

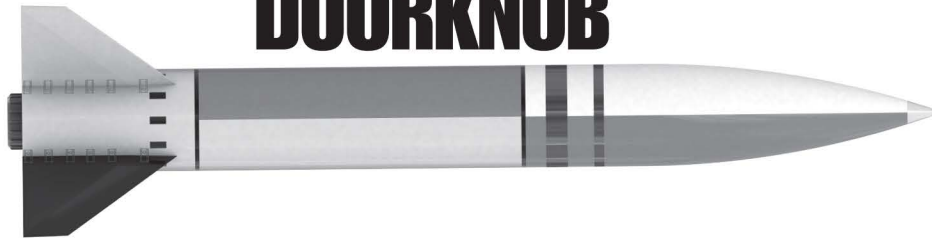




EstesRockets.com

DOORKNOB

9720



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.

SUPPLIES



SCISSORS



PENCIL



RULER



YELLOW GLUE



EPOXY



HOBBY KNIFE



MASKING TAPE



PRIMER (WHITE)



PAINT (DAY GLOW ORANGE, WHITE, BLACK)



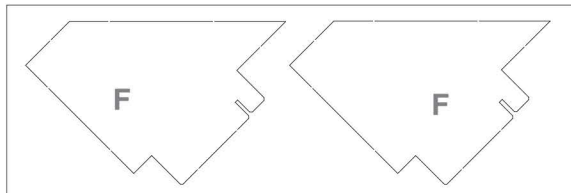
CLEAR COAT (OPTIONAL)



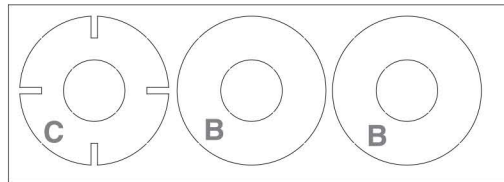
FINE SANDPAPER



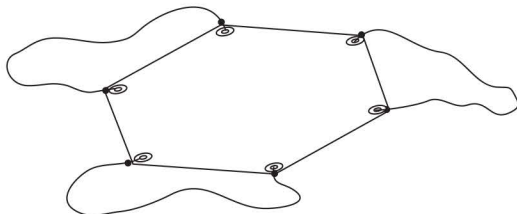
SAND BLOCK



F 090051-9720 X2
Laser-cut wood sheet



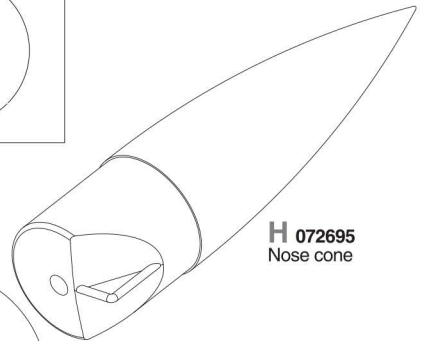
B/C 090052-9720
Laser-cut centering rings



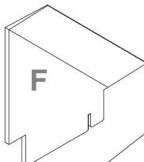
L 035810
Parachute



K 038363
Shock cord



H 072695
Nose cone



E 046010
Body tube



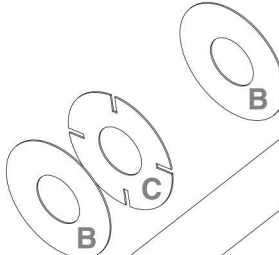
F



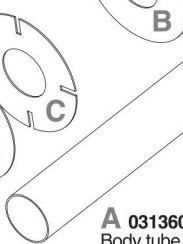
P 085705
Clay



G 038181
Launch lugs



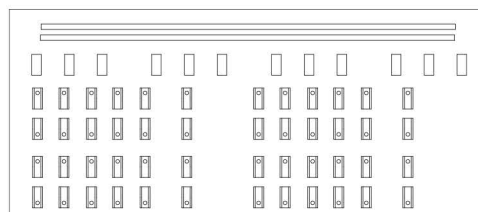
D 031362
Green spacer



A 031360
Body tube



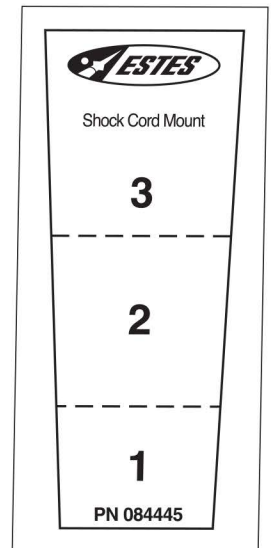
090001-9720B
Chrome adhesive strip



090001-9720A
Waterslide decal



I 072412
Engine retainer

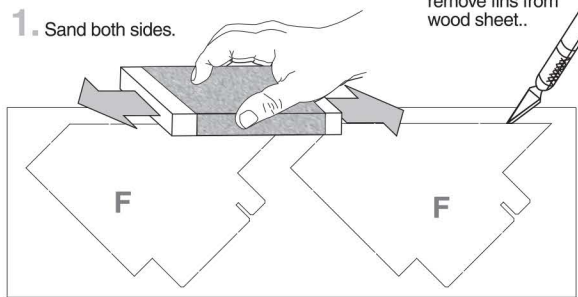


J 084445
Shock cord mount

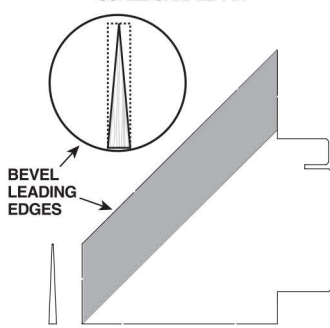
PREPARE FINNS

1. Sand both sides.

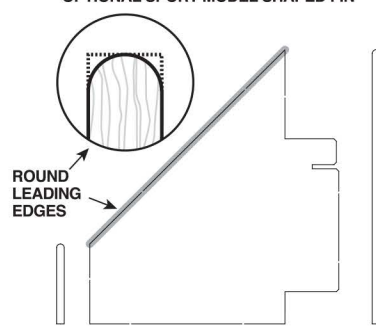
2. Use hobby knife to remove fins from wood sheet..



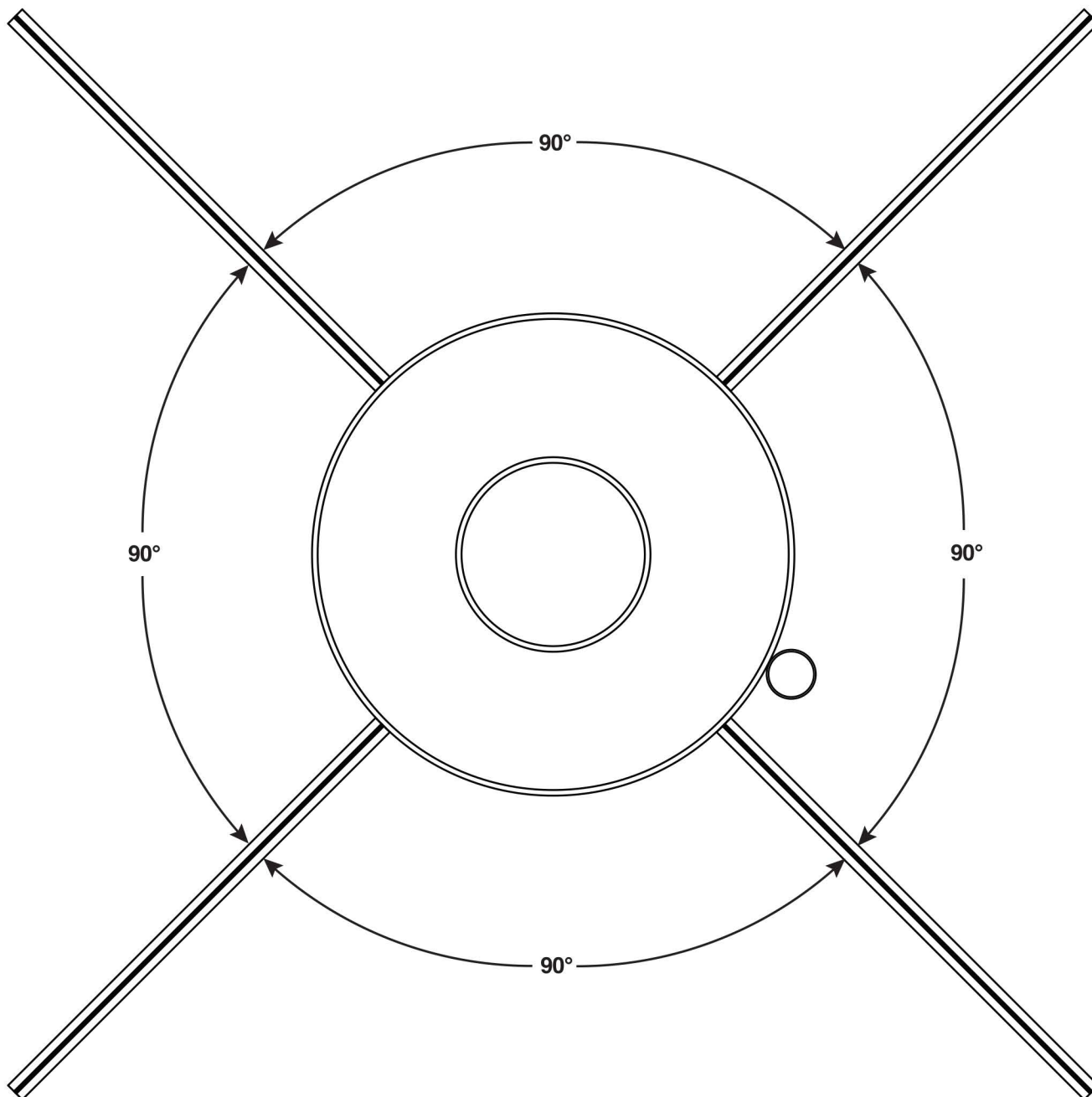
SCALE SHAPED FIN



OPTIONAL SPORT MODEL SHAPED FIN



FULL SIZE FIN ALIGNMENT GUIDE



ASSEMBLE ENGINE MOUNT

1. Push **D** over **H** to enlarge diameter .

2. Slide **B** and **D** over **A** until **D** and **A** are even.

3. Apply glue to back side of **B**.

When glue is dry enough to hold **B** in place, remove **D**.

Ends even

4. Slide **C** and **D** over **A** until they make contact with **F**.

5. Use **F** as a spacer to position **C** in correct place.

6. Remove **F** and glue **C** and **D** in place.

Use **F** to confirm position of **C** and **D** after gluing.

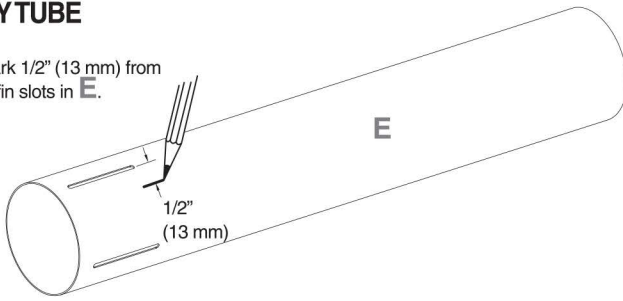
7. Apply glue bead around **A** as shown and attach **B**.

8. Apply glue fillets to both sides of **B** and **C**. Smooth with finger. Let dry.

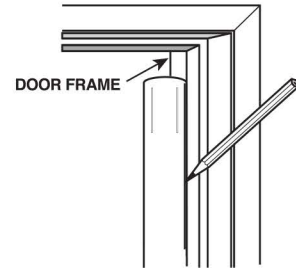
Completed assembly

MARK BODY TUBE

1. Make a mark 1/2" (13 mm) from one of the fin slots in **E**.



2. Use door frame to extend line to end of tube.



INSTALL ENGINE MOUNT

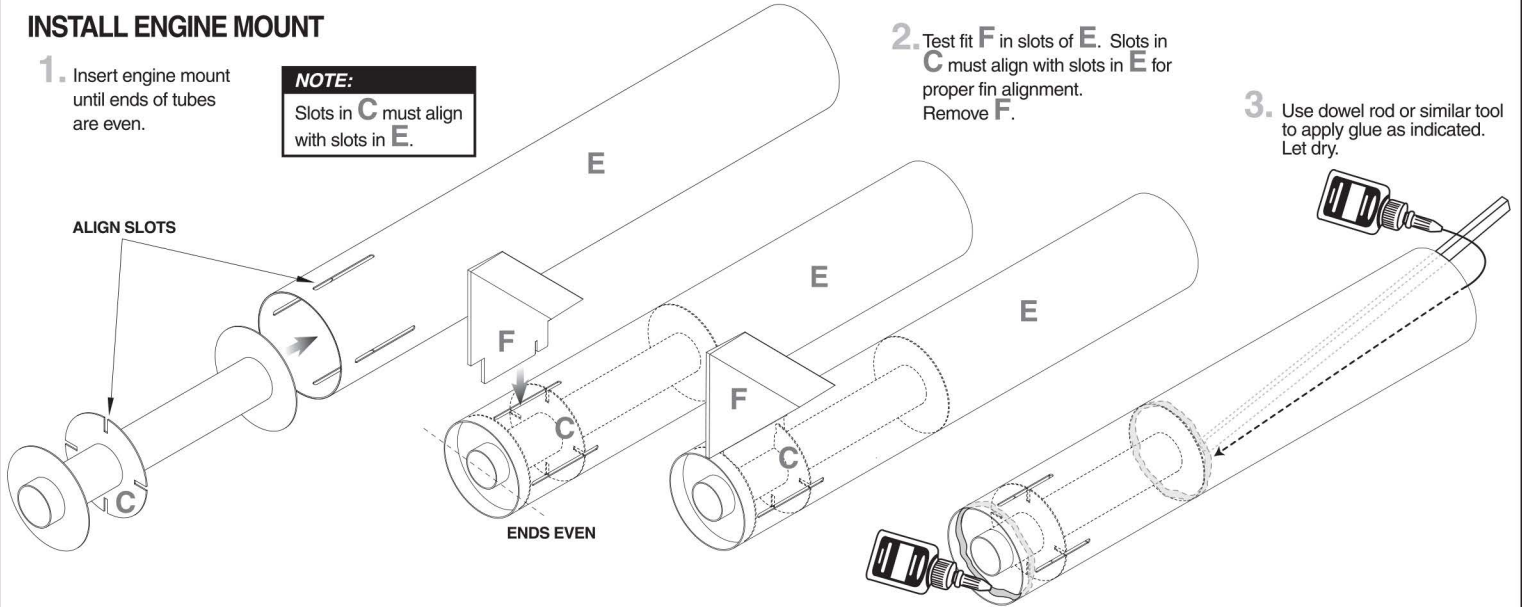
1. Insert engine mount until ends of tubes are even.

NOTE:

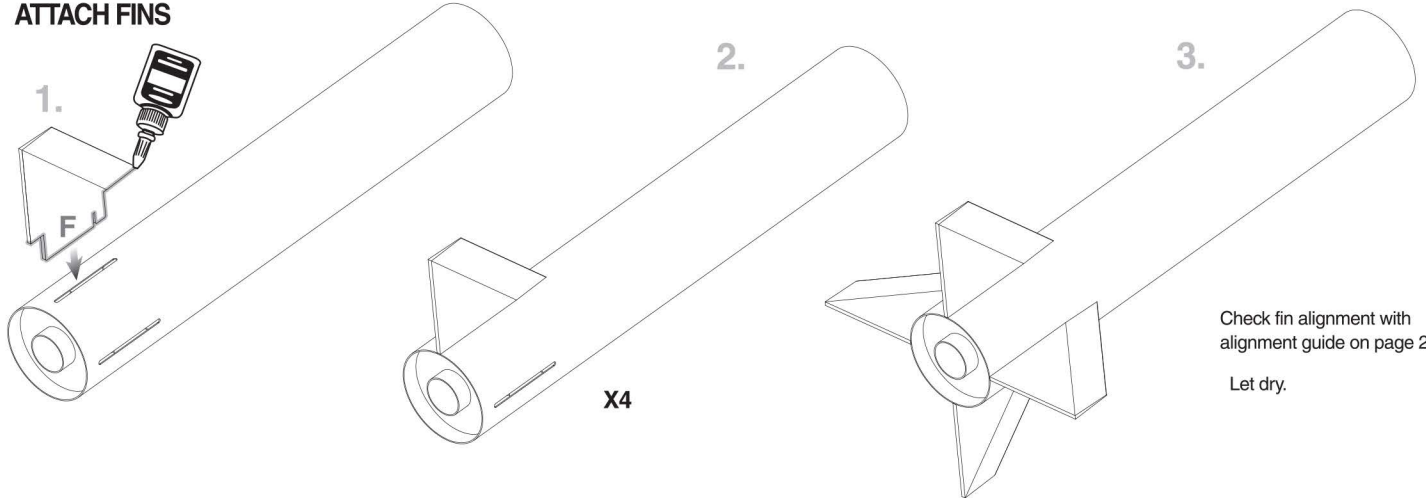
Slots in **C** must align with slots in **E**.

2. Test fit **F** in slots of **E**. Slots in **C** must align with slots in **E** for proper fin alignment. Remove **F**.

3. Use dowel rod or similar tool to apply glue as indicated. Let dry.



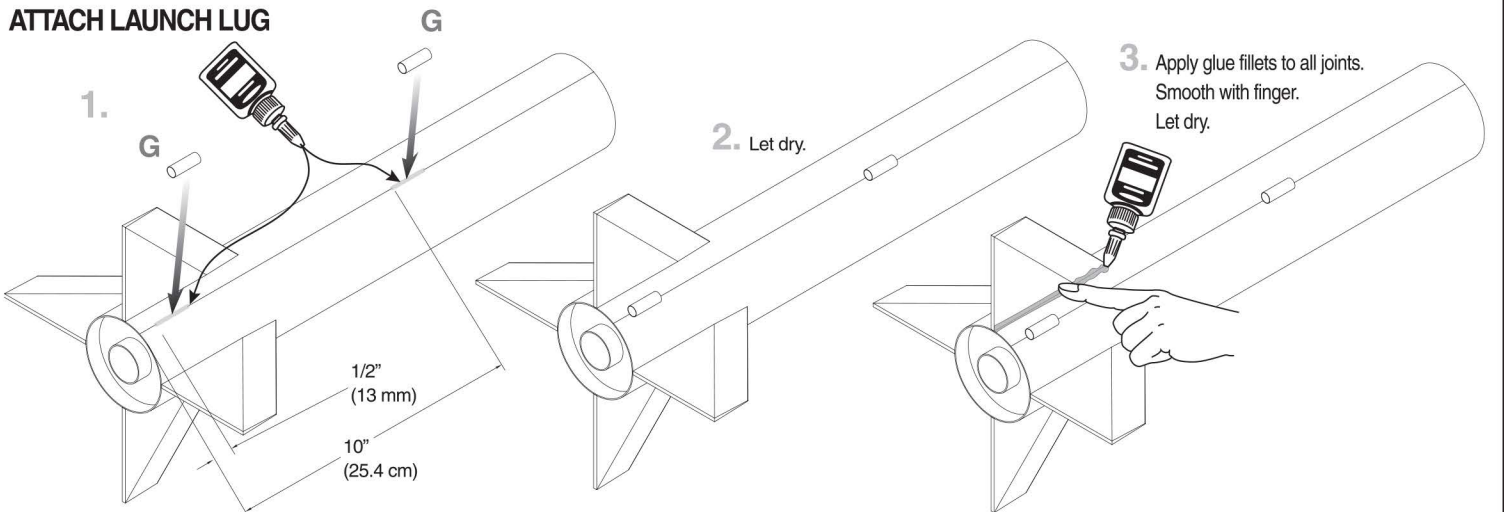
ATTACH FINS



Check fin alignment with alignment guide on page 2.

Let dry.

ATTACH LAUNCH LUG



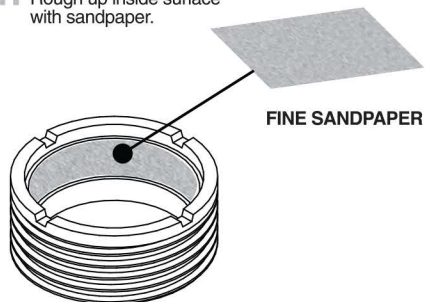
3. Apply glue fillets to all joints. Smooth with finger. Let dry.

1/2" (13 mm)

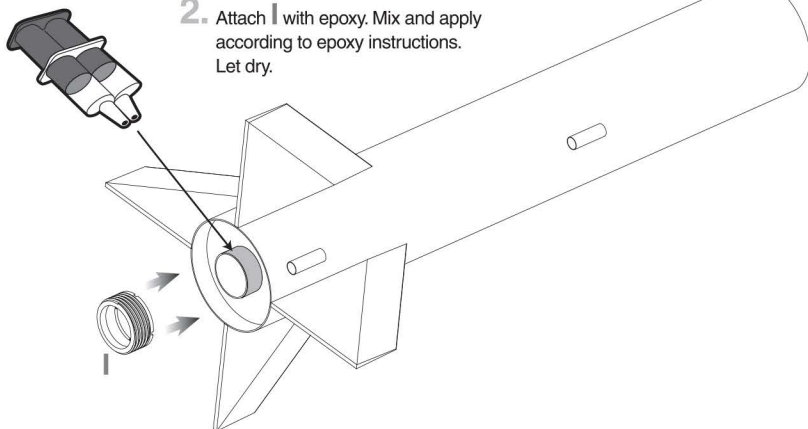
10" (25.4 cm)

ATTACH ENGINE RETAINER

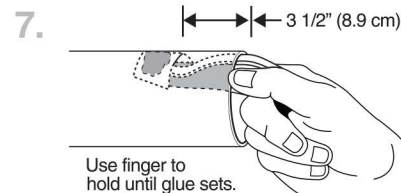
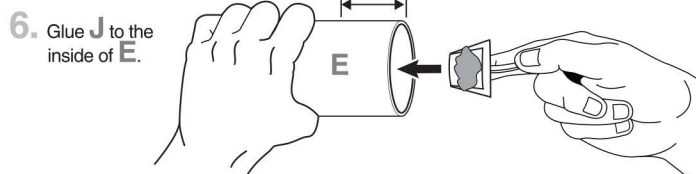
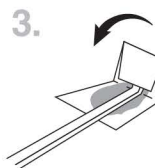
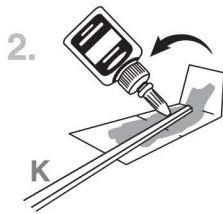
1. Rough up inside surface with sandpaper.



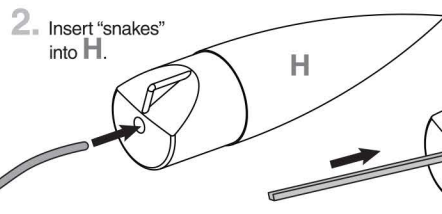
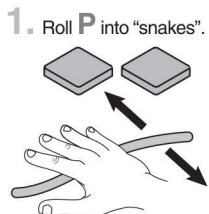
2. Attach I with epoxy. Mix and apply according to epoxy instructions. Let dry.



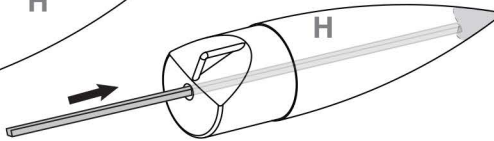
ATTACH SHOCK CORD



INSTALL CLAY NOSE WEIGHT

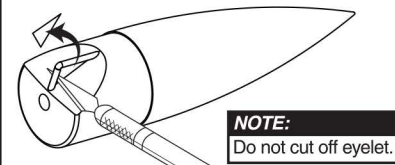


3. Use dowel rod, launch rod or similar tool to push P into tip of H.

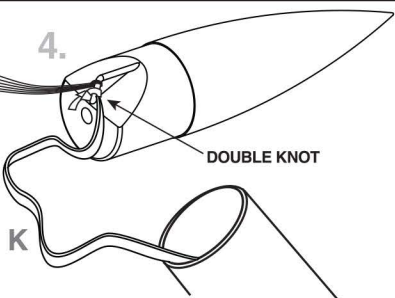
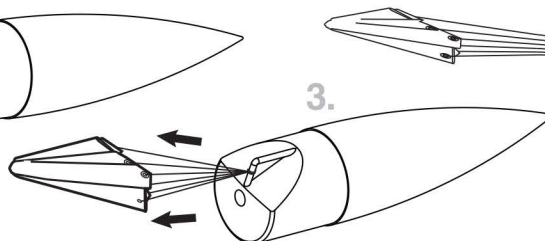
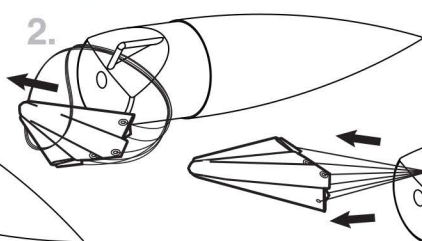
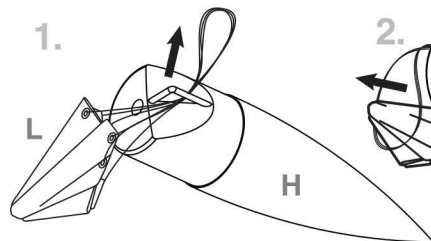


PREPARE NOSE CONE

1. Remove plastic from inside eyelet.

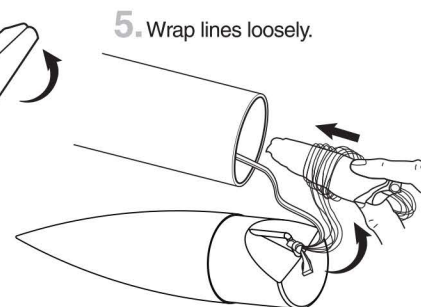
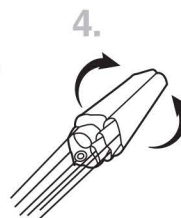
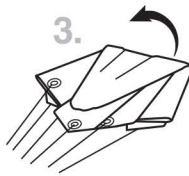
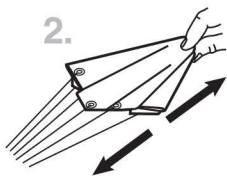
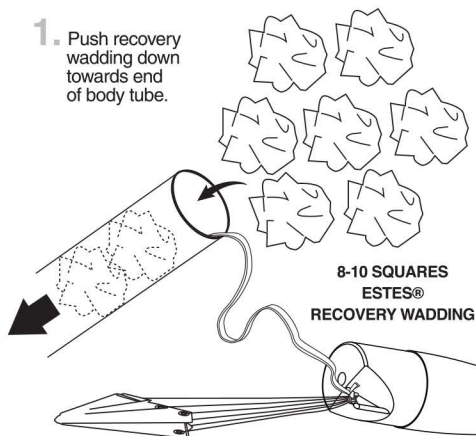


ATTACH PARACHUTE AND SHOCK CORD



PREPARE FLIGHT RECOVERY

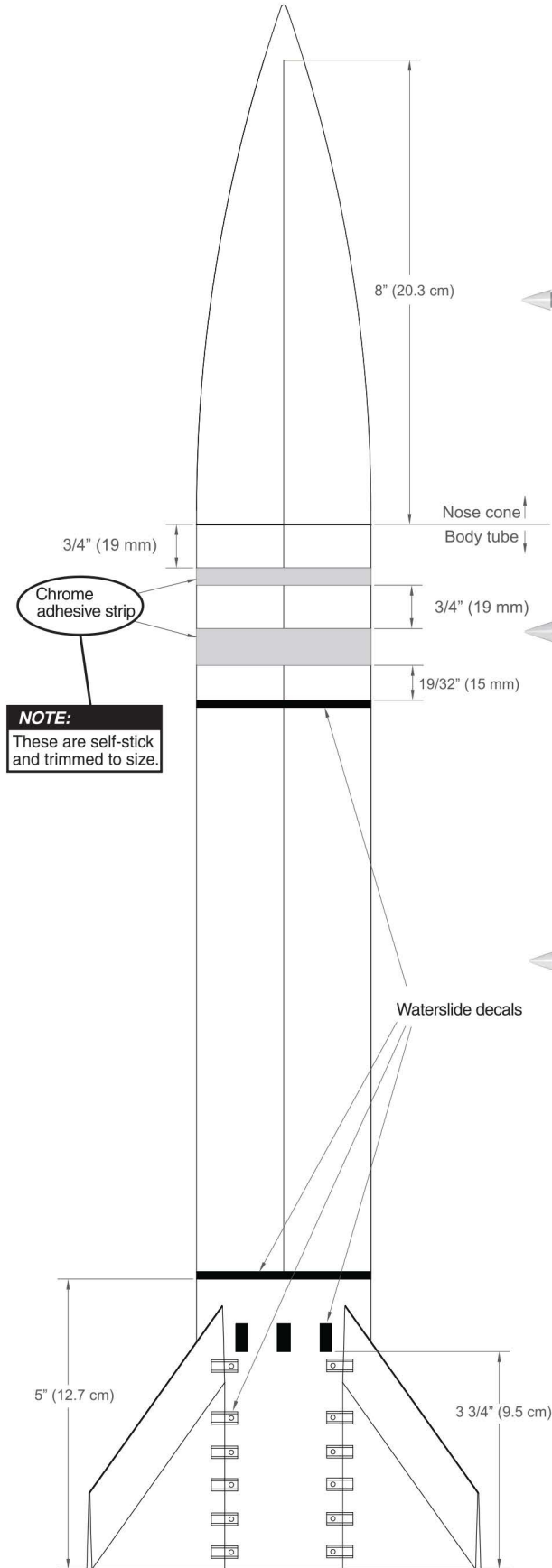
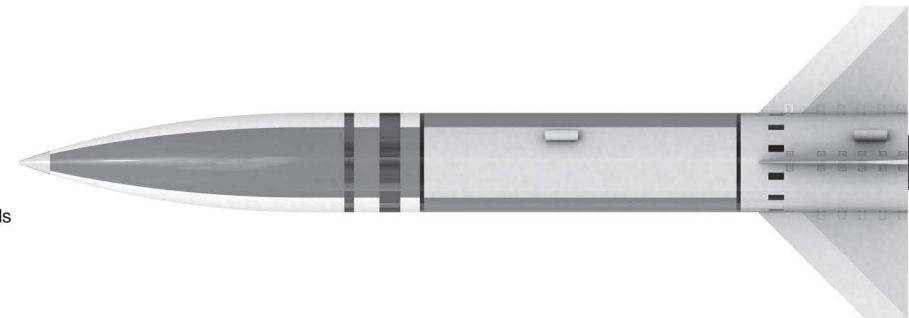
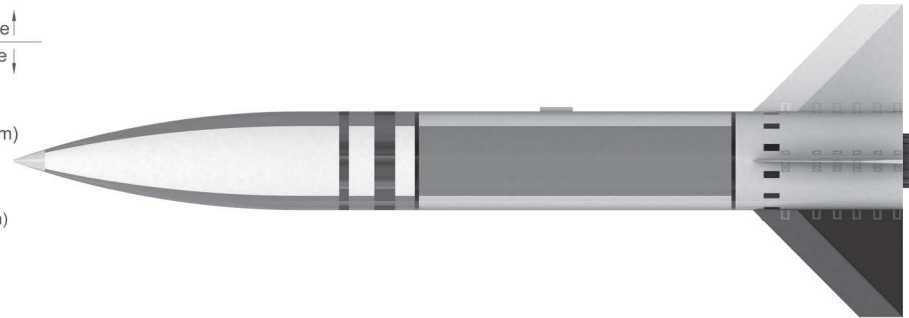
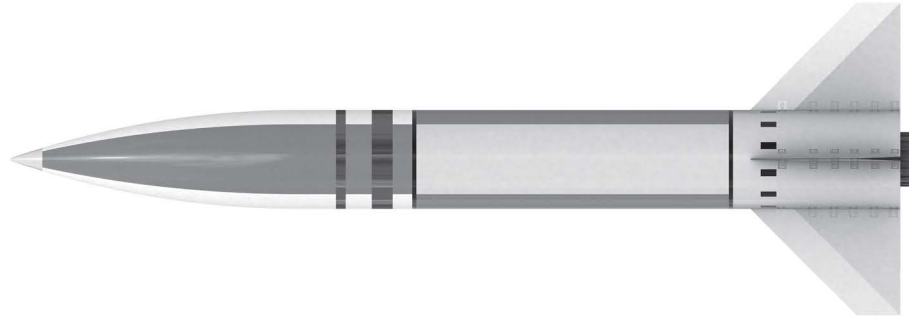
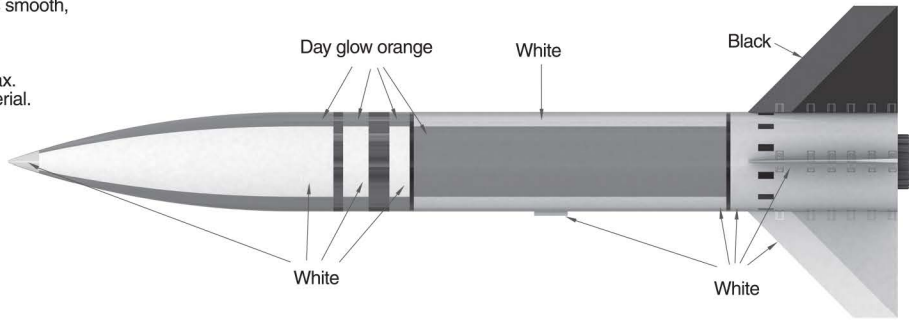
1. Push recovery wadding down towards end of body tube.



NOTE:
Recovery wadding and parachute must slide easily into body tube. If too tight, redo.

ROCKET FINISHING

1. Spray rocket with white primer, let dry, and sand. Repeat until rocket is smooth, then paint. Apply decals after paint is dry.
2. Carefully peel chrome strips from backing and apply as indicated.
3. Cut decals from sheet, trimming close to edge.
4. One at a time, place in warm water until decal curls and begins to relax.
5. Remove and position on rocket, sliding decal away from backing material.
6. Blot with clean paper towel. Let set overnight.
7. OPTIONAL: Apply protective clear coat.
8. Remove masking tape.

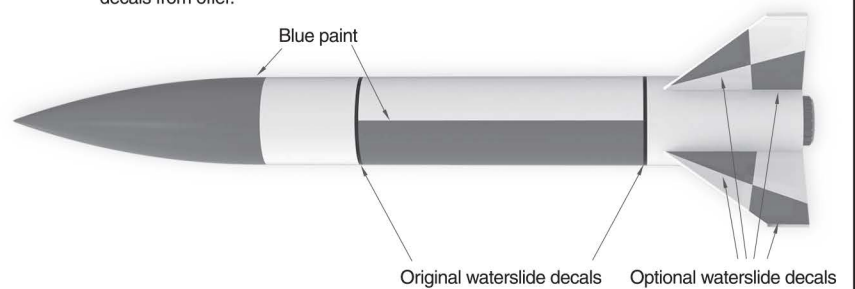


NOTE:
These are self-stick and trimmed to size.

FREE WATERSLIDE DECAL OFFER!

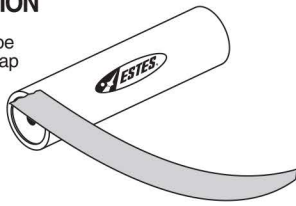
Go to EstesRockets.com/9720decal

Fill out the form and we'll send you your free waterslide decal! While supplies last. Limit one offer per rocket purchased. Design shown uses the black waterslide decals included and the free waterslide decals from offer.

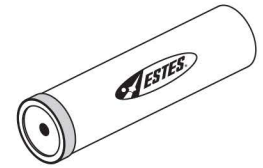


PREPARE ENGINE RETENTION

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

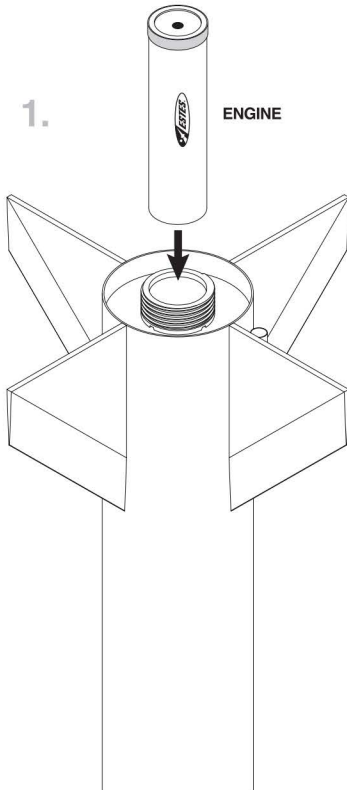


2. Trim off excess tape.



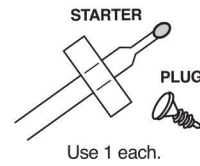
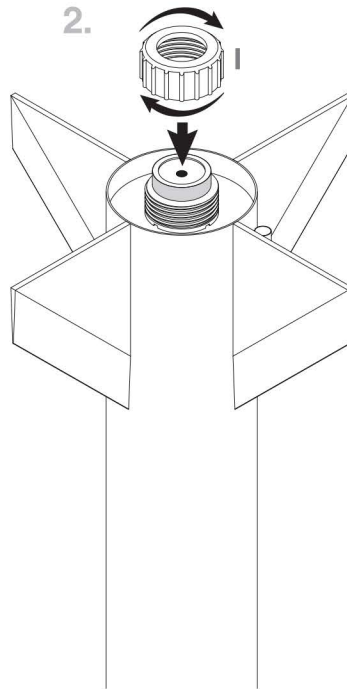
PREPARE ENGINE

1.



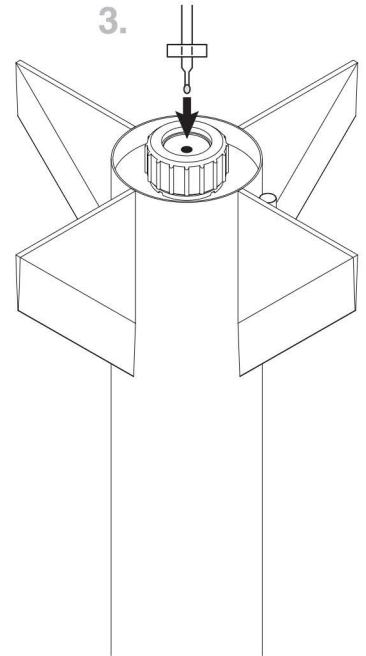
ENGINE

2.



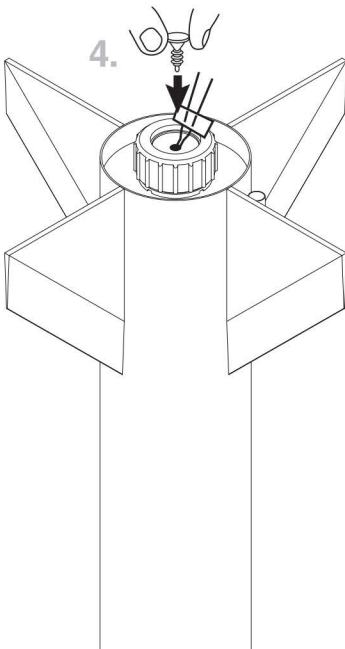
Use 1 each.

3.

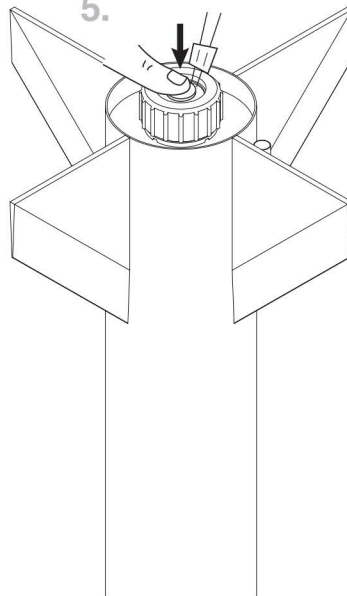


TIP MUST TOUCH PROPELLANT!

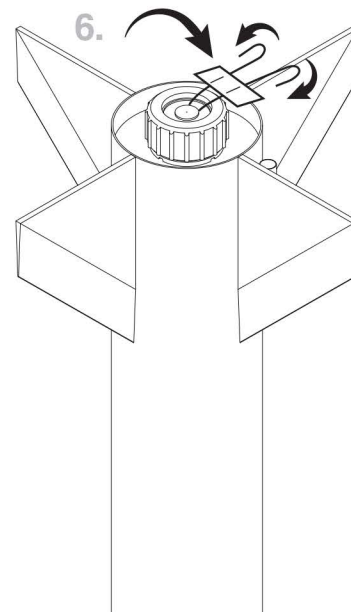
4.



5.



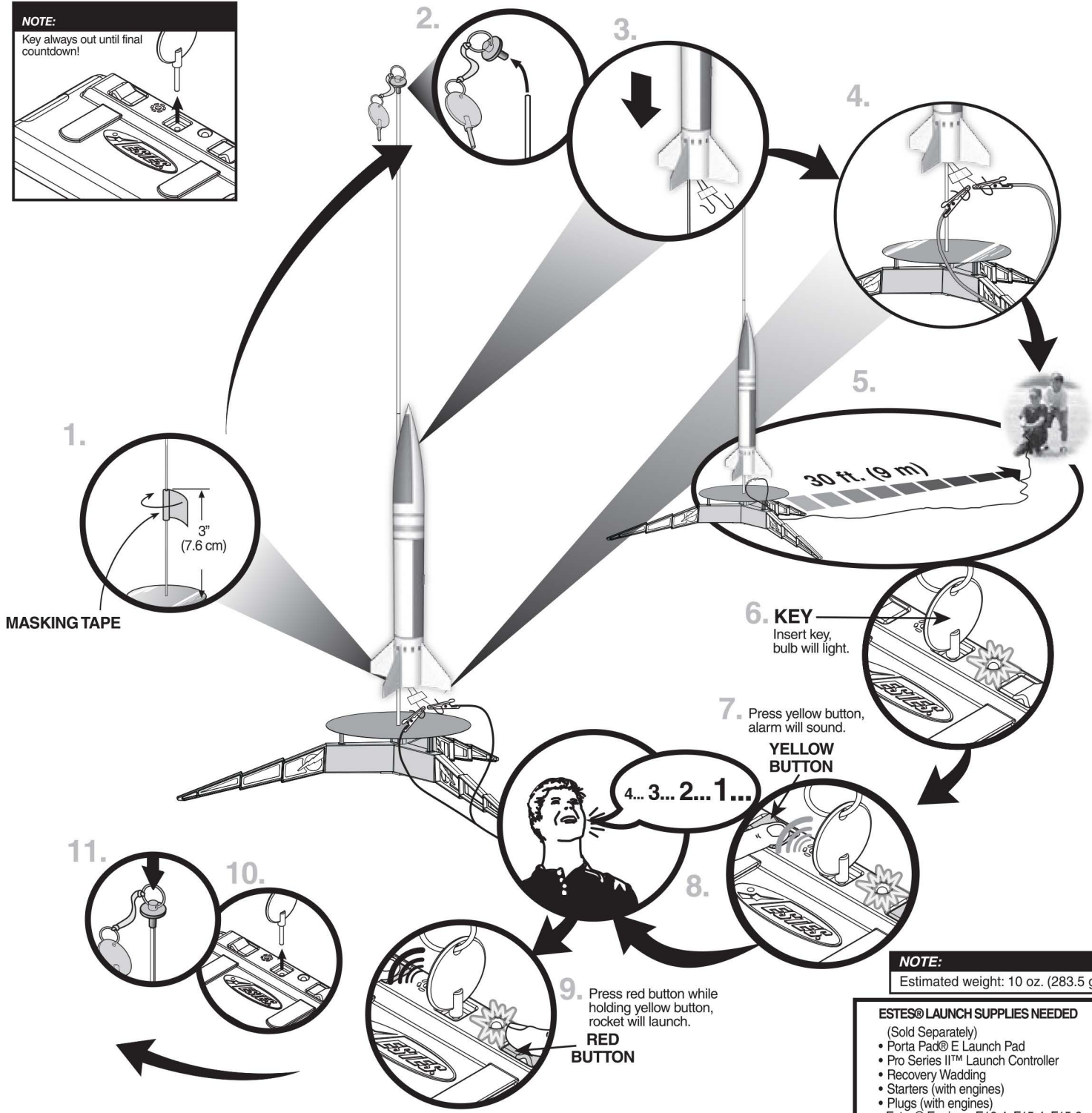
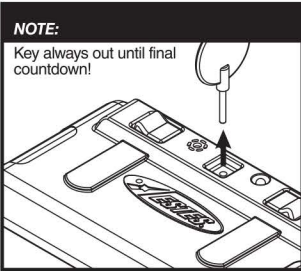
6.



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.

COUNTDOWN AND LAUNCH



NOTE:
Estimated weight: 10 oz. (283.5 g)

- ESTES® LAUNCH SUPPLIES NEEDED**
(Sold Separately)
- 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

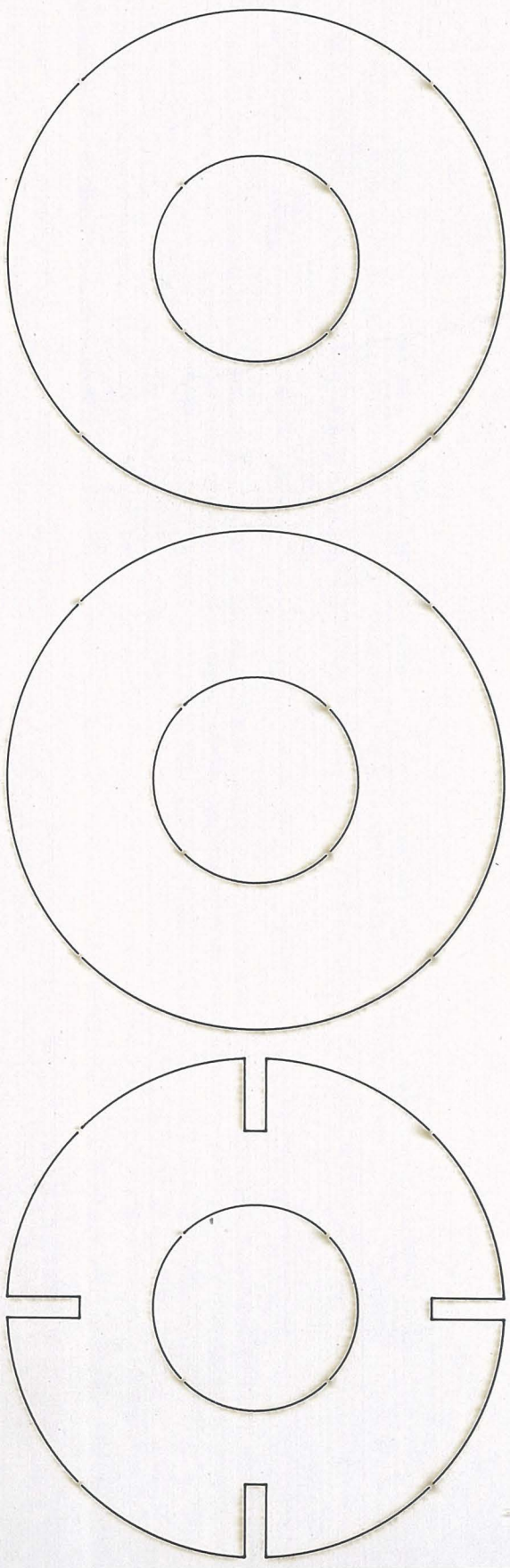
PRE-LAUNCH CHECK For safety, never launch a damaged rocket. Check the rocket's body, nose cone and fins. Also, check the engine mount, recovery system and launch lug(s). Repair any damage before launching the rocket.

FLYING YOUR ROCKET Choose a large field (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 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.



.055"
Thick



Whales Rule Maui Waters - December to Ma

January February March April May June July August September October November





1/8"
Hard Balsa



Whales Rule Maui Waters - December to May

January
February
March
April
May
June
July
August
September
October
November

ESTES.

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Made in Guangdong, China. PN 090001-9720A (9-19)

12/20/10



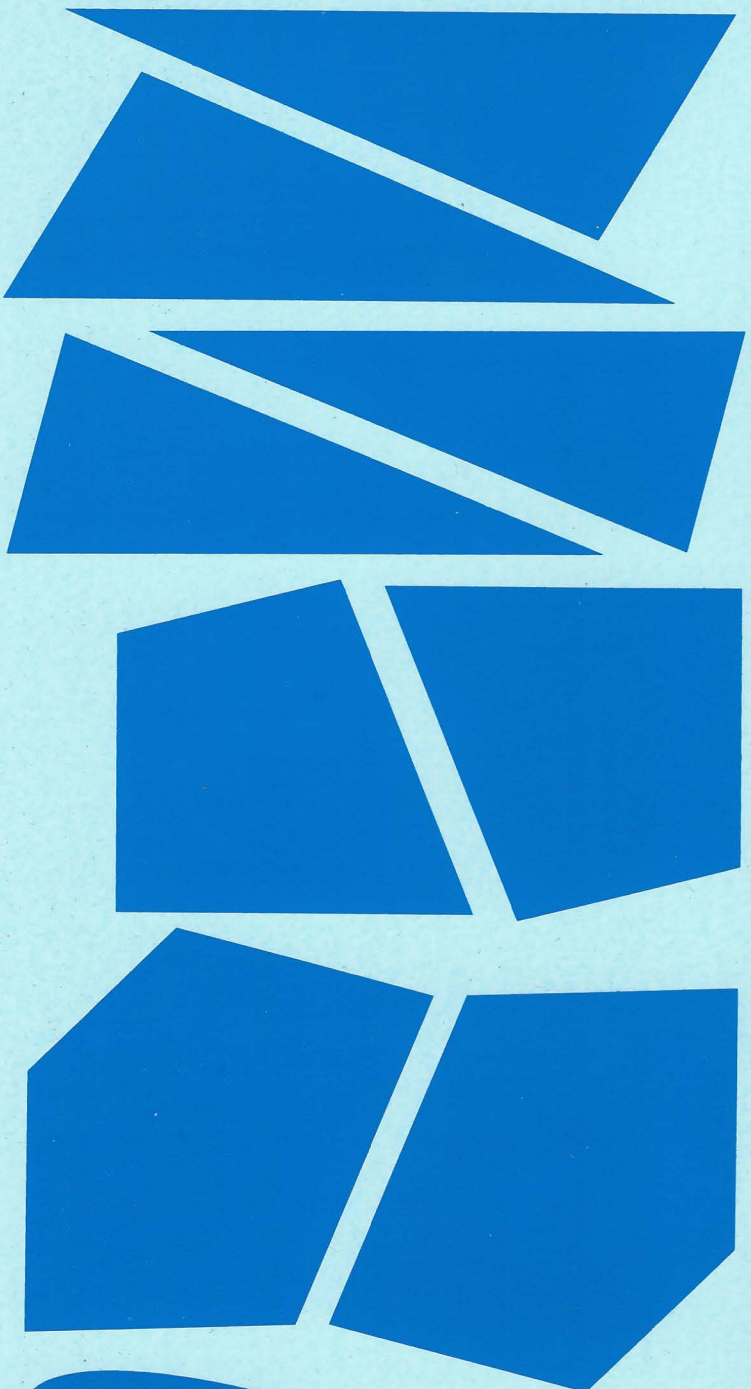
INCHES 1 2 3 4 5 6 7 8 9 10

cm 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

January February March April May June July August September October November

Whales Rule Maui Waters - December to .





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Made in Guangdong, China. PN 090001-9720C (10-19)

Whales Rule Maui Waters - Dec

January

February

March

April

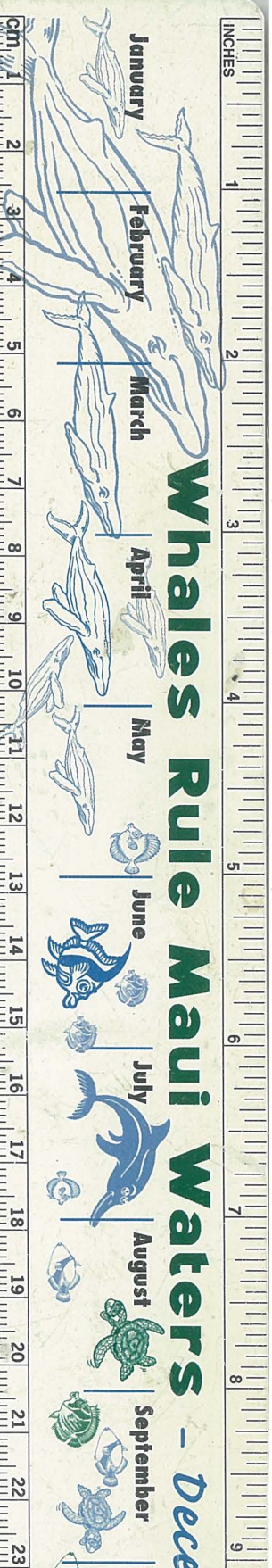
May

June

July

August

September



PARTS LIST KIT NO. 9999 - Name

Quantity	Description	Type	Number	Detail1	Detail2	Detail3	Detail4	Comment
2	Laser-cut wood sheet		090051-9720	4" wide	12" long	1/8" thick	Hard Balsa	Scan
1	Laser-cut centering rings		090052-9720	4" wide	11" long	.055" thick	Fiber	Scan
1	Nose cone		72695	8.75" long	3" dia.	3" shoulder	Ogive	Unique to 9720
1	Shock Cord		38363	48" long	1/4" wide		Rubber	
1	Parachute		35810	18" dia.	Red	Ripstop Nylon		Pre-Assembled
1	Body tube		46010	18 1/16" long	2.930" ID	3.000" OD		Estes 24mm
2	NOSE CONE WEIGHT	CNCW	3180/85705	1" wide	1" high	1/4" thick	.25 oz.	CLAY
2	LAUNCH LUG		38181	7/32" ID	3/16" rod	1" long		
1	Spacer		31362	0.5" long	1.21" ID	1.3" OD	.045" wall	Green
1	Engine Body tube		31360	8" long	1.12" ID	1.21" OD	.04" wall	Estes 24mm
1	Engine retainer		72412				Steel	E & F Series
1	Shock cord mount		84445					Scan
1	Decal		090001-9720A	4.75" wide	11" long	Silver/Black	Waterslide	Scan
1	Chrome adhesive strip		090001-9720B	1" wide	9.5" long	Chrome	Self Stick	Chrome Tape
1	Decal		090001-9720C	4" wide	9" long	Blue	Waterslide	Scan

ESTES
DOORKNOB
 FLYING MODEL ROCKET KIT



During the mid-1950's, the public concerns over nuclear fallout due to US and Russian testing was reaching a fevered pitch. To that end, President Eisenhower announced to the US on August 22, 1958, the US would ban further nuclear testing prior to October 31 of the same year. US scientists, wanting to gather as much data as possible, responded with Hardtack Series of tests. Scientists were interested in many scientific areas, but primary interest lay in the effects of radioactivity from underwater and above ground detonation.

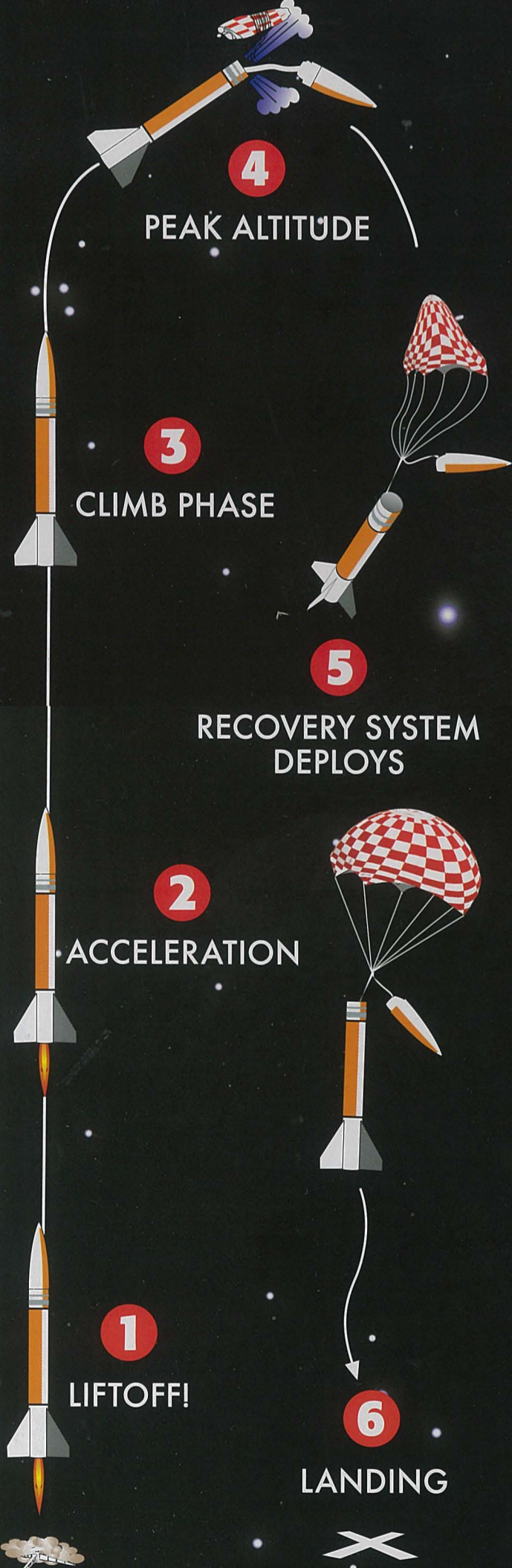
The Hardtack Nuclear Testing Program consisted of 35 detonations in the Pacific Proving Grounds during the period of April-August 1958. Scientists, at the time, were chiefly concerned about damage to the ozone layer and possible effects of long-range radioactive fallout and determined that scientific measurements of the earth's upper atmosphere (aeronomy) would help clarify what, if any, damage had occurred. Single and two stage Doorknob rockets were developed using Lacrosse and Thicket solid propellant motors and could launch an instrument laden sounding rocket to approximately 50 miles in altitude and capture radioactive data for analysis. Early results of this upper atmosphere data suggested little to no damage to the ozone layer was measured during the nuclear testing and water detonations probably produced enough ozone to replace what little might have been lost due to above ground testing.

Length: 26.9 in.
68.3 cm
 Diameter: 3 in.
76 mm
 Recovery: Parachute

PROJECTED ALTITUDE

Requires Estes® engines, sold separately.

E16-4	700 ft. 213 m
F15-4 F15-6	1100 ft. 335 m



DOORKNOB
 FLYING MODEL ROCKET KIT



ESTES
DOORKNOB
 FLYING MODEL ROCKET KIT
 Skill Level
ADVANCED

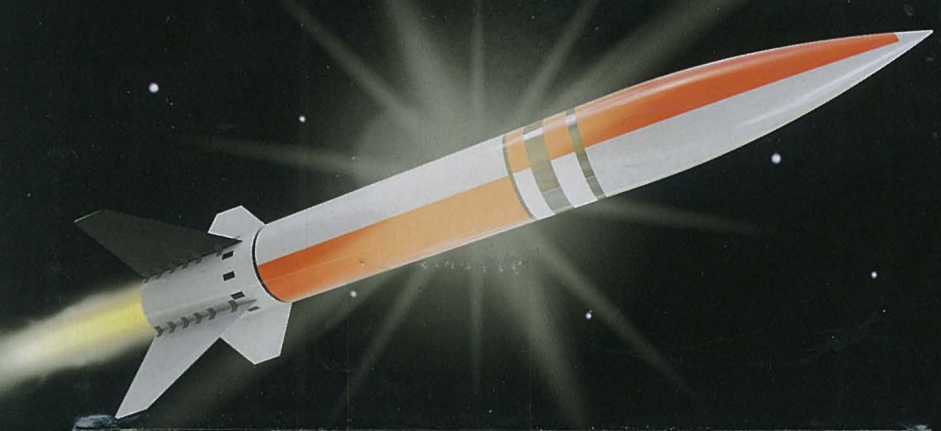


Exceptional
 1:5.3 Scale

Sears up to
1100 ft.
335 m
 On a F15-6 Engine
 Other engines you can use:
 E16-4, F15-4

10+
 Adult supervision under 12.
 QTY: 1

ESTES
DOORKNOB
 FLYING MODEL ROCKET KIT



ESTES
DOORKNOB
 FLYING MODEL ROCKET KIT



DOORKNOB



To Launch This Rocket, You Will Need:

- (Items sold separately):
- Estes® Engines, Starters and Recovery Wadding
 - Pro Series II™ Launch Pad
 - Pro Series II™ Launch Controller
 - Yellow glue, epoxy, paint and finishing supplies

IMPORTANT INFORMATION. KEEP FOR FUTURE REFERENCE.

Instructions, safety code and full one year warranty enclosed.
 Assembly required.
 Allergy Information: Product may contain latex.
 Do not launch a model rocket into a cloud or in a manner which constitutes a danger to air safety.



Optional Sport Deco
 See instructions inside box for details.

WARNING: Drilling, sawing, sanding or machining wood products can expose you to wood dust, a substance known to the State of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal protection. For more information go to www.P65Warnings.ca.gov/wood.

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