

COUNTDOWN AND LAUNCH

ESTES LAUNCH SUPPLIES

- Porta Pad® II Launch Pad.
- Electron Beam® Launch Controller
- Recovery Wadding (included with some engines)
- Igniters (with engines)
- Igniter Plugs (with engines)
- Recommended Engines: A8-3, B4-4, B6-4, C6-5



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METALIZER™

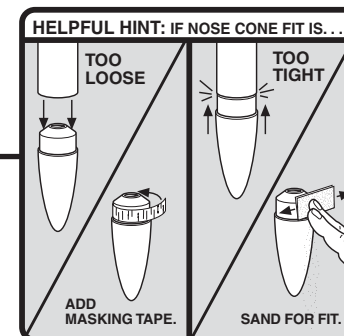
FLYING MODEL ROCKET KIT INSTRUCTIONS
KEEP FOR FUTURE REFERENCE

#2168



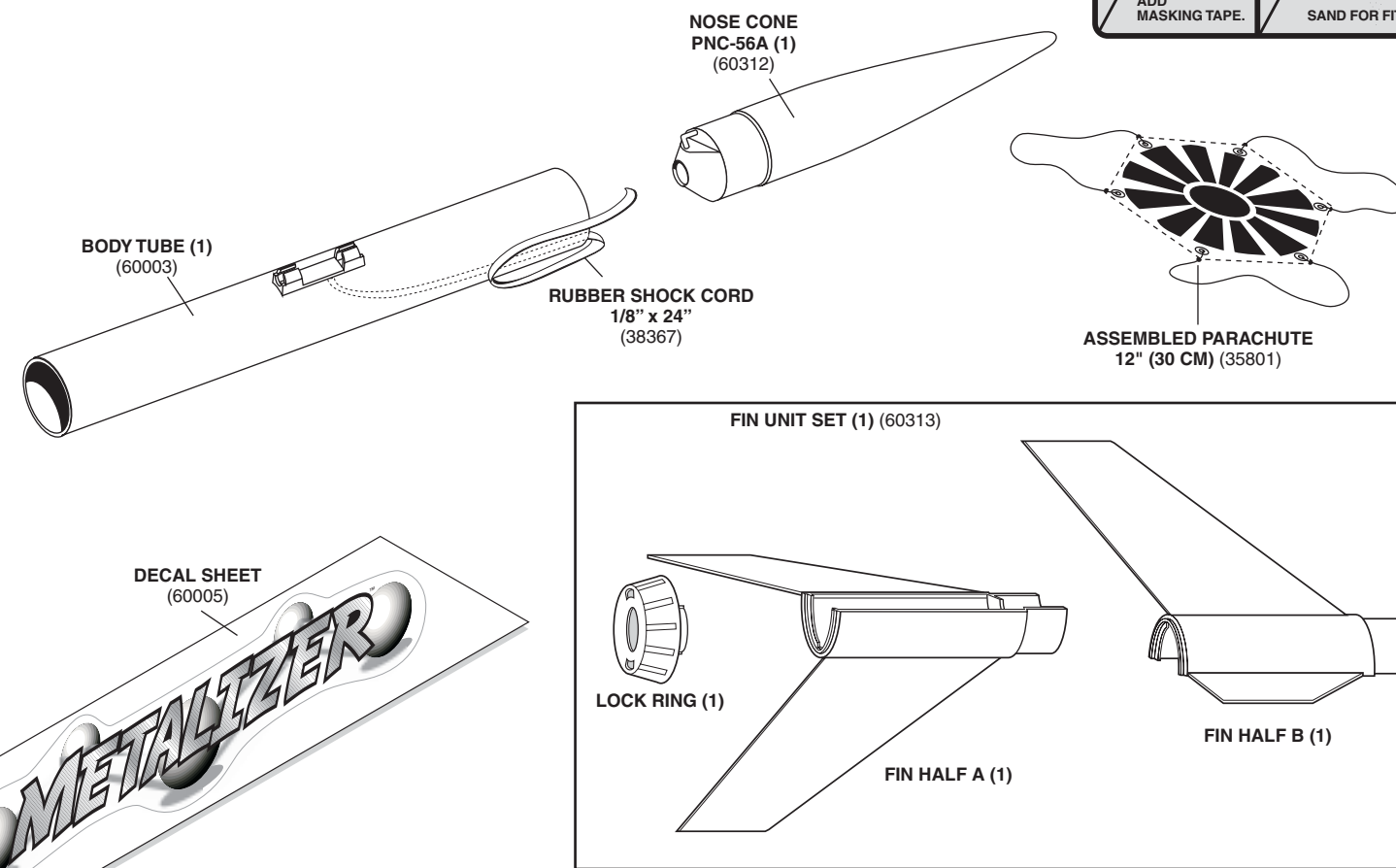
ASSEMBLY TIP: Read all instructions before beginning work on your model. Make sure you have all parts and supplies.

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.**



PRECAUTIONS



NAR Safety Code



- 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(s). 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 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.

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



SCISSORS



**FINE
SANDPAPER**



MODELING KNIFE



**MASKING
TAPE**



PLASTIC CEMENT

1. ASSEMBLE FIN UNIT

A. Scrape chrome flash from edges of fin halves A and B.

SCRAPE EDGES

FIN HALF

B. Apply plastic cement to fin half A.

C. Align pegs with holes and press fin halves together. Hold until cement sets. Let cement dry completely.

FIN HALF B

PEGS

HOLES

FINISHED

2. ATTACH BODY TUBE

A. Apply plastic cement inside rear end of body tube.

SHOCK CORD

LAUNCH LUG

REAR

B. Position and insert fin unit into the body tube so that the launch lug is aligned between two fins.

C. Wipe away excess cement. Let dry.

D. Apply decals.

NOTE: Apply engine sticker from decal sheet to body tube as an easy reference.



3. ATTACH PARACHUTE AND NOSE CONE

A. Clean the eye of the nose cone.

B. Tie shock cord to nose cone.

C. Form loop with parachute shroud lines.

CAUTION:
DO NOT CUT
EYE OF NOSE
CONE OFF!

DOUBLE
KNOT

SHOCK
CORD

D. Lay shock cord over loop about 3/4" (19 mm) from nose cone.

NOSE CONE

3/4"
(19 mm)

BODY TUBE

SHOCK
CORD

E. Pass parachute through loop.

F. Pull tight.

SHOCK
CORD

4. PREPARE PARACHUTE FOR FLIGHT

A. Insert 4-5 squares of loosely crumpled recovery wadding into rocket body tube.

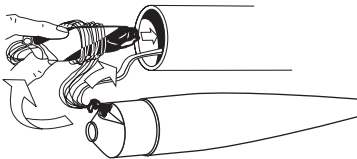
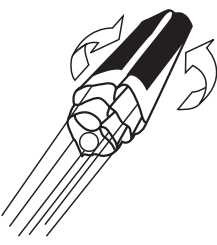
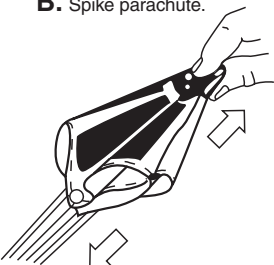
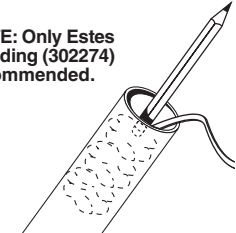
B. Spike parachute.

C. Fold.

D. Roll.

E. Wrap lines loosely. Insert 'chute, shock cord and nose cone into body tube.

NOTE: Only Estes Wadding (302274) recommended.



5. PREPARE ENGINE

WARNING: FLAMMABLE

To avoid serious injury, read instructions & NAR Safety Code included with engines before proceeding. **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.

NOZZLE
END

A. Slide engine into rear of rocket as shown.

B. Twist engine lock ring into locked position to hold engine in place.

C. Separate igniter and igniter plug.

D. Hold rocket upright, drop in igniter.

IGNITER MUST
TOUCH
PROPELLANT.

E. Insert igniter plug.

F. Firmly push all the way in.

G. Bend igniter wires as shown.

