

# Trident GTR

## Service Manual

NEVER STOP EVOLVING

# Maintenance



## Safety First



- Never allow children or animals in the vicinity of the mount while working on it
- The mount is heavy and appropriate precautions/PPE should be used
- Never work on the mount with power applied to the electronics
- Never operate equipment that you suspect to be faulty
- The brakes are only intended for parking a setup & balanced mount while not in use. They are not meant for use while a mount is being actively worked on. In this case it is necessary to remove fragile/expensive equipment first.

## Servicing

The Trident GTR is essentially maintenance free. Only basic care is required. The mount can be cleaned with a microfiber cloth that is damp with soapy water.

If the mount is performing normally we recommend to leave it alone. If abnormal behavior is seen please discontinue use and contact us. Every part of the mount that might fail is designed to be replaced in seconds, the remainder of the manual is for information only, unless instructed to perform these tasks.

# Diagrams and Service Procedures

## Modders & Makers

The Trident series of mounts and open source OnStep control system attract a specific type of customer, namely those who like to get under the hood and be more hands on with their equipment.

This information is provided without any guarantee or rights implied, intended for use by people who wish to keep a mount in service that is outside of warranty, perhaps modify it further or fit some other type of OnStep control system.

## Disclaimer

Performing any of these procedures during the warranty period without express written consent from JTW Astronomy will void your warranty!

If you are experiencing technical troubles please contact us, inside or outside the warranty period we will do our utmost to assist you.

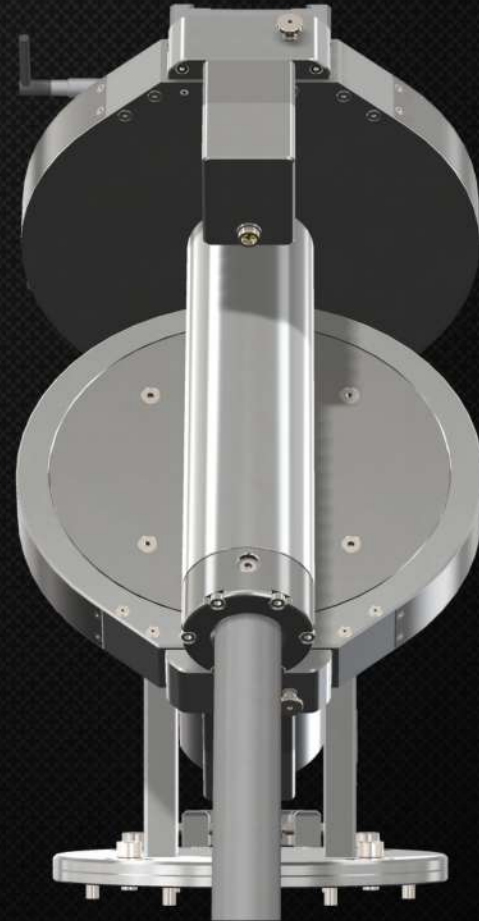
JTW Astronomy is not responsible for any direct/indirect injuries, losses, downtime or damage that arise from modification, servicing or maintenance of this equipment.

# Rain Damage

## Outdoor Storage

The Trident GTR is suitable to be stored outdoors under a waterproof cover on a pier. In this case it is very important to remove the cover regularly, especially after heavy rain, to allow the mount to air out.

The mount is constructed entirely from aerospace aluminium and stainless steel. As such it is very resistant to the elements, however this does not apply to the electronics and control system. If the mount gets wet due to some problem like a jammed ROR or leak, discontinue service and contact us.



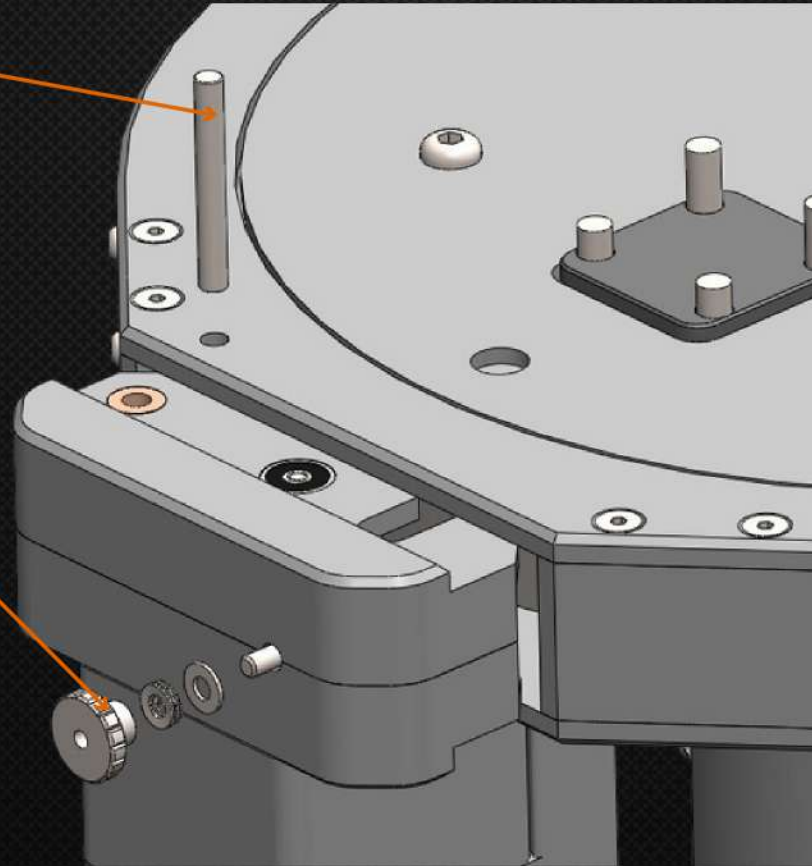
# Drive Body Removal

## 2 - Remove hinge pin

With thumbscrew and spring washers remove it is possible to tap out this pin using a punch. Take great care on reassembly. If not properly aligned it is possible to knock out the bronze bushes in the drive pin carrier assembly.

## 1 - Remove thumbscrew and spring washers

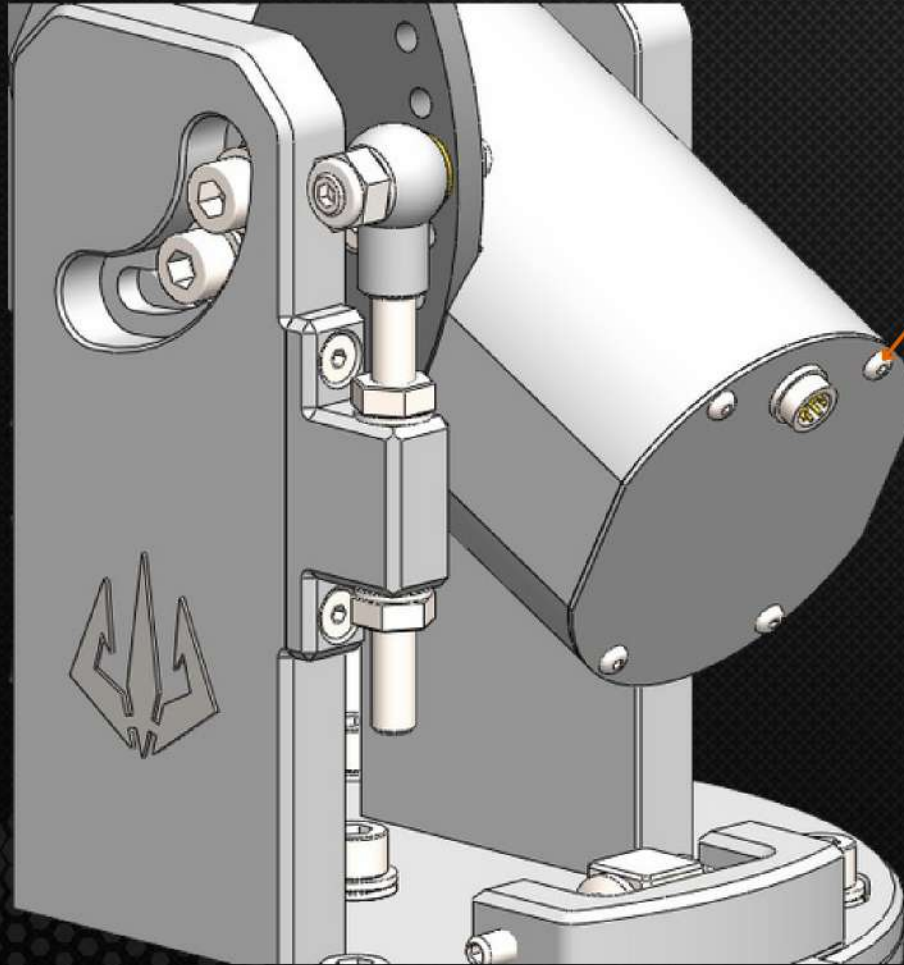
Spring washer orientation (alternating) is very important, improper reassembly will cause poor performance. Improper reassembly combined with an over-tightened clutch and large temperature changes can theoretically apply enough force to break the drive pin



Reasons to remove the drive body may include -

- Inspection of drive pin/drive wheel
- Broken drive pin
- Replacing the motor
- Replacing bearings
- Replacing PEC sensor (RA only)

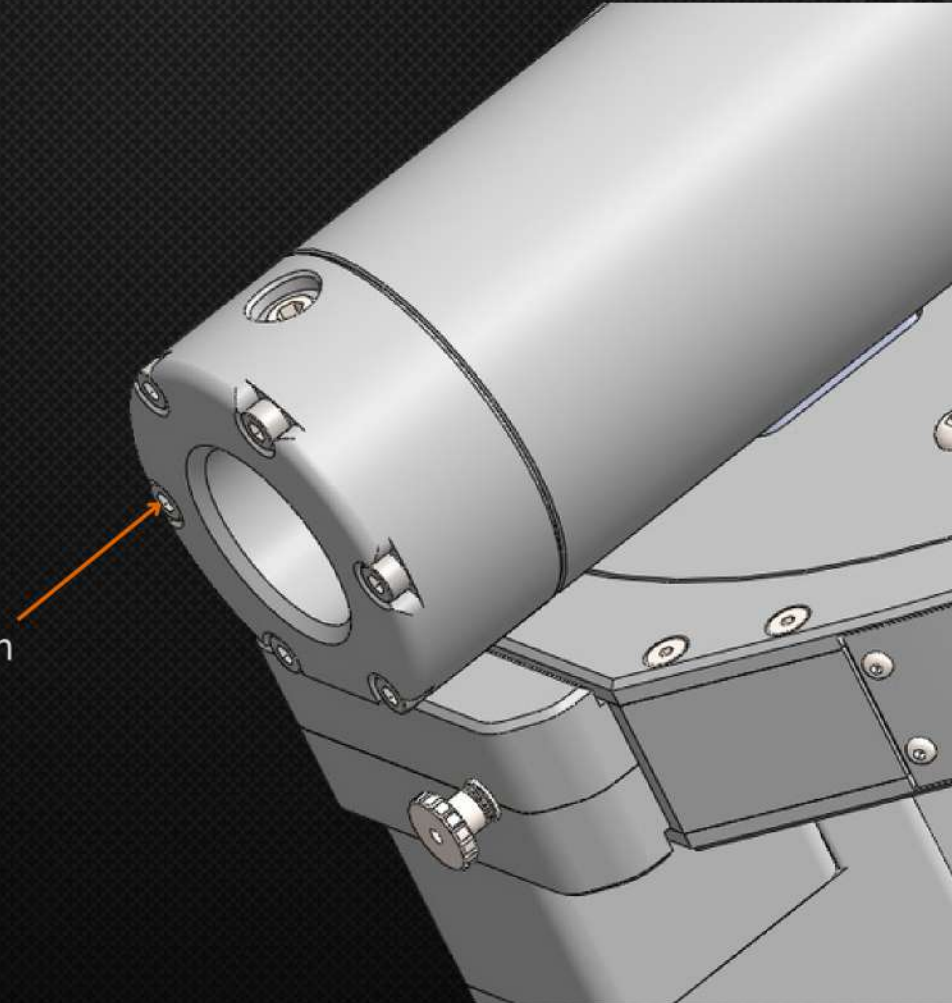
# Accessing RA Home Sensor/Encoder



Remove 4x M4 bolts to access Ra home sensor/encoder mounting position

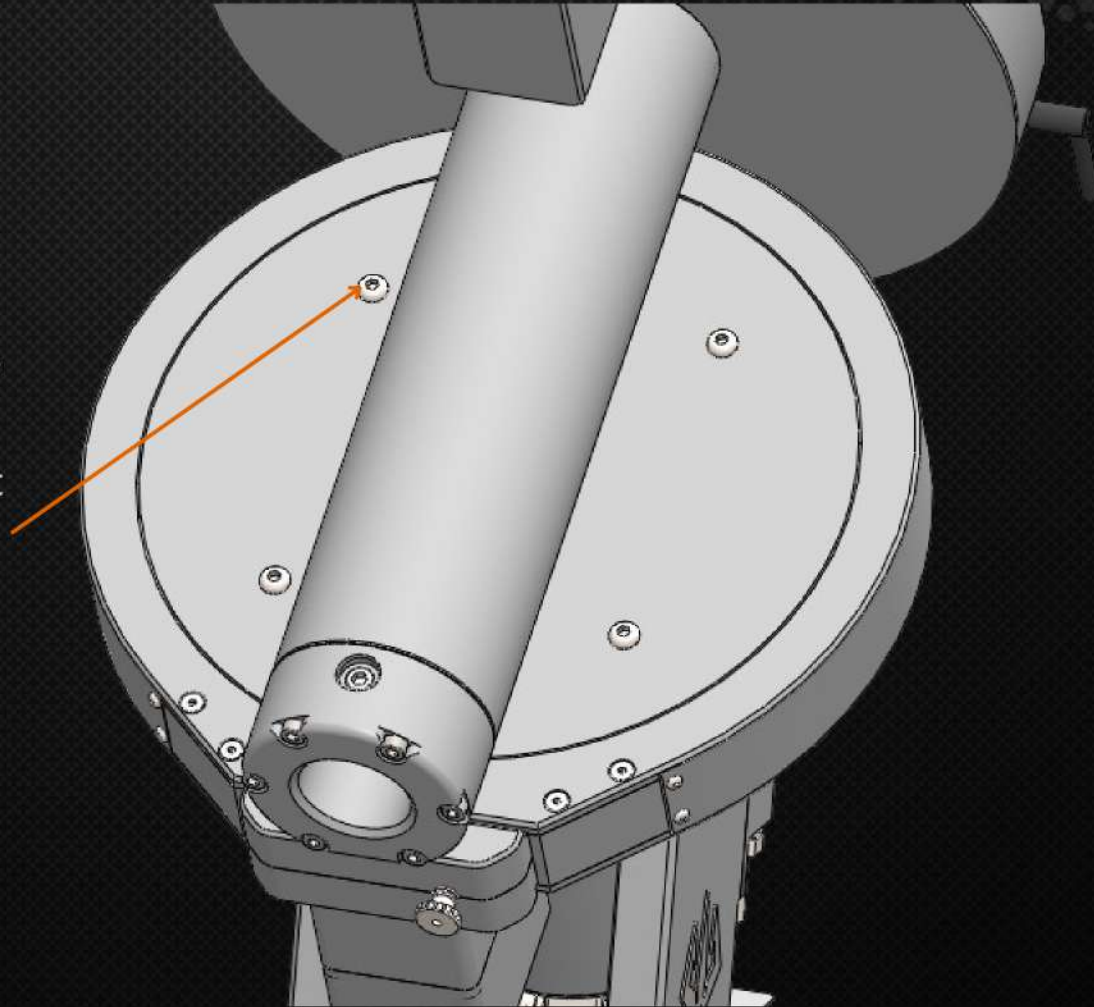
# Accessing Dec Home Sensor/Encoder

Remove 6x M5 bolts to access Dec home sensor/encoder mounting position



# Removing Dec Axis from Mount Assembly

The Dec axis is hard wired. Removal of the Dec axis assembly without first removing and desoldering the socket at the rear of the Ra axis will result in damage to the wiring. To remove the Dec axis, remove the 4x M6 bolts illustrated.





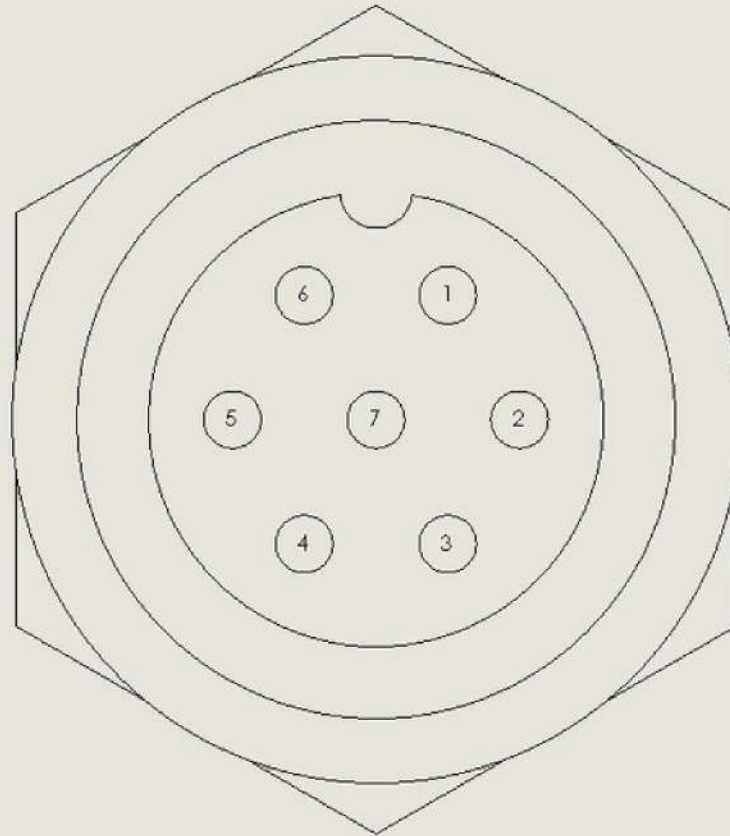
# Electrical Wiring - Motors/Sensors

RA Motor Socket - Front

Pin	Designation
1	Motor A+
2	Motor A-
3	PEC GND
4	PEC Signal
5	Motor B-
6	Motor B+
7	PEC VCC

Mount Socket - Front

Pin	Designation
1	Motor A+
2	Motor A-
3	Ra Home
4	De Home
5	Motor B-
6	Motor B+
7	GND



Plug/Socket Type  
Aviation GX12-7

View is front of socket