PARTS AND SUPPLIES
Locate the parts shown below and lay them out on the table in front of you. In addition to the parts included in the kit you will also need:

SCISSORS  PENCIL  RULER  SANDPAPER  WHITE GLUE  PAINT BRUSH  MODELING KNIFE  ENAMEL SPRAY PAINT (Blue and Yellow)  MASKING TAPE  SANDING SEALER

ASSEMBLY TIP
Read all instructions before beginning work on your model. Make sure you have all parts and supplies. Test-fit all parts together before applying any glue. If any parts don’t fit properly, sand as required for precision assembly.
ROCKET ASSEMBLY

1. A. Mark engine mount tube 1” to 2 1/2” from one end.
   B. Cut 1/8” long slit at 2 1/2” mark.
   C. Insert one end of engine hook into slit.
   D. Slide ring onto front of tube and down to 1” mark and glue both sides of ring/tube joint.
   E. Apply glue around front of tube. Slide remaining ring into place.

2. A. Fine sand balsa die-cut sheet. Carefully remove fins by freeing edges with sharp knife.
   B. Stack fins together. Sand all edges smooth.

3. A. Using a piece of scrap balsa, smear glue inside body tube 2” from one end.
   B. Push engine mount in until tube ends are even.

4. A. Cut out tube marking guide from front of instructions.
   B. Wrap guide around the tube and mark tube at arrows. Remove guide and save.
   C. Draw straight lines connecting each pair of marks.
   D. Extend launch lug line full length of tube.

5. A. Lay fins on pattern to find front (leading) and gluing (root) edges.
   B. Position and glue fins on alignment lines one at a time. Let each dry several minutes before applying the next one.
   C. Adjust fins to project straight out from tube.
   D. Do not set rocket on fins while glue is wet.

FIN PATTERN

FINS MUST BE ATTACHED CORRECTLY FOR STABLE FLIGHT!
Glue launch lug straight on launch lug line \(4\frac{3}{4}\)\(^\text{\text{in.}}\) from rear of tube.

7
A. Cut shock cord mount from tube marking guide.
B. Crease on dotted lines by folding. Spread glue on section 1 and lay end of shock cord into glue. Fold over and apply glue to back of first section and exposed part of section 2. Lay shock cord as shown and fold mount over again.
C. Clamp unit together with fingers until glue sets.

8
A. Apply glue to inside front of body tube to cover an area no less than 1" to 2" from end. The glued area should be same size as shock cord mount.
B. Press mount firmly into glue as shown.
C. Hold until glue sets.

9
A. Apply a glue reinforcement to each fin/body tube joint and each side of launch lug.
B. Support rocket as shown until glue dries.

10
A. Trim excess plastic from around sides of nose cone with a sharp knife. Also remove any excess plastic from inside molded eyelet.
B. Wipe nose cone with damp cloth to remove oil and dirt.

11
A. Cut out parachute on edge lines.
B. Cut three 23" lengths of shroud line.
C. Form small loops with shroud line ends and press onto sticky side of tape discs.
D. Attach tape discs with line ends to top of parachute as shown.
E. Firmly press tape discs into place until both tape discs and parachute material are molded around shroud line loops.
F. Pass shroud line loops through loop on nose cone. Pass parachute through loop ends and pull lines against the nose cone.
G. Tie free end of shock cord to nose cone eyelet.
**FINISHING YOUR ROCKET**

Apply sanding sealer to fins. When sealer is dry, lightly sand parts. Repeat sealing and sanding until balsa grain line is filled. Spray paint the lower half of the rocket BLUE. Follow instructions on spray can for best results. Allow the paint to dry overnight before masking for the second color.

Wrap a piece of masking tape around body with the top of the tape 10" from the rear of the body. Wrap paper around the lower portion of the body and tape in place. Seal any openings in the paper with tape. Paint the upper portion of the rocket YELLOW. Allow paint to dry for a couple of hours before removing paper and tape.

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**ROCKET PREFLIGHT**

CRUMPLE & INSERT 3 SQUARES OF RECOVERY WADDINGS

SPINE

FOLD PARACHUTE

ROLL PARACHUTE

WRAP LINES LOOSELY AROUND CHUTE INSERT PARACHUTE IN ROCKET

INSTALL NOSE CONE IN PLACE

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**PREPARE ENGINE**

SEPARATE THE IGNITERS

ENGINE

INSERT IGNITER

FOLD OVER

IGNITER TIP MUST TOUCH PROPELLANT DEEP INSIDE NOZZLE OPENING

APPLY AND FIRMLY PRESS MASKING TAPE IN PLACE

INSTALL ENGINE IN ROCKET

HOOK MUST LATCH OVER END OF ENGINE

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**LAUNCH SUPPLIES**

To launch your rocket you will need the following items:

—An Estes model rocket launching system

—Estes Parachute Recovery Wadding (No. 2274)

—Recommended Engines: D12-5 or D12-7

Use D12-5 engine for your first flight, to become familiar with your rocket's flight pattern.

**FLYING YOUR ROCKET**

Choose a large field away from power lines, tall trees, and low flying aircraft. Try to find a field at least 500 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.

Don't leave parachute packed more than a minute or so before launch during cold weather, colder than 40° Fahrenheit (4° Celsius)

**MISFIRES**

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.

**FOR YOUR SAFETY AND ENJOYMENT**

Always follow the NAR-HIA* MODEL ROCKETRY SAFETY CODE while participating in any model rocketry activities.

*National Association of Rocketry—The Hobby Industry of America

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**COUNTDOWN AND LAUNCH**

LAUNCH LUG

LAUNCH ROD

MICRO-CLIPS MUST NOT TOUCH BLAST DEFLECTOR OR EACH OTHER

BLAST DEFLECTOR

1. **INSERT SAFETY KEY** to arm the launch controller.
2. Move back from your rocket as far as launch wire will permit (at least 15 feet).
3. Attach micro-clips to the igniter wires. Arrange the clips so they do not touch other or the metal blast deflector. Attach clips as close to protective tape on igniter as possible.
4. 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.
5. Remove SAFETY KEY to disarm the launch controller.

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**LAUNCH!!! PUSH AND HOLD LAUNCH**

BUTTON UNTIL ENGINE IGNITES

Remove safety key—Replace cap on rod.
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