





# GUARDIAN™

www.estesrockets.com

FLYING MODEL ROCKET KIT  
INSTRUCTIONS

EST 2179

Estes® Industries  
1295 H Street  
Penrose, CO 81240

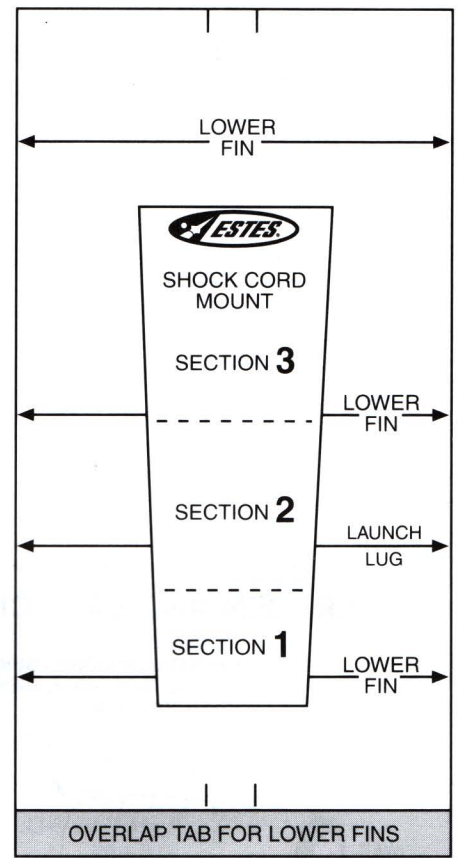
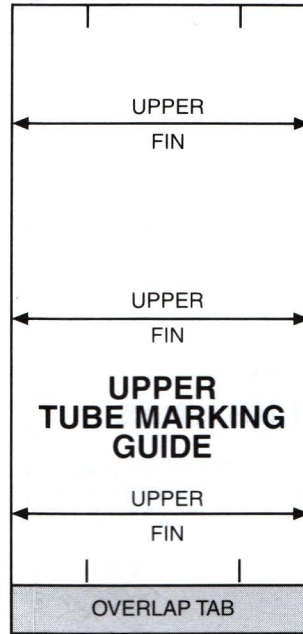
KEEP FOR FUTURE REFERENCE

PRINTED IN CHINA



## ASSEMBLY TIP

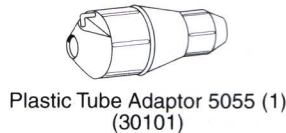
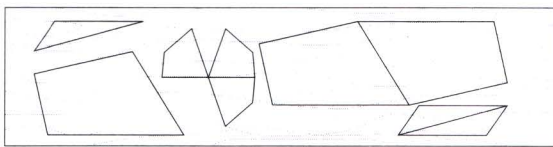
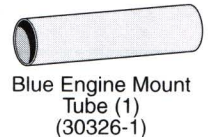
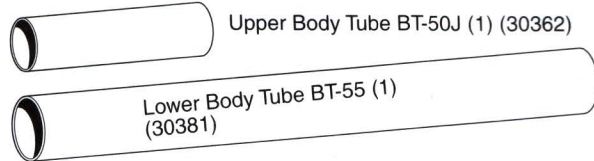
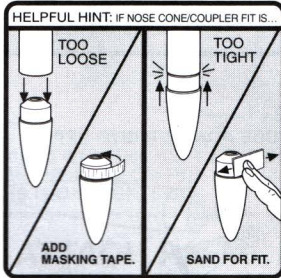
Read all instructions before beginning work on your model. Make sure you have all parts and supplies.  
**TEST-FIT ALL PARTS TOGETHER BEFORE APPLYING ANY GLUE.** If any parts don't fit properly, sand as required for precision assembly.



LOWER TUBE MARKING GUIDE AND SHOCK CORD MOUNT

## PARTS

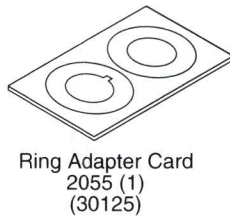
Locate the parts shown below and lay them out on the table in front of you. DO NOT USE THIS DRAWING TO ASSEMBLE YOUR ROCKET.



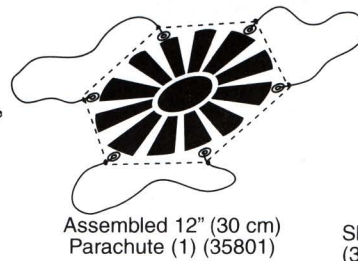
Die-cut Balsa Sheet (1) (60415)



Decal Sheet (1) (60379)



Ring Adapter Card 2055 (1) (30125)



Assembled 12" (30 cm) Parachute (1) (35801)



Engine Hook (1) (35021)



Shock Cord 1/8" x 18" (1) (38374)

## SUPPLIES

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



SCISSORS



PENCIL



RULER



FINE SAND PAPER (#400-600 GRIT)



CARPENTER'S GLUE



MASKING TAPE



MODELING KNIFE



PLASTIC CEMENT



SPRAY PAINT: BLACK, GRAY, LIGHT GRAY, BLUE

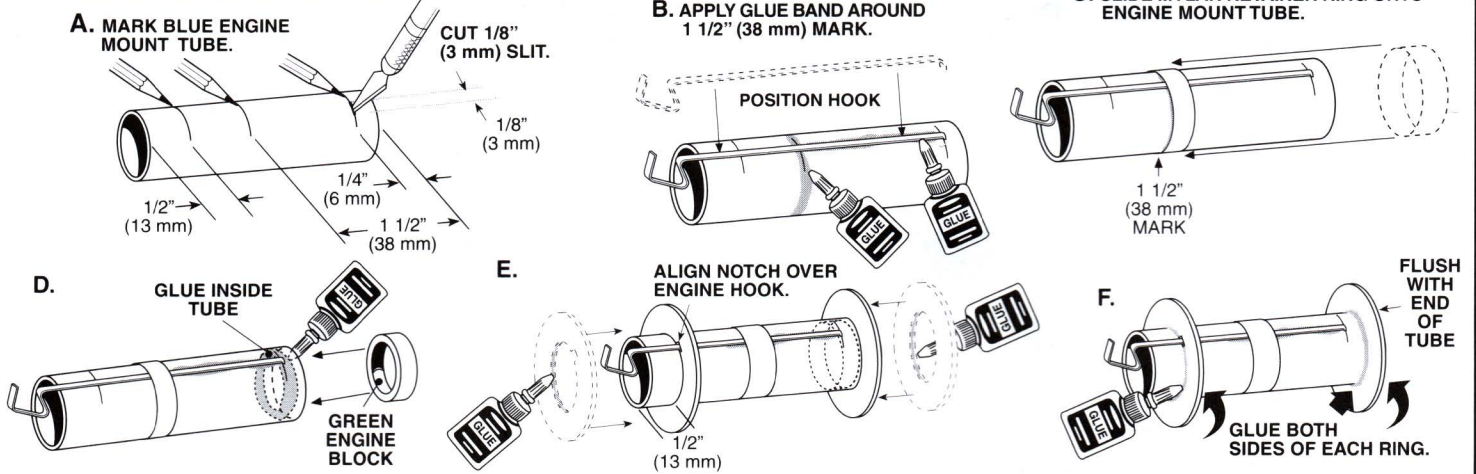


PRIMER (WHITE)

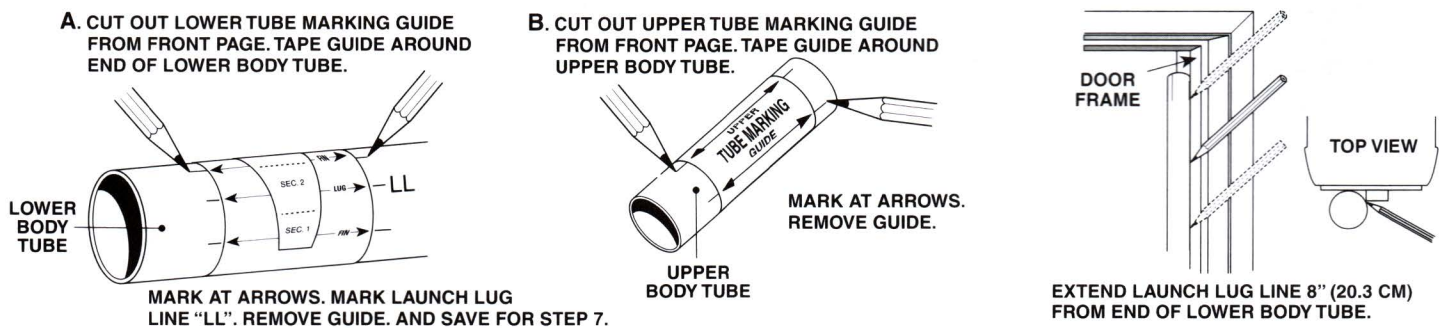


SPRAY CLEAR COAT

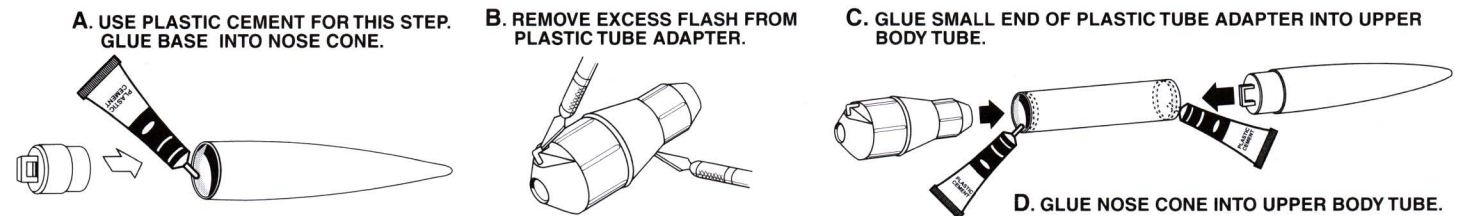
## 1. ASSEMBLE ENGINE MOUNT



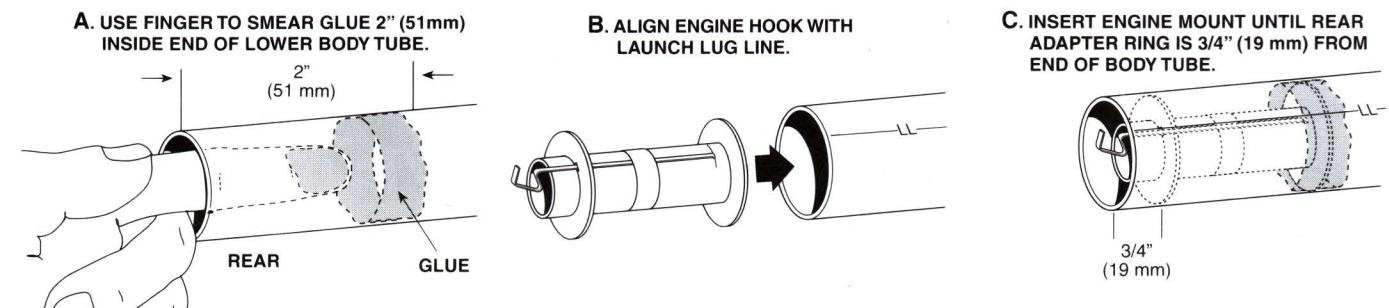
## 2. MARK FIN AND LAUNCH LUG LINES



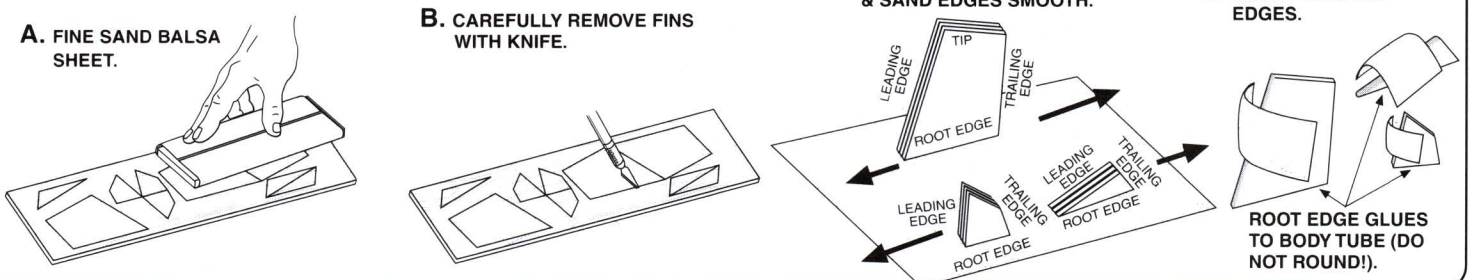
## 3. ASSEMBLE NOSE CONE SECTION



## 4. INSERT ENGINE MOUNT



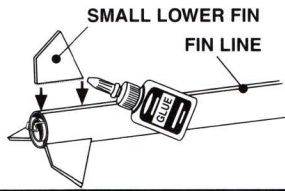
## 5. PREPARE FINS



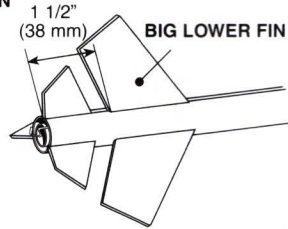


## 6. ATTACH FINS

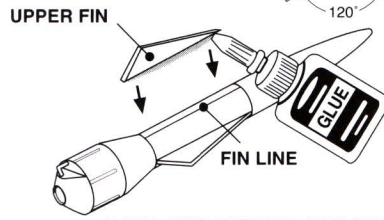
**A. APPLY THIN LAYER OF GLUE. WAIT 1 MINUTE. APPLY 2ND THIN LAYER AND ATTACH FIN CENTERED ON FIN LINE. REPEAT FOR OTHER FINS.**



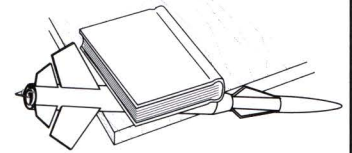
**B. REPEAT STEP A FOR BIG LOWER FINS.**



**C. REPEAT STEP A FOR UPPER FINS.**



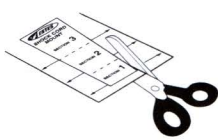
**D. SUPPORT ROCKET UNTIL GLUE DRIES.**



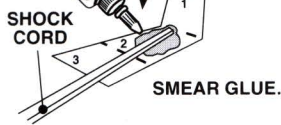
NOTE: FINS MUST BE ATTACHED CORRECTLY FOR STABLE FLIGHT.

## 7. ATTACH SHOCK CORD MOUNT

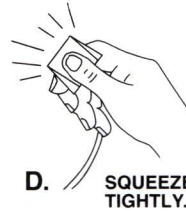
**A. CUT OUT SHOCK CORD MOUNT FROM LOWER TUBE MARKING GUIDE.**



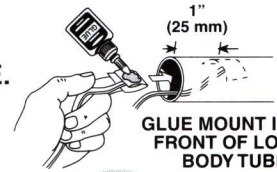
**B. FOLD FORWARD. SMEAR GLUE.**



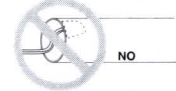
**C. FOLD FORWARD. SMEAR GLUE.**



**E.**



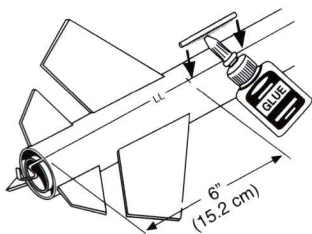
GLUE MOUNT INSIDE FRONT OF LOWER BODY TUBE.



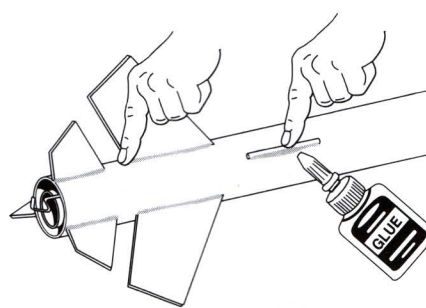
HOLD UNTIL GLUE SETS.

## 8. ATTACH LAUNCH LUG AND APPLY FILLETS

**A. GLUE LAUNCH LUG TO LOWER BODY TUBE AS SHOWN.**



**B. APPLY GLUE FILLETS TO ALL FIN AND LAUNCH LUG/BODY TUBE JOINTS.**

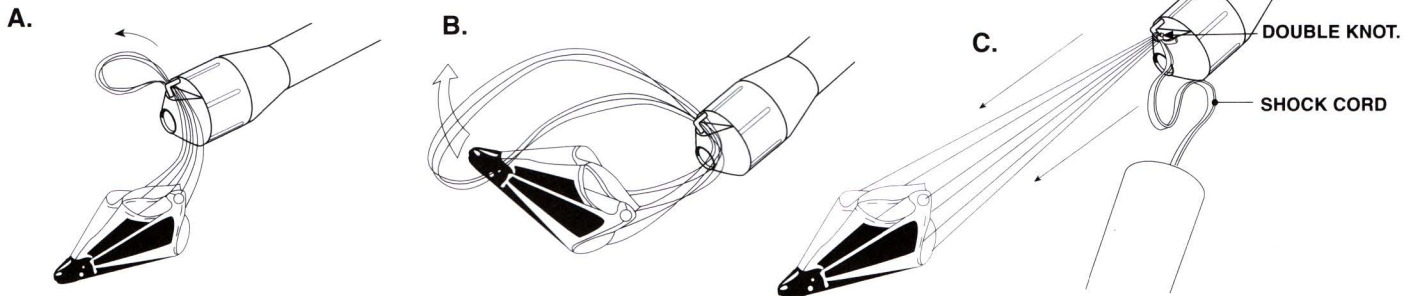


**C. SMOOTH WITH FINGERTIP.**

**D. ALLOW GLUE TO DRY.**

NOTE: PROCEED WITH THE NEXT STEP ONLY AFTER THE GLUE ON FINS AND LAUNCH LUG IS THOROUGHLY DRY.

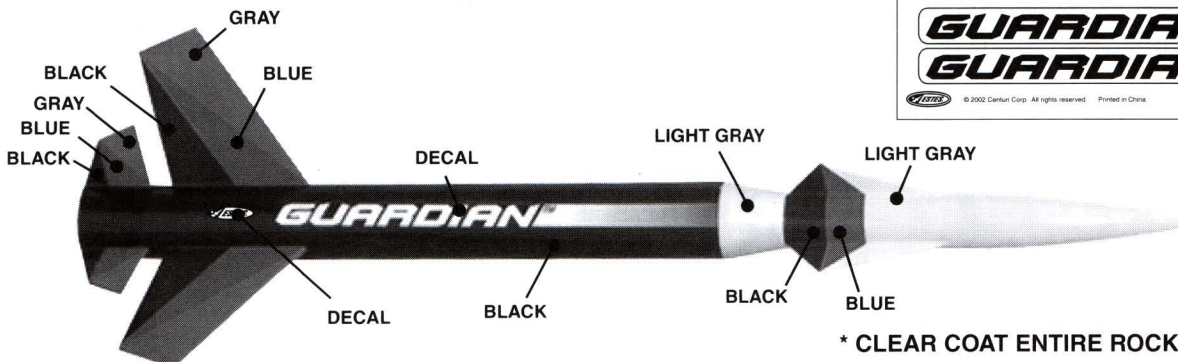
## 9. ATTACH PARACHUTE



### PAINT SCHEME

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

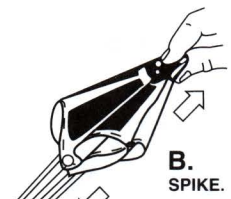
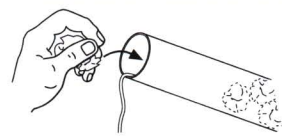
### DECAL



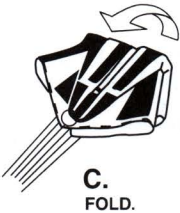
\* CLEAR COAT ENTIRE ROCKET WHEN PAINT DRIES.

## ROCKET PREFLIGHT

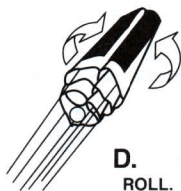
**A. INSERT 3 OR 4 LOOSELY CRUMPLED SQUARES OF RECOVERY WADDING.**



**B. SPIKE.**

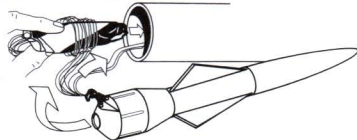


**C. FOLD.**



**D. ROLL.**

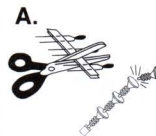
**E. WRAP LINES LOOSELY, INSERT CHUTE, SHOCK CORD AND NOSE CONE SECTION.**



## ENGINE PREP

### ⚠ WARNING: FLAMMABLE

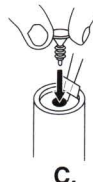
To avoid serious injury, read instructions & NAR Safety Code included with engines.  
**PREPARE YOUR ENGINE ONLY WHEN YOU ARE OUTSIDE AT THE LAUNCH SITE PREPARING TO LAUNCH!**  
 If you do not use your prepared engine, remove the igniter before storing your engine.



**A.**



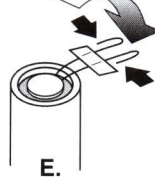
**B. TIP MUST TOUCH PROPELLANT.**



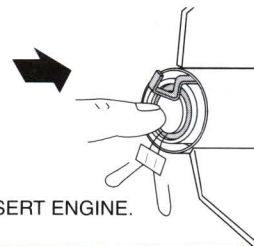
**C.**



**D.**



**E.**

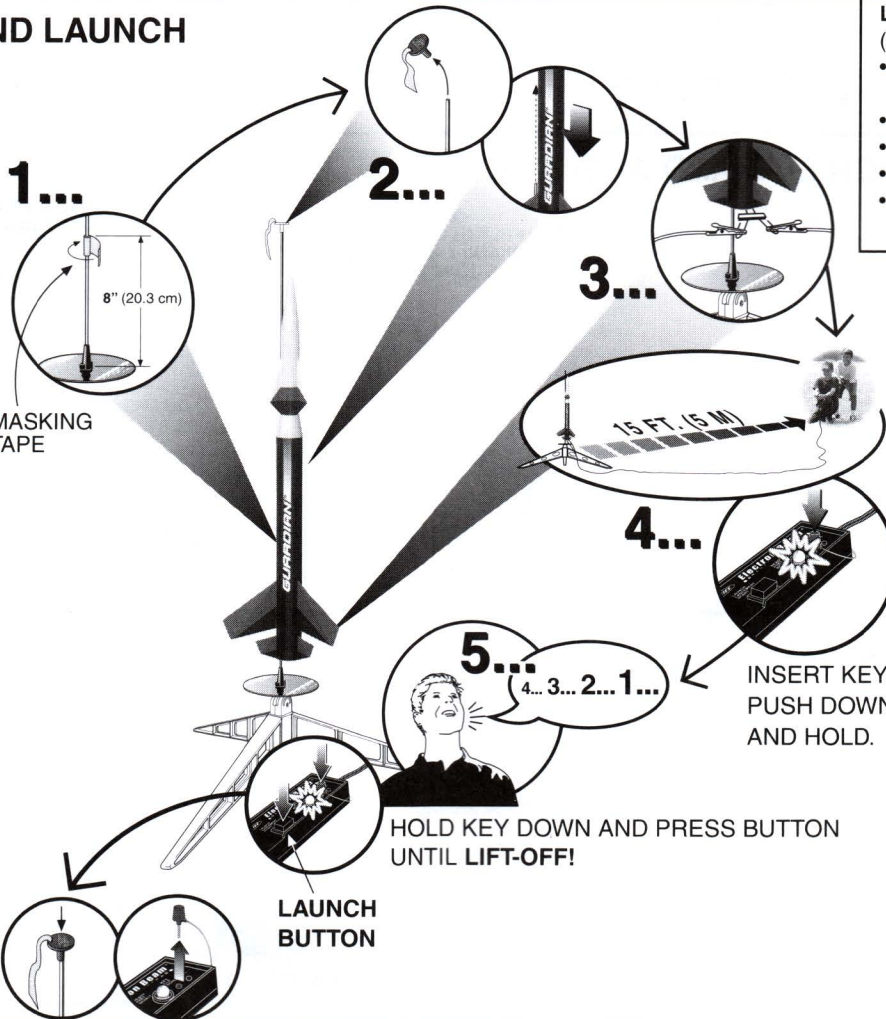


**F. INSERT ENGINE.**

## COUNTDOWN AND LAUNCH



**KEY ALWAYS OUT UNTIL FINAL COUNTDOWN!**



**1...**

8" (20.3 cm)

MASKING TAPE

**2...**

**3...**

**4...**

**5...**

4... 3... 2... 1...

**INSERT KEY. PUSH DOWN AND HOLD.**

**HOLD KEY DOWN AND PRESS BUTTON UNTIL LIFT-OFF!**

**LAUNCH BUTTON**

### LAUNCH SUPPLIES

(Sold Separately)

- Estes® Porta Pad® II and Electron Beam® Controller
- Recovery Wadding
- Igniters (with Engines)
- Igniter Plugs (with Engines)
- Estes® Engines: A8-3, B4-4, B6-4, B6-6, C6-5

## 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.

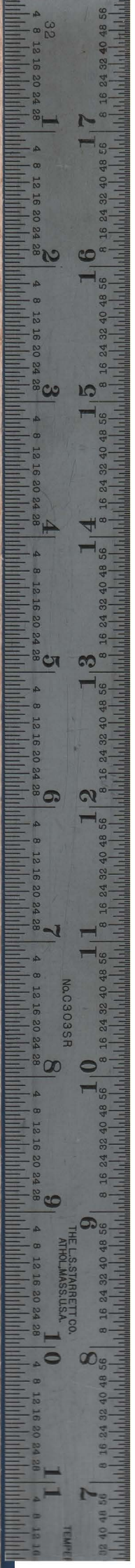
## MISFIRES

**TAKE THE KEY OUT OF THE CONTROLLER. WAIT ONE MINUTE BEFORE GOING NEAR THE ROCKET!** Disconnect the igniter clips and remove the engine. 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.





**3/32"**



NO. C303SR

THE L.S. STARRETT CO.  
ATHOL, MASS., U.S.A.

TEMPERATURE



GUARRODIAN™  
GUARRODIAN™



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(05/02) P/N 60379



No.C303SR

***Dear Estes Customer,***

Due to new restrictions regarding the printing of plastic materials, we have had to suspend printing our colorful parachutes. This parachute material conforms to all current government requirements and can be decorated with a design of your choice using colored markers.

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## PARTS LIST KIT NO. 2179 - Guardian

Quantity	Description	Type	Number	Detail1	Detail2	Detail3	Detail4	Comment
1	PAPER BODY TUBE	BT-20J	30326-1	2.75" long	0.710" ID	0.736" OD	0.013" wall	Blue
1	ENGINE HOLDER	?	35021	2.8" long	.100" wide	.025" thick		Thumb Saver
1	MYLAR RETAINER RING	HR-20	3340/30168	.774" ID	.25" wide			Strapdown ring for EH-2 and BT-20J
1	CENTERING RINGS	AR-520	30162-2	.69" OD	.542" ID	0.19" long	BT-5 in BT-20	Green
1	PLASTIC NOSE CONE	PNC-50YR	72604	4.1" long	.974" dia.		BT-50 - Ogive	Pairs with PIN-50YR
1	NOSE CONE INSERT	PIN-50YR	72605	.65" long	.5" shoulder			.65" exposed. .5" insert in cone.
1	PLASTIC ADAPTER	TA-5055(P)	30101	3.6" long	1.0" taper	.75" front	.85" back	Blow Molded
1	PAPER BODY TUBE	BT-50J	30362	2.75" long	0.950" ID	0.976" OD	0.013" wall	Glassine
1	PAPER BODY TUBE	BT-55?	30381	11.25" long	1.283" ID	1.325" OD	0.021" wall	Length verified on actual kit
2	PAPER ADAPTER	RA-2055	30125	0.738" ID	1.27" OD	.05" thick	Set of 2	One ring notched for engine hook.
1	Laser cut balsa	BF-2179	60415	4" wide	12" long	.09375" thick	3/32" thick	Scan
1	Shock Cord	SC-1	85730/38367	18" long	1/8" wide			Rubber
1	LAUNCH LUG	LL-2A	2321/38175	5/32" ID	1/8" rod	1-1/4" long		
1	Parachute	PK-12A	2263/85564/35815	12" dia.				Pre-assembled
1	Decal	KD-2179	60379	2" wide	8.5" long	Blue/White	Self Stick	Scan



FLYING MODEL  
**ROCKET**

**GUARDIAN**

MODEL # 600  
MSRP \$4.99  
EASY TO ASSEMBLE  
EASY TO LAUNCH  
CLASSIC DESIGN  
AVAILABLE

REIGN OF THE  
SKY!



THE GUARDIAN IS A CLASSIC DESIGN THAT HAS BEEN A POPULAR CHOICE FOR YEARS. IT'S EASY TO ASSEMBLE AND LAUNCH, AND IT'S A GREAT ROCKET FOR BEGINNERS AND INTERMEDIATE MODELERS AHEAD.

ESTES  
MODEL # 600  
EASY TO ASSEMBLE  
EASY TO LAUNCH  
CLASSIC DESIGN  
AVAILABLE



ESTES FLYING MODEL ROCKET  
ESTES MODELE DE FUSEE VOLANT



THE GUARDIAN IS A CLASSIC DESIGN THAT HAS BEEN A POPULAR CHOICE FOR YEARS. IT'S EASY TO ASSEMBLE AND LAUNCH, AND IT'S A GREAT ROCKET FOR BEGINNERS AND INTERMEDIATE MODELERS AHEAD.







www.hobbyking.com

FLYING MODEL

# ROCKET™

SMALL LEVEL 2

## GUARDIAN™

1000T - FM  
MISSILE!

FLIES TO 100 FEET  
(30.3 M)

PERFECT  
ACROBATIC

GUARDIAN  
OF THE  
SKY!



Includes everything you need to get started. Includes 1000T motor, 1000T motor, 1000T motor, 1000T motor, 1000T motor.

Recommended for ages 14 and up. Assembly required. Please read the instructions carefully before use.

SKU: GK1000T  
EAN: 6917381000000

