



# Solar vehicle C-6140

Check all parts before begin assembly

## Tools required for assembly of the vehicle

Fine-point permanent marker or pencil Hacksaw Screwdriver star tip Bench vise pliers Soldering iron and tin Shears or pliers for cutting sheet metal flat file Awl Sandpaper Cutter

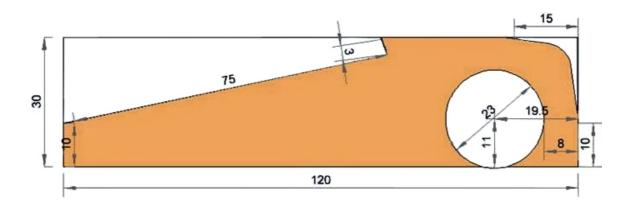
#### Materials included in the kit

Nº	Quantity	Description
1	1	Axis 3 x 90 mm
2	1	Axis 3 x 100 mm
3	6	Screws autorrosca CH 2,2 x 9,5 mm
4	1	Screws autorrosca CH 2,9 x 13 mm
5	1	Double toothed wheel 48/12 - Drill 2.9 mm - orange
6	1	85 mm metal strip (17 holes)
7	2	Perforated metal sheet 30 x 20 mm (6 x 3 holes)
8	1	Special solar engine
9	1	Pinion 10 teeth - 1.9 mm drill
10	4	Rubber stopped 24 x 5 mm
11	1	Photovoltaic solar cell 1V-200 mA
12	1	Mini wheel flange 8.5 x 2.9 mm
13	8	Flanged wheel 30/25 x 2.9 mm
14	1	Expanded polystyrene 120 x 50 x 30 mm with 23 mm bore
15	1	Washer M3
16	4	Double-sided adhesive pads



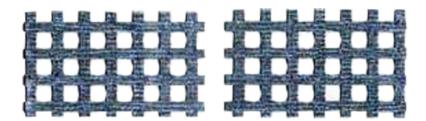
### How to place expanded polystyrene

- A) With a fine point permanent marker or pencil, mark the outline of the solar cell.
- B) With the saw will cut carefully the upper inclined portion.
- C) With the pen or pencil, will mark the curved point of the upper back, it has 11 mm and 15 mm below the back.
- D) The opening will be cut down with the cutter, try it is well cleaned. You have to leave about 5 mm for special ventilation motor.
- E) Press the solar cell in place. Cell connections are punctuated in the polystyrene.
- With the screwdriver handle is squeezed on brands to make it a well-marked hole. In this gap placed after the welding and support the solar cell is good.
- F) With a punch you have to make a hole from the hollow of the cell to the engine room. Polish well cut off all parts and place them in the hole the cables that go from the cell to the engine.
- G) Remember, with the sandpaper, you can leave a better finish of the pieces



#### As the sheet metal machining

The perforated metal plates bearing kit measuring 30 x 20 mm (6 x 3 holes).



For the construction of the stands, do form given below:

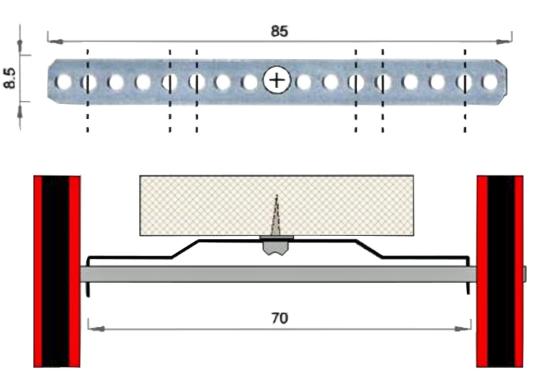
A) To cut outline what can be done with shears or scissors to cut iron.



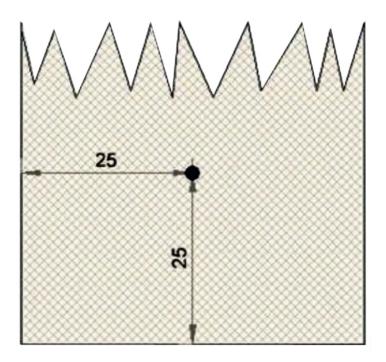
- B) Remember to iron out all the edges of the pieces, that can not be cut.
- C) Once cut and polished the pieces, put them rather flat.

# As machining the perforated metal strip

- A) The perforated metal strip is constructed as shown in the diagram below. The dashed lines show the points where they bend the strip
- B) The image below without bending axis shows the profile of the front axle once folded.



C) In this picture you can see the bottom of the vehicle and the point where the front axle must be screwed. This should be at the front and 25 mm at the center to 25 mm on the side. Mark the point with a pencil or permanent marker.

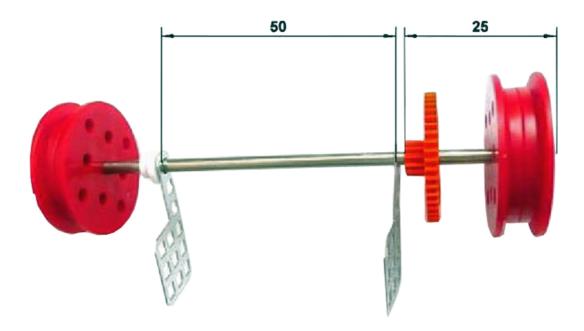


#### How to fit the rear axle

- A) Place the pinion on the motor shaft.
- B) Insert the red and black wires of the cell, into the hole instead of going to the motor.
- C) Weld connections to the motor.
- D) Fix the motor to pressure, noting that the ventilation slots must point downwards.
- E) Paste the solar cell. Use 4 cushions with double-sided adhesive. Paste a pad near each corner of the cell, then remove the other paper backing and strong tighten in place. Doing these operations carefully, because they can not be rectified.

#### F) We will assemble the rear axle follows:

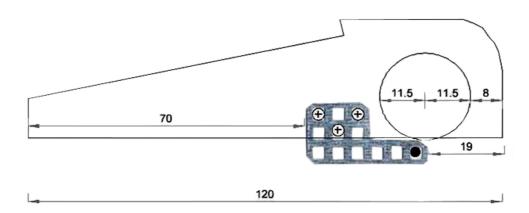
- Place the double gear 48/12, with drill 2.9mm (orange) on the metal shaft and place Ø3mm 25 mm from the end.
- In this end position the two flanged wheels 30/25 so that the tabs are on the outside.
- Place the two brackets made with perforated plates. Check the position in the drawing.
- Fix then the mini wheel flange, with the flange side of the metal support.
- Finally place at the end of the shaft, the two flanged wheels 30/25. See the details in the picture.
- Once this is all right and the measures indicated in the drawing, put the rubber rings on each of the wheels



## Like setting the rear axler

A) Fixing the rear axle is performed with three self-CH screw 2.2 x 13 mm screws on each side.

Note: It is best to screw only the outer screw. Other screws are placed has twice as gear, adapting the motor pinion. The pinion will not jam with double gear, leave room for movement. If they are too tight, adversely affect the proper functioning.



B) Set the mini wheel flange, so that one has a set of maximum 1 mm.

#### How to set the front axle

- A) The perforated metal strip has doubled, to be screwed with a self-CH 2.9 x 13mm threaded screw. Also you have to register an M3 washer between the polystyrene and the perforated strip, to avoid having rouphness.
- B) Place a pair of flanged wheels 30/25 (with the two opposing tabs) at one end of the Ø3 x 90 mm shaft.
- C) Place the shaft in the support strip perforated front axle.
- D) attach the other pair of flanged wheels 30/25, at the other end of the shaft.
- E) Place the rubber rings on the front wheels



#### How does it work:

Illuminating the photovoltaic cell produces a flow of electric current supplying the motor. Thanks to the reduction gears, the vehicle moves at normal speed. The vehicle can turn the front wheels.

This school Mounting Kit is designed for students and fans over 12 years of age.







NOTE: This kit is recommended for children from 12 years if accompanied by an adult.















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