ASP

THERMAL IMAGING MONOCULAR

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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EXPORT INFORMATION

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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.

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:

- To avoid losing unsaved data, DO NOT remove the batteries or disconnect the external power source while the Asp 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 Asp is a thermosensitive device. It 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 & white or color patterns, depending on the user's selected image palette.

NOTE:

It is important that the Asp 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 Asp consists of next primary parts: a body, a lens assembly and an eyepiece assembly. Figure 1-1 represents three versions of the device equiped with objective lenses with 25mm, 50mm, and 75mm focal length.

ASP TM25   ASP TM50   ASP TM75
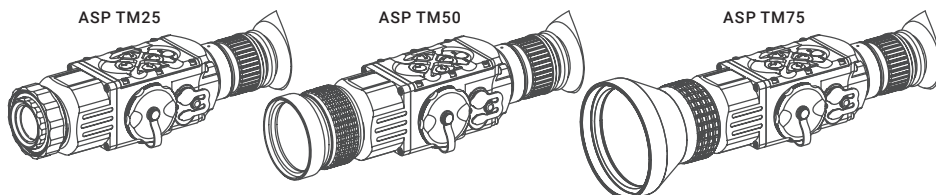
FIGURE 1-1. ASP THERMAL IMAGING MONOCULAR

The main optical-electronic components of the Asp include: an objective Germanium thermal lens, eyepiece, a thermal-imaging camera, a display, a control card, and a button control panel. The Asp is equipped with manual eyepiece and objective lens focusing.

All Asp devices are based on FLIR Tau 2 cameras that allow for improvements in overall image quality in a wide range of dynamic thermal environments.

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

- Display Brightness
- Digital Zoom
- Palette Color Selection
- User-Controlled Manual Non-Uniformity Correction/ Flat-Field Correction (UCMNUC/ FFC)

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

Manufactured for exceptional durability, the Asp 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 Asp.

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

Figure 1-2 shows the Asp. The ITEM NO. column of Table 1-1 indicates the number used to identify items in Figure 1-2.

NOTE:

Here and below, the example used is the Asp with a 50mm lens.
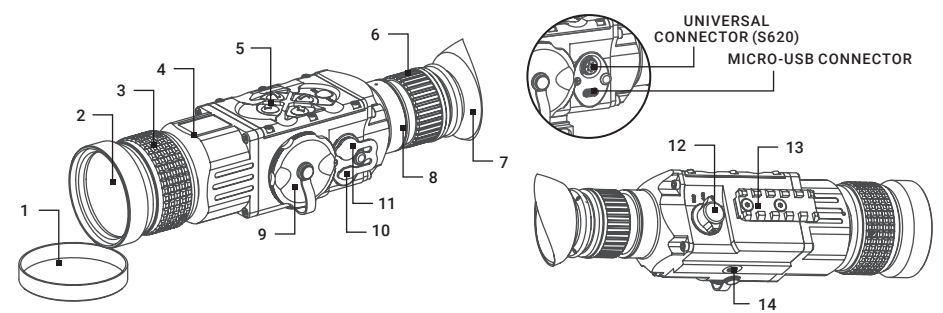
FIGURE 1-2. ASP THERMAL IMAGING MONOCULAR. SYSTEM DESCRIPTION

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	Tripod Socket

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1.2 STANDARD COMPONENTS

The Asp 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.
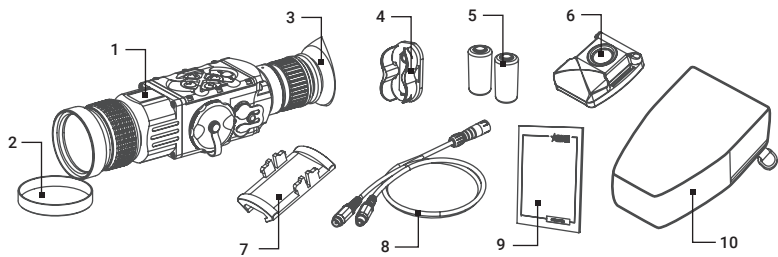
FIGURE 1-3. STANDARD COMPONENTS

TABLE 1-2. STANDARD COMPONENTS

ITEM	DESCRIPTION	QUANTITY
1	Asp Thermal Imaging Monocular	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 1-4 and listed in Table 1-3.
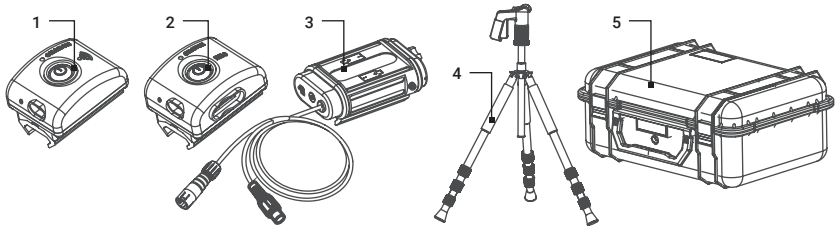
FIGURE 1-4. OPTIONAL EQUIPMENT

The ITEM column indicates the number used to identify items in Figure 1-4.
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	Professional Titanium Tripod with a Grip	6606TTR1
5	Hard Case for Storage/Transportation	6610HCS1

1.4   KEY FEATURES

- 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
    - Settings
    - Display Brightness
    - 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
- Powered by two standard CR123A batteries
- Power input capability
- Digital HD video recorder (optional)
- External Wi-Fi module (optional)
- Serviceability under severe conditions
- Filled with dry nitrogen to prevent internal fogging
- Waterproof
- Tripod mountable
- 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.

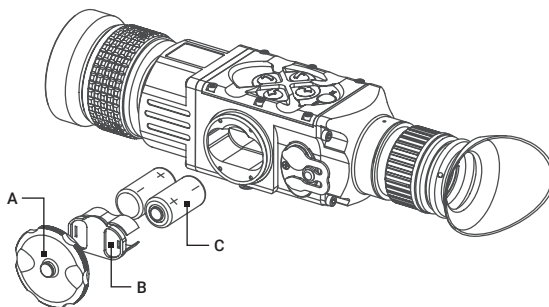**FIGURE 2-1. BATTERY INSTALLATION**

2.1.2 FASTENING AN WIRELESS REMOTE CONTROL

Using the supplied Velcro® tape (A, Figure 2-2), fasten the remote control (B) to an easily accessible place.

You can use the Picatinny adapter for the wireless remote control (C) for mounting the remote control to Picatinny or Weaver rail. Install the adapter onto the rail (D). Insert the remote control into the adapter.
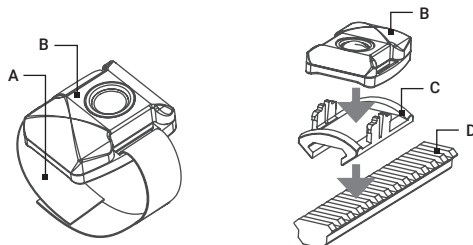
FIGURE 2-2. WIRELESS REMOTE CONTROL

2.1.3 INSTALLING ADDITIONAL EQUIPMENT

Use the side Picatinny/Weaver rail to install any additional equipment, such as the AGM HD Video Recorder, WiFi Attachment, or the Extended Battery Pack.
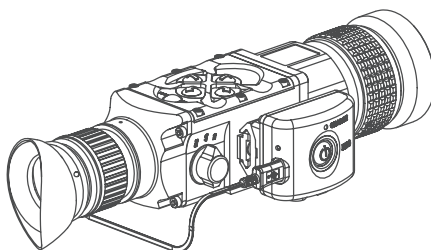
FIGURE 2-3. HD RECORDER INSTALLATION

2.1.4 CONNECTING AN ADDITIONAL EQUIPMENT

CAUTION:

Turn off the Asp 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 Asp Micro-USB connector.

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

Use the video cable plug (A, Figure 2-4) to connect an external video recorder/monitor/TV to the Asp. Connect the video cable plug (C) to the Asp S620 universal connector.
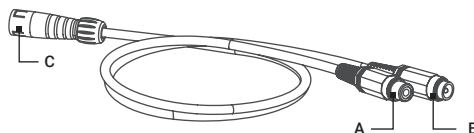
FIGURE 2-4. VIDEO CABLE

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

NOTE:

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

CAUTION:

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

2.1.5   INSTALLING THE ASP ON A TRIPOD

To mount the Asp to a tripod, screw the tripod into the 1/4'' threaded socket located on the bottom of the Asp.

CAUTION:

The unit may be badly damaged if the tripod collapses or falls over. Remove the unit from the tripod if it is not within your reach.

2.2 CONTROLS AND DISPLAY INDICATIONS

2.2.1 CONTROLS

CAUTION:

DO NOT force the equipment controls past their stopping points.

The Asp controls are shown in Figure 2-5 and are defined in Table 2-1. The ITEM column indicate the numbers used to identify items in the figures.

NOTE:

Various display symbols indicating the current operating state of the Asp can be displayed permanently, may appear momentarily, or can be set to appear only when a certain function is activated.
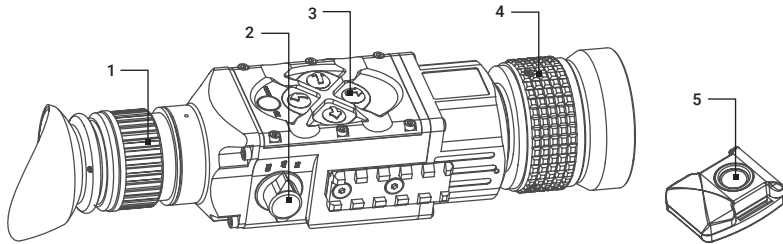
FIGURE 2-5. CONTROLS

TABLE 2-1. CONTROLS AND INDICATORS

ITEM	CONTROL/ INDICATOR	FUNCTION
1	Eyepiece Focus Ring	Adjusts the eyepiece diopter. The total diopter adjustment range is covered with 2 turns of the ring.
2	Operation Switch	Activates the Asp when turned to ON.
		Activates Standby mode when turned to STB.
		Deactivates the Asp when turned to OFF.
3	Control Panel Buttons	Configures operational settings. See Table 2-2 for button functions.
4	Objective Focus Ring	Focuses the objective lens. Adjusts for sharpest view of the scene. The total focus range is covered with three quarter turns of the lens.
5	Remote Control Button	Activates/deactivates the Asp in standby mode. To turn the unit on, press the button once. Press it again to turn the unit off.
—	Battery Status Indicator	The color fill bar in the battery icon indicates the current power level of the battery.
		The totally shaded battery icon indicates the fully charged battery.
		The flashing transparent battery icon indicates a low battery.

The Asp button control panel is shown in Figure 2-6.

Table 2-2 contains the button functions and their descriptions. The ITEM column indicates the number used to identify buttons in Figure 2-6.

NOTE:

Each button is responsible for different functions, selected by 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+ seconds is considered "holding down."
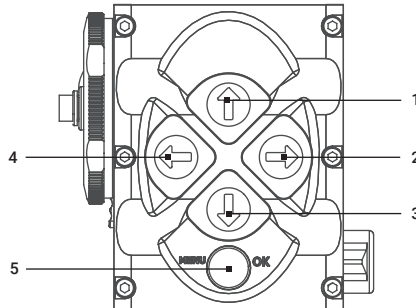
FIGURE 2-6. BUTTON CONTROL PANEL

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, OEM Custom.
	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.

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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, Temperature, Reticle, Boresight, Scenarios, Corrections 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 2-7). Push and hold down the MENU button again to exit the menu.

Once the MAIN MENU is displayed (Figure 2-8), use the UP and DOWN buttons (Figure 2-7) to navigate through the items on the menu.

Push the OK button to view the settings available for the item selected.
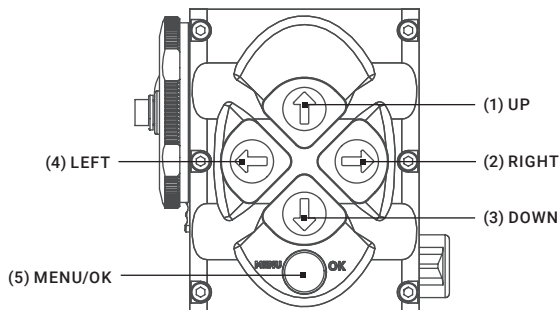
FIGURE 2-7. MAIN MENU NAVIGATION BUTTONS

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
    TEMPERATURE
    RETICLE
    BORESIGHT
    SCENARIOS
    CORRECTIONS
    SETTINGS
```
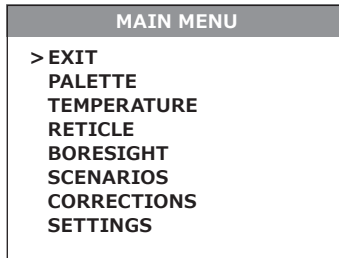
FIGURE 2-8. MAIN MENU

Palette Menu

The PALETTE menu (Figures 2-9) 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.

```
         PALETTE                      PALETTE
  >  EXIT                       >  EXIT
     WHITE HOT                     SEPIA
     BLACK HOT                     COLOR 1
     FUSION                        COLOR 2
     RAINBOW                       ICE - FIRE
     GLOBOW                        RAIN
     IRONBOW1                      OEM CUSTOM
     IRONBOW2
```
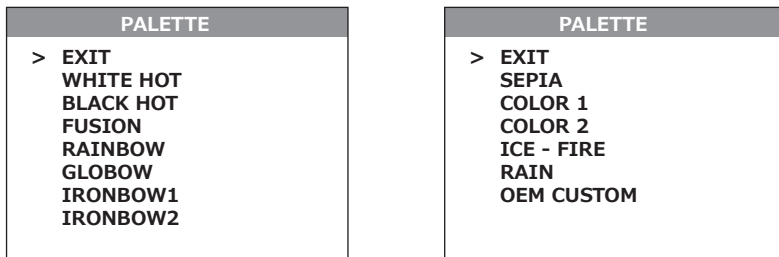
FIGURE 2-9. PALETTE MENU

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.

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.

Temperature Menu

The TEMPERATURE menu (Figure 2-10) allows the user to select varying temperature detection graphics in the display field of view.

Select Display Off to remove all temperature data from the display.

Select Numeric Only for a numerical representation of the temperature data on the display. The current temperature of the object or scene in the center of the field of view will be printed on the display.

```
        TEMPERATURE

   > EXIT
     DISPLAY OFF
     NUMERIC ONLY
     THERMOMETER ONLY
     NUMERIC-THERMOMETER
```
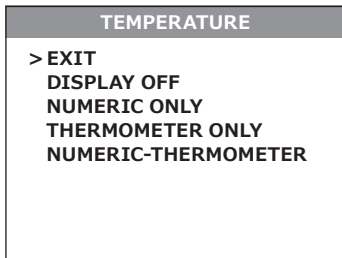
FIGURE 2-10. TEMPERATURE MENU

Select Thermometer Only for a graphical representation of the temperature data on the display. The current temperature of the object or scene in the center of the FOV will be indicated by a graphical thermometer.

Select Numeric-Thermometer item for both numerical and graphical representation of the temperature data on the display.

Reticle Menu

The RETICLE menu (Figure 2-11) allows the user to select from a choice of reticle patterns: Dot 4 MOA, Line Dot, Cross Center Dot, Cross, Crosshair.

To select the reticle type push the LEFT or RIGHT button. Push the OK button to confirm selection.

```
          RETICLE

   >  EXIT



               +



     <> CROSS
```
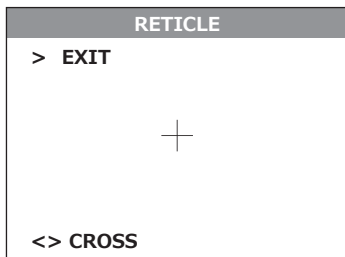
FIGURE 2-11. RETICLE MENU

Boresight Menu

The boresight function allows the user to changing the reticle position in the display. Figure 2-152 shows the BORESIGHT screen.

Push the LEFT and RIGHT buttons to adjust for windage. Push the UP and DOWN buttons to adjust for elevation.

Every time one of these buttons is pushed, the reticle shifts a single pixel increment. 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.

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

FIGURE 2-12. BORESIGHT MENU

Scenarios Menu

The SCENARIOS menu (Figure 2-13) allows the operator to select from a choice of hunting scenarios or turn the scenarios off. When a scenario is selected, the display image of the object with the correct temperature will be colorized for easy detection.

The icon of the selected scenario is displayed at the bottom of the main screen.

```
┌─────────────────────────────┐
│         SCENARIOS           │
├─────────────────────────────┤
│  > EXIT                     │
│    SCENARIOS OFF            │
│    HIGH VALUE TARGET        │
│    HOG HUNTING              │
│    COYOTE HUNTING           │
│    DEER HUNTING             │
│    BEAR HUNTING             │
│    MOUNTAIN LION            │
│    ELK HUNTING              │
└─────────────────────────────┘
```
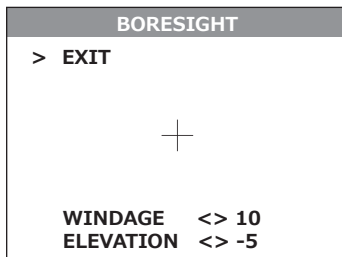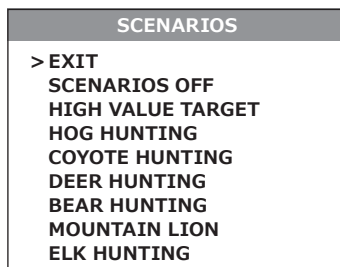
FIGURE 2-13. SCENARIOS MENU

Corrections Menu

The CORRECTIONS menu (Figure 3-14) allows the user to select from a choice of filter patterns. The different field environments are pre-set with the correction filters valued for the best field performance.

The icon of the selected correction is displayed at the bottom of the main screen.

```
┌─────────────────────────────┐
│        CORRECTIONS          │
├─────────────────────────────┤
│  > EXIT                     │
│    DEFAULT                  │
│    PANORAMA                 │
│    OUTDOOR DETECTION        │
│    CLOSE QUARTERS           │
│    FACE RECIGNITION         │
│    REGION                   │
│                             │
└─────────────────────────────┘
```

FIGURE 2-14. CORRECTIONS MENU

Settings Menu

The SETTINGS menu (Figure 2-15) allows direct changes to the save profiles, video standard, temperature units, display left margin, display top margin, and factory default setting.

The RIFLE PROFILE function allows the user to save three reticle positions as the Rifle Profile 1, Rifle Profile 2, and Rifle Profile 3.
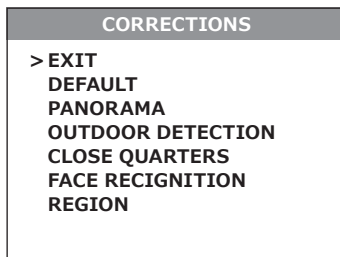
The STANDARD function allows the user to select from a choice of NTSC or PAL video standard.

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.

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.

```
            SETTINGS

 > EXIT
   RIFLE PROFILE  < >  1
   STANDARD       < >  NTSC
   TEMP. UNITS    < >  F
   LEFT MARGIN    < >  60
   RIGHT MARGIN   < >  20
   FACTORY DEFAULTS
```
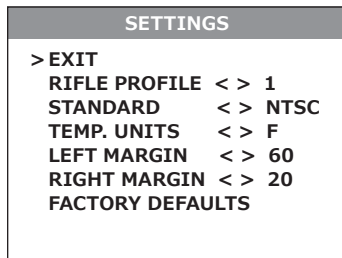
FIGURE 2-15. SETTINGS MENU

2.3 OPERATING PROCEDURES

2.3.1 OPERATING

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 Asp from the carrying case.

2. Remove the objective lens cap.

3. Point the equipment at an object.

4. Activate the Asp by turning the operation switch ON. After approximately 3 sec, video of the thermal scene should appear.

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

NOTE:

The total diopter adjustment range is covered with 2 turns of the eyepiece focus ring. The total focus range is covered with three quarter turns of the objective focus ring.

6. Using the buttons on the control panel (Figure 2-16), configure the Asp to adapt it to your situation.

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

(4) RETICLE COLOR / RETICLE PATTERN

(1) BRIGHTNESS UP/ PALETTE (FWD)

(2) DIGITAL ZOOM / RETICLE ON/ OFF
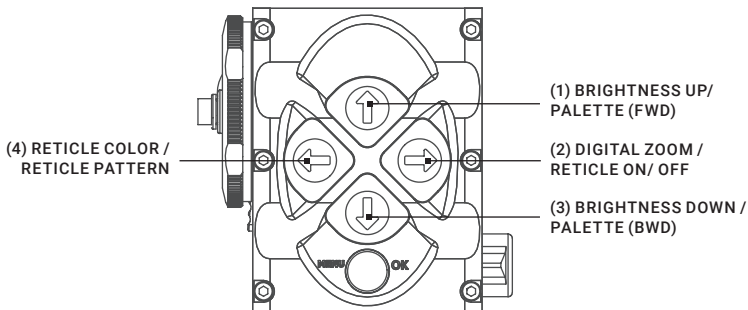
(3) BRIGHTNESS DOWN / PALETTE (BWD)

FIGURE 2-16. SETTING BUTTONS

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

Push buttons (1) and (2) to increase/ decrease the display brightness by one level at a time until you reach your desired brightness level.

B. Use FFC (Flat Field Correction) to improve image quality.

Push buttons (1) and (2) simultaneously to start manual Flat Field Correction.

If necessary, interrupt the automatic process by pushing the OK button (3) on the control panel during the 5-second countdown, which will appear at the bottom of the display.

C. 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 bottom part of the display.

NOTE:

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

D. Use the image palettes for optimal visualization of temperature changes in the scene.

Hold down the palette control button (2) to scroll through available palettes. The palette name will appear in the top part of the display.

E. Turns reticle ON/ OFF.

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

F. Select the color of the reticle.

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

G. 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.

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

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.

7. To operate the Asp 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   ASP SHUT-DOWN

NOTE:

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

Shut-down the Asp as follows:

1. Be sure to save your settings and data.
2. Turn off the Asp.
3. Place the protective cap on the objective lens.
4. Disconnect the cable (if applicable).
5. Place the protective cap on the connector.
6. Remove the batteries.

CAUTION:

Do not store the Asp with the batteries still installed.

7. Store the Asp 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 Asp. 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 Asp 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 3.2.3.
	The equipment is damaged.	Please contact Customer Support.
The Asp 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. If this is not effective, 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. If this is not effective, 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 Asp operator maintenance consists of operational tests, inspections for unit serviceability, cleaning and mounting procedures, and corrective actions (troubleshooting and replacement of a limited number of parts). Maintenance instructions covered elsewhere in this manual (troubleshooting, etc.) are not repeated in this section.

CAUTION:

The Asp 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 Asp 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. Dampen a cotton swab with ethanol and lightly and slowly wipe optical surface. Clean the optical surface using circular movements, starting from the center and moving out towards the edge, not touching the lens holder and changing the 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 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 4-1) that secure the cover to the bottom of the unit. Remove the cover.
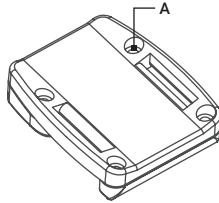

FIGURE 3-1. WIRELESS REMOTE CONTROL BATTERY INSTALLATION

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:

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5 SPECIFICATIONS

5.1 SPECIFICATIONS

TABLE 5-1. SYSTEM DATA

ITEM	ASP TM25-336	ASP TM25-640	ASP TM50-336	ASP TM50-640	ASP TM75-336	ASP TM75-640
Optical Magnification	1.6×	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	640×512	336×256	640×512	336×256	640×512
Pixel Size	17 µm					
Pixel Display Format	800×600					
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					
Analog Video Input/ Output Format (resolution)	PAL (768×574 pixels) / NTSC (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)					

TABLE 5-2. OPTICAL DATA

ITEM		ASP TB25-336	ASP TB25-640	ASP TB50-336	ASP TB50-640	ASP TB75-336	ASP TB75-640
Field of View	- ang. X degrees	12.6	24	7.8	14.8	4.3	8.3
	- ang. Y degrees	10	20	5.9	11.8	3.2	6.6
Objective Focal Length		25 mm		50 mm		75 mm	
Objective F-number		1:1		1:1		1:1	
Exit Pupil Diameter		14mm					
Eye Relief		16mm					
Focus Method		Manual					
Focusing Range		5m to inf.					
Diopter Adjustment		Manual					
Diopter Adjustment Range		±5 diopter					

TABLE 5-3. ELECTRICAL DATA

ITEM	DATA
Battery	Two CR123A 3V Lithium batteries or CR123 rechargeable batteries with voltage from 3.0V to 3.7V (2)
Current Consumption, max	320 mA
Battery Life at 20°C (68°F)	Up to 4 hr. (optional up to 12 hr.)
Extended Battery Pack	Two 18650 rechargeable batteries (3.7V), four CR123 rechargeable batteries with voltage 3.7V max, or four standard CR123A 3V Lithium batteries (operational time up to 8 hr.)
External Power Supply	6 VDC / 600mA

TABLE 5-4. MECHANICAL DATA

ITEM	ASP TB25-336 ASP TB25-640	ASP TB50-336 ASP TB50-640	ASP TB75-336 ASP TB75-640
Overall Dimensions	196 × 72 × 56 mm (7.7 × 2.8 × 2.2 in)	220 × 72 × 60 mm (8.6 × 2.8 × 2.3 in)	248 × 89 × 89 mm (9.7 × 3.5 × 3.5 in)
Weight (w/o Batteries)	0.58 kg (1.2 lb)	0.69 kg (1.5 lb)	0.83kg (1.8 lb)

TABLE 5-5. ENVIRONMENTAL DATA

ITEM	DATA
Operating Temperature	-40 to +50°C (-40 to +122°F)
Storage Temperature	-50 to +70°C (-58 to +158°F)

TABLE 5-6. 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

Specifications are subject to change without notice.

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.
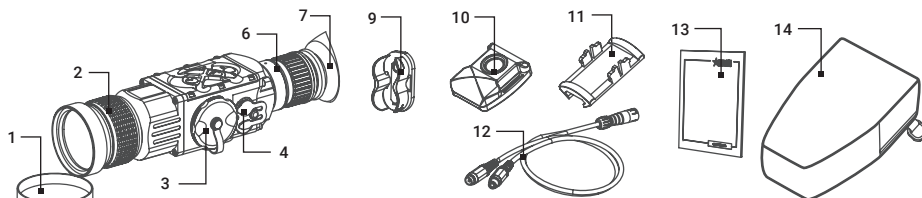
FIGURE A-1. ASP SPARE PARTS LIST

TABLE A-1. ASP 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	Battery Cap	AGMTIDBCP
4	Connector Cap	AGMTIDCNCP
5	Operation Switch (not shown)	AGMTIDOPSW
6	Eyepiece Assembly	AGMTIMIPAS
7	Eyecup	AGMTIMECP
8	Side Picatinny/Weaver Rail (not shown)	AGMTIDSPR
9	Battery Cassette	AGMTIDBTCS
10	Wireless Remote Control	AGMTIDWRC
11	Picatinny Adapter for Wireless Remote Control	AGMTIDPARC
12	Video Cable	AGMTIDVCB
13	Operation and Maintenance Manual	AGMTIMOMM
14	Carrying Case	AGMTIBCRCS

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