



estesrockets.com

PRO SERIES II

9727

OPTIMA PRO™

AGES
18+



Skill Level

INTERMEDIATE

MODEL ROCKET INSTRUCTIONS

KEEP FOR FUTURE REFERENCE

IMPORTANT: Please record date found on decal and keep for future reference. _____

READ ALL INSTRUCTIONS. Make sure you have all parts and supplies. Test fit all parts before applying glue. Refer to your glue manufacturer's dry times during build.

SUPPLIES



SCISSORS



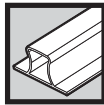
PENCIL



RULER



FINE
SANDPAPER



SANDING
BLOCK



YELLOW GLUE



EPOXY



HOBBY KNIFE



MASKING
TAPE



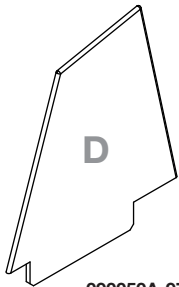
WHITE PRIMER



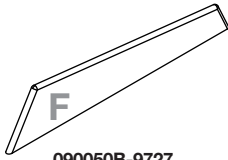
WHITE &
BLACK PAINT



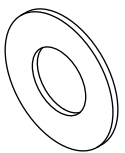
CLEAR COAT
(OPTIONAL)



090050A-9727
Laser Cut Plywood Fins
x3



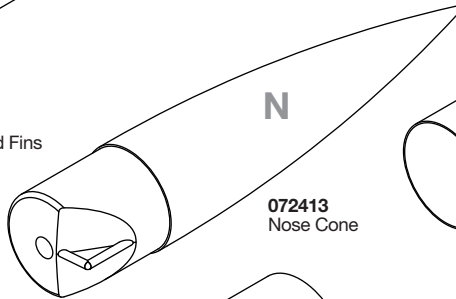
090050B-9727
Laser Cut Plywood Fins
x3



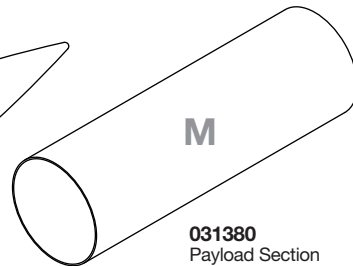
B
066475
Laser Cut Plywood
Centering Rings
x3



C
31362
Green Spacer



072413
Nose Cone



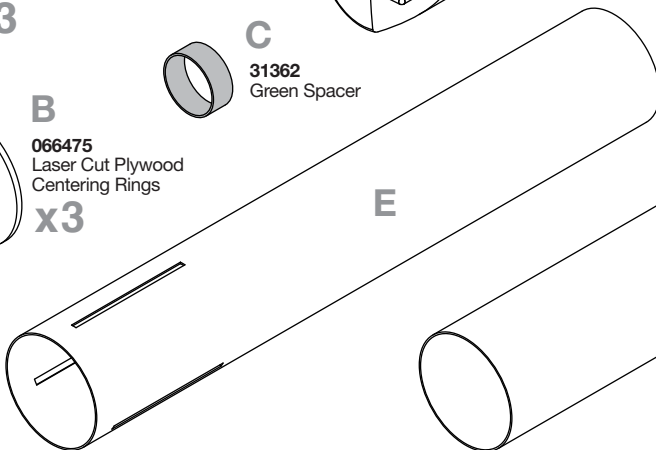
031380
Payload Section
Body Tube



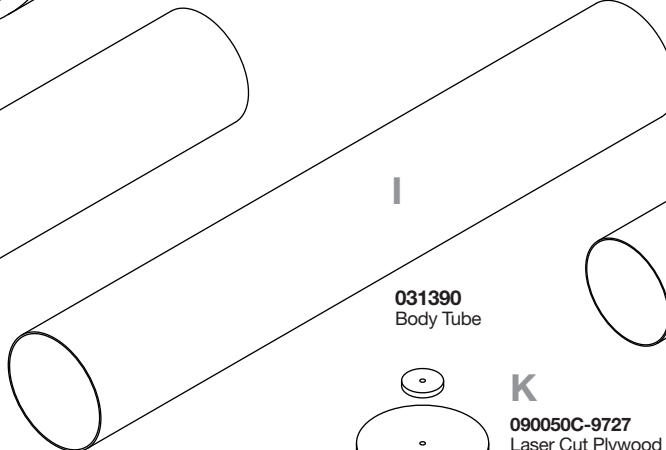
L
038250
Screw Eye #8



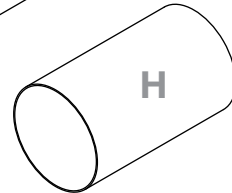
O
038378
Elastic
shock cord



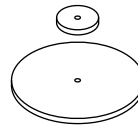
085865
15.5 in. Slotted-Body Tube



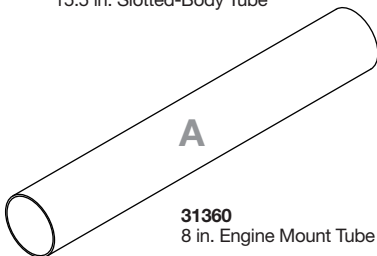
031390
Body Tube



030189
Tube Coupler
x2



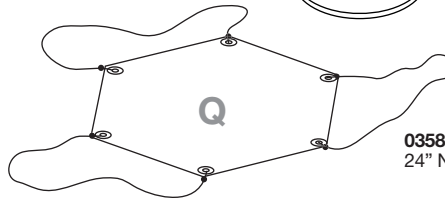
K
090050C-9727
Laser Cut Plywood
Bulkhead



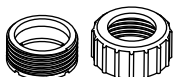
31360
8 in. Engine Mount Tube



G
038181
Launch lug
x2



035814
24" Nylon Parachute



J
072412
Engine Retainer Set

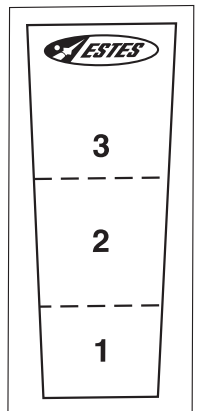
38411
1/2 x 9 in. Holographic Tape (Silver) x5

38410
2 x 9 in. Holographic Tape (Purple) x5

090001-9727
Waterslide Decal Sheet

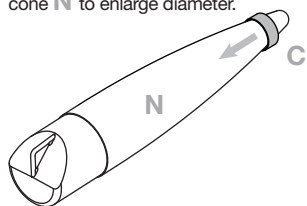


P
084446
Paper Shock
Cord Mount

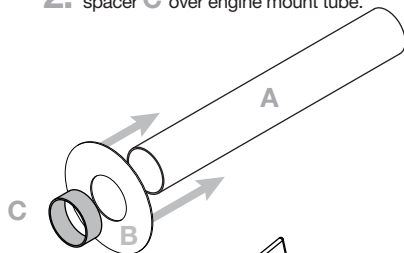


ASSEMBLE ENGINE MOUNT

1. Push green spacer **C** over nose cone **N** to enlarge diameter.

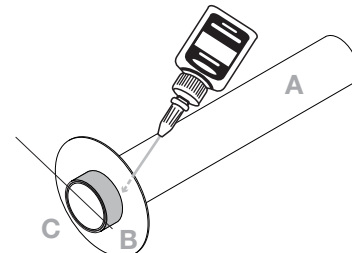


2. Slide centering ring **B** and green spacer **C** over engine mount tube.

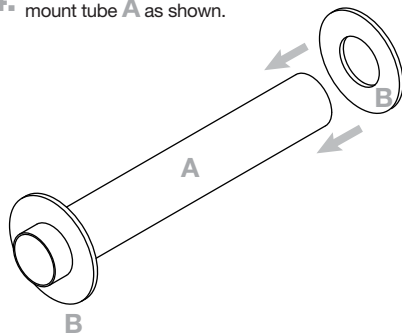


3. Apply glue to centering ring on opposite side of spacer.

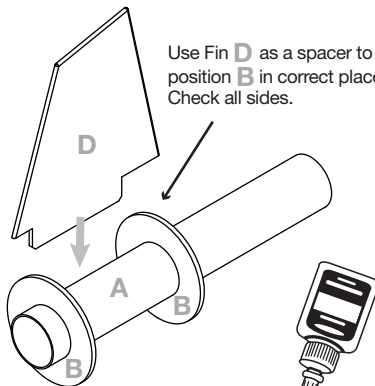
ENDS EVEN
REMOVE GREEN SPACER IMMEDIATELY



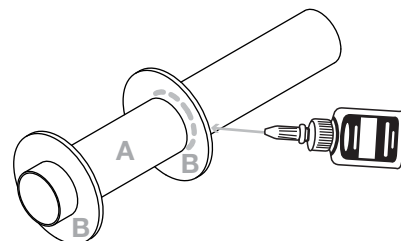
4. Slide centering ring **B** over engine mount tube **A** as shown.



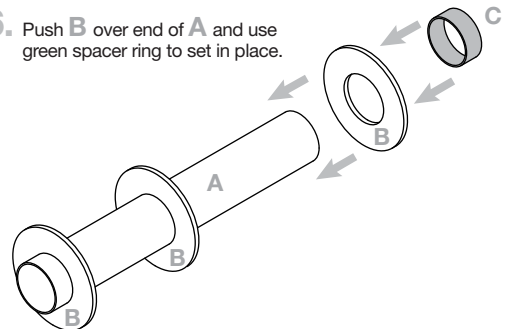
Use Fin **D** as a spacer to position **B** in correct place. Check all sides.



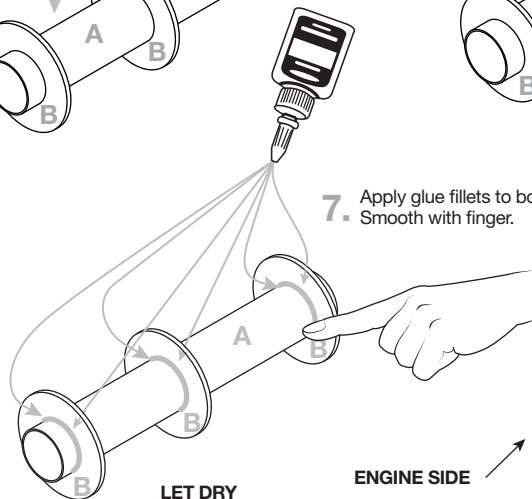
5. Remove fin and glue **B** into place. Use fin to confirm position after gluing.



6. Push **B** over end of **A** and use green spacer ring to set in place.

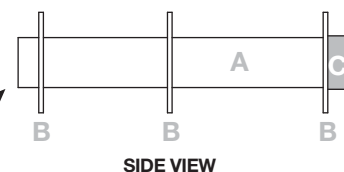


7. Apply glue fillets to both sides of the **B** centering rings. Smooth with finger.



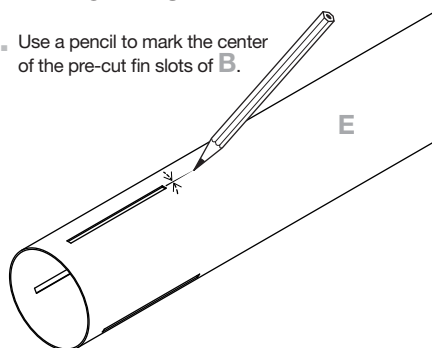
LET DRY

ENGINE SIDE

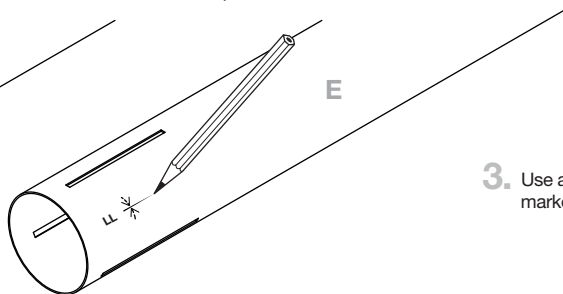


MARK BODY TUBE

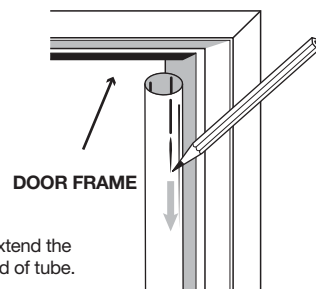
1. Use a pencil to mark the center of the pre-cut fin slots of **B**.



2. Use a pencil to mark the center between the pre-cut slots and mark LL.

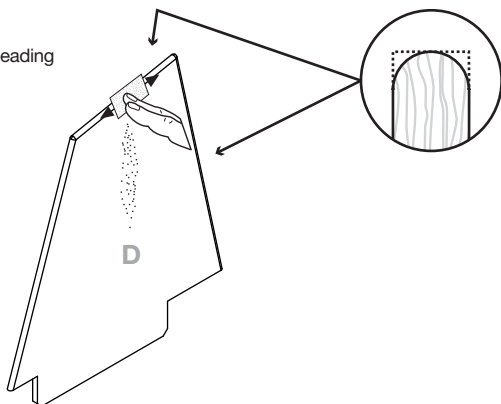


3. Use a door frame to extend the marked lines to the end of tube.

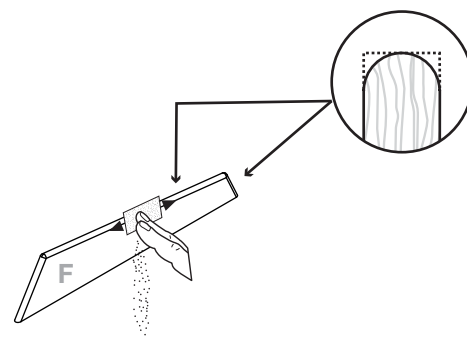


PREPARE FINS

1. Using sandpaper, round the leading and side edges of **D**.

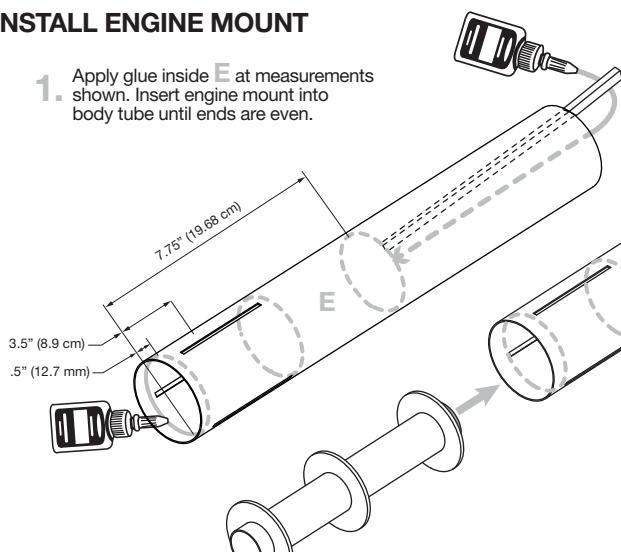


2. Round the leading edge of **F** as shown.

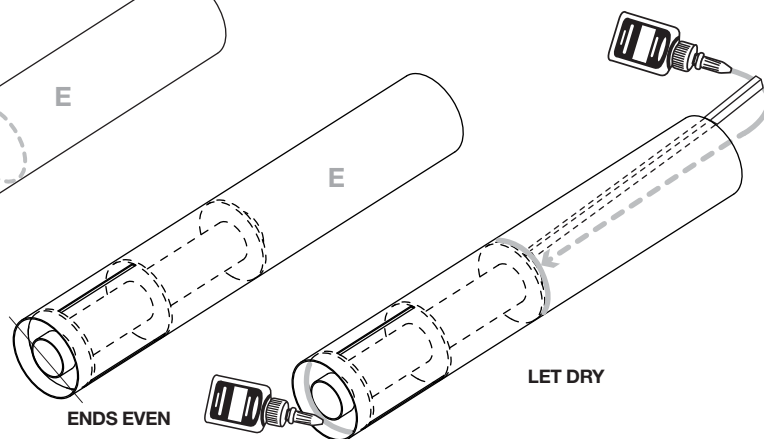


INSTALL ENGINE MOUNT

1. Apply glue inside **E** at measurements shown. Insert engine mount into body tube until ends are even.

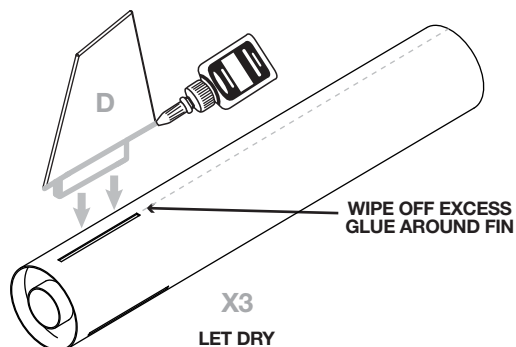


2. Use dowel rod or similar tool to apply glue to edges of engine mount as shown.

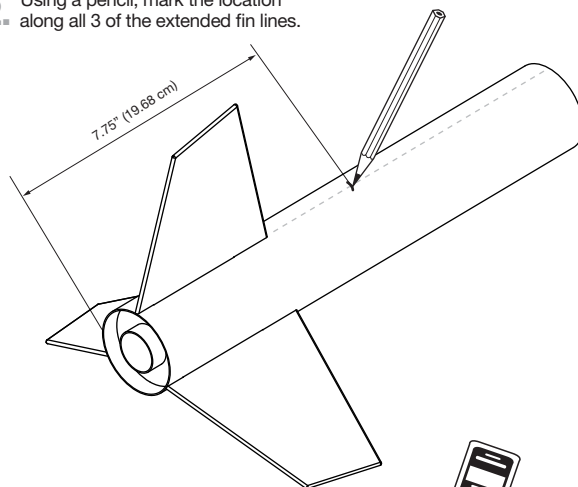


ATTACH FINS

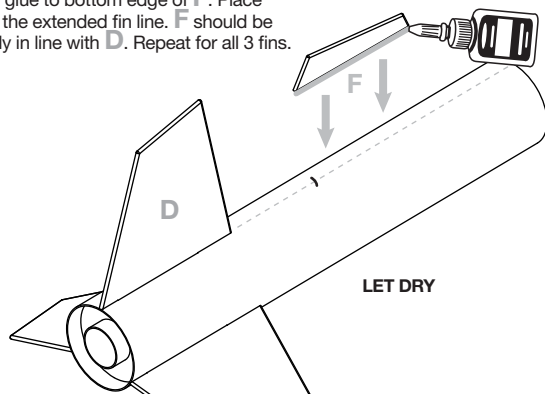
1. Apply glue to fin **D** as shown and insert into slot. Repeat with all 3 fins and let dry.



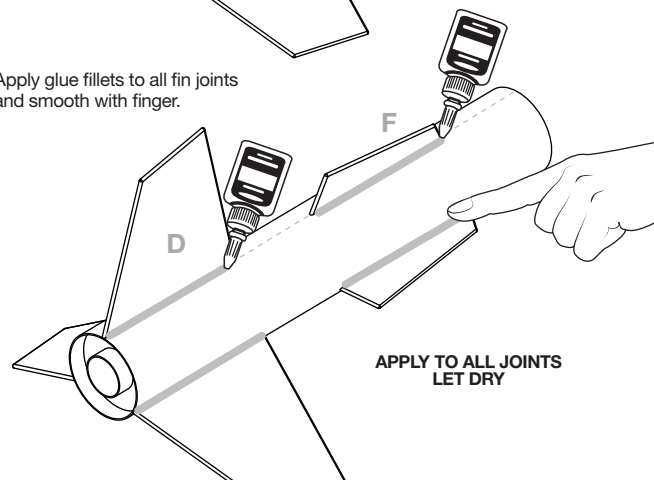
2. Using a pencil, mark the location along all 3 of the extended fin lines.



3. Apply glue to bottom edge of **F**. Place along the extended fin line. **F** should be directly in line with **D**. Repeat for all 3 fins.



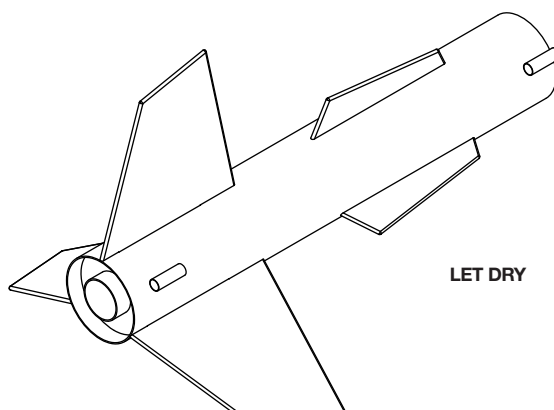
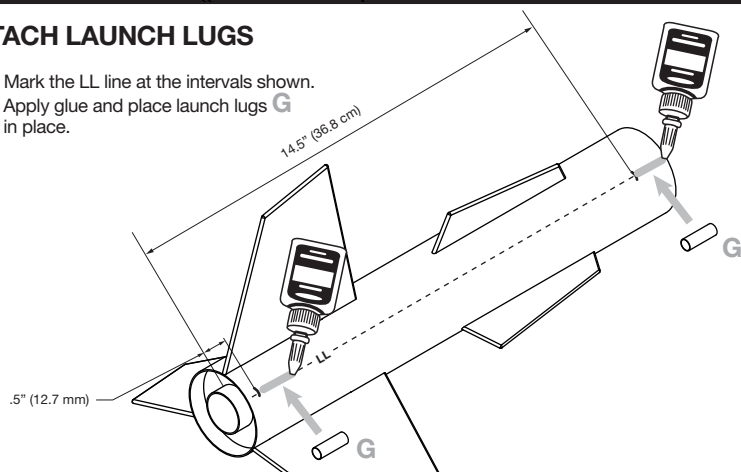
4. Apply glue fillets to all fin joints and smooth with finger.



ATTACH LAUNCH LUGS

1. Mark the LL line at the intervals shown.

1. Apply glue and place launch lugs **G** in place.



ASSEMBLE BODY

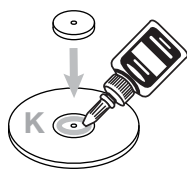
1. With a pencil, mark coupler **H** at distance shown. Apply glue to inside edge of **E** as shown. Insert **H** into **E** until it reaches 2" mark.

2. Apply glue to inside of **I**. Push **I** onto **H** until it connects with **E**.

LET DRY

ASSEMBLE PAYLOAD SECTION

1. Apply glue to center of **K** as shown and join pieces. Apply glue to inside edge of **H**. Place on a flat surface and push **H** on to **K** assembly.



NOTE:
Assemble over wax paper on flat surface.

2. Apply glue inside hole of **K** and screw **L** into middle of **K** as shown. Using a pencil, mark **H** assembly at 2" mark as shown.

LET DRY

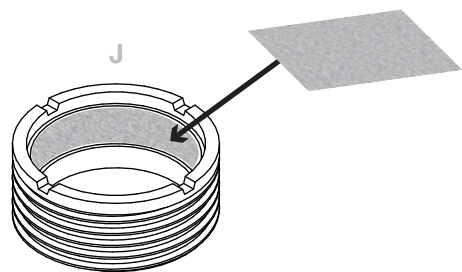
3. Apply glue to inside edge of **M**. Push **M** onto **H** until it reaches the 2" mark.

4. Use masking tape on nose cone **N** for a snug fit and push into **M**.

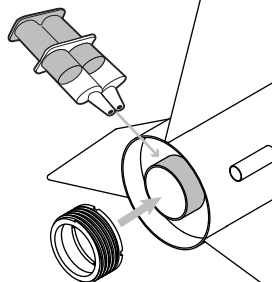
LET DRY

ATTACH ENGINE RETAINER

1. Rough up inside surface of **J** with sandpaper.



2. Attach with epoxy. Mix and apply according to instructions.

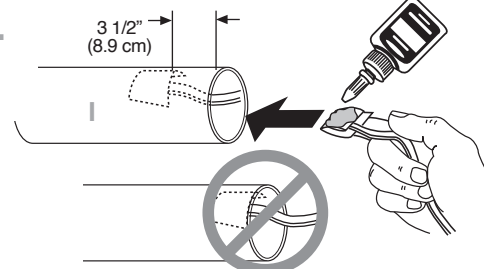
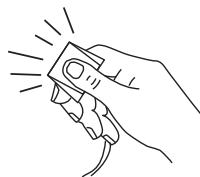
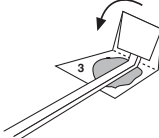
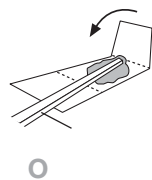
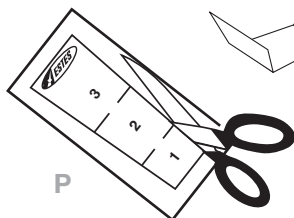


CAUTION:

For safe handling of epoxy, see manufacturer's warnings and follow instructions for use.

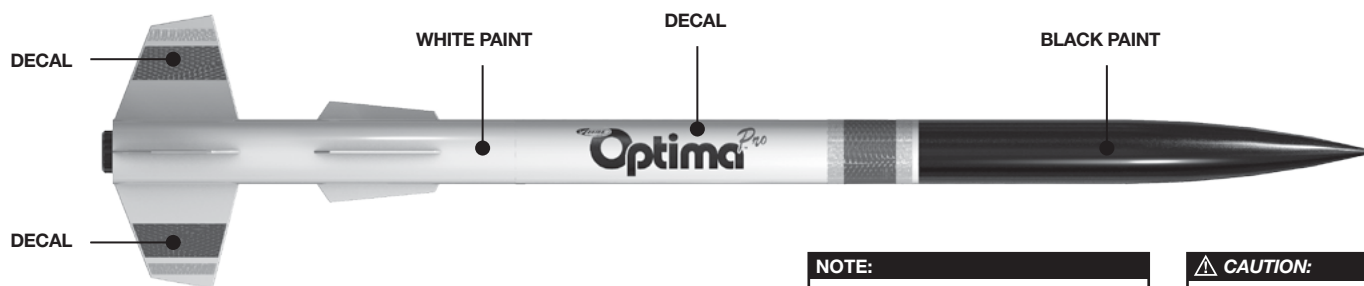
ATTACH SHOCK CORD

1. Cut shock cord **P** to length shown.
2. Fold shock cord **P** in half.
3. Insert shock cord **P** into the shock cord holder **O**.
4. Push shock cord **P** into the shock cord holder **O** until it reaches the 3" mark.
5. Hold until set.
6. Push shock cord **P** into the shock cord holder **O** until it reaches the 3 1/2" (8.9 cm) mark.



ROCKET FINISHING

Spray rocket with white primer, let dry & sand. Repeat until rocket is smooth, then paint. Apply decals after paint is dry. OTIONAL: Clear coat entire rocket when paint dries.



NOTE:

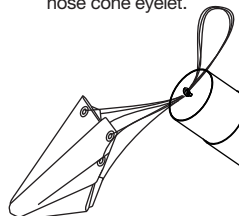
Refer to packaging for paint scheme and alternative paint option.

CAUTION:

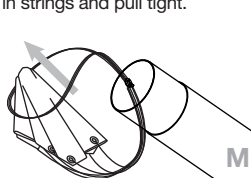
See manufacturer's warnings and instructions before using spray finishing products.

ATTACH RECOVERY SYSTEM

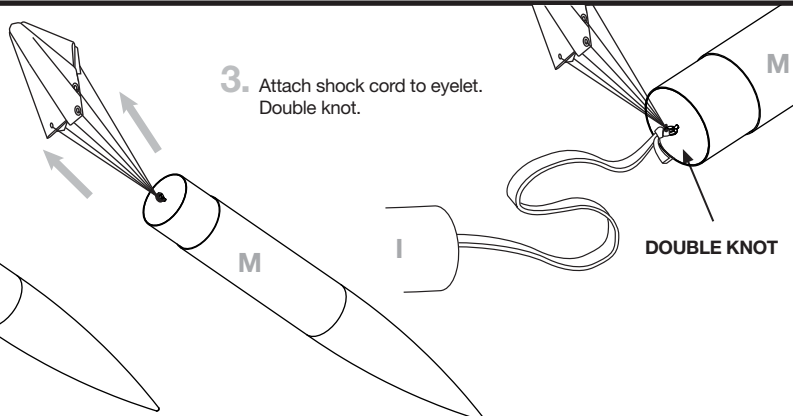
1. Thread parachute strings through nose cone eyelet.



2. Bring parachute through loop in strings and pull tight.

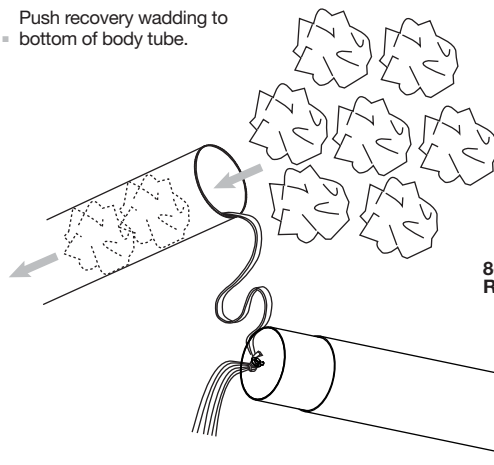


3. Attach shock cord to eyelet. Double knot.

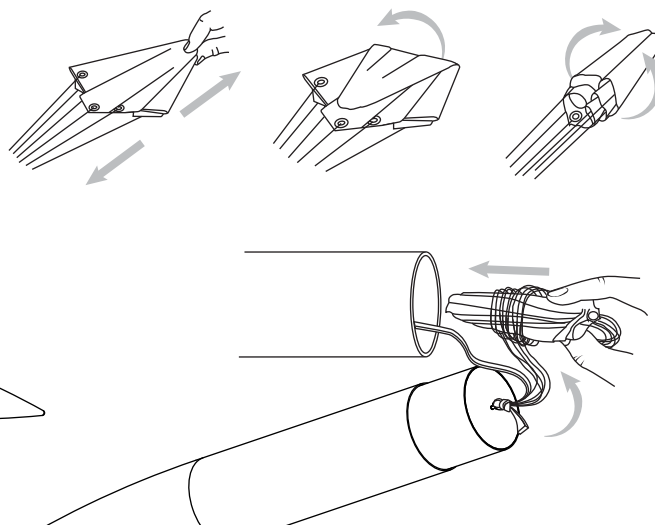


PREPARE FLIGHT RECOVERY

1. Push recovery wadding to bottom of body tube.

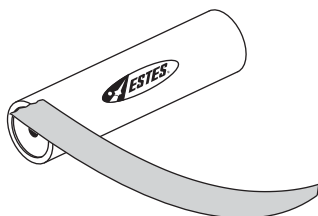


2. Fold parachute as shown. Wrap parachute lines loosely and insert into body tube. Recovery wadding and parachute must slide easily into body tube; redo if too tight.

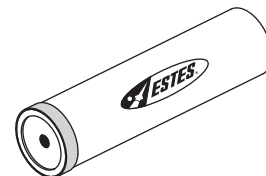
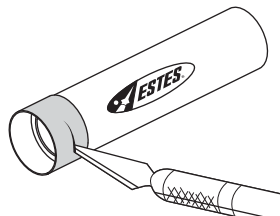


PREPARE ENGINE RETENTION

1. Wrap 6 to 8 layers of masking tape over nozzle end of motor. Overlap end of engine by 1/4 inch (6 mm).



2. Trim off excess tape.



PREPARE ENGINE

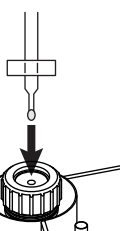
1. Use one each.



ENGINE



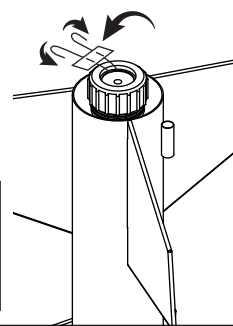
3.



TIP MUST TOUCH PROPELLANT!



5.



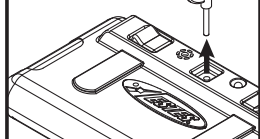
WARNING: FLAMMABLE

To avoid serious injury, 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 starter before storing your engine.

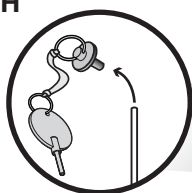
COUNT DOWN & LAUNCH

NOTE:

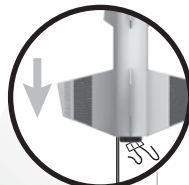
Key always out until countdown!



2.



3.

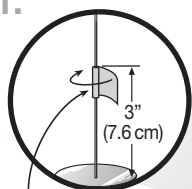


4.



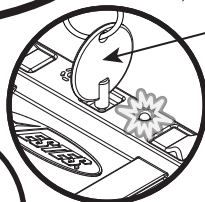
5. Fully extend your launch controller wire before launching.

1.



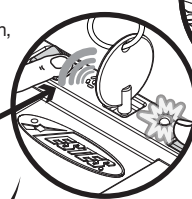
MASKING TAPE

6. Insert key, bulb will light.



KEY

7. Press yellow button, alarm will sound.



YELLOW BUTTON

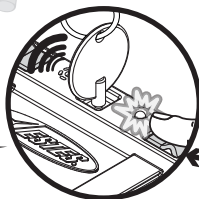
8.

5... 4... 3... 2... 1...



9. Press red button while holding yellow button, rocket will launch.

RED BUTTON



NOTE:

Estimated weight: 15 oz. (425 g)

ESTES® LAUNCH SUPPLIES NEEDED

(Sold Separately)

- Pro Series II™ Launch Base **OR** Porta-Pad® E Launch Pad
- Pro Series II™ Launch Controller
- Recovery Wadding
- Starters (with engines)
- Plugs (with engines)
- Estes® Engines: E16-4, F15-4, F15-6

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 (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. Launch only with little or no wind and good visibility. Always follow the National Association of Rocketry (NAR) SAFETY CODE (enclosed).

MISFIRES TAKE THE KEY OUT OF THE CONTROLLER. WAIT ONE MINUTE BEFORE GOING NEAR THE ROCKET. Disconnect the micro-clips and remove the engine. Take the plug and starter out of the engine. A burned starter means the starter tip was not touching engine propellant. Install a new starter; be sure the tip is touching propellant inside the engine. Push the plug in place. Repeat steps under Countdown and Launch.