





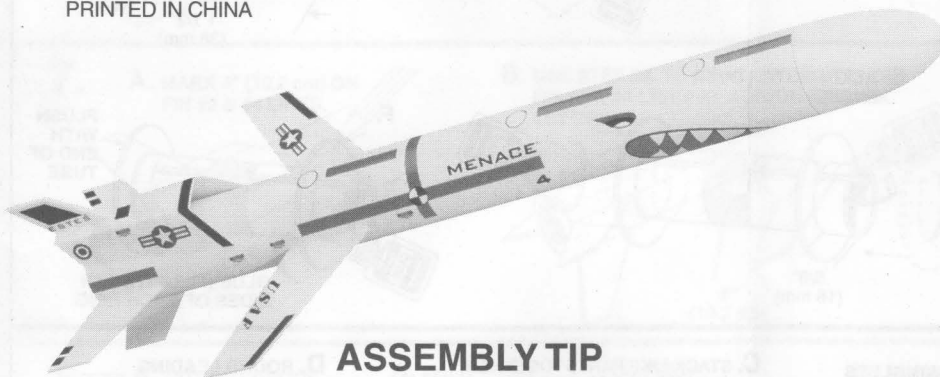
www.estesrockets.com

Estes Industries
1295 H Street
Penrose, CO 81240

PRINTED IN CHINA

MENACE™

FLYING MODEL ROCKET KIT EST 2173



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.

PARTS

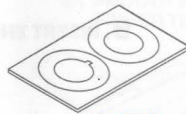
Locate the parts shown below and lay them out on the table in front of you. **DO NOT USE THIS DRAWING TO ASSEMBLE YOUR ROCKET.**



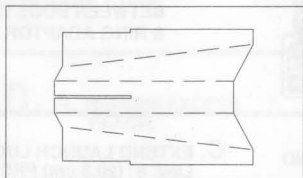
BT-60 14.75"
Body Tube (1)
(030395)



BT-20 2.75"
Blue Engine Mount Tube (1)
(030326-1)



AR-2060
Ring Adapter Card (1)
(030128)



Scoop (Die-cut paper) (1)
(030130) **67 lb. Cardstock**



Engine Hook (1)
(035021)



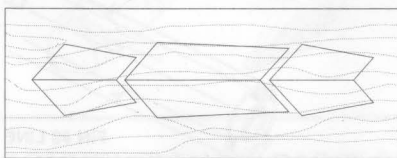
1/8" x 2 3/8"
Launch Lug (1)
(038178)



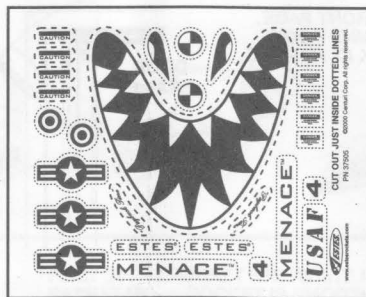
1/4" x 24" Elastic Shock Cord (1)
(038383)



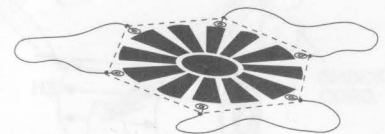
Same as Big Bertha
Nose Cone (1)
(071020)



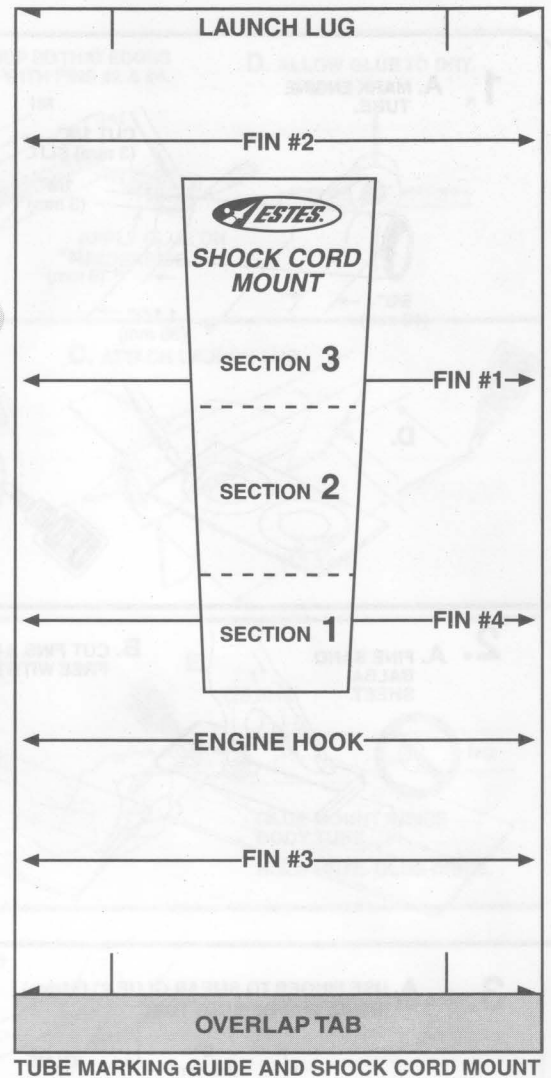
Die-cut Balsa Sheet (1)
(032243) **3/32" Balsa**



Decal Sheet (1) (037505)

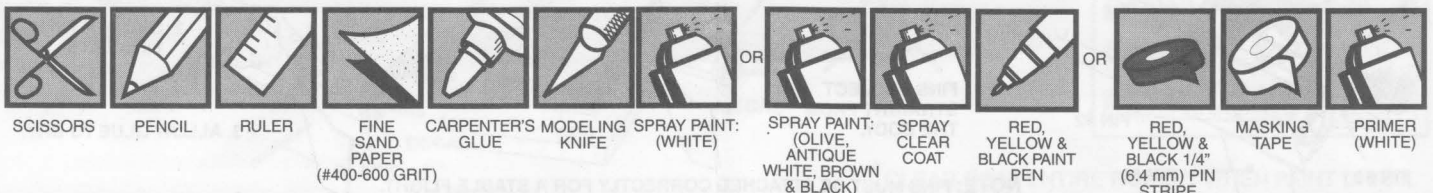


Assembled Parachute
18" (46 cm) (1)
(035802)

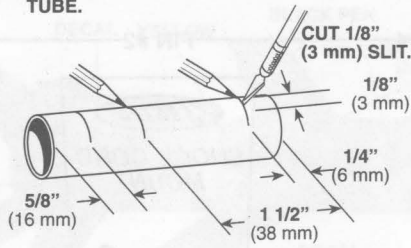


TUBE MARKING GUIDE AND SHOCK CORD MOUNT

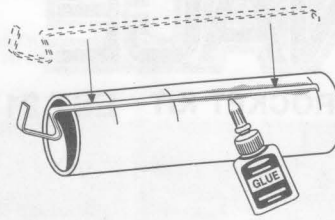
SUPPLIES

 In addition to the parts included in the kit you will also need:

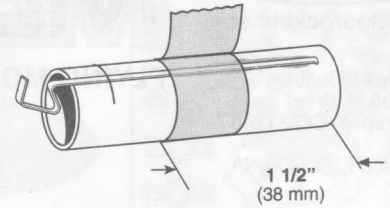
1. A. MARK ENGINE TUBE.



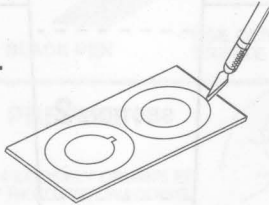
B. POSITION HOOK.



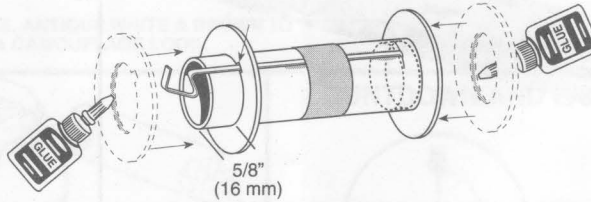
C. WRAP MASKING TAPE 3 TIMES AROUND TUBE & HOOK AT 1 1/2" (38 mm) MARK.



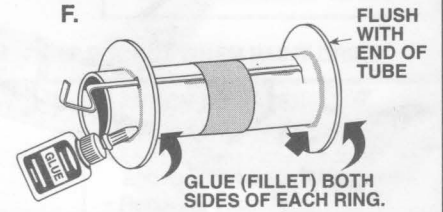
D.



E. ALIGN NOTCH OVER ENGINE HOOK.



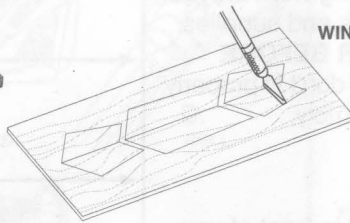
F.



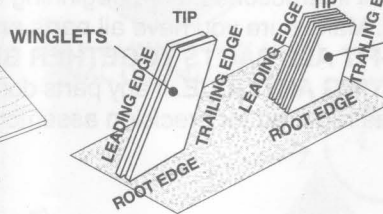
2. A. FINE SAND Balsa SHEET.



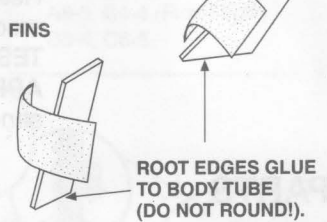
B. CUT FINS & WINGLETS FREE WITH KNIFE.



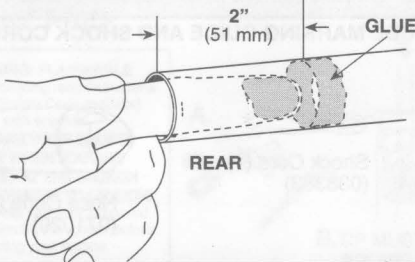
C. STACK LIKE PARTS TOGETHER & SAND EDGES SMOOTH.



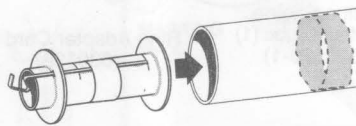
D. ROUND LEADING EDGES.



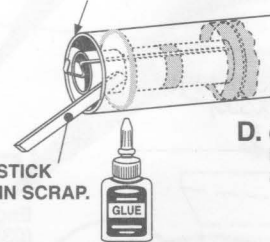
3. A. USE FINGER TO SMEAR GLUE 2" (51mm) INSIDE END OF BODY TUBE.



B. INSERT ENGINE MOUNT.

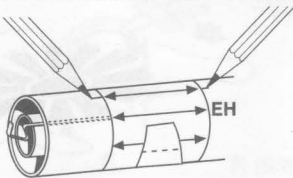


C. ENGINE MOUNT TUBE IS EVEN WITH END OF BODY TUBE.

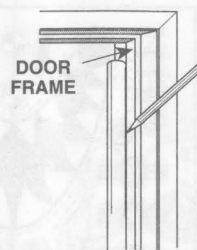


D. GLUE JOINT BETWEEN BODY TUBE & RING ADAPTOR.

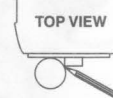
4. A. CUT OUT TUBE MARKING GUIDE FROM FRONT PAGE. ALIGN ENGINE HOOK (EH) LINE WITH ENGINE HOOK. TAPE GUIDE AROUND END OF TUBE, MARK AT ARROWS.



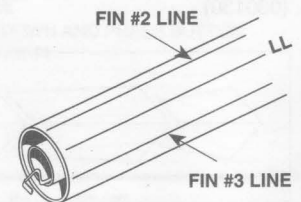
MARK LAUNCH LUG LINE "LL" AND ENGINE HOOK LINE "EH". REMOVE GUIDE.



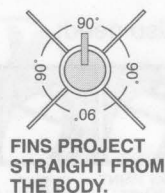
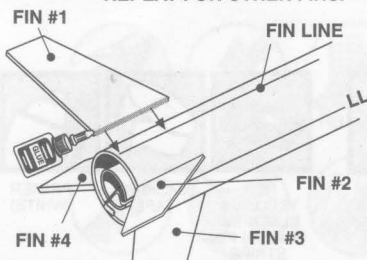
B. CONNECT FIN LINES AND EXTEND 8" (20.3 cm) FROM END OF TUBE.



C. EXTEND LAUNCH LUG LINE 8" (20.3 cm) FROM END OF TUBE.

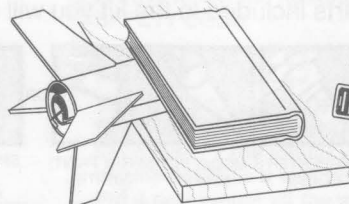


5. A. APPLY THIN LAYER OF GLUE. WAIT 1 MINUTE. APPLY 2ND THIN LAYER AND ATTACH FIN CENTERED ON FIN LINE. REPEAT FOR OTHER FINS.



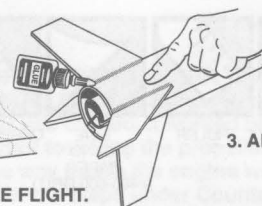
NOTE: FINS MUST BE ATTACHED CORRECTLY FOR A STABLE FLIGHT.

B. SUPPORT ROCKET UNTIL GLUE DRIES.



C. NOTE: PROCEED WITH THIS STEP ONLY AFTER THE GLUE ON FINS IS THOROUGHLY DRY.

1. APPLY GLUE FILLETS TO 4 FIN/BODY TUBE JOINTS.



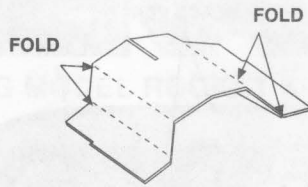
2. SMOOTH WITH FINGER TIP.

3. ALLOW GLUE TO DRY.

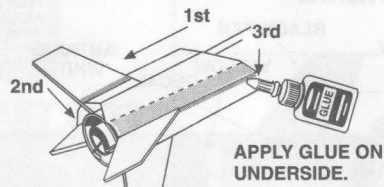
6. A. PUSH SCOOP FREE.
IF NEEDED, USE KNIFE TO HELP CUT FREE.



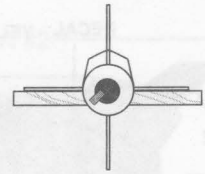
B. FOLD ON ALL DOTTED LINES.



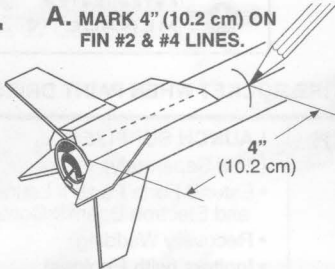
C. ATTACH SCOOP SO THAT EDGES ARE FLUSH WITH FINS #2 & #4.



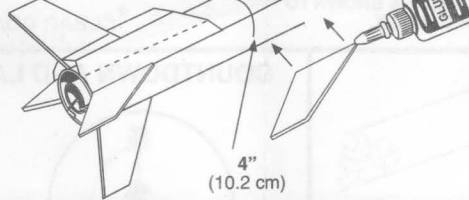
D. ALLOW GLUE TO DRY.



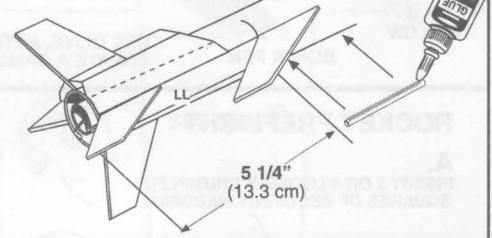
7. A. MARK 4" (10.2 cm) ON FIN #2 & #4 LINES.



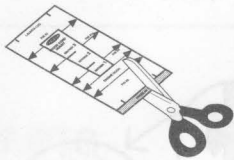
B. USE STEP 5A. TO ATTACH WINGLETS ON FIN #2 & #4 LINES AT 4" (10.2 cm) MARK. LET DRY.



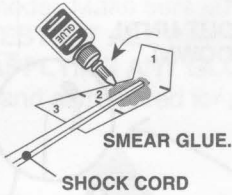
C. ATTACH LAUNCH LUG.



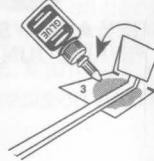
8. A. CUT OUT SHOCK CORD MOUNT FROM TUBE MARKING GUIDE.



B. FOLD FORWARD.



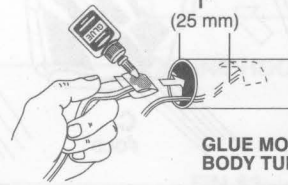
C. FOLD FORWARD.



D. SQUEEZE TIGHTLY.

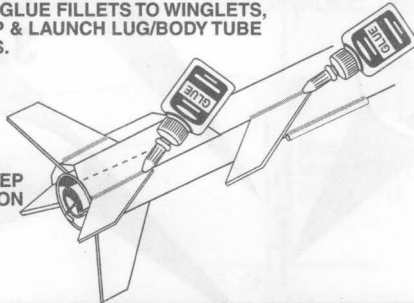


E.

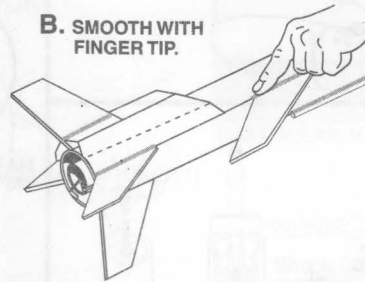


GLUE MOUNT INSIDE BODY TUBE. HOLD UNTIL GLUE DRIES.

9. A. APPLY GLUE FILLETS TO WINGLETS, SCOOP & LAUNCH LUG/BODY TUBE JOINTS.



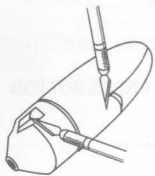
B. SMOOTH WITH FINGER TIP.



C. ALLOW GLUE TO DRY.

NOTE:
PROCEED WITH THIS STEP ONLY AFTER THE GLUE ON WINGLETS, SCOOP & LAUNCH LUG IS THOROUGHLY DRY.

10. A. REMOVE EXCESS FLASH.



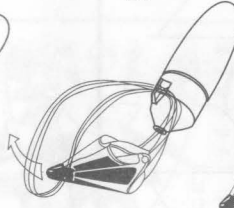
B.



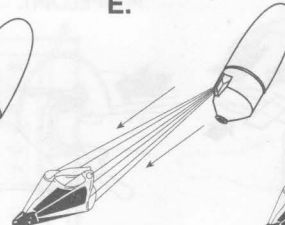
C.



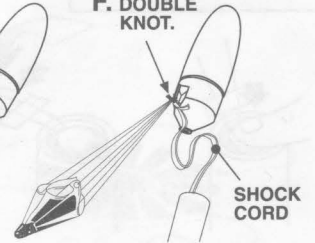
D.



E.



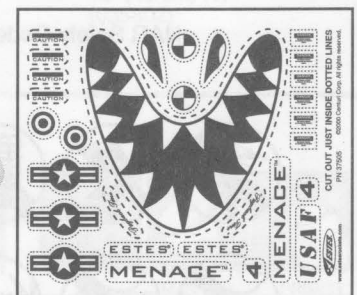
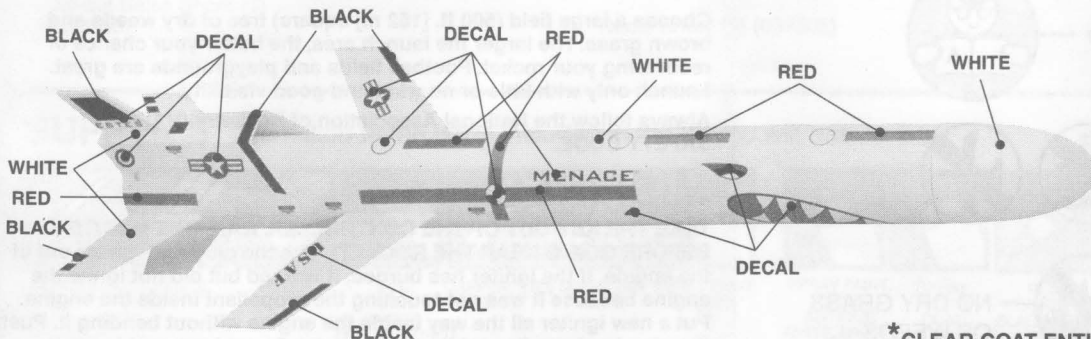
F. DOUBLE KNOT.



"CONVENTIONAL" PAINT SCHEME

FIRST SPRAY ROCKET WITH WHITE PRIMER, DRY AND SAND. REPEAT UNTIL ROCKET IS SMOOTH.

DECALS

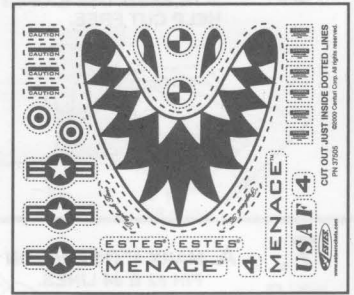
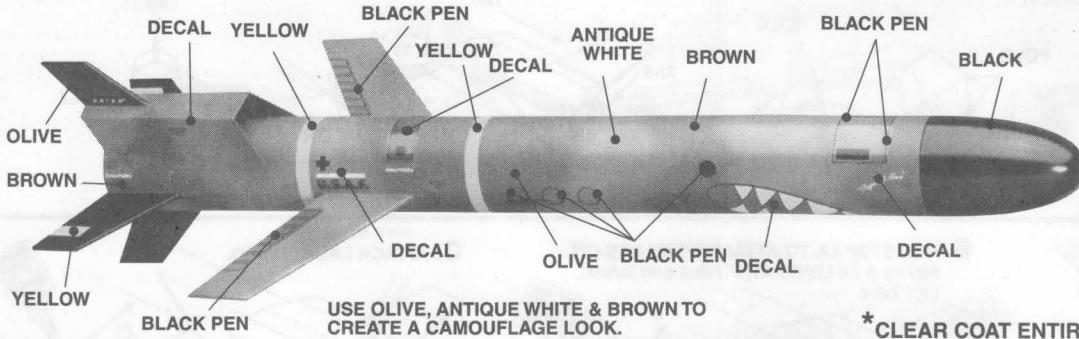


* CLEAR COAT ENTIRE ROCKET WHEN PAINT DRIES.

"WILD" PAINT SCHEME

FIRST SPRAY ROCKET WITH WHITE PRIMER, DRY AND SAND. REPEAT UNTIL ROCKET IS SMOOTH.

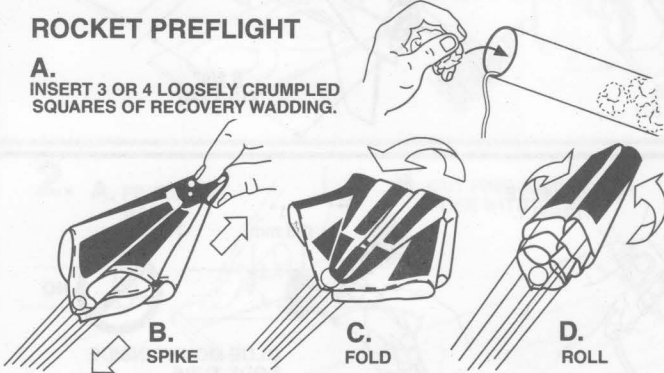
DECALS



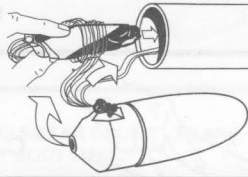
*CLEAR COAT ENTIRE ROCKET WHEN PAINT DRIES.

ROCKET PREFLIGHT

A. INSERT 3 OR 4 LOOSELY CRUMPLED SQUARES OF RECOVERY WADDING.



E. WRAP LINES LOOSELY, INSERT 'CHUTE, SHOCK CORD AND NOSE CONE.



COUNTDOWN AND LAUNCH

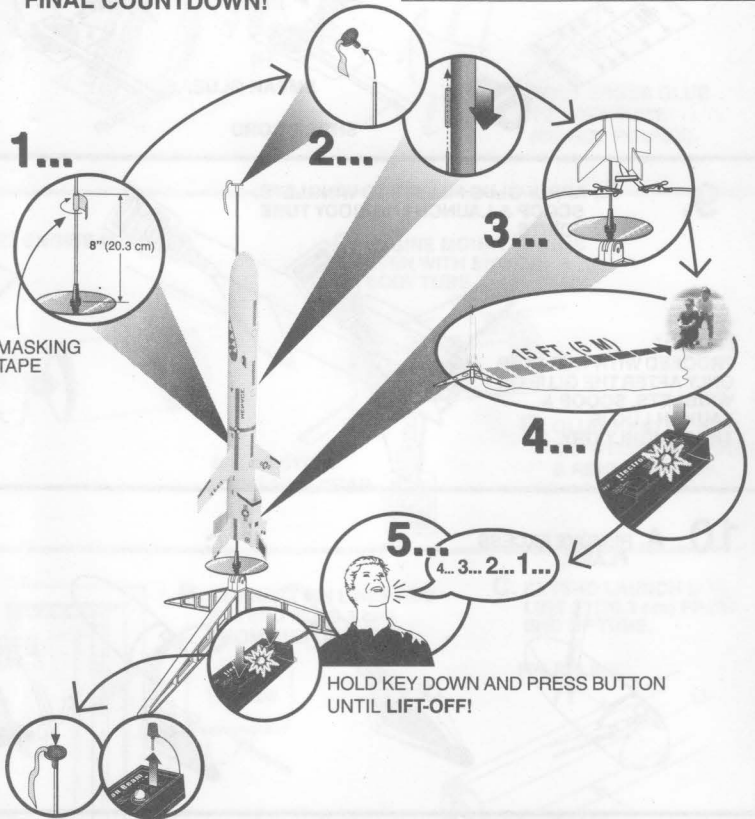
LAUNCH SUPPLIES

(Sold Separately)

- Estes® Porta Pad® II Launch Pad and Electron Beam® Controller
- Recovery Wadding
- Igniters (with Engines)
- Igniter Plugs (with Engines)
- Estes® Engines:
 - A8-3, B4-4 (First Flight)
 - B6-4, C6-5



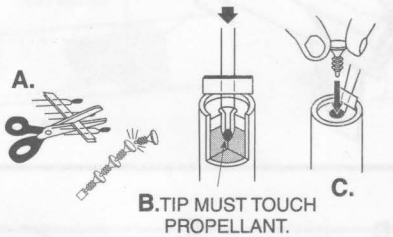
KEY ALWAYS OUT UNTIL FINAL COUNTDOWN!



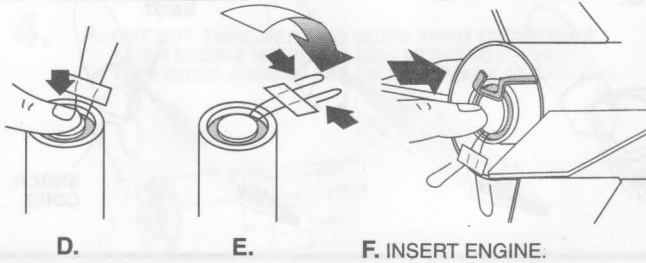
ENGINE PREP

WARNING: FLAMMABLE
Before proceeding read instructions & NAR Safety Code included with engines.

PREPARE YOUR ENGINE ONLY WHEN YOU ARE OUTSIDE AT THE LAUNCH SITE PREPARING TO LAUNCH!
If you do not use your prepared engine, remove the igniter before storing your engine.



B. TIP MUST TOUCH PROPELLANT.



PRECAUTIONS

NAR Safety Code



NO DRY GRASS OR WEEDS

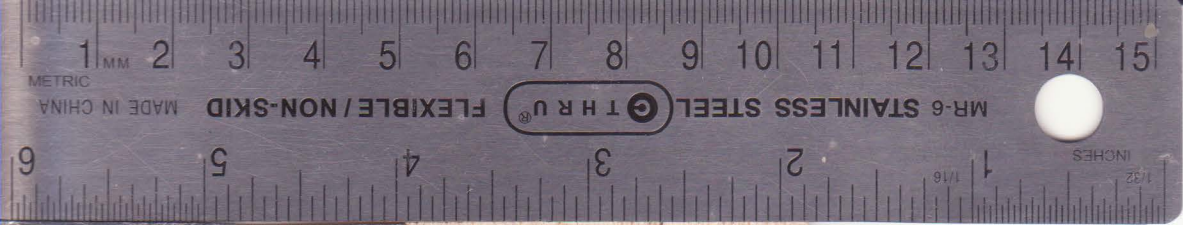
FLYING YOUR ROCKET

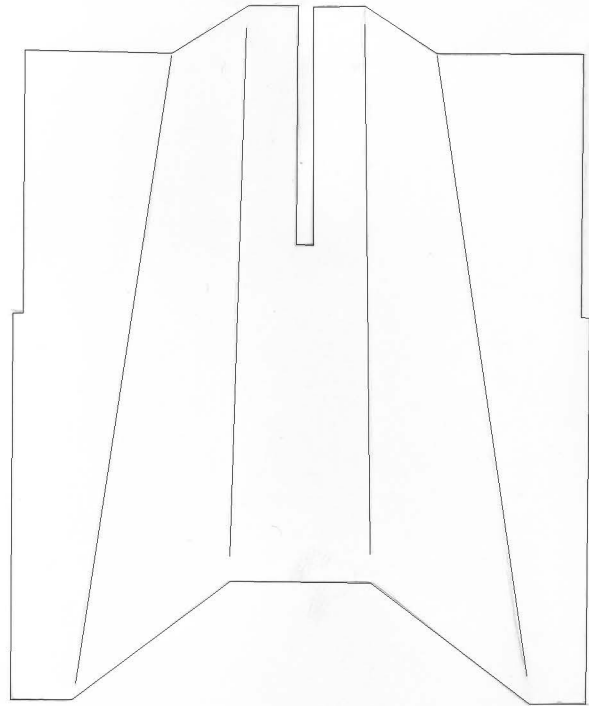
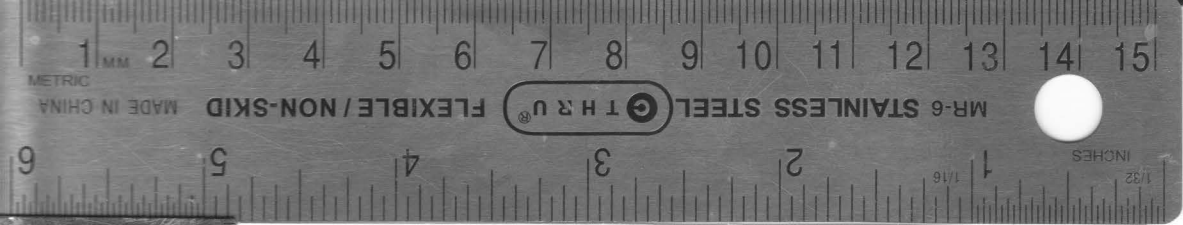
Choose a large field (500 ft. [152 m] square) free of dry weeds and brown grass. The larger the launch area, the better your chance of recovering your rocket. Football fields and playgrounds are great. Launch only with little or no wind and good visibility.

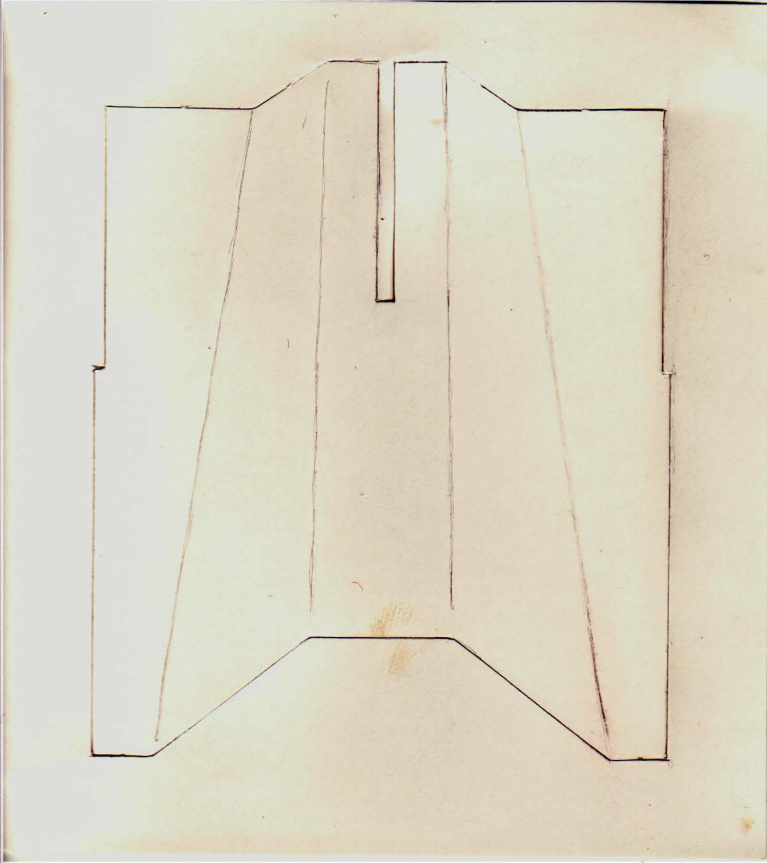
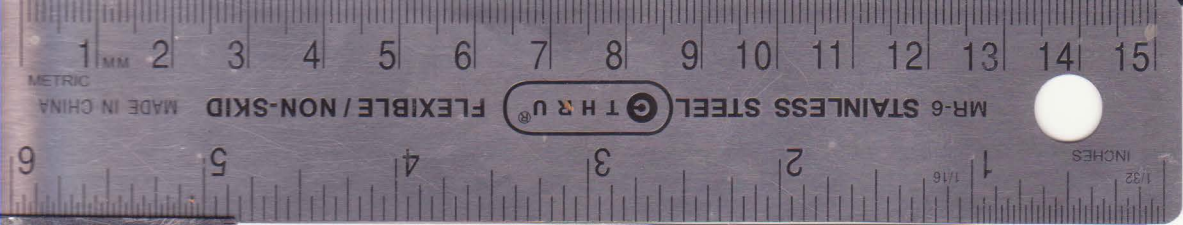
Always follow the National Association of Rocketry (NAR) SAFETY CODE.

MISFIRES

TAKE THE KEY OUT OF THE CONTROLLER. WAIT ONE MINUTE BEFORE GOING NEAR THE ROCKET! Take the plug and igniter out of the engine. If the igniter has burned, it worked but did not ignite the engine because it was not touching the propellant inside the engine. Put a new igniter all the way inside the engine without bending it. Push the plug in place. Repeat the steps under Countdown and Launch.









MR-6 STAINLESS STEEL THRU® FLEXIBLE / NON-SKID MADE IN CHINA
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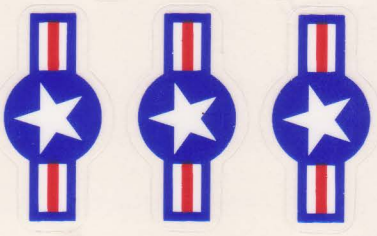
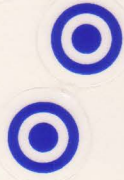


USA F 4

MENACE™



4
ESTES® ESTES®
MENACE™



M-12 **PACIFIC ARC**

Stainless Steel Non Skid



www.futaba.com

FLYING MODEL

ROCKET™

SMALL LEVEL II

MENACE™

- FLIES TO 600 FT. (180 M)
- GROUND - TO - AIR MISSILE
- ONE ROCKET - MANY DESIGNS

GO WILD!

DESIGN YOUR OWN
WILD LOOK
BY DESIGN



WIN
Rocket Storm
Exclusive Model



Menace is a high speed, high altitude, ground-to-air missile. It is a great model for the experienced flyer. It is a great model for the experienced flyer. It is a great model for the experienced flyer.

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