





ESTES INDUSTRIES  
1295 H STREET  
PENROSE, CO 81240 USA

# CORKSCREW™

## FLYING MODEL ROCKET KIT EST 2114



# BETA™

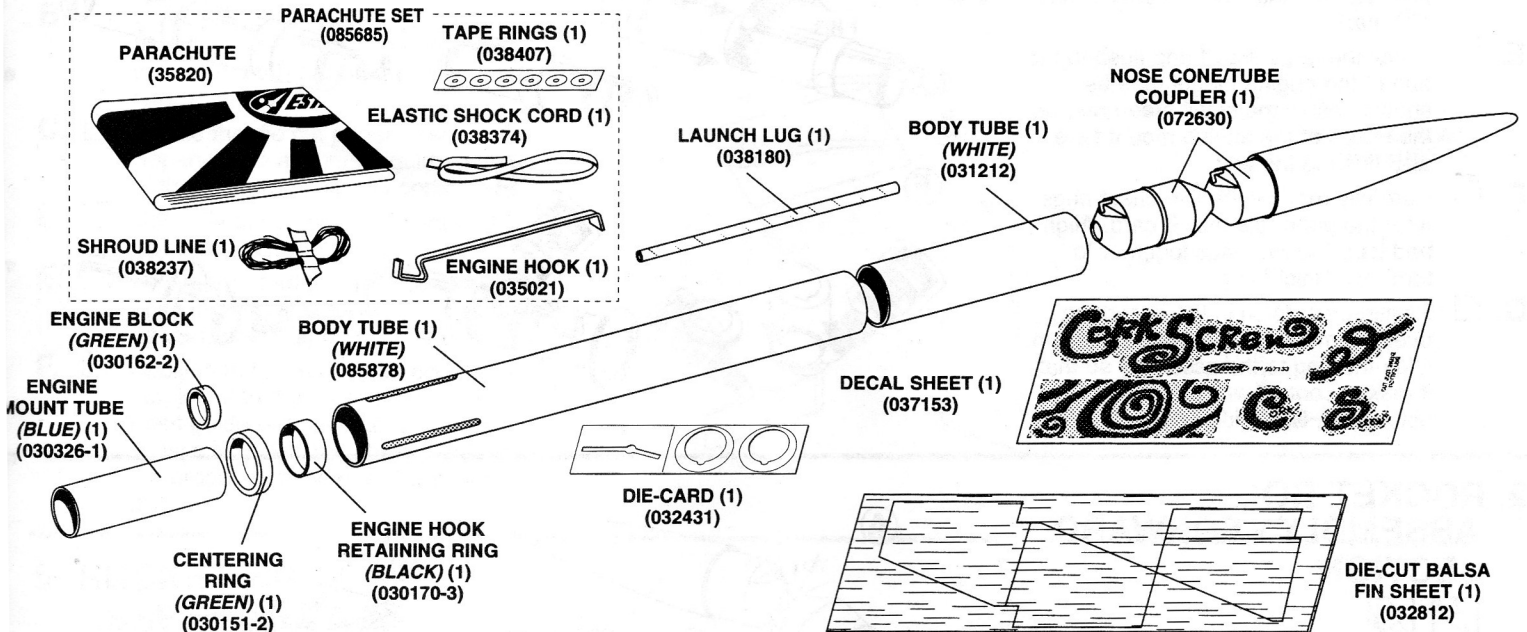
## SERIES

(9-94) 084445

### HOW TO USE THESE INSTRUCTIONS: READ ALL INSTRUCTIONS BEFORE STARTING WORK ON THIS MODEL.

- A. This rocket, incorporating basic model rocketry construction techniques, will help you in the continuing development of your rocketry modeling skills.
- B. Read each step first and visualize the procedure thoroughly in your mind before starting construction.
- C. Lay the parts out on the table in front of you. (Check inside tubes for any small parts.)
- D. Use the parts layout to match all parts contained in kit.
- E. Collect all construction supplies that are not included in this kit.
- F. Test fit parts before applying any glue.
- G. The construction supplies required for each step are listed at the beginning of each step.
- H. Check off each step as you complete it.

### PARTS LAYOUT



### EXTREMELY IMPORTANT: THE PARTS LAYOUT IS FOR REFERENCE ONLY!

The parts layout is only intended to assist you in locating the parts included in this kit.

### CONSTRUCTION SUPPLIES

In addition to the parts included in your kit, you will need these construction supplies. Each step shows which supplies will be required.



RULER



SCISSORS



HOBBY KNIFE



GLUE (white or yellow)



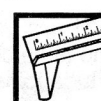
MASKING TAPE 19 mm (3/4") wide



Sanding Sealer (optional)



SPRAY PAINT (blue & red - optional) (felt markers may be used instead)



ROCKET BUILDER'S MARKING GUIDE - EST 2227 (optional)



PENCIL



SANDPAPER



PLASTIC CEMENT



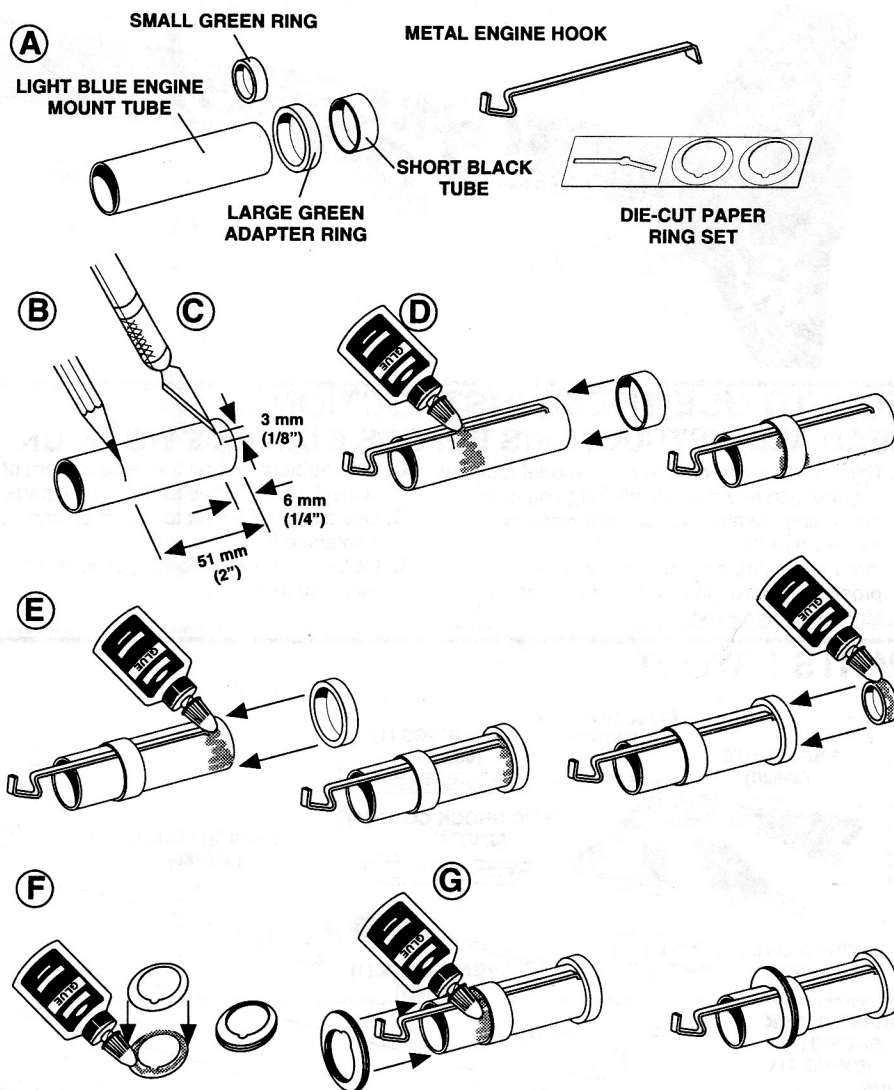
# ROCKET ASSEMBLY

**SPECIAL NOTE:** Your Estes Corkscrew rocket kit looks similar to other Estes kits that you may have already built. However, the Corkscrew has been designed to fly in a way that no other model rocket flies. When built properly your Corkscrew rocket will leave an exciting spiral or corkscrew smoke pattern in the sky. This is achieved by a special offset engine mount and a special trim tab on one of the Corkscrew's fins. So, read the instructions carefully, follow all the steps in order, and your Corkscrew will perform as designed.

## 1. ENGINE MOUNT ASSEMBLY



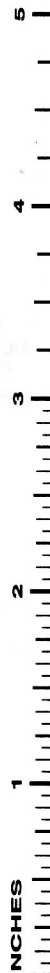
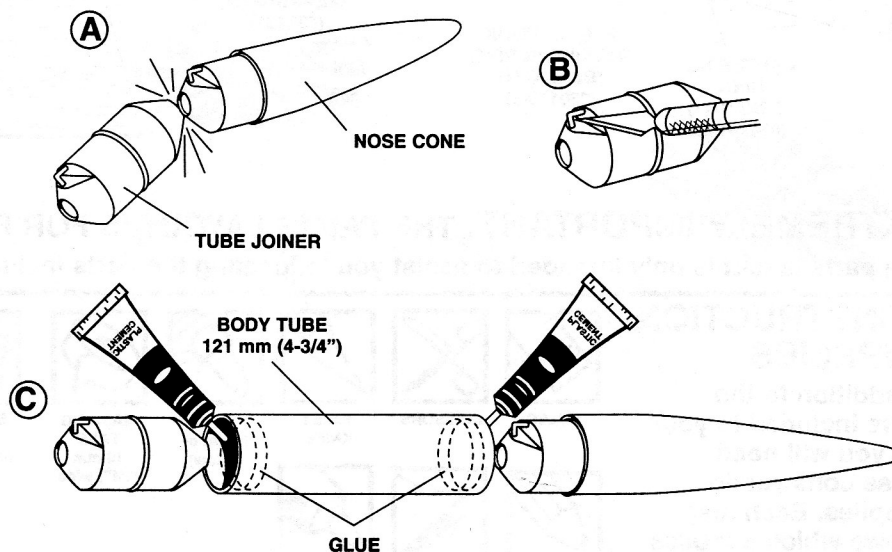
- A.  Locate the following items from the bagged part sets in your kit: The light blue engine mount tube, the short black tube, the die cut paper ring set, the metal engine hook, the large green ring, and the small green ring.
- B.  Mark the light blue engine mount tube at 6 mm (1/4") and at 51 mm (2") from one end. **Caution:** Be precise, make these marks as accurately as you can. Future steps will be easier if you place and use these marks correctly.
- C.  Use your hobby knife to make a 3 mm (1/8") slot at the 6 mm (1/4") mark as shown.
- D.  Insert the end of the metal engine hook into the slot. Apply glue to the engine mount tube as shown and position the black tube at the 51 mm (2") mark.
- E.  Install the large green ring flush to the end of the engine mount tube as shown. Install the small green ring on the inside of the engine mount tube also flush to the end.
- F.  Carefully remove the two offset rings from the paper die punch card. Align and glue the two rings together to form one "thick" ring.
- G.  Position the notch in the offset ring over the metal engine hook as shown. Glue the ring to the assembly so that it makes contact with the edge of the black tube. Set aside to dry.



## 2. ROCKET BODY ASSEMBLY - FORWARD SECTION



- A.  Locate the nose cone and tube joiner combination. Separate the two by breaking them apart.
- B.  Clean off excess plastic on the tube joiner.
- C.  Locate the 121 mm (4-3/4") body tube. Glue the nose cone into one end and the tube joiner into the other as shown.

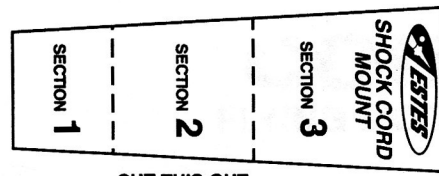


MM 10 20 30 40 50 60 70 80 90 100 110 120

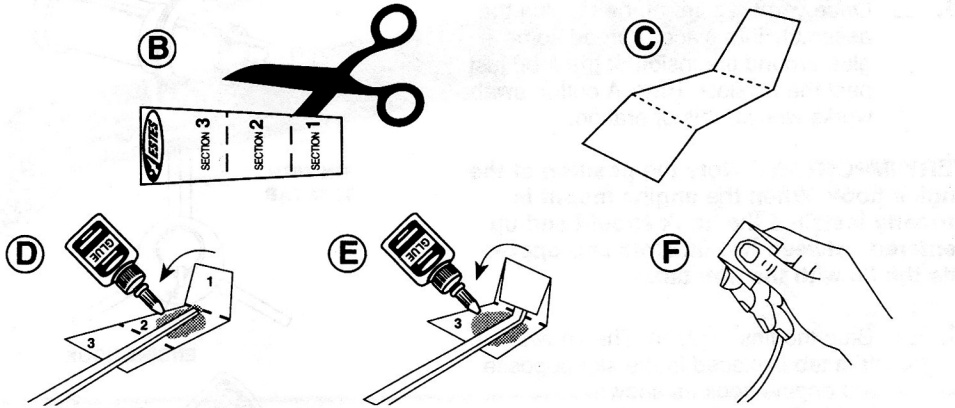
### 3. SHOCK CORD MOUNT ASSEMBLY



- A.  Locate the shock cord mount to the right. Locate the 46 cm (18") elastic shock cord.
- B.  Cut out the shock cord mount along the solid black outline.
- C.  Crease on dotted lines by carefully folding.
- D.  Spread glue on section 2 and lay one end of the shock cord into the glue at a slight angle as shown.
- E.  Fold section 1 forward. Apply glue to section 3. Fold forward again.
- F.  Clamp firmly with your fingers for 2 minutes until glue sets.



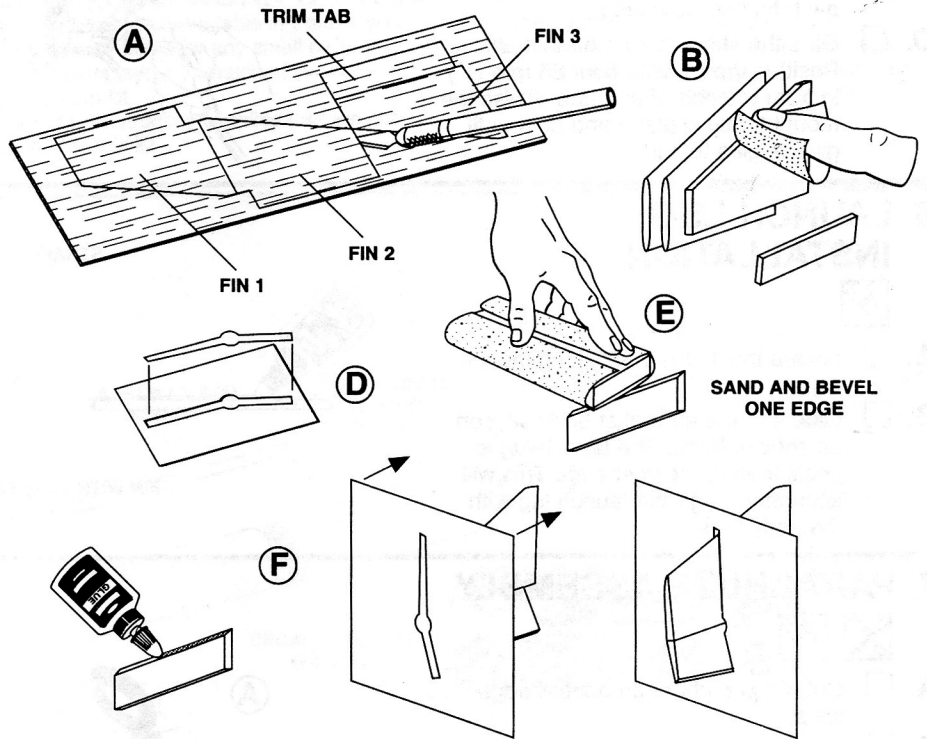
CUT THIS OUT



### 4. PREPARE THE Balsa FINS



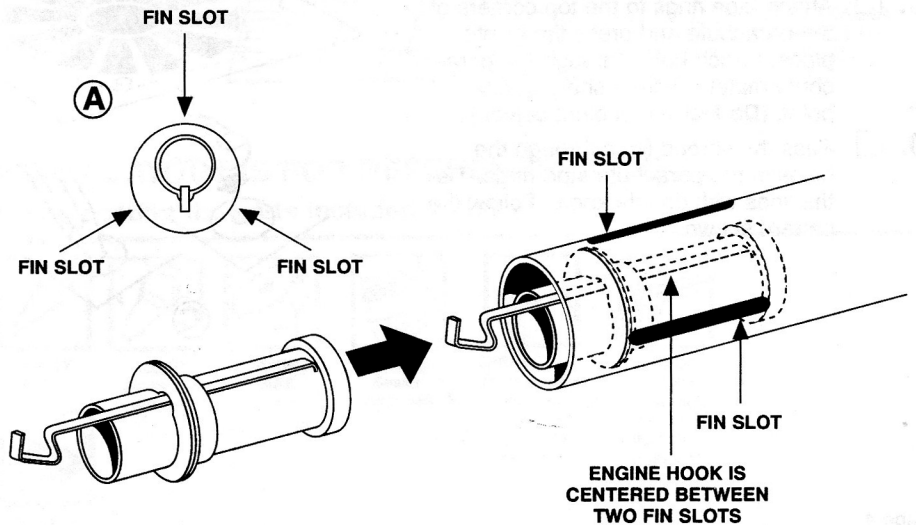
- A.  Locate the die cut Balsa sheet. Carefully remove the three fins and the "trim tab" piece. You may need to use your hobby knife to help free the fin parts from the balsa sheet.
- B.  **Note:** One fin is slightly different from the other two. This fin will be joined to the "trim tab". Sand the edges carefully to shape.
- C.  Locate the die cut paper card. Separate the alignment guide portion of the card from the ring portion.
- D.  Carefully punch out the paper in the guide slot and discard it.
- E.  Locate the "trim tab" and carefully sand the edges smooth. Sand a slight bevel in one long edge as shown.
- F.  Apply glue to the beveled edge of the tab, join it to the fin and slip the alignment guide over the tab and fin as shown. This will hold the fin and tab in the proper alignment until the glue is dry.



### 5. ROCKET BODY ASSEMBLY - AFT SECTION



- A.  Test fit the completed engine mount by inserting it into the end of the slotted body tube. **Do not glue yet.** **Note:** The engine mount assembly should be positioned so that the large green ring and the offset rings sit just past each end of the three fin slots. The engine hook is positioned between two of the fin slots. **Caution:** If the edges of the rings can be seen through the slots the fins may not fit properly.

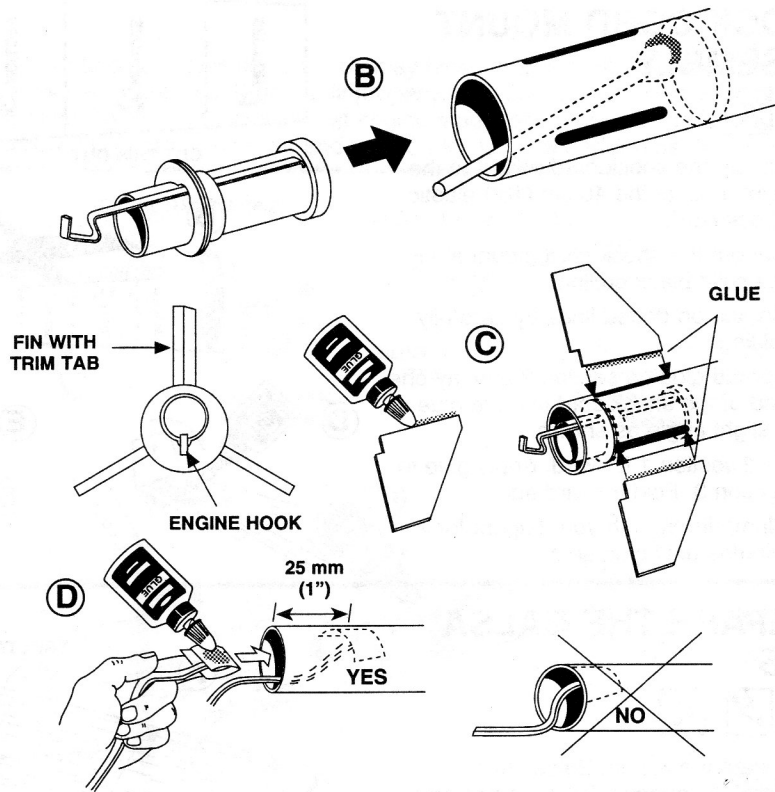


## 5. ROCKET BODY ASSEMBLY – AFT SECTION (CONTINUED)

- B.  Once you are sure of the fit, glue the assembly into place. Spread some glue around the inside of the tube just past the fin slots. **Hint:** A cotton swab works well for this operation.

**VERY IMPORTANT:** Note the position of the engine hook. When the engine mount is properly installed the hook should end up centered between two fin slots and opposite the fin with the trim tab.

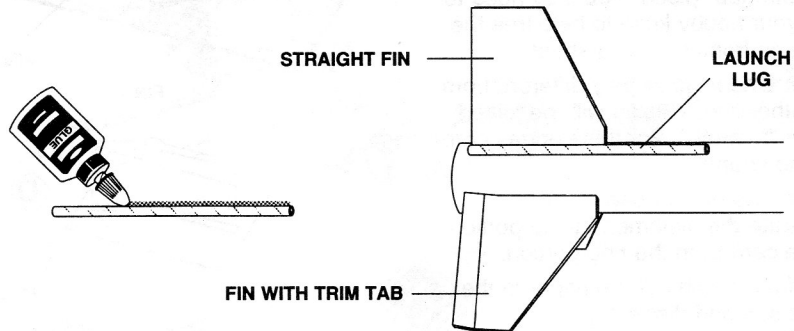
- C.  Glue the fins in place. The fin with the trim tab is placed in the slot opposite the engine hook as shown.  
**Note:** Some minor sanding might be required to fit the fins properly. Test fit each fin prior to gluing.
- D.  Glue the shock cord mount in place. Position the mount about 25 mm (1") in from the end of the tube. Press the mount firmly in place and hold until glue begins to set.



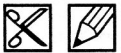
## 6. LAUNCH LUG INSTALLATION



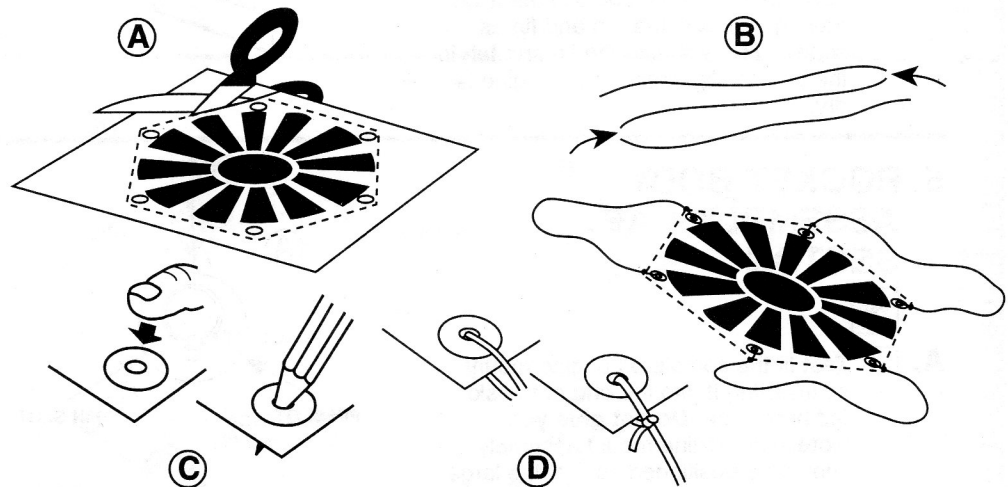
- A.  Locate the 127 mm (5") long launch lug.
- B.  Glue it to the aft rocket body section as shown. **Note:** The launch lug is positioned up against a fin. This will accurately align the launch lug with the body tube.



## 7. PARACHUTE ASSEMBLY



- A.  Cut out parachute on printed edge lines.
- B.  Remove tape from shroud lines and cut into three equal lengths.
- C.  Attach tape rings to the top corners of the parachute and press firmly into place. Punch holes through the parachute material with a sharp pencil point. (**Do Not** use a blunt object)
- D.  Pass the shroud lines through the holes in the parachute tape rings. Tie the lines with double knots. Follow the pattern shown.

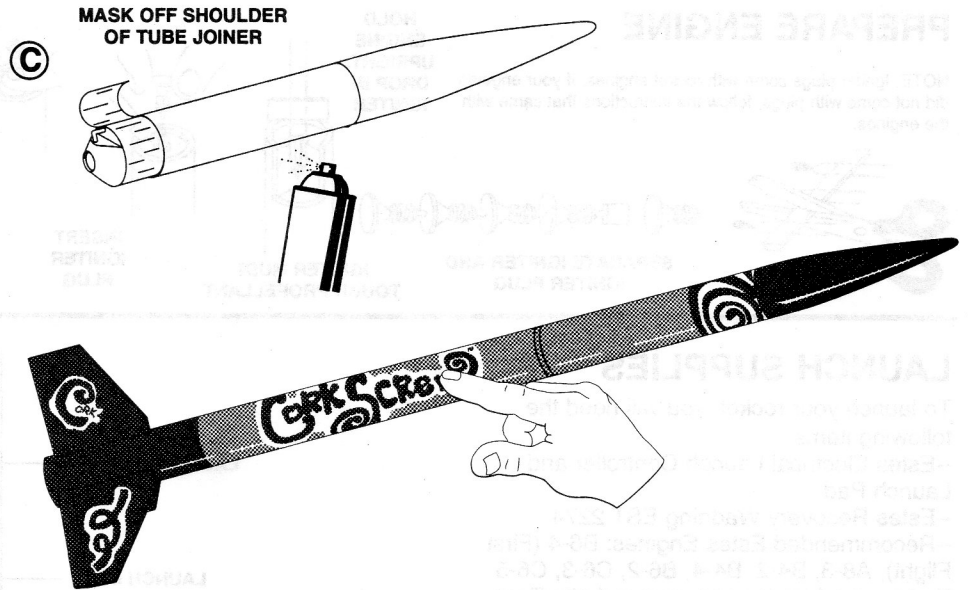


## 8. PAINTING YOUR ROCKET



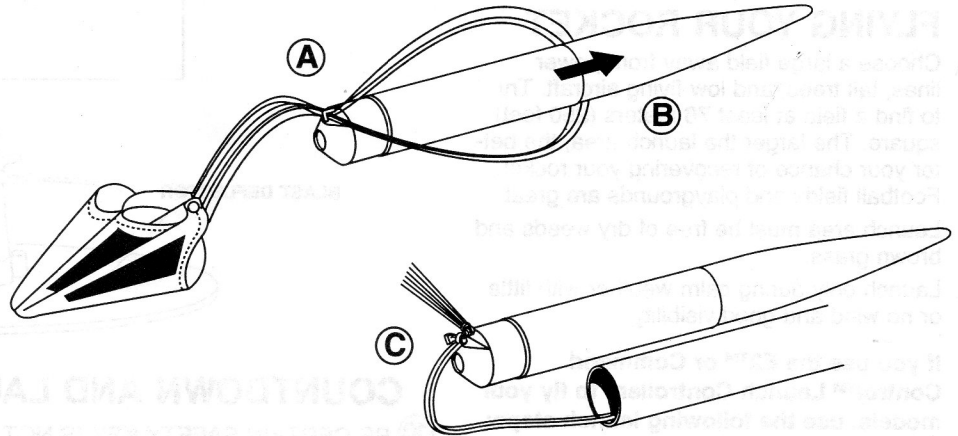
This is a good time to paint your rocket if you choose to do so. (Or, you may choose to color or decorate your Corkscrew with color markers. Go wild!)

- A.  To paint we recommend the use of hobby type spray enamels. Before you paint your rocket make sure all glue joints are dry.
- B.  For a better looking finish use a light coat of sanding sealer or lacquer type primer on all the exterior surfaces of your rocket. Sand lightly with 400 to 600 grit sand paper and apply a second coat if needed.
- C.  Mask the shoulder of the tube joiner to prevent overspray.
- D.  Refer to the package panel for color and decal placement.



## 9. PARACHUTE AND SHOCK CORD ATTACHMENT

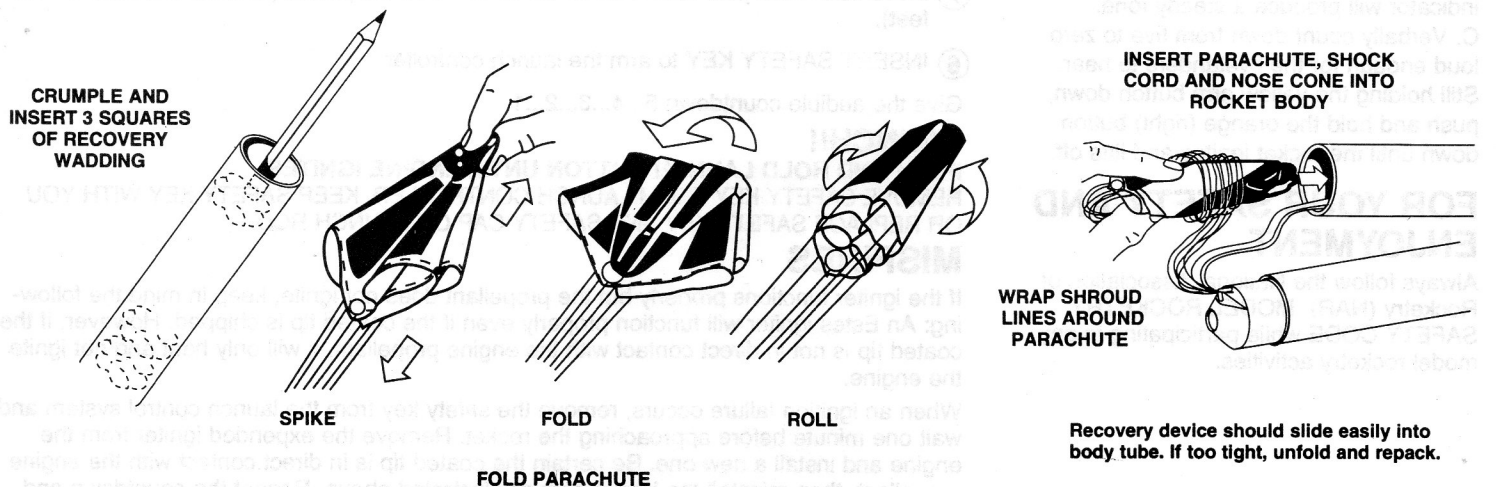
- A.  Gather the parachute shroud lines together and pass them through the loop on the plastic tube joiner.
- B.  Pass the nose cone back through the shroud loop as shown. Pull lines tight.
- C.  Tie the free end of the shock cord to the joiner loop and secure with a double knot.



## WHAT TO EXPECT WHEN FLYING YOUR CORKSCREW™ ROCKET

CorkScrew launches like most other rockets, but as soon as it leaves the pad it tracks through the sky leaving a spiral or *corkscrew* smoke pattern. The effect will be best on calm days!

## ROCKET PREFLIGHT





## PREPARE ENGINE

NOTE: Igniter plugs come with rocket engines. If your engines did not come with plugs, follow the instructions that came with the engines.



## LAUNCH SUPPLIES

To launch your rocket, you will need the following items:

- Estes Electrical Launch Controller and Launch Pad
  - Estes Recovery Wadding EST 2274
  - Recommended Estes Engines: B6-4 (First Flight), A8-3, B4-2, B4-4, B6-2, C6-3, C6-5
- To become familiar with your rocket's flight pattern, use a B6-4 engine for your first flight.

Use only Estes products to launch this rocket.

## FLYING YOUR ROCKET

Choose a large field away from power lines, tall trees, and low flying aircraft. Try to find a field at least 76 meters (250 feet) square. The larger the launch area, the better your chance of recovering your rocket. Football fields and playgrounds are great.

Launch area must be free of dry weeds and brown grass.

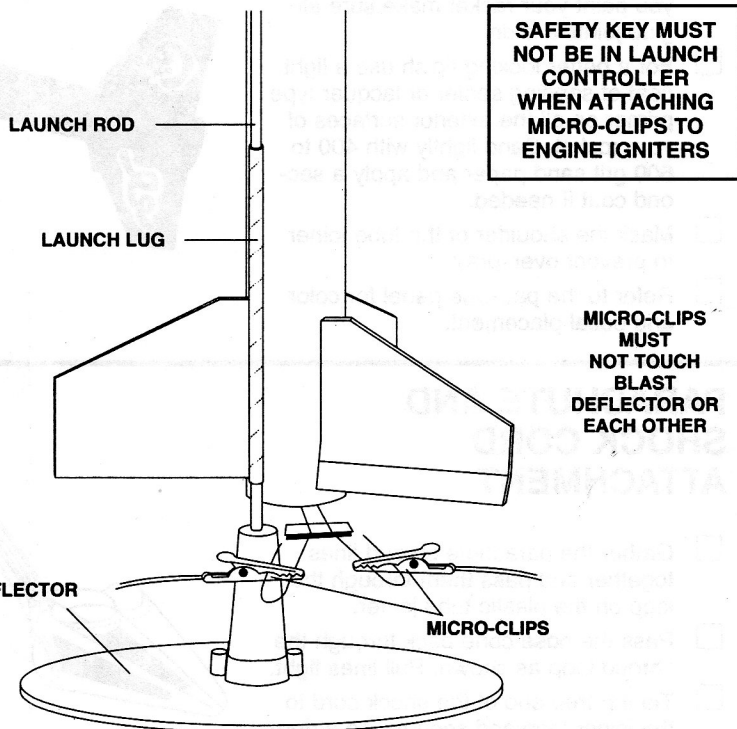
Launch only during calm weather with little or no wind and good visibility.

**If you use the E2™ or Command Control™ Launch Controllers to fly your models, use the following launch steps:**

- A. After attaching micro-clips, etc., insert safety key into the controller receptacle. If the igniter clips have been attached properly to the igniter, the red L.E.D. will now begin to flash on and off and the audio continuity indicator will beep on and off.
- B. Hold the yellow (left) arm button down. The L.E.D. will stop flashing and the audio indicator will produce a steady tone.
- C. Verbally count down from five to zero loud enough for the bystanders to hear. Still holding the yellow arm button down, push and hold the orange (right) button down until the rocket ignites and lifts off.

## FOR YOUR SAFETY AND ENJOYMENT

Always follow the National Association of Rocketry (NAR) MODEL ROCKETRY SAFETY CODE while participating in any model rocketry activities.



## COUNTDOWN AND LAUNCH

- ⑩ BE CERTAIN SAFETY KEY IS NOT IN LAUNCH CONTROLLER.
- ⑨ Remove safety cap and slide launch lug over launch rod to place rocket on launch pad. Make sure the rocket slides freely on the launch rod. Make sure micro-clips are clean for a good electrical contact.
- ⑧ Attach micro-clips 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.
- ⑦ Move back from your rocket as far as launch wire will permit (at least five meters - 15 feet).
- ⑥ INSERT SAFETY KEY to arm the launch controller.

Give the audible countdown 5...4...3...2...1

### LAUNCH!!

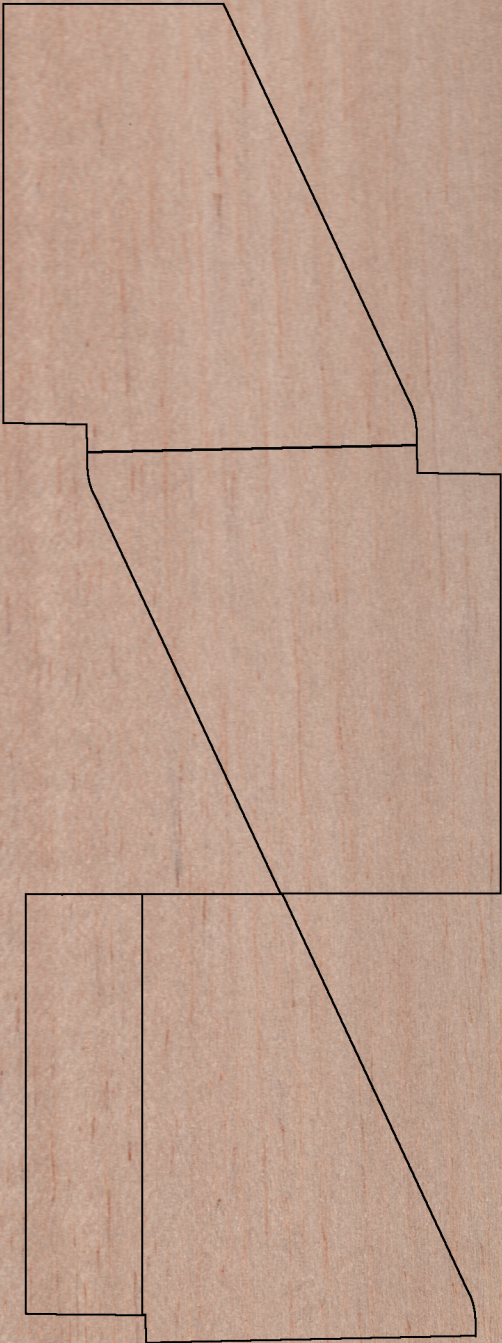
**PUSH AND HOLD LAUNCH BUTTON UNTIL ENGINE IGNITES**  
REMOVE SAFETY KEY FROM LAUNCH CONTROLLER. KEEP SAFETY KEY WITH YOU OR REPLACE SAFETY KEY AND SAFETY CAP ON LAUNCH ROD.

### MISFIRES

If the igniter functions properly but the propellant does not ignite, keep in mind the following: An Estes igniter will function properly even if the coated tip is chipped. However, if the coated tip is not in direct contact with the engine propellant, it will only heat and not ignite the engine.

When an ignition failure occurs, remove the safety key from the launch control system and wait one minute before approaching the rocket. Remove the expended igniter from the engine and install a new one. Be certain the coated tip is in direct contact with the engine propellant, then reinstall the igniter plug as illustrated above. Repeat the countdown and launch procedure.

3/32"



No.C303SR



300  
DPI



# Cork Screws



PN 037153



CUT JUST INSIDE  
DOTTED LINE



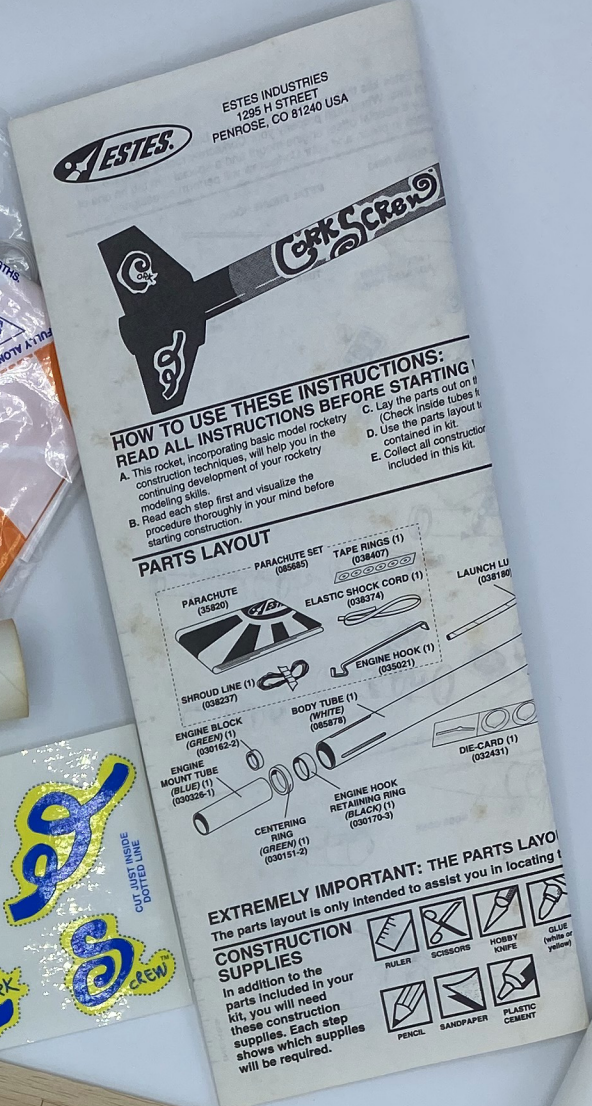
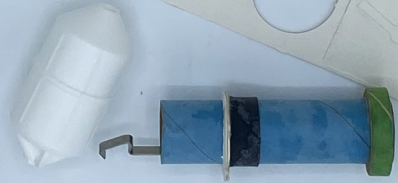
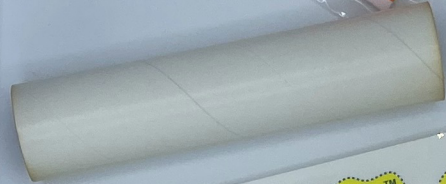
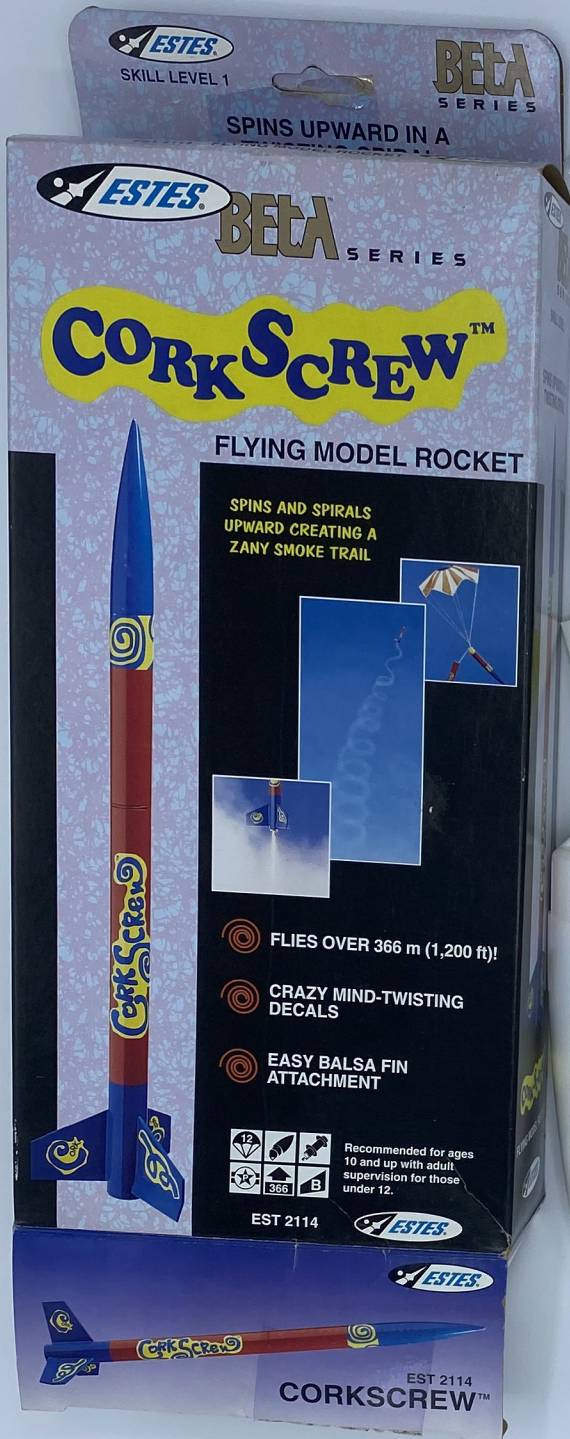


## PARTS LIST KIT NO. 2114 - Corkscrew

Quantity	Description	Type	Number	Details1	Details2	Details3	Details4	Comment
1	Nose Cone/Tube Coupler	NC-1090	72630	OD 1.090"	3.5" Long	W/Coupler	White	Blow Molded
1	PAPER BODY TUBE	HBT-1090	031212	4.75" long	1.090" OD	1.030" ID	0.030" wall	White
1	PAPER BODY TUBE	HBT-1090	85878	11" long	1.090" OD	1.030" ID	0.030" wall	White slotted for 3 fins
1	PAPER BODY TUBE	BT-20J	30326-1	2.75" long	0.710" ID	0.736" OD	0.013" wall	Blue
1	ENGINE HOLDER	EH-2	35021	2.8" long	.100" wide	.025" thick	18/24mm	Thumb Saver
1	ENGINE BLOCK	EB-20-2	30162-2	.69" OD	.542" ID	0.19" long	BT-5 in BT-20	Green
1	RETAINER RING	HR-20	030170-3	0.5" long	0.76" OD	0.74" ID	0.01" wall	Black
1	CENTERING RING	AR-201090	030151-2	0.25" long	0.737" ID	1.043" OD	0.153" wall	Green
1	LAUNCH LUG	LL-2C	38180	5/32" ID	1/8" rod	5" long		Mylar
1	DIE-CARD	SP-2114	32431	1.5" wide	4.25" long	0.05" thick	with fin guide	Scan
1	DIE-CUT Balsa	KB-2114	32812	3" wide	9" long	3/32" thick		Scan
1	TAPE RINGS	TD-3F	38407	1/2" dia.	Vinyl	Self-Stick	W/Center Hole	Set of 6
1	PARACHUTE	PK-12A	35820	12" dia.	12" x 6 Shrouds	LDPE plastic	Org/Wht	Damon Logo
1	*ELASTIC SHOCK CORD	SC-1	38374	18" long	1/8" wide			Rubber
1	SHROUD LINE	SLT-72	38237	72"	.020" diameter	Twisted cotton	3 x 24" shrouds	
1	DECAL SHEET	KD-2114	37153	3.5" wide	7" long	Blu, Yel	Selfstick	Scan

\* plans call out Elastic but kit contains rubber.







**ESTES**  
World Leader in Model Rocketry

**MODEL ROCKET ACCESSORIES**

**HBT-1090**  
BODY TUBES  
TUBES DE CORPS  
RUMPFROHRE

Warning: lightweight tubes for model rockets.  
 Model for classroom use only. Not for use in competition.

Length: 17.8 in. (45.2 cm)  
 Diameter: 1.5 in. (38.1 mm)  
 Weight: 0.15 lb (68 g)

Caution: body tubes only. Other accessories available separately.

▼ Tubes pour fusées modèles. Utilisez séparés de la figure.

▼ Tubes pour des fusées en compétition. Utilisez en plus de matériel de réparation.

▼ Kältlingen, hochdruckgeeignete Rohre für Modellraketenprojekte.

▼ Eigenes Stück Ideal zum Bau von Spezialanordnungen. Separaten Zubehör für Reparaturen.

Large: 15.8 in. (39.9 cm)  
 Medium: 12.5 in. (31.8 cm)  
 Small: 10.0 in. (25.4 cm)

Available in Bundles. See separate literature for details.

EST 3639H

Made in USA

**ESTES**  
World Leader in Model Rocketry

**MODEL ROCKET ACCESSORIES**

**NC-1090**  
NOSE CONES  
COIFFES  
RAKETENSPIZEN

Warning: lightweight tubes for model rockets.  
 Model for classroom use only. Not for use in competition.

Length: 1.5 in. (38.1 mm)  
 Diameter: 1.5 in. (38.1 mm)  
 Weight: 0.05 lb (22.7 g)

Caution: body tubes only. Other accessories available separately.

▼ Tubes pour fusées modèles. Utilisez séparés de la figure.

▼ Tubes pour des fusées en compétition. Utilisez en plus de matériel de réparation.

▼ Kältlingen, hochdruckgeeignete Rohre für Modellraketenprojekte.

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 Medium: 1.5 in. (38.1 mm)  
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Available in Bundles. See separate literature for details.

EST 3639H

Made in USA

**ESTES**  
World Leader in Model Rocketry

**FLYING MODEL ROCKET**

**ESTES**

Plastic bags can be dangerous. To avoid danger of suffocation, keep this bag away from babies and children.

Les sacs de plastique peuvent être dangereux. Pour éviter le danger de suffocation, ne l'utilisez pas en sa présence ou en celle de bébé et des enfants.

1 MODELE REQUIT. PEINTURE ET/OU COLLE NON COMPRISES

Requires white or yellow glue and/or tube type plastic cement, paint, finishing supplies, engine, spacers, washers, and launch system - NOT INCLUDED

USE ONLY WITH ESTES PRODUCTS

Caution: Use of this product with any other brand name rocket product resulting may direct or causing any damage may void the full warranty.

Safety Code and Full One Year Warranty Enclosed.

Estes Industries  
 1725 N. Prairie  
 Pomona, CO 81240 USA

**KENYA**

Made in USA

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RS311 (1997)

**ESTES**  
World Leader in Model Rocketry

**FLYING MODEL ROCKET**

**ESTES**

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Estes Industries  
 1725 N. Prairie  
 Pomona, CO 81240 USA

**KENYA**

Made in USA

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RS311 (1997)



MODEL ROCKET

# ACCESSORIES

## NC-1090 NOSE CONES



▼ Fits HBT-1090 body tubes  
(EST 303091)

NOSE CONES

S'adaptent aux tubes de corps HBT-1090 (EST 303091)

ROCKETNSPITZEN





ESTES.  
SKILL LEVEL 1

BETA  
SERIES

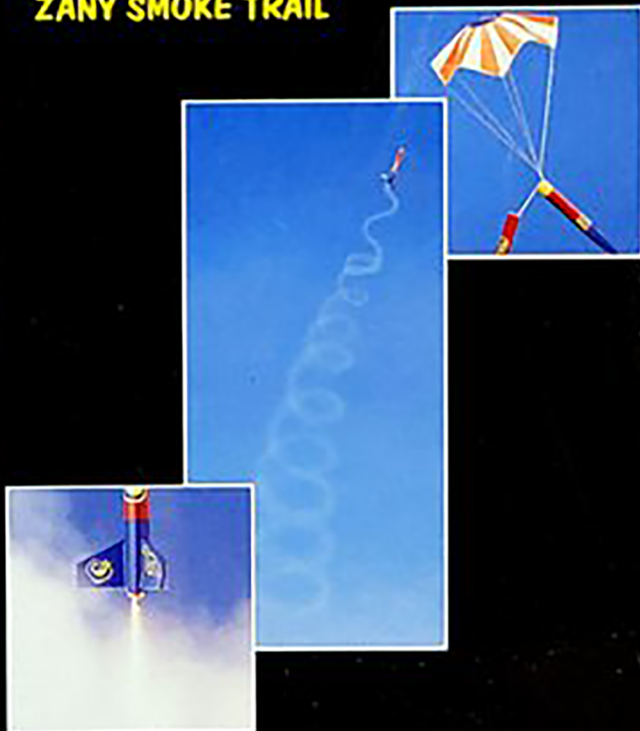


BETA  
SERIES

# CORK SCREW™

FLYING MODEL ROCKET

SPINS AND SPIRALS  
UPWARD CREATING A  
ZANY SMOKE TRAIL



- FLIES OVER 366 m (1,200 ft)!
- CRAZY MIND-TWISTING DECALS
- EASY Balsa FIN ATTACHMENT



Recommended for ages 10 and up with adult supervision for those under 12.

EST 2114



ESTES.  
SKILL LEVEL 1

BETA  
SERIES

SPINS UPWARD IN A  
TWISTING SPIRAL  
FLYING MODEL ROCKET

# CORK SCREW™

FLYING MODEL ROCKET  
SKILL LEVEL 1

- SIMPLE Balsa CONSTRUCTION
- CUSTOMIZE WITH PAINT OR MARKERS
- CREATES A TWISTING SMOKE TRAIL
- WATCH IN AMAZEMENT!



EASY THROUGH-THE-WALL  
Balsa FIN ATTACHMENT

Length: 54 cm (21 in.)  
Diameter: 28 mm (1.1 in.)  
Weight: 53 g (1.9 oz.)  
Recommended Engines:  
B6-4 (First Flight), A8-3, B4-2, B4-4, B6-2,  
C6-3, and C6-5

This model kit requires assembly.  
Requires tube-type plastic cement, white or yellow glue, engines, igniters, wadding, and launch system – NOT INCLUDED.

1 MODELE REDUIT PEINTURE ET COLLE NON COMPRISES

USE ONLY WITH ESTES PRODUCTS

MADE IN U.S.A.



ESTES INDUSTRIES  
1295 H STREET  
PENROSE, CO 81240



PN 36228