



Off Road Only

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AiROCK™

AiROCK Operation Guide

Now that you have made it through the set up and calibrate parts of the manual you get to the fun part, using it! We are going to start with a brief review of the AiROCK operation in general.

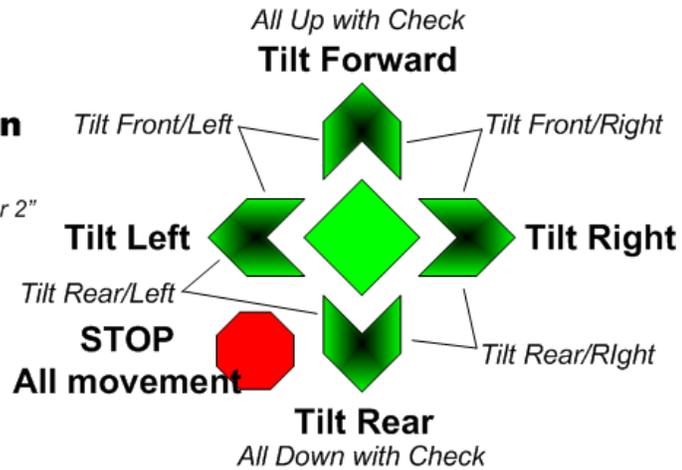
Button Control operation

The AiROCK is controlled via the 6 button control head.

AiROCK
Active Air Suspension

Hot Key Functions:
While display reads "Manual Mode 1 or 2"

X with LEFT – Mode 1 or 2
X with RIGHT – Momentary On/Off
X with UP – On or Off Road Default
X with DOWN – SwayLOC



AiROCK Functions as defined by button push:

Button Push	Manual Mode 1	Manual Mode 2
Check mark	go to preset ride height	go to preset ride height
Up arrow	pitch forward	all up
Down arrow	pitch backward	all down
Right arrow	rock right	rock right
Left arrow	rock left	rock left
Up arrow & ✓	all up	pitch forward
Down arrow & ✓	all down	pitch backward
Up arrow & Right arrow	tilt front right	tilt front right
Up arrow & left arrow	tilt front left	tilt front left
Down arrow & right arrow	tilt rear right	tilt rear right
Down arrow & left arrow	tilt rear left	tilt rear left
Up & down arrow	demo mode	demo mode

HOT KEYS:

DURING MANUAL MODE, the following actions may be engaged by pressing the X button and the following corresponding button.

- X and UP arrow will toggle default height from ON-Road to OFF-Road for the Checkmark to go to.
- X and DOWN arrow will toggle the SwayLOC™ (if installed) engaged and disengaged, disengaged meaning allowing more flex for offroad travel, screen will display "SwayLOC engaged" on lower line when the air cylinder is set to latch the arm.
- X and LEFT arrow toggles between Manual Mode 1 and 2
- X and RIGHT arrow toggles between Momentary mode ON and OFF, signified by the M behind the mode number momentary is ON when the M is present. Momentary means that the buttons will only react while



you are pushing them, and will stop that movement when you release, except for the Check Mark, that will always continue to go to the final position.

Off Road Only recommends using and working with all modes prior to offroading to learn the benefits of each. Once you find a preference, leave it at that setting, so you can familiarize yourself with one mode of operation.

Manual Mode

When you turn on the key for a brief moment you will read AiROCK firmware version 2.0i thru 3.3h. This guide supports 2.0i and later. After the version, the screen changes to **Manual Mode 1** or **Manual Mode 2**. Our review will start here with a run down of the setup menu first.

To get into the menu from here press the **X** and **Check Mark** at the same time. This brings you into the **Settings Menu**. NOTE: if you have the optional SwayLOC system installed and you have instructed the AiROCK system to engage the operational software, the first thing you see is **Engage Sway Loc**. If you do not have that option installed, or have not yet instructed AiROCK to control the SwayLOC, then you will not see this menu item first. The Setup Menu will begin with **Active Mode On/Off**.

You can toggle SwayLOC from Engaged (Highway mode) and Disengaged (Off-Road Mode) by pressing the right button. If the SwayLOC is installed, then pressing the ">" button repeatedly should result in the sound of air engaging and disengaging the air actuator. ([Refer to manual page # for in-depth info after each paragraph](#))

Menu Items as they appear in the menu in the following order by scrolling down:

Active mode On/Off This is the operation that levels the Jeep in turns, accelerating and braking. Turning this on allows the **ACU** to continuously sample the height sensors while you are moving and after you have reached the speed threshold you have set (see 3.3.5 for setting this). Active Mode should normally be set to On. Once you are driving and reach the active speed threshold **Active Mode On** will appear on the screen. You can turn this on and off with **hot keys** while driving at speeds above the threshold by pushing the right key to turn on and the left key to turn off. The reason for turning active mode off would be in a situation where you are off road, but traveling at higher speeds and you did not want the AiROCK reacting to turning situations, such as running sand dunes or any high speed wheeling where you want the system to stay stable. Active Mode Off may also be used when driving in crosswind if the result of the crosswind is constant adjustment by the AiROCK to compensate. You may turn active mode on/off while driving in active mode, or presetting it by setting the selection here in the menu.

Lower at key off. The right button toggles this setting on and off. Set this to your preference. Setting this to "Yes" will cause the AiROCK system to watch for the ignition key to be turned off, wait 5 seconds to ensure you don't turn it back on quickly, and then the AiROCK will automatically lower the Jeep to the All Down setting. Off Road Only **strongly recommends** turning this mode OFF during off road use. Failure to do so may result in the vehicle lowering during a Key Off cycle on an obstacle, thereby shifting the center of gravity and possibly causing damage or bodily harm.

Preset Height The right button toggles this setting from on-road to off-road. Set it to on-road to start with. This sets the default height that the AiROCK system will return to when you hit the Check Mark during Manual Mode. If you wish to use the Off Road Height while off roading, you need this set to Off Road. Then pushing the Check Mark will result in the Jeep going to the higher off road setting. Reaching Active mode speeds will result in the Jeep lowering to On Road Level, but pressing Check Mark again once you return to Manual Mode will return you to the higher setting. **Note:** Pressing the X button as soon as the AiROCK system goes into Active Mode will stop the lowering and leave the system at the higher height. At this point Active Mode should be Off and this will leave the Jeep at the higher setting during high speed maneuvers.

Change active threshold This is the speed setting that the system will use as the transition from Manual Mode to Active Mode. Cursor right to get into this menu then use the up and down buttons to set the speed. You can choose to set the transition speed anywhere from 20 to 35 MPH in 1 mph increments. If your side streets have a speed limit of 25 mph, then set your active threshold speed lower than that and it will level on side streets. If you shift right at 25mph, then adjust the setting to a slightly higher or lower setting, to prevent the AiROCK system from adjusting to the shifting position of the suspension.



Service Mode Off Road Only recommends this mode to be engaged when the Jeep will be lifted on a hoist that lifts all 4 tires off of the ground by lifting on the frame of the Jeep. Entering this mode presets the airspring pressure to 30psi. This setting allows the airsprings to properly reseal themselves when the vehicle is lowered on the ground. If the Jeep is raised by the frame and the airsprings need to be removed, vent airsprings to Zero PSI from the install menu, and then use the Install Menu to inflate each airspring to 25psi before returning the Jeep to the ground. Disabling Lowering at Key Off will allow a service tech to work on the Jeeps electrical system without effecting the AiROCK itself. If the Tech is to drive the Jeep, then the Service mode should be exited to ensure proper street driving. Follow the instructions on the display to resume normal operations.

Change Manual mode This group will change the Manual Modes from 1 to 2 and from Full Range to Momentary (M). This change only effects the orientation of the button pushes as displayed in the following chart. Operating AiROCK in the Full Range mode (no "M" in the display) will result in the action requested by the push of the button to be continued until the full range of travel is met, or until pressure or other limitations result in a "Can't make it" display. Pressing the X button will always stop the action and pressing another button during movement will force the AiROCK to react to the new button push.

The "M" mode will allow the AiROCK to respond to your button push, but only during the time you press the button, releasing the button will stop all action. Use of either of these modes is up to your preference. Users have reported that using "M" mode is probably more valuable off road. The 6 inch system has more travel and you will often find you do not need full travel. With the 4 inch system you may find you need full travel more often and therefore the momentary function may not be as useful.

To determine which mode (1 or 2) is right for you, consider the following situations. If pitching the vehicle forward or back is a feature you would use a in your wheeling, then Mode 1 is better for you. If you need to go all up or all down more often on the trail, or while driving around town, then Mode 2 would be more appropriate. The Mode change only modifies the operation of the All Up/Down and Pitch Forward/Backward functions; the rest of the buttons stay the same.

Adjust off-road height This menu item is used to re-adjust the Off Road height. This is the same process that is done after Calibrate. This setting just allows you to re-adjust the height setting without recalibrating or having to reset On Road height as well. In setting the off-road height we recommend this height to be near the middle of the range of travel. This will usually give a good balance between extension and compression during flex. Sometimes, depending on the terrain, you may wish to go higher. Remember that when you get closer to the maximum extension of the airspring, depending on the weight of the Jeep it may be more difficult to achieve maximum compression during flex. Ideally, you want to allow full range of movement without having the shock absorber make hard contact with the bump stop, or full extension.

Adjust on-road height This menu item is used to readjust the On Road height. This is the same process that is done after Calibrate. This setting allows you to re-adjust the height setting without recalibrating or having to reset Off Road height as well. In setting the on-road height we recommend setting the height as low as you can go without making tire to fender contact, with the limit of how low you can go being the bump stops and shocks. Ideally at On Road height, on most evenly balanced (front to rear) jeeps, we recommend 1 to 1 ½" of chrome shock shaft showing between the bump stop and the shock body. This setting normally allows enough compression travel so that you do not make contact between the shocks and bump stops from on road bumps. This setting may need to be slightly higher for heavier Jeeps.

Installation Menu is the next item in the menu. The main part of the user guide describes how to use these menus to adjust other features.

Driving AiROCK

On road driving: Start up the Jeep, the display should read Manual Mode 1 (NOTE: It may read 1 or 2, and may have an "M" behind the number as well, depending on the current Manual Mode selected.)

You may at this time change the Manual Mode from 1 to 2 or vice versa by using the Hot Keys described above. Pressing the check mark at this time will enact the AiROCK to go to the Ride Height. This will go to the height that you have selected as the Default Ride Height and if that is set to On Road Height, then the display should show, "Going to On Road" If you wish to have it go to the higher Off Road Height, then go into the menu and change "Default Ride Height" to Off Road height.



If you have the SwayLOC installed, the bottom of the screen may read **Sway Loc Engaged**. If you do have the SwayLOC installed, but do not see the Engaged message, going into the menu and setting the SwayLOC option to Engaged and then pressing "X" should return to this screen with the appropriate message on the lower line.

You are now ready for a quick trip down the highway. Once in Active mode, pressing the ">" and "<" buttons will change Active Mode On/Off depending on which button pushed. This will stop the active suspension management part of AiROCK. The AiROCK will still attempt to level the Jeep at On Road Height the instant that the Active speed threshold is met. If you wish to prevent this movement, you must hit the "X" button immediately on this switching to Active Mode.

While driving in Active Mode, you may also press the Check Mark at any time. This will force the Jeep to return to on road ride height immediately. Pressing and holding the Up or Down button will shift the Jeep higher or lower while you are pressing the buttons. (Note: unevenly loaded Jeeps may not raise or lower equally front to rear) This may be used to determine if raising or lowering the on road ride height will provide a change in ride quality. Again, pressing the check at any time will return to the preset on road height.

Off road driving: Most off road driving will be done with the AiROCK in Manual Mode, or while traveling at speeds less than the Active speed threshold. Off Road Only recommends for beginners to use the features of AiROCK to "preset" the Jeep for the intended obstacle before actually entering the obstacle. This usually will allow you to tilt the Jeep left to right or front to rear and manipulate the center of gravity to a more favorable position. It is recommended to preset the Jeep until you are comfortable with the process that the AiROCK uses to adjust the Jeep. Once familiarized, you will be able to press buttons as you are driving the obstacle and be able to negotiate terrain that other jeeps can't. Until you are comfortable with the buttons and reactions, please refrain from adjusting on an obstacle.

The following is a description of each function and a brief where and how to use that function.

All Up: Most times, by raising the Jeep you can get yourself out of a high center situation. With the 4" system on short arms you gain one more thing when you are higher, your wheelbase becomes shorter. At times this can be advantageous allowing you to drive out of obstacles that others may not be able to because of modifying the wheelbase. Off Road Only does not recommend wheeling constantly in the all up position, as in this position, the shocks are at near full extension and the range of movement is limited, extended use in this condition may cause premature failure of the shock absorbers, control arms and other suspension components.

All Down: This option is quite popular, you may lower your Center of Gravity (CG), often times making off camber or steep smooth obstacles more safe and comforting. You need to remember that while the vehicle is in this position there is less suspension compression, but also much more extension available in suspension droop. Sometimes going to a lower height will allow the axles to articulate easier over a section of rough terrain. Slow speed is recommended during the lower settings of the suspension travel.

Rock Right & Rock Left: This movement is the easiest to visualize. By rocking the vehicle into the side hill you can move the CG lower which will reduce the feeling of tipping over. Remember it reduces it not eliminates it. When enhancing the center of gravity in this manner, more extreme angle may be able to be negotiated, but then you are usually at a much worse angle if something was to go wrong. You can also use the tilt left/right functions to move the body away from rocks and trees. Remember to watch the CG and not induce a roll by moving the body in a tight spot.

Pitch Forward: This function lowers the front and raises the rear. Pre-stage your vehicle like this for a short steep climb. This moves the CG toward the front putting more weight on front axle while still allowing the rear suspension to move.

Pitch Backward: This function lowers the rear and raises the front. Pre-stage your vehicle like this for a short steep descent. This moves the CG toward the rear putting more weight on rear axle while still allowing the front suspension to move.

Tilt Front or Back & Left or Right: These commands are a bit more complicated to understand, but fully grasping the functions they can provide will enable you to gain better control of the Jeep.



What you are doing is tilting the vehicle in a diagonal through the center point. This command only acts on the two corners that are being instructed to move. The two opposite corners are not affected, and trying to get a reaction diagonally when the Jeep is at All Up or All Down will usually not deliver the desired reaction, because the suspension is unable to allow the movement you are requesting. This function works best when the opposite corners are in the middle of the suspension range.

Using the tilt diagonal functions may allow you to force one tire down and take some weight off of the opposing corner. The command lowers the air pressure in the spring called out.

An example would be when crossing a wide crack at an angle. Pre-stage by forcing the leading tire down by the command **Tilt Right Rear**. This will remove some air from the right rear airspring and add air to the left front airspring forcing it down. At the halfway point across the gap switch to **Tilt Left Front** to begin forcing the right rear tire down. When you have crossed the obstacle remember to hit the check mark to bring you back to level.

These functions should be experimented with on flat ground with the Jeep starting at On Road or Off Road ride height.

For more information or questions, contact:

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Or on the web at www.offroadonly.com or email info@offroadonly.com

Email inquiries will be responded to in a timely manner.



Cut at the line and take this diagram with you in the Jeep!

AiROCK

Active Air Suspension

Hot Key Functions:

While display reads "Manual Mode 1 or 2"

- X with LEFT** – Mode 1 or 2
- X with RIGHT** – Momentary On/Off
- X with UP** – On or Off Road Default
- X with DOWN** – SwayLOC

