ESTES

EstesRockets.com

PRO SERIES II

VOGEL™

9728/1743



AGES 18+

Skill Level

EXPERT

MODEL ROCKET INSTRUCTIONS

KEEP FOR FUTURE REFERENCE

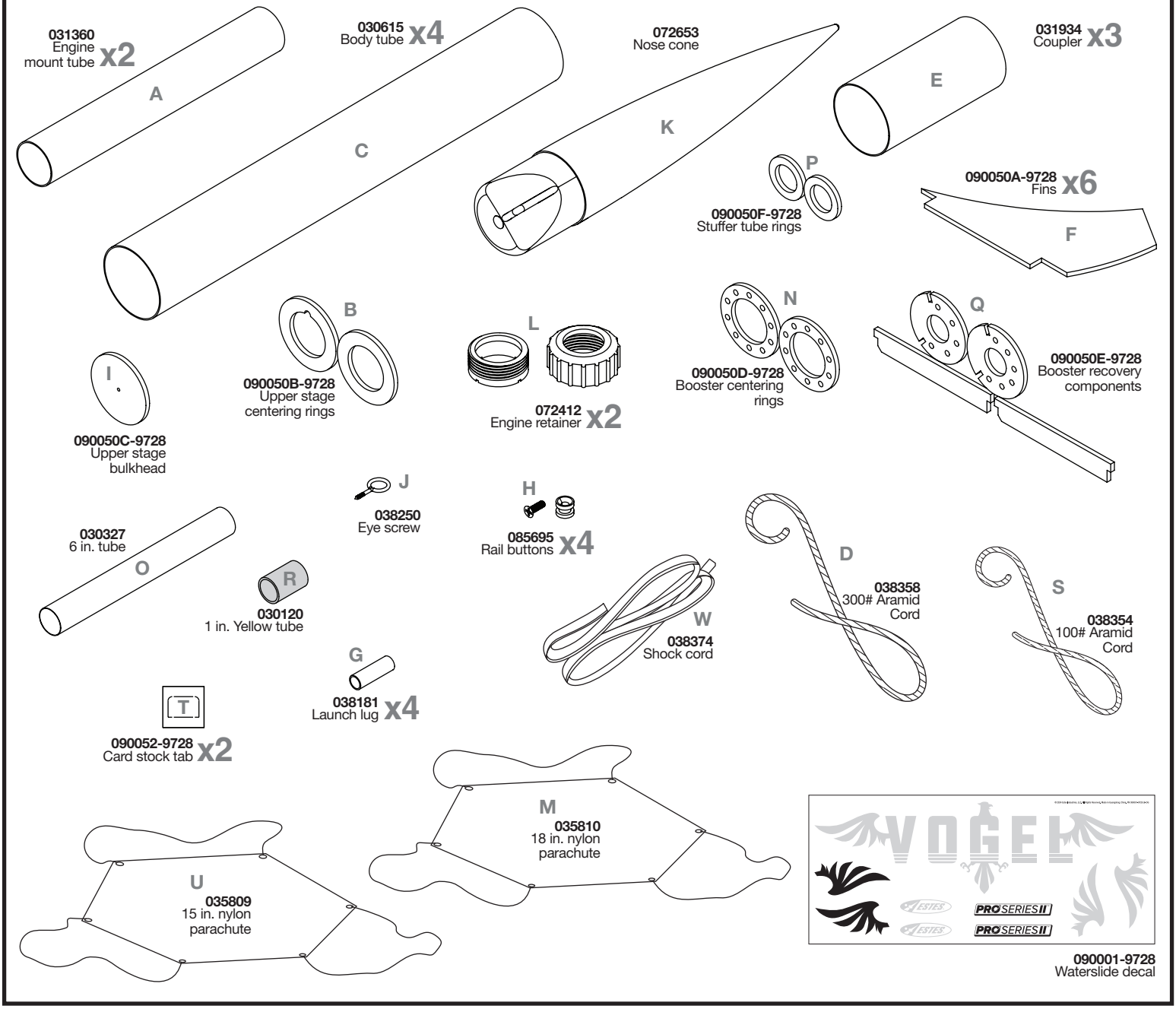
IMPORTANT: Please record date found on decal and keep for future reference. _____

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.*

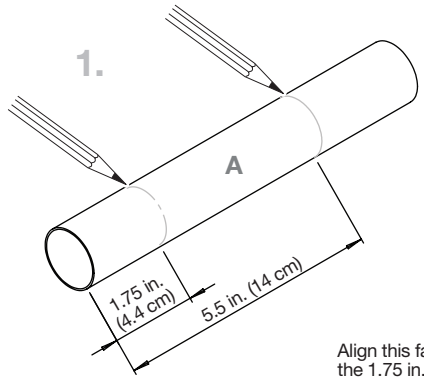
SUPPLIES

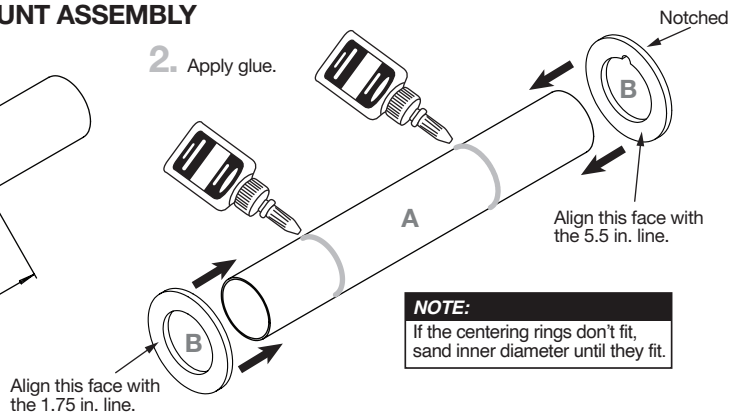


HOBBY KNIFE | DRILL | SCISSORS | FINE SANDPAPER | EPOXY | YELLOW GLUE | CLEAR TAPE | MASKING TAPE | RULER | SOFT LEAD PENCIL | WHITE PRIMER | PAINT (Listed on Pg. 13) | CLEAR COAT (OPTIONAL)

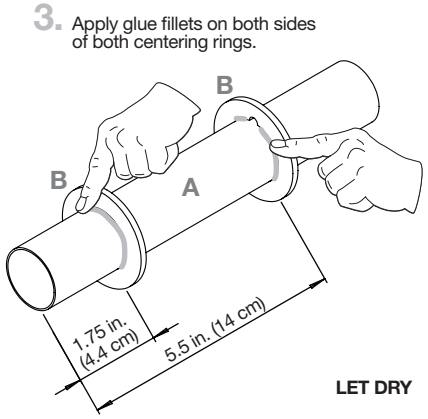


UPPER STAGE ENGINE MOUNT ASSEMBLY





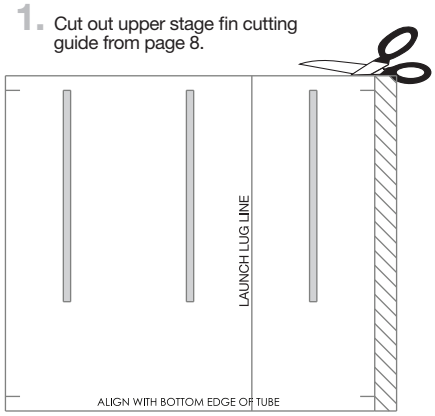
NOTE:
If the centering rings don't fit, sand inner diameter until they fit.



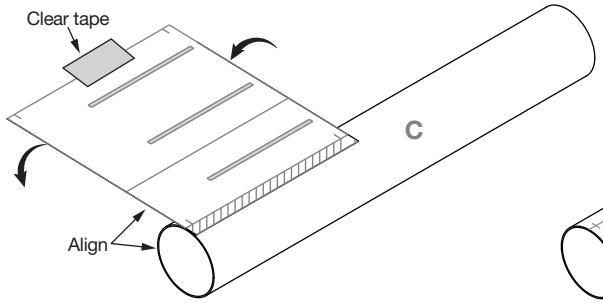
LET DRY

CUTTING UPPER STAGE FIN SLOTS

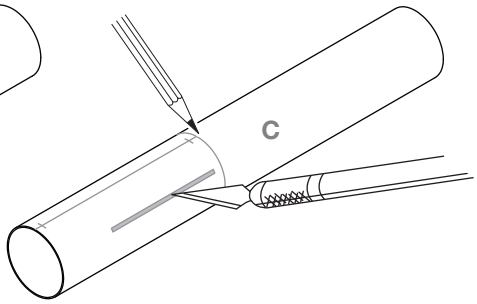
1. Cut out upper stage fin cutting guide from page 8.



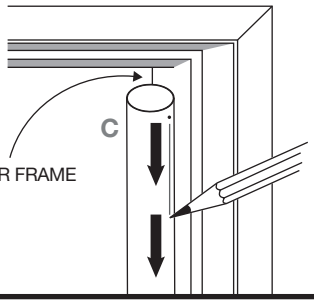
2. Wrap guide around tube, aligning bottom edges. Secure with clear tape.



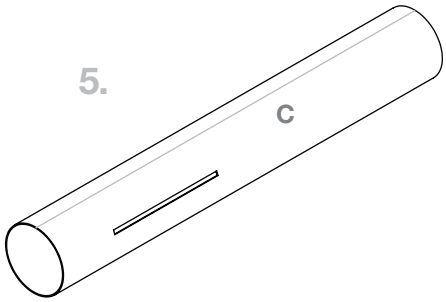
3. Mark the launch lug line on the body tube. Cut out all gray areas from the fin cutting guide.



4. Remove the fin cutting guide and use a door frame to extend launch lug line on the body tube.

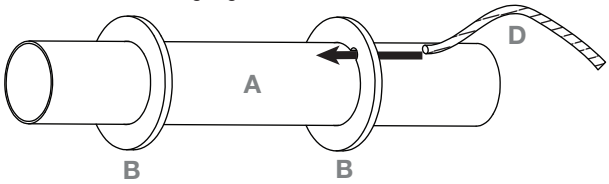


5.

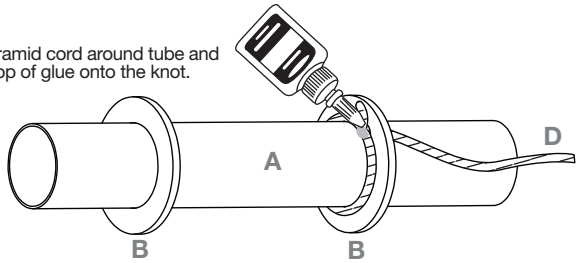


INSTALL ARAMID CORD & UPPER STAGE ENGINE MOUNT

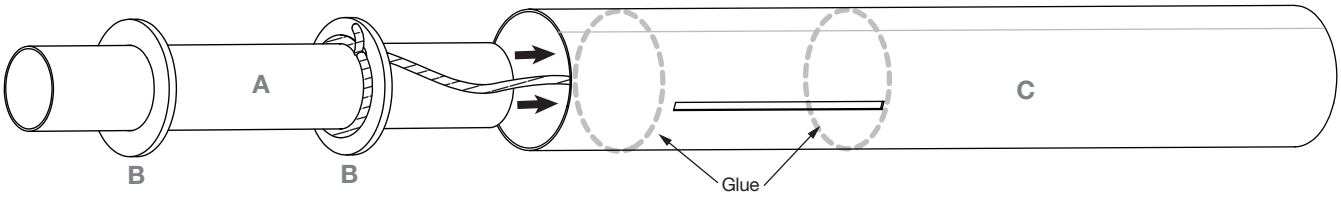
1. Thread 300# Aramid cord **D** through the notch in centering ring **B**.



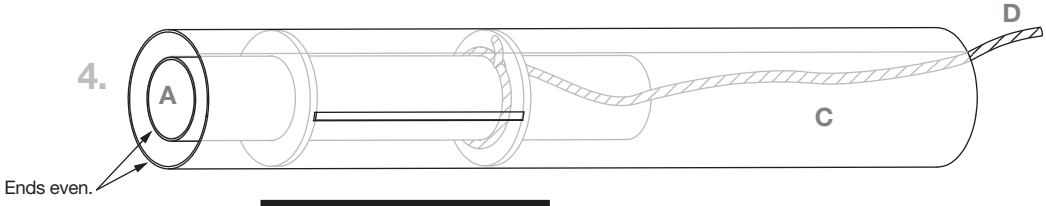
2. Tie 300# Aramid cord around tube and apply a drop of glue onto the knot.



3. Apply glue to the inside of tube **C**.



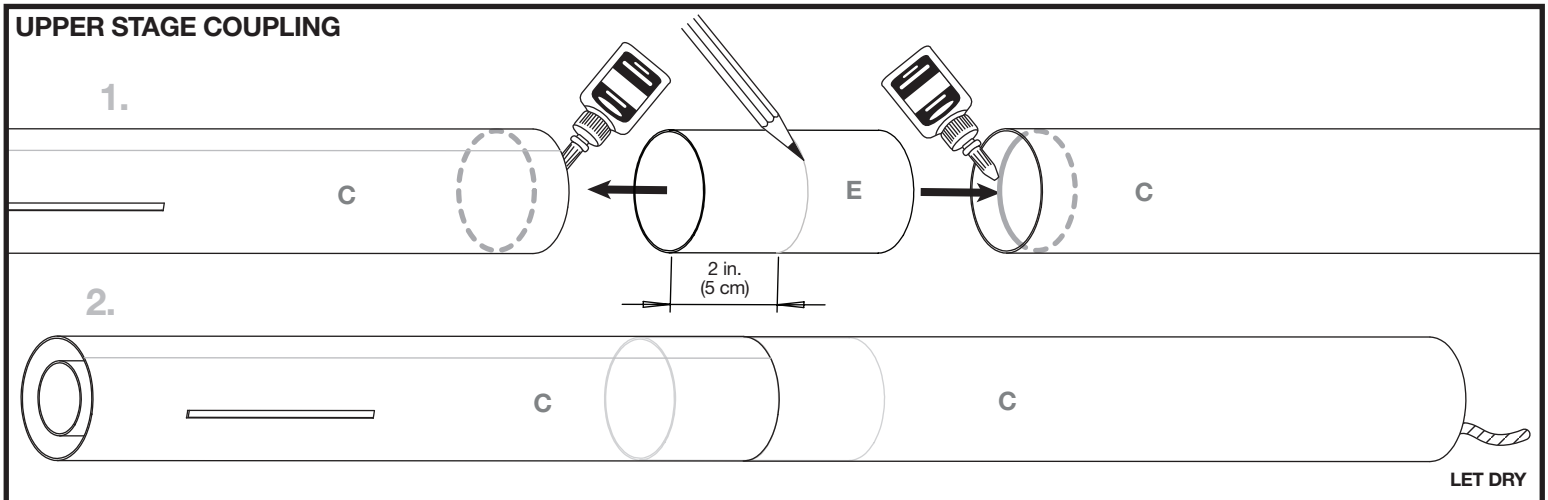
4.



NOTE:
Make sure centering rings are on either side of cut slots, not blocking.

LET DRY

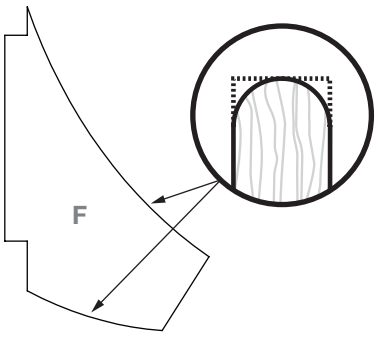
UPPER STAGE COUPLING



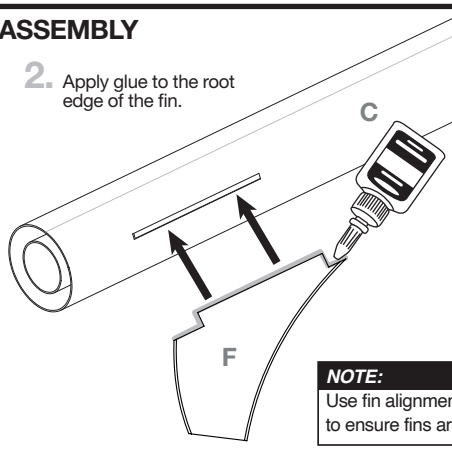
LET DRY

UPPER STAGE FIN PREPARATION & ASSEMBLY

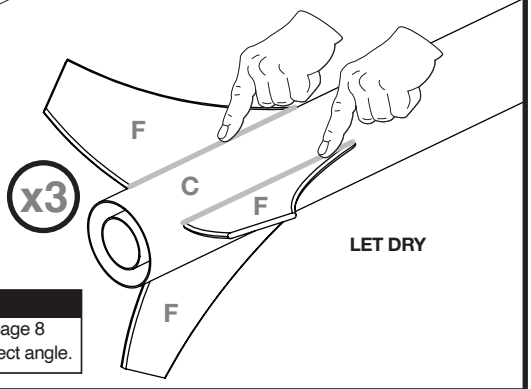
1. Using fine sand paper, round the leading and trailing edges of all F fins.



2. Apply glue to the root edge of the fin.



3. Apply glue fillets on both sides of all fins.

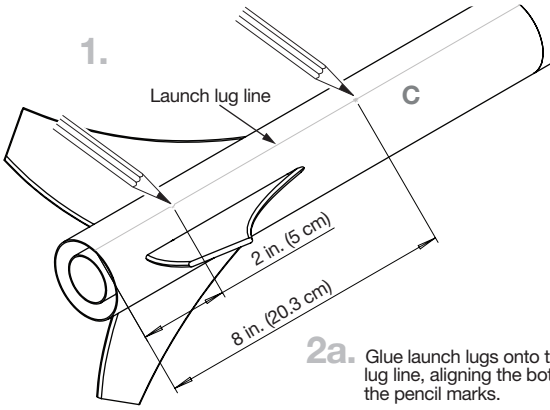


LET DRY

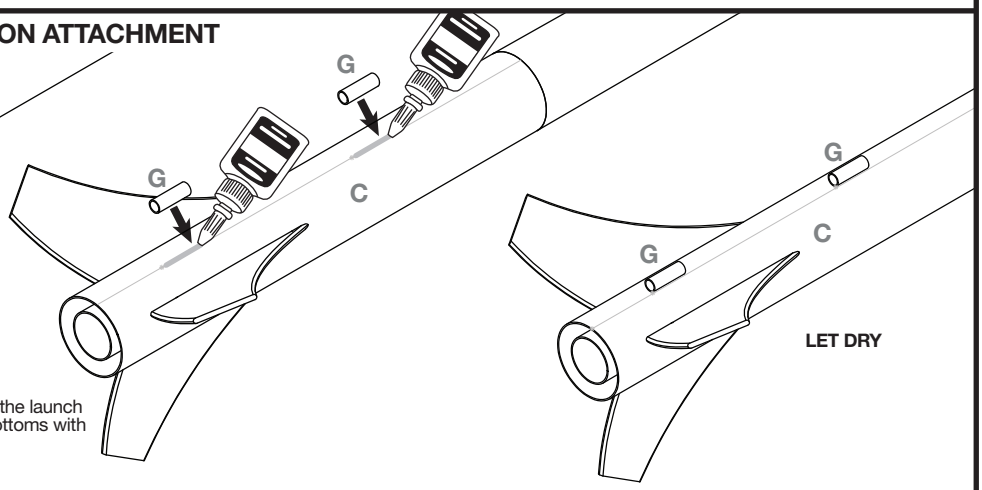
NOTE:
Use fin alignment guide on page 8 to ensure fins are at the correct angle.

UPPER STAGE LAUNCH LUG OR RAIL BUTTON ATTACHMENT

1.

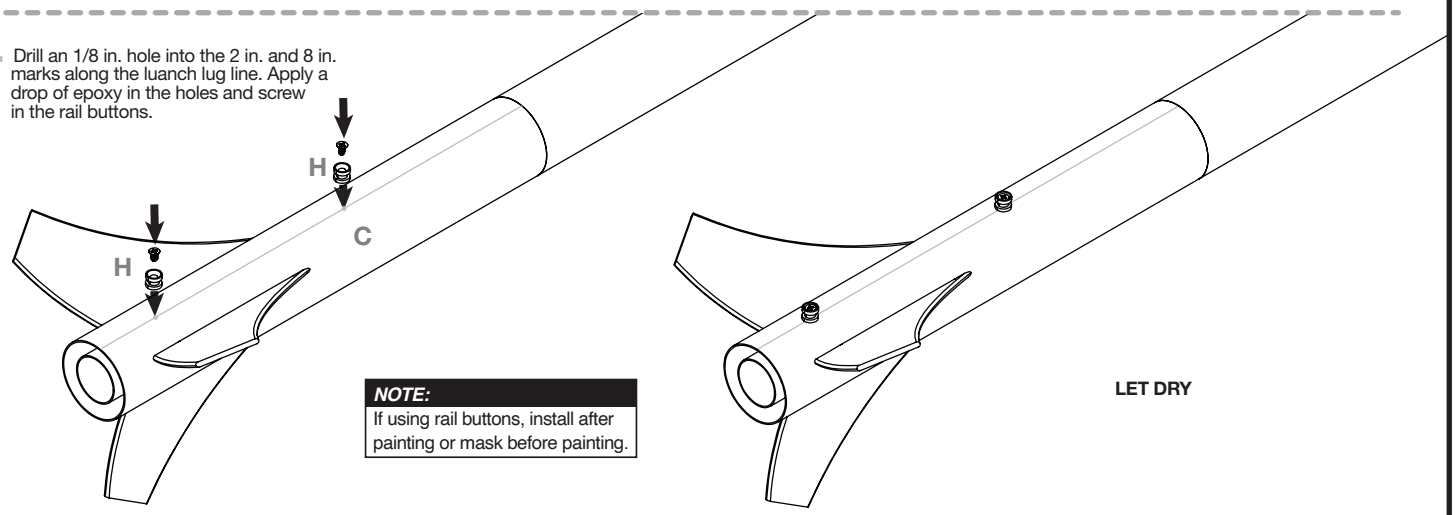


2a. Glue launch lugs onto the launch lug line, aligning the bottoms with the pencil marks.



LET DRY

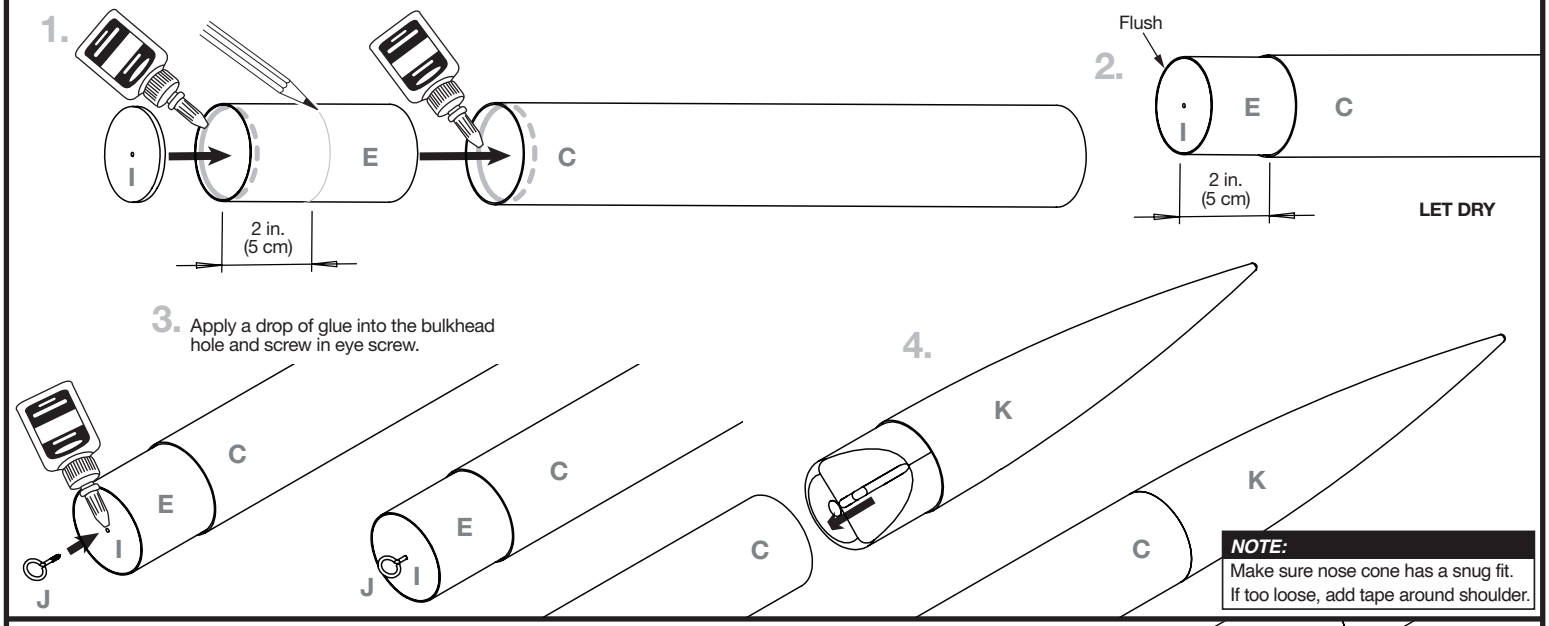
2b. Drill an 1/8 in. hole into the 2 in. and 8 in. marks along the luanch lug line. Apply a drop of epoxy in the holes and screw in the rail buttons.



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

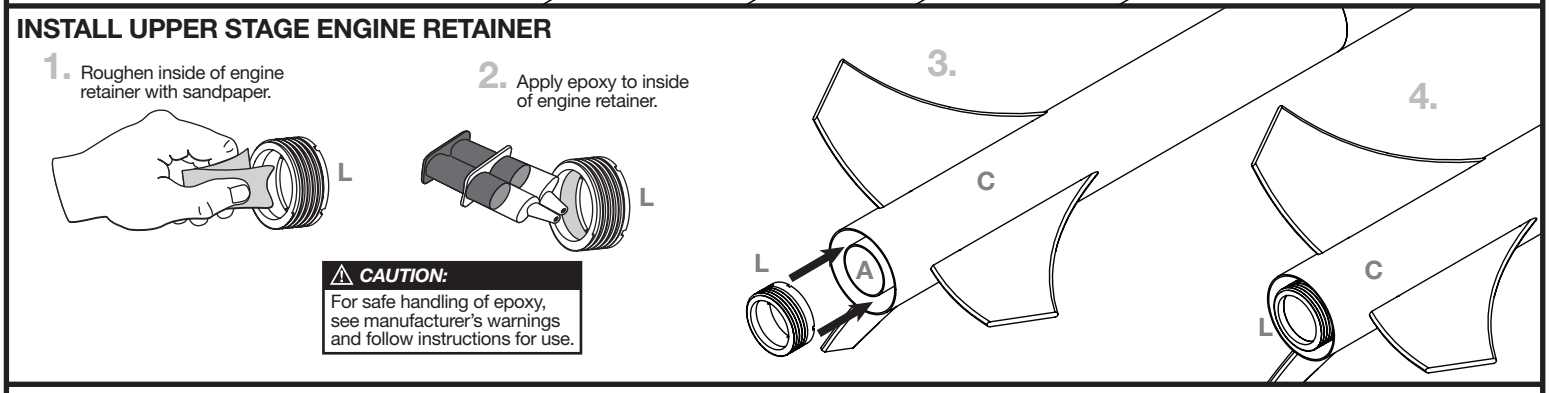
LET DRY

ASSEMBLE PAYLOAD SECTION



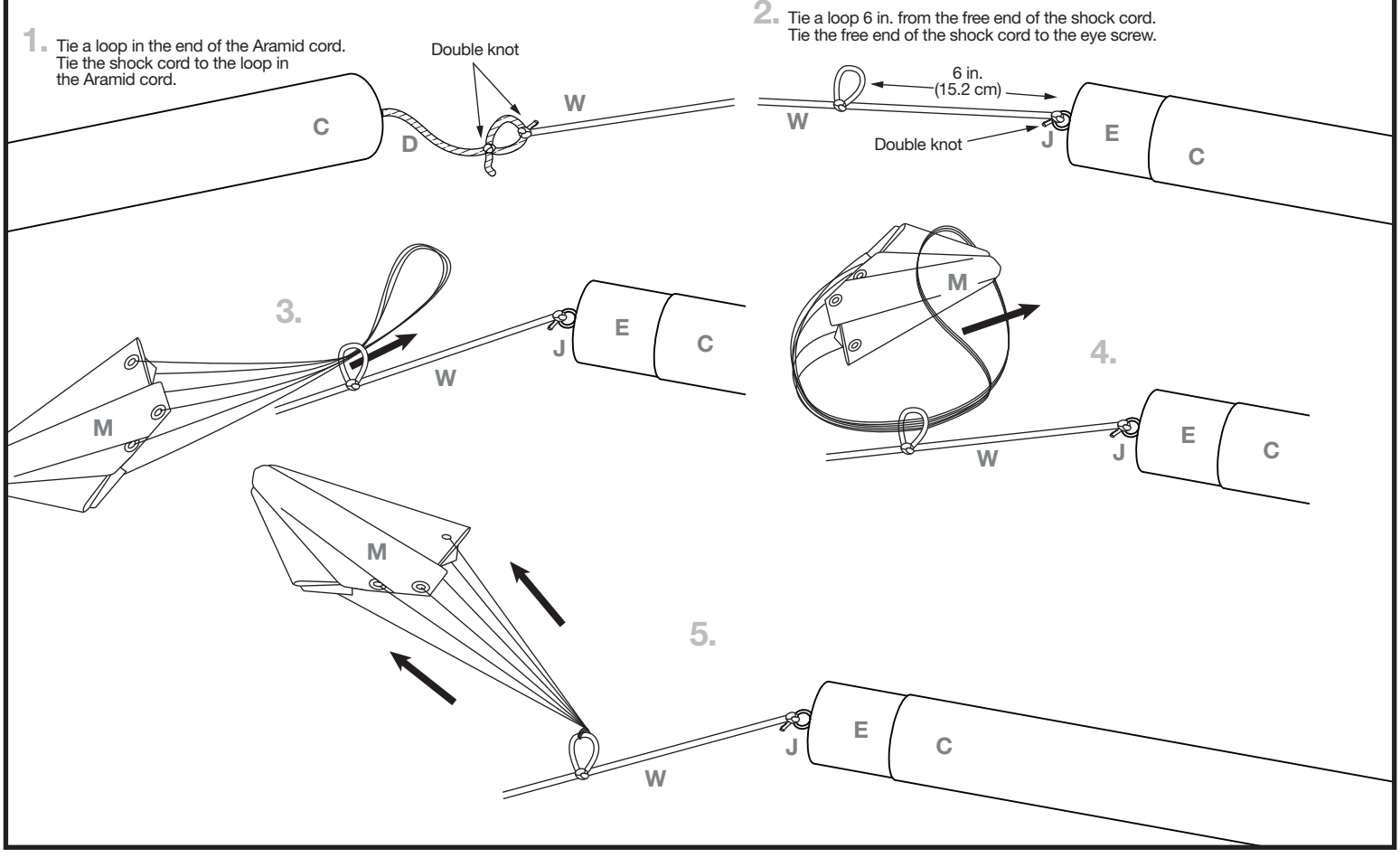
NOTE:
Make sure nose cone has a snug fit. If too loose, add tape around shoulder.

INSTALL UPPER STAGE ENGINE RETAINER

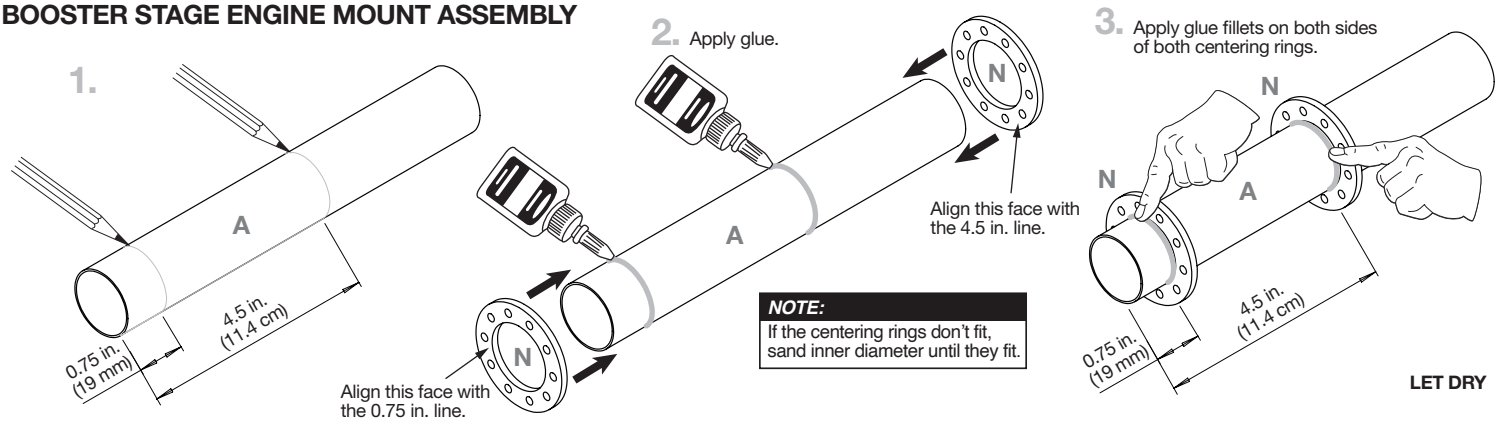


⚠ CAUTION:
For safe handling of epoxy, see manufacturer's warnings and follow instructions for use.

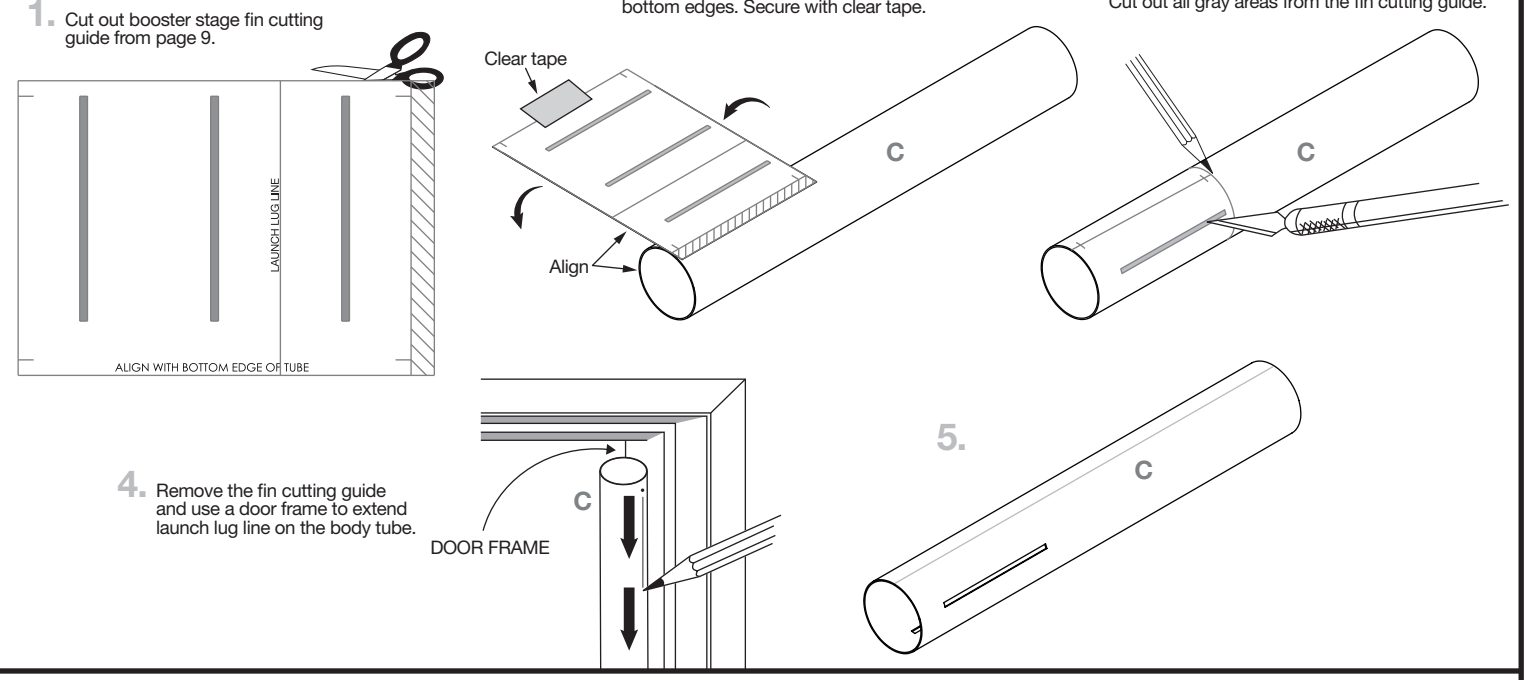
INSTALL UPPER STAGE RECOVERY SYSTEM



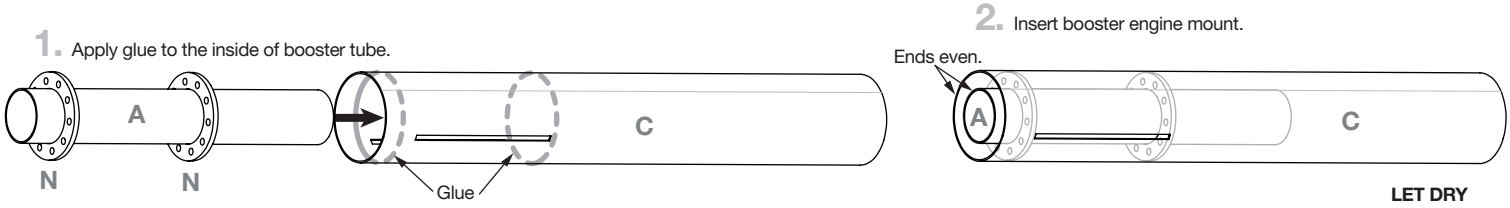
BOOSTER STAGE ENGINE MOUNT ASSEMBLY



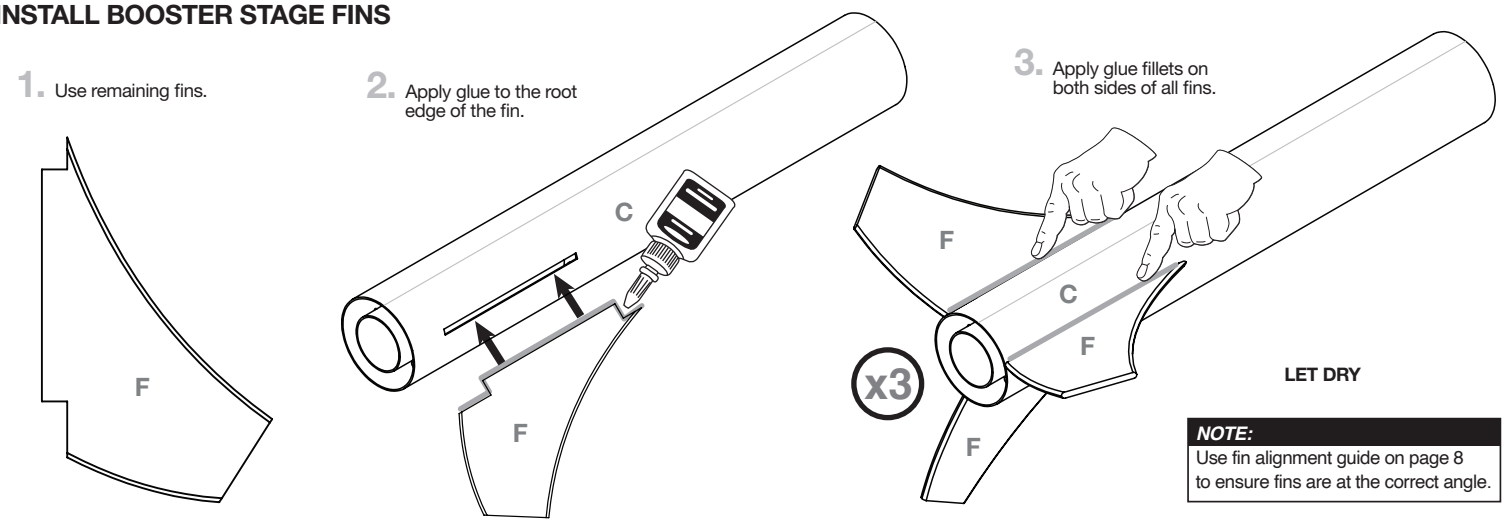
CUTTING BOOSTER STAGE FIN SLOTS



INSTALL BOOSTER STAGE ENGINE MOUNT

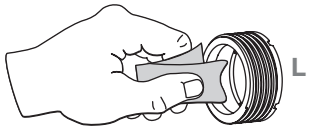


INSTALL BOOSTER STAGE FINS

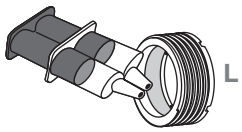


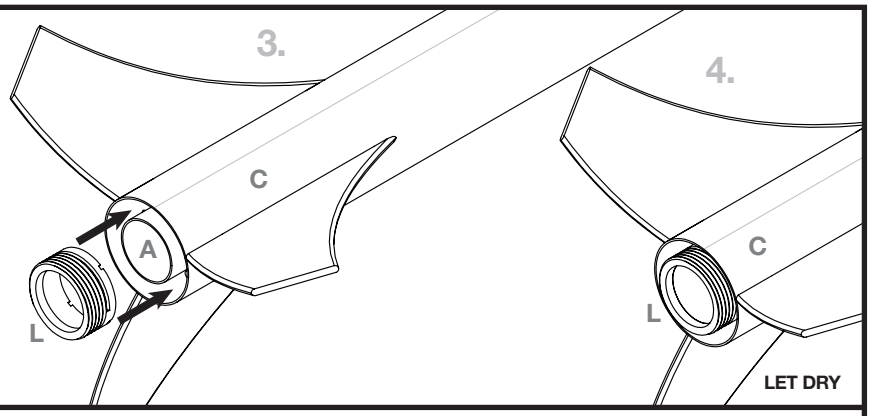
INSTALL BOOSTER STAGE ENGINE RETAINER

1. Roughen inside of engine retainer with sandpaper.



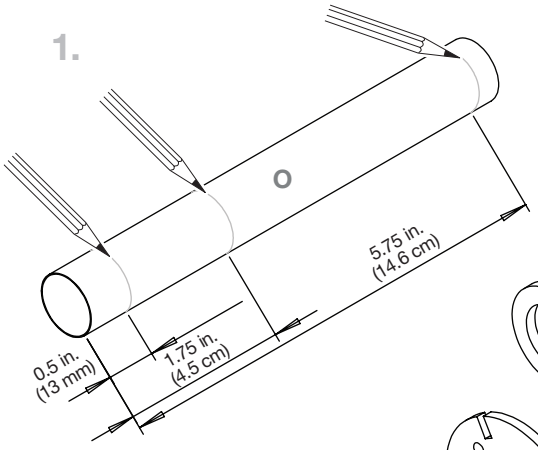
2. Apply epoxy to inside of engine retainer.



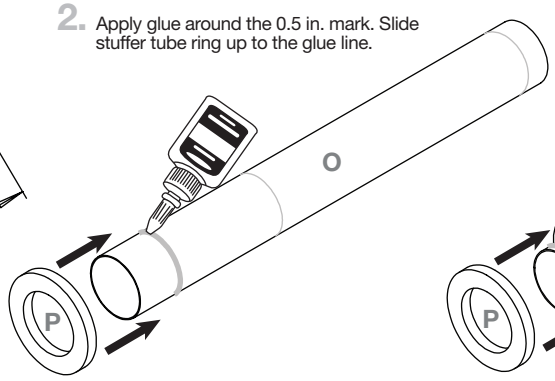


ASSEMBLE BOOSTER RECOVERY COMPARTMENT

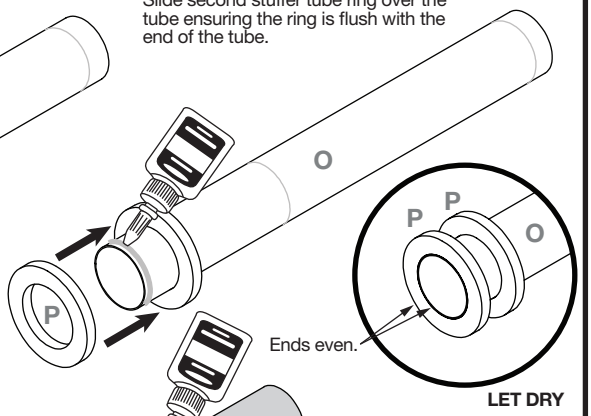
1.



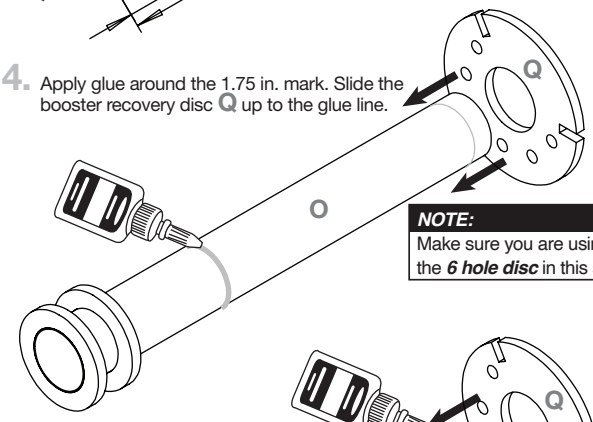
2. Apply glue around the 0.5 in. mark. Slide stuffer tube ring up to the glue line.



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.

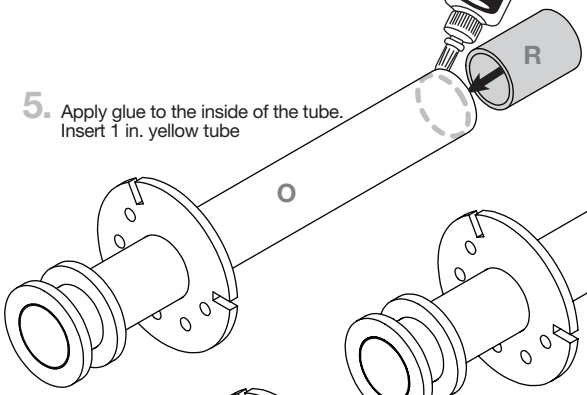


4. Apply glue around the 1.75 in. mark. Slide the booster recovery disc **Q** up to the glue line.

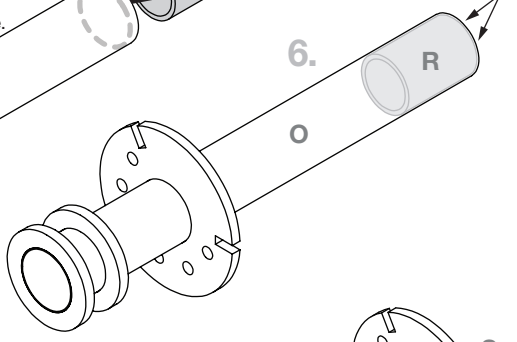


NOTE:
Make sure you are using the ***6 hole disc*** in this step.

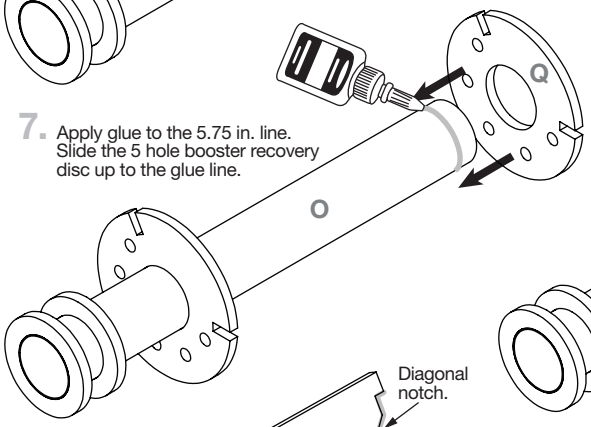
5. Apply glue to the inside of the tube. Insert 1 in. yellow tube



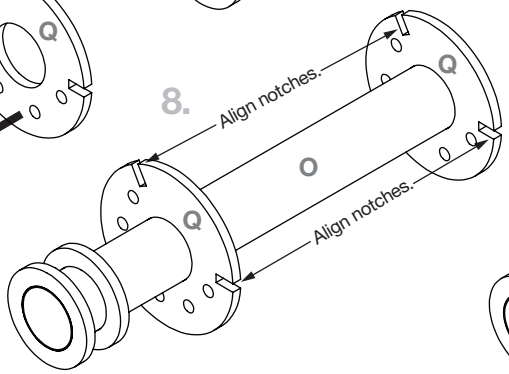
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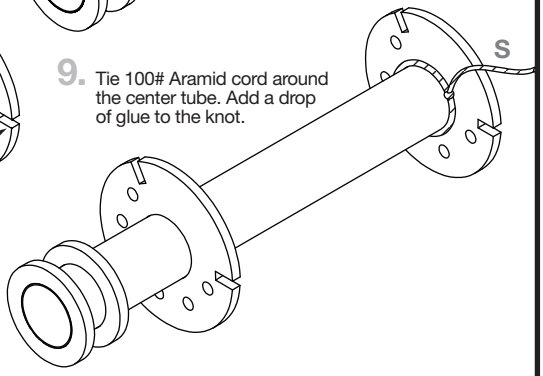
7. Apply glue to the 5.75 in. line. Slide the 5 hole booster recovery disc up to the glue line.

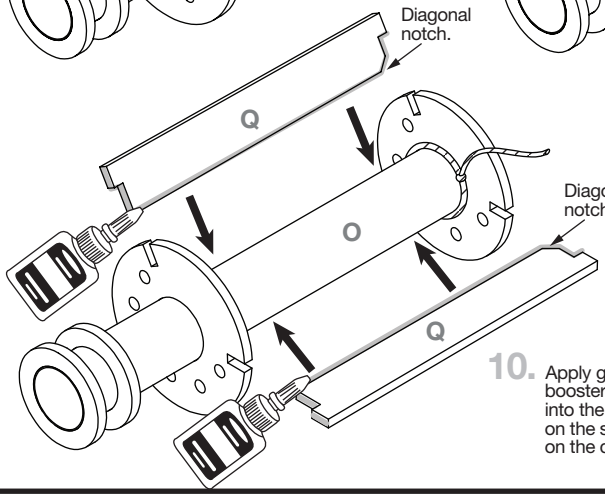


8.



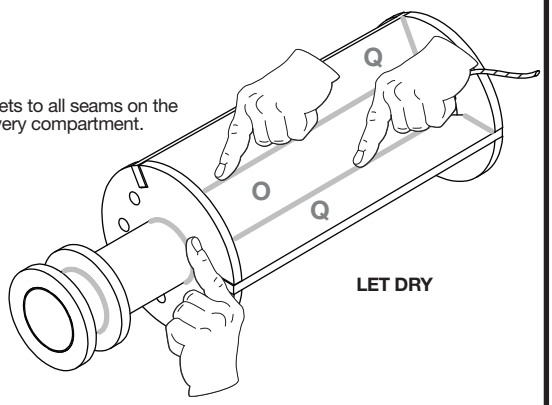
9. Tie 100# Aramid cord around the center tube. Add a drop of glue to the knot.



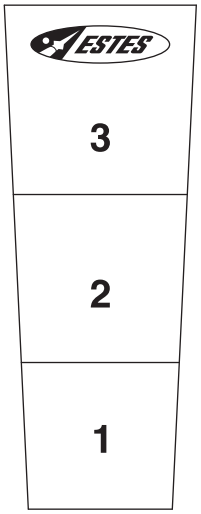


10. Apply glue to the root edges of booster recovery slat walls. Insert into the discs aligning the tabs on the slat walls with the notches on the discs.

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

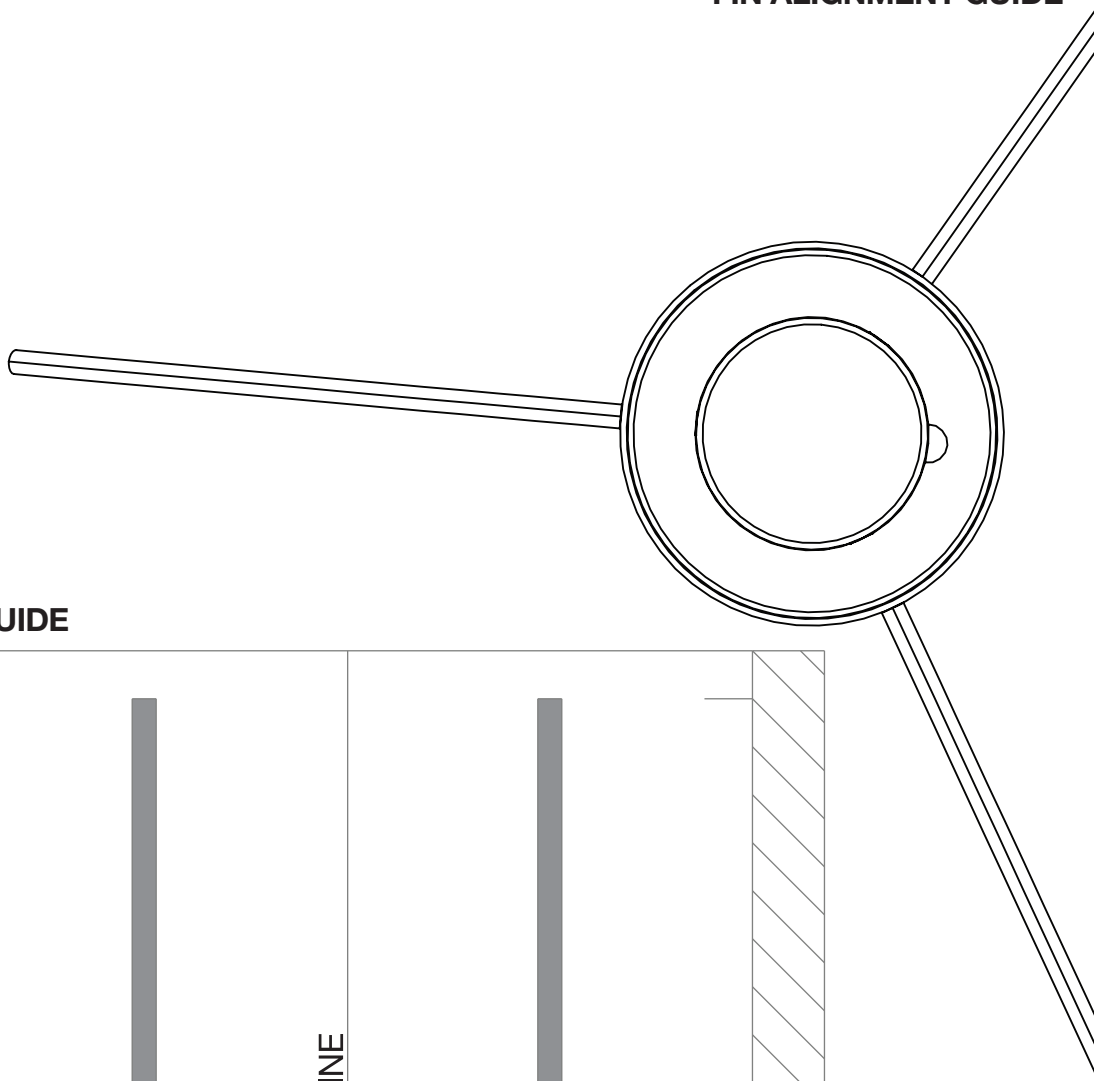


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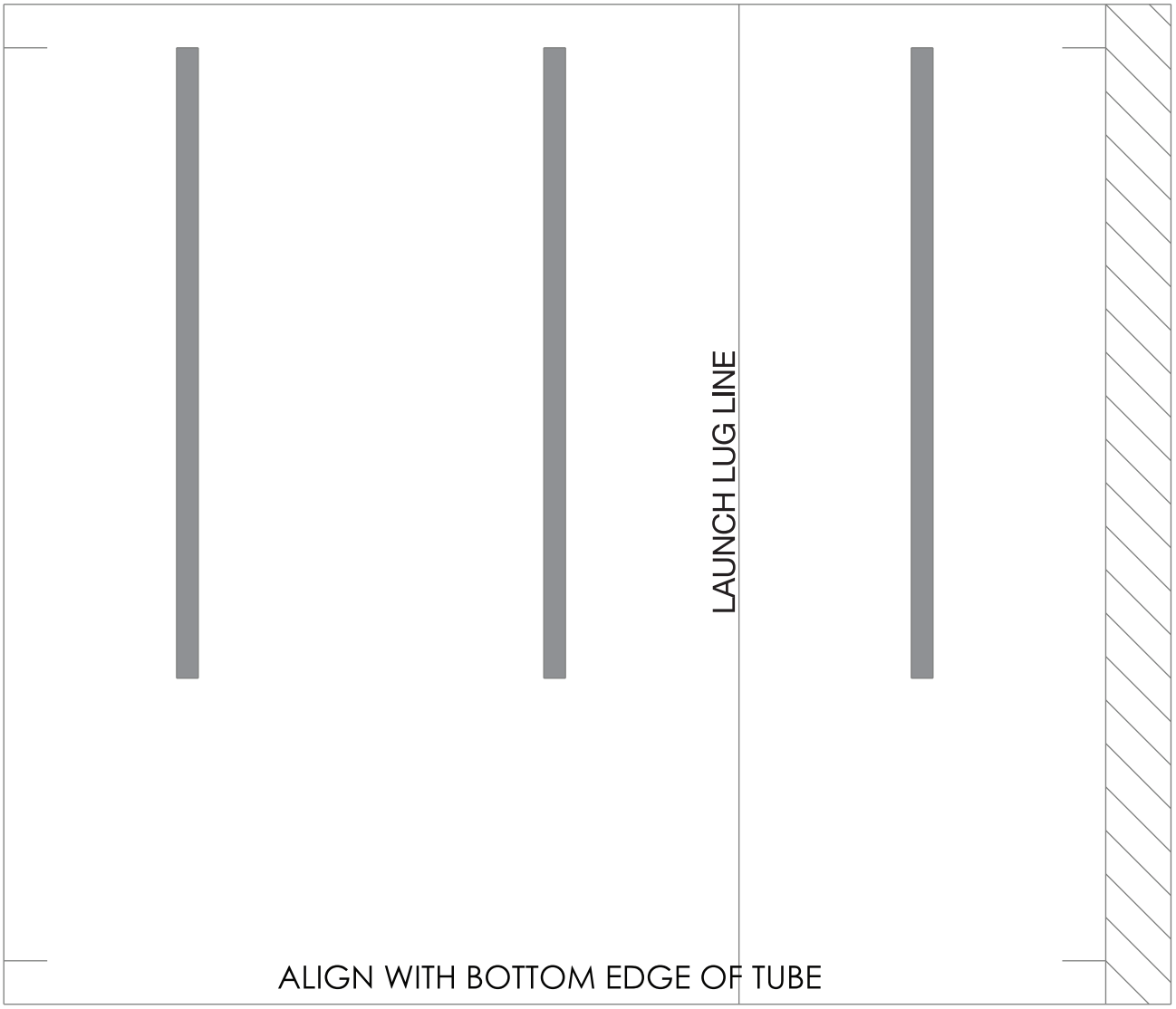


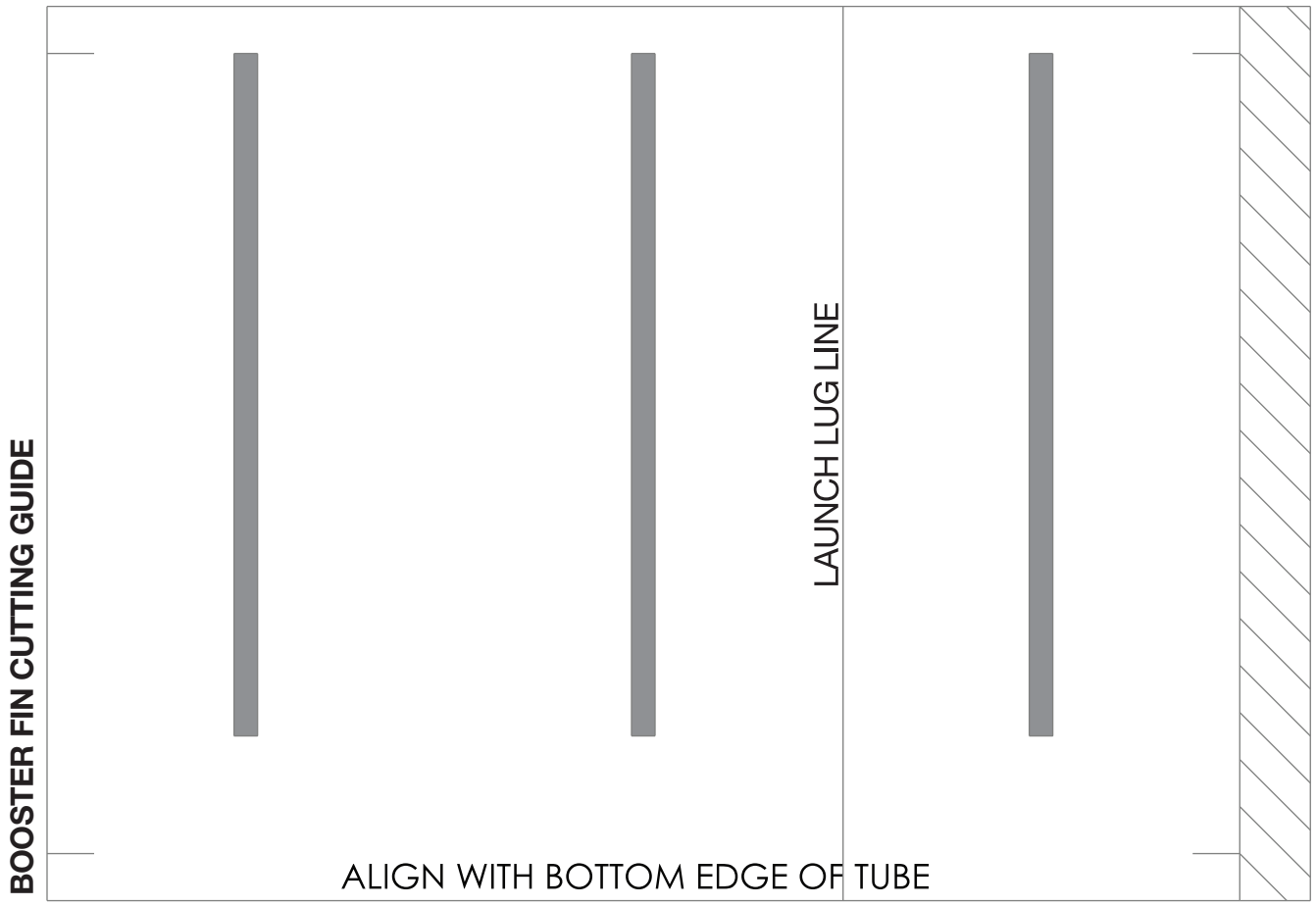
SHOCK CORD MOUNT

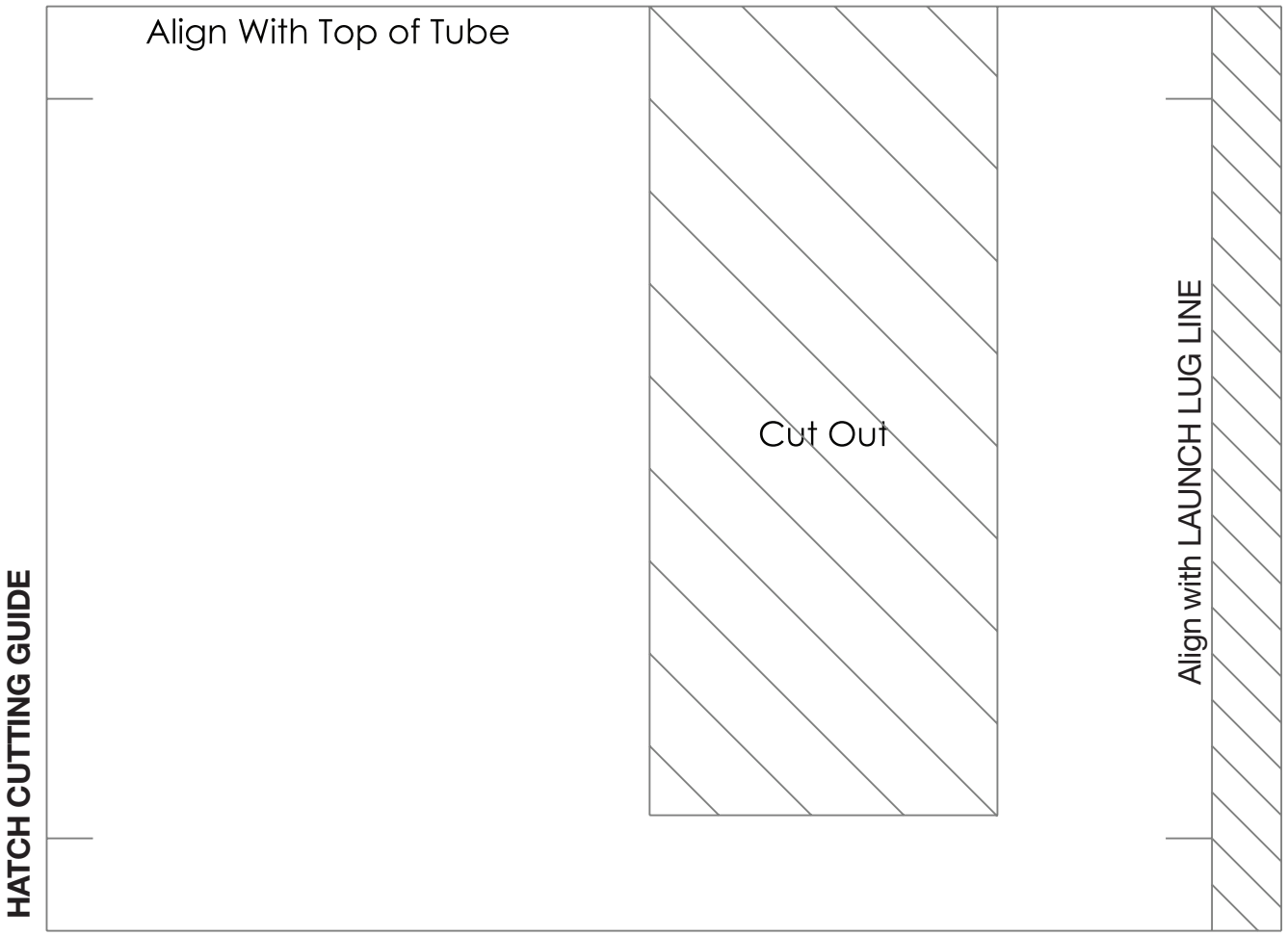
FIN ALIGNMENT GUIDE



UPPER STAGE FIN CUTTING GUIDE



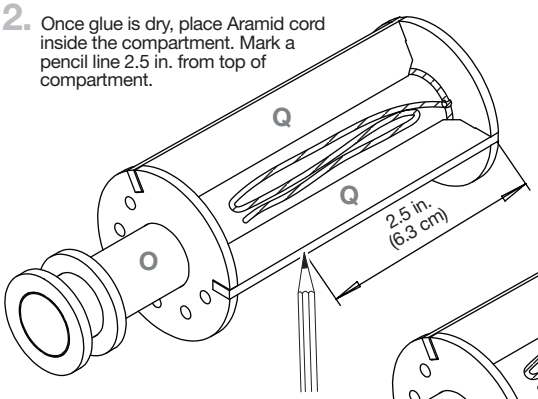

BOOSTER FIN CUTTING GUIDE
LAUNCH LUG LINE
ALIGN WITH BOTTOM EDGE OF TUBE


HATCH CUTTING GUIDE
Align With Top of Tube
Cut Out
Align with LAUNCH LUG LINE

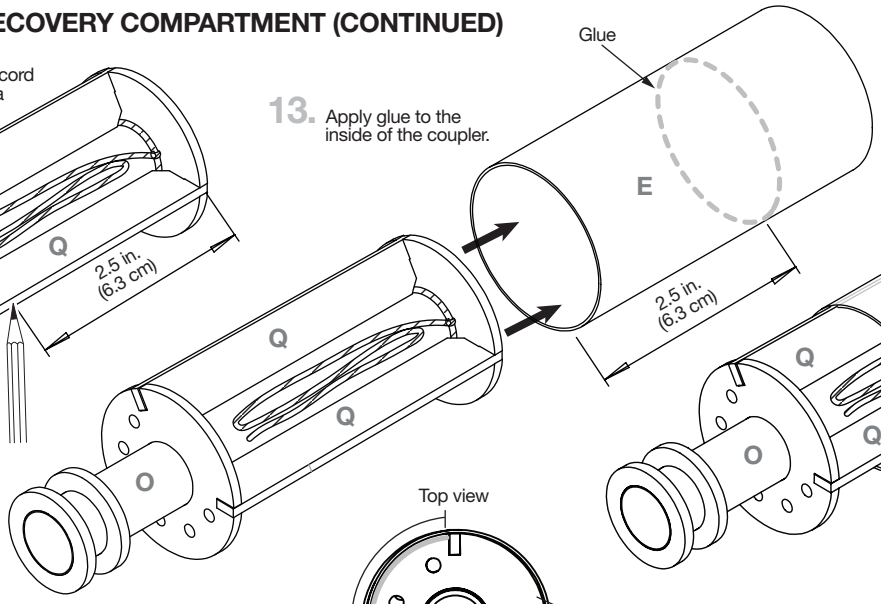
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ASSEMBLE BOOSTER RECOVERY COMPARTMENT (CONTINUED)

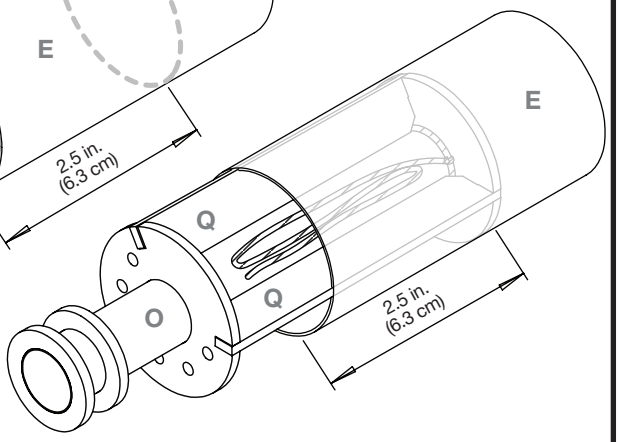
12. Once glue is dry, place Aramid cord inside the compartment. Mark a pencil line 2.5 in. from top of compartment.



13. Apply glue to the inside of the coupler.

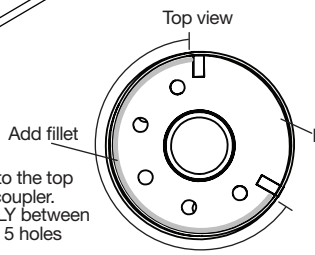


14. Insert booster recovery compartment into coupler.



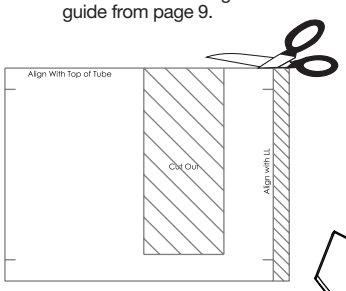
LET DRY

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

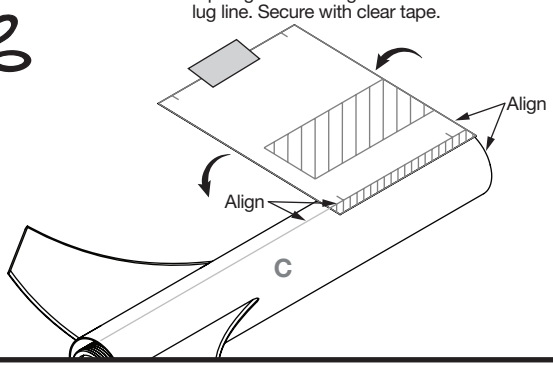


BOOSTER RECOVERY HATCH MARKING AND CUTTING

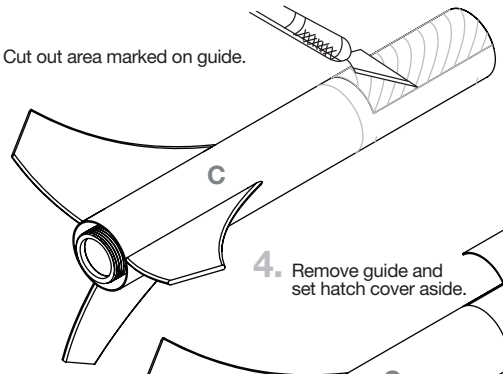
1. Cut out hatch cutting guide from page 9.



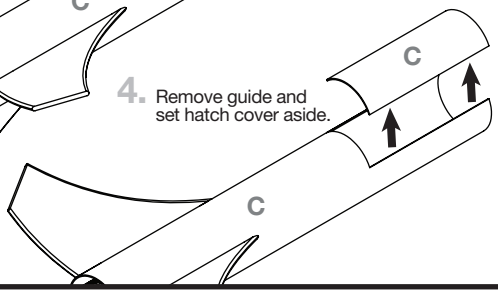
2. Wrap guide around tube, aligning top edges and along the launch lug line. Secure with clear tape.



3. Cut out area marked on guide.

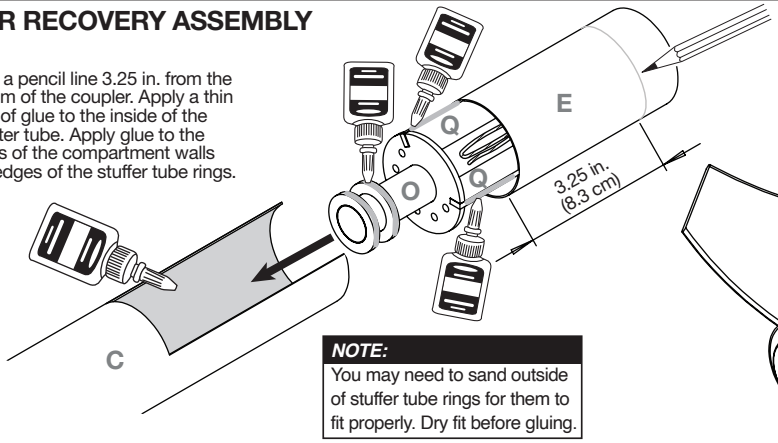


4. Remove guide and set hatch cover aside.



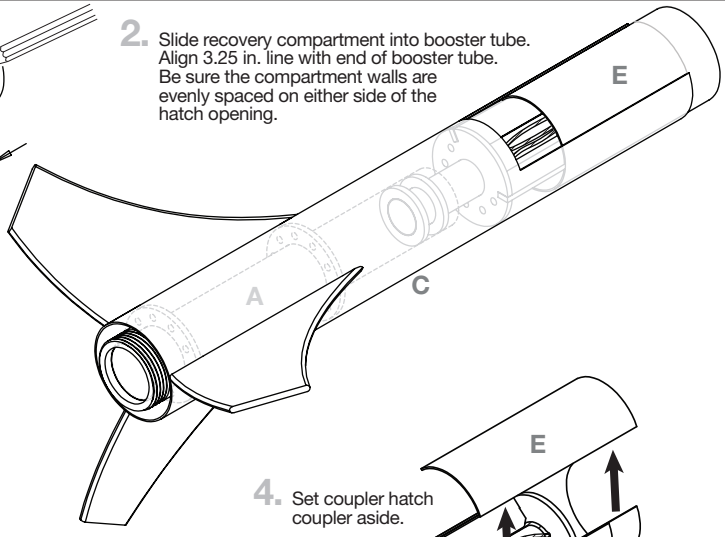
BOOSTER RECOVERY ASSEMBLY

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.

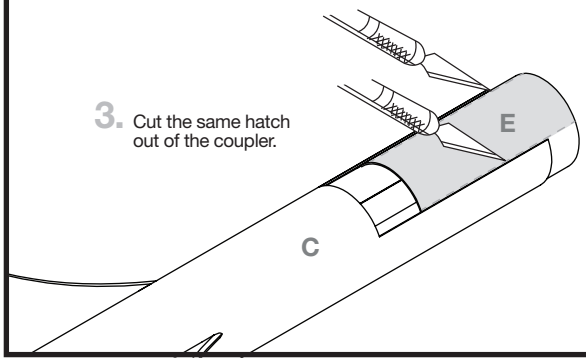


NOTE:
You may need to sand outside of stuffer tube rings for them to fit properly. Dry fit before gluing.

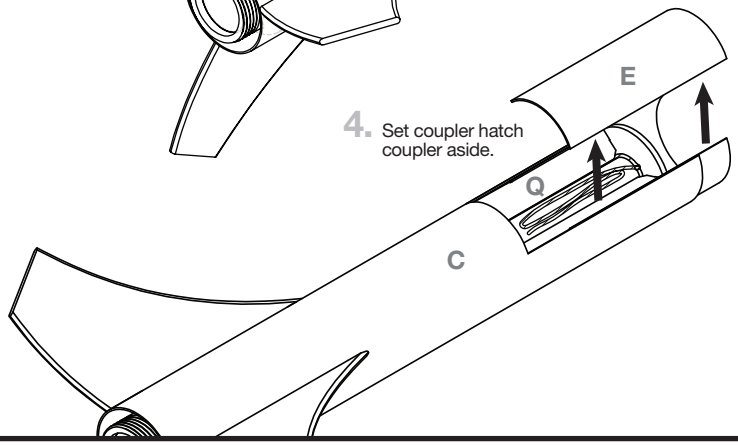
2. Slide recovery compartment into booster tube. Align 3.25 in. line with end of booster tube. Be sure the compartment walls are evenly spaced on either side of the hatch opening.



3. Cut the same hatch out of the coupler.

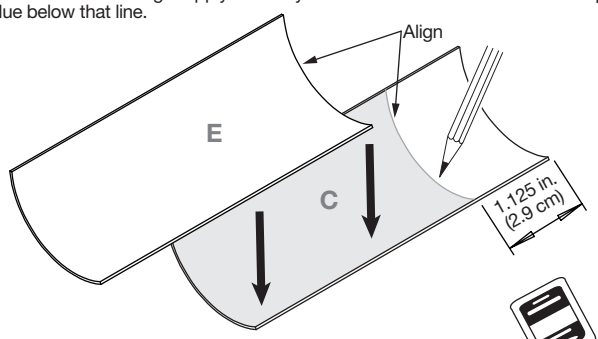


4. Set coupler hatch coupler aside.

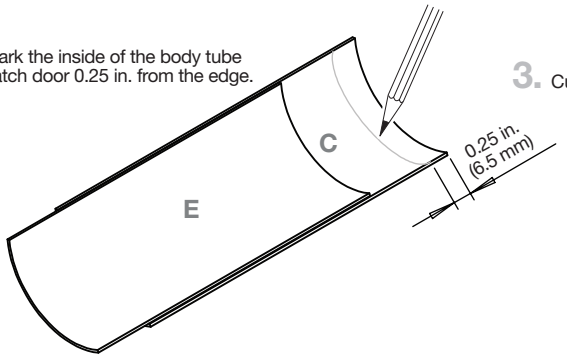


HATCH DOOR ASSEMBLY

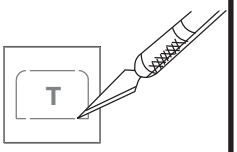
1. Mark the inside of the body tube hatch door 1.125 in. from the edge. Apply a thin layer of glue below that line.



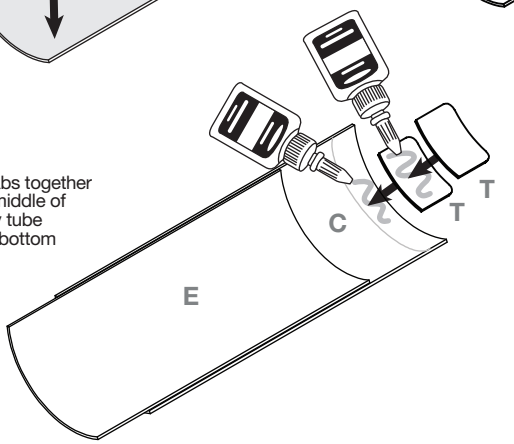
2. Mark the inside of the body tube hatch door 0.25 in. from the edge.



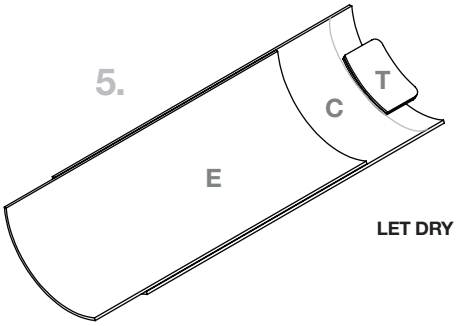
3. Cut out both cardstock tabs.



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.



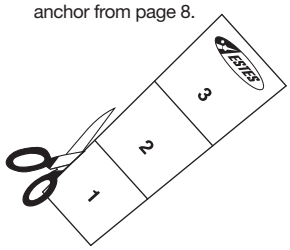
5.



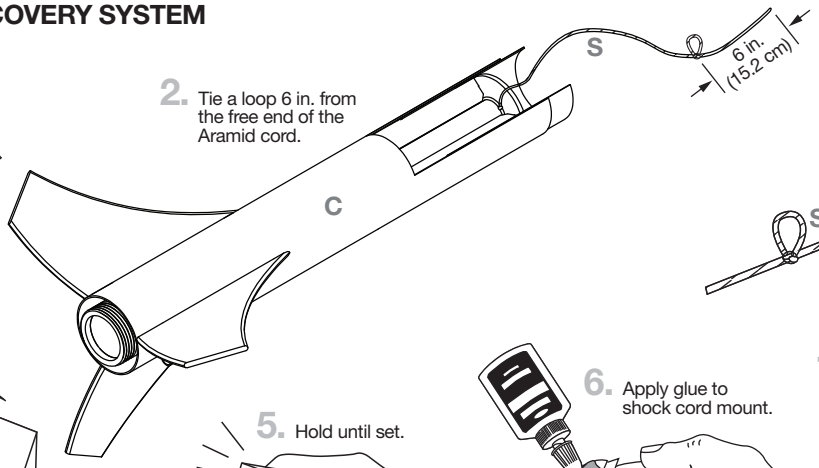
LET DRY

INSTALL BOOSTER RECOVERY SYSTEM

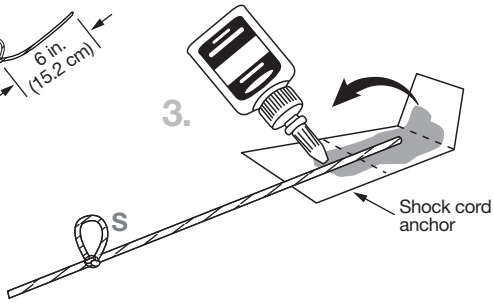
1. Cut out shock cord anchor from page 8.



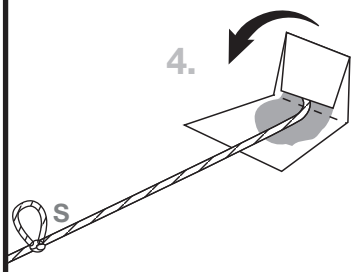
2. Tie a loop 6 in. from the free end of the Aramid cord.



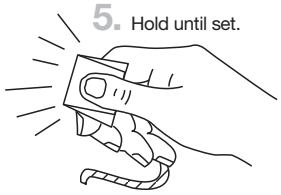
3.



4.

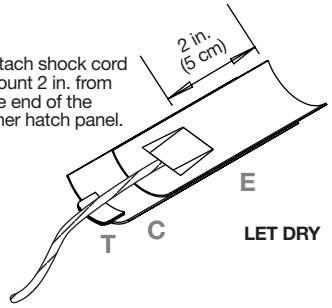


5. Hold until set.



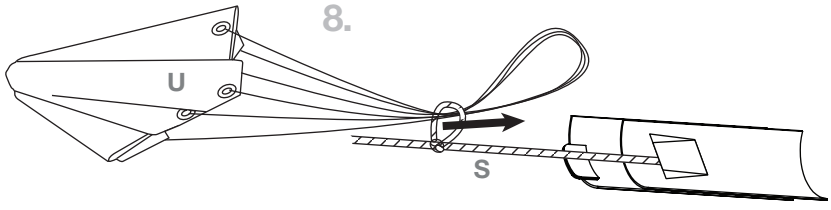
6. Apply glue to shock cord mount.

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

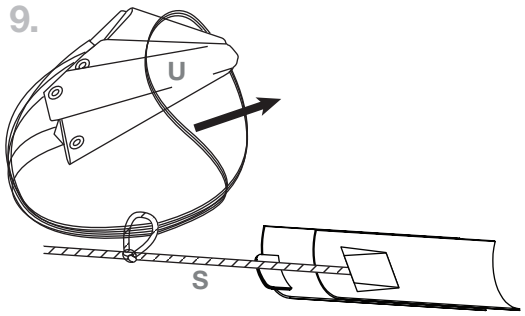


LET DRY

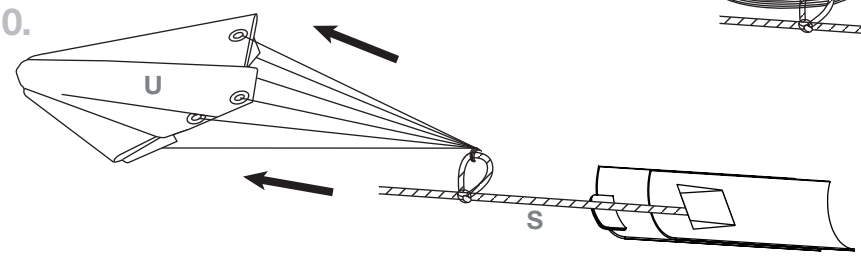
8.



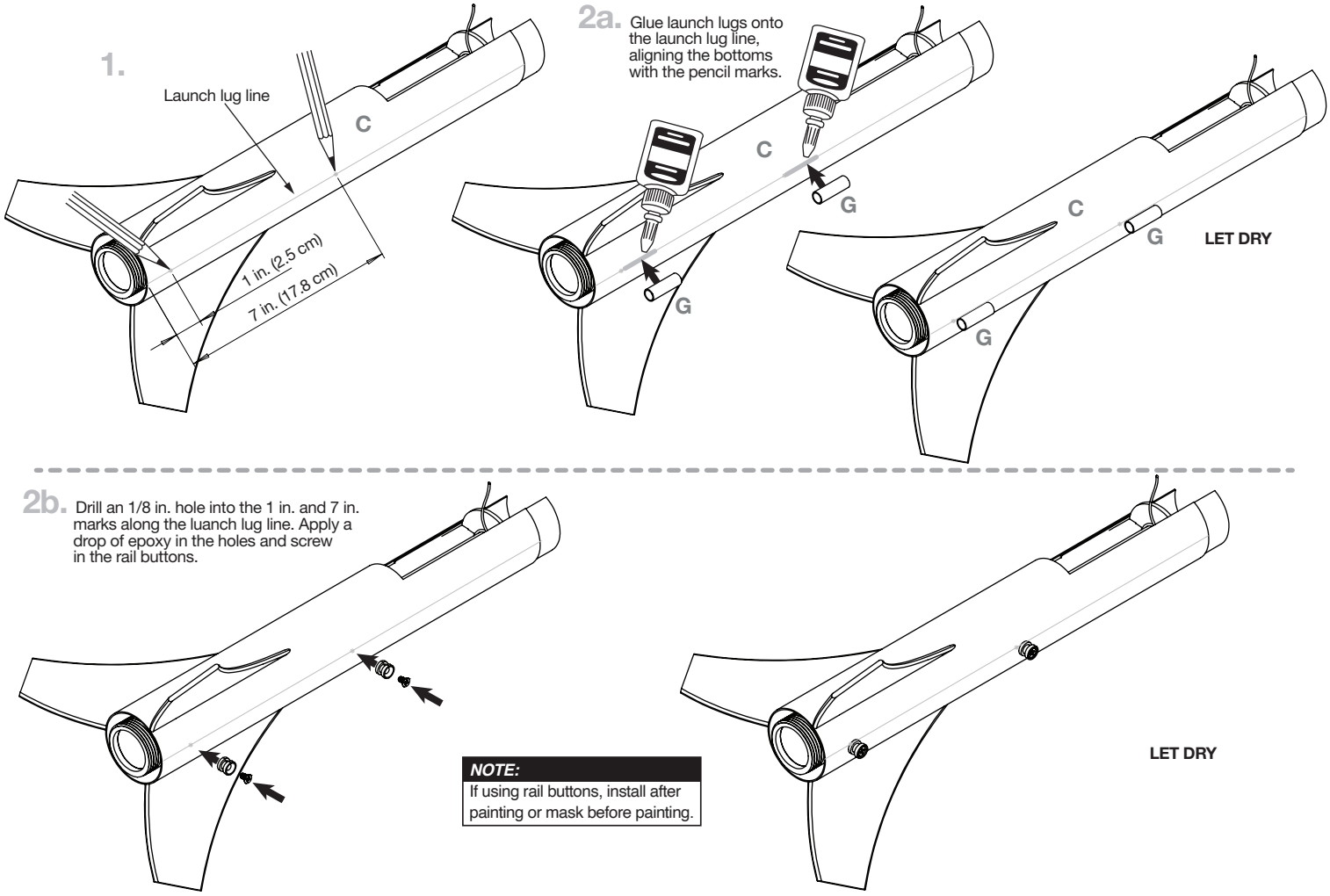
9.



10.



BOOSTER STAGE LAUNCH LUG OR RAIL BUTTON ATTACHMENT



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

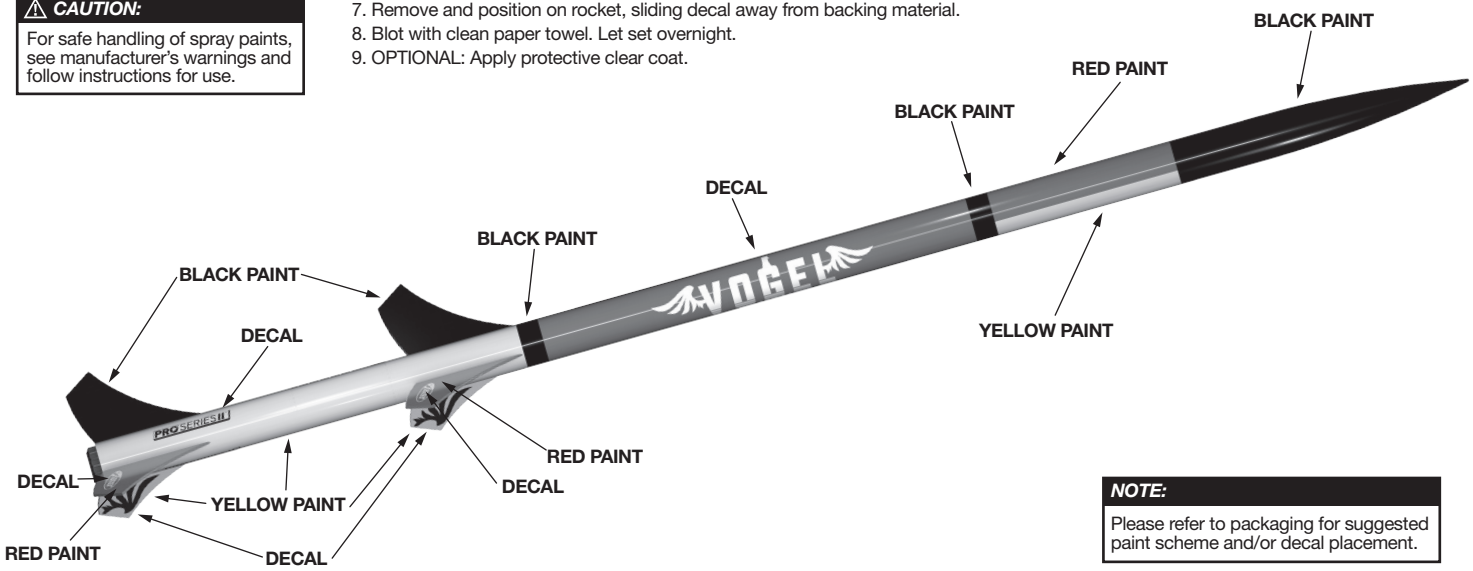
PAINT AND APPLY DECALS

PAINT COLORS

- Black Paint
- Red Paint
- Yellow Paint

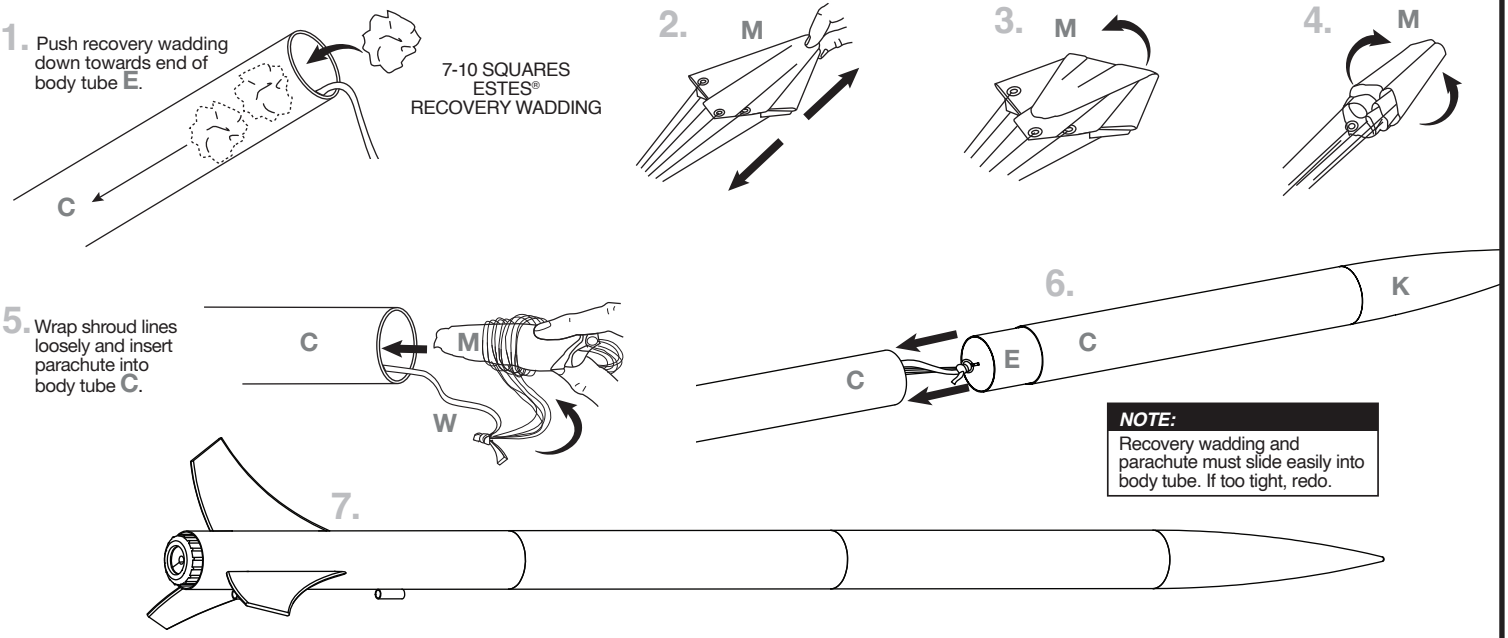
⚠ CAUTION:
For safe handling of spray paints, see manufacturer's warnings and follow instructions for use.

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.

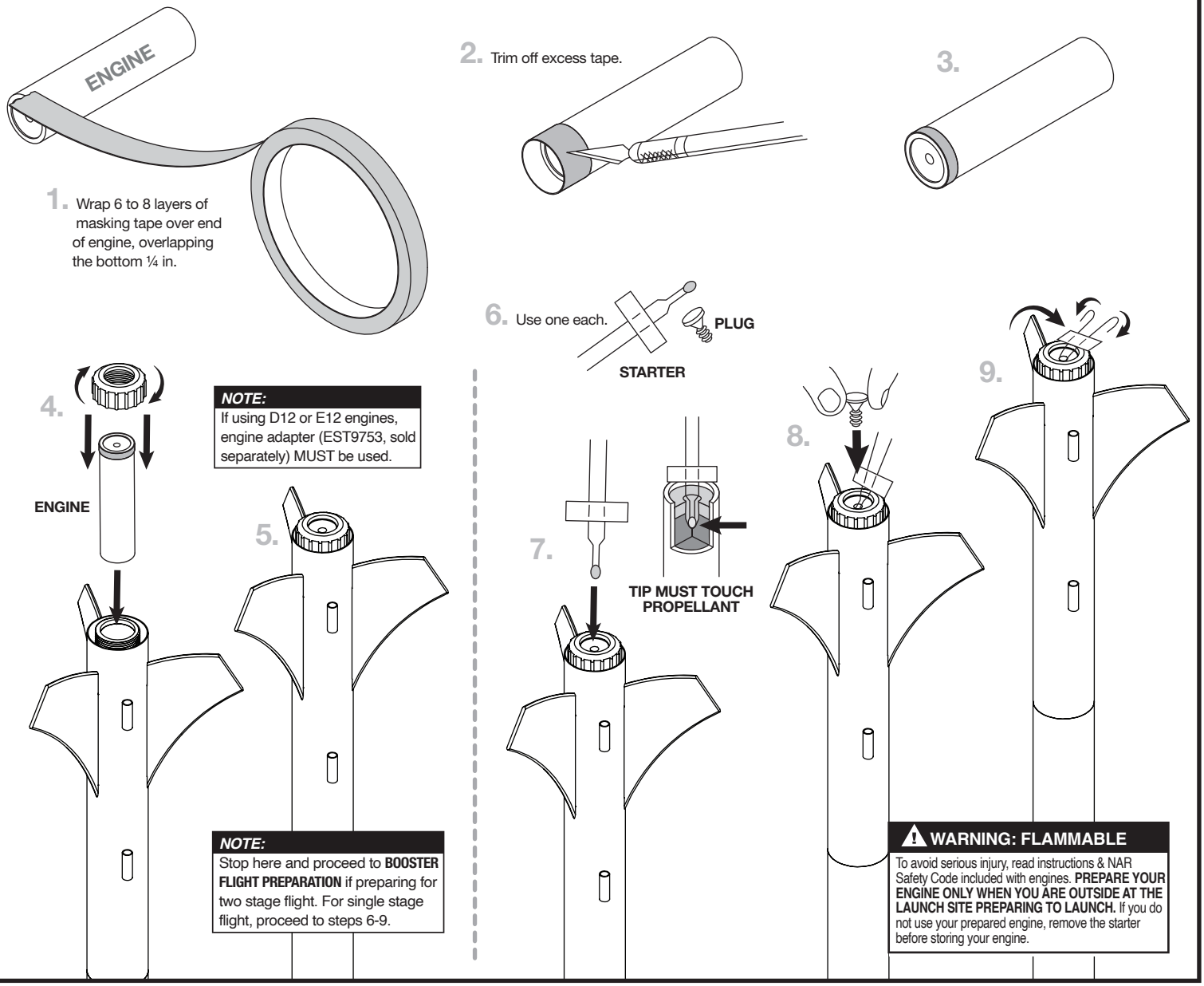


NOTE:
Please refer to packaging for suggested paint scheme and/or decal placement.

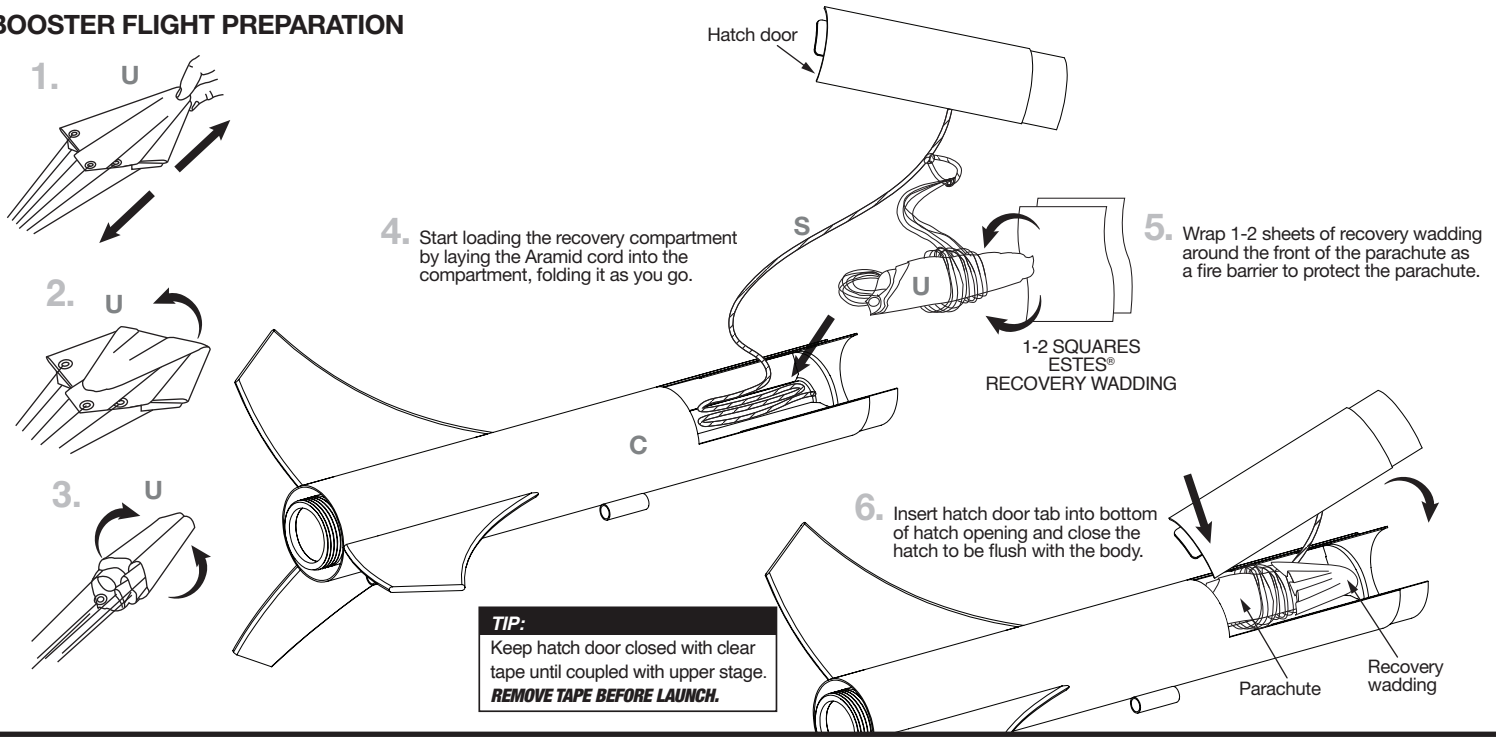
UPPER STAGE FLIGHT PREPARATION



UPPER STAGE ENGINE PREPARATION



BOOSTER FLIGHT PREPARATION

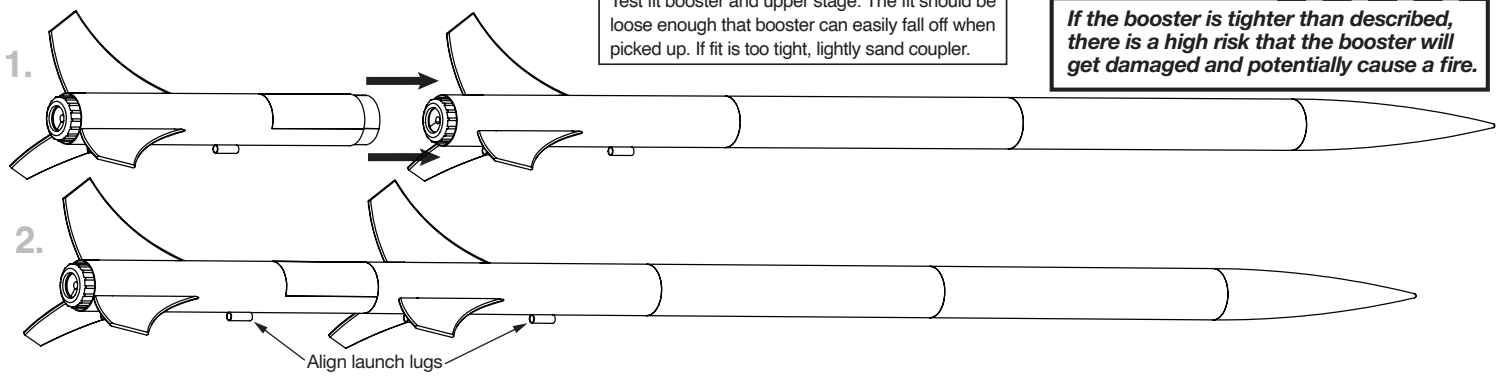


TIP:
Keep hatch door closed with clear tape until coupled with upper stage. ***REMOVE TAPE BEFORE LAUNCH.***

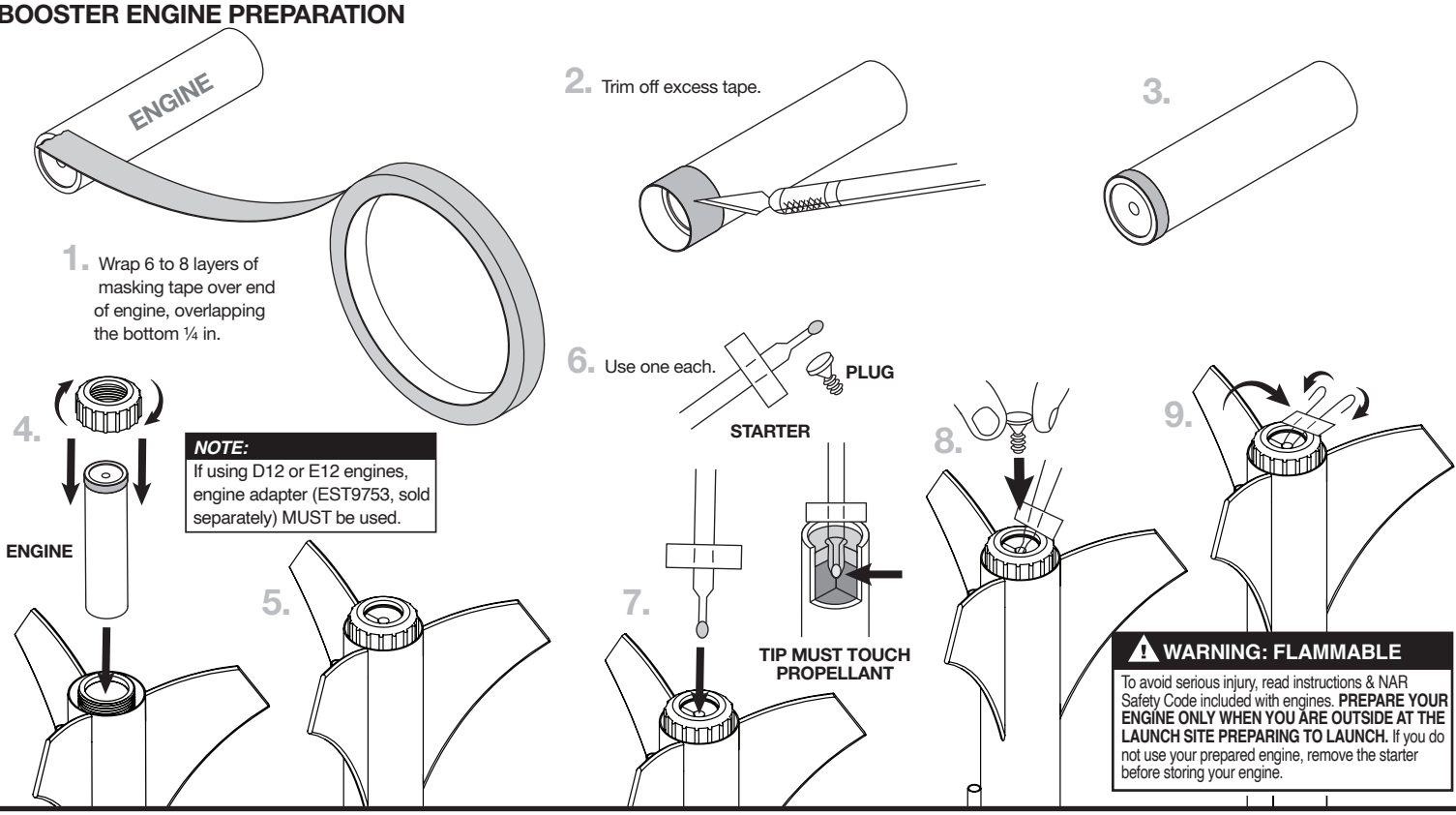
ASSEMBLE BOOSTER AND UPPER STAGES

NOTE:
Test fit booster and upper stage. The fit should be loose enough that booster can easily fall off when picked up. If fit is too tight, lightly sand coupler.

WARNING:
If the booster is tighter than described, there is a high risk that the booster will get damaged and potentially cause a fire.



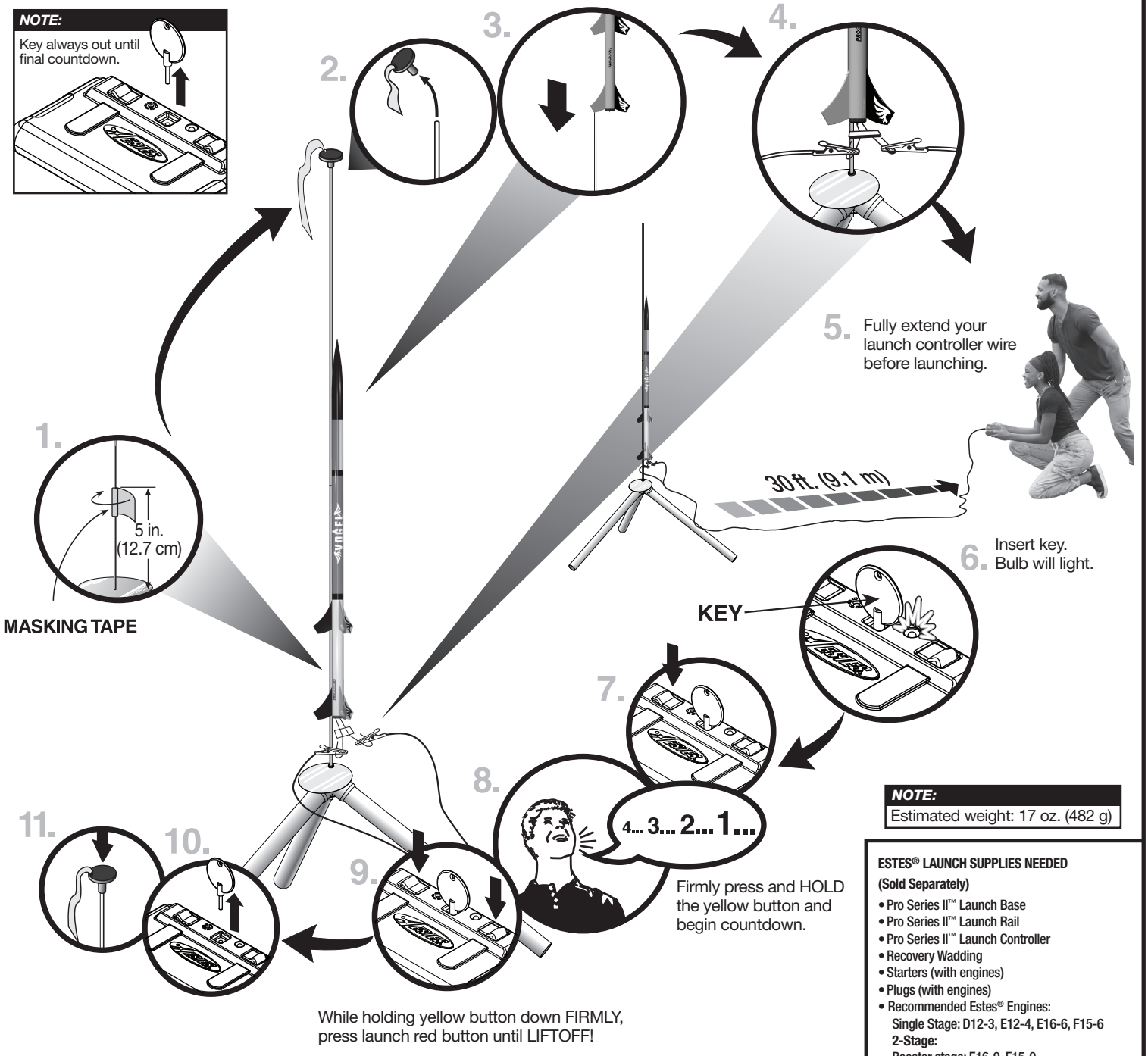
BOOSTER ENGINE PREPARATION



NOTE:
If using D12 or E12 engines, engine adapter (EST9753, sold separately) MUST be used.

⚠ WARNING: FLAMMABLE
To avoid serious injury, read instructions & NAR Safety Code included with engines. **PREPARE YOUR ENGINE ONLY WHEN YOU ARE OUTSIDE AT THE LAUNCH SITE PREPARING TO LAUNCH.** If you do not use your prepared engine, remove the starter before storing your engine.

COUNTDOWN AND LAUNCH



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



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.

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PN 090004-9728 (5-25)