

ADB 144

1:10 SCALE 4WD ELECTRIC DESERT BUGGY

BEDIENUNGSANLEITUNG MANUAL mode d'emploi



ABSIMA

Notice



Thank you for purchasing this ABSIMA Product.
Please take some time to read through to get familiar with the shown steps.

We continually improve our products, due to that, actual parts may be different to the illustrations.
Please check our website for the latest versions manuals and tips before you start to build this model.

This manual is written in English language only. If you need a manual in your language please visit our website or contact your distributor!

Diese Anleitung wurde in englischer Sprache verfasst. Sollten Sie eine Anleitung in Ihrer Sprache benötigen, besuchen Sie unsere Website oder kontaktieren Sie Ihren Vertriebsagenten.

Questo manuale è stato scritto in inglese. Se avete bisogno del manuale nella tua lingua, si prega di visitare il nostro sito web o contattate il proprio distributore.

Este manual está escrito en Inglés. Si necesita el manual en su idioma, por favor visite nuestro sitio web o contacte con su distribuidor.

Ce manuel est écrit en langue anglaise. Si vous avez besoin d'un manuel dans votre langue s'il vous plaît visitez notre site web ou contactez votre distributeur!

Deze handleiding is geschreven in het Engels taal beschikbaar. Als u een handleiding in uw eigen taal kunt u terecht op onze website of neem contact op met uw distributeur!

General Information

THIS IS NOT A TOY!
Not suitable for children under 14 years of age without adult supervision.

This is a high performance vehicle, for safety reasons don't run on public streets, in crowded areas, environmentally sensitive areas or near children or animals.

This model contains rotating parts and parts which become hot during operation. Care must be taken to avoid damage or injuries.

This product may require some assembly and routine maintenance.

This product is covered by warranty based on material defects. Crash damage or maintenance failures are not covered under warranty.

Batteries should be used in good condition only, and need to be fully charged.

Keep chemicals stored out of the range of small children.

Make sure your model and equipment is in perfect condition before you use it, to ensure safety and fun while driving.



ABSIMA

Basic Information for a safety operation of a rc model car.

Dear customer,

thank you that you have chosen a high-performance product from Absima. Our products have been designed for beginners, hobby pilots and competition ambitious drivers. Absima wants you to have fun and success with your new model and we therefore recommend that you read the following points carefully.

Before each driving:

- *Please check **all** screws are properly fitting.*
- *For screws which abut on metal, you should check whether there is enough security screws paint.*
- *The servo saver should always be set so that it works smoothly and is not too tight otherwise the servo gets damaged.*
- *Check on your remote control and the vehicle the batteries whether these are still fully charged.*
- *Check on your remote control, the **TRIM** settings that the wheels are straight and that you have enough steering angle.*

After each driving:

- *If you have driven in dirty terrain, it is advisable to clean the completely car.*
- *If you are driving through rain or water you have to dry the entire vehicle, otherwise all metal parts will rust. To displace moisture is **WD40** just right.*
- *After several trips we recommend that you check the bearings if they are still functioning properly.*
- *After several trips we recommend that you check out the differentials in the vehicle.*
- *General visual check after every ride*



Electric cars:

- *Before you driving an electric vehicle for the first time, you should retract the electric motor. **Proceed as follows:***
 1. *Drive the first 2 batteries only with half throttle.*
 2. *Then you can go on as usual normal.*

Adjusting the distance between the motor pinion and main gear (if needed).

Loosen the motor screws from motor mount and push the motor away from the main gear. Take a sheet of paper and hold it between the motor pinion and main gear. Now slide the engine completely to the main gear. Pull out the sheet of paper, now the correct distance between the motor pinion and main gear is made.

Declaration of conformity

The manufacturer hereby declares that the product complies with the essential requirements and other relevant provisions of the EU Directive.

The declaration of conformity can be found at <http://absima.com/index.php/downloads/erklaerungen/>

or can be consulted under

*Absima GmbH - Gibitzenhofstrasse 127a/RG - 90443 Nuremberg, Germany
can be requested.*



General Information

ATTENTION: Batteries and rechargeable batteries in your transmitter should always be fully charged! Never use the model when they are completely empty. Why? The transmitter could switch itself off, the signal would be lost to your RC Model and it could have a mind of its own.
- this could be very expensive!

Getting Started:

Switch on transmitter, hold vehicle clear of the ground, connect battery pack and switch on receiver. Test the transmitter to check control of the vehicle with wheels off the ground. Start driving slowly and if the vehicle does not go straight, adjust steering trim dial on Transmitter. For the very first run use the throttle gently, to help the driver become accustomed to the vehicles behaviour and controls

Always keep in mind:

This is **NOT** a toy and must be operated with caution and common sense. Failure to operate this product in a safe and responsible manner could result in damage, injury or damage to other property"

If you switch on the car first, before the transmitter your RC Model could have a mind of its own and could drive off.

Please observe:

Driving In wet conditions:

You shouldn't drive your model through big puddles unnecessarily. The vehicle is not designed to be completely submerged in water. The components of Absima RC Models are water resistant but are not water proof. Components like the motor are only splash proof. Most of all you should take care of the plug connections.

Jumps:

Your RC models is designed to take some rough and tumble and moderate pumps, please bare in mind the bigger the pump the more likely you could damage your RC vehicle.



SAFETY INSTRUCTIONS ABSIMA RC CAR MODELS

- Please read the manual in full before using your model to ensure safe operation
- Do not use your model at night or if the visibility is bad, this could cause damage to you and your model.
- Do not use the model in direct proximity of people. ABSIMA RC models can reach high speed and could cause serious injuries in case of an accident.
- Do not touch drive components, tires or rims of the model while in use, this could cause serious injuries.
- *Do not touch any electronic components of the model after driving, this could cause serious injuries.*
- Your model is radio controlled, no radio control system is completely free from interference. You could lose control of your model if this occurs, always use your model in a safe area. if you see signs of interference, stop using your model immediately.
- It's not allowed to use your model in public spaces.
- Only use the recommended rechargeable batterie for your model.
- Rechargeable batteries need to be charged with appropriate charger. Please read the instructions for the batteries being used before operating your model, misuse of the batteries could cause serious damage or injury.
- Never leave your rechargeable batteries unattended during charging!
- ALL ABSIMA MODELS GOT AGE 14!
- ATTENTION: Before you use your model, the transmitter must be switched on first and turned off last, this way you will not lose control of the model.

Necessary Service-features

This is a preinstalled RTR-model, the following service instructions have to be checked before using for the first time and before every use, for safety. Check the following as a guide and if necessary make the correct adjustments/repairs according to the manual.

- Check all wheels and steering parts are correctly fitted, if necessary adjust accordingly to the supplied manual
- Check the motor pinion and main gear before and after each use to ensure they are securely fixed. If required use thread lock glue on all metal-to-metal screws.
- Clean the model after each use as good as possible, check for any debris or small stones which could get jammed between moving parts.
- If the car has been used in damp weather conditions, ensure the model is fully dried

Warranty Terms



By purchasing and using your Absima product, you agree to the warranty terms of Absima GmbH.

The warranty applies only to material and/or functional defects already present at the time of purchase of the product.

Excluded from the guarantee:

- Damage caused by incorrect use
- Damage due to neglect of duty of care
- Damage due to improper handling and maintenance errors
- Fluid damages

Please report warranty claims to your dealer.

If it is necessary to return your product, please enclose your proof of purchase and a detailed description of the fault with the shipment. We also need your complete contact details (legible).

The direct sending to the service department of Absima GmbH requires the previous arrangement. This can be done by telephone under +49 911 65084130 or by e-mail to service@absima.com

The shipping costs are borne by the sender. Parcels that are not free of charge or are subject to charges will not be accepted.

Each incoming warranty case is first checked by our service department for admissibility. Complaints that are not covered by the warranty may incur costs for the inspection. Repairs or services that are not covered by the warranty will be charged in advance.

Disclaimer

Since Absima GmbH cannot at any time monitor the observance of the operating instructions as well as the operation and conditions of use of the product, Absima GmbH does not assume any liability for damages, costs, losses resulting from incorrect handling and/or incorrect operation or in any way related thereto. To the extent permitted by law, the obligation to pay damages, for whatever legal reason, will be limited to the invoice value of the Absima product involved in the event. This does not apply as far as we have to assume unlimited liability due to mandatory legal regulations or gross negligence.

Declaration of conformity

The manufacturer hereby declares that the product complies with the essential requirements and other relevant provisions of the EU Directive.

The declaration of conformity can be found at

<http://absima.com/index.php/downloads/erklaerungen/>

or can be consulted under

Absima GmbH - Gibitzenhofstrasse 127a/RG - 90443 Nuremberg, Germany
can be requested.

Disposal

Waste electronic equipment is a raw material and should not be disposed of with household waste. If the product is at the end of its service life, dispose of it at your local collection points in accordance with the applicable legal regulations. Disposal with household waste or at the expense of the environment is prohibited.

Important! Remove the batteries or rechargeable batteries before disposal. A separate take-back system applies to batteries and rechargeable batteries.

By properly disposing of your old appliances, you make an important contribution to environmental protection.

Absima GmbH
Gibitzenhofstrasse 127 a / RG
90443 Nürnberg , Germany
Phone: +49 911 65084130 / Fax: +49 911 65084140
www.absima.com

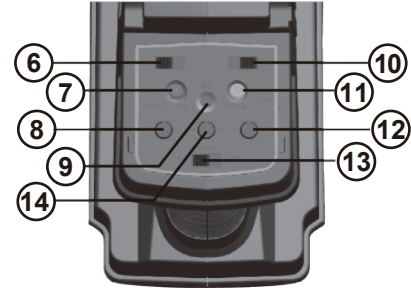


Technical changes, design and equipment subject to change without notice.

Sender Anleitung / Transmitter Manual / Mode D'emploi

2.4GHz

- 1 Kontrolleinheit / Control Panel / Accès aux réglages
- 2 Lenkrad / Steering Wheel / Volant de direction
- 3 Gas & Bremsauslöser / Throttle Trigger / gachette d'accélération & frein
- 4 Batteriefach / Battery Compartment / bac de batteries



- 6 Servo Umkehr Schalter / Sterring Servo Reverse / Inversion du sens du servo de direction
- 7 Power LED / LED de mise en route
- 8 Lenktrimmung / Steering Trimm / Trimm de Direction
- 9 Bind Knopf / Bind Button / Bouton Bind d'appairage
- 10 Umgekehrte Gas/Rückwärts Funktion / Throttle Servo Reverse / Inversion du sens du servo Gaz/frein
- 11 Batteriespannung / Battery Voltage / Tension de la batterie
- 12 Steuerungs Dual Rate / Steering Dual Rate / Limite débattements de la Direction
- 13 AN/AUS Schalter / ON/OFF Switch / Interrupteur On/Off
- 14 Gas Trimmung / Throttle Trimm / Trimm des Gaz/frein



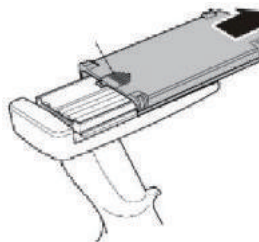
Transmitter Battery Installation Sender Batterie Installation Installation des batteries

Open battery cover at the bottom of transmitter. Install batteries. Follow the direction of batteries designated in the inside of battery box.

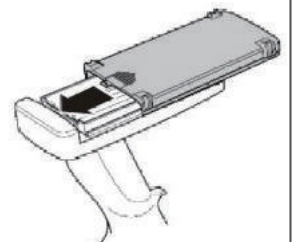
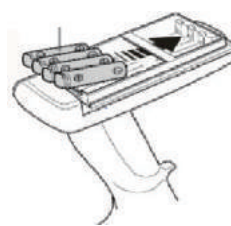
Öffnen Sie das Batteriefach am boden Ihrer Fernsteuerung. Befolgen Sie beim einlegen der Batterien die bezeichneten Richtungen (+ / -) die sich im inneren des Batteriefachs befinden.

Ouvrir le compartiment à batterie dans le dessous de la radio. Installer les 4 batteries de Type AA en repectant bien le sens d'installation +/- comme indiqué sur le schéma dans la radio.

Battery Cover
Batteriefach
Battery Cover



4 x AA Alkaling Batteries
4x AA Batterien
Capot d'accès aux batteries



BINDING RADIO & RECEIVER / BINDEN ANLAGE & EMPFÄNGER BIND (appairage) DE LA RADIO ET DU RECEPTEUR

Unsere Produkte sind werksseitig aufeinander abgestimmt, Sie brauchen sie nicht selbst zu verbinden. Wenn Sie den Empfänger mit einem anderen Sender abgleichen wollen oder einen neuen Empfänger oder Sender anschließen müssen, gehen Sie bitte wie folgt vor:



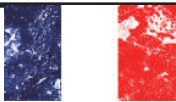
1. Legen Sie die Batterien in den 2,4Ghz-Sender ein und schalten Sie ihn aus.
2. Stecken Sie das Bind-Kabel in den "BIND" Port des Empfängers.
3. Schließen Sie den Empfängerakku an einen beliebigen VCC-Anschluss bzw. den Fahrtenregler auf Kanal 2 des Empfängers an, gleichzeitig blinkt die ROTE LED, was bedeutet, dass sich der Empfänger im Matching-Status befindet.
4. Drücken und halten Sie die "BIND"-Taste am Sender und schalten Sie die Stromversorgung ein.
5. Beobachten Sie die LED am Empfänger, wenn die LED aufhört zu blinken, ist der Bindevorgang erfolgreich. (Dieser Vorgang dauert bis zu 5 Sek.)
6. Lassen Sie die "BIND"-Taste am Sender los, ziehen Sie die "BIND"-Zuleitung heraus.
7. Testen Sie ob alle Servos/der Fahrtenregler richtig funktionieren.
8. Wenn der Test fehlschlägt, wiederholen Sie bitte die oben genannten Schritte.
(die oben genannte Möglichkeit des Bindevorgangs ist nur für unser 2,4GHz-Funksystem geeignet)

Our products are well matched in the factory, you don't need to match by yourself. If you are going to match the receiver with another transmitter or you have to connect a new receiver or transmitter, please follow the following steps:



1. Install the batteries to 2.4Ghz transmitter and shut it down.
2. Insert the matching lines to the channel "BIND" port of the receiver.
3. Connect the receiver battery to any VCC port of the receiver, on the same time the RED LED is flashing and this means the receiver are going to matching status.
4. Press and hold the "BIND" button on transmitter, and switch on the power supply.
5. Observe the LED on the receiver, if the LED stops flashing, the binding process is successful. (This process takes up to 5 sec.)
6. Release the "BIND" button on the transmitter, take out the "BIND" matching line.
7. Install the servo for testing.
8. If the test fail, please repeat the action above.
9. If the tests succeeds, insert the power supply port into VCC
(The above ways of match is only suitable for our 2.4GHz Radio system)

Nos produits sont correctement couplés (radio avec récepteur) lors de la fabrication en usine, vous n'avez aucune manipulation à faire. Si vous souhaitez connecter le récepteur avec un autre émetteur ou connecter un nouveau récepteur, merci de suivre les étapes suivantes d'appairage:



1. Installer les batteries dans la radio 2.4 GHz et l'éteindre
2. Positionner le câble spécifique d'appairage fournit sur le port <<BIND>> du récepteur
3. Connecter la batterie du récepteur sur l'un de ses ports VCC, la led rouge clignote: le récepteur est en statut d'appairage.
4. Appuyer et maintenir le bouton BIND de la radio et l'allumer.
5. Vérifier la led du récepteur, quand la led arrete de clignoter, le binding (appairage) a été réalisé (environ 5 seconds)
6. Relacher le bouton BIND de la radio et désengager la ligne BIND.
7. Installer le servo pour test normalement.
8. Si le test n'est pas correct, répéter les opérations ci-dessus.
9. Si le test est correct, connecter l'alimentation VCC, le processus est terminé.
(le processus ci-dessus n'est possible que sur des produits de 2,4 GHz)

FAIL SAFE SETUP



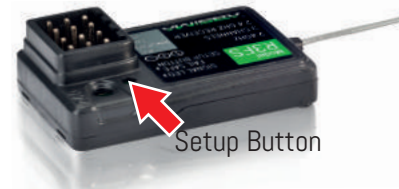
Fail safe function – digital protection against radio interference. The safety electronic can detect reception of a “false” or incomplete radio signal. E.g. due to a low transmitter battery or environmental radio interference which reach the model, or if the model is out of the transmitter range. For protection against damage, servo switches to the brake position and the model stops.

Setup:

1. Turn on the power of transmitter.
2. Connect power supply to receiver; LED on receiver should be solid.
3. Control the throttle trigger to make servo to “brake” or “stop” mode and remain for a while.
4. Press set up button on receiver and hold on until LED on receiver flash for 3 sec.
5. LED turn to solid, setup complete.

Testing:

1. Turn on the power of transmitter.
2. Connect power supply to receiver.
3. Turn off the power of transmitter.
4. Servo which controlled by fail safe should go to brake modus automatically.
5. In case can be complete step by step with the above action, means setting is correct.



EINSTELLUNG FAIL SAFE



Failsafe Funktion – digitaler Schutz gegen Funkstörungen. Die Sicherheitselektronik erkennt, wenn „falsche“ zu Funkstörungen mit der Umgebung kommt oder wenn sich das Modell außerhalb der Reichweite des Modell bleibt stehen.

Setup:

1. Den Sender einschalten.
2. Empfänger an die Stromversorgung anschließen. Die Sender-LED sollte aufleuchten.
3. Betätigen Sie den Gas Hebel in den Bremsmodus.
4. Die Setup-Taste auf dem Empfänger drücken. Die LED auf dem Empfänger blinkt und geht nach 3 Sekunden aus.
5. Die Einrichtung ist abgeschlossen.

Test:

1. Den Sender einschalten.
2. Empfänger an die Stromversorgung anschließen.
3. Den Sender ausschalten.
4. Servo oder Drehzahlregler, die durch das Failsafe gesteuert werden, gehen automatisch in den eingestellten Bremsmodus.
5. Wenn Vorstehendes vollständig durchgeführt werden kann, sind die Einstellungen korrekt.



FAIL SAFE MODE D`EMPLOI



L`ABSIMA „Fail Safe“ module (Système de sécurité) est la protection idéal pour votre voiture radiocommandée, pour éviter des dégats à votre véhicule ou à vous-meme et des personnes avec des blessures personnelles. Une position déterminée peut être définie en cas de perte de liason ou d`interférence entre la radio et le récepteur. Normalement le freinage doit être programmé.

Mise en fontion:

1. Allumer l`émetteur
2. Brancher le récepteur; la LED du récepteur doit être allumée fixe.
3. Positionnez la gachette de commande des gaz en position Frein ou Neutre pour programmer le servo dans cette position, maintenir cette position.
4. Appuyer sur le bouton Set Up du récepteur. La LED flashe pendant 3 secondes
5. Le Set up est terminé

Test:

1. Allumer l`émetteur
2. Brancher le récepteur
3. Eteindre l`émetteur
4. Le servo, contrôlé par le fail safe doit se mettre dans la position définie automatiquement.
5. Si les étapes précédentes peuvent être mises en oeuvre complètement, les réglages sont corrects..

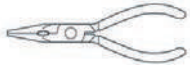




Benötigte Werkzeuge / Tools required / Outils nécessaires

Benötigte Werkzeuge

● Spitzzange



● Pinzette



● Schmiermittel



● Schrauben Sicherungslack



● Sekundenkleber oder Reifenkleber



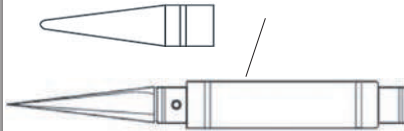
● Kugeldifferential Fett



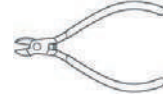
● Molybdam Fett



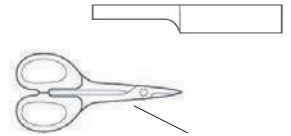
● Karosserielochbohrer



● Seitenschneider



● Karosserieschere & Feile



● Sechskant-schlüssel



● Kreuzschlüssel

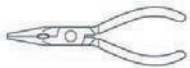


● Cuttermesser



Tools required

● Needle nose pliers



● Tweezers



● Grease



● Screw Cement



● Instant Glue



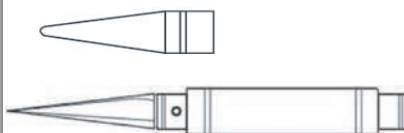
● Ball differential Grease



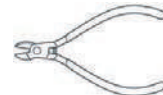
● Molybdenum Grease



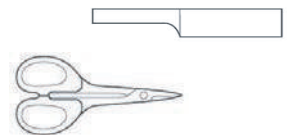
● KNIFE EDGE REAMER



● Wire Cutters



● Round edge scissors & Sander



● Allen key



● Hex Wrench



● Sharp Hobby Knife



Outils nécessaires

● Pince à bec effilé



● Pince à épiler



● lubrifiant



● Vernis de blocage des vis



● Superglue ou colle à pneus



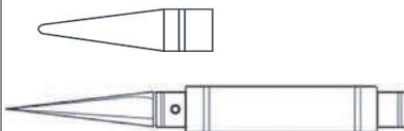
● Graisse différentielle à billes



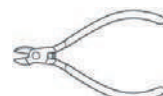
● Graisse de molybdam



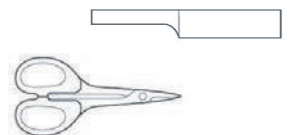
● Perceuse de trou de corps



● Coupante



● Cisailles & lime



● clé Allen



● Clé en croix



● Couteau artisanal



USER MANUAL BRUSHED SPEED CONTROLLER



Thanks for purchasing our electronic speed controller (ESC). The power system for RC model can be very dangerous, please read this manual carefully. In that we have no control over the correct use, installation, application, or maintenance of our products, no liability shall be assumed nor accepted for any damages, losses or costs resulting from the use of the product.

Features:

- Water-proof and dust-proof for all weather races
- Small size with built-in capacitor module
- Multiple protections: Low voltage cut-off protection for Lipo or NiMH battery / Over-heat protection / Throttle signal loss protection.
- Easily programmed with “jumpers”

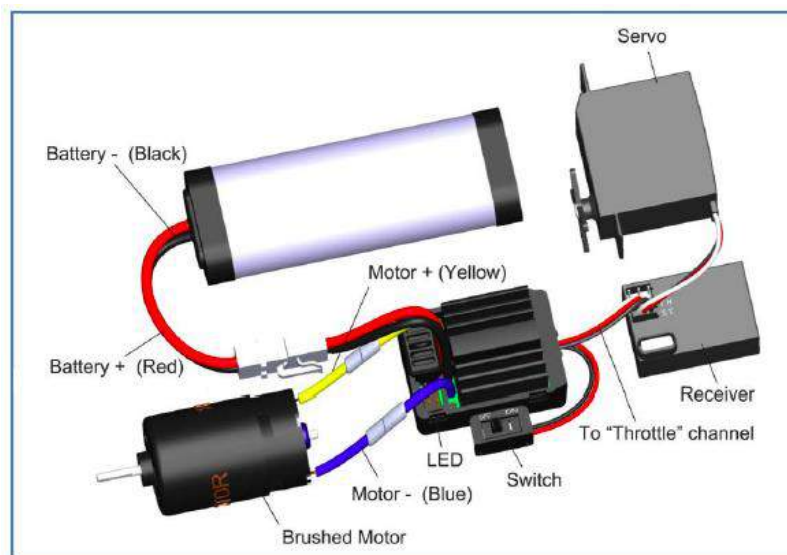
Thanks for purchasing our electronic speed controller (ESC). The power system for RC model can be very dangerous, please read this manual carefully. In that we have no control over the correct use, installation, application, or maintenance of our products, no liability shall be assumed nor accepted for any damages, losses or costs resulting from the use of the product.

Specification:

Model:	WP1040-BRUSHED WP1040-BRUSHED Crawler & Boat
Cont. / Burst Current:	Forward 40A / 180A Reverse 20A / 90A
Input	2-3S LiPo / 5-9 Cells NiMH
Cars Application	1:10 On-road, Off-road, Buggy, Truggy, Monster Truck 1:10 Crawler, Tank/Boat
Motor Limit 2S LiPo 5-6Cells NiMH	540 or 550 size motor $\geq 12T$ or RPM $< 30.000@7.2V$
Motor Limit 3S LiPo 7-9Cells NiMH	540 or 550 size motor $\geq 18T$ or RPM $< 20.000@7.2V$
Resistance	Fwd: 0.002 Ohm, Bwd: 0.004 Ohm
Built-in BEC	2A/6V (Linear mode BEC)
Dimension & Weight	WP1040-BRUSHED 46.5*34*28,5mm 65g WP1040-BRUSHED Crawler & Boat 46.5*34*28,5mm, 70g

Begin to use:

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



“+” and “-” wires of the ESC are connected to the battery pack.

ATTENTION: The incorrect polarity will damage the ESC immediately!

The control cable of the ESC (trio wires with black, red and white color) is connected to the throttle channel of the receiver (usually CH2). The “Motor +” and “Motor -” wires are connected to the ESC without any order. If the motor runs in the opposite direction, please swap these two wire connections.



2. Set the transmitter

Please set the D/R, EPA and ATL to 100% for throttle channel (for transmitter without LCD display, please turn the knobs to the maximum value), and set the TRIM of the throttle channel to 0 (for transmitter without LCD display, please turn the TRIM knob to neutral position). For some radios the direction of throttle channel shall be set to "REV" while for others shall be set to "NOR".

3. Throttle Range Setting (Throttle Range Calibration)

In order to make the ESC match the throttle range of different transmitters, the calibration of the ESC is necessary. To calibrate the ESC, please turn on the transmitter, keep throttle stick at its neutral position, wait for 3 seconds to let the ESC execute self-test and automatic throttle calibration. When the ESC is ready to run, a long beep sound is emitted from the motor. **Note:** Please calibrate the throttle range again when using a new transmitter or changing the settings of the neutral position of throttle channel, D/R, ATV, ATL or EPA parameters, otherwise the ESC may not work properly.

Beep Sound and LED Status:

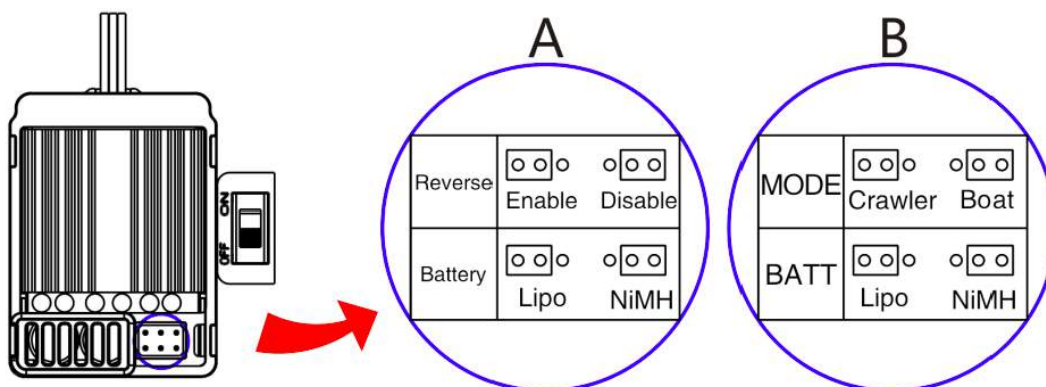
The meaning of Beep Sound	LED Status
<ul style="list-style-type: none"> 1 short Beep: NiMH/NiCd Battery 2 short Beep: 2S LiPo 3 short Beep: 3S LiPo 1 long Beep: Self-testing and throttle calibration is OK and the ESC is ready to use. 	<ul style="list-style-type: none"> Throttle stick in neutral range, 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:



Set the ESC:

The ESC is programmed by the jumpers (Tweezers is recommended to plug and unplug the jumper)



A:WP-1040-BRUSHED

B:WP-1040-BRUSHED-CRAWLER & BOAT



Protection Functions:

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. When the car stops, the red LED blinks to indicate the low voltage cut-off protection has been activated.

LVC protection for WP1040-BRUSHED

2S LiPo	3S LiPo	5-9 Cells NiMH
Output reduces 50% at 6.5V Output cuts off at 6.0V, cannot be recovered	Output reduces 50% at 9.75V Output cuts off at 9.0V, cannot be recovered	Output reduces 50% at 4.5V Output cuts off at 4.0V, cannot be recovered

LVC protection for WP1040-BRUSHED Crawler & Boat

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

2. Over-heat protection:

When the internal temperature of the ESC is higher than 100 Celsius degree or 212 Fahrenheit degree for 5 seconds, the ESC will reduce and cut off the output power. When the car stops, the red LED blinks to indicate the over-heat protection has been activated. If the ESC cools down to 80 Celsius degree (176 Fahrenheit degree) the output power is recovered to normal state.

3. Throttle signal loss protection:

The ESC will cut-off the output power if the throttle signal has been lost for 0.1 second. The "fail safe" function of the radio system is strongly recommended to be activated.

The difference between "BRUSHED" and "BRUSHED CRAWLER & BOAT" ESC:

"Brushed" and "Brushed-Crawler & Boat" ESCs have different backward-running modes.

"Brushed" ESC uses "Double-Click" method to make the car go backward. When you move the throttle stick from forward zone to backward zone for the first time, the ESC begins to brake the motor, the motor speeds down but still running, so the backward action is NOT happened at this moment. When the throttle stick is moved to the backward zone again (The 2nd "click"), if the motor speed is slowed down to zero (i.e. stopped), the backward action will be activated. The "Double-Click" method prevents mistakenly reverse when the brake function is frequently used in steering.

"Brushed-Crawler & Boat" ESC uses "Single-click" to make the car go backward. When you move the throttle stick from forward zone to backward zone, the car will go backward immediately. This mode is common for the Rock Crawler and tank.

The maximum reverse force (for backward running) is 50% for the general "Brushed" ESC, 100% for the "Crawler" mode of a "Brushed-Crawler & Boat" ESC, and 25% for the "Boat" mode of a "Brushed-Crawler & Boat" ESC.

The Low Voltage Cut-off Protection modes are different (Please check the instructions in the section of "PROTECTION FUNCTIONS")



Trouble Shooting:

Trouble	Possible Reason	Solution
After power on, motor can't work, no sound is emitted, and LED is off.	The ESC doesn't get its working voltage; Connections between battery pack and ESC are broken.	Check the battery wires connection or replace the defective connectors.
After power on, motor can't 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.
The car runs backward while giving throttle. (The motor runs in the opposite direction)	The wire connections between ESC and the motor need to be changed.	Swap two wire connections between the ESC and the motor.
The car can't go backward.	The jumper position is wrong. The neutral point of throttle channel is changed or drifted.	Check the jumper and plug it to the correct position. Set the "TRIM" of throttle channel to 0 or turn the knob to its neutral position.
The car can't go forward, but can go backward.	The direction of throttle channel is not correct.	Reset the direction of throttle channel from original "NOR" to "REV", or from original "REV" to "NOR".
The motor doesn't work, but the LED in the ESC works normally.	The connections between motor and ESC are broken. Motor is damaged.	Check the connections and replace the defective connectors. Replace the motor.
The motor suddenly stops running while in working state	The throttle signal is lost. Low voltage cut-off protection or Over-heat cut-off protection has been activated.	Check the transmitter and the receiver / Check the throttle wire connection. 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 incorrect.	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. The battery has limited discharge ability. Something wrong in the driving system of the car.	Use battery with better discharge ability. Use motor with lower RPM, or use smaller pinion to get softer gear ratio. Check the driving system of the car.

Declaration of conformity:

For the products manufactured by Absima GmbH mentioned in this manual the compelling and relevant EC Directive will apply:
Directive: 2004/108/EG



Declaration of conformity is ready for download under the following link:
<http://wp.absima.com/en/index.php/downloads/erklaerungen/>

The following special directives will apply: **EN 61000-6-1:2007 EN 61000-6-3:2007**



This symbol on the products and / or accompanying documents means the used electrical and electronic products must be at the end of their lifetime separated from household waste. Please take these products for the treatment, recovery and recycling to designated collection points, which will receive the devices free of charge. The proper disposal of this product, prevent any potential adverse effects on humans and the environment which could otherwise arise from inappropriate waste handling at the end of its lifetime. For more details of your nearest designated collection point, contact your local authority. For business users in the European Union, please contact your dealer or supplier for further information if you wish to dispose electrical and electronic equipment. He holds further information ready for you. Information on disposal in other countries outside the European Union. This symbol is only valid in the European Union.

Absima GmbH, Gibitzenhofstrasse 127A, 90443 Nürnberg, Germany

Phone: +49 911 650841 30 Fax: +49 911 650841 40 E-Mail: info@absima.com

USER MANUAL



Waterproof Sensorless Brushless Speed Controller A10 ECO

[FEATURES]

1. Water-proof and dust-proof. The ESC can work under water for a short time.
(Please remove the cooling fan when running car in water, and after running, please make the ESC clean and then dry it to avoid the oxidation to copper connectors)
2. Specially designed for RC car and truck, with excellent start-up, acceleration and linearity features.
3. Drive sensorless brushless motors.
4. 2 running modes ("Forward with brake" mode, "Forward/Backward with brake" mode).
5. Proportional ABS brake function with 4 steps of maximum brake force adjustment, 8 steps of drag-brake force adjustment.
6. 4 start modes ("Punch") from "Soft" to "Very aggressive" to be suitable for different chassis, tires and tracks.
7. Multiple protection features: Low voltage cut-off protection for Lipo or NiMH battery / Over-heat protection / Throttle signal loss protection / Motor blocked protection.
8. Easily programmed with the "SET" button on the ESC.

[SPECIFICATIONS]

Model	WP-10BL50-RTR	
Cont./ Burst	50A/300A	
Resistance	0.0010 ohm	
Car Applicable	1/10 Onroad / Offroad	
Motor Limit	2S Lipo 6 cells NiMH	On-road: ≥ 8T Off-road: ≥ 11T 3650 size motor
	3S Lipo 9 cells NiMH	On-road: ≥ 11T Off-road: ≥ 14T 3650 size motor
Battery	4-9 cells NiMH or 2-3S Lipo	
Rating Voltage of the stock Cooling Fan (*Note 1)	5V	
Built -in BEC	6V/3A (Switch Mode)	
Program Port	Multiplexed with cooling fan port	
Dimension/ Weight	48.5*38*32/90g	

* Note1:

- 1) The cooling fan on the WP-10BL50-RTR is powered by the built in BEC, so the 5V fan is OK and there is no need to consider if the input voltage is high or low.
- 2) In addition, please detach the fan from the ESC when running the vehicle in water/rain.

[BEGIN TO USE THE NEW ESC]

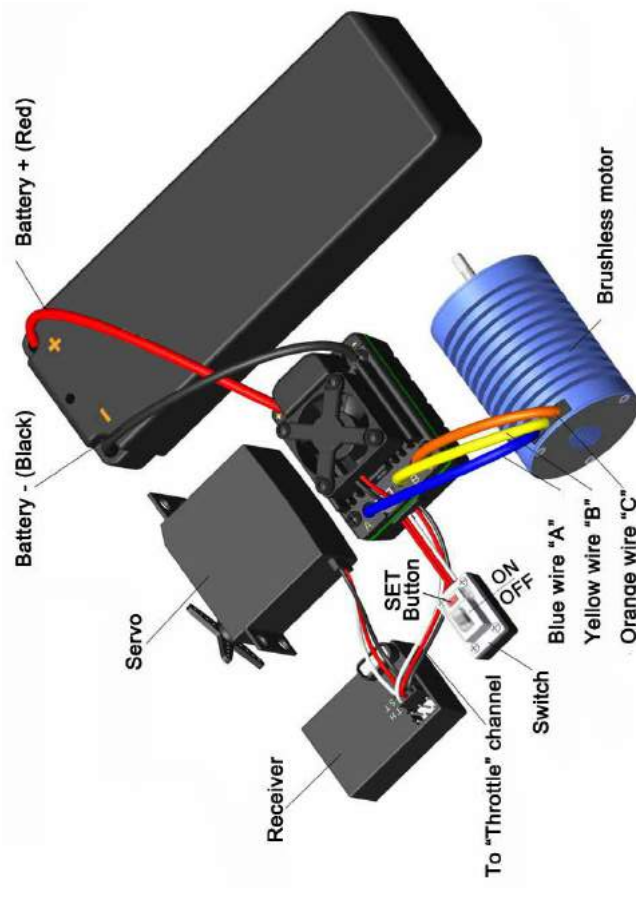
1. Connect the ESC, motor, receiver, battery and servo according to the following diagram

"+" and "-" wires of the ESC are connected with the battery pack, and #A, #B and #C are connected with the motor wires. The "SET" button is used for programming the ESC.

The control cable of the ESC (trio wires with black, red and white color) is connected with the throttle channel of the receiver (Usually CH2).

The #A, #B, #C wires of the ESC can be connected with the motor wires freely (without any order). If the motor runs in the opposite direction, please swap any two wire connections.

Note: You can use the transmitter to set the throttle channel to



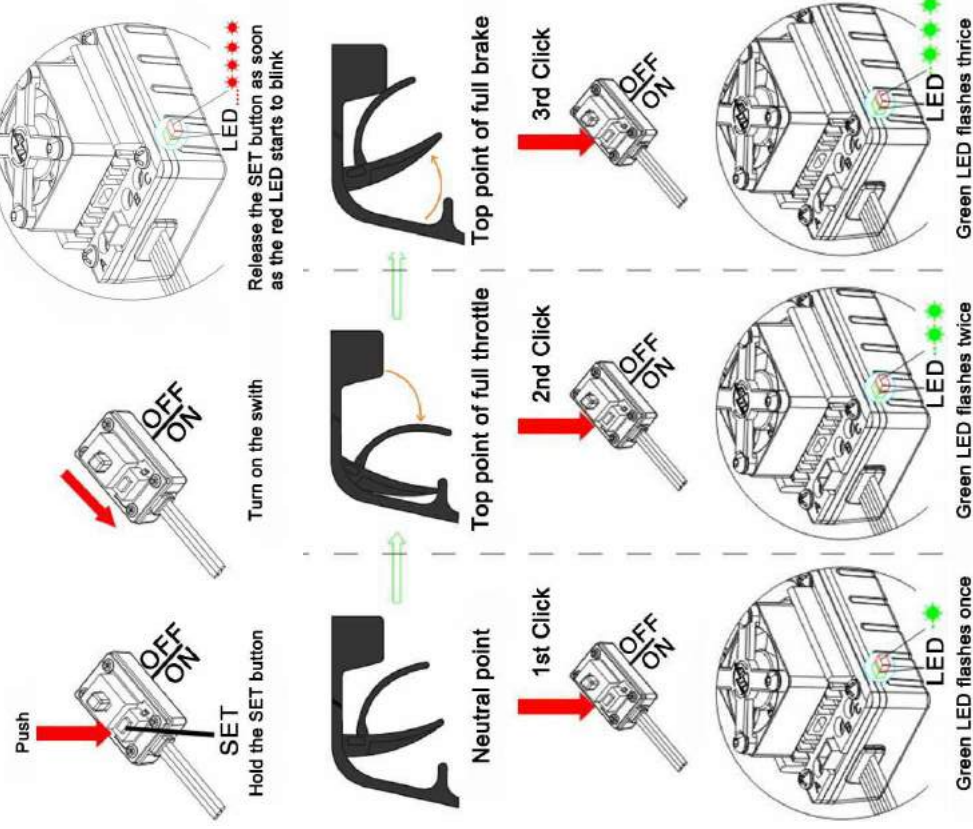
[DECLARATION]

Thanks for purchasing our electronic speed controller (ESC). The power system for RC model can be very dangerous, so please read this manual carefully. In that we have no control over the correct use, installation, application, or maintenance of our products, no liability shall be assumed or accepted for any damages, losses or costs resulting from the use of the product.

the "Reverse" direction, and then the motor will run oppositely. Please calibrate the throttle range again after changing the direction of throttle channel.

2. Throttle Range Setting (Throttle Range Calibration)

In order to make the ESC match the throttle range, you must calibrate it when you begin to use a new ESC, or a new transmitter, or after changing the settings of the neutral position of throttle channel, ATV or EPA parameters, otherwise the ESC cannot work properly. There are 3 points need to be set, they are the top point of "forward", "backward" and the neutral point. The following pictures show how to set the throttle range with a transmitter.



- A) Switch off the ESC, turn on the transmitter, set the direction of throttle channel to "REV", set the "EPA/ATV" value of throttle channel to "100%", and disable the "ABS" brake function of your transmitter. (*Note2)
- B) Hold the "SET" key and then switch on the ESC, when the red LED begins to flash, release the key immediately. (Please check the picture on the right side)

- C) Set the THREE points according to the steps shown in the picture on the right side.
- 1) Neutral point
 - 2) End point of forward direction
 - 3) End point of backward direction
- D) When the process of calibration is finished, the motor can be started after 3 seconds.

Note2: If you don't release the "SET" key after the red LED begins to flash, the ESC will enter the program mode, in such a case, please switch off the ESC and re-calibrate the throttle range again from step A to step D.

3. The LED Status in Normal Running

- When the throttle stick is in the neutral range, neither the Red LED nor the Green LED lights up.
- When the car moves forward, the Red LED solidly lights; the Green LED also lights up when the throttle stick is at the top position (100% throttle).
- When the car brakes, the Red LED solidly lights; the Green LED also lights up when the throttle stick is at the bottom position and the maximum brake force is set to 100%.
- When the car reverses, the Red LED solidly lights.

[ALERT TONES]

- Input voltage abnormal alert tone: The ESC begins to check the input voltage when power on, if it is out of the normal range, such an alert tone will be emitted: "beep-beep-, beep-beep-, beep-beep-" (There is 1 second time interval between every "beep-beep-" tone).
- Throttle signal abnormal alert tone: When the ESC can't detect the normal throttle signal, such an alert tone will be emitted: "beep-, beep-, beep-" (There is 2 seconds time interval between every "beep-" tone).

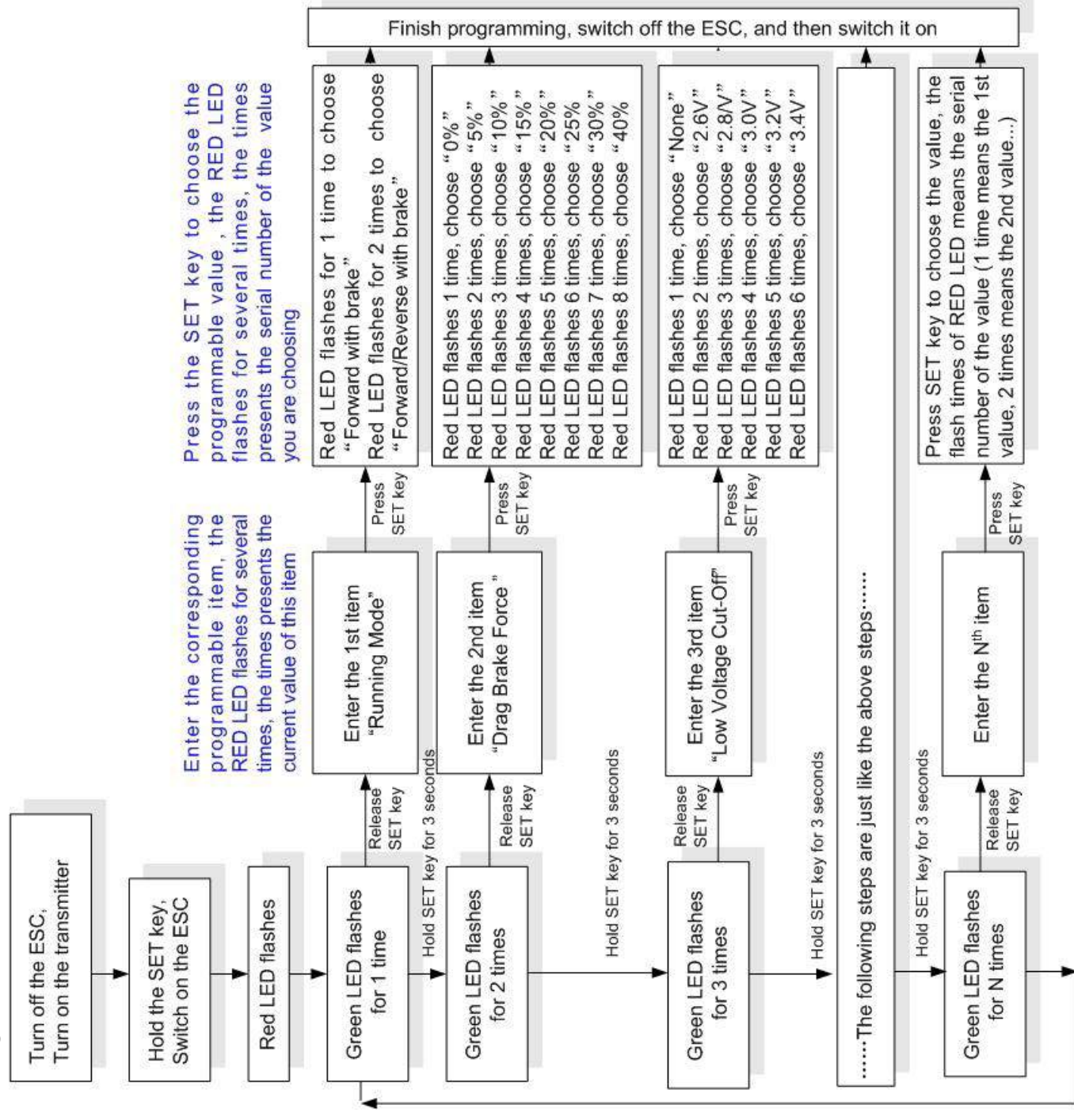
[PROTECTION FUNCTION]

- Low voltage cut-off protection: If the voltage of a Lipo battery pack is lower than the threshold for 2 seconds, the ESC will cut off the output power. Please note that the ESC cannot be restarted if the voltage of each Lipo cell is lower than 3.5V. For NiMH battery packs, if the voltage of the whole NiMH battery pack is higher than 9.0V but lower than 12V, it will be considered as a 3S Lipo; if it is lower than 9.0V, it will be considered as a 2S Lipo. For example, if the NiMH battery pack is 8.0V, and the threshold is set to 2.6V/Cell, it is considered as a 2S Lipo, and the low-voltage cut-off threshold for this NiMH battery pack is 2.6*2=5.2V.
- Over-heat protection: When the temperature of the ESC is over a factory preset threshold for 5 seconds, the ESC will cut off the output power. You can disable the over-heat protection function for competition race.

3. Throttle signal loss protection: The ESC will cut off the output power if the throttle signal is lost for 0.2 second.

[PROGRAM THE ESC]

1. Program Method



Note:

- In the program process, the motor will emit "Beep" tone when the LED is flashing.
 - The 5th programmable item is represented by 5 short Beeps (that is, "BBBBB").
 - For the options of each programmable item, we use a long time flash and long "Beep---" tone to represent number "5", so it is easy to identify the options with big numbers.
- For example, if the LED flashes as the following:
- "A long time flash" (Motor sounds "B---") = The option 5
 - "A long time flash + a short time flash" (Motor sounds "B---B") = The option 6
 - "A long time flash + 2 short times flash" (Motor sounds "B---BB") = The option 7
 - "A long time flash + 3 short times flash" (Motor sounds "B---BBB") = The option 8

2. Programmable Items list

Programmable Items	Programmable Value							
	1	2	3	4	5	6	7	8
1. Running Mode	Forward with Brake	Forward/Reverse with Brake						
2. Drag Brake Force	0%	5%	10%	15%	20%	25%	30%	40%
3. Low Voltage Cut-Off Threshold	Non-Protection	2.6V /Cell	2.8V /Cell	3.0V /Cell	3.2V /Cell	3.4V /Cell		
4. Start Mode (Punch)	Level1 (Soft)	Level2	Level3	Level4 (Very Aggressive)				
5. Maximum Brake Force	25%	50%	75%	100%				

Attention: The black colored in the above form are the default settings.

3. Programmable Items

3.1. Running Mode: With "Forward with Brake" mode, the car can go forward and brake, but cannot go backward, this mode is suitable for competition; "Forward/Reverse with Brake" mode provides backward function, which is suitable for training.

Note: "Forward/Reverse with Brake" mode uses "Double-Click" method to make the car go backward. When you move the throttle stick from forward zone to backward zone for the first time, the ESC begins to brake the motor, the motor speeds down but it is still running, not completely stopped, so the backward action is NOT happened now. When the throttle stick is moved to the backward zone again (The 2nd "click"), if the motor speed is slowed down to zero (i.e. stopped), the backward action will be occurred. The "Double-Click" method can prevent mistakenly reverse when the brake function is frequently used in steering.

3.2. Drag Brake Force: Set the amount of drag brake applied at neutral throttle to simulate the slight braking effect of a neutral brushed motor while coasting.

3.3. Low Voltage Cut-Off: The function is mainly used to prevent the Lipo battery from over discharging. The ESC monitors the battery's voltage at any time, if the voltage is lower than the threshold, the output power will be reduced to 50% in 2 seconds. Please drive to the side of racing track as soon as possible and then stop the car, the ESC will completely cut off the output power in 10 seconds. The values listed in the table refer to the cut-off threshold for each Lipo cell.

3.4. Start Mode (Also called "Punch"): Select from "Level1 (Soft)" to "Level 4(Very aggressive)" start mode as you like. Please note that if you choose "Level 4(Very aggressive)", you should use good quality battery with powerful discharge ability, otherwise you cannot get the bursting start effect as you want. If the motor cannot run smoothly (that is: the motor is trembling), it may caused by the weak discharge ability of the battery, please choose a better battery or increase the gear rate.

3.5. Maximum Brake Force: The ESC provides proportional brake function. The brake force is related to the position of the throttle stick. Maximum brake force refers to the force when the throttle stick is located at the top point of the backward zone. A very large brake force can shorten the brake time, but it may damage the gears.

4. Reset All items To Default Values

At any time when the throttle is located in neutral zone (except in the throttle calibration or programming mode), hold the "SET" key for over 3 seconds, the red LED and green LED will flash at the same time, which means each programmable item has been reset to its default value. It needs to be restarted to complete the whole process.

[TROUBLE SHOOTING]

Trouble	Possible Reason	Solution
After power on, motor can't work, no sound is emitted	The connections between battery pack and ESC are not correct	Check the power connections Replace the connectors
After power on, motor can't work, but emits "beep-beep-, beep-beep-" alert tone. (Every "beep-beep-" has a time interval of 1 second)	Input voltage is abnormal, too high or too low.	Check the voltage of the battery pack
After power on, motor can't work, but emits "beep-, beep-, beep-" alert tone. (Every "beep-" has a time interval of about 2 seconds). And the red LED solid lights	Throttle signal is abnormal	Check the transmitter and the receiver Check the wire of the throttle channel
After power on, motor can't work and the red LED blinks very quickly	The neutral point of the throttle channel is changed	Calibrate the throttle range for the ESC again, or adjust the trimmer of throttle channel (on the transmitter) to change the neutral point.
The motor runs in the opposite direction	The wire connections between ESC and the motor need to be changed	Swap any two wire connections between the ESC and the motor.
The motor suddenly stops running while in working state	The throttle signal is lost	Check the transmitter and the receiver Check the wire of the throttle channel
Random stop or restart or irregular working state	The ESC has entered the Low Voltage Protection Mode Some connections are not reliable There is strong electro magnetic interference	Replace the battery pack Check all the connections: battery pack connections, throttle signal wire, and motor connections, etc. Reset the ESC. If the function could not be resumed, you might need to move to another area to run the car.

If you got any problems with this A10 ECO speed controller please contact your local hobby shop or Absima Distributor via www.absima.com

Declaration of conformity

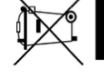
For the products manufactured by Absima GmbH mentioned in this manual the compelling and relevant EC Directive will apply:
Direktive: 2004/108/EG



The following special directives will apply:

EN 61000-6-1:2007

EN 61000-6-3:2007



This symbol on the products and / or accompanying documents means the used electrical and electronic products must be at the end of their lifetime separated from household waste. Please take these products for the treatment, recovery and recycling to designated collection points, which will receive the devices free of charge. The proper disposal of this product, prevent any potential adverse effects on humans and the environment which could otherwise arise from inappropriate waste handling at the end of its lifetime. For more details of your nearest designated collection point, contact your local authority.

For business users in the European Union, please contact your dealer or supplier for further information if you wish to dispose electrical and electronic equipment. He holds further information ready for you. Information on disposal in other countries outside the European Union. This symbol is only valid in the European Union.

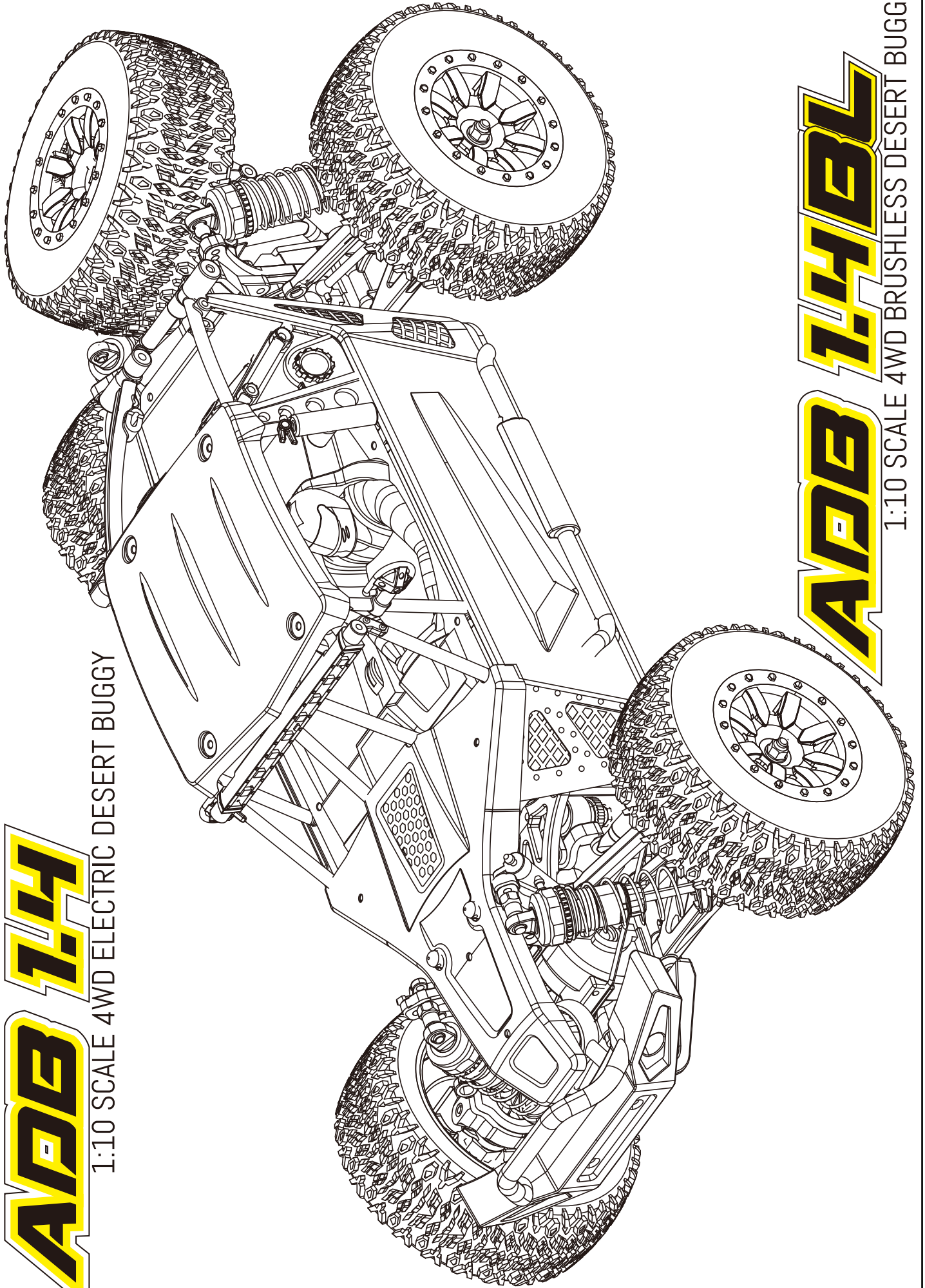
Absima GmbH Phone.: +49 911 650841 30

Gibitzenhofstrasse 127A Fax: +49 911 650841 40

D-90443 Nürnberg E-Mail: info@absima.com

A03 1H

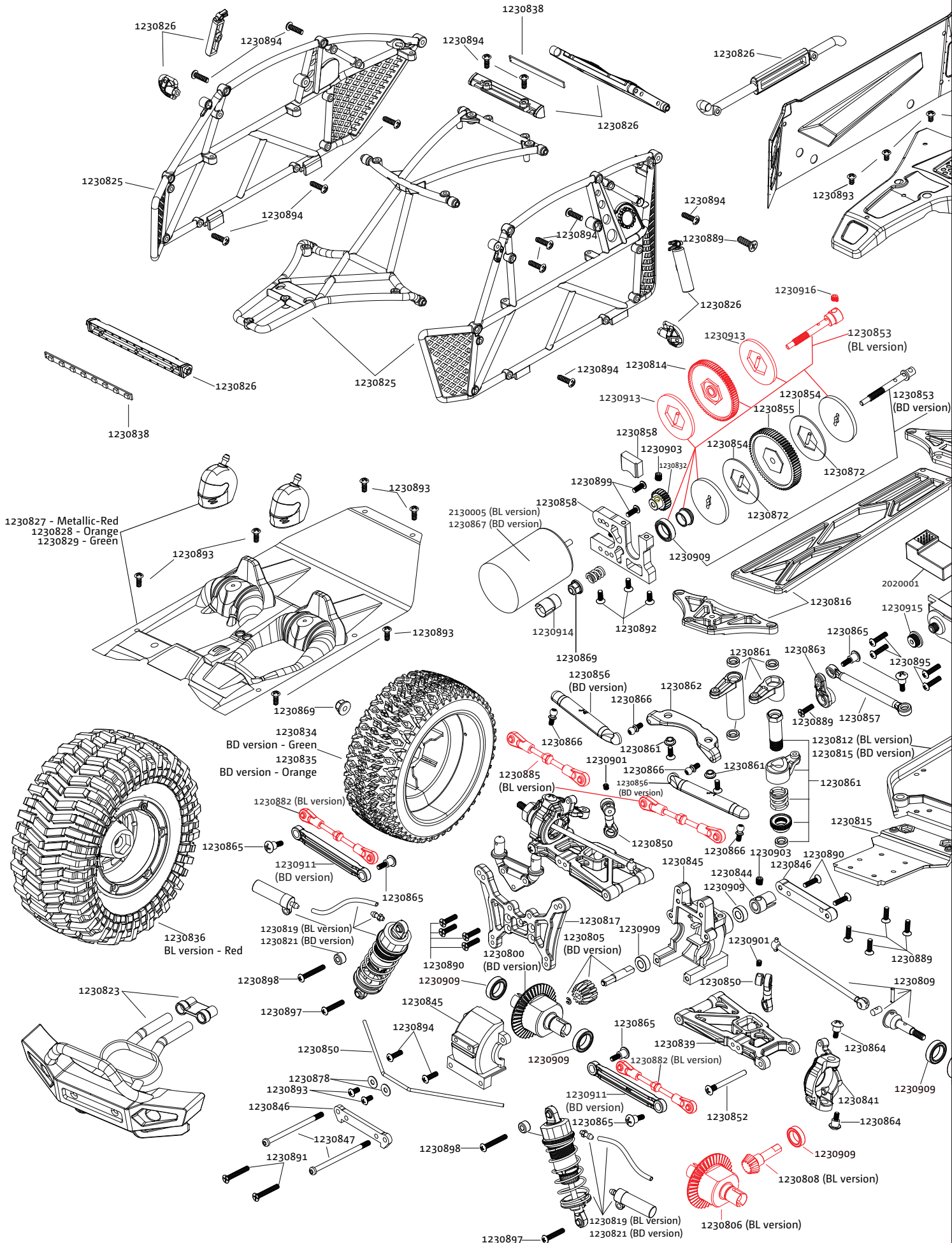
1:10 SCALE 4WD ELECTRIC DESERT BUGGY

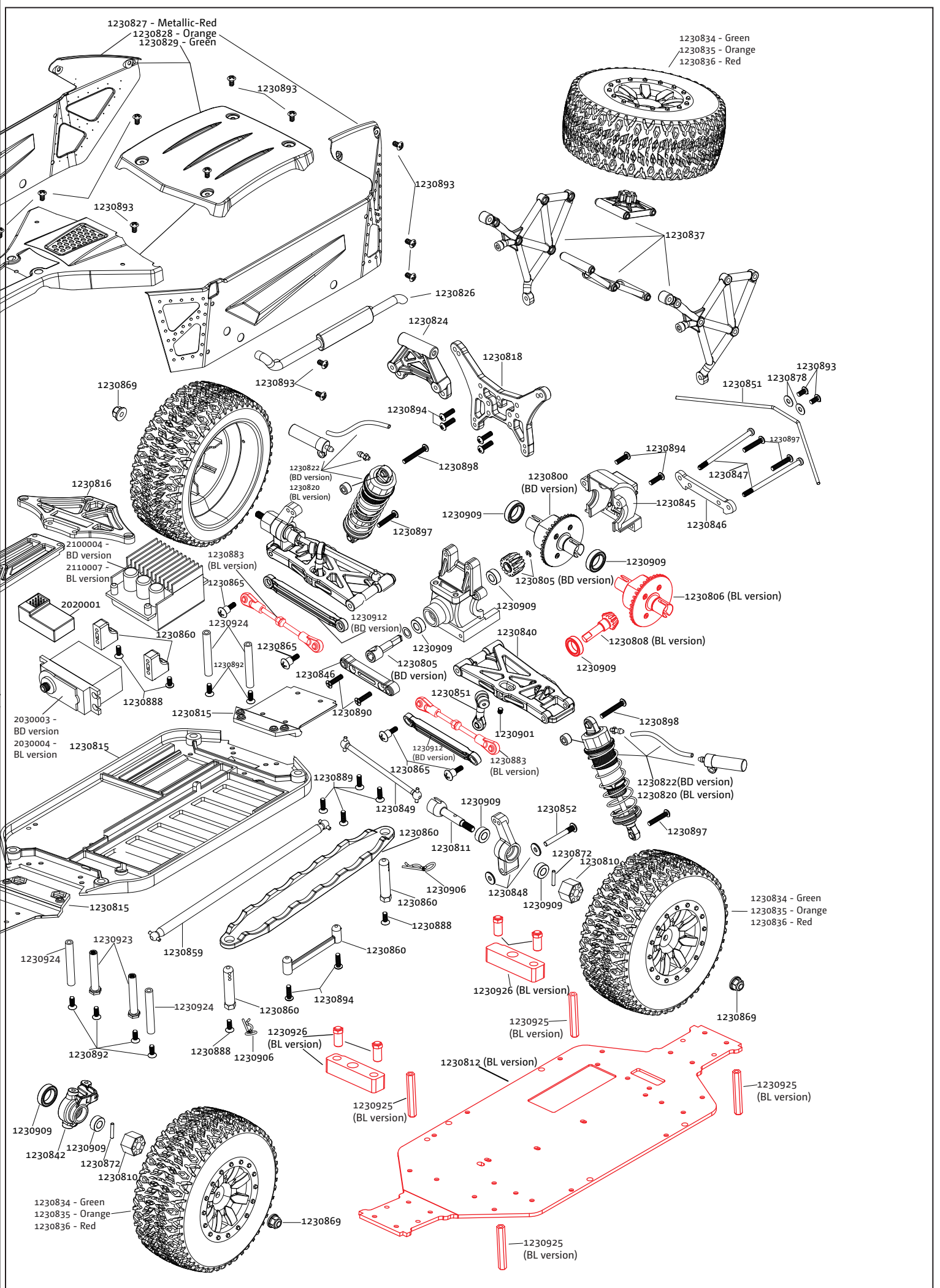


A03 1HBL

1:10 SCALE 4WD BRUSHLESS DESERT BUGGY

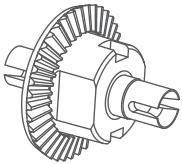
EXPLOSION VIEW





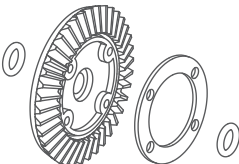
Spare parts list

Complete Differential Set



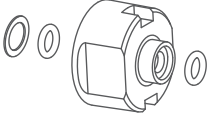
1230800

Differential metal Gear 38T



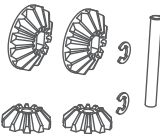
1230801

Differential plastic case



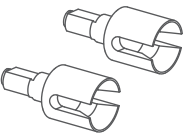
1230802

Differential Gear Set (4)



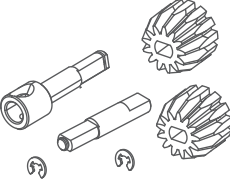
1230803

Differential outdrive F+R



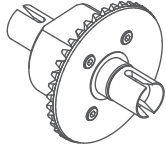
1230804

Diff. Pinion Gear 13T (2)



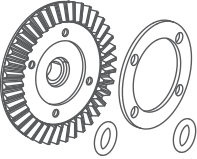
1230805

Diff. set for Brushless version



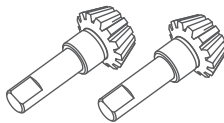
1230806

Diff. Alu. Gear 38T




1230807

Diff. Alu. Pinion Gear 10T (2)
for Brushless version



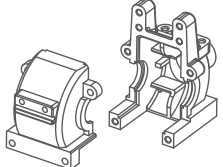
1230808

Gear box Outdrive F



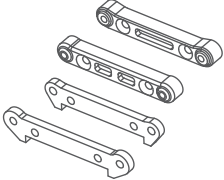
1230844

Gear box plastic out cover Set



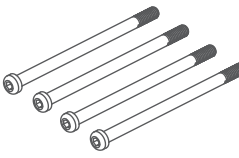
1230845

Suspension Arm Hing Pin Brace
F+R



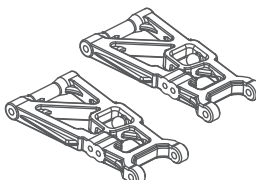
1230846

Hinge Pin 3*30 (4)



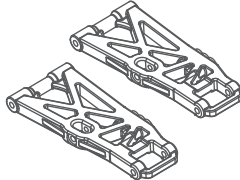
1230847

Front suspension arm set (2)



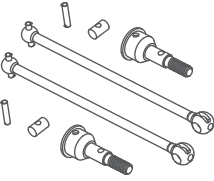
1230839

Rear suspension arm set (2)



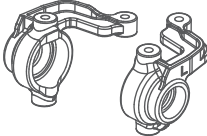
1230840

Universal Drive Shaft (2)



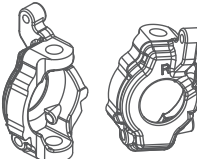
1230809

Steering Knuckle (2)



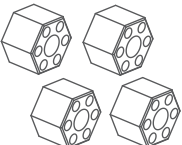
1230842

C-Hubs (2)



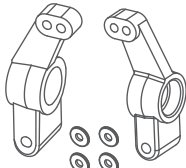
1230841

Wheel hex. nuts (4)



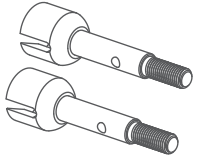
1230810

Rear Hubs set (2)



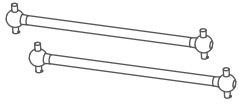
1230848

Rear hub outdrive shaft (2)



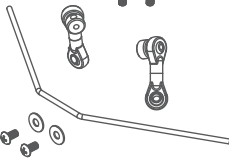
1230811

Drive shafts (2)



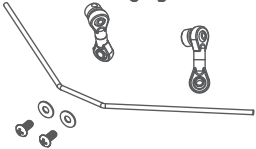
1230849

Front Sway Bar set



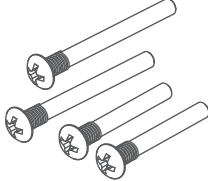
1230850

Rear Sway Bar set



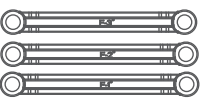
1230851

Lower Suspension Pins F+R




1230852

Front upper Rod Set 1^ø/ 2^ø/ 3^ø



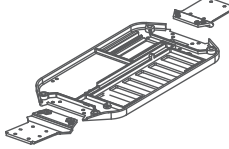
1230911

Rear upper Rod Set 1^ø/ 2^ø/ 3^ø



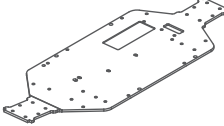
1230912

Plastic chassis plate set



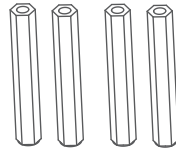
1230815

Alu. chassis plate
for Brushless version



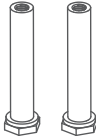
1230812

Alu. post (4)
for brushless version



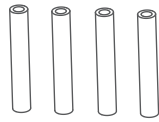
1230925

Servo Saver Post (2)



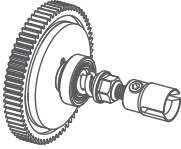
1230923

Plastic post (4)



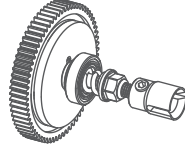
1230924

Plastic main gear with slipper
clutch



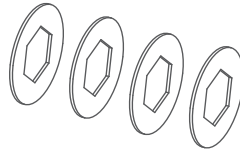
1230853

Alu. main gear with slipper
clutch for brushless version



1230813

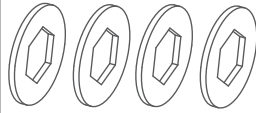
Asbestos friction paper (4)



1230854

Spare parts list

Friction plate -copper (4)
for Brushless version



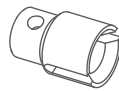
1230913

Plastic Reduction Gear



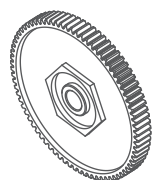
1230855

Slippe clutch shaft outride



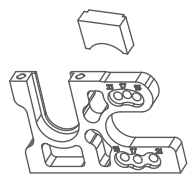
1230914

Alu. Reduction Gear
for brushless version



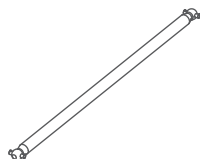
1230814

Alu. Motor Mount set



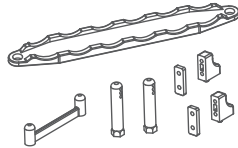
1230858

Alu. Center Driving Shaft



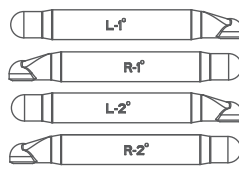
1230859

Battery Tray and Posts set



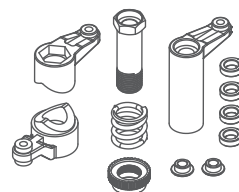
1230860

Plastic steering Rod (2)



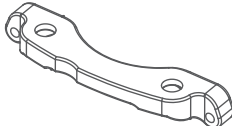
1230856

Servo Saver + Steering arm



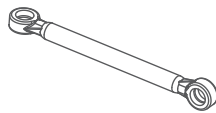
1230861

Plastic steering connecting plate




1230862

Steering Servo Turnbuckle -
Plastic



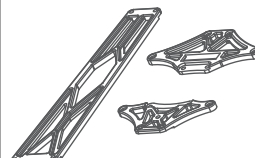
1230857

Plastic servo horn



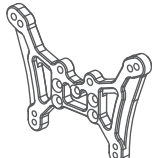
1230863

Upper chassis plate



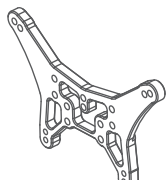
1230816

Alu. Front shock Tower



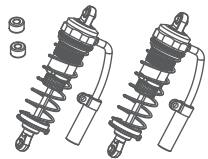
1230817

Alu. rear shock Tower



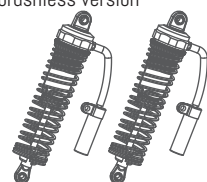
1230818

Alu. Front Damper set (2)
for brushless version



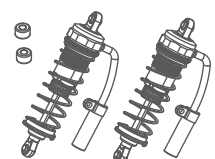
1230819

Alu. Rear Damper set (2)
for brushless version



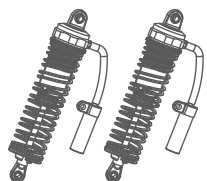
1230820

Front Damper set (2)



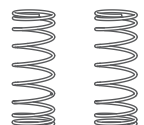
1230821

Rear Damper set (2)



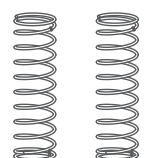
1230822

Front Damper Springs (2)




1230918

Rear Damper Springs (2)



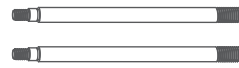
1230919

Front shock shaft (2)



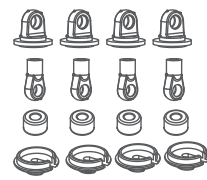
1230921

Rear shock shaft (2)



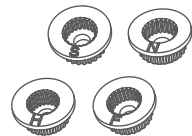
1230922

Damper plastic spare part set



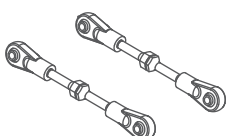
1230920

Serveo Crankset (4)



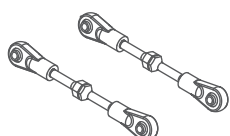
1230915

Front upper linkage rods, 70mm
for brushless version



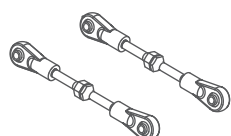
1230882

Rear upper linkage rods, 78mm
for brushless version



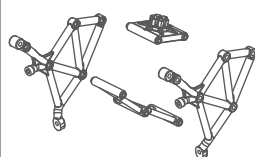
1230883

Steering linkage turnbuckle,
63mm for brushless version



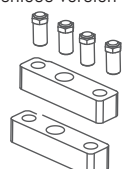
1230885

Spare Tire plastic mount



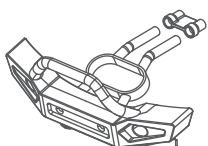
1230837

Battery holder set
for brushless version



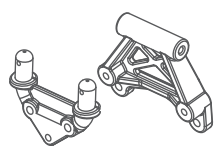
1230926

Front Bumper



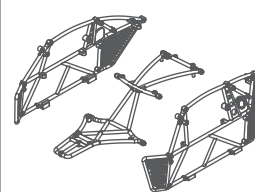
1230823

Body post set



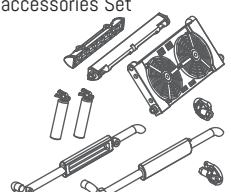
1230824

Plastic rolling Rack set



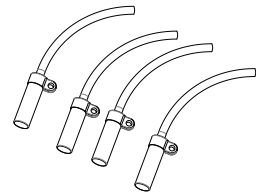
1230825

Plastic body Decoration
accessories Set



1230826

Spare tank for Damper



1230917

Spare parts list

PVC Body Shell "Orange"

1230828

PVC Body Shell "Green"

1230829

PVC Body Shell - Metallic Red

1230827

Pinion 17T

1230830

Pinion 19T

1230831

Pinion 21T

1230832

Pinion 23T

1230833

Wheels Tires Set "Green" (2)

1230834

Wheels Tires Set "Orange" (2)

1230835

Wheels Tires Set "Red" (2)

1230836

Socket Cap Screw M2*10

1230887

Flat Head Self-tapping Screw M3*8

1230888

Flat Head Self-tapping Screw M3*10

1230889

Flat Head Self-tapping Screw M3*12

1230890

Flat Head Self-tapping Screw M3*20

1230891

Flat Head Screw Set M3*10

1230892

Pan Self-tapping Screw Set M3*6

1230893

Pan Self-tapping Screw Set M3*10

1230894

Pan Self-tapping Screw Set M3*12

1230895

Pan Self-tapping Screw Set M3*14

1230896

Pan Self-tapping Screw Set M3*16

1230897

Pan Self-tapping Screw Set M3*20

1230898

Pan Head Screw Set M3*8

1230899

Pan Head Screw Set M3*10

1230900

Set Screw M3*3

1230901

Set Screw M5*4

1230916

Set Screw M4*4

1230903

Set Screw M3*10

1230902

Lock Nut M2.5

1230868

Lock Nut M4

1230869

Screw Rod M3*4.1

1230864

Screw Rod M3*4.8

1230865

Steering ball head

1230866

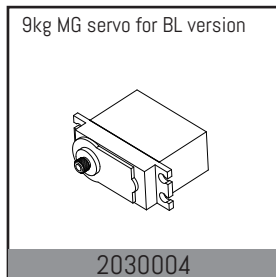
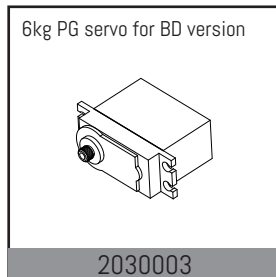
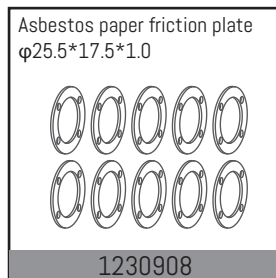
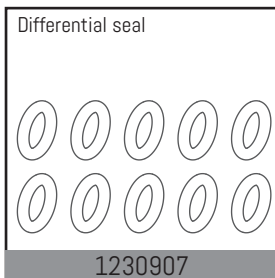
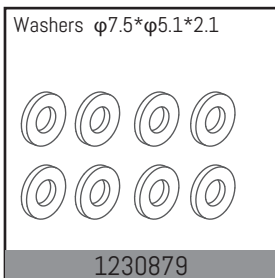
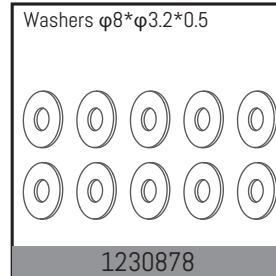
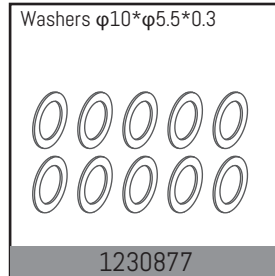
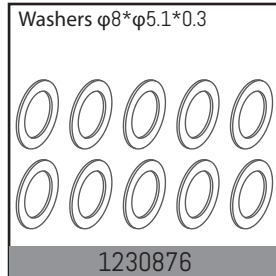
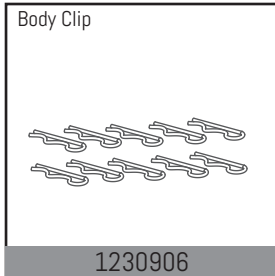
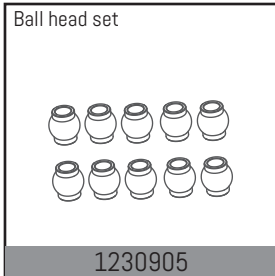
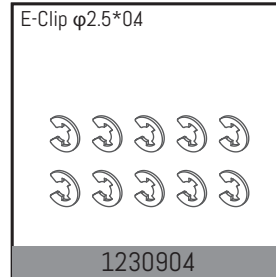
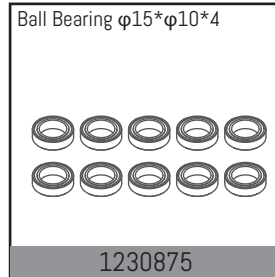
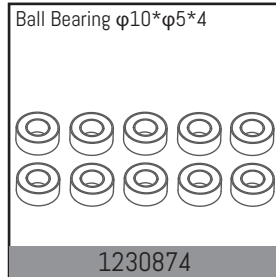
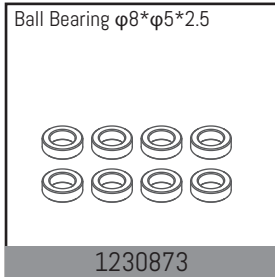
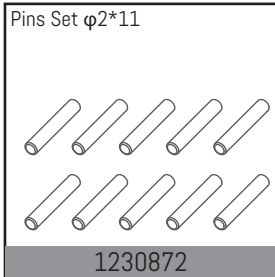
Pins Set $\varnothing 2 \times 9.7$

1230870

Pins Set $\varnothing 2 \times 10$

1230871

Spare parts list



Upgrade Part List / Tuningteile



More add-on and tuning parts you will find at:
 Mehr Anbau- und Tuningteile finden Sie unter:

Vous trouverez d'autres modules complémentaires et pièces de réglage à l'adresse suivante:

www.absima.com



ABSiMA

**Absima GmbH
Gibitzenhofstr. 127a RG
90443 Nürnberg
Germany**

Web: www.absima.com