

AIR BAG SYSTEM GUIDE

WARNING

This manual provides information regarding the use and operation of your caravan air suspension system. Following the guidelines in this manual will help provide you with many years of trouble-free service.
RETAIN THIS MANUAL.

ENDURO AIR



! IMPORTANT

**THIS MANUAL COVERS THE AIR BAG SYSTEM OF ENDURO X AIR. FOR
OVERALL SUSPENSION MAINTENANCE AND INFORMATION PLEASE CONSULT
THE ENDURO X MANUAL PICTURED BELOW.**



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IMPORTANT INFORMATION

DOCUMENTATION TO BE KEPT WITH THE CARAVAN

It is very important that the caravan owner and operator is advised on how to use the system and that this System Guide is kept with the caravan. Read this System Guide carefully before using the system or towing the caravan.



It is recommended that only a properly trained person services the product and carries out maintenance.



Never exceed the caravans weight ratings for the overall caravan (ATM) or suspension group (GTM). The manufacturer's weight ratings are stated on the VIN plate on the caravan. It is recommended to weigh your vehicle and caravan combination on an authorised weighbridge when it is fully loaded and in a level condition to determine if you are exceeding weight ratings.



Ensure you are fully conversant with how to position load on your caravan. A caravan loaded in an improper manner can greatly affect safety & stability and may result in twisting and stress on the chassis and overloading of axles resulting in injury and / or damage.



When operating, ensure no one is close to or under the caravan as they may be trapped or injured.



Before towing the caravan ensure that you are familiar with the correct Towing height of the caravan.



When uncoupled and operating, ensure the jockey wheel is forward facing to prevent possible damage.



Lower and Higher height positions are to be used when stationary or under 10km/h.



Incorrect use of this air suspension product can result in damage to the airbag, associated parts and / or the vehicle which is not covered under warranty.

OPERATION

HOW TO USE YOUR SUSPENSION CONTROL

The air suspension and control system on this caravan allows adjustment to maintain height when load is added or removed from the caravan. This ensures the caravan is constantly maintained at the correct suspension height when towing, ensuring optimum stability, road handling, isolation and drive comfort.

Inflation of the Airbags will utilise the stored air and the compressor will automatically cycle to refill this stored air. Do not inflate the airbags past the Airbag Maximum. If inflation over 105psi is required, check the vehicle is within the allowable weight. Deflation will vent the airbag to atmosphere and lower the suspension. Do not continue to lower the suspension once the airbag has contacted the bump stop, therefore it is recommended to not deflate below 30psi.



When operating, ensure no one is close to or under the caravan as they may become trapped or injured.



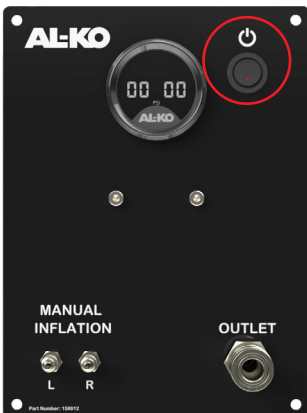
Before towing the caravan ensure that you are familiar with the correct Towing height of the caravan.



When uncoupled and operating, ensure the jockey wheel is forward facing to prevent possible damage.

SYSTEM ON/OFF

The system is activated via the On/Off rocker switch found at the upper Right of the Control Interface. The system must be On to allow operation of the Airbag Suspension control and Tyre inflation and can be turned Off while on site or in storage.

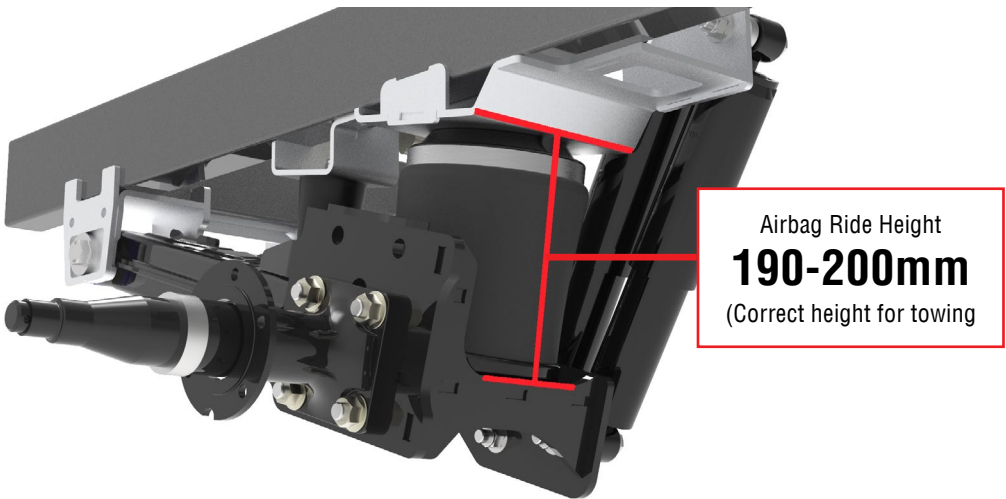


Note: When system is activated, the compressor may cycle for up to 2 minutes to pressurize the air system. Once correct system pressure is achieved the compressor will automatically shut off.

MANUAL CONTROL OPERATION

Manual mode can be utilised to adjust the suspension heights as needed. It is important to confirm the Airbag Reference Height to ensure the airbag and suspension is operated correctly.

The Airbag Reference Height is measured from the underside of the upper airbag mounting plate on the chassis, to the upper edge of the horizontal flange on the trailing arm as shown in the diagram below.



SETTING TOWING HEIGHT



Before towing the caravan ensure that you are familiar with the correct Towing ride height of the caravan.



Always ensure all airbags are set to the correct towing ride height every time before towing. Airbags in a 'low' or 'raised' state are for stationary use or to be driven at a maximum of 10kmh.



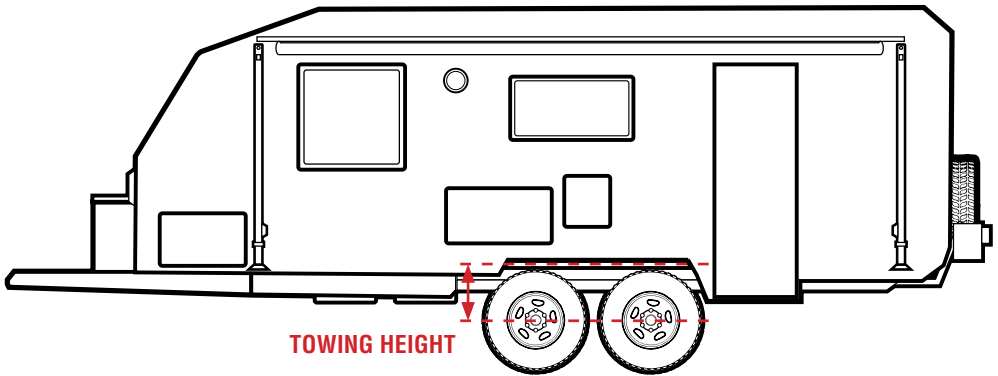
The towing ride height ensures the correct effective 'spring rate' for optimal shock absorption, ride quality & stability.



The above is not required with the KIT3 'Auto levelling' Feature.

METHOD FOR RECORDING EASY REFERENCE OF RIDE HIGHT

Safely achieve the Airbag height of 190-200mm (Towing Ride Height) and then record an external reference point for ease of checking. This must reference distance between the centre of the wheel or lip of the wheel to a fixed feature on the exterior body work such as the arch lip. Set this external reference to your noted measurement each time you tow and this will ensure the correct Towing Ride Height is set.



SITE LEVELLING

When site levelling, it is recommended to manually adjust each side from the ride height. The pressure required to achieve maximum height varies on axle load specification. Once the site levelled position is achieved the control system can be turned Off to eliminate compressor cycling.



Minimum Airbag pressure setting 30psi (STOP deflation when Min Height is achieved)



Maximum Airbag pressure setting 105psi (STOP inflation when Max Height is achieved)



When operating, ensure no one is close to or under the caravan as they may become trapped or injured.

KIT1 – STANDARD AIRBAG CONTROL

The Kit1 control includes MANUAL CONTROL with Pressure Monitoring reference for Passenger Side and Driver Side independent control.



With the Control Panel ON, use the Paddle Switches to adjust the Passenger Side and Driver Side suspension to the correct height. Refer to the Manual Control Operation and Site Levelling sections for correct operation and suspension.

Note: To achieve the correct towing height, it is normal for the Pressures to vary between the Passenger Side and Driver Side due to weight distribution.



When operating, ensure no one is close to or under the caravan as they may become trapped or injured.



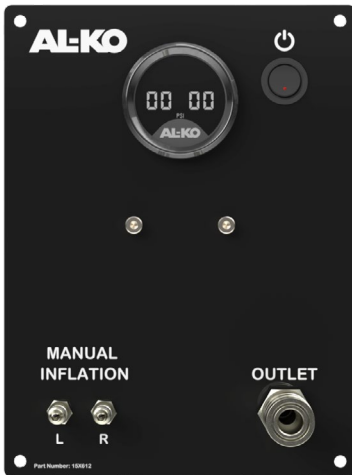
Before towing the caravan ensure that you are familiar with the correct Towing height of the caravan.



When uncoupled and operating, ensure the jockey wheel is forward facing to prevent possible damage.

KIT2 – WIRELESS AIRBAG CONTROL

The Kit2 control includes WIRELESS MANUAL CONTROL with Pressure Monitoring reference for Passenger Side and Driver Side independent control.



With the Control Panel ON, use the WIRELESS CONTROLLER to adjust the Passenger Side and Driver Side suspension to the desired height. Refer to the Manual Control Operation and Site Leveling sections for correct operation and suspension parameters. The Wireless Controller LED will illuminate when an adjustment command is made and has a range of over 20metres.

It is only possible to adjust one side at a time so it is recommended to alternate each side in stages when lifting or lowering.

NOTE: To achieve the correct towing height, it is normal for the pressures values to vary between the Passenger Side and Driver Side due to weight distribution.



When operating, ensure no one is close to or under the caravan as they may become trapped or injured.



Before towing the caravan ensure that you are familiar with the correct Towing height of the caravan.



When uncoupled and operating, ensure the jockey wheel is forward facing to prevent possible damage.

KIT3 – AUTO LEVELLING AIRBAG CONTROL

The Kit3 control includes MANUAL CONTROL with Pressure Monitoring reference for Passenger Side and Driver Side independent control, as well as AUTOMATIC CONTROL, providing Auto adjustment back to the correct preset towing ride height.



With the control panel ON, and the toggle switches in the MANUAL position, the paddle switches can be used to adjust the passenger side and driver side suspension to the desired height. Refer to pages 5-8 for correct operation and suspension parameters.

AUTO LEVELLING is used to automatically reset back to correct towing ride height. With the control panel ON, first ensure van is on a level surface and there are no obstructions to the vehicle adjusting Up or Down. Then move the lower toggle switches to AUTO and the system will begin to adjust as necessary to achieve the correct towing ride height. When towing ride height has been set, the toggles MUST be returned back to manual before towing can occur. Failure to do this will cause the suspension to constantly self-adjust whilst travelling causing the caravan to become unsettled.

Note: To achieve the correct towing ride height, it is normal for the pressures values to vary between the passenger side and driver side due to weight distribution.



When operating, ensure no one is close to or under the caravan as they may become trapped or injured.



Before towing the caravan ensure that you are familiar with the correct Towing height of the caravan.



When uncoupled and operating, ensure the jockey wheel is forward facing to prevent possible damage.

! IMPORTANT

AUTO ADJUSTMENT TOGGLES MUST BE SET BACK TO MANUAL MODE BEFORE TOWING.

GENERAL USE

CHANGING A FLAT TYRE

Stop the tow vehicle and caravan in a safe location, ensure park brake(s) are applied. The system must be using Manual control, then follow the recommended tyre change process outlined by the Caravan Manufacturer. Once the tyre has been changed and the tow vehicle and caravan are safe to move, ensure the correct towing height before traveling.

LONG TERM STORAGE

Turn the control panel OFF to avoid battery drainage. It is normal for some pressure to be lost during long term storage. When restarting the system from long term storage, turn the control panel ON and allow the air system to pressurise. If the airbags are below 30psi, the airbags it is recommended to gradually the reinflated the airbags to allow for any creases to gently straighten back out.

HOW TO USE YOUR TYRE INFLATION FACILITY

The control system includes a tyre inflation outlet on the control panel. The system must be ON to ensure the compressor cycles to maintain the air supply. Connect the tyre inflation wand to the coupler and connect the wand to the tyre valve. During tyre inflation facility operation, ensure that there is adequate air flow to the compressor at all times. The tyre inflation compressor must have periodic rest for cooling. Using the tyre inflation facility constantly for more than 20minutes can cause the system to thermatically cut and the system will only restart once cooled



EMERGENCY AIRBAG INFLATION

The inflation outlet on the control panel can also be used to backfill the air system and replace any air pressure lost in an emergency due to compressor failure. Follow the steps below for the appropriate kit. To identify your kit please see pages 9,10 and 11 of this manual.

Kit 1 Manual / Kit 3 Auto Level

Step1: Remove emergency fill coil from the black ALKO bag.



Step2: Insert the male end of the emergency fill coil into the panel outlet. Slide the knurled outer sleeve backwards and then release the to lock in.



Caution High pressure air, ensure adapter is fully engaged before filling to avoid injury

Step3: Connect the external compressed air source to the Schrader (Tyre) valve end of the coil.



Step4: Add air to pressurize the air tank. Min 50psi, Max 110psi

Step5: Kit1/3 - Using the manual paddle controls, inflate the airbags.

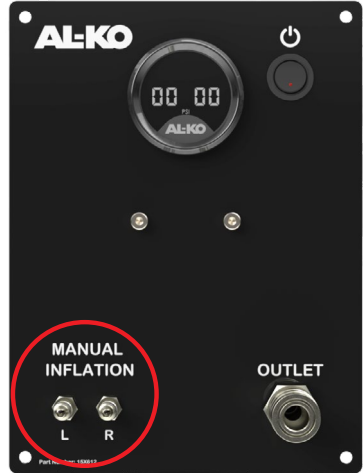
Kit3 – Alternatively, set the Auto level toggles to 'AUTO', this will self-adjust the airbags to optimal ride height as the system is being pressurized.

Step6: Repeat steps 4 & 5 if more air is required to allow the airbags to rise fully to ride height.

Step7: Once ride height is achieved, reverse step 2 to disconnect the emergency coil.

KIT2 Wireless system

Step1: Connect external compressed air source to a selected Schrader (tyre) valve on the control panel.



Step2: Add air to directly inflate airbags until optimal ride height is achieved. Repeat on the other side if required.

Step3: Once ride height is achieved, disconnect the external compressed air source.

RE-INFLATION FROM LOW SYSTEM PRESSURE

If re-inflating from low system pressure and the compressor continues to cycle without building pressure. The inline moisture collector valve could be open due to insufficient vacuum. With the compressor running, check the blue valve as shown for air leakage. To close this valve, firmly push it in for 5-10 seconds with the compressor running, this will build vacuum and shut the valve allowing for the system to pressurise.



Inline moisture collector valve

MAINTENANCE

NOTE: The following information is regarding maintenance for the air bag system only. For overall suspension maintenance please consult the ENDURO X manual pictured on the inside cover of this manual.



It is recommended that only a properly qualified person installs the product and carries out removal and refitting of any components.



If removed, never inflate an airbag assembly unrestricted. Improper use or over inflation may cause property damage or severe personal injury.

GENERAL SYSTEM CARE

It is recommended to periodically inspect your air suspension for operation, security, possible damage and component integrity. As with your vehicles tyres, an airbag is a pneumatic device that supports the vehicle's weight. Air leaks may develop in the system and these are generally not covered under Warranty. If you encounter an air leak, contact the Caravan manufacturer or their nearest service representative for assistance. Though unlikely, it is possible that the airbag may be punctured as a result of: impact damage, improper inflation, improper installation or improper usage. To reduce the risk of puncture, we strongly recommend to inspect and wash any accumulated sand, gravel or other road debris from the airbags and surrounding components.

SYSTEM SUPPLY VOLTAGE

It is recommended to always maintain system voltage above 12.0volts. System operation will be adversely effected by low voltage, causing the compressor to run longer and increase the time for height adjustment.

PRESSURE RETENTION CHECK

It is normal for air pressure to be lost during long term storage of your caravan causing the suspension height to lower. Due to the nature of the airbag material, the rate of loss can vary across the group of airbags. When the system is re-activated ensure the reinflation is carried out carefully as instructed.

During regular operation, a system air leak could occur even after many years of leak free service. A system air leak will cause increased frequency and / or run time of the air compressor. Any system leak must be rectified as the life of the compressor will be adversely affected, contact the Caravan Manufacturer or their service representative. If an airbag has been punctured while you are travelling, as indicated by a loss of height and/or the compressor running continuously for more than 5 minutes, park in a safe place and contact the Caravan Manufacturer or their service representative.



Never cut, weld or modify the airbag or associated parts without approval from the Caravan Manufacturer.



Do not use aerosol tyre repair products in airbags. If there is a hole, the airbag must be replaced.



Do not use a tyre patch of any kind on an airbag. If there is a hole, the airbag must be replaced.



Never weld within sight of an un-protected airbag; they are severely affected by weld UV & heat.

TROUBLE SHOOTING GUIDE

Airbags will not inflate

Check battery voltage and connections.

Check the system earth connection is correct and working.

Check the system power supply and compressor fuse is fitted and intact.

Check that the On/ Off switch is turned ON.

If the system is still not lifting then check that you are not exceeding Manufacturer's weight ratings.

Airbags deflate on their own

Selecting Auto mode (Kit3 only) with the suspension in a high position will cause the airbags to deflate automatically.

If the caravan is losing height from the correct towing height, park in a safe place and contact the Caravan Manufacturer or their service representative.

The compressor is running continuously

With the system ON do not select any buttons on the control interface to eliminate air usage.

Check the moisture collector for air leaks (See page 12)

With no system adjustment, if the compressor is running continuously for more than 5 minutes park in a safe place and contact the Caravan Manufacturer or their service representative.

The caravan is not level for towing

Confirm that the tow vehicle and caravan are on level ground, and that the tow coupling height is correct.

Check for obstruction or components that may be restricting the suspension. Ensure the correct towing height is achieved before travelling.

The caravan is not levelling on site

Use the Manual control and deflate the higher ground side to bump stop contact.

Select the lower ground side and inflate until maximum suspension height is reached.

Following the above steps, if the available adjustment is not adequate for the site variation use traditional levelling methods to achieve the difference. Manual control can then be used to complete the levelling process.

GENERAL ADVICE & ASSISTANCE

AL-KO are proud to offer the best quality products and customer service. If you have any concern with this system please contact the Caravan Manufacturer or Installer.

SPARE PARTS

Spare parts are available for all components in this system. Should you require spare parts please contact the Caravan Manufacturer or their nearest service representative for assistance.

WARRANTY

AL-KO INTERNATIONAL PTY LTD

AIR SYSTEM WARRANTY

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. AL-KO International Pty Ltd (ABN 96 003 066 813) ("AL-KO") provides the following warranty in relation to its AL-KO Enduro product ("Product"). The benefits of this warranty are in addition to any rights and remedies imposed by Australian State and Federal legislation that cannot be excluded. Nothing in this warranty is to be interpreted as excluding, restricting or modifying any State or Federal legislation applicable to the supply of goods and services which cannot be excluded, restricted or modified.

WARRANTY

AL-KO warrants that, subject to the exclusions and limitations below, the Product will be free from defects in materials and workmanship for a period of 12 months from date of purchase. AL-KO may, at its discretion, offer a longer warranty term on certain products. This warranty is not transferable to a subsequent person if the Product is sold by the original purchaser during the warranty period. If a defect appears in the Product before the end of the warranty period and AL-KO finds the Product to be defective in materials or workmanship, AL-KO will, in its sole discretion, either: replace or repair the Product or the defective part of the Product free of charge; or b) cause the Product or the defective part of the Product to be replaced or repaired by a qualified repairer free of charge. AL-KO reserves the right to replace defective parts of the Product with parts and components of similar quality, grade and composition where an identical part or component is not available. Goods presented for repair may be replaced by refurbished goods of the same type rather than being repaired. Refurbished parts may be used to repair the goods.

WARRANTY PROCESS

1. If a fault covered by warranty occurs, the customer must within 7 days contact the dealer from which the Product was purchased, or AL-KO at the contact address listed below. 2. Any warranty claim must be accompanied by: a. proof of purchase; b. full details of the alleged defect; and c. any relevant documentation (such as maintenance records). 3. The customer must make the Product

available to AL-KO or its authorised repair agent for inspection and testing within 14 days of contacting AL-KO or the dealer in accordance with this warranty claims procedure. If inspection and testing finds no defect in the Product, the customer must pay AL-KO's costs of service work and testing. 4. The cost of transportation to or from AL-KO or the authorised repair agent is to be paid by the customer.

EXCLUSIONS

The warranty will not apply where:

1. the Product has been repaired, altered or modified by someone other than AL-KO or an authorised repair agent;
2. the Product was improperly installed or used;
3. AL-KO cannot establish any fault in the Product after testing and inspection;
4. the Product has been used other than for the purpose for which it was designed;
5. the defect in the Product has arisen due to the customer's failure to properly use and maintain the Product in accordance with AL-KO's instructions, recommendations and specifications (including maintenance);
6. the Product has been subject to abnormal conditions, including environment, temperature, water, fire, humidity, pressure, stress or similar;
7. the defect has arisen due to abuse, misuse, neglect or accident;
8. the defect has arisen due to a power surge or other fault in the supply of electricity; or
9. unauthorised parts or accessories have been used on or in relation to the Product;
10. the defect is a deterioration of the appearance of the product;
11. the defect is a result of wear & tear.

LIMITATIONS

AL-KO makes no express warranties or representations other than set out in this warranty. The repair or replacement of the Product or part of the Product is the absolute limit of AL-KO's liability under this express warranty.

CONTACT

AL-KO International Pty Ltd
67 Nathan Road, Dandenong South, Victoria, 3175
Phone: (03) 9997 4500

Email: info.aus@alko-tech.com



Visit
www.alko.com.au
for more information