

ASSEMBLY INSTRUCTIONS:

Start assembly of nose cone by putting a thin coat of plastic (styrene) cement around inside edge of nose cone. Rub the cement with your fingers to smooth it out and remove excess. Use cement sparingly as it will melt nose cone.

Insert adapter into nose cone with open end outward, then slip nose cone into body tube to insure alignment. With a twisting motion carefully remove nose cone from body tube and allow to dry thoroughly.

Cut two slots in the gauze shock line anchor about 1/2" apart and thread shock line into anchor as shown. Smear lots of glue the size of the anchor inside the body tube about 2 1/2" from end using a brush or cotton swab. Make sure the shock line anchor is at least 2 1/2" from the end of the body tube so it will not interfere with the lower payload compartment. Insert anchor and shock line into body tube and push into glue with a pencil until securely in place. Add more glue if necessary. Tie a loop in other end thru a rubber band.

Using a cotton swab or brush, smear glue around inside of body tube about 5 1/2" from rear. Insert engine block and push it forward with an "F" engine until 1/4" of engine protrudes. Remove engine as soon as block is positioned.

Sand fins to an airfoil shape. The front (leading) edge should be rounded while the rear (trailing) edge should be sharp like a knife. The root edge (part that glues to the body) should be straight and square. Sand the body tube at fin locations to provide a good bond for the glue.

Using the fin spacing guide, center the end of the body tube in the circles and mark at the 3. Use a "V" notch of a drawer or door frame and draw a line at the mark parallel to the body. Glue the three fins on this line 1/4" from the bottom of the body. When dry, apply a heavy glue fillet on each side of all fins.

If you plan to fly with "F" engines, the fin root and body joint on each side of fin should be reinforced with a 3/4" x 1 1/2" piece of fibreglass. Coat area with glue and set fibreglass in place. Coat with glue again and sand smooth when dry.

Attach launch lugs halfway between fins 1" from top and bottom of body tube. Sight thru lugs to insure alignment.

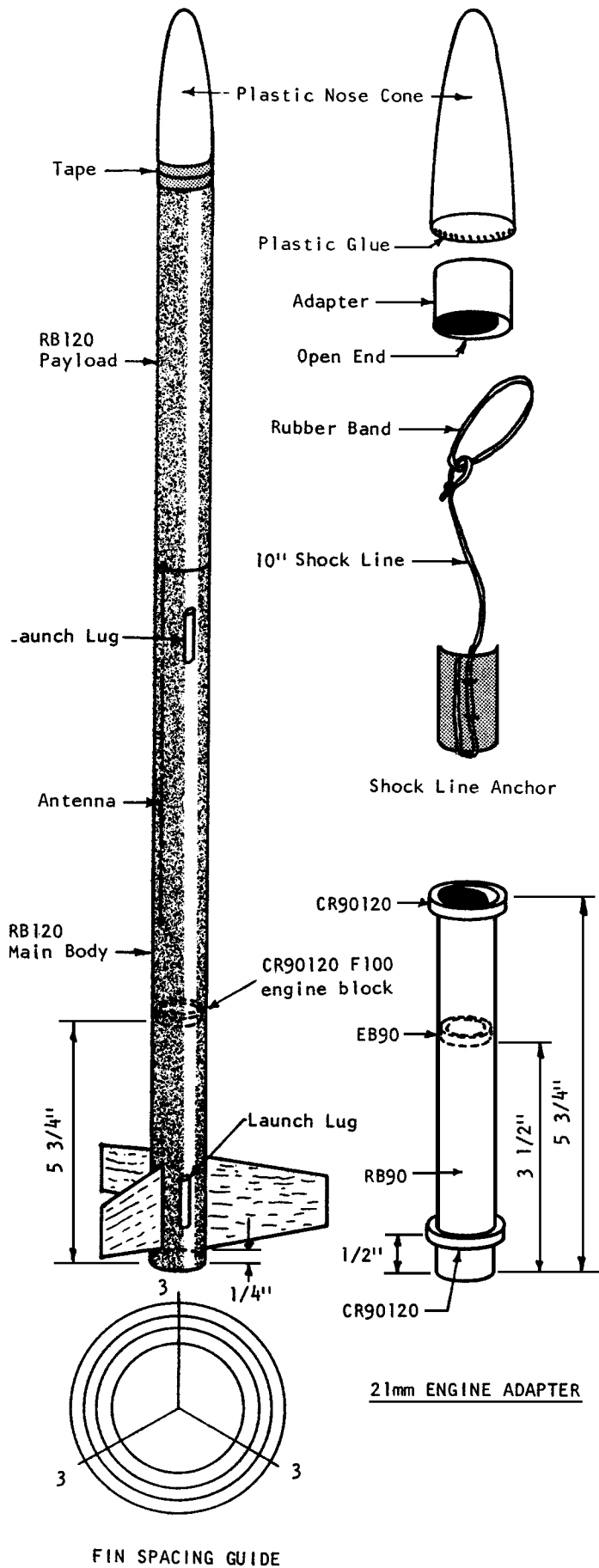
Build payload section. (See Payload instructions.)

Sand all wood and paper surfaces with fine sandpaper to remove irregularities. Finish the rocket by filling all wood surfaces with sanding sealer. Coat several times sanding between each coat until wood is smooth. Coat body tube with sanding sealer and sand until smooth. Paint entire rocket, except nose cone and payload section, with a bright color.

Build parachutes. (See Parachute Instructions.)

If you desire to use 21mm dia. engines construct the 21mm engine adapter as follows: Glue one adapter ring flush with top of 5 3/4" RB90 tubing and glue second adapter ring 1/2" from other end. Using a cotton swab or brush smear glue around inside of tube about 3 1/2" from rear. Insert engine block in tube and push it forward with an E5 or D18 engine casing until 1/4" of engine protrudes. Remove engine as soon as block is positioned. This assembly can be glued in place or made removable by wrapping the rings with masking tape until a tight fit is obtained.

This completes the construction of the model. See Flight Preparation and Flying Instructions next.



21mm ENGINE ADAPTER

FIN SPACING GUIDE

NOTE:
In order to use FSI D6 engines, it is necessary to make an adapter from a 1" length of expanded 21mm engine casing.

PAYLOAD INSTRUCTIONS:

The exterior of the 9" RB120 is covered with aluminized mylar to provide a shield for the electronic payloads. Sand the payload smooth with fine sandpaper before applying mylar. Draw a line along the side of the payload using the "V" notch of a drawer or door frame. Peel back about 1/2" of the adhesive aluminized mylar and place the edge along this line. Very carefully adhere the mylar on the payload and peel it off the backing at the same time, making sure no wrinkles are formed. Continue until the entire payload is covered. Trim edges with a razor blade.

Either a hole can be drilled or a small notch must be made in the lower end of the payload for the antenna.

The payload liner is in two pieces, the lower and upper compartments, to allow installation of just about any type of electronic payload.

Glue a centering ring 1" from each end of the 5 3/4" piece of RB90. Glue a 1 1/2" piece of RB92 over the one end so that 3/4" protrudes beyond the upper compartment. This acts as a coupler to the lower compartment.

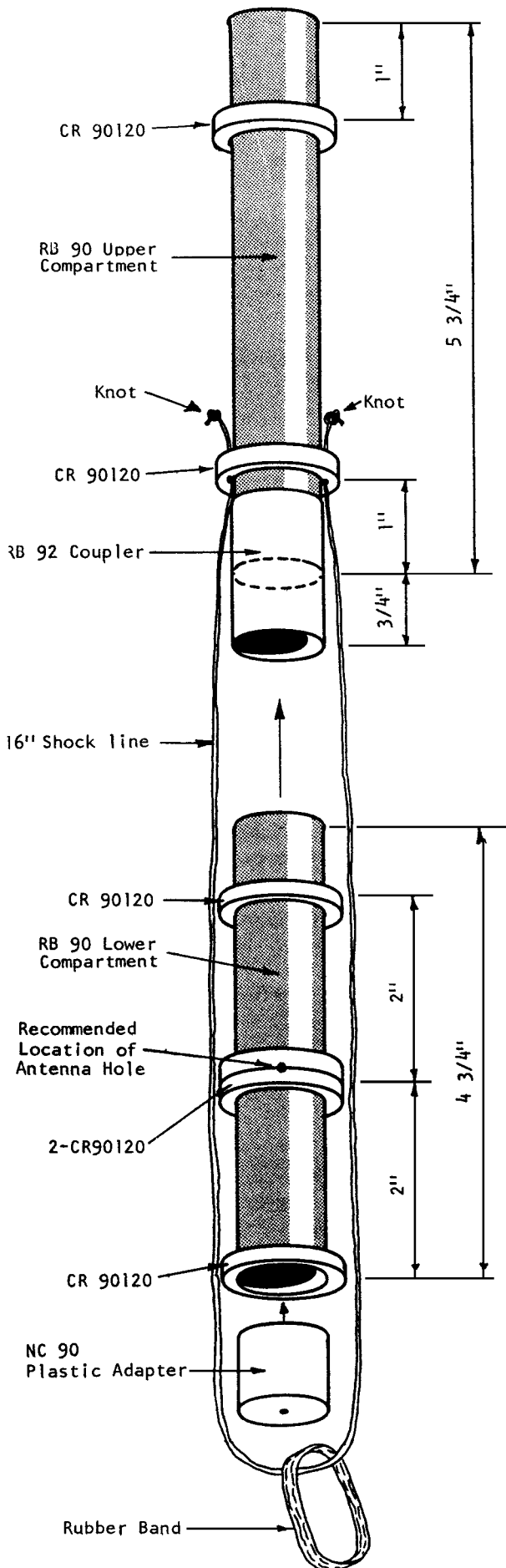
Cut a piece of shock line 16" long. Drill 2 holes opposite each other in the CR90120 nearest the RB92 coupler. These holes should be drilled parallel to and between the RB90 and the CR90120. Insert one end of the shock cord from the side nearest the coupler into one hole and tie with a knot. Slip the other end into a rubber band and then into the other hole. Tie with a knot and glue both knots to the RB90. The cord goes around the lower compartment and acts as a parachute attachment. For added strength the cord should also be taped to the RB92 coupler.

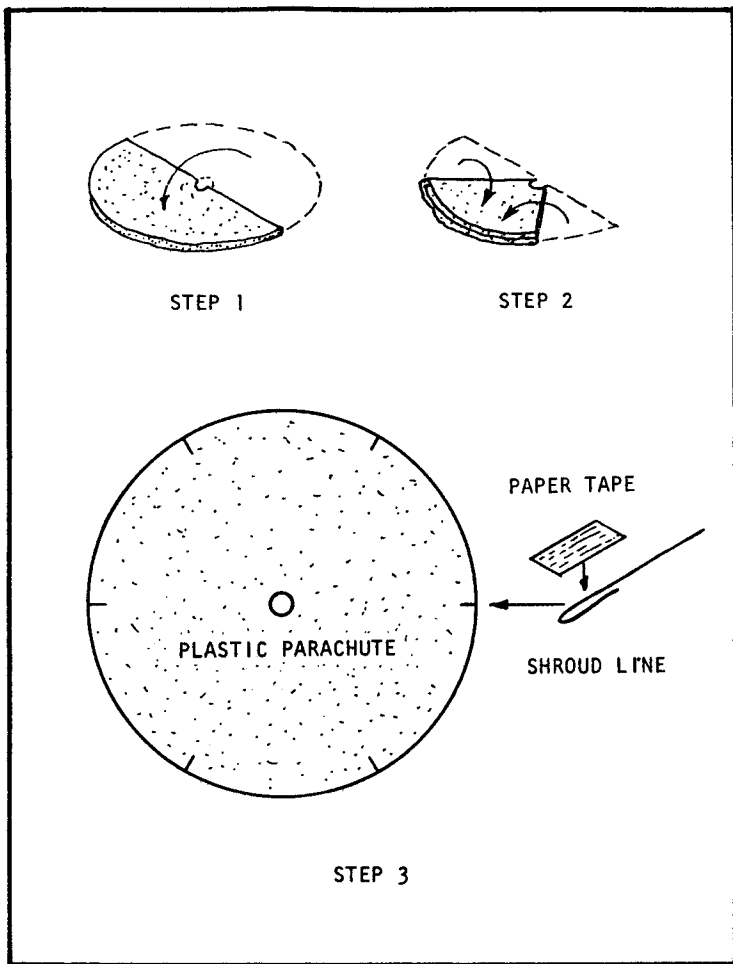
Glue a centering ring flush with one end of the 4 3/4" piece of RB90. Slip 4 centering rings on the other end and glue two together 2" from the first ring and the last 2" from the center of the two rings. Glue plastic adapter using plastic cement in end of compartment as shown, open side facing in.

Assemble the payload compartments and check fit inside the payload. The liner must fit tightly into the payload section to prevent movement during flight. Wrap rings with masking tape as required. It may be necessary to wrap lower liner to insure a snug fit into body tube. Mark a line down one side of the lower compartment. Mark another line down the opposite side 180° from the first line. Notch each ring at these lines to fit the cord.

It will be necessary to put holes in the liner or payload for antennas and tuning. Location will depend upon type of transmitter used.

Finally, tape the nose cone to the payload section with special tape furnished.





PARACHUTE INSTRUCTIONS:

Parachute is precut to a circular shape. Fold in half, then fold in thirds to obtain the location of the shroud lines. Crease parachute at folds or mark with marking pencil. Cut off tip of parachute when folded to provide a vent hole to aid in parachute folding and opening after ejection. When reopened there should be 6 equally spaced places for shroud lines.

Cut 6 shroud lines, equal in length to the diameter of the parachute.

Cut 6 pieces of wide tape about 5/8" long. Peel off paper backing and attach by pressing tape over a loop of shroud line.

Gather free ends of shroud line together, insert through snap swivel and tie into a knot. Apply a drop of glue to knot so it will not loosen. Attach snap swivel to hook in nose cone or payload coupler.

There are many ways of folding a parachute for insertion into a body tube. Experience will dictate the best method for each individual. One way is to first dust the parachute with talcum powder to keep it from sticking to itself. Then form the parachute by holding the snap swivel with one hand and tip of canopy with the other and straighten the chute. Fold the canopy once or twice to fit the space in the body tube and insert it. Pack the shroud lines and shock cord in over the parachute and push the nose cone or payload section into place.

FLIGHT PREPARATION:

The payload compartment of the Chameleon is designed to fit almost any type electronic transmitter on the market. The two inner liners are made to separate to allow easy installation of a transmitter.

Three additional centering rings (CR92120) are required to allow use of an Estes Transroc. Peel the inner layer of paper from these rings so they will fit over the three plastic rings on the Transroc, then glue in place. The upper inner liner is not necessary when using the Transroc. The manufacturer's instructions should be followed for the actual installation and operation of the transmitter.

The payload is recovered by parachute separate from the rocket body. If desired, the payload cord can be attached to the nose cone to allow the payload to descend bottom downward. Drill a hole thru the tip of the nose cone and thread the cord thru this hole and the hole in the adapter and tie a knot. The other end is tied to a rubber band to act as the parachute attachment.

FLYING INSTRUCTIONS:

The Chameleon is designed to fly with FS1 D6-6, D18-4, E5-6, F7-4, and F100-8 engines. Maximum liftoff weights of the completed bird with engine and payload must not exceed the following: D6-6 150 gms; D18-4 175 gms; E5-6 150 gms; F7-6 225 gms; and F100-8 400 gms. When flying with F7 and F100 engines the fins must be reinforced at the fin root and body joint to prevent separation.

Install engine with igniter into rocket body in accordance with engine manufacturer's instructions. Push flameproof wadding in end of body tube until it touches top of engine. Do not pack it in too hard or it will not eject the parachutes. Attach the parachute to the shock cord. Pack the parachute, put the shock cord into the body then place the parachute on top of it. Push the parachute into the body tube with a pencil until there is enough room for the second parachute and payload section.

The loading of the payload section will depend upon what transmitter is used. The manufacturer of the transmitter usually provides instructions on how they want their unit packed for best flight performance. Generally, the transmitter is placed in the payload liner with the antenna threaded thru a hole near the separation of the payload section and rocket body. This allows the antenna to extend along the outside of the rocket. The transmitter is padded with cotton at either end to prevent movement during flight. The liner is then loaded into the payload section with the cord around it. The lower 2" of the liner protrudes from the payload section to act as a coupler to the rocket body. The nose cone is taped to the payload section as an extra precaution to prevent losing the transmitter at ejection. The second parachute is attached to the rubber band and loaded into the top of the prepared rocket. The payload is then attached and the rocket is ready for flight. Check transmitter operation. Place the rocket on the launch pad, hook up the igniter clips, count down and ignite.