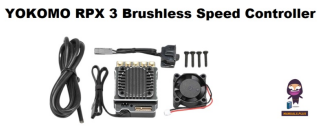


YOKOMO RPX 3 Brushless Speed Controller Instruction Manual

Contents

YOKOMO RPX 3 Brushless Speed Controller

Specifications:

- **Model**: BRUSHLESS SPEED CONTROLLER 319 3194
- **Input Voltage**: 7V
- **Output Voltage**: 5V
- **Compatibility**: BL-RPX3

Product Usage Instructions

Overview:
The BRUSHLESS SPEED CONTROLLER 319 3194 is designed to provide precise speed control for compatible devices.

Installation:

1. Ensure power is disconnected.
2. Connect the input and output cables as per the device specifications.
3. Securely mount the speed controller in a suitable location.

Operation:
Once installed, power on the device and adjust the speed controller settings to achieve the desired speed output.

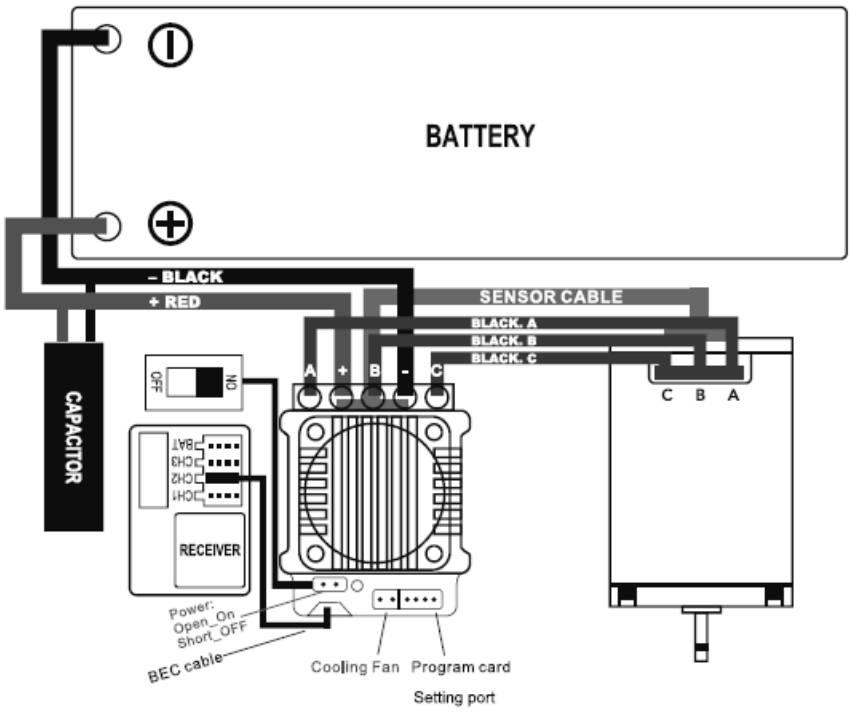
Maintenance:
Regularly inspect the connections and ensure the speed controller is free from dust or debris for optimal performance.

Thank you for purchasing the Yokomo product. This product has been developed to maximize the power of a brushless motor. RPX 3 and RPX S competition brushless controllers achieve high operability in wide range of R / C racing scenes by changing settings. Various programming changes enable to set up according to the operation(programming card available separately will be required). Please read this manual for settings and operations.

	RPX 3	**RPX S**
	● 32 bit processor ● Low resistance FET ● Auto Fan control	
System	Brushless	
Forward / Brake / Reverse	Factory default setting : Forward / Brake	
Size	33.3 × 35.9 × 19.6	25.6 × 34.6 × 14.8
Weight	39.5g	25.4g
Voltage Input	4.5V˜ 11V 6 cell Ni-Cd / Ni-MH Battery 2 cell Li-PO	4.8V˜ 11V 6 cell Ni-Cd / Ni-MH Battery 2 cell Li-PO
Rated Current	160A	100A
Motor Limit	4.5	10.5
Motor Type	Sensored Brushless Motors	
B.E.C	5A / 6V / 7.2V	

How to connect

- Use double-sided tape to fix the ESC in safe area.
- Pay close attention to the polarity (+ and-) when connecting the battery cable. If you make a mistake between + and-when connecting to the battery, the ESC will be damaged. In addition, please note that the failure caused by this operation is not covered by the warranty. Use BEC wire to connect the receiver to the ESC's 3-pin port. (Do not mistake + and-)
- Solder 3 motor wires to ESC before connecting to the motor. At that time, connect A-B-C wires of ESC and A-B-C of the motor that match. When using solder, do not apply solder for more than 5 seconds as it will become hot and may damage the ESC. Damage during solder installation is not covered by the warranty, so be careful when working. After installing the solder, be careful that the wires are not in contact with each other. If the wires are in contact with each other and short-circuited, the product will be damaged and the warranty will be invalid
- Connect the sensor cable to the ESC and motor.
- Connect the receiver cable to CH2 of the receiver..
    - The output voltage of the FAN port is designed to be the same as the battery voltage.
    - A-B-C connected to the motor can be changed to C-B-A by changing the programming card settings.



Default Settings

Initial setting value of the transmitter: (After setting the transmitter as follows, perform the initial setup of the amplifier)

Throttle Level	100
Brake Level	100
Throttle EXP	0%
Throttle Neutral Trim	0
Throttle Servo Reverse	Reverse (Futaba,KO, Sanwa)

Common to RPX 3 and RPX S
Connect the charged battery to the ESC. (Be careful on polarity)

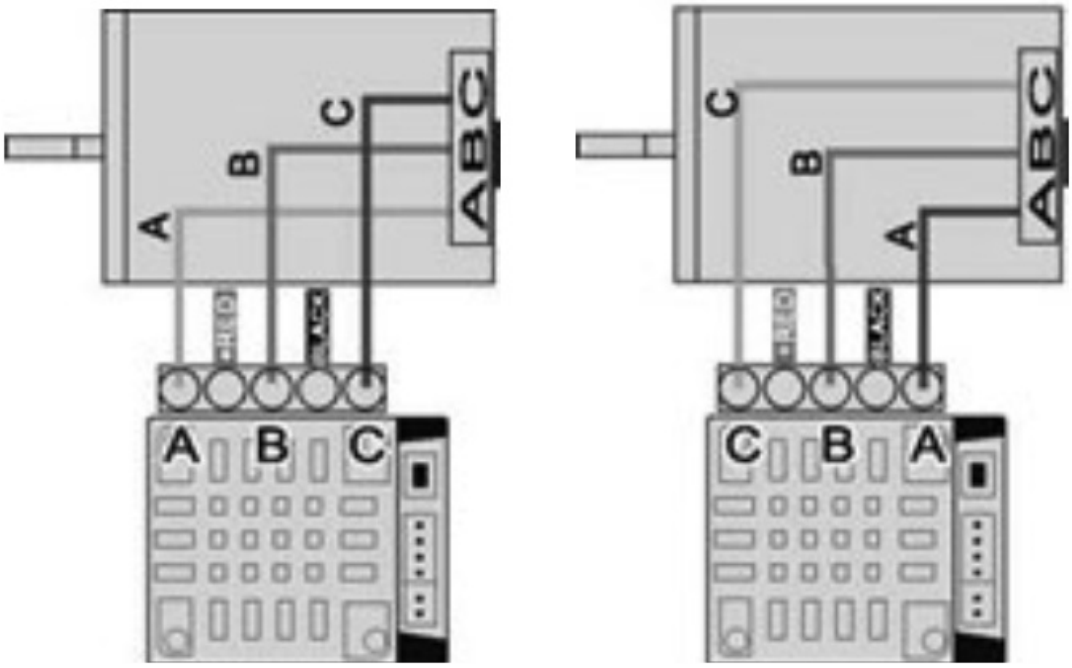
For safety, avoid tyres touching the ground to prevent the car from moving.

1. Turn on the transmitter.
2. Hold the throttle trigger of the transmitter at full brake side.
3. Turn on the power while holding the throttle on brake side.
4. Red LED blinks twice to enter the setup.
5. After red LED blinked twice, if the throttle trigger is held to full throttle, red LED will blink twice.
6. Return the throttle trigger to neutral position and when red LED lights up, the setting is completed.

- If the initial setting cannot be made, change the throttle of the transmitter from the reverse setting to the normal setting, and then set the amplifier again.
- Some transmitter manufacturers have a high response mode setting. Depending on the transmitter manufacturer, the initial setting may not be possible, so set the ESC with the normal mode of the transmitter.

Changing ESC Settings

- ESC settings are available to change regarding on use of each categories. An optional program box is required to change each setting.
- Connect attached wire to the program box.
- Connect program box to the program port of the ESC main unit.
- Connect ESC and battery. When ESC is turned on, program box will start automatically.“ Loading…” is displayed on the screen and ESC setting program box will be read. When reading the programming is completed, “YOKOMO” and “Program” are displayed on the screen, and ESC setting will be able to change, and programming can be changed easily.
- A-B-C wires connected to the motor can be changed to C-B-A by changing the initial settings of the programming card.

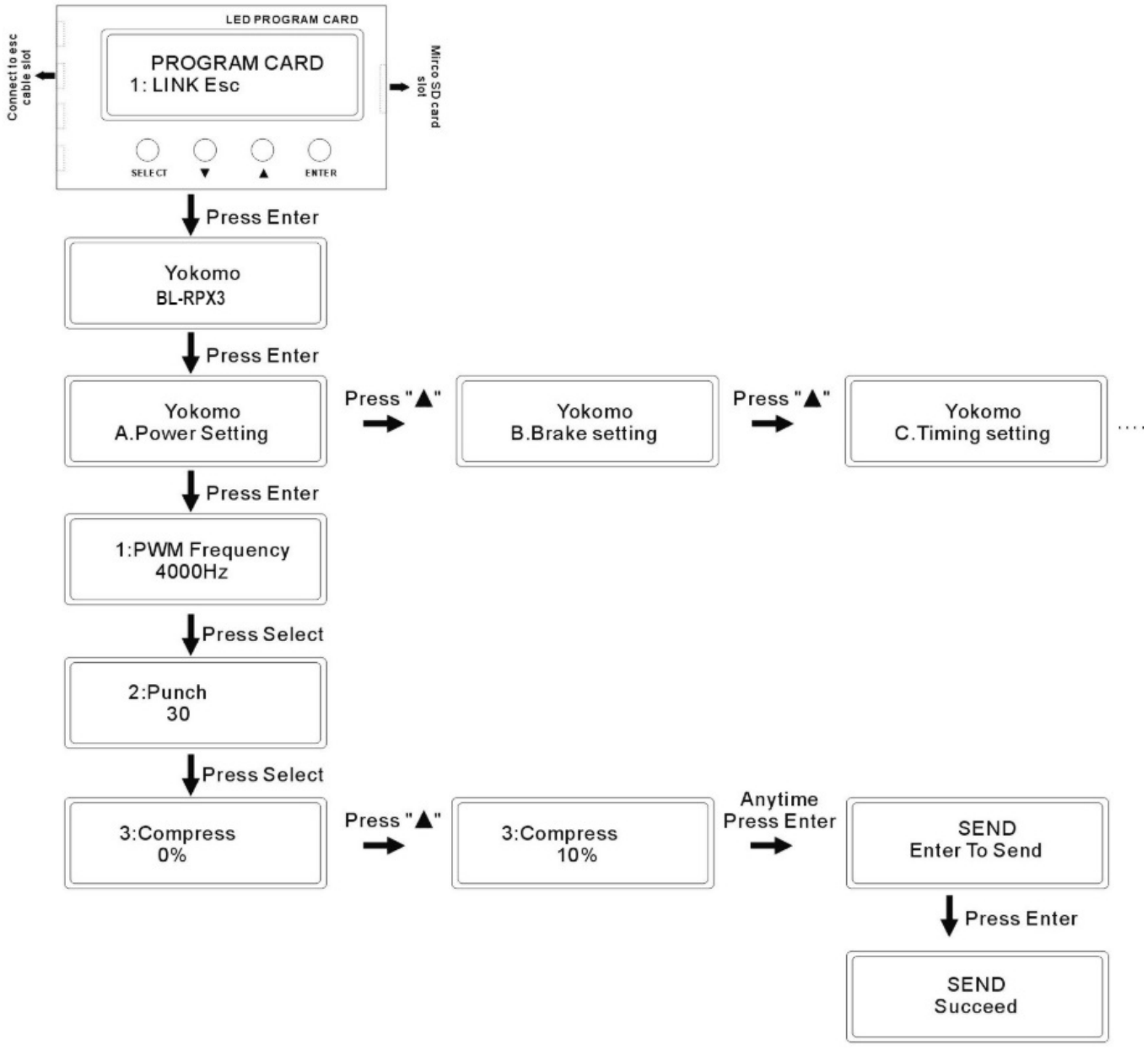


Factory default setting mode is BLINKY MODE.

1. **1: Setup**
    - Press the ENTER button from the opening screen.
    - Use the “ ▲ ” button or “ ▼ ” button and choose [A: Power Setting], [B: Brake Setting], [C: Timing Setting], [D:
    - General Setting], [E: Limit Value], [F: Load Setting] [G: Save Setting], [H: Firmware Update]
    - Press“ Enter” to enter program mode or read data. It is divided into 8 modes.
    - If you encounter any problems, please initialize the program box and then check the ESC settings.
    - Change settings with the four buttons located below the program box. The function of each button differs
    - depending on the screen display. “Select” button —— Move to next item, and hold down “Select” button for 2 seconds ——- Return to the previous item.
        - “▲” button- Scrolls up.
        - “▼” button-Scrolls down.

- “Enter” button –The changed data will be sent to ESC and rewritten with new data.
- If program box and ESC settings are same, no data will be sent. “Send Sucessed” is displayed after data transmission only when there is a change in the set value. If you have any doubts about the settings, you can return to the default settings and then change the settings again.

2. **Update**
   - ESC firmware rewrite
   - Go to the“ Update” menu and press“ Enter” to see the current ESC firmware. Press“ Enter” again to access the firmware folder on the SD card. Select the firmware to use for updating ESC and press“ Enter” again to start the update. The update will take about 1 minute.



[A.POWAER SETTING]	
1 PWM Frequency	Drive frequency can be adjusted. At 2K, feeling of power at low speeds increases, a nd at 32K, feeling of power at high speeds increases.

2 Punch	If you set it to 30, you can get the maximum punch when moving forward.
3 Compress	You can adjust the throttle curve. 0% is a linear slot.
4 Throtte Feel	Adjust throttle response. 5 is an aggressive throttle.
5 Max Reerse Force	You can adjust the maximum speed when moving backward.
[B.Brake Setting]	
1 Drag Brake	Automatic brake adjustment when the transmitter throttle is in neutral. 30% is the m aximum brake value.
2 Brake Punch	You can adjust the punch when braking. The maximum brake punch is 30%.
3 Initia Brake	You can adjust the effectiveness of the initial brake when operating the brake.
4 Brake Frequency	Smooth braking can be obtained by adjusting the brake frequency and increasing th e frequency.
5 Max Breke Force	Throttle operation, maximum brake effectiveness adjustment.
[C.Timing Setting]	
1 Boost Timing Activation	When you set the boost, you can select the automatic setting or the manual setting of the rotation speed.
2 Boost	When increasing boost timing, this will increase the motor speed and reduce the tor que. If boost value has set too high, motor will become hot and may damage, so it i s necessary to pay attention to the motor temperature and make adjustments.
3 Boost Start RPM	Adjustment of boost start rotation speed.
4 Boost End RPM	Adjustment of boost end rotation speed.
5 Turbo Timing	The motor speed can be further increased when the transmitter is fully throttled. If t urbo timing is raised too high, motor will become hot and may be damaged, so it is necessary to pay attention to the motor temperature and make adjustments.
6 Turbo Start	Timing of entering turbo will be adjusted, and if set to 50%, the timing of entering tur bo will be earlier.
7 Turbo Delay	The time is adjusted while switching from boost to turbo, and if set to 0.00 seconds, it will switch from boost to turbo without a time lag, but heat generated by the motor will also incr ease.
8 Turbo Up Rake	Will be able to adjust the amount of turbo timing increase in 0.5 second increments. Increasing value may cause the motor to generate heat and cause damage. It is ne cessary to pay attention to motor temperature and make adjustments.

9 Turbo Down Rake	Will be able to adjust the amount of turbo timing that drops when throttle is returned in 0.5 second increments. Increasing value will cause the turbo timing to drop faster and the response will increase, but if turbo value is large, it may cause a phenomenon like braking.
[D.General Setting]	
1 Running Mode	Three types of operation settings can be set: forward / brake, forward / reverse, for ward / reverse / brake.
2 Battery	Select the battery type.
3 Cut off Voltage	Set the battery cut voltage.
4 Esc Over Heat Protect	Will be able to adjust the ESC operating cut temperature for ESC protection.
5 Motor Over Heat Protec t	To protect the motor, you can set the temperature to cut operation of ESC when mot or temperature rises too high. This will not work if motor does not have a temperature sensor. ..
6 Neutral Range	Neutral width adjustment.
7 BEC Voltage	Will be able to adjust the voltage input to the receiver. When adjusted to 7V, a servo that supports high voltage is required.
8 Motor Action	Will be able to set the direction of rotation of the motor.
9 Motor Link	Will be able to change the motor wire connection order to A.B.C or C.B.A. If needed to change this, check the ESC settings and connect the motor wire to his A.B.C ter minal on the motor. There is a risk of damage if connected incorrectly.
[E.Limit Vaiue]	
1 Voltage Minimum	Minimum voltage during driving is displayed.
2 ESC temp Maximum	Maximum ESC temperature while driving is displayed.
3 Motor Tempreature maximum	Maximum temperature of motor while driving is displayed.
4 RPM Maximum	Maximum number of revolutions of motor while driving is displayed.
5 ClearLimit Record	Able to erase the data stored by ESC.
[F.Load Setting]	
1 Blinky Mode	Blinky mode and default setup.
2 Stock Mode	Stock mode and default setup.
3 Modify mode	Modify mode and default set. (Not included in RPX S)

4 Custom-1,2,3	Able to recall settings stored in Customs 1, 2, and 3. You can call it by pressing enter and then pressing enter again.
[G. Save Setting]	
1 Custom-1,2,3	Able to save 3 types of custom-configured data. Press enter and press enter again to save.
[H.FirmwareUpdete]	
1 Load TF File	Able to update firmware stored on the SD card from your PC to ESC.
2 CurrentVersion	Able to check the current ESC version by pressing enter.

Mode	No.	Item	Setting value		Min	Max	Blinky Default	
A.POWERSETTING	1	PWM Frequency	2000-32000Hz Adjustable, Step:500Hz		2	32	4000	8
	2	Punch	Level:1-30 Adjustable,step:1		1	30	30	30
	3	Compress	0-50% Adjustable, Step:1%		0	50	0%	0
	4	Throttle Feel	Level1-5 Adjustable, Step:1		1	5	1	1
	5	Max Reverse Force	50%-100% Adjustable,Step:1%		30	100	30%	30
B.BrakeSetting	1	Drag Brake	OFF,0-30% Adjustable, Step:1%		0	30	0	0
	2	BrakePunch	Level:1-30 Adjustable, Step:1		1	30	30	30
	3	Initial Brake	(=Dragbrake,1-30%Adjustable,Step:1%)		0	30	0	0
	4	Brake Frequency	1000-5000Hz Adjustable, Step:50Hz		1	50	1000	20
	5	MaxBrake Force	0-100% Adjustable, Step:1%		0	100	100%	100
	1	Boost Timing Activation	RPM	AUTO	0	1	RPM	0
	2	Boost Timing	0-60 Adjustable, Step:1°		0	75	0	0
	3	Boost Start RPM	500-35000 RPM Adjustable, Step:500RPM		1	70	500	1

C:TimingSetting	4	Boost End RPM	3000-60000 RPM Adjustable, Step:500RPM				6	120	3000	6
	5	Turbo Timing	0-60 Adjustable, Step:1°				0	75	0	0
	6	TurboStart	50-100% Adjustable, Step:1%				50	100	95%	95
	7	TurboDelay	0-1.00sec Adjustable: Step:0.01sec				0	100	0.3	3
	8	TurboUpRake (Degree/0.05sec)	1-30°/0.5sec Adjustable: Step:1Degree				1	30	30°	30
	9	TurboDown Rake (Degree/0.05sec)	1-30°/0.5sec Adjustable: Step:1Degree				1	30	30°	30
D:GeneralSetting	1	Running Mode	Forward with Brake	Forward/Reverse	Forward/Reverse/ Brake		0	2	Forward/ Brake	0
	2	Battery	LiPolymer	Li-Fe	NI-XX		0	2	LiPolymer	0
	3	Cut off Voltage	LOW_2.8v/s	Middle_3.0v/s	High_3.2v/s	Disabled	0	3	Middle	1
	4	Esc Over Heat Protect	95°	105°	120°	Disabled	0	3	115°	2
	5	Motor Over Heat Protect	95°	105°	120°	Disabled	0	3	115°	2
	6	NeutralRange	5%-15% Adjustable,Step:1%				5	15	6%	6
	7	BEC voltage	6V	7V			0	1	6V	0
	8	Motor Action	CCW	CW			0	1	CCW	0
	9	Motor LinK	Normal	A SWAP C			0	1	Normal	0
	1	VoltageMinimum	Show the battery minimum record of voltage							

E:LimitValue	2	ESCtempMaximum	Show the esc maximum record of esc temperature				
	3	Motor Tempreature maximum	Show the motor maximum record of temperature				
	4	RPM Maximum	Show the motor maximum record of RPM				
		ClearLimitRecord	Enter to clear all record and standby to read the coming record				
F:LoadSetting)	1	BlinkyMode	Load Blinky mode Default setup				
	2	StockMode	Load stock mode Default setup				
	3	ModifyMode	Load Modify mode Default setup				
	4	Custom-1	Enter and enter again to load your memery of custom 1,2 or 3				
		Custom-2					
		Custom-3					
G:SaveSetting	1	Custom-1	Enter and enter again to save your current setup to custom 1, 2 or 3				
	2	Custom-2					
	3	Custom-3					
H Firmware	1	Load TF File	Enter import to the SD card and select the firmware version, enter again when find the right version of firmware to update.				
	2	CurrentVersion	Enter to see the current firmware version.				

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FAQ

Q: How do I adjust the speed settings?
A: Use the provided controls to increase or decrease the speed output based on your requirements.

Q: What should I do if the speed controller malfunctions?
A: Disconnect power immediately and check connections. If issues persist, refer to the user manual for troubleshooting steps or contact customer support.

Q: Can this speed controller be used with other devices?
A: The compatibility of this speed controller may vary, refer to the product specifications for detailed information or consult with technical support.

Documents / Resources

	YOKOMO RPX 3 Brushless Speed Controller [pdf] Instruction Manual RPX3, RPXS, RPX 3 Brushless Speed Controller, RPX 3, Brushless Speed Controller, Speed Controller, Controller

References

- RC YOKOMO
- User Manual