

QUALITY FOR LIFE

AL-KO



AL-KO ESC

**TOWING SAFETY AND
STABILITY NOW HAS A NAME**



QUALITY FOR LIFE

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Due to a policy of continuous product improvement, AL-KO reserves the right to change technical specifications. Revision Date 4/12

International Patent Pending

The Safety and Stability System for Caravans with Electric Brakes



AL-KO, the world leaders in caravan axles, brakes and components manufacture has developed the AL-KO Electronic Stability Control (ESC) to control instability that can cause dangerous and frightening driving scenarios when towing.

AL-KO ESC is a sophisticated electronic brake actuation system that automatically responds to the driving behaviour of the caravan by monitoring for any dangerous lateral movements and taking preventative action immediately - applying the caravan's electric brakes to maintain road position, making every journey you take safer and more pleasurable.

AL-KO ESC supports responsible driving and towing, ensuring that in any critical or dangerous situation you may encounter, you have the maximum assistance available for a safe recovery. Even in less extreme situations, such as inclement weather or being caught in the air stream around semi-trailers, vans and coaches, AL-KO ESC gives you the confidence to drive past the oncoming danger.

Caravan manufacturers can now make AL-KO ESC available as standard or as an option on their vehicle ranges. In the near future, AL-KO ESC will also be available to be retrofitted to many older caravans.



Critical Driving Situations

AL-KO ESC monitors for lateral movements that occur at any time during a journey. Critical driving situations can happen without warning and create a problem for the driver.

AL-KO ESC is there to take control of the caravan in such situations, ensuring that the danger does not escalate.



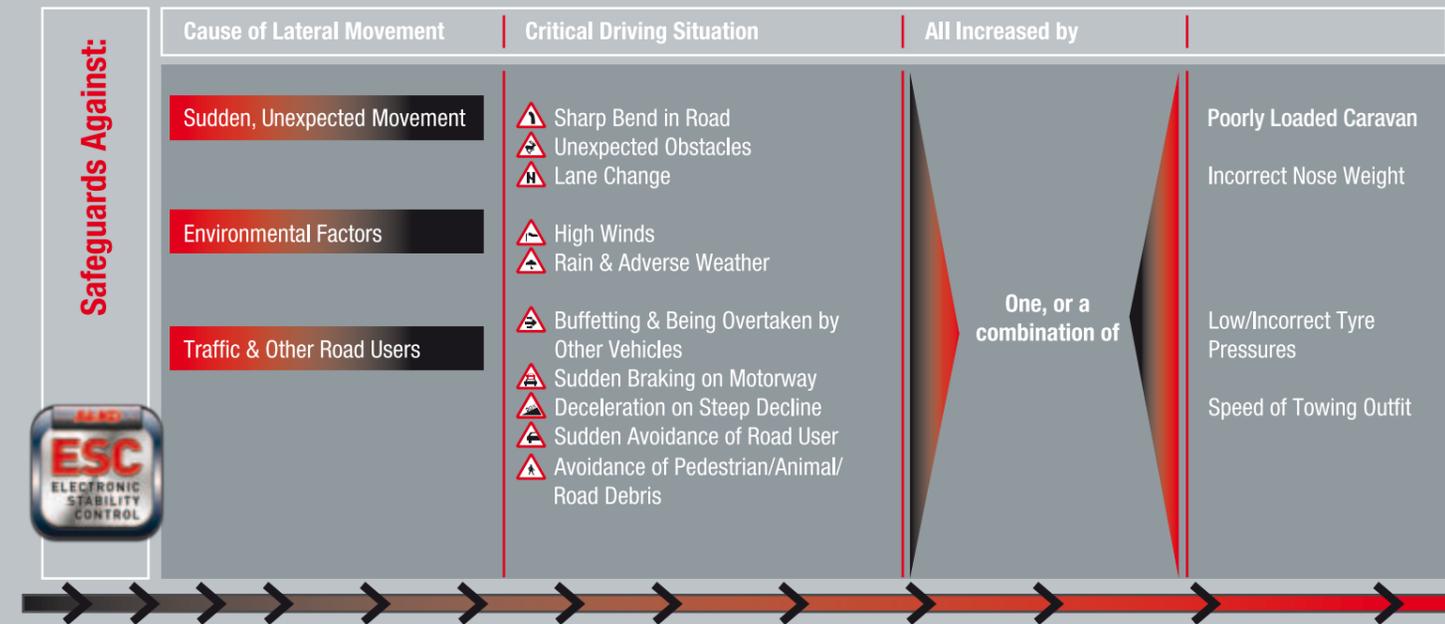
The causes of instability

Caravans and trailers can be subject to lateral movements due to a range of different circumstances, such as having to take evasive manoeuvres to miss a vehicle or animal that has suddenly appeared in the road ahead, in addition to high winds and difficult weather conditions, or buffeting from other vehicles using the roads.

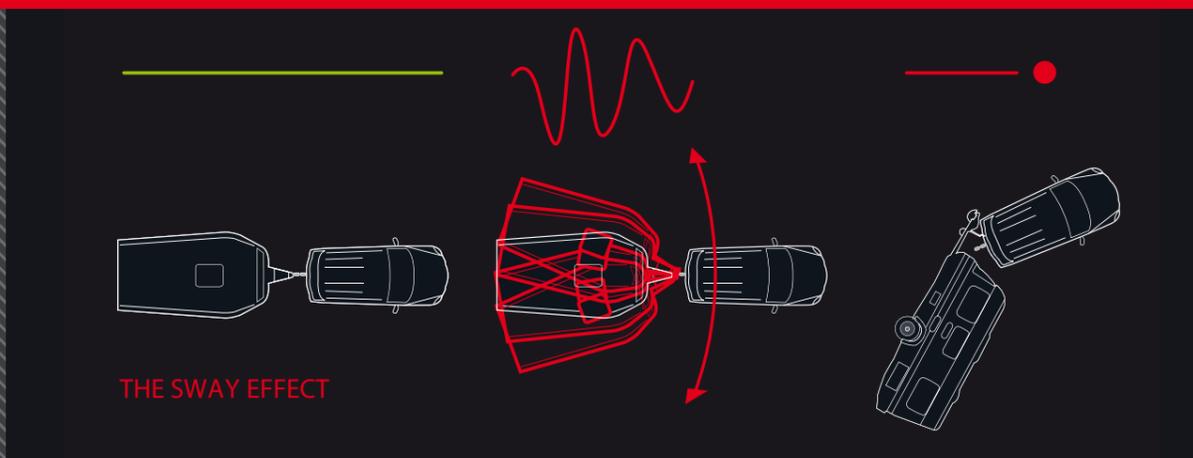
The sway effect, where the caravan or trailer is swinging from side to side behind the tow vehicle, can occur in these situations.

Sometimes the movement of the trailer is so slight that it can recover itself, however when the movement becomes greater, it is more difficult to overcome and can be a very frightening experience for the occupants of the tow vehicle, resulting in a potential jack-knife situation.

Other factors that can cause varying levels of swaying to occur are issues such as poorly loaded vehicles, too much speed, incorrect tyre pressures and erratic driving.

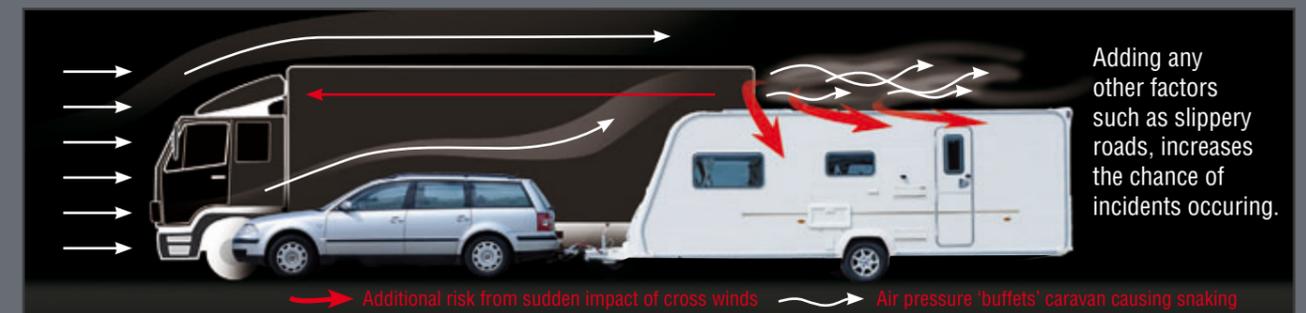


Any of the above factors can create the initial occurrences of swaying, leading to increased instability. Intervention by ESC will arrest the lateral movement and allow the driver to retain control of the vehicle.



Winds & Buffeting = Increased Chance of Lateral Movement

High side winds or the displacement of air around semi-trailers and other large road vehicles can cause severe buffeting and increase lateral movement of the car and caravan.

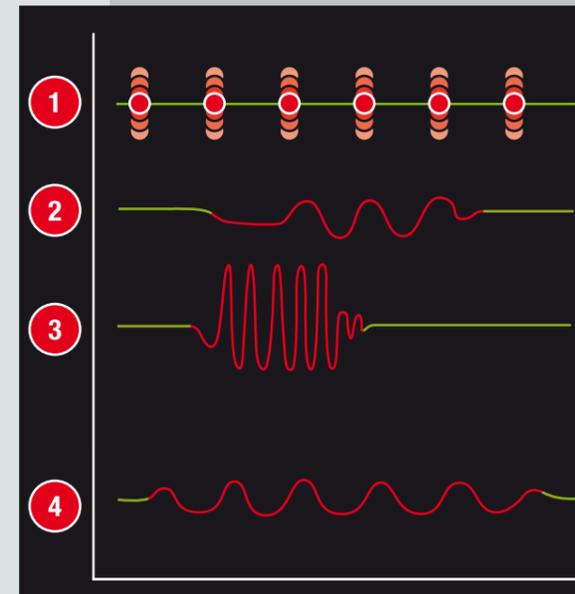


How ESC works



Even in normal everyday driving, the following situations can happen. Throughout all of these situations, AL-KO ESC is constantly monitoring and helps to correct any instabilities as they occur, enabling you to continue a smooth and stress free journey.

Situation	Driver	Caravan	With ESC
1 Normal driving conditions	Under normal driving conditions, the driver will notice nothing of AL-KO ESC's operation	Caravan is stable and safe, throughout any normal journey	AL-KO ESC's intelligent system is ready – continually monitoring for any lateral caravan movements
2 Overtaking large vehicle	Driver feels buffeting caused by mass of large vehicle	Caravan starts to oscillate due to airflow movement	AL-KO ESC reacts instantly, calculating the correct application of the brakes for the situation
3 Swerve or sudden lane change manoeuvre	Driver turns wheel sharply to avoid hazard	Caravan follows the direction of the car, creating rapid side to side swinging motions at the rear of the caravan that can continue to increase in severity	AL-KO ESC applies exactly the right amount of braking force whilst also monitoring for any additional change in speed or instability
4 Adverse weather conditions	Driver feels lateral movement in caravan, due to wind forces	Sudden forces on caravan start a dangerous side to side motion	



The AL-KO ESC system is engineered to operate when it identifies critical driving situations - such as a build-up of two small swings, or one large, sudden lateral movement.

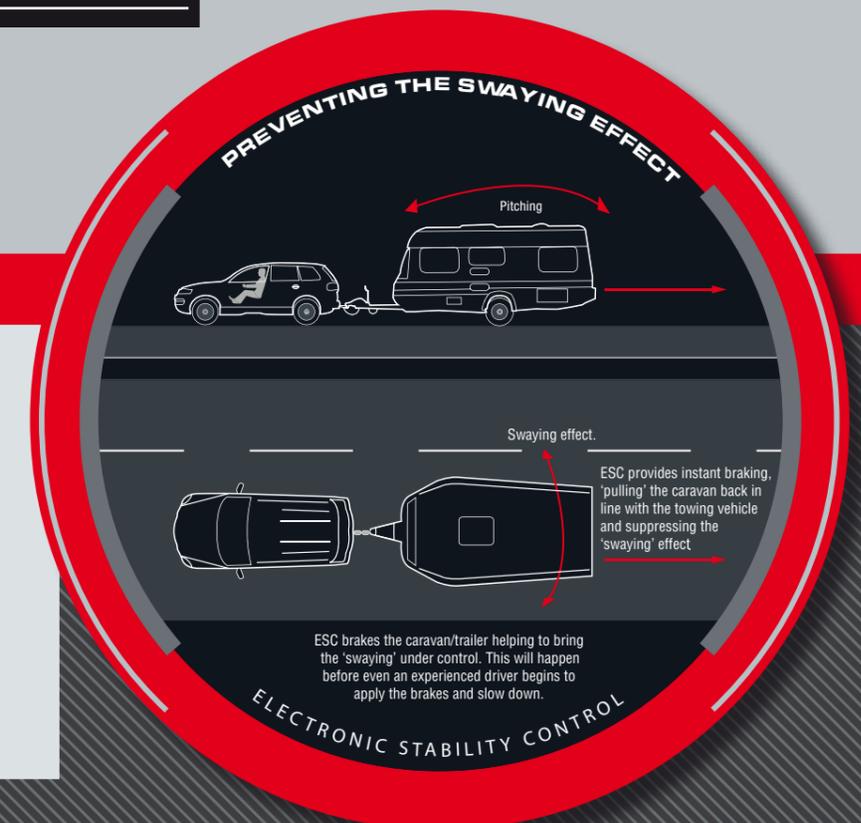
The lateral acceleration sensors inside the AL-KO ESC unit monitor for these repeated side movements or large swings. AL-KO ESC continuously evaluates the data and when critical lateral movements are recognised, ESC activates and applies the electric brakes immediately to bring the vehicle back into line in a smooth and controlled manner.

AL-KO ESC is positioned behind the axle of the caravan or trailer at the point where lateral movement can be measured consistently between different caravans. The brakes are applied for as long as necessary, until no further lateral movement of the trailer or caravan is picked up. AL-KO ESC then immediately continues to monitor for critical situations.

This world first, revolutionary technology has been developed and manufactured in Australia by AL-KO International, in conjunction with the global expertise of the AL-KO Kober group.



Scan to view our AL-KO ESC demonstration video.



ESC brakes the caravan/trailer helping to bring the 'swaying' under control. This will happen before even an experienced driver begins to apply the brakes and slow down.

ESC Proven Safety

The diagram below shows the extreme forces at work on a test vehicle, being driven at high speed and navigating the double lane change course.

It is easy to see the body roll and instability of the towing vehicle and compare this to the stability and position of the caravan with AL-KO ESC fitted and activated.

— — — — — These red lines illustrate the severe banking of the towing vehicle, and therefore the implied extreme forces that are being applied to the caravan.

1) Also notice the large pressure on the offside tyre of the towing vehicle.

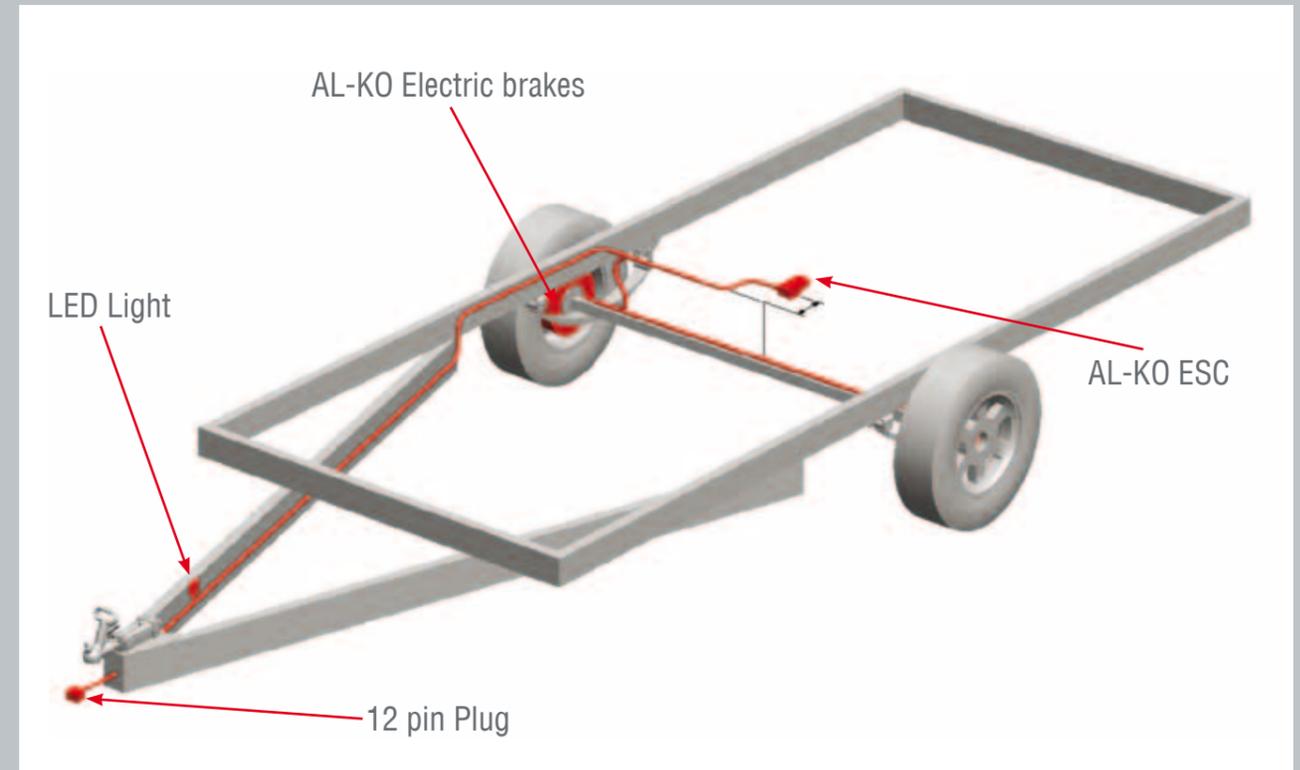
..... Despite the large forces at work in this critical driving situation, the caravan is entirely level, and is in a controlled position as it completes the lane change. This is a testament to AL-KO ESC's performance, clearly showing how it keeps the caravan straight even under significant manoeuvring.



'Brought back into line'

This phrase accurately describes a feeling unique to AL-KO ESC. When the system activates and brings the caravan back under control and the lateral movements are corrected, the driver may notice a subtle feeling of the caravan pulling the car as the caravan is brought back into line.

How AL-KO ESC is fitted to your Caravan



ESC is powered by a separate 12 volt positive and earth which are connected either into spare pins on a standard 12 pin trailer connector, or an alternative two pin connector



AL-KO manufactures, markets and distributes a comprehensive range of products for the trailer, caravan and motor home markets in Australia and New Zealand. The company is best known for its high quality running gear range, including axles, brakes and suspension products. In addition AL-KO offers its customers a wide range of accessories, as well as chassis and under carriage components. The company has a long and proud history in Australia spanning back to 1946, when Hornby Engineering was founded and started to produce axles in South Melbourne. In 1974 this company was acquired by Girlock and with the acquisition of two other companies in Sydney and Brisbane it became Australia's largest company in its field. In 1988 the German AL-KO Kober Group acquired the company, which signalled the start of a new era of international involvement in New Zealand and South East Asia. The company's strong growth over the last decade has been driven by product range expansion and innovation that has further enhanced AL-KO's position as market leader in its field. AL-KO is proud of its reputation for high quality products and services to the trailer, caravan and motor home market. Today the company utilises CAD, CNC and robotics to design and manufacture excellent products and with the aid of a modern computer system delivers high quality of service to its customers. AL-KO's Australian and New Zealand head office and main manufacturing facility is located in Melbourne with further factories and offices in Sydney, Brisbane and Auckland.

Towing Responsibly

ESC is engineered for responsible drivers, but no matter how well you prepare for your journey, another driver or a combination of adverse driving conditions can make towing unsafe and unstable. Caravanning is safer than ever before, but incidents can still occur due to the increased volume of traffic on the road and general road and weather conditions. It's a fact that this means more chance of 'critical driving situations' occurring, underlying why fitting ESC can provide the confidence to deal with what you can see, and the technology to control what you can't.



"ESC monitors for instability, making every journey you take safer and more controlled."



When a critical situation occurs, ESC sensitively acts to bring your caravan under control"