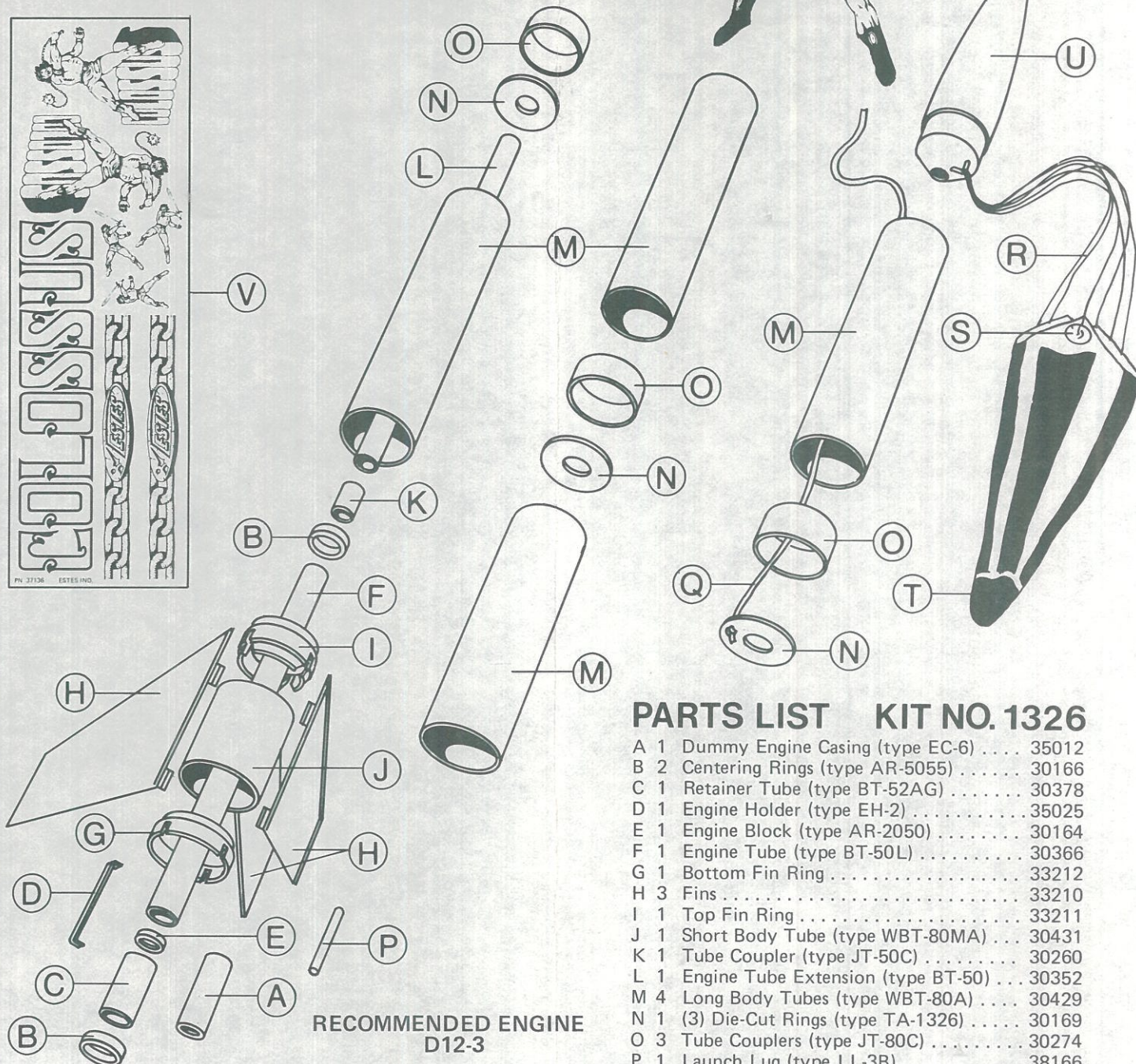
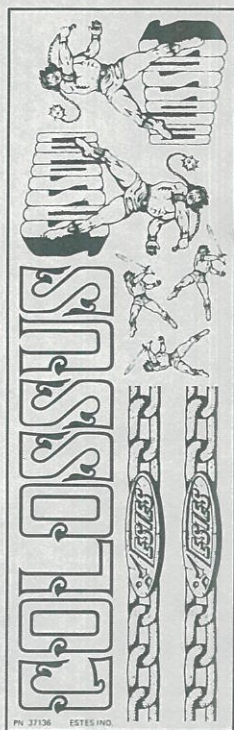


# COLOSSUS



**SKILL LEVEL 2**  
Recommended for  
Intermediate  
Rocketeers



**RECOMMENDED ENGINE  
D12-3**

**IMPORTANT:** Read each assembly step thoroughly before doing the work for that step. Test fit parts before applying any glue. If necessary, lightly sand the inside edge of the tube ends to insure a good slip fit. Do not attempt to build this model with any cement other than the type indicated.

## PARTS LIST KIT NO. 1326

A	1	Dummy Engine Casing (type EC-6) . . . . .	35012
B	2	Centering Rings (type AR-5055) . . . . .	30166
C	1	Retainer Tube (type BT-52AG) . . . . .	30378
D	1	Engine Holder (type EH-2) . . . . .	35025
E	1	Engine Block (type AR-2050) . . . . .	30164
F	1	Engine Tube (type BT-50L) . . . . .	30366
G	1	Bottom Fin Ring . . . . .	33212
H	3	Fins . . . . .	33210
I	1	Top Fin Ring . . . . .	33211
J	1	Short Body Tube (type WBT-80MA) . . . . .	30431
K	1	Tube Coupler (type JT-50C) . . . . .	30260
L	1	Engine Tube Extension (type BT-50) . . . . .	30352
M	4	Long Body Tubes (type WBT-80A) . . . . .	30429
N	1	(3) Die-Cut Rings (type TA-1326) . . . . .	30169
O	3	Tube Couplers (type JT-80C) . . . . .	30274
P	1	Launch Lug (type LL-3B) . . . . .	38166
Q	1	Shock Cord (type SC-2MJ) . . . . .	85738
R	1	Shroud Line (type SLT-144) . . . . .	38241
S	6	Tape Discs (type TD-3F) . . . . .	38406
T	1	Parachute (type PK-24A) . . . . .	85568
U	1	Nose Cone (type PNC-80KR) . . . . .	71034
V	1	Decal (type KD-1326) . . . . .	37136

## TOOLS AND MATERIALS

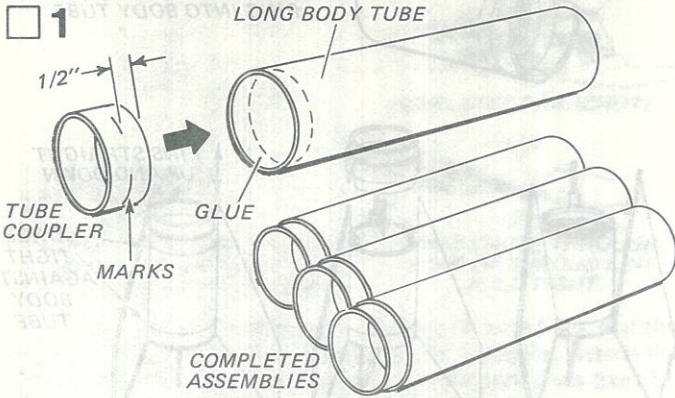
In addition to the parts included in this kit you will need "white" glue (such as Elmer's, Wilhold, etc.), a modeling knife, masking tape, fine sandpaper, pencil & ruler.



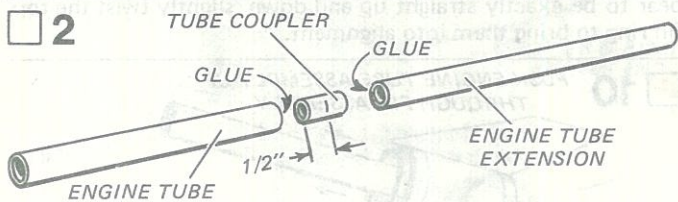
A DAMON COMPANY

**ESTES INDUSTRIES**  
PENROSE, CO 81240 USA

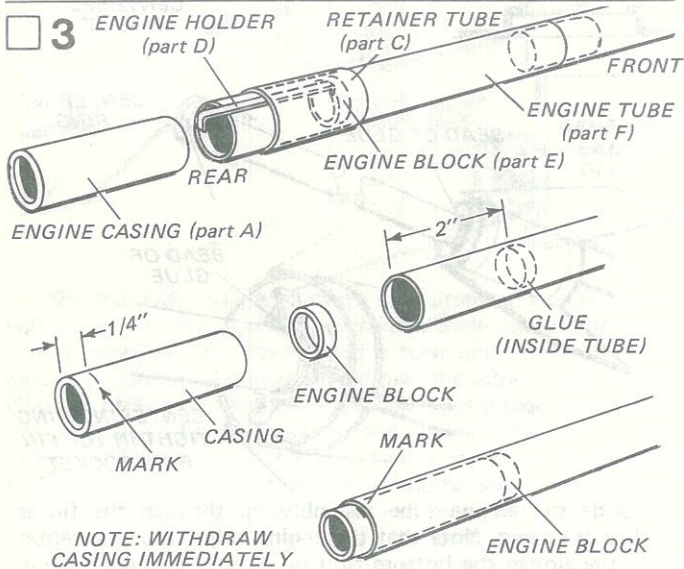
# ASSEMBLY INSTRUCTIONS



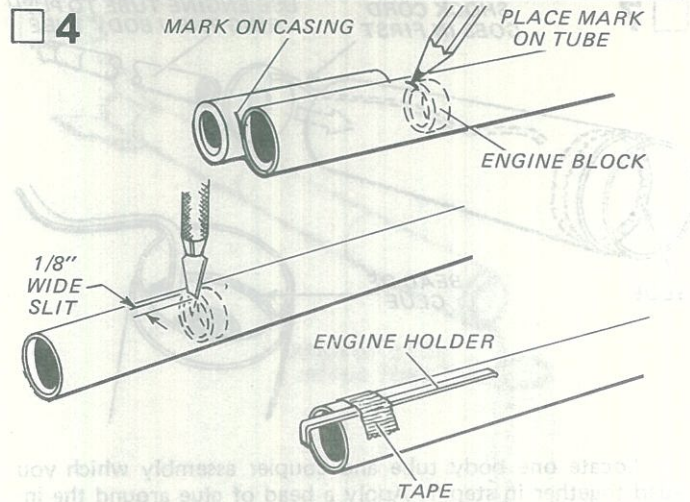
Mark one tube coupler (part O) in the middle (1/2" from one end). Put 3 or 4 marks around coupler so it can be positioned straight in the body tube. Run a bead of glue around the inside of one end of one 9" long body tube (part M). Push the coupler into the tube until the marks on the coupler line up with the end of the tube. Wipe away excess glue and set aside to dry. Repeat this process with 2 more long body tubes and the 2 remaining tube couplers.



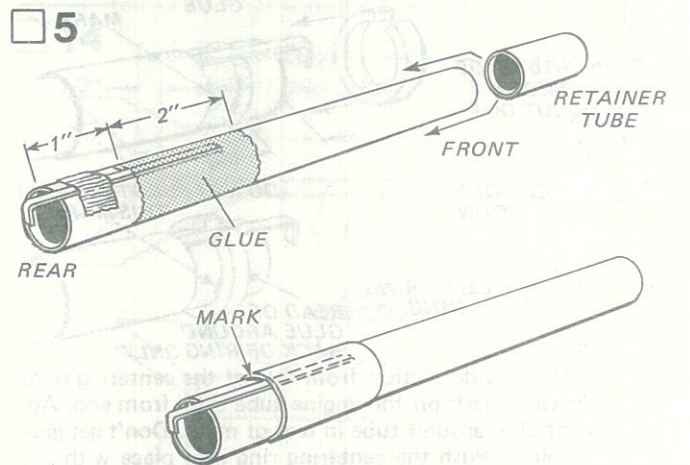
Apply a bead of glue around the inside of one end of the engine tube (part F). Slip the tube coupler (part K) half way (1/2") into this end of the tube. Apply glue inside one end of the engine tube extension (part L) and slip over the end of the coupler. Make sure the tubes are pushed together. Lay the assembly on a flat surface and roll back and forth. This will insure that the tubes are straight. Do not move the assembly until the glue has dried.



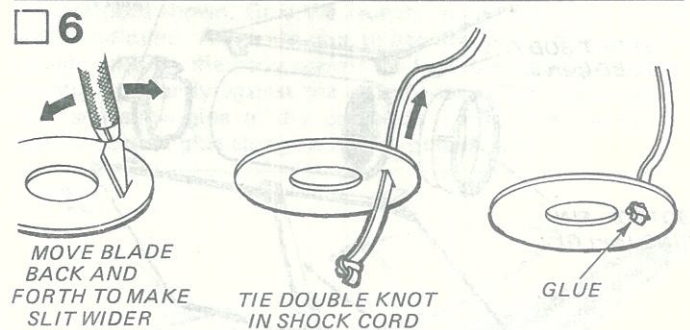
Locate the parts shown in the illustration. Place a mark on the engine casing 1/4" from one end. Using a small stick, apply a bead of glue inside one end of the engine tube approximately 2" from the end. Insert the engine block into this end of the tube and use the engine casing to push the block into place (with mark on casing even with end of engine tube). Withdraw casing immediately so it will not be accidentally glued into tube.



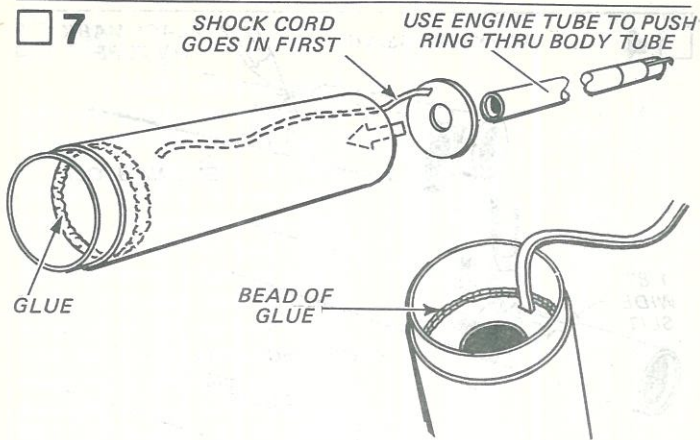
The engine holder is attached to the engine tube with one of its hooked ends against the engine block. To locate, hold the casing against the outside of the engine tube with the mark on the casing even with the end of the tube. Place a mark on the tube even with the top of the casing. Cut a 1/8" wide slit in the tube on the pencil mark. Insert one end of the engine holder into slit. Align holder with tube and temporarily secure with a piece of masking tape around bottom of tube.



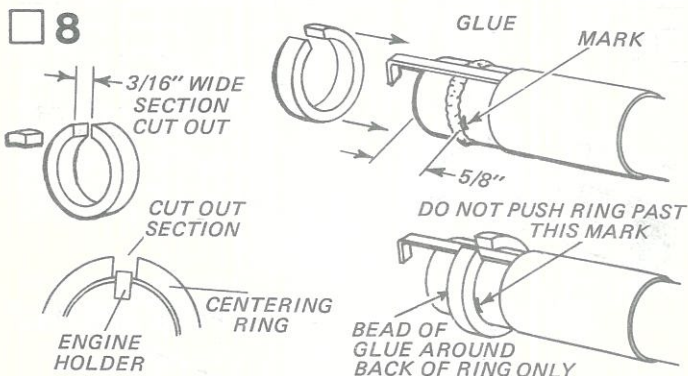
Place a mark on the engine tube 1" from the end. Smear a film of glue around the tube above this mark for a distance of 2". Make sure you have glue all around the upper portion of the engine holder. Slide the retainer tube onto the opposite end of the engine tube. Push the retainer down until it reaches the 1" mark. Wipe away excess glue. Remove masking tape.



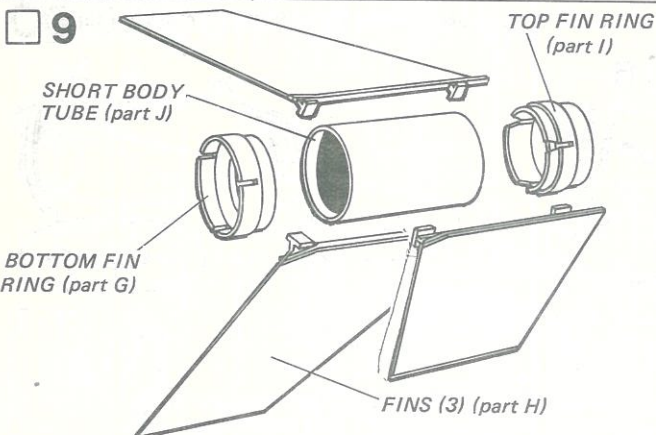
Remove the 3 die-cut rings from the card (part N). One of these rings has a slit cut in it. Use a knife blade to slightly widen the slit. Insert one end of the shock cord (part Q) through the slit. Tie a double knot in the end of the shock cord and pull it tight against the ring. Smear glue over the knot to secure it in place.



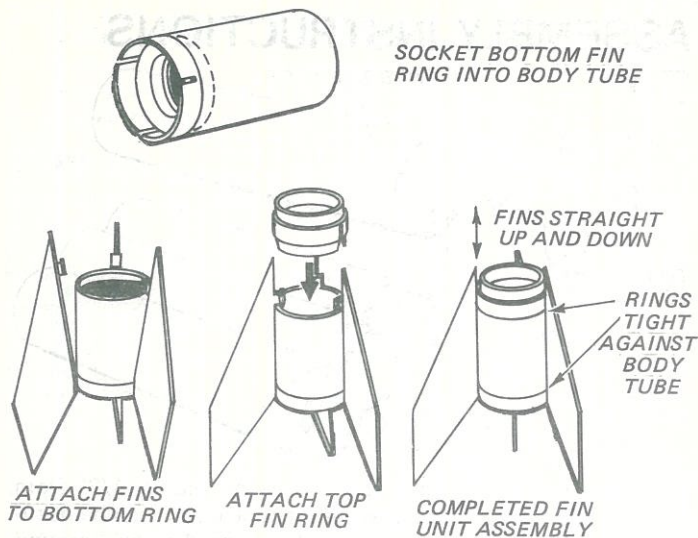
Locate one body tube and coupler assembly which you glued together in step 1. Apply a bead of glue around the inside of the body tube at the base of the coupler. Insert the die-cut ring into the opposite end of the body tube with the shock cord extending through the body first (as shown). Use the engine tube to push the ring through the body tube until the ring is tight against the bottom of the coupler. Apply a second bead of glue around the ring-coupler joint and set aside to dry. Glue the two remaining rings into the other body tube-coupler assemblies in the same manner.



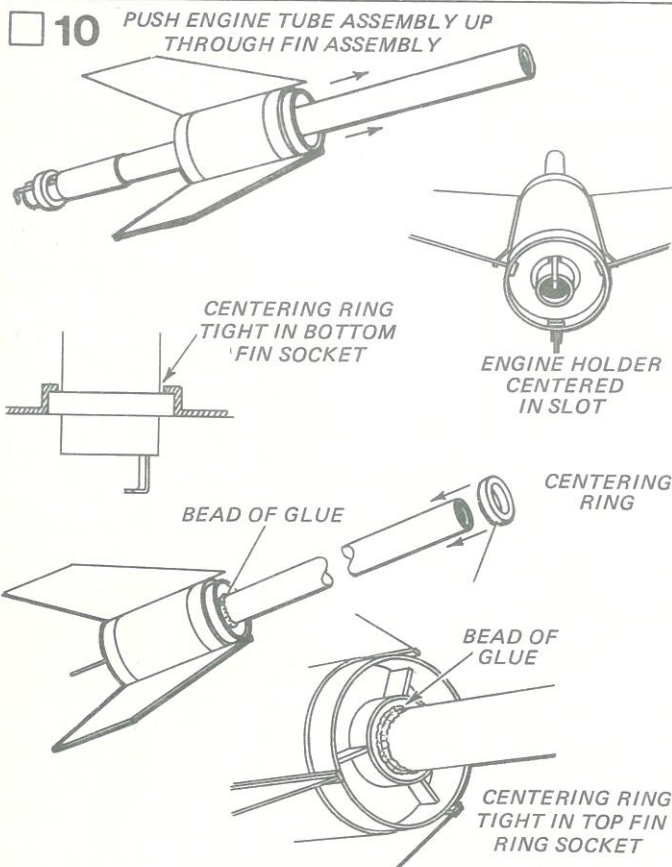
Cut a 3/16" wide section from one of the centering rings (part B). Place a mark on the engine tube 5/8" from end. Apply a bead of glue around tube in rear of mark. Don't get glue on engine holder. Push the centering ring into place with the front of the ring even with the mark. The cut-out section of the ring should be centered on the engine holder. The holder must be able to flex outward without interference from the ring. Run a bead of glue around bottom ring-tube joint for added strength. Do not put any glue on the front of the ring.



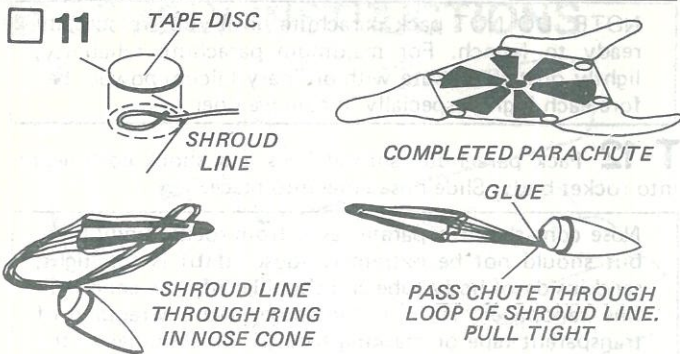
Locate the parts shown in the illustration. Socket the bottom fin ring into the short body tube. Push the bottom attachment lug of each fin into one of the slits in the bottom ring.



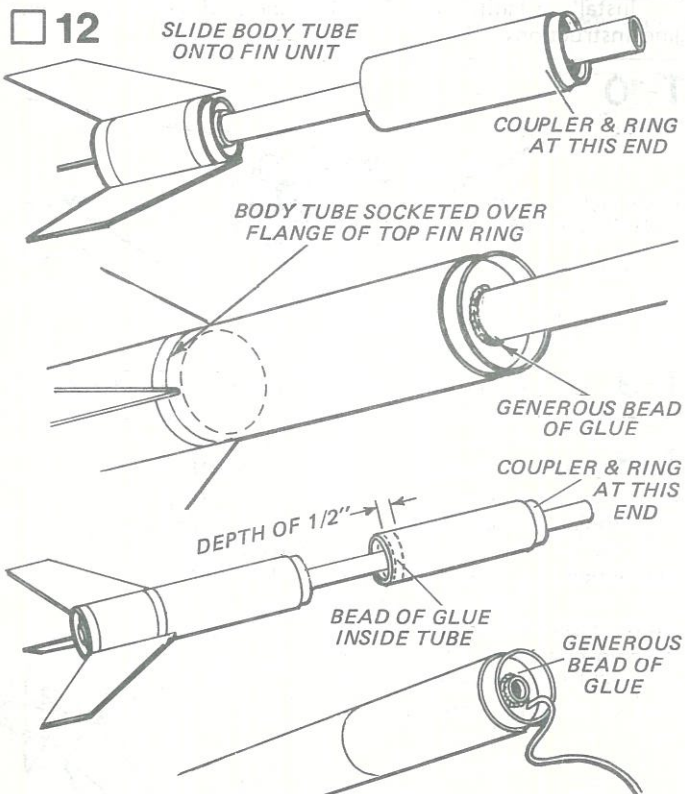
Pull the tops of the fins in against the body tube and attach the top fin ring. The attachment lugs on the fins will first engage the slots in the top ring. Push the ring down until the bottom portion of the ring is socketed into the body tube. Make sure both rings are firmly socketed into the body tube. Check the vertical alignment of the fins with the body. If they do not appear to be exactly straight up and down, slightly twist the top fin ring to bring them into alignment.



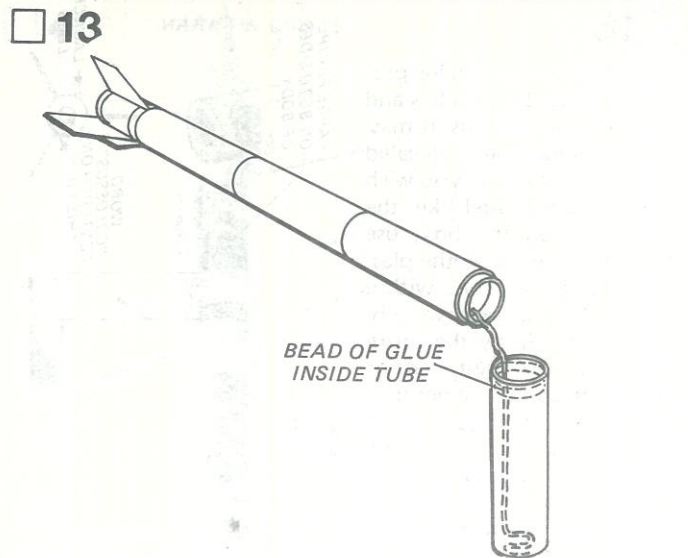
Slide the engine tube assembly up through the fin assembly as shown. Note that the engine holder must be centered in the slot in the bottom fin ring. Push the engine tube up until the centering ring is tight in the bottom fin ring socket. Apply a bead of glue around the engine tube just above the top fin ring. Slide the remaining centering ring over the top end of the engine tube and push it down until it is tight in the top fin ring socket. Make sure the fin assembly is still pressed firmly together and that the bottom centering ring is tight against the bottom fin ring. For added strength, apply a bead of glue around the centering ring-body tube joint. Set aside to dry.



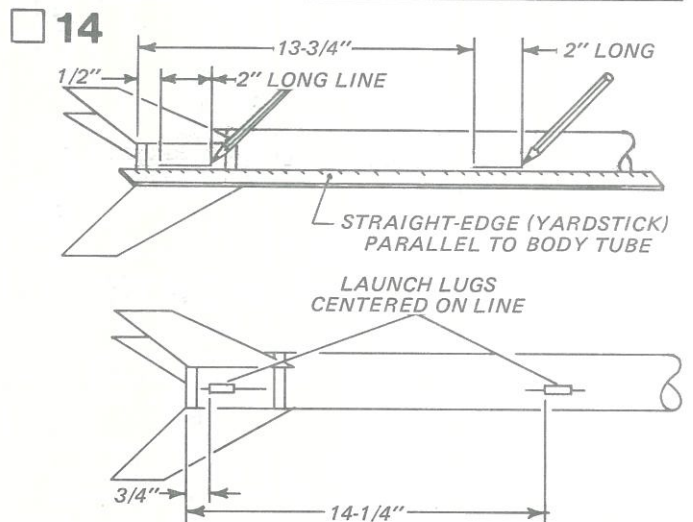
Cut out the parachute (part T) along its edge lines. Cut the shroud line (part R) into three equal (48") lengths. Attach the ends of the lines to the parachute with the tape discs (part S). Make sure the lines form a complete loop at the ends and that the tape discs are pressed firmly in place. Pass the shroud line loops through the attachment ring of the nose cone (part U). Pass the parachute through the loop ends and draw the lines tight against the nose cone ring. Set the knot with a drop of glue.



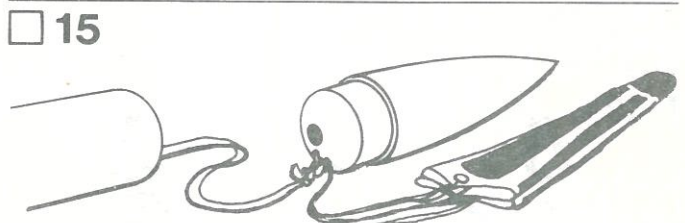
Set the body tube with shock cord attached to one side. It will be last in the assembly sequence. Slide one of the body tube assemblies onto the fin/engine tube unit. The bottom of the body tube should be socketed over the upper flange of the fin ring. Make sure the unit is pushed tightly together and apply a generous bead of glue to the engine tube where it extends through the die-cut ring. Smear a generous film of glue around the inside end of the second body assembly as shown. Slide this body onto the "stack" and down over the coupler of the first body tube. Make sure the body tubes are tightly joined, then apply a bead of glue around the joint between the engine tube and die-cut ring (as before). The body with the shock cord attached is now assembled on the "stack". Apply glue around the inside of the bottom of the tube and socket over the coupler of the previously mounted tube. The engine tube will extend about 1/8" through the die-cut ring at the top of the body tube. Apply a generous bead of glue to the engine tube/die-cut ring joint. Allow glue to dry for 10 minutes before continuing.



Now attach the last body tube. Apply a generous bead of glue around the inside of one end of the tube. Place this tube, glue end up, on a flat surface. Lift the main assembly, inverted, and allow the shock cord to drop down inside the body tube. Socket the main assembly onto the tube, make sure the body tubes are tightly joined and let the assembly set until the glue dries.



Cut the launch lug (part P) into two 1" lengths. Lay a straight-edge (a yardstick if available) on the body, centered between two fins. Sight down from above to make sure straight-edge is parallel with the body. Draw two short lines at the positions shown. Glue the launch lugs to the body at the places indicated. Allow the glue to become tacky, then lay the straight-edge on the body against the lugs. Make sure both lugs are aligned exactly against the straight-edge. Remove straight-edge and allow glue to dry completely. For added strength, apply a bead of glue along both sides of each lug.

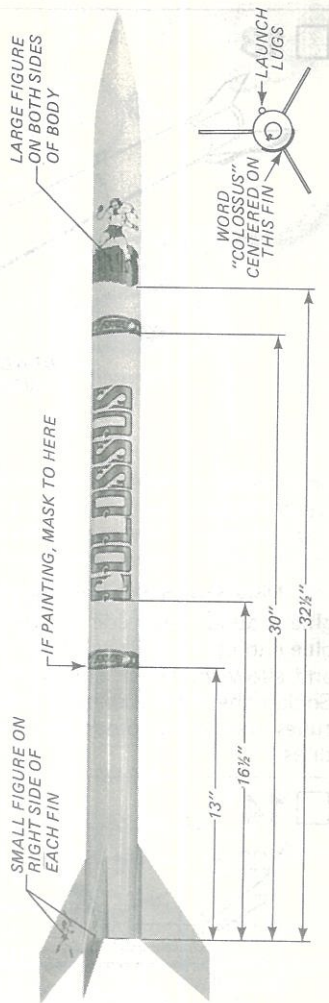


Tie the free end of the shock cord to the nose cone attachment ring. Tie a good triple knot so it won't come loose. Insert chute, shock cord into body and socket nose cone in place.

## 16

This kit contains pre-colored white body tubes and red nose cone and fins. It may be assembled and decaled without painting. If you wish to paint your model like the one shown on the box, use this procedure. Wipe the plastic fins and nose cone with a damp cloth to remove oily finger-prints. Spray the entire model with two light coats of gloss white spray enamel (DO NOT use lacquer base paint on this model). Allow the paint to dry overnight. Using masking tape and newspaper, mask off the front portion of the rocket from a point 13" from the rear of the body. Spray the lower portion of the rocket gloss yellow. Let dry several hours before disturbing.

The decals are applied to the rocket in the positions shown. Cut out the individual decals, dip in water for 20-30 seconds (until decal slides from backing material). Slide decal from backing paper onto desired surface. Gently smooth out and blot dry with a clean damp cloth.



**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.

**T-12** Pack parachute, shroud lines and shock cord neatly into rocket body. Slide nose cone into place.

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.

## T-11

**IGNITER TIP MUST TOUCH PROPELLANT AT BOTTOM OF NOZZLE OPENING**

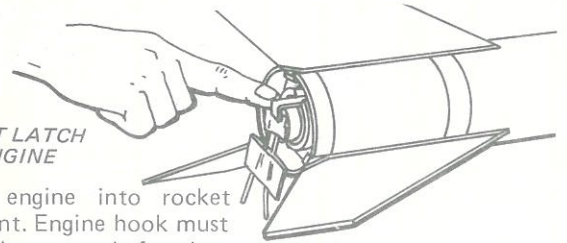


Install an igniter in a D12-3 engine as directed in the engine instructions.

## T-10

**HOOK MUST LATCH OVER ENGINE**

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

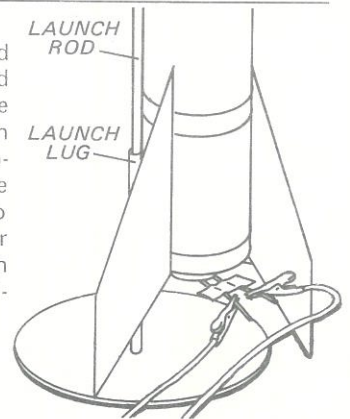


## T-9

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

Occasionally the igniter will heat and burn into two pieces without igniting the engine. This is almost always caused by a failure to install it correctly. **REMOVE SAFETY KEY** from launch panel, remove the model, clean the igniter residue from the nozzle and install a new igniter. Follow the launching procedure again.

## LAUNCHING COMPONENTS

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

- An Estes model rocket launching system fitted with a heavy duty launch rod (Estes Cat. No. 2239). Make sure the launch platform is securely "tied down" as described in the launcher instructions.
- Parachute recovery wadding (Estes Cat. No. 2274).
- Estes D12-3 model rocket engines. (Estes Cat. No. 1666).

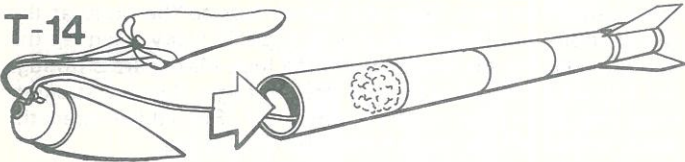
### IMPORTANT---IMPORTANT---IMPORTANT

Be sure to follow the \*HIAA-NAR Model Rocketry Safety Code when carrying out your model rocketry activities.

\*HIAA-NAR - Hobby Industry Association of America  
National Association of Rocketry

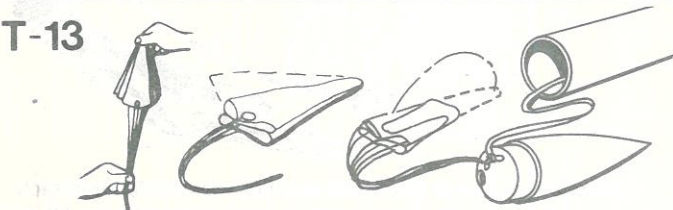
## COUNTDOWN CHECKLIST

### T-14



Pack 12 to 14 squares of loosely crumpled Estes Recovery Wadding into main body tube.

### T-13



Gather the parachute as shown, then fold into a triangular shape. Fold again and insert into rocket body.