

Setting Pistol Grip transmitters for TMM xxxx – 3 Race Boat (Expert+, Z-series)

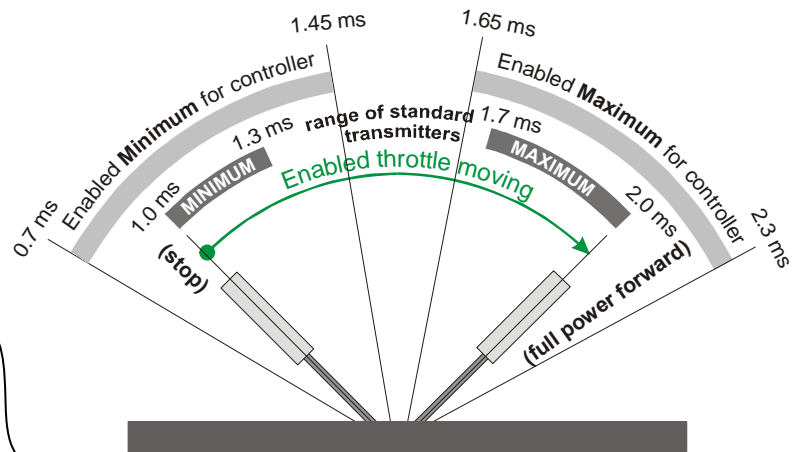
(speed boats, forward mode only):

Controller accepts boundaries of control signal for throttle in “minimal throttle” (**motor stopped**) position anywhere in between 0.70 – 1.45 ms. Controller accepts boundaries of control signal for throttle in “full throttle” (**full power**) position anywhere in between range 1.65 – 2.30 ms. Difference between minimal and maximal throttle must be greater than 0.3 ms.

When turned on controller waits for the throttle to be moved to “minimal throttle” position. This is a safety precaution to prevent unwanted motor start when the transmitter is turned on with throttle outside the “minimal throttle” (standard transmitters) or “neutral” (pistol grip transmitters) position. „Minimal throttle“ position must be in the allowed range boundaries (0.70 – 1.45 ms).

For **standard transmitters** this boundary is almost always correct unless the user moves the whole boundary by mistake (electronic trim) somewhere else. These transmitters usually have minimal throttle set from 1.0 ms to 1.3 ms and maximal throttle from 1.7 ms to 2.0 ms. The controller finds the real boundary positions easily. Situation is depicted on the figure.

Standard transmitter - throttle



Pistol Grip transmitters have defined neutral throttle position (also mechanically) and throttle movement is forwards and backwards from neutral (both directional movement). Situation here is therefore completely different:

Pistol grip transmitters

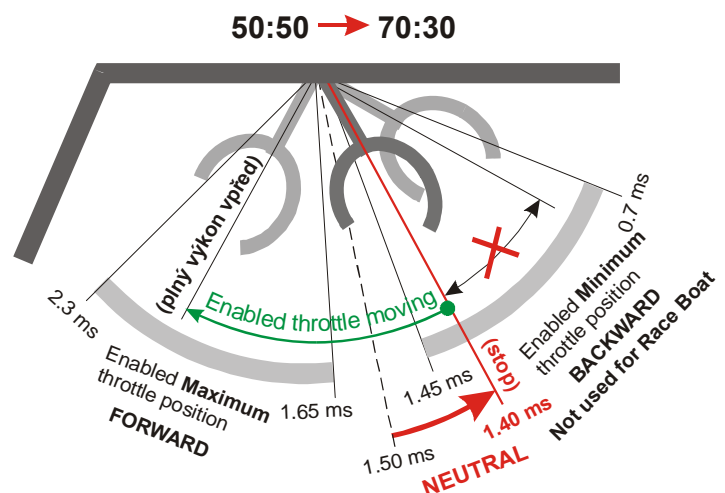
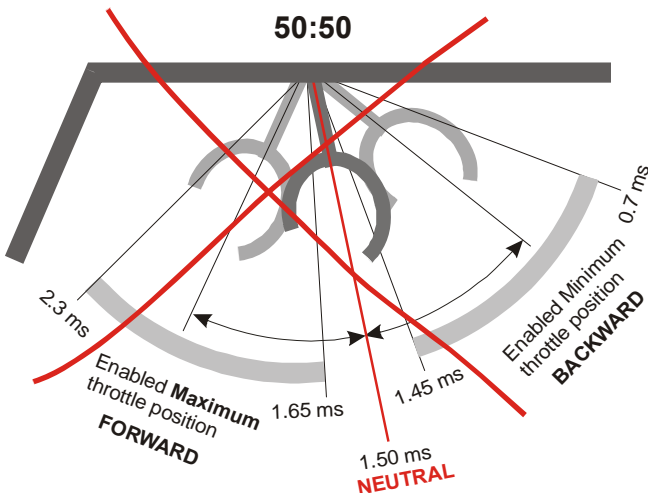


Transmitter for both directional operations (forwards – backwards) must adjust for operation with unidirectional controller (only forwards). „Throttle neutral“ in this type of transmitters acts as “minimal throttle” (motor is stopped) and the range for throttle for reverse movement is cannot be used! When programming, do not think about the backwards (reverse) range from neutral – act as if it was not there.

In normal operation it does not matter if you move the throttle backwards, as for the controller it will be “minimal throttle” anyway. It is important however, during programming not to move the throttle backwards from neutral!

If on the transmitter the throttle is set in ratio 50:50 (forwards – backwards) then usually the condition of “minimal throttle in range between 0.7 - 1.45 ms” is not fulfilled. Neutral is close to 1.50 ms and so the controller will not find the minimal throttle - therefore it is not possible to program it. (“Neutral” here is a “minimal throttle” for standard transmitters – in both cases it is where motor is stopped)

This can be corrected easily by **changing to throttle ratio 70:30** (2/3: 1/3) which moves the neutral to range under 1.45 ms and the controller can find the “minimal throttle” position. It is also possible to instead **move the neutral** (electronically) **towards “BACKWARDS”** position. Both methods may be combined so that the throttle “neutral” is less than 1.45 ms.



Recommended procedure for programming by **UNICARD** or by **PC**: (unnecessary for BASIC mode)

- I) first teach the controller the real limit boundaries of your transmitter – **this is done only for the first time or when using new transmitter or receiver** - that is “minimal” and “maximal” throttle positions for standard transmitters or “neutral” and “full forward throttle” positions for pistol grip transmitters. This is done by programming using transmitter:
 - a) turn on the transmitter and move the throttle to maximal position (forward),
 - b) turn the controller on, wait 10 seconds for 3 motor beeps, then
 - c) move the throttle to **minimal** position (standard transmitters) or to **neutral** (pistol grip transmitters), wait for 1 beep and then turn the controller off. The controller has now saved the positions (permanently until possible next programming).
- II) when the controller has saved the real limit boundaries (min and max throttle positions) of your RC set, all the other parameters may be set anytime using the programming card **UNICARD** or by connecting the controller to the **PC** using **USBCOM(+)** and setting the parameters with mouse (utility “**Controller**”). If you wish to set the parameters using transmitter, do not turn the controller off in c) above but continue programming (for details see controllers manual).