



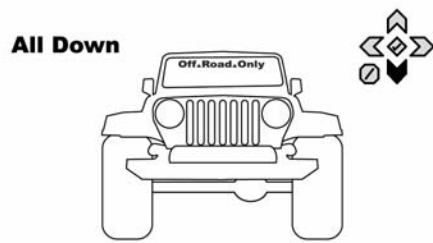
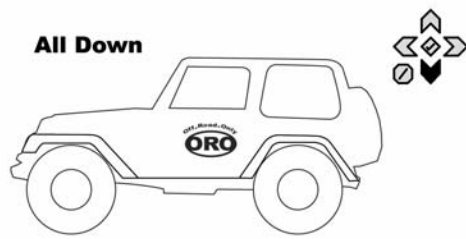
User Guide

Congratulations on your new AiROCK™ suspension system! This guide will help familiarize you with the features of the system. Please be sure the installation has been completed as shown in the install manual. If you have further questions, please contact your local dealer or visit our website at www.offroadonly.com.

Your vehicle is now equipped with a state of the art active suspension, designed by off roaders with off road prowess in mind. The AiROCK™ system will operate to both improve highway operation as well as drastically enhance off road control. Please read this entire manual to understand all off the features built into the AiROCK™ system.

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Button pushes shown are in Offroad mode 2. To learn more about the Button Menus, turn to page 7.

The AiROCK™ system is now automated. The driving modes are controlled by the vehicle's speed. With the AiROCK™ harness tied into the Vehicle Speed Sensor, (VSS) the AiROCK™ ACU can now monitor and adjust the ride height to always ensure safe driving conditions. There are three driving modes that will be displayed by the AiROCK™ interface. By understanding the three modes, you are well on your way to understanding the logic behind the system and have a good understanding of how you want to have your interface customized. The following is an explanation of the three driving modes.

1. Off Road mode

This is the mode that your vehicle both starts and stops in. The vehicle is automatically in this mode between 0-20mph. In this mode you have complete control of the height, pitch and roll of your vehicle.

2. Highway mode

This mode is automatically entered when you are traveling between 20-50mph. In this mode your vehicle returns to its predetermined "ride height". This mode assures that your suspension and steering geometry will be correct during high speeds. During Highway mode you have the option to adjust your ride height by a small amount only. The system will compensate for body roll by inflating the air springs as it sees fit.

3. Freeway mode

This mode is automatically entered once you are traveling faster than 50mph. Highway mode will be reengaged after you slow to approximately 35mph. While your vehicle is in this mode, the vehicle will remain in its predetermined ride height, (which is the same height as Highway mode) and will not let you adjust it at all. This mode assures that your suspension and steering geometry will be correct during high speeds. Although the system will compensate for body roll in this mode, it will do so less often since turns on freeways are far more gradual than on smaller streets.

During the configuration of your interface, Highway and Freeway modes are referred to as "Ride Height", and Offroad mode will be referred to as "Offroad Height". It is important that your suspension and steering geometry is dialed in while in your predetermined "Ride Height" to ensure proper handling. As you change your height, your toe will change. The toe should be adjusted at "Ride Height". If you change your "Ride Height" later on, you will have to have your toe readjusted to ensure proper handling. It is also important to have the proper speedometer gear installed so that the AiROCK™ computer can accurately judge your vehicles speed.

Now that you understand the three different driving modes, let's move on to the setup menu. This menu is where all of the user configurations are displayed and changed. Understanding how this menu works is important during initial setup, troubleshooting, and making changes later on.

If this is the first time powering the system on, with the key OFF, plug the fuse into fuse holder at the battery connection.

Display will be as follows: **VEHICLE SLEEPING**

Turn the vehicle key on.

U/D to Scroll

Pushing the UP or DOWN buttons will scroll through the list of MENU options. The options are as follows, in the correct order if you push the down button.

Egress Set U/D
Y:Select X:Cancel

Offroad Level
= Highway N

Service U/D
Y:Select X:Cancel

Button Menu U/D
Y:Select X:Cancel

Bleed Springs to
All 0 PSI Y/X

Ride Height U/D
Y:Select X:Cancel

Install AiROCK™
Spring to 25 PSI

Calibrate U/D
Y:Select X:Cancel

Calibrate Speed
Sensor DANGER!!!

Show Installed
AiROCK™ Options

Page 5 shows the complete list; once the bottom of the list is reached it will start over again at the top. Below is the explanation of each of the menu options.

Egress Active? 0
Y/X

Y sets 0 to 1 and returns to menu

- Egress now active

X sets 1 to 0 and returns to menu

- Egress now inactive

Offroad Level
= Highway N

Press **CHECK** to adjust

Press the **CHECK** button again to set the display to Y, press the **X** button to set the display to N.

Press **X** to exit the menu.

- When it is displaying an **N**, manual level during Offroad Mode will be the height preset during set ride height
- When it is displaying a **Y**, manual level during Offroad Mode will be at the same height as set for highway driving.

Service U/D
Y:Select X:Cancel

Pressing Y will display the following:

Service Mode
Turn Off Key Y

NOTE: Turning off the key will result in the vehicle lowering; make sure there are no objects or persons under the Jeep. Turning off the key will set the vehicle in a mode where it can safely be lifted on a frame-lifting hoist. The air springs will deplete to 35psi and the unit will stay dark and non-responsive until the key is turned back on and **X** is hit. This will return the to the menu function of service mode.

The backlight will stay off until the next time the key is cycled.

This mode allows for the Jeep to be lifted on a hoist, or also puts the ACU into a non-reactive mode during which the vehicle may go thru several key cycles for diagnostic purposes and not affect the AiROCK™ Control Unit.

Button Menu U/D
Y:Select X:Cancel

Pressing **CHECK** will allow the user to swap the operations of the **Up** and **Down** buttons, from one touch all up and all down to pitch front up and pitch front down respectively. The two functions that are not on a single button push are still available as a two button push. These two button pushes you add the up button and left button together. Or the down button and the right button together.

Pitch Up/Down
Rock Left/Right1

This sets up the **Up** and **Down** buttons to be Pitch Front Up and Pitch Front Down respectively. Touching the **Up** and **Left** buttons together will enact ALL UP and pushing **Down** and **Right** buttons together will enact ALL DOWN.

All Up / All Down
Rock Left/Right1

This sets up the **Up** and **Down** buttons to be ALL UP and ALL DOWN respectively. Touching the **Up** and **Left** buttons together will enact Pitch Front Up and pushing **Down** and **Right** buttons together will enact Pitch Front Down.

Continuous Disp1
PU/PD/RL/RR

This mode sets the 4 direction buttons to move the vehicle in the direction indicated only during the time that the button is depressed. Touching the **Up** button will enact the ACU to perform a Pitch Front Up mode but will only move appx 5% of the allowable range. At the point that the range is moved, if the button is still depressed it will perform that mode again.

This configuration will treat the **Up** and **Down** buttons as pitch front up and pitch front down.

Continuous Disp2
AU/AD/RL/RR

This configuration will be like the one above, but will perform an ALL UP or ALL DOWN on the **Up** or **Down** buttons.

These are options 1 through 4, which is the number displayed after Offroad Mode.

**Bleed Springs to
All 0PSI Y/X**

This will do just as it says; it will deplete the complete volume of air in the air springs themselves. This may be used to exchange an airline or for service on any part of the air system.

Ride Height

Selecting **CHECK** here will bring the vehicle to the currently set ride height for Highway and Freeway mode. Once reached this will allow you to raise or lower the front end or rear end of the vehicle independently to adjust the ride height to your preference.

UP/DOWN will adjust the front end up or down a small preset amount. It may be necessary to hold the button for just a second to get the ACU to respond.

RIGHT/LEFT will adjust the rear end up or down a small preset amount.

Pressing **CHECK** will accept this height as the highway ride height, where the Jeep goes to while driving over 20 MPH.

This will be displayed next:

**Tweak LR Level
L/R down only Y**

Pushing the **Left** button one time will cycle the left springs to vent for a very short set time. This will lower the left side of the vehicle just slightly. Press it or the **Right** until the vehicle is level left to right. Be careful not to go beyond your desired ride height, or you may have to reset ride height.

Press the **CHECK** button when complete, a message will be displayed:

Ride Height Set

After a moment the following will appear:

**Set Offroad Ride
Height U/D Y**

By pressing the **Up** or **Down** buttons you may adjust the set ride height up or down by small increments to give you more or less clearance for offroad height. This setting will be the setting the unit

goes to for level when you press the **CHECK** button manually during **Offroad Mode**.

Pressing **CHECK** will return the following:

Ride Height Set

The ride height setting is now done. You are ready to drive the Jeep or adjust other features in the menu.

Install AiROCK™ Spring to 25 PSI

Pressing the **CHECK** Button will return the following:

1/2/3/4 U/R/D/L
X Bleed All 0 Y

Pressing the **CHECK** will display two rows of numbers. The top numbers are the height sensor readings for positions 1 thru 4, the bottom numbers are pressure readings for positions 1 thru 4. The height and pressures will be above and below at their similar positions.

515 459 423 573
57 54 62 57

If the lower numbers are greater than 25, then the unit will not respond to any button push other than **X** to Bleed All, or a **CHECK** push to return to menu.

Pressing the **X** will bleed all the air pressure off of the AiROCK™ air springs and set the vehicle down on the bump stops. Once this button is hit, it cannot be stopped, so DO NOT touch the **X** button if there is anyone under the vehicle!

The **Up**, **Right**, **Down**, and **Left** buttons will each control one spring, **Left Front**, **Right Front**, **Left Rear** and **Right Rear** respectively. A push of the buttons will open the valve allowing air into that air spring. To slow the process and prevent over pressurizing, the computer will cycle the valve on and off real fast. This will help you to only put as much pressure in as is needed. This cycling will continue until each airspring has a maximum of 25PSI in it. This process will not allow the airsprings to be pressurized greater than that. This is to be used to seat the airsprings and tighten the lower airspring nuts as suggested in the AiROCK™ installation manual.

Pressing the **CHECK** button will return to the menu selection for Install AiROCK™ spring to 25 PSI, from here you may scroll up or down thru the menu or **X** to return to Offroad Mode.

Calibrate U/D
Y:Select X:Cancel

NOTE: If the vehicle is equipped with a disconnect-able sway bar system, please disconnect and stow the links before the Calibrate process is run. Also make sure the vehicle is in an area where it can raise at least 12” or more. The vehicle will go up and down and rock right and left to its maximum allowable travel. DO NOT do this procedure in a tight parking space.

Pressing **CHECK** will return the following:

Calibrate
Start engine Y/X

At this point, if you have a mechanical engine driven compressor start your engine and then press the **CHECK** button again, or **X** to return to menu.

The Calibrate mode will cycle through the process by lowering the vehicle to its lowest setting, and then raising to its highest setting. It will then lower midway and rock to the left and then rock to the right. Once these are complete the vehicle will lower itself and then rise back up to the midpoint of travel in the suspension.

Once this is complete the computer will automatically run through the Ride Height Set process.

Calibrate Speed Sensor DANGER!!!

This menu is a function used only on non-TJ applications where the signal of the vehicle speed sensor may not match that of the TJ. Press the **CHECK** and you will see the following:

Drive to 20mph Y

Press **CHECK** once your speed stabilizes at 20mph.

Drive to 40mph Y

Press **CHECK** once your speed stabilizes at 40mph.

This is used to differentiate the signal readings and configures the ACU to work with the corresponding signals. DO NOT Perform this on the TJ's.

Show Installed AiROCK™ Options.

Pressing **CHECK** will return the following:

Tilt:N
H:Y P:Y Light:Y

This screen basically tells you what the ACU sees the signals for.

Tilt:N	Does not determine the presence of the tilt sensor.
H:Y	Does see the height sensors.
P:Y	Does see the pressure sensors.
Light:Y	Does see the Controller with the LED backlight option

(This is a timed screen and it will return to the menu after a few seconds.)

After driving your vehicle on and off road for awhile you'll get the feel for how the system handles in different situations. You can always return to the main menu by pressing the **X** and **CHECK** button at the same time. You are always able to recalibrate, and adjust "ride height" and "offroad height" by entering the menu.

Troubleshooting

Problem

Vehicle will not start

Vehicle does not “wake up” on key on.

Vehicle does not complete calibrate process.

Vehicle is not level after calibrate.

Highway ride is rough, choppy when going over bumps.

Solution

Check battery connections

Check to make sure user interface is connected to ACU, and if it is reseal the inline fuse.

Go into the menu, perform the Instal AiROCK springs option. Press the CHECK button until the following is displayed.

515 459 423 573

57 54 62 57

If any of the top numbers are reading either 0 or 1000, then there is either an open or a short in the sensors. The numbers are in columns, left column being position 1, next column position 2, etc, etc. Check the wires on the corresponding sensor position and look for improper connection.

During the calibrate process the vehicle should start at the lowest position, raise to the highest setting, then rock left and rock right to the extents of the range. If any of these processes were stopped, by a Check button push, the extents were not reached, and therefore the computer does not know the full range of operation and therefore will not deliver expected results.

Most likely the height is set low enough that the shock bodies are making contact with the bump stops during suspension cycling and the result is a bucking feeling rather than the soft ride that one would expect. Perform visual inspection of shocks and verify the bump stop to shock

body clearance. Adjust the ride height to a higher setting if necessary.

Vehicle is setting on the bump stops or is a lot lower in the morning that it was set at in the evening.

Chances are there is an air leak in the system. Any leak will result in the vehicle lowering to about 35psi per corner for pressure if given enough time. If the supply side leaks, the tank pressure will be at zero, or as low as 35psi. If the AiROCK airlines leak, then the tank supply should be at the full level. A quick test, does the air compressor turn on immediately on engaging the key? If so chances are it is a supply system leak. If the tank is still high on pressure, then there is a leak in the AiROCK lines or the ACU. Soapy (Dish soap preferably) water in a squirt bottle, (or squirt gun) and a quick spray on any fittings will result in a bubbly alert when you find the leak. Repair as necessary.

NOTE: There is an optional check valve that is available to place between the air filter and ACU to prevent the AiROCK from lowering when there is a supply leak. Please contact ORO and inquire accordingly.