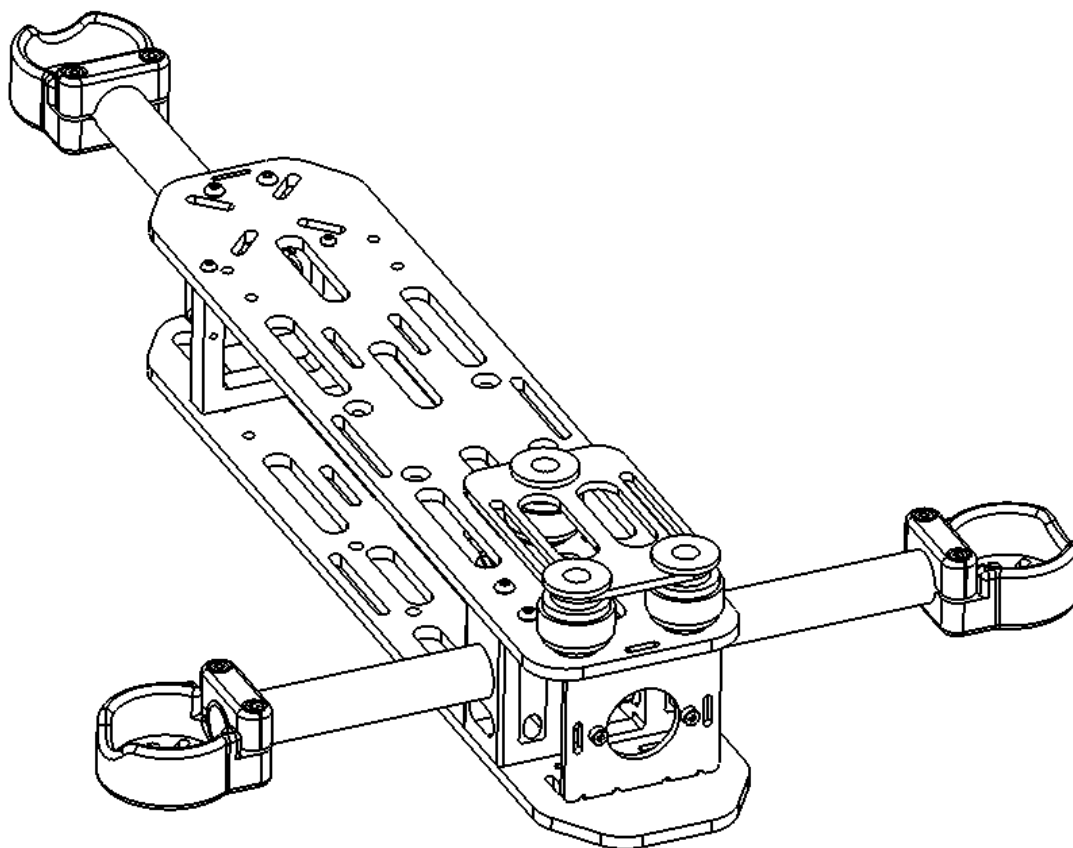


# VECTORQUADS

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## VTC250 ASSEMBLY MANUAL



Product ID. : VTC250  
Ver. : 1.00

# VECTORQUADS

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## Introduction









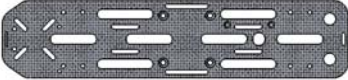




The VTC250 tricopter features a simple tilting rotor design allowing level forward flight. In addition to the supplied hex keys, you will need a Phillips screw driver during this build. It is recommended you use blue loctite (or equivalent product) on all screws inserted into metal parts only. Do not use any thread locking substances on any of the plastic parts.

## Parts List

|      |                                                                                     |                                          |
|------|-------------------------------------------------------------------------------------|------------------------------------------|
| 4 x  |    | Socket Head Cap Screw M2x0.4x6           |
| 4 x  |    | Pan Head Phillips Screw 9mm Length       |
| 4 x  |    | Flat Head Phillips Screw 9mm Length      |
| 3 x  |   | Button Head Cap Screw M2x0.4x18          |
| 12 x |  | Button Head Socket Cap Screw M2.5x0.45x8 |
| 6 x  |  | Socket Head Cap Screw M2.5x0.45x16       |
| 1 x  |  | Alloy Steel Dowel Pin M2x16              |
| 1 x  |  | Rod End                                  |
| 1 x  |  | Servo Horn & Linkage Stopper Assembly    |
| 1 x  |  | Servo Tube Hub                           |
| 1 x  |  | Short Push Rod                           |

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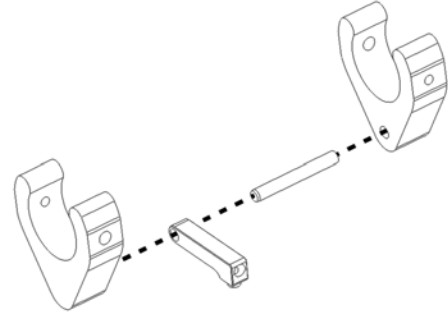
|     |                                                                                     |                                 |
|-----|-------------------------------------------------------------------------------------|---------------------------------|
| 3 x |    | Vibration Dampening Rubber Ball |
| 3 x |    | Motor Mount                     |
| 3 x |    | Motor Mount Clamp               |
| 2 x |    | Servo Mount Frame               |
| 2 x |    | Tube Clamp                      |
| 1 x |   | Tail Tube Pivot Block           |
| 1 x |  | Tube Pivot Block                |
| 1 x |  | Base Plate                      |
| 1 x |  | Top Plate                       |
| 1 x |  | HD Camera Plate                 |
| 1 x |  | FPV Camera Plate                |
| 1 x |  | 12mm Tail Tube                  |
| 1 x |  | 12mm Tube                       |

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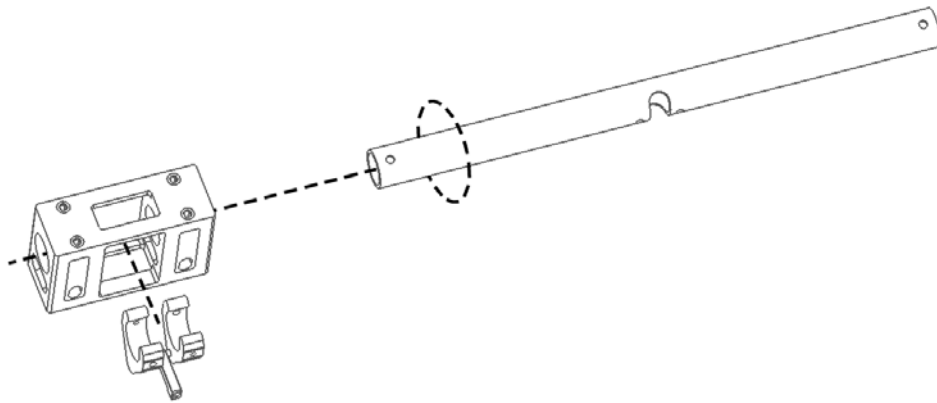
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## Pivot Tube Assembly

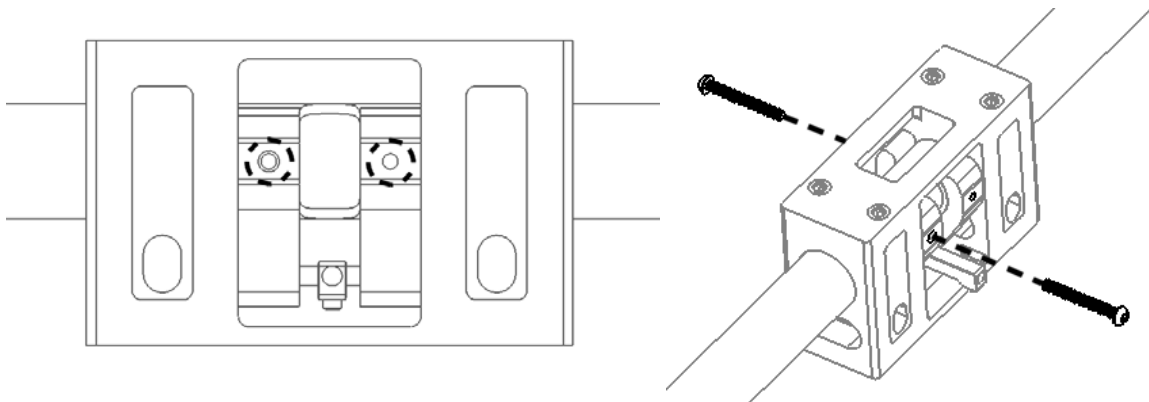
1. Slide the **Alloy Steel Dowel Pin M2x16** onto the **Rod End**. Insert the **Alloy Steel Dowel Pin M2x16** into the holes on the **Tube Clamps** as shown.



2. Position the **Tube Clamp** assembly within the **Tube Pivot Block** and push the **12mm Tube** through the holes using a twisting motion.



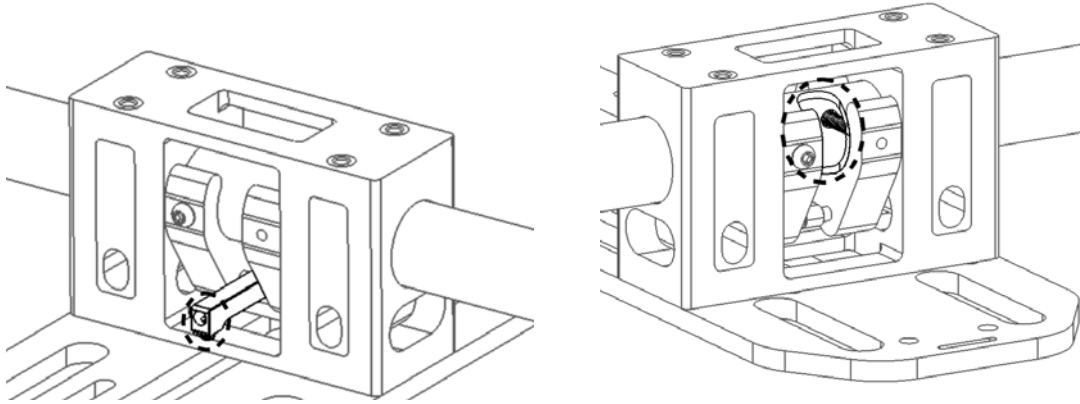
3. Align the holes on the tube with the threaded holes on the clamps and use two **Button Head Cap Screws M2x0.4x18** to secure the tube in place.



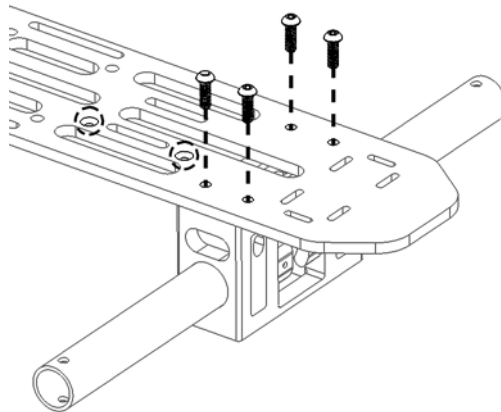
# VECTORQUADS

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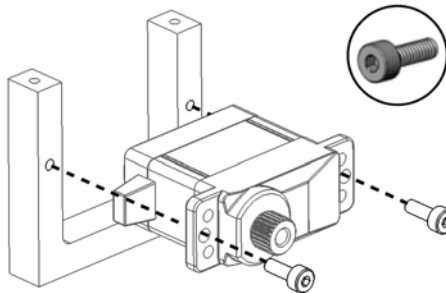
4. Make sure the rod ends are pointing towards the center of the base plate and the cutout on the tubes on the opposite side towards the ends.



Mount the tube assembly onto the **Base Plate** using four **Button Head Socket Cap Screw M2.5x0.45x8** on the same side as the countersunk holes. Note the orientation of the tube pivot block with respect to the base plate.

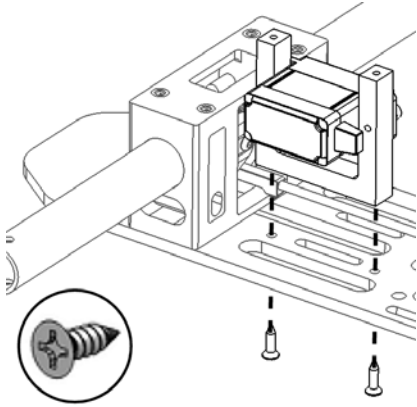


5. Secure the two servos on the **Servo Mount Frames** using two **Socket Head Cap Screw M2x0.4x6**.

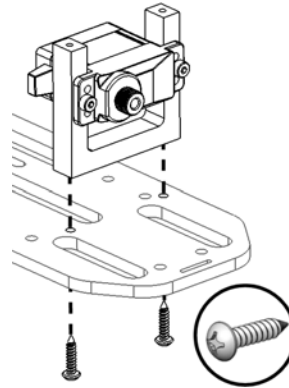


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6. Mount the **Servo Mount Frame** onto the base plate using two **Flat Head Phillips Screw 9mm Length**. Do not over tighten screws.



7. Mount the tail **Servo Mount Frame** onto the base plate using two **Pan Head Phillips Screw 9mm Length**. Do not over tighten screws.

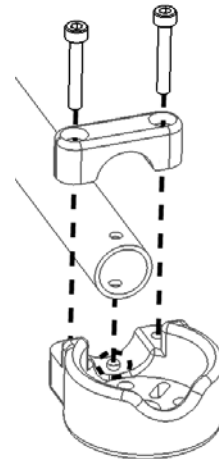


8. Assemble the **Motor Mount** onto the ends of the tubes using a **Motor Mount Clamp** and two **Socket Head Cap Screw M2.5x0.45x16**. Align the locating pins on the clamp and mount to the guide holes on the tube.

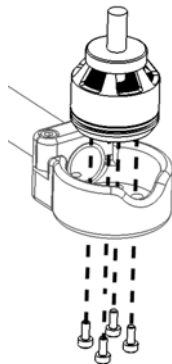
**IMPORTANT: Do not completely tighten one screw, then the other.** Tighten each screw a little at a time to avoid putting too much stress on one side of the tube. Tighten screws just enough to remove any play on the motor mount.

Note that due to the tube length and frame size, 5 inch props are the max size that can be used with this frame.

Do not install motors at this time. Simply choose the orientation of the motor mounts based on the intended motor size you plan to use.



For 1806 18mm diameter motors, install inside the motor mount.



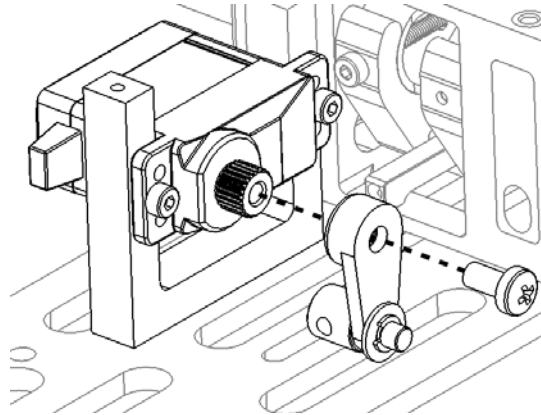
For a stator diameter larger than 18mm, rotate the motor mount upside down and install motors on the bottom side.



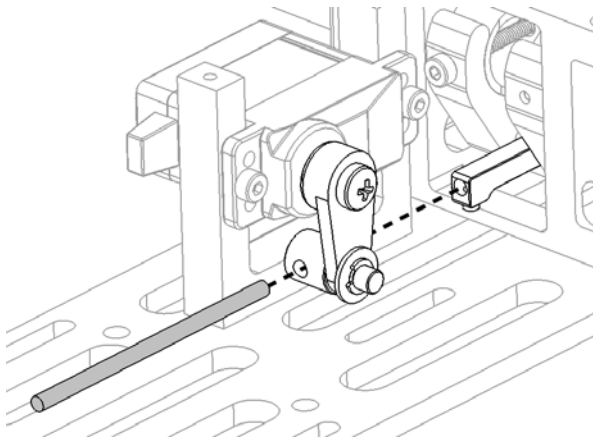
# VECTORQUADS

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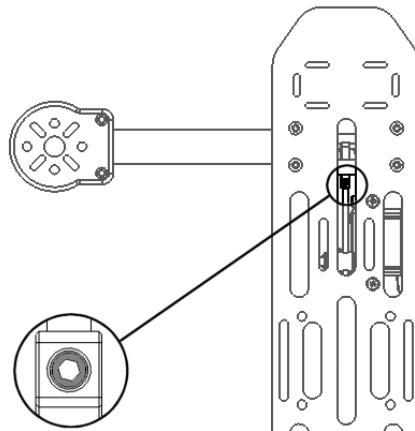
9. Using a suitable servo controller, center the servo spline. Push the servo horn onto the spline and secure in place using the M3 screw supplied with your servo.



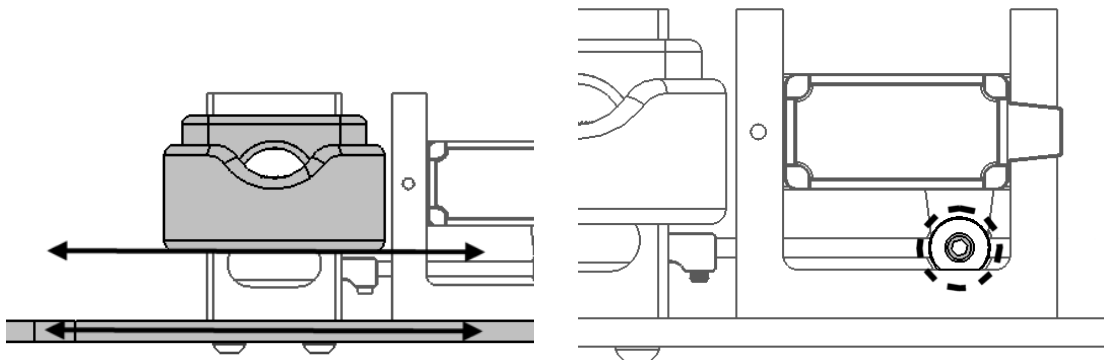
10. Slide the **Short Push Rod** through the **Servo Horn & Linkage Stopper Assembly** and into the rod end as shown.



11. Tighten the set screw on the **Rod End**.



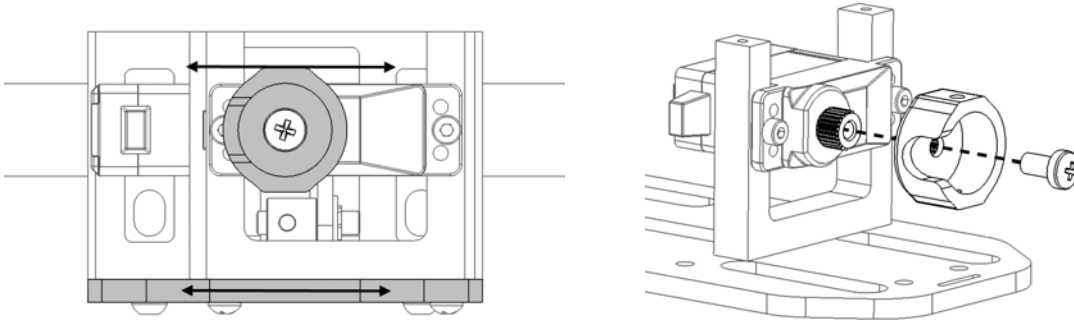
12. Align the **Motor Mount** to the **Base Plate** and tighten the set screw on the linkage stopper.



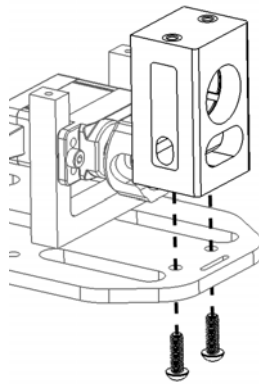
# VECTORQUADS

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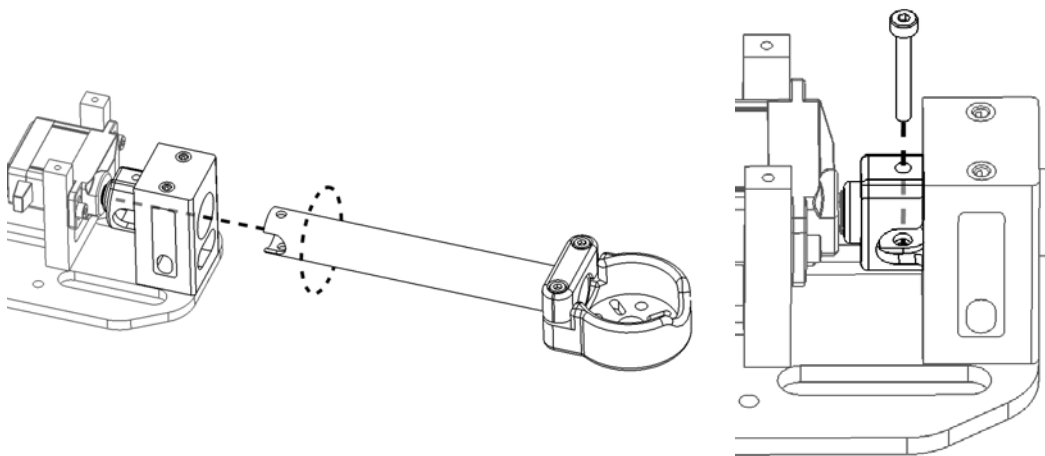
13. Using a suitable servo controller, center the tail servo spline. Align the flat surface on the **Servo Tube Hub** to the **Base Plate** and push onto the spline. Secure in place using the M3 screw supplied with your servo.



14. Mount the **Tail Tube Pivot Block** onto the **Base Plate** using two **Button Head Socket Cap Screw M2.5x0.45x8**.



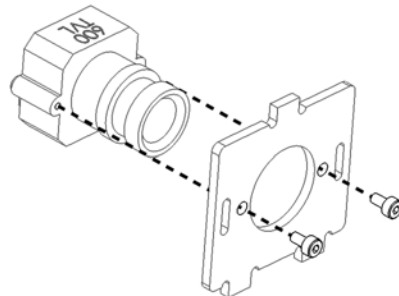
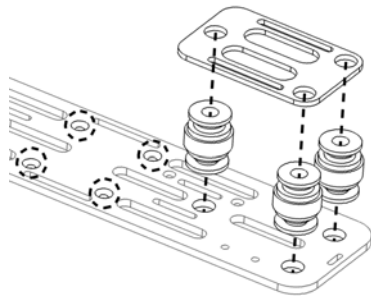
15. Push the **12mm Tail Tube** through the hole on the **Tail Tube Pivot Block** using a twisting motion. Secure in place using the remaining **Button Head Cap Screw M2x0.4x18**.



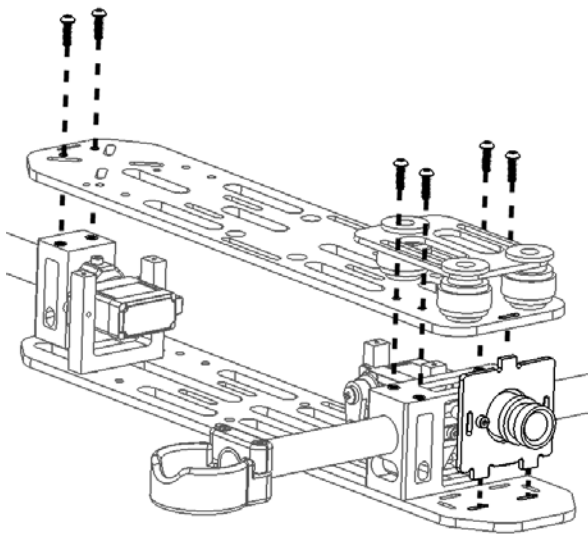


# VECTORQUADS

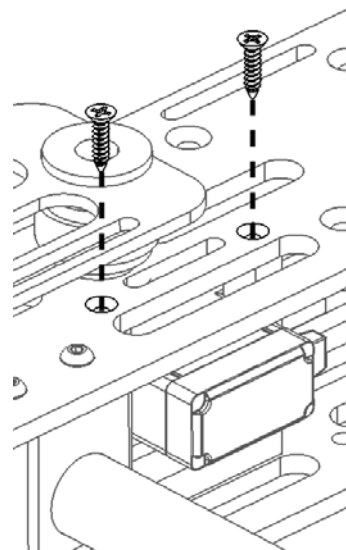
16. Install the **Vibration Dampening Rubber Balls** and **HD Camera Plate** onto the **Top Plate** noting the location of the countersunk holes. Prepare the **FPV Camera Plate** at this time as well.



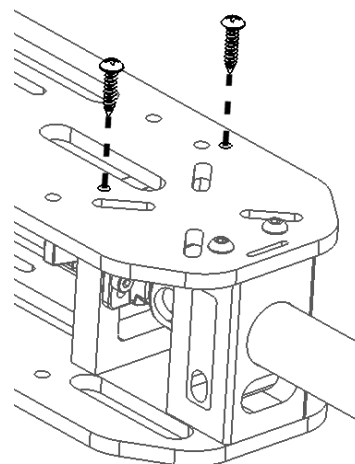
17. Mount the top plate and FPV camera plate onto the base plate assembly using the remaining six **Button Head Socket Cap Screw M2.5x0.45x8**.



18. Use two **Flat Head Phillips Screw 9mm Length** to secure the servo mount frame to the top plate. Do not over tighten screws.

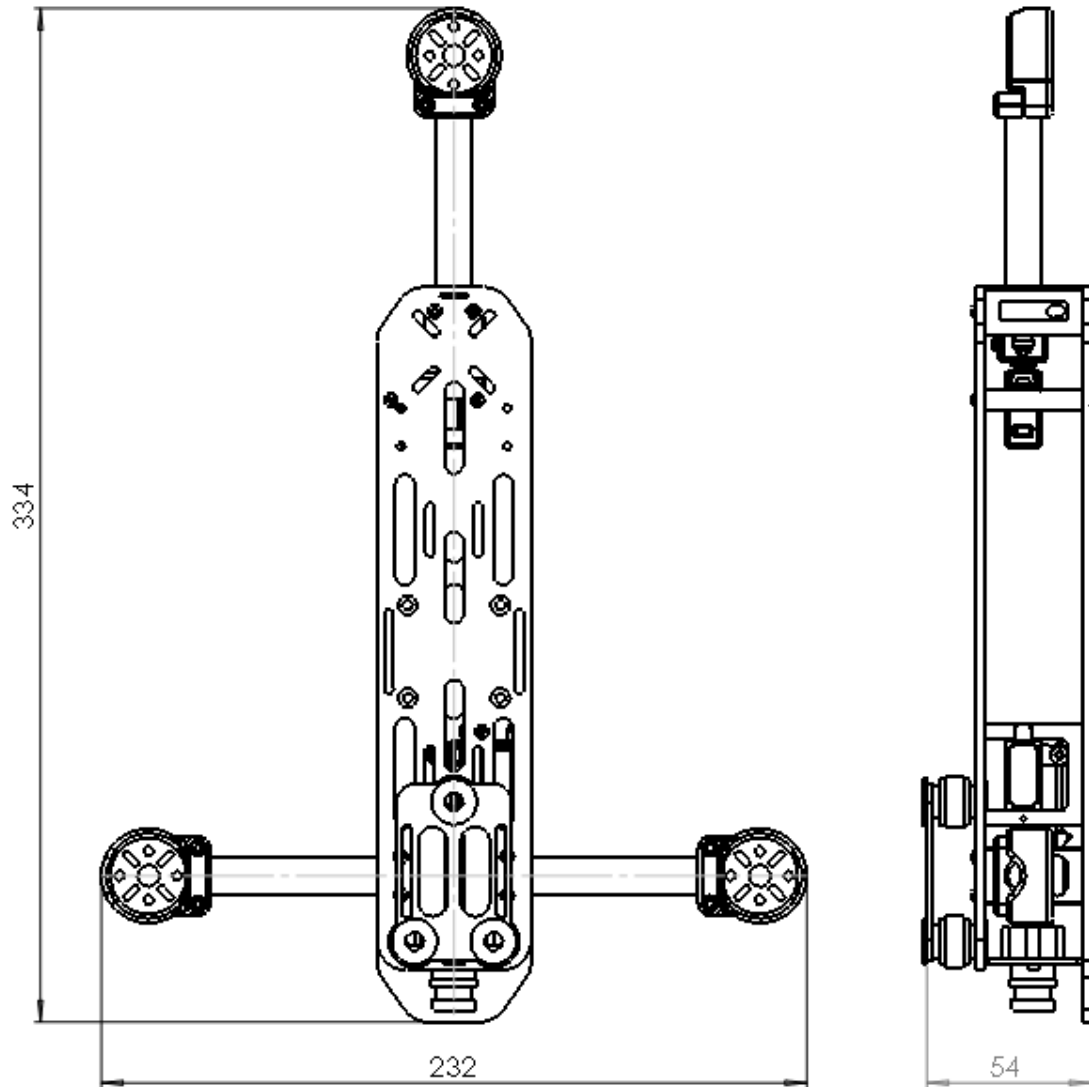


19. Use two **Pan Head Phillips Screw 9mm Length** to secure the Tail Servo Mount Frame to the top plate. Do not over tighten screws.



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## Mechanical Specifications



Empty Weight (excluding servo): 193g

Length: 334mm

Width: 232mm

Height: 54mm

Tilt Rotor Angle:  $+50^\circ / -40^\circ$

Tail Rotor Angle:  $+45^\circ / -45^\circ$