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Operating the E-Maxx on 14 Cells

How to get T-Maxx speed with your E-Maxx Operating the E-Maxx on 14 Cells

Here's a cool trick that many of you may not know about; installing two 7-cell battery packs into your E-Maxx. That's right! 14-cells for unbelievable dirt-churning power. Now you can run side-by-side with your buddy's T-Maxx and still reap the benefits of the high-torque, twin 550 Titan Motors.

In a recent test performed here at Traxxas, box-stock E-Maxxes were blazing well into the 30 mph zone when outfitted with performance-matched dual 7-cell battery packs. The extra 2.4 volts really has an impact on the performance of the electric monster.

Now, some of you may be wondering, "Will this hurt my EVX?" The experts at Novak Electronics (designer and manufacturer of the EVX) have informed us that as long as you stick with the stock Titan motors there should be no problems created by using extra voltage. We do not recommend operating the EVX on 14 cells with any other motor system than the stock Traxxas Titans. The use of after-market, modified motors along with 14-cells, could permanently damage the EVX and will also void the 30-day factory warranty.

Of course all of the typical preventative maintenance checks should be made before running the mighty E-Maxx, such as making sure that the drive-train operates smooth and freely, that the pinion/spur gear mesh is adjusted correctly, and that the slipper clutch adjustment is tight. If there is any kind of binding in the drive system then, the problems will be amplified with the extra power and exceptional damage could result.

In order to take your E-Maxx to the next level you're going to need two 7-cell battery packs. Off-the shelf 7-cell battery packs that are commonly available from your hobby dealer will not fit into the E-Maxx chassis without modifications. We're going to show you two different options for building your own custom 7-cell packs.

Option 1 – Assembling a 7-cell pack from individual matched cells

Option 2 – [Adding a 7th cell to an existing 6-cell pack](#)

To get the best results, start out with 14 new individual cells and assemble them into two 7-cell packs. If using pre-assembled stick packs (option 2), please follow the steps provided for installing the extra cell. Note that you may not get the same performance that we have obtained by using cells that have not been matched as a set.

Assembling two 7-cell pack from individual matched cells



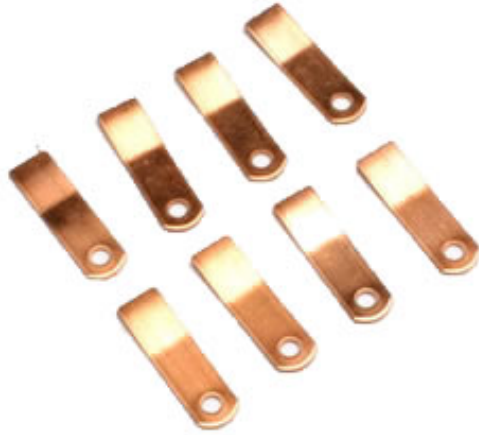
Battery cells – (14) Sub-C nicad cells. We'll be using (14) 2400mAh custom-matched racing cells for our project. Most 1.2volt Sub-C nicad cells will work fine. Just remember that unmatched cells will provide somewhat reduced performance when compared to matched racing cells.



Tools needed – Needle nose pliers, wire cutters, small flat head screwdriver, wire strippers, hobby knife, and a soldering iron – 60 to 80 watts works best. Hotter irons heat things up more quickly and allow the solder to join together faster. This keeps prolonged heat from damaging the cells.



Supplies & accessories needed: 60/40 solder, a small tube of soldering flux, 8-battery bars, 2-JST style battery plugs, 20-inches of 20-gauge wire (RED), 14-inches of 14-gauge wire (BLACK), battery jig (optional), small piece of 400 grit sand paper, adhesive (such as Pro Bond, E6000, Zap or equivalent glue), and some rubber bands for holding the cells together after gluing them.



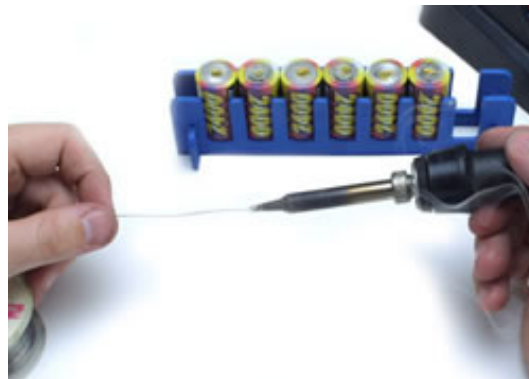


Step one – To achieve the best bond possible between the solder and the battery take a small piece of 400 grit sandpaper and scuff the positive and the negative terminals on each battery cell. After cleaning the terminals with some denatured alcohol go ahead and turn on your iron so that it'll be ready. Now place six cells in the battery jig, starting with the 1st cell negative side up. Make sure that the cells line up in a negative / positive / negative sequence.

Step two – Now we're going to "tin" the terminals of the batteries



Place a small drop of flux on the end of the cell. Next heat up some solder on the tip of your iron.



Place the tip of the iron onto the battery terminal and wait for the solder to spread.



Do this with each cell. Now your cells are tinned. Now, tin the battery bars. Tin each end of the battery bars on one side (face).



Tinning the ends of the battery bars and also the ends of the wires will also make quick work out of assembling the packs.

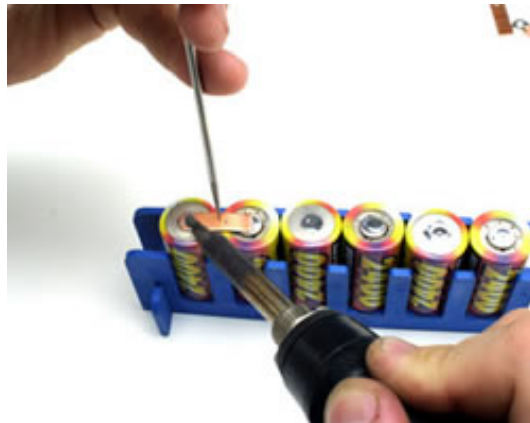


The flux allows the solder to spread very rapidly. This reduces the amount of time spent holding the iron to the cell.

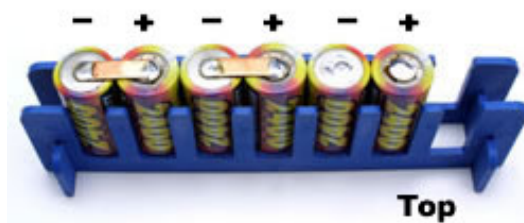


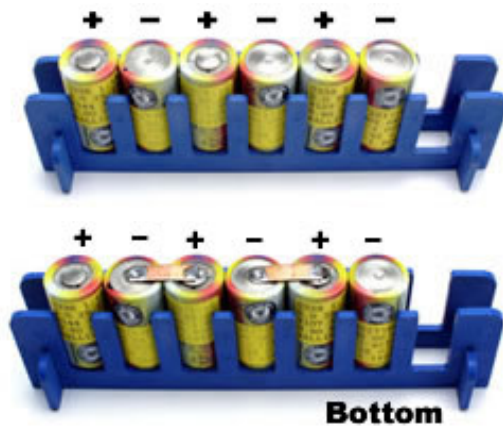


The less heat that you have to apply to your cells when joining the battery bars and wires, the better off your cells will be. Holding a soldering iron onto a battery cell for too long can permanently damage the cell. It's highly recommended to use flux and tin the components first, before assembly.



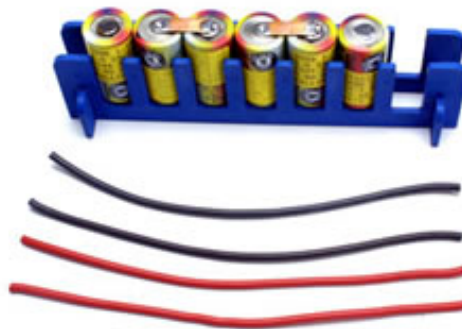
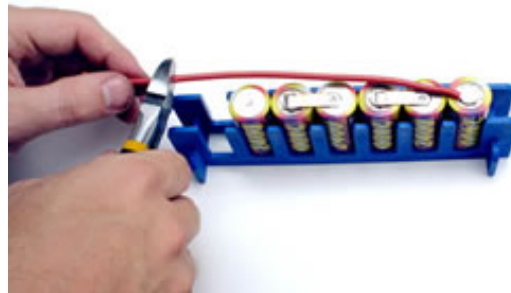
Step three – Place a battery bar onto the first cell terminal (neg.) and connect the other end to the positive terminal of the next cell. Place the iron tip onto the terminal and allow the solder to join together. Use a small screwdriver to hold down the battery bar while you lift the iron off of the cell. This will keep the bar from moving while the solder cools. Now connect the next two cells together. The last two cells will not need a battery bar.





Step four – Now remove and flip all of the cells over and place them back into the same slots in the battery jig. Join only the second and third cells together, from the left, and the fourth and the fifth cells together with battery bars. The sixth cell will not be joined at this time but still needs to be flipped over along with the rest of the cells.

Step five



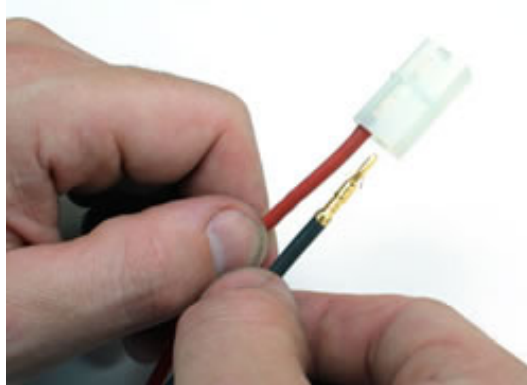
Cut two 6-inch lengths of the red and two 6-inch lengths of the black 14-gauge wire and strip about a ¼ inch of insulation off the ends of each wire.



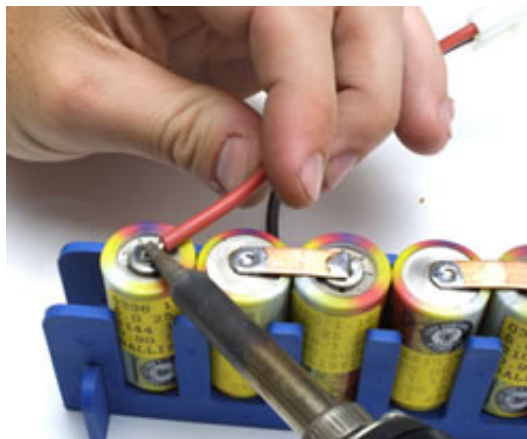
Tin the ends of the wires with the soldering iron and install the bullet plugs onto the end of each wire.



Solder the wires to the bullet plug after crimping them into position. This will keep the wires from pulling out of the plug when unplugging your packs from the ESC.

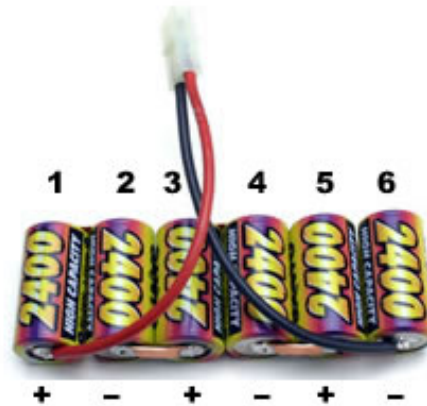


Now plug the bullet connectors into the appropriate location in the plastic housing. (Note in the photo, that the positive red wire is on the left when the locking tab on the JST connector is facing up.)





Solder the end of the red wire onto the positive terminal of the first battery and the black wire to the negative terminal of the sixth battery.



Step six – Pull the cells out of the battery jig and lay them flat on the table. Keep in mind that the sixth cell will still be loose. Apply a bead of glue between each cell.



Tip: Be sure when applying the glue that you use no more than necessary. The glues mentioned before may take a little while to cure but are very strong. It's very important to use the glue sparingly. Excess glue can get all over the place and can bond things together that you do not want bonded together. Just a small amount of glue between each cell will be plenty.



Build the packs so that the seventh cell is towards the rear of the truck and mounted inboard of the chassis to keep them out of danger during a roll over or a crash. The seventh cell is positioned on the side of the pack to clear the battery hold-downs.



Place the seventh cell across the top and on the side of the last two cells that didn't require a battery bar.

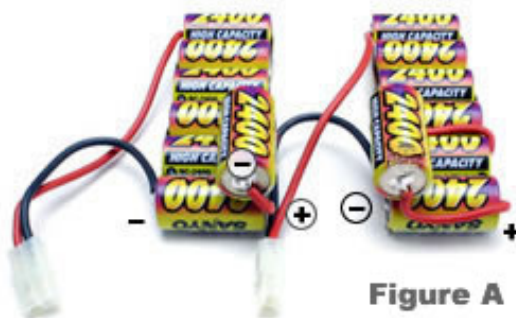
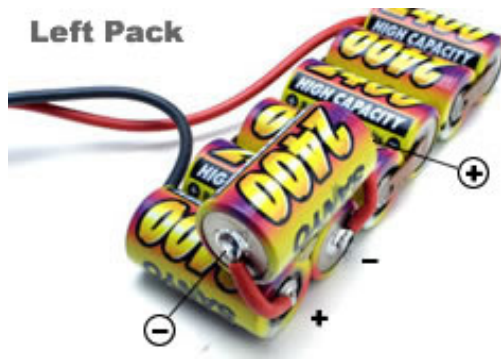


Figure A

Note that the cell is placed further away from the open terminals on one of the packs. This is to keep the cell mounted inboard on the truck. To help simplify things, the first six cells on both packs were assembled the same way. Only the seventh cells will be mounted differently on each pack.

Left Pack



On pack # 1 the seventh is located just above the open terminals and will use the 1 ½" wires to be connected.



On pack # 2 the cell is mounted on the other side and will need the 2 ½" wires to connect it.

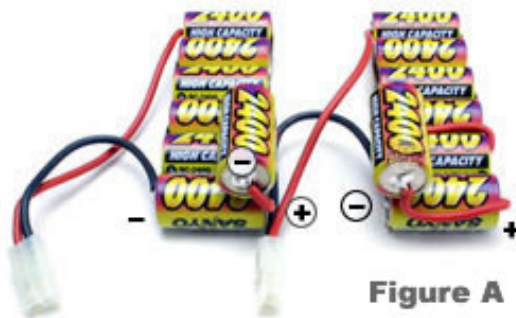


Figure A

Position the 7th cell on each pack as shown on figure A.



Now apply a bead of glue between the seventh cell and the two cells that it rests on. Wrap the cells with a thick rubber band along the length, and also with one around the seventh cell.



Tip: (Wrap the seventh cell with a rubber band first. Then, while holding the cell steady wrap another rubber band around the length of the pack so that it keeps the seventh cell in place.)



The battery trays in the chassis of the E-Maxx can be used along with the hold downs to make sure that the seventh cell is in the correct position while the glue cures. Allow the glue to set-up overnight before handling the cells. Hang in there. Your pack is almost complete.

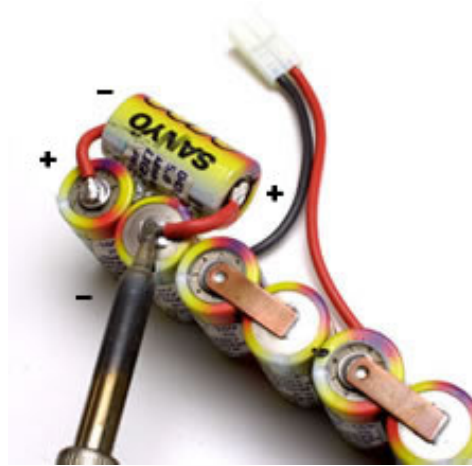
Step seven



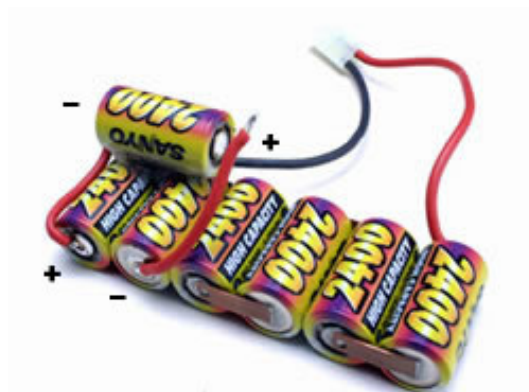
Cut two 1 ½" and two 2 ½" pieces of 14 gauge wire . Strip and tin the ends.



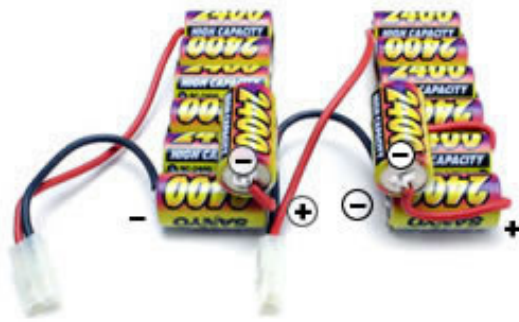
Caution: When building battery packs, make sure that positive terminals are always connected to negative terminals on the cells (series connection). Reversing polarity will permanently damage the cells. Solder the positive terminal of the sixth cell to the negative terminal of the seventh cell.



Then connect the negative terminal of the fifth cell to the positive terminal of the seventh cell and solder. Your pack is now complete.



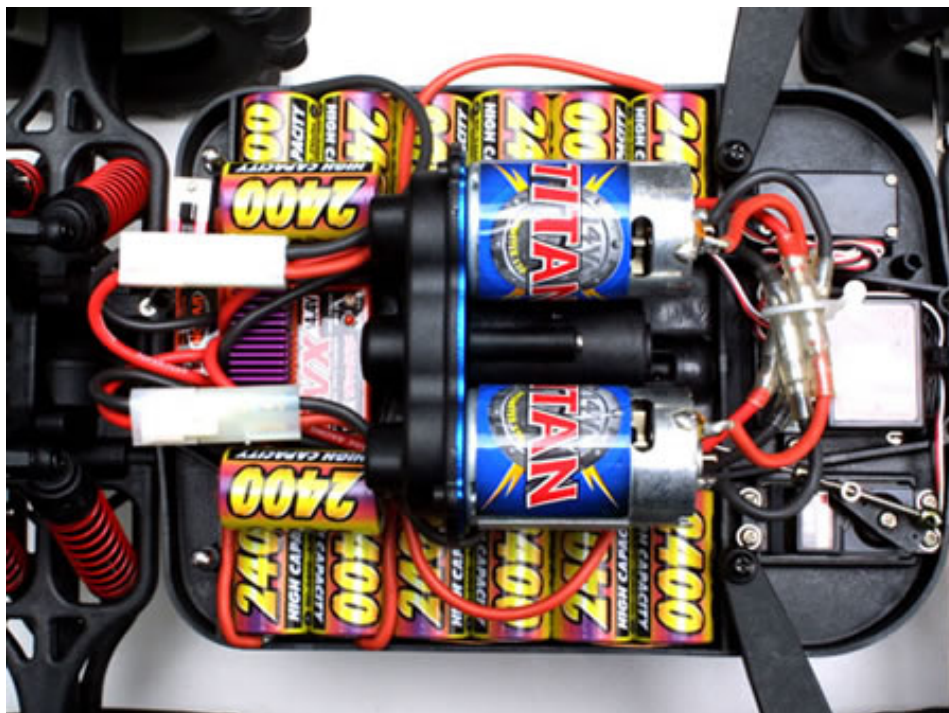
The second pack can be assembled in the same manner with the exception of using longer pieces of wire to reach the seventh cell.



Tip: (complete steps one through five on both packs before applying any glue so that they can share the same time to dry. This will save a little time so that you can enjoy the awesome power of the extra cells as soon as possible.)



There you have it. Seven easy steps to building a 14-cell E-Maxx powerhouse. Everyone will think that you are running expensive “modified” motors while retaining the low maintenance attributes of the two Titan motors.



Remember to always discharge nicads fully before recharging and the packs will give you many hours of stump-pullin' power. Have fun!

