

A DUMMIES GUIDE FOR SETTING UP YOUR THROTTLES

IN ADVANCED MODE THERE IS A SIGNIFICANT DIFFERENCE IN THROTTLE SETTINGS ON PB-PRO COMPARED TO THE SSD SYSTEM WHICH HAD NONE.

THIS GUIDE IS TO ILLUSTRATE WHAT TO DO AND HOW TO DO IT TO OPTIMISE YOUR THROTTLES FOR YOUR PARTICULAR TRACK AND RACING STYLE.

Background:

Early throttles had a very wide production tolerance range on the resistance of the slider attached to the trigger.

If you look at early threads on SlotForum you will find references to throttles not being "3F". That is a computer (HexaDecimal) value that is used to denote maximum throttle.

I have throttles that only achieve $\frac{3}{4}$ of this value. So my earliest experience with SSD was disappointing to say the least.

The other thing was that my cars would all "buzz" or creep forward when the throttles were off. That was because the zero point also was poorly controlled.

The net effect of this when using dynamic braking is that the powerbase would not get a zero throttle reading, so wouldn't apply brakes. More alarmingly was that it would sometimes apply brakes and occasionally not, to catastrophic conclusions.

I have noticed that throttles do deteriorate, so one that once braked successfully now does not. Part of the problem is that the tolerance on zero can only go one way.... To our cost.

INDEX

- 1) SETTING UP MINIMUM AND MAXIMUM VALUES**
- 2) WHAT TO DO WITH THE MINIMUM SPEED SETTING**
- 3) ADVANCED SETTING**
- 4) NON-LINEAR "MAPPING"**

Riko's PB Pro Throttle Settings Guide

Having pressed the **Edit** key the display will read CONTROL ? to indicate hand controller selection

- Use the **Scroll** keys to select hand controller 1 to 6
- Alternatively press the **Brake** button. The corresponding hand controller will be selected and the controller input (unmodified) and output (modified according to programmed settings) signal will be displayed on line 2.

Having selected the required hand controllers press **Edit** to show the parameter list (line 1 gives the parameter and line 2 the setting)

- Use the **Scroll** keys to cycle through the list (Dyn Brk, Btn Brk, Max Thr, Min Thr and Min Spd)
- To change the selected parameter press **Edit** again, the parameter will now flash
- Use the **Scroll** keys to change the parameter setting
- Press the **Set** key to select the parameter currently displayed
- The display now returns to the parameter list, confirmed by parameter no longer flashing
- Press **Set** key again to return to hand controller selection
- Press **Set** key again to return to Mode selection

Max Thr – to set the throttle position at which maximum throttle (3Fh) is output to the powerbase

- The setting can range from 20h to 3Fh
- Use the throttle on the corresponding hand controller to set the required value
- This parameter can be used to correct a throttle that does not ordinarily give maximum output – simply hold the throttle fully closed then press the **Set** key
- Can also be used to set full throttle earlier in the throttle stroke – with the throttle held in the desired full throttle position press the **Set** key
- This menu option is hidden/disabled if throttle map is selected

Min Thr – to prevent “throttle creep”

- The setting can range from 00h to 07h
- Use the throttle on the corresponding hand controller to set the required value
- Press the **Set** key with the throttle in the fully open position
- This menu option is hidden/disabled if throttle map is selected

So practically, what does this mean?

Plug throttle one into the port one of the powerbase

Select Set Cntrl on the menu and press “edit” button. Select throttle 1, now press right button three times to get to the max thr adjustment. Hit “edit” button again to start the adjustment process.

Fully press the throttle trigger a few times and then hold it on. You should see on the display a value like 38, 3A or similar. This is the actual reading your throttle gives. Press “set” button now and the system will now take your reading as being the new value that will give the car 100% speed. Easy as that!

Now go one step right on the menu to the min thr adjustment. Hit “edit”.

Now you should see a value of 00 on the display, on a dodgy throttle this may be as high as 05. Again exercise the throttle a few times and then let go of the trigger to get the zero point. Now hit “set” and the system will recognise your value as the new value that denotes zero speed. Now you will have no creep or buzzing, and dynamic braking will work.

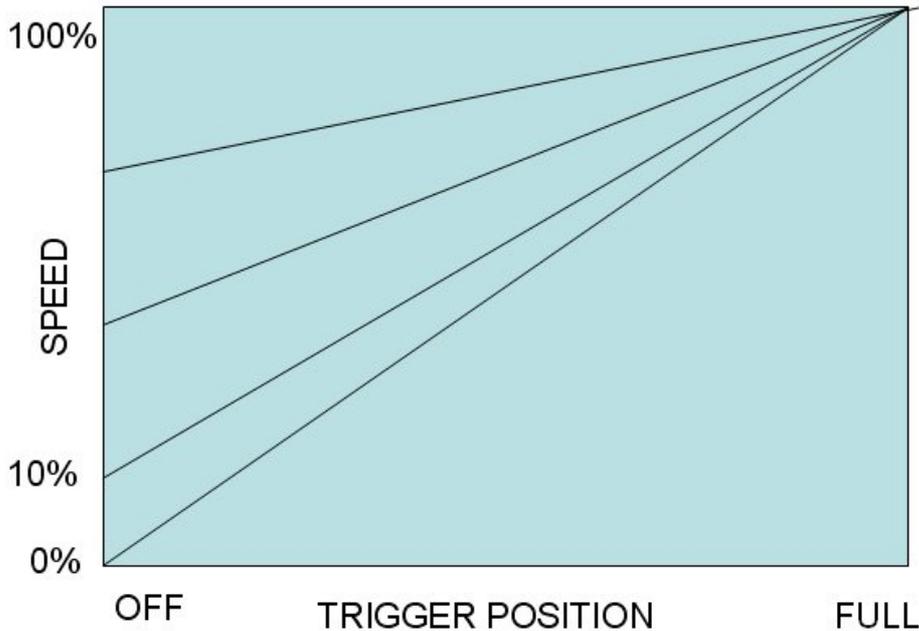
Now plug throttle 2 into port 2 and do the same, then throttle 3 into port 3 etc

Once you have completed this you need to understand that the powerbase is configured for the particular throttle in the particular port, so make a note of which goes where as it is essential that you replace them in the same way each time, else you would need to recalibrate them all.

Riko's PB Pro Throttle Settings Guide

2) WHAT TO DO WITH THE MINIMUM SPEED SETTING

What is this? Well in a nutshell it does what it says on the tin... This allows you to set what your minimum speed is from the slightest pressure to get you off the zero. For the analogue buffs out there it is a bit like choosing a lower resistance for your throttle. This can particularly help if you have a very fast circuit and find that you are on full throttle most of the time. It is best illustrated in a graph:



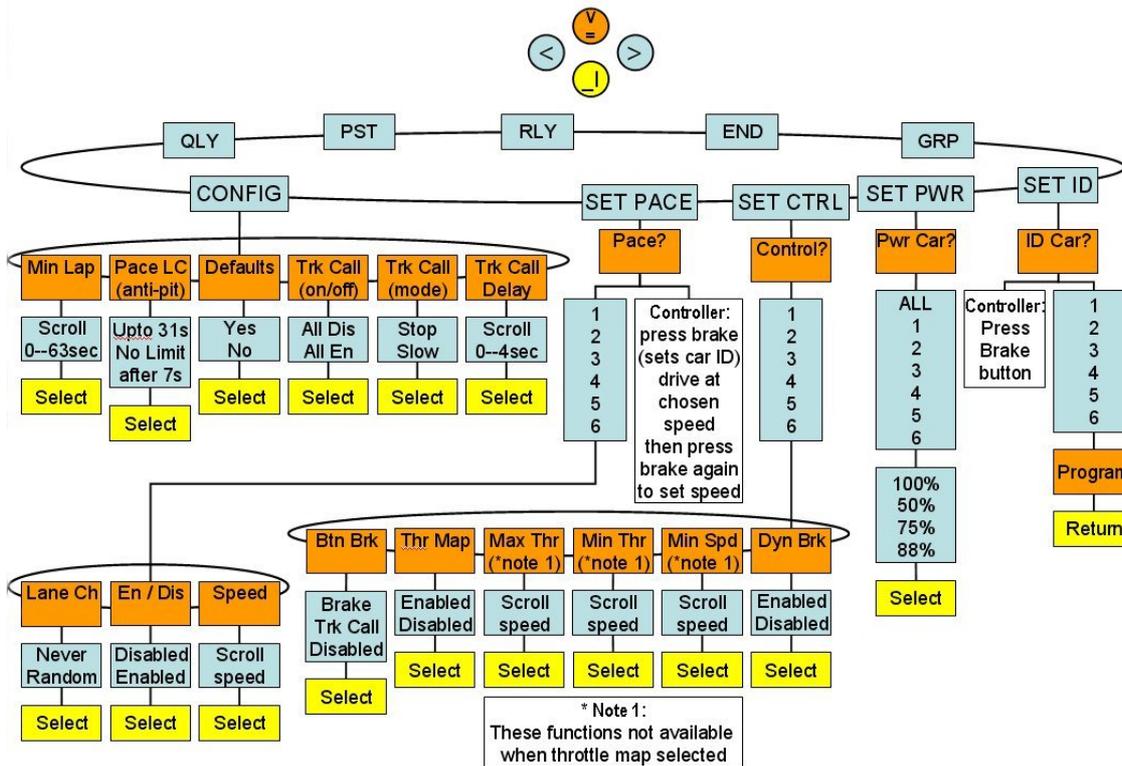
The higher you set minimum speed the greater control you will have at higher speeds. If you find that you are using the throttle as a switch, either on or off then upping the minimum speed will help. So on the graph above if you set the minimum speed as 1F you would be half way up the left hand side.

Regardless of the minimum speed setting the powerbase always recognises zero as stop!

So to run over the instructions:

Select Set Cntrl on the menu and press "edit" button. Select throttle 1, now press left button once to get to the min spd adjustment. Hit "edit" button again to start the adjustment process.

Riko's PB Pro Throttle Settings Guide



Min Spd – to set the speed at the minimum throttle position

- The setting can range from 00h to 1Fh
- Use the throttle on the corresponding hand controller to set the required value
- Effectively makes the throttle more responsive when starting and at low speed
- Press the **Set** key with the throttle in the desired position
- This menu option is hidden/disabled if throttle map is selected

3) ADVANCED SETTING

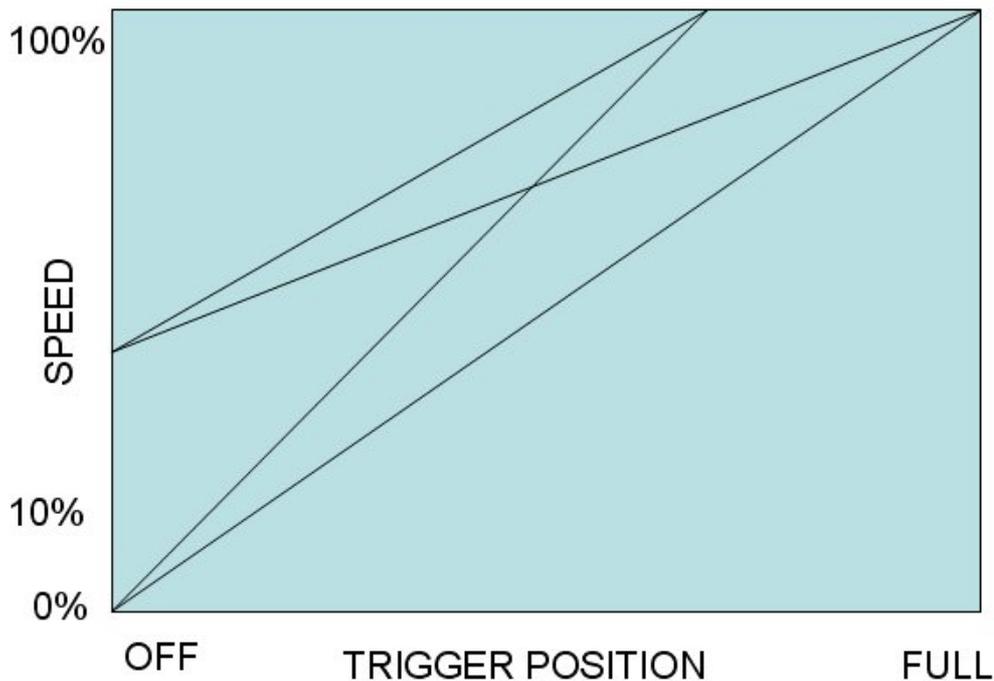
OK, so what can we do if we combine these adjustments?

Well we can alter the slope, that changes the sensitivity of the throttle.

We can also adjust how fast the trigger is, making a short throw be full throttle.

How? Adjust min speed as above. Adjust max throttle to a different value holding the throttle at $\frac{3}{4}$ position when pressing set or similar:

Riko's PB Pro Throttle Settings Guide



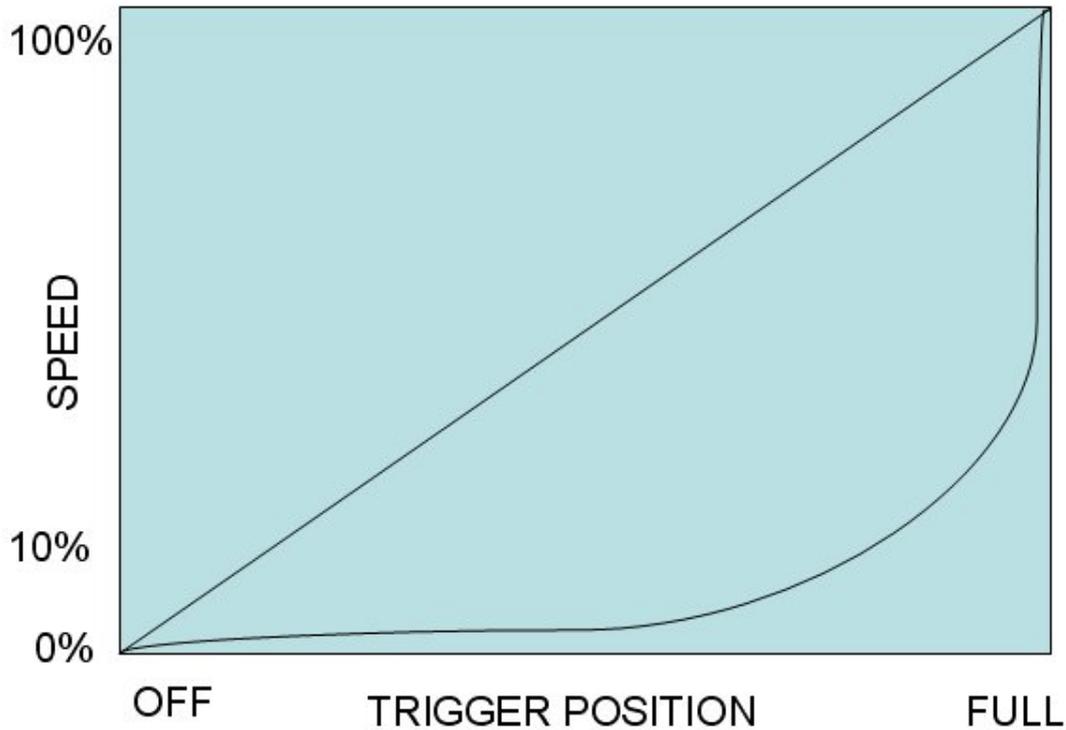
From this you can make your throttle short throw so fast acting and with a high minimum speed for very fast circuits that need a lot of on/off throttle action...

Other tips on advanced settings would be: On setting zero hold the trigger just slightly to give a couple of points margin, especially if your throttles are temperamental. Ditto for the max setting, hold the throttle slightly off the fully pressed position so that you are really sure you have 100% speed when you need it

5) NON-LINEAR "MAPPING"

Now what we can't do with any linear setting as above is to give a good control at low throttle settings and still get max power/speed. That is why we included a "map" feature. Sometimes referred to as "S" curves, what is in place from 1.6 onwards is an inverse square law map (exponential) as standard, with the option to write over these individually for each throttle through the two way Aux link. So you can have what you want, and it can be different for each car. Values on the default map were worked out with the guys on SlotDigital.com to be optimised around non-mag racing. With standard SSD non mag is a joke as the cars are too fast to control on all but the straightest sections. So they want a graph like above that is flat and starts at zero/0% but curves just at the end so that they can get full power/max speed when they need it.

Riko's PB Pro Throttle Settings Guide



So to run over the instructions:

Select Set Cntrl on the menu and press “edit” button. Select throttle 1, now press right button twice to get to the thr map selection. Hit “edit” button again to select the default map.

Thr Map – to select a non-linear throttle response (optimised for non-magnet cars)

- The default setting is a exponential curve giving more control at low power
- These settings are designed to enable any S curve to be loaded
- Uploading individual throttle maps can be done via the new two way Aux port, using appropriate software

To conclude here are my recommendations:

Non mag use “map”

High speed circuit set min speed high and calibrate throttles correctly

High action circuit set min speed high and max throttle lower than normal

Varied circuit set min speed low and calibrate throttles correctly

Disclaimer – these are just my ideas! Feel free to play around with all the parameters!