





ESTES INDUSTRIES
1295 H Street
Penrose, CO 81240

EX[®]
SERIES
ALMOST READY TO FLY

(3-97) 82115

EST 0834

X-RAY™

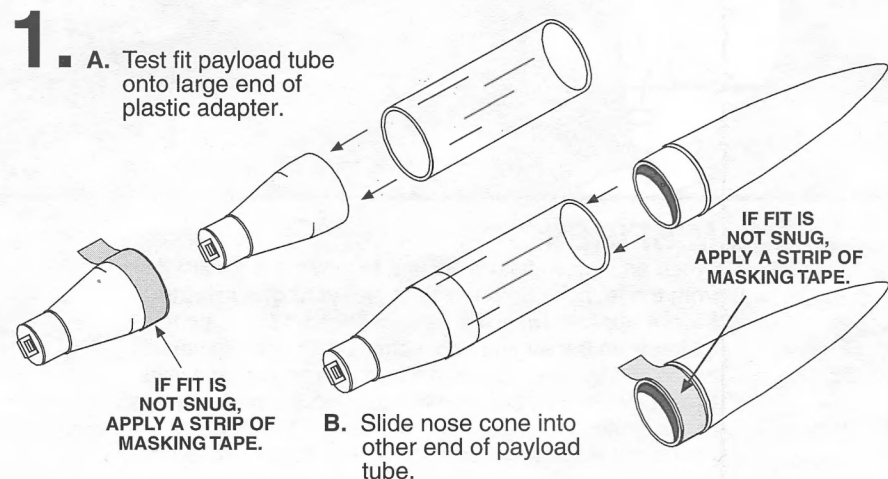
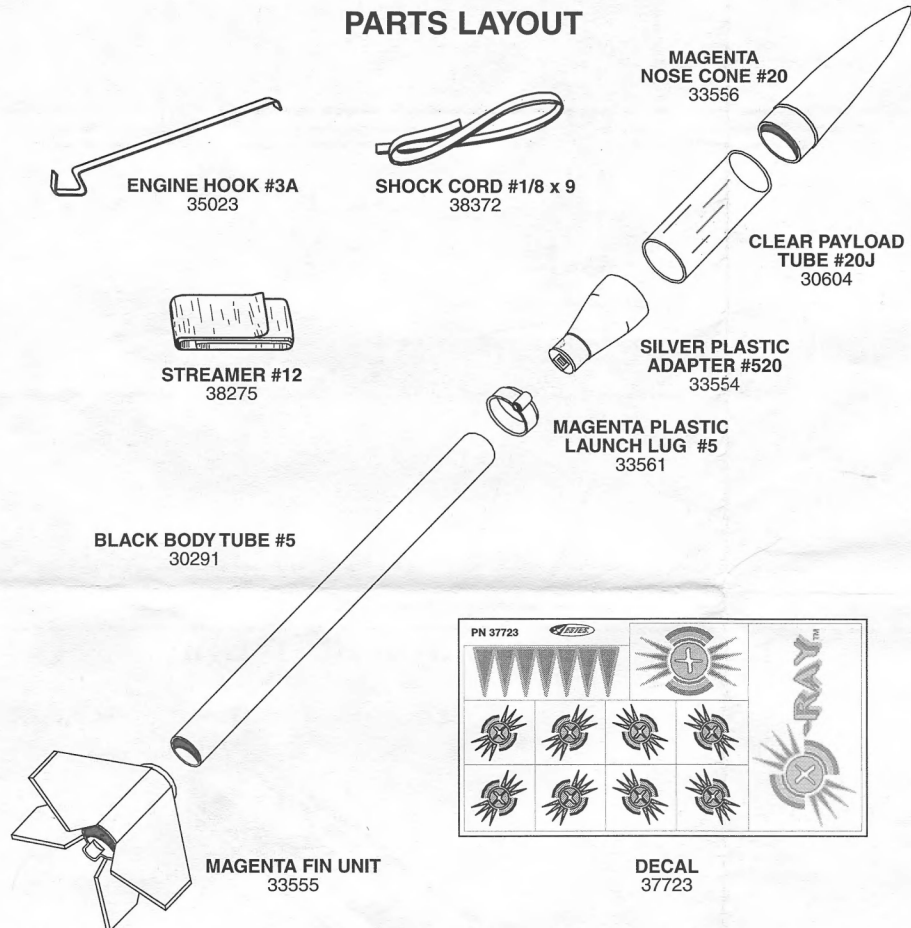
FLYING MODEL ROCKET KIT INSTRUCTIONS

TOOLS REQUIRED:

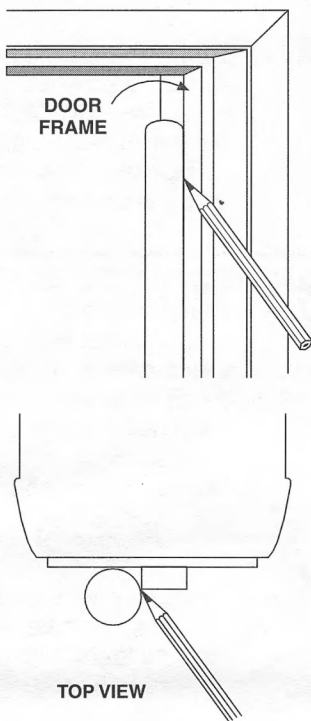
PENCIL, TUBE TYPE PLASTIC CEMENT, HOBBY KNIFE, MASKING TAPE, SCISSORS

ALL GLUED AREAS ARE SHADED IN GRAY

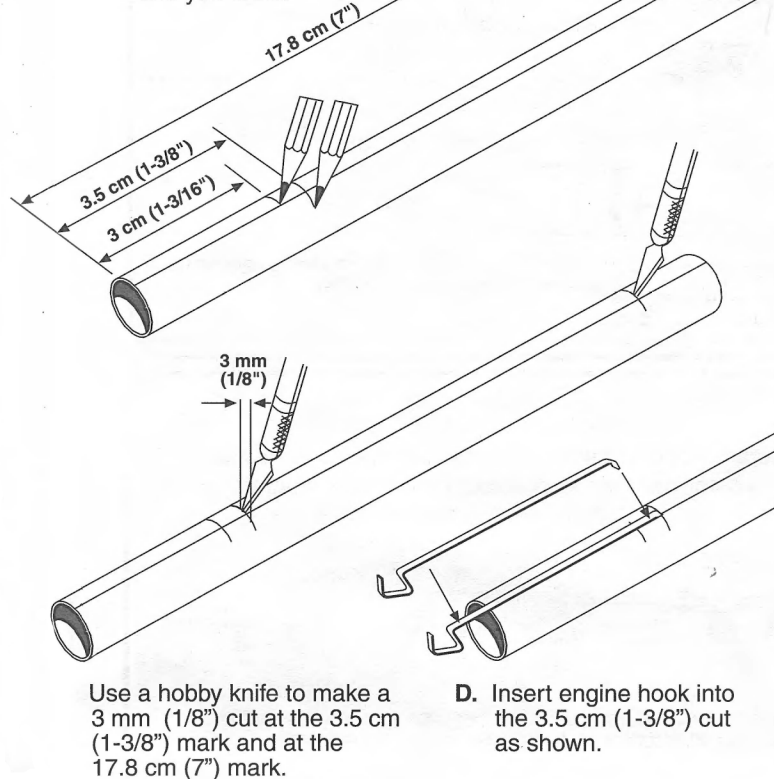
PARTS LAYOUT



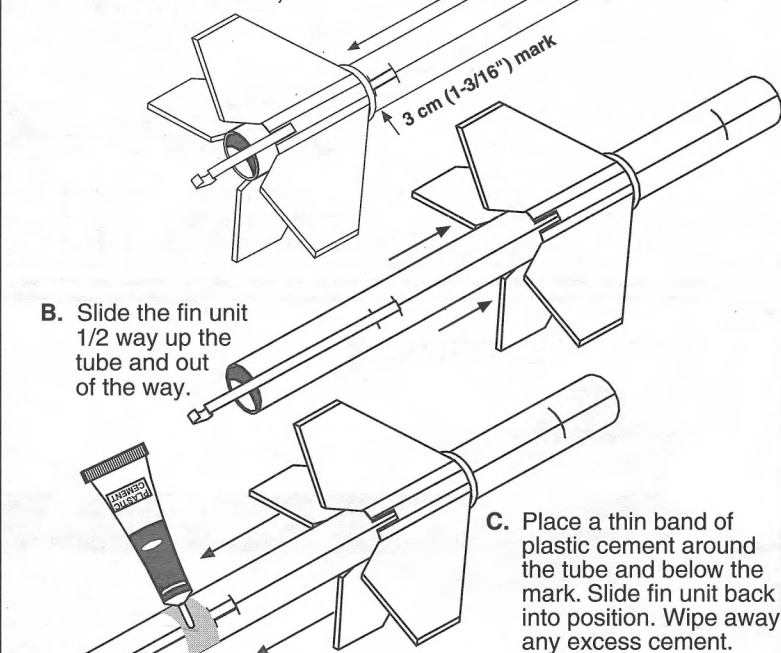
2. A. Draw a straight line along the entire length of the body tube. A door frame can be used for this, but we recommend the Estes Tube Marking Guide (EST 302227)



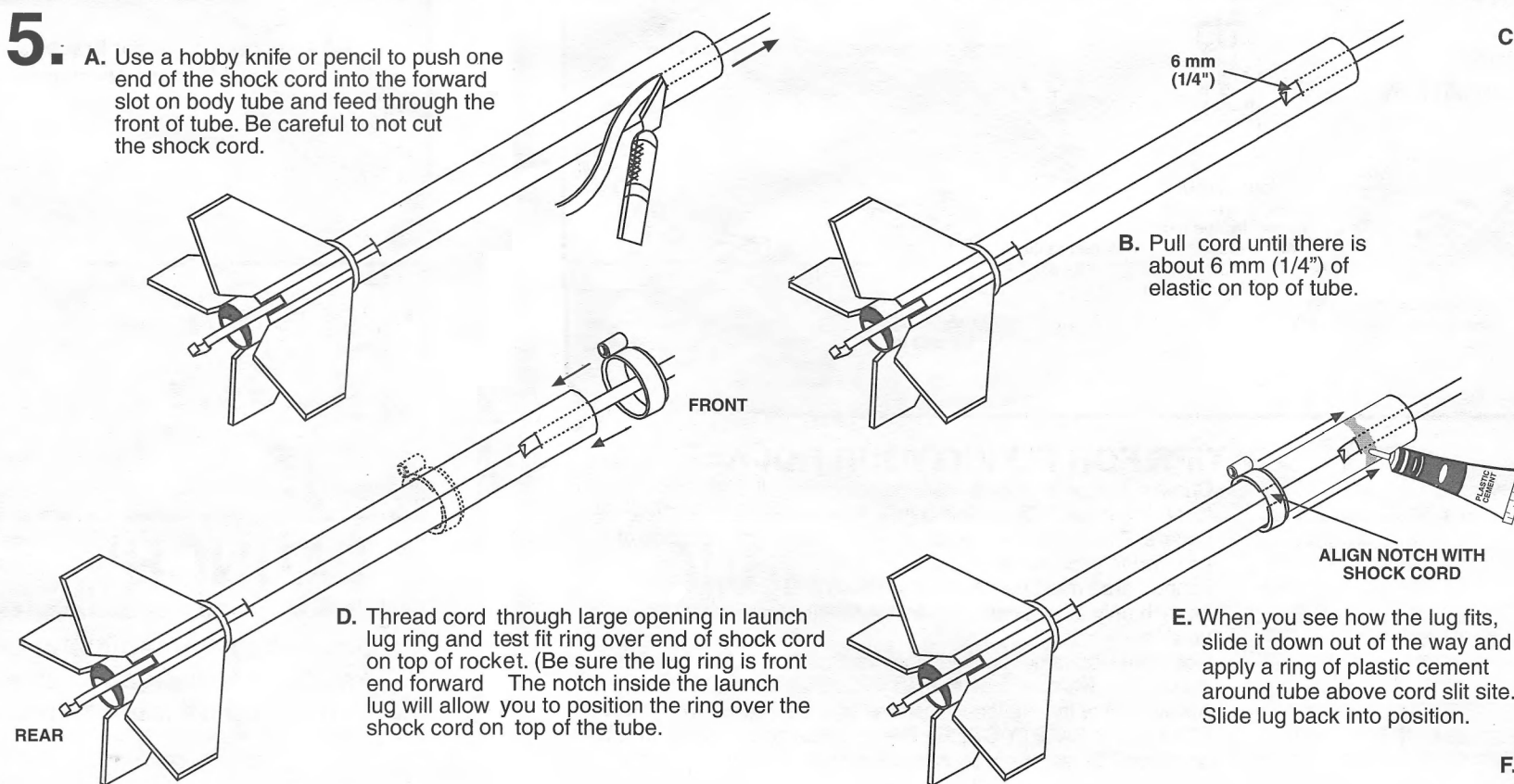
3. A. Mark tube at 3 cm (1-3/16"), at 3.5 cm (1-3/8"), and at 17.8 cm (7") along the line you drew.



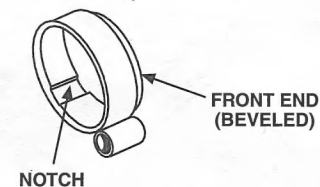
4. A. Test fit fin unit by sliding it down the body tube, over the engine hook, so the front of the fin unit is at the 3 cm (1-3/16") mark. (The engine hook should be positioned in the pre-formed slot. A small portion of tube will be visible at the bottom of the fin unit.)



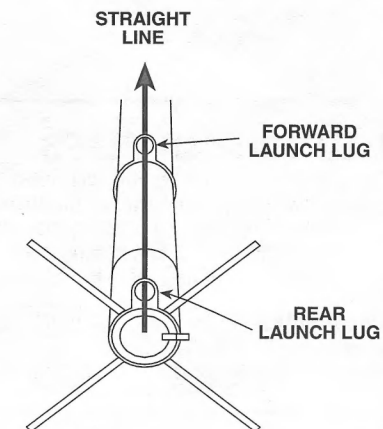
5. A. Use a hobby knife or pencil to push one end of the shock cord into the forward slot on body tube and feed through the front of tube. Be careful to not cut the shock cord.



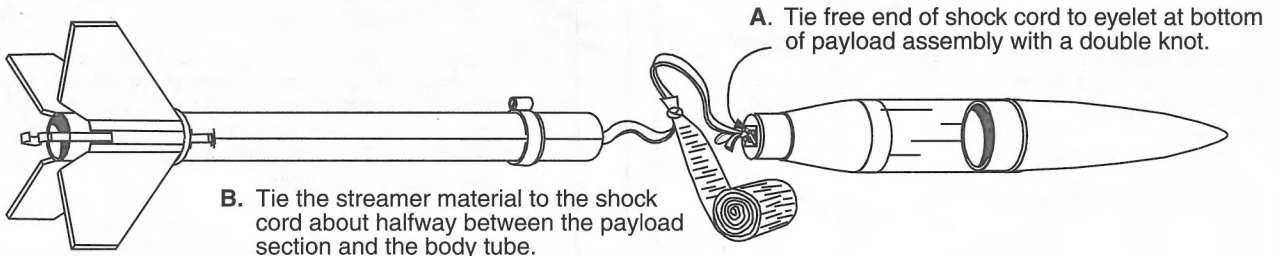
C. Find the notch, and identify the front and rear of the launch lug ring (the front end of lug is beveled).



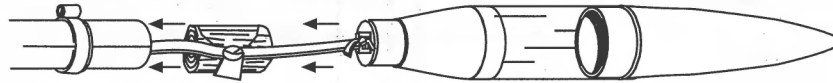
F. Make certain launch lugs are aligned. Gently erase pencil line on body tube.



6.



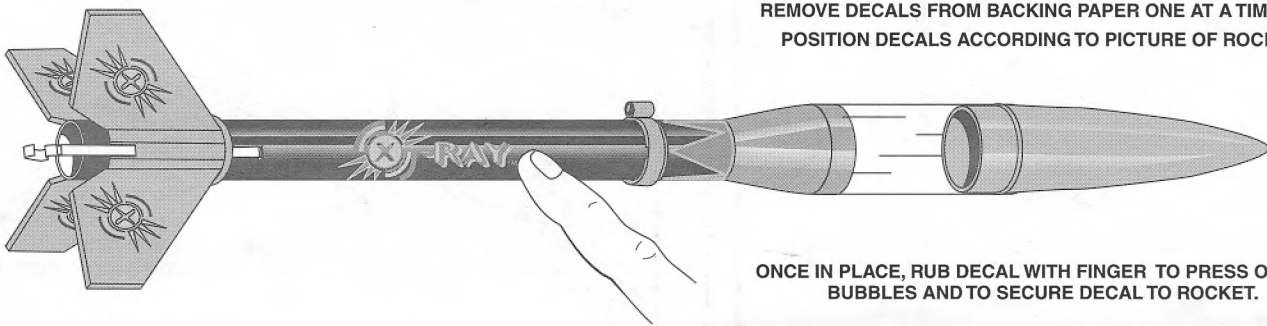
B. Tie the streamer material to the shock cord about halfway between the payload section and the body tube.



C. Roll streamer. Insert streamer, shock cord, and payload section into X-Ray™ body. Recovery device should slide easily into body tube. If fit is too tight, unfold and re-pack.

DO NOT FORGET TO PACK RECOVERY WADDING IN ROCKET - SEE STEP 8.

7. APPLYING DECALS



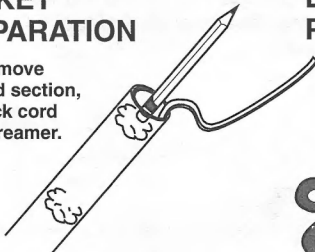
REMOVE DECALS FROM BACKING PAPER ONE AT A TIME AND POSITION DECALS ACCORDING TO PICTURE OF ROCKET.

ONCE IN PLACE, RUB DECAL WITH FINGER TO PRESS OUT AIR BUBBLES AND TO SECURE DECAL TO ROCKET.

8. FLYING YOUR ROCKET

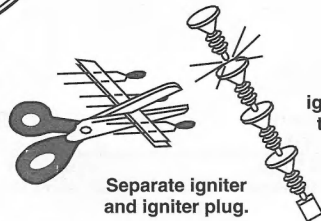
ROCKET PREPARATION

Remove payload section, shock cord and streamer.



Crumple and insert two squares of recovery wadding. Repack and insert streamer, shock cord and payload section.

ENGINE PREPARATION



Separate igniter and igniter plug.



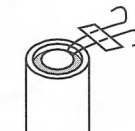
Hold engine upright, drop in igniter. Igniter must touch propellant.



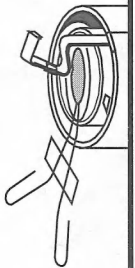
Insert igniter plug.



Firmly push all the way in.



Bend igniter wires back.



Insert engine into rocket.

LAUNCH SUPPLIES

To launch your rocket, you will need the following items:

- Estes Electrical Launch Controller and Launch Pad
- Estes Recovery Wadding No. 302274
- Recommended Estes Engines: 1/2 A3-2T, 1/2 A3-4T, A3-4T or A10-3T

Use a 1/2A3-2T for your first flight to become familiar with your rocket's flight pattern.

Use only Estes products to launch this rocket.

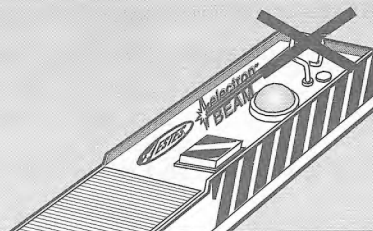
TIPS FOR FLYING YOUR ROCKET

- Choose a large field away from power lines, buildings, tall trees, and low flying aircraft. Try to find a field at least 76 meters (250 feet) square. The larger the launch area, the better your chance of recovering your rocket.
- Launch area must be free of dry weeds and brown grass.
- Launch only during calm weather with little or no wind and good visibility.
- Don't leave streamer packed more than a minute or so before launch during cold weather (colder than 4° Celsius [40° Fahrenheit]).
- Always follow the National Association of Rocketry (NAR) MODEL ROCKETRY SAFETY CODE while participating in any model rocketry activities. The safety code is enclosed with this kit.

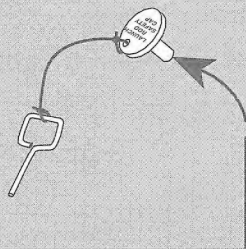
ENGINE	PROJECTED ALTITUDE	
	Feet	Meters
1/2 A3-2T or 1/2 A3-4T.....	255.....	77
A3-4T.....	510.....	155
A10-3T.....	485.....	148

COUNTDOWN AND LAUNCH

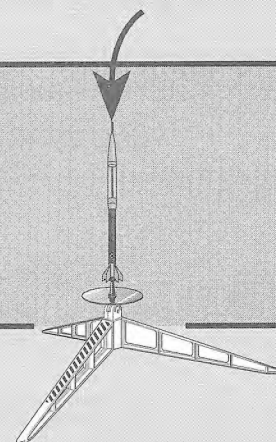
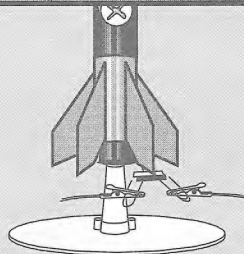
- 10...** Safety key must not be in launch controller. The safety cap with safety key attached should already be on the launch rod.



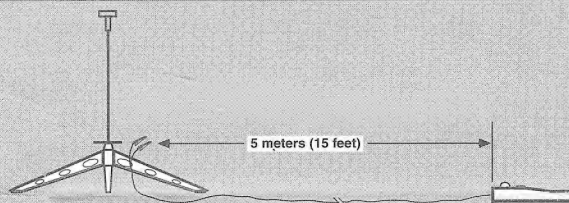
- 9...** Remove safety cap from launch rod, slide launch lugs over rod. Make sure rocket slides freely and micro-clips are clean for good electrical contact.



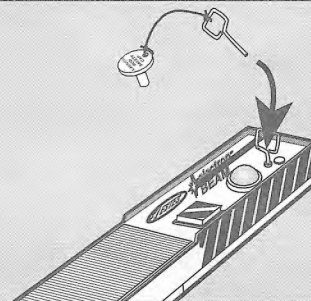
- 8...** Attach micro-clips to the igniter wires. Arrange the micro-clips so they do not touch each other or the metal blast deflector. Attach micro-clips as close to protective tape on igniter as possible.



- 7...** Move everyone back from your rocket as far as launch wire will permit (at least 5 meters - 15 feet).

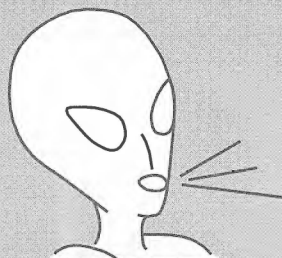


- 6...** Insert safety key to arm the launch controller.



- 5...** Start audible countdown.

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



LAUNCH!

Push and hold button until engine ignites.

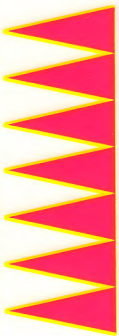
For safety, immediately remove safety key from launch controller and replace safety cap on launch rod.

MISFIRES

When an ignition failure occurs, **remove the safety key** from the launch control system and **wait one minute before approaching the rocket**. Remove the expended igniter from the engine and install a new one. Be certain the coated tip is in direct contact with the engine propellant. Broken or chipped coating will not affect the performance of the igniter. Reinstall the igniter plug as illustrated previously. Repeat the countdown and launch procedure.

95 87 04 26 42 91 8
32 300 DPI
1 1
2 1 9 1
3 1 5 1
4 1 7 1
5 3

PN 37723



PARTS LIST KIT NO. 0834 - X-Ray								
Quantity	Description	Type	Number	Details1	Details2	Details3	Details4	Comment
1	PAPER BODY TUBE	BT-5	39291	8" long	0.515" ID	0.541" OD	0.013" wall	Black
1	PLASTIC NOSE CONE	PNC-20A	*72602	2.81" long	.736" dia.	.5" shoulder	White	Injection Molded
1	PLASTIC BODY TUBE	PST-20J	30604	2.75" long	0.710" ID	0.736" OD	0.013" wall	
1	PLASTIC ADAPTER	N/A	33554	1.75" long	0.75" taper	0.5" shoulder		Silver
1	Plastic Launch Lug	N/A	*33561					E2X common
1	Fin Unit	N/A	*33555					E2X common
1	Shock Cord	SC-1	38372	9" long	1/8" wide			Rubber
1	Plastic Streamer	?	38275	1.2" wide	18" long	Flo. Orange	Surveyor's Tape	polyethylene
1	ENGINE HOLDER	EH-3	35023	1.8" long	.125" wide	.025" thick	13mm	Thumb Saver
1	Decal	KD-0834	37723	3" wide	5" long	Blk, Yel, Red	Selfstick	Scan
<p>*The same fin unit and launch lug used for all these kits, only the color is changed.</p> <p>0834 - X-Ray Magenta - 033555</p> <p>0835 - Nike Arrow - Orange - 033557</p> <p>0885 - Sprite - White - Unknown</p> <p>0886 - Gnome - Green - 072608</p> <p>0886 - Gnome (Re-release) - Blue - Unknown</p> <p>0887 - Leprechaun - White - Unknown</p> <p>2159 - Fire Flash - White - 072620</p>								
* Nose cone is a standard PNC-20A with a different number, 33566, due to color.								



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SERIE
ALMOST READY TO

X-RAY™

FLYING MODEL ROCKET KIT INSTRUCTION

TOOLS REQUIRED:

PENCIL, TUBE TYPE PLASTIC CEMENT, HOBBY KNIFE, MASKING TAPE

ALL GLUED AREAS ARE SHADED IN

PARTS LAYOUT





ESTES

SAFE PRODUCTS FOR OVER 35 YEARS
AGES 10 AND UP. ADULT SUPERVISION FOR THOSE UNDER 12.

FLYING MODEL

ROCKET

EX SERIES
ALMOST READY TO FLY

X-RAY™

- Clear Payload Section-
Launch Insects, Science
Projects, and More!
- Screams to over 500
Feet (150 m)!
- Easy to Build-
No Finishing
Required!

CAUTION: Use
of this Estes
product with
any other
brand-name
rocket product
containing any
defect or
causing any
damage may
void the Estes
warranty.

Length: 14.8" (37.6 cm)
Diameter: (Payload
Section) .74" (18.8 mm)
Weight: .6 oz. (17 g)
Recommended Engines:
1/2A3-2T (First Flight),
1/2A3-4T, A3-4T, A10-3T



EST 0834



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Made in USA

ESTES
INDUSTRIES
The World Leader in
Model Rocketry
1295 H Street
Penrose, CO 81240

(6/96) PN 82134



ESTES

SATISFACTION GUARANTEED
WITH ESTES YOU CONTROL THE SKIES

FLYING MODEL
ROCKET

1 **MODEL REDUIT** Peinture et Colle
non comprises

Plastic bags can be dangerous.
To avoid danger of suffocation, keep
this bag away from babies and children.
Les sacs de plastique peuvent
être dangereux. Pour éviter le danger
de suffocation, ne laissez pas ce sac
à la portée des bébés ni des enfants.
Complete instructions, FAR
safety code and full one year warranty
enclosed.
**USE ONLY WITH ESTES
PRODUCTS.**

Symbols indicate the
following kit features:

- Parachute
& Streamer (Nylon)
- Plastic Nose
Cone
- Balsa Nose
Cone
- Plastic Fin
Unit
- Altitude in
meters
- Streamer
Recovery
- Die-Cut
Balsa Fin
- Die-Cut
Fiberglass
- Die-Cut
Plastic Fin

Pressure
sensitive decal
Water
soluble decal
Quick-release
engine mount
Balsa Fin
Stock

Estes Industries offers you more
than 75 rockets to choose from in-
cluding sport, scale, multi-stage,
glider, payload, and science fiction
models from as small as ten cm
(four inches) high to over 1.83
meters (six feet) tall.

Building and flying Estes kits will give you first-
hand knowledge of the exciting world of model
rocketry. In order to build your kit, you will require
glue, finishing supplies, ink, cutting pair, and sim-
ple tools such as a pencil, ruler, scissors and
hobby knife. To fly your model rocket, you'll need
an Estes launch system, recovery wadding, and
engines as specified on the front of the package.
These materials are not included.

ESTES INDUSTRIES
1295 H STREET
PENROSE, CO 81240

35-0102