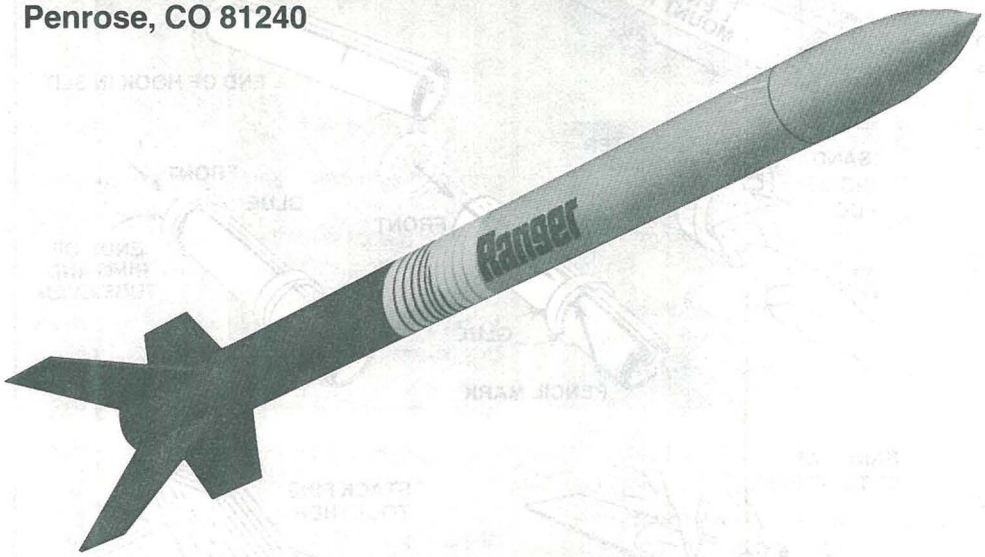
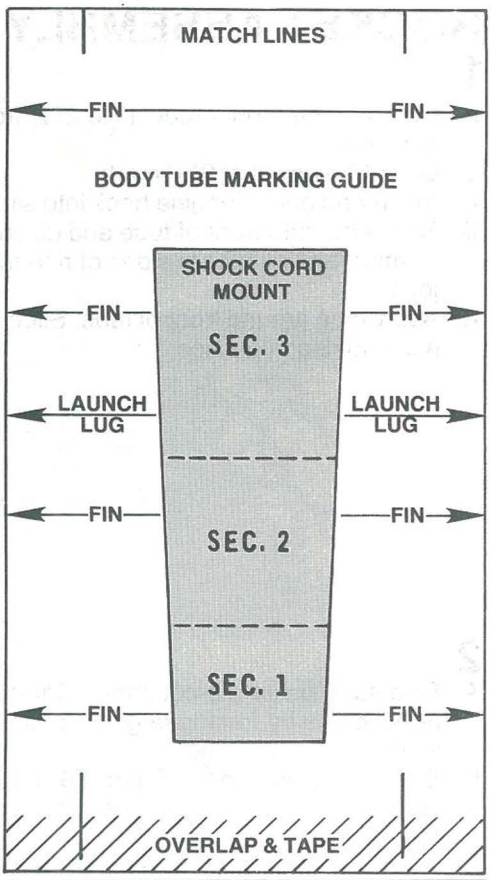

Ranger

ESTES
A DAMON COMPANY
Estes Industries
1295 H Street
Penrose, CO 81240

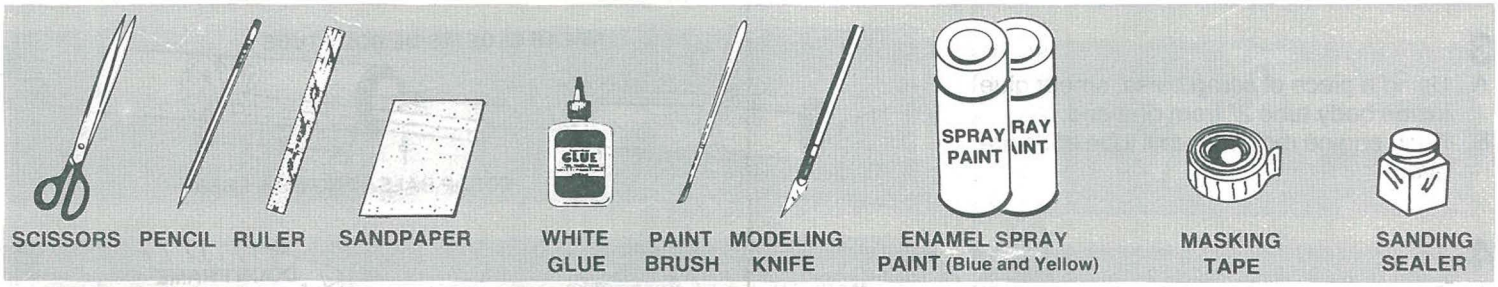
Ranger #1955





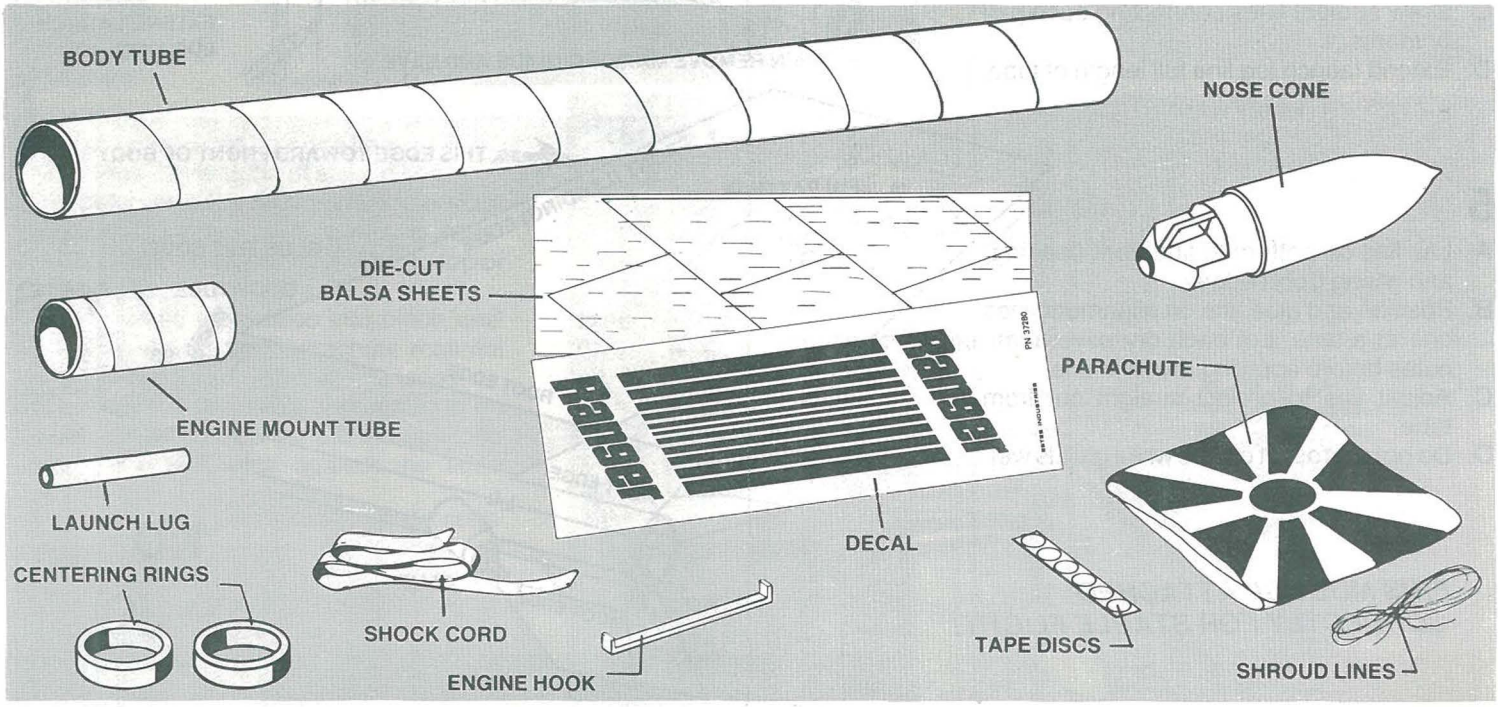
PARTS AND SUPPLIES

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:



ASSEMBLY TIP

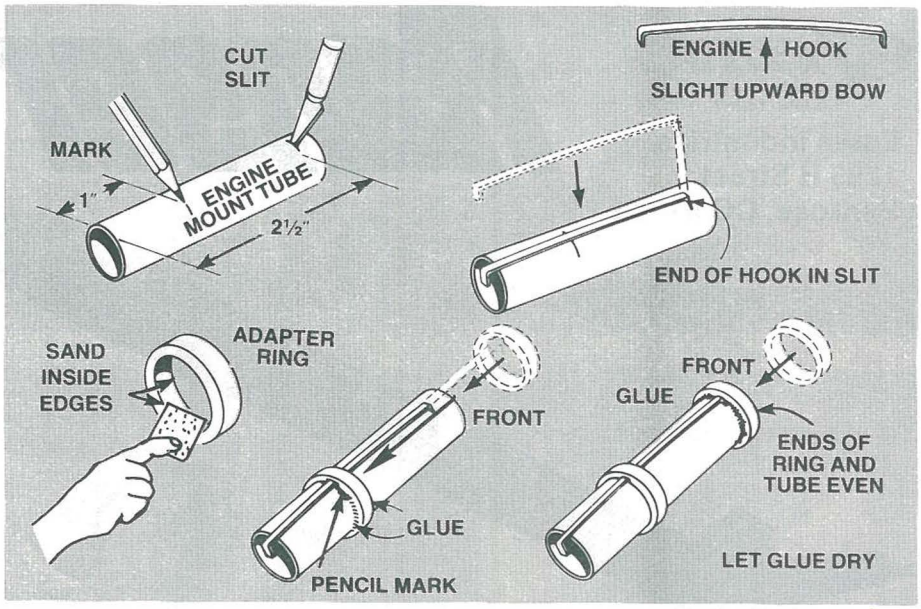
Read all instructions before beginning work on your model. Make sure you have all parts and supplies. Test-fit all parts together before applying any glue. If any parts don't fit properly, sand as required for precision assembly.



ROCKET ASSEMBLY

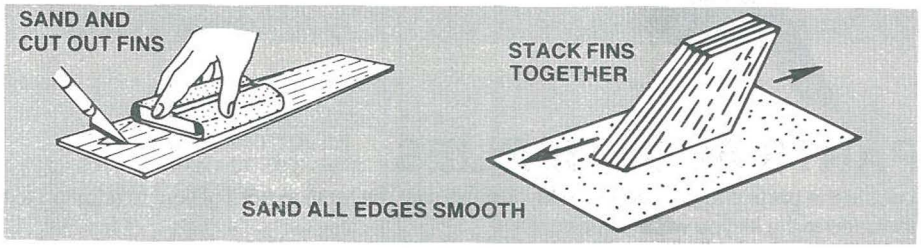
1

A. Mark engine mount tube 1″ to 2½″ from one end.
B. Cut 1/8″ long slit at 2½″ mark.
C. Insert one end of engine hook into slit.
D. Slide ring onto front of tube and down to 1″ mark and glue both sides of ring/tube joint.
E. Apply glue around front of tube. Slide remaining ring into place.



2

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

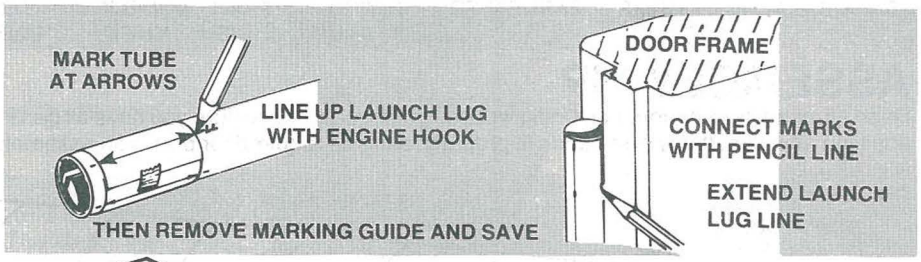


3

A. Using a piece of scrap balsa, smear glue inside body tube 2″ from one end.
B. Push engine mount in until tube ends are even.

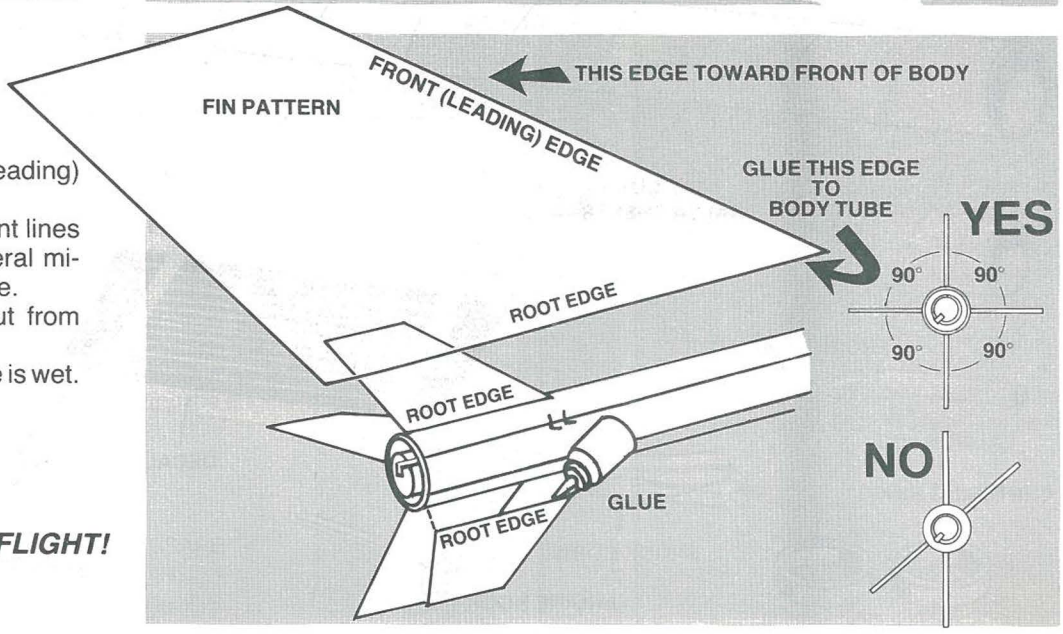
4

A. Cut out tube marking guide from front of instructions.
B. Wrap guide around the tube and mark tube at arrows. Remove guide and save.
C. Draw straight lines connecting each pair of marks.
D. Extend launch lug line full length of tube.



5

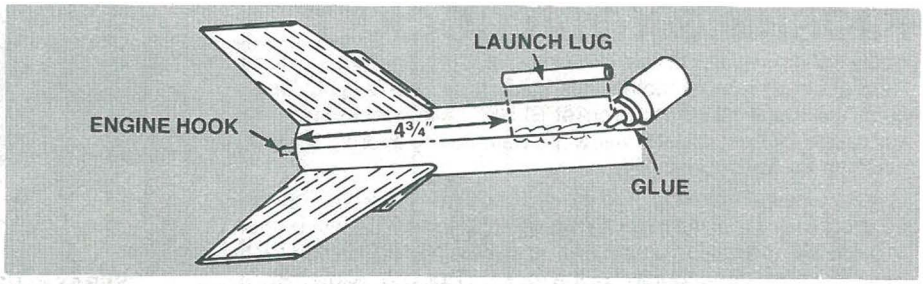
A. Lay fins on pattern to find front (leading) and gluing (root) edges.
B. Position and glue fins on alignment lines one at a time. Let each dry several minutes before applying the next one.
C. Adjust fins to project straight out from tube.
D. Do not set rocket on fins while glue is wet.



FINS MUST BE ATTACHED CORRECTLY FOR STABLE FLIGHT!

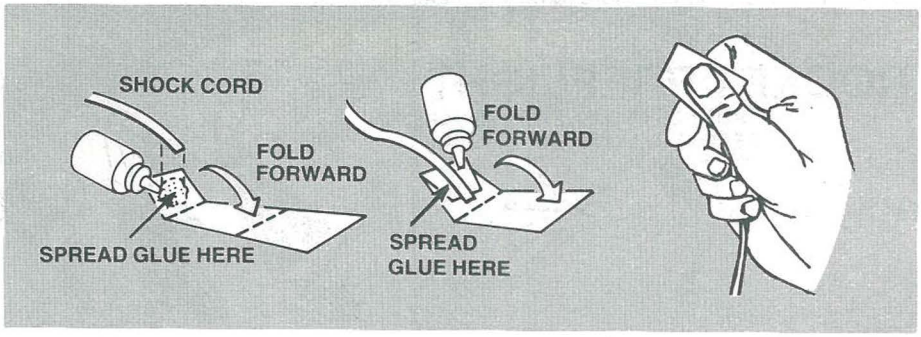
6

Glue launch lug straight on launch lug line 4¾" from rear of tube.



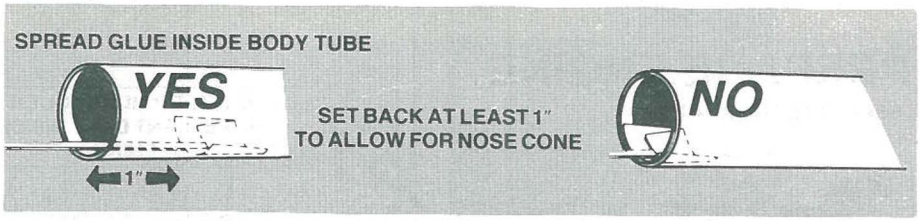
7

A. Cut shock cord mount from tube marking guide.
B. 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.
C. Clamp unit together with fingers until glue sets.



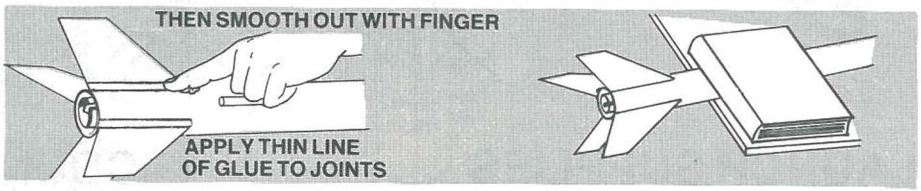
8

A. 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.
B. Press mount firmly into glue as shown.
C. Hold until glue sets.



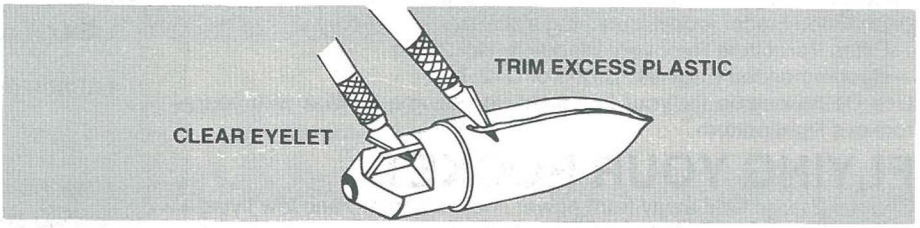
9

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



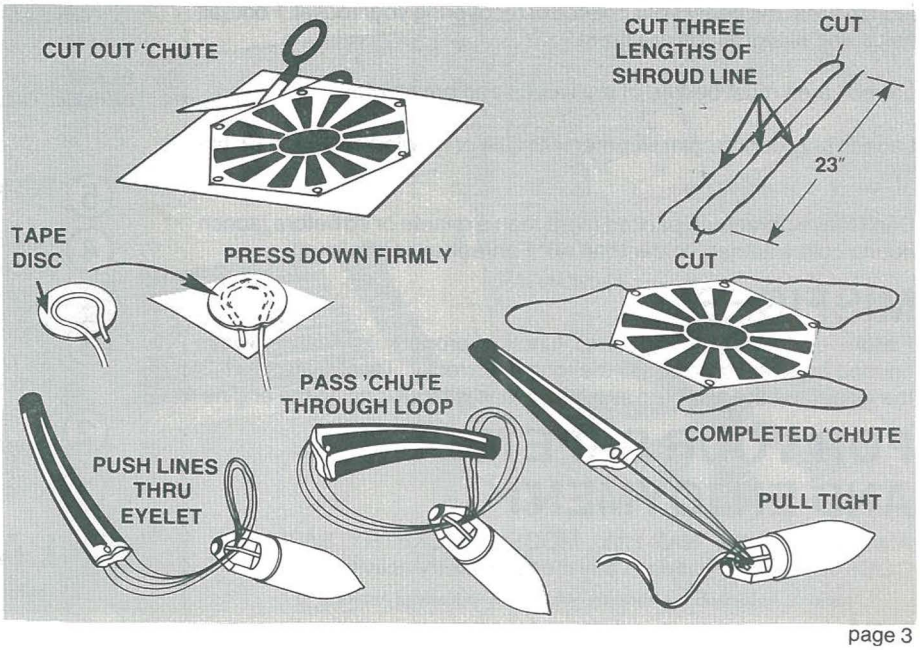
10

A. Trim excess plastic from around sides of nose cone with a sharp knife. Also remove any excess plastic from inside molded eyelet.
B. Wipe nose cone with damp cloth to remove oil and dirt.



11

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

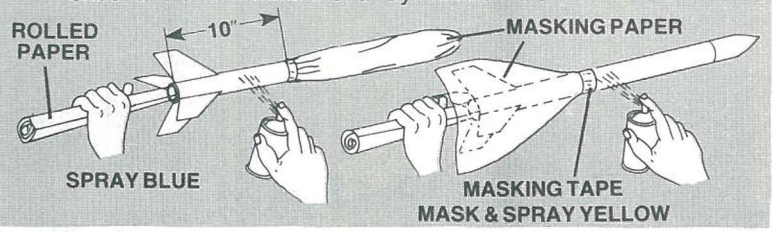


FINISHING YOUR ROCKET

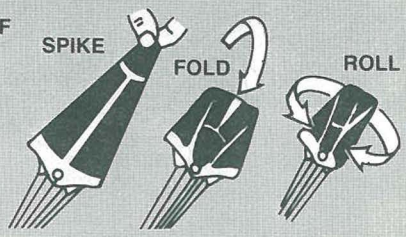
Apply sanding sealer to fins. When sealer is dry, lightly sand parts. Repeat sealing and sanding until balsa grain line is filled. Spray paint the lower half of the rocket BLUE. Follow instructions on spray can for best results. Allow the paint to dry overnight before masking for the second color.

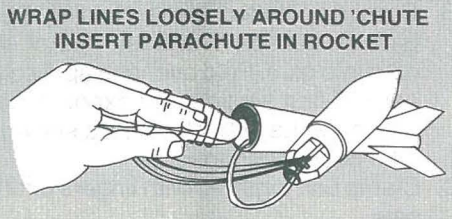
Wrap a piece of masking tape around body with the top of the tape 10" from the rear of the body. Wrap paper around the lower portion of the body and tape in place. Seal any openings in the paper with tape. Paint the upper portion of the rocket YELLOW. Allow paint to dry for a couple of hours before removing paper and tape.

Refer to photo on front of instructions and photo on panel for decal placement. To apply decals, cut each out, dip in lukewarm water for 20 seconds and hold until it uncurls. Slip decal off backing sheet and onto model. Blot away excess water.

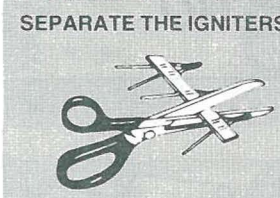


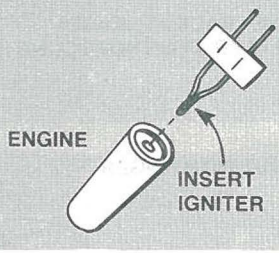
ROCKET PREFLIGHT

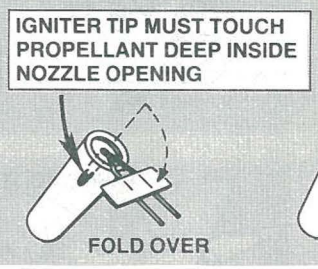


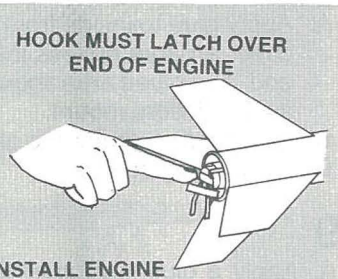


PREPARE ENGINE









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: D12-5 or D12-7
Use D12-5 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 500 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)

MISFIRES

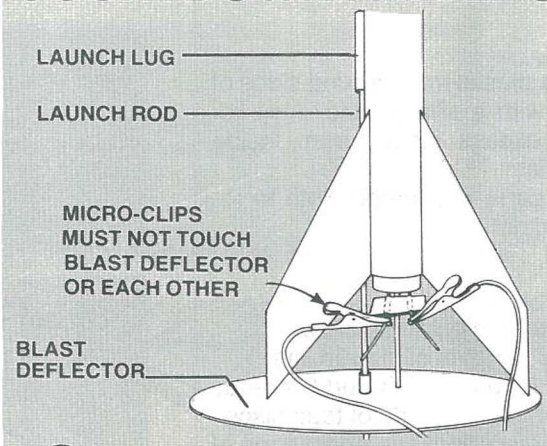
Failure of the rocket engine to function properly is nearly always caused by a failure to install the igniter correctly. This failure permits the igniter to heat and burn into two pieces without igniting the engine.

FOR YOUR SAFETY AND ENJOYMENT

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

*National Association of Rocketry–The Hobby Industry of America

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.

3/32”

ESTES INDUSTRIES PN 3728O

Ranger

Ranger

1 Inch

THE L.S.STARRETT CO.
ATHOL,MASS.U.S.A.
No.O3O3SR

Ranger

Ranger

PARTS LIST KIT NO. 1955			
Quantity	Description	Part Number	Comment
1	Engine MountTube (BT-50J)	30362	2&3/4" (2.75")
1	Engine Hook (EH-2)	35025	2&4/5" (2.8")
2	Centering Rings (AR-5055)	3103	BT-50 to BT-55
1	Shock Cord Mount (SCM-50)	N/A	on page 1
1	Shock Cord (SC-2)	85736	1/4" x 18"
1	Body Tube (BT-55)	30382	18"
1	Body Tube Marking Guide	N/A	on page 1
1	Die-Cut Balsa Fin Sheet	N/A	3/32"
1	Launch Lug (LL-2B)	38176	1/8" x 2&3/8" (2.375")
1	Plastic Nose Cone (PNC-55EX)	71031	See 3D printer files
1	Parachute (PK-18)	85566	Plastic
1	Shroud Line (SLT-108)	38239	108"
1	Tape Discs Set (TD-3F)	38406	1/2" Dia.
1	Decal	37280	Waterslide


Flying Model Rocket
Ranger
FLYING MODEL ROCKET
SKILL LEVEL 2
Nearly Two Feet Tall
Huge 18" Chute
D-Powered
Two-Color Decal
FLIES OVER 1200 FEET
Length: 22.125 in. (56.2 cm)
Dia: 1.325 in. (33.7 mm)
Weight: 1.6 oz. (46 g)
Recommended Engines: D12-5 (First Flight), D12-7
ESTES
Ranger
Estes Industries
1295 H Street
Penrose, CO 81240
PARTS AND SUPPLIES
ASSEMBLY TIP
BODY TUBE
NOSE CONE
DIE CUT BALSA SHEETS
ENGINE MOUNT TUBE
PARACHUTE
LAUNCH LUG
DECAL
CENTERING RINGS
SHOCK CORD
ENGINE HOOK
TAPE DISCS
SHROUD LINES
MODEL ROCKETRY--
THE SPORT OF FUTURE ASTRONAUTS!
Ranger
Ranger
30°
2"


Ranger
FLYING
MODEL
ROCKET
INCLUDING
Nearly Two
Feet Tall
Huge 18" Chute
D-Powered
Two-Color Body
Flies
Over
1000
Feet