



EstesRockets.com

# PRO SERIES II VOGEL™

9728/1743

AGES  
18+



Skill Level

**EXPERT**

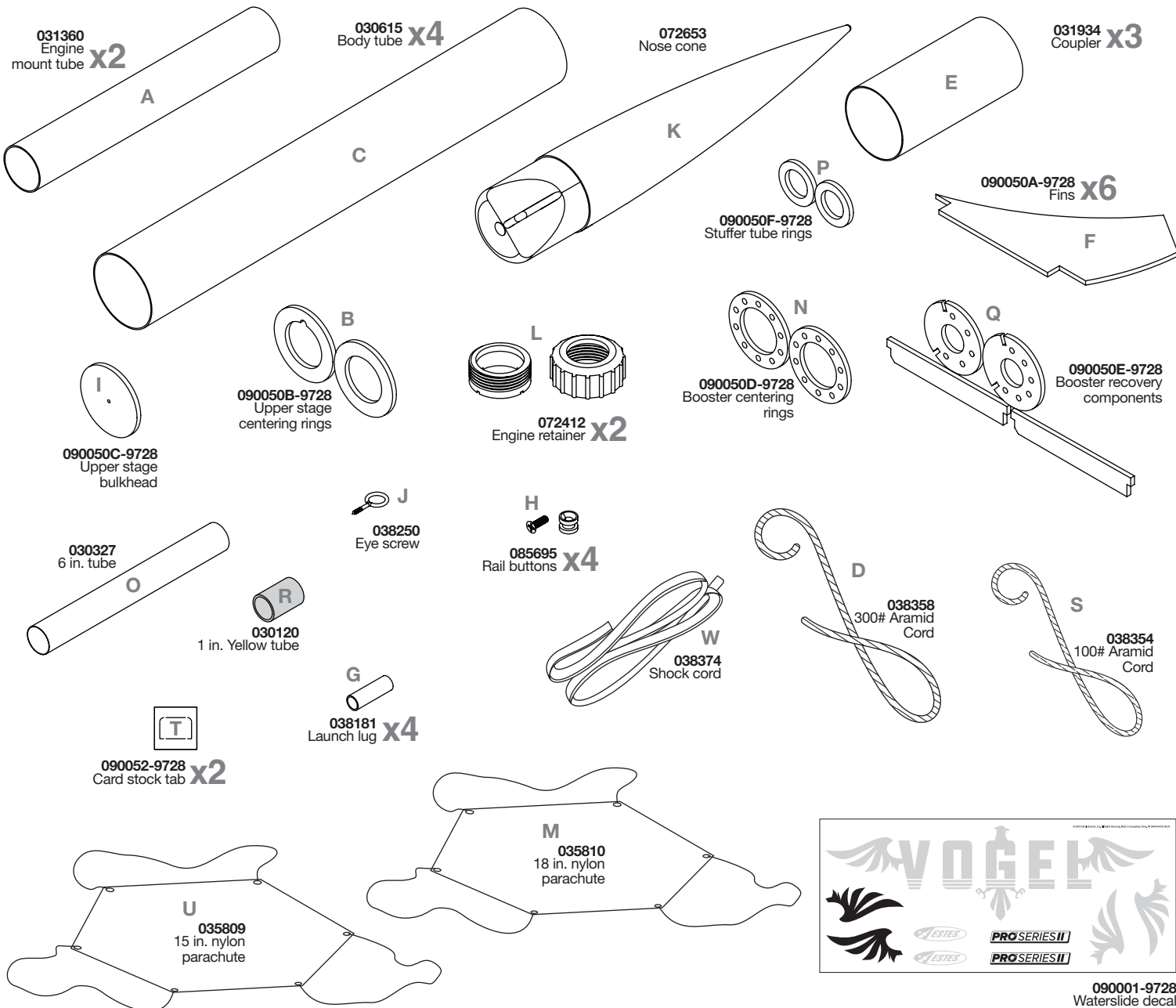
## MODEL ROCKET INSTRUCTIONS

### KEEP FOR FUTURE REFERENCE

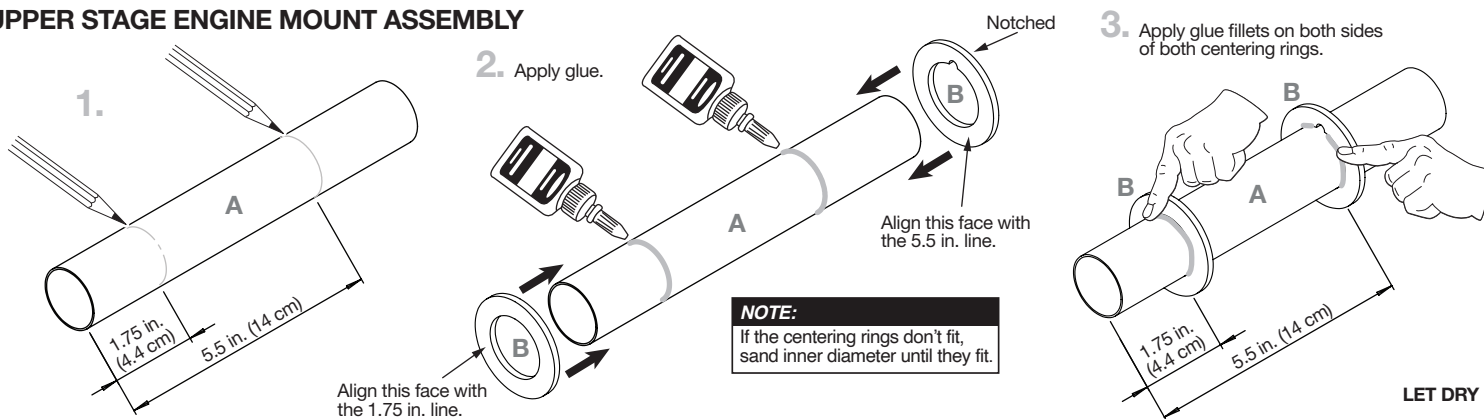
**IMPORTANT:** Please record date found on decal and keep for future reference. \_\_\_\_\_

**READ ALL INSTRUCTIONS.** Make sure you have all parts and supplies. Test fit all parts before applying glue. Refer to your glue manufacturer's dry times during build.

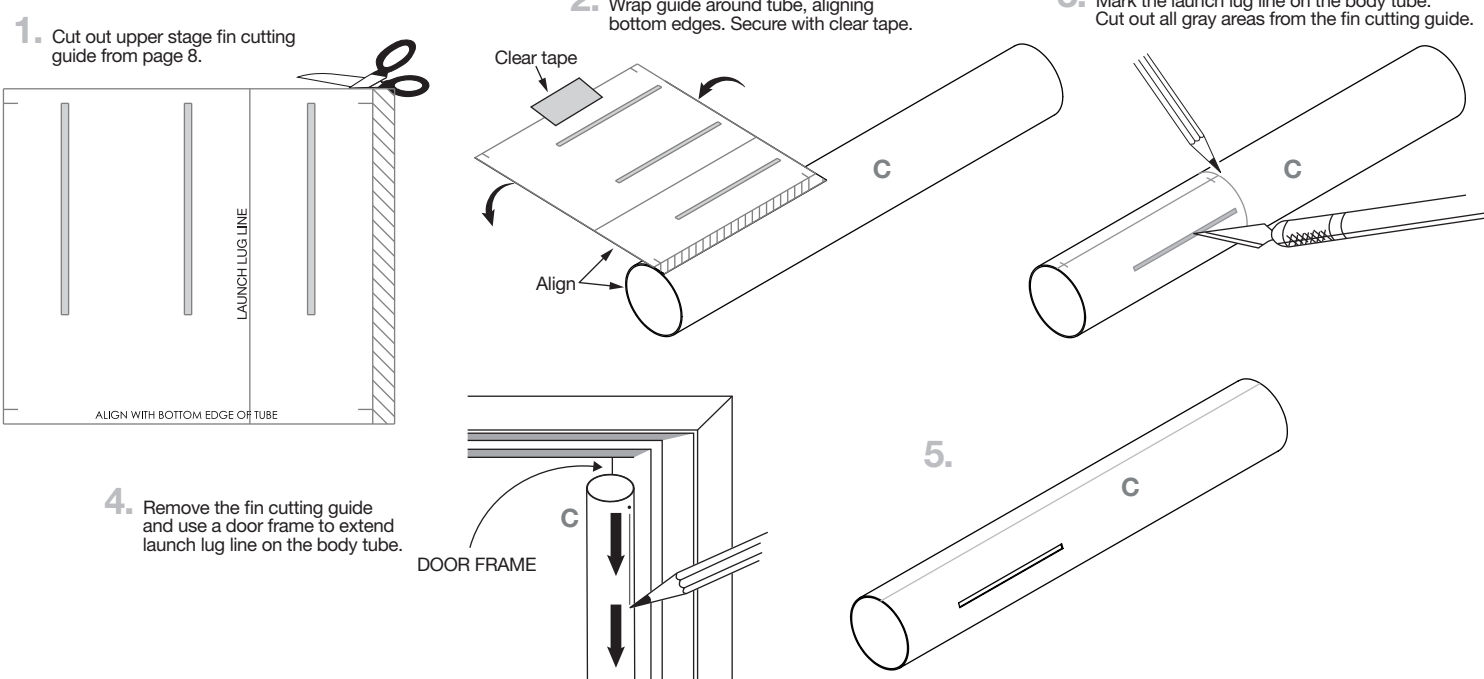
### SUPPLIES



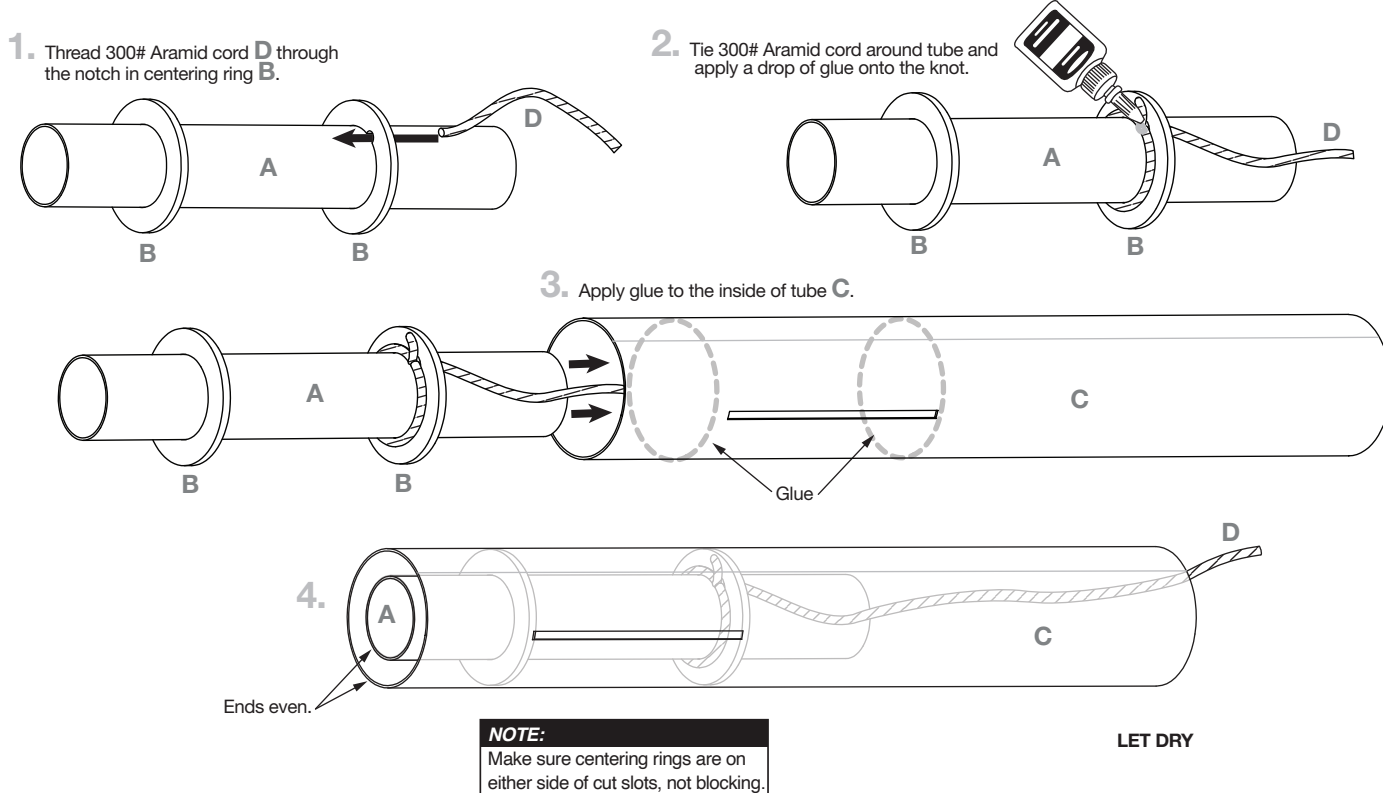
## UPPER STAGE ENGINE MOUNT ASSEMBLY



## CUTTING UPPER STAGE FIN SLOTS



## INSTALL ARAMID CORD & UPPER STAGE ENGINE MOUNT



**UPPER STAGE COUPLING**

**1.** The diagram shows a central cylindrical component labeled 'E' with a length of 2 in. (5 cm). It is being coupled to two other cylindrical components labeled 'C'. Arrows indicate the direction of assembly. A syringe is shown injecting a substance into the coupling points. A pencil is shown marking the center of component 'E'.

**2.** The diagram shows the completed assembly. The central component 'E' is now fully coupled to the two outer components 'C'. A syringe is shown injecting a substance into the coupling points. A pencil is shown marking the center of component 'E'.

**LET DRY**

### UPPER STAGE FIN PREPARATION & ASSEMBLY

1. Using fine sand paper, round the leading and trailing edges of all **F** fins.
2. Apply glue to the root edge of the fin.
3. Apply glue fillets on both sides of all fins.

**NOTE:**  
Use fin alignment guide on page 8 to ensure fins are at the correct angle.

**LET DRY**

# UPPER STAGE LAUNCH LUG OR RAIL BUTTON ATTACHMENT

**1.** Launch lug line  
2 in. (5 cm)  
8 in. (20.3 cm)

**2a.** Glue launch lugs onto the launch lug line, aligning the bottoms with the pencil marks.

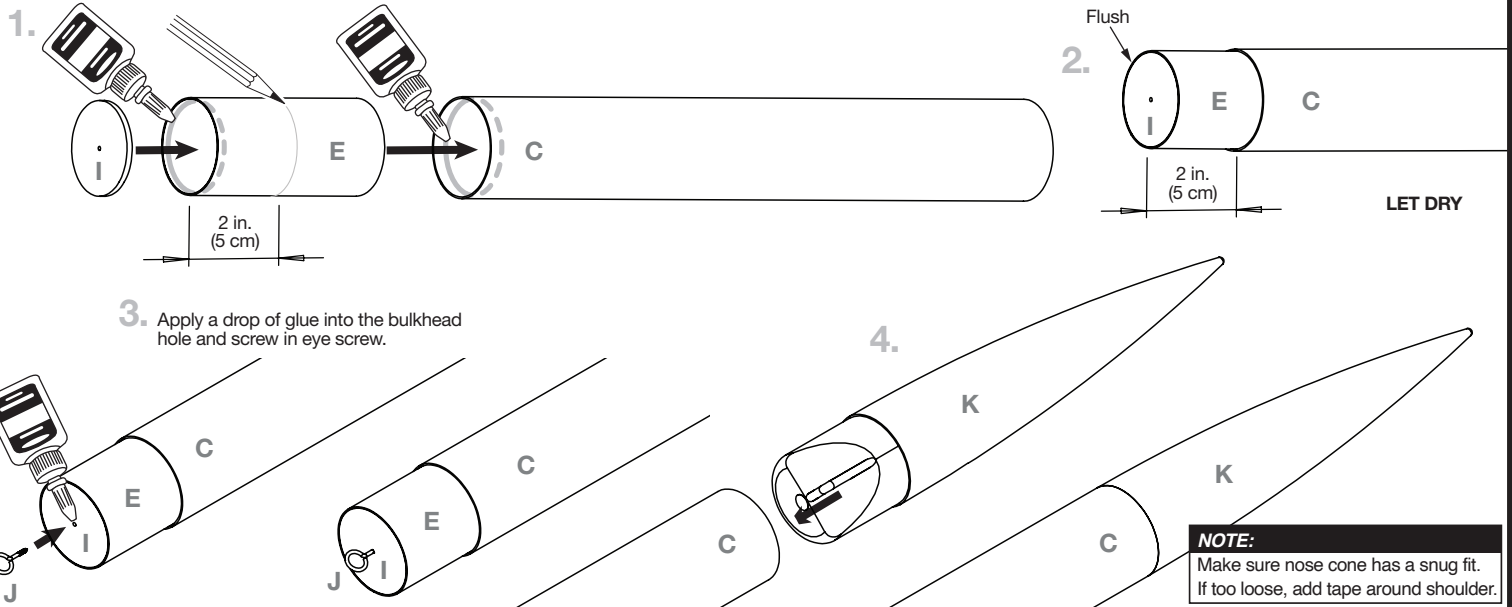
**2b.** Drill an 1/8 in. hole into the 2 in. and 8 in. marks along the launch lug line. Apply a drop of epoxy in the holes and screw in the rail buttons.

**NOTE:**  
If using rail buttons, install after painting or mask before painting.

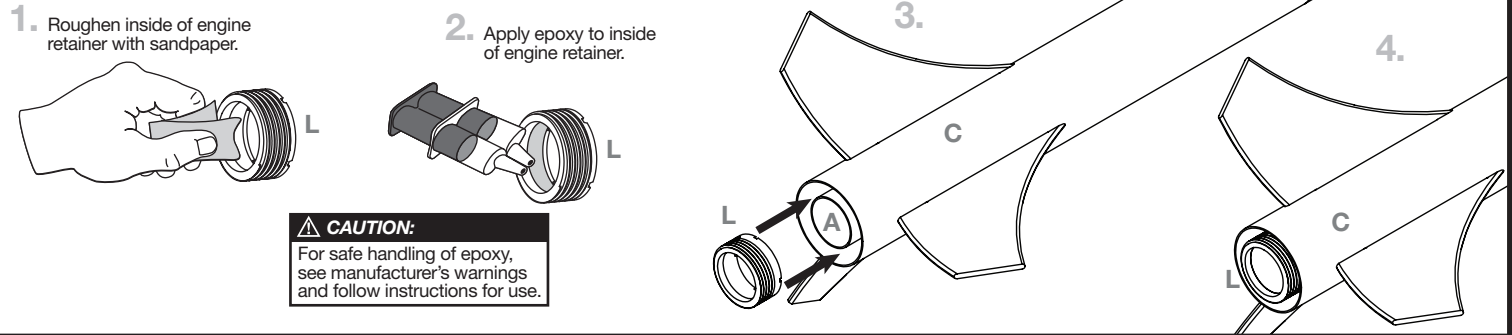
**LET DRY**

**LET DRY**

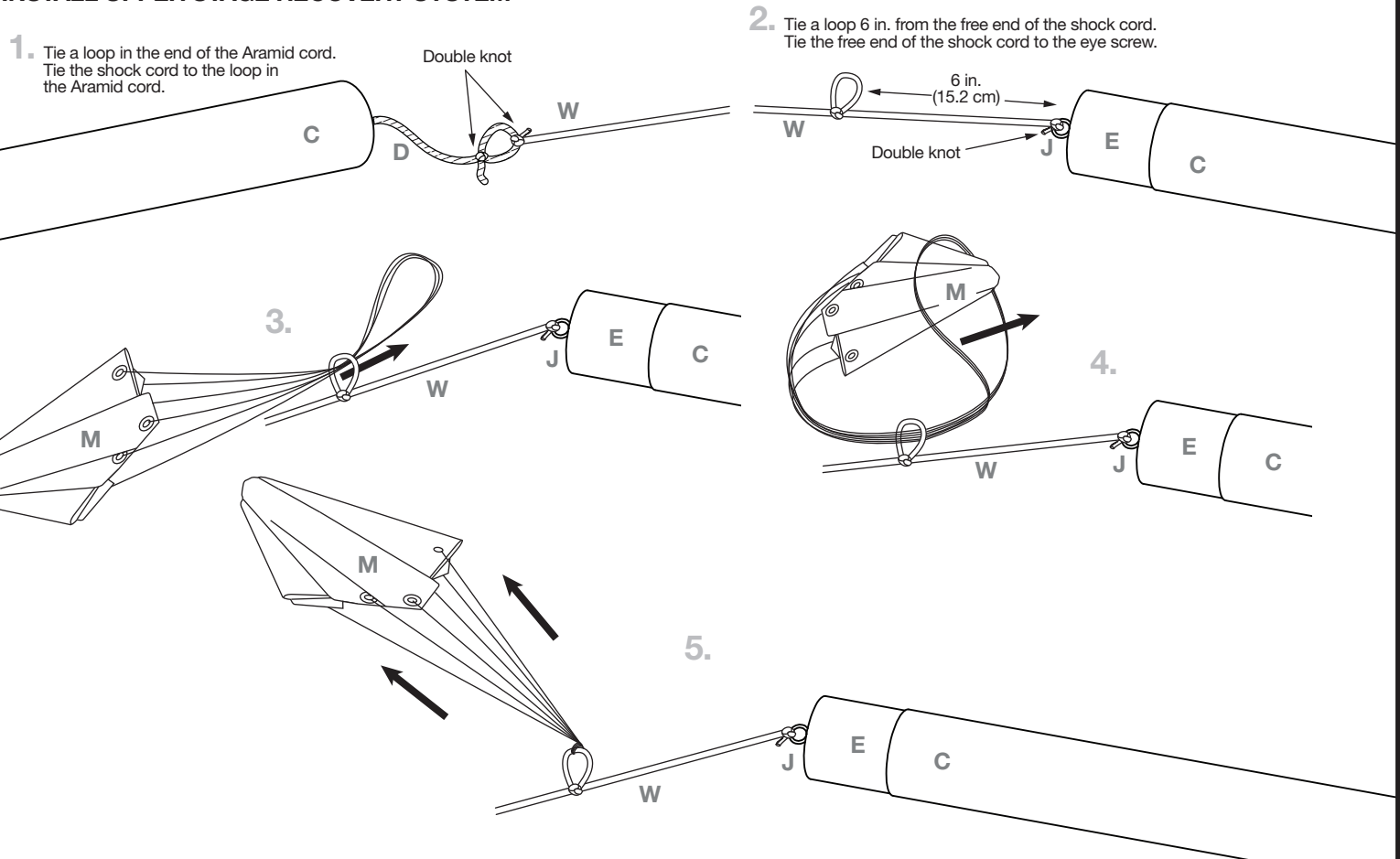
## ASSEMBLE PAYLOAD SECTION



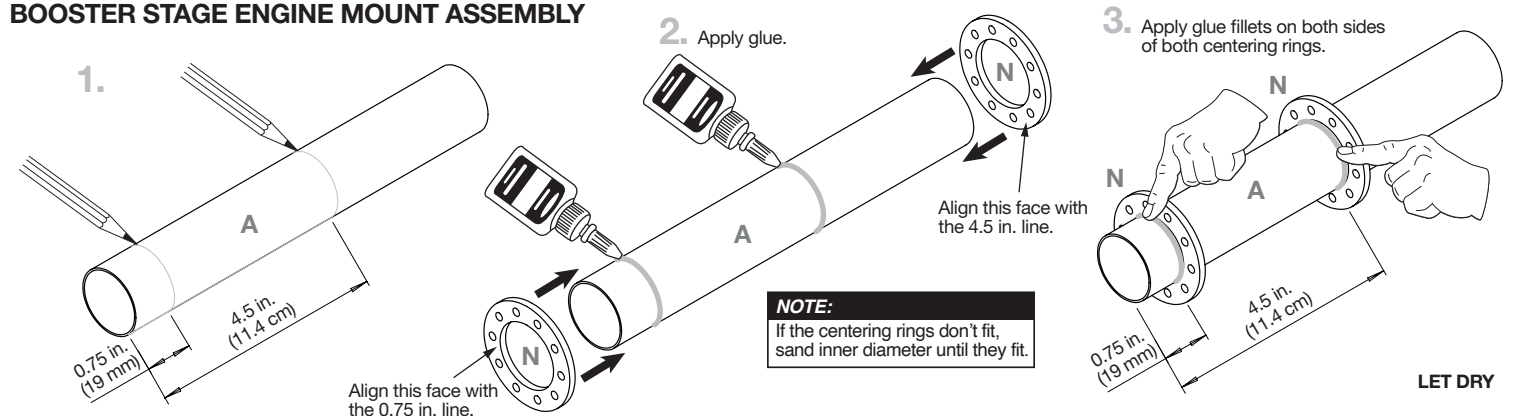
## INSTALL UPPER STAGE ENGINE RETAINER



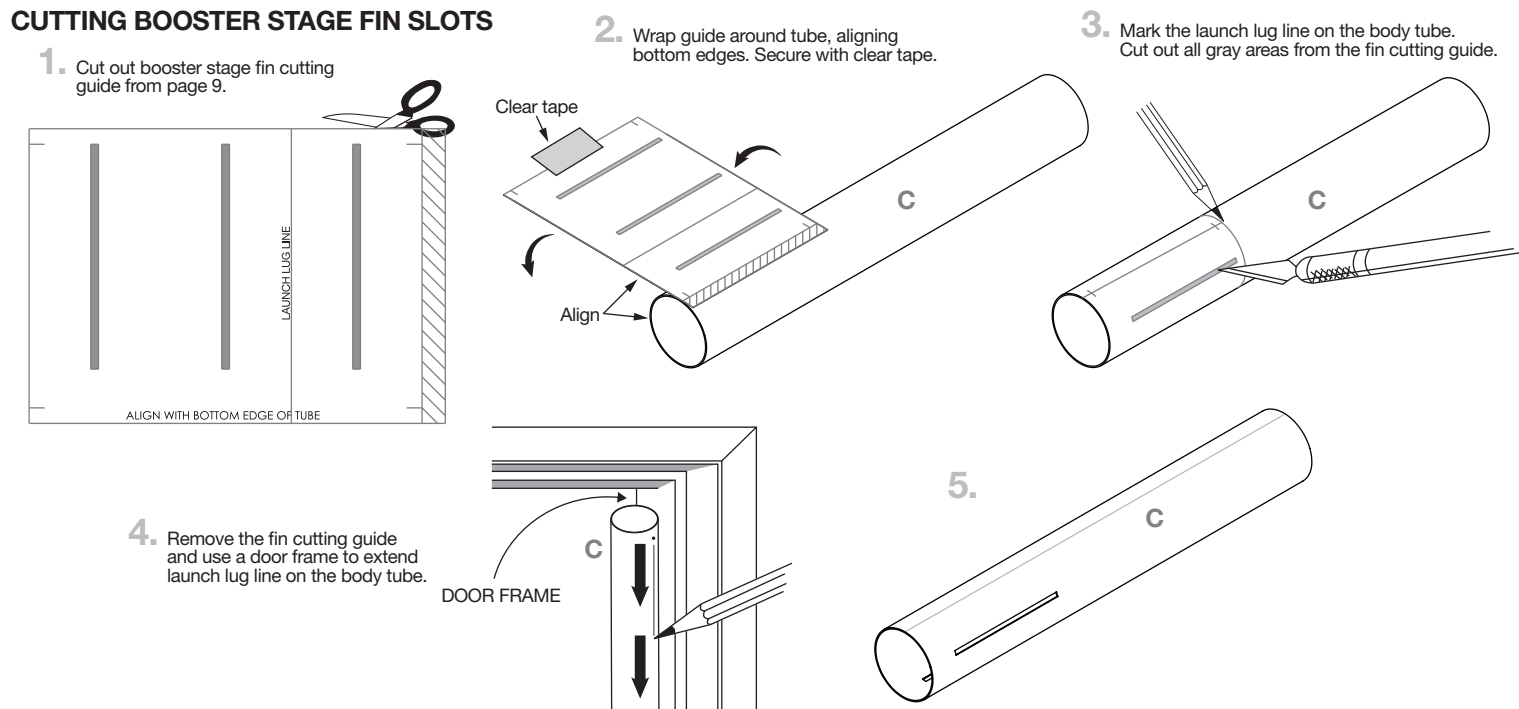
## INSTALL UPPER STAGE RECOVERY SYSTEM



## BOOSTER STAGE ENGINE MOUNT ASSEMBLY



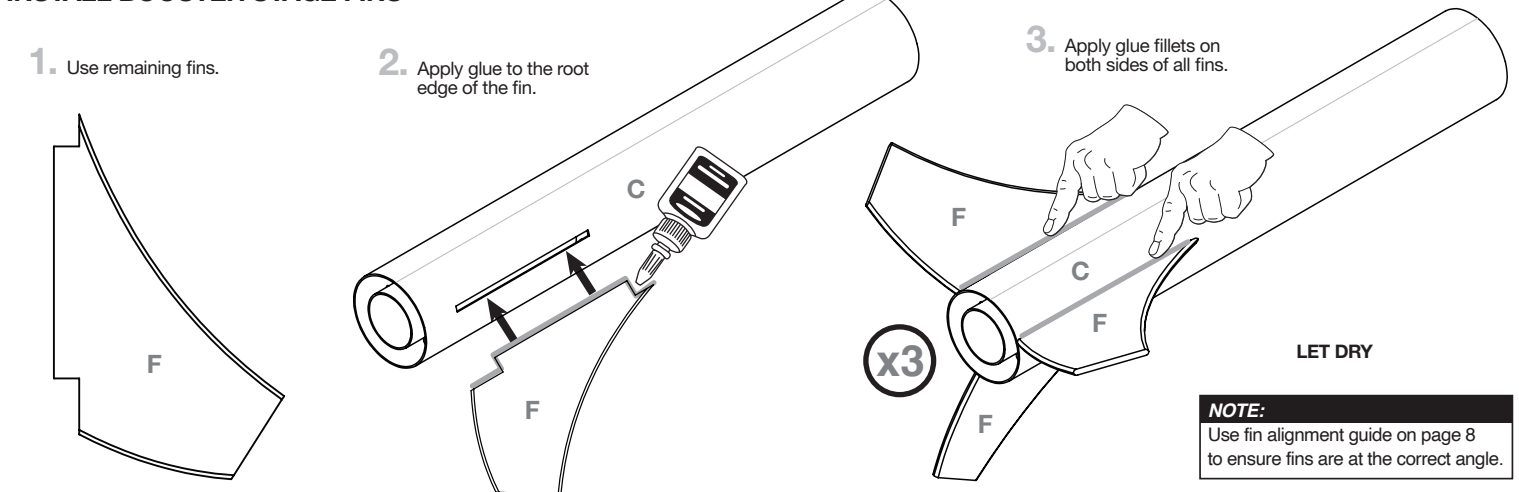
## CUTTING BOOSTER STAGE FIN SLOTS



## INSTALL BOOSTER STAGE ENGINE MOUNT

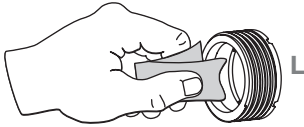


## INSTALL BOOSTER STAGE FINS

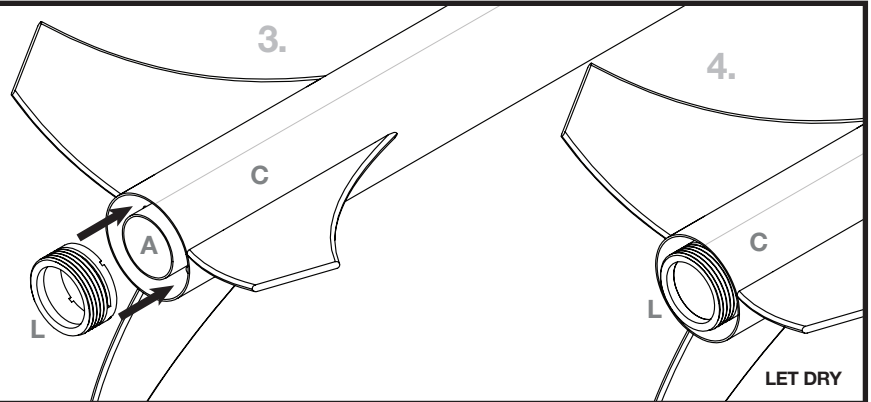
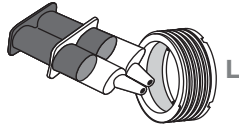


## INSTALL BOOSTER STAGE ENGINE RETAINER

1. Roughen inside of engine retainer with sandpaper.

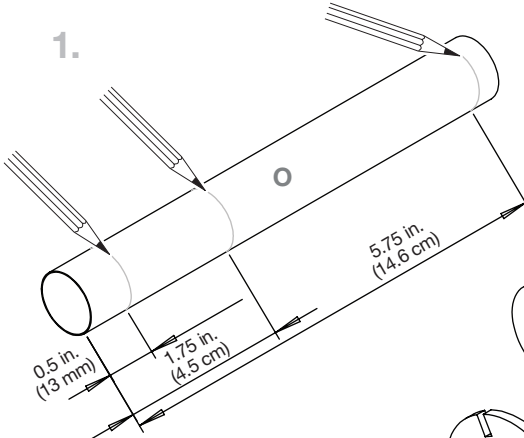


2. Apply epoxy to inside of engine retainer.



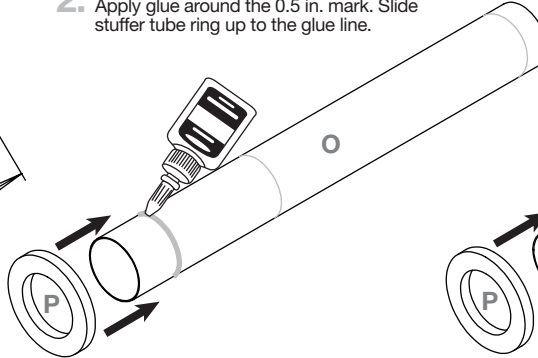
## ASSEMBLE BOOSTER RECOVERY COMPARTMENT

1.



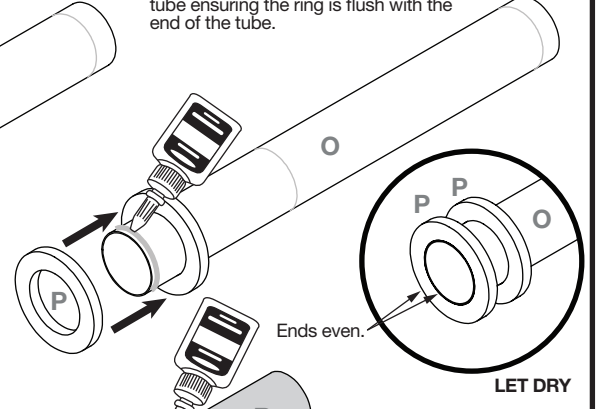
2.

- Apply glue around the 0.5 in. mark. Slide stuffer tube ring up to the glue line.

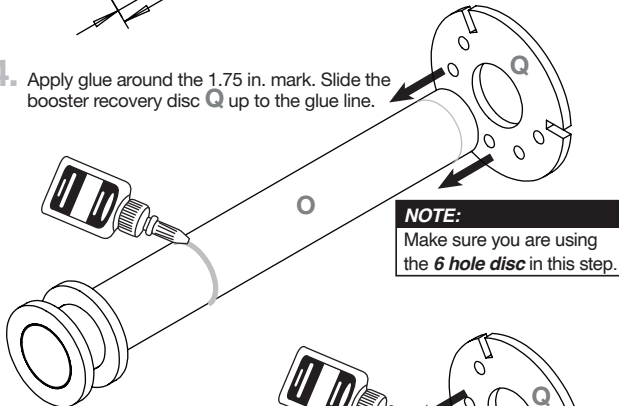


3.

- Apply glue around the end of the tube. Slide second stuffer tube ring over the tube ensuring the ring is flush with the end of the tube.

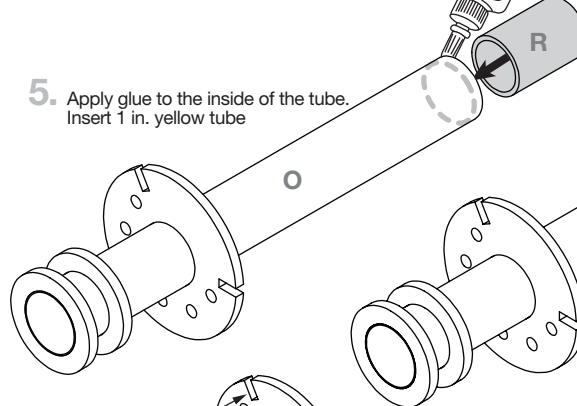


4. Apply glue around the 1.75 in. mark. Slide the booster recovery disc Q up to the glue line.

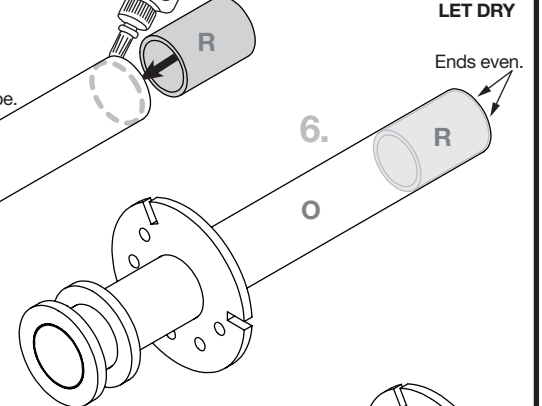


5.

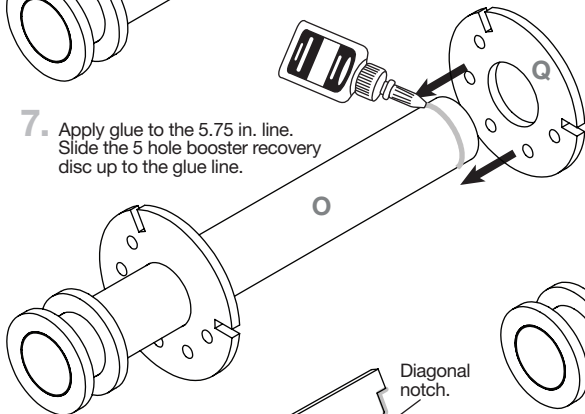
- Apply glue to the inside of the tube. Insert 1 in. yellow tube



6.

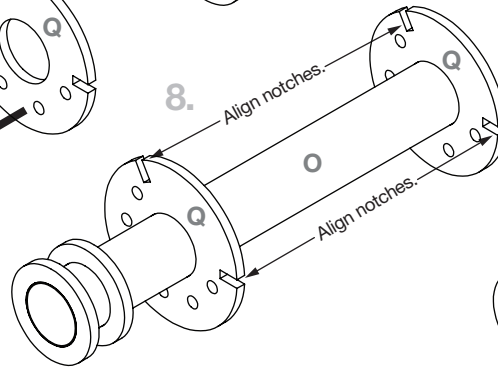


7. Apply glue to the 5.75 in. line. Slide the 5 hole booster recovery disc up to the glue line.



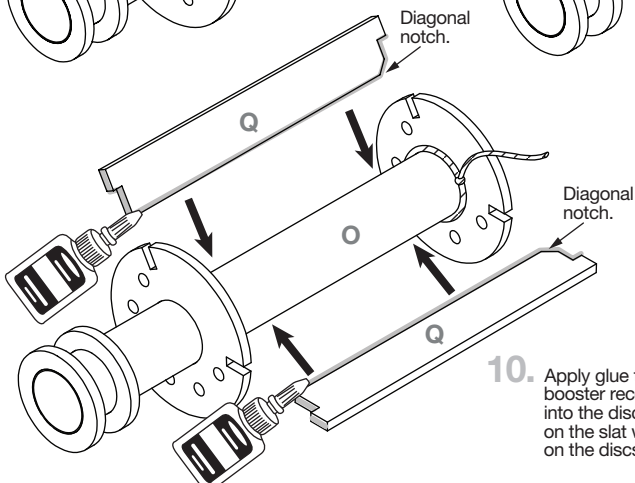
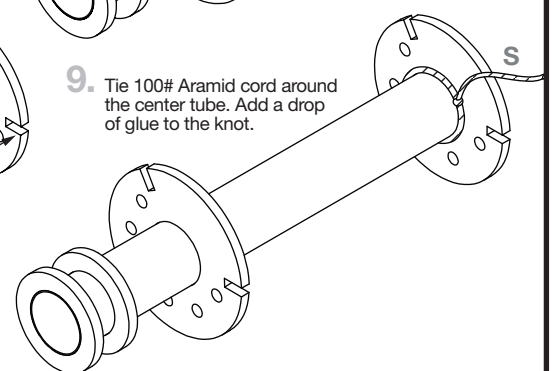
8.

- Align notches.



9.

- Tie 100# Aramid cord around the center tube. Add a drop of glue to the knot.

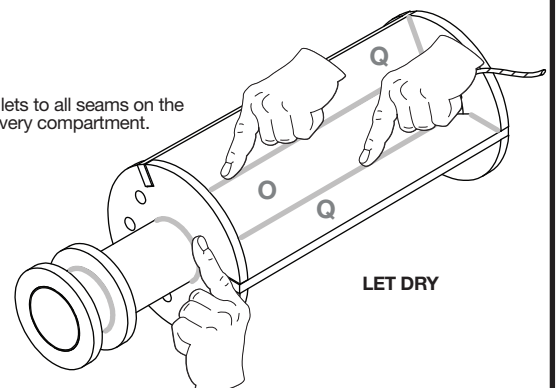


10.

- Apply glue to the root edges of booster recovery slat walls. Insert into the discs aligning the tabs on the slat walls with the notches on the discs.

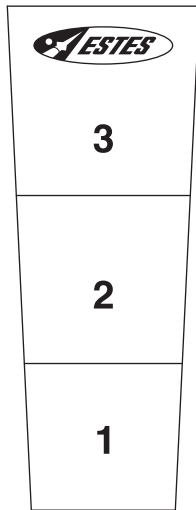
11.

- Apply glue fillets to all seams on the booster recovery compartment.



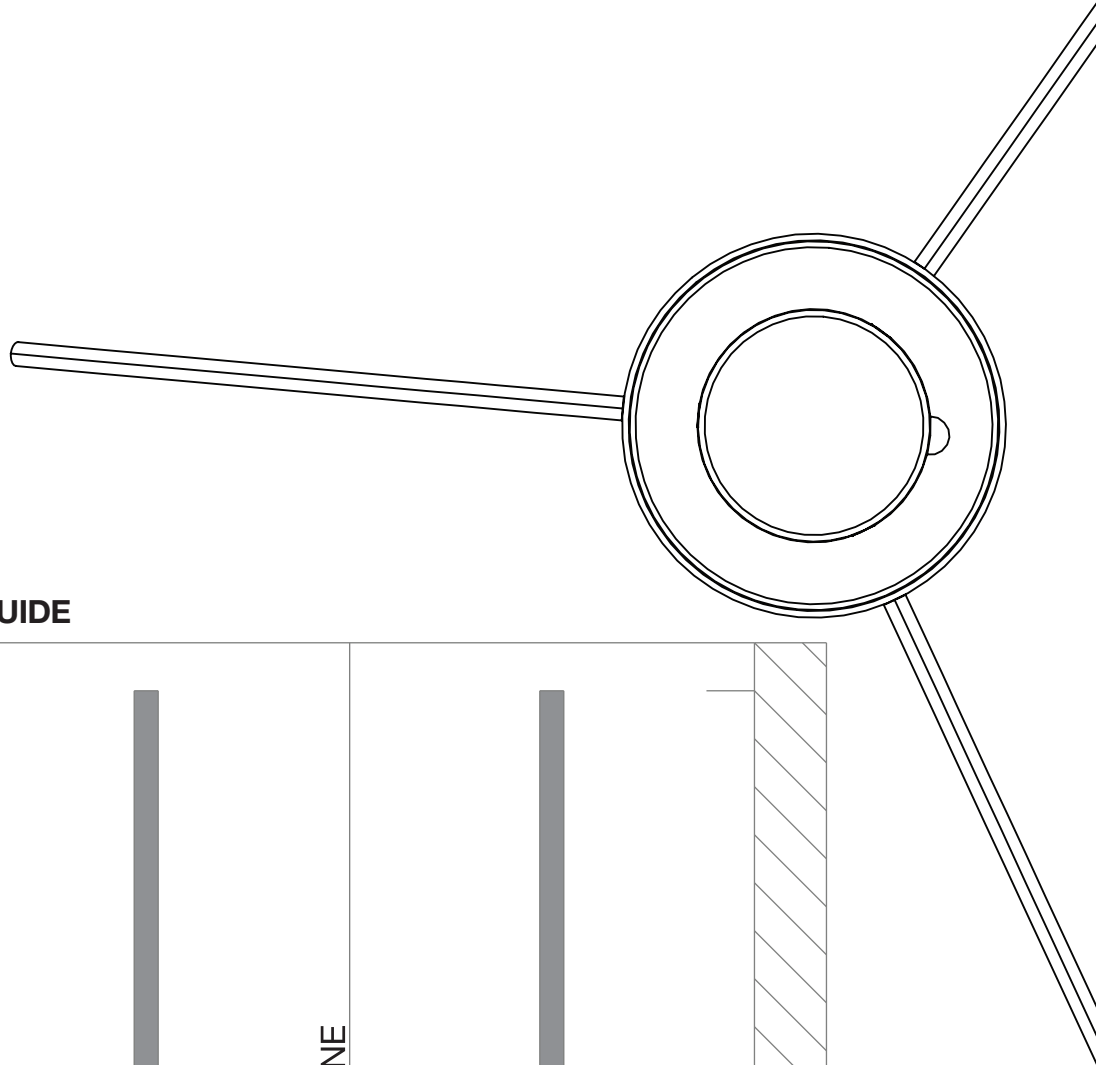
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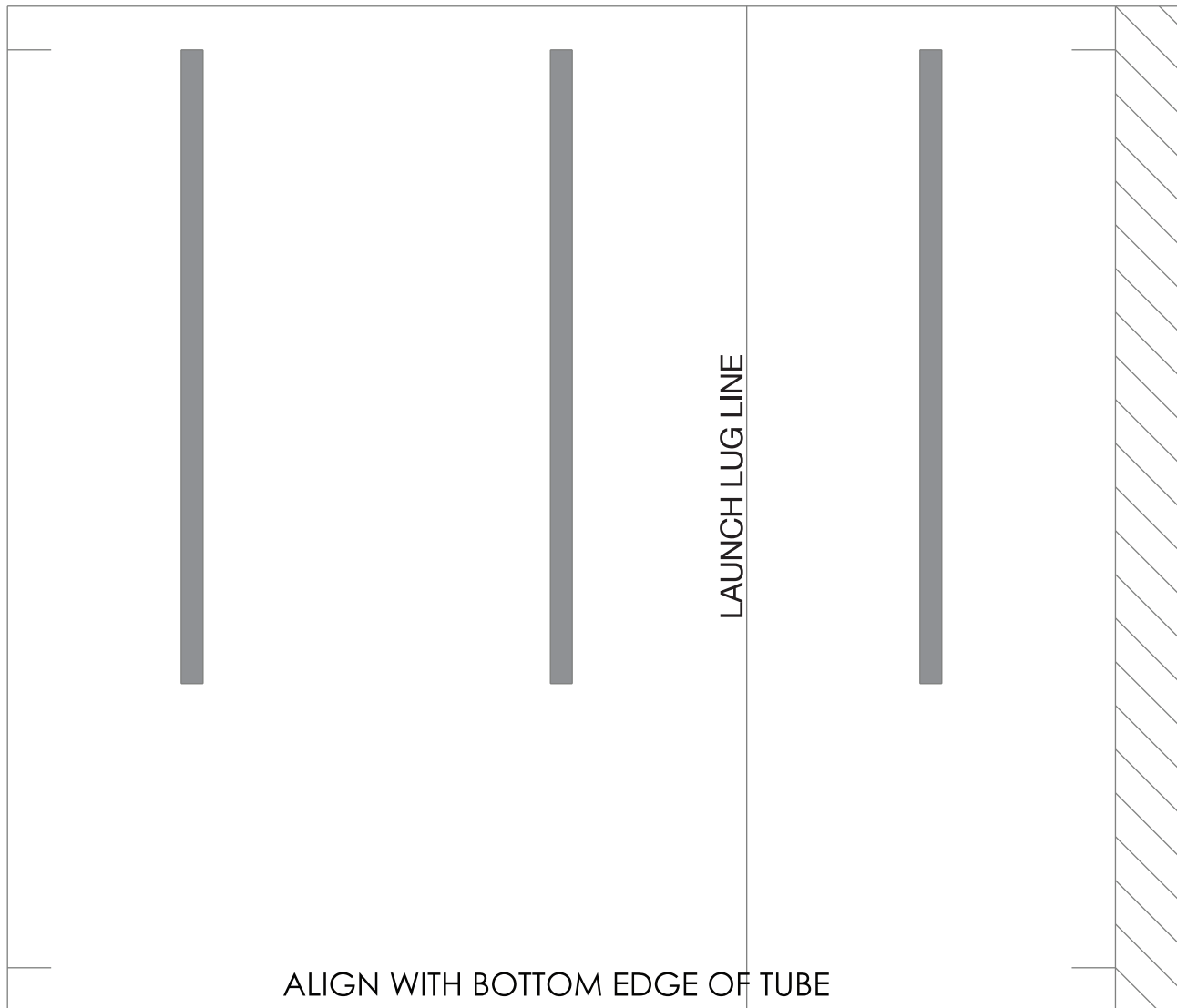


**SHOCK CORD MOUNT**

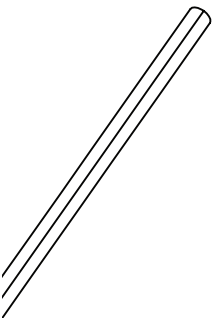
**FIN ALIGNMENT GUIDE**



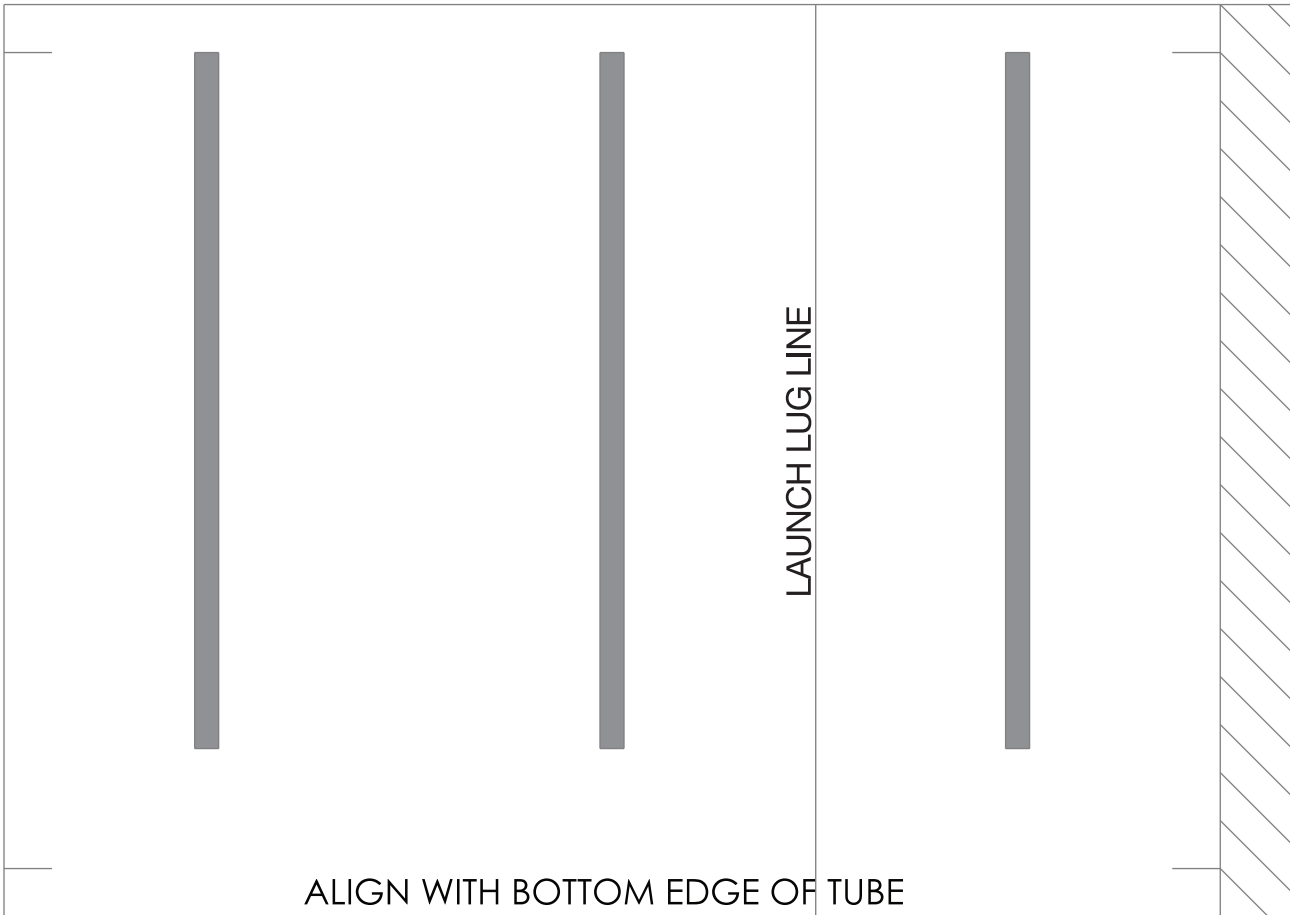
**UPPER STAGE FIN CUTTING GUIDE**



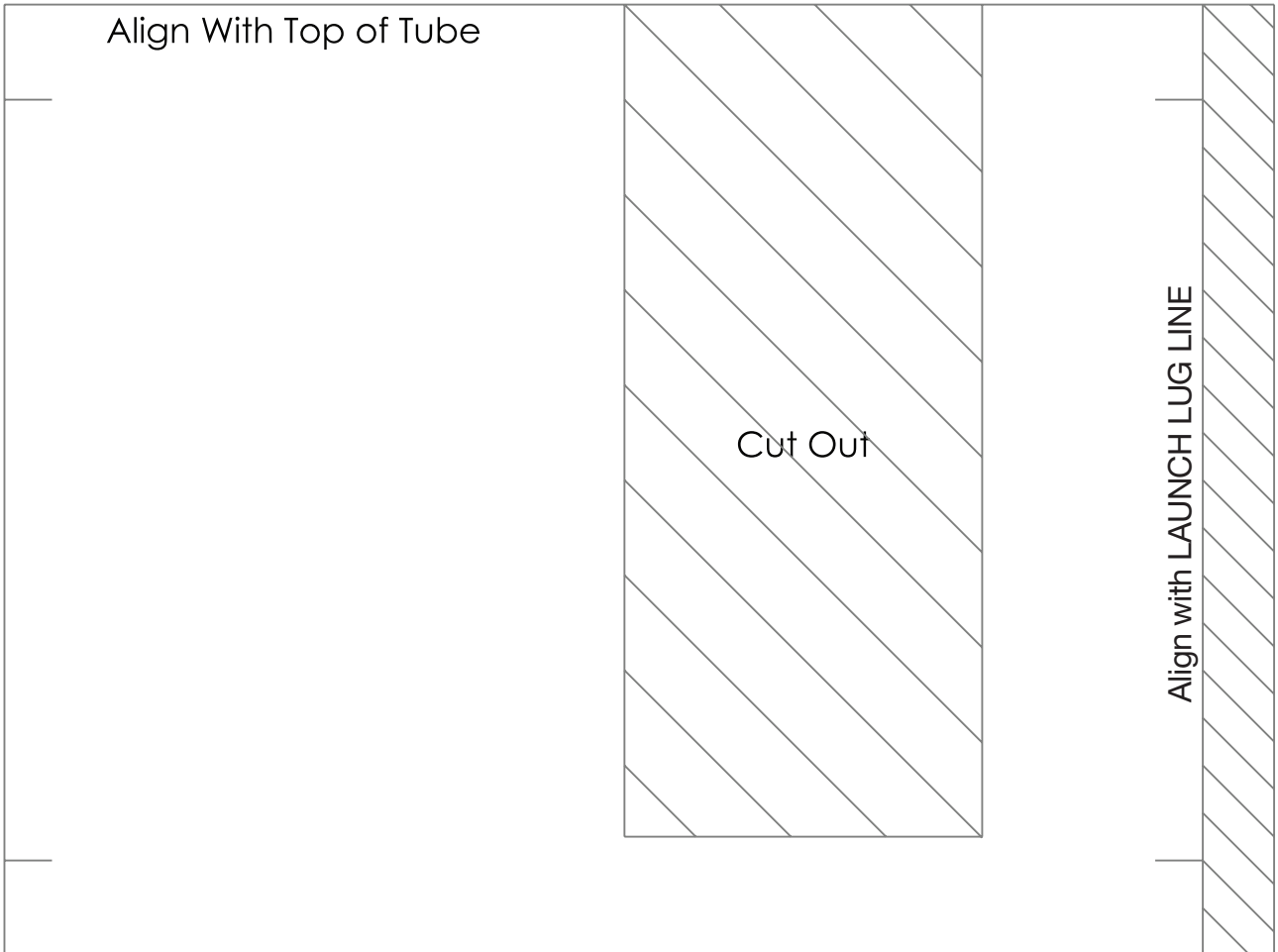




**BOOSTER FIN CUTTING GUIDE**



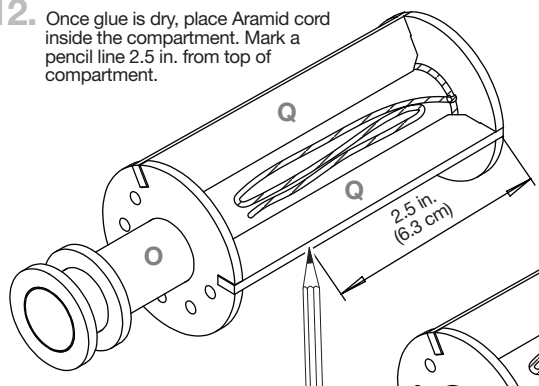
**HATCH CUTTING GUIDE**



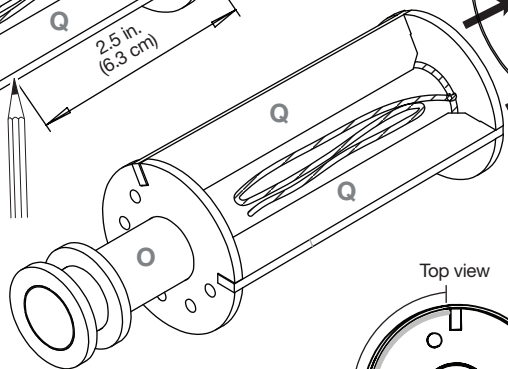
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## ASSEMBLE BOOSTER RECOVERY COMPARTMENT (CONTINUED)

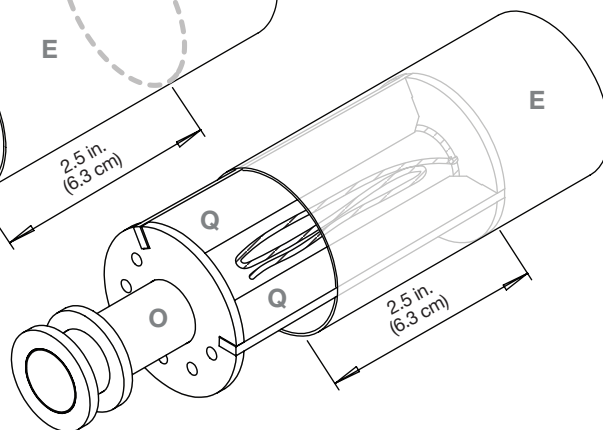
12. Once glue is dry, place Aramid cord inside the compartment. Mark a pencil line 2.5 in. from top of compartment.



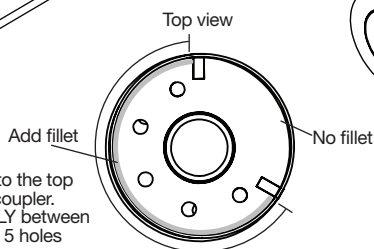
13. Apply glue to the inside of the coupler.



14. Insert booster recovery compartment into coupler.



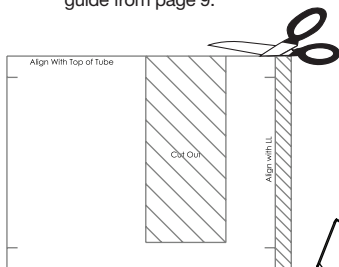
15. Add a glue fillet to the top inner rim of the coupler. Glue the rim ONLY between the notches with 5 holes



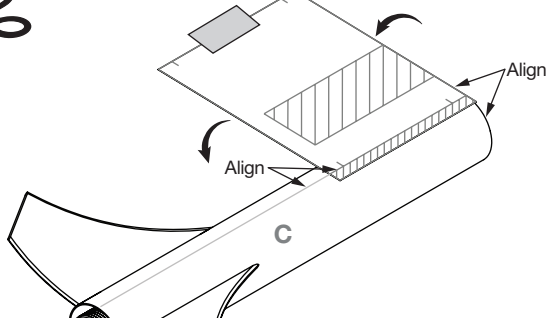
LET DRY

## BOOSTER RECOVERY HATCH MARKING AND CUTTING

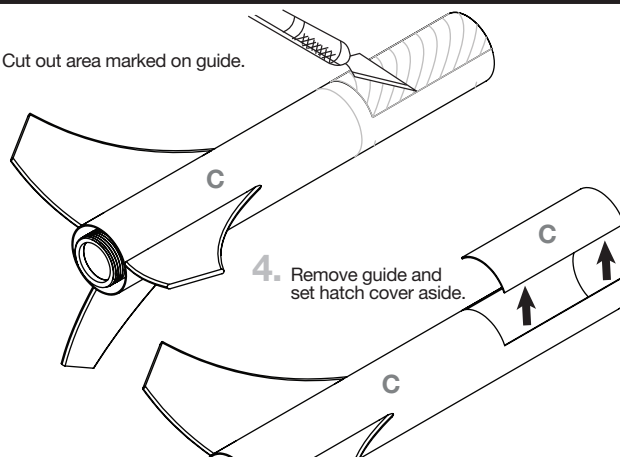
1. Cut out hatch cutting guide from page 9.



2. Wrap guide around tube, aligning top edges and along the launch lug line. Secure with clear tape.



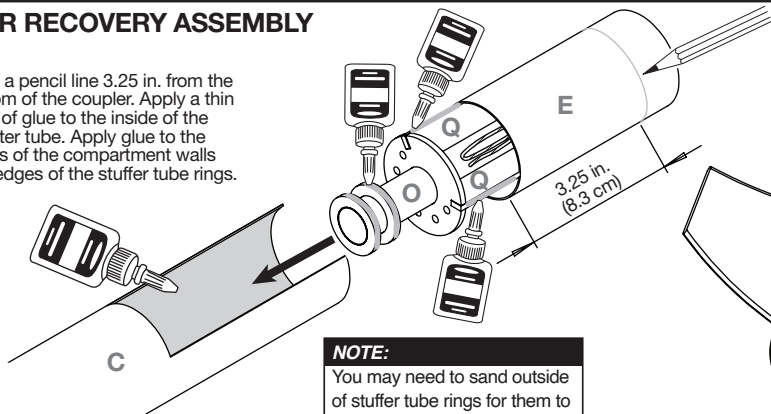
3. Cut out area marked on guide.



4. Remove guide and set hatch cover aside.

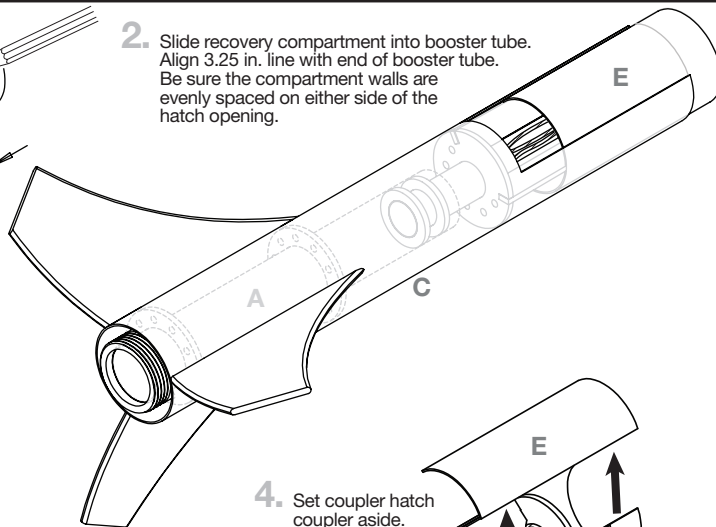
## BOOSTER RECOVERY ASSEMBLY

1. Mark a pencil line 3.25 in. from the bottom of the coupler. Apply a thin layer of glue to the inside of the booster tube. Apply glue to the edges of the compartment walls and edges of the stuffer tube rings.



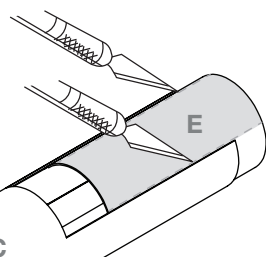
**NOTE:**  
You may need to sand outside of stuffer tube rings for them to fit properly. Dry fit before gluing.

2. Slide recovery compartment into booster tube. Align 3.25 in. line with end of booster tube. Be sure the compartment walls are evenly spaced on either side of the hatch opening.



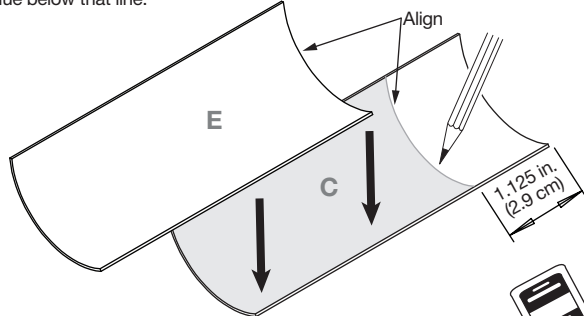
4. Set coupler hatch coupler aside.

3. Cut the same hatch out of the coupler.

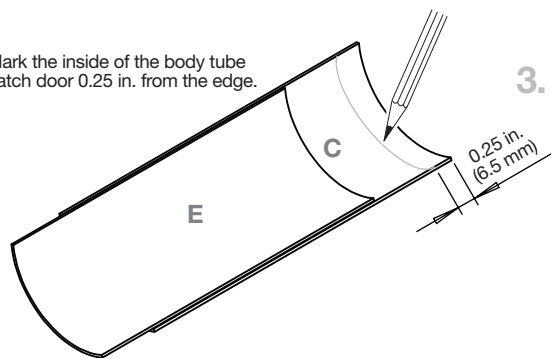


## HATCH DOOR ASSEMBLY

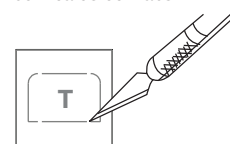
1. Mark the inside of the body tube hatch door 1.125 in. from the edge. Apply a thin layer of glue below that line.



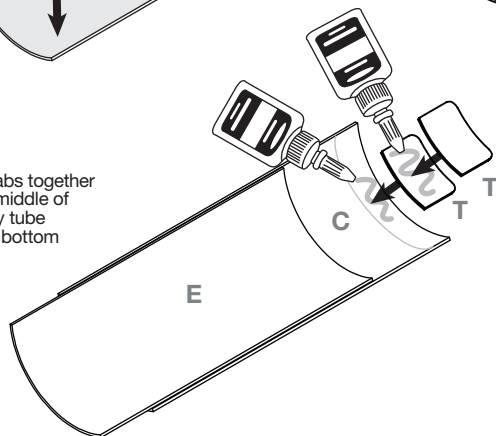
2. Mark the inside of the body tube hatch door 0.25 in. from the edge.



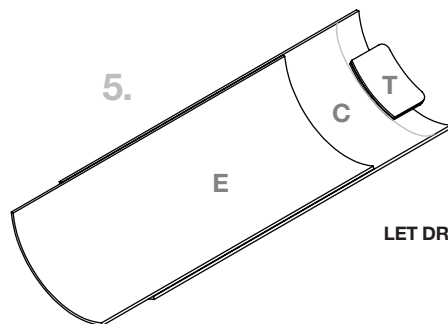
3. Cut out both cardstock tabs.



4. Glue the cardstock tabs together. Glue the tabs to the middle of the inside of the body tube hatch door. Align the bottom of the tabs with the 0.25 in. line.



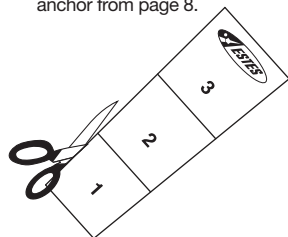
5.



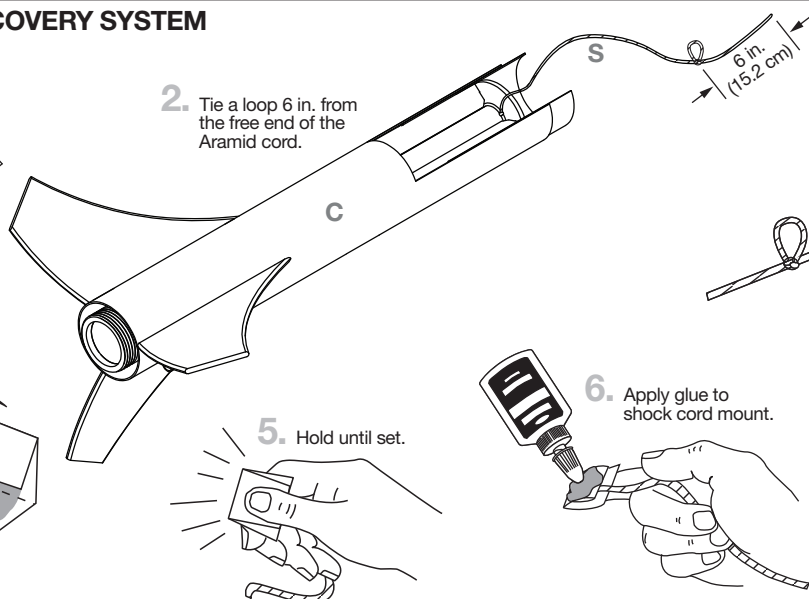
LET DRY

## INSTALL BOOSTER RECOVERY SYSTEM

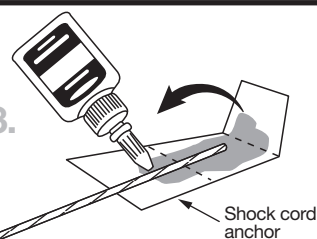
1. Cut out shock cord anchor from page 8.



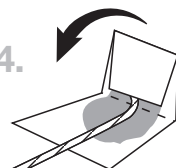
2. Tie a loop 6 in. from the free end of the Aramid cord.



3.



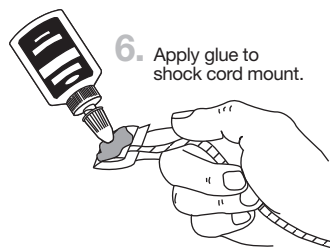
4.



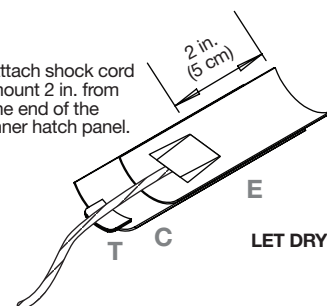
5. Hold until set.



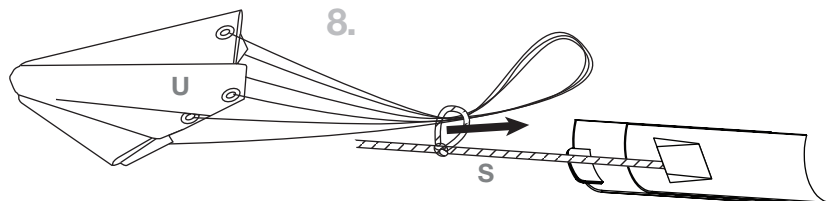
6. Apply glue to shock cord mount.



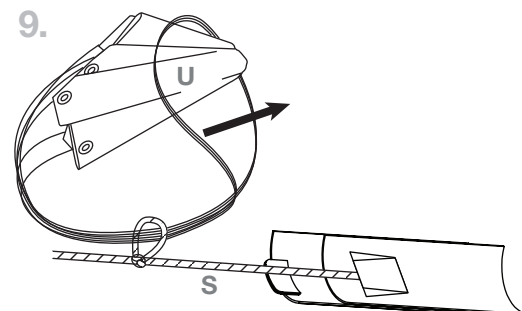
7. Attach shock cord mount 2 in. from the end of the inner hatch panel.



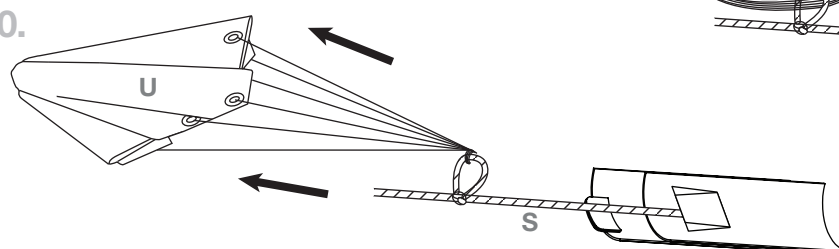
8.



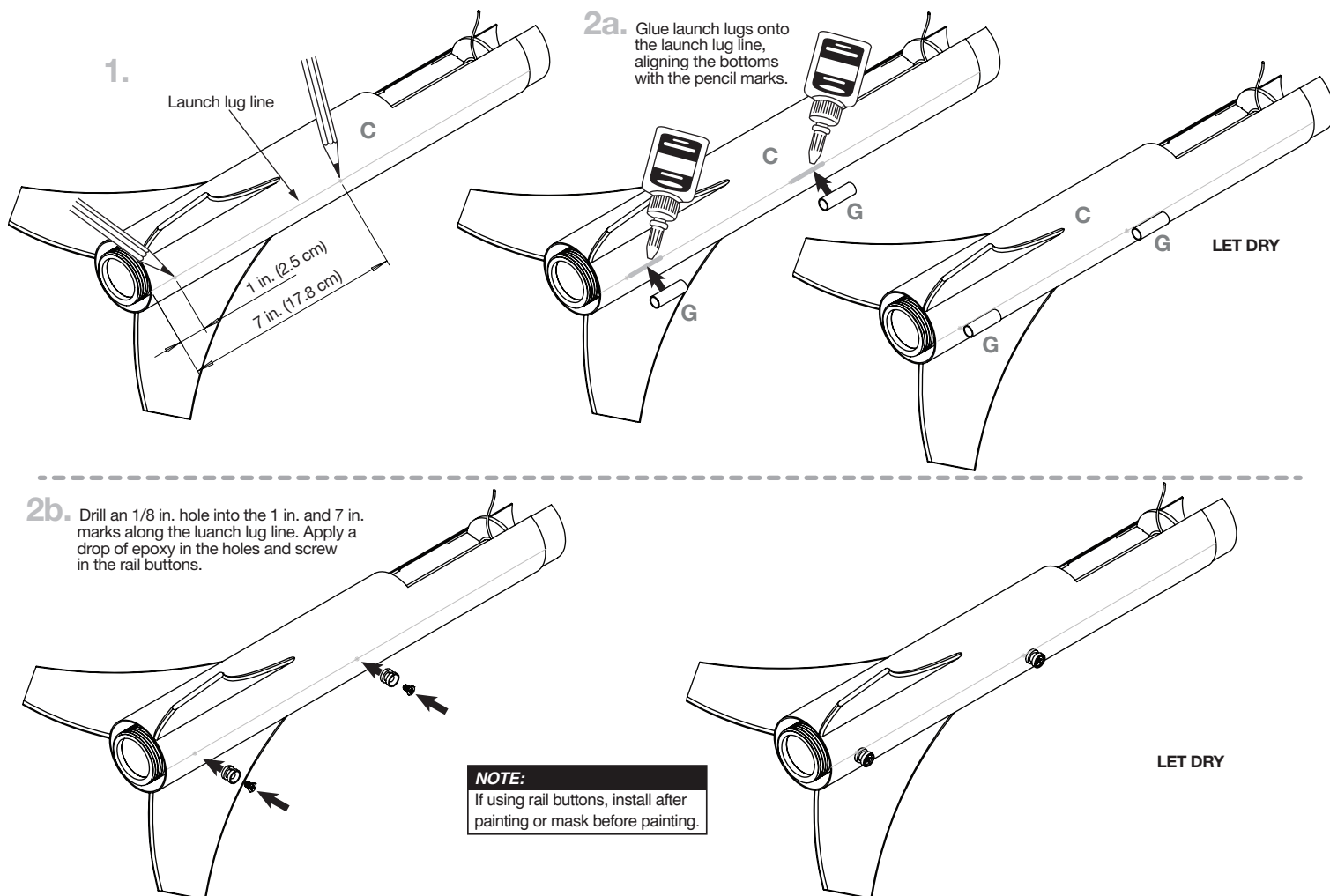
9.



10.



## BOOSTER STAGE LAUNCH LUG OR RAIL BUTTON ATTACHMENT



## PAINT AND APPLY DECALS

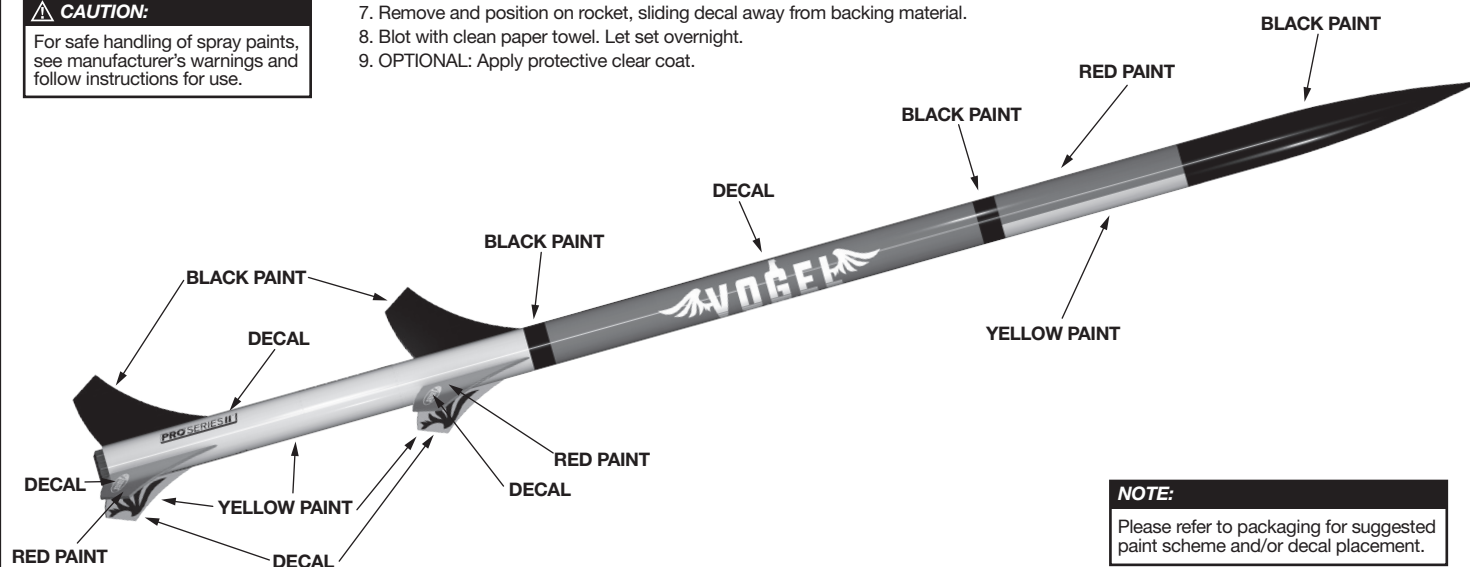
### PAINT COLORS

Black Paint  
Red Paint  
Yellow Paint

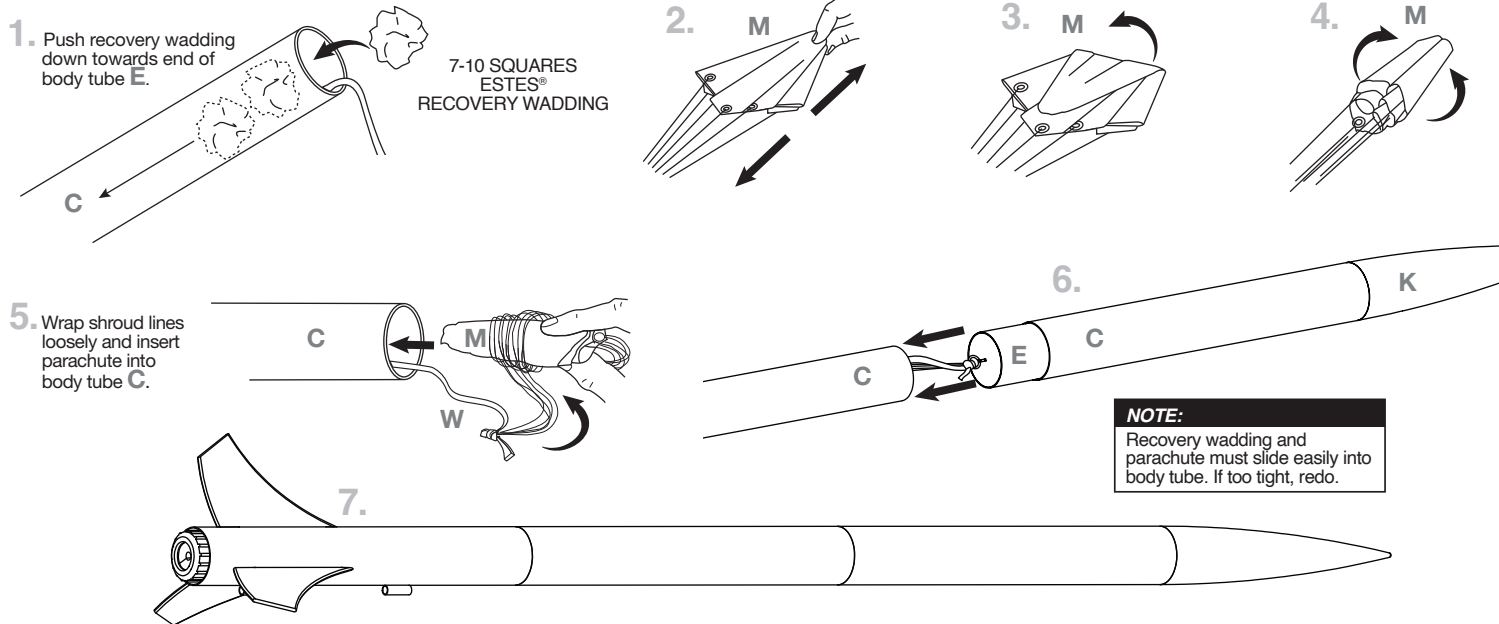
### CAUTION:

For safe handling of spray paints, see manufacturer's warnings and follow instructions for use.

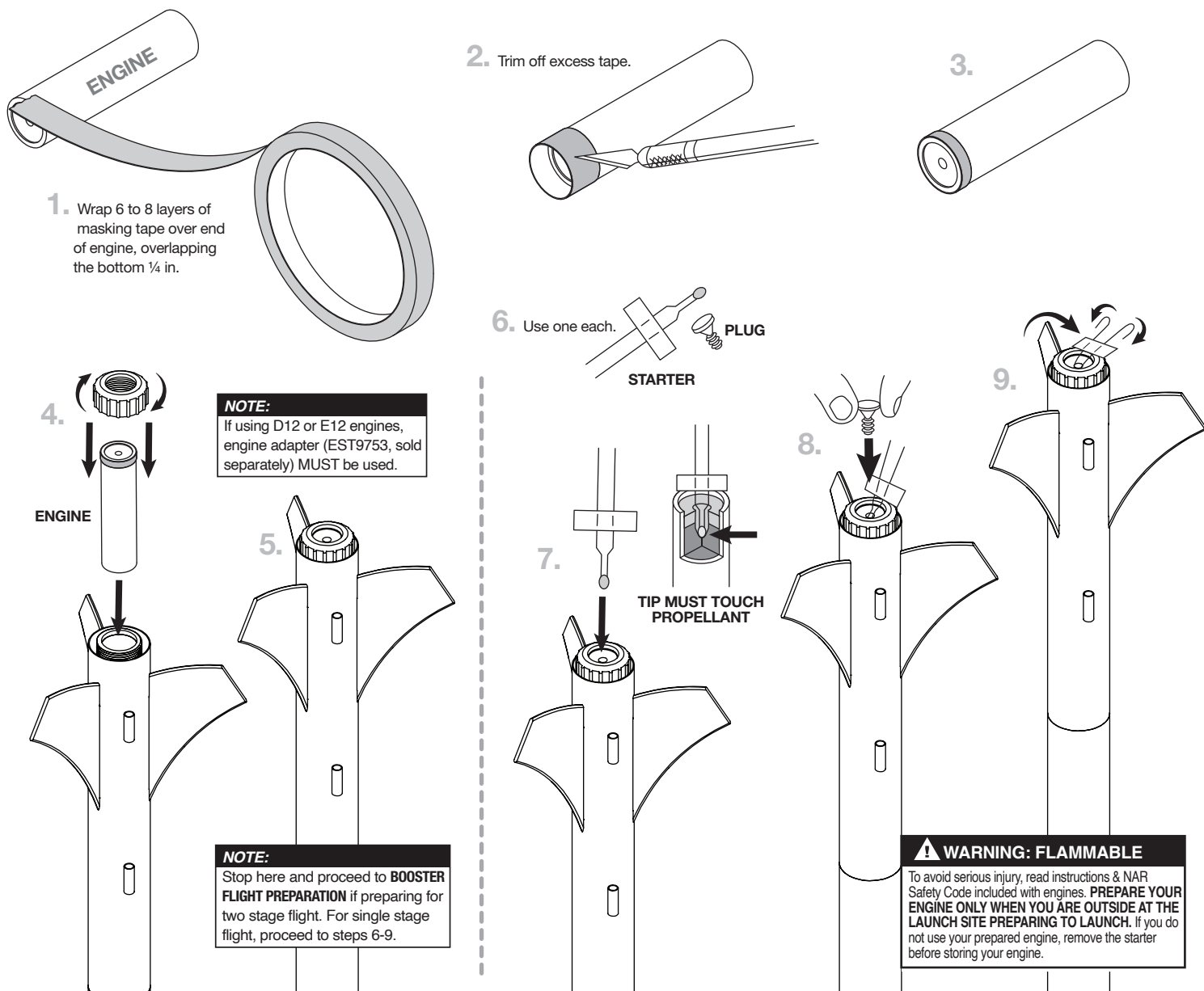
1. Spray rocket with white primer, let dry, and sand. Repeat until rocket is smooth.
2. Paint entire rocket yellow.
3. Mask off rocket as needed for red and black paint application.
4. Apply decals only after paint is dry.
5. Cut decals from sheet, trimming close to edge.
6. One at a time, place in warm water until decal curls and begins to relax.
7. Remove and position on rocket, sliding decal away from backing material.
8. Blot with clean paper towel. Let set overnight.
9. OPTIONAL: Apply protective clear coat.



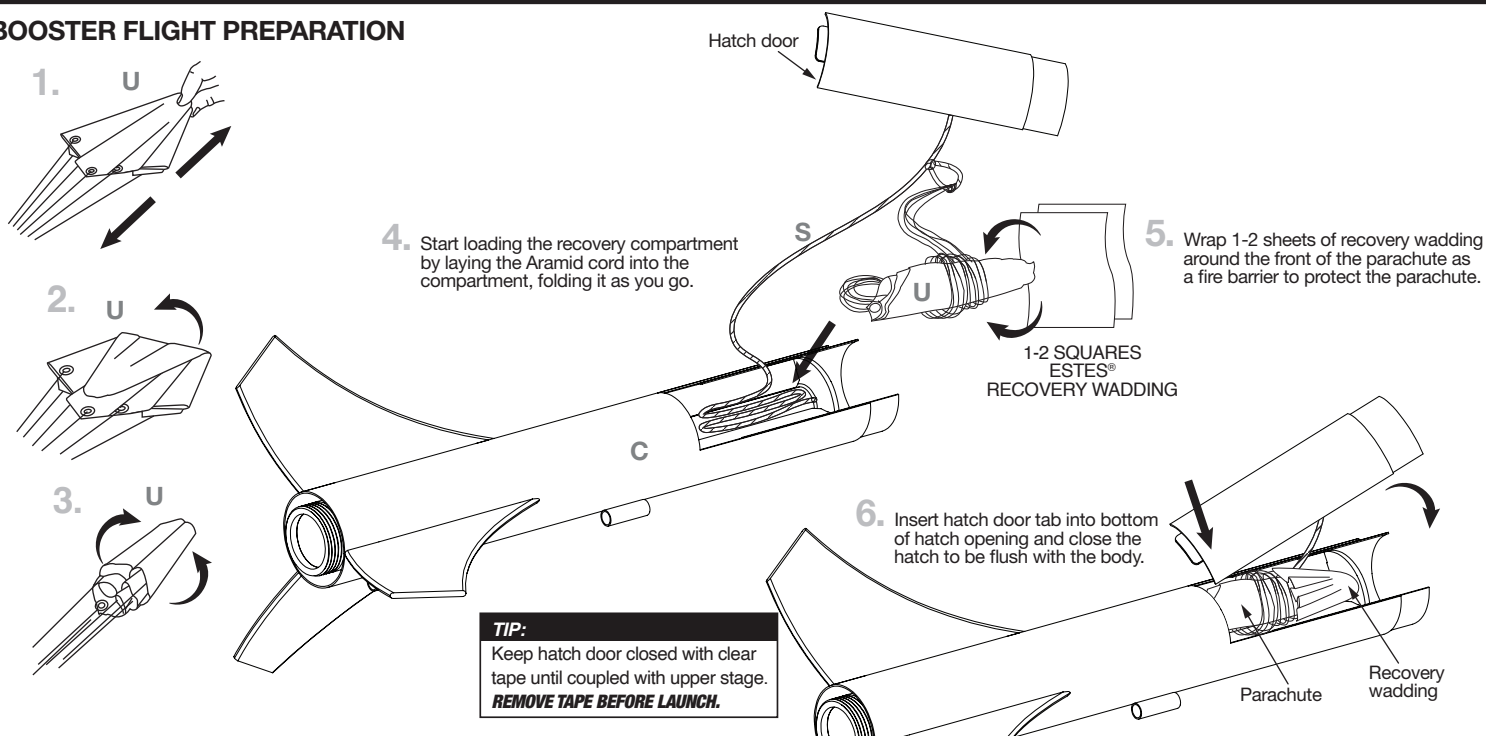
## UPPER STAGE FLIGHT PREPARATION



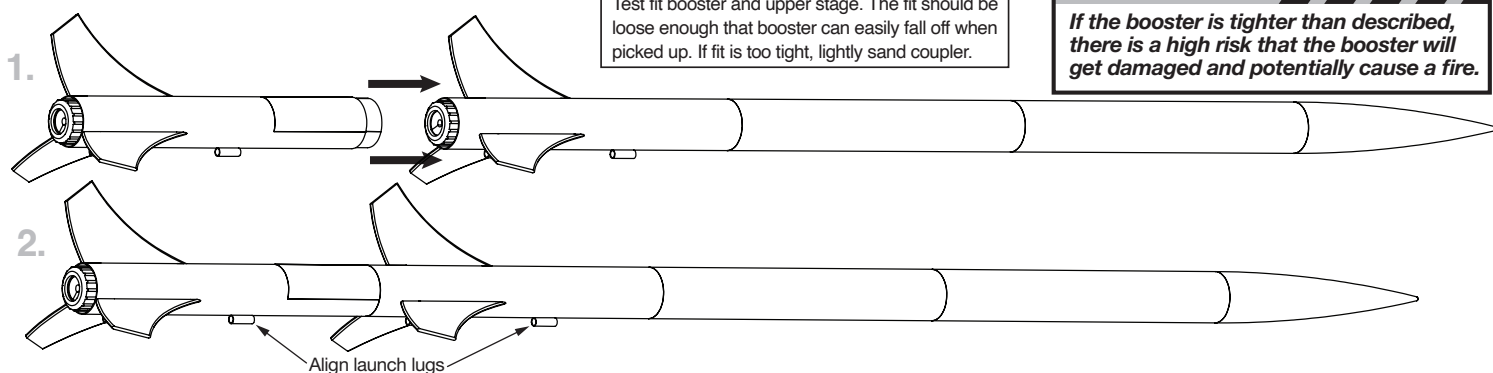
## UPPER STAGE ENGINE PREPARATION



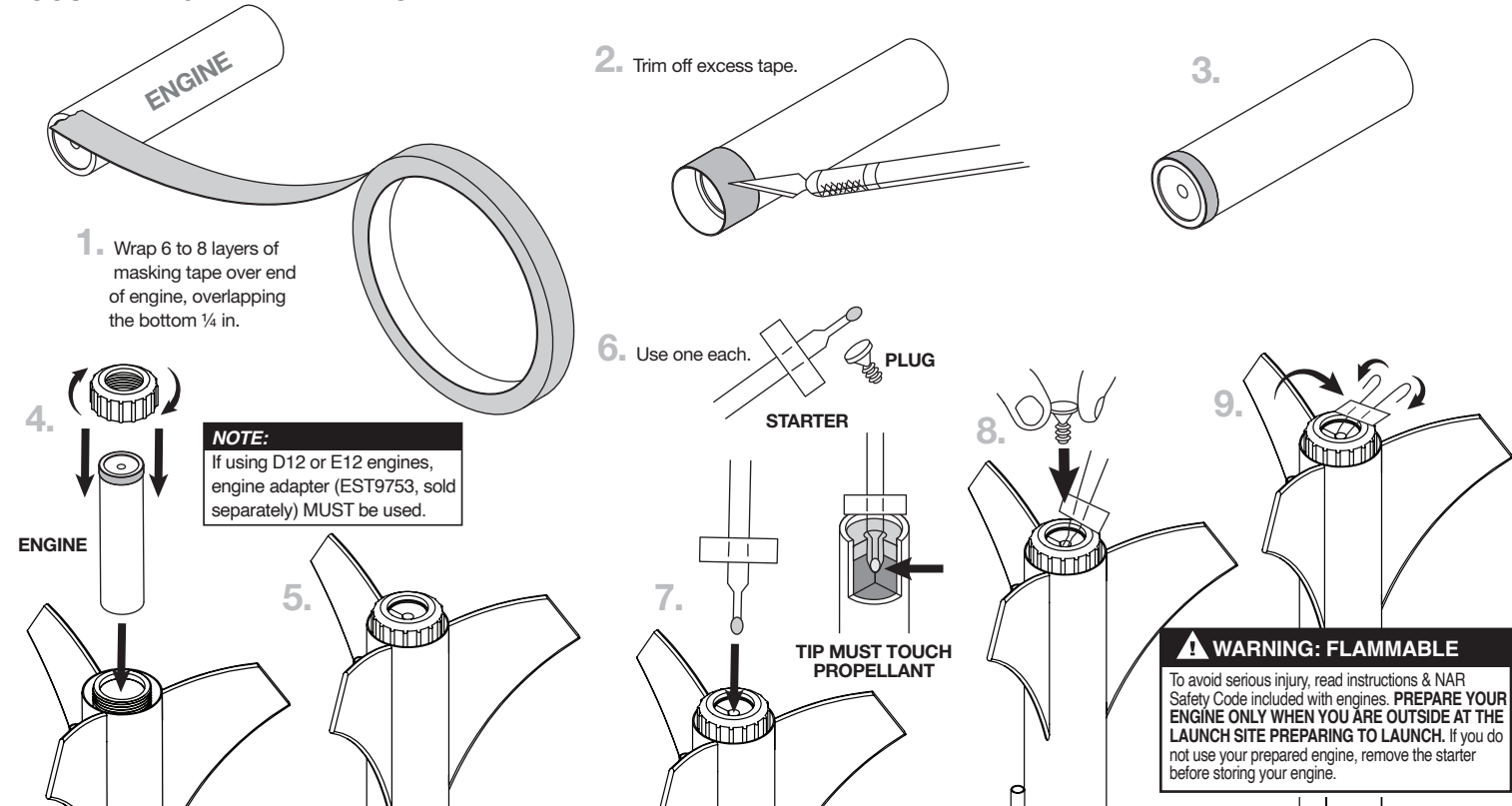
## BOOSTER FLIGHT PREPARATION



## ASSEMBLE BOOSTER AND UPPER STAGES



## BOOSTER ENGINE PREPARATION

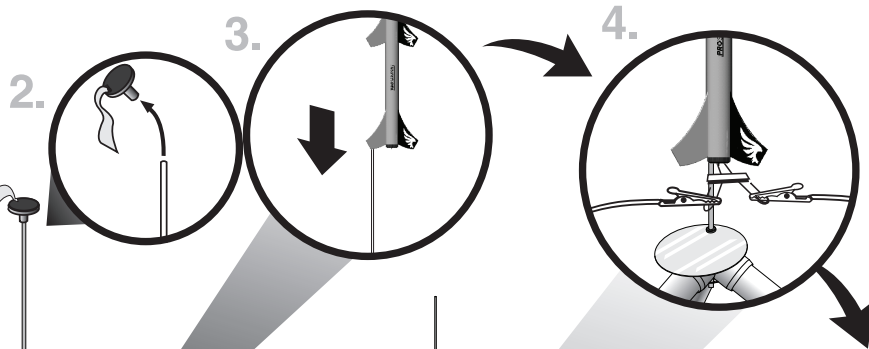
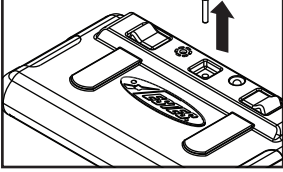




## COUNTDOWN AND LAUNCH

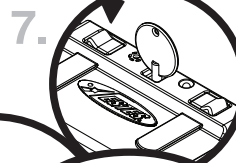
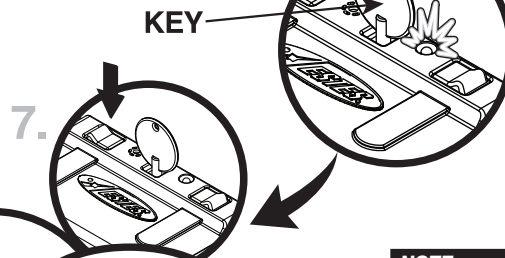
### NOTE:

Key always out until final countdown.



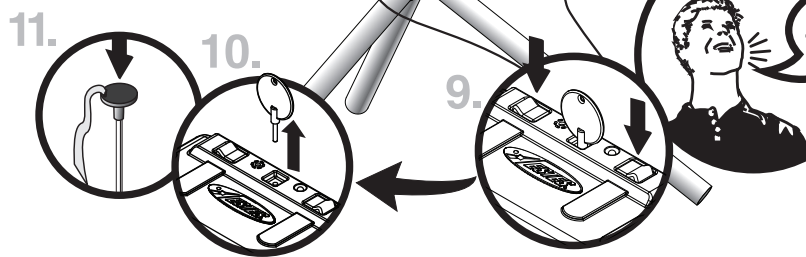
5. Fully extend your launch controller wire before launching.

6. Insert key. Bulb will light.

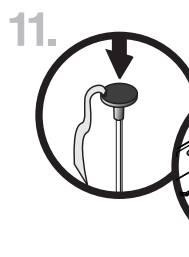
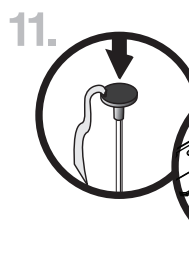
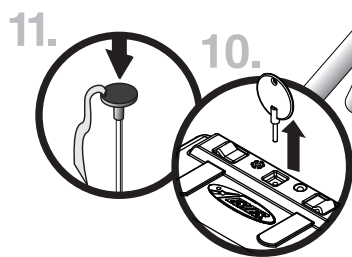


4... 3... 2... 1...

Firmly press and HOLD the yellow button and begin countdown.



While holding yellow button down FIRMLY, press launch red button until LIFTOFF!



### NOTE:

Estimated weight: 17 oz. (482 g)

### ESTES® LAUNCH SUPPLIES NEEDED (Sold Separately)

- Pro Series II™ Launch Base
- Pro Series II™ Launch Rail
- Pro Series II™ Launch Controller
- Recovery Wadding
- Starters (with engines)
- Plugs (with engines)
- Recommended Estes® Engines:
  - Single Stage: D12-3, E12-4, E16-6, F15-6
  - 2-Stage:
    - Booster stage: E16-0, F15-0
    - Upper stage: D12-5, E12-6, E16-6, F15-6

## 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 (1000 ft. [305 m] square) free of dry weeds and brown grass. The larger the launch area, the better your chance of recovering your rocket. 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 the engine. Push the plug in place. Repeat steps under Countdown and Launch.

