



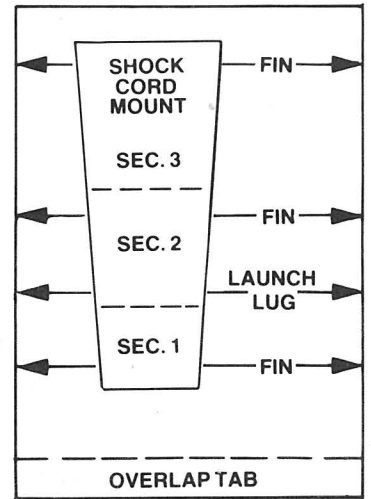
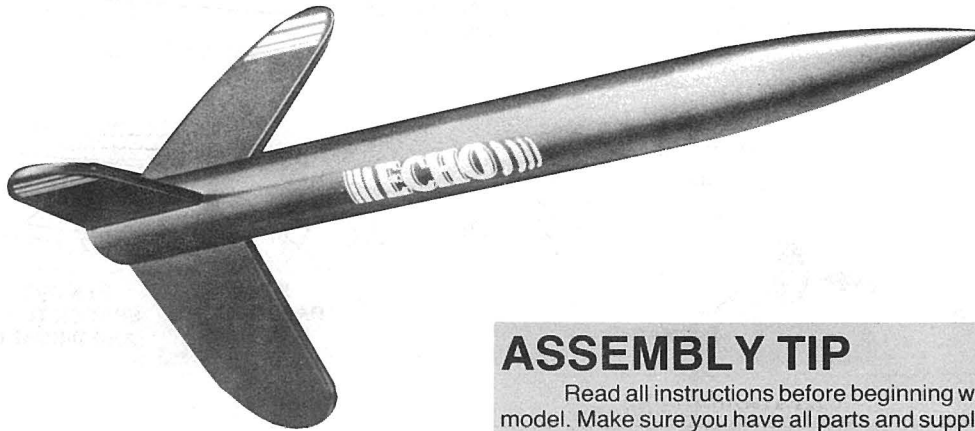


A DAMON COMPANY

Estes Industries
1295 H Street
Penrose, CO 81240

ECHO

#1950



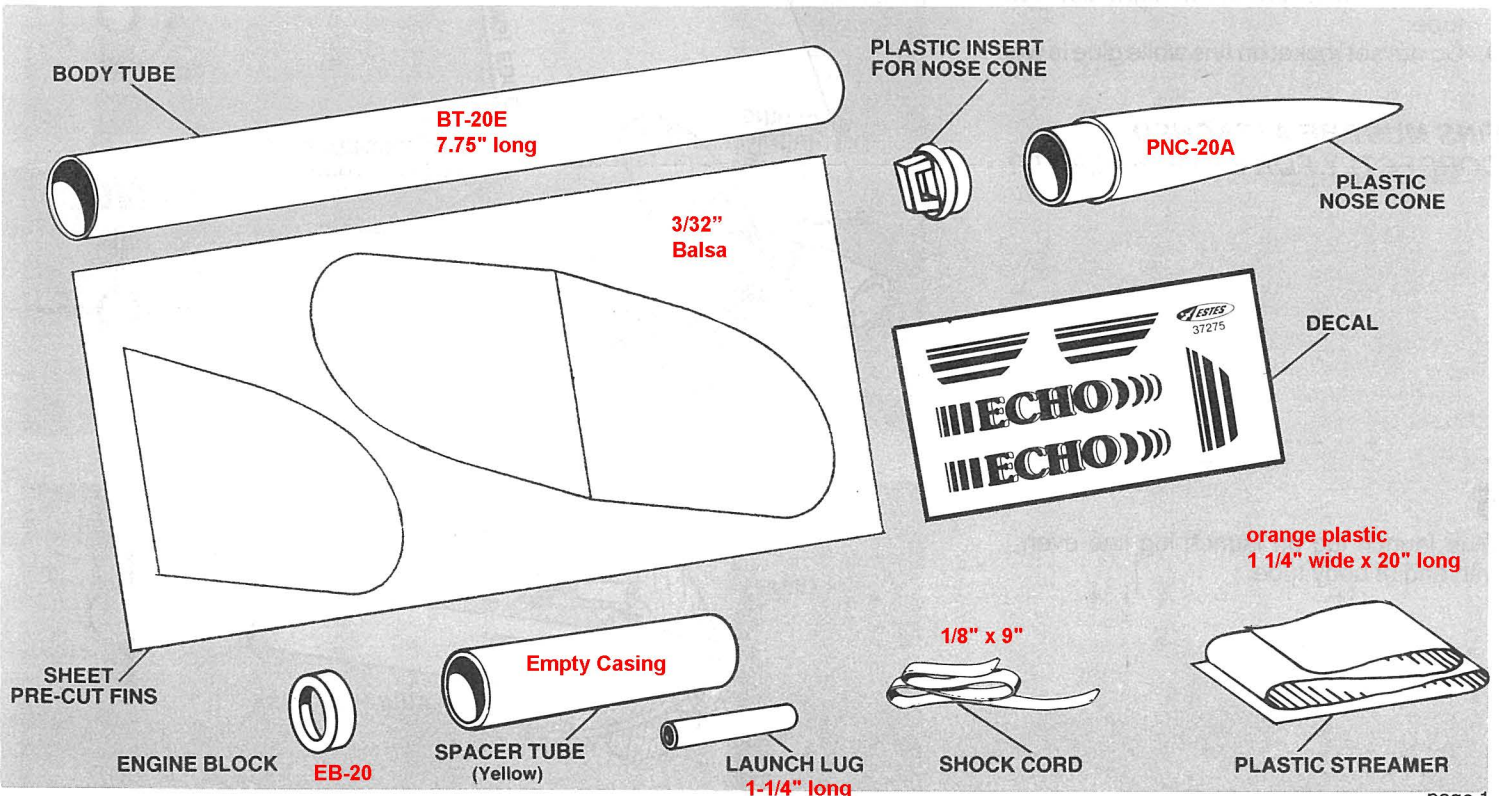
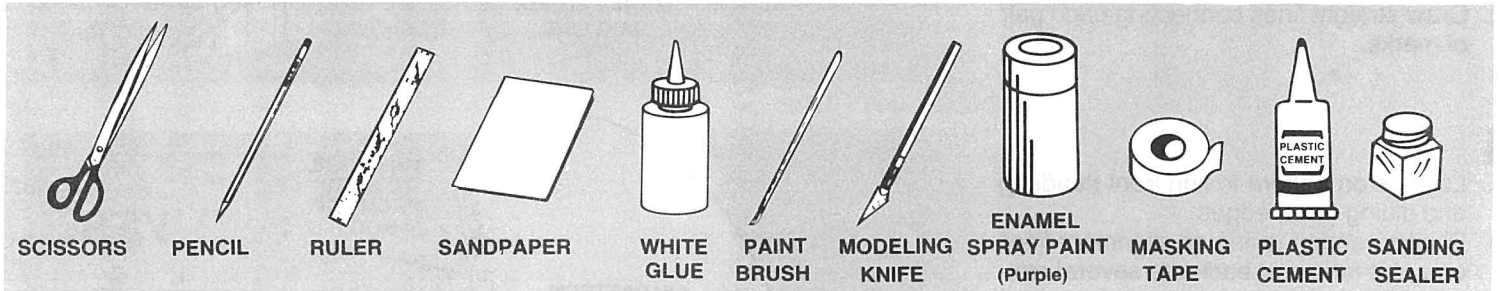
TUBE MARKING GUIDE

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 AND SUPPLIES

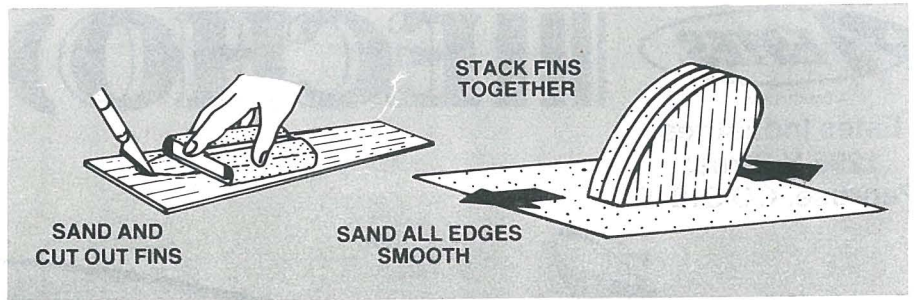
Locate the parts shown below and lay them out on the table in front of you. In addition to the parts included in the kit you will also need:



ROCKET ASSEMBLY

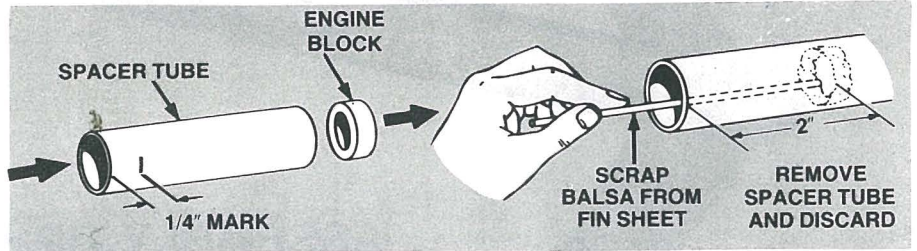
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- Fine sand balsa die-cut sheet. Carefully remove fins by freeing edges with sharp knife.
- Stack fins together. Sand all edges smooth.



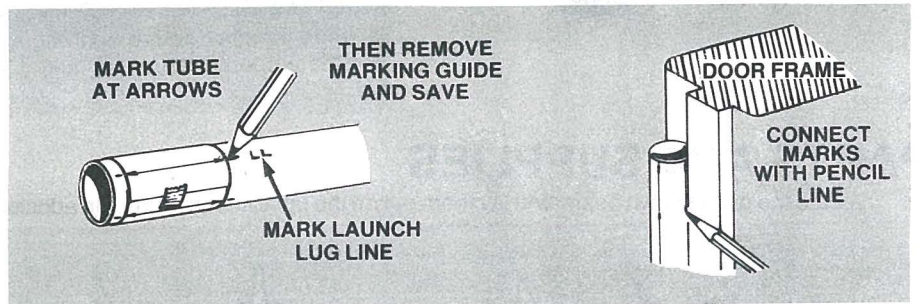
2

- Mark spacer tube 1/4" from one end.
- Using a piece of scrap balsa, smear glue inside body tube 2" from one end.
- Push engine block up into body tube with engine spacer tube until 1/4" mark is even with end of body tube and remove engine spacer tube immediately!



3

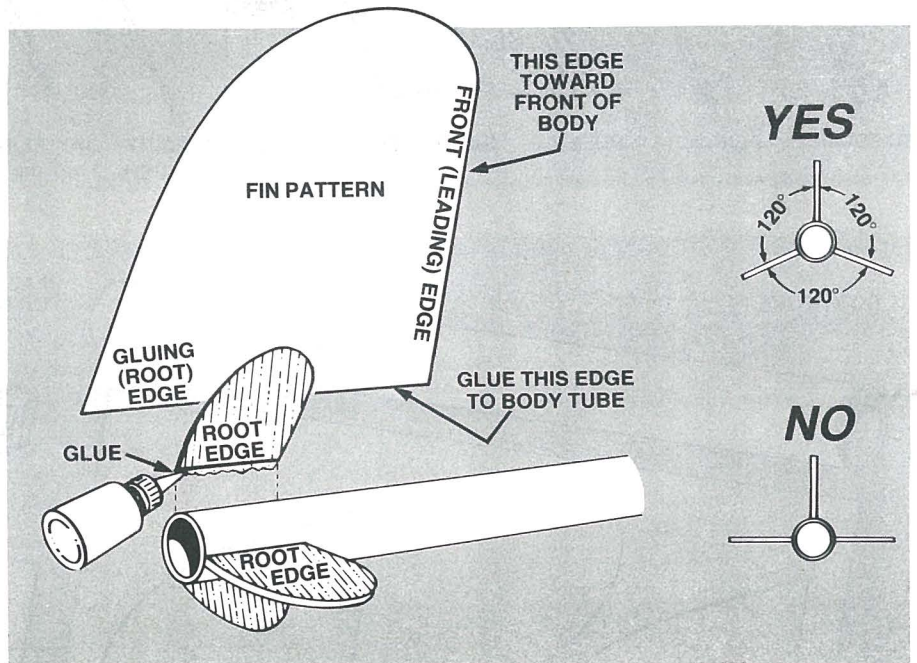
- Cut out tube marking guide from front of instructions.
- Wrap guide around the tube and tape. Mark tube at arrows.
- Mark launch lug line. Remove guide and save.
- Draw straight lines connecting each pair of marks.



4

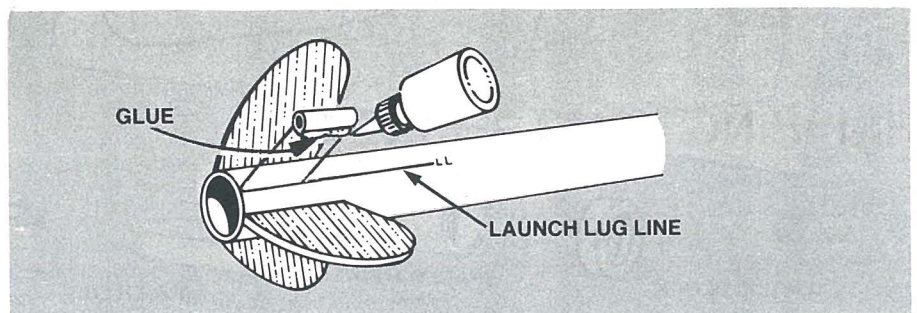
- Lay fins on pattern to find front (leading) and gluing (root) edges.
- Position and glue fins on alignment lines one at a time. Let each dry several minutes before applying the next one.
- Adjust fins to project straight out from tube.
- Do not set rocket on fins while glue is wet.

FINS MUST BE ATTACHED CORRECTLY FOR STABLE FLIGHT!



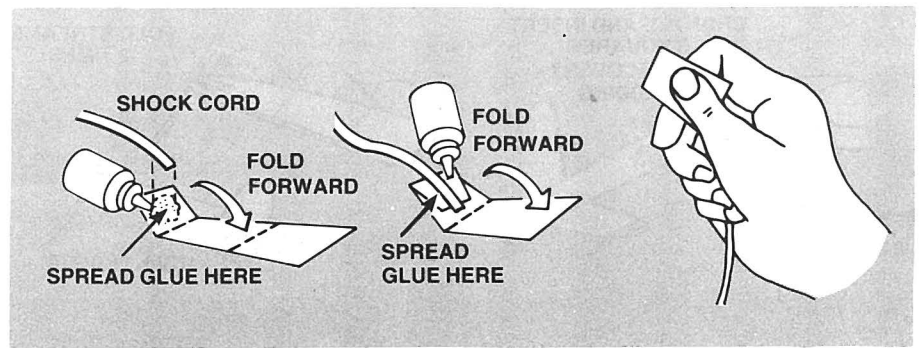
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- Glue launch lug on launch lug line even with end of body tube.



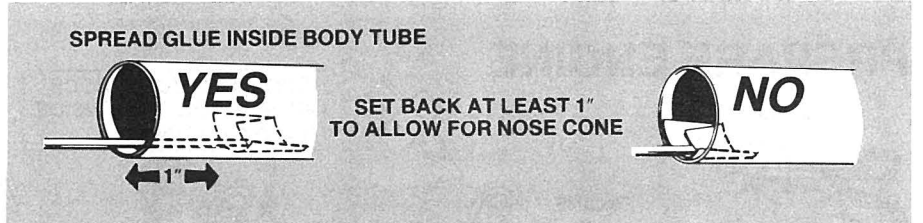
6

- Cut shock cord mount from tube marking guide.
- Crease on dotted lines by folding. Spread glue on section 1 and lay end of shock cord into glue. Fold over and apply glue to back of first section and exposed part of section 2. Lay shock cord as shown and fold mount over again.
- Clamp unit together with fingers until glue sets.



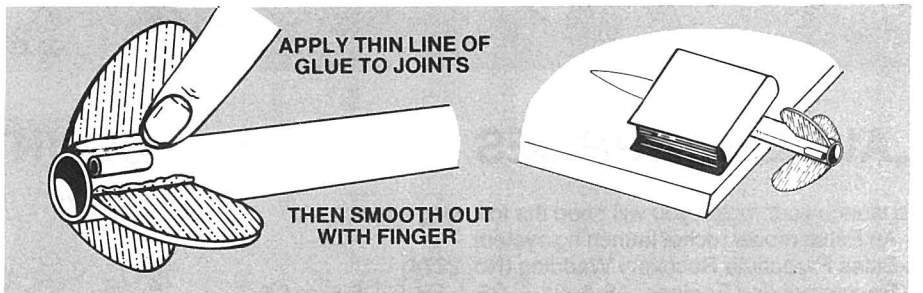
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- Apply glue to inside front of body tube to cover an area no less than 1" to 2" from end. The glued area should be same size as shock cord mount.
- Press mount firmly into glue as shown.
- Hold until glue sets.



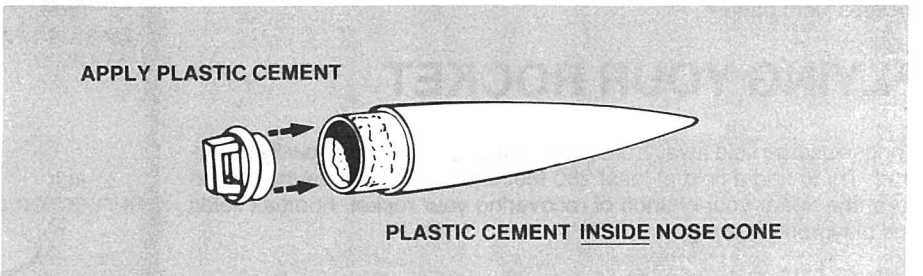
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- Apply a glue reinforcement to each fin/body tube joint and each side of launch lug.
- Support rocket as shown until glue dries.



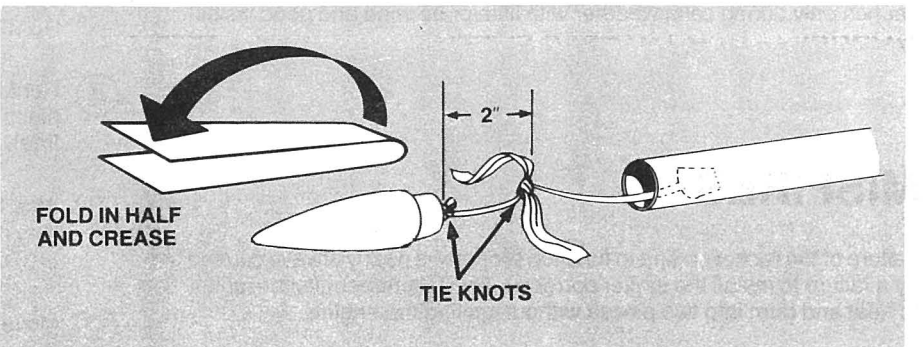
9

- Apply plastic cement to inside of nose cone shoulder.
- Push nose cone insert firmly into nose cone end. Let dry.



10

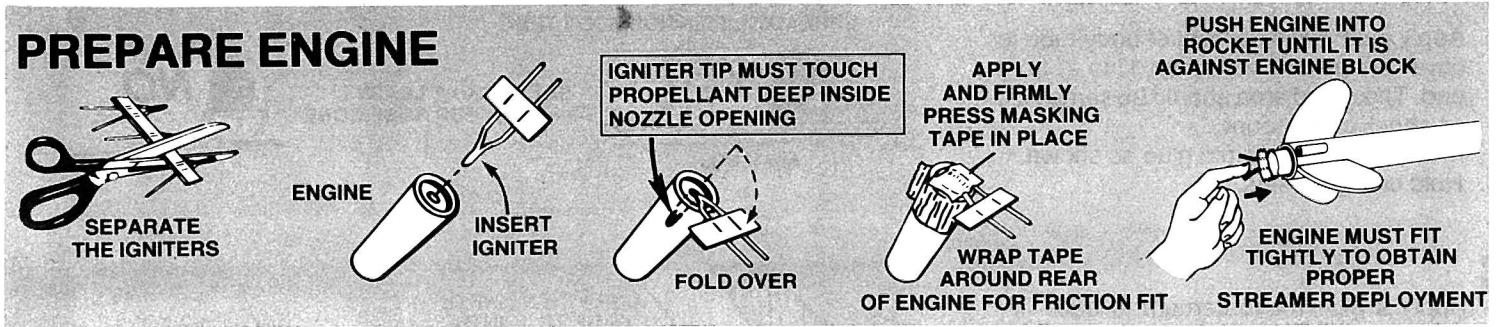
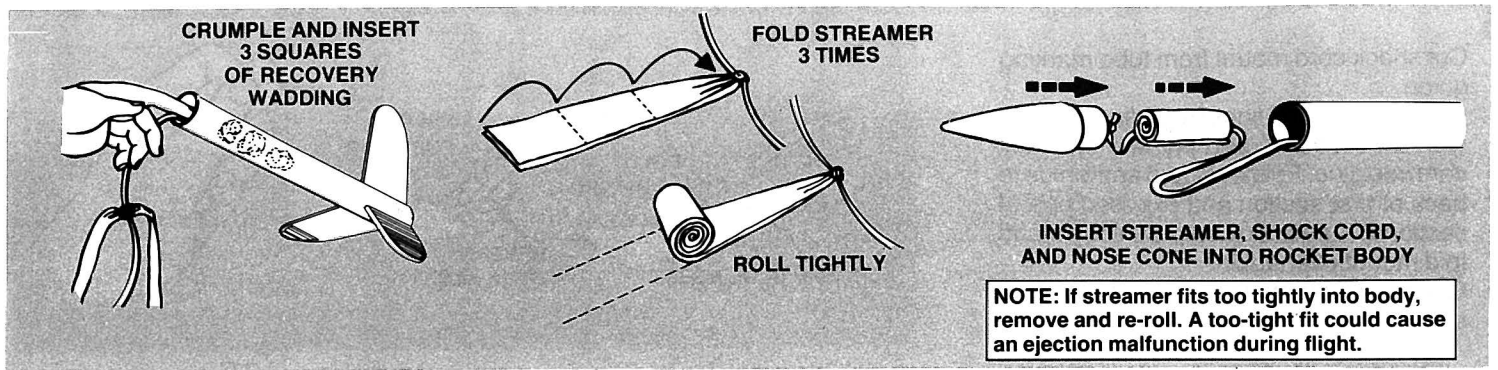
- Fold streamer in half and crease.
- Using a double knot, tie shock cord around streamer about 2 inches from end of shock cord.
- Tie free end of shock cord to eyelet in end of nose cone.



FINISHING YOUR ROCKET

Apply sanding sealer to wood parts with small brush. When sealer is dry, lightly sand all sealed surfaces. Repeat sealing and sanding until balsa grain is filled and smooth. When sanding sealer and glue are completely dry, paint model with spray enamel. Follow instructions on spray can for best results. Let paint dry. To apply

decals, cut each out, dip in lukewarm water for 20 seconds and hold until it uncurls. Refer to photograph on front page and/or on front of panel for decal placement. Slip decal off backing sheet and onto model. Blot away excess water. For best results, let decals dry overnight and apply a coat of clear spray paint to protect decals.



LAUNCH SUPPLIES

To launch your rocket you will need the following items:

- An Estes model rocket launching system
- Estes Parachute Recovery Wadding (No. 2274)
- Recommended Engines: A8-5, B4-4, B6-4, B8-5, C6-5, or C6-7

Use an A8-5 engine for your first flight, to become familiar with your rocket's flight pattern.

FLYING YOUR ROCKET

Choose a large field away from power lines, tall trees, and low flying aircraft. Try to find a field at least 250 feet square. The larger the launch area, the better your chance of recovering your rocket. Football fields and playgrounds are great.

Launch area must be free of dry weeds and brown grass.

Launch only during calm weather with little or no wind and good visibility.

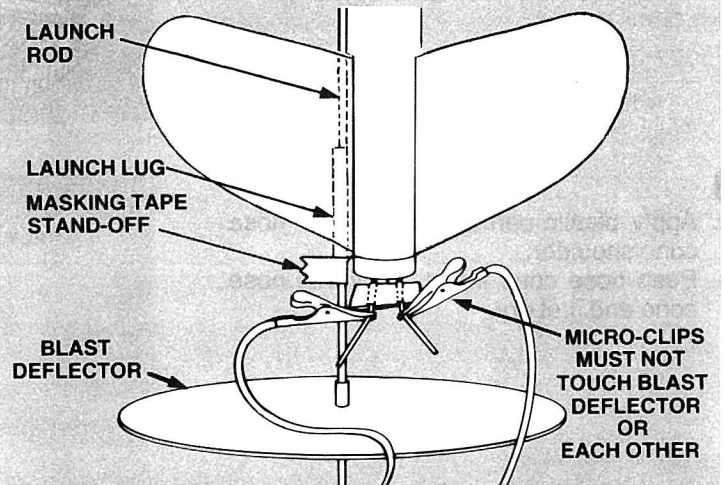
MISFIRES

Failure of the rocket engine to function properly is nearly always caused by a failure to install the igniter correctly. This failure permits the igniter to heat and burn into two pieces without igniting the engine.

FOR YOUR SAFETY AND ENJOYMENT

Always follow the NAR-HIA* MODEL ROCKETRY SAFETY CODE while participating in any model rocketry activities.

COUNTDOWN AND LAUNCH

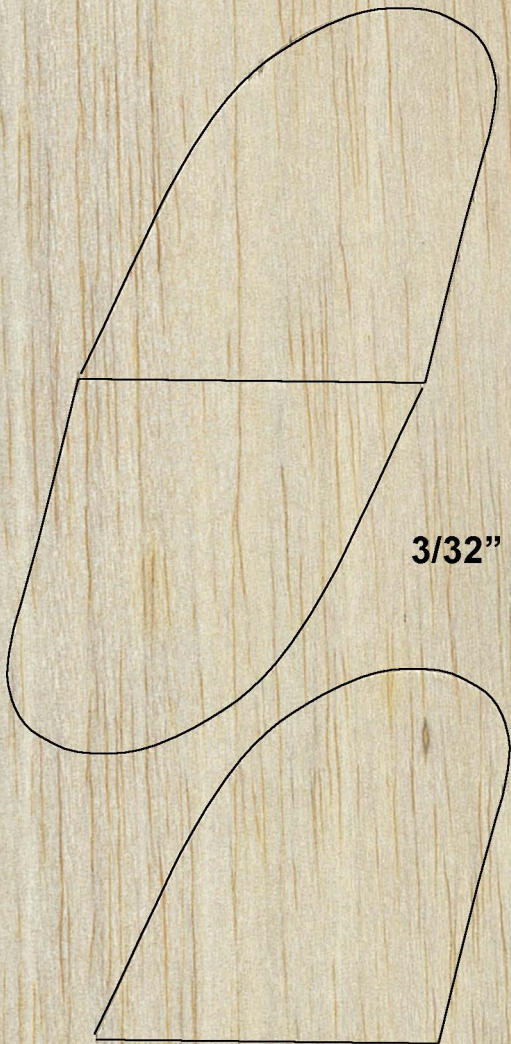


- ⑤ REMOVE SAFETY KEY to disarm the launch controller.
- ④ Remove safety cap and slide launch lug over launch rod to place rocket on launch pad. Make sure the rocket slides freely on the launch rod.
- ③ Attach micro-clips to the igniter wires. Arrange the clips so they do not touch each other or the metal blast deflector. Attach clips as close to protective tape on igniter as possible.
- ② Move back from your rocket as far as launch wire will permit (at least 15 feet).
- ① INSERT SAFETY KEY to arm the launch controller.

LAUNCH!!! PUSH AND HOLD LAUNCH BUTTON UNTIL ENGINE IGNITES

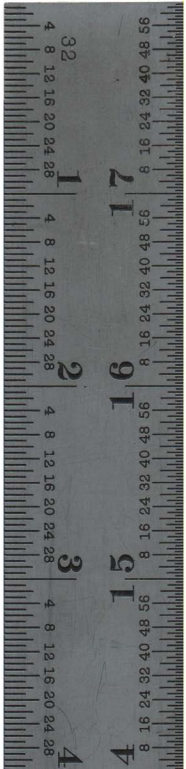
Remove safety key—Replace cap on rod.

*National Association of Rocketry-The Hobby Industry of America





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ECHO))))))™

FLYING MODEL ROCKET

SKILL LEVEL 1

Recommended for the Beginning Modeler

- Futuristic Appearance
- Streamer Recovery
- Forward Swept Fins

Length: 10.5 in. (26.67 cm)

Dia: .736 in. (18.7 mm)

Weight: .47 oz. (13.42 g)

Recommended Engines: A3-5
(First Flight), B4-4, B6-4, B6-5,
C6-5, C6-7



FLIES UP
TO 1,000
FEET



A GAOCHI COMPANY

ESTES INDUSTRIES
NEWPORT, CO 81640 USA



#1950

This is a model kit requiring assembly.
Glue and finishing supplies, launch sys-
tem and engines for flight are not in-
cluded.

