#### STEP 5

Cut the launch lug in half at an angle, making them aerodynamic. Find the high point of the airframe between fins. Mark a straight perpendicular line up 10" from the AFT of the airframe. Epoxy one lug 2" up from the AFT of the airframe. Epoxy another at least 8" FWD. Allow to cure.

#### STEP 6

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 plastic nose cone and also secure it with a double knot. Place a SMALL drop of glue on both knots to keep them permanently secured.

#### STEP 7

Attach the parachute to the shock cord at a point about 1/3 of the length of the shock cord from the nose cone. To do this, take the chute shroud line loops 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.

### STEP 8

Lightly sand plastic nose cone with fine sandpaper to remove molding seam line. Also sand airframe and fins to produce a smooth finish.

#### FINISH

Spray rocket with primer, sand and repeat until smooth finish is obtained. Spray rocket with paint of choice, let dry. Apply protective clear coat.

#### Attention!

This rocket is recommended for low to mid power rocket motors D — G impulse. Depending on your flying field and finished weight, this is a very versatile kit. Always check stability to ensure stable flight; the Center of Gravity (CG) must be forward of the Center of Pressure (CP) in flight ready condition.

Installed Total Im- pulse (N-	Equivalent Motor Type	Minimum Site Dimen- sions (ft.)
0.00–1.25	1/4A, 1/2A	50
1.26-2.50	А	100
2.51-5.00	В	200
5.01-10.00	С	400
10.01-20.00	D	500
20.01-40.00	E	1,000
40.01-80.00	F	1,000
80.01-160.00	G	1,000
160.01–320.00	Two Gs	1,500

LAUNCH SITE DI-

MENSIONS

#### Model Rocketry Safety Code

- 1. Materials. I will use only lightweight, non-metal parts for the nose, body, and fins of my rocket.
- 2. Motors. I will use only certified, commercially-made model rocket motors, and will not tamper with these motors or use them for any purposes except those recommended by the manufacturer.
- 3. Ignition System. I will launch my rockets with an electrical launch system and electrical motor igniters. My launch system will have a safety interlock in series with the launch switch, and will use a launch switch that returns to the "off" position when released.
- 4. Misfires. If my rocket does not launch when I press the button of my electrical launch system, I will remove the launcher's safety interlock or disconnect its battery, and will wait 60 seconds after the last launch attempt before allowing anyone to approach the rocket.
- 5. Launch Safety. I will use a countdown before launch, and will ensure that everyone is paying attention and is a safe distance of at least 15 feet away when I launch rockets with D motors or smaller, and 30 feet when I launch larger rockets. If I am uncertain about the safety or stability of an untested rocket, I will check the stability before flight and will fly it only after warning spectators and clearing them away to a safe distance. When conducting a simultaneous launch of more than ten rockets I will observe a safe distance of 1.5 times the maximum expected altitude of any launched rocket.
- 6. Launcher. I will launch my rocket from a launch rod, tower, or rail that is pointed to within 30 degrees of the vertical to ensure that the rocket flies nearly straight up, and I will use a blast deflector to prevent the motor's exhaust from hitting the ground. To prevent accidental eye injury, I will place launchers so that the end of the launch rod is above eye level or will cap the end of the rod when it is not in use.
- 7. Size. My model rocket will not weigh more than 1,500 grams (53 ounces) at liftoff and will not contain more than 125 grams (4.4 ounces) of propellant or 320 N-sec (71.9 pound-seconds) of total impulse.
- 8. Flight Safety. I will not launch my rocket at targets, into clouds, or near airplanes, and will not put any flammable or explosive payload in my rocket.
- 9. Launch Site. I will launch my rocket outdoors, in an open area at least as large as shown in the accompanying table, and in safe weather conditions with wind speeds no greater than 20 miles per hour. I will ensure that there is no dry grass close to the launch pad, and that the launch site does not present risk of grass fires.
- 10. Recovery System. I will use a recovery system such as a streamer or parachute in my rocket so that it returns safely and undamaged and can be flown again, and I will use only flame-resistant or fireproof recovery system wadding in my rocket.
- 11. Recovery Safety. I will not attempt to recover my rocket from power lines, tall trees, or other dangerous places.

Revision of August, 2012.

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Due to the high thrust motors that can be flown in this rocket, epoxy is recommended! Before beginning construction, read over instructions to become familiar with the proper construction steps. TEST FIT ALL PARTS! Light sanding may be necessary to obtain proper fit.

#### STEP 1

Rough sand the motor tube to ensure proper adhesion OR remove the outer glassine wrap. Slide the one ring onto the 29mm motor tube so the tube is 1/8" exposed from the ring. OR measure out where the FWD of the fin tab will be, some choose to sandwich their rings to the fin tabs. Insert other ring on other end of motor tube so 1/8" of the motor tube protrudes. Tack rings into place with epoxy, allow to cure. Epoxy fillet both sides where the ring meets the motor tube. Allow to cure.

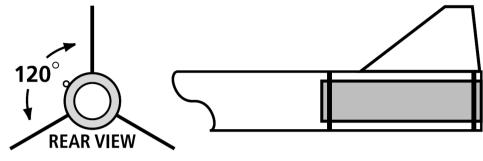
### STEP 2

Slather epoxy in the AFT of the airframe between each fin slot. Insert motor mount assembly up the airframe. Slide all the way up the airframe until the MMT is flush or slightly recessed with the AFT of the airframe. Once cured apply a small layer to the AFT of the AFT ring. Allow to cure.

# STEP 3

Reposition airframe laying down. Apply a generous bead of epoxy to the root edge of one fin and insert in the fin slot. Allow to cure before moving onto the next fin. When all fins are epoxied in place, apply an external filet to each fin to airframe joint.

# CROSS SECTION OF CENTERING RINGS/ MOTOR MOUNT TUBE ASSEMBLY IN MAIN AIRFRAME.



## Step 4 — 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!

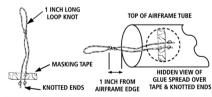
**1.** Take the length of 2' Kevlar cord and at its center make a 1" long loop knot and pull it tight. Make a knot a 1/4" away from the end of EACH of the two loose ends.

**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. Making sure there is enough room for the cone should to fit down the airframe! 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. Using a small piece of wooden dowel, press the masking tape down firmly around the inside of the airframe tubing.

**4.** Place a generous bead of glue over the knotted ends and length of masking tape. Spread the glue around until they are completely covered and place the airframe in a horizontal position to dry.

# REPEAT STEP 4 UNTIL A SMOOTH GLUE LAYER IS ACHIEVED OVER THE MASKING TAPE AND KNOT-



TED ENDS.

**OPTIONAL** A screw eye is also included. Simply screw into hole in forward ring and glue. Knot shock cord mount to screw eye and glue. Make a loop at the end as shown to tie on shock cord.