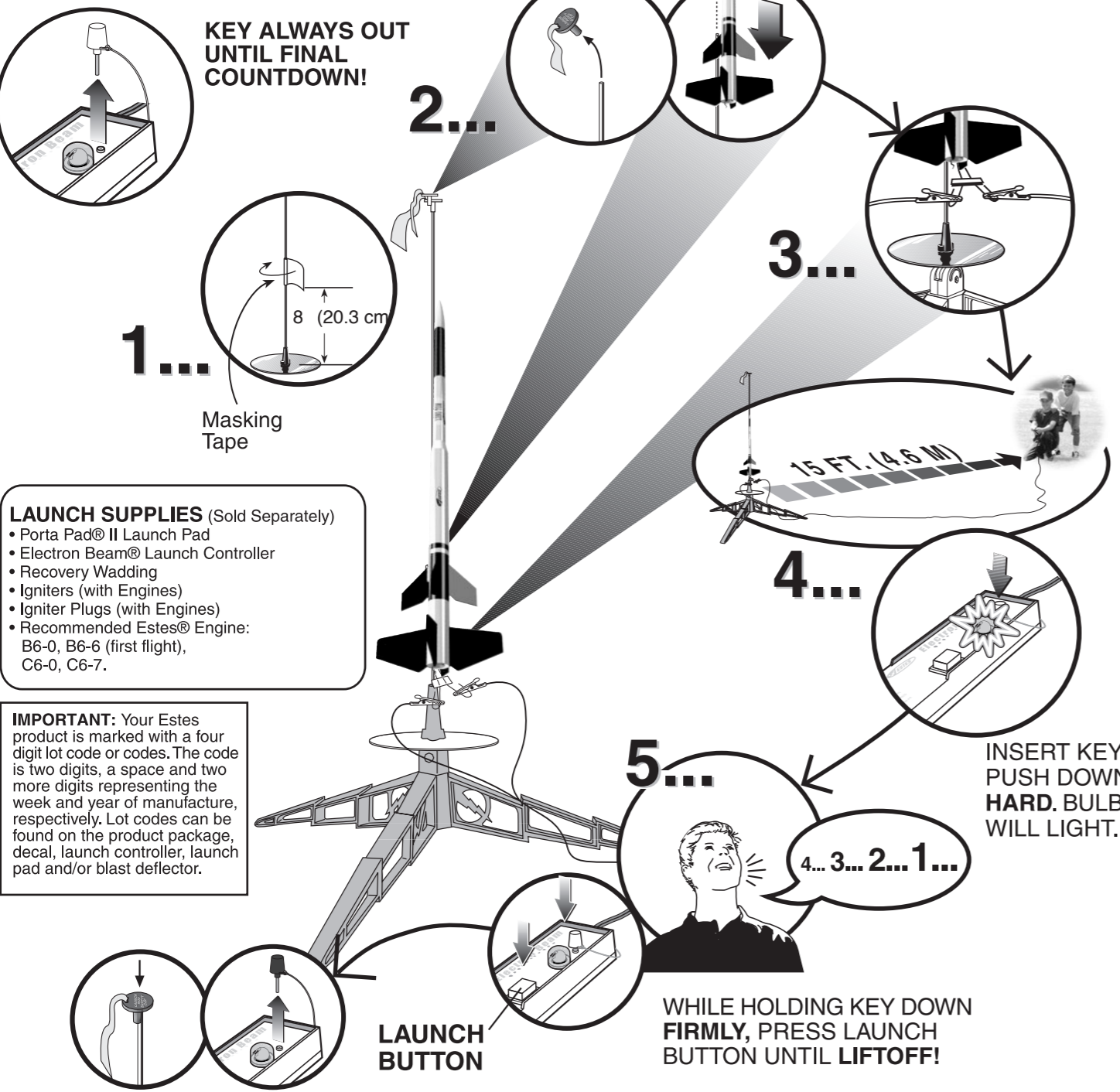


COUNTDOWN AND LAUNCH



KEY ALWAYS OUT UNTIL FINAL COUNTDOWN!

- LAUNCH SUPPLIES** (Sold Separately)
- Porta Pad® II Launch Pad
 - Electron Beam® Launch Controller
 - Recovery Wadding
 - Igniters (with Engines)
 - Igniter Plugs (with Engines)
 - Recommended Estes® Engine: B6-0, B6-6 (first flight), C6-0, C6-7.

IMPORTANT: Your Estes product is marked with a four digit lot code or codes. The code is two digits, a space and two more digits representing the week and year of manufacture, respectively. Lot codes can be found on the product package, decal, launch controller, launch pad and/or blast deflector.

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. 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 enclosed National Association of Rocketry (NAR) SAFETY CODE.

MISFIRES
TAKE THE KEY OUT OF THE CONTROLLER. WAIT ONE MINUTE BEFORE GOING NEAR THE ROCKET! Disconnect the igniter clips and remove the engine. 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.



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Printed in Guangdong, China

LONG TOM™

FLYING MODEL ROCKET KIT INSTRUCTIONS
KEEP FOR FUTURE REFERENCE

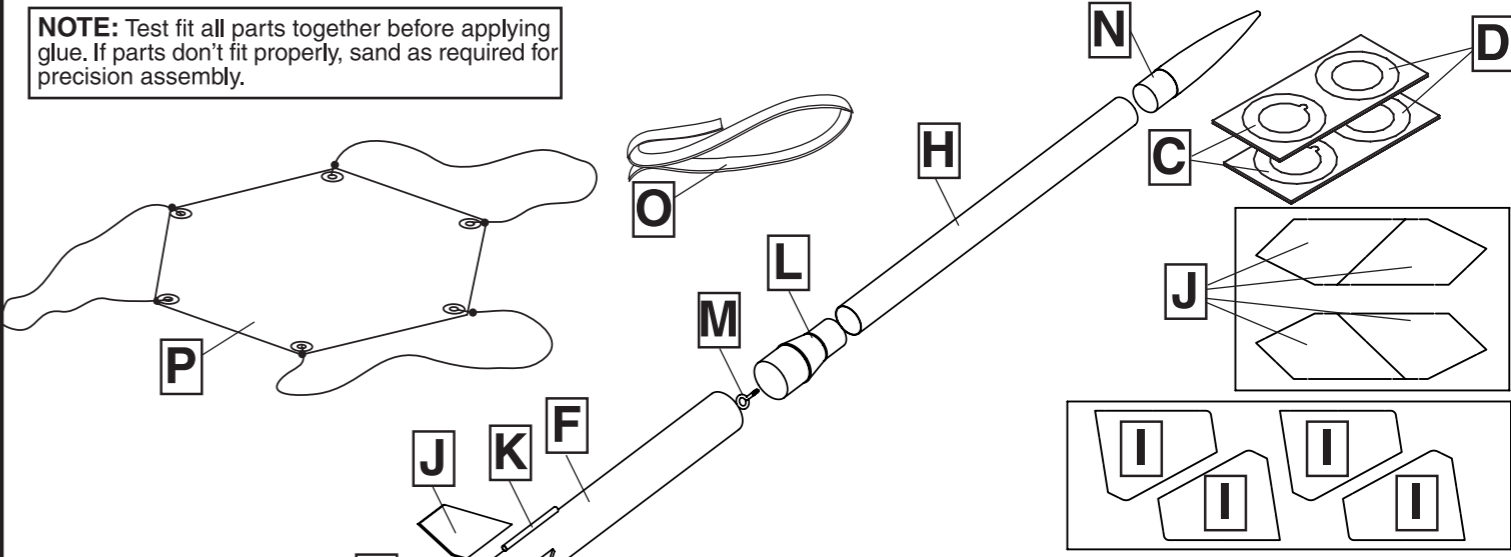
#3016



www. **estes** rockets .com

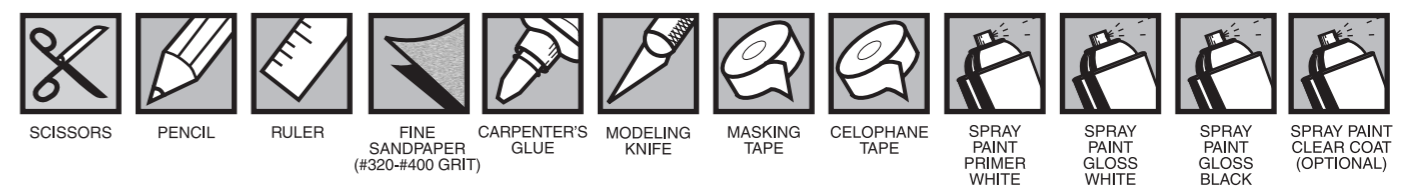
ASSEMBLY TIP:
Read all instructions before beginning work on your model. Make sure you have all parts and supplies.

NOTE: Test fit all parts together before applying glue. If parts don't fit properly, sand as required for precision assembly.



Part	Qty.	Description	Part Number
A	2	Engine Mount Tube	030326-1
B	2	Engine Block	030224
		Laser Cut Centering Ring Set Includes	030125
C	2	Centering Ring Notched	
D	2	Centering Ring	
E	1	Stage Coupler	030175-5
F	1	Second Stage Body Tube 12" (30.5 cm)	030630
G	1	Booster Stage Body Tube 3.25" (83 mm)	030392
H	1	Upper Section Body Tube 12.7" (32.3 cm)	030366
I	4	Booster Fins	066104
J	4	Upper Section Fins	066105
K	1	Launch Lug	038178
L	1	Balsa Tube Adapter	070014
M	1	Screw Eye	038251
N	1	Balsa Nose Cone	073001
O	1	Shock Cord	038369
P	1	Parachute	035816
		Waterslide Decal (not shown)	066106

SUPPLIES



SECOND STAGE ENGINE MOUNT ASSEMBLY

1. Apply ring of glue in end of **A**. Press **B** in end. Stand on flat surface.
2. Measure and mark **A**.
 5/8" (16 mm)
3. Slide **C** past mark. Slide **D** to mark.
4. Apply glue to both sides of **C** and **D**. Let dry.
 1/8" (3 mm)

SECOND STAGE FIN ATTACHMENT

1. Apply glue to root edge of **J**. Let dry 1 minute.
2. Apply 2nd layer of glue. Position **J** centered on **FL**. Repeat for all **J**. Let dry.
3. Use fin alignment guide for fin attachment accuracy.

Fin Alignment Guide

SECOND STAGE ENGINE MOUNT INSTALLATION

1. Apply ring of glue inside of **F**.
 1 1/2" (38 mm)
2. Slide engine mount assembly into **F**. Make sure end of engine mount is even with end of **F**.
3. Apply ring of glue to inside of **F**. Let dry.

TUBE ADAPTER ATTACHMENT

1. Test fit **L** in **H**. Sand if required for good fit.
2. Apply ring of glue inside **H**. Slide **L** into **H**.
3. Wipe excess glue. Let dry. Screw **M** centered into **L**.

NOSE CONE ATTACHMENT

1. Test fit **N** in **H**. Sand if required for good fit.
2. Apply ring of glue inside of **H**.
3. Slide **N** into **H**. Wipe excess glue. Let dry.

TOO TIGHT
SAND FOR FIT.

LAUNCH LUG ATTACHMENT

1. Sand **K** with fine sandpaper.
2. Apply glue on **LL** forward of mark.
3. Position **K** centered on **LL** forward of mark.

SHOCK CORD INSTALLATION

1. Cut shock cord mount from instructions.
2. Apply glue to section 2. Place **O** on glue. Fold forward.
3. Apply glue and fold forward.
4. Squeeze tight!
5. Apply glue to shock cord mount and insert in body tube. Hold until glue sets. Let dry.

NO
1 1/2" (38 mm)

ROCKET FINISHING

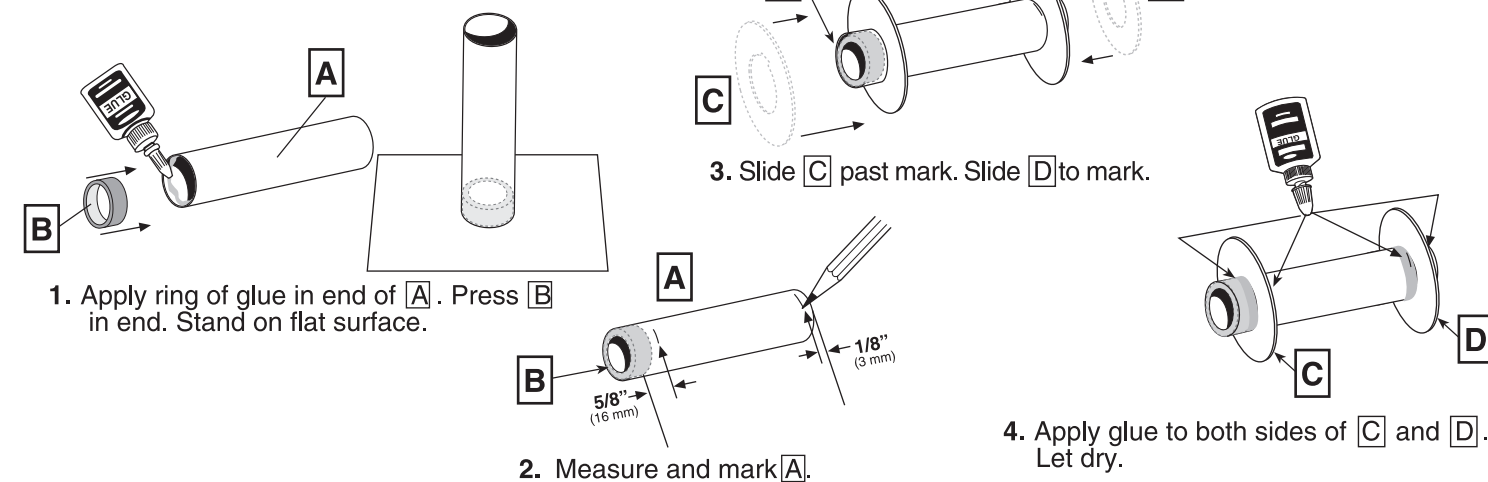
NOTE; We have found Testors spray primers (Testors #2948 White Primer), Testors One Coat Lacquer spray paints (color of your choice), Testors Model Master spray paints (color of your choice) and Testors Gloss Lacquer (#1961) to be excellent for providing a long lasting and durable finish on your rocket. Always be sure to spray your models outside or in a well ventilated area.

STEPS TO A QUALITY FINISH

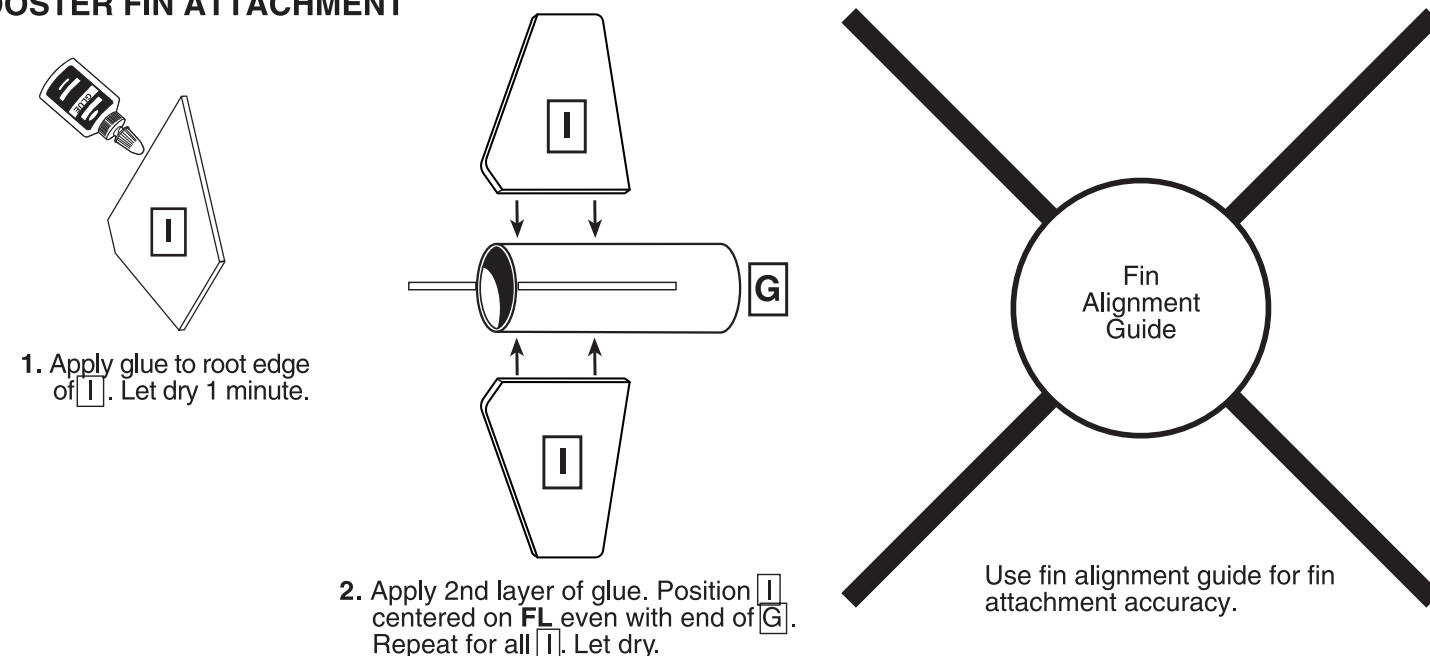
1. Insert shock cord into body tube and hold in place with paper.
2. Lightly sand body tube, fins and nose cone with fine sandpaper (#320 or #400 grit).
3. Apply glue fillets to fins and launch lug.
 - a. Allow glue to dry overnight.
4. Use a stick inserted into the motor tube end of the booster and second stage for painting.
5. Hold the upper section by the screw eye with a clip or pliers for painting.
6. We recommend a good filler/primer to be applied to the balsa fins and nose cone before painting.
7. Apply 1-2 light coats of primer to rocket body and nose cone, lightly sanding with fine sandpaper (#320 or #400 grit) between coats.
 - a. Allow to dry between each coat.
8. Apply gloss white to booster and upper stages.
 - a. Let paint dry overnight (24 hours is best).
9. Apply masking tape and protective cover to booster stage exposing fins.
10. Spray fins gloss black.
 - a. Let paint dry overnight (24 hours is best). Remove masking tape.
 - b. Measure and mark upper stage as shown in image.
11. Apply masking tape and protective cover to upper stage protecting the white.
12. Spray lower fins and strip gloss black.
 - a. Let paint dry overnight (24 hours is best). Remove masking tape.
13. Apply waterslide decals where shown.
 - a. Cut the decal to be applied from the decal sheet, trimming close to the decal edge.
 - b. Hold the decal in warm water until decal begins to curl.
 - c. Remove the entire decal, position in place and slide the decal backing material from under the decal and onto the model as close to final position as possible.
 - d. Gently blot out excess water with a clean paper towel.
 - e. Allow decals to set overnight before applying protective clear coat.
14. When decals are dry, spray entire rocket (body sections separately) with a light coat of Testors Gloss Lacquer (#1961). This will provide added protection and shine to your LONG TOM™ rocket!



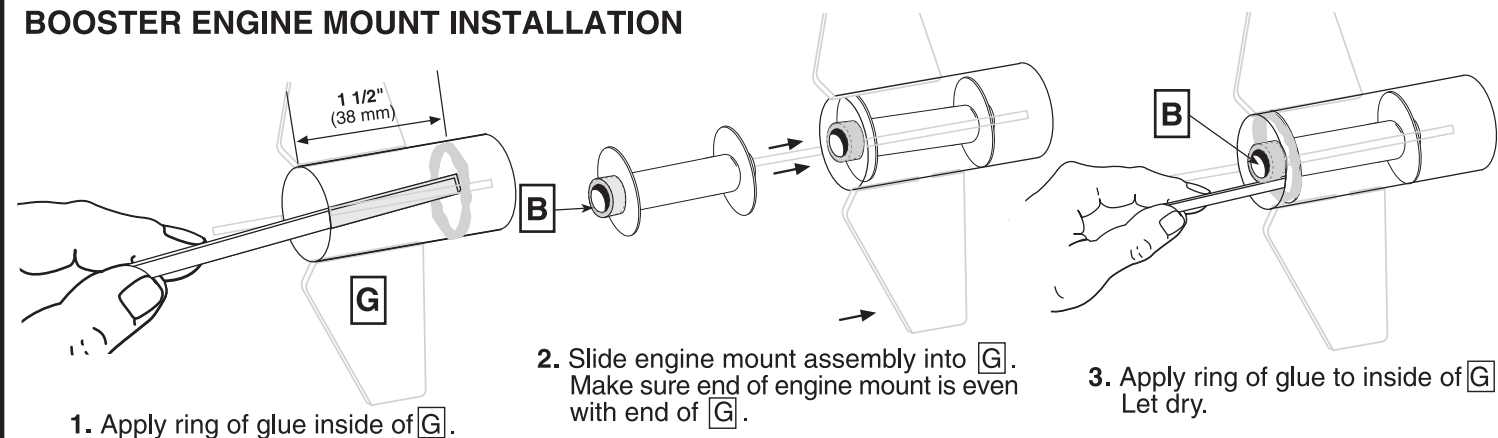
BOOSTER ENGINE MOUNT ASSEMBLY



BOOSTER FIN ATTACHMENT

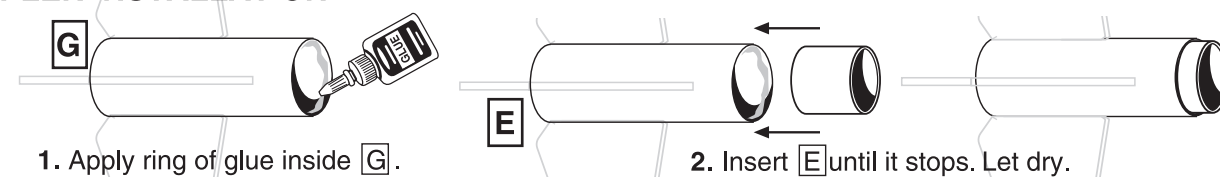


BOOSTER ENGINE MOUNT INSTALLATION



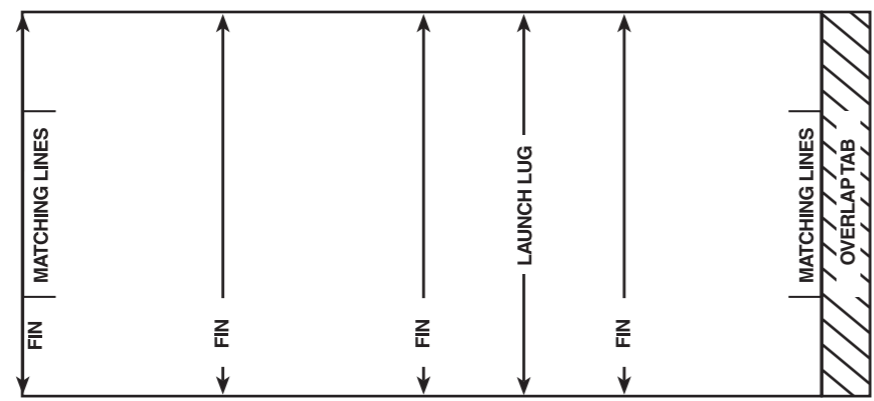
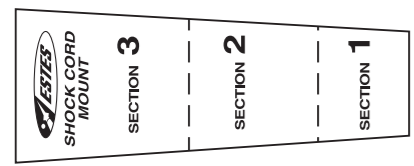
STAGE COUPLER INSTALLATION

NOTE: Test fit E into G. If tight, remove outer red layer, recheck fit.



TUBE MARKING GUIDE

(Make a copy if you want to keep instructions.)



FIN PREPARATION

- Sand both sides of balsa sheet with fine sandpaper (#320 or #400 grit).
- Cut I and J from sheet.
- Stack like fins together. Sand edges smooth.
- Sand leading edges round. **DO NOT** round root edges.

TUBE MARKING

- Cut tube marking guide from instructions.
- Tape guide around G. Mark fin locations FL with arrows. Remove guide.
- Use door frame to connect and extend FL on G.
- Tape guide around F. Mark FL and LL with arrows. Remove guide.
- Use door frame to connect and extend FL and LL on F.
- Measure and mark LL for K.

PARACHUTE PREPARATION

- Form loop with shroud lines.
- Insert loop through M.
- Pass P through loop.
- Pull lines tight.
- Tie O to M with double knot.

FLIGHT RECOVERY PREPARATION

NOTE: Only Estes Recovery Wadding (302274) recommended.

NOTE: Recovery wadding and parachute must slide easily into body tube. If too tight, redo.

- Pull shock cord taut when inserting wadding.
- Insert 5 - 6 loosely crumpled squares recovery wadding. Push below shock cord attachment.
- Spike.
- Fold.
- Roll.
- Wrap lines loosely around parachute. Insert parachute and shock cord into body tube.

TWO-STAGE ENGINE PREPARATION

WARNING: FLAMMABLE
Before proceeding 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 igniter before storing your engine.

- Use cellophane tape to tape booster engine and upper stage engine together as shown.
- Wrap masking tape around rear of upper stage engine and front of booster stage engine to friction fit into the engine tubes.
- Push upper stage engine into upper stage until it stops against engine block and fits snugly.
- Slide booster stage onto assembly until booster engine stops against engine block.
- Separate igniter and igniter plug.
- Hold engine upright, insert igniter. Igniter must touch propellant.
- Insert igniter plug.
- Firmly push all the way in.
- Bend igniter wires back.

SINGLE STAGE ENGINE PREPARATION

WARNING: FLAMMABLE
Before proceeding 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 igniter before storing your engine.

- Wrap masking tape around middle of engine for friction fit.
- Separate igniter and igniter plug.
- Insert igniter.
- Insert plug.
- Push down.
- Insert engine into rocket.

NOTE: BOOSTER STAGE IS NOT USED FOR SINGLE STAGE FLIGHTS.