MAMBA X SERIES

DRIVER'S ED GUIDE

INSTRUCTION MANUAL FOR ALL CASTLE CREATIONS
MAMBA X SERIES SURFACE POWER SYSTEMS

OVERPOWERING RC SINCE 1997

castle

⚠ **WARNING: This is an extremely powerful brushless motor system.** *We strongly recommend removing the pinion gear from the motor for your own safety and the safety of those around you before performing calibration and programming functions. Please keep your hands, hair, feet, pets, fuzzy purple shorts, and garden gnomes clear from the gear train, axle shafts, wheels, and tires of an armed high performance system.*

⚠ **DO NOT hold the vehicle in the air and run it up to full throttle.** *Rubber tires will "grow" to extreme size on a high-speed vehicle. Tire failures at speed can cause serious injury! Make sure your tires are securely glued to the wheels and check them often.*

⚠ **ALWAYS disconnect the battery from the ESC when you are finished enjoying your vehicle.** *The switch on the ESC controls the power that is delivered to the receiver and servo(s). The controller will always draw current when it is connected to the battery and will completely discharge batteries if they are connected for long durations. This may cause failure of your batteries. Castle Creations is not responsible for any damage as a result of batteries left plugged in to your ESC. Your Castle ESC is programmed to sound a tone every ten seconds to remind you that it is still powered.*

⚠ *Always monitor your ESC and motor temperatures during the first run after modifying your system to ensure they stay within the safe operating limits.*

GETTING STARTED

1. Solder a high quality battery connector to the ESC. *See "Connectors and Power Wiring"* - page 3

2. Mount the ESC and motor into the vehicle.

3. Connect motor to the ESC. *See "Motor Wiring"* - pages 4-7

4. Plug in the ESC RX lead and AUX lead. *See "Radio Connection"* - page 8

5. Calibrate your ESC to your radio. *See "How to Calibrate the ESC"* - pages 10-12

You are now ready to go!

CONTENTS

EASY TO USE, SOPHISTICATED ENOUGH TO WIN EVERYTHING

Castle controllers are extremely simple to set up and optimize for your application. Most users may simply plug the controller into their motor, radio, and battery and run it immediately.

Advanced users may wish to access the incredible tuning features using their Windows-based PC and the Castle Link USB adapter via a standard USB-mini cable. With Castle Link software you can tune the ESC exactly with point-and-click ease!

Please make sure to read this guide completely to get the most from your Castle ESC.

A WORD ABOUT BATTERIES

As with any extremely high-powered electric power system, the primary limitations to ultimate vehicle performance are the batteries and connectors. Use the best batteries and connectors that you can find. The better the batteries, the more punch you'll have!

Recommended capacity for 1/18th scale vehicles is 1500mAh+, 1/10th, 1/8th, and 1/5th scale recommended capacity is 5000mAh+. Do not use 20C continuous discharge batteries. We recommend 30C continuous discharge or higher for 1/18th scale to 1/8th scale vehicles (or high quality 25C batteries such as Traxxas® Power Cells®), and 50C continuous or higher for 1/5th scale vehicles. Using too low of a C rating or capacity will damage your ESC and will not be covered under warranty.

Top-of-the-line cells aren't required for this system to operate normally, but the best cells will certainly allow your Castle system to put more power to the ground.

ⓘ You cannot trade off capacity (mAh) for C rating or vice versa. You MUST meet the requirements listed above.

CONNECTORS AND POWER WIRING

Poor quality battery connectors can be a roadblock to performance. Avoid the common "white plastic" connectors seen on many battery packs. A high-performance brushless setup will draw many times the power that these connectors can safely handle. Invest in connector sets made for high-powered electric systems such as our CC Bullets, Castle Polarized Connectors, Traxxas® Power Connectors, FlightPower Star™ Plug, or Deans® Ultra Plugs.

Your Castle ESC has motor connectors on the motor wires or directly on the ESC and the battery input wires are bare. You must add the connector of your choice to the battery leads. We recommend a connector rated for 40-100 amps, depending on your setup.

ⓘ Check the amperage ratings of your connectors to make sure they meet the amperage requirements for your application, e.g., don't use 40 amp connectors on a 1/5th scale setup.

⚠ Proper polarity is essential here! *Make absolutely sure positive (+) connects to positive (+), and negative (-) connects to negative (-) when you plug in your battery! If reverse polarity is applied to your ESC from the battery, it WILL damage your ESC. This WILL NOT be covered under warranty!*

MOTOR WIRING
Brushless Motor Wiring, Sensorless Motors (Figure 1)

For sensorless brushless motor connections, the three wires from the ESC to the motor have no polarity. Connect the three wires
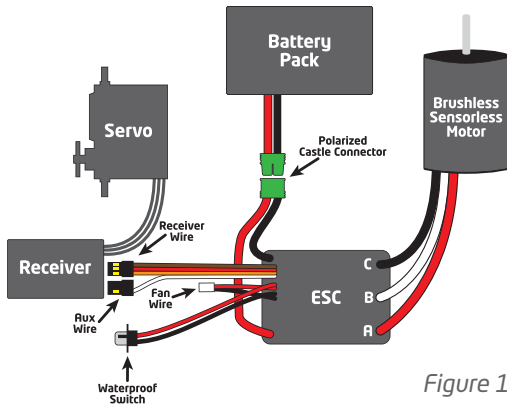

Figure 1

coming from the motor to the ESC's motor connections in any order. If you are using a motor other than a Castle Creations motor, you may need to either solder the included bullet plugs to your motor, or solder the ESC wires directly to the motor wires.

ⓘ *If you choose to direct solder or to shorten the motor wires, you may do so on the Castle Creations 14XX series, 15XX series, and 2028 motors only. DO NOT CUT any part of the wire length from any other motor, regardless of brand or type. In most cases, only the last 1/4 inch or so of the motor wires are able to be soldered. If they are clipped shorter you may not be able to solder the remaining portion of the wire and the motor will not run properly, if at all.*

⚠ ***If the motor is supplied with connectors you do not want to use, simply unsolder the original motor connectors from the wires - do not cut them off.***

Brushless Motor Wiring, Sensored Motors* (Figure 2):

For sensored brushless motor connections, the three wires from the ESC to the motor DO HAVE polarity. Connect the ESC to the motor. Connect A to A, B to B, C to C, and install the sensor harness** after removing the dust cover. In order to change the motor direction, use Castle Link or transmitter programming.

*Not available on all ESCs. See product Quick Start Guide for clarification.

**Castle Creations Sensor Harness (not included with Mamba Micro X controllers; part # 011-0108-00) is required for sensored brushless motor connections.
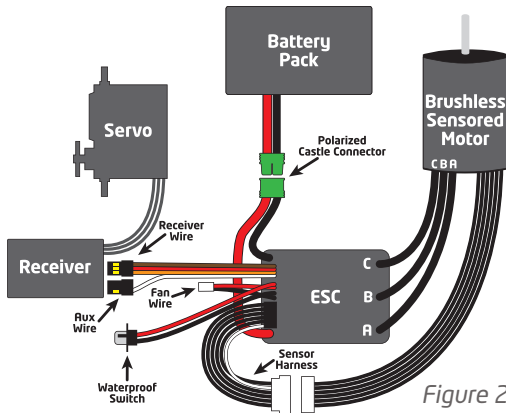
Figure 2

Brushed Motor Wiring, Reversing (Figure 3)

Use this mode if you wish to use reverse. Make sure you change the Motor Type setting to "Brushed Reversing" in the ESC before using a brushed motor. Use only the red and black motor wires from the ESC, or the outside bullet connectors on the ESC. In most applications, the red wire from the ESC will connect to the red wire (or positive + side hood) of the motor, and the black wire to the black wire (or negative - side hood) of the motor. The white wire from the ESC (or middle bullet connector on the
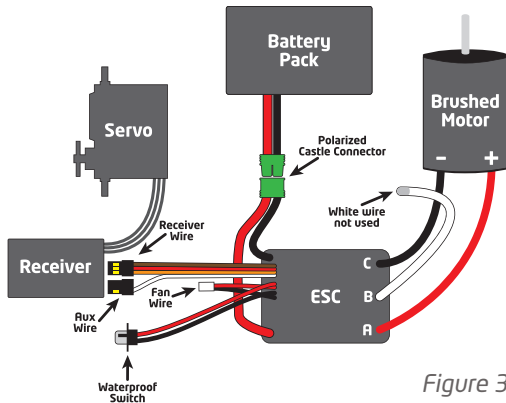

Figure 3

ESC) is not used. After calibration (See "How to Calibrate the ESC", page 10), you may need to swap the two motor wires to get the wheels to spin in the right direction.

RADIO CONNECTION
RX Wire (Orange/Red/Brown)
Your Castle ESC RX wire plugs into the throttle channel of your receiver. This is usually channel 2. Your Castle ESC provides power to the receiver and the steering servo. No separate receiver battery is needed to power the radio system. Some servos can draw more current than the on-board BEC can handle and will require an external BEC or receiver pack.

AUX Wire (White Signal Wire)
The Auxiliary or "AUX" wire allows you to adjust a setting "on-the fly" using an auxiliary channel on your receiver. The AUX wire function is programmable via Castle Link.

ⓘ Castle ESC receiver plugs are designed to work with any current receiver, but you will need to make sure the polarity is correct when connected to the receiver. The ESC signal wire is orange or white, the positive wire is red, and the negative wire is brown. Check your receiver documentation for correct connection polarity if it's not marked.

ⓘ Most receivers use negative (brown) towards the outside of the case and signal (orange/white) towards the channel markings on the case.

Castle ESC/Radio Calibration

Individual transmitter signals for neutral, full throttle, and full brake vary. You must calibrate your Castle ESC so that it will operate effectively with your transmitter. Anytime the ESC is powered up with a new transmitter or with different throttle channel settings, it will need to be calibrated to the transmitter's throttle settings. The ESC may also need to be calibrated after updating to new software via Castle Link.

If you are using a Futaba-made transmitter, you will need to set the transmitter's throttle channel direction to the REVERSE (Rev) position. This is either an external micro switch on the transmitter or an option available within the computer programming of the transmitter. Please start by zeroing out any throttle trim that you may have set in your transmitter.

How To Calibrate The ESC
⚠ *Safety First! Remove the pinion prior to calibration.*

Step 1: Start with the transmitter ON, the battery disconnected, and the ESC switch in the OFF position (if your ESC has a switch).

Step 2: Plug a battery into the ESC. If your ESC does not have a switch, hold full throttle on your transmitter before plugging in the battery.

Step 3: Hold full throttle on the transmitter and turn the ESC switch ON. Keep holding full throttle on the transmitter. If all your connections are correct, you will hear one multi-toned initialization "ring" from the motor (all sounds are played by the ESC vibrating the motor).

Step 4: If the ESC's voltage cutoff is set to Auto-LiPo (the default setting), then the ESC will emit a sequence of beeps indicating the number of battery cells.

ⓘ If the number of beeps does NOT match the number of cells, disconnect the battery and confirm that it is fully charged.

Step 5: After the beeps, the green LED on the ESC will blink rapidly. If the red LED is blinking instead, reverse your throttle channel. After a couple of seconds, the motor will "ring" four times in a row. Next, the ESC will rapidly blink the red LED and the motor will beep continuously. At this point, the full throttle endpoint has been set within the ESC and now it's looking for the full

brake endpoint (red LED blinking).

STEP 6: Move the throttle trigger to the full brake position and hold full brake. After a few seconds, the motor will "ring" four times rapidly. The ESC will then blink the yellow LED and the motor will beep continuously. At this point, the full brake endpoint has been set within the ESC and now it's looking for the neutral endpoint (yellow LED blinking).

STEP 7: Now relax the trigger to the neutral position. The ESC will now "ring" four times and flash the yellow LED rapidly to accept the neutral position.

After accepting the neutral position, the ESC will "ring" twice, flash all the LEDs, and the yellow LED will illuminate. This is the arming tone and LED indication that the **ESC IS NOW ARMED** and the vehicle will respond to throttle inputs from your transmitter.

From this point on, when you connect batteries and turn the switch on, the ESC will give the initialization "ring" followed by battery cell count beeps (only in Auto-LiPo mode), and then after the arming delay the ESC will "ring" twice, indicating it is **ARMED** and will respond to throttle application.

If you have problems calibrating your transmitter with the Castle ESC, please see the troubleshooting guide on page 36, visit www.castlecreations.com/support, or contact our world class technical support department via email or on the phone.

Final Check

Once you are calibrated and armed, do one last check before going out and experiencing the Castle brushless difference. Slowly advance the throttle and check the rotation direction of the motor and the color of the LEDs on the ESC. If the motor is spinning in the right direction and the green LED is blinking, then you are ready for a test run. If the ESC shows the green LED with

throttle, but the wheels spin in the wrong direction, you'll need to change the motor direction. See Motor Wiring, pages 4-7.

ⓘ Closely monitor your ESC and motor temperatures during the first run to ensure they stay within the safe operating limits.

AUDIBLE ALERTS

Castle Mamba X Series ESCs provide you with audible alerts that notify you of various issues and error conditions to help you diagnose problems in your setup. These alerts only occur when the vehicle is stopped and the ESC is in neutral. They repeat every five seconds until the ESC's power is cycled.

ⓘ Your ESC will emit a single beep every ten seconds to let you know the ESC is powered. This is NOT an error condition. This is simply a reminder to disconnect the battery.

If you wish to silence these features, they can be disabled using Castle Link. See "Idle/Error Beeping" on the "Basic" tab in Castle Link.

The audible alerts consist of a sequence of long and short beeps, repeating every five seconds. To determine the cause of the alert, record • for short beeps and – for long beeps, then match the code you heard to the following list.

ⓘ The red LED will always blink, even if silenced.

Audible Tone	Key	Description
• •	Start Fail	The ESC was unable to start the motor. Check your motor wiring and make sure there is nothing interfering with your drive train.

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Audible Tone	Key	Description
● –	Low Voltage Cutoff	Main battery voltage dropped below the cutoff value. The default is Auto-LiPo which sets the cutoff value based on the detected cell count. Other options may be entered in Castle Link.
– ●	Over-Current	The ESC detected operating currents that exceed the capabilities of the ESC.
● ● ●	Sensors Lost*	The ESC detected unusual signals or loss of signal on the sensor cable coming from the motor. Check the sensor cable for good connections to the ESC and motor. If you are not using a sensored motor, ensure the "Sensors Lost" warning is disabled in Castle Link.
● ● –	Radio Glitch	The ESC detected unusual signals or loss of signal on the throttle wire.

Audible Tone	Key	Description
● — ●	Over-Temperature	The ESC reached an over-temperature condition. Occurs when operated under too high a load or operated without proper cooling airflow.
● — —	Excessive Load	The ESC detected very high current spikes. Causes may include damaged wiring leading to, or inside, the motor, the use of too large a motor for the controller, excessive gearing, or improperly soldered motor connections. If multiple Excessive Load errors are detected, beeping will be disabled to protect the ESC. If the error continues, contact Castle Tech Support.
— ● ●	Auxiliary Wire Radio Glitch	The ESC detected unusual signals or loss of signal on the AUX wire. *Note: if you are not utilizing the AUX wire function, disable the AUX wire mode via Castle Link.*

Audible Tone	Key	Description
▬ ● ▬	BEC Over-Temperature*	The ESC detected that the integrated BEC is overheating due to current draw above the rating of the BEC. This is commonly caused by faulty servos or a servo that exceeds the amp rating of the BEC. (e.g. digital servos with very high torque/speed values)
▬ ▬ ●	Motor Over-Temperature*	The ESC detected that the sensored motor's temperature has exceeded the Motor Temperature Cutoff value set in Castle Link. Motor Temperature Cutoff is only available when running a sensored motor. Motor temperature sensors vary. Always check motor temperatures periodically after making system adjustments. This alert is disabled by default and can be adjusted via Castle Link.
● ● ● ●	Datalog Full Warning*	The ESC's internal datalog has reached its capacity. The datalog must be cleared before it can record any new data.

Not available on all Mamba X Series ESC models. See the Quick Start Guide for more information

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DATA LOGGING*

Mamba X Series ESCs are able to measure and record important power system information during your race, turn-by-turn. After your run, you can download and analyze this log using Castle Link. You will be able to inspect many parameters including battery voltage, motor RPM, ESC temperature, motor temperature**, and more.

Recording Duration

The ESC writes the recorded data to a limited amount of memory. Recording time varies with the parameters selected and the sample rate. The ESC compresses data wherever possible; periods at idle or constant throttle do not take very much memory. Use Castle Link to select or deselect parameters logged by the ESC.

Not available on all Mamba X Series ESC models. See Quick Start Guide for clarification.
**Only available when using a sensored motor.*

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Automatic Data Reset

At power up, Automatic Data Reset checks the amount of memory used. If that value is more than the programmed limit, the controller will erase the entire data log. This ensures that the last few runs are saved to memory and available for analysis. The ESC will emit a long beep tone after the arming "rings" to alert you that the data log was erased.

Manual Data Reset

Recorded data can be erased manually by holding your transmitter at full reverse when powering up the ESC. The motor will emit the normal power up chimes. Leave throttle at full reverse for six seconds and the motor will emit a long beep tone. The ESC will then erase the entire data log. Return the throttle to neutral and the ESC will arm.

AUXILIARY WIRE MODES

Your ESC can be connected to an additional radio channel using the AUX wire (white signal wire) to adjust driving parameters on-the-fly. Enable this feature with Castle Link to dynamically reign in your vehicle's power, enable reversing, and more.

The AUX signal has fixed endpoints of 1.1ms and 1.9ms, so there's no need to calibrate anything to use the AUX wire. If the AUX wire becomes disconnected from the receiver, the ESC will use the value selected in Castle Link instead.

Max Throttle Adjustment

The ESC's maximum power is scaled from 10% to 100% depending on the signal received on the AUX wire. Perfect for passing the controls to children, neighbors, or your boss.

Max Reverse Adjustment

The ESC's maximum reverse power is scaled from 10% to 100% depending on the signal received on the AUX wire.

Max Brake Adjustment

The ESC's maximum braking power is scaled from 10% to 100% depending on the signal received on the AUX wire.

Drag Brake Adjustment

The ESC's drag brake setting is scaled from 0% to full brake depending on the signal received on the AUX wire.

Reverse Enable/Disable (Only works in modes with reverse)

Reversing is disabled when the controller receives an AUX wire signal above 50% (>1.5ms). When the controller receives an AUX wire signal below 50% (<1.5ms) or if the AUX wire is disconnected, reverse capability is enabled.

Torque Control Adjustment

The ESC's torque control setting is scaled from 0.1 to 5.0 depending on the signal received on the AUX wire. Torque control is disabled when the input exceeds 1.9ms. Great for finding the perfect torque control setting for your track and tires.

Motor test must be performed before using this setting.

Enable Rock Race/Crawler Mode

This mode allows the user to switch between two different modes on the fly: "Race Mode" and "Crawler Mode". "Race Mode" is optimized for either Racing/Bashing and "Crawler Mode" is optimized for crawling. Please visit www.castlecreations.com/crawlermode for more detailed setup information.

Datalog Erase Enable

When the vehicle is stopped, toggling the AUX signal for a few seconds will erase the datalog. The motor will emit a long beep to indicate the log was erased. This feature can be added to any of the other AUX wire modes by checking the Idle Datalog Erase box in Castle Link.

TUNING WITH CASTLE LINK™

All Castle ESCs may be connected to your PC using the Castle Link USB adapter. The Castle Link software will give you access to a whole new world of tuning options. You may use Castle Link to tune your throttle and brake curves, set your drag brake feel, and use the incredible Torque Limit to keep the front end of your car on the ground with all the power you have at your command. As new software becomes available, you can install it in your Castle ESC for new and updated features. All of this ensures your Castle ESC will be the best that it can be.

Castle Link Quick Connect

Experienced modelers go to great lengths to tie down their servo and throttle leads - and some find that unplugging a Castle controller from the receiver disrupts all their work. The Castle Link Quick Connect allows you to connect the Castle Link USB adapter without removing wires from your receiver. Visit www.castlecreations.com/quickconnect to purchase online.

Using Castle Link

Disconnect the RX (Orange/Red/Brown) wire from your receiver and connect it to the Castle Link USB adapter. Castle ESCs may also be programmed using your transmitter and receiver (see Transmitter Programming, page 27), or a Field Link Programming Card (see Field Link Programming Card, page 27).

⚠ *If your ESC has a 3-wire AUX connection (White/Red/Brown) you MUST disconnect it prior to connecting your ESC to the Castle Link USB adapter unless using a Castle Quick Connect Duo. Failure to disconnect a 3-wire AUX connection from the receiver may result in damage to the Castle Link USB adapter.*

FIELD LINK™ PROGRAMMING CARD

You can use a Field Link programming card to easily change many settings at the field without your PC, or it will function as a Castle Link adapter when you do have a PC available. For more information visit www.castlecreations.com/fieldlink.

TRANSMITTER PROGRAMMING

Transmitter programming is very easy; simply answer YES or NO to a list of options. These are grouped into five settings and each setting has several possible options. You can only accept one option per setting. By answering YES to an option you will jump to the next setting. If you answer NO to an option you will move to the next option within that setting.

At each option, you can accept it by going to full throttle on your transmitter, or you can reject the option by going to full brake. In programming terms, full throttle is 'YES' and full brake is 'NO.' The ESC will indicate that it has accepted your selection by producing a continuous "skipping" tone. When you hear this tone, allow the trigger to go back to the neutral position to

advance to the next setting or option depending on your selection.

How To Get Into Programming Mode:

1. Turn your transmitter on.

2. Plug the battery into the ESC with its switch off. If your ESC does not have a switch, hold full throttle on your transmitter before plugging in the battery.

3. Hold full throttle on your transmitter and turn the ESC switch on.

4. The ESC will go through its boot-up sequence and blink the green LED. If the ESC's voltage cutoff is set to Auto-LiPo (the default setting), then the ESC will emit a sequence of beeps indicating the number of battery cells. 🛈 *If the number of beeps does NOT match the number of cells, disconnect the battery and confirm that it is fully charged.*

5. There will be a sequence of four "rings" and the red LED will blink.

6. Keep holding the trigger, within 6 – 8 seconds there will be a sequence of four "rings" and the yellow LED will blink. You are now in programming mode; let the trigger return to neutral.

To Make Changes In Programming Mode:
Once in programming mode, the ESC will beep once, pause, then beep once again and repeat until a change is made with your transmitter. For instance, if you want to adjust setting 1 (Brake/Reverse Type) to option 1 (With Reverse) you would pull full throttle to select it. When the trigger is returned to neutral the beep pattern will change to 2 beeps followed by 1 beep. By selecting an option, you have now moved on to setting 2 and option 1. If at setting 2 (Cutoff Voltage) you reject option 1 (Auto-LiPo) by going to full brake/reverse, the beep pattern will then change to 2 beeps followed by 2 beeps. This means the ESC is still at setting 2 but is now asking if you would like to accept option 2 (None).

Reject options unless you wish to change that specific setting. As an example, say you want to adjust the Drag Brake to 20%. Work through the settings and options, rejecting all options until you get to 4 beeps, meaning setting 4 (Drag Brake), followed by 3 beeps, meaning option 3 (20%). Select this option by going to full throttle. Once you have changed the setting you want, you can unplug power from the ESC to get out of programming mode. You do not need to finish all of the settings. The ESC will store your changes until you change them again.

The next section of the manual gives a description of each of the settings and options and what to expect when you change an option from default.

ⓘ There is a reference guide on the last page of this manual.

1. Brake/Reverse Type

Sets whether reverse is enabled or not, and exactly how it can be accessed.

Option 1: With Reverse (Default)
This setting allows the use of reverse only after the ESC senses the vehicle has come to a stop. Use it for race practice sessions and bashing, but check with your race director to see if this setting is allowed for actual racing.

Option 2: Without Reverse
Reverse cannot be accessed under any circumstances with this setting. Use this setting for sanctioned racing events that do not allow reverse driving.

Option 3: Crawler Reverse
Reverse or forward is accessible at any time, even if the vehicle is still moving.

2. Cutoff Voltage

Sets the voltage at which the ESC stops the motor in order to protect the battery from over-discharge.

Option 1: Auto-LiPo (Default)

This setting automatically detects the number of LiPo cells you have plugged in. It will automatically set the cutoff to 3.2 volts per cell detected. The ESC will beep the number of cells detected between the initialization "ring" and the arming "rings" on initial power up of the ESC.

If the number of cells indicated does not match the number of cells in your LiPo pack, do not operate the vehicle. Unplug your battery and ensure that it is fully charged.

Check with your battery manufacturer to make sure 3.2V per cell is their recommended cutoff. You can change this value in Castle Link if a higher per cell voltage is needed.

Option 2: None

This setting disables low voltage cutoff.

⚠️ *Do not use this setting with any Lithium pack! Use this setting ONLY with NiCad or NiMH packs.*

3. Brake Amount

Sets what percentage of available braking power is applied with full brake.

Option 1: 25% Power	**Option 3: 75% Power**
Option 2: 50% Power (Default)	**Option 4: 100% Power**

4. Drag Brake

Sets the amount of brake applied at neutral throttle for a slight braking effect while coasting.

Option 1: Drag Brake Disabled (Default)
Vehicle will coast with minimal resistance from the motor at neutral throttle.

Option 2: Drag Brake 10%
Low amount of braking effect from the motor at neutral throttle.

Option 3: Drag Brake 20%
Moderate braking effect from the motor at neutral throttle.

Option 4: Drag Brake 30%
High braking effect from the motor at neutral throttle.

Option 5: Crawler Full On
This setting applies full brake at neutral throttle to prevent crawler-type vehicles from rolling or coasting when stopping on an incline.

5. Motor Type

Sets which type of motor you will use with the Castle ESC. ⚠ *The ESC may be damaged if this setting does not match the motor type/hook-up method in the car, and this damage is NOT covered under warranty.*

Option 1: Brushless (Default)

See Brushless Motor Setup, figure 1 on page 4, and figure 2 on page 6.

Option 2: Brushed Reversing

See Reversing Brushed Motor Setup, figure 3 on page 7.

6. Motor Direction

Allows you to change the motor direction.

Option 1: Normal (Default)

Option 2: Reverse

TROUBLESHOOTING

If you're still having difficulties with your Castle ESC after trying the suggestions offered here, please contact Castle Creations technical support at the email or phone number listed in the next section.

Problem: My Castle ESC may or may not arm, but it will not calibrate to my transmitter.

Solution: Most calibration issues can be solved by changing settings on the transmitter. Make sure you have both your throttle and brake endpoints (called EPA or ATV on your radio) on the throttle channel set to between 100 to 120%. If you have a Futaba-made transmitter, make sure to have the throttle channel set to the reversed position. See Castle ESC/Radio Calibration on page 10.

Problem: My ESC calibrates for the full throttle and full brake positions but won't calibrate to the neutral throttle position (yellow LED keeps flashing with single beeps).

Solution: Try moving the throttle trim one way, then the other. If your transmitter has a 50/50 and 70/30 setting for the throttle, set it for 50/50 and retry calibration. If you have changed the throttle dead band to a narrower band using Castle Link, you may want to try going back to the "normal" setting.

ℹ️ If you have changed the motor type to "Sensored only" using Castle Link and the ESC is not beeping, the yellow flashing light at neutral is normal and the ESC is ready for use.

Problem: My vehicle acts like it has "turbo lag" (poor acceleration/punch for the first few feet or yards, and then it "kicks in").

Solution: Make sure you're using high quality batteries and a battery connector capable of high amp flow (40-100 amps). Ensure connector is properly sized for your application. This behavior is very typical of a battery pack that is having difficulty providing the power your system requires for top performance. Refer to pages 1-2 for recommended battery capacity and C ratings for use with Castle ESCs.

For NiCad/NiMH packs, use copper bars to connect cells rather than welded tabs.

Problem: My battery pack is plugged into the ESC and nothing is working - no steering and no throttle.

Solution: Make sure the ESC's RX wire is plugged into channel 2 on the receiver, and that it's plugged in with the correct orientation. Double check your solder connections on the battery plug, and make sure the battery is charged.

For more troubleshooting tips visit www.castlecreations.com/support

CASTLE TECHNICAL SUPPORT

You may contact our world-class technical support department via e-mail anytime, or by phone. Please visit Castle Creations' website for technical support hours.

Website: www.castlecreations.com/support

E-mail: www.castlecreations.com/contact-support

Phone: (913) 390-6939, option #1.

WARRANTY INFO

Your Castle ESC is warranted for one (1) year from date of purchase to be free from manufacturing and component defects. This warranty does not cover damages caused to your motor or controller from abuse. Abuse includes, but is not limited to, incorrect wiring, over-voltage, overloading, improper gearing, improper motor selection, incorrect controller settings, insufficient batteries, or inadequate connectors.

If you have any questions, comments, or wish to return your Castle ESC for warranty or non-warranty repair or replacement, please visit www.castlecreations.com/repairs before contacting us directly.

TRANSMITTER PROGRAMMING REFERENCE

1. Brake/Reverse Type
- • With Reverse*
- •• Without Reverse
- ••• Crawler Reverse

2. Voltage Cutoff
- • Auto-Lipo*
- •• None

3. Brake Amount
- • 25%
- •• 50%*
- ••• 75%
- •••• 100%

4. Drag Brake
- • Disabled*
- •• 10%
- ••• 20%
- •••• 30%
- ••••• Crawler Full On

5. Motor Type
- • Brushless*
- •• Brushed Reversing

6. Motor Direction
- • Normal*
- •• Reverse

Default Setting

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AUDIBLE ALERT REFERENCE

Audible Tone	Key	Audible Tone	Key
● ●	Start Fail	● – –	Excessive Load
● –	Low Voltage Cutoff	– ● ●	Auxiliary Wire Radio Glitch
– ●	Over-Current	– ● –	BEC Over-Temperature*
● ● ●	Sensors Lost*	– – ●	Motor Over-Temperature*
● ● –	Radio Glitch	● ● ● ●	Datalog Full Warning*
● – ●	Over-Temperature		

* Not available on all Mamba X Series ESC models. See the Quick Start Guide for clarification.

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