PREPARE ENGINE

A.

B. TIP MUST TOUCH PROPELLANT.

C.

D.

E.

F. INSERT ENGINE.

COUNTDOWN AND LAUNCH

KEY ALWAYS OUT UNTIL FINAL COUNTDOWN!
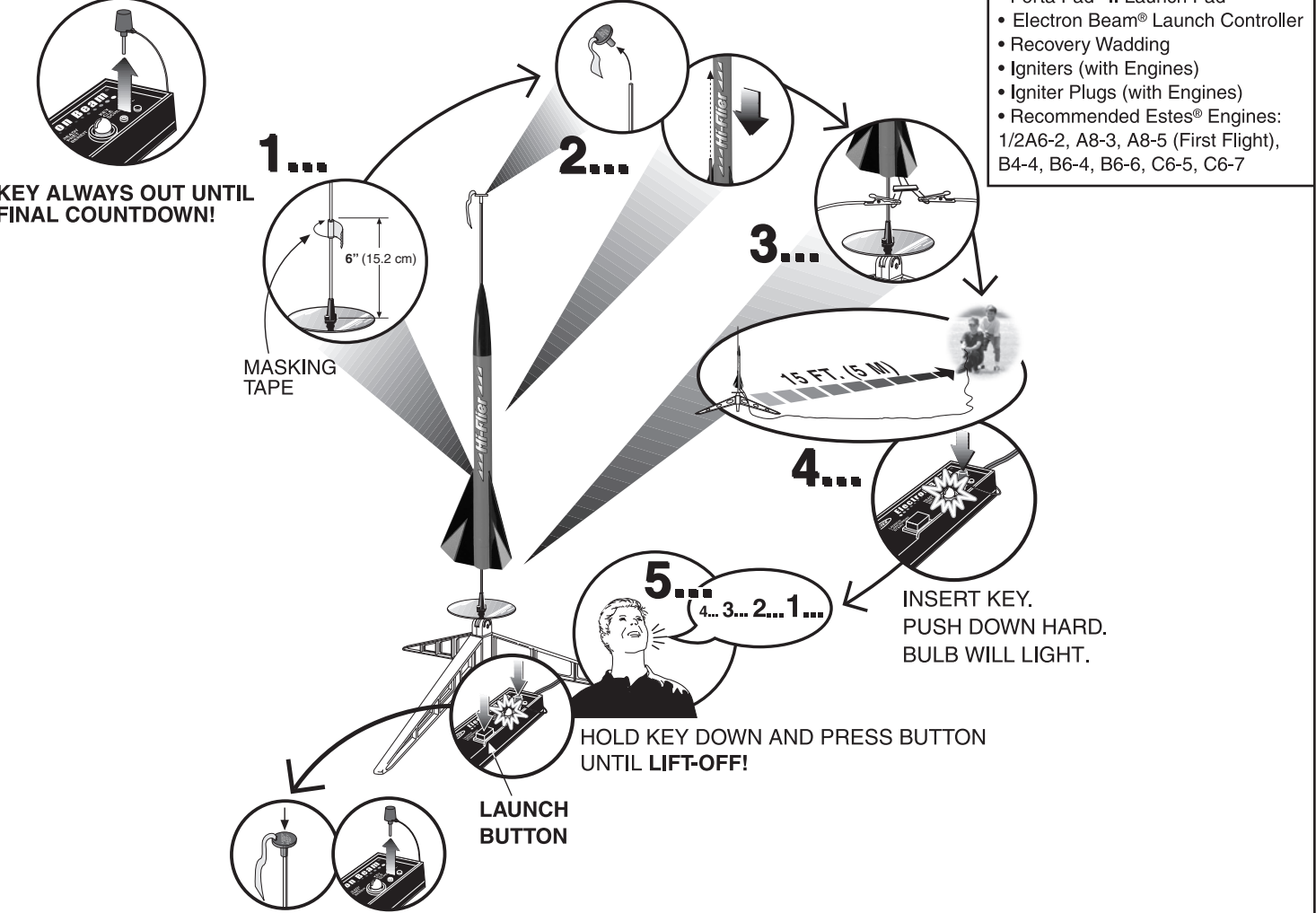
LAUNCH SUPPLIES
(Sold Separately)
• Porta Pad® II Launch Pad
• Electron Beam® Launch Controller
• Recovery Wadding
• Igniters (with Engines)
• Igniter Plugs (with Engines)
• Recommended Estes® Engines:
1/2A6-2, A8-3, A8-5 (First Flight),
B4-4, B6-4, B6-6, C6-5, C6-7

1...

6" (15.2 cm)

MASKING TAPE

2...

3...

15 FT. (5 M)

4...

INSERT KEY. PUSH DOWN HARD. BULB WILL LIGHT.

5... 4... 3... 2... 1...

HOLD KEY DOWN AND PRESS BUTTON UNTIL **LIFT-OFF!**

LAUNCH BUTTON

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. [153 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! 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.

SHOCK CORD MOUNT

FIN · FIN

SECTION 3

FIN · FIN

SECTION 2

LAUNCH LUG · LAUNCH LUG

SECTION 1

FIN · FIN

OVERLAP TAB

TUBE MARKING GUIDE & SHOCK CORD MOUNT

Hi-Flier®

FLYING MODEL ROCKET KIT INSTRUCTIONS

KEEP FOR FUTURE REFERENCE

2178

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 FIT IS...
TOO LOOSE — ADD MASKING TAPE.
TOO TIGHT — SAND FOR FIT.

Body Tube (1) (30314)

Nose Cone Insert (1) (72603)

Nose Cone (1) (72602)

Yellow Spacer Tool (1) (35003)

Green Engine Block (1) (30162-2)

Engine Retainer Ring - Mylar (1) (30168)

Launch Lug (1) (38175)

Shock Cord 1/8" x 12" (1) (38365)

Engine Hook (1) (35021)

Laser-cut Balsa Sheet (1) (60414)

Decal Sheet (1) (60376)

Streamer (1) (38275)

SUPPLIES

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

SCISSORS · PENCIL · RULER · CARPENTER'S GLUE · MODELING KNIFE · PLASTIC CEMENT · PRIMER (WHITE) · SPRAY PAINT: RED, BLACK & GRAY · SPRAY C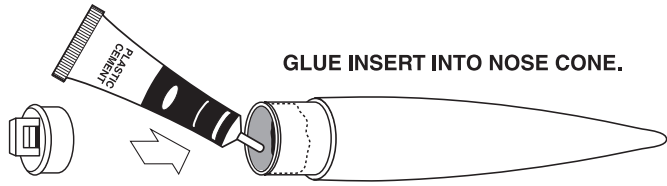LEAR COAT · MASKING TAPE · FINE SAND PAPER (#400-600 Grit) · SILVER 1/32" (1 mm) PIN STRIPE TAPE · OR · SILVER PAINT PEN
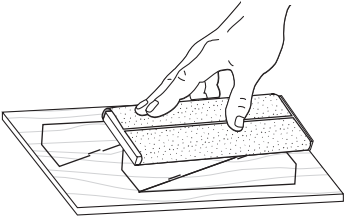
1. ASSEMBLE NOSE CONE
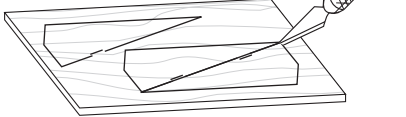
NOTE: USE PLASTIC CEMENT ONLY IN THIS STEP.

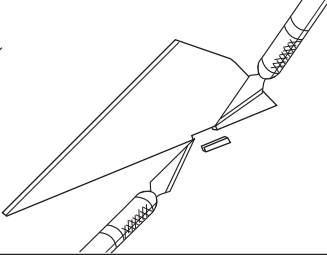GLUE INSERT INTO NOSE CONE.
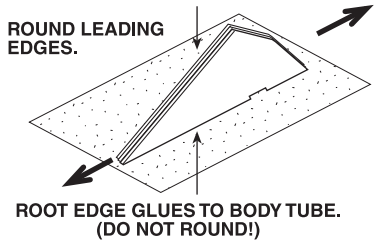
2. PREPARE FINS

A. FINE SAND BALSA SHEET.

**B.** CUT FINS FREE WITH MODELING KNIFE .

C. CUT EACH FIN AS SHOWN.

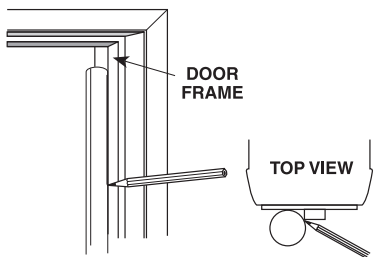**D.** STACK FINS TOGETHER AND SAND EDGES SMOOTH.

ROUND LEADING EDGES.

ROOT EDGE GLUES TO BODY TUBE. (DO NOT ROUND!)

3. MARK FIN AND LAUNCH LUG LINES

A. CUT OUT TUBE MARKING GUIDE FROM FRONT PAGE. TAPE AROUND END OF BODY TUBE. MARK AT ARROWS. MARK LAUNCH LUG LINE "LL". REMOVE GUIDE AND SAVE FOR STEP 7.

LL

B. CONNECT FIN LINES.

DOOR FRAME

FIN LINES

TOP VIEW
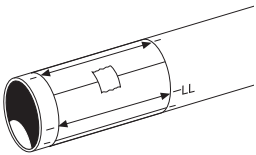
C. EXTEND LAUNCH LUG LINE 4" (102 mm)

LAUNCH LUG LINE

LL

4" (102 mm)
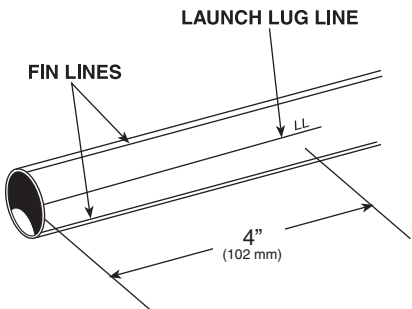
4. ASSEMBLE ENGINE MOUNT

A. MARK SPACER TOOL.

YELLOW SPACER TOOL

1/4" (6 mm)

B. MARK BODY TUBE.
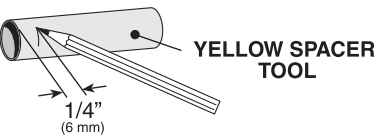
LL BODY TUBE
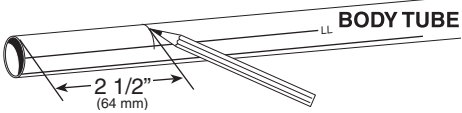
2 1/2" (64 mm)

C. USE SCRAP BALSA TO SMEAR GLUE 2 1/2" (64 mm) INSIDE REAR OF BODY TUBE

BALSA STICK FROM FIN SCRAP

BODY TUBE

LL

2 1/2" (64 mm)

GLUE INSIDE.

1/4" (6 mm) YELLOW SPACER TOOL

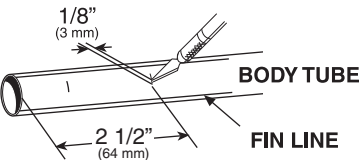GREEN ENGINE BLOCK

LL

LL
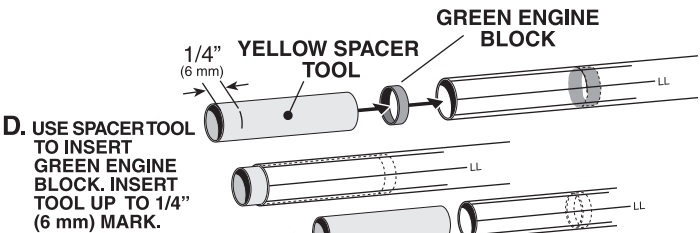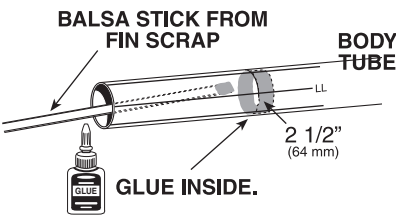
D. USE SPACER TOOL TO INSERT GREEN ENGINE BLOCK. INSERT TOOL UP TO 1/4" (6 mm) MARK.

E. REMOVE SPACER TOOL IMMEDIATELY.

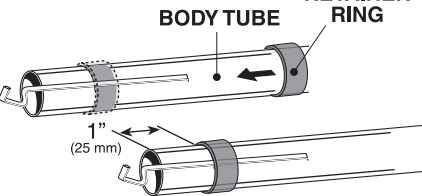**F.** MARK TUBE BETWEEN FIN LINES. OPPOSITE OF LAUNCH LUG LINE.

1" (25 mm) FIN LINE

BODY TUBE
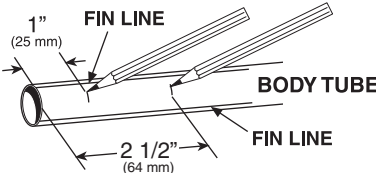
FIN LINE

2 1/2" (64 mm)

G. CUT 1/8" (3 mm) SLIT AT 2 1/2" (64 mm) MARK.

1/8" (3 mm)

BODY TUBE

2 1/2" (64 mm) FIN LINE

H. POSITION HOOK, APPLY GLUE AROUND TUBE IN FRONT OF 1" (25 mm) MARK.

GLUE

1" (25 mm)

BODY TUBE FRONT
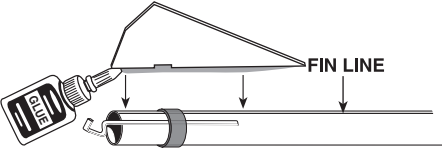
I. SLIDE ENGINE RETAINER RING DOWN TO 1" (25 mm) MARK.

ENGINE RETAINER RING

BODY TUBE

1" (25 mm)

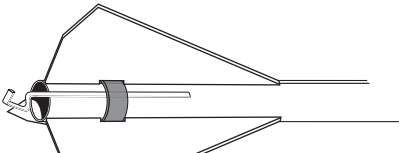## 5. ATTACH FINS

A. APPLY THIN LAYER OF GLUE. WAIT 1 MINUTE. APPLY 2nd LAYER AND ATTACH FIN CENTERED ON FIN LINE. NOTCH FITS OVER RING.
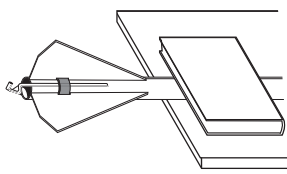
FIN LINE

B. REPEAT FOR REMAINING FINS.

C. SUPPORT ROCKET UNTIL GLUE DRIES.

120° 120° 120°

YES

FINS PROJECT STRAIGHT FROM THE BODY
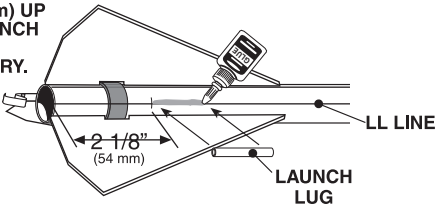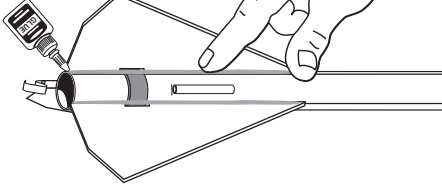
NOTE: FINS MUST BE ATTACHED CORRECTLY FOR STABLE FLIGHT.

6. ATTACH LAUNCH LUG

A. GLUE LAUNCH LUG 2 1/8" (54 mm) UP ALONG LAUNCH LUG LINE. LET GLUE DRY.

2 1/8" (54 mm)

LL LINE

LAUNCH LUG

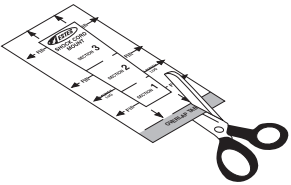**B.** APPLY GLUE FILLETS TO ALL FIN AND LAUNCH LUG/BODY TUBE JOINTS.
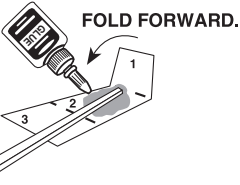
C. SMOOTH WITH FINGER.

D. LET GLUE DRY.

7. ATTACH SHOCK CORD
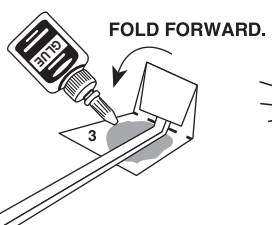
A. CUT OUT SHOCK CORD MOUNT FROM TUBE MARKING GUIDE.

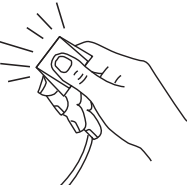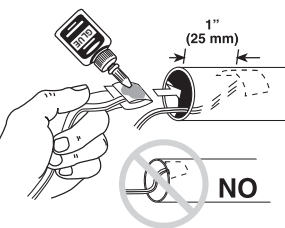**B.** SMEAR GLUE.

FOLD FORWARD.

C. SMEAR GLUE.

FOLD FORWARD.

D. SQUEEZE TIGHTLY AND HOLD FOR ONE MINUTE.

E. GLUE MOUNT INSIDE BODY TUBE. HOLD UNTIL GLUE SETS.

1" (25 mm)

NO

8. ATTACH STREAMER

A. TIE SHOCK CORD TO NOSE CONE.

DOUBLE KNOT
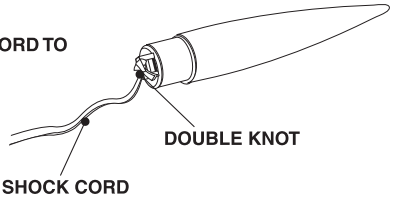
SHOCK CORD

B. TIE STREAMER TO SHOCK CORD 1" (25 mm) FROM NOSE CONE.

DOUBLE KNOT

1" (25 mm)

STREAMER

PAINT SCHEME

FIRST SPRAY ROCKET WITH WHITE PRIMER, LET DRY & SAND. REPEAT UNTIL ROCKET IS SMOOTH. THEN PAINT.

SILVER PAINT PEN OR 1/32" (1 mm) PINSTRIPE TAPE

GRAY

BLACK

DECAL

BLACK

GRAY

BLACK

RED

Hi-Flier

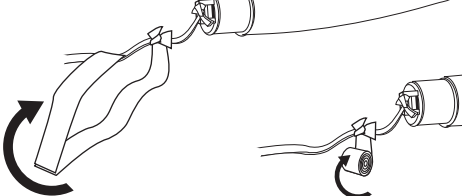AFTER THE PAINT IS DRY, CUT DECALS FROM THE DECAL SHEET, PEEL FROM BACKING AND CAREFULLY PLACE ON ROCKET.

*OPTIONAL: CLEAR COAT ENTIRE ROCKET WHEN PAINT DRIES.
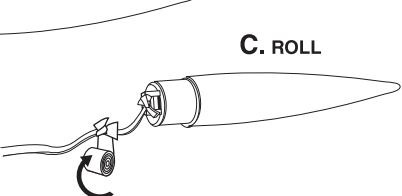
ROCKET PREFLIGHT

A. INSERT 3 LOOSELY CRUMPLED SQUARES OF RECOVERY WADDING.
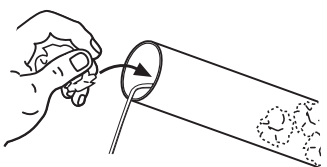
B. FOLD

C. ROLL

D. INSERT STREAMER, SHOCK CORD AND NOSE CONE.