

PK-44

TM

# NORAD

**Height: 39.125"**

**Weight: 20 oz.**

**Diameter: 3.100" to 2.260"**

**Single motor flights to over 3,000 ft.**

## Motor Suggestions:

**F40-6, F60-6, G40-7, G80-7, G35-7,  
G38-7, H55-10, H70-10, H125-14,**

**Reloadable Cases:**

**RMS-29/60, 100, 180, 240**

## Kit Features Include:

- Heavy Duty Airframe Tubing
- Precision Cut Plywood Fins & Rings
- Pre-slotted Airframe
- Plastic Nose Cone
- Plastic Airframe Reducer
- Nylon Parachute Recovery

\*This kit is recommended for those with previous model rocket building experience.

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LOC/PRECISION MULTI-PACKS are now available for this and other LOC/PRECISION models. For more information on launching model rockets in your area contact the National Association of Rocketry (NAR) at [www.nar.org](http://www.nar.org) or the Tripoli Rocketry Association at [www.tripoli.org](http://www.tripoli.org)

### OTHER KITS AVAILABLE:



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# PK-44 NORAD ASSEMBLY INSTRUCTIONS

<b>PARTS LIST:</b>	1 Main Airframe SBT-3.00-14" S-4	1 Sub Airframe PL-2.14-12"	4 Plywood Fins	1-24mm Main Motor Tube 12.6"
	1 Nose Cone PNC-2.14	1 Airframe Reducer AR-3.00-2.14	1 Shock Cord Mount	1 Centering Ring
	1 Nylon Parachute LP-28	1 Launch Lug LL-25	1 Nylon Elastic Shock Cord	

- ◇ Due to the high thrust motors that can be flown in this kit, it is strongly recommended that epoxy be used throughout its entire construction.
- ◇ Before beginning construction, read over assembly instructions to become familiar with the proper construction sequence. Check rear and side exposed views (shown at bottom of instructions) carefully for fin positions and motor mount/centering ring placement inside the main airframe.
- ◇ TEST FIT PARTS BEFORE BONDING TOGETHER WITH GLUE!!!!
- ◇ It may be necessary to lightly sand some parts to obtain a proper fit.
- ◇ The following items will be needed for the construction & finishing of this kit: 12" ruler, Modeling knife, Pen or pencil, Masking tape, Sanding sealer, Paint brushes (assorted sizes), Sandpaper (medium & fine), Primer and paint, Yellow Carpenter's Glue, Epoxy (5 or 15 minute), CA Glue (cyanoacrylate).

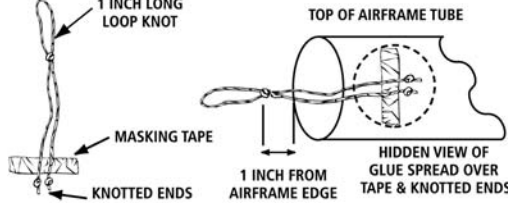
## Main Airframe Assembly Instructions

1. Take the single length of 29mm motor tube and cut it exactly to 19 5/8" long. Next epoxy the one centering ring 1/8" in on one end of it. MAKE SURE THE MOTOR MOUNT TUBE IS POSITIONED STRAIGHT UP FROM THE CENTERING RING. When dry, give both sides of the centering ring/motor mount tube joint a good fillet coat of epoxy to insure maximum strength. Do one side at a time, letting it dry in an upright position before starting on the opposite side.
2. The airframe reducer has been cut out on both ends to accept the 29mm motor tube, which passes through it. First, cut off the molded shock cord eyelets at both ends. The airframe reducer has several motor mount tube raised diameter rings on both ends to make cutting in-line tube diameter openings easy. Using a Dremel tool, carefully rout out both ends of the reducer until you are close to the SMALLEST RAISED DIAMETER RING. Finish the motor mount tube diameter openings by wrapping some medium grit sandpaper around a 1" wooden dowel and sand to obtain an exact fit using the SMALLEST RAISED DIAMETER RING as a guide.
3. Apply a continuous bead of epoxy around the inside of the pre-slotted airframe, 1/8" up from its slotted end. DO NOT GET ANY EPOXY IN THE FIN SLOTS!! Take the centering ring/motor mount tube assembly and push it straight up into the epoxied end of the pre-slotted airframe, until the bottom centering ring is 1/8" up into the pre-slotted airframe's bottom edge. Immediately seat the airframe reducer over the motor mount tube and all the way down into the top of the main airframe. This is done to center the motor mount tube into the main airframe. DO NOT EPOXY THE REDUCER IN PLACE AT THIS TIME. Set in an upright position to dry. When dry the reducer can be taken off.
4. Lightly sand airframe reducer and nose cone with fine sandpaper to remove molding seam line.
5. Apply a continuous bead of epoxy around the inside of the main airframe 1/2" in from its top end and also around the outside of the motor mount tube at that same point. Next spread a light layer of epoxy around the reducer's LARGE SHOULDER DIAMETER. Immediately push the airframe reducer all the way down into the top of the main airframe. Turn assembly upside down to dry. When dry, give exposed bottom centering ring a light layer of epoxy for additional strength. Set entire assembly aside to dry.
6. Apply a continuous bead of epoxy around the top of the motor mount tube where it comes in contact with the reducer top for additional strength. Next apply a LARGE continuous bead of epoxy around the inside of the sub airframe tube 1/2" in from one of its ends and then push it gently all the way down onto the reducer until it seats properly. Set in an upright position to dry.
7. Sand all fins smooth and round off the leading and trailing edges of them, using medium, then fine sandpaper. Also bevel both sides of fin root edge for better contact in the motor mount tube valley joints.
8. Test fit the fins into the airframes's fin slots. Sand if necessary, for proper fit. Place epoxy on one of the fin's root edges and place the fin in the slot and push it down until the root edge sets on the motor mount tube. Keep the airframe in a horizontal position while drying. Make sure that the fin is straight up from the airframe tube and against the slot's bottom edge. When dry, repeat this procedure with the remaining fins.
9. Sight in the high point (center of the airframe's diameter) of the airframe between any 2 fins and from 3" up from the airframe's bottom edge, make a small pencil mark. From this mark, make a straight line up 6" long. Epoxy the

- launch lug directly on this line, making sure that it is parallel to the airframe. Set aside in a horizontal position to dry.
- 10. Give all fin and launch lug joints added epoxy fillets for maximum strength.

## Shock Cord Mount Instructions

LOC/PRECISION'S Shock Cord Mount is easy to make and install, yet is very strong! This mounting system makes shock cord attachment quick and easy. Follow instructions carefully!

1. Take the length of nylon braided cord and at its center make a 1" long loop knot and pull it tight. Make a knot a 1/4" away from the end of EACH of the two loose ends.
 
2. Cut a piece of masking tape 1/4" wide by 1 1/4" long. This is centered crosswise just ahead of the two knots.
3. Carefully place the two knotted loose ends of the Shock Cord Mount, with tape attached, inside the top of airframe tube so that the 1" long loop knot is protruding out about 1" from the airframe tube's edge. Using a small piece of wooden dowel, press the masking tape down firmly around the inside of the airframe tubing. The masking tape will keep the Shock Cord Mount in place while gluing.
4. Place a generous bead of epoxy over the knotted ends and length of masking tape. Spread the epoxy around until they are completely covered and place the airframe in a horizontal position to dry. REPEAT STEP 4 UNTIL A SMOOTH EPOXY LAYER IS ACHIEVED OVER THE MASKING TAPE AND KNOTTED ENDS.

## Main Airframe Assembly Instructions Cont'd

11. Seal fins and launch lug with sanding sealer using a brush. Sand lightly between coats to fill pores and obtain a smooth finish.
12. When you are satisfied with the smooth sanded finish of your model, it is ready to prime and then paint in the color or colors of your choice.
13. When paint is completely dry, take one end of the shock cord and pass it through the loop of the Shock Cord Mount. Secure it with a double knot. Take the other end of the shock cord and pass it through the eyelet of the airframe reducer and also secure it with a double knot. Using a toothpick, place a TINY drop of epoxy on both knots to keep them permanently secured.
14. Attach the parachute to the shock cord about 3 feet away from the eyelet of the airframe reducer. To do this, take all the chute shroud line loop ends in one hand, and with the other hand, take the chute and go around the shock cord, passing the chute through the shroud line loops. When the chute is pulled through tightly, it will form a knot.
15. Select a motor for first flight. Because of all the different motor combinations available (with varying motor lengths), this kit uses no motor blocks. Instead, wrap 1/2" wide masking tape around the nozzle end of each motor to a diameter equal to that of the motor mount tube. This will keep the motor from pushing forward upon ignition. Friction fit the motor in place by wrapping masking tape around the motor in two places for a snug fit in the motor mount tube. This will prevent the motor from ejecting rearward upon activation of the ejection charge.
16. Remember to use enough recovery wadding to protect the chute and shock cord from the hot ejection gases.
17. Always follow motor manufacturer's instructions for motor use and ignition, and launch this vehicle on calm, windless days to insure safe recovery.

