

lajf P28

Building a battery pack

Building a battery pack for the P28.

The P28 uses a saddle pack type of battery that needs to be built by the car owner since it's not possible to buy them readymade. The battery is made up from 4 AAA size nimh battery cells.

This guide will take you through the necessary steps required to make a complete race pack.

To make a complete pack you will need 4 higrade nimh AAA cells. Be careful which cells you use because there are many different makes and not all are suitable for this application. Take a look at the P28 recommendations document for a list of suitable cells.

Tools needed:

Soldering iron with at least 100w power.

Solder

A paper clip

CA glue, medium or thick

2mm gold battery connectors 2pc

Connecting wire 1-1,5mm² (16AWG)

A cutting tool

Step 1

Start by putting all 4 cells in the chassis and check that they fit. Note that it is important that you file the battery slots as described in the instruction manual. Make sure the direction of all cells are correct. See Fig 1. There is a small gap between the cells and by putting them in the chassis you make sure that the gap is correct. Now put some CA between the cells to glue them together two and two. See Fig 2. When the CA has dried, take them out of the chassis and put some glue on the opposite side as well.

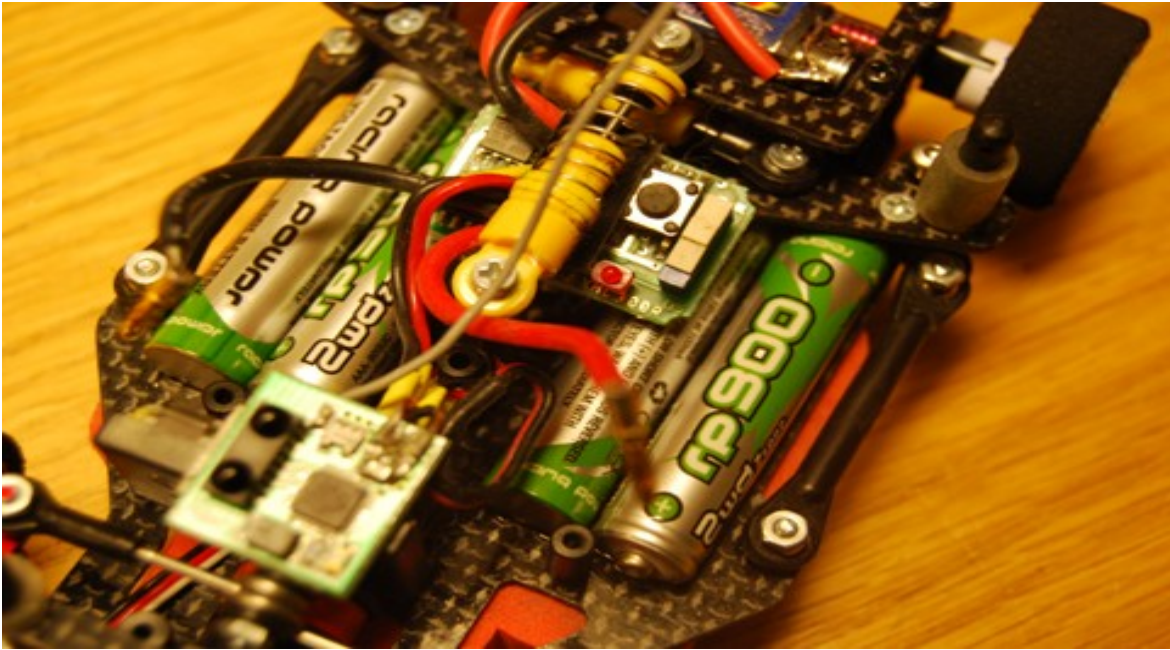


Fig 1 Make sure the direction of the cells are correct.

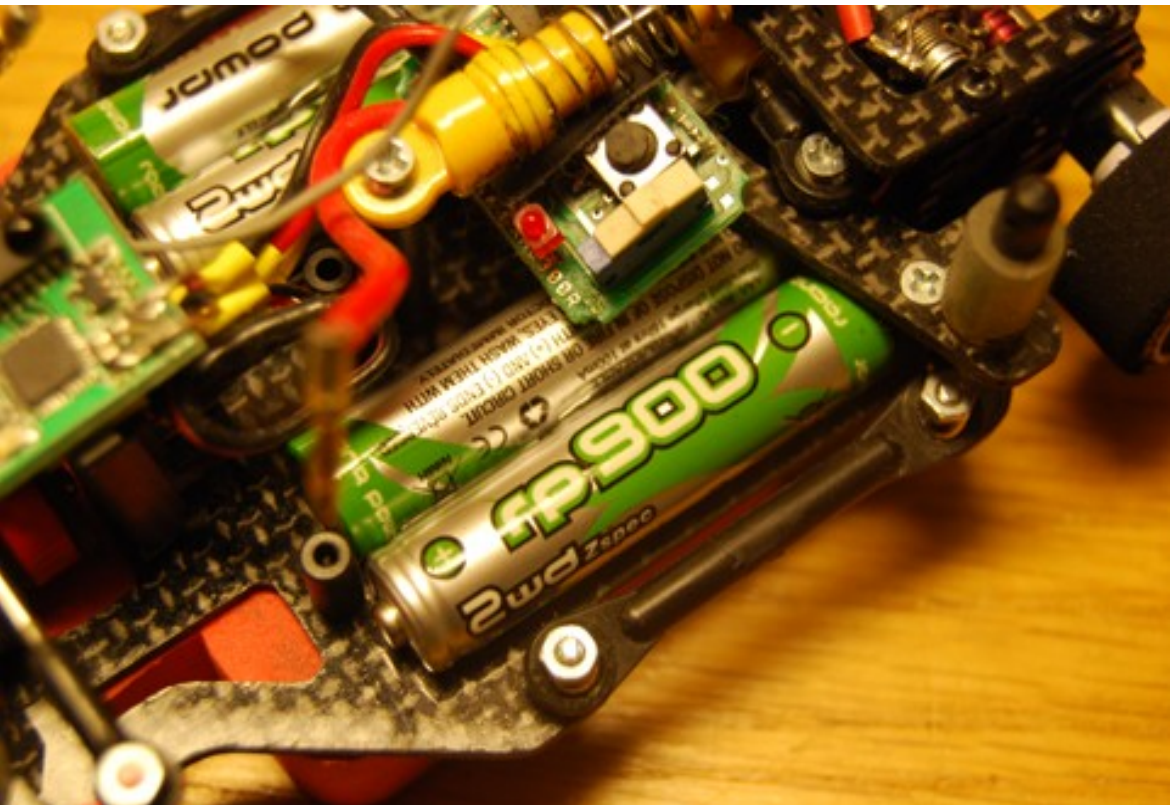


Fig 2 Glue the cells together.

Now it should look like in Fig 3.



Fig 3 Cells glued into the two halves.

Step 2

Take a normal paper clip and cut out two pieces approx 13mm of length see Fig 4 and 5.



Fig 4 Paperclip



Fig 5 Paperclip cut to correct length

The two pieces shall be used to connect the two batteries in each halves together. See Fig 6

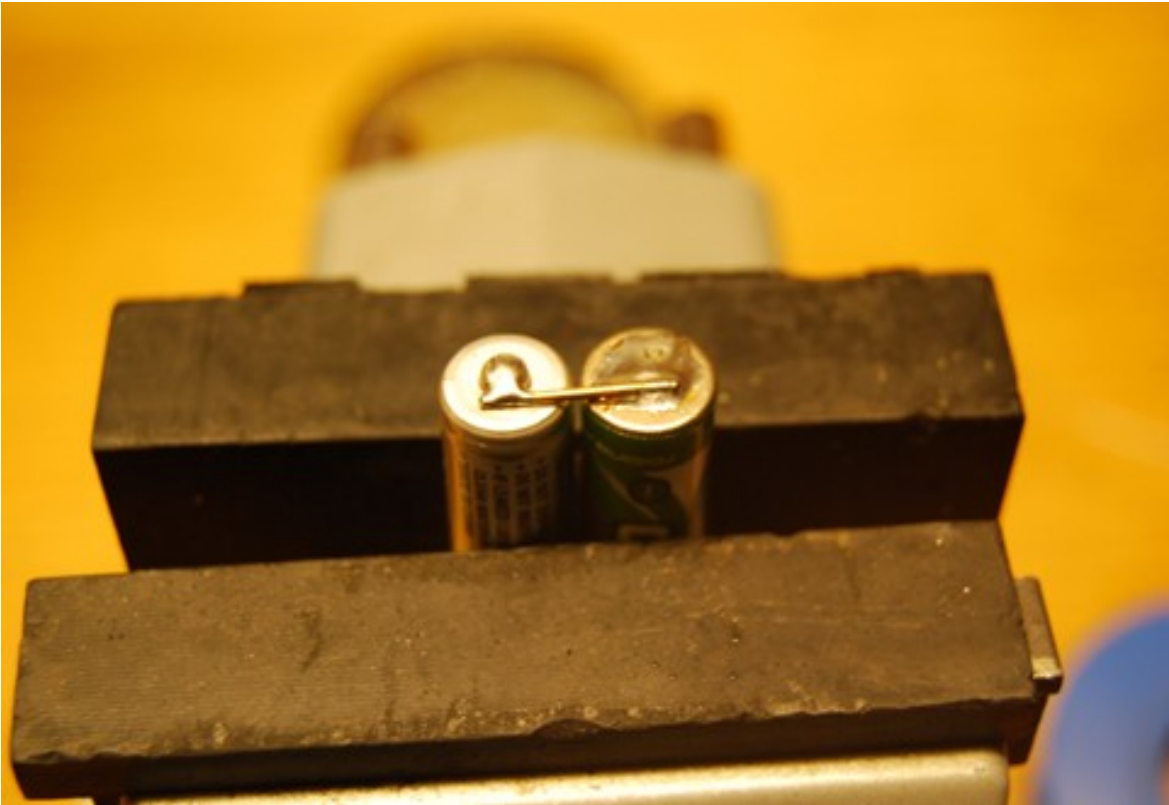


Fig 6 Battery soldered

Be careful not to over heat the the cells with the soldering iron. Also be careful with the shrink plastic on each cell so that it does not melt. You need a soldering iron of at least 100w power for this job.

Double check that you solder the two halves on the correct side...

Step 3

Now it's time to solder the power connectors to the battery. We use 2mm gold connectors cut to approx 8.5mm length. Solder the female part to the battery as seen in Fig 7.

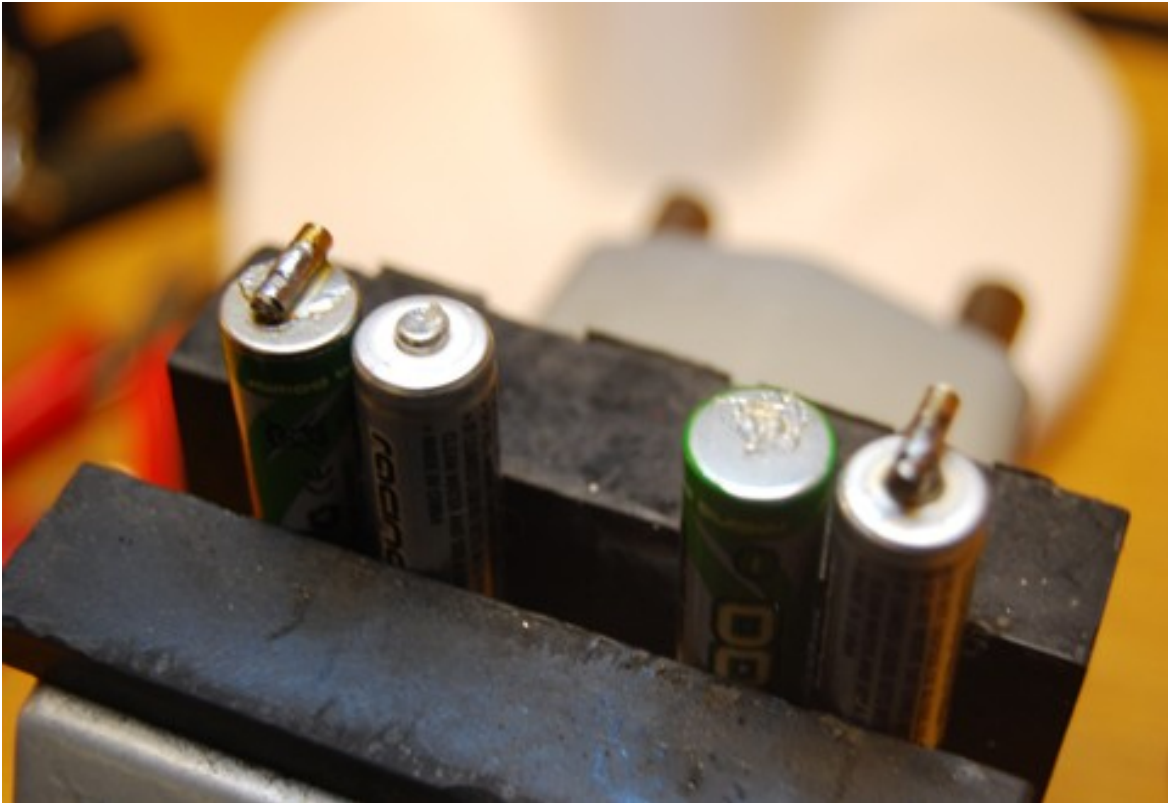


Fig 7 The two halves with 2mm gold connectors.

Make sure there is a clearance between the chassis and the connectors when the battery is mounted. The connectors must not touch the carbon fiber since it will cause a short.

Step 4

To connect the two halves together we use a 1-1,5mm² (16AWG) wire soldered between the two inner cells. See Fig 8. Cut the wire to approx 75mm. It is not necessary to use a piece of sheet brass as shown in fig 9. You can solder the wire directly to the cells. Again be careful not to over heat the cells.

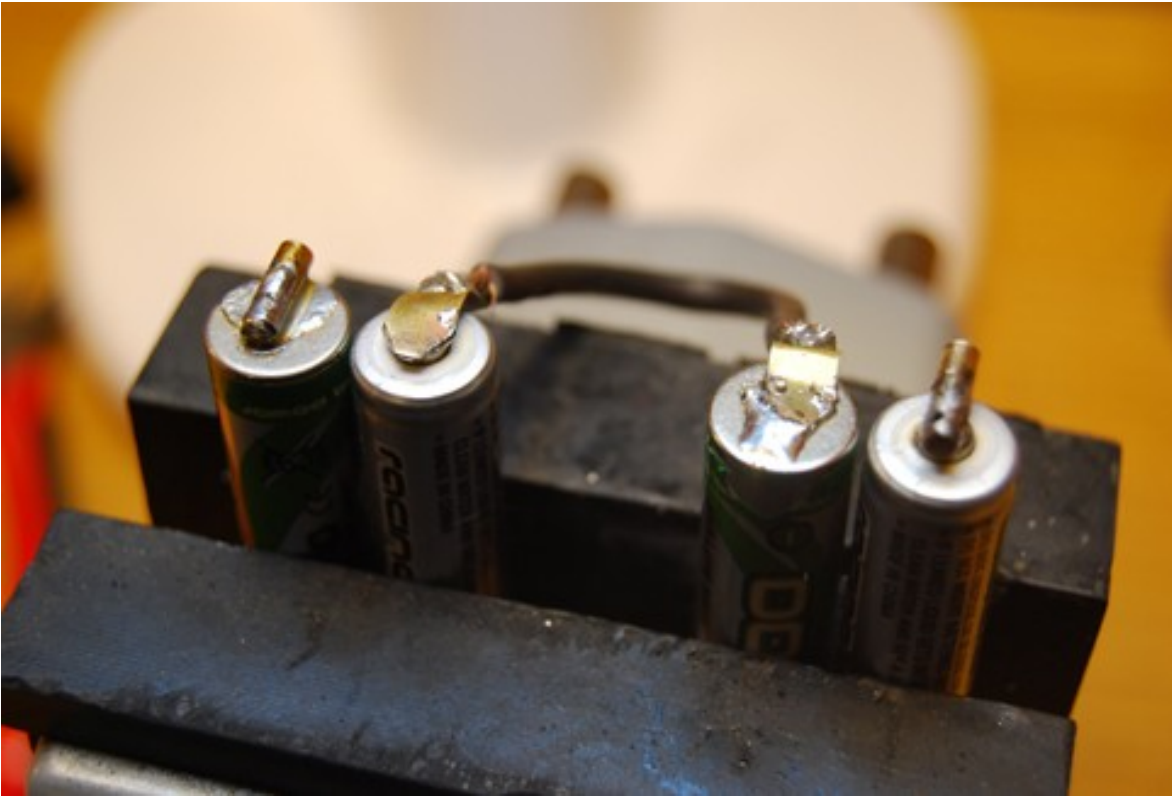


Fig 8 Mounted connection wire.



Fig 9 Mounted connection wire.

If you did melt some of the shrink plastic on the cells you need to insulate them from the chassis, remember that the carbon fiber is conductive. You can use liquid tape or similar to insulate the battery pack. To verify that you do not have a short to the chassis you can use a multimeter and connect the positive test probe to the positive battery pole and the negative test probe to the chassis (preferably to one of the chassis screws where it is easier to get a proper connection). The reading should be 0 volt.

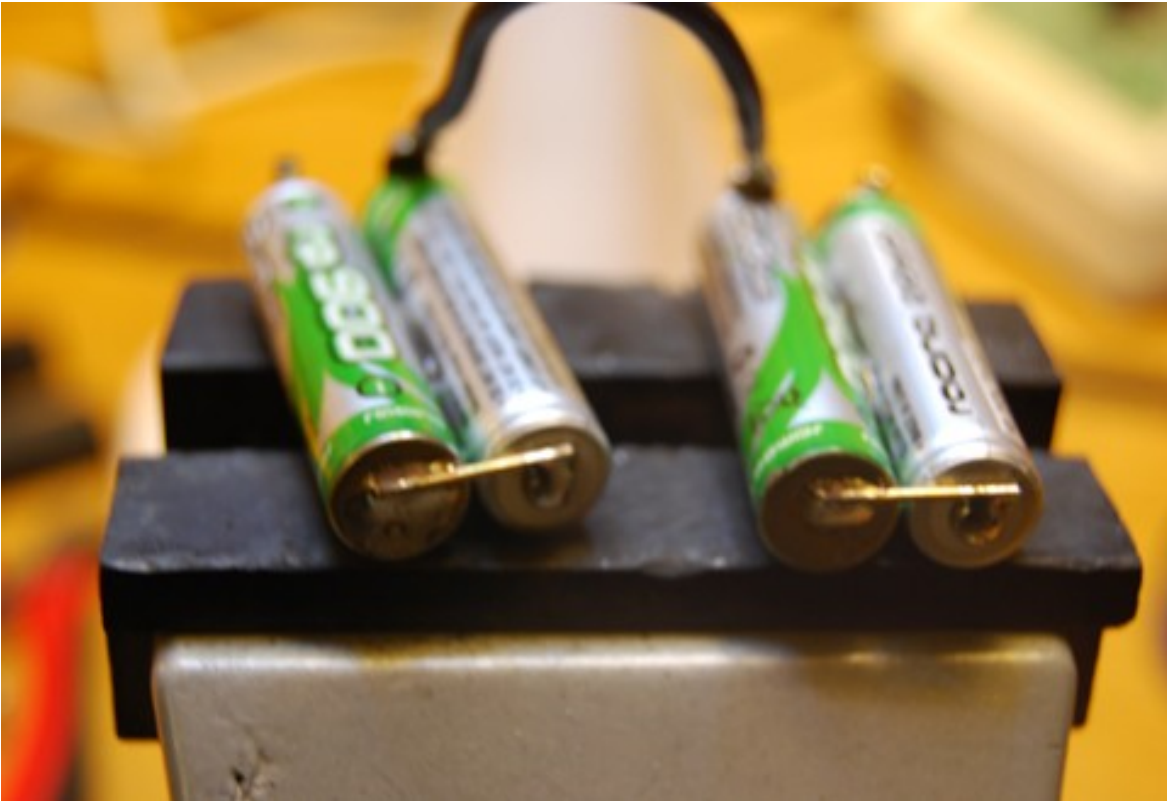


Fig 10 The complete battery pack.



Fig 11 Battery pack ready for race.

Now you have a complete battery pack for the P28.