TEAL™

GOLDEN EAGLE SYSTEM

FIELD MAINTENANCE & SCHEDULE

FIELD REPLACEABLE ITEMS

Field-replaceable items are parts that can easily be replaced in the field without requiring special expertise or tools other than those provided in the Field Spares Kit. Repairs, upgrades, or software updates that cannot be performed in the field are beyond the scope of this manual, and doing so may void conditions and terms of the warranty.

MAINTENANCE SCHEDULE

AFTER 10 FLIGHT HOURS (OR AS NEEDED)

1. Clear and format SD Card media
2. Clean all sensors and the vehicle with a damp cloth and a can of air
3. Fully discharge all batteries and charge back to full capacity
4. Verify that the gimbal and camera connectors and securely seated
5. Update the Golden Eagle and the TAC software
6. Delete and re-download offline maps to ensure the latest versions
7. Clear flight logs from the Golden Eagle

AFTER 150 FLIGHTS (OR AS NEEDED)

1. Replace propeller assemblies
2. Replace rotor arm assemblies
3. Retire battery pack after 150 charge/discharge cycles

ROTOR ARM REPLACEMENT

Damaged or worn rotor arms require the entire assembly to be replaced but can easily be done so in the field. The arms are prewired with the motor installed, and only need to be locked into place and secured with a single Torx T8 screw per arm. The Torx T8 screwdriver is included in the Field Repair Kit.

Arms are keyed to the appropriate sockets on the airframe so that CW and CCW arms cannot be inadvertently interchanged.

REPLACEMENT INSTRUCTIONS

1. Place the drone on its back on a table or workspace where the antenna can hang off the edge to prevent being damaged.
2. Remove the single T8 Torx screw on the motor arm using a T8 Torx screwdriver.

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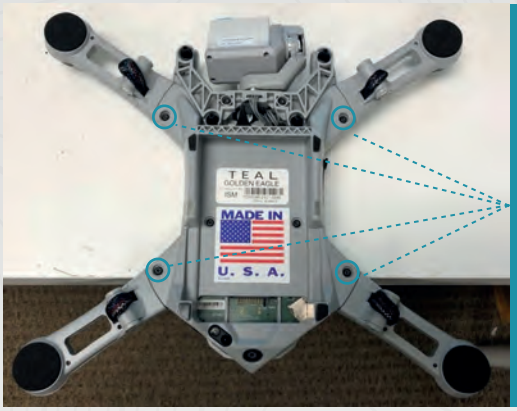
REPLACEMENT INSTRUCTIONS (CONTINUED)



Tools Needed:
One (1) T8 Torx Screwdriver

Removal:
One (1) T8 Torx Screw Per Rotor Arm

3. Set the screw aside for re-use.
4. Carefully pull the arm straight out from its socket in the drone.
5. Insert the new arm into the airframe. Push firmly until you feel the connectors "click".

> **NOTE:** **If you feel any resistance and the arm will not easily click into place, ensure that you are not attempting to insert a CW arm into a CCW position, and vice-versa.**

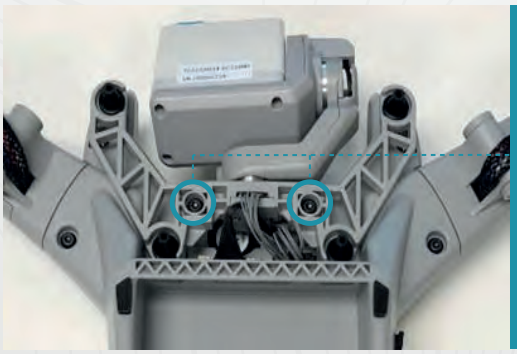
6. Use a Torx T8 screwdriver to tighten the screw to 0.6N*m (0.44 ft-lbs) and secure the arm into place.
7. Make sure that the motor functions properly before the next flight.

CAMERA & GIMBAL PAYLOAD REPLACEMENT

Both the FLIR Hadron EO/IR camera and gimbal can be replaced in the field. Use the specific tools to ensure that no components are damaged in the process. Use the following instructions to replace both parts.

REPLACEMENT INSTRUCTIONS

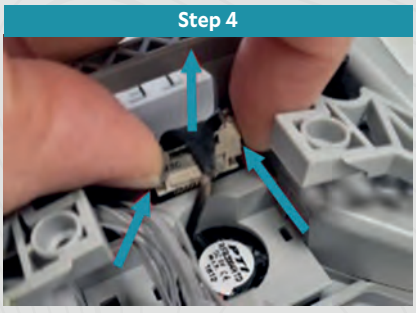
1. Place the drone on its back on a table or workspace where the antenna can hang off the edge to prevent being damaged.
2. Remove the two (2) M3 x 8mm screws on the gimbal brackets using a T8 Torx screwdriver.



Tools Needed:
One (1) T8 Torx Screwdriver

Removal:
Two (2) M3 x 8mm Screws

3. Set the screws aside for re-use.
4. Squeeze the side latches of the camera data cable connector to release the connector (as shown in the image to the right).
5. Carefully pull the connector straight up to disconnect it from its socket in the drone.



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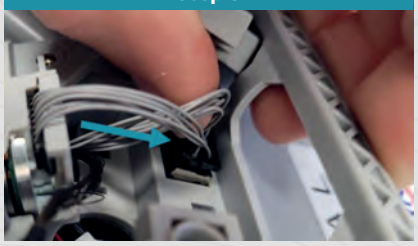
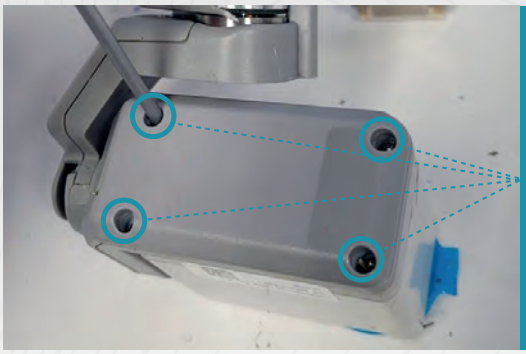
REPLACEMENT INSTRUCTIONS (CONTINUED)

6. Use your fingernail or a flathead screwdriver to press on the tab on the motor control cable connector (as shown in the image to the right).

Step 6



7. Carefully pull the connector up to disconnect it from its socket in the drone.
8. Use a T5 Torx screwdriver to remove the four (4) M1.6 x 4mm screws from the back of the Hadron camera.



Tools Needed:
One (1) T5 Torx Screwdriver

Removal:
Four (4) M1.6 x 4mm Screws

9. Set the screws aside for re-use.
10. Disconnect the Hadron camera from the gimbal by carefully pulling it away from the gimbal (as shown in the image to the right).

Step 10

CAUTION: The exposed PCB is ESD sensitive and static discharge can damage the electronics. Minimize handling of the exposed PCB.

11. Check that the gasket around the PCB on the Hadron camera is properly aligned and adjust if needed.
12. Push the Hadron camera onto the gimbal. Press firmly until you feel the connector "click" into place.
13. Use a T5 Torx screwdriver to secure the four (4) M1.6 x 4mm screws in the back of the Hadron camera.
14. Connect the camera data cable connector to the mating socket in the drone so that the side of the cable as shown in the image to the right is facing towards the front of the drone.
15. Connect the gimbal motor cable connector to the mating socket in the drone so that the tab on the connector is facing toward the front of the drone (as shown in the image to the right).
16. Align the threaded inserts on the gimbal under the holes on the gimbal brackets.
17. Place the two (2) M3 x 8mm screws into the holes on the gimbal brackets.
18. Align the gaps (as shown in the image to the right).
19. Use a Torx T8 screwdriver to tighten the screws to 0.6 N*m (0.44 ft-lbs).

Step 14

Step 15

Step 18

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SYSTEM CHECKOUT

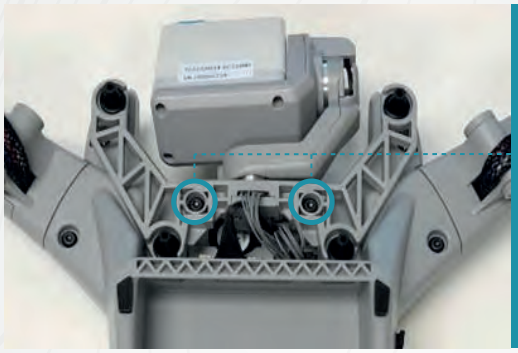
- ✓ Manually move the gimbal pitch and roll axis and check for binding or obstructions.
- ✓ Ensure that no wires are pinched.
- ✓ Power on the system and confirm the gimbal properly functions and is properly oriented.

PAYLOAD MOUNTING BRACKET REPLACEMENT

The gimbal brackets can be easily replaced in the field; however, the black silicone gimbal dampers cannot. If the dampers need to be replaced or serviced, please contact Teal Drone Customer Support or an authorized service center.

REPLACEMENT INSTRUCTIONS

1. Place the drone on its back on a table or workspace where the antenna can hang off the edge to prevent being damaged.
2. Make sure that the camera data cable and gimbal motor cable are not strained in any way.
3. Remove the two (2) M3 x 8mm screws on the gimbal brackets using a T8 Torx screwdriver.

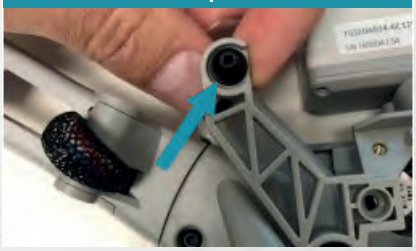


Tools Needed:
One (1) T8 Torx Screwdriver

Removal:
Two (2) M3 x 8mm Screws

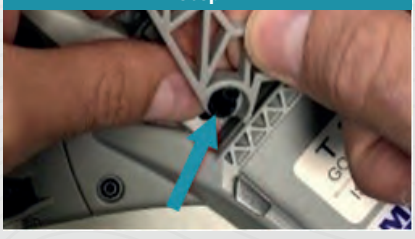
4. Set the screws aside for re-use.
5. Use your fingers or plastic pliers that will not damage the silicone damper to hold the body of one of the front dampers in place (as shown in the image to the right).

Step 5



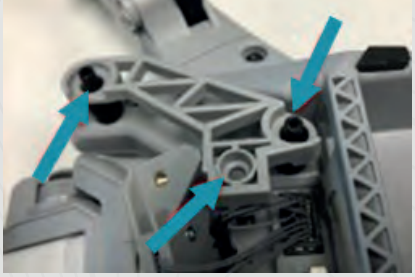
6. Firmly, but slowly, pull the bracket away from the damper body until the end of the damper pulls through the hole.
7. Follow the same directions to remove the rear damper (as shown in the image to the right).

Step 7



8. Remove the remaining dampers.
9. Set the new bracket so that the recesses for the screw head and dampers are visible and away from the body of the drone (as shown in the image to the right).

Step 9



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REPLACEMENT INSTRUCTIONS (CONTINUED)

10. Hold the bracket in place and pull the end of the silicone damper through the hole in the bracket (as shown in the image to the right).
11. Make sure that the damper is properly seated in the bracket.
12. Repeat this procedure for the remaining dampers.
13. Align the threaded inserts on the gimbal under the holes on the gimbal brackets.
14. Place the two (2) M3 x 8mm screws into the holes on the gimbal brackets.
15. Align the gaps (as shown in the image to the right).
16. Use a Torx T8 screwdriver to tighten the screws to 0.6 N*m (0.44 ft-lbs).

Step 10

Step 15

SYSTEM CHECKOUT

- ✓ Manually move the gimbal pitch and roll axis and check for binding or obstructions.
- ✓ Ensure that no wires are pinched.
- ✓ Power on the system and confirm the gimbal properly functions and is properly oriented.

PROPELLER REPLACEMENT

Individual damaged or worn propellers require the entire 2-prop assembly to be replaced, but are easily installed, removed, or replaced with a simple push-and-twist method that requires no tools or hardware.

The propeller assemblies are keyed so that CCW and CW props cannot be inadvertently mounted to the wrong hub.

The two CW prop assemblies have black rivets that secure their blades, and the two CW propeller motors have a black ring below the spring.

The two CCW prop assemblies have silver rivets that secure their blades, and the two CCW propeller motors have a silver ring below the spring.

NOTE: CW prop assemblies lock into place by turning it in a CCW direction, and CCW prop assemblies lock into place by turning it in a CW direction.

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PROPELLER REMOVAL & INSTALLATION

PROPELLER REMOVAL

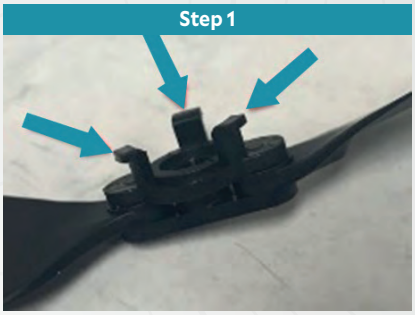
1. To remove a prop assembly, push down and rotate it a quarter turn until it hits its mechanical limit. Allow the spring to push the hub up, then pull the assembly off the shaft.

PROPELLER INSTALLATION

1. To attach a prop assembly to a motor, line up and insert the three (3) bent legs on the underside of the prop assembly into the three (3) slots on the motor (as shown in the image to the right).

2. Push down to compress the spring on the shaft, then rotate a quarter turn until it hits its mechanical limit. Allow the spring to push the hub up into its locked position.

3. Verify that the newly installed propellers spin feely.



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