

# Absima « Revenge CTS »

(Competition Team Speedo)

Thank you that you have chosen a product of the "Revenge CTS" series. Here you get a high quality competition product, developed by racers for racers, to win races.

Please read the instructions carefully. By using this product you agree to the terms of the warranty of Absima GmbH.

## Main Applications

Operating mode	-	Sensor /sensorless
Ampere	-	160A
Peak Ampere	-	760A
Resistance	-	0.0002ohm
Max KV	-	up to 9500kv
Lipo/life	-	2S-3S(7,4v-11,1v)
NiMh/NiCd	-	4-9 cell (NiMh-NiCd)
Motor limit 2S	-	3,5T< onroad / 5,5T< offroad
Motor limit 3S	-	5.5T< onroad / 8,5T< offroad
Adjustments	-	Program box(19 programs)
BEC	-	6v / 3A
Weight	-	112g

Timing- /Boost function and Zero boost (blinky) mode

## Controller calibration

Each controller must be calibrated individually to the single remote control.

**(Tip: please remove the tires or the motor pinion before calibration, so that the model cannot be self-employed at a mishandling)**

**Please follow the following instructions for this.**

Check that:

- the EPA from throttle and brake on 100%.
- the expo function from throttle/brake on 0.

Connect the controller to the receiver and connect the battery to the controller.

Make sure that the remote control is on.

Press and hold the setup button on the controller and then turn on the controller. As soon as the green LED lights up, release the button.

Leave the throttle lever in the neutral position and a short press the setup button on the controller saves the zero position.

The green LED flashes and the red LED lights permanently.

For internal use only

Give full throttle and hold on the remote control. A short press of the setup button stores the full throttle point, the green LED flashes. **Please keep it full throttle on the remote control until the red and green LEDs stay!**  
Give full brake and hold on the remote control. A briefly pressing of the setup button saves the max. braking point. The red and green LED flashes. **Please keep the throttle to maximum brake until the LEDs goes out and the controller has stored the position.**  
Turn off the controller. The calibration is complete, and the controller is now ready for use.

## LED status

(\*\_\*\*\_\*) ESC entered temperature protection, green LED flashing, speed reduced.

(\*\_\*\*\_\*) ESC entered low battery protection, red LED flashing, speed reduced.

(\*\*\_\*\*\_\*\*\_\*\*) In sensored mode, if the sensored wire is disconnected during running, both red and green LED's will be flashing until power is switch off.

### Other information

Red LED flashing when turn on switch, indicates number of cell. For example: If 2S red LED will be flashing 2 times or 4 times if 4S is connected. In sensorless mode when turn on switch both red and green LED's will be flashing for 3 times and red LED will flash again to indicates number of cell.

## Connect to the motor

On the controller you have 5 cables they are marked as follows.

+ - A B C

If you use the controller/motor with the sensor, so please make sure that the cables connected to the motor as follow:

Controller cable A → Motor soldering tag A

Controller cable B → Motor soldering tag B

Controller cable C → Motor soldering tag C

A disregard can damage the motor and the controller.

If you use the controller without sensors so you should also use the order:

Controller cable A → Motor soldering tag A

Controller cable B → Motor soldering tag B

Controller cable C → Motor soldering tag C

**Change direction of motor rotation: Attention only in sensorless mode possible!!**

In sensorless mode you can change any 2 wires on the motor to change the rotation direction.

## Connect with battery

On the controller, you have 2 cables which are intended as connectors for the battery.

These are marked with + (red) and – (black).

**Please make sure that you connect the cables in the correct polarity of the battery. Reverse polarity will damage the controller and will void the warranty.**

## Advanced settings and programs on the controller

The controller is equipped with the latest technology in software and can be fully adjusted to the needs of the driver and the selected motor.

To program your controller you need the Absima programming box.

Connect the controller by using the receiver cable to the interface provided with the program box and turn on the controller. (Connect the battery)

**The setup program is divided as follows:**  
(An \* indicates the factory default settings)

**Operation mode**

\*1. For/Brake (2. For/brake/reverse 3. For/reverse)

**Initial brake**

\*1. =Drag brake (2. 0% 3. 6% 4. 12% 5. 15% 6. Custom: 25%)

**Drag brake**

\*4. 10% (1. 0% 2. 4% 3. 8% 5. 12% 6. 15% 7. 20% 8. Custom: 35%)

**Brake strength**

\*2. 80% (1. 75% 3. 85% 4. 90% 5. 95% 6. 100%)

**Voltage cut off**

\*4. 3.2V/cell (1. None 2. 2.9V/cell 3. 3.0V/cell 5. Custom: 6.2)

**Punch profile**

\*7. Level 7 ( from 1 to 9 => Level 1 to 9)

**Neutral dead band**

\*3. 6% (1. 0% 2. 3% 4. 9% 5. 12%)

**Boost timing**

\*2. 1deg (1. 0deg 3. 2deg 4. 3deg usw. .... 61. 60deg)

**Turbo slope**

\*4. 18deg/0.1s (1. 3deg/0.1s 2. 6deg/0.1s 3. 12deg/0.1s 5. 24deg/0.1s 6. Fastest)

**Turbo timing**

\*1. 0deg (2. 1deg 3. 2deg usw. .... 31. 30deg)

**Boost timing RPM**

\*3. 1500 (1. 500 2. 1000 3. 1500 usw. .... 10. 5000 11. 6000 12. 7000 ..... 20. 15000)

**Turbo delay**

\*5. 0.2sec (1. Off 2. 0.05sec 3. 0.1sec 4. 0.15sec 5. 0.25sec usw. .... 9. 0.4sec)

**Boost timing ACC**

\*1. 50RPM/deg (2. 100RPM/deg 3. 150RPM/deg usw. ... 14. 700RPM/deg)

**Reverse speed**

\*1. 25% (2. 50% 3. 75% 4. 100%)

**Drive frequency**

\*3. 8KHZ (2KHZ 4KHZ 8KHZ 16KHZ 32KHZ 64KHZ)

#### Brake frequency

\*3. 4KHZ (1KHZ 2KHZ 4KHZ 8KHZ 16KHZ 32KHZ)

#### Temperature set

\*2. 176F/80C (1. Off 3. 194F/90C )

#### Reverse rotation

\*1. Normal (2. Reverse)

#### Restore default

\*1. No (2. Defaulting .... => Yes

By pressing the individual buttons on the programming box you can adjust the values individual. With ▲ ▼ can select the individual program points, with ◀ ▶ can adjust the values you want in the menu.

**(Warning, this controller has setting functions which can destroy both the regulator as well as the motor if mishandled, with mishandling will void the warranty!!)**

## Explanations of the advanced settings:

### Operating mode :

“**For/Brake**” is suitable for competition use. In this mode you can only drive forward and brake.

“**for/reverse/brake**” your RC car can drive forward and backward. To drive backwards you have to stop the car completely and re-press the brake lever will release the reverse gear.

“**For/reverse**” is suitable for rock crawler and it has no brakes. The vehicle can also go directly from forward to reverse. Use this mode only for rock crawlers and no other cars, because the speed controller and the vehicle may be damaged.

### Initial brake :

Initial brake indicates how much braking force on the first press of the brake lever is available.

For example you have initial brake to 20% so you have a braking force of 20% immediately when pressing.

**(Team tip: use the initial brake 0% or drake brake, therefore they have a very linear braking)**

### Drake brake:

Drake Brake can also be called automatic brake. This simulates the engine brake.

**(Team tip: 10% Engine brake often helps to stabilize the model on corner entry and it helps to drive consistent lap times)**

### Brake strength:

This sets the maximum braking force. Usually sufficient 80% of the factory setting and you can settle down the brake above the EPA settings on your remote control.

### Voltage cut off:

This setting is designed to protect your LiPo before undervoltage and can be adapted to individual. Please pay attention to the manufacturer's instructions for your batteries where there is a value which must not be exceeded.

### Punch profile:

Punch profile is your start punch and can be diversify between 1-9.

1-3 → soft start, ideally with very little grip

For internal use only

4-6 → slightly stronger start, ideal for modified engines with medium grip

7-9 → very aggressive start-up behavior, ideal for stock classes with high handle (carpet)

**Neutral deadband:**

This shows how sensitive the controller reacts in the neutral position.

**Boost timing:**

Boost Timing changes over the whole engine speed, the timing and so likewise helps enormous power of each to brushless motor. Please always change the settings only in small values because a too big boost timing may exert a negative impact on the efficiency of the engine and can damage this. Always keep the temperature in mind if you change the boost timing.

**Turbo slope:**

Turbo slope indicates how many degrees should be added per 0.1sec off the turbo timing at full throttle.

**Turbo timing:**

Turbo timing is similar to the turbo timing but this turns too at full throttle. Again, only small changes can make because too much turbo timing will damage the motor. Also, keep an eye on the temperature!

**Boost timing RPM:**

This indicates at which motor speed the boost timing is enabled.

**Turbo delay:**

This works as a delay at full throttle. If you have the delay set to 0 so the turbo timing switches immediately at full throttle.

**Boost timing ACC:**

Acc = accelerator. This indicates at how many turns each time add 1 degree on timing.

**Reverse speed:**

Here you can set with how much power the reverse gear works.

**Drive frequency:**

The drive frequency indicates with which frequency the controller should work. The lower the value, more power is available to them at the beginning. The higher the value, more power in the middle and closing speed range.

(Team tip : the best experiences we had with 8 KHZ or zero boost mode at stock engines with 4 KHZ)

**Brake frequency:**

At the brake frequency you can change the efficiency of the brake. The factory settings produce a very linear braking force.

**Temperature set:**

With the temperature set the switch-off of the controller can be changed, which protects against overheating.

**Reverse rotation:**

With this the rotation of the motor can be changed.

**Restore default:**

Here the controller can be set back to the factory settings.

**Zero boost „BLINKY“ mode**

The controller decreed about the increasingly upcoming „BLINKY“ mode for stock classes.  
The zero boost mode is indicated by a continuous flashing of the LED after switching on.  
To reach this mode, the turbo timing and boost timing parameters need to program with the value 0.

### Warnings & information

- o This controller is not a toy! Do not leave children unattended when using this product.
  - o Do not leave the controller unattended when switched on.
  - o The controller may not be used in the range of flammable materials!
- o If the controller does not work properly, disconnect the battery immediately and contact the dealer.
- o The controller must always be stored without a battery connection – disconnect the battery immediately after use!

### General warranty provisions

All products of ABSIMA GmbH are manufactured according to very strict quality guidelines. The statutory warranty on manufacturing and material defects which existed at the time of delivery; ABSIMA GmbH takes over the course in full.

No warranty for defects listed below:

- Cable to receiver or switch-on damaged
- Mechanical damage, or destruction of the housing
  - Water or water inside
- Mechanical damage to the components and / or the blank
- Soldered on the PCB (except on external soldering sockets)
  - Battery polarity reversed
    - Improper use
  - Third-party intervention

When a sending the product for repair, please ensure that all other components are working properly.

### Regulations for repair

If you return the product for repair, please tell us unequivocally with whether the product is to be repaired. Both the product testing, as well as any repair is chargeable, unless a warranty or warranty claim exists. Only attach the proof of purchase (a copy is sufficient), a guarantee or warranty can be accepted. On request, a fee-based service offering can be created, to which we are bound for 14 days from date of issue.

It should come after a repair, the cost of the repair quote you will of course not be charged.

#### Advantageous in the case of service:

- Exact and detailed error description
  - Your complete address data
- Telephone number for any possible questions

#### **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**



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**Absima GmbH**  
**Gibitzenhofstrasse 127A**  
**D-90443 Nürnberg**

**Phone.: +49 911 650841 30**  
**Fax: +49 911 650841 40**  
**E-Mail: [info@absima.com](mailto:info@absima.com)**