**ASSEMBLY TIP**
Read all instructions before beginning work on your model. Make sure you have all parts and supplies.

**TEST-FIT ALL PARTS TOGETHER BEFORE APPLYING ANY GLUE.** If any parts don’t fit properly, sand as required for precision assembly.

**PARTS**
Locate the parts shown below and lay them out on the table in front of you.

**DO NOT USE THIS DRAWING TO ASSEMBLE YOUR ROCKET.**

**HELPFUL HINT:** If Nose Cone/Coupler Fit Is...
- **TOO LOOSE**
  - ADD MASKING TAPE.
  - SAND FOR FIT.
- **TOO TIGHT**
  - FRONT CONE/COUPLER INSERT.

**SUPPLIES**
In addition to the parts included in the kit you will also need:

1. **ENGINE MOUNT TUBE.**
   - A. **CUT 1/8” (3 mm) SLIT AT 1/8” (3 mm) MARK.**
   - B. **POSITION HOOK.**
   - C. **APPLY GLUE BAND AROUND TUBE ABOVE 1/2” (13 mm) MARK.**
   - D. **SLIDE RETAINER RING ONTO GLUE BAND DOWN TO MARK.**

2. **DROP CLAY INTO NOSE CONE.**
   - A. **PACK CLAY.**
   - B. **APPLY PLASTIC CEMENT.**
   - C. **FINISHED**

3. **SHOCK CORD**
   - A. **DOUBLE KNOT**
   - B. **PASS SHOCK CORD THROUGH SHOCK CORD MOUNT UNTIL KNOT IS AGAINST SHOCK CORD MOUNT.**
   - C. **TIE SHOCK CORD TO NOSE CONE.**
**Countdown and Launch**

1. **1...**
   - Insert key, push down, and hold.

2. **2...**
   - Insert key. Push down and hold.

3. **3...**
   - Hold key down and press button until lift-off!

4. **4...**
   - Hold key down and press button until lift-off!

5. **5...**
   - Insert key. Push down and hold.

**Launch Supplies**
(Sold Separately)
- Estes® Porta Pad® II Launch Pad and Electron Beam® Controller
- Recovery Wadding
- Igniters (with Engines)
- Igniter Plugs (with Engines)
- Estes® Engines: 1/4A3-3T, 1/2A3-4T, A3-4T (First Flight), A10-3T

**Flying Your Rocket**

Choose a large field (250 ft. [76 m] square) free of dry weeds and brown grass. The larger the launch area, the better your chance of recovering your rocket. Football fields and playgrounds are great. Launch only with little or no wind and good visibility.

Always follow the National Association of Rocketry (NAR) Safety Code.

**MISFIRES**

**Take the key out of the controller, wait one minute before going near the rocket!** Take the plug and igniter out of the engine. If the igniter has burned, it worked but did not ignite the engine because it was not touching the propellant inside the engine. Put a new igniter all the way inside the engine without bending it. Push the plug in place. Repeat the steps under Countdown and Launch.