

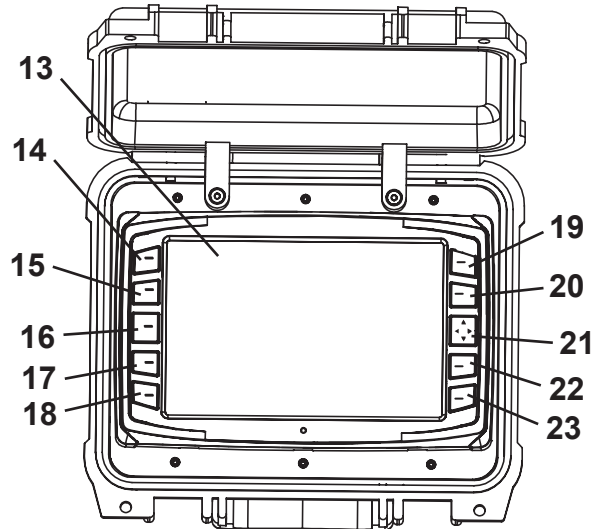
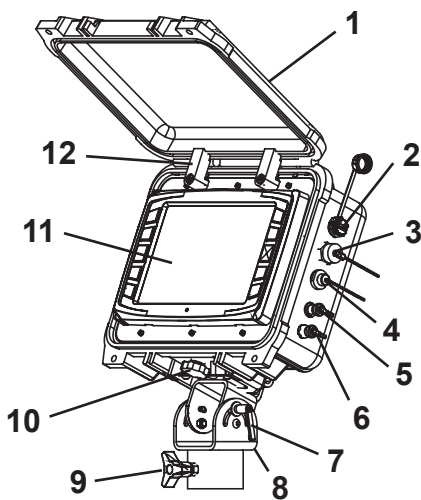


Akkerman Inc.

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GBM Gen V Monitor Operation Instructions Instruction Part No. 050138A

The GBM Gen V monitor contains the computer with an outdoor flat screen for viewing the illuminated target in the steering head via the theodolite mounted camera. The target image can be adjusted with the gain, exposure, zoom and image pan controls. With the on-screen pilot tube counter, it is easy to keep track of the pilot tubes that have been installed in the drive. The monitor case can be used as a sun visor for reducing the glare on the monitor screen. The built-in software includes data logging capabilities with target images.



- | | |
|----------------------------------|---------------------------|
| 1. Case/Sun Visor | 10. Case Mount Knob |
| 2. USB Port/Data Log Flash Drive | 11. Monitor Display |
| 3. Power IN Cable Connection | 12. Lid Support |
| 4. Data Log Connection* | 13. GBM System Window |
| 5. LED/Focus Cable Connection | 14. Shut Down Button |
| 6. Camera Cable Connection | 15. Reset Zoom Button |
| 7. Monitor Tilt Adjustment | 16. Wide Mode Button |
| 8. Monitor Mount | 17. LED Brightness Button |
| 9. Monitor Mount Knob | 18. Pilot Tube Counter |

- | |
|--|
| 19. Gain Button - controls the camera sensitivity |
| 20. Exposure Button - controls amount of light available to the camera |
| 21. Focus Button/4-Way Directional Selector/Power ON Button** |
| 22. Pan Button - moves image width/height with 4-Way Selector Button |
| 23. Zoom Button |

* Equipped with monitors SN A49400A-28 & After

** Power ON button - Up Arrow

SETUP

1. Connect cable from camera to Camera connection (item 6) on guidance system.
2. Connect LED cable from theodolite to LED/Focus connection (item 5) on guidance system.
3. Connect power cable from pendant to Power IN (item 3) connection on guidance system.
4. If pressure data logging is needed, connect cable from jacking frame to *Data Log connection (4).

START UP

If using data logging:

- Prior to start up, insert USB flash drive into USB Port/Data Log Flash Drive port (item 2). **Do not remove flash drive until the monitor is powered down.**

1. The monitor will automatically boot up (typically within 15 seconds) once power is connected.
2. The monitor will display the Akkerman logo while it is connecting to the camera.
3. If the Akkerman logo remains for an extended period of time, check the camera connections and the camera itself.
4. The monitor can be turned on by pressing the up arrow on the 4-Way direction button (item 21) if the monitor has been shut down via the shutdown button.

PRIOR TO SHUT DOWN

BEFORE shutting down guidance system, be sure to record the Gain (item 19), Exposure (20), Pan Width/Height (item 22), Zoom (item 23), LED Brightness (item 17) and Pilot Tube Counter (item 18) settings. After computer is shut down and then is restarted, the settings will return to the factory default settings.

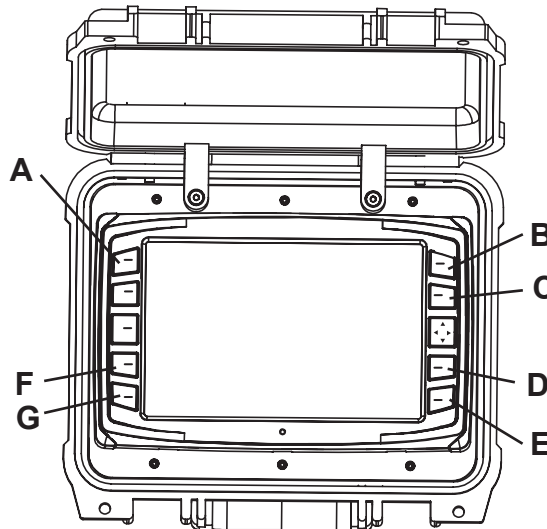
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SHUT DOWN

Prior to removing/disconnecting power from monitor, shut down the monitor by pressing the Shut Down button (A).

SUDDEN POWER LOSS

If a sudden or unexpected power loss occurs or power pack is shut down, once power is restored, the Gain (B), Exposure (C), Pan Width/Height (D), Zoom (E), LED (F) and Pilot Tube Counter (G) settings will return to the factory default settings.

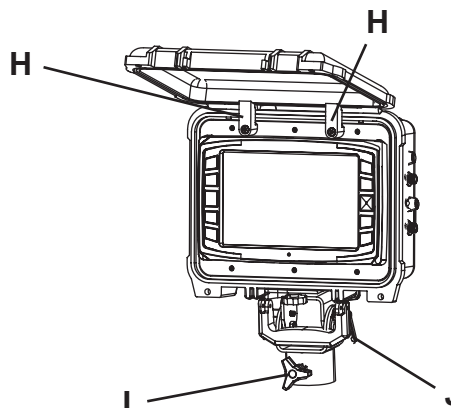


DISCONNECTING CAMERA

Shut down the computer properly before disconnecting the camera. Disconnecting camera while power is still connected and computer not properly shut down will cause the screen to lockup or freeze. If this occurs, remove/disconnect power from the monitor and reconnect the camera and repower the monitor to return to operation.

USING CASE AS SUN VISOR

Open case and rotate both lid supports (H) up. Lower case to supports for use as a sun visor. Be sure to rotate lid supports down before attempting to close case cover.



MONITOR REMOVE/REPLACE/TILT

To remove guidance system monitor case from monitor mount, loosen monitor mount knob (I) until case can be removed from mount.

To replace monitor case to monitor mount, place monitor on mount and tighten with monitor mount knob (I).

To tilt monitor for improved viewing, loosen monitor tilt adjustment (J), tilt monitor to desired position, tighten tilt adjustment.

CLEANING COMPUTER DISPLAY

The computer display can be scratched. Use a soft, lint-free cloth to clean dust, fingerprints and smudges. DO NOT use solvents. If cleaning is necessary on the guidance system, use a lightly dampened micro fiber cloth or other soft lint-free cloth.

PILOT TUBE COUNTER

When installing a new pilot tube, press the pilot tube counter button (G) to increase the pilot tube count. If it becomes necessary to decrease the tube number, hold the pilot tube counter button (G) as needed to decrease the pilot tube count.

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USING DATA LOGGING

Prior to start up, insert USB flash drive into USB Port/ Data Log Flash Drive connection (A). **Do not remove flash drive until the monitor is powered down.**

The data logging generates two files every five seconds and is saved to the USB flash drive.

1. A .log file (B) is generated recording the time stamp, pan width, pan height, frame per second, pilot tube # and zoom level.

A new .log file is generated when the monitor is shutdown and restarted as long as a USB flash drive is in the USB Port/Data Log Flash Drive connection.

Monitors SN A49400A-28 & after are equipped with a Data Log connection port (C) to record the thrust PSI and rotation PSI. To record PSI data, prior to start up connect pressure transducer cable (from A49403A kit installed on GBM frame) to Data Log connection port (C). The pressure data will then be added to the log file (B/D).

To access data:

- a. Insert the USB flash drive in a computer USB port.
- b. Navigate to *timestamp.log* file.
- c. Double click *timestamp.log* to open file in text form (D).
- d. Click File.
- e. Click Save As.
- f. Change the .log file extension to .csv (column separated value) file extension.
- g. Close file.
- h. Double click the .csv file. The data will open in a spread sheet program and is now in column form (E).

2. Concurrently a .bmp image file (F) is generated showing the target screen corresponding to the time stamp entry in the logging file.

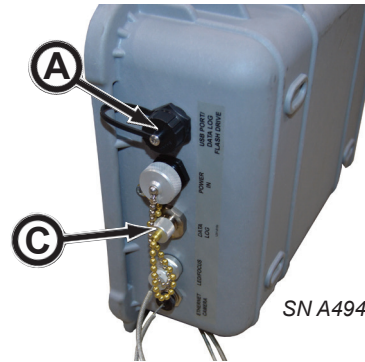
To view the file, simply double click the desired time stamped image file. The image will open in a photo/picture program.

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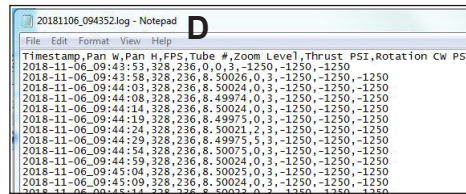


SN A49400A-27 & Before

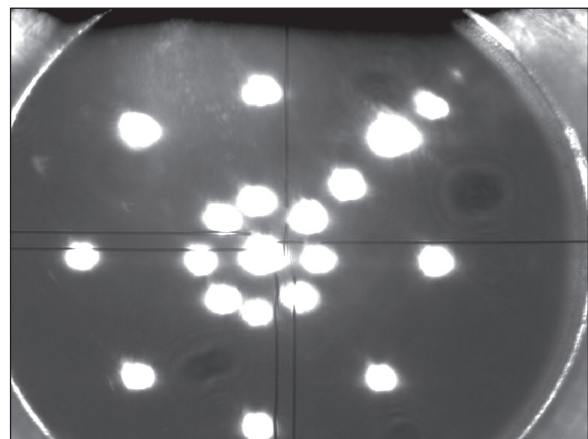
20181106_094352.log	B	11/8/2018 9:20 AM	Text Docu
20181106_094353.bmp	F	11/6/2018 9:43 AM	BMP File
20181106_094358.bmp	F	11/6/2018 9:43 AM	BMP File
20181106_094403.bmp	F	11/6/2018 9:44 AM	BMP File



SN A49400A-28 & After



Timestamp	Pan W	Pan H	FPS	Tube #	Zoom Level	Thrust PSI	Rotation CW PSI	Rotation CCW PSI
2018-11-06_09:43:53	328	236	0	0	3	-1250	-1250	-1250
2018-11-06_09:43:58	328	236	8.50026	0	3	-1250	-1250	-1250
2018-11-06_09:44:03	328	236	8.50024	0	3	-1250	-1250	-1250
2018-11-06_09:44:08	328	236	8.49974	0	3	-1250	-1250	-1250
2018-11-06_09:44:14	328	236	8.50024	0	3	-1250	-1250	-1250
2018-11-06_09:44:19	328	236	8.49975	0	3	-1250	-1250	-1250
2018-11-06_09:44:24	328	236	8.50021	2	3	-1250	-1250	-1250
2018-11-06_09:44:29	328	236	8.49975	5	3	-1250	-1250	-1250



UPDATING MONITOR SOFTWARE

Periodically Akkerman may release an update to the monitor software to add functionality and improve performance.

The Akkerman Aftermarket Support department will contact users and either email them an updated file to copy to a USB flash drive or depending on the size of the update, a USB flash drive with the updated file will be sent to each user.

NOTICE The update file will be located in the update_gbm folder.

1. Insert USB flash drive with the updated file into USB port (A) on the monitor.
2. Boot up the monitor and wait until the operational screen is visible.
3. Press and hold the Pilot Tube Counter button until the count is at 0 (zero).

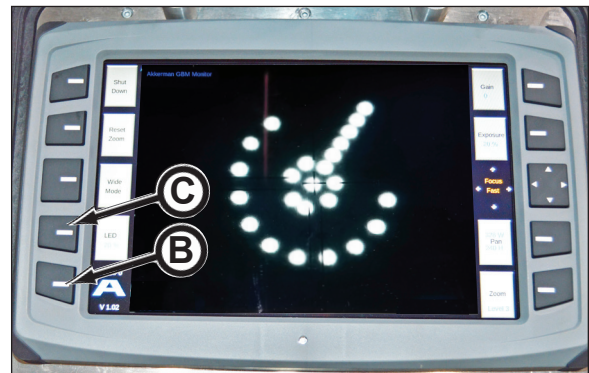


SN A49400A-27 & Before



SN A49400A-28 & After

4. While holding the Pilot Tube Counter button(B), press LED brightness button (C). Hold both buttons until the camera screen exits. Once the buttons are released, the update will initiate. This may take up to 15 minutes to update the monitor software.



IMPORTANT: While updating DO NOT DISCONNECT POWER!

Once the update initiates, a series of update windows will appear indicating the progress of the update.

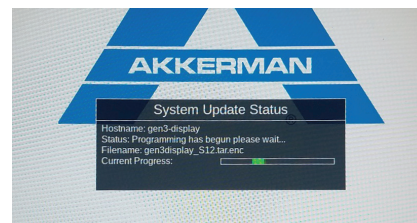
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Automatic Update V1.0.9
Update file 2 of 2:
/tmp/usb_storage/update_gbm/Display_update_Pro
ject_abs.phy_0211
Connected to FWMA Server: Ok
Decrypted File Details:
Status: Ok
Title: Project_abs.phyFW
Updater: CAM_LINK_UPDATER
Version: 0211
Progress: 100%
Message: Complete
Disconnected from FWMA Server: Ok
Updates will continue after rebooting...

Automatic Update V1.0.9
Update file 1 of 2:
/tmp/usb_storage/update_gbm/0
ject_abs.phy_0211
Connected to FWMA Server: Ok
Decrypted File Details:
Status: Ok
Title: Project_abs.phyFW
Updater: CAM_LINK_UPDATER
Version: 0211
Progress: 67%
Message: Updating...

***** UPDATING, DO NOT DISCONNECT POWER! *****
Status: In Progress
Progress: 67%
Message: Updating...
    
```

Update Windows for V 1.02



Update Window for V 1.03 & After

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If the update file is not on the USB flash drive or is not located in the update_gbm folder:

V 1.02: an error window (A) will appear and the automatic update will cancel.

V 1.03: the camera screen reappears without the new version number. Be sure to confirm whether the version number has been updated. If not, rerun the update.

5. When the camera screen reappears, the update is complete. The new version # (B) will be visible in the lower left portion of the screen.

