

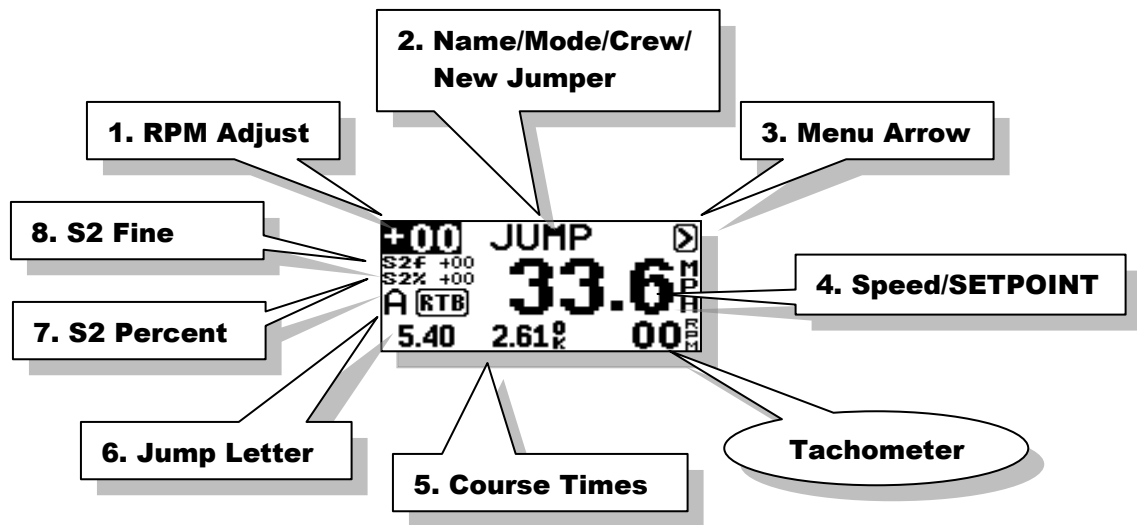
# USING JUMP MODE

**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 (1<sup>st</sup> & 2<sup>nd</sup> 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.

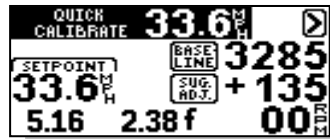
### 3. Menu Arrow

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:

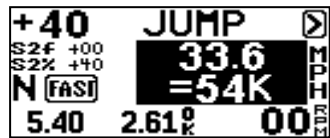


The calibration screen is described below in this section.

### 4. Speed/SETPOINT

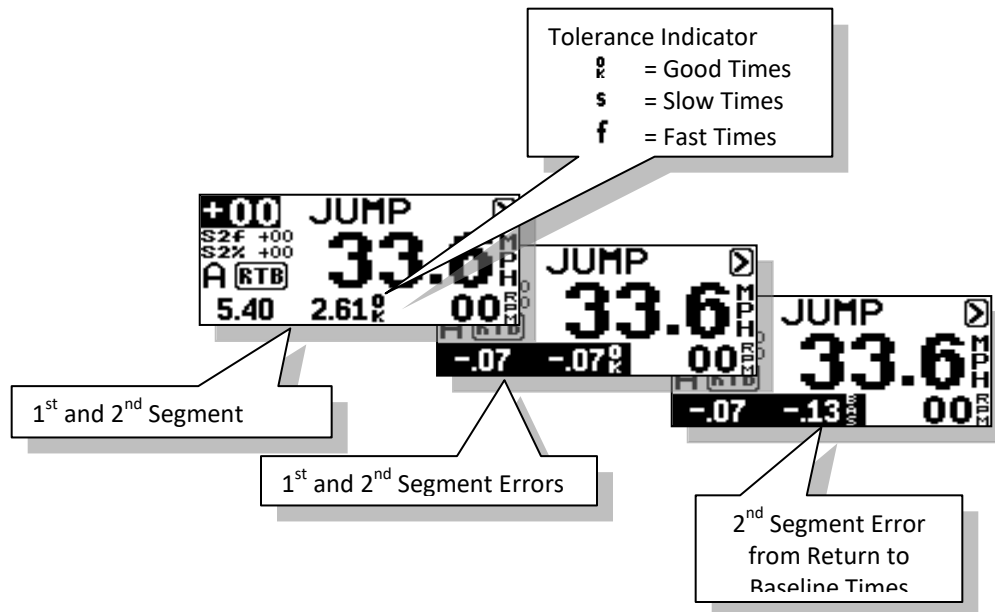
The speed readout will turn into the SETPOINT when the engine is below 1500 RPM or the Speed/SETPOINT is highlighted. When this is highlighted the metric conversion will appear in this area of the screen.

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



## 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:



## 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 2<sup>nd</sup> segment. Under IWSF and AWSA rules, the boat is permitted to speed up in the 2<sup>nd</sup> 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 2<sup>nd</sup> segment.

**Example:** If the 1<sup>st</sup> segment times are good, but the 2<sup>nd</sup> 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.

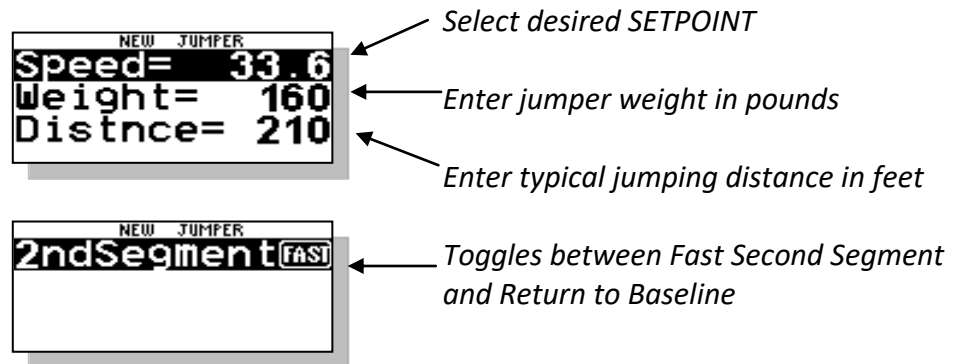
## 8. Second Segment Fine Adjust (S2 Fine)

This adjustment allows the driver to effectively fine adjust the 2<sup>nd</sup> segment only. It comes set at 0, which means a neutral effect. A number such as 30 would increase the 2<sup>nd</sup> 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 2<sup>nd</sup> segment to keep the 2<sup>nd</sup> 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**.

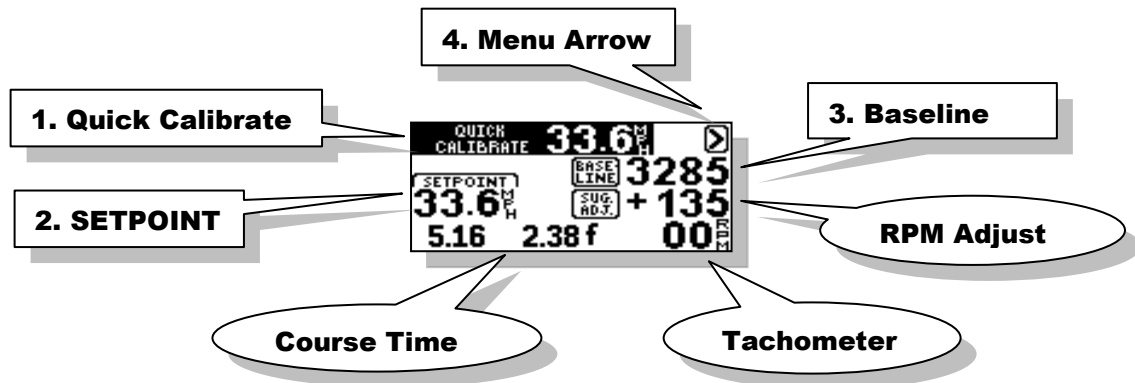


**Return to Baseline (RTB)** – If you selected Return to Baseline the screen will show **RTB** to the right of the Jump Letter. When RTB is selected the boat speed will immediately go to the baseline value as boat enters the second segment. If you have a skier using the switch with a value of J or higher, 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 2<sup>nd</sup> Segment** – If you selected to run the fast 2<sup>nd</sup> 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.



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 within 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.

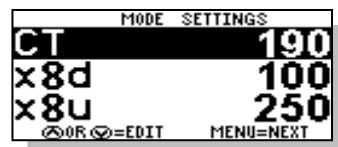
The key to a good pull and good times is to get the correct Jump Letter. If the pull to the ramp is solid and the first segment time is good, you know the Jump Letter is OK. If the time on the 1<sup>st</sup> segment was slow, you will require a higher letter on the next pass and vice versa. (Once engaged, 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 2<sup>nd</sup> 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 throttle up 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 2<sup>nd</sup> segment, you would lower the value.

**Typical values 2008 Promo Boats with DBW PerfectPass**

	<b>5.7L</b>	<b>6.0L</b>
<b>x8u</b>	85	650
<b>x8d</b>	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.

<b>Jump Settings</b>	<b>S2%</b>	<b>S2 RTB</b>	<b>CT</b>
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

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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