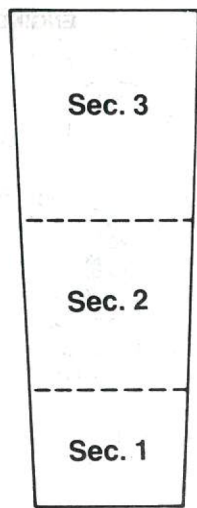
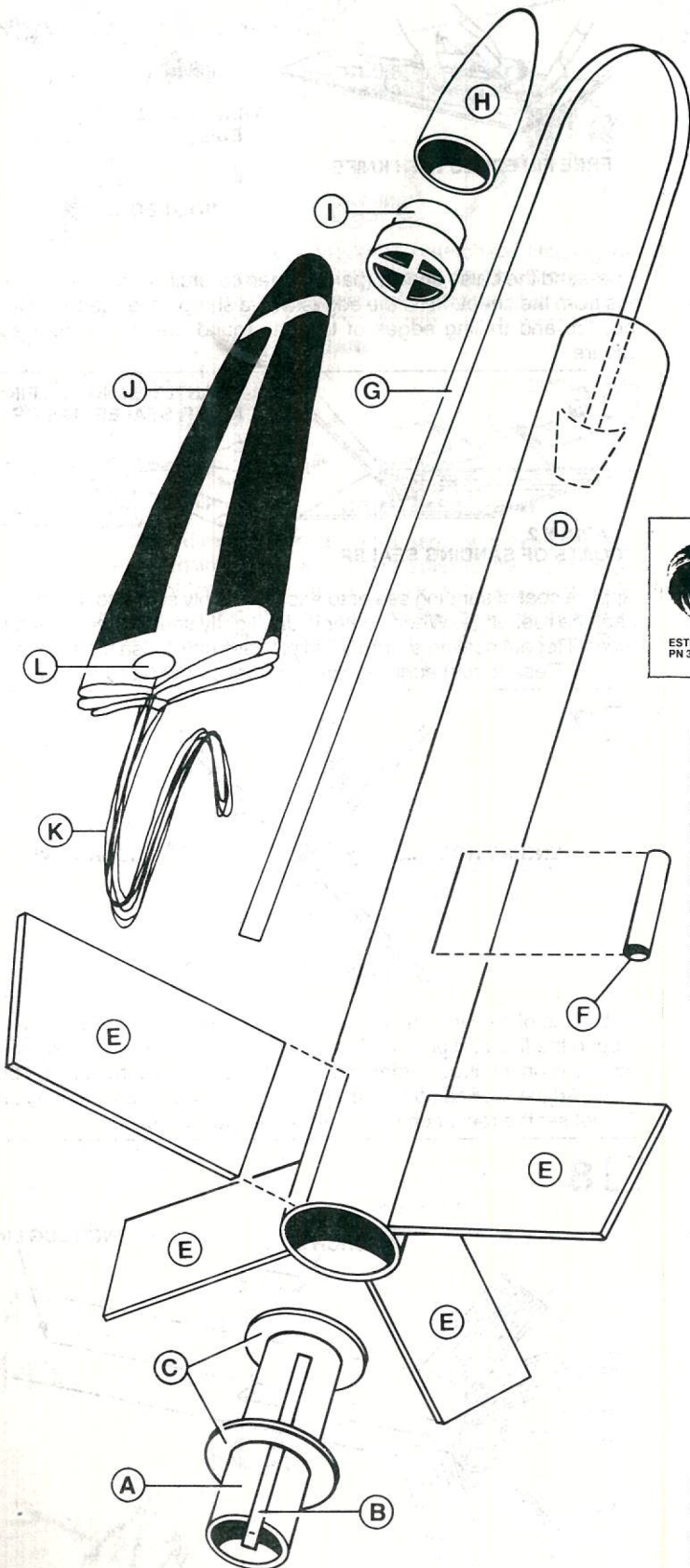
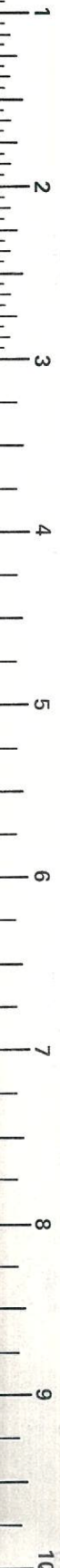




CYCLONE

RULER

INCHES



SHOCK CORD MOUNT
(to be cut out here)



BEFORE YOU START

Read each step and study the accompanying drawings before doing any of the work called for in that step. Make sure you have all the parts and materials. Check off each step as you complete it. Always test-fit parts together before applying glue. It will sometimes be necessary to sand edges of rings, tubes, etc. to obtain a proper fit. If you are in doubt about the relative size or location of some parts, refer back to this exploded view drawing for clarification. Adequate glue joints are very important for a flying model rocket. Follow the instructions carefully in this regard.

KIT NO. 1907

PARTS LIST

A	1	Engine Mount Tube (type BT-20J)	30326
B	1	Engine Hook (type EH-2)	35025
C	1	Adapter Centering Rings (type TA-1327)	30090
D	1	Body Tube (type ST-1312)	31190
E	1	Die-Cut Balsa Sheet (type BF-1907)	32607
F	1	Launch Lug (type LL-2B)	38178
G	1	Shock Cord (type SC-1)	85730
H	1	Nose Cone	72132
I	1	Nose Cone Insert	72513
J	1	Parachute (PK-12A)	85564
K	1	Shroud Line (type SLT-72)	38237
L	1	Tape Discs (type TD-3F)	38406
M	1	Decal (type KD 1907)	37222

TOOLS AND MATERIALS

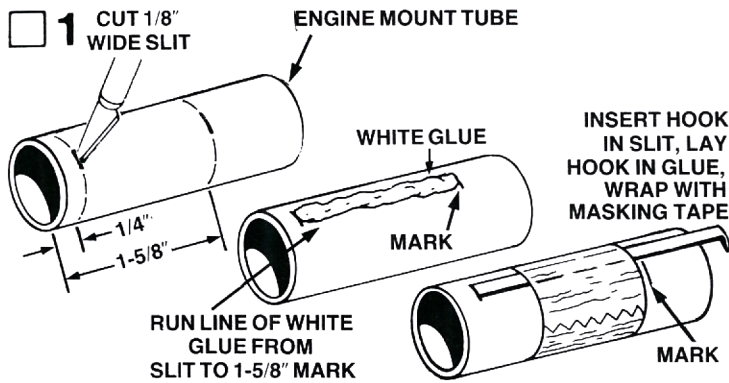
In addition to the parts included in this kit you will need: Scissors, pencil, ruler, fine or extra-fine grit sandpaper, sanding sealer, a medium-size modeling paint brush, modeling knife with sharp blade, gloss yellow and red enamel spray paints and household white glue or resin glue and tube type plastic cement. Other types of glue are not recommended.

For easy and positive alignment of the fins on your model, we recommend the use of Estes' Fin Alignment Guide, Part. No. 2231.

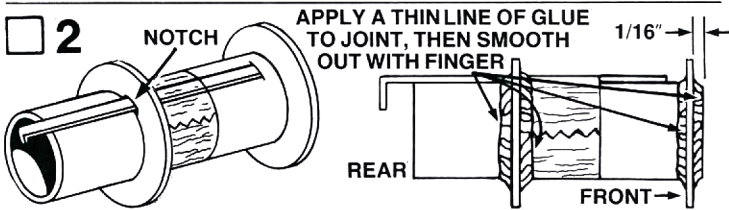
RECOMMENDED ENGINES:
A8-3, B4-4, B6-4, B8-5, C6-5
First Flight A8-3



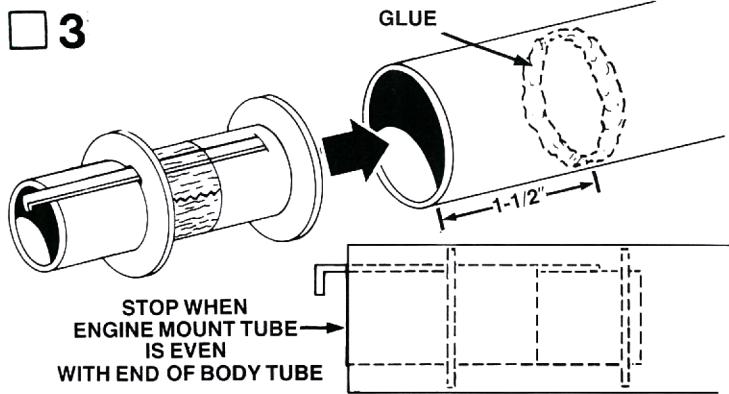
ASSEMBLY INSTRUCTIONS



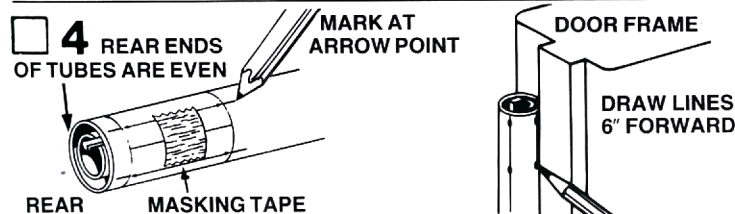
Mark the engine mount tube (part A) 1/4" and 1-5/8" from one end. Use a sharp modeling knife to cut a 1/8" wide slit at the 1/4" mark. Insert one end of the engine hook (part B) into the slit and lay the hook into the glue straight along the tube. Wrap two layers of masking tape around the hook and tube with one edge of the tape next to the mark as shown.



Locate the centering adapter rings (part C) and separate them from the die-cut card. Slide the notched ring onto the tube from the rear and position it so it touches the masking tape as shown. Apply a line of white glue around both sides of the ring where it touches the tube. Slide the remaining ring onto the forward end of the tube and position it about 1/16" from the end. Apply a thin line of white glue around both sides of the ring where it touches the tube. Smooth out with finger. Let this assembly dry completely.



Apply a liberal amount of glue around the inside of the body tube (part D). The glue should be applied about 1-1/2" from the rear of the tube. Slide the engine mount unit into the body tube as shown until the end of the engine mount tube is even with the body end. Do not pause when pushing the mount in or the glue may "grab" at the wrong place!



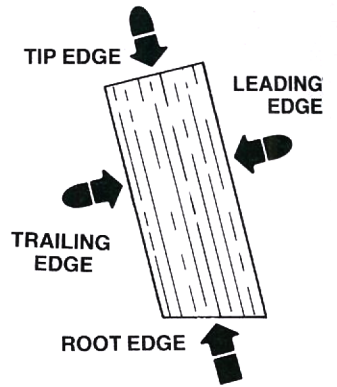
Cut out the body tube marking guide from the back of the display panel. Wrap it around the rear of the body tube with the launch lug line in line with the engine hook. Mark the tube at each arrow point, front and rear. Draw a straight line connecting each matching front and rear mark. (Use a door sill when drawing lines.) Extend the launch lug line forward 8" (align launch lug line with engine hook).

5

FINE-SAND BOTH SIDES OF BALSA SHEET



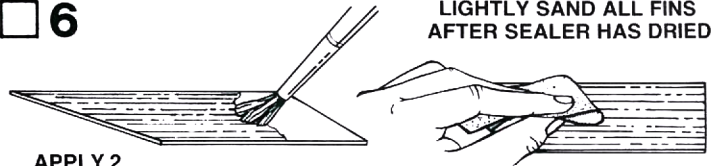
FREE FIN EDGES WITH KNIFE



Fine-sand the balsa sheets (part E), then carefully remove the die-cut fins from the sheet. Free the edges with a sharp knife. Sand the leading, tip, and trailing edges of the fins round. Leave the root edge square.

6

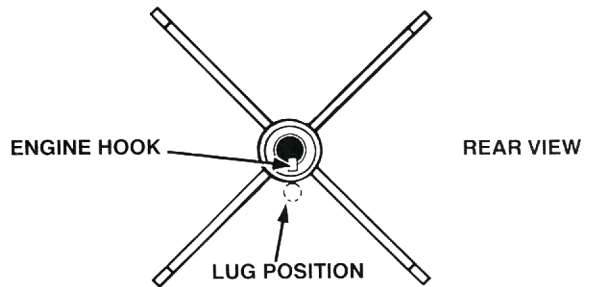
LIGHTLY SAND ALL FINS AFTER SEALER HAS DRIED



APPLY 2 COATS OF SANDING SEALER

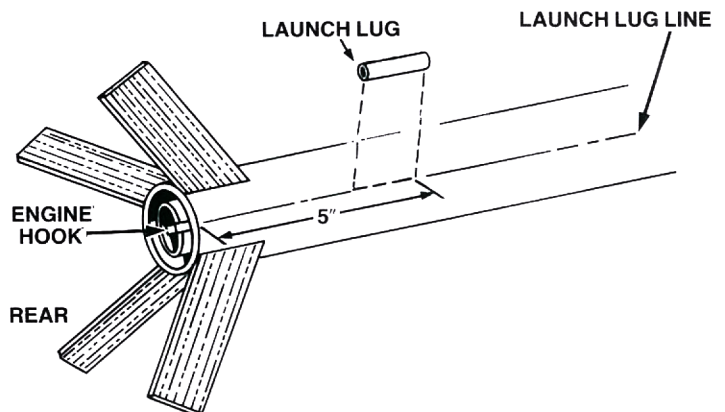
Apply a coat of sanding sealer to each fin. Apply sealer to all edges except the root edge. When sealer is dry, lightly sand all the sealed surfaces. Repeat sealing and sanding process until balsa grain no longer shows. Resand root edge, lightly, to remove any trace of sealer.

7

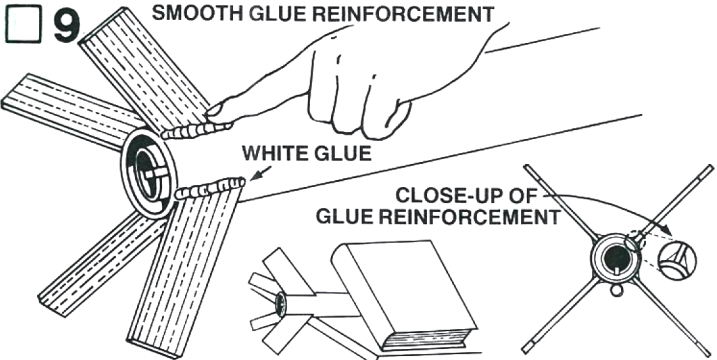


Rub a line of glue into the root edge of each fin and allow to dry. Apply glue to the fins and position fins on the alignment lines in their correct positions on the tube. Refer to the illustration to be sure of these positions. Adjust the fins so they project straight away from the body tube. Do not set the rocket on its fins while the glue is wet.

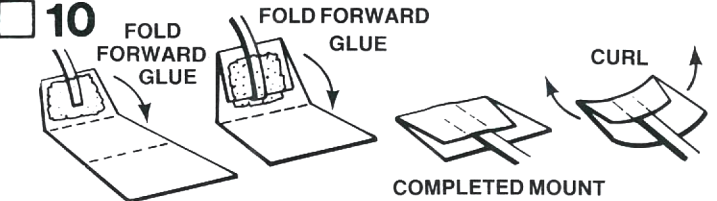
8



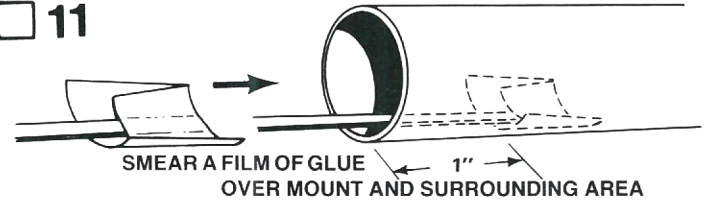
Glue the launch lug (part F) to the body on its line. The front of the lug should be 5" from the rear of the body. Align it straight on the body.



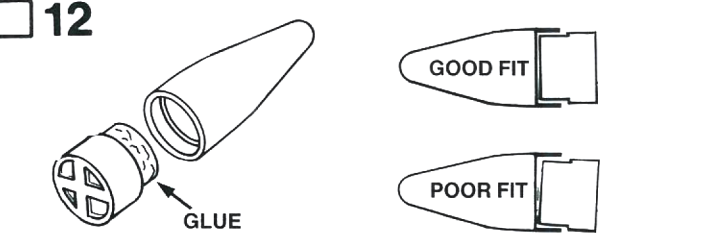
Apply a glue reinforcement to each fin joint and launch lug. Holding the model level, apply a line of glue to both sides of each joint. Smooth out the glue with your finger. Keep the model level until the glue dries.



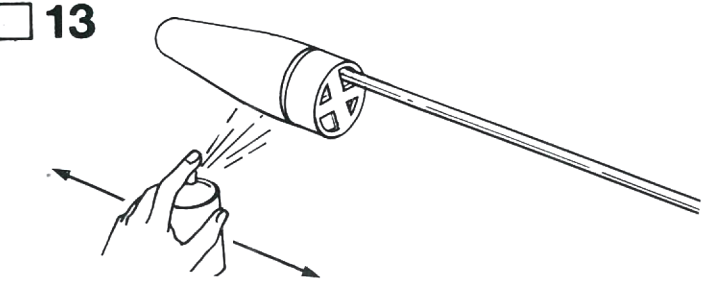
Cut out the shock cord mount from the front page of the instructions. Crease it on the dotted lines by folding. Spread glue on the first section (1) and lay the end of the shock cord (part G) into the glue. Fold over and apply glue to the back of the first section and the exposed part of section 2. Lay the shock cord as shown and fold over again. Clamp the unit together with your fingers until the glue sets.



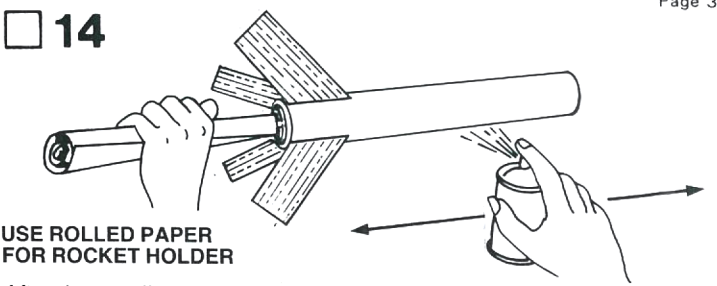
Use a stick or scrap dowel to apply a generous amount of glue inside the body tube 1" from the front of the tube. Slide the shock cord mount into the tube and press it into the glue. To insure a good bond use a stick or your finger to smear a film of glue over the mount and surrounding area in the body tube.



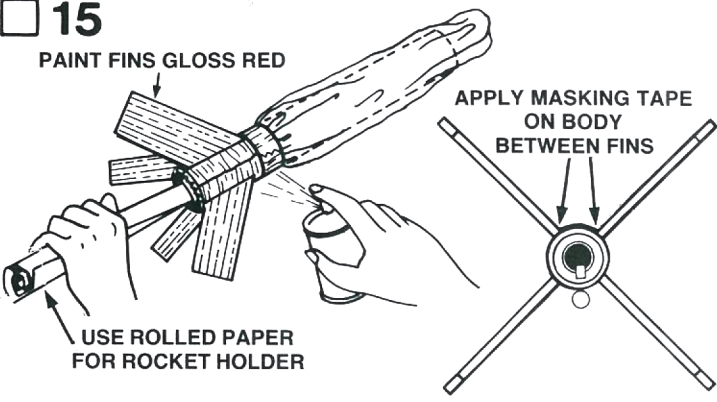
Glue the plastic nose cone (part H) and insert (part I) together using PLASTIC GLUE (not white glue). Check the fit before the glue dries.



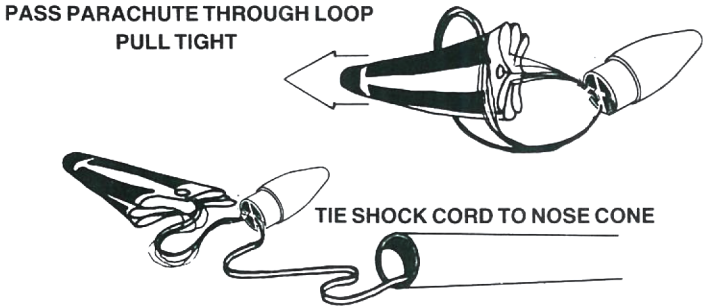
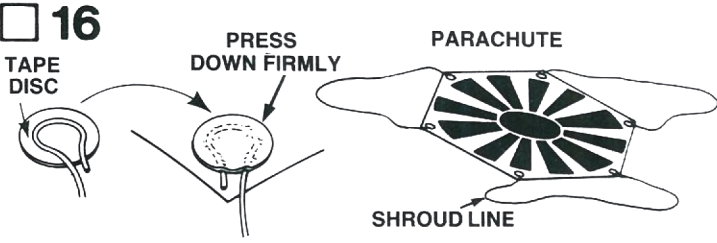
Spray paint the nose cone with several light coats of bright red spray enamel paint. The nose cone can be supported with a pencil or dowel as shown above.



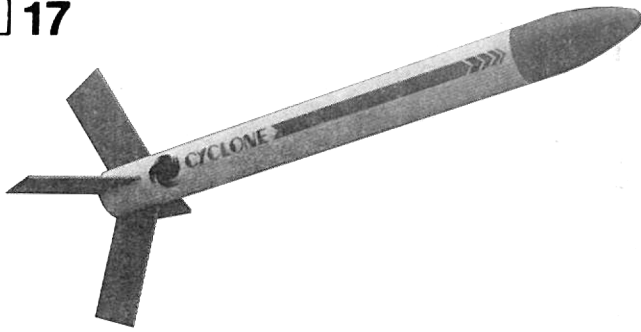
After the sanding sealer is completely dry, paint the entire rocket body and fins with bright yellow spray enamel. Follow instructions on the spray can for best results. We recommend spray enamel. Do not paint the model with lacquer paint. Shake can before spraying. Hold the can straight up and spray in long, smooth "strokes". Spray the model with several light, dry mist coats of paint to avoid "runs". Shake can periodically. To obtain a gloss, final coat should be applied slightly heavier. Let this coat dry overnight.



When the yellow paint has dried, apply masking tape on the rear of the body between all four fins as shown. This is in preparation for painting the fins red. Then use the plastic bag this kit came in to cover the remainder of the body tube. Use masking tape wrapped around the tube to hold the bag in place. The tape should be applied neatly around the tube just in front of fins where the leading edges touch the tube. Paint the fins bright red using the technique described in the previous step. Let the paint dry before removing the plastic bag and masking tape.



Cut out the parachute (part J) on its edge lines. Cut three 24" lengths of shroud line (part K). Attach the line ends to the top of the parachute with tape discs (part L) as shown. Pass the shroud line loops through a crossbar on the nose cone. Pass the parachute through the loop ends and draw the lines tight against the crossbar. Set the knot with a drop of glue. Tie the free end of the shock cord to the nose cone. Fold the chute and pack into body. Insert the nose cone into place.



When all paint is dry, apply the decals (part M) in the positions shown. (A) Cut only one decal at a time from sheet. (B) Submerge decal in lukewarm water until decal slides on backing paper (usually 15 to 30 seconds). (C) Gently slide decal from backing paper onto model. (D) Move decal into exact position and carefully blot away excess water with a soft cloth. (E) If the decal "sticks" before you have it in position, apply water over the decal with a brush. This will permit the decal to be moved. (F) Smooth out all wrinkles and air bubbles before the decal dries. We recommend that the completed model be sprayed with Testor's "Gloss-Kote". This is a clear spray paint that protects the model's finish.

LAUNCHING COMPONENTS

Be sure to follow the HIAA-NAR* Model Rocket Safety Code when carrying out your model rocket activities.

*HIAA—Hobby Industry of America

*NAR—National Association of Rocketry

To launch your model you will need the following items:

An Estes model rocket launch system

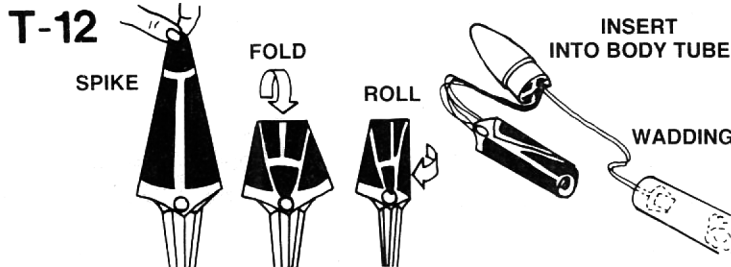
Parachute recovery wadding (Estes Cat. No. 2274)

Recommended Engines: A8-3, B4-4, B6-4, B8-5, C6-5.

Use an A8-3 Engine for your first flight.

COUNTDOWN CHECKLIST

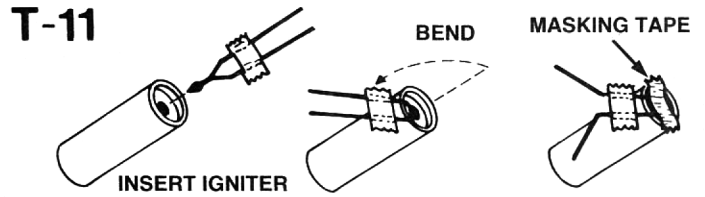
T-13 Pack 4 or 5 squares of loosely crumpled recovery wadding into the body tube.



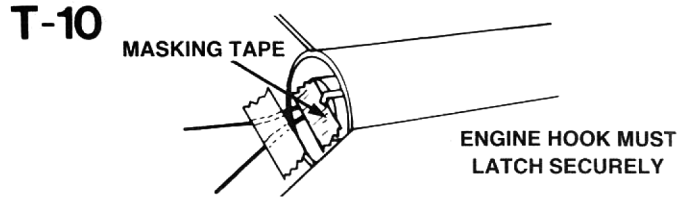
Hold the parachute at its center and pass the other hand down it to form a "spike" shape. Fold this spike in half. Roll parachute into tube shape to fit easily into body. Pack chute into the tube on top of the wadding. Pack the shroud lines and shock cord in on top of the parachute and slip the nose cone into place.

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 cold weather.

NOTE: Nose cone should separate easily from rocket body tube, but should not be extremely loose. If fit is too tight, sand inside of body tube and shoulder of nose cone with fine sandpaper. If fit is too loose, add a wrapping of transparent tape or masking tape to the shoulder of the nose cone.



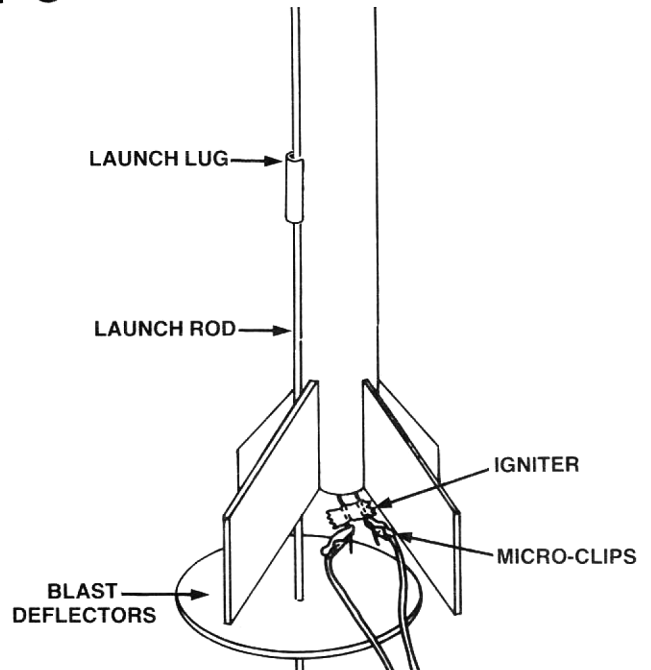
Select an engine and install in igniter as directed in the engine instructions. Use an A8-3 engine for your first flight.



Insert engine into rocket engine mount. Engine hook must latch securely over end of the engine.

T-9 Disarm the launch panel--REMOVE SAFETY KEY!

T-8



Slide launch rod through rocket launch lug and place rocket on launch pad. Make sure the rocket slides freely on the launch rod. Clean the micro-clips and attach them to the igniter wires. Arrange the clips so they do not touch each other or the metal blast deflector. Attach clips as close to engine as possible.

T-7 Clear the launch area, alert recovery crew and trackers. Check for low flying aircraft and unauthorized persons in the recovery area.

T-6 Arm the launch panel--INSERT SAFETY KEY!

-5-4-3-2-1-LAUNCH!!

Repeat Countdown Checklist for each flight.

MISFIRE PROCEDURE

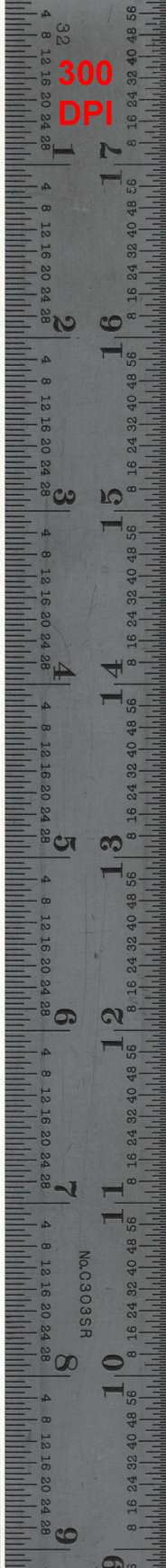
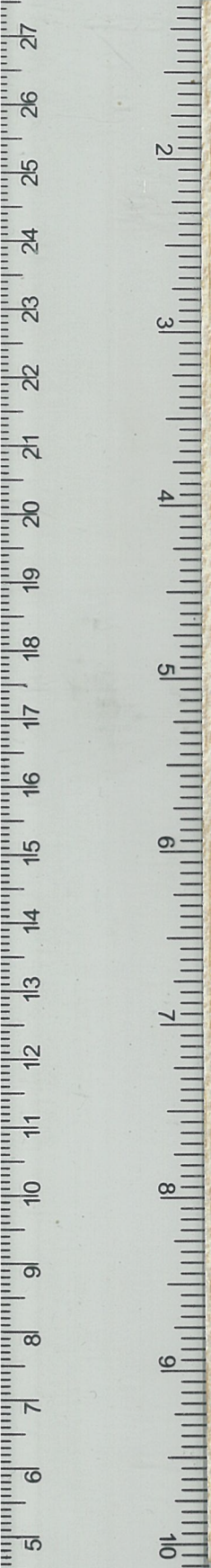
Disarm the launch panel. Wait one minute before approaching the rocket on the launch pad. Remove the rocket, clean the igniter residue from the nozzle of the engine, and carefully install a new igniter. Repeat the Countdown Checklist.

Failure of the rocket engine to function properly is nearly always caused by a failure to install the igniter correctly. This failure permits the igniter to heat and burn into two pieces without igniting the engine.

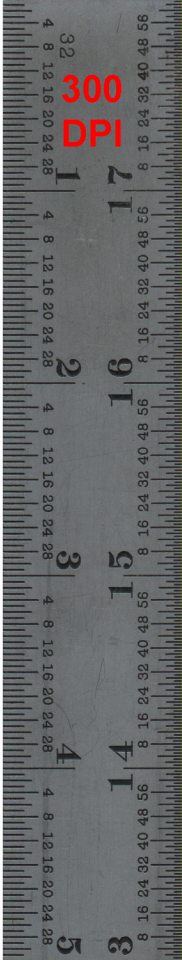
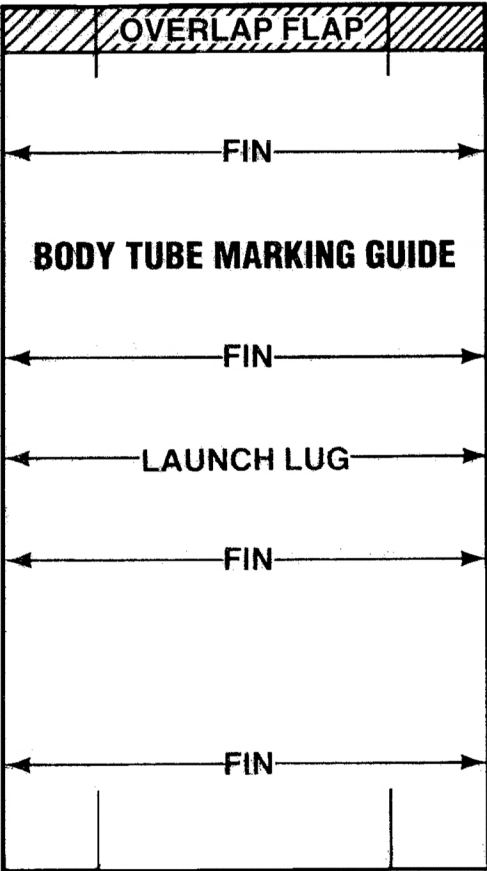
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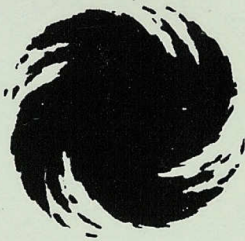
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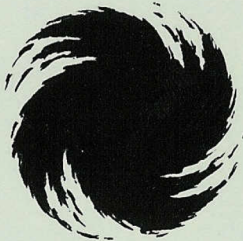


ESTES INDUSTRIES PN 83634





CYCLONE CYCLONE

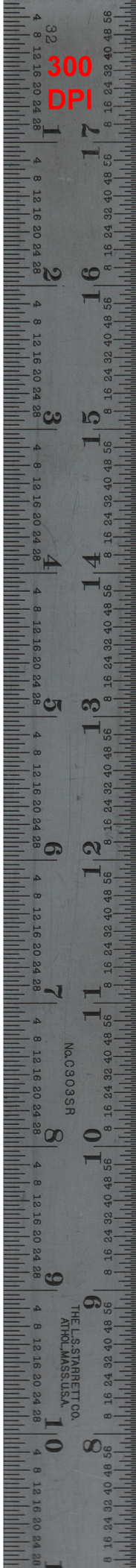


ESTES IND.
PN 37222

NO.C303SR

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

300
DPI



PARTS LIST KIT NO. 1907 - Cyclone								
Quantity	Description	Type	Number	Detail1	Detail2	Detail3	Detail4	Comment
1	PAPER BODY TUBE	BT-20J	30326	2.75" long	0.710" ID	0.736" OD	0.013" wall	Glassine
1	ENGINE HOLDER	EH-2	35025	2.8" long	.100" wide	.025" thick		Reg. & D
2	PAPER ADAPTER	TA-1327	30090	0.738" ID	1.29" OD	.05" thick		BT-20 to BT-56
1	PAPER BODY TUBE	BT-56(12)	31190	12" long	1.3" ID	1.34" OD	0.020" wall	Centuri ST-1312
1	BALSA FIN STOCK	*BFS-30	32108	3" wide	9" long	3/32" thick	0.09375	Scan
1	LAUNCH LUG	LL-2B	38178	5/32" ID	1/8" rod	2-3/8" long		Mylar
1	Shock Cord	SC-1	85730	18" long	1/8" wide			Rubber
1	PLASTIC NOSE CONE	PNC-132	72132	2.7" long	1.34" dia.	0.75" shoulder	Estes BT-56 series	Injection Molded
1	NOSE CONE INSERT	NCI-132	72513	1.5" long	1.30" dia.	0.75" shoulder	Estes BT-56 series	Injection Molded
1	Parachute	PK-12A	85564	12" hexago	1.25 mil thic	LDPE plastic	Org/Wht	
1	Shroud Line	SLT-72	38237	72"	.020" diame	Twisted cotton		
6	Tape Disc	TD-3F	38406	1/2" dia.	Paper	Self-Stick		Set of 6
1	Decal	KD 1907	37222	2.75" wide	11" long	Red, Blk	Waterslide	Scan
1	Marking Guide	SP-1907	83634	3.5" wide	5" long	Index Card		Scan
*Die-Cut Balsa Sheet BF-1907 #32607 4 fins.								

CYCLONE

FLYING MODEL ROCKET

SKILL LEVEL 1

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

- Flights Over 800 Feet
- High Performance Sport Flyer
- 12" Parachute Recovery
- Plastic Nose Cone
- Die-Cut Balsa Parts
- Quick Release Engine Mount

Length: 16" (40.6 cm)

Dia.: 1.32" (33.5 mm)

Weight: 1.48 oz. (42 g)

Engine Types: A8-3 (First Flight),
B4-4, B6-4, B8-5,
C6-5.



This is a hobby kit requiring assembly. Recommended for ages 10 to adult. Engines, launch system, glue and finishing supplies are not included. Adult supervision is suggested for those under 12 years of age when flying model rockets.

#1907



A DAMON COMPANY

ESTES INDUSTRIES
PENROSE, CO 81240 USA