# NanoTwo V1 Kits (Discontinued)

Compact Robot Control units for use in 150g antweight fighting robots

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Note: These controllers have been discontinued. The V2s can be found here.

## Contents



Fig 1. Contents of the NanoTwo Kit

## 1. Features

- Includes all the electronics (apart from a battery) required to make a competitive Antweight robot.
- Plug and play: Only requires a battery to be connected and the receiver to be bound to a transmitter; no soldering required.
- Compact construction: Main board is 26mm x18mm x10mm
- Total weight of 30g
- Comes with motors, wheels, and motor mounts for ease of construction
- Custom made 3D printed wheels with soft silicon moulded tires for maximum grip
- Servo Connector for controlling weapons with a regulated 6V 1A supply
- 2.4GHz DSM2 Compatible
- Built in signal mixing
- Options are available to tailor your kit to your requirements
- Supplied with bind plug for easy setup

## 2. General Description

The NanoTwo Kit combines the NanoTwo ESC with a LemonRX receiver to make a compact robot control unit. This is then fitted with motors, wheels, and motor mounts to supply a complete kit containing all the major components required to build an Antweight robot.
The NanoTwo kit is the smallest and most competitive setup that is currently available in it's price range; over 100 robots in the UK are now running these kits.
The price of the kit is equivalent to buying all the components separately, however it is packaged into a very small unit which requires no soldering or knowledge of electronics; Just plug the battery in, bind to a receiver, and attach a chassis.

## 3. Maximum Ratings

Note: Permanent damage may occur if these ratings are exceeded. These values are taken from the component datasheets, so their accuracy cannot be guaranteed. The performance of the device may degrade if used at or close to the maximum ratings for extended periods. Voltages below the minimum operating voltage will cause the device to function incorrectly or shutdown.

- Maximum voltage: 9.6V
- Minimum operating voltage 3.7V
- Maximum peak aux. current draw (@ 9.6V in) 2.2A

## 4. Recommended Operating Conditions

- Maximum Voltage: 8V (2 cell LiPo Battery)
- Minimum Operating Voltage: 6V
- Maximum continuous aux. current draw (@ 9.6V in) 1A

## 5. Options

. Wheels and motors or just the control unit
. Fast motors (500 rpm) or slow motors (300rpm)
. Shipping or collection

If you have any particular requirements, ask in an email to check if it's possible.
Please provide a list of options when you place your order.

## 6. Recommended components

Other components may be used, however these are know to work well with the kits and will make good low cost setup for a first antweight (cannot guarantee availability of stock):

**Power:**

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|---|---|
| Battery: | Turnigy nano-tech 180mah 2S Lipo |
| Battery Charger: | Turnigy 12v 2-3S Basic Balance Charger |
| Charger Power: | 1.5Amp 12V PSU |
| Charge Bag: | Lipoly Charge Bag 14 x 23 cm |
| Battery Checker: | Battery Monitor 2-6S |

**Transmitter:**

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|---|---|
| DSM2 Transmitter: | Spektrum MLP4DSM |

**Chassis:**

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|---|---|
| Polycarbonate: | 1.5mm Polycarbonate Sheet |
| Cable Ties: | Various Cable Ties |
| 3D Printing: | Team Shakey Robotics |

**Servo:**

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|---|---|
| Lifter Servo: | Turnigy TGY-50090M |
| Flipper Servo | Turnigy TGY-306G-HV |

## 7. Price

£40 for complete kit.
£30 a control unit without wheels, motors and motor mounts
£2 postage

Postage is via 1st Class Large Letter from Royal Mail.

## 8. Binding and Setup

Before the kit can be used, it must be bound to a transmitter. This only needs to be done on first start up or when switching to a different transmitter.

To bind the kit to a transmitter, insert the bind plug into the two outside square holes behind the servo socket (as shown in the picture below). Plug the battery in; the LED on the kit should then start flashing.
Turn on your transmitter and put it into bind mode (For the Blade transmitter, push down on the left hand stick and turn on the transmitter). The rate of flashing on the kit should change. Leave for a few seconds until the flashing stops and the LED remains constant. You should then be able to control the kit with the transmitter

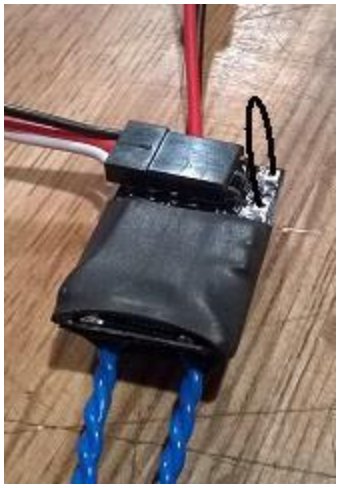

Fig 2. Bind plug position

If the motors are turning when the sticks on the transmitter are central then trim should be used until the motors stop turning and the kit is silent at center stick. If the kit drives backwards or if steering is reversed, then either reverse the channels on the transmitter, or swap over the motors in the robot.

## 9. Warranty

Reasonable damage to the kit will be repaired free of charge if a fault occurs while used under recommended operating conditions (as specified above), though any shipping costs must be covered by the customer.
This warranty will be void if the the protective heat shrink is removed from the board or if the kit is damaged by weaponry, although repairs can still be made if the cost of new components is covered.