Thank you for your purchase of the Nemesis Mini Airframe from R-Squared Innovations! Proudly designed in the USA by RCG users 'drclawscat' and 'bayareaheli'. Please see below for instructions on proper assembly of your kit and recommendations for flight electronic configurations.

Kit Parts:
1x – Top Clean Section Plate
1x – Bottom Section Clean Plate
1x – Top Dirty Section Plate
1x – Bottom Section Dirty Plate
4x – Adjustable Arms
1x – CCD Camera Plate
1x – HD Camera Plate
1x – Accessory Mounting Plate
1x – Rear Mounting Bulkhead

Included Hardware:
4x – Anti-vibration bobbins
8x – M3 hex nuts (for use with bobbins)
4x – M4 screws
4x – M4 nylock nuts
4x – M2 screws
4x – M2 low profile hex nuts
4x – M2 spacers
16x – M3 Nylon Screws
8x – M3 Nylon Standoffs

Revisions:
Rev 1.2 – Added Hardware and Kit parts, Added HD camera plate and accessory plate configurations, updated dirty section exploded views, general clarifications.

Assembly:
Part 1: Dirty Section
Part 2: Clean Section
Part 1: **Dirty Section Assembly**

*Top View Exploded*

*[note spacers go between plates on M2 sections]*

*Bottom View Exploded*
Paddle edges of arms all oriented forward.

Frame parts:
1 - Dirty Bottom Plate
1 - Dirty Top Plate
4 - Arms

Dirty Section Hardware:
4 - M4 x 14mm
4 - M4 Nylock Nuts
4 - M2 X 9mm
4 - M2 Standard Nuts
4 - High Quality Vibration Dampers
4 - M3 Standard Nuts

*Paddles of arms should all face forward. Arm should not be over tightened at this point. Keep them loose.
Clean Section Assembly

Clean Section Frame parts:
1 - Clean Bottom Plate
1 - Clean Top Plate
1 - Camera Plate
1 - Rear Bulkhead

Clean Section Hardware:
8 - M3 x 35mm Nylon Standoffs
16 - M3 x 6mm Nylon Screws
4 - M3 Standard Nuts

Align Clean Bottom Section so extra M3 hole in front is on the left and the elongated Hole in the rear is also on the left.

Install the rear bulkhead with the arrow on the bottom and pointing left.

Install the camera plate with the asymmetric prong on top and on the left side.

The CCD plate and bulkhead are designed to fit well however due to manufacturing and material tolerances some may fit just barely loose or barely too tight. This is normal.

Too tight - A quick mild sanding under water.
Too loose - Shim the prongs on the plate with tape.
Install Clean Top Plate so the slots in the front are on the right side. Install all 8 standoffs and 16 standoff screws. Center 4 standoffs will mount on the inner set of holes on the top plate.

Insert Clean section into vibration dampers and install compress dampers by pushing down on top chassis. Install 4 damper top nuts to affix clean section to dirty section while under compression. Tighter till hand tight with wrench and release compression.
Adjust tightness of M4 bolts on arms until they can turn in and arms can retract in slot under force. They should absorb energy in a crash by folding. They should not move when hitting light objects.
Storage:
To store your quad the arms are designed to fold neatly into center to maintain the smallest possible footprint. Even with motors and props mounted you can still fold all the way inward.
Accessories

The HD camera plate can be added to both the top and bottom of the clean section for additional clearance. This plate has side straps for bolting various HD cameras down, a ¼” tripod screw pass-through mount, and also strap pass through holes for all generations of GoPro Hero cameras.

To bolt to the top, place the plate on the top section and pass the frame screws through both the HD camera plate and top plate into the standoffs. It is recommended to use metal screws here for support rather than nylon. Where the green hole is marked is a spot for an additional screw pass through if you want an even more secure mount.

To bolt to the bottom, place the plate under the bottom section and pass the frame screws through both the HD camera plate and bottom plate into the standoffs. It is recommended to use metal screws here for support rather than nylon. Where the green hole is marked is a spot for an additional screw pass through if you want an even more secure mount.
Flight configurations

The Nemesis supports different flight configurations which will all change the handling of the quad. Experiment to see what you like best and what works for you.

Perfect H 5" (More sensitive Pitch Axis then Roll Axis, Keeps props out of view):
Swing arms out until arms are parallel and the inside hole on the top, bottom, and arm align perfectly where the blue circles are shown. If you want to solid mount this configuration you can put a m3 x 8mm-12mm screw through here and affix the bottom with a standard or nylock nut.
Perfect X (symmetric) 5" (Symmetric Even geometry with balanced Pitch and Roll Axis):
Swing arms out until arms are past the H configuration and the inside edge hole on the top, bottom, and arm align perfectly where the blue circles are shown. If you want to solid mount this configuration you can put a m3 x 8mm-12mm screw through here and affix the bottom with a standard or nylock nut.
Extended Wingspan 6" (Designed to support Larger Diameter props, more sensitive Pitch then Roll) :
Extend arms out to their full length. Swing arms out until arms are past the H configuration and the outside edge hole on the top, bottom, and arm align perfectly where the blue circles are shown. To stiffen the frame in 6" configuration it is required to insert an m3 spacer in the gap where the purple circle is and bolt it down with m3 x 8-12mm screws and a standard or nylock nut.
Also recommended to solid mount this configuration by putting an m3 x 8mm-12mm screw through the blue hole and affix the bottom with a standard or nylock nut.
Dead Cat (Near symmetric configuration, FC slightly forward, props out of view):
Extend rear arms out to their full length. Retract front arms in fully. Set front arms for 5” H position. Swing rear arms out till the center of the motors are aligned horizontally with the front motors.
Flight Electronics:

- Voltage Reader/Buzzer Window
- Multiple Integrated SMA Antenna Mounts
- Landing Gear M3 Hole
- Motor wire tie down slots
- Accessory strap slots
- Battery strap holes
- Nalux/Diminika strap slots
Flight Controller (right angle pins) Mounted on Bottom of Accessory Plate

3m tape (10-20lb outdoor) ESC to bottom frame cutouts

ESC cooling vents anti-torsion ribs

Front underbelly Strobe Location

Mini 36mm PDB can mount here

Rear Underbelly Strobe location