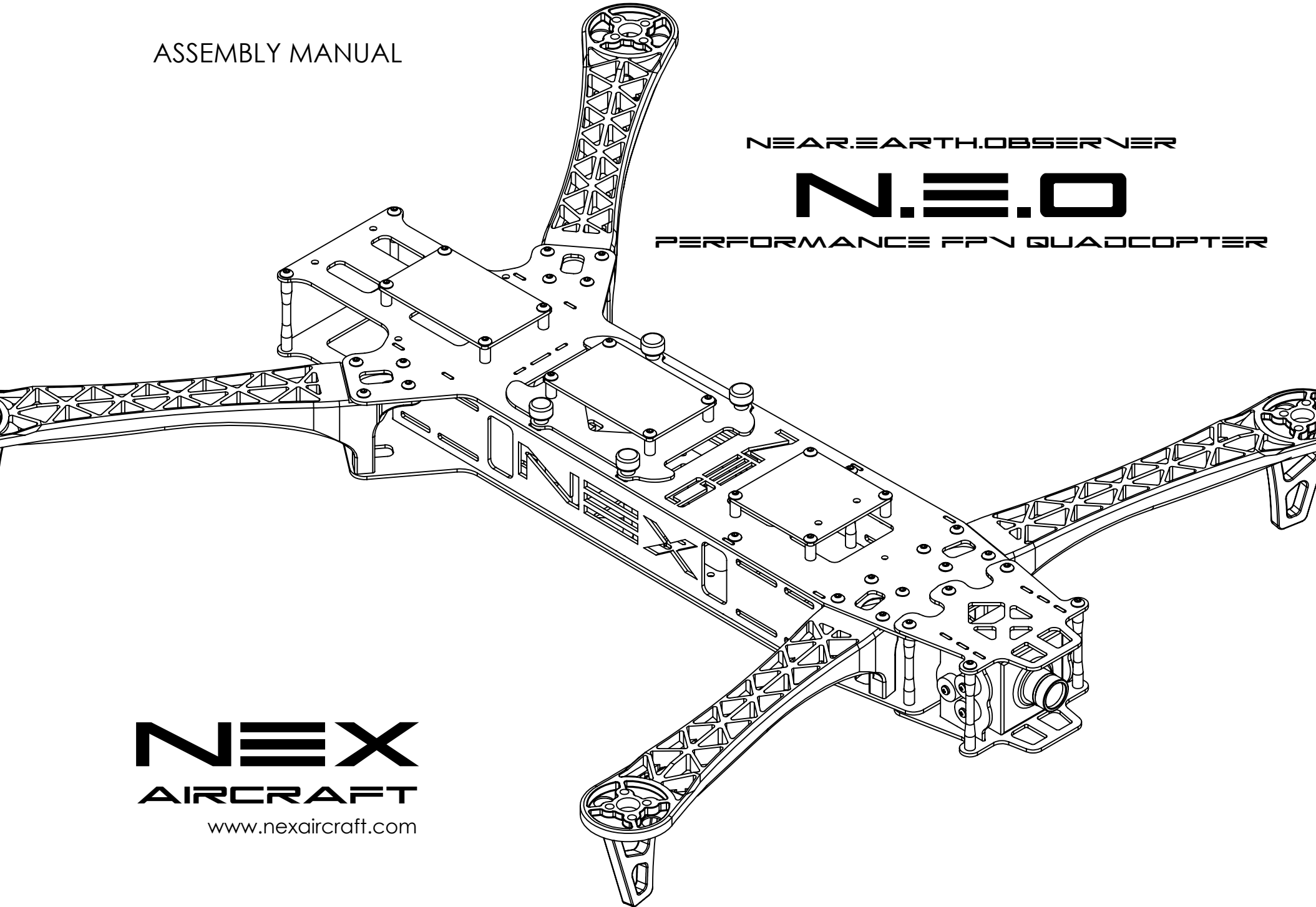


ASSEMBLY MANUAL

NEAR.EARTH.OBSERVER

**N.E.O**

PERFORMANCE FPV QUADCOPTER



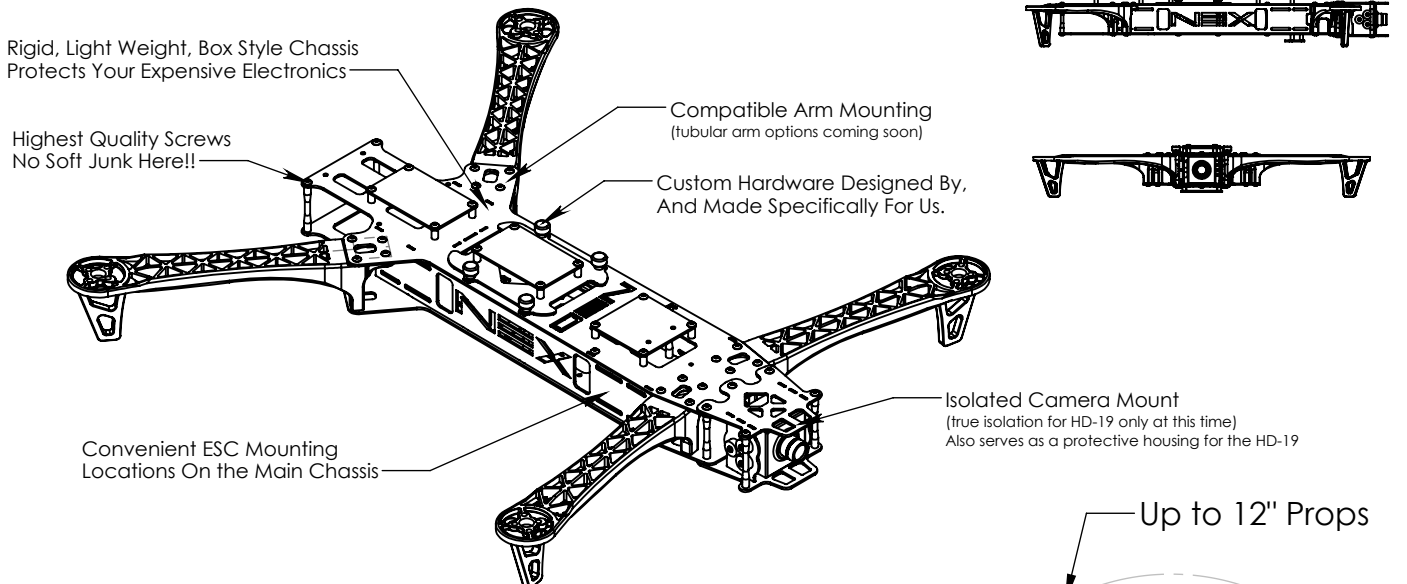
**NEX**  
**AIRCRAFT**

[www.nexaircraft.com](http://www.nexaircraft.com)

# NEAR . EARTH . OBSERVER

# N.E.O

## PERFORMANCE FPV QUADCOPTER



Square Geometry  
No bad tendencies due to trapezoidal geometry found on some other FPV quads.

Dampened Flight Controller Deck To Isolate Vibrations

Removeable Hatch For Easy Access To Flight Controller. Uses 4 thumb screws for access.

Up to 12" Props

Multiple, Configurable and stackable Gear Decks.

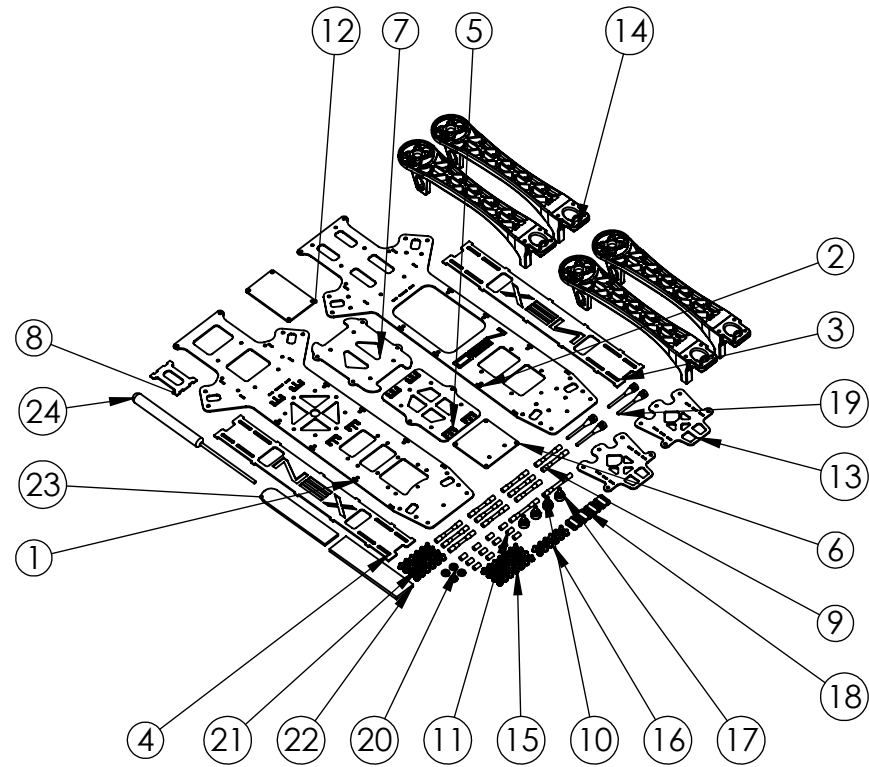
Specification	
Diagonal Base	570mm
Prop Size	9"-12"
Motor Size	22-38mm Stator
Battery	3S-4S 3300-5000Mah
Naked Weight	440g
RTF Weight	varies with setup
Flight Time	varies with setup

# Main Parts List

Please check your kit prior to assembly to ensure no parts are missing.

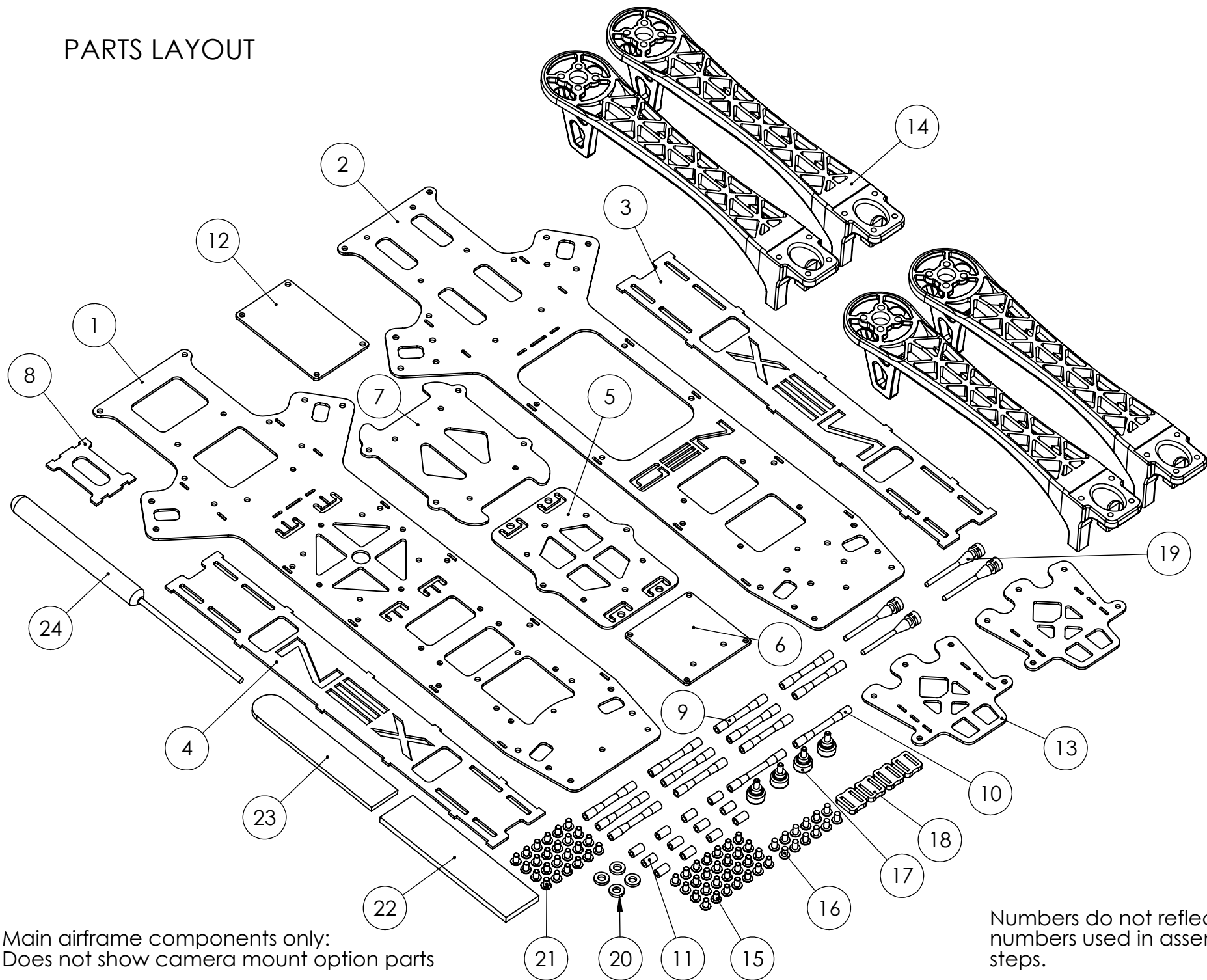
ITEM NO.	PART NUMBER	QTY.
1	Bottom Deck	1
2	Top Deck	1
3	Side Right	1
4	Side Left	1
5	ISO Deck	1
6	GPS Deck	1
7	Hatch	1
8	Battery Block	1
9	37mm Standoff	11
10	41mm Standoff	2
11	8mm Spacer	12
12	Accessory Deck	1
13	Cam Mount Plate	2
14	Arm	4
15	M3x5 Button Head Screw	28
16	M3x5 Wafer Head Screw	12
17	M3 ThumbScrew	4
18	Square Deck Damper	4
19	Stud Deck Damper	4
20	Foam Washer	4
21	M3x6 Shouldered Arm Screw	24
22	Velcro	1
23	Battery Strap	1
24	Hex Driver	1

Numbers here do not reflect numbering in assembly steps.



Main airframe components only:  
Camera mount option parts not shown

# PARTS LAYOUT



Main airframe components only:  
Does not show camera mount option parts

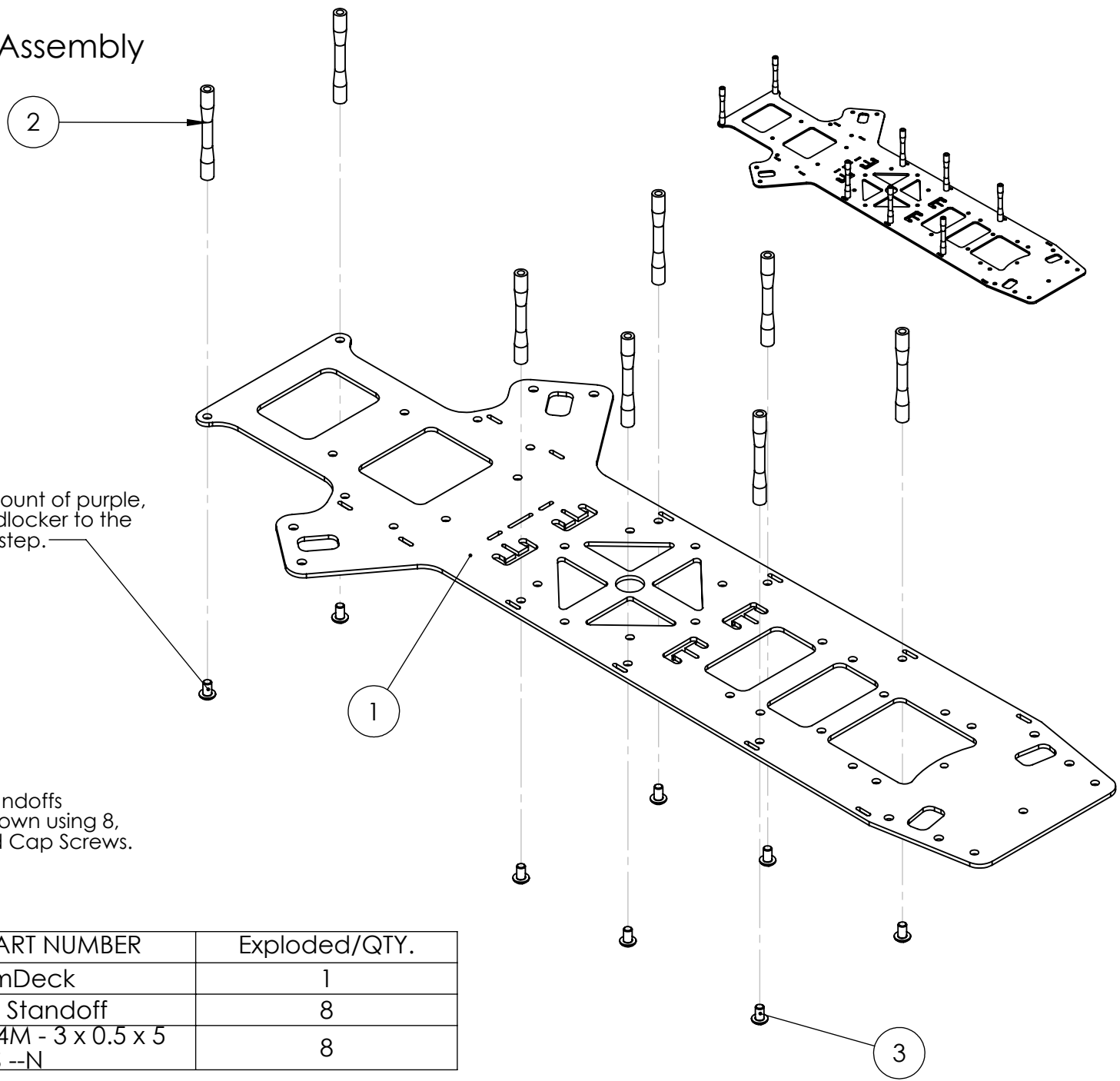
Numbers do not reflect  
numbers used in assembly  
steps.

# Bottom Deck Assembly

Apply a *SMALL* amount of purple, low strength threadlocker to the screws used in this step.

Install 8, 37mm Standoffs in the locations shown using 8, M3x5 Button Head Cap Screws.

ITEM NO.	PART NUMBER	Exploded/QTY.
1	BottomDeck	1
2	37mm Standoff	8
3	B18.3.4M - 3 x 0.5 x 5 SBHCS --N	8



# TOP DECK ASSEMBLY

Do not add thread lock to the M3x5 Wafer Head Screws.

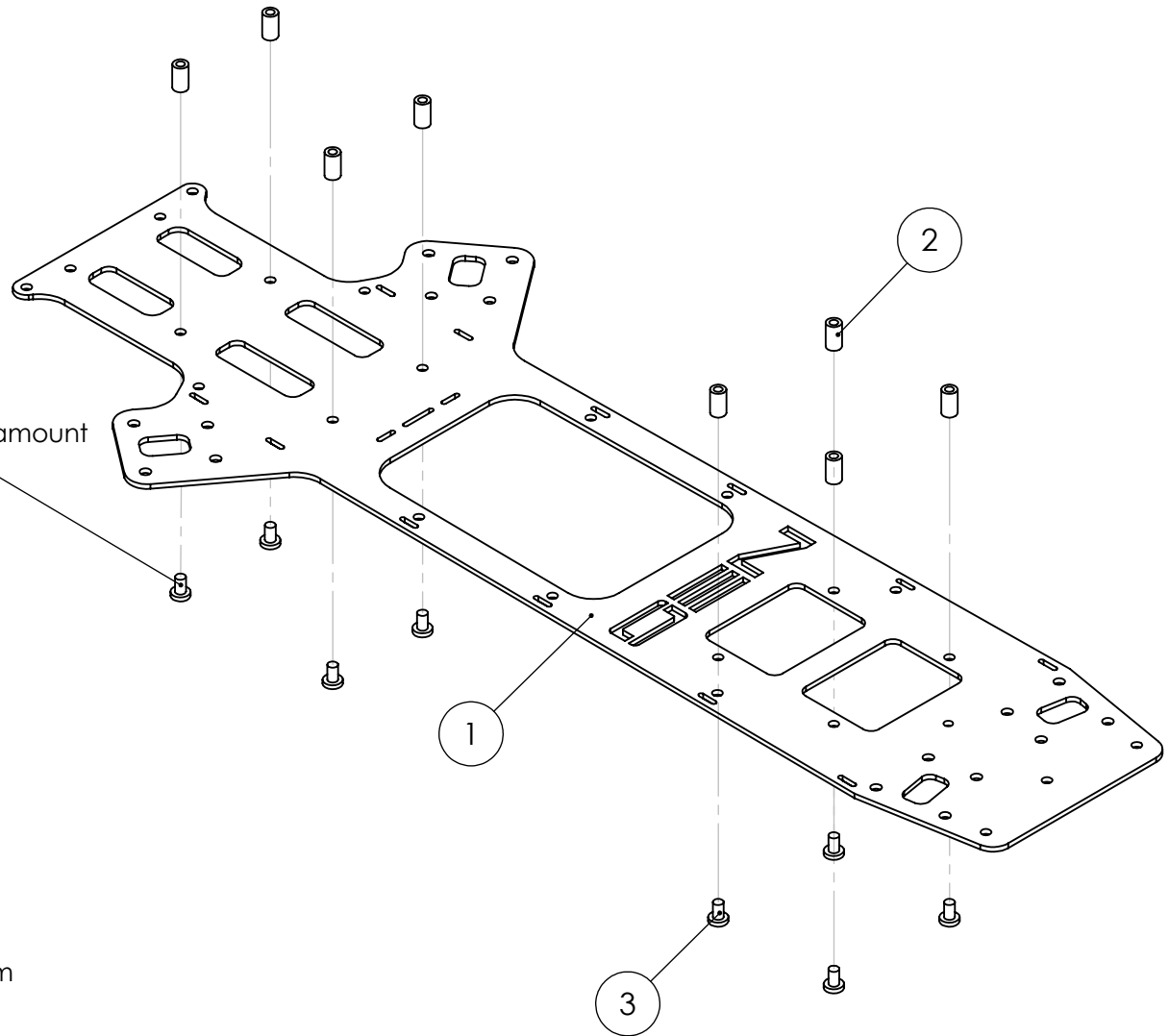
These screws already have the proper amount and type of thread lock applied.

## Top Deck Assembly

Install the 8mm spacers to the top deck as shown.

These screw positions are not very accessible once chassis is assembled.

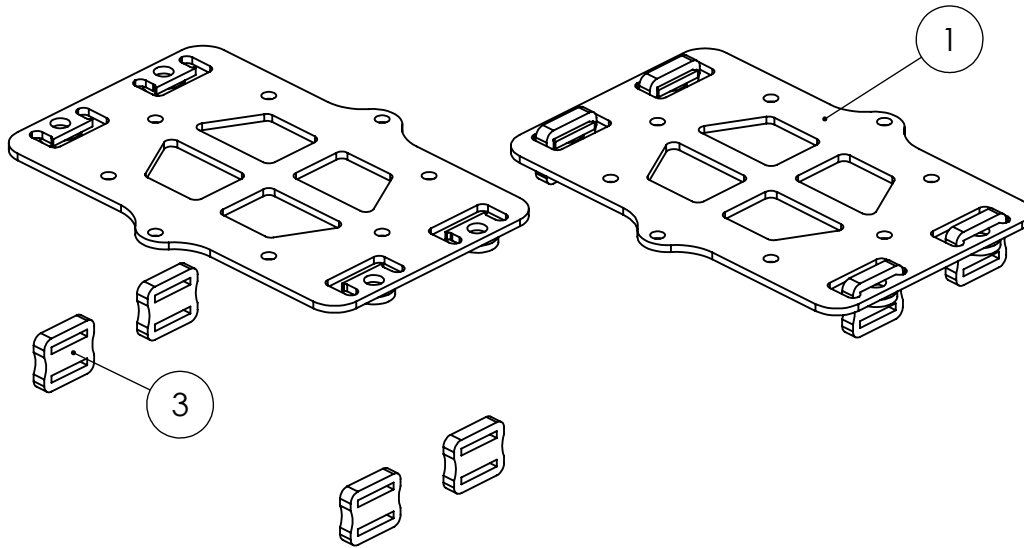
If you plan to not use either of these gear deck positions, you may omit this step. We recommend installing them for future attachment of gear decks.



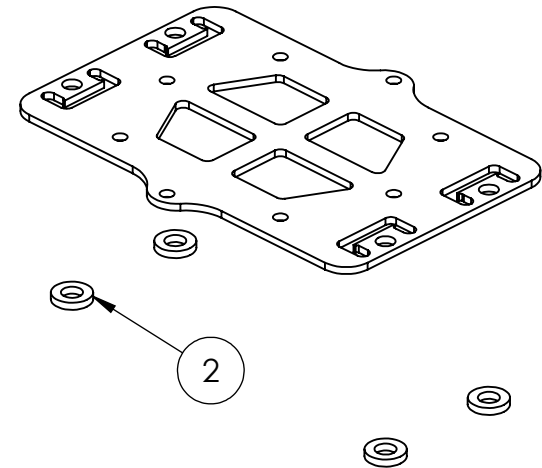
ITEM NO.	PART NUMBER	Exploded/QTY.
1	Top Deck	1
2	8mm Spacer	8
3	M3x5 Wafer Head Screws	8

# ISO DECK DAMPER OPTIONS

## OPTION 1: Square Dampers



## OPTION 2: Stud Dampers



## Damper Installation

Choose the flight deck dampers you wish to use.

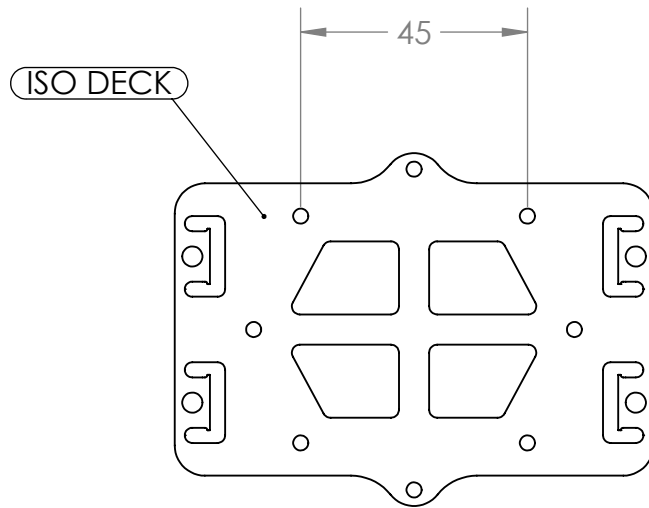
For the square dampers, install as shown in OPTION 1. They will need to be stretched slightly to fit. This is normal, and necessary.

DO NOT install the foam washers if using the square dampers.

For the Stud type dampers, OPTION 2, only install the foam adhesive backed washers to the underside of the Iso Deck in this step. Ensure the hole in the washer aligns with the holes on the Iso Deck. You will install the Stud Dampers into the bottom deck in a later step.

ITEM NO.	PART NUMBER	DESCRIPTION	Exploded/QTY.
1	ISO_Plate		1
2	Foam Washer	SEE OPTIONS	4
3	Deck_Damper	SEE OPTIONS	4

## INSTALLING YOUR FLIGHT CONTROLLER



### NOTE:

You may choose to not use the Iso Deck in your build.

There is provision on the Bottom Deck for attaching your flight controller directly to the Bottom Deck.

## Installing the Flight Controller

The Iso Deck is compatible with nearly all Flight Controllers on the market.

The holes in the Iso deck are patterned for standard 45mmx45mm flight controller pattern.

There are holes for squarely, and diagonally oriented flight controllers.

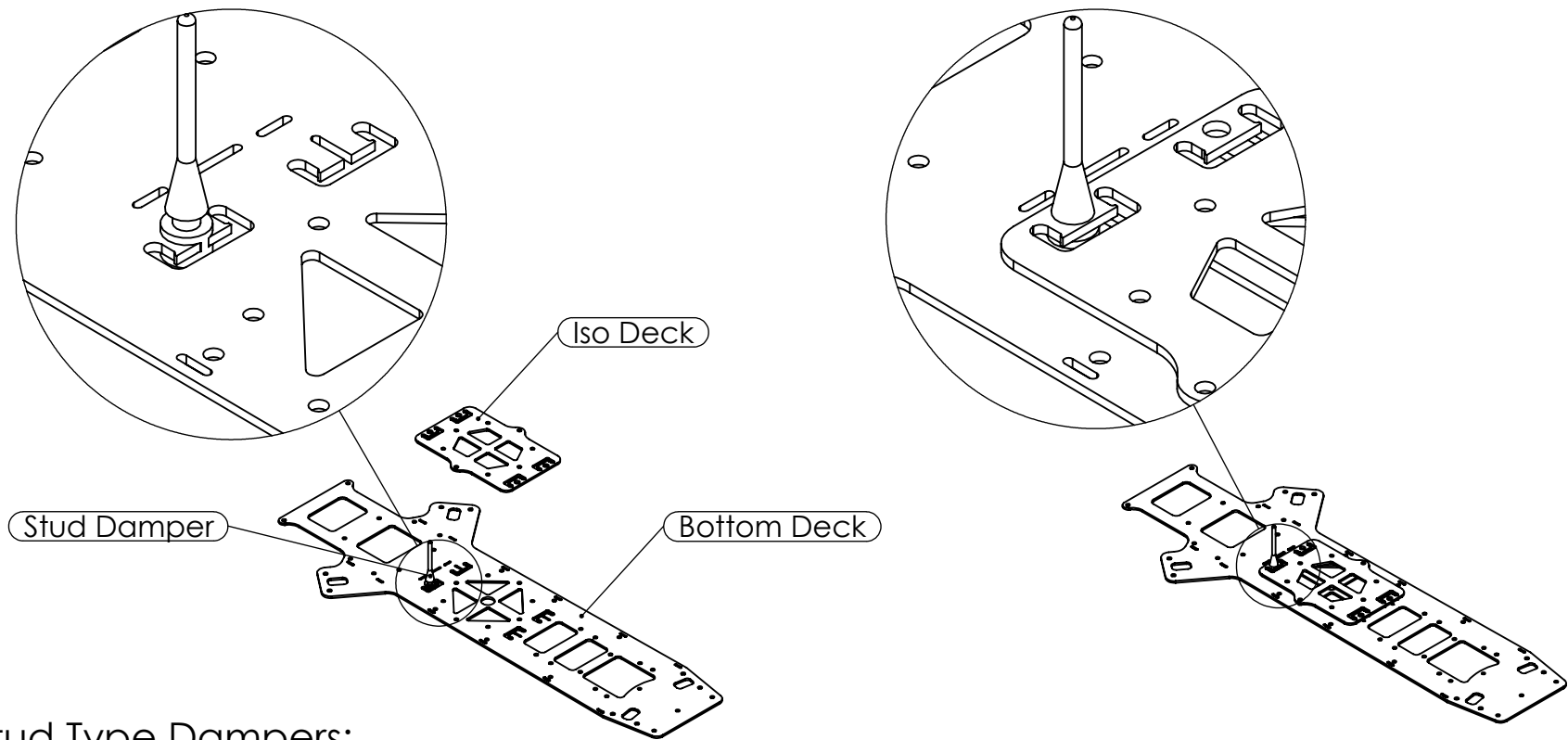
You may also use double sided tape to attach controllers such as the NAZA, which do not mount with screws.

We recommend installing your flight controller on to the Iso Deck before attaching the Iso deck to the Bottom Deck, as access to the screws on the underside of the Iso Deck that are used to attach your flight controller will be limited once the Iso Deck is installed on to the Bottom Deck. The Iso Deck is easily removed if access is needed after assembly.

If you are using standoffs to space your flight controller from the Iso Deck, you may install those first, and attach your flight controller later on in the assembly.



## INSTALLING STUD DAMPERS (DAMPER OPTION 2) Some assembly items removed for clarity



### Stud Type Dampers:

When using the stud type dampers, the foam adhesive washers must first be installed on to the bottom of the Iso Deck.

Install the Stud Dampers as shown in the balloon above.

They must be aligned with the slot, and rolled into place through the slot at the front of each location.

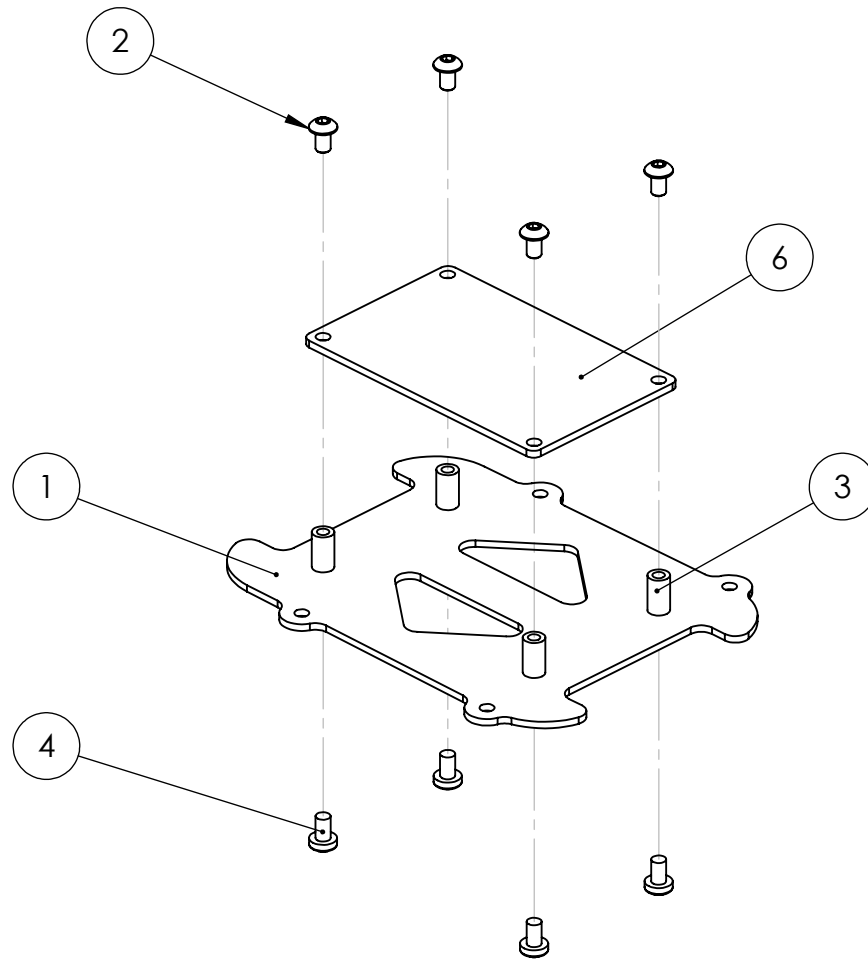
Install damper in all 4 locations.

To install the Iso Deck on to the Stud type Dampers, slide the Iso Deck over the 4 long tendons on the Stud Dampers.

Pull on the tendon to stretch it to the point that the retaining cone fully enters the Iso Deck holes as shown in the balloon above.

The extra length of the tendons may be cut off just above the end of the cone after installing.

# HATCH ASSEMBLY



## Assembling The Hatch

Assemble the hatch as shown

You may choose not to assemble as shown if you do not wish to use the Gear Deck on the hatch.

ITEM NO.	PART NUMBER	QTY.
1	Cover Plate	1
2	M3x5 Button Head Cap Screw	4
3	8mm Spacer	4
4	M3x5 Wafer Head Philips Screw	4
6	Accessory_Plate	1

# Attaching Top Deck Assembly

Some parts omitted for clarity

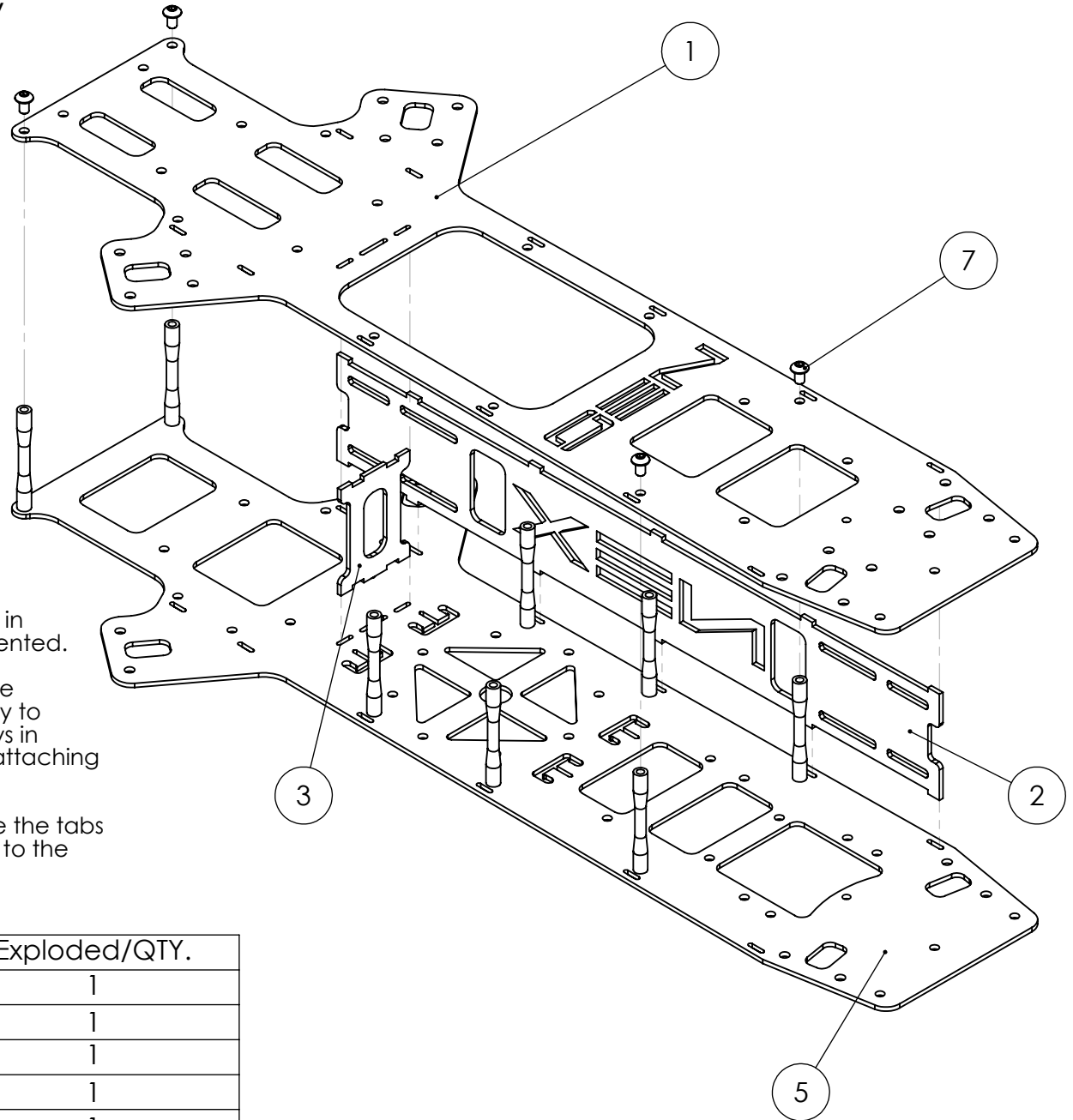
## Assemble Decks

Insert the Battery Block in to the respective slots in the Bottom Deck.

When inserting the side plates, ensure the NEX logo is oriented properly. They are keyed to go in only one direction when the logo is properly oriented.

Using only 4, M3x5mm Button Head Screws in the locations shown, attach the Top Deck Assembly to the Bottom Deck Assembly. Do not install screws in to the other 4 standoff locations. These are for attaching the Hatch using the thumb screws.

When attaching the Top Deck Assembly, ensure the tabs fo the Side Plates, and the Battery Block line up to the slots in the Top Deck.



ITEM NO.	PART NUMBER	Exploded/QTY.
1	Top Deck Assem.	1
2	Side L	1
3	Battery Block	1
4	Side R	1
5	Bottom Deck Assem.	1
7	M3x5 Button Head Screw	4

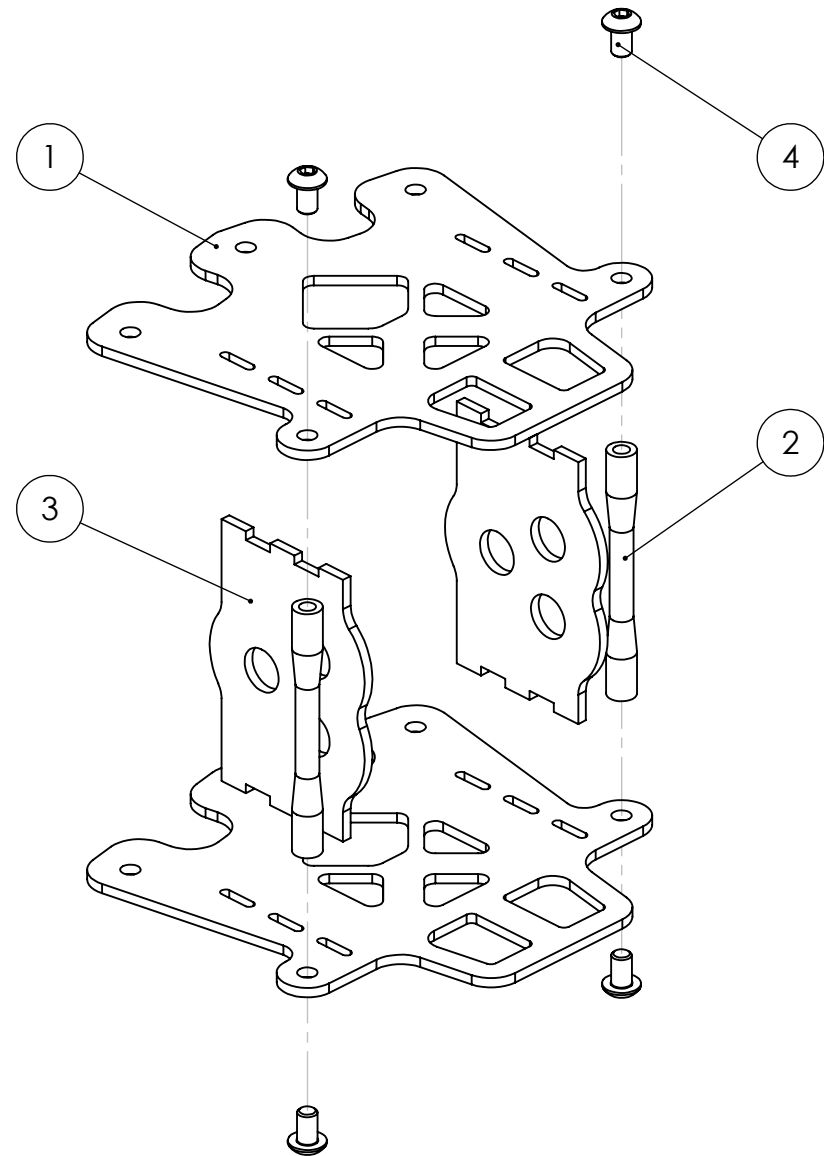
## CAMERA MOUNT ASSEMBLY FOR HD-19

## CAMERA MOUNT ASSEMBLY FOR HD-19

Attach 2, 41mm standoffs to bottom Camera Mount plate using 2, M3x5 Button Head Screws.

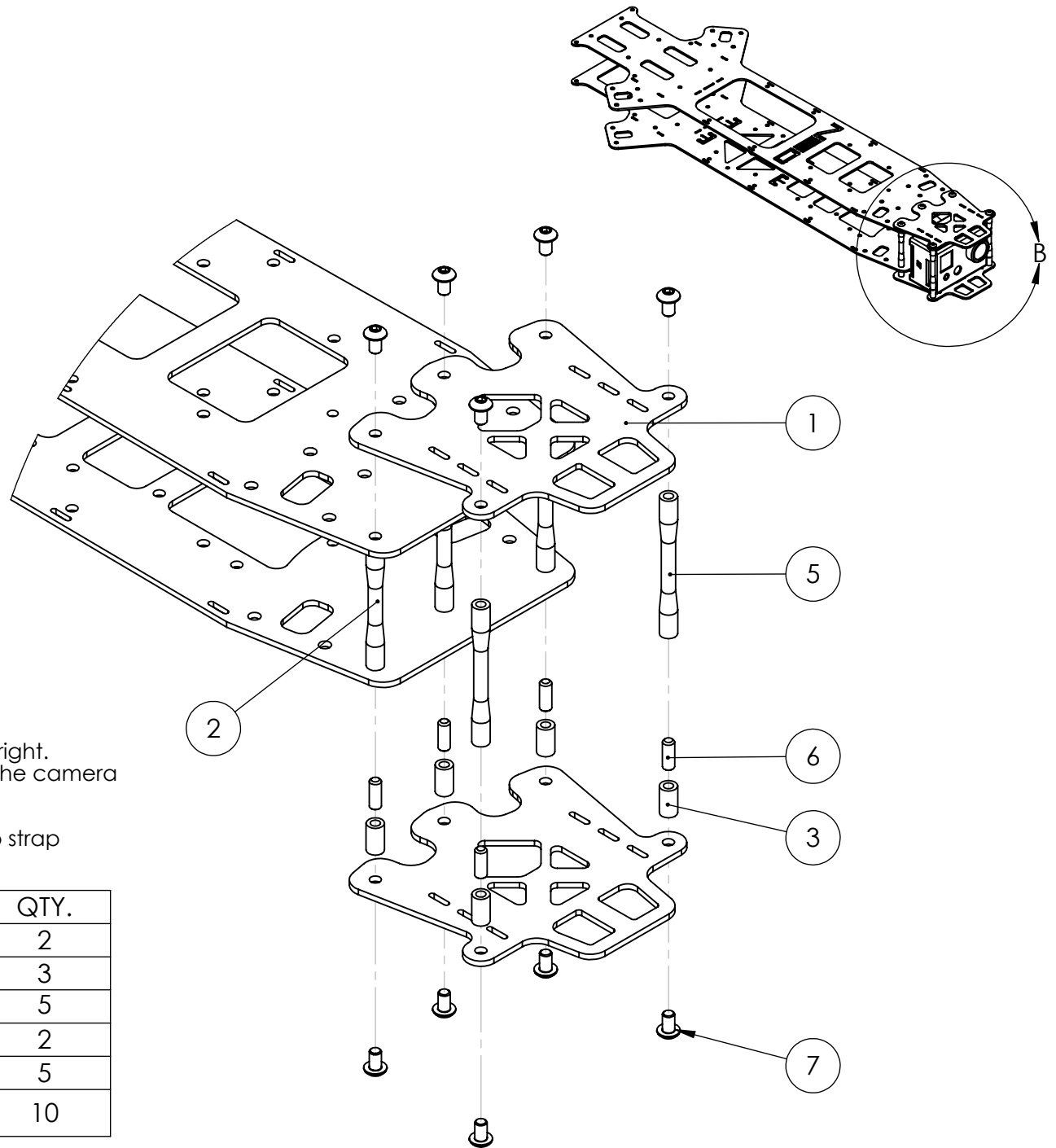
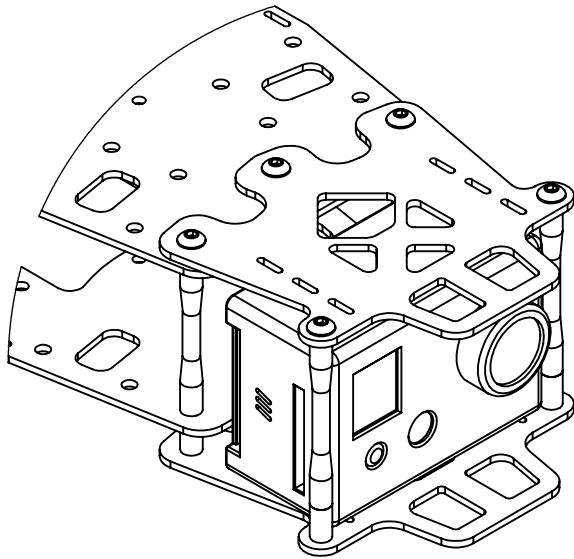
Insert the side plates into the slots with the 2 lobe side facing the standoffs as shown.

Place the top Camera Mount Plate on top, ensuring to line up the tabs on the side plates to the slots in the top plate. Attach top plate to standoffs using 2, M3x5 Button Head Screws.



ITEM NO.	PART NUMBER	Exploded/QTY.
1	Cam Mount Plate	2
2	41mm Standoff	2
3	Cam Mount Side Plate	2
4	M3x5 Button Head Screw	4

# GoPro Mount Assembly



## GoPro Mount Assembly

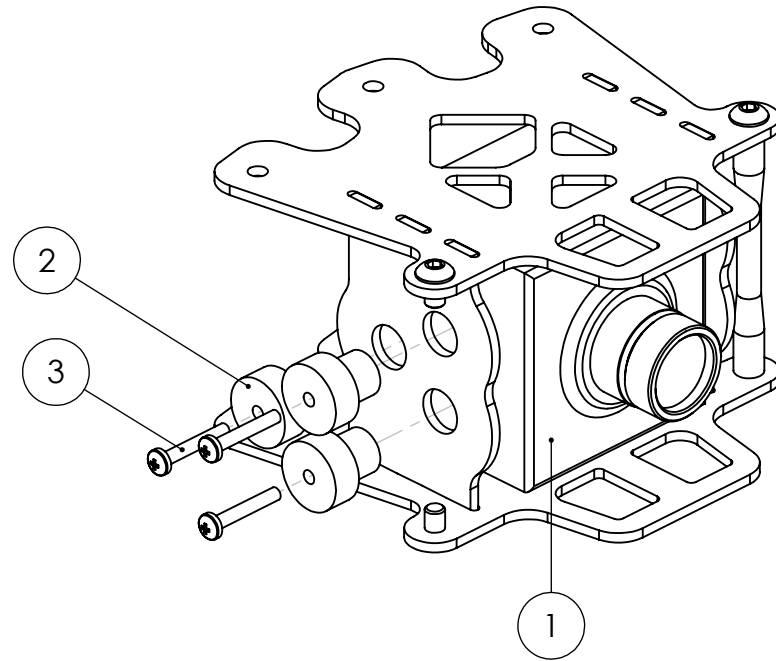
Assemble the GoPro Mount as shown to the right. A piece of foam is recommended between the camera and the mount.

Attach the GoPro to the mount with a velcro strap

ITEM NO.	PART NUMBER	QTY.
1	Cam Mount	2
2	37mm Standoff	3
3	8mm Spacer	5
5	41mm Standoff	2
6	Extension Screw	5
7	M3x5 Button Head	10

# HD-19 CAMERA INSTALLATION

SOME PARTS OMITTED FOR CLARITY



## INSTALLING THE HD-19 CAMERA

Slide the camera into the Camera mount as shown

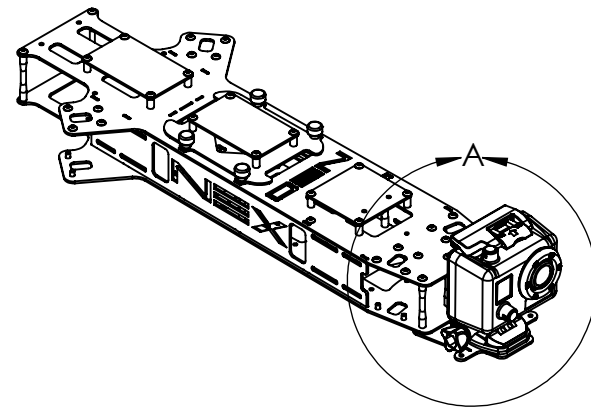
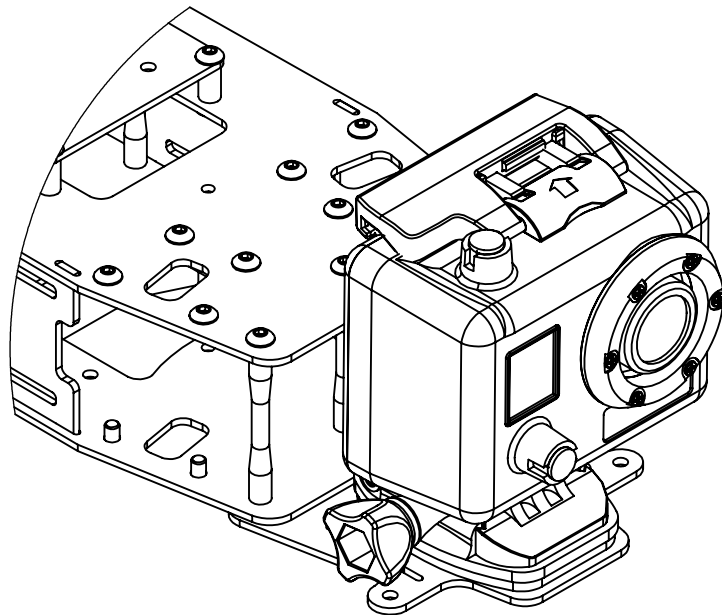
Insert 6 HD19 Dampers into their respective holes, on both sides of the Camera Mount as shown. (only one side shown for clarity)

Attach camera to dampers using 6, M2x12mm Nylon Screws, 3 per side.

ITEM NO.	PART NUMBER	Explode2/QTY.
4	B18.3.4M - 3 x 0.5 x 5 SBHCS --N	4
1	Boscam HD19	1
2	HD19 Damper	6
3	M2x12 Nylon Screw	6

NOTE:  
The HD-19 Camera is not included in your kit.

## MOUNTING A GOPRO CAMERA (ALTERNATE)



## MOUNTING A GOPRO (all GoPro versions)

When using a GoPro camera, only install the lower Cam Mount Plate. Or, you may install it inverted by installing the upper plate.

Attach the GoPro using the flat adhesive mount that comes with the GoPro as shown above.

You may also mount the GoPro directly to the mount without its case using a velcro strap. We recommend leaving it in the case to prevent damage in case of a crash.

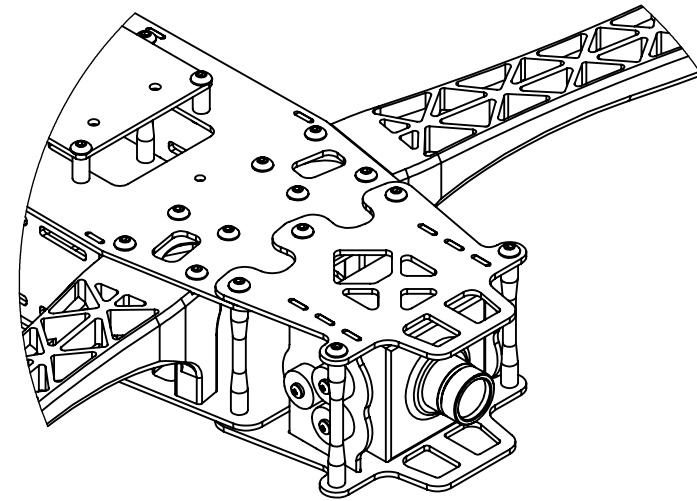
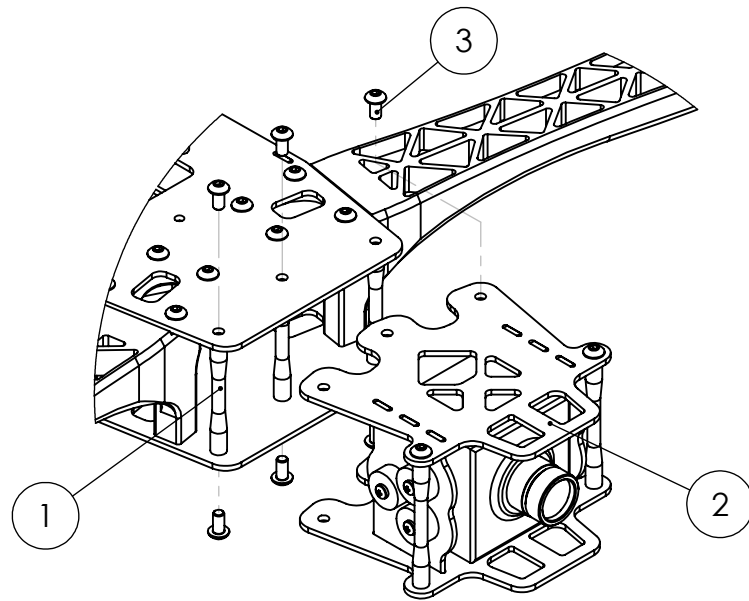
## NOTE:

You may also mount the GoPro directly to the main body without using the Cam Mount Plate.

(the GoPro and its accessories are NOT included in the kit)

# HD-19 CAMERA MOUNT INSTALLATION

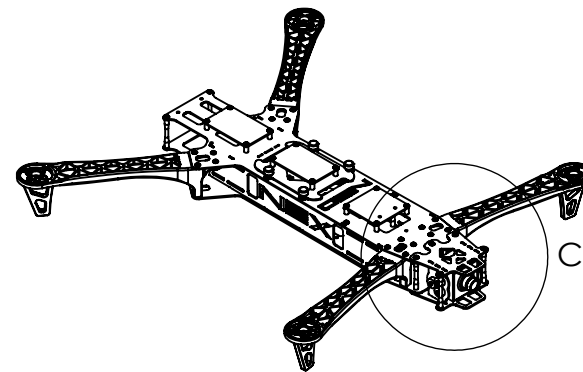
SEE OTHER SHEET FOR GoPro Mounting



## Camera Mount Installation:

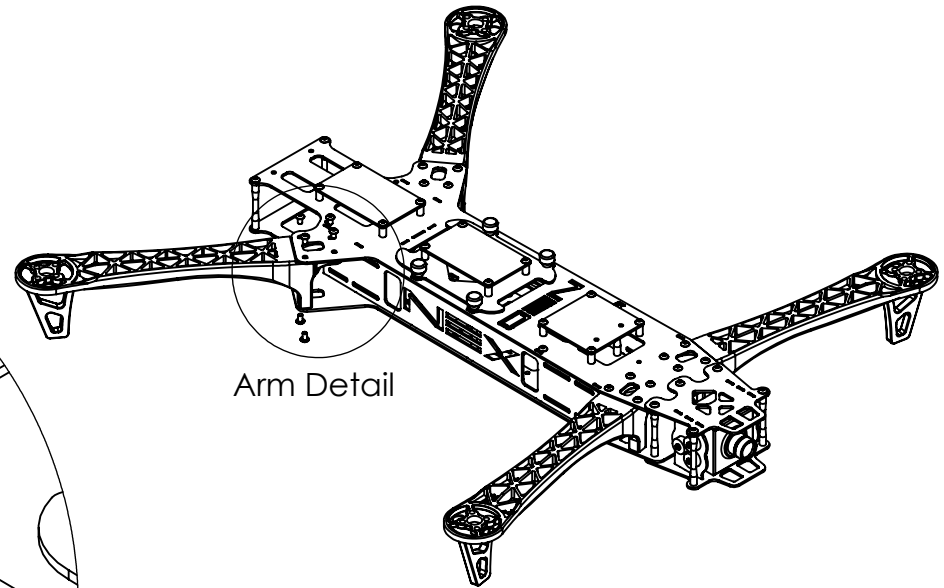
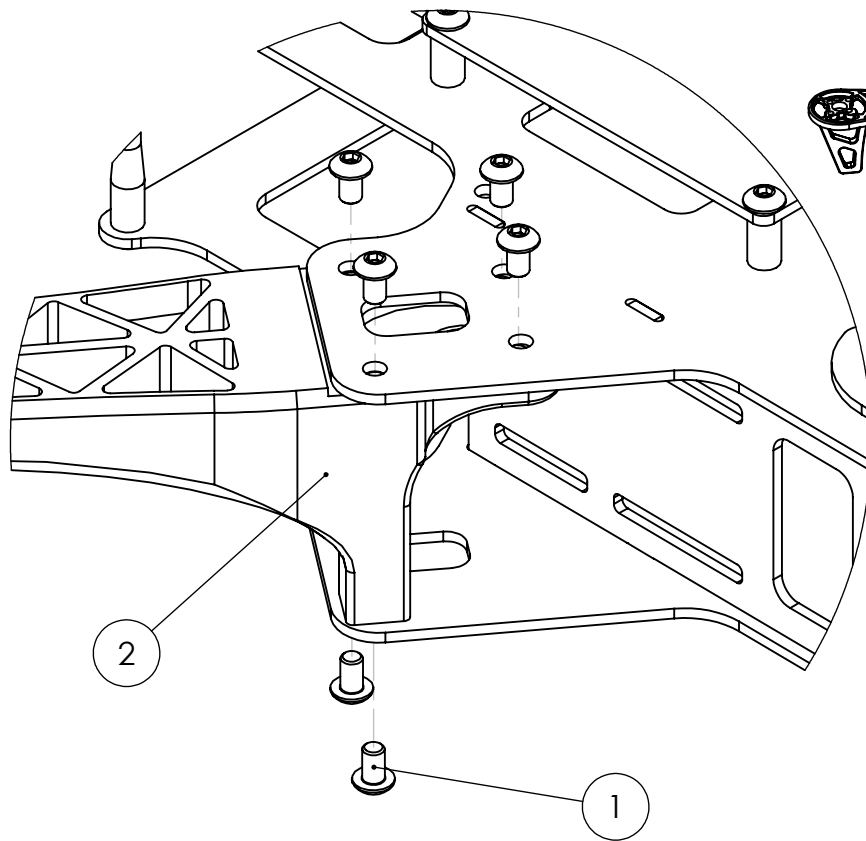
Place 3, 37mm Standoffs in positions shown above.  
Slide Camera Mount Assembly into positions shown and attach with 6 M3x6 Button Head Screws, 3 on top, 3 on bottom.

ITEM NO.	PART NUMBER	QTY.
1	37mm Standoff	3
2	Camera Mount Assembly	1
3	B18.3.4M - 3 x 0.5 x 6 SBHCS --N	6





# ARM INSTALLATION



ITEM NO.	PART NUMBER	Arms/QTY.
1	M3x5 Button Head Screw	24
2	DJI/Clone 450 Arm	4

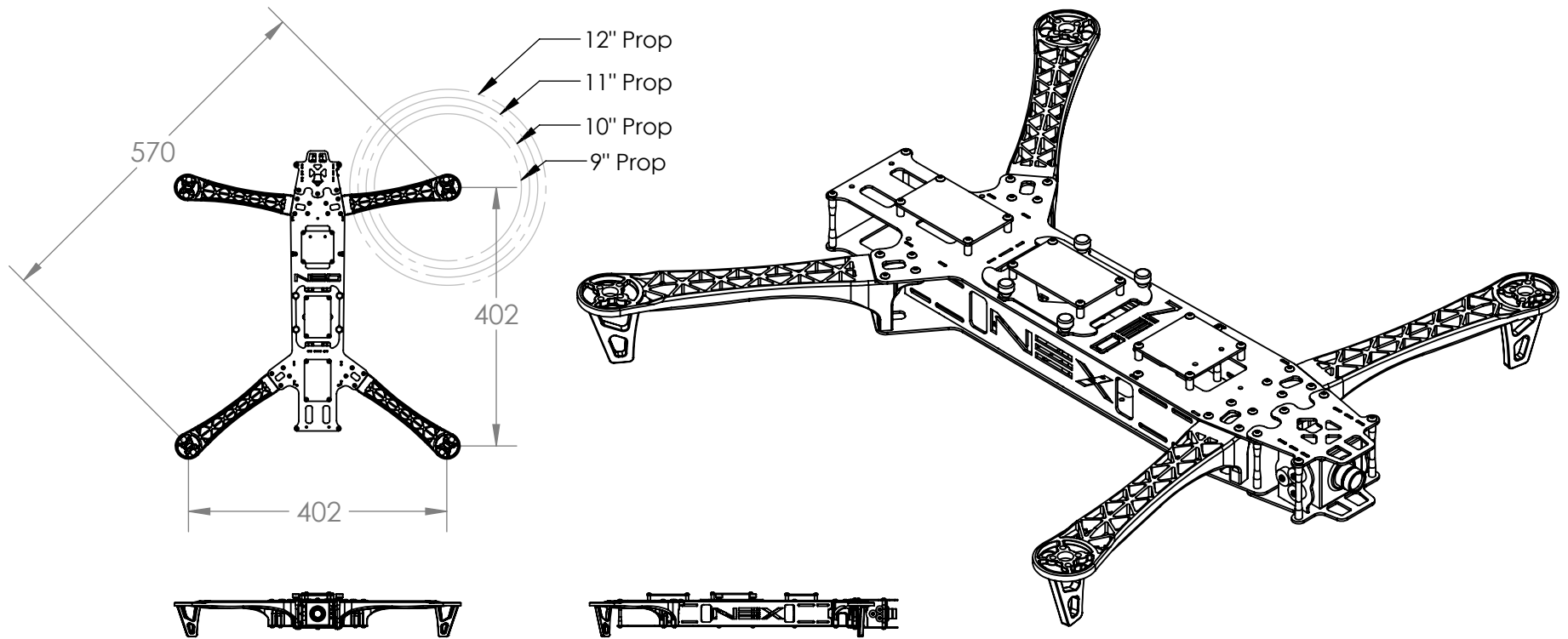
## INSTALLING THE ARMS:

Install the arms as shown above in the 4 arm locations using 24 M3x5 Button Head Screws (6 per arm). 4 screws on top, 2 screws on bottom.

DO NOT over tighten

We do NOT recommend using threadlocker on the arm screws.

## ASSEMBLY OVERVIEW



## POST ASSEMBLY OVERVIEW

After completing assembly of your NEX N.E.O kit, give it a once over with your hex key/driver and ensure all screws are tight.

You are now ready to install your electronics and begin setting them up to get ready for flight.

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