

# VAGABOND™

## FLYING MODEL ROCKETRY STARTER SET

MADE  
IN U.S.A.

LAUNCHES  
TO ALTITUDES  
OVER 1000 FEET!

### SKILL LEVEL 1

Recommended for the Beginning Modeler.

#### FEATURES:

**VAGABOND™**  
Excellent First Model Rocket Kit

**ELECTRON BEAM™**  
Remote Electrical Launcher

**PORTA-PAD® II**  
Deluxe Launch Platform

Solid-Propellant **MODEL ROCKET  
ENGINES** and Supplies for 3 Sub-  
Orbital Launches

#### 1 MODELE REDUIT

Peinture et colle non comprises.

This is a model kit requiring assembly. Re-  
quires adhesives, paint, tools and 4 AA al-  
kaline batteries - Not Included.

Recommended for Ages 10 through Adult.  
Adult supervision suggested for those under  
12 years of age.

**USE ONLY WITH ESTES PRODUCTS**



A DAMON COMPANY

**ESTES INDUSTRIES**  
PENROSE, CO 81240 USA

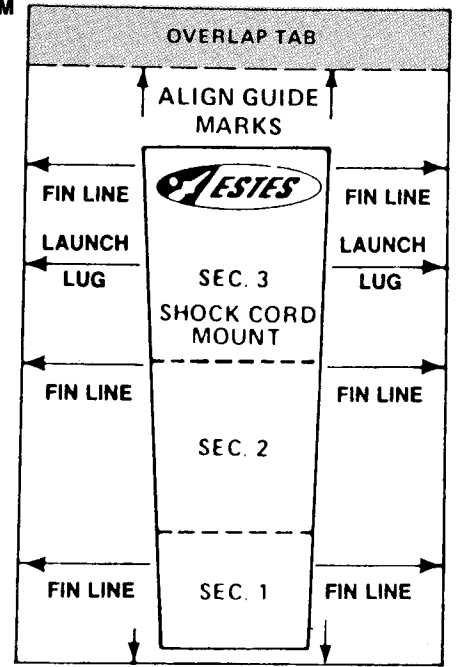
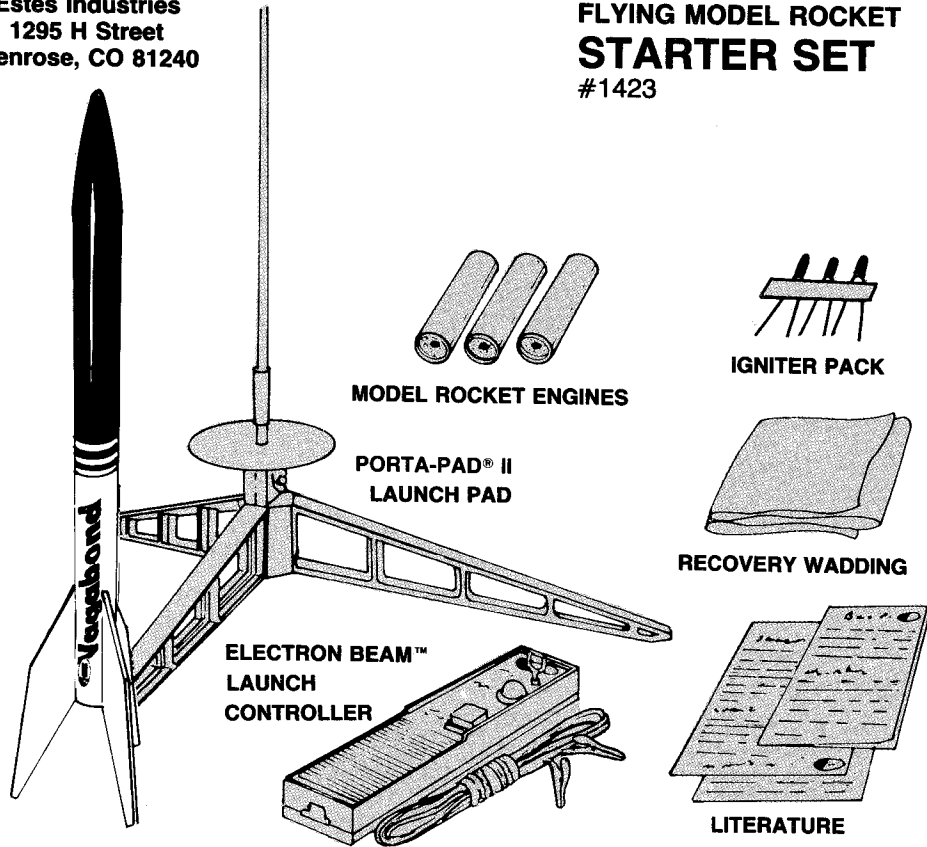




# Vagabond™

Estes Industries  
1295 H Street  
Penrose, CO 81240

## FLYING MODEL ROCKET STARTER SET #1423

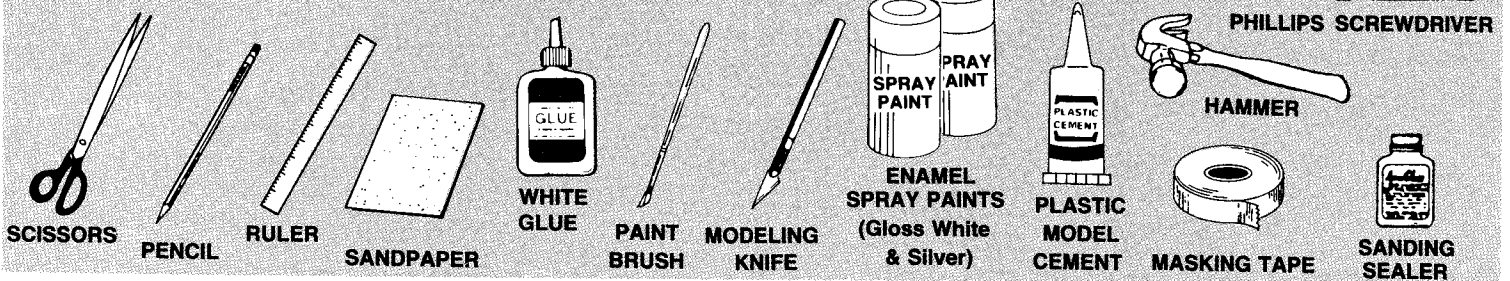


TUBE MARKING GUIDE

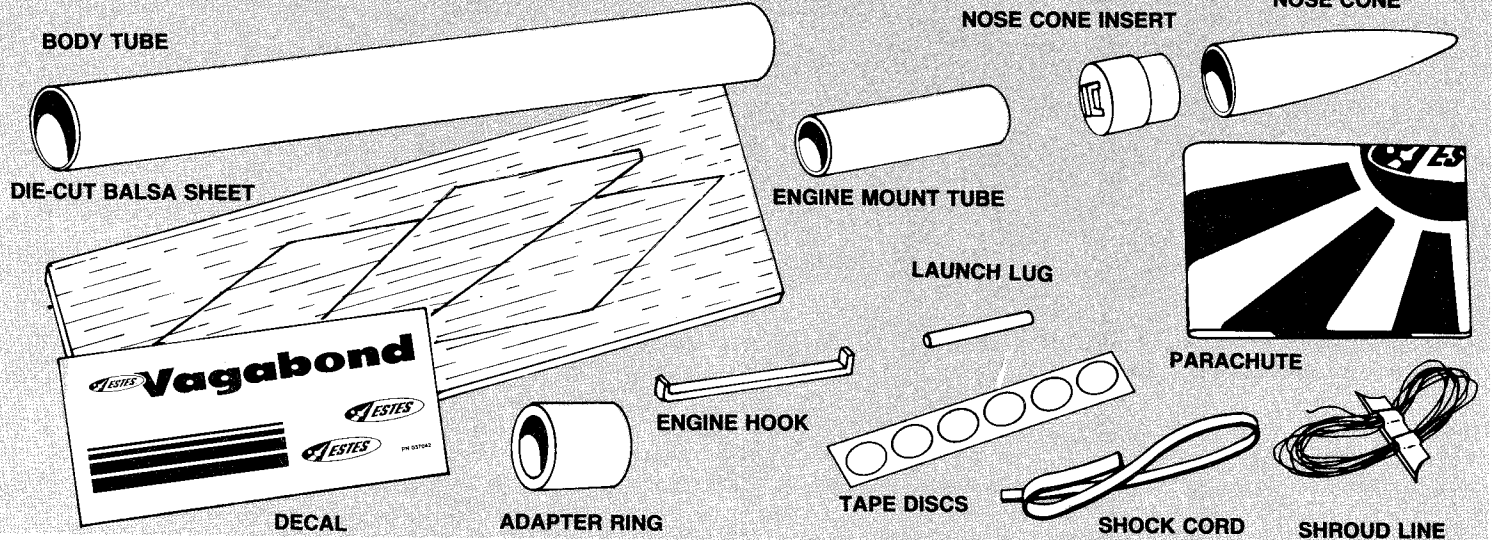
### ASSEMBLY TIP

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.

You will need the following items to assemble this model rocketry starter set.



### ROCKET ASSEMBLY COMPONENTS

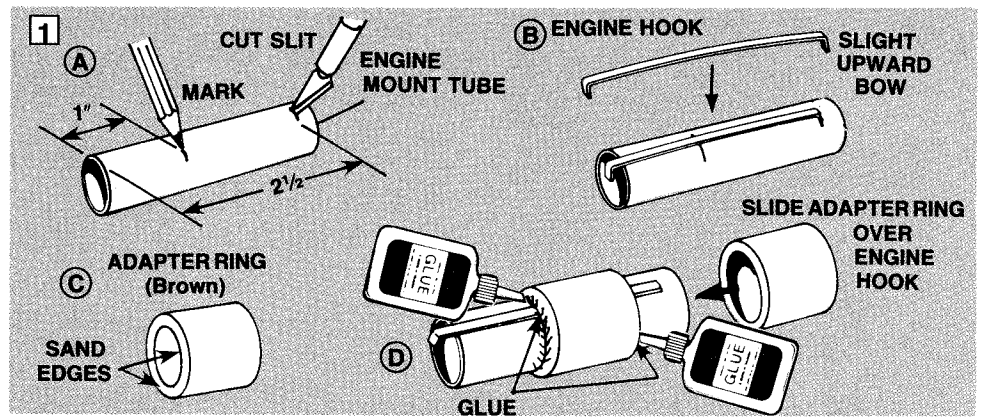


Sort and identify the parts shown above.

# ROCKET ASSEMBLY

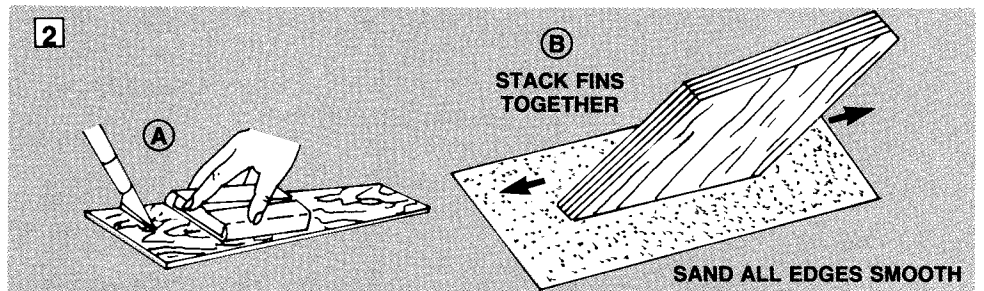
## STEP 1.

- Mark engine mount tube 1 inch and 2½ inches from one end and then cut 1/8 inch long slit at 2½ inch mark.
- Insert one end of engine hook into slit.
- Sand inside edges of adapter ring.
- Slide adapter ring onto tube as shown to the 1 inch mark and then glue both ends of ring to tube.



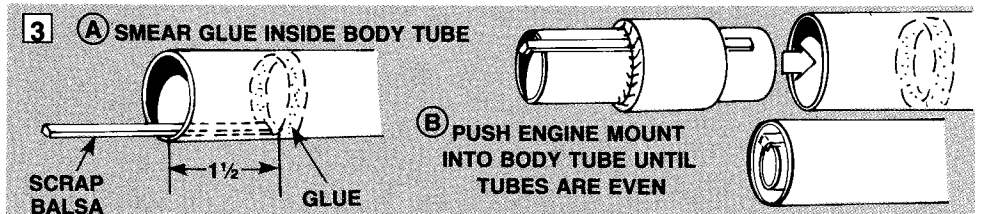
## STEP 2.

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



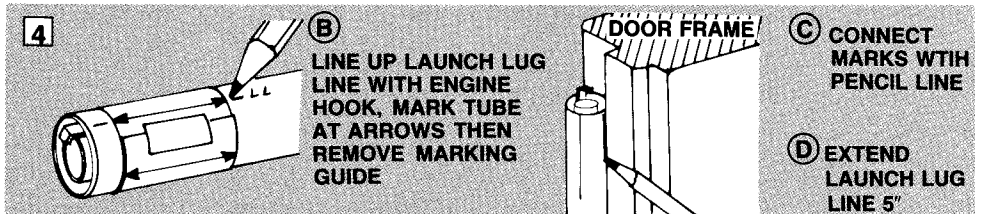
## STEP 3.

- Using a piece of scrap balsa, smear glue inside body tube 1½ inches from one end.
- Push engine mount in until tube ends are even.



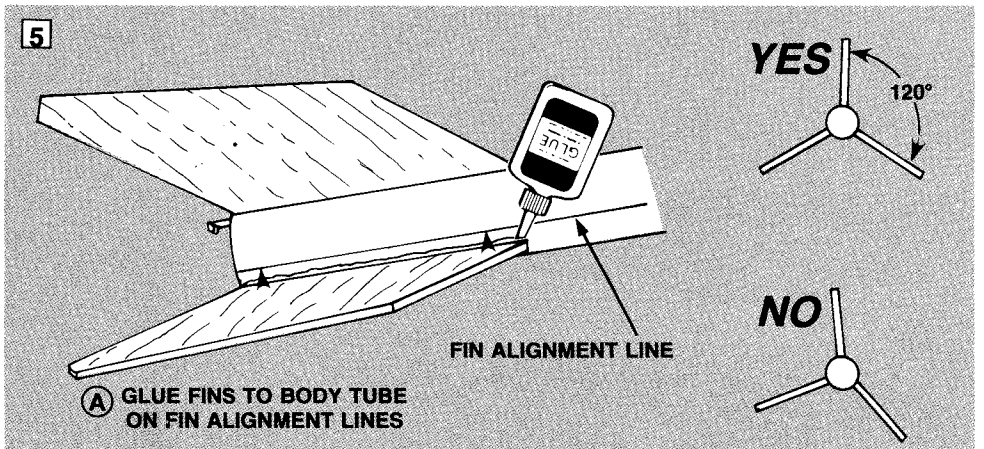
## STEP 4.

- Cut out tube marking guide from front of instructions.
- Wrap guide around the tube and tape. Mark tube at arrows. Remove guide and save.
- Draw straight lines connecting each pair of marks.
- Extend launch lug line 5 inches from rear of tube.



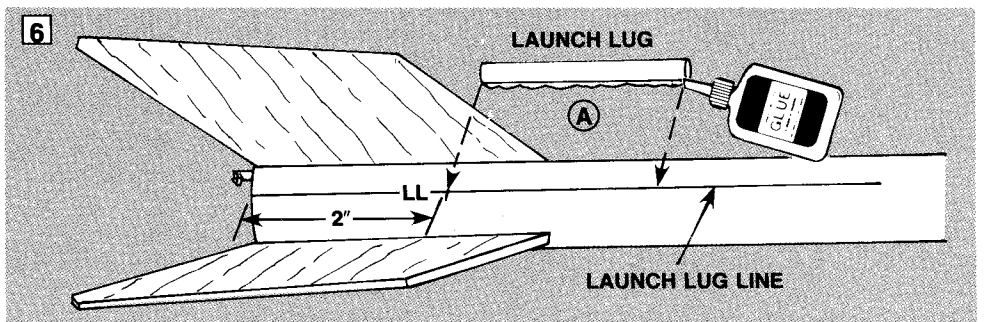
## STEP 5.

- Glue fins on alignment lines, one at a time as shown. Let glue dry several minutes before applying the next fin.
- Looking at the rocket from the rear, the fins should be in the positions shown in illustration marked YES.



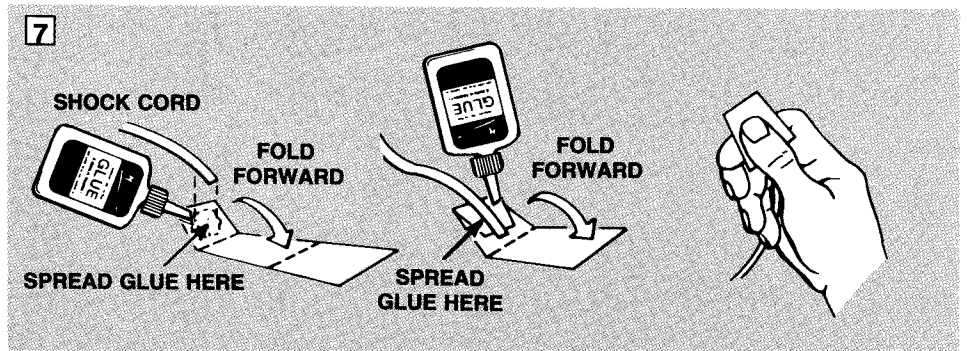
## STEP 6.

- Glue launch lug on launch lug line 2 inches from end of body tube as shown.



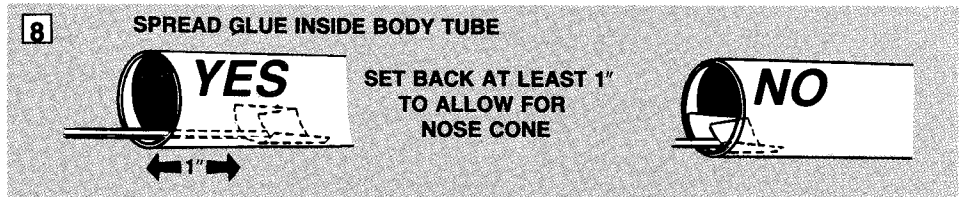
## STEP 7.

- 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.



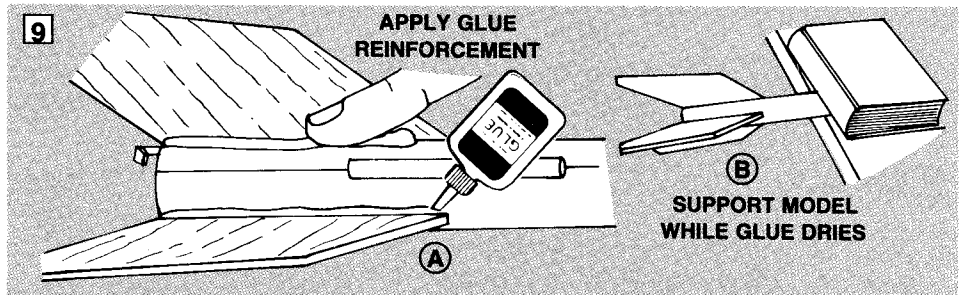
## STEP 8.

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



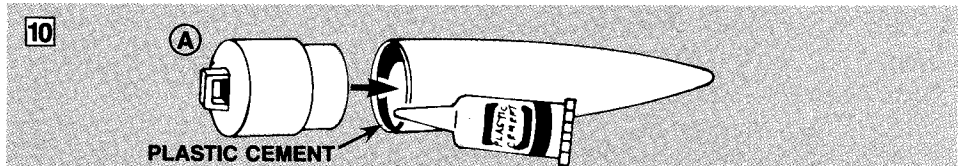
## STEP 9.

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



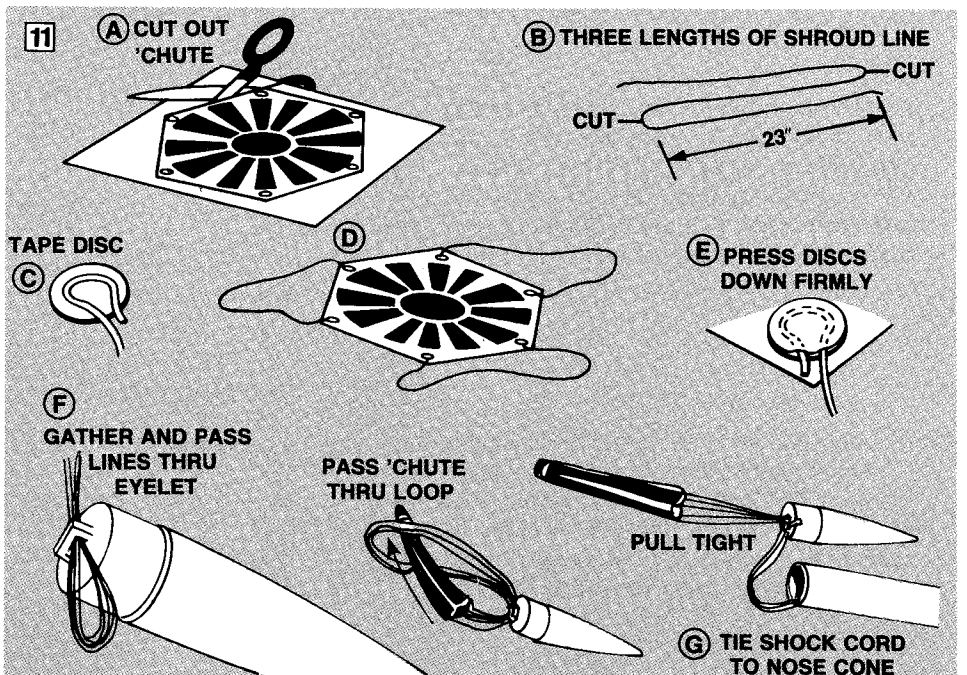
## STEP 10.

- Apply plastic cement to inside edge of nose cone and then insert nose cone insert as shown.



## STEP 11.

- Cut out parachute on edge lines.
- Cut three 23 inch lengths of shroud lines.
- Form small loops with shroud line ends and press onto sticky side of tape discs.
- Attach tape discs with line ends to top of parachute as shown.
- Firmly press tape discs into place until both tape discs and parachute material are molded around shroud line loops.
- Gather and pass shroud line loops through eyelet on nose cone. Pass parachute through loop ends and pull lines against the nose cone.
- Tie free end of shock cord to nose cone eyelet.



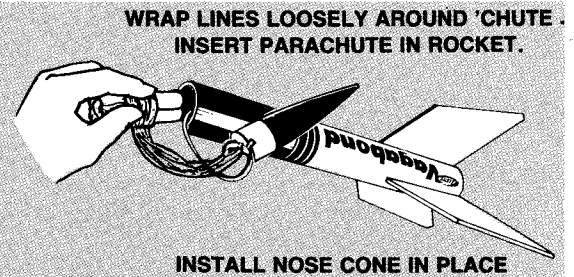
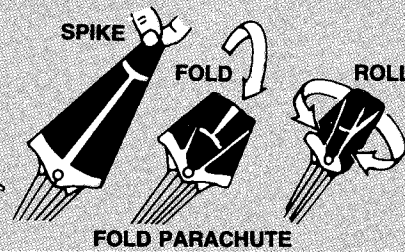
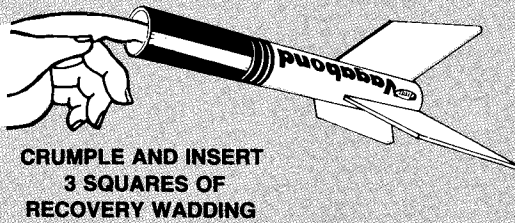
## FINISHING YOUR ROCKET

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 is completely dry, paint model with white spray enamel. Follow instructions on spray can for best results. Let paint dry overnight before masking to paint second color. Mask off rocket 3 inches from tip of nose cone

to paint front of rocket and nose cone silver. 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 box 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.

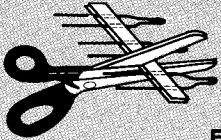


## ROCKET PREFLIGHT

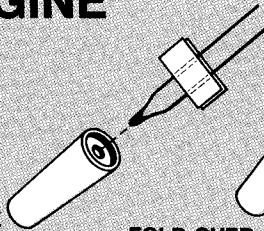


## PREPARE ENGINE

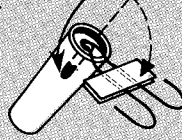
SEPARATE THE IGNITERS



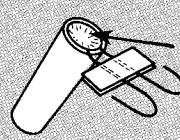
ENGINE



IGNITER TIP MUST TOUCH  
PROPELLANT DEEP INSIDE  
NOZZLE OPENING



APPLY AND  
FIRMLY PRESS  
TAPE DISC OR  
MASKING TAPE  
IN PLACE



INSTALL ENGINE IN ROCKET



## LAUNCH SUPPLIES

Your model rocket will need the following items for each flight.

—Estes Recovery Wadding No. 2274

—Recommended Engines: A8-3, B4-4, B6-4, or C6-5

Use an A8-3 for first flight to become familiar with your rocket's flight pattern. Use only Estes products to launch this rocket.

## 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.

Don't leave parachute packed more than a minute or so before launch during cold weather [colder than 40° Fahrenheit (4° Celsius)]. Parachute may be dusted with talcum powder to avoid sticking.

## MISFIRES

Failure of the model rocket engine to ignite is nearly always caused by incorrect igniter installation. An Estes igniter will function properly even if the coated tip is chipped. However, if the coated tip is not in direct contact with the engine propellant, it will only heat and not ignite the engine.

When an ignition failure occurs, remove the safety key from the launch control system and wait one minute before approaching the rocket. Remove the expended igniter from the engine and install a new one. Be certain the coated tip is in direct contact with the engine propellant, then tape the igniter leads firmly to base of engine as illustrated above. Repeat the countdown and launch procedure.

## FOR YOUR SAFETY AND ENJOYMENT

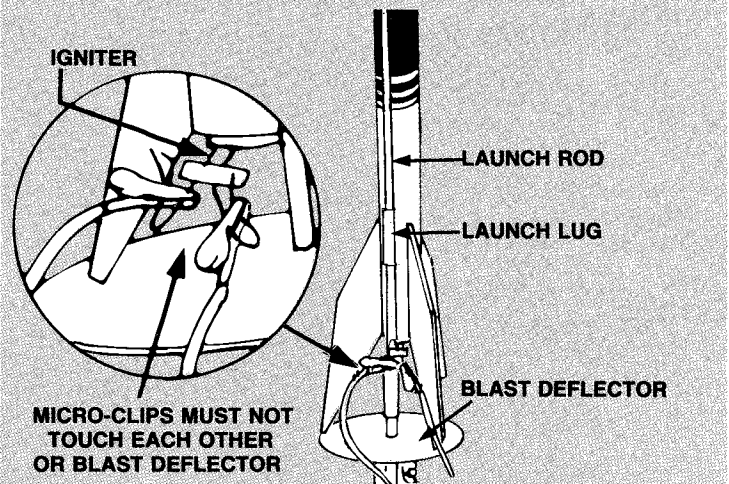
Always follow the NAR-HIA\* MODEL ROCKETRY SAFETY CODE while participating in any model rocketry activities.

\*National Association of Rocketry-The Hobby Industry of America

### OTHER ESTES PRODUCTS:

The brochures included with this set shows some of the other rockets that you may build and launch. The Skill Level for each rocket is indicated. It is recommended that you start with Skill Level One and Two rockets. A Skill Level Three rocket should not be attempted until you have gained more experience.

## COUNTDOWN AND LAUNCH



- ⑩ REMOVE SAFETY KEY to disarm the launch controller.
- ⑨ 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.
- ⑧ 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.
- ⑦ Move back from your rocket as far as launch wire will permit (at least 15 feet).
- ⑥ INSERT SAFETY KEY to arm the launch controller.

Give audible countdown 5...4...3...2...1

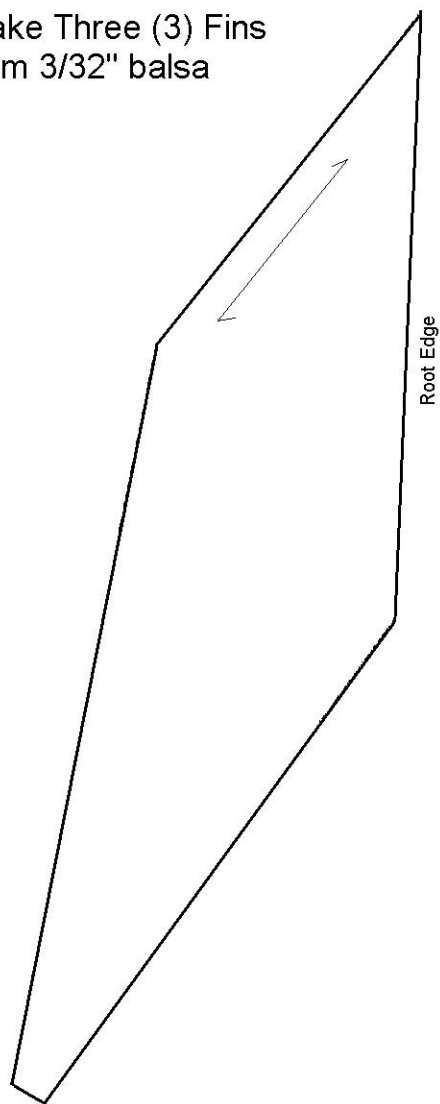
**LAUNCH!!** PUSH AND HOLD LAUNCH BUTTON  
UNTIL ENGINE IGNITES


REMOVE SAFETY KEY FROM CONTROLLER  
AND REPLACE SAFETY CAP ON LAUNCH  
ROD IMMEDIATELY AFTER EACH FLIGHT.

The launch components in this outfit can be used to launch even very large "D" powered rockets. Some "D" engine rockets require the use of a larger (3/16") launch rod (purchased separately). The larger pair of grooves in the launch pad rod hub are designed to accept the 3/16" dia. Maxi™ launch rod (#2244). When using the larger rod, you will have to remove the core pin from the blast deflector.

The full line of Estes products is available from most toy and hobby shops and many chain stores. Or for more information write: Estes Industries, P.O. Box 227, Penrose, CO 81240.

Make Three (3) Fins  
from 3/32" balsa





# Vagabond



PN 037042

#1423 VAGABOND PARTS LIST

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Body Tube:	BT50 9.5" long
Engine Mount Tube:	BT20 2.75" long
"Adapter Ring":	Heavy Cardboard CR2050, 1.125" long
Engine Hook	Standard Size
Launch Lug:	1/8" lug, 2.375" long
Nose Cone:	50Y shape, 2 piece plastic
Shock Cord:	20" rubber
Parachute Assembly:	Estes 12" standard
Fin Stock:	3/32" balsa

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