ALIEN INVADER™

FLYING MODEL ROCKET KIT INSTRUCTIONS

KEEP FOR FUTURE REFERENCE

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

IMPORTANT: Your Estes product is marked with a four digit lot code or codes. The code is two digits, a space and two more digits representing the week and year of manufacture, respectively. Lot codes can be found on the product package, decal, launch controller, launch pad and/or blast deflector. Please record the lot code found on the decal and keep for future reference. Lot code: ________

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 Tube (blue)           | 030326-1    
B   |    1 | Engine Hook                       | 035021      
C   |    1 | Adapter Ring 2050L                | 030165-2    
D   |    1 | Engine Block                      | 030224      
E   |    1 | Body Tube                         | 030366      
F   |    2 | Wing Tip Tubes                    | 030362      
    |    1 | Laser Cut Balsa Sheet includes    | 066113      
G   |    2 | Laser Cut Wing                    |             
H   |    2 | Laser Cut Wing                    |             
I   |    2 | Laser Cut Wing                    |             
J   |    4 | Laser Cut Wing Tip Fins           |             
K   |    6 | Laser Cut Fins                    |             
L   |    2 | Laser Cut Top and Lower Fins      |             
M   |    1 | Plastic Nose Cone                 | 072733      
N   |    2 | Launch Lug                        | 038175      
O   |    1 | Wood Dowel                        | 032054      
P   |    1 | Shock Cord                        | 038367      
Q   |    1 | Parachute                          | 035815      
R   |    1 | Marking Guides / Wing Pattern Sheet | 066115      
    |    1 | Waterslide Decal (not shown)      | 066114      

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

- SCISSORS
- PENCIL
- RULER
- FINE SANDPAPER (#320-#400 GRIT)
- CARPENTERS GLUE
- MODELING KNIFE
- MASKING TAPE
- WAX PAPER
- SPRAY PAINT GLOSS YELLOW
- SPRAY PAINT PRIMER WHITE
- SPRAY PAINT GLOSS BLACK
- SPRAY PAINT CLEAR COAT (OPTIONAL)
FIN PREPARATION

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

2. Cut fins from sheet.


4. Round leading edge of J, K and L. DO NOT sand root edges round. Do not round the leading edge of G and H round at this time.

MAIN WING ASSEMBLY

1. Cut wing assembly pattern from tube marking guide on R.

2. Lay wing assembly pattern on a flat surface. Cover with wax paper.

3. Position G as shown. Hold in place with small weight.

4. Apply glue to edge of H and position next to G. Hold in place with small weight. Let dry.

5. Apply glue to edge of I and position as shown. Hold in place with small weight. Let dry.

6. After wing assembly is dry, sand both sides smooth.

7. Place wing assembly back on pattern. Hold in place with small weight.

8. Apply glue to edge of K and position on wing assembly. Glue other K in place. Let dry.

9. Remove wing assembly from pattern. Repeat for other wing assembly using unused pattern. When both wing assemblies are completely dry, sand leading edge of each wing assembly round and sand root edge FLAT.

NOTE: Do not round root edge of wing assembly.
ENGINE MOUNT ASSEMBLY

1. Measure and mark A.
2. Cut small slit at mark.
3. Insert B in slit.
4. Slide C to mark. Apply ring of glue to both sides of C.
5. Apply ring of glue to inside of A. Insert D until it stops. Let dry.

BODY TUBE MARKING

1. Cut body tube marking guide from R.
2. Tape body tube marking guide around E. Mark wing lines W, top fin TF, lower fin LF and both launch lug lines LL.
3. Remove guide. Connect and extend all lines full length of E. Use door frame as a straight edge.
4. Measure and mark LL for N.

WING ATTACHMENT

1. Apply glue to root edge of wing assembly. Let dry 1 minute. Apply 2nd layer of glue. Attach to E even with end of tube.
2. Check wing alignment with guide. Let dry.
3. Repeat for other assembly. Check wing alignment with alignment guide. Let dry.

RAM TUBE MARKING

1. Cut ram tube marking guide from R.
2. Tape ram tube marking guide around F. Mark wing mounts WM, angled fins AF, dowel lines D.
3. Remove guide. Connect and extend all lines full length of F. Repeat for other F. Use door frame as a straight edge.
4. Measure and mark WM as shown.
5. Repeat for other F.
**RAM TUBE ATTACHMENT**

1. Apply glue to edge of wing. Let dry 1 minute. Apply 2nd layer of glue. Position centered between WM lines and forward of 1" (25 mm) mark. Let dry.

2. Repeat for other. Let dry.

**ANGLED FIN ATTACHMENT**

1. Apply glue to edge of J. Let dry 1 minute. Apply 2nd layer of glue. Position J on AF line centered on F.

2. Repeat for second J on F. Let dry.

3. Repeat steps for opposite wing assembly.

**TOP FIN ATTACHMENT**

1. Apply glue to root edge of L. Let dry 1 minute. Apply 2nd layer of glue. Position L centered on TF at end of E. Let dry.

2. Make sure L is 90 degrees to wing. Let dry.

**LOWER FIN ATTACHMENT**

1. Apply glue to root edge remaining L. Let dry 1 minute. Apply 2nd layer of glue. Position L centered on LF at end of E. Let dry.

2. Make sure L is 90 degrees to wing. Let dry.

**FORWARD FIN ATTACHMENT**

1. Measure and mark on 1/4" (6 mm) forward of H on W line.

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


4. Repeat for other K.
**Dowel Attachment**

1. Measure and mark O at 2" (51 mm) and 3 3/4" (95 mm). Cut at the 3 3/4" (95 mm) mark. Repeat to make 2 equal pieces.

2. Apply glue as shown.

3. Attached glued area of O centered on D line on E. Let dry.

4. Repeat for other O. Let dry.

**Launch Lug Attachment**

1. Sand N with fine sandpaper.

2. Apply glue as shown on N.

3. Glue one N forward of mark on LL. Let dry. Repeat for other N.

**Engine Mount Installation**

1. Apply ring of glue 1" (25 mm) inside E.

2. Slide engine mount assembly into E until tube ends are even. Make sure B is centered on LF. Let dry.

**Nose Cone Assembly**

**Caution:** Do not cut off eyelet.

1. Remove excess flash and clean eyelet of M.

2. Test fit M in E. Sand as required for smooth fit.

**Helpful Hint:** If nose cone fit is...

- Too loose: Add masking tape.
- Too tight: Sand for fit.

**Shock Cord Installation**

1. Cut shock cord mount from R.

2. Apply glue to section 2. Place P in glue. Fold forward.

3. Apply glue, fold forward.

ROCKET FINISHING
NOTE: We have found Testors spray primers (Testors #2948 White Primer), Testors One Coat Lacquer spray paints (color of your choice), 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 TO A QUALITY FINISH
1. Insert shock cord into body tube and hold in place with paper.
2. Lightly sand body tube, fins and nose cone with fine sandpaper (#320 or #400 grit).
3. Apply glue fillets to fins and launch lug.
   a. Allow glue to dry overnight.
4. Use a stick inserted into engine mount of the rocket for painting.
5. Insert a stick into nose cone to hold for painting. Cover shoulder with masking tape.
6. Apply 1-2 light coats of white primer to rocket body and nose cone, lightly sanding with fine sandpaper (#320 or #400 grit) between coats.
7. Apply gloss yellow paint to the top portion of the rocket body to forward fins.
   a. Let paint dry overnight (24 hours is best)
8. Apply masking tape and protective cover over yellow.
   a. Let dry overnight (24 hours is best).
10. Remove masking tape and protective cover.
11. Apply waterslide decals where shown.
    a. Cut decals to be applied from decal sheet, trimming close to the decal edge.
    b. Place decal in bowl of warm water until decal begins to curl.
    c. Remove decal, position in place and slide decal off of backing material 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.
12. When decals are dry, spray entire rocket (body and nose cone separately) with a light coat of Testors Gloss Lacquer (#1961). This will provide added protection and shine to your Alien Invader rocket!
**RECOVERY SYSTEM ATTACHMENT**

1. Form loop with shroud lines.
2. Insert loop through M.
3. Pass parachute through loop.
4. Pull lines tight.
5. Taper end of P.
6. Tie P to M with double knot.

**FLIGHT RECOVERY PREPARATION**

NOTE: Only Estes Recovery Wadding (302274) recommended.

1. Pull shock cord taut when inserting wadding.
2. Insert 3 - 4 loosely crumpled squares recovery wadding. Push below shock cord attachment.
3. Spike.
4. Fold.
5. Roll.
6. Wrap lines loosely around parachute. Insert parachute and shock cord into body tube.

**ENGINE PREPARATION**

**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.

1. Separate igniter and igniter plug.
2. Insert igniter.
3. Insert plug.
4. Push down.
5. Gently bend igniters to form leads as shown.
6. Insert engine into rocket.

IGNITER TIP MUST TOUCH PROPELLANT!
**COUNTDOWN AND LAUNCH**

1... **Masking Tape**

**LAUNCH SUPPLIES** (Sold Separately)
- Porta Pad® II Launch Pad
- Electron Beam® Launch Controller
- Recovery Wadding
- Igniters (with Engines)
- Igniter Plugs (with Engines)
- Recommended Estes® Engine: A8-3, B4-4 (first flight), B6-4, C6-6

2...

3...

4...

5...

**PRECAUTIONS**

- **NAR Safety Code**
- **This Paper Can Be Recycled**
- **NO DRY GRASS OR WEEDS**

**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.
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Alien Invader
FLYING MODEL ROCKET KIT
Skill Level 2
Classic Series

- Futuristic Alien Warship!
- Laser Cut Balsa Fins!

FLIES UP TO 900 FEET (274 M)
OVER 20 INCHES TALL!

3003

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