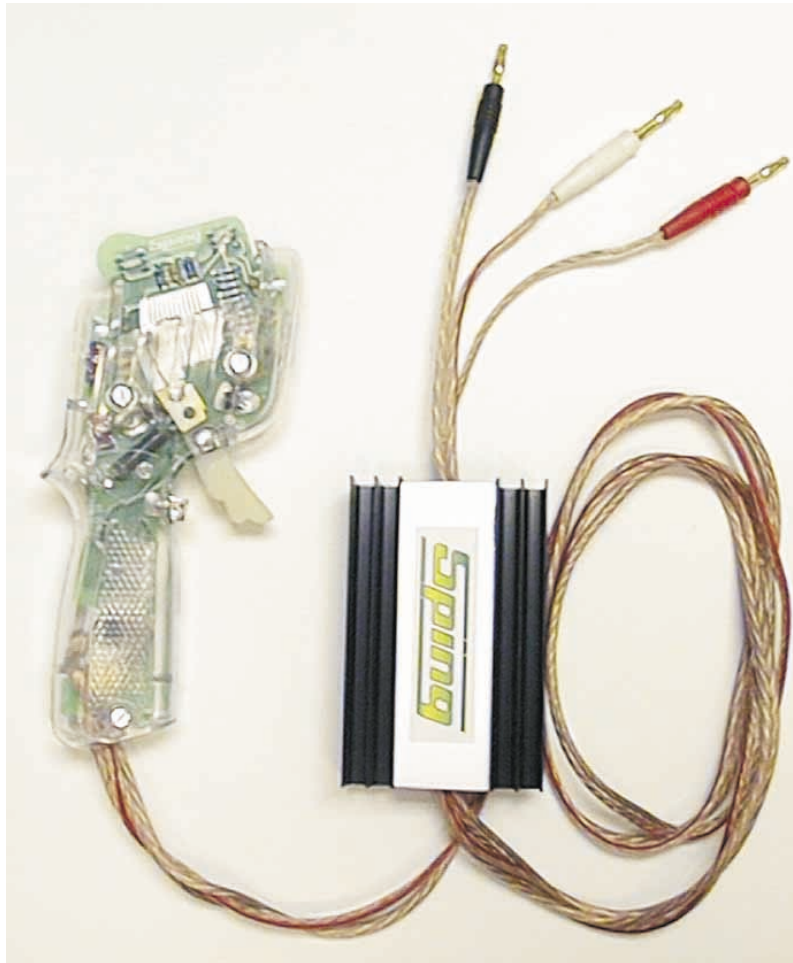


Sping

Electronic controller conversion kit.

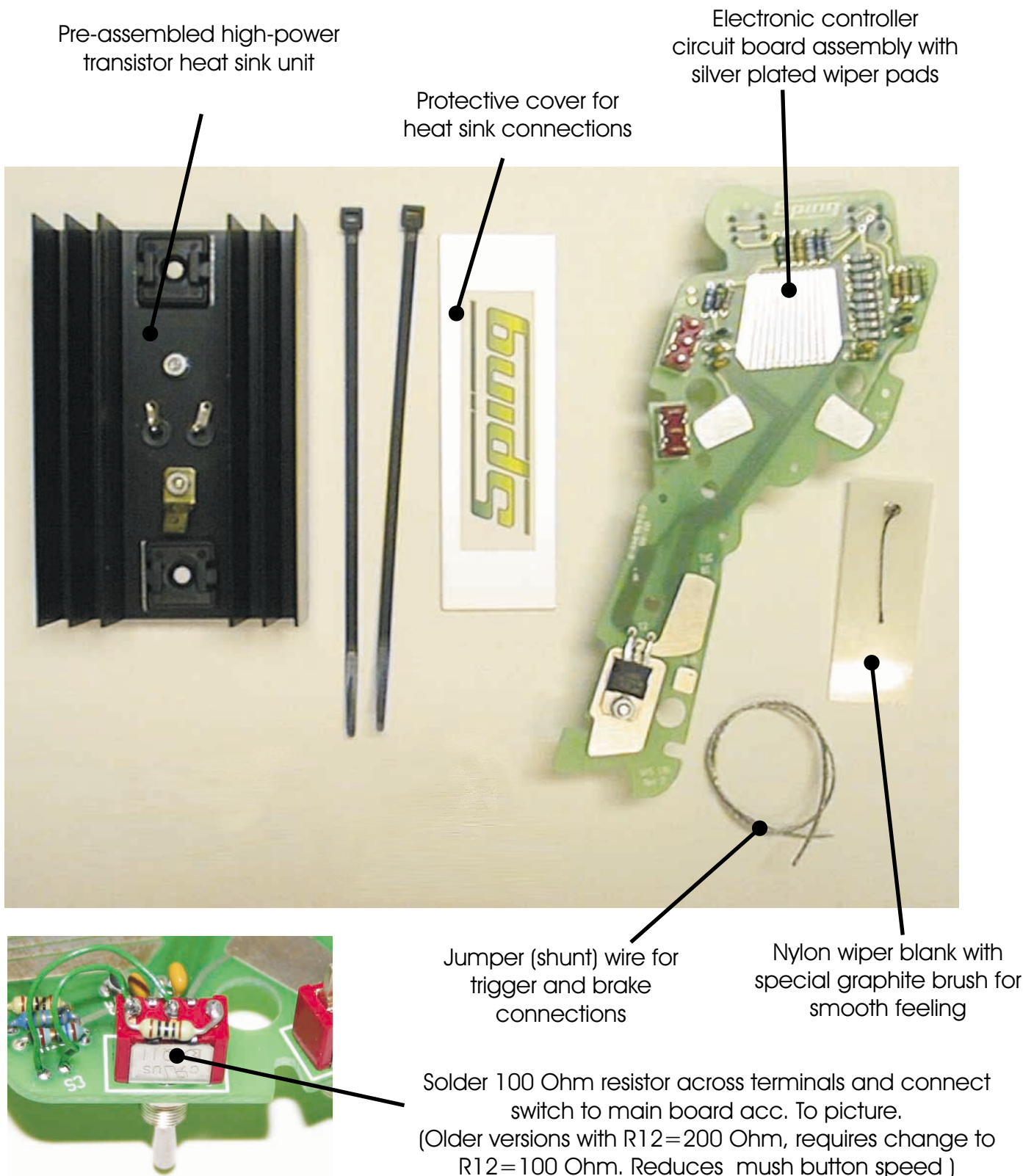


- PROFESSIONAL HIGH POWER TRANSISTOR CONTROLLER
- FOR ALL TYPE OF SLOTCARS, FROM H0- TO G7 WING CAR RACING
- FEATURES - VARIABLE SENSITIVITY ADJUSTMENT
- VARIABLE NEW "ACTIVE BRAKE" SYSTEM FOR OPTIMIZING PERFORMANCE
- CIRCUIT BOARD FRAME WITH INTEGRATED SILVER PLATED CONTACT PADS
- LIGHTWEIGHT DESIGN FOR LONG ENDURANCE RACING
- SMOOTH 10-BAND WIPER CONTROL
- NYLON WIPER WITH SPECIAL GRAPHITE BUTTON FOR SMOOTH FEELING
- SWITCHES FOR: MUSH EFFECT, DUAL SENSITIVITY RANGE AND BRAKE

This kit includes everything you need to convert your existing Parma Turbo controller (or similar) into an advanced electronic controller. Without an existing controller to convert, you will need: Lexan handles, Full power- and brake contacts, trigger assembly with bearings, spring and connecting cables (we recommend at least 2,5mm² for G27 or G7 cars on +/White and track/Black).

Follow the step by step instructions on the following pages carefully.

The kit should contain the following parts:



Step 1

Dismantle your old controller completely and check that the new electronic pc-board fits inside the existing handles. You will need to cut out a small portion of the plastic on both handles, to ensure a proper fit. Refer to figure below:

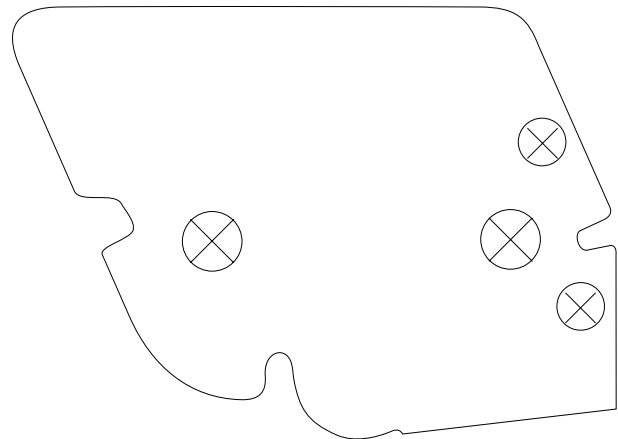
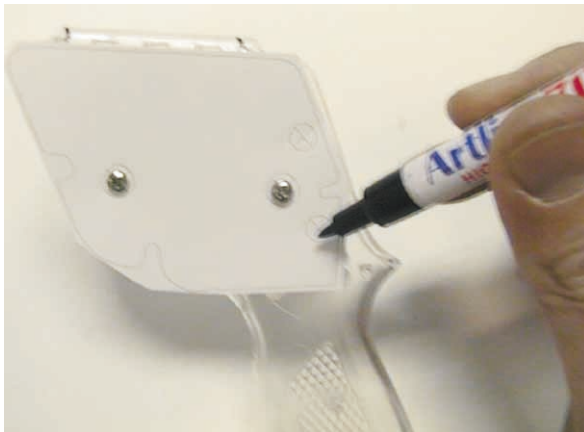


Cut out this portion

Step 2

Use the template to cut out 2 holes for the switches. Approx. dia.: 7-8mm

Refer to figure below:



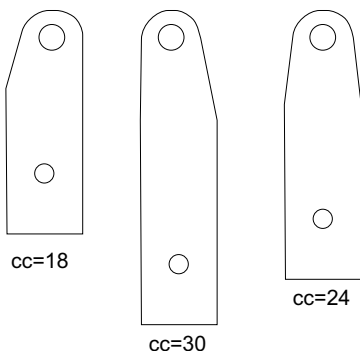
Step 3

Decide how long trigger action you desire, and cut out the appropriate template.

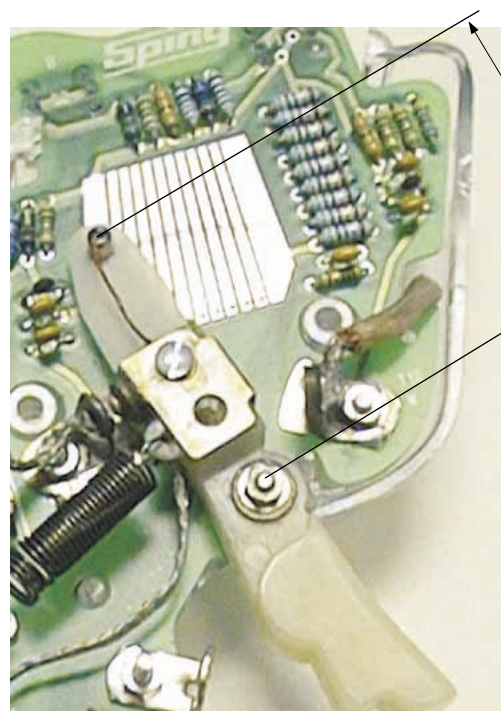
Hint: mount the selected paper template on your trigger back side with double sided tape and test the action by installing the trigger temporarily on the pc-board. Make sure that the marked place of the wiper brush completely reaches the brake and full power band at your desired trigger travel distance. If not, try another template or customize one yourself.

Next put your finally selected template on top of the enclosed nylon wiper arm and cut the nylon wiper to the same shape.

Cut-out templates for short, medium or long stroke wiper action.



Nylon wiper with pre-assembled shunted brush

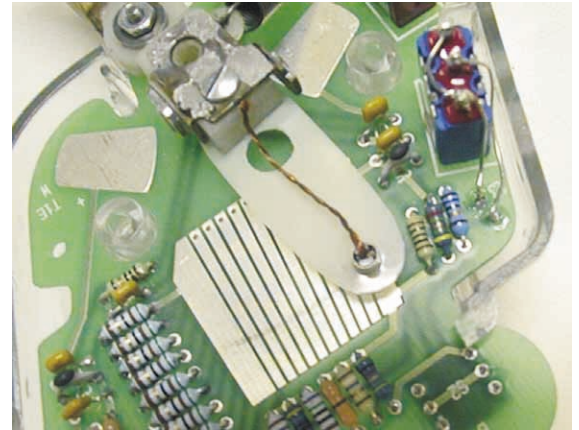
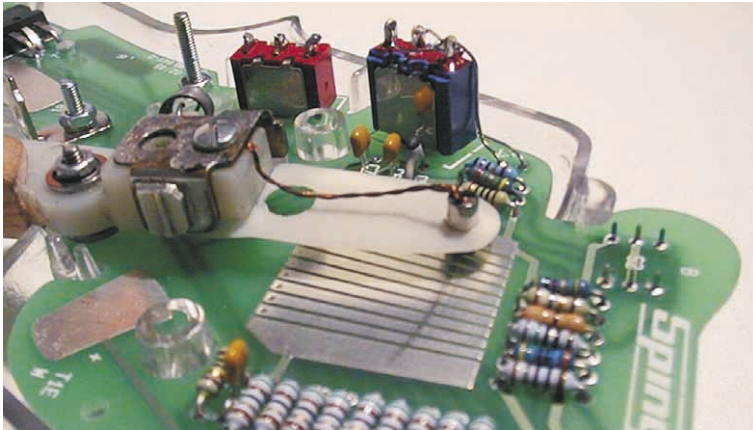


For long trigger stroke, keep the distance "D" as short as possible and the opposite for shorter stroke

Step 4.

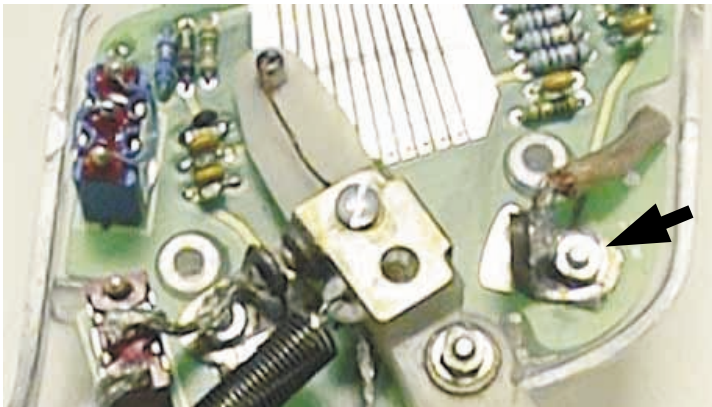
install the finished nylon wiper on the back side of the original Parma trigger and secure it with the original screw and nut.

Solder the shunt wire to the contact bracket as shown below. Install the trigger to the pc-board and check that the brush makes contact to the pc-board control bands. It might be necessary to bend the nylon wiper a bit to get a proper contact. Refer to the pictures below.



Step 5.

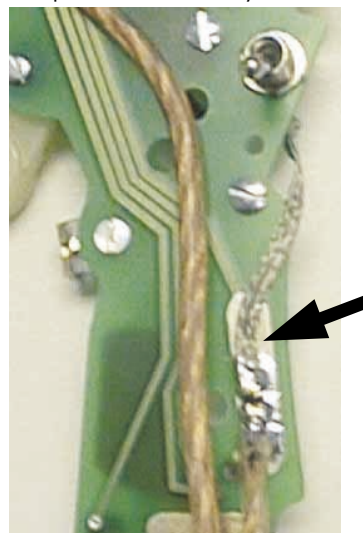
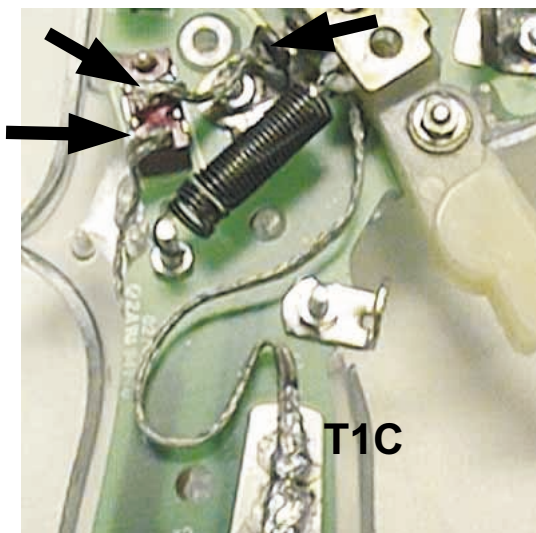
Put the 2 original Parma contact brackets (brake and full power) in place, by first moving the wiper to the end positions (one at a time) and soldering the brackets in place. Take care to ensure that the wiper brush is in the center of the pc-board end bands when soldering. NOTE! The full power contact bracket should finally be fixed to the pc-board by drilling a hole through the bracket (The original hole of the Parma bracket is preferably used) and through the pc-board. A screw should then be used to secure the bracket. Refer to the picture:



Step 6.

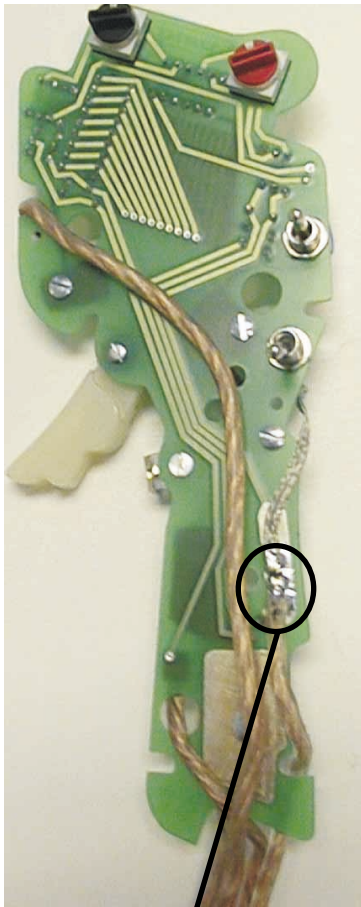
Solder the enclosed shunt wire to the trigger wiper bracket, and then connect it to the pc-board solder terminal "T1C". Install the Trigger spring, and use a screw and nut to act as rear spring post installed in one of the two holes for this purpose.

Next make a jumper of shunt wire and connect it between the brake contact and center terminal of the lower 2-way switch. Connect the desired outer terminal of the switch to the back side terminal of the pc-board. This will enable you to switch between full brake and the selectable 10-step active brake system.

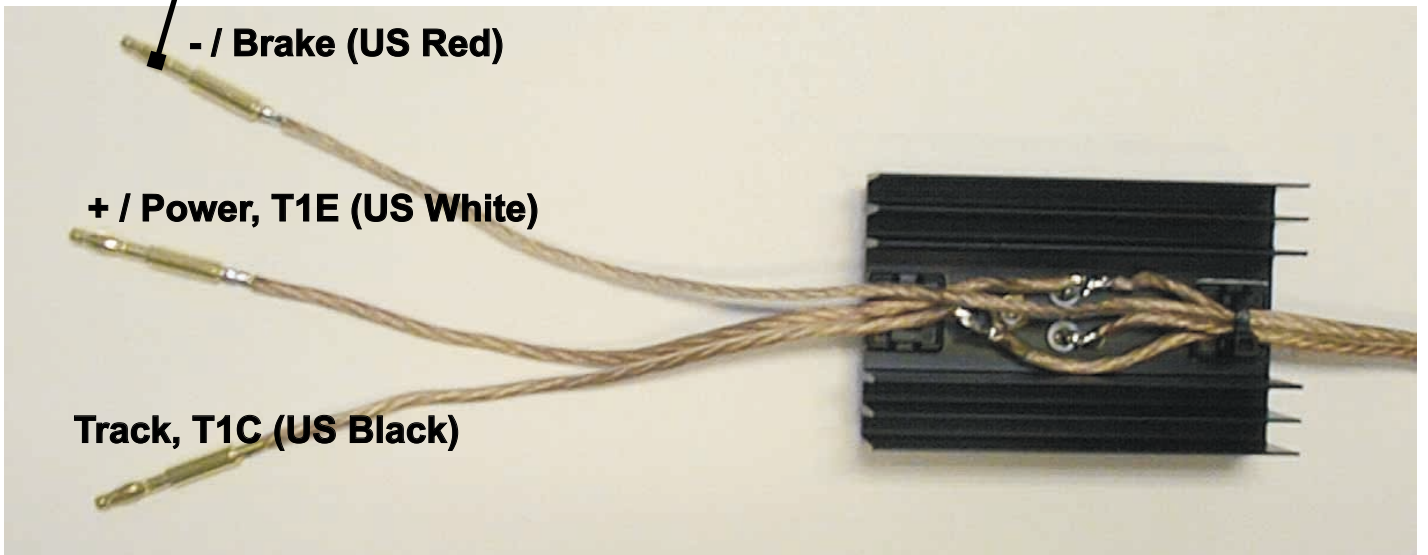
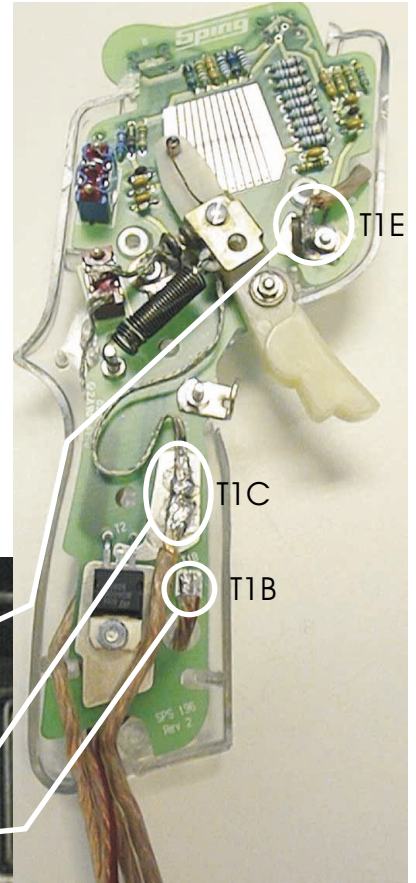
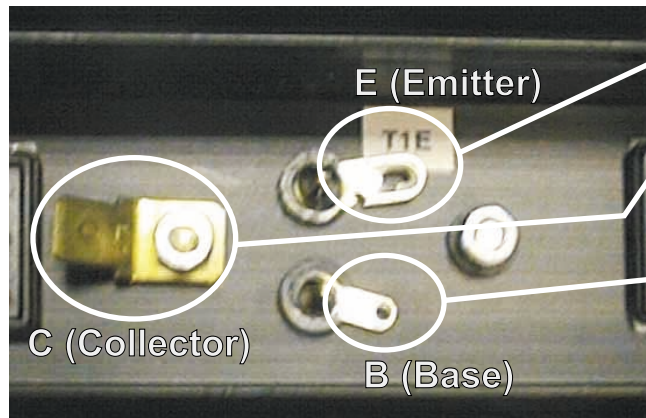
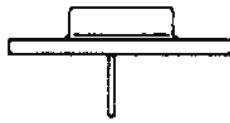
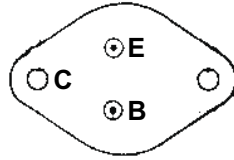


Step 7.

Solder the connecting cables according to the figures and pictures below:



Transistor (T1) connection:



Step 8.

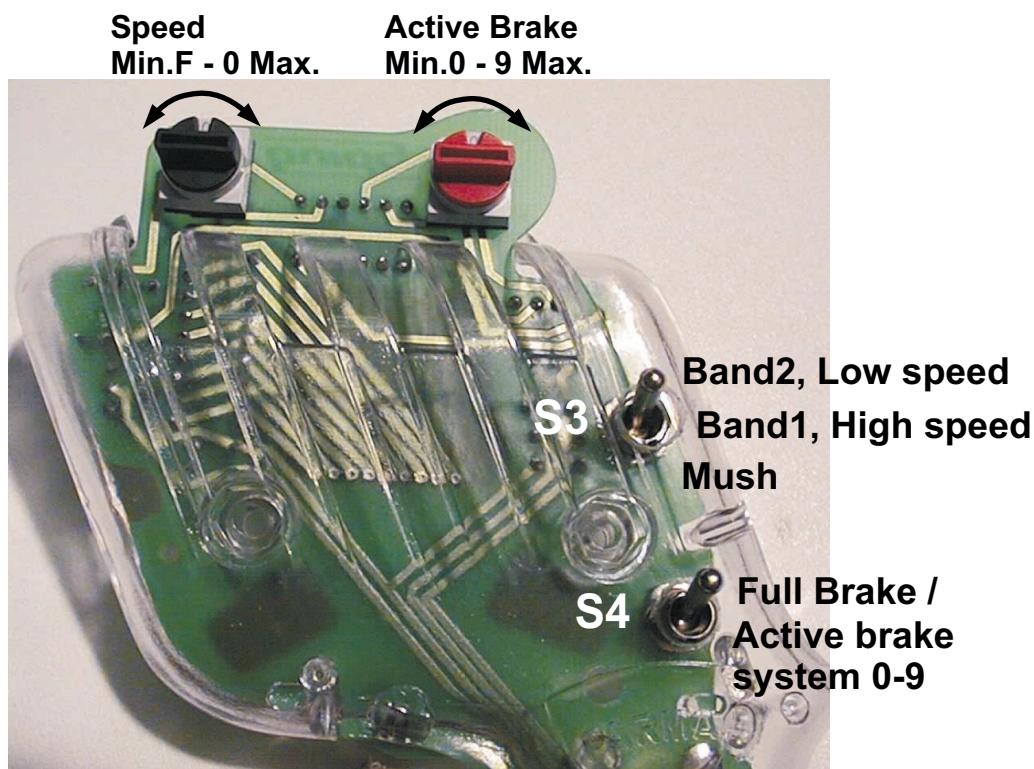
Finally clamp the cables to the heat sink with the enclosed cable ties, and install the protective cable cover.

-----IMPORTANT!!-----

Connect the controller with +(White) and common(Black) wire connected only (without the brake(red)) the first time you try it out. This will minimize any damage to the controller if you have connected anything the wrong way!!



Operating instructions



The controller sensitivity adjustment is controlled using the black rotary switch knob. The switch has 16 steps marked 0-F, 0 gives maximum speed on the first power band. 2 different ranges can be selected with the "S3" switch. We recommend that you start with the switch in the center (Band 1, high speed) position. Set the black switch to position "F", which gives you the slowest speed on the first wiper band. Try your car out and change the setting to the next step E,D,C,B etc. for higher speed. If you need a slower speed for the first wiper band, put the "S3" switch in "Band 2, low speed" position. For heavy glue wing car racing G27 and G7, you may sometimes need to start at a temporarily lower speed if you are stuck in the glue. In such a case, just push the "S3" switch down temporarily to the "mush" position while starting the car.

NOTE! If you have purchased the conversion kit, and it is the first time that you try out your controller, it is recommended that you do not connect the brake wire (Red - US standard) until you have tried the controller. This, to minimize the risk of damaging something if not properly wired.

The all new "active brake" system adjustment is controlled using the red rotary switch knob. The switch has 10 steps marked 0-9, 9 gives maximum active brake. The active brake system is enabled by setting the "S4" switch to position "Active brake". At the "Full Brake" position, the active brake is disengaged and your car will have maximum possible brake.

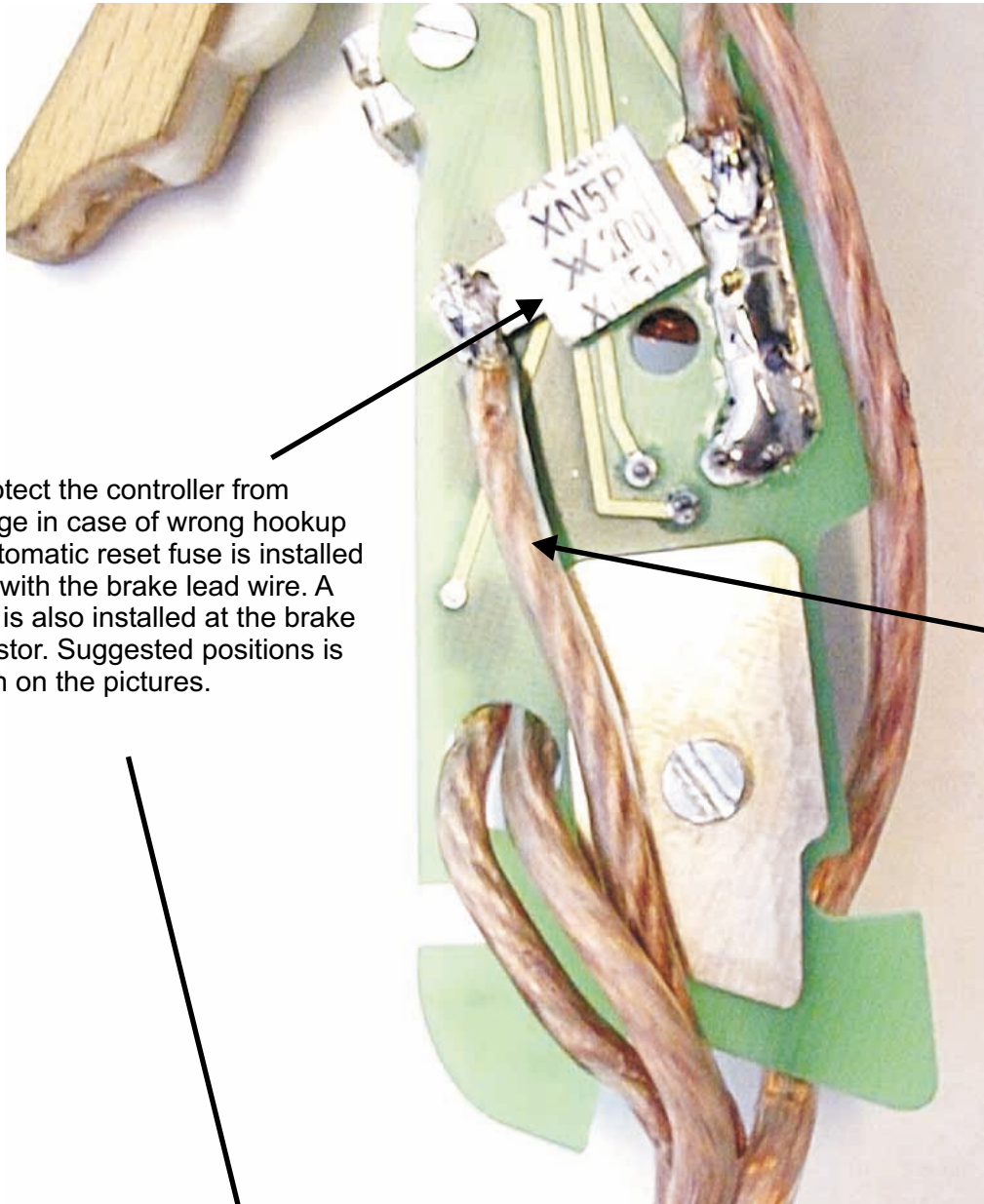
The active brake system will optimize your cars performance by enabling full brake until the car slows down to a certain speed at which the brake will disengage. This making it so easy to handle the car through those tight corners, where it is crucial to brake at the exact point without getting that irritating stop just before the corner starts. Once you have found the desired setting, you can switch between active brake and full brake depending on which lane you are running at.

The use of rotary switches for brake and sensitivity makes it easy to find your favorite settings again. You never have to worry if you lend your controller to the next guy who changes your settings - in a second you will have dialed them back again!

Maintenance: If needed you can clean the wiper button and contact pads with cloth. Braid juice or 5-56 can be used as lubricant, wipe off any excess. Power and brake contacts may need cleaning for max performance.

IMPORTANT!: NEVER USE SANDPAPER ON THE WIPER CONTACT PADS!

Installing short circuit protection



To protect the controller from damage in case of wrong hookup an automatic reset fuse is installed inline with the brake lead wire. A diode is also installed at the brake transistor. Suggested positions is shown on the pictures.

- / Brake (US Red)

