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.

PARTS
Locate the parts shown below and lay them out on the table in front of you. DO NOT USE THIS DRAWING TO ASSEMBLE YOUR ROCKET.

14.2" Long
Slofted Body Tube BT-80 (1)
(031180)

14.175" Long
Upper Body Tube
BT-80KD (1) (030433)

3" Long
Joiner Tube
JT-80L (1) (030278)

12.7" Long
Body Tube BT-50L (1)
(030366)

Nose Cone NC-80K
(1) (071035)

Shock Cord SC-36
(1) (038382)

2.1" Long
Body Tube 52AG (1) (030450)

Engineering Hook-E
(1) (035022)

Decal Sheet (1) (037041)

Yellow Spacer Tool (1)
(034997)

Orange E to D Spacer (1)
(035005)

Green Engine Block
(AR-2050) (1)
(030164-2)

Assembled Parachute
24" (61 cm) (1)
(035803)

1/4" (6 mm) Launch Lug
(2) (038181)

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

- MASKING TAPE
- SCISSORS
- PENCIL
- RULER
- FINE SAND PAPER (#400-600 GRIT)
- CARPENTER’S GLUE
- MODELING KNIFE
- PRIMER (WHITE)
- SPRAY PAINT (GLOSS BLACK & METALLIC SILVER)
- SPRAY PAINT (CLEAR)
- 1/32" (.8 mm) PINSTRIPE TAPE (YELLOW)
1. A. JOINER TUBE
   B. SPREAD GLUE INSIDE UPPER BODY TUBE. INSERT JOINER TUBE UP TO 1 1/2" (38 mm) MARK.
   C. INSERT GREEN ENGINE BLOCK AND YELLOW SPACER TOOL TO 1/2" (13 mm) MARK.
   D. REMOVE SPACER TOOL IMMEDIATELY.

2. A. YELLOW SPACER TOOL
   B. SMEAR GLUE 3 1/4" (83 mm) INSIDE BODY TUBE BT-50L.
   C. GREEN ENGINE BLOCK
   D. BODY TUBE BT-50L

3. A. CUT 1/8" (3 mm) SLIT 3 1/4" (83 mm) FROM REAR.
   B. POSITION HOOK.
   C. TAPE ENGINE HOOK DOWN, MARK TUBE.
   D. TEST FIT BT-52AG OVER TUBE. REMOVE SOME PAPER FROM INSIDE BT-52AG IF TOO TIGHT. SPREAD GLUE AROUND TUBE BETWEEN TWO MARKS.
   E. SLIDE BODY TUBE 52AG OVER TUBE TO THE 1" (25 mm) MARK. REMOVE TAPE.
   F. BODY TUBE 52AG

4. A. CUT TUBE ADAPTERS FROM CARD. MOVE BLADE BACK AND FORTH TO WIDEN SLIT.
   B. TIE DOUBLE KNOT IN SHOCK CORD.
   C. PASS SHOCK CORD THROUGH SLIT.
   D. GLUE KNOT.
   E. MARK ENGINE MOUNT TUBE.
   F. APPLY GLUE BANDS AROUND MARKS.
   G. SLIDE TUBE ADAPTERS ONTO ENGINE MOUNT TUBE UNTIL THEY SIT EVENLY AT GLUE BANDS. LET DRY.
5. A. INSERT ENGINE MOUNT TUBE HALF WAY INTO SLOTTED BODY TUBE.

POSITION ENGINE HOOK BETWEEN FIN SLOTS.

C. INSERT ENGINE MOUNT TUBE UNTIL TUBE ENDS ARE EVEN.

6. A. DRAW LAUNCH LUG (LL) LINE BETWEEN SLOTS ABOVE HOOK ENTIRE LENGTH OF SLOTTED TUBE.

B. THREAD SHOCK CORD THROUGH UPPER BODY TUBE AND APPLY GLUE AROUND JOINER. INSERT INTO SLOTTED BODY TUBE.

7. A. SAND LASER CUT FIN SHEETS.

B. REMOVE FINS FROM EACH SHEET WITH KNIFE.

C. SAND EDGES.

8. A. TEST FIT FINS INTO EACH SLOT. SAND FIN SURFACE IF NEEDED FOR PROPER FIT. APPLY THIN LAYER OF GLUE TO FIN, WAIT ONE MINUTE. APPLY SECOND LAYER AND INSERT INTO SLOT.

B. REPEAT FOR OTHER FINS.

C. ALLOW GLUE TO DRY.

NOTE: FINS MUST BE ATTACHED CORRECTLY FOR A STABLE FLIGHT.
9. A. REMOVE EXCESS FLASH FROM NOSE CONE AND CLEAN THE EYE OF THE NOSE CONE.
   CAUTION: DO NOT CUT EYE OF NOSE CONE OFF.

B. [Diagram showing the process]

C. [Diagram showing the process]

D. [Diagram showing the process]

E. [Diagram showing the process]

10. A. GLUE LAUNCH LUGS ONTO LAUNCH LUG (LL) LINE.

   [Diagram showing the process with annotations: 1/4" (6 mm) for the body tube joint and LL line]

11. A. APPLY GLUE FILLETS TO ALL LAUNCH LUG AND FIN/BODY TUBE JOINTS.

   [Diagram showing the process with a hand pointing to the LL line]

B. SMOOTH WITH FINGER TIP.

C. ALLOW GLUE TO DRY.
FINISHING YOUR ROCKET

FIRST SPRAY ROCKET WITH WHITE PRIMER, LET DRY AND SAND. REPEAT UNTIL ROCKET IS SMOOTH.

GLOSS BLACK

METALLIC SILVER

YELLOW 1/32" (0.8 mm) PIN STRIPE

GLOSS BLACK

METALLIC SILVER

YELLOW 1/32" (0.8 mm) PIN STRIPE

*CLEAR COAT ENTIRE ROCKET WHEN PAINT DRIES.

ROCKET PREFLIGHT

A. INSERT 6-8 LOOSELY CRUMPLED SQUARES OF RECOVERY WADDING.

B. SPIKE

C. FOLD

D. ROLL

E. WRAP LINES LOOSELY, AROUND ROLLED CHUTE. INSERT CHUTE & SHOCK CORD INTO BODY TUBE AND SLIP NOSE CONE INTO PLACE.

NOTE: IF NOSE CONE IS TOO LOOSE, ADD TAPE.

ENGINE PREP

WARNING: FLAMMABLE
Before proceeding read instructions & NAR Safety Code included with engines.

PREPARE YOUR 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 your engine.

A. 

B. TIP MUST TOUCH PROPELLANT.

C. 

D. 

E. 

F. IF YOU ARE USING A 'D' ENGINE, INSERT ORANGE SPACER, THEN ENGINE.

G. FOR AN 'E' ENGINE, JUST INSERT ENGINE.
COUNTDOWN AND LAUNCH

KEY ALWAYS OUT UNTIL FINAL COUNTDOWN!

1...

2...

3...

4...

5...

4... 3... 2... 1...

HOLD KEY DOWN AND PRESS BUTTON UNTIL LIFT-OFF!

PORTA-PAD® E-LAUNCH PAD

MASKING TAPE

PRESS KEY DOWN & HOLD

E-ENGINE LAUNCH CONTROLLER

LAUNCH SUPPLIES
(Sold Separately)

- Estes® Porta-Pad® E-Launch Pad (EST 2238) and E-Engine Launch Controller (EST 2230)
- Recovery Wadding (302274)
- Igniters (with Engines)
- Igniter Plugs (with Engines)
- Estes® Engines: D12-3 (First Flight), E9-4, E9-6

PRECAUTIONS

NAR Safety Code

- NO DRY GRASS OR WEEDS

FLYING YOUR ROCKET

Choose a large field (1000 ft. [305 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 National Association of Rocketry (NAR) SAFETY CODE.

MISFIRES

TAKE THE KEY OUT OF THE CONTROLLER, WAIT ONE MINUTE BEFORE GOING NEAR THE ROCKET! 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.
.110" Thick Laser Cut Plywood
FLYING MODEL ROCKET

SKILL LEVEL 3

MODEL KIT

- OVER 3 FT. (0.9 m) TALL!
- FLIES TO 590 FT. (180 m)!

AWESOME "E" ENGINE ROCKET!

Includes Adapter for use with Estes® 'D' Engines.

For ages 16 and up. Adult supervision required for ages under 16.

EST 1951