enters the second segment. If you have a skier using the switch with a value of J or higher, you can enter an S2 value which is a % of switch driven RPM. A setting above 0 will speed up boat in second segment if required to balance times. (This is similar to S2% used when Faster 2nd Segment is selected).

Fast 2nd Segment – If you selected to run the fast 2nd segment, the screen will show ⟦FAST⟧ to the right of the Jump Letter.

Calibrating RPM Baselines - You can set RPM Baseline values for all of the official jump speeds (28, 29.8, 31.7, 33.6, and 35.4) or just the ones you use regularly. Let us assume you wish to set up 33.6 mph (54 kph). Enter the **SETPOINT** of 33.6 mph by pressing the **MENU** key until the 'Speed/SETPOINT' section of the screen is highlighted, then adjust the **SETPOINT** to 33.6 = 54K. Set the Jump Letter to A. Now bring the boat smoothly up to the **SETPOINT** to engage the system. *(The system engages as soon as the default RPM Baseline value is reached, the NAME/MODE section will become highlighted, and an audible beep will sound).* Enter the jump course and time both segments. As you exit the course the times will be displayed and then the difference from actuals. The display screen will show the 33.6 mph times. The jump letter is set at A, RTB (return to baseline times are used). An example of this is shown in JUMP TIMING screens shown earlier in this section.

If the times are not in tolerance or close to actuals then the RPM Baseline values will require adjustment. The easiest way to do this in Jump mode is to go to Quick Recalibrate by pressing the **DOWN** key with the ⟦▷⟧ highlighted. This will bring you to the Calibration screen as seen below.

4. Menu Arrow

1. Quick Calibrate

3. Baseline

2. SETPOINT

RPM Adjust

10
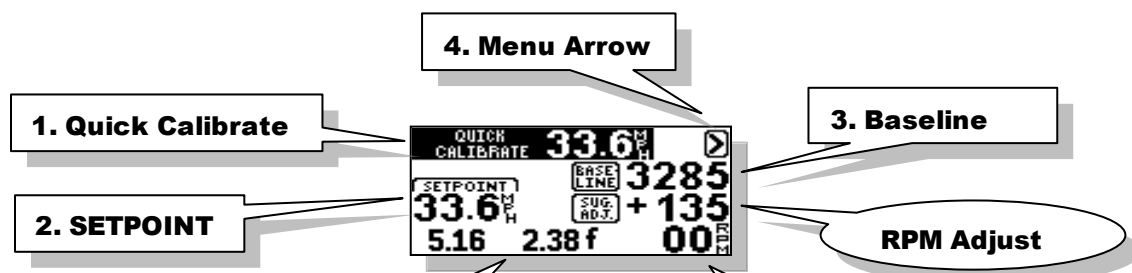
Press the **UP** key on the Quick Calibrate message to recalibrate the baseline based on the times recorded from the last pass. In this example it is suggesting your RPM Baseline should be increased by 135 rpm. When you perform a Quick Calibrate the suggested adjust of 135 will be added to the baseline and saved in memory. The system will also calibrate the digital speedometer if the times are with in the "OK" tolerance.

Now engage system and time boat again. If the times are still not close enough, repeat above steps until accurate. If you wish to set up RPM Baseline values for other speeds (i.e. 31.7 mph), change the SETPOINT and repeat the above steps.

JUMP DRIVING

WARNING – Using the Jump mode with Jump Switch is for experienced drivers and skiers only. Please read carefully prior to operating. The pull is very aggressive and designed for tournament water skiers only. You MUST have integrated timing and a proper jump course for system to operate properly.

Assuming the RPM Baseline values have been accurately set, you are now ready to tow skiers.

First enter your Jump Letter or enter a "New Jumper" as explained above. The Jump Letter can be changed by pressing the **UP** or **DOWN** keys with the Jump Letter highlighted on the screen.

The key to a good pull and good times is to get the correct Jump Letter. If the pull to the ramp is solid and the first segment time is good, you know the Jump Letter is OK. If the time on the 1st segment was slow, you will require a higher letter on the next pass and vice versa. (Once engaged, push handle to full open position to allow PerfectPass room to throttle up when pulling long distance jumpers).

If the first segment time was good, but the 2nd was slow, raise the S2%.

Important Note: If the timer is triggered prior to entering the course, it must be reset by pressing the **UP** key. Failure to reset will result in an improper pull to the ramp.

ADDITIONAL SETTINGS

Additional Jump Settings are accessed by pressing the **UP** key on the Main Slalom Screen with the ⊠ highlighted. Then press the **DOWN** key when JUMP is highlighted on the Mode Select Screen. The

first three options can be accessed from the Main Slalom Screen as described above as well as in the Jump Settings Screen.
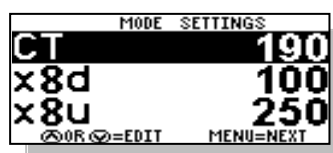
Crew Weight – This setting can also be accessed on the main Slalom Screen as mentioned above or through the Jump Settings screen. This value should be set to represent the total Crew Weight in pounds in the boat. It is essential this value be properly setup to ensure you get good times.

Crew Weight Calculator - The system will add the weight of up to 3 individual crewmembers. Simply go to "Crew Adj" on the list, then press the **DOWN** and **UP** keys together, enter the weight of crew member #1, press **MENU** and do the same for crew member #2. The system will total the weight automatically.

Calibrate – Press the **UP** key to enter the Baseline Calibration screen. This can also be accessed by pressing the **DOWN** key with the ▶ highlighted on the Main Jump Screen.

New Jumper – Details for entering a new jumper are outlined above. This should be used when unsure what Jump Letter to select.

CT (Counter Cut Time) - The maximum length of time the system will throttle once the skier pulls and closes the switch on the counter cut. Example: a value of 175 is 1.75 seconds and may be used in a tail wind. In a head wind you may want a longer pull so you could move it to 200 − 220 (2.0 − 2.2 seconds). The factory default is 190, or 1.9 seconds.

x8u and x8d - These settings were always riding in the software, but were not adjustable values. With the higher horsepower engines and strong props being produced, these values are available for adjustment if needed for high-end jumpers.
x8u – Represents the rate of <u>throttle up</u> on counter cut and cut for ramp once switch is activated. The larger the value, the softer the start will be. In other words, the pull will not be as aggressive on the start, but more gradual. The smaller the value, the more aggressive it will throttle up as switch closes.
Example: A strong 6 Litre engine may need a larger X8u to avoid a strong initial pull as switch closes.

x8d – Represents the rate of throttle down once skier stops pulling. The higher the value, the slower (softer) the throttle will return. The lower the value, the more aggressive it will throttle back.
Example: If a boat was not slowing quickly enough in the 2nd segment, you would lower the value.

Typical values 2008 Promo Boats with DBW PerfectPass

	5.7L	6.0L
x8u	85	650
x8d	275	275

One Magnet Timing - In the background settings, you can switch from multi-magnet to one-ball timing. If you select one- ball in Jump or Slalom, it carries over to the other mode.

Jump Settings

New Times (Faster Second Segment)
Examples for when towing jumpers over 120 Feet.

Jump Settings	S2%	S2 RTB	CT
Ski Nautique	Faster 60 – 120	Faster 10	190
MasterCraft	Faster 60 – 120	Faster 10	190
Malibu	Faster 60 – 120	Slower 5	190
Others	Faster 60 – 120	Slower 5	190

Important Tip: *Once engaged, the throttle handle should be pushed forward to provide the system with room to throttle up. For long distance jumpers, it should be moved to full open.*

Effective May 2008, IWSF requires R & L Class Jump Events to run the new three segment timing. PerfectPass will show this new segment, however, you must select ONE MAGNET METHOD as most courses will not have a magnet in this new location.

Jump Mode -
New Three Segment Timing

New 52 Metre Segment

New 30 Metre Segment

Second Segment

R&L Class Tournaments must use the new I.W.S.F. timing rule. You must select "ONE MAGNET" method to see these times.
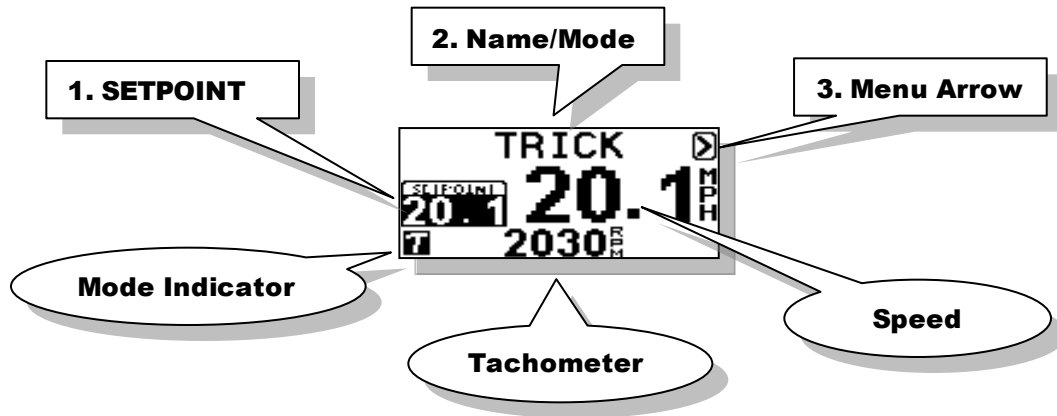
After a brief moment, the traditional two segment times will appear 5.47/2.73

Section 4.   TRICK MODE

USING TRICK MODE

The trick mode is controlled via the speed signal from the GPS Receiver. (You simply select the desired speed and go.
The main Trick screen will appear as:

1. SETPOINT
The speed at which would like the boat to engage and control. This number is adjusted in 0.1 mph (0.2 kph) increments. It can be adjusted while engaged ("on the fly"), or before it is engaged.

2. Menu Arrow
Highlight Menu Arrow in upper right corner. Press **UP** key to change modes (Back to Slalom) or to access KD settings:

As mentioned above this allows you to change modes and mode settings.

TRICK DRIVING

Using Trick mode is relatively easy. Turn control ON, select the desired speed and drive smoothly to the **SETPOINT** so PerfectPass can seamlessly take over. *If you accelerate aggressively past the SETPOINT, it will take the system several seconds to lock in the speed.*

You should keep your hand on the throttle to ensure it does not pull back and disengage the system. If you see the "More Throttle" on the screen, this indicates the system needs a little more manual throttle.

If the skier falls, pull back on the throttle to disengage system. Slowly return to skier and pull them back up again. System will take over automatically once **SETPOINT** is reached. Speed changes can be made "on the fly".

When you are finished with the speed control, go to neutral and press the **ON/OFF** key.

TRICK SETTINGS

Trick Setting (KD) is accessed by pressing the **Down Key** when the word "TRICK" is highlighted. See above illustration.
Kd – This adjustable parameter controls the "firmness of the Pull".   The higher the number, = more aggressive pull. Normal range 14 – 28.

Section 5. RPM MODE

USING RPM MODE

In this mode, the screen will appear as follows:
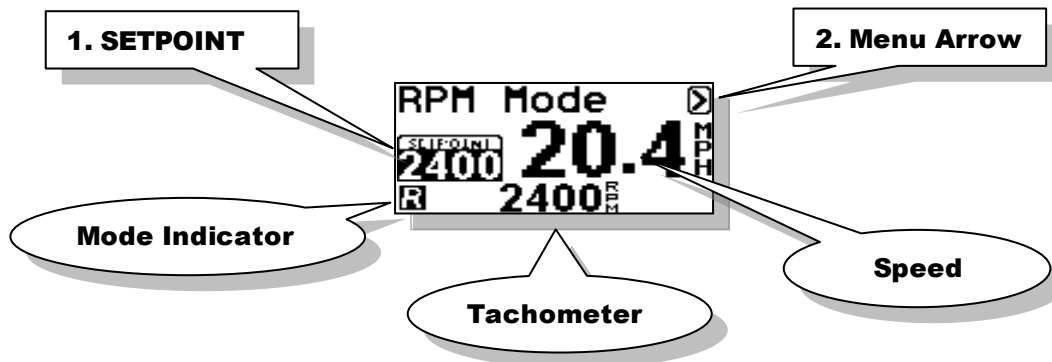
Operating in this mode is very similar to using the Wakeboard or Trick modes, except the system is now controlling to an RPM **SETPOINT**.

RPM DRIVING

Prior to towing the rider / skier, select the RPM **SETPOINT** by using the **UP** or **DOWN** keys with the SETPOINT highlighted on the screen. Pull the rider up smoothly and continue to accelerate up to or beyond the RPM **SETPOINT** so the system can engage and take control.

Changes can be made to the RPM SETPOINT while the system in engaged ("on the fly") to fine-tune the RPM you desire.

Section 6.   WAKEBOARD MODE

USING WAKEBOARD MODE

This is a speed-based mode using the GPS Data to control similar to the TRICK mode. The Main Wakeboard Screen will appear as follows:
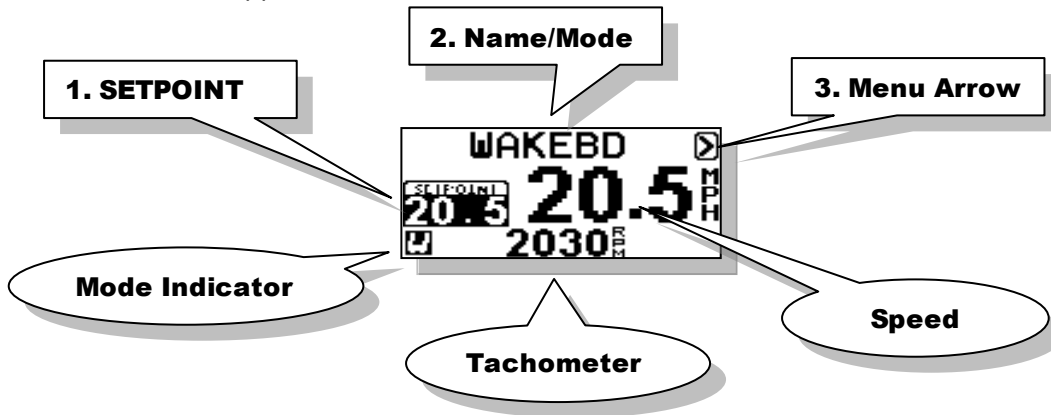
1. **SETPOINT**
   The speed at which would like the boat to engage and control. This number is adjusted in 0.25 mph (0.5 kph) increments. It can be adjusted while engaged ("on the fly"), or before it is engaged.

2. **Name/Mode/Crew**
   This section of the screen displays either the Mode Name or a Skier's Name pulled from the Name List.
   Press **UP** key to access the Name List:

   Name List is discussed in Section 8.

3. **Menu Arrow**
   Press **UP** key to change modes or mode settings:

   As mentioned above this allows you to change modes and mode settings.

DRIVING WAKEBOARD

Select the desired **SETPOINT** by pressing the **UP** or **DOWN** keys. Pull the rider up normally and accelerate smoothly up to or slightly beyond the target speed. Once PerfectPass sees the actual speed reach the **SETPOINT** it will <u>automatically</u> take control and will notify you of this with an audible beep. (Top line will become highlighted during engagement).

While in engaged the WakeboardPro should hold a smooth steady speed in a straight course down the lake. The driver should keep their hand on the throttle for safety, and to prevent it from pulling back on its own which will cause PerfectPass to disengage.

The key to driving is to smoothly drive to the SETPOINT so the system can seamlessly take control. If you accelerate aggressively past the **SETPOINT** it will hunt around for several seconds before settling in. You will hear an audible beep when the system automatically takes control. If the rider falls, simply pull back on the throttle and the system will disengage.

To Disengage System: If the rider falls simply slow the boat down. This will disengage speed control. Return to rider slowly and pull up again. System will once again take over when **SETPOINT** is reached.

Turns / Over-riding the system: As the boat enters a turn, the engine RPM may increase to keep the craft at the **SETPOINT**. If the driver would like less throttle (so the rider does not get whipped) then simply pull back some on the throttle and help the system maintain a safe speed. As you complete the turn, move the throttle gently forward and the system will re-take control. (The driver can override the system at any time by pulling back or advancing the throttle).

Wake Surfing in Wakeboard mode is excellent in the 9 – 11 mph range. Prior to using your boat for wake surfing, check with your boat builder or dealer to confirm it is safe for this sport.

<u>**WAKEBOARD SETTINGS**</u>

Wakeboard Settings are accessed by pressing the **UP** key on the Main Wakeboard Screen with the ▶ highlighted. Then press the **DOWN** key when WAKEBOARD is highlighted on the Mode Select Screen.
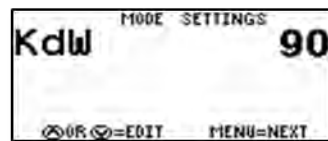
KdW (Pull Characteristic) - KdW can be changed using the **UP** or **DOWN** keys with it highlighted on the screen. Higher values = more aggressive control response. Factory setting is 80-90. (Example: Heavily loaded boats may need a different value to maintain a steady, crisp pull. Try values from 40 to 120 **to see what is best**. After adjustment, press **MENU** to proceed.

Section 7.   COURSE MAPPING (NO MAGNET TIMING)

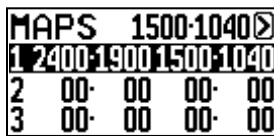**(Older Smart Timers should be disconnected from Master Module – If Present)**

Watch this on video under "Support" at www.perfectpass.com

Step. 1   Locate "Map Courses" on your screen which is one of the event modes. "Slalom, Jump, Trick, RPM Mode, Wakeboard, Map Courses".

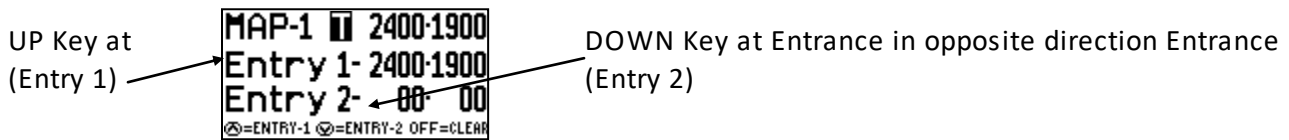MODE SELECT
RPM
WAKEBOARD
MAP COURSES
⊙=SETTINGS ⊗=SELECT

Highlight "Map Courses" and press Up to Enter.

Step. 2   You will see where you have the ability to Map Three (3) Courses. To enter the coordinates for the first course highlight line 1. Press the UP Key to select Course 1.

MAPS   1500·1040▷
1 2400·1900 1500·1040
2 00· 00 00· 00
3 00· 00 00· 00

Highlight the course you wish to map & press UP to select.

UP Key at (Entry 1)

MAP-1 ⏱ 2400·1900
Entry 1- 2400·1900
Entry 2- 00· 00
⊗=ENTRY-1 ⊙=ENTRY-2 OFF=CLEAR

DOWN Key at Entrance in opposite direction Entrance (Entry 2)

Note: Only the entrance gates from each direction will be "mapped".

Step. 3   Starting at one end of the course, <u>idle</u> the boat towards and through the entrance gates. As you pass through the gates and the gate buoys are <u>parallel to the engine box</u>, press the **UP KEY**. (Entry 1) The display will beep to confirm coordinates are locked. (See Figure A).

Drive to the other end of the course, turn boat around and idle back through the entrance gates into the course and press the **DOWN KEY** (Entry 2) as the gate buoys pass the engine box. The display will beep.

(If you made an error you can simply repeat the procedure, press the **UP** or **DOWN KEY** again and it will overwrite the original coordinates).

Figure A

E

Course #1 is now Mapped and you are finished. Use MENU Key to proceed.

E

MENU Arrow

20
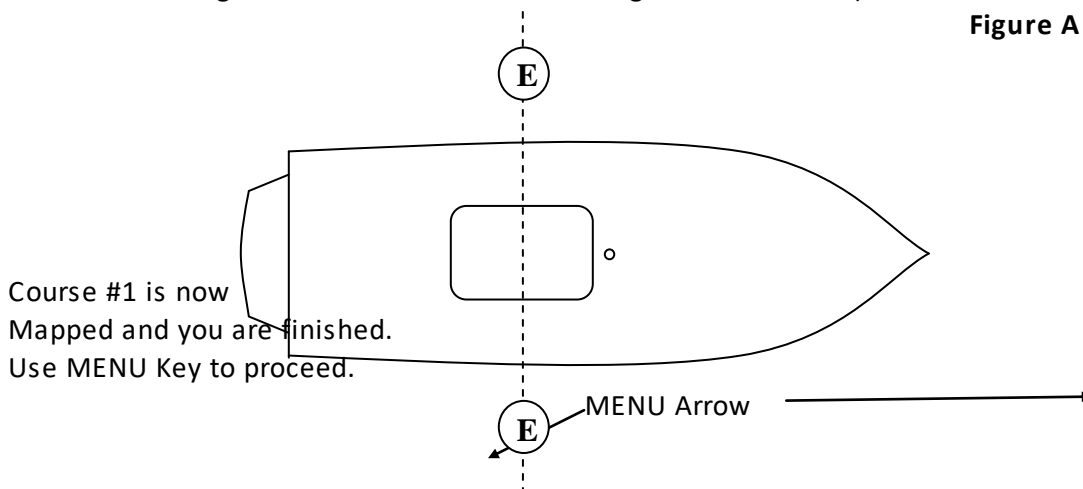
```
MAPS   1500·1040▷
1 2400·1900 1500·1040
2    00·  00   00·  00
3    00·  00   00·  00
```

To leave this screen, use MENU Key to highlight MENU ▷ arrow and press UP Key.

If you wish to Map another course, highlight course #2 and press UP. Repeat procedure. If mapping a jump course, you only lock in entry coordinates, no EXIT.

To clear any course you have mapped, highlight the course # (ie. Course 1) and press the <u>OFF KEY</u> to clear the screen.

```
MAP-1 ⓣ 2400·1900
Entry 1- 2400·1900
Entry 2-   00·  00
⊗=ENTRY-1 ⊘=ENTRY-2 OFF=CLEAR
```

Press OFF Key to clear coordinates

Section 8.   ADDITIONAL FEATURES (Menu & UP Keys together)

Additional PerfectPass features are accessed by pressing the **MENU** & **UP** keys together from any main screen. The features available vary depending on the make and model of your boat. If a feature is not present on your PerfectPass then it is not available on your system. To move to the next feature press the **MENU** key.

1. **CONTRAST**
You can adjust screen contrast by pressing UP or DOWN Keys. (Settings range from 2-5). In bright sun, you may have to use a smaller value to improve visibility. Standard is 3.

2. **BACKLIGHT** – You can set the backlighting level. Range is 0 – 5.

3. **QUICK LIST -NAME LIST**

   This version of PerfectPass allows you to store up to four names and their preferred speed. The Name List can be accessed by pressing the **UP** key when the NAME/MODE section is highlighted or by going into the SUBMENU and selecting the Name List. Once in the Name List press the **MENU** key to move through the list. With the desired name highlighted press the **UP** key to select the name from the list and load their settings or press the **DOWN** key to edit the name.

   Creating Names – First enter the Name List. Press the **MENU** key until [**NEW   ENTRY**] is highlighted. Then press the **UP** key to enter a new name. The following screen will then appear:
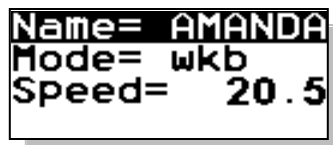
   Scroll through the alphabet using **UP** & **DOWN** keys, and then press **MENU** to move to next position. Press the **MENU** key to move through the settings. If you are programming a JUMP or SLALOM name there will be another page of settings to enter.
   Deleting/Editing Names – As you scroll through list of names, instead of pressing **UP** key to select that name, press the **DOWN** key to edit or delete.

4. **SYSTEM INFO**

Press UP Key to enter. The Software Version, Battery Volts and system hours can be found here.

Press MENU to view next screen.

Water Temp only available on paddlewheel equipped boats.

5.   DEVICE TEST

Press UP Key to enter. Here you can test the Rope Switch AND test Servo Motors, etc.

Rope Switch Test – This feature allows you to test the rope switch to be used prior to a tournament and will appear as [ROPE SWITCH TEST]. Pull hard on the rope to close switch and it will change to [ROPE SWITCH ON] and there will be an audible beep to confirm proper operation. Since it takes 250 pounds of force to trigger a Slalom Switch, it is very difficult to do. The easiest way to confirm operation is to ski with it and watch the ▶ symbol in the upper right corner. This symbol will turn into ⊟ when the switch is activated.

Servo Motor Test – After Rope Switch Test, Servo Test will appear as follows: (See Servo Motor Phase Test video at www.perfectpass.com "Support".

6.   USER SETTINGS/ENGINE SELECTION (Tach Signal)
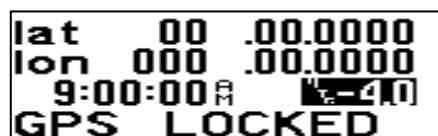
Switching display to Metric (KPH <>MPH).
Engine Set Up – Here you can INVERT the RPM or change to V6, etc. (Contact PerfectPass for assistance).

7.   GPS INFO/CLOCK

Shows latitude and longitude as well as GPS Clock.

Set clock for your region by pressing

23

The Clock will need to be set for your region of the world. Simply press the UP Key until your time zone is correct.

Section 9. INSTALLATION INSTRUCTIONS

Step 1. Installation of Servo Motor

Using the two provided hose clamps, loosely mount the servo motor on top of the cooling water hose leading to drivers side exhaust manifold (starboard side on standard inboard engines). See Figure A. Tighten later after final positioning (or as specified in any Addendum photos).

Remove ball joint connector from throttle control lever and remove the coupling from end of Morse control / Teleflex cable. (See Figure B).

Position the servo motor throttle cable in line with the throttle control lever. Ensure the 10/32 locking nut is in place on Morse control / Teleflex throttle cable. Screw threaded brass hex connector on PerfectPass cable onto the end of the Morse control throttle cable. (Do **not** over tighten hex nut). Install L shaped brass throttle adapter to throttle control lever using identical hole as original ball joint. (L adapter must be able to swivel). Using an Allen key, tighten L shaped adapter-mounting bolt. (See Figure C). You may find it helps to move the Morse control lever into gear during installation to allow more clearance. Be sure the washer is next to the brass L-adapter and not under the nut.

Check and adjust position of servo motor ensuring the motor box cover closes properly and servo throttle cable is not in contact with any moving parts. Make sure the servo motor cable has 2 or 3 inches of free travel. Securely tighten hose clamps on servo motor. (Do not "tie wrap" the throttle cable as it must be able to move freely).

With the throttle in neutral position, adjust brass hex connector if necessary to ensure there is **no gap** between it and the end of the servo motor cable (any gap may cause engine to surge up and down in neutral). Adjust and snugly tighten all parts. (See photos, **DO NOT OVER TIGHTEN**).

Turn the black servo motor knob in a clockwise position until **snug**. With throttle in neutral, the linkage should appear as in Figure C.

Servo Motor / Cable Testing - It is vitally important that the stainless steel cable inside the plastic jacket has the ability to move freely or the system will not perform properly, may hunt and not settle down. The alignment of the PerfectPass cable and the boat's throttle cable should be straight.

Linkage Test - An easy way to confirm proper operation after installation is to perform the following quick linkage test. With key **OFF**, push the manual throttle lever to ¾ open

position. Then take the black knob on servo motor and slowly wind the knob in a counter clockwise, then clockwise direction. As you do this, the engine throttle arm will slowly open and close. This should happen <u>very smoothly</u> and in no place shall the cable *"catch"* or *"hook"* which will cause the servo to hunt. If the cable does "catch", adjust servo & cable to eliminate this problem.

If the cable comes into any interference with the fuel rail, decorative engine cover or anything that causes this problem, adjust motor and cable accordingly.

The brass L bracket on the throttle linkage must be able to *swivel freely* for system to work smoothly.

IMPORTANT:
- Make sure all wires are tied away from hot or moving parts and there is adequate clearance.
- The manual throttle on your boat should operate and feel the same as before the PerfectPass was installed, or you may have to adjust hex nut.

If you have re-installed a decorative engine cover, with key <u>"OFF"</u> push the throttle down to full open and back to neutral. At no point should the PerfectPass cable "hook" or "jam". (Never tie wrap on restrict the PerfectPass cable from free movement).

Step 2. Installation of Master Module

Mount the Master Module under the dash normally on the bulkhead accessible behind and right of the passenger seat in a dry location. It can also be installed on the left side of driver's bulkhead. The wires from under the dash pod can be easily fed across the bulkhead.

Route servo motor power cable from Master Module to servo motor and connect. A wire snake is helpful. (Use tie wraps to keep cable away from moving parts). Make sure the tips **on the plug are facing up** towards the top of the Master Module box.

Step 3. Mount Dash Display

Typically the boat speedometer is replaced. If you have twin speedometers, remove the right speedometer and install the **In Dash PerfectPass Display** and connect into Master Module. (If there is a speedo tube on back, it can be plugged using a clamp).

If you prefer, the tachometer can be replaced.

Step 4. Connect Power Wire

Depending on the boat and model, there are a number of ways to connect to a switched (12 volt) power source.

1. On boats with traditional analogue gauges and posts on back of tachometer, there is a 12 volt (+) post often marked (IGN) which is an easy connection to the purple wire. The black wire end can attach to the ground (-) post marked (GND).

2. On boats with Borg Warner gauges with no posts, attach the PerfectPass purple power wire to the purple wire leading to the ignition terminal. The black wire can be securely grounded to the grounding bar or other suitable ground location.

3. **2000 – 2005 Nautiques** – There is a main wiring harness and large white plug located behind the dash pod. Connected to this plug is a purple wire carrying the switched 12 volts and a black wire which is a suitable ground connection.

4. **2002 – 2005 MasterCraft** – Power, RPM and Paddle Wheel speed is all located in the special plug and play harness supplied with each system. The MasterCraft supplied white connector is on every boat specifically for PerfectPass. You may have to remove the driver's foot panel to locate this connector in the boat's wiring harness.

5. **2005 Malibu** – The plug & play harness will provide RPM, Power and Speed signal.

Step 5. RPM Cable Installation

This connection will depend on the brand and year of boat you own.

(1) **Standard Installation** (Older boats and boats with traditional Analogue gauges with Posts on back)

The **Gray wire** with ring terminal can be easily attached to the "SEND" post on back of tachometer. This Gray wires picks up the raw engine rpm from this post. The **Black wire** ring terminal can be attached to any suitable ground, including the ground post on the tachometer. (If there is not a post, connect to the solid gray wire coming from the tachometer).

(2) **2002 - 2005 MasterCraft** – The custom wiring harness supplied by PerfectPass allows for plug & play for RPM and Power.

(3) **1998- 2004 Malibu** (Borg Warner Gauge System)

In behind the dash pod on most models, Malibu has left a Gray (RPM) wire that terminates at a large female spade connector. If you can locate this, you can simply attach the Gray wire on the rpm sensor cable to this connector.
Alternatively, you can locate the solid gray wire in the main wiring harness that leads <u>into the</u> Borg Warner control box under the dash. Use a blue "Tee Tap" connector to connect to this gray wire. You can then attach the gray rpm sensor wire to this using a push on spade connector. The black wire can be securely connected to any suitable ground.

LS-1 On this engine (pre 2002 only), you only connect the Black wire on the RPM Sensor cable to the Gray wire leading to the Borg Warner control box. (Same as LT-R MasterCraft). The gray RPM sensor wire is left un-connected.

2005 Malibu - See Plug & Play Harness.

(4) **1999 – 2001 MasterCraft, 2000 Supra, 2000-2002 Infinity (All Other Brands Using Borg Warner Gauges)**

TBI & Multi Port Engines (except LT-R) – Locate the solid gray wire in the main wiring harness that leads from the engine <u>into the</u> Borg Warner control box under the dash. This solid gray wire carries the raw engine rpm. Use a blue "Tee Tap" connector to connect to this gray wire. You can then attach the gray wire on the rpm sensor to this using a push on spade connector. The black wire can be securely connected to any suitable ground.

LT-R / LT-1 - On this engine the Gray wire lead on the PerfectPass RPM Sensor cable <u>is not</u> <u>used and can be taped off</u>. The separate **Black wire** end must be connected to the Gray wire located in the main wiring harness <u>leading into</u> the Borg Warner MDC Control box. It is on the engine side of the box that the raw rpm is located. You can attach a blue "Tee Tap" connector to this Gray wire, and attach the RPM sensor cable end to this "Tee Tap" using a supplied spade connector.

(5) **2000 – 2002 Nautiques**

Same as standard #1 above, except the rpm signal can be picked from the Gray wire coming from the back of the tachometer.

(6) **2003 - 2005 Nautiques**

Located behind the dash pod is a large wiring harness with a large white plug. The Gray wire in this plug carries the raw rpm of the engine and has been brought to the pod solely for the PerfectPass system. This gray wire is not connected to any gauge. Use a blue "Tee Tap" connector or other splice method to attach the Gray wire on the PerfectPass rpm sensor cable to this Gray wire in the harness. The Black wire (ground) on the RPM Sensor cable can be attached to the black wire in this same boat harness.

Step 6. Your manual throttle should act and feel just the same as before PerfectPass was installed. If it does not feel normal, inspect throttle and linkage connection, particularly the brass hex nut adjustment.

For assistance call (902) 468-2150.

Section 10.   GPS RECEIVER - INSTALLATION INSTRUCTIONS

Installation: The GPS Receiver can be installed on the dash board looking up through the wind screen. As long as the receiver has a clear unobstructed view of the sky, it will work properly, even if sitting at an angle to the sky.

(It can also be installed under the dash looking up through the fiberglass. In this case you will need to move the Velcro to the top of the GPS Puck or use a 2-sided industrial strength tape. The puck must be mounted with top looking up to the sky).

On a new system, after connection and initial power up it will take up to 10 minutes for the GPS Receiver to find its new location. Once a proper fix has been made, **GPS** will appear in the top left of screen. (If after 10 minutes you do not see **GPS**, turn key off and back on and wait a few more minutes).

Until a fix is made, it will appear as "**No GPS Fix"**. If you see "**No GPS Data**" on screen, then the system does not see the Receiver connected. (Check plug in connection).

WARNING: ONLY connect into Master Module in port marked "GPS" or the Receiver will become damaged.

Section 11. TROUBLE SHOOTING / GENERAL INFORMATION

Detailed Trouble Shooting documents and videos can be found on line at **www.perfectpass.com** **. See Support, "Trouble shooting".**

You can learn a lot from just turning on key and watching system start up. Every time PerfectPass is powered you will see the back light in Display glow green followed by a beep as the screen becomes active. When the Master Module sees a solid 12 volts +, the Intel processor starts which puts the data on screen and the servo motor will perform its "auto tighten" check.

A.   NOT CONTROLLING

Servo Motor "Auto tighten" Test

Check: To confirm proper operation of the 4 phase servo motor, perform the following test. With key OFF, check to see if servo motor can be easily turned and that set screw in knob is snug. (It should turn freely, if not the motor may be seized) Turn knob in clockwise direction until snug, and then turn it back counter clockwise <u>one</u> full turn.
Now turn key ON and servo should perform its "auto tighten" function and wind in the cable (approximately ¾ of a turn). (Every time system is powered, it will do an "auto tighten" which confirms all electrical phases are OK). Ideally, you should hold knob gently during "auto tighten" test to put a little extra load on the motor to check the connections.

Remember the servo motor will run very hot, particularly the gold resistor.

If motor <u>does not</u> wind in or just vibrates, then an electrical connection is likely bad. Unplug both connectors at servomotor and closely inspect the crimps and wiring. Gently pull on each wire to make sure the wire is securely crimped. Also check the connectors on the gray servo power cable at both ends   (See servo testing in addendum for detailed testing).

If this test is OK, do a "Linkage Test" as described in section B.

B.   Linkage Test - With key OFF, push the manual throttle open to ¾ position. Then take the black knob on servo motor and slowly wind the knob in a counter clockwise direction, then in a clockwise direction. As you do this, the throttle will slowly open and close with each step of the motor. In no place should the cable catch or hook as this will cause the system to surge. If the cable comes into contact with any part, fuel rail, cross over pipe or decorative engine cover, adjust cable and servo as required. (The cable should have a nice smooth bend and be in good alignment with the throttle connection. If you feel the cable is too long, contact PerfectPass)

The brass L adapter should <u>freely swivel</u> as the throttle opens & closes.
(If your boat has a plastic decorative engine shroud, you may wish to remove it temporarily and see if the problem disappears).

With key <u>OFF</u>, push manual throttle to full open and back to neutral. Does PerfectPass throttle cable move forward and back freely without jamming or rubbing against cover, fuel rails, etc?

C. **System surging in neutral** – Check gap between the PerfectPass cable & the Morse control / Teleflex cable. There should be No Gap. (See photo C in instruction manual).

D. **System accelerates past set point** – If the system accelerates past the set point and is very slow to work back to the set speed, the engine throttle return spring may be weak. PerfectPass can open the throttle, but depends on the engine return spring to bring it back towards neutral. A spring can be easily added. It may also be a throttle cable / mechanical problem. See Linkage Test, Section B above.

   On Water Test – To confirm this, drive the boat carefully with engine cover open. Set speed at a lower setting (i.e. 20 mph) and have driver engage system and press throttle up to 25 MPH. As boat speed exceeds 20 mph, the servo should turn counter clockwise to let out cable and slow engine. If servo counter rotates, the return spring should pull throttle back towards neutral. If servo rotates but boat does not slow, the return spring is not pulling or something is preventing the throttle or cable from moving.

E. **No RPM tachometer reading** – If the display tachometer reading is 00, check to make sure rpm sensor is plugged into the correct port on Master Module. Check connections of rpm sensor. (Check installation as per instructions).

F. **Blown Fuse** (**5 amp, 1.25 inch fuse)**

   The most common reason a fuse will blow is if the red wire in the servo power cable is grounded or shorted. Inspect the wire for any breaks, pinches or failure especially near the gold resistor on the servo motor.

G. **System Reset** – If you would like to reset the entire system to original factory specifications, you can do so by **pressing & holding the ON/OFF & MENU Keys together as you power up the system.** After about 5 seconds the display will show [System Reset ^ = Y]. Press the **UP** key to continue with a reset.
   The next question will be whether you wish to reset all your baseline rpm values. [Reset RPM @ ^ = Y] If you are happy with your baseline values, press the **DOWN** key and your settings will be maintained. On some systems, you will be asked to select the engine in your boat. It will then ask if you wish to run in just wakeboard modes [WAKBD ONLY ^=Y].

H. **Change Display from MPH to KPH/Wakeboard only –** Perform a "System Reset".

I. **Run in Wakeboard only Mode/Three Event Menu** – To run in just wakeboard modes or to return to the full event menu see (I) above.

J. **Display is Hard to Read** – Adjust contrast.

For more Trouble Shooting details, go to: www.perfectpass.com . Click on "Support" and then go to "Trouble Shooting". Once there you can choose your boat details and bring up the appropriate file containing the requested information to assist you.

APPENDIX

PerfectPass All Buoy Timing   Version 4 IWSF Approved 2001

The All Buoy Timing Method (ABT) eliminates the need for a fall button. In Tournament Use, after a skier falls or misses during a pass, the boat is timed to the next set of boat gates. Because the boat travels only a relatively short distance before the time is measured, the boat speed does not change significantly. Thus the time is an accurate measure of the speed of the boat while pulling the skier.

If the skier runs a full pass, the full course time is used to determine if the boat speed was within tolerance. For scores less than six, a chart showing the timing tolerances for each buoy score is used. This method uses the cumulative time from the gates up to the last ball scored. With this approach, only one segment time is required.

After each pass, the PerfectPass system briefly displays the Full Course Time and then the two separate segments as in this 34.2 mph example. **[0.0 16.95 OK]**   then **[7.13 9.82 OK]** If the score was less than six, then the ABT sub-menu is entered via the Down Key. The times are displayed in pairs preceded by the score identification and a colon. (Press any key to take you to the next set of scores). **For example:** if the score were four and a quarter, you would scroll through the ABT times until the 4 ID is found which would appear as: " **4: 12.50 5: 15.19** " The time of 12.50 would be called in.   For a score of one and a half the display showing " **0: 1.77   1: 4.45** " is used and only the 4.45 time is reported. All of the existing rules for optional and mandatory rerides are applied to the ABT times. *(The guide is to always refer to the time segment corresponding to the score. Example: If the score starts with a 4 you look at the time following the 4 and call in that time only.*

Magnets: A minimum of eight magnets and two Smart Timers are required to run ABT, a course with ball one magnets had eight magnets already, two are on the entrance and exit gates and two Smart Timers are required for the jump event, so for many sites the equipment necessary to use ABT already exists.

(Check with our website at www.perfectpass.com for more details).

<div align="center">

PerfectPass All Buoy Timing
36mph/58kph   IWSF approved method 4

</div>

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score	score id.	fast in	actual	slow in
0 to 0.5	0:	1.64	1.68	1.71
1 to 1.5	1:	4.15	4.22	4.28
2 to 2.5	2:	6.67	6.77	6.84
3 to 3.5	3:	9.20	9.31	9.41
4 to 4.5	4:	11.73	11.86	11.97
5 to 5.5	5:	14.25	14.40	14.53
6		16.00	16.08	16.16

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PerfectPass All Buoy Timing

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score	score id.	fast in	actual	slow in
0 to 0.5	0:	1.73	1.77	1.80
1 to 1.5	1:	4.37	4.45	4.51
2 to 2.5	2:	7.03	7.13	7.23
3 to 3.5	3:	9.69	9.82	9.93
4 to 4.5	4:	12.35	12.50	12.64
5 to 5.5	5:	15.02	15.19	15.34
6		16.86	16.95	17.04

PerfectPass ®
WORLD LEADER IN SPEED CONTROL

WARNING
RELEASE OF LIABILITY – ASSUMPTION OF RISK

IMPORTANT
(Detach, sign and mail immediately)

YOU MUST READ THIS!

The PerfectPass Speed Control device is a high performance mechanism designed solely for use with competitive water ski and wakeboard boats operating under ideal, calm conditions utilizing a spotter and all other safety crew and requirements of tournament water skiing. The PerfectPass Speed Control device should not be used for any other purpose or under any other conditions.

YOUR USE OF YOUR PERFECTPASS SPEED CONTROL DEVICE IS CONDITIONAL UPON YOU ASSUMING ALL RISKS, LOSSES AND DANGERS RELATING TO USE OF THIS DEVICE.

Both purchaser and/or anyone utilizing the PerfectPass Speed Control device acknowledges that their purchase and or use of this device is conditional upon them releasing and forever discharging PerfectPass Speed Control Systems Inc., its directors, officers, employees, agents and/or dealers, their heirs, and assigns **from any and all liability for personal injury or property loss** and from any other claims, demands, losses or causes of action, whether occurring prior to, during, or subsequent to or directly or indirectly connected with the use of the PerfectPass Speed Control device, **and whether caused by any persons negligence or otherwise**.

The PerfectPass release of liability, and warranty agreement shall be interpreted in accordance with the laws of the Province of Nova Scotia, Canada, and **IT IS FURTHER AGREED** that any legal proceedings that either directly or indirectly relate to the PerfectPass Speed Control device shall be conducted within the Province of Nova Scotia, Canada, regardless of where arising.

The purchaser hereby agrees to inform any subsequent purchasers or anyone using the PerfectPass Speed Control device, of the conditions of this Release of Liability, Assumption of Risk Agreement. It is agreed that there shall be absolutely no alterations to this agreement whether by implication or otherwise.

_____
Purchaser Signature

_____
Date

_____
Address

_____

_____

_____
Serial Number (found on Master Control Module)

_____
Name (Please Print)

(Must be signed to affect valid purchase and activate warranty agreement, detach and mail immediately to PerfectPass Control Systems Inc., 14 Trider Crescent Dartmouth, Nova Scotia, B3B 1R6, Canada).

LIMITED WARRANTY

During the first 12 months from date of original retail purchase, any PerfectPass component that fails due to defects in materials or workmanship will be repaired or replaced at the option of PerfectPass at no charge.

All warranty claims must be authorized in advance and a Return Authorization (R/A #) issued. All packages, correspondence, documents and packing slips must reference this R/A #.

Warranty excludes components damaged my improper installation or improper use of boat. Servo Motors are water resistant, but not water proof. Servo motors may become damaged if excess water is run in a boats bilge and this may void warranty. Ensure your boat is properly "bilged" prior to operating.

Warranty Service:

1. If your PerfectPass was factory installed, any warranty issues should be directed to your authorized dealer. PerfectPass encourages all customers to contact us prior to visiting your dealer for "technical support" as many issues may be easily handled direct with customer.
2. If your PerfectPass was purchased and installed by a dealer you may contact your dealer direct or initiate a warranty claim with PerfectPass.
3. If your PerfectPass was purchased directly from the Company, contact us at the number below.

Warranty Service / Technical Support
PerfectPass Control Systems Inc.
14 Trider Crescent
Dartmouth, Nova Scotia
CANADA B3B 1R6
(902) 468-2150

(Hours: Monday to Friday 8:00 am – 4:00 pm EST)