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# CORA 40


# INSTRUCTION MANUAL

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#C-54001

## WARNINGS

- Make sure that all wires and connections are properly insulated before connecting the ESC to the motor and battery. A short circuit can cause irreparable damage to the ESC.
- Make sure all devices are properly connected, a poor connection can result in loss of vehicle control or damage to the ESC.
- Read the manuals of all power supplies and make sure that the power supply configuration is correct before using this ESC.
- Please use a soldering iron with a power of at least 60W to solder all inputs/outputs cables with connectors.
- Do not hold the vehicle in the air or start it at full throttle, as rubber tires can «expand» to an extreme size and even crack and cause serious injury.
- Stop using the ESC when the temperature of its housing exceeds 90°C/194°F, otherwise the ESC will be destroyed and your engine may be damaged. We recommend setting the «ESC Thermal Protection» to 105°C/221°F (this is the internal temperature of the ESC).
- Please remove the ESC cooling fan before exposing the vehicle to liquids and dry it completely immediately after use.
- Always disconnect the batteries after use, as the ESC will always consume power if connected to the battery (even if the ESC is off). A long-lasting contact will cause the battery to completely discharge and damage it. This will NOT be covered by the warranty.

## SPECIFICATIONS

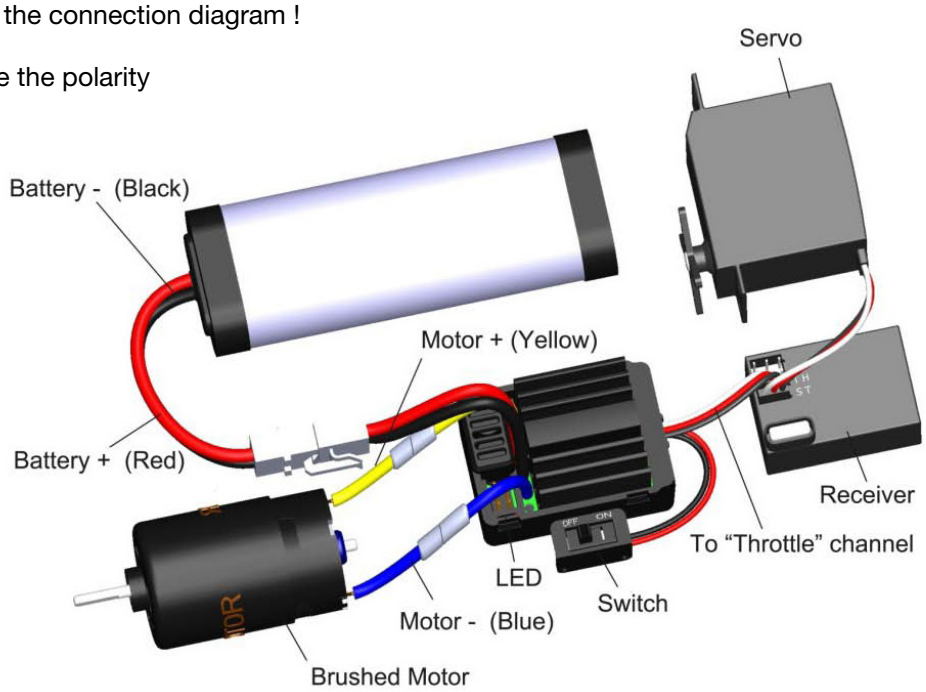
| | |
|---|---|
| **Cont./Peak Current** | Forward : 40A / 180A • Reverse : 20A / 90A |
| **Motor Type** | Brushed Motor |
| **Applications** | 1/10th Buggy, On-road, Truggy, SCT, Crawler |
| **Motor Limit** | 2S LiPo or 5-6 Cell NiMH : 540-550 size motor ≥12T or RPM ≤30000@7.2V<br>3S LiPo or 7-9 Cell NiMH : 540-550 size motor ≥18T or RPM ≤20000@10.8V |
| **LiPo /NiMH Cells** | 2-3S LiPo / 5-9 Cell NiMH |
| **BEC Output** | 2A/6V Linear mode BEC |
| **Resistance** | Forward: 0.002 Ohm, Reverse: 0.004 Ohm |
| **Size/Weight** | 46.5 x 34 x 28.5mm - 65g |

## CONNECTIONS

Connect the ESC, motor, receiver, battery and servo according to the following diagram

⚠ Please observe the connection diagram !

⚠ DO NOT reverse the polarity



## CONNECTIONS

**Motor Wiring**
Connect the motor to the ESC. If the motor runs in reverse switch the motor cables + and -.

**Receiver Wiring**
Plug the ESC cable to the Throttle Channel (TH/2) of the receiver.
Plug the steering servo cable to the Steering Channel (ST/1) of the receiver.

**Battery Wiring**
Connect the ESC power cables (Black and Red) to the battery, making sure that the polarity is correct.
Connect the Positive (**+**) RED cable to the Positive (**+**) connector of the battery.
Connect the Negative (**-**) BLACK cable to the Negative (**-**) connector of the battery.

If you reverse the polarities on the battery, the ESC will be immediately damaged and cannot be repaired.
**This is not covered by the warranty.**

## RADIO CALIBRATION

1. **Set the Transmitter :**
   Turn ON the transmitter, ensure all parameters (D/R, Curve, ATL) on the throttle channel are at default (100%). For transmitter without LCD, please turn the knob to the maximum and the throttle "TRIM" to 0. Please also turn the corresponding knob to the neutral position. For Futaba™ transmitter, the direction of throttle channel shall be set to "REV", while other radio systems shall be set to "NOR". We strongly recommend to use the "Fail Safe" function of your radio system. Please ensure that the motor stopped when the "Fail Save" is activated.
2. **Throttle Range Setting (Throttle Range Calibration) :**
   It is necessary to calibrate the ESC according to your transmitter.
   To calibrate the ESC, please turn ON the transmitter, keep the throttle stick in neutral position, wait for 3 seconds to let the ESC execute self-test and automatic throttle calibration. When the ESC is ready, a long beep sound is emitted from the motor.
   **Note :** Please recalibrate the ESC after each change in your transmitter *(changing the settings of the neutral position of throttle channel, D/R, ATV, ATL or EPA parameters)*,otherwise the ESC may not work properly.

## LED STATUS & BEEP SOUND

**BEEP SOUND**

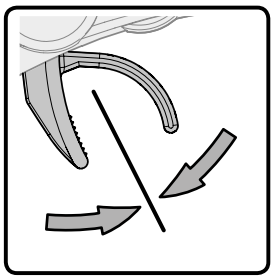
- 1 Short Beep: The battery is NiMH/NiCd
- 2 Short Beeps: The battery is 2S Lipo
- 3 Short Beeps: The battery is 3S Lipo
- 1 Long Beep: Self-test and throttle calibration is OK, the ESC is ready to run.

**LED STATUS**

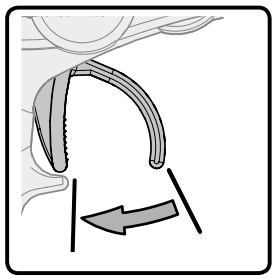
- When the throttle stick is in neutral range, red LED is OFF.
- Forward, Brake or Reverse at partial throttle, red LED blinks.
- Forward, Brake or Reverse at full throttle, red LED is solid.

## THROTTLE STICK POSITION

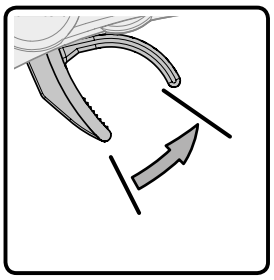
**NEUTRAL POSITION**



**FORWARD POSITION**

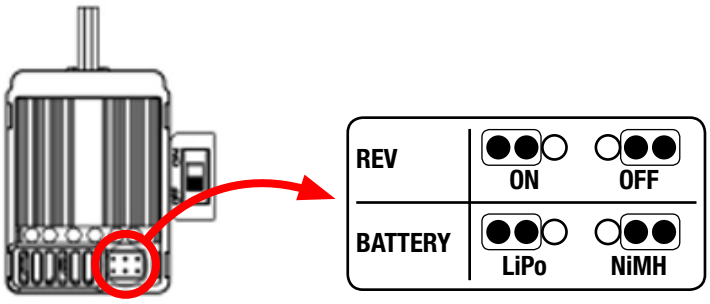


**BRAKE/REVERSE POSITION**



## ESC PROGRAMMING

The is ESC is programmed by the jumper.
Change jumper position to select LiPo or NiMH battery. **(Very important)**




## PROTECTION FUNCTION

1. **Low Voltage Cut-Off (LVC) protection:** If the voltage of battery pack is lower than the threshold for 2 seconds, the ESC will enter the protection mode. The car stops and the red LED blinks to indicate the low voltage cut-off protection has been activated.

| 2S LiPo | 3S LiPo | 5-9 cells NiMH |
|---|---|---|
| Output cuts off at 6.5V.<br>If the throttle stick moves to neutral and then up again, the output can be recovered to 50%.<br>If the voltage drops to 6.5V again, the above process repeats in circles. | Output cuts off at 9.75V.<br>If the throttle stick moves to neutral and then up again, the output can be recovered to 50%.<br>If the voltage drops to 9.75V again, the above process repeats in circles. | Output cuts off at 4.5V.<br>If the throttle stick moves to neutral and then up again, the output can be recovered to 50%.<br>If the voltage drops to 4.5V again, the above process repeats in circles. |

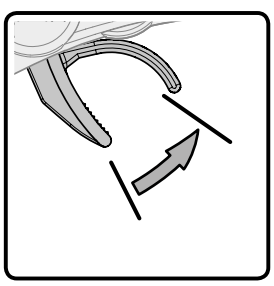
2. **Overheat Protection:** When the internal temperature of the ESC is higher than 100°C or 212°F for 5 seconds, the ESC will reduce and cut off the output power.
   The car stops and the red LED blinks to indicate the over-heat protection has been activated. If the ESC cools down to 80°C (176°F) the ESC operation is restarted.

3. **Signal Loss Protection:** The ESC will cut off the output power if the throttle signal has been lost for 0.1 second. We recommend that the FAILSAFE function of your transmitter is activated.

## REVERSE FUNCTION

The ESC uses “Single-click” to make the car go backward. When you move the throttle stick from Forward zone to Backward/Reverse, the car will go backward immediately.

BRAKE/REVERSE POSITION



## TROUBLESHOOTING

| Trouble(s) | Possible Causes | Solution |
|---|---|---|
| After power ON, motor does not work, no sound is emitted, and LED is OFF. | The ESC doesn't get its working voltage; Connections between battery pack and ESC are bad or the switch is damaged | Check the battery wires connection or replace the defective connectors. |
| After power ON, motor does not work; red LED blinks. | Throttle signal is abnormal. | Check the throttle wire connection; make sure it is plugged into the throttle channel of the receiver. |
| | Automatic Throttle Range calibration is failed. | Set the "TRIM" of throttle channel to 0 or turn the knob to its neutral position. |
| The car runs backward while giving throttle. (The motor runs in the opposite direction) | Error in the connection of the motor cables. | Change the order of connection of the motor cables. |
| The car does not run backward. | The jumper position is wrong | Check the jumper and plug it to the correct position. |
| | The neutral point of throttle channel is changed or drifted. | Set the "TRIM" of throttle channel to 0 or turn the knob to its neutral position. |
| The car does not run forward, but run backward. | The throttle channel is not correct. | Move the throttle button (REV-NOR) from "NOR" to "REV", or from "REV" to "NOR". |
| The motor doesn't work, but the LED in the ESC works normally. | The connections between motor and ESC are broken. | Check the connections and replace the defective connectors. |
| The motor suddenly stops running while in working state | The throttle signal is lost. | Check the transmitter and the receiver. Check the throttle wire connection. |
| | Low Voltage Cut-off Protection or Over-heat cut-off protection has been activated. | Replace the battery pack, or cool down the ESC. |
| The car cannot get top speed and the red LED doesn't solid on at full throttle | Some setting in the transmitter are wrong. | Check the settings. Set D/R, EPA, ATL to 100% or turn the knobs to maximum value. Set TRIM to 0 or turn the knob to its neutral position. |
| Motor is cogging when accelerated quickly. | The battery has limited discharge ability. | Use battery with better discharge ability. |
| | Motor RPM is too high, the gear ratio is too aggressive. | Use motor with lower RPM, or use smaller pinion to get softer gear ratio. |
| | Something wrong in the driving system of the car. | Check the driving system of the car. |

**ATTENTION: INCORRECT POLARITY WILL DAMAGE THE ESC IMMEDIATELY.**

## SIMPLIFIED DECLARATION OF CONFORMITY

**MANUFACTURER :**

**Team Corally** hereby declares that the speedcontroller system type **CORA 40** complies with the Directive 2014/53/EU.

The full text of the EU Declaration of Conformity is available at the following Internet address:
**www.corally.com**

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