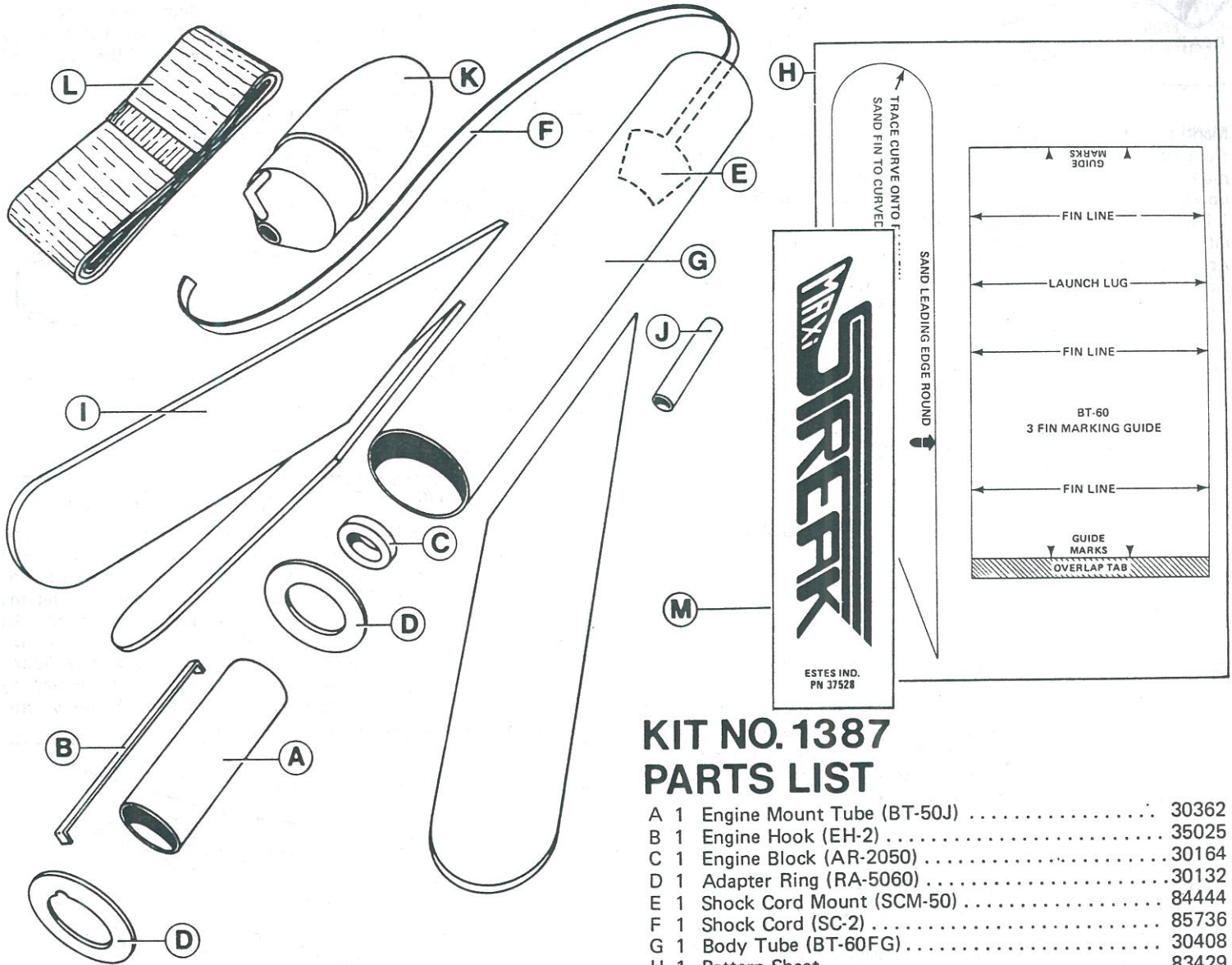


MAXI BREAK

SKILL LEVEL 2 – Recommended for Intermediate Rocketeers

BEFORE YOU START

Read each step and study the accompanying drawings before doing any of the work called for in that step. Make sure you have all parts and materials. Check off each step as you complete it. Always test-fit parts together before applying glue. It will sometimes be necessary to sand edges of rings, tubes, etc. to obtain a proper fit. If you are in doubt about the relative size or location of some parts, refer back to this exploded view drawing for clarification. Adequate glue joints are very important for a flying model rocket. Follow the instructions carefully in this regard.



RECOMMENDED ENGINES: D11-9, D12-5, D12-7

KIT NO. 1387 PARTS LIST

A	1 Engine Mount Tube (BT-50J)	30362
B	1 Engine Hook (EH-2)	35025
C	1 Engine Block (AR-2050)	30164
D	1 Adapter Ring (RA-5060)	30132
E	1 Shock Cord Mount (SCM-50)	84444
F	1 Shock Cord (SC-2)	85736
G	1 Body Tube (BT-60FG)	30408
H	1 Pattern Sheet	83429
I	3 Fin Stock (BF-1387)	32139
J	1 Launch Lug (LL-2A)	38175
K	1 Plastic Nose Cone (PNC-60MS)	71020
L	1 Streamer (SM-1)	38273
M	1 Decal (KD-1387)	37528



A DAMON COMPANY

ESTES INDUSTRIES
PENROSE, CO 81240 USA

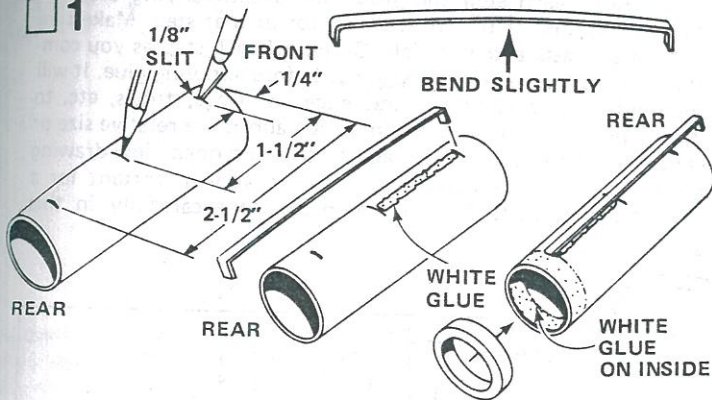
TOOLS AND MATERIALS

In addition to the parts included in this kit you will need: Scissors, pencil, ruler, fine or extra-fine grit sandpaper, sanding sealer, a medium-size modeling paint brush, modeling knife with sharp blade, gloss orange and gloss black enamel spray paints, and household white glue or resin glue (Elmer's, Titebond, or similar). Other types of glue are not recommended.



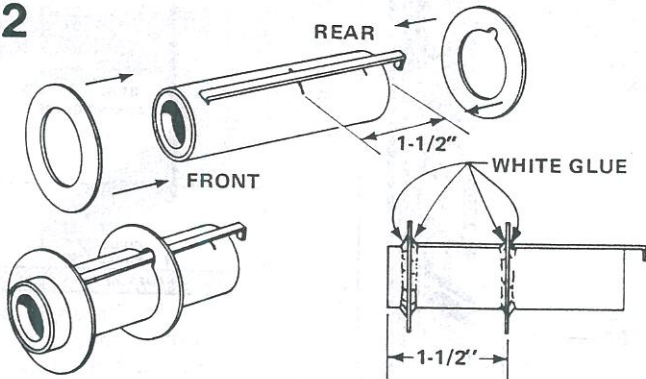
ASSEMBLY INSTRUCTIONS

1



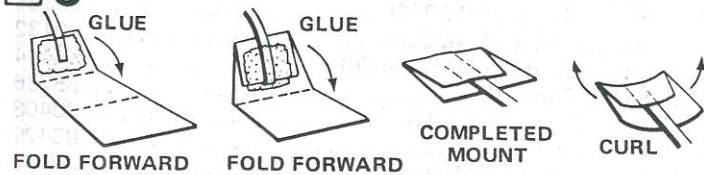
Mark the engine mount tube (part A) 1/4", 1-1/2", and 2-1/2" from one end as shown. Cut a 1/8" long slit in the tube at the 1/4" mark. Gently bend the engine hook (part B) so that the hook bows upward slightly in the middle. Apply glue from the slit to the 1-1/2" mark on the engine mount tube. Insert one end of the hook into the slit and press the main part of the hook into the glue. Apply glue to the inside front of the engine mount tube. Immediately push the engine block (part C) into the engine mount tube until the block is against the engine hook.

2



Carefully separate the two adapter rings (part D) from the die-cut sheet. Slide the notched ring over the engine hook up to the 1-1/2" mark. Slide the other ring over the front of the tube up to the engine hook as shown. Make sure the engine hook is aligned straight along the tube. Glue the rings in place by applying a line of glue where ring meets tube all the way around both sides of the ring. Set the assembly on one end while the glue dries.

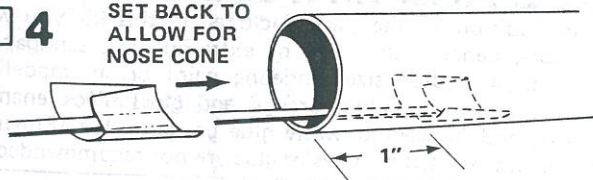
3



Cut out the shock cord mount (part E). Fold on dotted lines, then unfold and apply glue to section 1. Lay one end of the shock cord (part F) into the glue. Fold over and apply glue to the back of section 1 and the exposed part of section 2. Fold again to complete mount. Curl the edges of the mount up so it will match the contour of the body tube and hold with your fingers until the glue sets.

4

SET BACK TO ALLOW FOR NOSE CONE

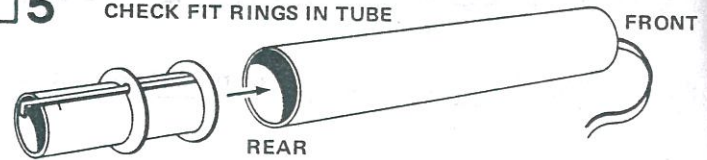


Use a finger or stick to apply glue to the inside of the front of the body tube, 1" to 2" from the front of the tube. Press the shock cord mount firmly into position in the glue far enough from the

front edge of the tube to allow clearance for the nose cone to fit into place. To insure a good bond use a stick or your finger to smear a film of glue over the mount and surrounding area in the body tube.

5

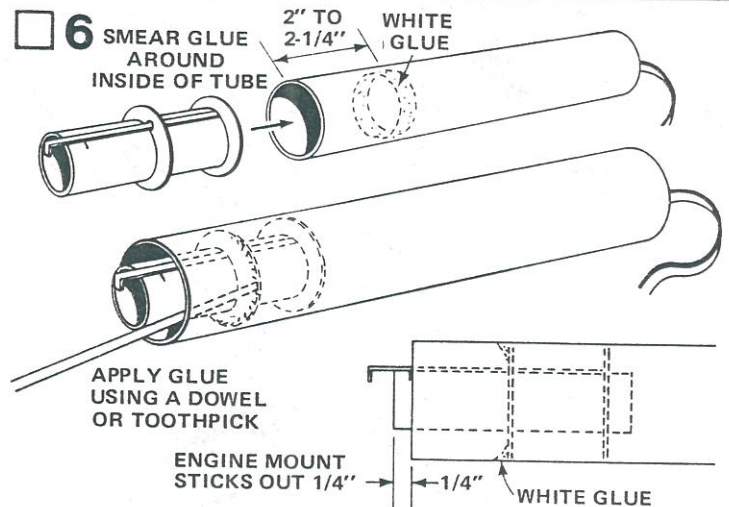
CHECK FIT RINGS IN TUBE



When the glue on the engine mount has completely dried, check the fit of the rings inside the body tube. The rings should slide easily into the tube. If the fit is too tight, sand the edges of the rings until they slide easily into the tube.

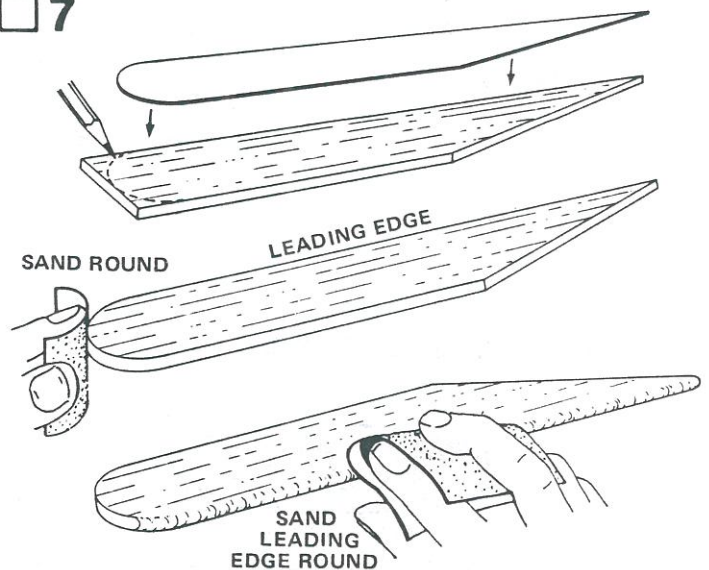
6

SMEAR GLUE AROUND INSIDE OF TUBE



The engine mount will be glued into place so that the rear of the tube projects out of the body tube 1/4" (the rear most mark drawn in step 1). Apply a ring of glue around the inside rear end of the body tube about 2" to 2-1/4" from the end of the tube. Using one smooth motion, slide the engine mount, engine block first, into the tube so that the mark is even with the rear of the body tube. Do not pause while inserting the engine mount as the glue may "lock" with the mount in the wrong position. Finish the installation by applying glue to the joint between the rear ring and the body tube. Use a dowel or toothpick to apply the glue.

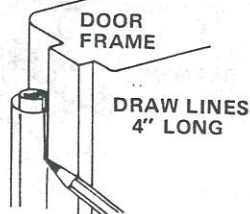
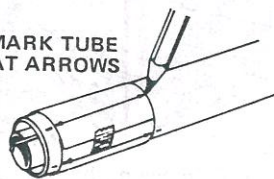
7



Carefully cut out the fin guide from the pattern sheet (part H). Lay the guide on the balsa fin stock pieces (part I) and trace the curve of the fin guide onto each of the three fin units. Sand each of the fins to the curved line as shown. Also sand round the leading edge of each fin as shown.

8

MARK TUBE AT ARROWS

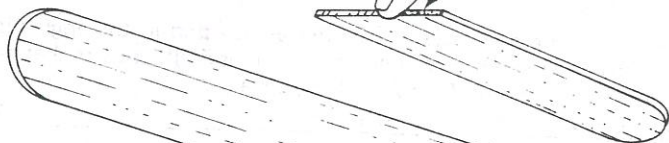


Cut out the body tube marking guide from the pattern sheet. Wrap the guide tightly around the rear of the body tube. Align the guide marks and tape the guide together. Line up the launch lug line with the engine hook. Mark the fin lines and the launch lug line on the body tube. Remove the guide. Place the body tube against the inside edge of a door frame as shown. Draw each line about 4" forward from the rear of the tube.

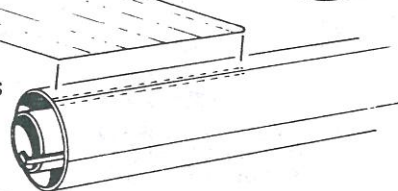
9

RUB GLUE INTO ROOT EDGE OF EACH FIN

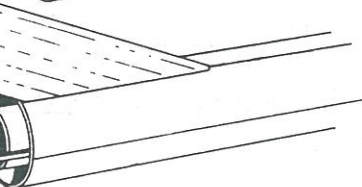
WHITE GLUE



GLUE FINS ON ALIGNMENT LINES

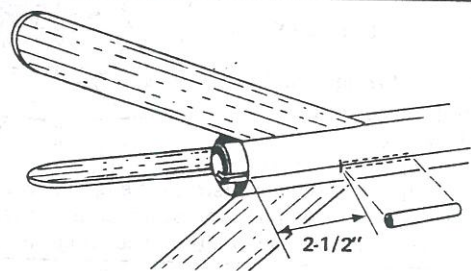


FINS EVEN WITH END OF BODY TUBE



Rub glue into the root edge of each fin and allow to dry. Apply glue to the fins again and position the fins on the alignment lines in the positions shown. Adjust the fins so that they project straight along the body tube and the rear of the root edge is even with the end of the body tube. Do not set the rocket on its fins while the glue is wet.

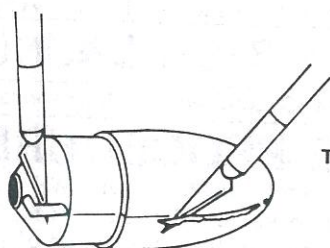
10



Glue the launch lug (part J) to the rocket body tube on the launch lug line. The rear of the launch lug should be 2-1/2" from the rear of the body tube. Align the launch lug straight along the tube.

11

CLEAR EYELET

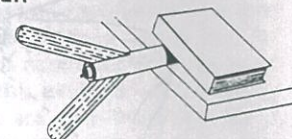
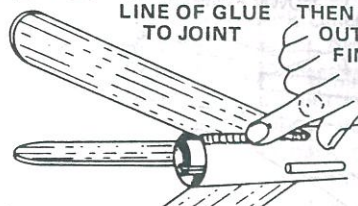


TRIM EXCESS PLASTIC

Trim or sand any excess plastic from around the sides of the nose cone (part K). Use a sharp knife to remove any excess plastic from the inside of the eyelet at the rear of the nose cone. Wash the nose cone with lukewarm soapy water, rinse well, and let dry.

12

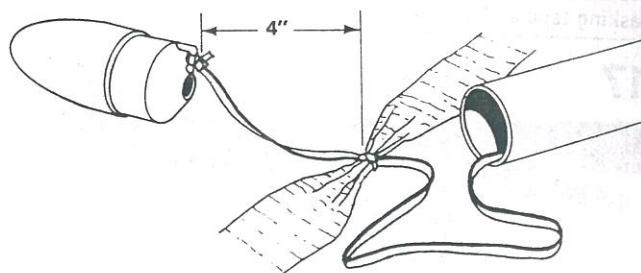
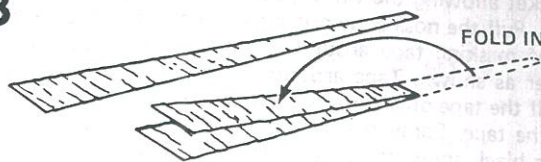
APPLY THIN LINE OF GLUE TO JOINT THEN SMOOTH OUT WITH FINGER



When the glue on the fin joints has dried, apply a glue reinforcement to each fin/body tube joint. Holding the model level, apply a line of glue to both sides of each fin joint and on both sides of the launch lug. Smooth out the glue with your finger. **IMPORTANT** - Support rocket on table edge as shown until the glue dries.

13

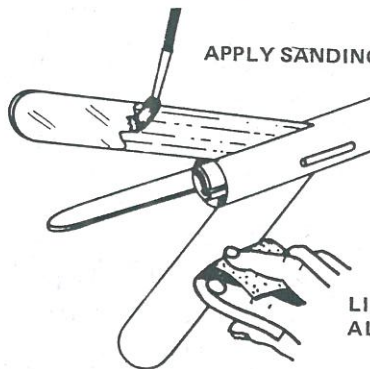
FOLD IN HALF



Unfold the streamer (part L) and refold lengthwise to find its center. Tie the shock cord around the middle of the streamer so that there is about 4" of shock cord on the free end. Tie the free end of the shock cord to the nose cone.

14

APPLY SANDING SEALER



LIGHTLY SAND ALL FINs

Proper application of sanding sealer makes the rocket look better and reduces drag so that the rocket will fly higher. However, this step is not essential to make a safe, attractive rocket. Apply a coat of sanding sealer to each fin. When sealer is dry, lightly sand all the sealed surfaces. Repeat sealing and sanding process until balsa grain is filled and smooth.

15

SHAKE CAN BEFORE SPRAYING

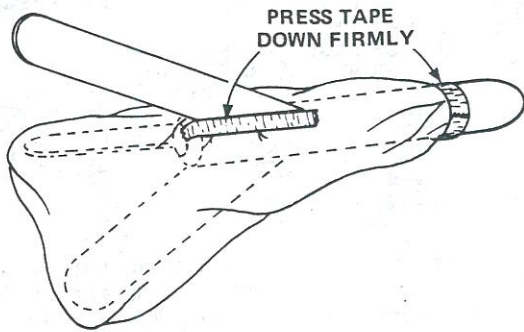
USE ROLLED PAPER FOR ROCKET HOLDER



HOLD CAN STRAIGHT UP AND SPRAY IN LONG, SMOOTH "STROKES"

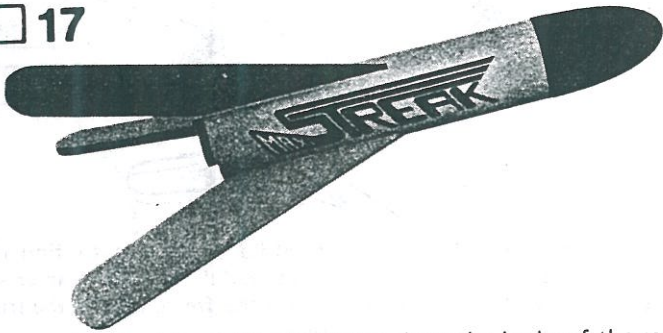
Insert a sheet of rolled up newspaper into the rear of the rocket as shown. Apply two or three coats of gloss orange spray paint to the entire model. Allow each coat to dry thoroughly before applying the next coat.

□ 16



Allow the model to dry thoroughly (overnight is best). Cut a slit in the plastic packing bag about 7" long. Slide the bag over the rear of the rocket allowing the fin opposite the launch lug to stick out of the slit. Pull the nose cone out slightly from the body tube. Wrap a piece of masking tape around the plastic bag and the nose cone shoulder as shown. Tape around the fin and the plastic as shown. Press all the tape down firmly so that the paint will not seep underneath the tape. Spray the fin and nose cone with several light coats of gloss black spray paint. After the model is dry, carefully remove the masking tape and plastic bag.

□ 17



Apply the decal (part M) lengthwise along the body of the rocket to the right side of the black fin. Dip the decal in the water for 15 – 30 seconds. Hold the decal until it starts to uncurl or the decal slides easily off the backing sheet. Use a brush to wet the model where the decal will be applied. Slide the decal off the backing sheet into place on the model. Position the decal and blot away any excess water with a damp cloth. Smooth out all wrinkles and air bubbles before the decal dries. Allow the decaled model to dry overnight. Apply a final coat of gloss clear spray paint to the decaled area to protect the decal.

LAUNCHING COMPONENTS

To launch your rocket you will need the following items:

- An Estes model rocket launching system
- Flame proof recovery wadding (Estes Cat. No. 2274)
- Estes D11-9, D12-5, or D12-7 model rocket engines. Use a D12-5 engine for your first flight.

Be sure to follow the HIAA-NAR* Model Rocket Safety Code when carrying out your model rocket activities.
*HIAA – Hobby Industry Association of America
NAR – National Association of Rocketry

COUNTDOWN CHECKLIST

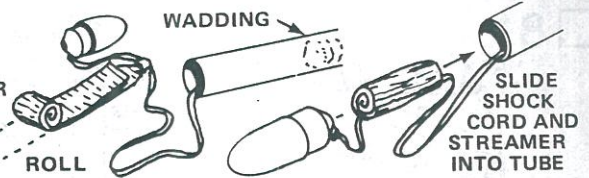
T-13



Pack 5 or 6 squares of loosely crumpled recovery wadding into the body tube. Usually this will fill the body tube for a distance equal to about 1-1/2 times its diameter.

T-12

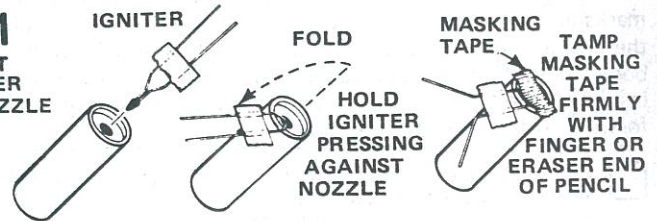
FOLD STREAMER IN HALF TWICE



Fold the streamer in half lengthwise. Fold again, then roll streamer tightly until the streamer fits loosely into the rocket body. Pack the shock cord neatly into the rocket body. Slide nose cone into place.

T-11

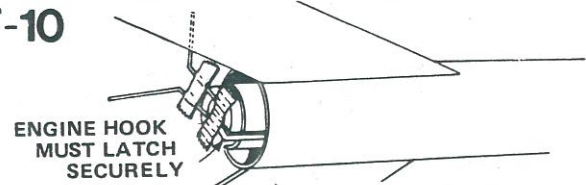
INSERT IGNITER IN NOZZLE



Select an engine and install an igniter as directed in the engine instructions. The engines recommended for use with this rocket are the D11-9, D12-5, and D12-7 made by Estes.

Use a D12-5 engine for your first flight.

T-10

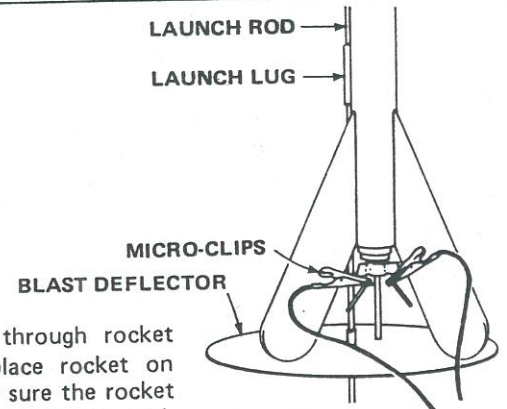


Insert engine into rocket engine mount. Engine hook must latch securely over end of the engine.

T-9

Disarm the launch panel – REMOVE SAFETY KEY!

T-8



Slide launch rod through rocket launch lug and place rocket on launch pad. Make sure the rocket slides freely on the launch rod.

Clean the micro-clips and attach them 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.

T-7

Clear the launch area. Alert recovery crew and trackers. Check for low flying aircraft and unauthorized persons in the recovery area.

T-6

Arm the launch panel – INSERT SAFETY KEY!

-5-4-3-2-1-LAUNCH!!

Repeat Countdown Checklist for each flight.

MISFIRE PROCEDURE

Disarm the launch panel. Wait one minute before approaching the rocket on the launch pad. Remove the rocket, clean the igniter residue from the nozzle of the engine, and carefully install a new igniter. Repeat the Countdown Checklist.

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.



ESTES IND.
PN 37528