

mini- **BRUTE** **AERO-HI**



- **SOUNDING ROCKET VEHICLE**
- **SCALE-LIKE APPEARANCE**
- **REALISTIC DECOR**
- **HIGH PERFORMANCE DESIGN**
- **OGIVE NOSE CONE**

SKILL LEVEL 1

1—Beginner 2—Intermediate 3—Craftsman 4—Advanced 5—Expert

SPECIFICATIONS

Length 11.6" (29.5 cm.)

Weight 0.75 oz. (21.2 g.)

Body Dia. 0.736" (18.7 mm.)

Parachute Recovery

RECOMMENDED ENGINES

1/4A3-2T 1/2A3-2T A3-4T

Use 1/4A3-2T for first flights.

Engines and launcher not included.

#0817

ESTES INDUSTRIES
PENROSE, COLO. 81240

Aero-Hi

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PARTS LIST

(A)	1	Nose Cone	BNC-20N
(B)	1	Body Tube	BT-20B
(C)	1	Engine Mount Tube	BT-5BJ
(D)	2	Centering Rings	.....	AR-520
(E)	1	Engine Hook	.....	EH-3
(F)	1	Launch Lug	.....	LL-2A
(G)	1	Die Cut Fin	.....	BF-0817
(H)	1	Decal	.....	KD-0817
(I)	1	Shock Cord	.....	SC-1
(J)	1	Parachute	.....	PK-10R
(K)	1	Screw Eye	.....	SE-2
(L)	1	Dummy Engine	.....	EC-8
(M)	1	Display Stand Card	.....	09014
(N)	1	Instructions with Shock Cord Mount and Marking Guide	.....	0817/2328-72

In addition to the materials above you will need scissors, a sharp hobby knife or single edge razor blade, sandpaper, masking tape, sanding sealer, and paint or dope. (Enamel based spray paint works best.)

NOTE:

Read the instructions carefully before beginning work on your rocket. Then start construction, following each step in order, checking off each step as it is completed.

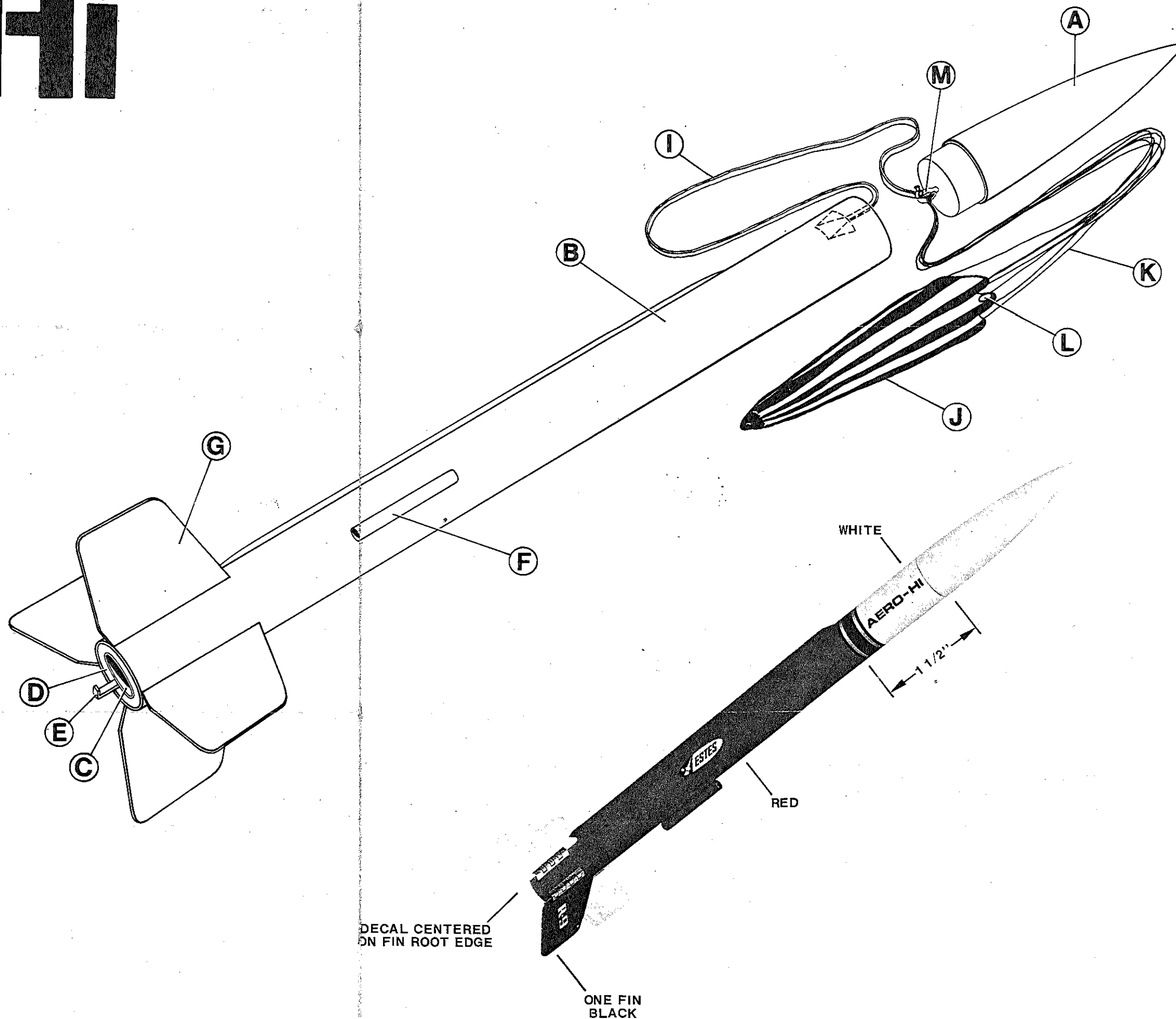
WARRANTY

ESTES model rocket engines, kits, launch systems, and supplies are guaranteed against manufacturing defects. Any part or item found defective will be repaired or replaced without charge providing the defective part is returned postpaid to Estes Industries' Customer Service Department, Penrose, Colorado 81240. For fastest service, please send only the defective part.



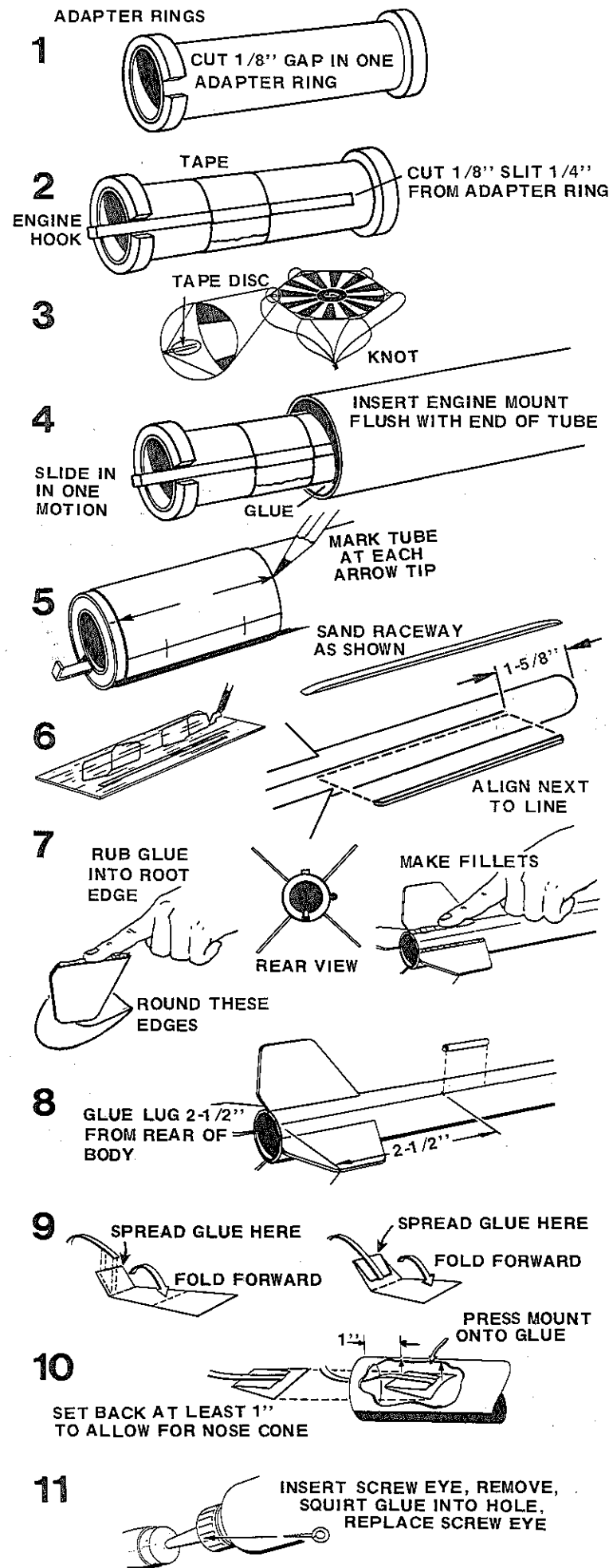
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ASSEMBLY INSTRUCTIONS

- 1 Cut a 1/8" gap in one adapter ring. Glue it to one end of the engine mount tube. Glue the other ring on the other end as shown.
- 2 Cut a 1/8" slit in the engine mount tube, directly in line with the gap in the split ring and 1/4" from the other ring. Insert one end of the engine hook into the slit and lay the other end through the gap in the split ring. Wrap a layer of tape around the tube to hold the hook and apply glue to the slit. Set entire unit aside to dry.
- 3 Locate the centers of the shroud lines and knot the lines together at this point. Make sure the tape discs hold the shroud lines securely on the parachute.
- 4 Smear glue around the inside of the body tube about 1" from one end. Quickly push the engine mount tube in until the rear ring is even with the end of the body tube.
- 5 Cut out marking guide from instructions near Misfire Procedure, wrap it around the body tube, and mark body tube at each arrow point. Remove guide and connect the matching front and rear marks with a straight line. Extend the launch lug line up the body about 4 inches and extend the raceway line the entire length of the body.
- 6 Use a sharp knife to help remove the fins from the die-cut sheet. Sand the fins to shape. Separate the raceway, sand as illustrated, and glue in place along the raceway line on the body.
- 7 Rub a priming coat of glue into the root edge of each fin and allow to dry. Glue the fins to the body tube directly beside the alignment lines with the rear of the root edge even with the rear of the body tube. Align the fins so they project straight away from the body. After the joint is completely dry, apply a glue fillet.
- 8 Glue the launch lug to the body on the alignment line as shown, 2-1/2" from the rear of the body tube. Make sure the lug is aligned parallel to the body.
- 9 Cut out the shock cord mount from instructions near Misfire Procedure. Pre-fold it on the dotted lines. Apply glue to section 1 and lay the shock cord end onto the glue. Fold this first section over. Spread glue over 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.
- 10 Apply glue to the inside of the body tube at the front over an area about 1" to 1-3/4" from the end. The glued area should be the same size as the shock cord mount. Press the mount into the glue and hold it until the glue sets.
- 11 Insert the screw eye into the base of the nose cone. Remove and squirt a small amount of glue into the hole. Re-insert the screw eye.
- 12 Tie the free end of the shock cord and shroud lines to the screw eye.



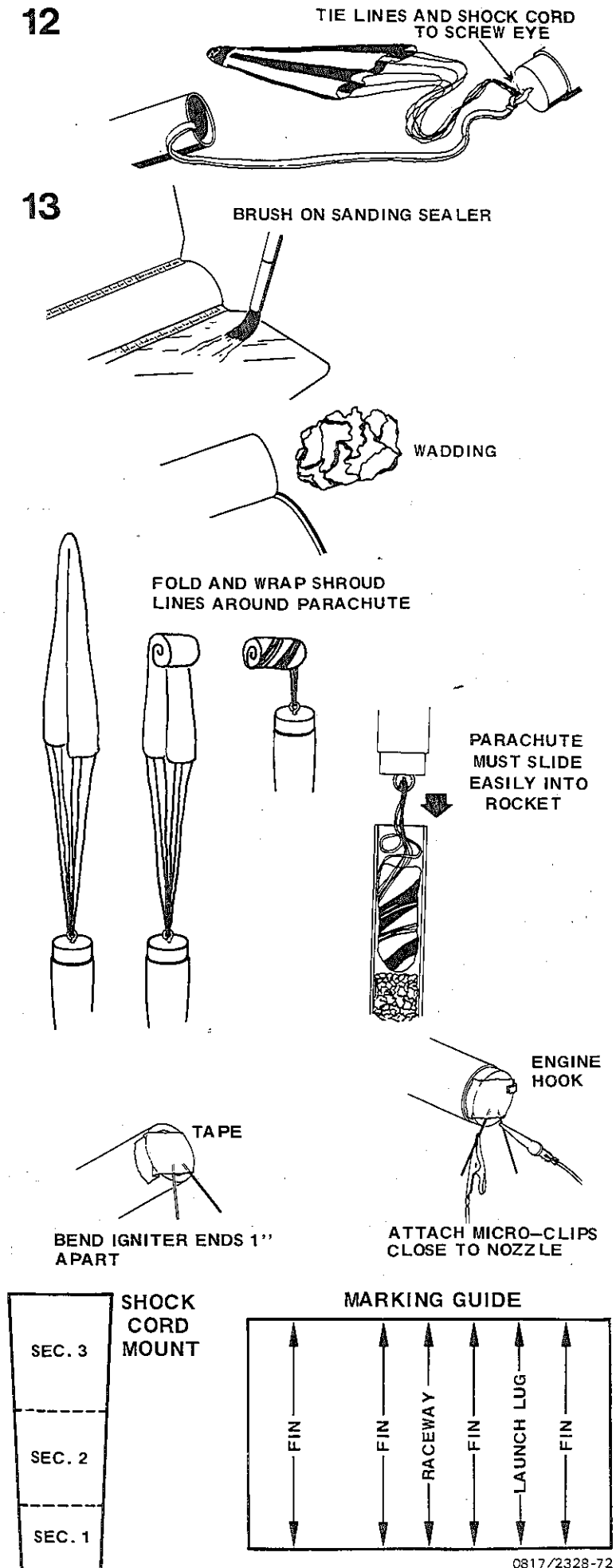
- 13 Apply two or more coats of sanding sealer to all balsa surfaces. Sand lightly with extra fine sandpaper between coats. Repeat until all pores are filled and the surfaces smooth. Give the rocket a spray base coat of white. Follow with red and black trim as shown in the decor layout photo.
- 14 Assemble the display stand according to the instructions on the back of the card.

COUNTDOWN CHECKLIST

- 14. Pack two squares of crumpled recovery wadding loosely into body tube.
- 13. Fold the parachute into a triangular shape. Roll 'chute tightly as shown and wrap shroud lines around it. If 'chute is too large, unroll and repack until it slides easily into the rocket. A very tight fit may prevent parachute from ejecting properly.
Pack shock cord neatly into rocket. NOTE: DO NOT pack parachute until you are actually ready to launch. For maximum parachute reliability, lightly dust the 'chute with ordinary talcum powder before each flight, especially in colder weather.
- 12. Slide nose cone into place. Nose cone should separate easily from rocket body tube, but not be extremely loose. If fit is too tight, sand inside of body tube end and shoulder of nose cone with fine sandpaper.
If nose cone is too loose, add a wrapping of transparent tape or masking tape to the shoulder of the nose cone.
- 11. Select an engine and install an igniter as directed in the engine instructions. Engines recommended for use with this rocket are 1/4A3-2T, 1/2A3-2T and A3-4T. Use 1/4A3-2T engine for first flight.
- 10. Insert engine into rocket. Engine hook must latch securely over the end of the engine.
- 9. Disarm the launch panel - remove safety key.
- 8. Place rocket on launch pad making sure rocket slides freely on launch rod. Clean the micro-clips and attach them to the igniter.
- 7. Clear the launch area, alert recovery crew and trackers. Check for low flying aircraft and unauthorized persons in the recovery area.
- 6. Arm the launch panel - insert safety key.
- 5 4 3 2 1 LAUNCH!!

MISFIRE PROCEDURE

Occasionally the igniter will heat and burn in two without igniting the engine. This is almost always caused by a failure to install it correctly. Disarm the launch panel, remove the model, clean the igniter residue from the nozzle, and install a new igniter. Follow the launching procedure again.



RACEWAY

LEADING

LEADING

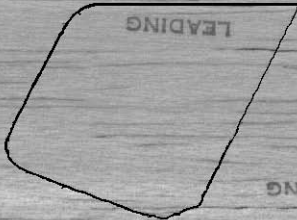


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LEADING

LEADING





8-9 R-9



AERO-HI AERO-HI

KD-0817 ESTES INDUSTRIES
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GLUE
CASING
HERE

MODEL BUILT BY:

DISPLAY STAND ASSEMBLY

1. Prefold sides and tabs on creases.
2. Glue tabs UNDER sides using white glue.
3. Glue paper casing to assembled base.
4. Use black marking pen to darken casing and to touch up white base edges.
5. Add model and builder's name.

