

AeroHead HD

Quick Reference Guide



AeroHead HD Quick Reference

I. Startup

- 1) **Powering up the system** - Press the “Mains Power” button to power up the AeroRemote. This will automatically power up the Aerohead Power Chassis. It will take 5 to 10 seconds for the two systems to establish communications and synchronize to one another. The AeroRemote display will show “Waiting for Console” during this process. The Aerohead Power Chassis may be powered up manually if cabling does not allow automatic turn on. This may be done with either the rocker switch directly above the circuit breaker on the Aerohead Power Chassis or the rocker switch on the Remote On/Off chassis located near the Aerohead. When first powered up the pan and tilt will rock back and forth slightly to initialize their power amplifiers.
- 2) **Motor power** - Once communication has been established, motor power may be turned on by pressing the “Motor Power” button. At this point the Aerohead controls are functional.
- 3) **Joystick sensitivity** - The sensitivity of the joystick is controlled over a wide range by the “Sensitivity” knob. The current setting is shown on the left side of the AeroRemote screen. This is scaled from 1 to 100; the units are arbitrary. Joystick sensitivity is also affected by the current focal length of the lens. Sensitivity is reduced as the lens is zoomed to longer focal lengths.
- 4) **Initial Calibration/Home Sense** - The Aerohead should be calibrated whenever motor power is turned on since Limits and all Takes and Marks are measured from this true home position. The Calibrate process commands the Aerohead to find its home positions by driving the pan and tilt motors to find their home switches. To implement this press the “Setup” button; rotate the “Select” knob until “Calibrate” is highlighted on the display; and press the “Accept” button. The system will ask “Are You Sure” and requires a second press of the “Accept” button. This will cause the Aerohead to drive the pan and tilt motors toward their home sense switches. Once found the system will reverse the motors at a slower speed to more precisely locate the positions. The system will then run the motors to the zero position if one has been recorded.
- 5) **Go to Zero** - Once initial calibration has been done the “Go to Zero” command is activated. This may be used at any time to return the Aerohead to a recorded zero position. If no zero position has been recorded this defaults to the Home Sense position.

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- 6) **Extend** - Sends a command to the lens to insert the lens extender. Successive button pushes toggles the extender in and out. The lamp in the “Extend” button will be on when the extender is in.

II. Standard System Setup

System setup is accomplished using the Setup Controls: “Setup”, “Accept” and “Cancel” buttons and the “Select” knob. Press the “Setup” knob to enable the system. Select the desired function with the “Select” knob and press “Accept”. For On/Off type settings pressing the “Accept” button will toggle between the two states. For functions requiring a numeric value the “Accept” button will allow the “Select” knob to make changes. Press “Accept” again to store the new setting. “Cancel” will restore the old setting.

- 1) **Stabilize On/Off** - This sends a command to the lens to turn on or turn off its internal stabilization. This feature is currently inactive.
- 2) **Enable Axes** - Each axis may be separately enabled or disabled. Enabled axes are shown as a dark letter in a light background. Disabled axes are shown as a light letter in a dark background.
- 3) **Smooth Axes** - This controls the level of smoothing for each axis on a scale of 0 to 100. A zero smoothing puts no smoothing between the controls and the motor commands. A setting of 100 implements a very high level of smoothing. Smoothing levels below 25 and above 90 may be too extreme for normal use.
- 4) **Sensitivity** - The relative level of control sensitivity may be set with these commands. These settings are used to set the speed of an axis for a particular joystick position or knob turn. Pan, Tilt and Zoom sensitivity are also affected by the “Sensitivity” knob.

III. Advanced System Setup

To enter the Advanced System Setup hold down the “Setup” button and press the “Cancel” button. This will enable the setup of the more advanced and less often used functions. Operation is very similar to the Standard System Setup except in some cases an “OK” may appear on the screen. In these cases the “OK” must be highlighted and accepted before the changes will become permanent.

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- 1) **Limits** - Minimum and maximum software limits may be set for each axis and limits may be enabled and disabled for each axis. If limits are enabled the letter for that axis will be shown as a dark letter on a light background. This is one of the functions for which “OK” must be accepted before the changes will take effect. Pressing “Setup” will reset the limits to + and - 360 degrees (only for Pan and Tilt.)
- 2) **Tuning** - These settings control the values used in the servo motor tuning calculations. Changing these can cause severe motor operation problems and should only be changed by knowledgeable engineers. If these are changed and severe problems occur please restore the values to the default values of:

Pan: P = 48, I = 80, D = 64, IL = 24 and DS = 0
Tilt: P = 48, I = 64, D = 64, IL = 24 and DS = 0
- 3) **Direction** - The direction of the control knob or joystick may be set for each axis according to the user’s preference.
- 4) **Lens Type** - This sets the type of lens being used in the system. Currently only the Fujinon standard is operations.
- 5) **Overslung** - Sets whether the Aerohead is mounted above or below its base. This sets which home position the systems calibrates the tilt axis to. It must be set to “Overslung” if the Aerohead is pylon mounted. If set to “Underslung” tilt will calibrate 180 degrees out which would cause serious problems if the camera is too long to be able to continuously rotate in tilt.
- 6) **Contrast** - Adjusts the contrast setting of the LCD screen for better viewing.

IV. Marks Control

The “Marks Control” system allows recording of pan, tilt, focus and zoom positions for future playback. The “Take/Mark Select” knob does double duty as a selector for Takes or Marks. An arrow indicates which it is currently controlling. The selection will change to Mark number if either the “Set” or “Go To” button is pushed or if the “Time” knob is moved. Also, pushing the “Stop” button will toggle between Takes and Marks. The recorded Pan and Tilt positions for the currently selected mark is displayed on the information line.

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Joystick and focus controls are active during all moves: goto's, rewinds and takes. These manual inputs are added to the predefined motion. This will cause any controlled axis to end at a different position than is recorded in the set move. The Goto time may also be changed during a move, allowing the operator to speed-up or slow down a move already in operation. This does not apply to Takes.

The camera will take the most direct route in Pan to a new Mark position. If the camera is panned more than 180 degrees from a Mark it will take the shortest route rather than reversing direction. To disable this feature hold "Cancel" while pressing "GoTo" and the move will go the long way.

- 1) **To set a Mark** - Run the system to the desired framing and focal position with the joystick and focus control. Use the "Take/Mark Select" knob to select the desired Mark number. Push the "Set" button. If the Mark is not empty the screen will display "Are you sure". If you are press "Set" again to overwrite the Mark.
- 2) **To run to a Mark** - Use the "Take/Mark Select" knob to select the desired Mark. Using the "Time" knob set the desired time for the move. Push the "Go To" knob. The control system will then smoothly run the axes to the selected framing in the time shown.
- 3) **To select Marks faster** - Holding the "Cancel" or "Setup" button while selecting Marks will allow faster selection. The "Cancel" button allows the select knob to change Marks 50 at a time. The "Setup" button causes the system to move to the next recorded or non-empty Mark.
- 4) **To Delete a Mark** - To delete a Mark first select the desired Mark then hold "Cancel" and press "Set". Since a two button keypress is required the Mark will be cleared immediately without needing confirmation.
- 5) **Running to successive Marks** - If you are already on a Mark, pressing "GoTo" will automatically select the next non-empty Mark and begin the run.

V. Record/Playback

This is a mini motion control system which will record and playback moves as originally performed. Since the "Take/Mark Select" knob does double duty

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press the “Stop” button to use it to select Take. There is a total of 19 minutes of move recording capability in the system. This can be a few or many, many takes.

- 1) **Record a move** - Select the desired take number. Press the “Record” button and perform your move. When complete push the “Stop” button.
- 2) **Play back a move** - Use the “Take/Mark Select” knob to select the desired take. Press the “Rewind” button to move to the beginning of the take. The “Q’d” lamp will light whenever the axes are at the beginning position of the selected take. Press “Play” to run the move.
- 3) **Take selection** - The “Take/Mark Select” knob selects between takes. Hold the “Setup” button while turning the knob to select the next non-empty take. Hold the “Cancel” button to move through takes 50 at a time.
- 4) **Delete a take** - Select the desired take. Hold the “Stop” button and hit “Record” to delete the take.

VI. Additional information

If the “Cancel” button is held when power is turned on memory will be erased depending on which other buttons are being held:

Play - resets all motor parameters

Record - Erases all Takes

Set - Erases all Marks

The system will ask for confirmation. Hold both switches while pressing “Accept” to confirm.

Pan and tilt positions are displayed from -999.99 to +999.99 degrees. Beyond this the 1000th place is displayed above the number. The Min and Max values only display to + or _ 999.99

In the limits screen press “Setup” to reset limits to + and - 360.00 degrees around the current zero point. This is for pan and tilt only.