Cautionary and Safety Warnings

- This kit is designed and intended for educational purposes only.
- Use only under the direct supervision of an adult who has read and understood the instructions provided in this user guide.
- Read warnings on packaging and in manual carefully.
- When using this product, always wear safety glasses.
- Use caution when interacting with the molder. Parts of the molder will become very hot and could cause severe burns.

Materials Included

- Injection molder
- Golf tee mold

Items Required (not included)

- Low-density polyethylene pellets
- Safety glasses

Injection Molding Machine Overview

In an injection molding machine, plastic is heated until it melts. After the plastic is in liquid form, it is injected into a mold. The plastic takes the form of the mold. As the plastic cools, it becomes solid again and maintains the form of the mold. The Injection Molding Machine is designed to form a golf tee using the included mold.
**Prepare the Machine and Mold**

1. Plug in the injection molder and turn it on. Let the unit preheat for approximately 5 to 7 minutes before using. Be very careful as parts of the molder will become quite hot and could cause severe burns.

2. While the unit is preheating, separate the golf tee mold into two sections. Slip one section onto the molder and align the spike of the golf tee with the tip of the injection nozzle (Figure 2). If necessary, loosen the wing nut and turn the washer until it touches the side of the mold. Lock the washer in place by tightening the wing nut. The washer will serve as a stop for the mold, ensuring that is always properly positioned.

3. Remove the half-mold from the machine. Assemble the mold by snapping both sections together.

**Prepare for Injection**

1. Place the assembled mold back on the injection machine, hole-side up, but at this point, **do not align the hole with the nozzle tip**. Instead, position the mold so that neither the hole nor the seam is directly under the nozzle tip (Figure 3). This will prevent plastic that might already be in the nozzle from leaking out during preheating, seeping into a seam, and then hardening.

2. Using the scoop, pour polyethylene pellets into the hopper (Figure 4). Pack them down by depressing the plunger lever. Do not force the plunger past the point at which it stops. Continue to fill and press until the hopper is filled to about 1/4" from the top. Do not allow any spilled pellets to remain on the metal surface of the molder.

3. Remove the mold.

4. Keep an eye on the hopper to see when the pellets have melted. If some pellets still have their original shape, they have not yet melted sufficiently. The melting process should take no longer than 1 minute when the unit has been properly preheated. (Pellets on the inside edges of the hopper always melt before those in the center.)
5. When the pellets are fully melted, slide the mold against the washer stop to realign its hole with the nozzle tip. Press down on the toggle clamp lever to hold the mold in place (Figure 5).

**Hint:** At this point, add a thin layer of cold pellets to the hopper on top of the liquid plastic. This will keep the liquid plastic from sticking to the plunger.

**Inject**

1. Inject the melted polymer into the mold by quickly and firmly pulling down on the plunger lever (Figure 6). Do not force the lever past the point at which it stops. Then, bring the lever up.

2. Release the toggle clamp and carefully remove the mold. Open it and remove the golf tee (Figure 7). **Caution:** The tee might be hot.

**Note:** If the tee is not fully formed, you can recycle it. Place it in the hopper, add more pellets, and allow the plastic to melt. Place the mold back in position, apply the toggle clamp, and reinject the mold.

**Storing and Cleaning the Unit**

Remove any plastic material that is on the outside of the hopper. The plunger can be cleaned using very fine steel wool or a cloth while the plunger is still hot. The scoop can be used to remove excess plastic from the nozzle. Exercise extreme caution while the injection molder is still hot.

When finished cleaning, lift the plunger lever, shut off the machine, and unplug the cord.