Wind turbine in light kit C-0208

This kit allows the mounting of a windmill of 160 x 50 x 380 mm., With a propeller built in a single piece of polypropylene.

The wind turbine has an electronic circuit to illuminate the LEDs. To mount the circuit, you have to solder electronic components.

OPERATION: The light wind turbine works with the wind turns the blades. When the turbine rotates in the wind, drag a generator that makes electricity is produced and the LED lights.
Vane that is in the back of the mill, always causes the turbine to face the wind.

Note: Remember that the wind turbine only works abroad

You can also build a base for the wind turbine

Check all the material before beginning assembly

Tools required to mount the turbine:

Scissors
Tracing paper
Fine-tipped pen, fine point permanent marker
Rule
Welder
Tin
Flat pliers
Cutters
Star tip screwdriver (small)
Star tip screwdriver (medium)
Silicone gun
Drill and bits of 1 - 1.5 - 2.5 - 3 - 4.5 to 5 -5.5 - 6.5 mm

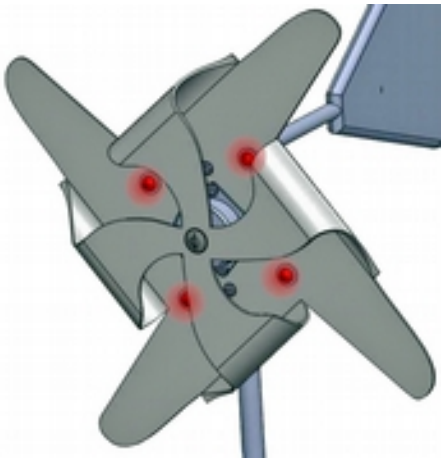
Wind turbine operation scheme

When the wind blows

The wind turbine starts rotating

The alternator is set in motion

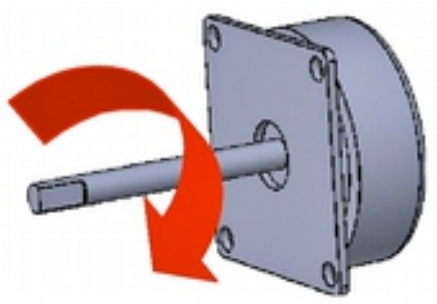
LEDs light



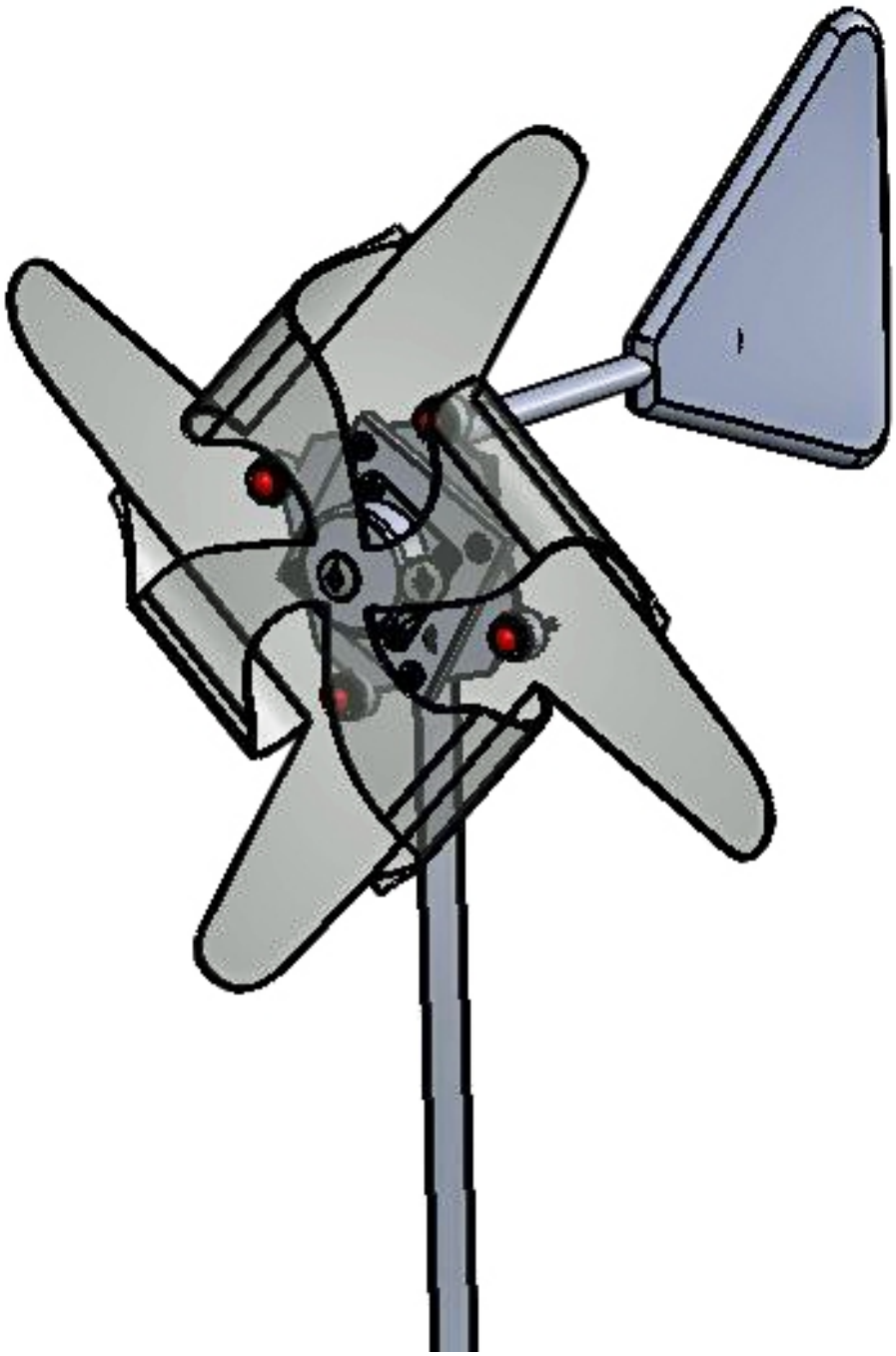
Vane allows the wind turbine always facing the wind

Operating principle:

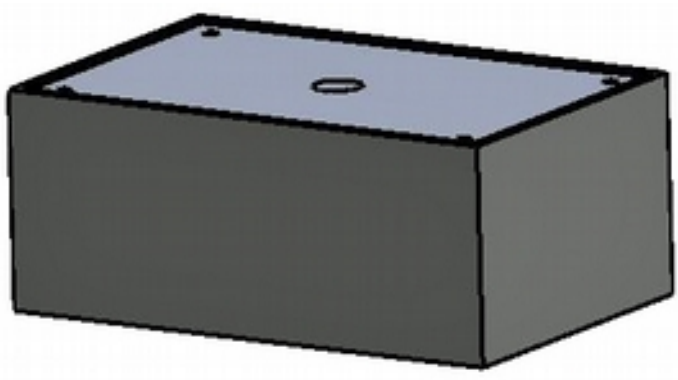
The wind moves the blades. These blades set in motion the alternator rotor. Turning the alternator produces electricity that allows the illumination of the LED.
Thanks to the turbine vane is always facing the wind.



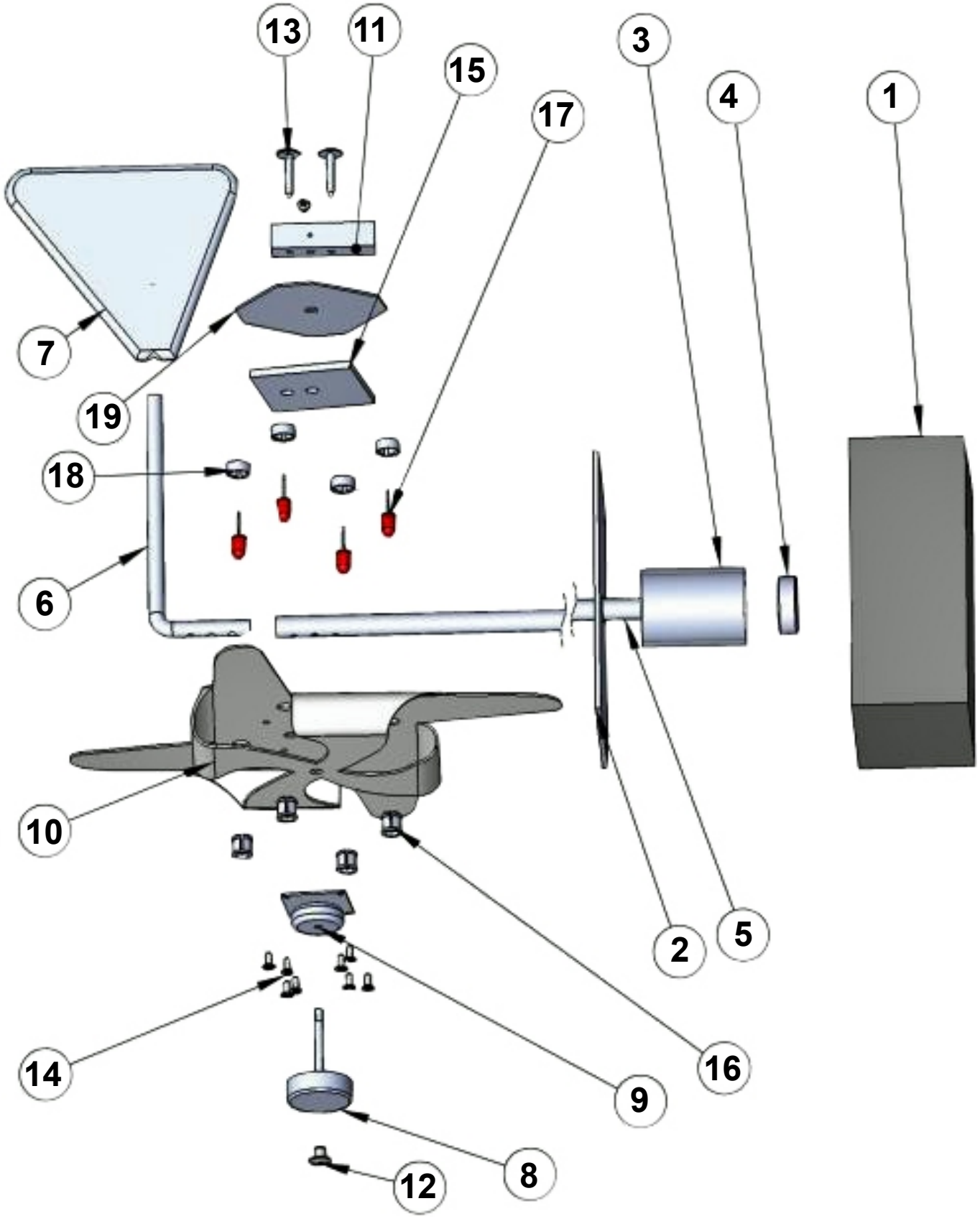
3D view



Option: a base for the wind turbine



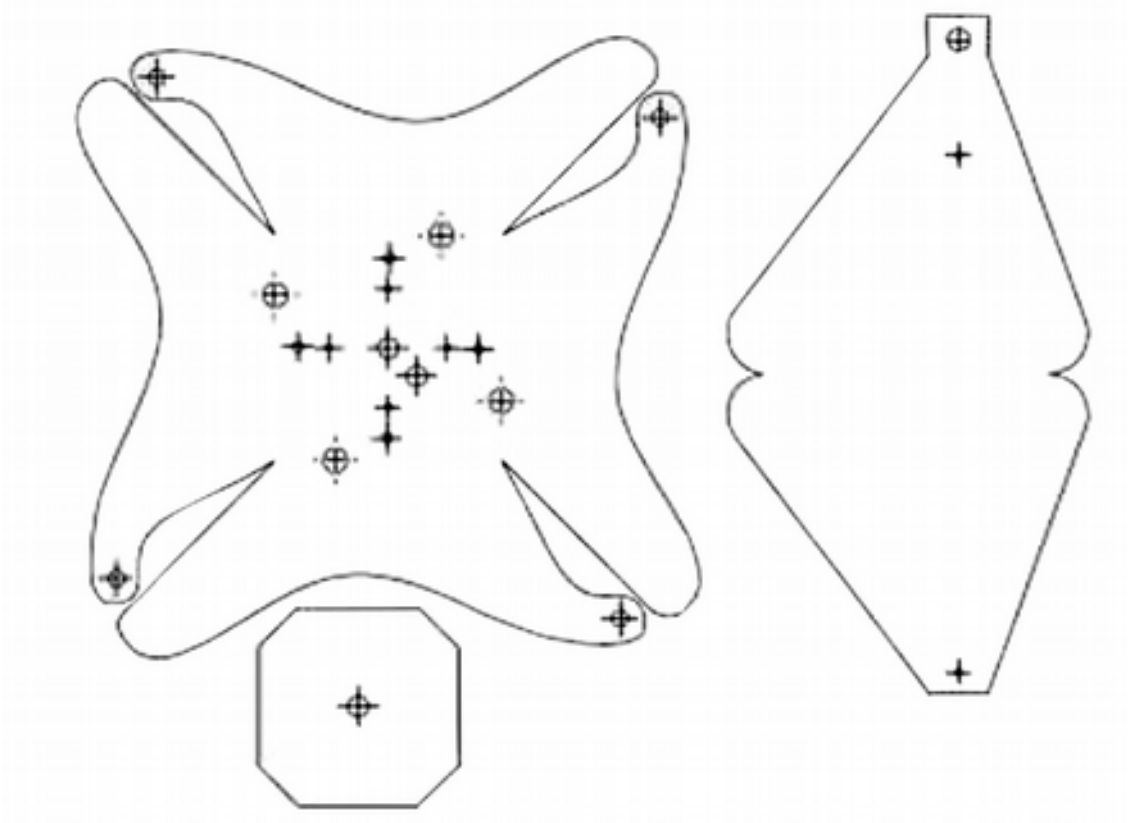
Cutting kit



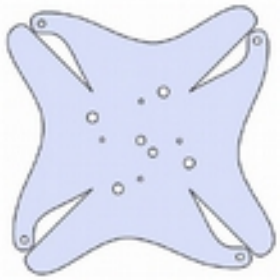
Material required for attaching the kit

Part No.	Description	Quantity
1	1	Cash basis to support (Optional)
2	1	Base cover (Optional)
3	1	Insulating tube bearing (bearing than Ø) PVC tube (Optional)
4	1	Bearing inner diameter Ø8mm (Optional)
5	1	PVC pipe mast
6	1	6mm rod
7	1	Veleta Polypropylene (*)
8	1	Alternator shaft
9	1	Base alternator
10	1	Polypropylene blades (*)
11	1	Alternator mounting bar bar PVC 10x10x40
12	1	Plastic rivet
13	2	Screw M3,5 x 16
14	10	2.2 x 6.5 screws Flathead
15	1	The support plate 3mm PVC blades
16	4	Clips LED
17	4	Red LEDs
18	4	LED rear clip ring
19	1	Polypropylene rear cover plate LEDs (*)

(*) Note: the three pieces of polypropylene were mounted from the same plate



Mounting tabs : E10, E20, E30 y E40



E-10	Construction of the blades

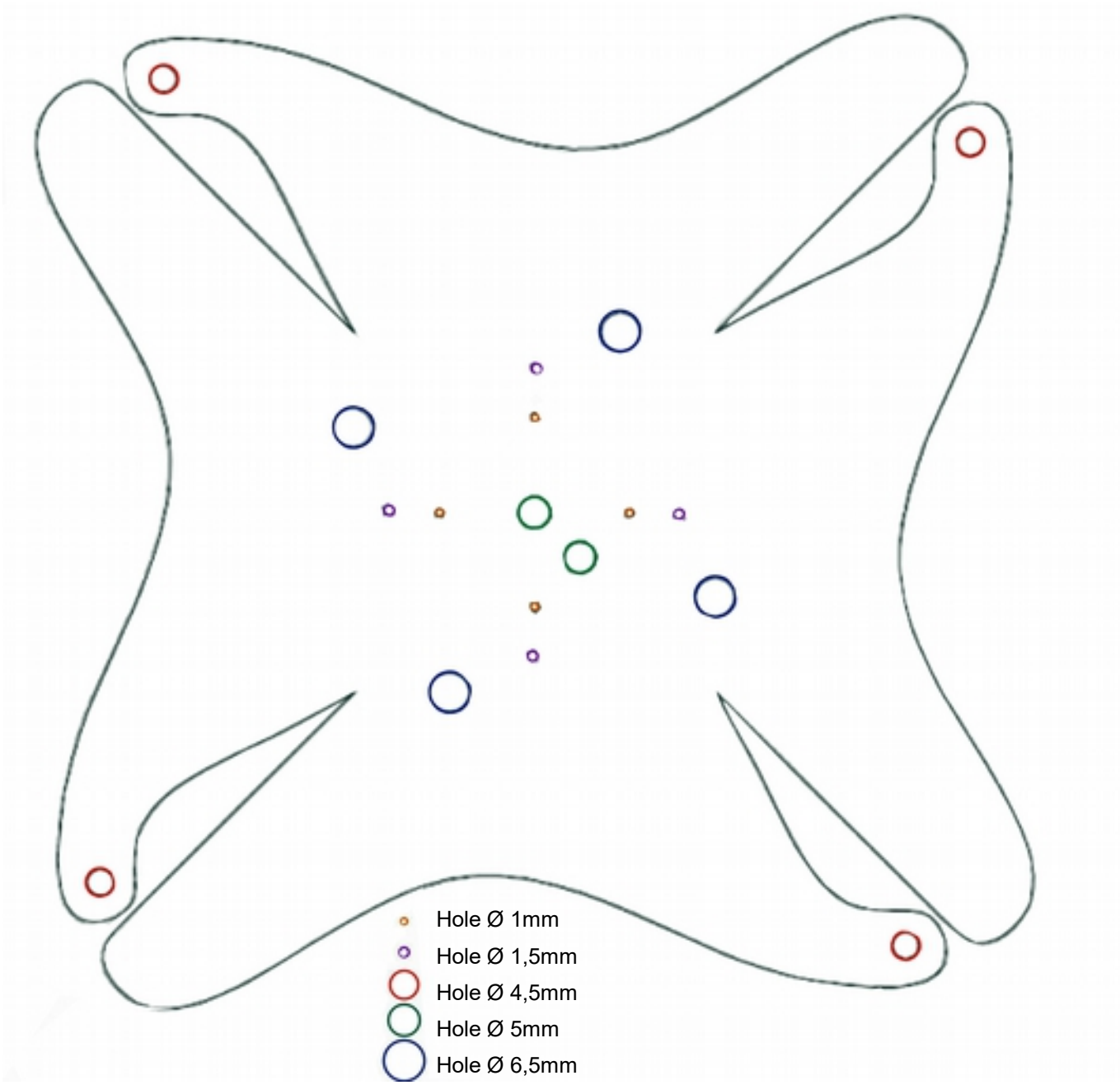
Material: tracing paper, pencil, scissors, drill and bits 1- 1,5 - 4,5 -5- 6,5mm,

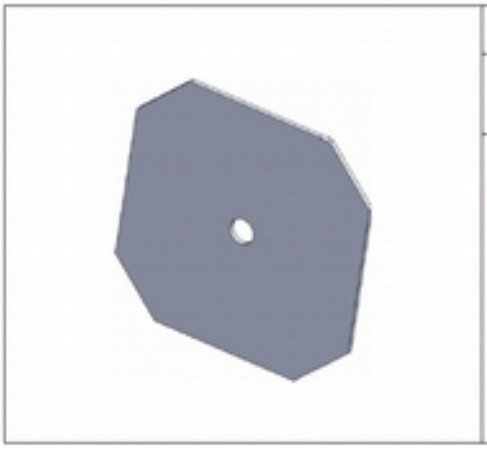
1 - Tracing the figure is reproduced below

2 - Reproduction on the polypropylene plate.
It should be room for E20 and E30 figures on the same plate.

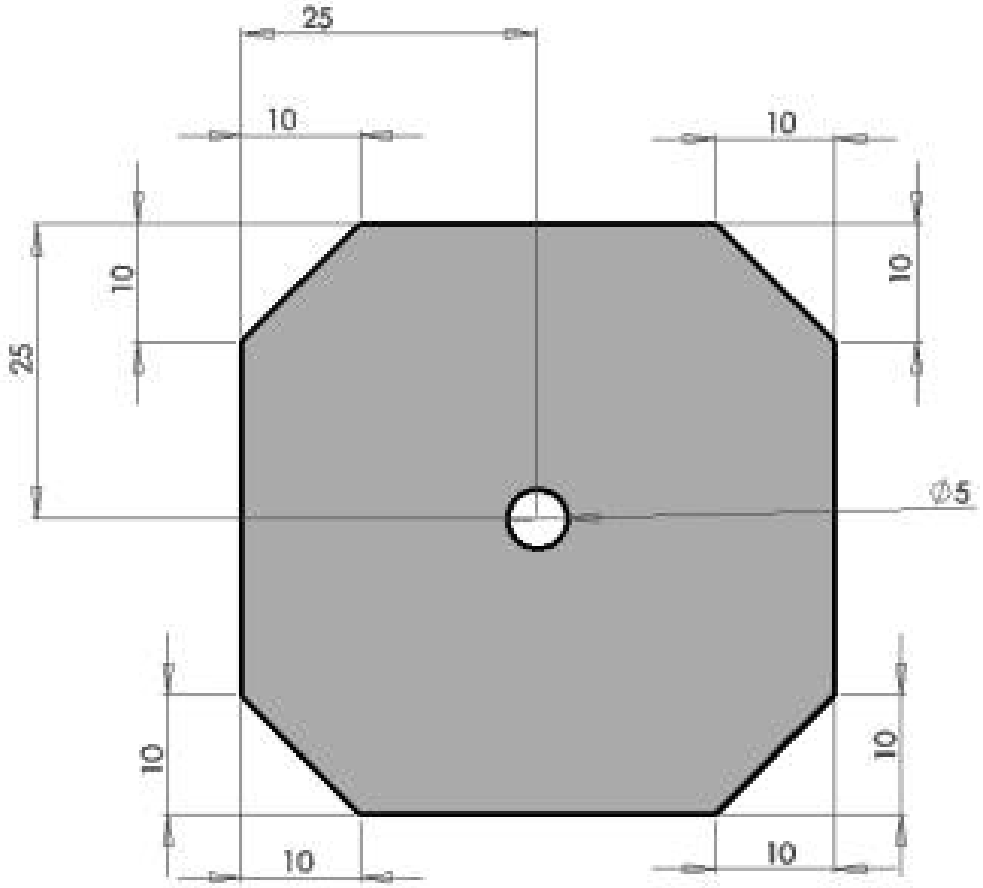
2 - Cut the profile shape drawn with the help of scissors.

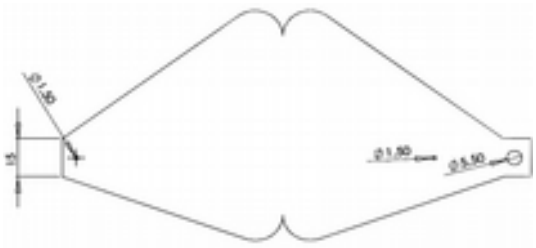
3 - 18 holes have been marked and to the extent indicated in the plane.



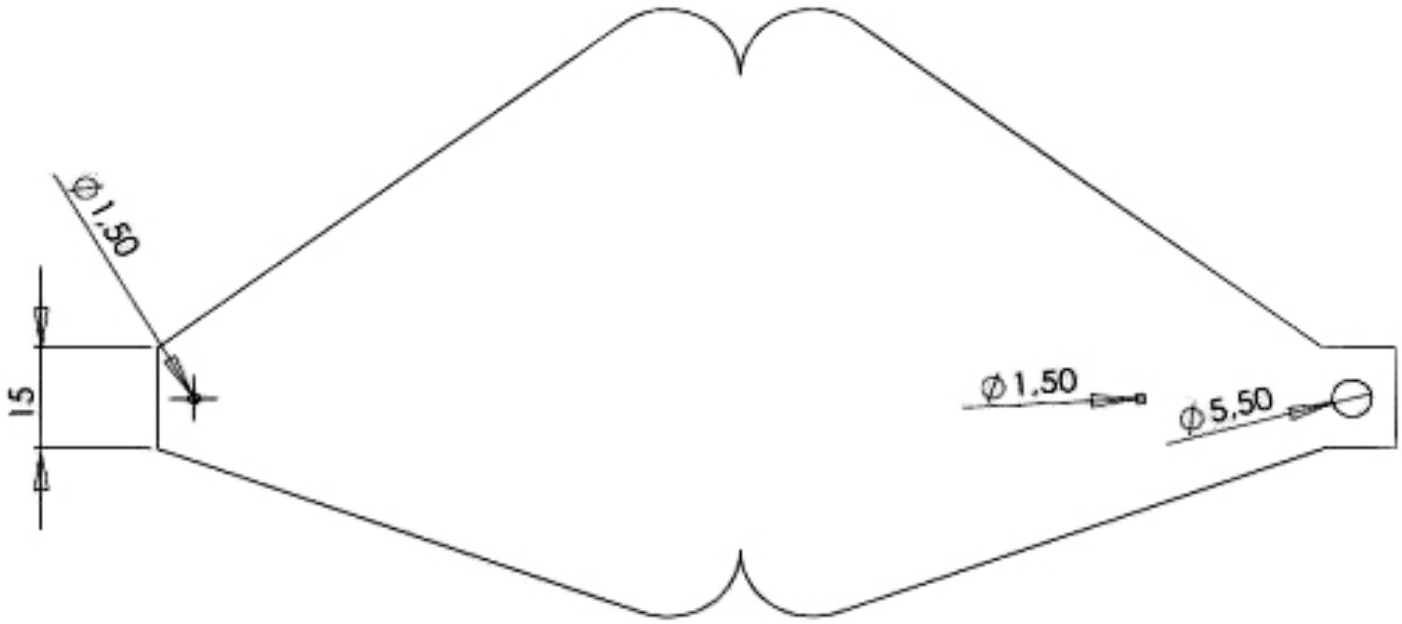


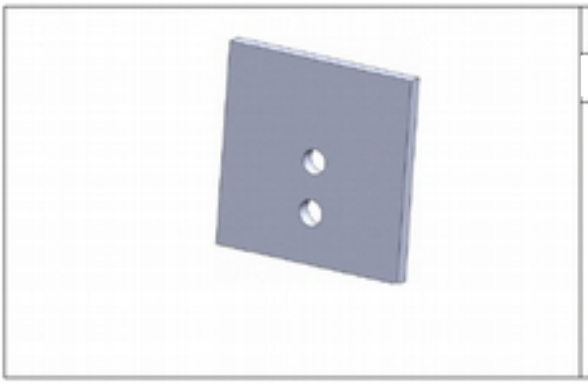
E-20	Construction of the tailpiece of the LEDs
Material: pencil, ruler, scissors, drill and bit Ø5mm.	
1 - Copy drawing on the plate bottom polypropylene (has to be room for Figure E30) 2 - Cut 50x50mm Square first. 3 - Cut corners to 10mm from the edge. 4 - Center hole Ø5mm.	



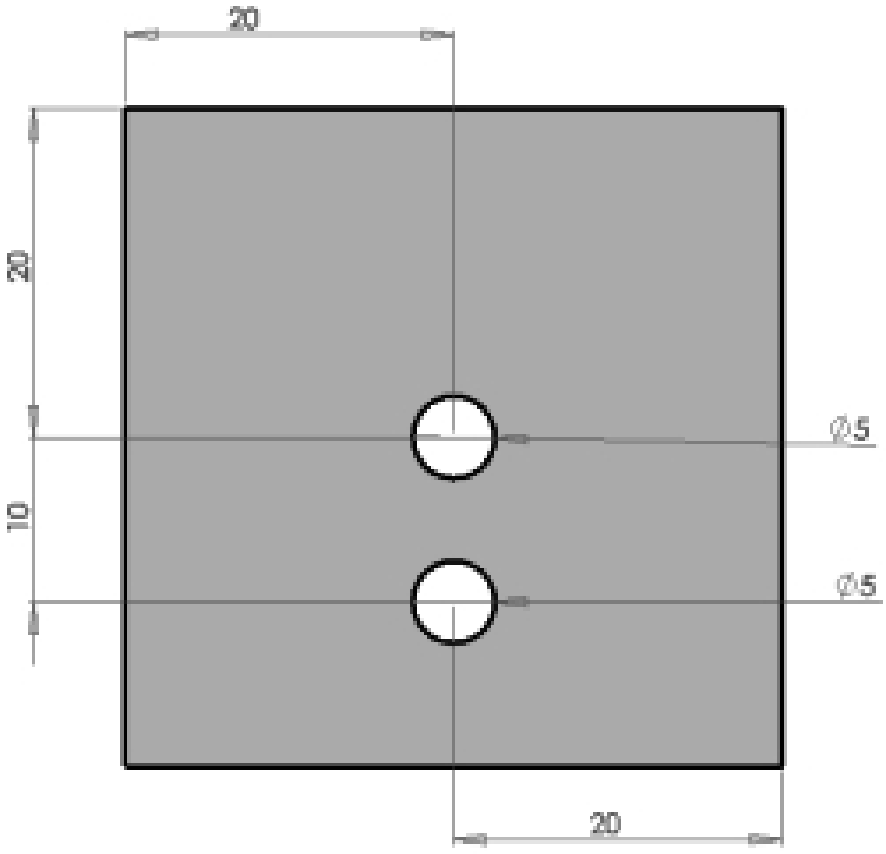


E-10	Trim vane
Material: pencil, ruler, scissors, drill and bit Ø1,5mm y 5,5mm.	
1 - Tracing the figure is reproduced below 2 - Reproduction on the rest of the polypropylene plate. 2 - Cut the profile shape drawn with the help of scissors. 3 - 3 holes have been marked and to the extent indicated in the plane.	



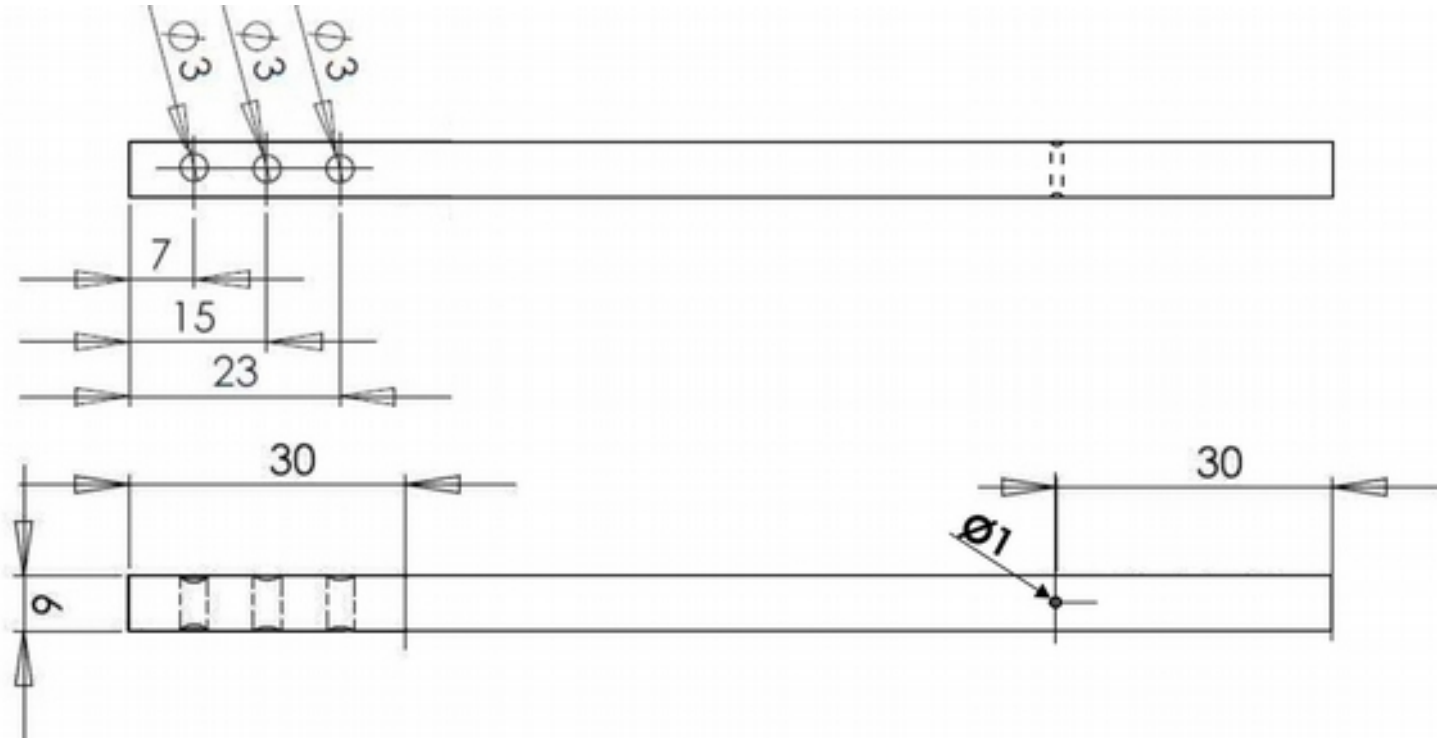


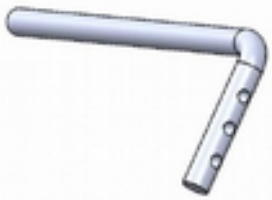
E-40	Bracket Assembly blades
Tools: drill and bit Ø5mm	
1 - Mark the two diagonals on the plastic PVC 40x40x3mm, to mark the center hole. 2 - Draw the center line and mark the second hole of 10mm First 3 - The two holes with a bit Ø5mm.	



Mounting tabs : E50, E60, E70 y E80

E-50	Rod Ø6mm - hole
Tools: ruler, pencil or permanent marker fine point, drill and bits Ø1 y 3mm	
Making holes Ø6mm rod according to the lower plane.	



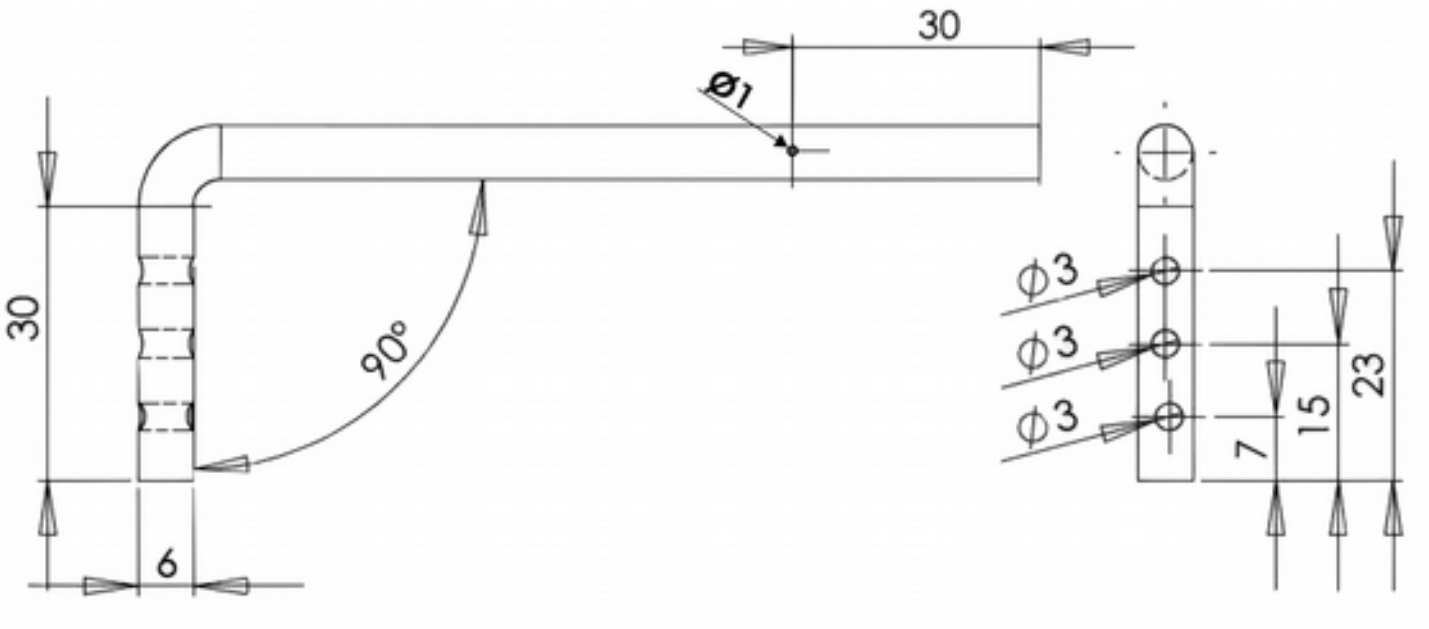


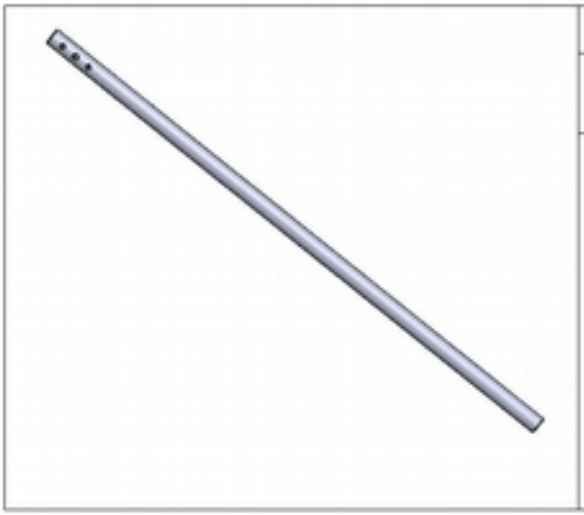
E-60	Rod Ø6mm - fold

Tools: ruler, hot air blower.

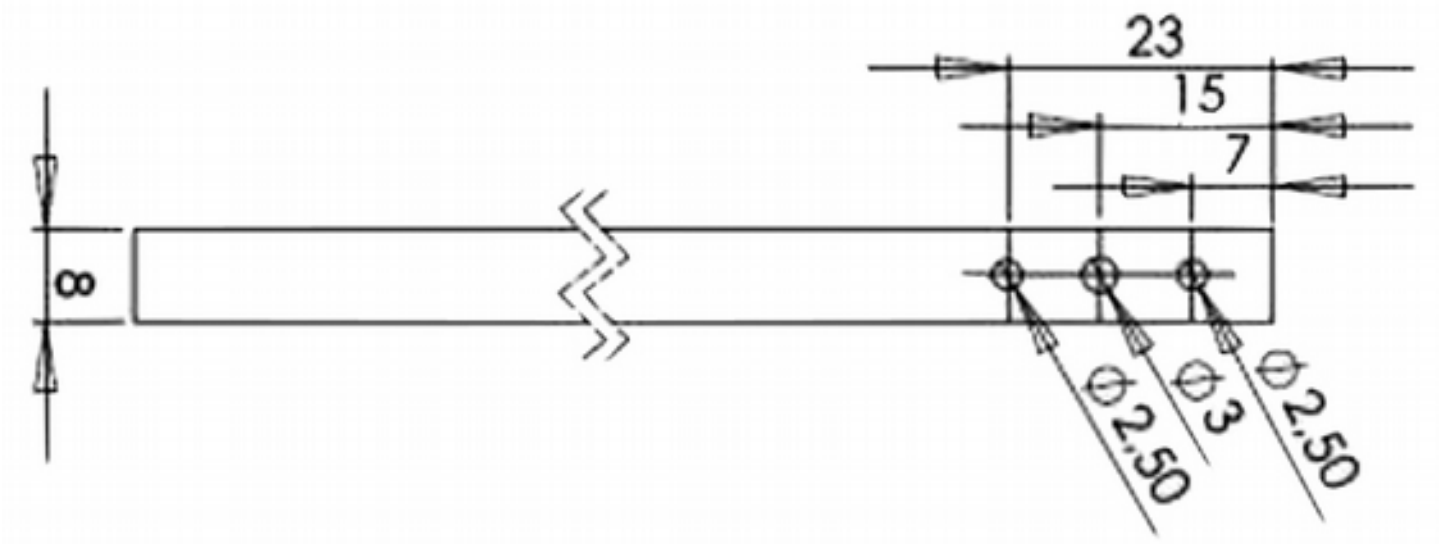
With the help of hot air turn fluorescent rod 90 as the lower plane

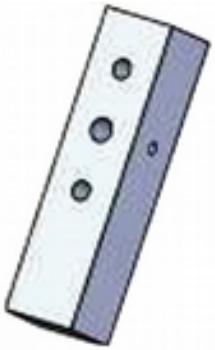
ATTENTION - DANGER:
Go carefully when working with hot air blower.
Burn hazard.
This practice should be done with a responsible person who perfectly knows the procedure.



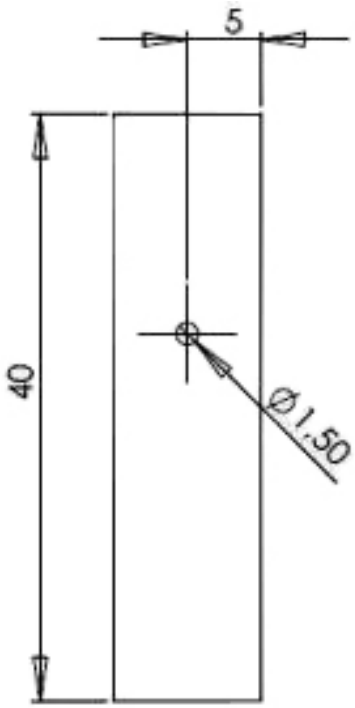


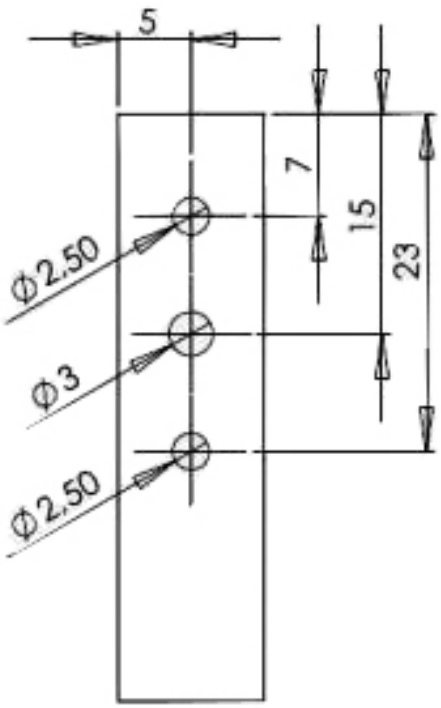
E-70	Preparation of mast Ø8mm
Tools: ruler, pencil or permanent marker fine point, drill, drill bits Ø2,5 y 3mm	
Poke holes in the mast (PVC tube Ø8mm) according to the lower plane	

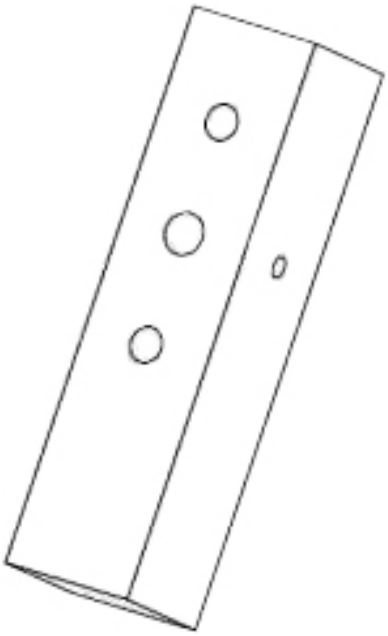


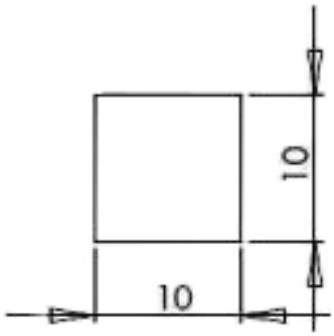


E-80	Preparation of the locking bar Alternator
Tools: ruler, pencil or permanent marker fine point, drill, drill bits Ø1,5 - 2,5 y 3mm	
Poke holes in the locking bar alternator (square bar PVC) as shown in the lower plane	

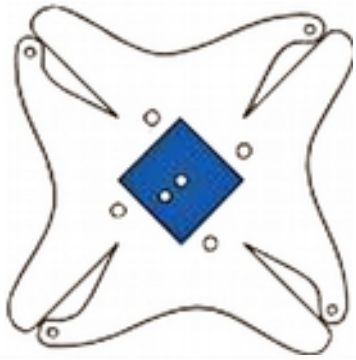








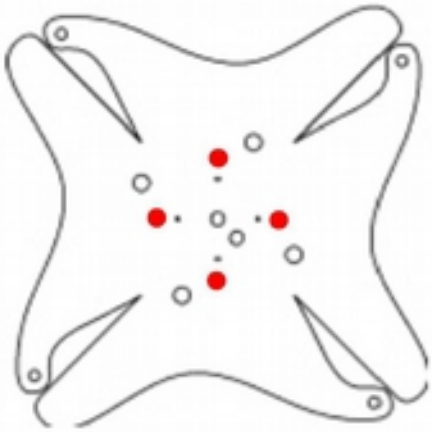
Mounting tabs : E90, E100 y E110



E-90 **Assembling the Blades on its support**

Tools: none

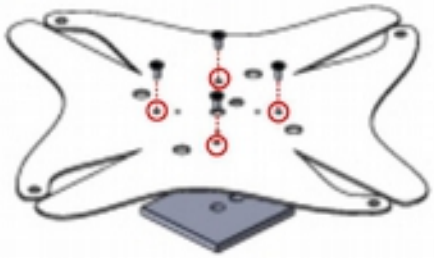
Place the plate PVC we have built in E40, in the back of the wind turbine.

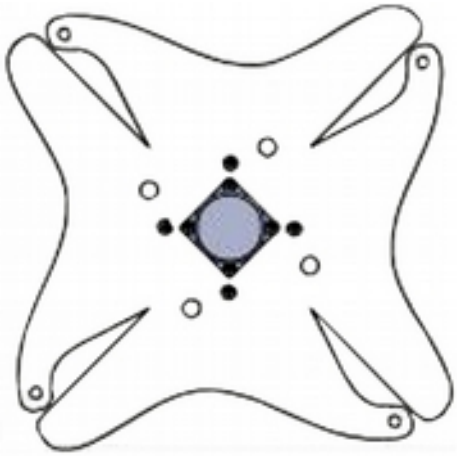


E-100 **Fixing the blades on the support**

Fixing the blades on the support

1 - Place the screw 2.2 x 6.5 flathead fix PVC plate
2 - Tighten the screws





E-110 **Fixing the alternator to the bracket**

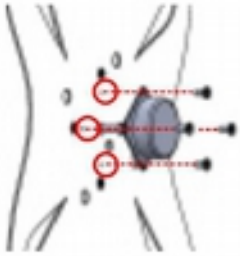
Tools: screwdriver tip star

1 - Place the alternator shaft into the center hole on the opposite side to the support PVC

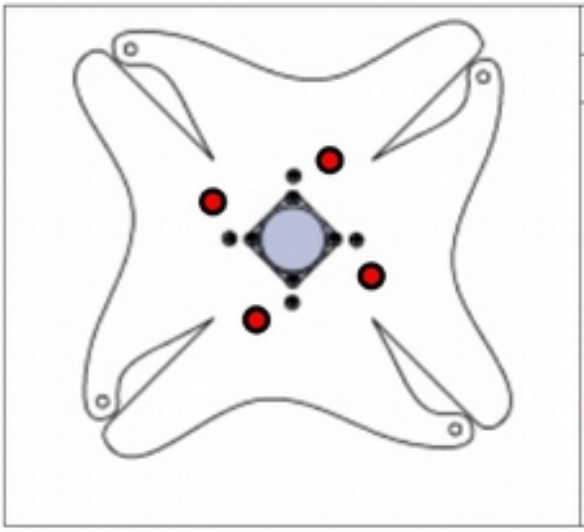
2 - With the help of pliers,
Cut the wire alternator
right next to the connector

3 - Pass the 3-wire through the hole
It is below the center hole

4 - Tighten the alternator with 4 screws 2,2x6,5mm



Mounting tabs : E120, E130, E140, E150, E160 y E170

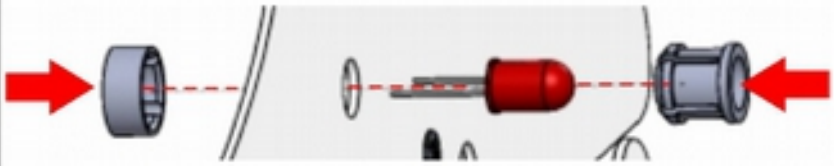


E-120 Mounting the LED

Tools: screwdriver tip star

1 - Fit the LED on the wind turbine with the help of clips for LED

2 - Tighten the clip on the back



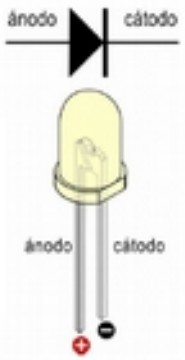
E-130 Connecting the LED

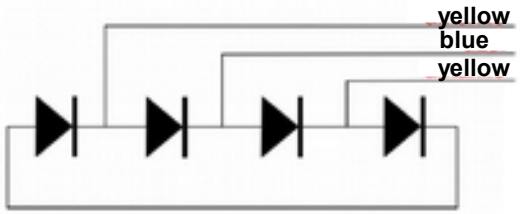
Tools: cutting pliers, flat pliers, soldering iron and tin

1 - Watch the position of the legs of the LED.
= cathode short leg.

2 - Place the LED in order, so that the anode of a LED corresponds to the cathode of his companion. Fold the legs at right angles.

3 - When the position is correct weld the legs of the LED





4 - Peel the end of the wires and alternator weld as indicated by the scheme.

E-140 Rivet mounting

Tools: Hand

Attach the bonds of the blades by a plastic rivet, which belted four blades.

1

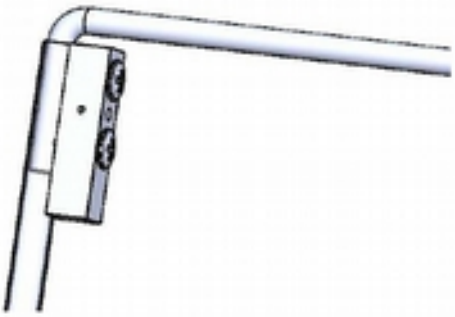
2

E-150	Assembling the insulating plate

Tools: Hand

1 - Place the insulating plate. Welds will be protected inside.

2 - Glue the silicon plate



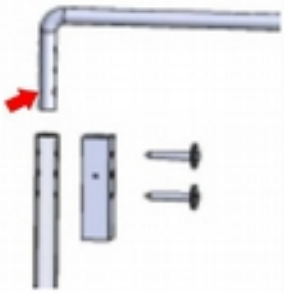
E-160	Mast mounting and fluorescent rod

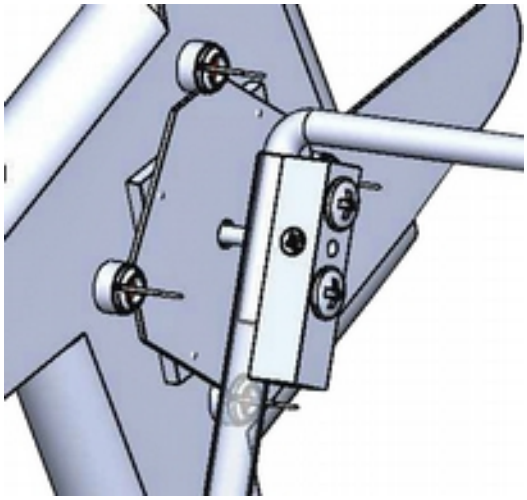
Tools: medium star tip screwdriver

1 - Fit the mast (Ø6mm).

2 - Using the locking bar
alternator and two screws
3,5x16mm, we will post the bent rod.

Note: If the entry is difficult, some sanding shaft





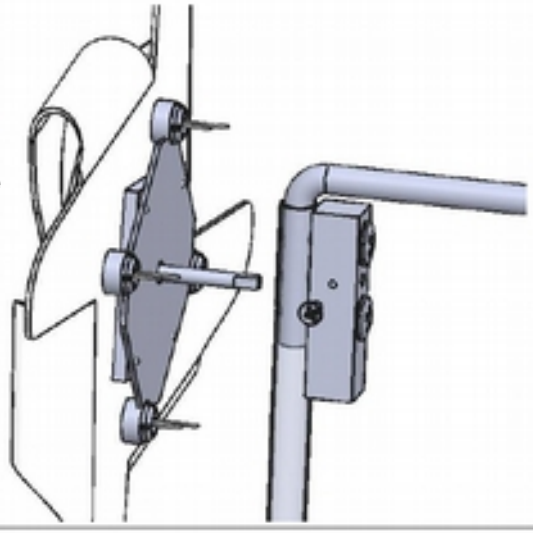
E-170	Assembling the propeller

Tools: Phillips screwdriver tip small

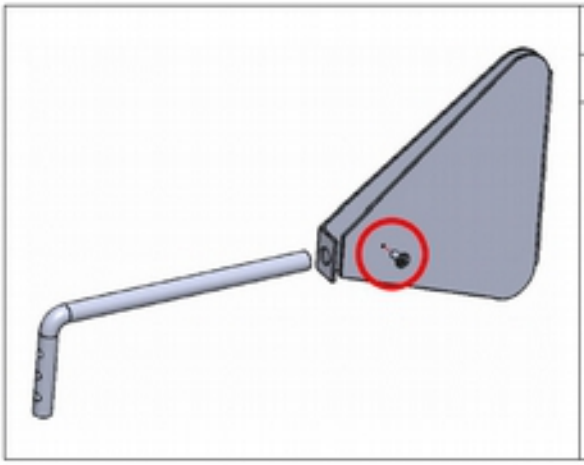
1 - Insert the alternator shaft into the hole of the support plate of the blades.

2 - Once properly positioned the shaft, block it with a small screw 2,2x6,5mm. This will in Ø1,5mm hole that is perpendicular to the other two.

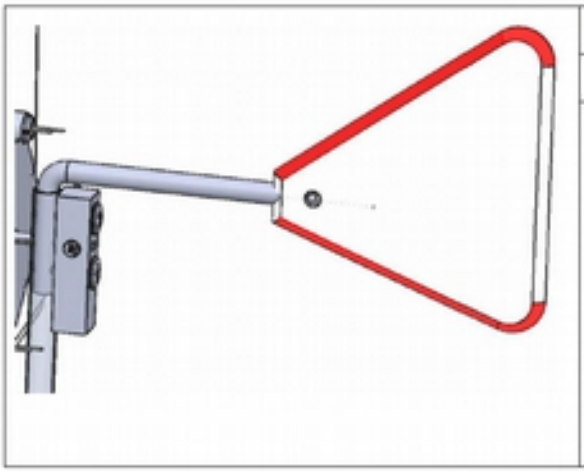
ATTENTION:
The plane shaft alternator should give Looking screw 2,2x6,5mm tighten.



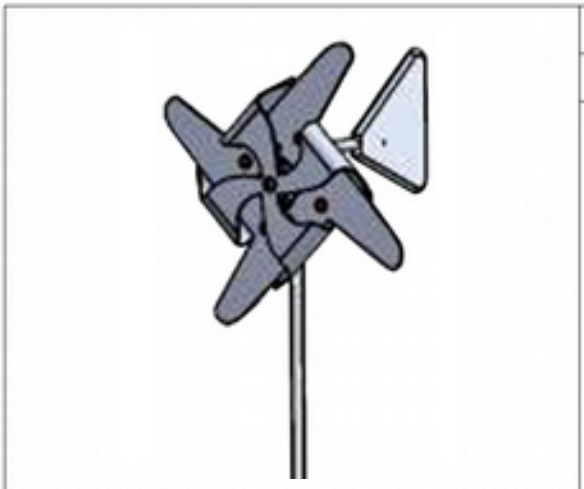
Mounting tabs : E180, E190 y E200



E-180	Vane assembly -1
Tools: screwdriver tip star	
1 - Mount vane on the rod have doubled to 90 2 - Fix it with a small screw side 2,2x6,5mm	



E-190	Vane assembly-2
Tools: glue gun	
With the help of a glue gun, seal the edges of the vane to prevent air	



E-200	Windmill Test
The light wind turbine is ready for operation	

Mounting a basis for the wind turbine case you want to use a

With glue gun, glue the bearing to
bottom of the box. Much careful NOT STRIKE THE INSIDE BEARING

Paste a piece of PVC pipe of the same height of the box and of larger diameter than the bearing

Fill the box with sand. Cap the tube to fill the box to prevent sand in the bearing

To end cover and screw the box with its lid. Before we have done a hole with a drill Ø 9mm for the mast to rotate freely.

This kit is designed so that you have a basic knowledge of the horizontal wind turbines.

The windmill is a purely ecological project.
The construction of the wind turbine has to, to see a system of renewable energy production.

NOTE: Remember that you must always operate abroad, to produce energy.

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

Notas: