Ray Catcher Sprint Deluxe Kit Instructions [1]

If you are competing in the Junior Solar Sprint competition, Pitsco strongly encourages you to create your own design. The official Junior Solar Sprint rule sheet is enclosed. Refer to the sheet when designing your vehicle to meet those specifications.

The assembly instructions that follow are intended for those not participating in the Junior Solar Sprint competition. These instructions represent one of many ways to assemble the vehicle.

Contents of Kit

Your kit includes the following items (the solar panel and motor are official parts required by the Junior Solar Sprint competition). These materials are used to make a complete solar vehicle.

- 1 Ray Catcher solar panel (2.76V, 1,100 mA)
- 2 balsa wood sheets (10-1/2" x 4" x 3/16")
- 2 alligator clips
- 2 Pitsco GT-F wheels
- 2 Pitsco GT-R wheels
- 2 screw eyes
- Junior Solar Sprint Rules and Regulations
- 1 No. 280 Motor
- 4 nylon spacers
- 2 steel axles
- 1 plastic gear font
- 2 No. 14 rubber bands
- 2 wide rubber bands
- Ray Catcher Sprint Deluxe Kit Instructions

Tools You Will Need (not included)

- Soldering iron
- Sharp utility knife
- Coping saw (optional)
- Cool-melt glue gun
- Needlenose pliers
- 2 C-clamps
- Ruler

Making the Chassis

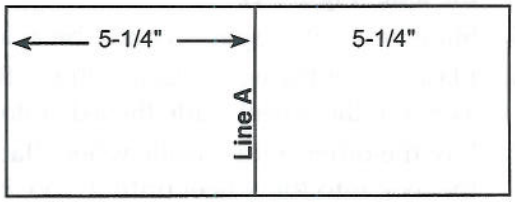

Figure 1

1. Using a No. 2 pencil, draw **Line A** down the center of a balsa wood sheet (Figure 1).
2. Turn over the balsa wood sheet. Draw **Line B** 3/4" from one end of the sheet (Figure 2).
3. At the same end, draw a 5/8" x 1-1/2" notch 1" from the top of the sheet (Figure 2).
4. Draw **Line C** 2-1/2" from the other end of the same sheet of balsa wood (Figure 2).
5. Using a sharp utility knife or a coping saw, cut out the notch drawn in Step 3.

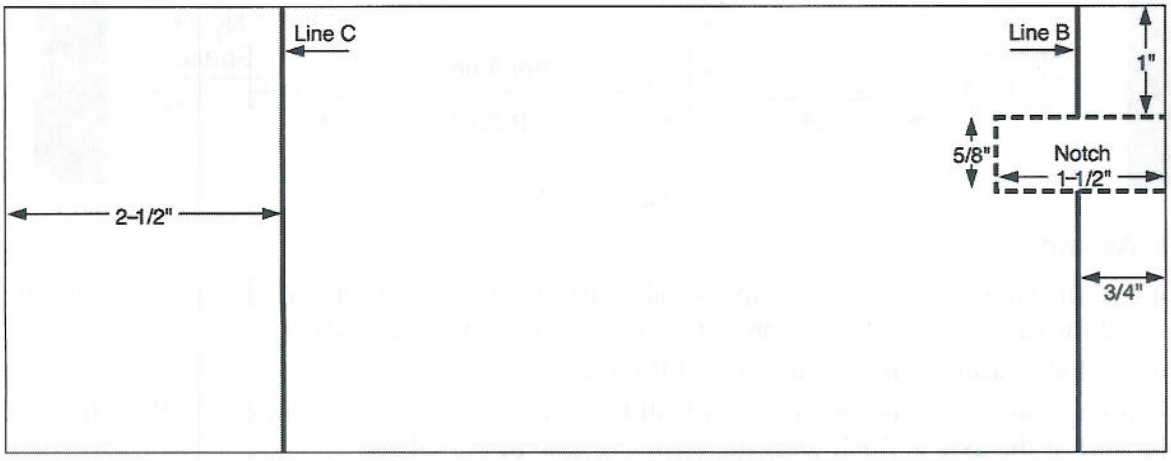

Figure 2

Attaching Axle Assemblies to Chassis

1. Position the notched chassis on the table so the notched end of the balsa wood sheet is hanging over the table edge and **Lines B** and **C** are face up.
2. Carefully position the rear axle assembly so:
   - **Gear I** is centered in the notched area of the chassis.
   - The axle is positioned along **Line B** between the line and the end of the chassis.
   - The nylon spacers are positioned within 1/16" of each wheel.
3. When the rear axle is positioned as described in Step 2, use small C-clamps or ask a friend to hold the rear axle assembly in the correct position.
4. While the rear axle is in the correct position, gently apply a bead of cool-melt glue along the sides of the nylon spacers where they contact the chassis.
5. Hold the rear axle assembly in place until the glue cools.
6. Place the front axle assembly along Line C.
7. Position the axle so the wheels are equidistant from the chassis.
8. Slide the spacers to within 1/16" of each wheel.
9. Hold the assembly in place and gently apply a bead of cool-melt glue along the sides of the nylon spacers where they contact the chassis.
10. Hold the front axle assembly until the glue dries.

Attaching Motor Assembly to Chassis

1. Find **Gear F** on the plastic gear font.
2. Remove **Gear F** from the font and cut off any excess plastic between the teeth of the gear.
3. Insert the shaft of the motor into **Gear F** to within 1/8" of the body of the motor.
4. Set the chassis on the table with the axle assemblies facing down.
5. Using a cool-melt glue gun, create a 1/2" x 1" rectangle of glue about 1/8" deep as illustrated in Figure 5.
6. While the glue is still liquid, place the motor on its side (with vent holes up) on the glue so **Gear F** sits directly on top of and engages with **Gear I** (Figure 5). Be sure not to obstruct or fill the vent holes with glue.
7. Hold the motor in place while the glue cools.
8. Apply another bead of cool-melt glue behind and in front of the motor (Figure 5). This will keep the motor in place if the vehicle comes to a sudden stop (crashes).
9. If the motor dislodges, use the tip of the glue gun to soften the glue on the chassis where the motor was. Add a small amount of glue and reattach the motor as you did before.

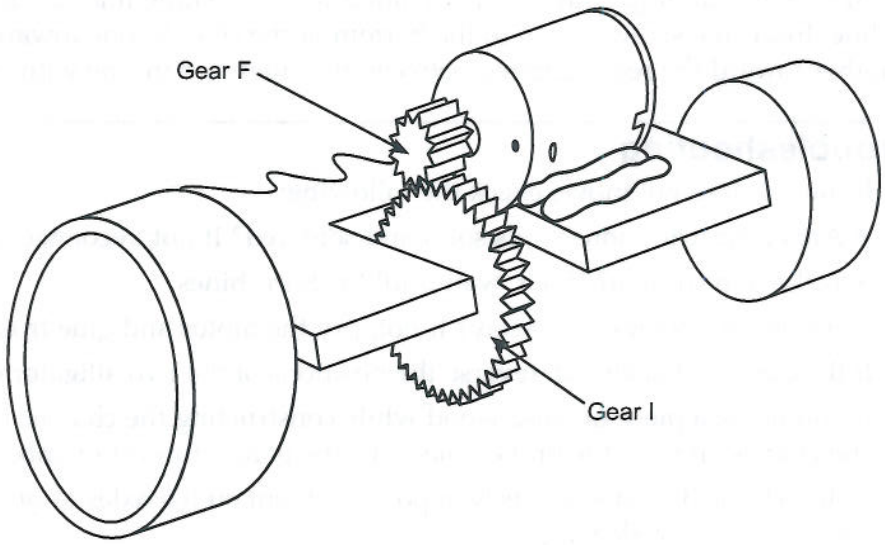

Figure 5 – In this illustration, Gear F engages Gear I.