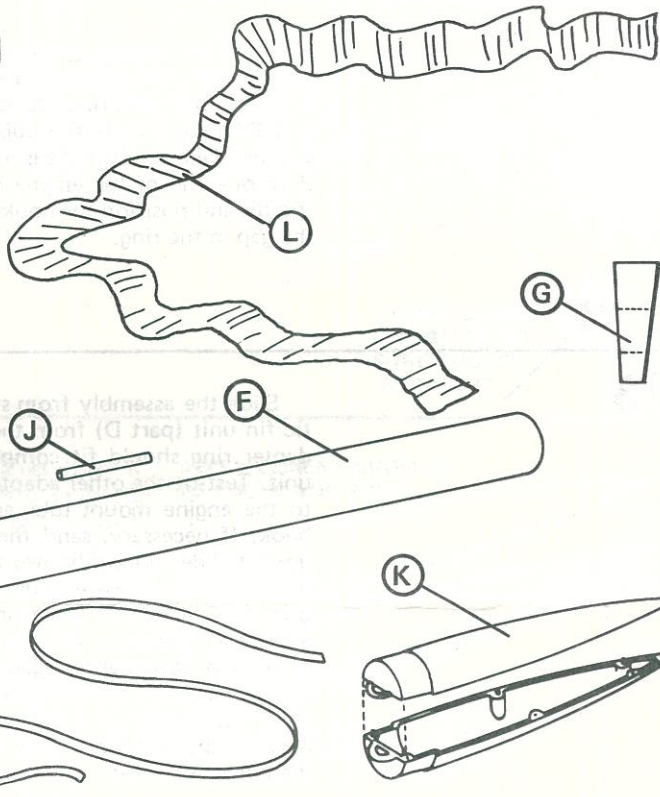
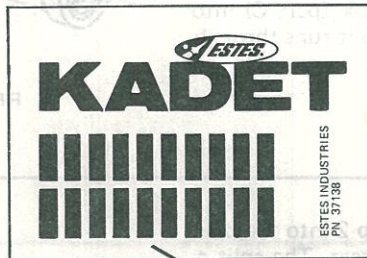


ESTES KADET

KIT NO. 1328

Skill Level 1
This kit recommended
for Beginning Rocketeers.



PARTS LIST

A 1	Split Adapter Ring (type AR-2050S)	80425	G 1	Shock Cord Mount (type SCM-50)	84444
B 1	Engine Mount Tube (type BT-20J) 2-3/4"	30326	H 1	Shock Cord (type SC-1) 18"	85730
C 1	Engine Hook (type EH-2)	35025	I 1	Decal Sheet (type KD-1)	37138
D 1	Plastic Fin Unit (type PRP-1G)	32486	J 1	Launch Lug (type LL-2B) 2-3/8"	38178
E 1	Adapter Ring (type AR-2050)	30164	K 2	Nose Cone Halves (type PRP-1H)	32487
F 1	Body Tube (type WBT-50W) 9-1/2"	30373	L 1	Streamer (type RS-20)	38278

TOOLS AND MATERIALS

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

1. White Glue (Titebond, Elmer's or similar).
2. Plastic Model Cement (Use cement made for styrene plastic models.).

3. Scissors.
4. A sharp model knife, or a single-edge razor blade.
5. A ruler.
6. A pencil

IMPORTANT ASSEMBLY TIP

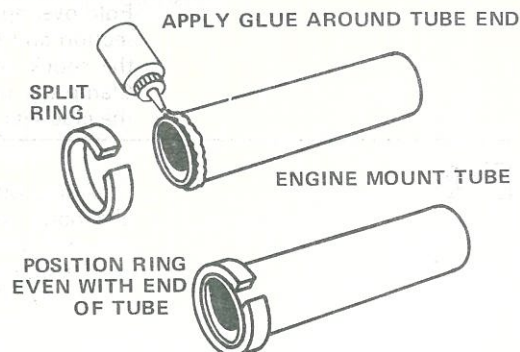
Read all instructions before beginning work on your model. Make sure you have all parts and materials. When you are thoroughly familiar with the assembly procedure, begin construction. Check off each step as you complete. In

each step, test-fit the parts together before applying any glue. If some part doesn't fit properly, sand lightly as required for precision assembly.

ROCKET ASSEMBLY

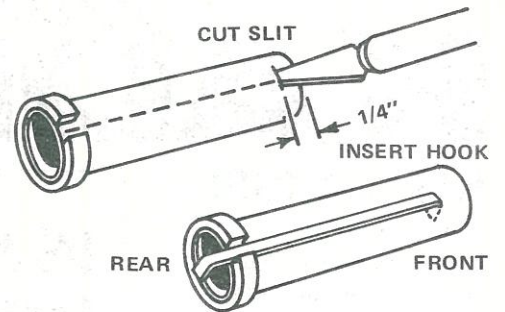
1

Glue the split adapter ring (part A) to the engine mount tube (part B). Apply a line of white glue around the outside of the engine mount tube at one end. Position the split ring over the glue so the end of the ring is even with the end of the tube and press the ring snugly around the tube. Wipe away any extra glue. Be sure to clean the extra glue from the gap in the ring.



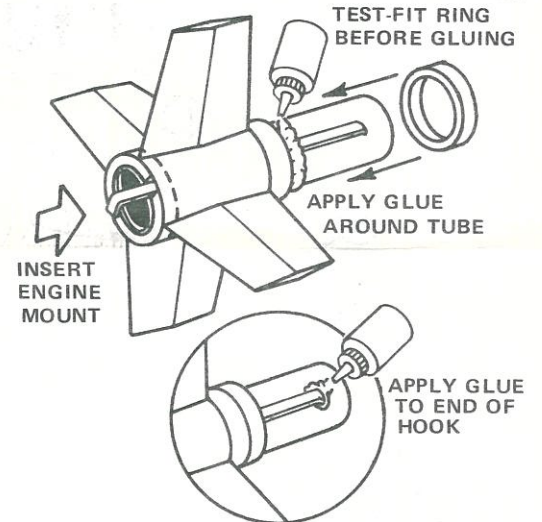
□ 2

Mark the engine mount tube 1/4" from the end opposite the ring and on a straight line from the gap in the split ring. Use a sharp knife to cut a 1/8" long slit in the tube at the mark as shown. Make sure the slit is in line with the gap. Push one end of the engine hook (part C) into the slit and position the hook so it runs through the gap in the ring.



□ 3

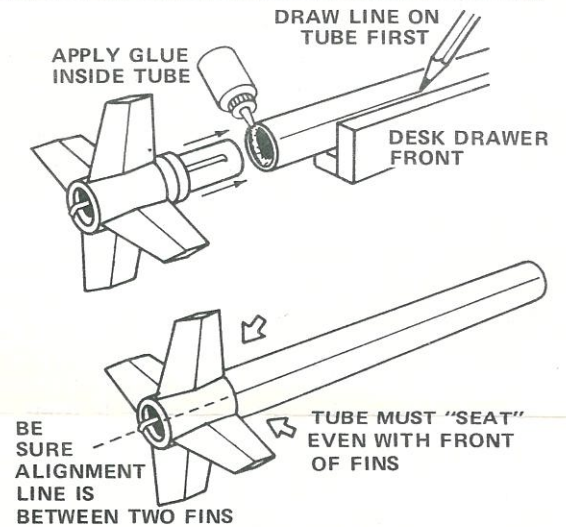
Slide the assembly from step 2 into the plastic fin unit (part D) from the rear. The split adapter ring should fit completely into the fin unit. Test-fit the other adapter ring (part E) onto the engine mount tube and over the engine hook. If necessary, sand the inside of the ring until it slides smoothly over the tube and hook. Apply a line of white glue around the engine tube 1/4" ahead of the front of the fin unit. Slide the ring onto the engine tube, over the hook, and back tightly against the fin unit. Do not pause while installing the ring or the glue may "grab" with the ring in the wrong place. Apply a drop of white glue to seal the front of the hook in the slit.



□ 4

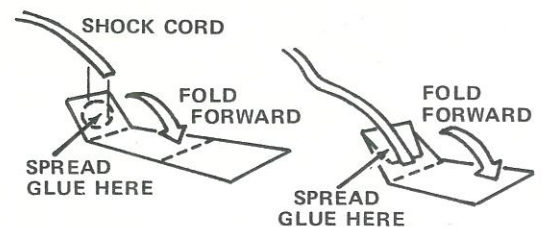
Draw a straight line along the entire length of the body tube (part F). The edge of a desk drawer or a door frame makes a suitable guide for drawing the line. Test-fit the fin unit assembly in the body tube end. The adapter ring should fit smoothly into the tube.

Spread white glue around the inside of either body tube end. The glue should cover an area extending 1/2" into the tube. Line up the tube and fin unit so the tube alignment line is between two fins, and insert the front of the fin unit into the tube end with the glue. The tube should "seat" evenly and tightly against the fins on the fin unit.



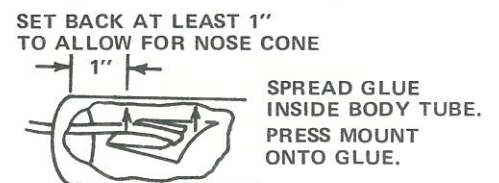
□ 5

Cut out the shock cord mount (part G). Crease it on the dotted lines by folding. Spread white glue on the first section (1) and lay the end of the shock cord (part H) into the glue. Fold over and apply glue to the back of the first section and the exposed part of section 2. Lay the shock cord as shown and fold over again. Clamp the unit together with your fingers until the glue sets.



□ 6

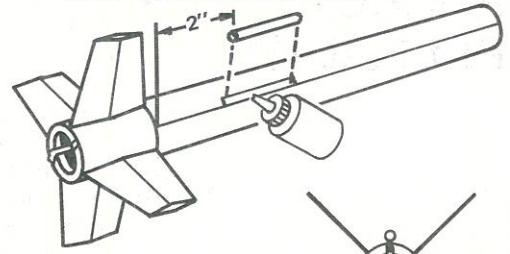
Apply white glue to the inside of the front of the body tube to cover an area 1" to 2" from the end. The glued area should be the same size as the shock cord mount. Press the mount into the glue as shown. Hold it until the glue sets.



7

Glue the launch lug (part J) to the body tube 2" from the front of the fin unit. (Use white glue.) Sight along the tube to be sure the launch lug is straight on the body. After the glue is dry, erase the pencil line still showing on the tube.

GLUE LAUNCH LUG ON LINE



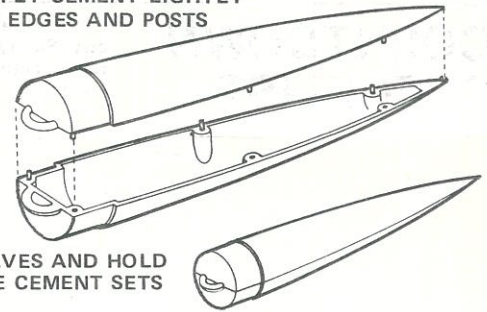
SIGHT ALONG
TUBE TO BE
SURE LUG IS
STRAIGHT



8

Cement the two nose cone halves (part K) together using plastic model cement. Be careful to not use too much or you will have a sloppy-looking joint. Make sure the alignment pins on the inside of the cone fit completely into their matching holes.

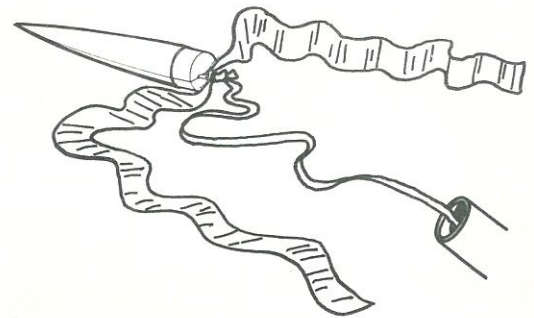
APPLY CEMENT LIGHTLY
TO EDGES AND POSTS



JOIN HALVES AND HOLD
WHILE CEMENT SETS

9

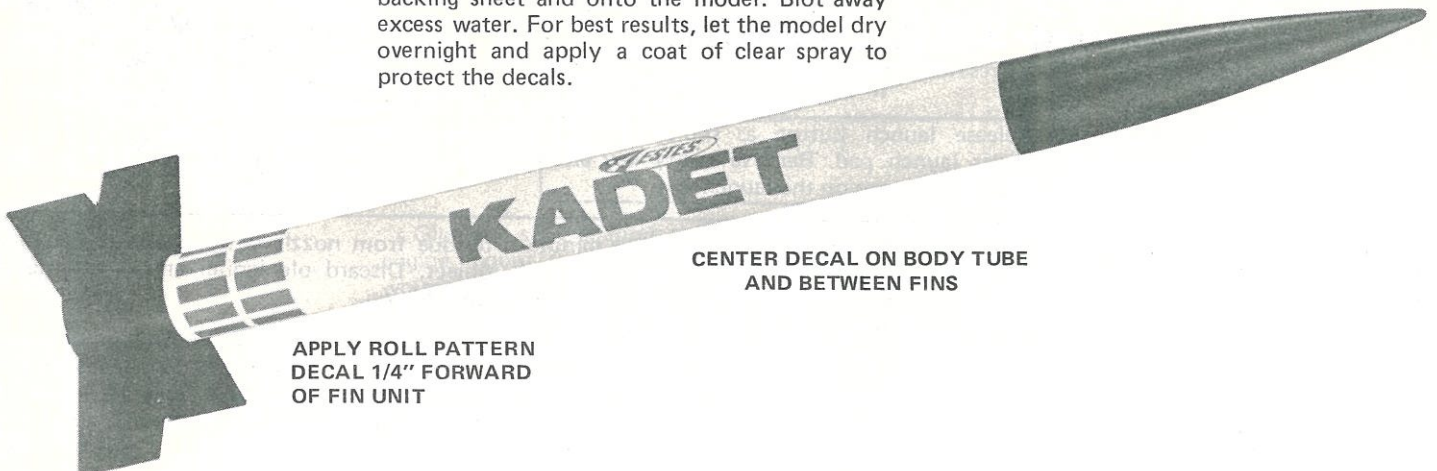
After the glue on the rocket has dried enough so it can be safely handled, tie the free end of the shock cord to the nose loop. Pass one end of the streamer (part L) through the nose loop and continue to pull the streamer until its length is centered in the loop. The streamer need not be tied as it will stay centered in the loop due to its own friction.



10

Apply decals, (part I). Cut out each decal, dip it in lukewarm water for 10 seconds, and hold it until it uncurls. Slip the decal off the backing sheet and onto the model. Blot away excess water. For best results, let the model dry overnight and apply a coat of clear spray to protect the decals.

CENTER DECAL ON BODY TUBE
AND BETWEEN FINIS

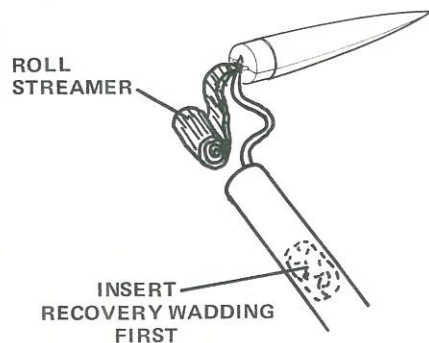


APPLY ROLL PATTERN
DECAL 1/4" FORWARD
OF FIN UNIT

ROCKET PREFLIGHT

T-13 Loosely pack four squares of flameproof wadding into the body tube from the shock cord end. Fold the streamer in half lengthwise from where it is attached to the nose loop. Roll the streamer compactly enough to enter the body tube easily. Push the rolled streamer down into the body tube on top of the wadding.

T-12 Pack the shock cord neatly into the tube and slide the nose cone into place. The nose cone should separate easily from the rocket body tube, but should not be extremely loose. If it is too tight, sand the inside of the body tube end and the shoulder of the nose cone with extra fine sandpaper. If the nose cone is too loose, add a wrapping of transparent tape or masking tape to the shoulder of the nose cone.



COUNTDOWN CHECKLIST

Be sure to follow the *HIAA-NAR Model Rocketry Safety Code when carrying out all your model rocket activities.

*HIAA-NAR -- Hobby Industry Association of America
-- National Association of Rocketry

T-11 Select an engine and install an igniter. (Use A8-3 engine for your first flight.)

[11A] Cut tape to separate igniters. Do not remove tape from individual igniters.

[11B] Insert coated end of igniter into engine nozzle as far as possible. (Igniter must touch end of propellant in nozzle.)

[11C] Tape igniter in place with a short strip of ordinary masking tape. Spread ends of igniter about 1" apart as shown. Do not disturb tape on igniter.

T-10 IMPORTANT: Remove safety key from launch controller. Insert engine into rocket.

T-9 Remove rod safety cap. Place rocket on launch pad. Slide the rocket's launch lug over the end of the launch rod and lower the rocket in place, above blast deflector. Make sure the rocket slides freely on launch rod.

T-8 Attach micro-clips to igniter ends. (For maximum ignition reliability, attach clips as close to engine nozzle or igniter tape as possible.) CLIPS MUST NOT TOUCH EACH OTHER OR METAL BLAST DEFLECTOR. Be sure micro-clip wires will not snag on rocket fins.

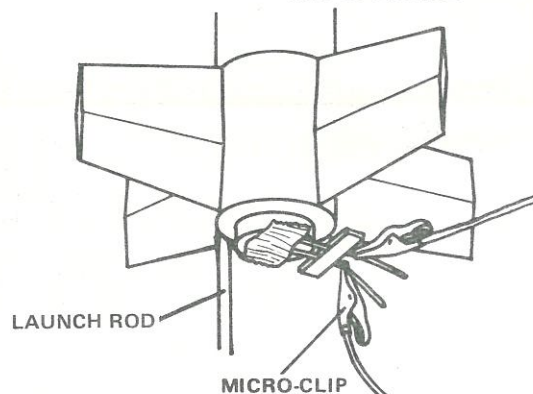
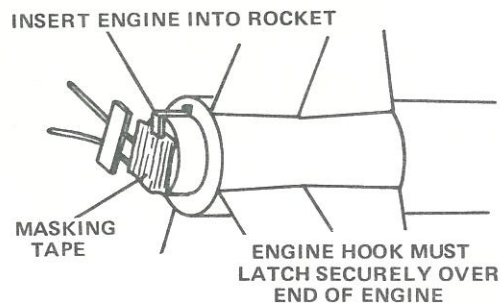
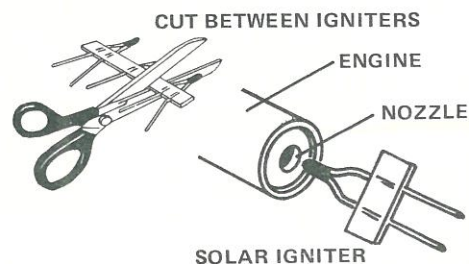
T-7 Alert all personnel that rocket is ready for launch. Check for low flying aircraft and make sure there is no dry grass or other burnable material near the launch pad.

T-6 Arm the launch controller -- INSERT SAFETY KEY -- Start final countdown.

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

Press launch button and hold until Kadet lifts off.

Release launch button as soon as rocket leaves launch pad. Remove safety key and install safety cap on the launch rod.



MISFIRE PROCEDURE

If engine does not ignite, wait one minute before approaching rocket. Remove safety key from controller, disconnect micro-clips, and slide rocket off the launch rod. Clean igniter

residue from nozzle with toothpick or similar object. Discard old igniter and repeat Rocket Countdown.

RECOVERY PROCEDURE

After each flight, remove the used engine by springing the engine hook back and pulling on the end of the engine. Inspect the model to be sure that everything is in order and you're ready to prepare the rocket for another flight.

Clean the flat jaws of the micro-clips frequently to insure good contact with igniter. (An emery board, nail file, or sandpaper works well.)