

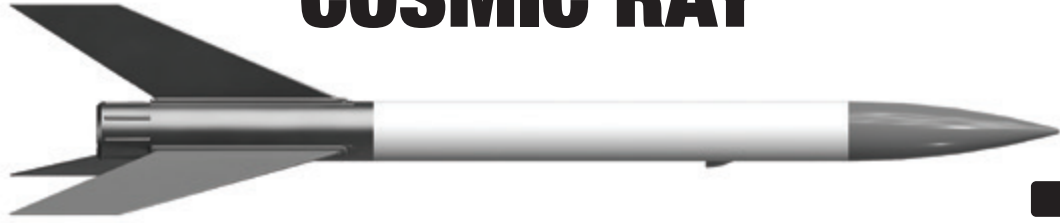


EstesRockets.com

# COSMIC RAY™

1112

AGES  
10+



Skill Level

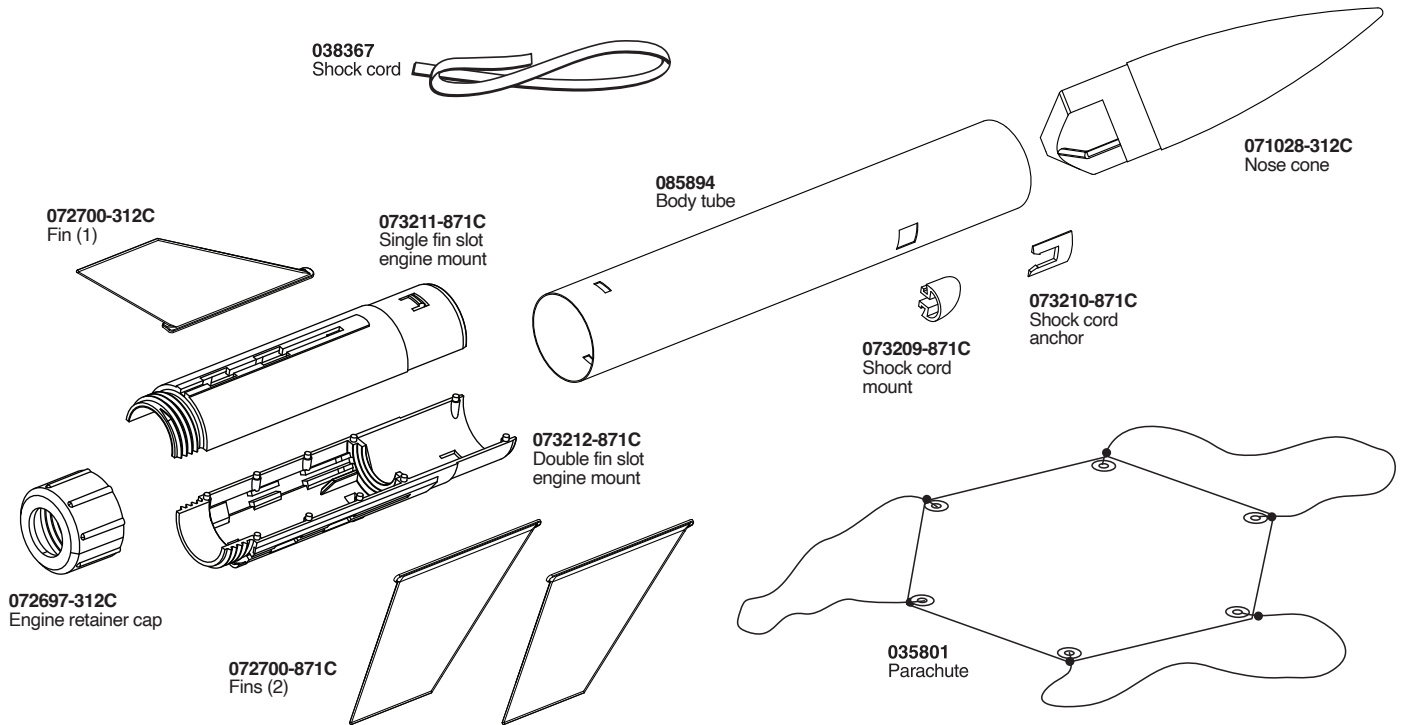
**BEGINNER**

## MODEL ROCKET INSTRUCTIONS

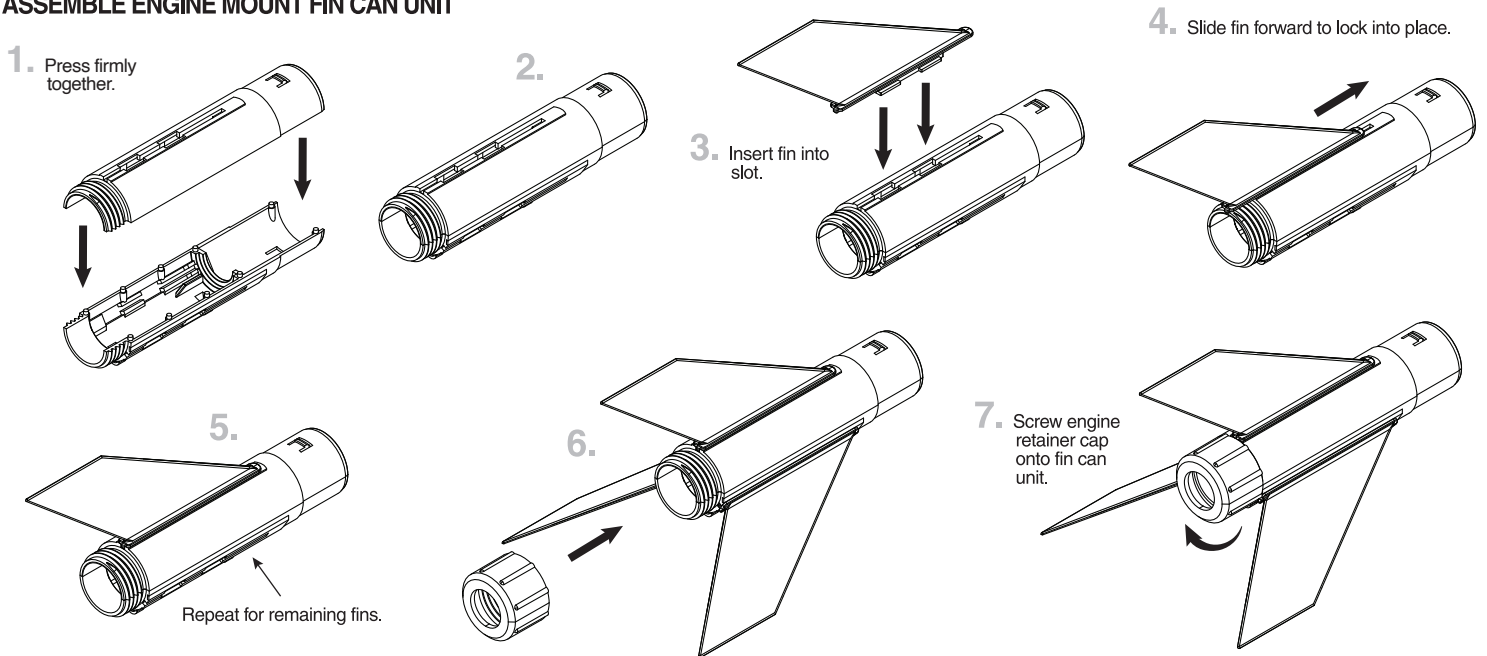
KEEP FOR FUTURE REFERENCE

**IMPORTANT:** Please record date found on box and keep for future reference.

**READ ALL INSTRUCTIONS.** Make sure you have all parts and supplies.

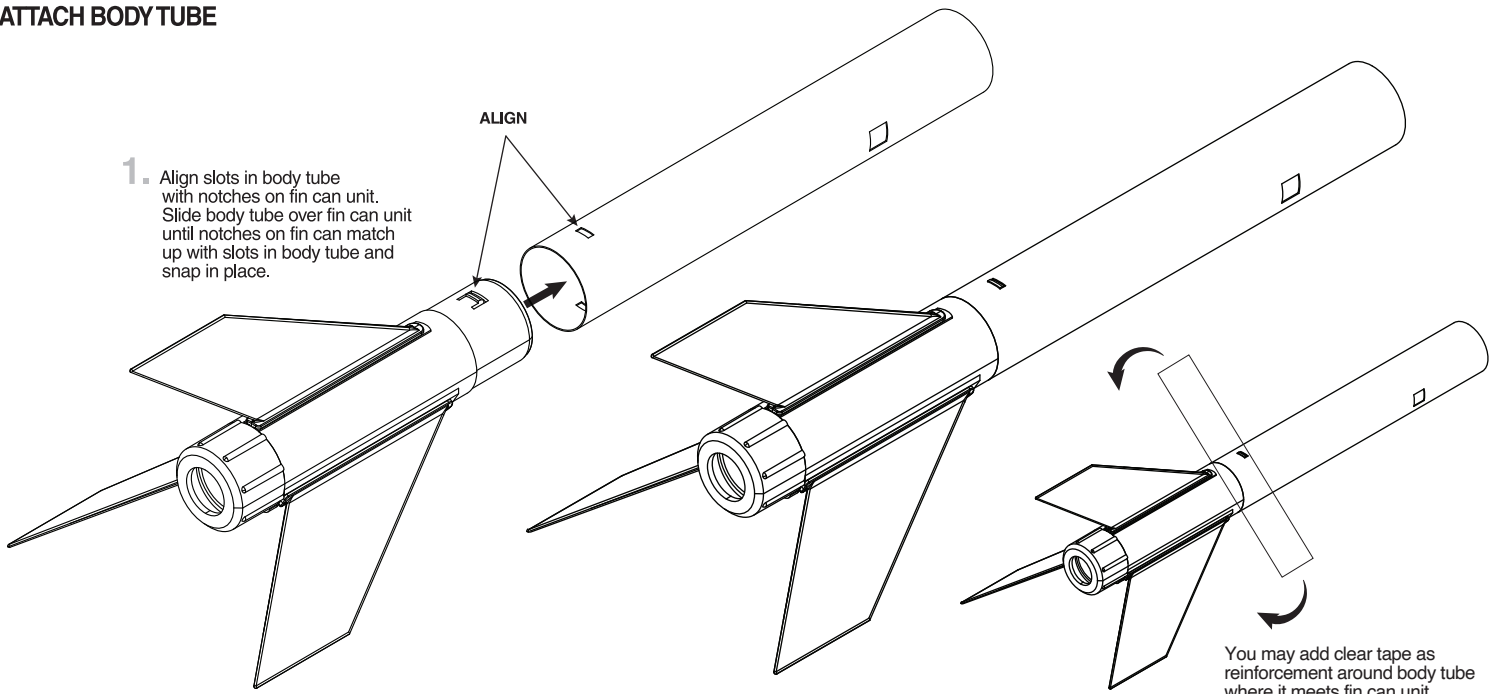


### ASSEMBLE ENGINE MOUNT FIN CAN UNIT



## ATTACH BODY TUBE

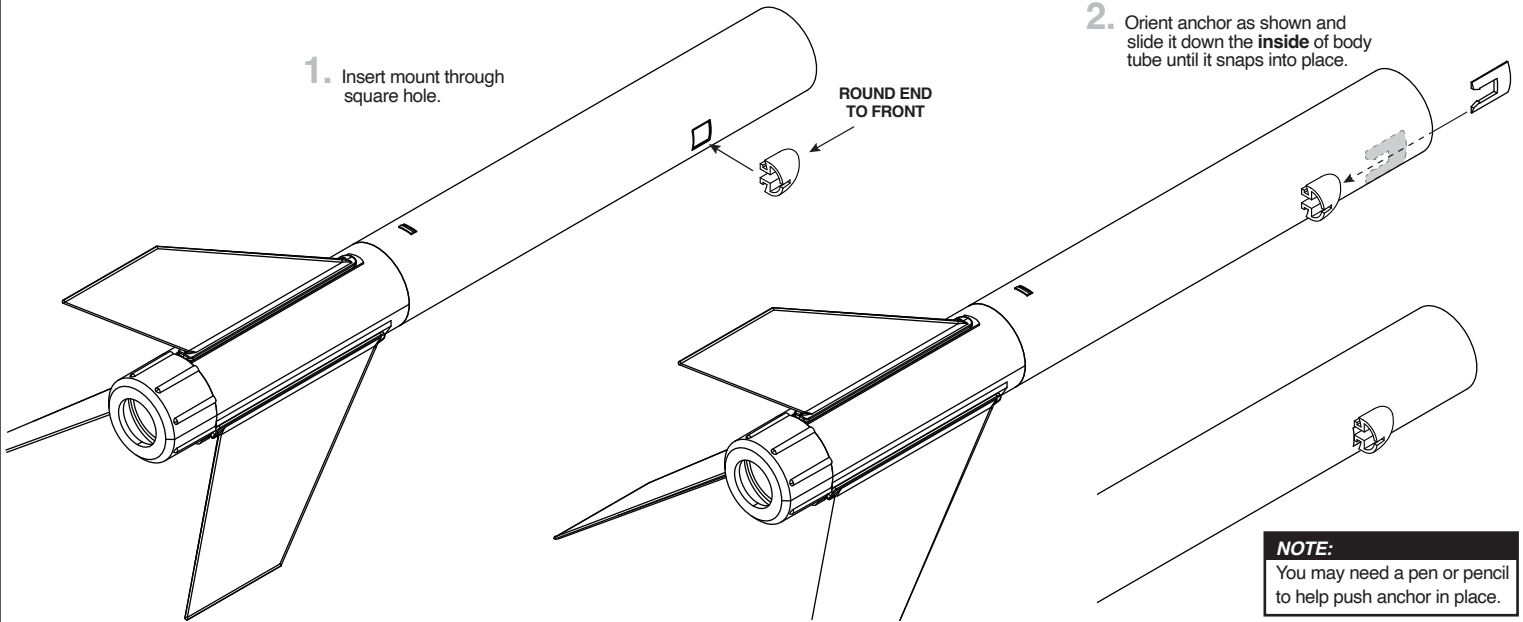
1. Align slots in body tube with notches on fin can unit. Slide body tube over fin can unit until notches on fin can match up with slots in body tube and snap in place.



## ATTACH SHOCK CORD MOUNT

1. Insert mount through square hole.

2. Orient anchor as shown and slide it down the **inside** of body tube until it snaps into place.

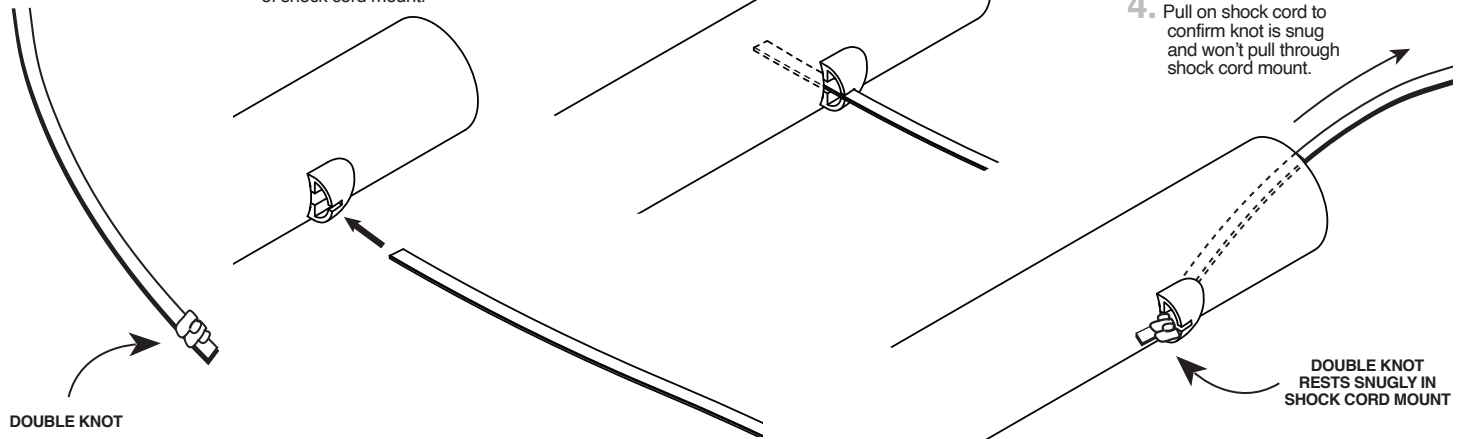


## INSTALL SHOCK CORD

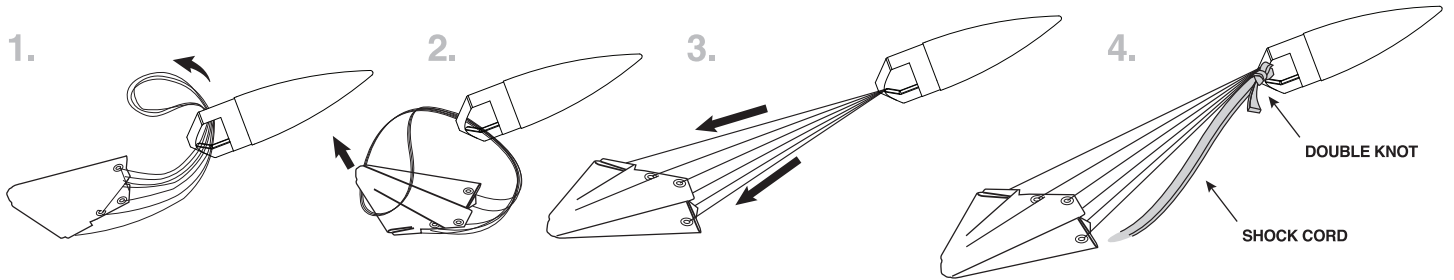
1. Tie double knot in end of shock cord.
2. Insert **unknotted** end of shock cord through opening of shock cord mount.

3.

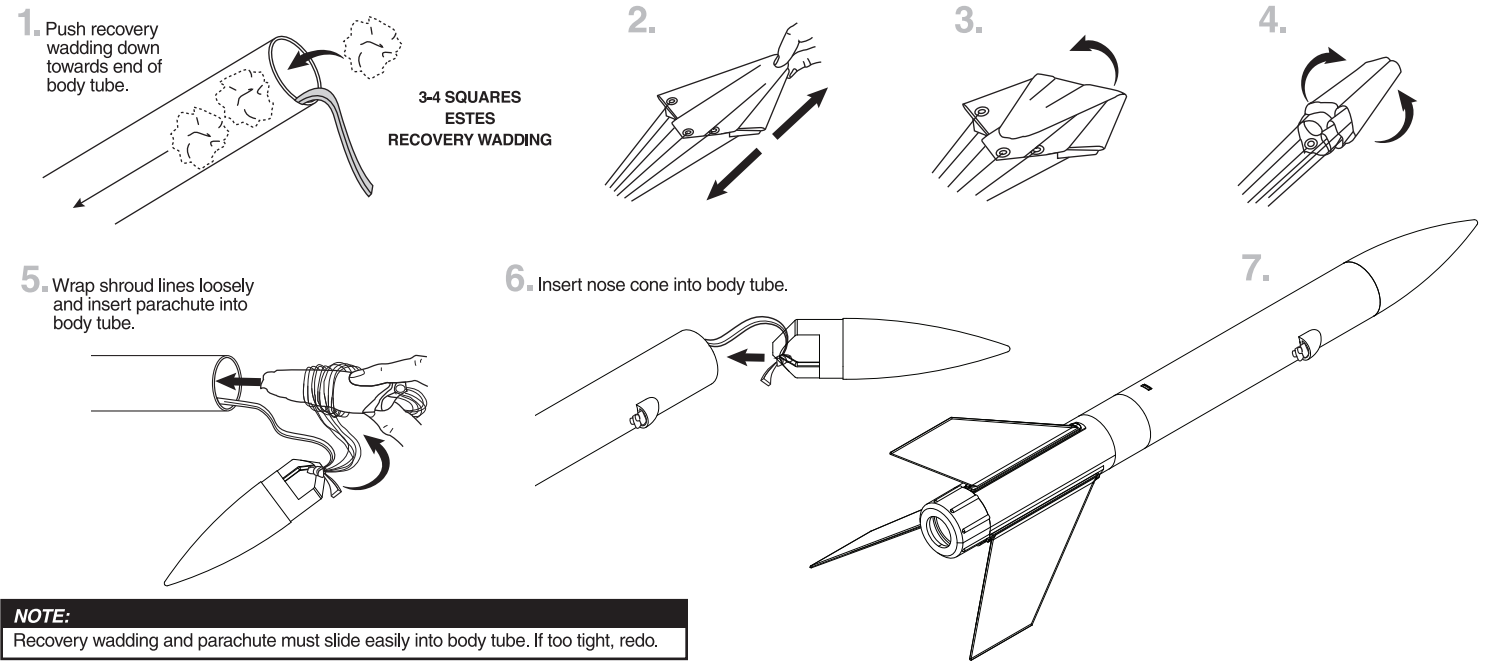
4. Pull on shock cord to confirm knot is snug and won't pull through shock cord mount.



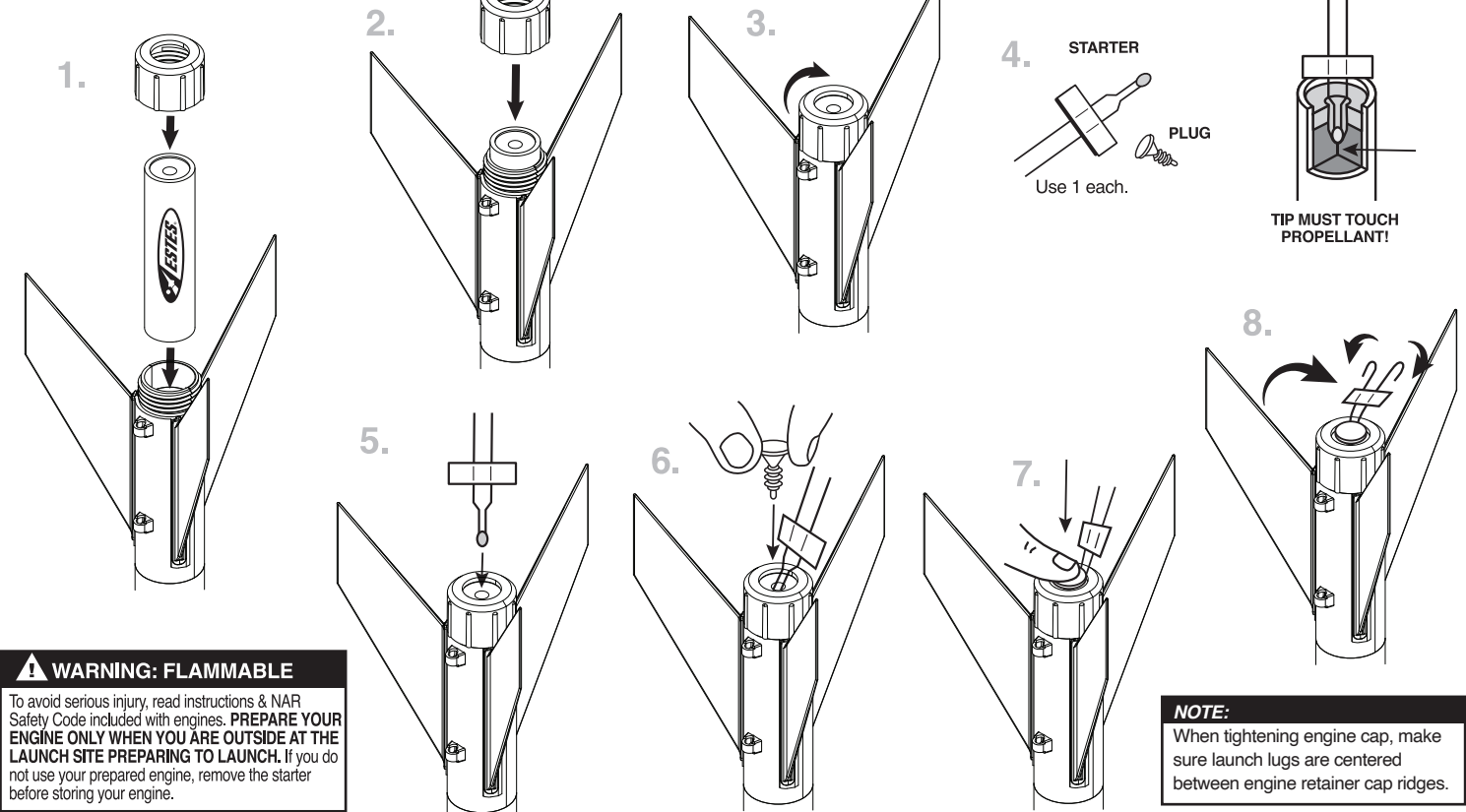
## ATTACH PARACHUTE AND SHOCK CORD



## PREPARE FLIGHT RECOVERY



## PREPARE ENGINE



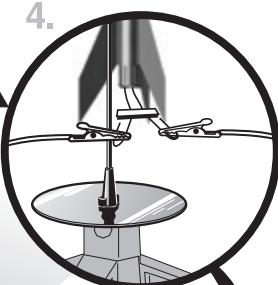
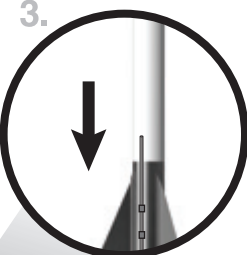
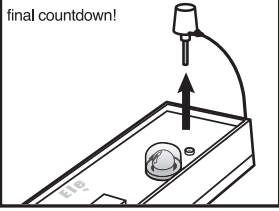
# COUNTDOWN AND LAUNCH

## ESTES® LAUNCH SUPPLIES NEEDED (Sold Separately)

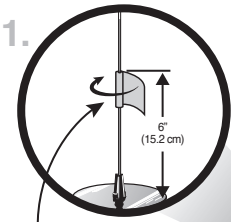
- Porta-Pad® II Launch Pad
- Electron Beam® Launch Controller
- Recovery Wadding
- Starters (with engines)
- Plugs (with engines)
- Estes® Engines: A8-3 (first flight), A8-5, B4-4, B6-6, C6-5, C6-7

**NOTE:**

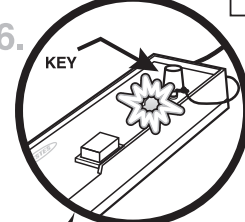
Key always out until final countdown!



**NOTE:**  
Fully extend your launch controller wire before launching.



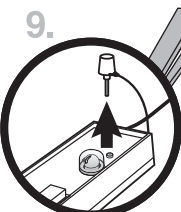
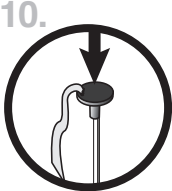
MASKING TAPE



Insert key, push down hard. Bulb will light.



**NOTE:**  
While holding key down FIRMLY, press launch button until LIFTOFF!



**NOTE:**  
Estimated weight: 1.3 oz. (36.9 g)

## PRECAUTIONS



NAR SAFETY CODE



NO DRY GRASS OR WEEDS

**PRE-LAUNCH CHECK** For safety, never launch a damaged rocket. Check the rocket's body, nose cone and fins. Also, check the engine mount, recovery system and launch lug(s). Repair any damage before launching the rocket.

**FLYING YOUR ROCKET** Choose a large field (500 ft. [152 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 (enclosed).

**MISFIRES** TAKE THE KEY OUT OF THE CONTROLLER. WAIT ONE MINUTE BEFORE GOING NEAR THE ROCKET! Disconnect the micro clips and remove the engine. Take the plug and starter out of the engine. A burned starter means the starter tip was not touching engine propellant. Install a new starter; be sure the tip is touching propellant inside engine. Repeat the steps under Countdown and Launch.

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