

# SHOTOVER M2 Multi-Sensor Purge Kit Instructions

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### Introduction

The M2 gimbal features two desiccant assemblies that ensure optimal performance by maintaining a dry internal environment and regulating pressure. The desiccant assemblies can be serviced by the parts and tools included in the Purge Kit.

#### These assemblies include:

##### Breather Valve:

Regulates internal pressure while filtering moisture and particulates from incoming air, protecting internal components.

##### Humidity Indicator:

Monitors relative humidity inside the gimbal turret, signaling when maintenance is required to sustain performance.

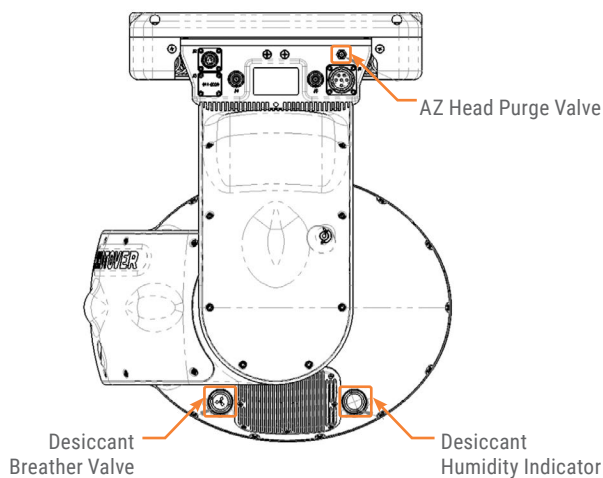


Fig1: Rear view displaying desiccant assemblies and purge valve

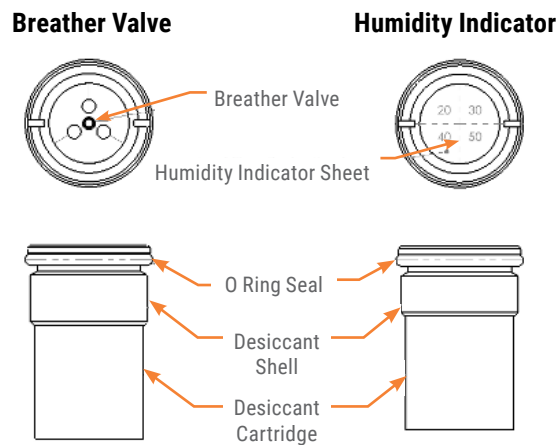


Fig2: Desiccant assemblies

Maintaining the desiccant assemblies is vital for the gimbal's optimal performance. The maintenance frequency varies based on environmental and operational factors, including:

- Humidity levels in both operating and storage environments
- Altitude changes during flights
- Instances where the gimbal housing is opened
- Regularity of gimbal use



*It is recommended to regularly purge the system and perform desiccant assembly maintenance before storing the gimbal for extended periods.*

### Desiccant Inspection

The humidity indicator is divided into four moisture-sensitive quadrants, labeled 20%, 30%, 40%, and 50%. These quadrants change color from blue to pink (lavender) as the relative humidity inside the gimbal increases.

#### Purge Procedure Trigger:

If quadrant 20 turns pink (lavender), this indicates elevated humidity levels, and the gimbal must be purged. Refer to the **Purging the Gimbal** section for detailed instructions.



*The 20% lavender quadrant may remain lavender.*

#### Indicator and Breather Valve Replacement Trigger:

If quadrants 20%, 30%, and 40% all turn pink (lavender), both the humidity indicator and the breather valve must be replaced. Follow the steps below to either replace the entire humidity indicator assembly or swap out the desiccant cartridge while reusing the existing desiccant shell.

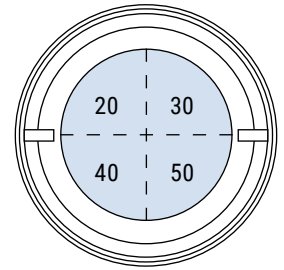
### Desiccant Assembly Replacement Procedure

The humidity indicator and breather valve can be removed and assembled using the AGM Installation Driver (000-4177 / 000-4118) and a ¼-inch Allen key or ½-inch socket. The driver tool is included in the desiccant kit (011-0205). When installing the new desiccant, apply Vibratite VC3 to the thread, dielectric grease to the O-ring, and torque to 3Nm (26.5 in-lbs).

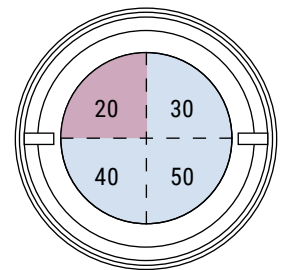
1. Ensure the gimbal is in the STOW position, and power/steering controls are disabled.
2. Use the AGM Installation Driver to remove the expired desiccant cartridge by turning it counterclockwise.
3. Clean any Vibratite residue from the desiccant thread on the gimbal.
4. Inspect the desiccant thread and O-ring for wear or defects.
5. Lightly apply dielectric grease to the O-ring on the new desiccant assembly.
6. Apply a single drop of Vibratite to the desiccant assembly thread IAW manufacturers instructions.
7. Install the new desiccant assembly using the AGM Installation Driver and torque wrench, tightening to 3Nm (26.5 in-lbs).
8. Repeat steps 1–7 for the breather valve.
9. Purge the gimbal following the instructions in **Purge the Gimbal** section below.



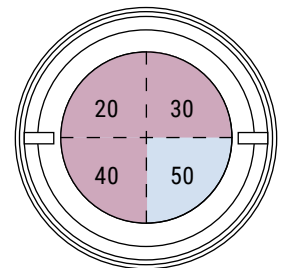
*For detailed instructions, refer to user manual.*



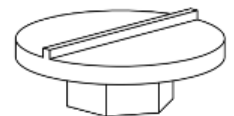
*Fig3: All quadrants blue – Gimbal operational*



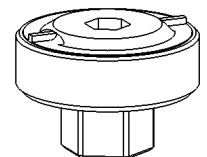
*Fig4: 20% quadrant lavender – Purge gimbal*



*Fig5: 40% quadrant lavender – Replace both desiccants*



*Fig6: 000-4118 – AGM Installation Driver*



*Fig7: 000-4177 – AGM Installation Driver*

### Desiccant Cartridges Replacement Procedure

The desiccant cartridges thread into the rear of the desiccant shell and can be replaced individually, eliminating the need to replace the entire assembly. Before replacing, review the desiccant MSDS for proper handling and disposal procedures. Always wear appropriate PPE (gloves, eye protection, and a mask in non-ventilated areas) when handling desiccant.

1. Remove the expired cartridge by hand or use pliers if needed, gripping near the thread to prevent damage.
2. Clean the desiccant shell and inspect the O-ring, removing any Vibratite debris.
3. Refer to the MSDS for disposal instructions and decide whether to keep or discard the expired cartridge.
4. Take the new desiccant cartridge from its sealed bag.
5. Lightly apply dielectric grease to the O-ring on the desiccant assembly.
6. Apply Vibratite to the cartridge thread and hand-tighten it into the shell. Avoid over-tightening.
7. Once replaced, follow the desiccant assembly replacement procedure to reinstall the cartridge into the gimbal.

### Replacement Desiccant Parts

| Item                                     | SHOTOVER Part # | Manufacturer Part # | Description                                                       |
|------------------------------------------|-----------------|---------------------|-------------------------------------------------------------------|
| Humidity Indicator                       | 002-62763       | TA352-MS1-2345P     | AGM Container – TA352-MS1-2345P Indicating Desiccator             |
| Breather Valve                           | 002-62764       | 658590              | AGM Container – Custom Valve 658590                               |
| Desiccant Cartridge - Humidity Indicator | 002-63083       | TA352-RC-MS1        | Desiccant Cartridge for TA352-MS1-2345P                           |
| Desiccant Cartridge - Breather Valve     | 002-63084       | 658590-RC           | Desiccant Cartridge for 658590                                    |
| Humidity Indicator Card                  | 002-63297       | TA352-HC-2345P      | AGM Container - TA356-HC-2345P humidity indicator pie sector disc |

### Tools for Replacement & Installation of Desiccant Parts

| Item                    | SHOTOVER Part #     | Manufacturer Part #        | Description                                                                      |
|-------------------------|---------------------|----------------------------|----------------------------------------------------------------------------------|
| AGM Installation Driver | 000-4177 / 000-4118 | N/A                        | Tool for removing and installing desiccant. AGM Container - 348100               |
| Vibratite VC-3          | 002-6511            | Vibra-Tite VC-3 Threadmate | Low flake thread locker for applying on desiccant threads prior to installation. |
| Di-Electric Grease      | 002-63420           | RUBGR0001                  | Clay based O-ring grease for desiccant O-ring seal                               |

### Purging the Gimbal

Regular gimbal purging is essential to prevent moisture accumulation. Purging frequency depends on environmental conditions.

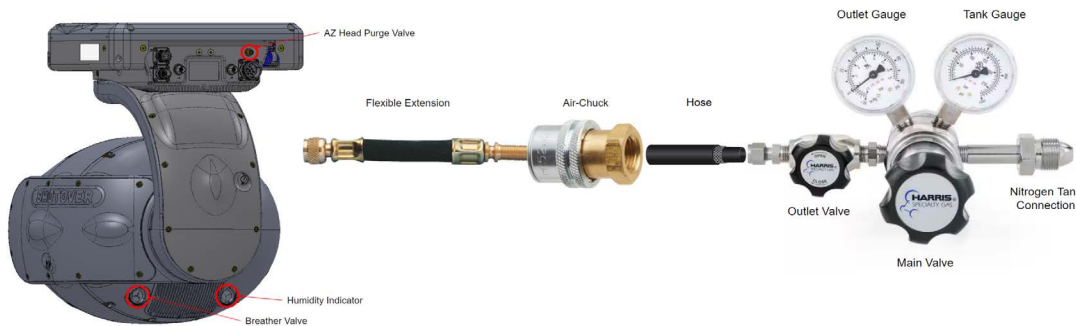


Fig8: Purging the gimbal

#### Gas Cylinder Connectors

US – CGA580

NZ – TYPE 50

EU – DIN 477



*Always wear appropriate PPE (gloves, eye protection, hearing protection and safety footwear) when purging the gimbal.*

#### Steps:

1. Ensure the gimbal is in the STOW position.
2. Disable the power and steering control to the gimbal.
3. Remove the regulator from its case and close both the outlet and main valves as indicated.
4. Secure the regulator to the nitrogen tank using a spanner.
5. Fully open the nitrogen tank valve and confirm the outlet pressure gauge reads 0 PSI.
6. Inspect the flexible extension for debris at both ends.
7. Remove the cap from the purge valve on the AZ head, ensuring the valve and thread are clean.
8. Attach the flexible extension to the purge valve on the AZ head.
9. Connect the air chuck to the flexible extension.
10. Turn the regulator main valve clockwise until the outlet gauge measures 5 PSI.
11. Open the outlet valve to start the nitrogen flow. Adjust the regulator as needed to maintain 5 PSI.
12. Ensure air is escaping from the breather valve on the rear payload cover.
13. Purge the system for at least 30 minutes, adjusting based on environmental conditions and system familiarity.
14. Close the nitrogen tank valve.
15. Close the regulator main valve.
16. Close the outlet valve.
17. Disconnect the air chuck from the flexible extension.
18. Detach the flexible extension from the AZ head and replace the cap on the purge valve.
19. Open the regulator valve to release internal pressure.
20. The gimbal is now purged and ready for use.