![AGM logo] **AGM GLOBAL VISION**

PYTHON

THERMAL IMAGING WEAPON SIGHT

If you have questions that are not covered in this manual, or need service, contact AGM Global Vision customer support for additional information prior to returning a product.

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LIST OF CONTENTS

SAFETY SUMMARY

- Read and follow all instructions
- Read all warnings
- Only use the attachments/accessories specified by the manufacturer
- All service must be provided by the manufacturer

⚠ **WARNING:**

This product contains natural rubber latex, which may cause allergic reactions! The FDA has reported an increase in the number of deaths associated with sensitivity to natural latex proteins. If you are allergic to latex, learn which products contain it and strictly avoid exposure to those products.

⚠ **WARNING:**

Always make sure your firearm is unloaded before you place the scope on the firearm. Reconfirm that the chamber is empty if you stop the procedure then resume later. Safe handling rules should be followed at all times.

⚠ **WARNING:**

If a scope is mounted too far to the rear, the eyepiece can injure the shooter's brow. Shooting at an uphill angle also increases this hazard because it shortens the distance between the brow and the rear of the scope. For this reason, AGM scopes are engineered to provide generous eye relief. Therefore, when mounting your scope, we recommend positioning it as far forward in the mounts as possible to take full advantage of this generous eye relief. With hard-recoiling rifles, serious injury or even death can result from eyepiece impact with the shooter during the recoil process when discharging the firearm. Be certain that your installation provides sufficient eye relief for the recoil generated by your rifle before shooting the firearm.

NOTE: Give special attention to this warning when shooting uphill and/or from a prone position. These shooting conditions can dramatically reduce eye relief. PLEASE maintain maximum eye relief when shooting heavy recoiling and/or magnum firearms. THE USER ASSUMES ALL RESPONSIBILITY AND LIABILITY FOR HAVING THE AGM RIFLESCOPE PROPERLY MOUNTED TO A FIREARM AND USING THE AGM RIFLESCOPE PROPERLY. ALWAYS CHECK THE CONDITION OF YOUR MOUNTING SYSTEM PRIOR TO USING YOUR FIREARM.

CAUTION:

- **Do not dismantle the equipment.**
- **Keep the equipment clean. Protect it from moisture, dramatic temperature drops, and electrical shocks.**
- **DO NOT force the equipment controls past their stopping points.**
- **DO NOT leave the equipment activated during breaks in operation.**
- **DO NOT store the equipment with the batteries installed.**
- **Thoroughly clean and dry each item before placing them into the storage case.**

CAUTION:

To prevent thermal damage to the equipment, never point it, either on or off, directly at the sun or any other source of high intensity light that the unprotected human eye cannot tolerate (such as a welding arc). To prevent inadvertent exposure to these types of sources, never leave the equipment with the objective lens cap off.

NOTES:

- Python must be zeroed each time it is mounted to a **new** weapon.
- To avoid losing unsaved data, DO NOT remove the batteries or disconnect the external power source while the Python is on.
- Inadvertent sun damage is not considered a defect in material or workmanship, and is therefore not covered in the product warranty.

1 GENERAL INFORMATION

1.1 SYSTEM DESCRIPTION

The Python consists of two primary parts: a thermal imaging aiming device and a mount. The equipment comes as shown in Figure 1-1, with the mount secured to the body of the device. The figure represents three versions of the device equipped with objective lenses with 25mm, 50mm, and 75mm focal length.
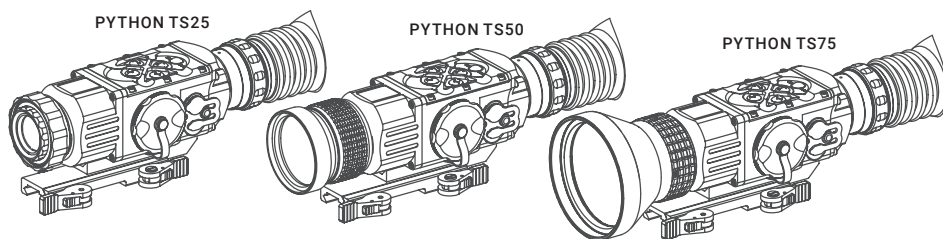
PYTHON TS25   PYTHON TS50   PYTHON TS75

FIGURE 1-1. PYTHON THERMAL IMAGING WEAPON SIGHTS APPEARANCE

The Python is a thermosensitive device equipped with an aiming reticle. The Python senses the differences in heat emitted by objects in its field of view and converts the received temperature pattern into a viewable image that represents the scene in contrasting black and white or color patterns, depending on the user's selected image palette.

NOTE:

It is important that the Python sensor receive sufficient thermal contrast between the target and background area, or between the different parts of a target. For example, there would be a vast temperature contrast between the snow and any heat target (such as an animal), making it exceptionally easy to distinguish the target.

The main optical-electronic components of the Python include: an objective Germanium thermal lens, two eyepieces, a thermal-imaging camera, a display, a control card, and a button control panel.

The Python is equipped with manual eyepiece and objective lens focusing.

To accommodate individual user needs, the Python has a variety of digitally controlled options such as:

- Display brightness
- Digital zoom
- Reticle color selection
- Reticle type selection

- Reticle ON/OFF selection
- Palette color selection
- User-Controlled Manual Non-Uniformity Correction/Flat-Field Correction (UCMNUC/FFC)
- Boresight adjustments
- Imaging enhancements
- Custom settings

All Python series scopes are based on FLIR Tau 2 cameras that allow for improvements in overall image quality in a wide range of dynamic thermal environments. The Python has employed special user-adjustable imaging tools that include:

- **Active Contrast Enhancement (ACE)** – a digital "Contrast" correction that allows for smart scene optimization based on dynamic adjustments, where a variety of contrast levels occur depending on relative scene temperature.

- **Second Generation Digital Detail Enhancement (DDE)** – a "Sharpness" correction that digitally enhances the picture, significantly sharpens edges, and further reduces image noise.

- **Smart Scene Optimization (SSO)** – a fine-tuning computational correction that significantly improves overall visual acuity for targets that have thermal signatures similar to the surrounding background.

- **Automatic Gain Control (AGC)** – a "Gain" correction that used to automatically adjust the gain to an appropriate range, the weaker the image signal, the stronger the gain.

- **User-Controlled Manual Non-Uniformity Correction/ Flat-Field Correction (UCMNUC/ FFC).** There is a mechanical shutter between the camera sensor and the lens. This shutter is used to perform a non-uniformity correction (NUC), also known as flat-field correction (FFC). During FFC, the shutter presents a uniform temperature source to each detector element in the array. While imaging the flat-field source, the camera updates the offset correction coefficients, resulting in a more uniform image after the process is complete. All Python models allow for user to manually trigger or interrupt scheduled UCMNUC/ FFC function.

- **Silent Shutterless NUC™ (SSN)** – In addition to User-Controlled Manual NUC/ FFC, all Python models employ a digital, supplemental, non-mechanical flat-field correction that extends periods between mechanical shutter events and further reduces image noise. SSN is an always ON enhancement.

Information on the current operating state (battery status, active function, the reticle running coordinate in the display etc.) is continuously displayed, making field operation of the Python simple and convenient.

Manufactured for exceptional durability, the Python has a lightweight and robust aluminum body. A side Picatinny/Weaver rail allows for the installation of an optional HD Video Recorder, WiFi Attachment, Extended Battery Pack, or other equipment.

A standard NTSC/PAL video input/output connector enables an external video display (monitor, TV) or video recorder to be connected to the Python.

The Python is powered by two CR123A (2×3V) batteries. An external 6VDC/600mA power source and USB power bank can also be connected to the Python.

The quick-release mount of the Python fits any Picatinny, MIL-STD-1913, or Weaver weapon rail. The mount's lever-cam clamping device ensures quick, easy and reliable mounting and removal.

The Python with 50mm lens is shown in Figure 1-2. The ITEM column of Table 1-1 indicates the number used to identify items in Figure 1-2.

NOTE:

Here and below, the model Python with 50mm Lens is used for the example.
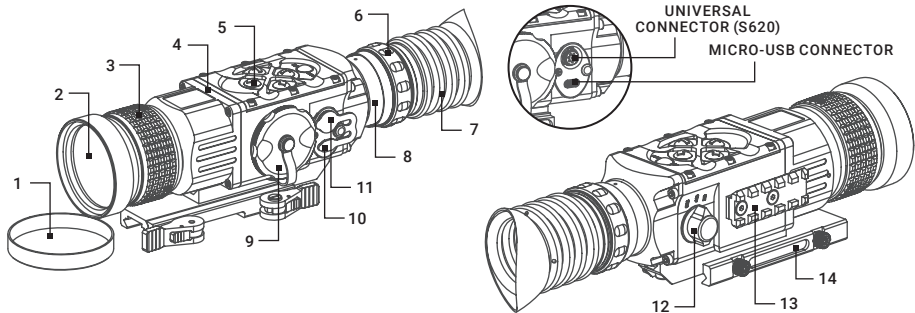
FIGURE 1-2. PYTHON. SYSTEM DESCRIPTION

TABLE 1-1. SYSTEM DESCRIPTION

ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	Objective Lens Cap	8	Eyepiece
2	Objective Lens	9	Battery Cap
3	Objective Focus Ring	10	Micro-USB Connector with a Cap
4	Body	11	Universal Connector with a Cap
5	Button Control Panel	12	Operation Switch
6	Eyepiece Focus Ring	13	Side Picatinny/Weaver Rail
7	Eyecup	14	Mount

1.2   STANDARD COMPONENTS

The Python standard components are shown in Figure 1-3 and listed in Table 1-2.
The ITEM column indicates the number used to identify items in Figure 1-3.

FIGURE 1-3. STANDARD COMPONENTS

AGM Global Vision

TABLE 1-2. STANDARD COMPONENTS

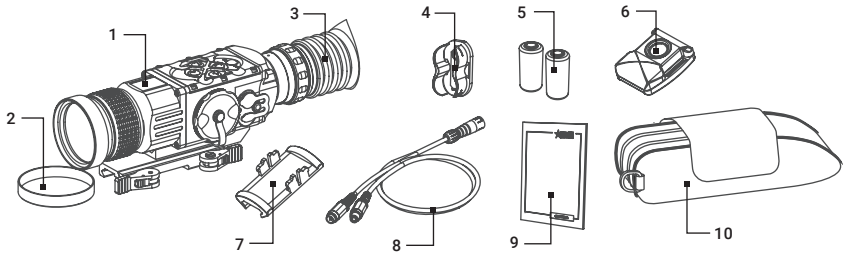| ITEM	DESCRIPTION	QUANTITY
1	Python Thermal Imaging Weapon Sight	1
2	Objective Lens Cap	1
3	Eyecup	1
4	Battery Cassette	2
5	CR123A Lithium Battery	2
6	Wireless Remote Control	1
7	Picatinny Adapter for Wireless Remote Control	1
8	Video Cable	1
9	Operation and Maintenance Manual	1
10	Carrying Case	1

1.3   OPTIONAL EQUIPMENT

Optional items are shown in Figure 2-4 and listed in Table 1-3.
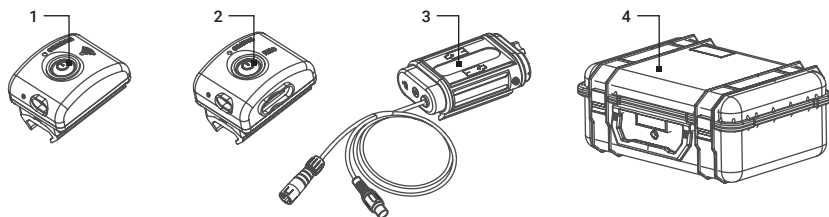
FIGURE 2-4. OPTIONAL EQUIPMENT

The ITEM column indicates the number used to identify items in Figure 2-4.
The PART NO. column indicates the primary number used by the manufacturer, to identify an item.

TABLE 1-3. OPTIONAL EQUIPMENT

ITEM	DESCRIPTION	PART NO.
1	AGM WiFi Attachment	6305WIF1
2	AGM HD Recorder	6305HDR1
3	AGM Extended Battery Pack	6308EXB1
4	Hard Case for Storage/Transportation	6610HCS1

1.4   KEY FEATURES

- Multiple versions with optical magnifications ranging from 2x to 5x
- High-performance thermal imaging camera
- Lightweight and robust design
- Easy to operate
- Manually adjustable eyepiece and objective lens
- Real-time display
- Digitally controlled features:
  - Palette
  - Reticle
  - Boresight
  - Enhancement
  - Settings
  - Display Brightness
  - Reticle Color
  - Electronic Magnification
  - User-Controlled Manual Non-Uniformity Correction/ Flat-Field Correction (UCMNUC/FFC)
- Current operational state information display (battery status, active profile, palette setting)
- Wireless remote control
- Analog video input and output (NTSC/PAL)
- Powered by two standard CR123A batteries
- Power input capability
- Digital HD video recorder (optional)
- External Wi-Fi module (optional)
- Fits any Picatinny, MIL-STD-1913, and Weaver rail with an adjustable quick-release mount
- Serviceability under severe conditions
- Filled with dry nitrogen to prevent internal fogging
- Waterproof
- Limited 3-year warranty

2   OPERATING INSTRUCTIONS

2.1   INSTALLATION AND MOUNTING

2.1.1   BATTERY INSTALLATION

CAUTION:

Verify that the equipment is OFF before installing the batteries.

To install two CR123A batteries (refer to Figure 2-1):

1. Unscrew the battery cap (A).

2. Remove the battery cassette (B).

3. Insert the batteries (C) into the cassette. Align the polarity symbols on the batteries with the polarity symbols on the cassette.

4. Insert the cassette with installed batteries.
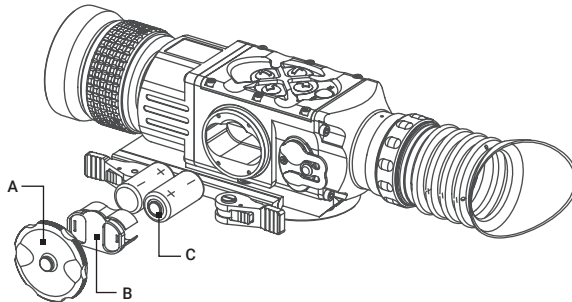
5. Replace the battery cap.

FIGURE 2-1. BATTERY INSTALLATION

2.1.2   INSTALLING THE PYTHON ON A PICATINNY/WEAVER RAIL

⚠️ **WARNING:**

Always make sure your firearm is unloaded before you place the scope on the firearm. Reconfirm that the chamber is empty if you stop the procedure then resume later. Safe firearms handling rules should be followed at all times.

The Python comes fully-assembled with a Picatinny/Weaver mount (Figure 2-2).

The mount (A) is attached to the scope seating rail (C) with two M5×8 flathead socket cap screws (B).

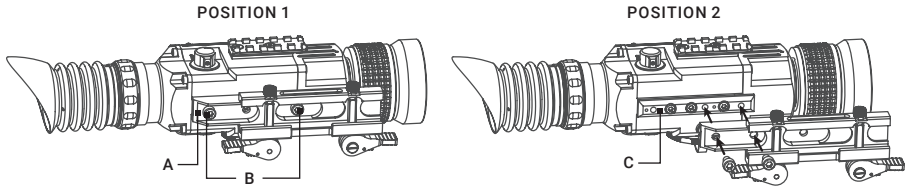POSITION 1   POSITION 2

FIGURE 2-2. MOUNT ASSEMBLING

To install the Python on a Picatinny/ Weaver rail, perform the following:

1. Unlock the clamping device of the scope mount by pushing down on the lever holders (A, see Figure 2-3) and unlocking the levers (B).
2. Install the scope on the Picatinny/ Weaver rail so that the stops (C, see Figure 2-3) slides into the transverse slots on the rail.
3. Affix the scope to the rail by locking the levers (B, Figure 2-3).
4. Verify that the clamping device is firmly holding the Python. If necessary, adjust the clamping device's lever-cam locks as detailed in Part 2.1.3 (Clamping Device Adjustment).

LOCKED   UNLOCK   UNDERSIDE
POSITION   POSITION   VIEW
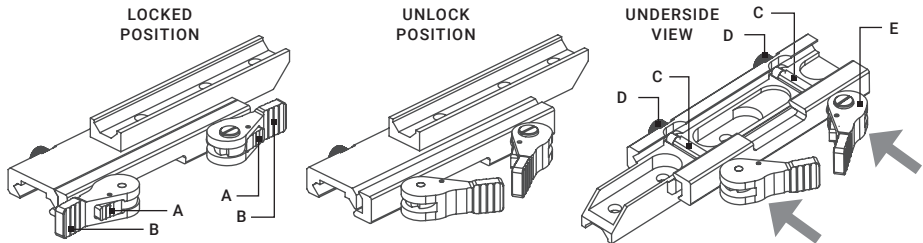
FIGURE 2-3. MOUNT

To provide you with greater flexibility in mounting Python weapon sight on the weapon, the dual lever mount can be installed in two different positions. On the bottom of the scope body there are two pairs of threaded mounting holes in the seating rail. You can shift the mounting position of your Python by an extra 1.5 inches backwards.

To change the position of Python mount, please follow the instructions below:

1. Remove the two screws (B, Figure 2-2) that attach the mount (A, Figure 2-2) to the seating rail (C, Figure 2-2).
2. Remove the mount.
3. Change the position of the mount.
4. Install the two screws into the mount and tight up the screws.

2.1.3   CLAMPING DEVICE ADJUSTMENT

To adjust the mount's clamping device, do the following:

1. Remove the Python from the weapon.
2. With the clamping device unlocked (as shown in Figure 2-3), push the cam (E) towards the arrow, which will cause the nut (D) to slide out of its hole.
3. To tighten/ loosen the clamping device, push down on the cam (E) and turn the nut (D) CW/ CCW respectively, in one-two increments (see note below). Much like when the cam (E) is released, backward-moving springs will cause the nut (D) to slide back into its hole.

NOTE:

The eight-sided nuts of the mount lever-cam locks will only fit into their holes if turned in one of the discrete positions, using increments equal to 360°/8.

4. Verify that the adjusted lever-cam lock securely holds the weapon mounting rail.
5. Repeat the procedure to adjust the clamping device's second lever-cam lock.

2.1.4   FASTENING THE WIRELESS REMOTE CONTROL TO A WEAPON

Using the supplied Velcro® tape (A, Figure 2-4), fasten the remote control (B) to your weapon in an easily accessible place (e.g., on the front of the rifle stock).

If your rifle has a Picatinny or Weaver rail on the front end, you can use the Picatinny adaptor for the wireless remote (C). Install the adaptor onto the rail (D). Insert the remote control unit into the adapter.
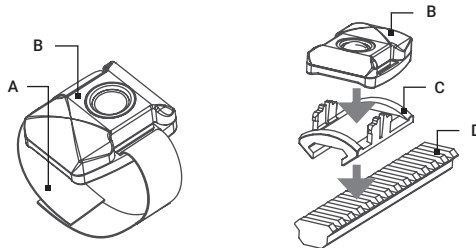

FIGURE 2-4. WIRELESS REMOTE CONTROL

2.1.5   INSTALLING ADDITIONAL EQUIPMENT

Use the side Picatinny/Weaver rail to install any additional equipment, such as the HD Video Recorder, WiFi Attachment, or the Extended Battery Pack.
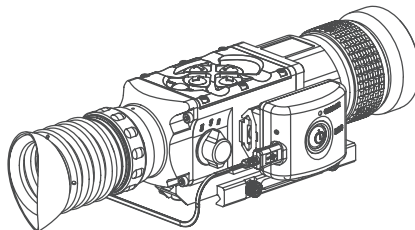
FIGURE 2-5. HD RECORDER INSTALLATION

2.1.6 CONNECTING AN ADDITIONAL EQUIPMENT

CAUTION:

Turn off the Python before you begin connecting/disconnecting any external equipment and before removing the batteries.

Remove the connector protective cap (see Figure 1-2).

Connect a cable of the external 5V battery bank to the Python Micro-USB connector.

Connect a cable of HD Video Recorder, WiFi Attachment, or the Extended Battery Pack to the Python S620 universal connector.

Use the plug A (Figure 2-6) of a video cable to connect an external video recorder/monitor/TV to the Python. Connect the plug C of a video cable to the Python S620 universal connector.

Use the plug B of a video cable to connect an external power source (6 VDC / 600 mA) to the Python. Connect the plug C of a video cable to the Python S620 universal connector.

FIGURE 2-6. VIDEO CABLE

NOTE:

The external power supply must have a standard OD double-pole socket with a positive center contact.

CAUTION:

After removing the cable, replace the protective cap over the connector.

2.2 CONTROLS AND DISPLAY INDICATIONS

2.2.1 CONTROLS

CAUTION:

DO NOT force the equipment controls past their stopping points.

The Python controls are shown in Figures 2-7 and 2-8 and are defined in Tables 2-1 and 2-2. The ITEM NO. columns of the tables indicate the numbers used to identify items in the figures.
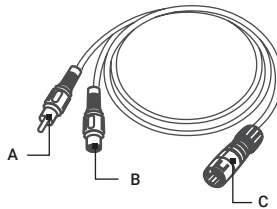
NOTE:

Various display symbols indicating the current operating state of the Python can be displayed permanently, may appear momentarily, or can be set to appear only when a certain function is activated.
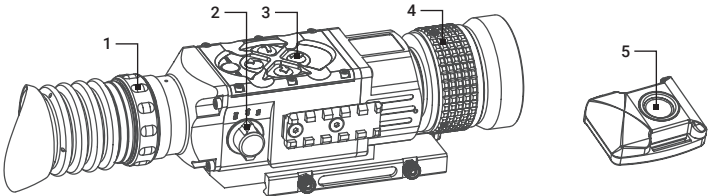
FIGURE 2-7. CONTROLS

TABLE 2-1. CONTROLS AND INDICATORS

ITEM	CONTROL/INDICATOR	FUNCTION
1	Eyepiece Focus Ring	Adjusts the eyepiece diopter.
2	Operation Switch	Activates the Python when turned to ON.
		Activates Standby mode when turned to STB.
		Deactivates the Python when turned to OFF.
3	Control Panel Buttons	Configures operational settings. See Table 3-2 for button functions.
4	Objective Focus Ring	Focuses the objective lens. Adjusts for sharpest view of the scene.
5	Remote Control Button	Activates/deactivates the Python in standby mode. To turn the unit on, press button once, to turn it off – press button again. To operate the device in short-time activation mode, press and hold the remote control button down for 1.5+ seconds. Release the remote control button to deactivate the device.
—	Battery Status Indicator (a battery icon in the top right hand part of the display)	The color fill (green/yellow/red) bar in the battery icon indicates the current power level of the internal battery, or remaining battery life.
		The totally shaded battery icon indicates the fully charged battery.
		The flashing transparent battery icon indicates a low battery.

The Python button control panel is shown in Figures 2-8.

Table 2-2 contains the button functions and their brief descriptions. The ITEM NO. column of the table indicates the number used to identify buttons in Figure 2-8.

NOTE:

Each button is responsible for some functions selected by briefly pushing or holding down the button, or using the button in combination with a second one (as described in Table 2-2). Pushing a button for 1.5+ second is considered "holding down."
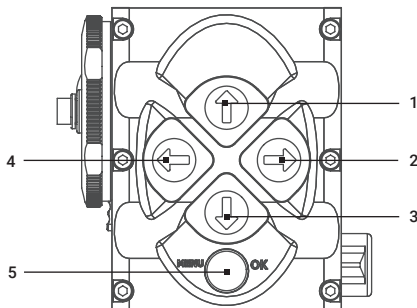
FIGURE 2-8. BUTTON CONTROL PANEL

TABLE 2-2. BUTTON CONTROLS

ITEM	FUNCTION	DESCRIPTION
1, 3	Display Brightness Control	Push the button (1) to increase the screen brightness or push the button (3) to decrease the screen brightness.
	Image Palette Control	To scroll up through the available palettes push and hold button (1) or (3) to scroll down or up respectively. There are 13 palettes available: White Hot, Black Hot, Fusion, Rainbow, Globow, Ironbow 1, Ironbow 2, Sepia, Color 1, Color 2, Ice-Fire, Rain and OEM.
	User-Controlled Manual Non-Uniformity Correction/ Flat-Field Correction (UCMNUC/ FFC)	Simultaneously holding down buttons (1) and (3) induces manual User-Controlled Manual Non-Uniformity Correction/Flat-Field Correction (UCMNUC/ FFC).
	Up, Down	Use the UP (1) and DOWN (3) buttons to navigate through the items on the menu.
2	Digital Zoom Control	To change the zoom progressively, push button (2).
	Reticle on/ off	Pushing and holding button (2) to reticle ON/OFF.
4	Reticle Color Control	To change the reticle color, push button (4). There are four colors available of the reticle: black, white, red and cyan.
	Reticle Pattern Control	To scroll through the reticle types, push and hold button (4). There are five types of reticles available: "Dot 4 MOA", "Line Dot", "Cross Center Dot", "Cross", "Crosshair".

ITEM	FUNCTION	DESCRIPTION
2, 4	Reticle Position Zeroing	Simultaneously holding down buttons (2) and (4) zeroes the reticle position to the center of the screen.
	Left, Right	Use the LEFT (4) and RIGHT (2) buttons to navigate through the items on the menu.
5	OK	Push the OK button (5) to view the settings available for the item selected.
	MENU	Pushing and holding button (5) will bring up the Main Menu selection. The menu includes the following functions: Palette, Reticle, Boresight, Enhancement, and Settings.
	UCMNUC/ FFC Process Interruption	Pushing button (5) when the countdown is on the screen will cancel the UCMNUC/ FFC and the shutter will not interrupt viewing.

2.2.2   MAIN MENU

Most setup options can be accessed from the MAIN MENU.

To display the MAIN MENU, push and hold down the MENU button (5) on the control panel (Figure 2-9).
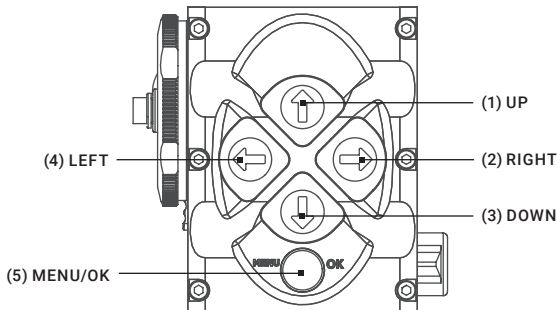
FIGURE 2-9. MAIN MENU NAVIGATION BUTTONS

Once the MAIN MENU is displayed (Figure 2-10), use the UP and DOWN buttons (Figure 2-9) to navigate through the items on the menu.

Push the OK button to view the settings available for the item selected.

NOTES:

Navigate through submenu items by pushing the UP and DOWN button, except where otherwise expressly indicated. The LEFT and RIGHT buttons are available only when specified on the menu screen with < > symbols.
After a menu item is selected, push the OK button to make the selected setting/ activate the selected function.
Select the EXIT item and then push the OK button to return to the MAIN MENU.

```
              MAIN MENU
    >  EXIT
       PALETTE
       RETICLE
       BORESIGHT
       ENHANCEMENT
       SETTINGS
```
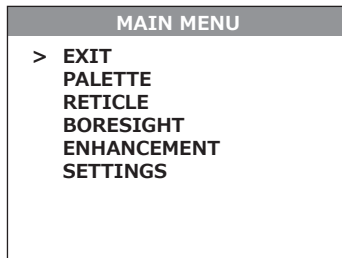
FIGURE 2-10. MAIN MENU

Palette Menu

The PALETTE menu (Figures 2-11 and 2-12) allows the user to select from a choice of temperature imaging modes: White Hot, Black Hot, Fusion, Rainbow, Globow, Ironbow 1, Ironbow 2, Sepia, Color 1, Color 2, Ice-Fire, Rain, and OEM Custom.

NOTE:

To navigate through the items on the two-page PALETTE menu, hold down the UP/ DOWN button.

The palettes act as color templates for visualizing temperature changes in the scene.

```
              PALETTE
    >  EXIT
       WHITE HOT
       BLACK HOT
       FUSION
       RAINBOW
       GLOBOW
       IRONBOW1
       IRONBOW2
```
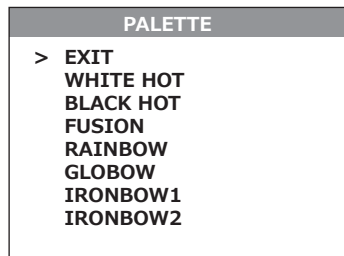
FIGURE 2-11. PALETTE MENU. PAGE 1

```
              PALETTE
    >  EXIT
       SEPIA
       COLOR 1
       COLOR 2
       ICE - FIRE
       RAIN
       OEM CUSTOM
```

FIGURE 2-12. PALETTE MENU. PAGE 2

AGM Global Vision

NOTE:

The most popular palettes are White Hot and Black Hot, usually known as inversion. White Hot mode is good for spotting targets, while Black Hot mode is most useful for situational reading.

NOTE:

Training and experience are required to quickly and properly interpret the thermal image being displayed.

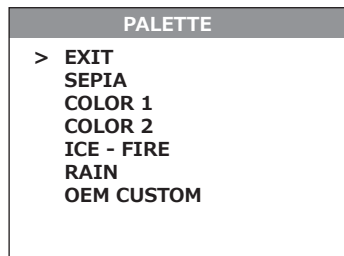### Reticle Menu

The RETICLE menu (Figure 2-13) allows the user to select from a choice of reticle patterns: Dot type, Line Dot, Crosshair Center Dot, Crosshair.

To navigate through the items on the RETICLE menu, push and hold down the LEFT/ RIGHT button.

```
┌─────────────────────────────────┐
│            RETICLE              │
│  >  EXIT                        │
│                                 │
│                                 │
│                 ┼               │
│                                 │
│                                 │
│  <>  CROSS                      │
└─────────────────────────────────┘
```
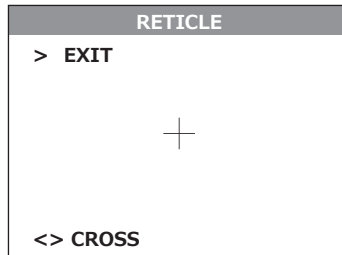
FIGURE 2-13. RETICLE MENU

Boresight Menu

The BORESIGHT function allows the user to changing the reticle position in the display.

NOTE:

Remember that **the center of impact on the target shifts in the opposite direction from the direction that the reticle shifts.** So, to bring the center of impact to the right/left and up/down, you must shift the reticle to the left/right and down/up, respectively.

Figure 2-14 shows the boresight screen.

```
┌─────────────────────────────────┐
│            BORESIGHT            │
│  >  EXIT                        │
│                                 │
│                 ┼               │
│                                 │
│      WINDAGE    <> 10           │
│      ELEVATION  <> -5           │
└─────────────────────────────────┘
```

FIGURE 2-14. BORESIGHT MENU

To control the reticle shifting, check the running reticle center coordinates, which are printed in the lower left hand corner of the display.

NOTE:

For display coordinates, the origin is the center of the display. The running coordinate of the reticle is the number of incremental shifts of the reticle from the center of the display. The minus sign appears before the displayed number when the reticle shifts left or down (the point of impact (POI) on the target shifts right or up, respectively).

Push the LEFT and RIGHT buttons to adjust for windage. Moving the reticle in the positive direction (to the right) will move the POI to the left. Moving the reticle in the negative direction (to the left) will move the POI to the right.
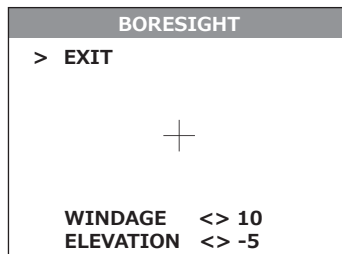
Push the UP and DOWN buttons to adjust for elevation. Moving the reticle in the positive directly (up) will move the POI down. Moving the reticle in the negative direction (down) will move the POI up.

Every time one of these buttons is pushed, the reticle shifts a single pixel increment corresponding to the minimum boresight correction value, and the **point of impact** on the target moves according to the specified windage/elevation boresight increment, in the opposite direction to that of the shifting reticle.

Every time one of these buttons is pushed for 3 sec, then the reticle begins to shift in 4 pixels increments untill you let go.

Holding down the combination of buttons (LEFT+RIGHT) to reset to zero azimuth and elevation the reticle will shift to the display center.

Enhancement Menu

The ENHANCEMENT menu (Figure 2-15) settings allow the user to take advantage of advanced signal processing algorithms to improve the quality of the picture that is being viewed under a variety of different thermal environments.

```
            ENHANCEMENT
   > EXIT
     CONTRAST    <> 4
     SHARPNESS   <> 60
     SMARTSCENE <> 15
     GAIN        <> 35
     AGC SPEED   <> 12
```

FIGURE 2-15. ENHANCEMENT MENU

CONTRAST - Active Contrast Enhancement (ACE) – a digital contrast correction that allows for a smart scene optimization based on dynamic adjustments where a variety of contrast levels occur depending on relative scene temperature. The adjustment range is from -8 to +8 with default value 4. Lower values will make hotter objects get more contrast and higher values will make a colder objects get more contrast.

CONTRAST -8   CONTRAST +8

FIGURE 2-16. DIGITAL CONTRAST CORRECTION

SHARPNESS - Second Generation Digital Detail Enhancement (DDE) – a sharpness correction that is digitally enhances the picture to present clearer imagery, significantly improves edge sharpening and further reduces image noise. The adjustment range is from -20 to +100 with default value 60. Lower values will create an object image with softer edges. Higher values will make an object sharper, enhance details and will further increase the signal to noise ratio.

SHARPNESS -20   SHARPNESS +100

FIGURE 2-17. SHARPNESS CORRECTION

SMART SCENE - Smart Scene Optimization (SSO) – a fine-tuning computational correction that significantly improves an overall visual acuity for targets that have thermal signatures similar to a surrounding background. Higher values provide a more linear automatic gain control behavior and objects with similar, but not the same temperature can be differentiated with greater accuracy. The adjustment range is from 0 to 100 with default value 15.
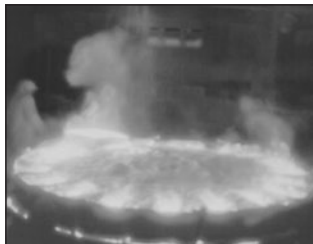
SMART SCENE 0   SMART SCENE 100

FIGURE 2-18. SMART SCENE OPTIMIZATION

GAIN - Automatic Gain Control (AGC) – a correction that used to automatically adjust the gain to an appropriate range, the weaker the image signal, the stronger the gain. The adjustment range is from 0 to 255 with default value 35.

GAIN 0   GAIN 35

FIGURE 2-19. GAIN CORRECTION

AGC SPEED – parameter that allows user to control the refresh rate of Automatic Gain Control (AGC). The adjustment range is from 0 to 128 with a default value of 12.

Settings Menu

The SETTINGS menu (Figure 2-20) allows direct changes to the save rifle profiles, video standard, display left margin, display top margin, and factory default setting.

The RIFLE PROFILE function allows the user to bore sight the Python to the weapon and then save the bore sighted reticle position map in the "Rifle Profile" tab. This can be done for the same scope equipped to up to 3 different rifles (Profile 1, Profile 2, and Profile 3).

The STANDARD function allows the user to select from a choice of NTSC or PAL video standard.

The LEFT MARGIN function allows the user to move the display left/right by a fixed number of pixels.

The TOP MARGIN function allows to move the display up/down by a fixed number of pixels.

The SETTINGS menu also includes factory software revision information under FW: (firmware).

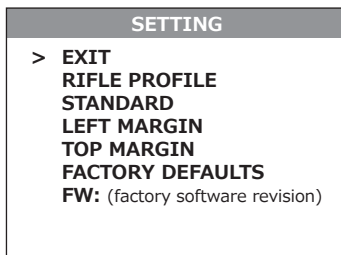| SETTING |
|---|
| > **EXIT** |
| **RIFLE PROFILE** |
| **STANDARD** |
| **LEFT MARGIN** |
| **TOP MARGIN** |
| **FACTORY DEFAULTS** |
| **FW:** (factory software revision) |

FIGURE 2-20. SETTINGS MENU

NOTE:

After configuration is complete, select EXIT on the MAIN MENU and push the OK button to leave the MAIN MENU. All settings will be saved.

2.3   OPERATING PROCEDURES

2.3.1   OPERATING

⚠ **WARNING:**

Always make sure your firearm is unloaded before you place the scope on the firearm. Reconfirm that the chamber is empty if you stop the procedure then resume later. Safe handling rules should be followed at all times.

CAUTION:

DO NOT force the equipment controls past their stopping points.

CAUTION:

To prevent thermal damage to the equipment, never point it, either powered or not, directly at the sun or any other source of high intensity light that the unprotected human eye cannot tolerate (such as a welding arc). To prevent inadvertent exposure to these sources, never leave the equipment without the objective lens cap secured.

Operating procedures are as follows:

1. Remove the Python from the carrying case.

2. Install the Python on the weapon's Picatinny/Weaver rail.

3. Verify that the Python is securely mounted to the weapon.

4. Remove the objective lens cap.

5. Point the equipment at an object.

6. Activate the Python by turning the operation switch to the ON position. After approximately 3 sec, video of the thermal scene should appear.

7. Adjust the Python for your eyesight by turning the eyepiece focus ring CW up to the stop, and then CCW until the display and symbols (such as the reticle) are as clear as possible. Bring the object into focus by turning the objective focus ring (CW for far focus, CCW for near focus).
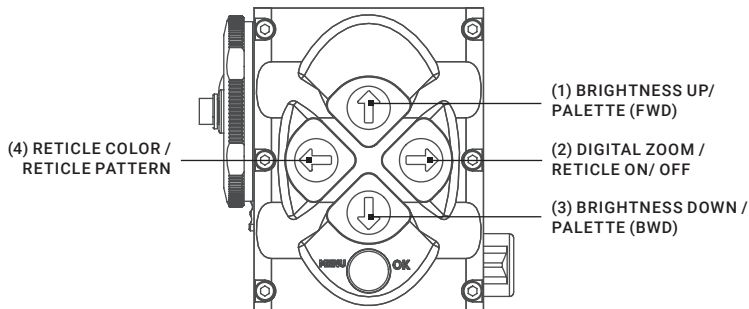

(4) RETICLE COLOR / RETICLE PATTERN

(1) BRIGHTNESS UP/ PALETTE (FWD)

(2) DIGITAL ZOOM / RETICLE ON/ OFF

(3) BRIGHTNESS DOWN / PALETTE (BWD)

FIGURE 2-21. SETTING BUTTONS

NOTE:

The total diopter adjustment range is covered with 2 turns of the eyepiece focus ring.
The total focus range is covered with 3/4 turn of the objective focus ring.

8. Using the buttons on the control panel (Figure 2-21), configure the Python to adapt it to your situation.

For more information on operational setting procedures, see Part 2.2 (Controls and Display Indications).

A. Adjust the brightness of the display for your comfort.

Momentarily push the brightness adjustment buttons to increase (1) /decrease (3) the display brightness by one level at a time until you reach your desired brightness level.

B. Use UCMNUC/FFC (User-Controlled Manual Non-Uniformity Correction/Flat-Field Correction) function to improve image quality. As the camera including the detector heats up during the use, the detector pixels will drift. The pixels do not drift uniformly. The camera software compensates for the drift up to an accurate position point, but when the limit is reached the UCMNUC/FFC function is triggered. A uniform mechanical shutter is placed between the lens and the detector for a moment and the signal is processed.

Push and hold the two brightness control buttons (1) and (3) at the same time to manually trigger a User-Controlled Manual Non-Uniformity Correction/Flat-Field Correction.

If necessary, interrupt the automatic UCMNUC/FFC process by pushing the OK button (5) on the control panel during the 5 second countdown which appears at the bottom of the display.

C. Adjust the necessary adjustment using the MAIN MENU. See Part 2.2.2 (Using the MAIN MENU).

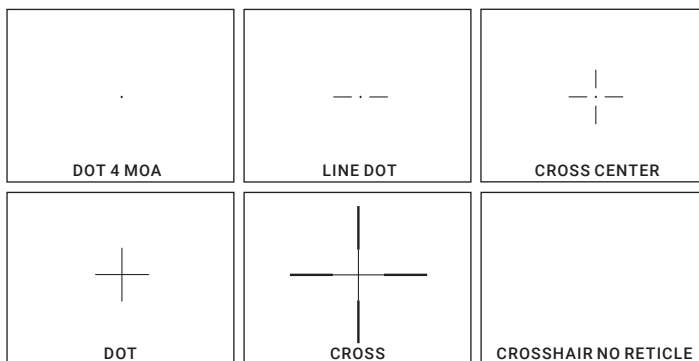| DOT 4 MOA	LINE DOT	CROSS CENTER
DOT	CROSS	CROSSHAIR NO RETICLE

FIGURE 2-22. RETICLE PATTERNS

NOTE:

After configuration is complete, select EXIT on the MAIN MENU and push the OK button to leave the MAIN MENU. All settings will be saved.

D. Select the color of the reticle.

Momentarily push the reticle color control button (4) to select among black, white, red, and cyan.

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E. Turns reticle ON/ OFF.

Push and hold button (2) to turn reticule ON or OFF.

F. Select a reticle pattern.

Push and hold button (4) to select from a choice of reticle patterns: "Dot 4 MOA," "Line Dot," "Cross Center Dot," "Cross," "Crosshair" (Figure 2-22).

NOTE:

The reticles appear in the most recently saved position on the display.

G. Use digital zoom to magnify the central area of the displayed scene.

Momentarily push the zoom control button (2) to slowly magnify into the displayed scene. The 2x, 4x, 8x symbols (maximum zoom factor is dependent of model) will appear in the top part of the display.

NOTE:

Digital zoom allows distant objects to appear larger; however, the resolution will be compromised.

NOTE:

Zooming does not affect the boresight.

NOTE:

Digital zoom and reticle color control help target detection and discrimination.

9. To align the barrel of the weapon, place the reticle on the desired target. To allow for the bullet's travel (i.e. bullet drop, windage, and the target mobility), use the boresight adjusting buttons.

10. To operate the Python with wireless remote control, turn the operation switch to the STB position (Standby). After it the remote control button can activate/ deactivate the device in two ways:

1) To turn the device on, press the remote control button once, to turn it off – press the button again.

2) To operate the device in short-time activation mode (see note below), press and hold the remote control button down for 1.5+ seconds. Release the remote control button to deactivate the device.

CAUTION:

DO NOT leave the equipment activated when not in use.

2.3.2 BORE SIGHTING THE PYTHON

⚠ **WARNING:**

Always make sure your firearm is unloaded before you place the scope on the firearm. Reconfirm that the chamber is empty if you stop the procedure then resume later. Safe handling rules should be followed at all times.

NOTE:

The Python must be zeroed each time it is mounted to a new weapon.

NOTE:

When reticle at (0-0) coordinates there is an incline of 15 arc minutes for the scope's optical axis.

Boresight the Python as follows:

1. Locate a target at the fire adjustment range (100yd or 100m for example).
2. Turn on the Python.
3. Adjust the eyepiece and focus the objective lens to sharpen the image of the target.
4. Adjust the brightness of the display.
5. Select a reticle pattern.
6. Take aim by centering the reticle on the target and fire a series of shots (3-4).
7. Find the point of impact and measure its vertical and horizontal deviations from the center of the target.
8. Work out the values of boresight correction required to compensate for the measured deviation of the point of impact from the center of the target. Table 2-3 contains examples of calculating boresight correction values.

TABLE 2-3. EXAMPLE OF CALCULATING BORESIGHT CORRECTIONS (100YD AND 100M FIRE RANGES)

MODEL		PYTHON TS25-336	PYTHON TS50-336	PYTHON TS75-336	PYTHON TS25-640	PYTHON TS50-640	PYTHON TS75-640
Boresight Increment *		1.3 in/ 100 yd (3.5cm/ 100m)	0.6in / 100yd (1.7cm / 100m)	0.35in / 100yd (1cm / 100m)	2.5 in / 100 yd (6.6 m / 100m)	1.2in / 100yd (3.3cm / 100m)	0.65in / 100yd (1.8cm / 100m)
Measured Windage/ Elevation Deflection of the Point of Impact from the Target Center (for example)		5 in/ 10 in (13 cm/ 25 cm)	2in / 1in (5cm / 2cm)	4in / 3in (10cm / 7cm)	5 in/ 10 in (13 cm/ 25 cm)	5in / 10in (13cm / 25cm)	7in / 2in (18cm / 5cm)
Correction Value	Windage	5/1.3≈4 (13/3.5≈4) 4 reticle shifts	2/0.6≈3 shifts (5/1.7≈3 shifts)	4/0.35≈11 shifts (10/1=10 shifts)	5/2.5=2 (13/6.6≈2) 2 reticle shifts	5/1.2≈4 shifts (13/3.3≈4 shifts)	7/0.65≈11 shifts (18/1.8=10 shifts)
	Elevation	10/1.3≈7 (25/3.5≈7) 7 reticle shifts	1/0.6≈1 shif (2/1.7≈1 shif)	3/0.35=8 shifts (7/1=7 shifts)	10/2.5=4 (25/6.6≈4) 4 reticle shifts	10/1.2≈8 shifts (25/3.3≈8 shifts)	2/0.65≈3 shifts (5/1.8≈3 shifts)

* 1) For PAL resolution (768x574).

2) To calculate boresight increment value for a fire range R different from 100 yards, use the coefficient R/100.

So at a range R (in yards) the boresight increment is:

1.3×R/100, in − for Python TS25-336;
0.6×R/100, in − for Python TS50-336;
0.35×R/100, in − for Python TS75-336;
2.5×R/100, in − for Python TS25-640;
1.2×R/100, in − for Python TS50-640;
0.65×R/100, in − for Python TS75-640.

3) To calculate boresight increment value in metric units for a fire range R different from 100m, use the coefficient R/100. So at a range R (in meters) the boresight increment is:

3.5×R/100, cm −for Python TS25-336;
1.7×R/100, cm − for Python TS50-336;
1×R/100, cm − for Python TS75-336;
6.6×R/100, cm − for Python TS25-640;
3.3×R/100, cm − for Python TS50-640;
1.8×R/100, cm − for Python TS75-640.

9. Use the BORESIGHT MENU to apply corrections required to bring the point of impact as close as possible to the center of the target. See Part 2.2.2 (Using the MAIN MENU).

A. Use LEFT and RIGHT buttons to adjust for windage. Moving the reticle in the positive direction (to the right) will move the point of impact to the left. Moving the reticle in the negative direction (to the left) will move the point of impact to the right.

B. Use UP and DOWN buttons to adjust for elevation. Moving the reticle in the positive directly (up) will move the point of impact down. Moving the reticle in the negative direction (down) will move the point of impact up.

10. Fire a series of shots to check the boresight.

11. After completing the boresight adjustment procedure you can use RIFLE PROFILE function of Setting menu to save the boresighted reticle position map in the "Rifle Profile" tab. This can be done for the same scope equipped to up to 3 different rifles (Profile 1, Profile 2, and Profile 3).

12. Turn off the Python and place the cap over the objective lens.

2.3.3 PYTHON SHUT-DOWN

NOTE:

Shut down the Python properly to avoid losing unsaved settings and data.

Shut-down the Python as follows:

1. Be sure to save your settings and data.

2. Turn off the Python.

3. Replace the cap on the objective lens.

4. Disconnect the cable (if applicable).

5. Place the cap on the connector.

6. Dismount the Python from the weapon.

7. Remove the batteries.

CAUTION:

Do not store the Python with the batteries still in it.

8. Store the Python and all accessories in the carrying case.

3 MAINTENANCE INSTRUCTIONS

3.1 OPERATOR TROUBLESHOOTING

The purpose of troubleshooting is to identify the most frequent equipment malfunctions, probable causes, and corrective actions required.

Table 3-1 lists the common malfunctions that may be found during the operation or maintenance of the Python. Perform the tests/inspections and corrective actions in the order listed.

This table does not list all of the malfunctions that may occur with your device, or all of the tests and corrective actions that may be necessary. If you experience an equipment malfunction that is not listed, or is not fixed by the corrective actions listed in the table, please contact Customer Service center.

TABLE 3-1. OPERATOR TROUBLESHOOTING

MALFUNCTION	PROBABLE CAUSE/ TEST/ INSPECTION	CORRECTIVE ACTION
The scope fails to activate.	Batteries are missing or improperly installed.	Insert batteries or install correctly.
	Batteries are dead.	Replace the batteries.
	Batteries, surfaces or contacts are dirty or corroded.	Clean the contact surfaces with a pencil eraser and/or alcohol and cotton swabs.
	Remote control unit is damaged.	Please contact Customer Support.
	Remote control battery is dead.	Replace the battery as per Part 3.2.4.
	The equipment is damaged.	Please contact Customer Support.
The scope is not responsive to control buttons.	The equipment is damaged.	Please contact Customer Support.
Remote control does not work.	Battery is missing or improperly installed.	Insert battery or install correctly.
	Battery is dead.	Replace the battery.
	Battery surfaces or contacts are dirty or corroded.	Clean the contact surfaces with a pencil eraser and/or alcohol and cotton swabs.
	Remote control unit is damaged.	Please contact Customer Support.
Poor image quality.	Check objective lens and eyepiece focus.	Refocus.
	Check for fogging or dirt on objective lens and eyepiece.	Clean the lenses as detailed in Part 3.2.2.
	The equipment is damaged.	Please contact Customer Support.

MALFUNCTION	PROBABLE CAUSE/ TEST/ INSPECTION	CORRECTIVE ACTION
No image on an external monitor.	Video cable is damaged.	Replace the video cable with a new one. Please contact Customer Support.
	The equipment is damaged.	Please contact Customer Support.
Hindered rotation of the battery cap.	Dirty cap thread.	Clean the thread.
	Damaged cap thread.	Replace the cap with a new one. Please contact Customer Support.
Light is visible around eyecup.	Check eyecup resilience.	If the eyecup is defective, please contact Customer Support.

3.2 MAINTENANCE

3.2.1 GENERAL

The Python operator maintenance consists of operational tests, inspections for unit serviceability, cleaning and mounting procedures, corrective actions (troubleshooting and replacement of a limited number of parts). Maintenance instructions covered elsewhere in this manual (PMCS, troubleshooting, etc.) are not repeated in this section.

CAUTION:

The Python is a precision electro-optical instrument and must be handled carefully at all times to prevent damage.

CAUTION:

DO NOT dismantle the equipment.

3.2.2 CLEANING PROCEDURES

Clean the Python and optional items as follows:
1. Gently brush off any dirt from the equipment using only a clean, soft cloth.
2. Moisten the cloth with fresh water and gently wipe the external surfaces (except for optical surfaces).
3. Dry any wet surfaces (except for optical surfaces) with another clean, dry soft cloth.
4. Using a lens brush, carefully remove all loose dirt from optical surfaces (objective lens and eyepiece).
5. Slightly dampen a cotton swab with ethanol and lightly and slowly wipe optical surface. Clean the optical surface by circular movements from the center to the edge, not touching the lens holder and changing cotton swab after each circular stroke. Repeat until the optical surface is clean.
6. Clean the battery contact surfaces and contact springs with a pencil eraser and/or alcohol and cotton swabs.

CAUTION:

Thoroughly dry each item before replacing into the storage/ carrying case.

3.2.3   BORE SIGHTING

Perform the Python bore sighting:
—   When the Python is mounted to a new weapon for the first time;
—   After repair of the Python/ weapon;
—   As the need arises (in case of systematic inaccuracy and missing the target).

Refer to Part 2.3.2 for boresight procedure.

3.2.4   BATTERY REMOVAL AND REPLACEMENT

Refer to Part 2.1.1 for battery installation procedures.

Replace the remote control battery as follows:

1. Using a screwdriver, unscrew the four screws (A, Figure 3-1) that secure the cover to the bottom of the unit. Remove the cover.
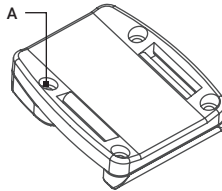

FIGURE 3-1. WIRELESS REMOTE CONTROL BATTERY INSTALLATION

2. Replace the battery with new one (CR2032, 3V). Install the battery, aligning their polarity markings (+/-) with those embossed on the compartment.
3. Replace the cover and tighten the screws (A).

4 WARRANTY INFORMATION

4.1 WARRANTY INFORMATION AND REGISTRATION

4.1.1 WARRANTY INFORMATION

This product is guaranteed to be free from manufacturing defects in material and workmanship under normal use for a period of three (3) years from the date of purchase. In the event that a defect covered by the warranty below occurs during the applicable period stated above, AGM Global Vision, at its discretion, will either repair or replace the product; such action on the part of AGM Global Vision shall be the full extent of AGM Global Vision's liability, and the Customer's sole and exclusive reparation. This warranty does not cover a product if it has been (a) used in ways other than its normal and customary manner; (b) subjected to misuse; (c) subjected to alterations, modifications or repairs by the Customer or by any party other than AGM Global Vision without prior written consent of AGM Global Vision; (d) is the result of a special order or categorized as "close-out" merchandise or merchandise sold "as-is" by either AGM Global Vision or the AGM Global Vision dealer; or (e) merchandise that has been discontinued by the manufacturer and either parts or replacement units are not available due to reasons beyond the control of AGM Global Vision. AGM Global Vision shall not be responsible for any defects or damage that in AGM Global Vision's view are a result from the mishandling, abuse, misuse, improper storage or improper operation of the device, including use in conjunction with equipment that is electrically or mechanically incompatible with, or of inferior quality to, the product, as well as failure to maintain the environmental conditions specified by the manufacturer. This warranty is extended only to the original purchaser. Any breach of this warranty shall be enforced unless the customer notifies AGM Global Vision at the address noted below within the applicable warranty period.

The customer understands and agrees that except for the foregoing warranty, no other warranties written or oral, statutory, expressed or implied, including any implied warranty of merchantability or fitness for a particular purpose, shall apply to the product. All such implied warranties are hereby and expressly disclaimed.

4.1.2 LIMITATION OF LIABILITY

AGM Global Vision will not be liable for any claims, actions, suits, proceedings, costs, expenses, damages, or liabilities arising out of the use of this product. Operation and use of the product are the sole responsibility of the Customer. AGM Global Vision's sole undertaking is limited to providing the products and services outlined herein in accordance with the terms and conditions of this Agreement. The provision of products sold and services performed by AGM Global Vision to the Customer shall not be interpreted, construed, or regarded, either expressly or implied, as being for the benefit of or creating any obligation toward any third party of legal entity outside AGM Global Vision and the Customer; AGM Global Vision's obligations under this Agreement extend solely to the Customer. AGM Global Vision's liability hereunder for damages, regardless of the form or action, shall not exceed the fees or other charges paid to AGM Global Vision by the customer or customer's dealer. AGM Global Vision shall not, in any event, be liable for special, indirect, incidental, or consequential damages, including, but not limited to, lost income, lost revenue, or lost profit, whether such damages were foreseeable or not at the time of purchase, and whether or not such damages arise out of a breach of warranty, a breach of agreement, negligence, strict liability, or any other theory of liability.

4.1.3   PRODUCT REGISTRATION

In order to validate the warranty on your product, the customer must complete and submit AGM Global Vision PRODUCT REGISTRATION FORM on our website (**www.agmglobalvision.com/customer-support**).

4.1.4   OBTAINING WARRANTY SERVICE

To obtain warranty service on your unit, the End-user (Customer) must notify the AGM Global Vision service department via e-mail. Send any requests to **support@agmglobalvision.com** to receive a Return Merchandise Authorization number (RMA). When returning any device, please take the product to your retailer, or send the product, postage paid and with a copy of your sales receipt, to AGM Global Vision's service center at the address listed above. All merchandise must be fully insured with the correct postage; AGM Global Vision will not be responsible for improper postage or merchandise that becomes lost or damaged during shipment. When sending product back, please clearly write the RMA# on the outside of the shipping box. Please include a letter that indicates your RMA#, the Customer's Name, a Return Address, reason for the return, contact information (valid telephone numbers and/or an e-mail address), and proof of purchase that will help us to establish the valid start date of the warranty. Product merchandise returns that do not have an RMA# listed may be refused, or a significant delay in processing may occur. Estimated Warranty service time is 10-20 business days. The End-user/Customer is responsible for postage to AGM Global Vision for warranty service. AGM Global Vision will cover return postage/shipping after warranty repair to the End-user/Customer only if the product is covered by the aforementioned warranty. AGM Global Vision will return the product after warranty service by domestic UPS Ground service and/or domestic mail. Should any other requested, required, or international shipping methods be necessary, the postage/shipping fee will be the responsibility of the End-user/Customer.

For service, repair or replacement, please contact:

AGM Global Vision

173 West Main Street
PO Box 962
Springerville, AZ 85938
Tel. 928.333.4300
Fax 480.393.4882
support@agmglobalvision.com
www.agmglobalvision.com

5 SPECIFICATIONS

5.1 SPECIFICATIONS

TABLE 5-1. SPECIFICATIONS

ITEM	PYTHON TS25-336	PYTHON TS25-640	PYTHON TS50-336	PYTHON TS50-640	PYTHON TS75-336	PYTHON TS75-640
Magnification	2×	1×	2.9×	1.7×	4.3×	2.6×
Objective Lens Type	Germanium					
Type of Focal Plane Array	FLIR Tau 2					
Frame Rate	60 Hz	30 Hz	60 Hz	30 Hz	60 Hz	30 Hz
Pixel Array Format	336×256	640x512	336×256	640x512	336×256	640x512
Pixel Size	17 µm					
Display Type	LED VGA 060					
Pixel Display Format	640×480					
Display Brightness	Discretely adjustable to 8 levels					
Turn-on Time, max	3 sec					
Digital Zoom	2×, 4×	2×, 4×, 8×	2×, 4×	2×, 4×, 8×	2×, 4×	2×, 4×, 8×
Temperature Imaging Modes (Image Palettes)	White Hot, Black Hot, Fusion, Rainbow, Globow, Ironbow 1, Ironbow 2, Sepia, Color 1, Color 2, Ice-Fire, Rain, and OEM Custom					
User-Adjustable Image Enhancement Tools	• Active Contrast Enhancement (ACE) – "CONTRAST" • Second Generation Digital Detail Enhancement (DDE) – "SHARPNESS" • Smart Scene Optimization (SSO) – "SMART SCENE" • Automatic Gain Control (AGC) – "GAIN" • User-Controlled Manual Non-Uniformity Correction /Flat-Field Correction (UCMNUC/FFC) • Silent Shutterless NUC™ (SSN)					
Reticle Type	6-Pattern digitally controlled: Dot 4 MOA, Line Dot, Cross Center Dot, Cross, Crosshair, and No Reticle					
Reticle Color	Black, White, Red, Cyan					
Boresight Adjustment Type	Digitally controlled					
Windage/ Elevation Boresight Increment	1.2 MOA 0.35 mils 1.3 in / 100 yd 3.5 cm / 100 m	2.3 MOA 0.7 mils 2.5 in / 100 yd 6.6 cm / 100 m	0.6 MOA 0.17 mils 0.6in/ 100yd 1.7cm/ 100m	1.13 MOA 0.33 mils 1.2in/ 100yd 3.3cm/ 100m	0.33 MOA 0.1 mils 0.35in/ 100yd 1cm/ 100m	0.63 MOA 0.18 mils 0.65in/ 100yd 1.8cm/ 100m
Windage Adjustment Range	±96 MOA	±180MOA	±48 MOA	±90MOA	±26 MOA	±50 MOA
Elevation Adjustment Range	±72 MOA	±134 MOA	±36 MOA	±68 MOA	±20 MOA	±38 MOA

ITEM	PYTHON TS25-336	PYTHON TS25-640	PYTHON TS50-336	PYTHON TS50-640	PYTHON TS75-336	PYTHON TS75-640
Analog Video Format	PAL / NTSC					
Output Resolution	640×480 pixels					
Interfacing	• Micro-USB (Power bank 5V) • Universal S620 connector (Power In, Analog Video In/Out, Wi-Fi Attachment, HD Recorder, Extended Battery Pack)					
Optical Data						
Objective Focal Length	25 mm		50mm		75mm	
Objective F-number	1:1		1:1		1:1.3	
Field of View (X × Y)	13° × 10°	25° × 20°	7.8° × 5.9°	14.8° × 11.8°	4.3° × 3.3°	8.3° × 6.6°
Eye Relief	45 mm					
Focusing Range	2 m to inf.		5 m to inf.		10 m to inf.	
Diopter Adjustment	Manual					
Diopter Adjustment Range	±5 diopter					
Electrical Data						
Battery	Two CR123A 3V Lithium batteries or two CR123 rechargeable batteries with voltage from 3.0V to 3.7V (2)					
Current Consumption, maximum	450 mA					
Battery Life at 20°C (68°F)	Up to 4 hr. (optional up to 12 hr.)					
Extended Battery Pack (optional)	Two 18650 rechargeable batteries (3.7V), or four CR123 type rechargeable batteries with voltage 3.7V max, or four standard CR123A 3V Lithium batteries (operational time up to 8 hr.)					
External Power Supply	Power bank (5V) via Micro-USB port; Extended battery pack (6V) or 6V/600 mA power supply via S620 universal connector					
Mechanical Data						
Weapon Mount Type	Picatinny MIL-STD-1913 and Weaver rails					
Overall Dimensions	274 × 74 × 83 mm (10.8 × 2.9 × 3.3 in)		259×74×83 mm (10.2×2.9×3.3 in)		291×89×96 mm (11.5×3.5×3.8 in)	
Dimensions w/o Eyecup	193 × 74 × 83 mm (7.6 × 2.9 × 3.3 in)		187×74×83 mm (7.4×2.9×3.3 in)		222×89×96 mm (8.7×3.5×3.8 in)	
Height of the Scope Axis above Rail	42 mm (1.65 in)					
Weight (w/o Batteries)	0.63 kg (1.4 lb)		0.7 kg (1.5 lb)		0.8 kg (1.8 lb)	
Environmental Data						
Operating Temperature	-40 to +50°C (-40 to +122°F)					
Storage Temperature	-50 to +70°C (-58 to +158°F)					
Recoil Resistance	700*g*					
Environmental Rating	Waterproof					

*Default setting (may be altered at the customer's request).

TABLE 5-2. WIRELESS REMOTE CONTROL DATA

ITEM	DATA
Type	Wireless Remote Control
Working Range	Up to 0.5m
Battery	Single CR2032 Lithium battery (3V)
Battery Life at 20°C (68 °F)	Approx. 10,000 clicks
Overall Dimensions	48 × 39 × 18 mm (1.9 × 1.5 × 0.7 in)
Weight (with Battery)	25 g (0.9 oz)
Operating Temperature	-30 to +50°C (-22 to 122°F)
Storage Temperature	-50 to +70°C (-58 to 158°F)
Environmental Rating	Water and Fog-Resistant

APPENDIX

A. SPARE PARTS LIST

The parts authorized by this list of spare parts are required for operator maintenance. The list includes parts that must be removed before replacing authorized parts.

The PART NO. column indicates the primary number used by the manufacturer, which controls the design and characteristics of the item in terms of its engineering drawings, specifications, standards, and inspection requirement, to identify an item.
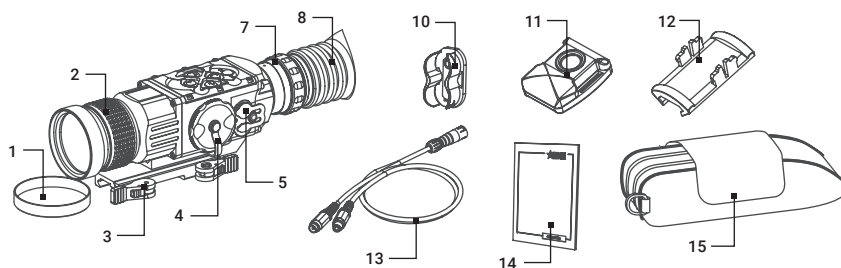

FIGURE A-1. PYTHON SPARE PARTS LIST

TABLE A-1. PYTHON SPARE PARTS LIST

ITEM	DESCRIPTION	PART NO.
1	25mm Objective Lens Cap	GOL25OBLCP
-	50mm Objective Lens Cap	GOL50OBLCP
-	75mm Objective Lens Cap	GOL75OBLCP
2	25mm Objective Lens Assembly	GOL25OBLAS
-	50mm Objective Lens Assembly	GOL50OBLAS
-	75mm Objective Lens Assembly	GOL75OBLAS
3	Mount	AGMPTNQRM
4	Battery Cap	AGMTIDBCP
5	Connector Cap	AGMTIDCNCP
6	Operation Switch (not shown)	AGMTIDOPSW
7	Eyepiece Assembly	AGMTIRIPAS
8	Eyecup	AGMTIRECP
9	Side Picatinny/Weaver Rail (not shown)	AGMTIDSPR
10	Battery Cassette	AGMTIDBTCS
11	Wireless Remote Control	AGMTIDWRC
12	Picatinny Adapter for Wireless Remote Control	AGMTIDPARC
13	Video Cable	AGMTIDVCB
14	Operation and Maintenance Manual	AGMTIROMM
15	Carrying Case	AGMRSCC

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