





Estes-Cox Corp.
1295 H Street, PO Box 227
Penrose, CO 81240-0227

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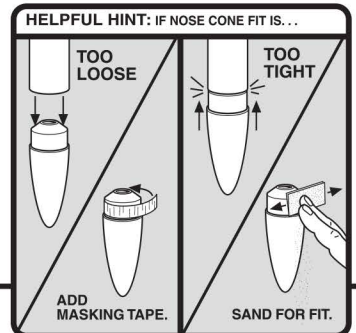
ASSEMBLY TIP: Read all instructions before beginning work on your model. Make sure you have all parts and supplies.

www.
estes
rockets
.com

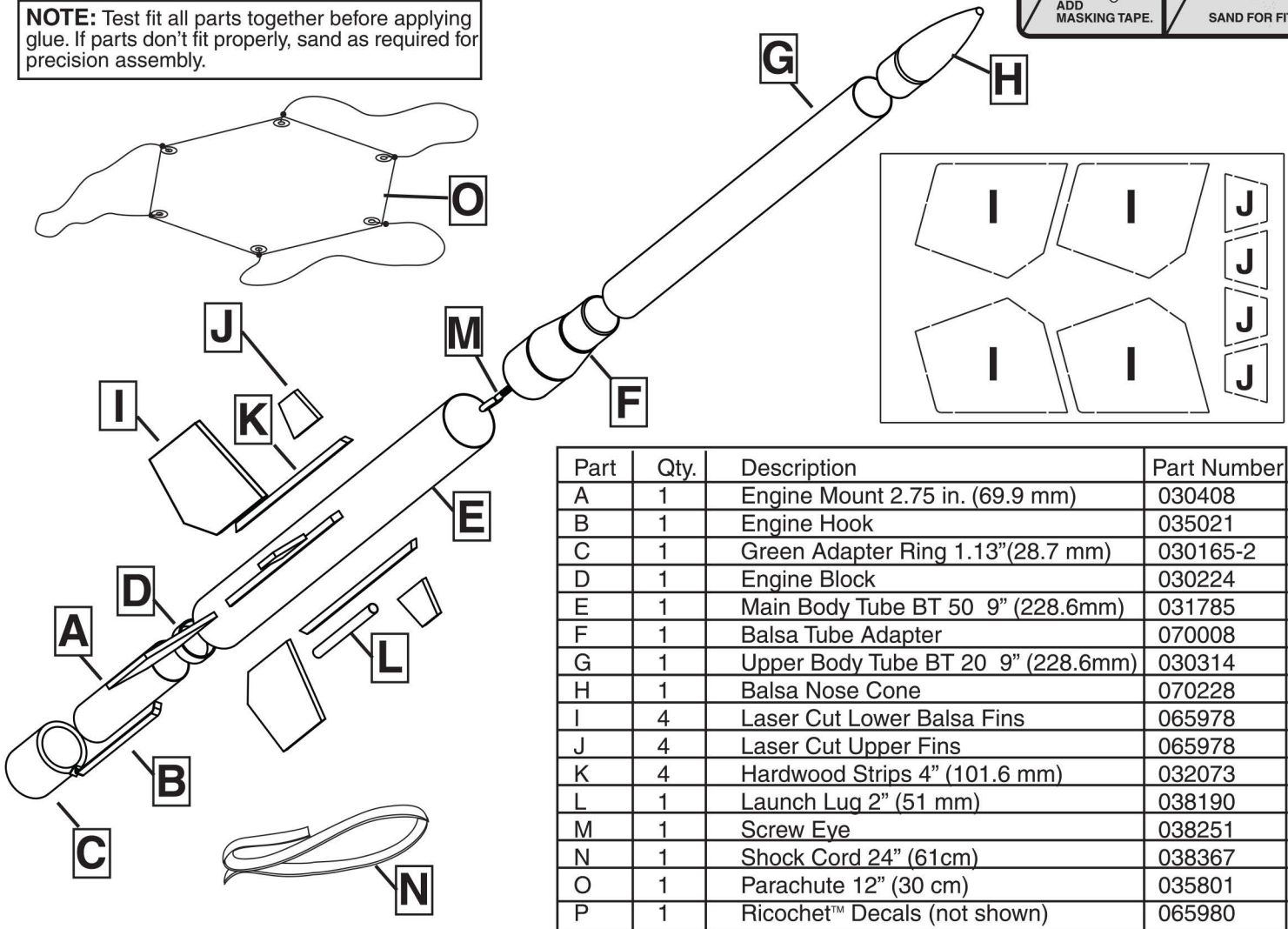
RICOCHET™

#7208

FLYING MODEL ROCKET KIT INSTRUCTIONS
KEEP FOR FUTURE REFERENCE



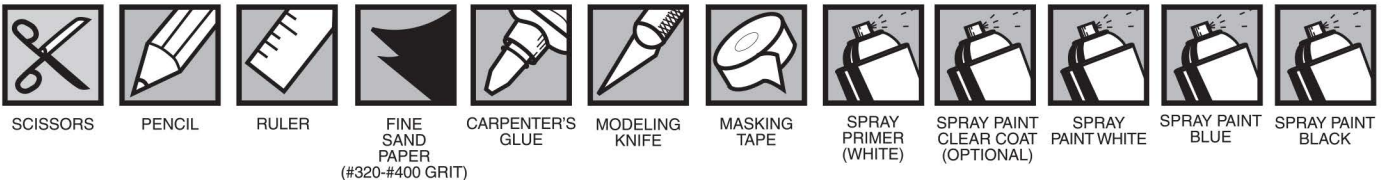
NOTE: Test fit all parts together before applying glue. If parts don't fit properly, sand as required for precision assembly.



Part	Qty.	Description	Part Number
A	1	Engine Mount 2.75 in. (69.9 mm)	030408
B	1	Engine Hook	035021
C	1	Green Adapter Ring 1.13"(28.7 mm)	030165-2
D	1	Engine Block	030224
E	1	Main Body Tube BT 50 9" (228.6mm)	031785
F	1	Balsa Tube Adapter	070008
G	1	Upper Body Tube BT 20 9" (228.6mm)	030314
H	1	Balsa Nose Cone	070228
I	4	Laser Cut Lower Balsa Fins	065978
J	4	Laser Cut Upper Fins	065978
K	4	Hardwood Strips 4" (101.6 mm)	032073
L	1	Launch Lug 2" (51 mm)	038190
M	1	Screw Eye	038251
N	1	Shock Cord 24" (61cm)	038367
O	1	Parachute 12" (30 cm)	035801
P	1	Ricochet™ Decals (not shown)	065980

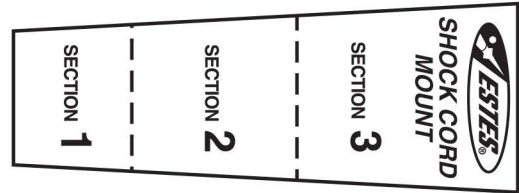
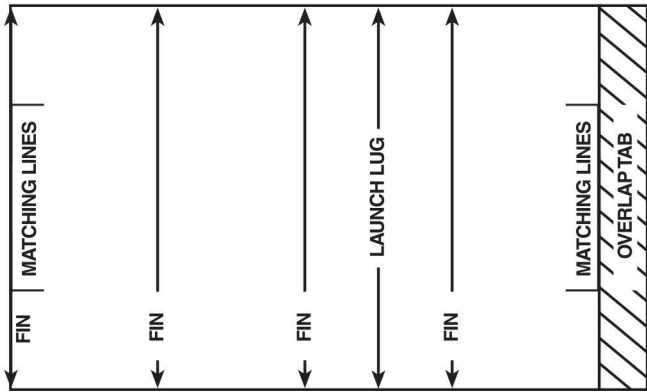
SUPPLIES

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

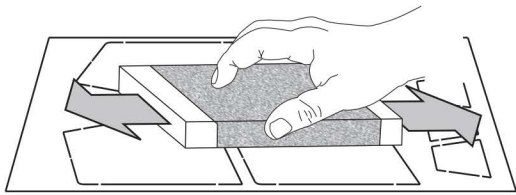


TUBE MARKING GUIDE AND SHOCK CORD MOUNT

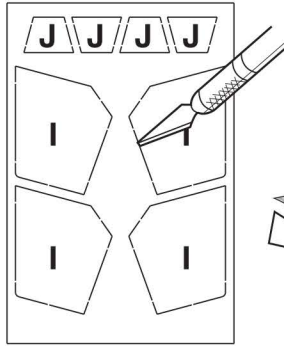
(Make a copy if you want to keep instructions.)



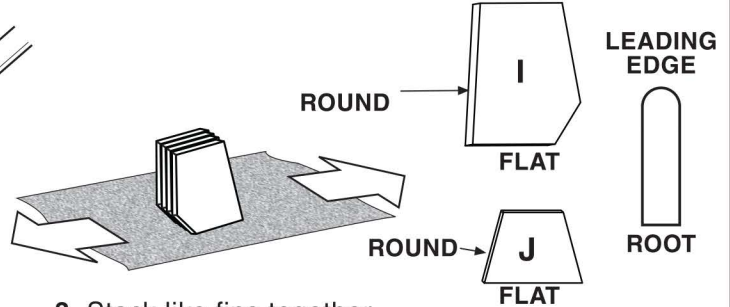
FIN PREPARATION



1. Sand both sides of balsa sheet with fine sandpaper (#320 or #400 grit).



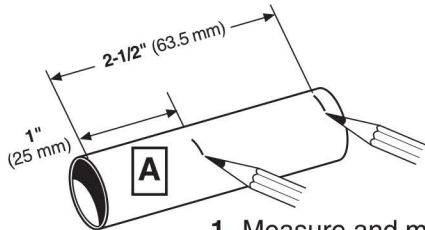
2. Cut I and J from sheet.



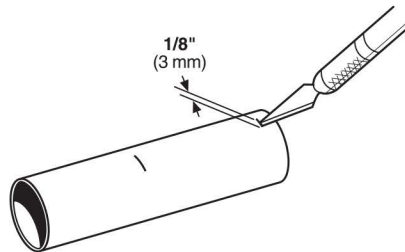
3. Stack like fins together. Sand edges smooth. Do not sand root edge round.

4. Sand leading edge round.

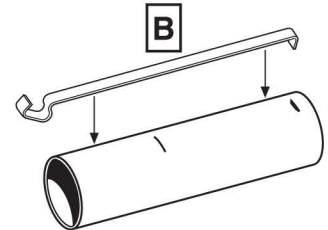
ENGINE MOUNT ASSEMBLY



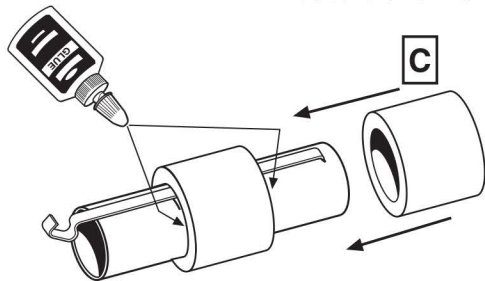
1. Measure and mark A.



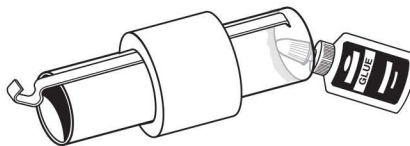
2. Cut slit at mark.



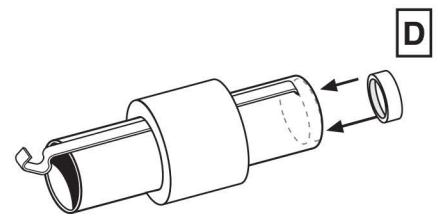
3. Insert B in slit.



4. Slide C to mark. Apply glue to both sides of C.

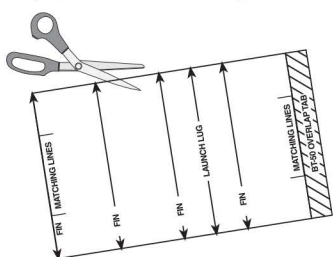


5. Apply glue in end of A.

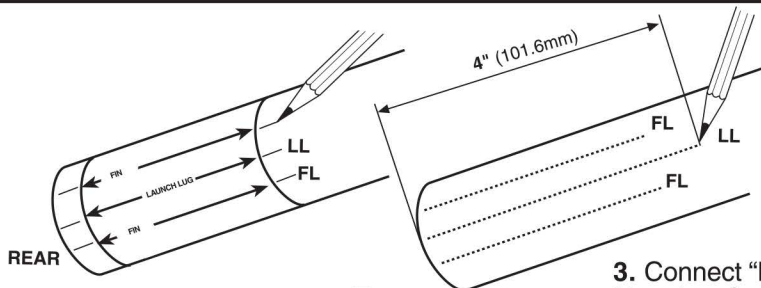


6. Insert D until it stops. Let dry.

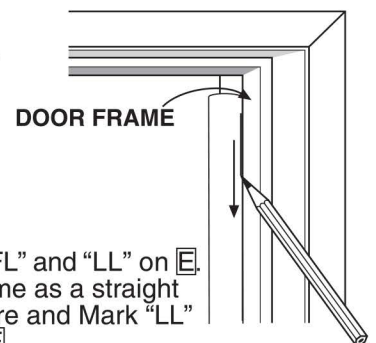
TUBE MARKING



1. Cut tube marking guide from instructions.

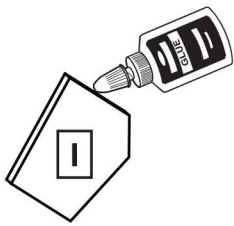


2. Tape guide around E. Mark launch lug "LL" and fin lines "FL". Remove guide.

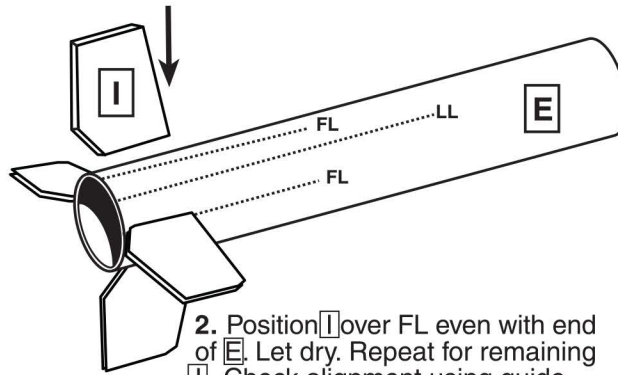


3. Connect "FL" and "LL" on E. Use door frame as a straight edge. Measure and Mark "LL" from end of E.

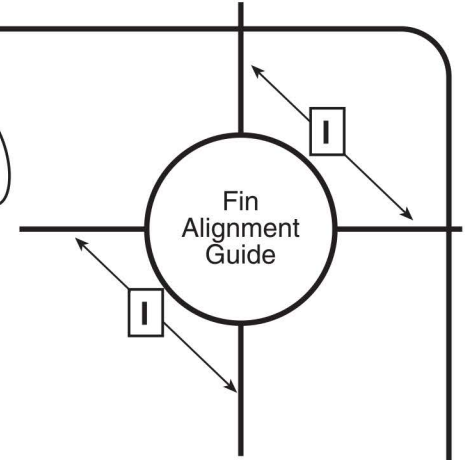
LOWER FIN ATTACHMENT



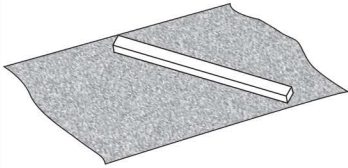
1. Apply glue to root edge of **I**. Let dry 1 minute. Apply 2nd layer of glue.



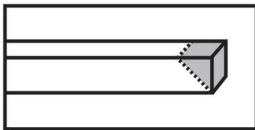
2. Position **I** over FL even with end of **E**. Let dry. Repeat for remaining **I**. Check alignment using guide.



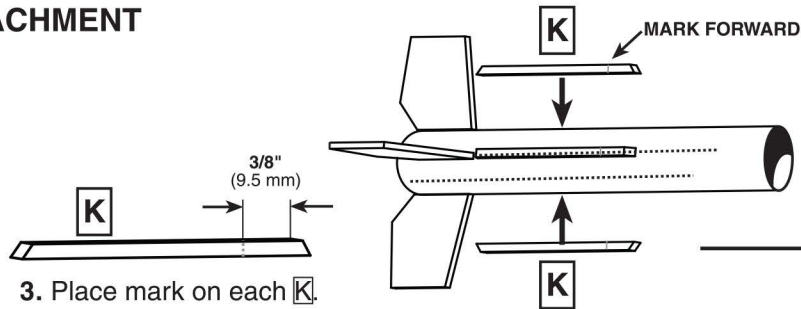
HARDWOOD STRIP ATTACHMENT



1. Sand sides of **K** smooth.

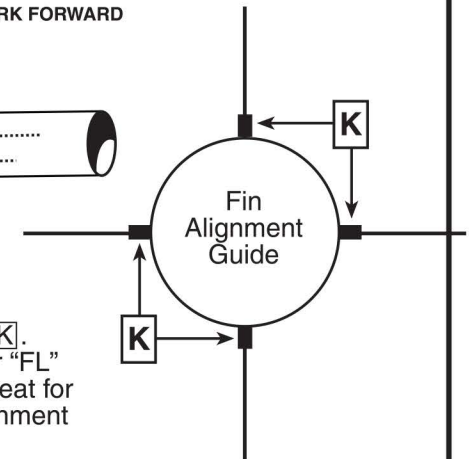


2. Bevel each end of **K** 45 degrees. Sand smooth.

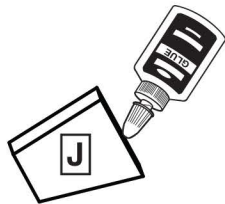


3. Place mark on each **K**.

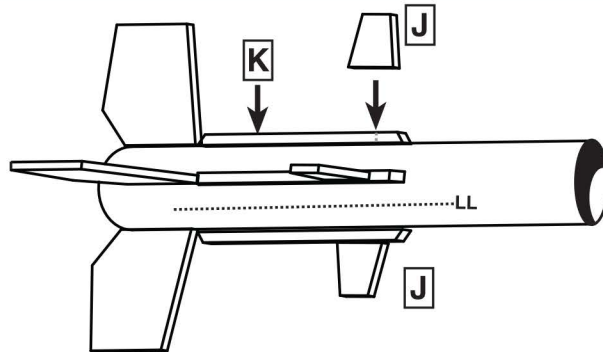
4. Apply glue to bottom **K**. Position **K** centered over "FL" with mark forward. Repeat for remaining **K**. Check alignment using guide.



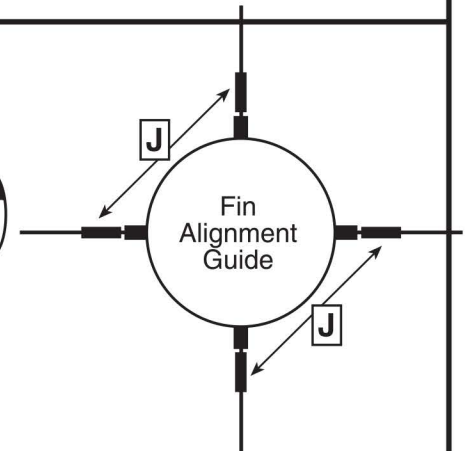
UPPER FIN ATTACHMENT



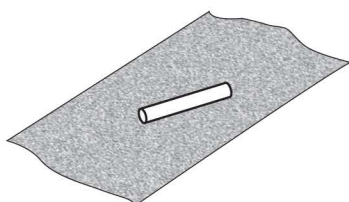
1. Apply glue to root edge of **J**. Let dry 1 minute. Apply 2nd layer of glue. Position over **K** rear of mark. Let dry.



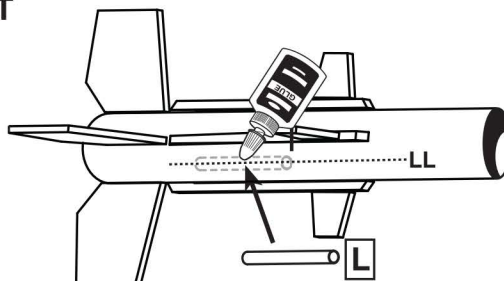
2. Repeat for remaining **J**. Let fins dry. Check alignment using guide.



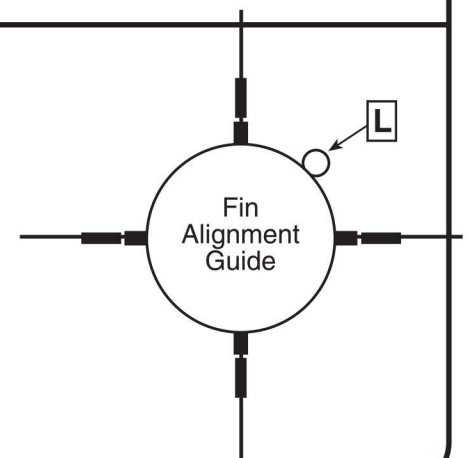
LAUNCH LUG ATTACHMENT



1. Sand **L** with fine sandpaper.

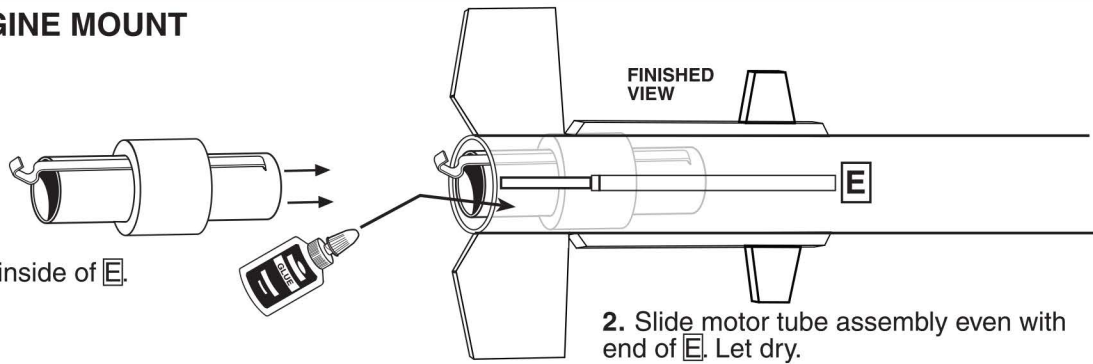


2. Apply glue to "LL" forward of mark. Position **L** in place. Let dry.



INSTALL ENGINE MOUNT

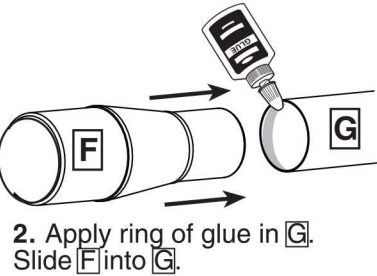
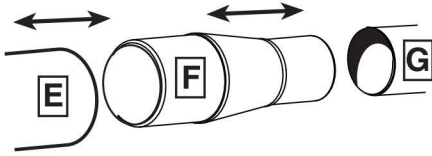
1. Apply glue inside of **E**.



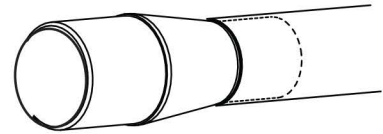
2. Slide motor tube assembly even with end of **E**. Let dry.

UPPER BODY TUBE ASSEMBLY

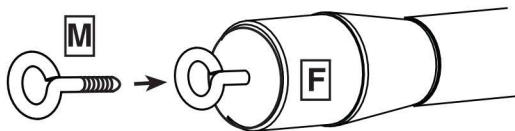
1. Check fit of **F** in **E** and **G**. Sand as required for fit.



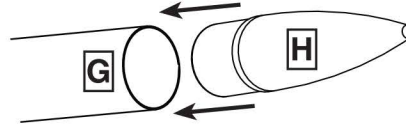
2. Apply ring of glue in **G**. Slide **F** into **G**.



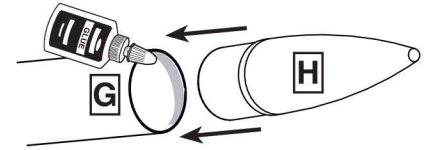
3. Wipe excess glue. Let dry.



4. Screw **M** into **F**



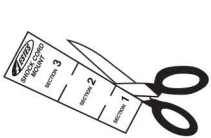
5. Test fit **H** in **G**. Sand as required for fit.



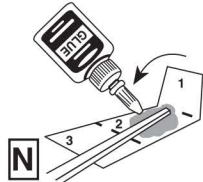
6. Apply ring of glue in **G**. Slide **H** into **G**. Let dry.

INSTALL SHOCK CORD MOUNT

1. Cut shock cord mount from instructions.



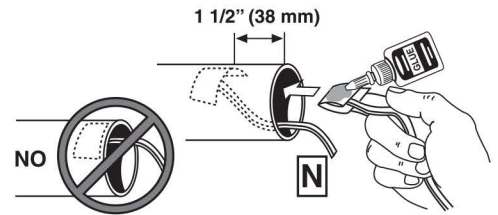
2. Apply glue to mount. Place **N** on Section 2. Fold forward.



3. Apply glue and fold forward. Squeeze tight!



4. Apply glue to shock cord mount and insert in **E**. Hold until glue sets. Let dry.



ROCKET FINISHING

NOTE: We have found Testors One Coat Lacquer, Testors Model Master spray paints (color of your choice) and Testors Gloss Lacquer (# 1961) to be excellent for providing a long lasting and durable finish on your rocket. Always be sure to spray your models outside or in a well ventilated area.

Steps for a Quality Finish:

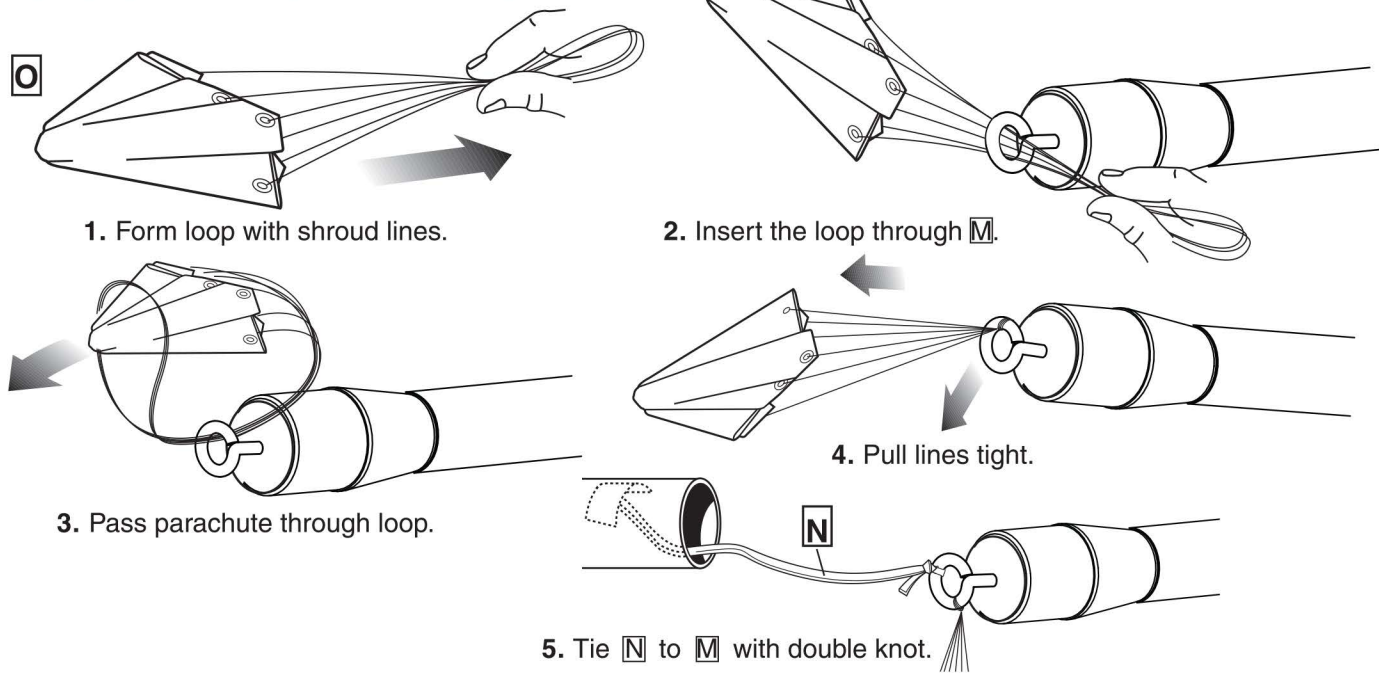
1. Stuff shock cord into body tube and hold in place with paper.
2. Lightly sand entire rocket with fine sandpaper (#320 or #400 grit).
3. Apply glue fillets to fins and launch lug.
 - a. Allow glue to dry overnight.
4. Paint the main rocket body and upper rocket tube separately. Assemble after painting is complete.
5. Use a stick inserted into the engine tube end of the rocket body for painting.
6. Hold the upper rocket section by the screw eye with a clip or pliers for painting.
7. We recommend a good filler/primer to be applied to the balsa fins, tube adapter and nose cone before painting.
 - a. Sand after each application for a smooth finish.
8. Apply 1-2 light coats of white primer to upper and lower rocket sections.
 - a. Lightly sand with fine sandpaper (#320 or #400 grit) between coats.
 - b. Allow to dry between each coat.
9. Spray paint tube adapter gloss white.
 - a. Let paint dry overnight (24 hours is best).
10. Apply masking tape and protective cover around tube adapter.
11. Spray paint upper rocket section gloss blue.
 - a. Let paint dry overnight (24 hours is best). Remove tape.
12. Apply masking tape and protective cover around nose cone and upper rocket section.
13. Spray paint nose cone gloss black.
 - a. Let paint dry overnight (24 hours is best). Remove tape.

ROCKET FINISHING CONTINUED

14. Spray paint main rocket body gloss white.
 - a. Let paint dry overnight (24 hours is best).
15. Apply masking tape between fins and protective cover over lower rocket section.
16. Spray fins gloss black.
 - a. Let paint dry overnight (24 hours is best). Remove tape and cover.
17. Apply waterslide decals where shown.
 - A. Cut the decal to be applied from the decal sheet, trimming close to the decal edge.
 - B. Hold the decal in warm water until decal begins to curl.
 - C. Remove the entire decal, position in place and slide the decal backing material from under the decal and onto the model as close to final position as possible.
 - D. Gently blot out excess water with a clean paper towel.
 - E. Allow decals to set overnight before applying protective clear coat.
18. When decals are dry, spray entire rocket (body and nose cone with Testor's clear lacquer #1961). This will provide added protection and shine to your Ricochet rocket!

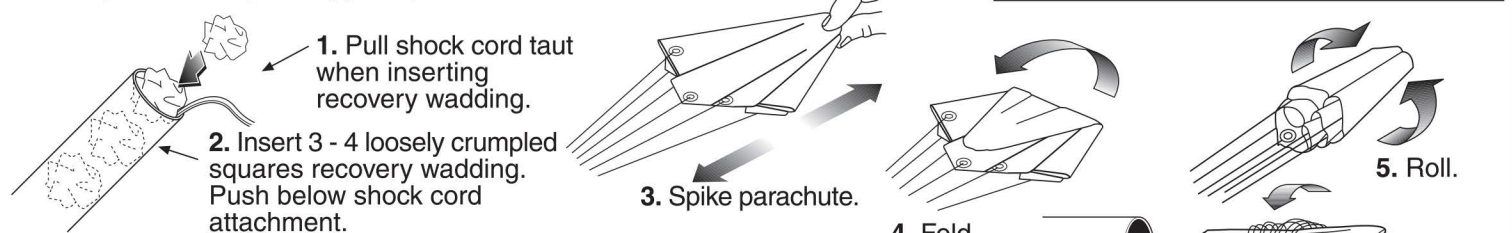


RECOVERY SYSTEM ATTACHMENT



PREPARE FLIGHT RECOVERY

NOTE: Only Estes Recovery Wadding (302274) recommended.

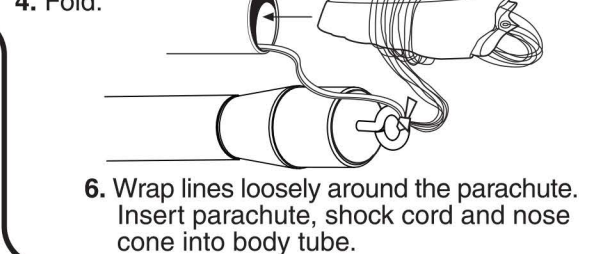
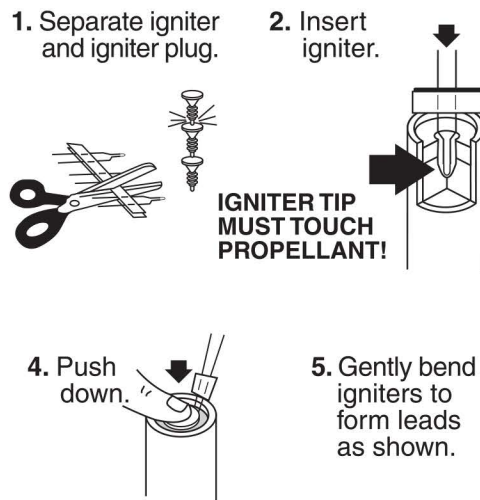


NOTE: Recovery wadding and streamer must slide easily into body tube. If too tight, redo.

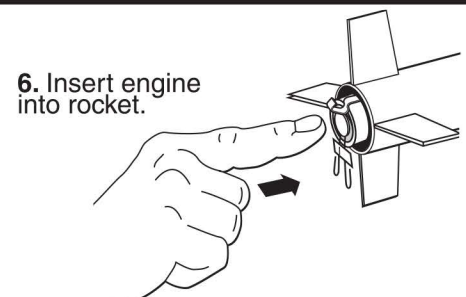
PREPARE ENGINE

⚠ WARNING: FLAMMABLE

To avoid serious injury, read instructions & NAR Safety Code included with engines.
PREPARE 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 engine.



6. Wrap lines loosely around the parachute. Insert parachute, shock cord and nose cone into body tube.



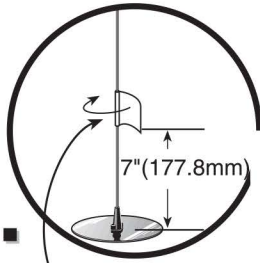
6. Insert engine into rocket.

COUNTDOWN AND LAUNCH



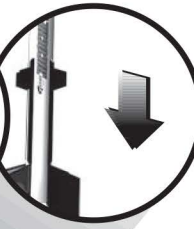
KEY ALWAYS OUT UNTIL FINAL COUNTDOWN!

1...

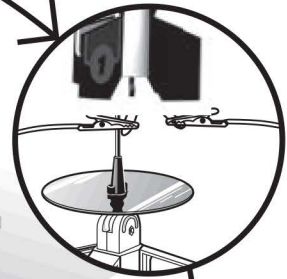


Masking Tape

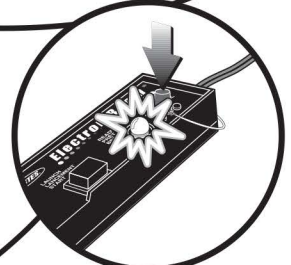
2...



3...



4...



INSERT KEY. PUSH DOWN HARD. BULB WILL LIGHT.

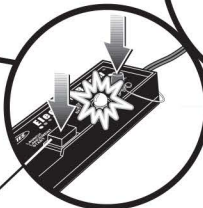
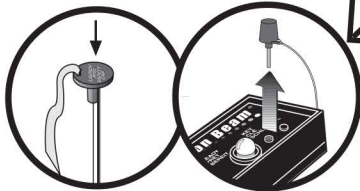
5...



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

WHILE HOLDING KEY DOWN FIRMLY, PRESS LAUNCH BUTTON UNTIL LIFT-OFF!

LAUNCH BUTTON



Estes Launch Supplies Needed:

(Sold Separately)

- Porta Pad® II Launch Pad
- Electron Beam® Launch Controller
- Recovery Wadding (302274)
- Igniters (with engines)
- Igniter Plugs (with engines)
- Recommended Estes Engines:
 - A8-3 (First Flight),
 - B6-4, C6-5

PRECAUTIONS



NAR Safety Code

This Paper



Can Be Recycled

PRE-LAUNCH CHECK

For safety, never launch a damaged rocket. Check the rocket's body, nose cone and fins. Also, check the engine mount, recovery system and launch lug. Repair any damage before launching the rocket.

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 enclosed National Association of Rocketry (NAR) SAFETY CODE.

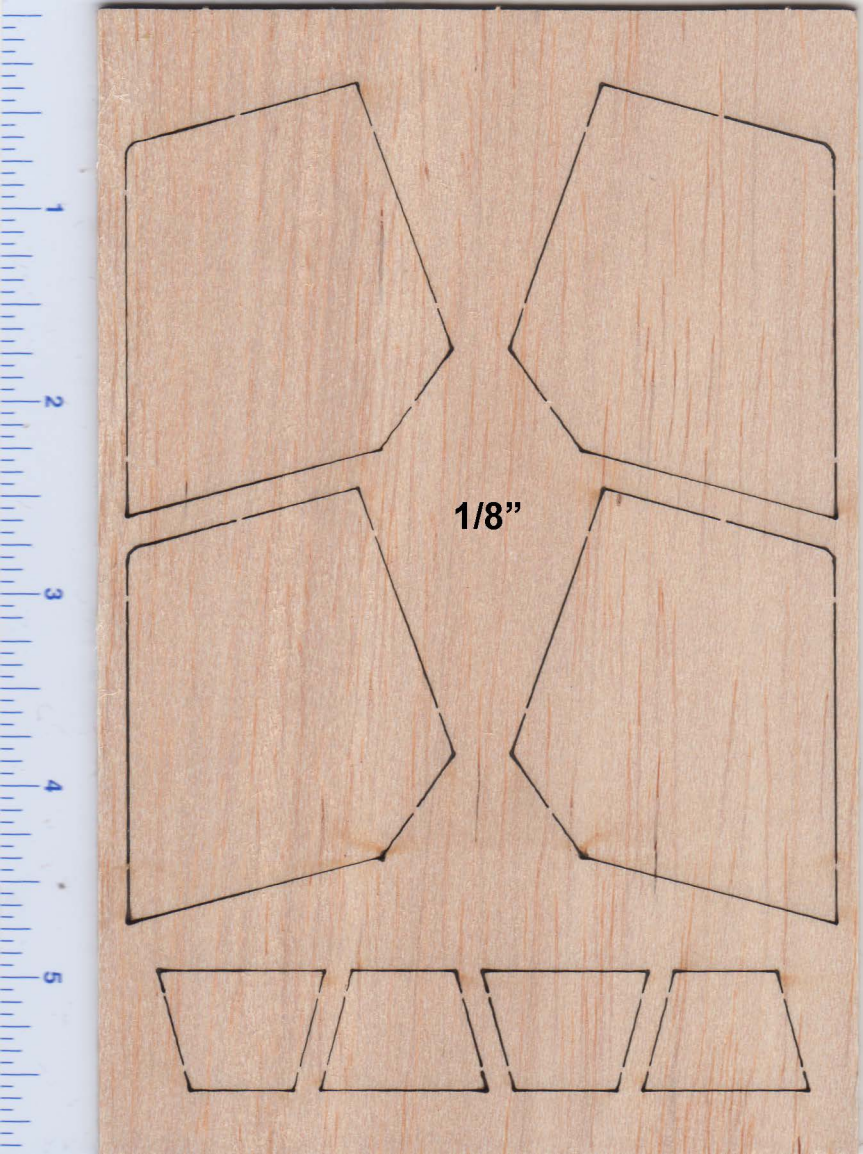
MISFIRES

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.

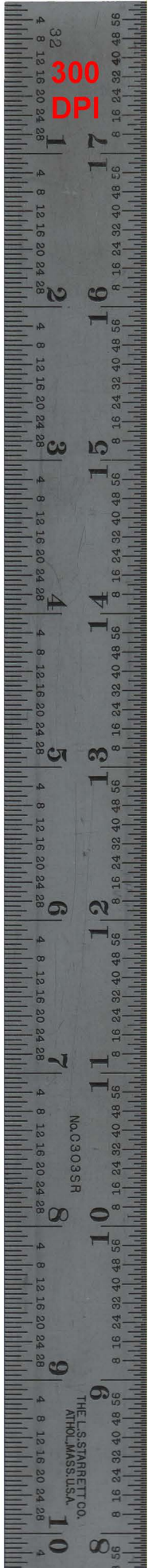


NO DRY GRASS OR WEEDS



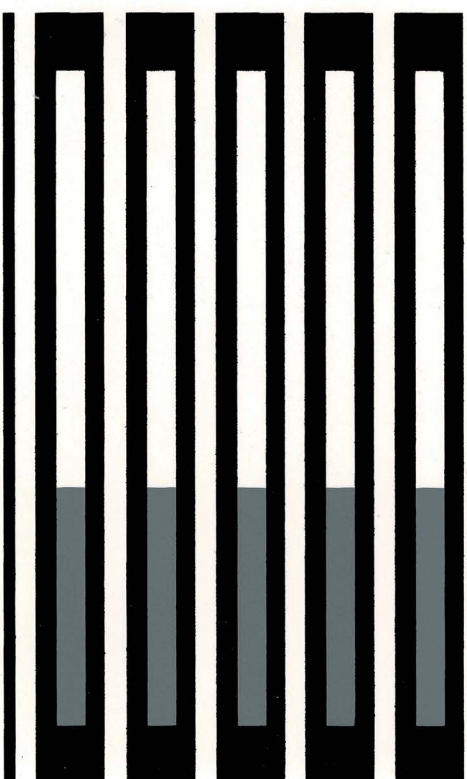


1/8"



BEECHNET™

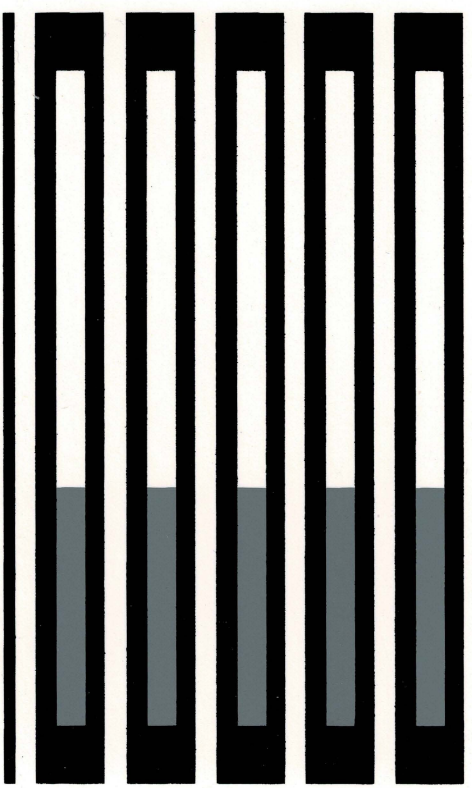
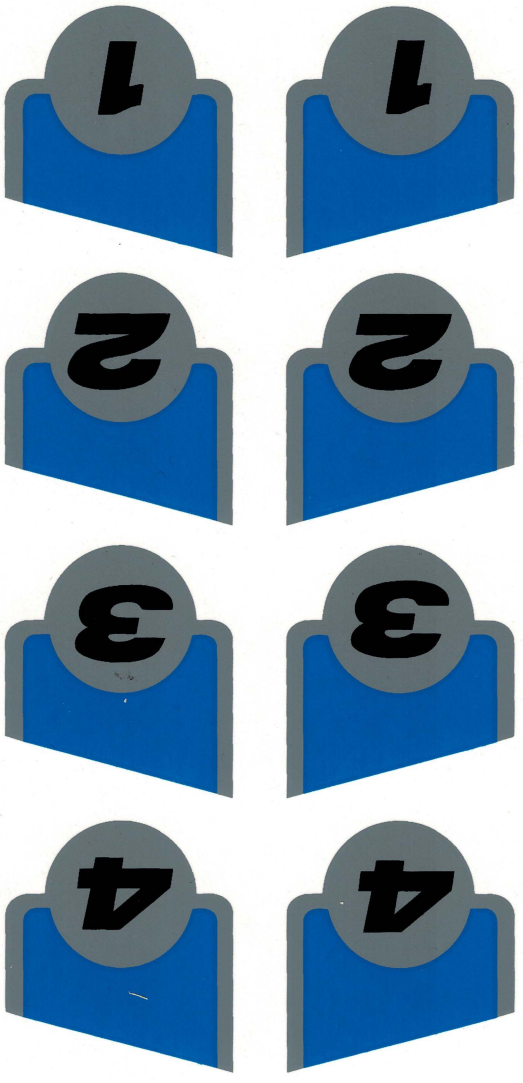
Recommended Engines: A8-3 (First Flight); B6-4; C6-5





BLISSCHET™

Recommended Engines: A8-3 (First Flight); B6-4; C6-5





PN36901 (2-11)

11/28/13



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PARTS LIST KIT NO. 7208 - Ricochet

Quantity	Description	Type	Number	Detail1	Detail2	Detail3	Detail4	Comment
1	PAPER BODY TUBE	BT-20?	30408	2.75" long	0.710" ID	0.736" OD	0.013" wall	White
1	ENGINE HOLDER	EH-2	35021	2.8" long	.100" wide	.025" thick		Thumb Saver
1	CENTERING RING	AR-2050L	30165-2	1.125" long	.737" ID	.949" OD	0.106" wall	Green
1	ENGINE BLOCK	EB-20A	30224	.708" OD	.63" ID	.025" thick	fits BT-20	Black
1	PAPER BODY TUBE	BT-50?	31785	9" long	0.950" ID	0.976" OD	0.013" wall	White
1	BALSA ADAPTER	TA-2050A	70008	2.0" long	1.0" taper	.5" front	.5" back	BT-20 to BT-50
1	PAPER BODY TUBE	BT-20?	30314	9" long	0.710" ID	0.736" OD	0.013" wall	White
1	BALSA NOSE CONE	BNC-20AZ	70228	2.5" long	.736" dia.	.5" shoulder		
1	BALSA FIN STOCK	BFS-40?	*65978	1/8" thick	4" wide	6" long	0.125	Lasercut
4	WOOD STRIPS		32073	1/8" square	4" long			Balsa
1	LAUNCH LUG	LL-2	38190	5/32" ID	1/8" rod	2" long		
1	Screw Eye (Large)	SE-1	38251	1" long				
1	Shock Cord	SC-1	38367	25" long	1/8" wide			Rubber
1	Parachute	PK-12	35801	12" dia.	6 x 12" Shrouds		Org/Wht	Preassembled
1	Decal		65980	2.25" wide	6" long	Multicolor	Self Stick	Scan

* Diecut part number

MADE IN CHINA



PROCHART

PROCHART
PROCHART
PROCHART
PROCHART

1 2 3 4 4 3 2 1

5

INSTALL WITH
FLAT SIDE UP
HARD SIDE
DOWN



RICOCHET

FLYING MODEL ROCKET KIT

MODELE REDUIT

SKILL LEVEL 1

- **Basic Builder Series!**
- **Simple to Glue and Paint!**
- **Air to Air Missile Styling!**

FLIES
UP TO
1125
FEET
(343 M)

Requires launch system and flight supplies - sold separately. See back for details.

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

www.
estes
rockets
.com



-22 inches Tall!



RICOCHET™

FLYING MODEL ROCKET KIT

Building is necessary - this Model Rocket can be flown over and over again. After each flight, simply insert more recovery wadding, repack the parachute, and insert a new Estes model rocket engine with an igniter and plug. Place on launch pad and blast off!

To Launch This Rocket, You Will Need

(Items sold separately):

- Estes Porta Pad® II Launch Pad (included in some Estes Launch Sets, Starter Sets or sold separately)
- Estes Launch Controller (included in all Estes Launch Sets, Starter Sets or sold separately)
- Estes Model Rocket Engines (Recommended Estes Engines: A8-3 (First Flight), B6-4, C6-5)
- Estes Igniters and Plugs (included with Estes Engines and Flight Packs)
- Estes Recovery Wadding (included with Estes Flight Packs or sold separately)

IMPORTANT INFORMATION:

Requires Assembly. Requires hobby tools, yellow or white glue, paint, finishing supplies, engines, igniters, wadding, and launch system - NOT INCLUDED.

Safety Code and Full One Year Warranty Enclosed.

Use only with Estes products. **CAUTION:** Use of this Estes product with any other brand-name rocket product containing any defect or missing any damage may void the Estes warranty.

Allergy Information: Product may contain latex.

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Do not launch a model rocket into a cloud or in a manner which constitutes a danger to air safety.

Cette modèle réduit exige montage. Colle et peinture, moteurs, alternateurs et système de lancement - NON COMPRIS.

Code de Sécurité et Garantie contenues.

EMPLOYEZ SEULEMENT AVEC DES PRODUITS D'ESTES. Mise en garde: L'utilisation de ce produit Estes avec un produit d'une autre marque entraîne d'une détérioration ou causant des dommages peut annuler la garantie Estes.

L'Information d'Allergie: Le produit peut contenir le latex.

Avertissement: Ce produit contient un produit chimique révisé par l'état de Californie comme cause d'anomalies congénitales ou d'autres problèmes reproductifs.

Ne pas lancer un modèle réduit de fusée dans un usage ou d'une manière qui constitue un danger pour la sécurité aérienne.

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MADE IN CHINA

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Recycles



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Color of product may vary.