

AL-KO TOW ASSIST ABS and Sway Mitigation System



AL-KO TOW ASSIST ABS and Sway Mitigation System Owner's Manual

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AL-KO TOW ASSIST ABS and Sway Mitigation System



Product Information

Specifications:

- Anti-Lock Braking System (ABS)
- Trailer Sway Mitigation (TSM)
- Evasive Action Control (EAC)
- Towable Odometer
- 3 Years Warranty

Introduction:

The AL-KO Tow Assist™ system brings automotive intelligence and technology to the trailer industry by providing Anti-Lock Braking (ABS), Sway Mitigation, Emergency Action Control (EAC), and a towable odometer. The product aims to enhance trailer driving safety for both novice and professional drivers, while also reducing costs associated with trailer downtime.

- **Anti-Lock Braking System (ABS):**

The ABS feature ensures maximum braking power on low-friction surfaces by preventing wheel lock-up, maintaining lateral stability of the trailer.

- **Trailer Sway Mitigation (TSM):**

TSM function activates at speeds above 65 kph to reduce trailer sway caused by incorrect loading or external forces, improving safety through advanced monitoring and braking algorithms.

- **Evasive Action Control (EAC):**

EAC stabilizes the trailer in response to sudden changes in the tow vehicle's direction, ensuring early stabilization in emergency situations.

- **Trailer Odometer Feature:**

The towable odometer feature tracks trailer mileage, aiding in servicing schedules and improving resale value by providing accurate service history.

Product Usage Instructions

1. Anti-Lock Braking System (ABS):

ABS activates when wheels slip to prevent lock-up. It ensures maximum braking power and lateral stability on low-friction surfaces.

2. Trailer Sway Mitigation (TSM):

TSM activates at speeds above 65 kph to reduce trailer sway caused by incorrect loading or external forces. It uses advanced algorithms for effective sway control.

3. Evasive Action Control (EAC):

EAC stabilizes the trailer in response to sudden changes in the tow vehicle's direction, ensuring stability during emergency maneuvers.

4. Trailer Odometer Feature:

Utilize the towable odometer feature to track trailer mileage for proper servicing and improved resale value.

Frequently Asked Questions (FAQ):

Q: Can the Tow Assist system be installed on any type of trailer?

A: The Tow Assist system can be configured for trailers with different numbers of axles and tire sizes. Significant changes may slightly affect odometer accuracy.

TOW ASSIST

ABS & Sway Mitigation System OWNER'S MANUAL



ANTI-LOCK
BRAKING



TRAILER SWAY
MITIGATION



TOWABLE
ODOMETER



EVASIVE
ACTION
CONTROL

TOW ASSIST™
ABS & SWAY MITIGATION SYSTEM

Powered by



BOSCH
Invented for life



alko.com.au

Scan to visit the Tow Assist Website.



INTRODUCTION

The AL-KO Tow Assist™ system brings automotive intelligence and technology to the trailer industry by providing Anti-Lock Braking (ABS), Sway Mitigation, Emergency Action Control (EAC) and a towable odometer. The product

will make trailer driving safer for both novice and professional drivers while also helping to reduce the costs associated with trailer downtime.

- **Anti-Lock Braking System (ABS)**

Anti-lock Braking System (ABS) will operate when one or more wheels are determined to be slipping to a level to require ABS intervention. The main goal of the trailer

ABS feature is to maintain lateral stability of the trailer on a surface where the trailer wheels become locked (typically lower friction surfaces, wet asphalt, gravel, snow, ice).

ABS ensures the braking system can achieve maximum braking power without the associated risk of locked wheel trailer instability. ABS is the foundation of a safe braking system.

- **Trailer Sway Mitigation (TSM)**

- Trailer sway is increasing oscillations of a trailer swaying due to incorrectly loaded trailers (incorrect loading should always be corrected by the operator) or external forces such as high winds, road conditions or extreme driver steering. TSM function will only activate at speeds 65 kph and above.
- TSM improves safety by using advanced monitoring and braking algorithms to ensure the trailer assists with the most effective level for the sway rate, road surface, brake efficiency and trailer weight. Paired with ABS, trailer sway mitigation is extremely effective in adapting to all trailers irrespective of the weight, loading, braking efficiency or wheel & tire choice.

- **Evasive Action Control (EAC)**

Evasive action instability differs from trailer sway. EAC is activated by a sudden change in the tow vehicle's direction rather than an increasing the sway of the trailer while the vehicle is traveling straight. The Tow Assist Evasive Action Control (EAC) monitors for sudden vehicle swerving and extreme trailer movement to stabilize the trailer early.

- **Trailer Brake Monitoring**

Drivers know they can rely on Tow Assist; it is a safety system that continually monitors components and provides up to date notification through the indicator light. For this reason, the customer benefits from a monitoring system. Monitoring of trailer components includes electrical brake mechanisms, wheel speed sensors, power source monitoring and trailer braking issues.

- **Trailer Odometer Feature**

Tow Assist offers the feature of recording trailer mileage. Trailer mileage tracking plays an important role in ensuring trailers are serviced at correct intervals, improving safety. Additionally, it can improve the resale value of trailers by offering the buyer the trailer mileage and service history.

- **Configuration**

The installer of your Tow Assist system configured it to your specific trailer with the number of axles and tire size from original delivery. Significant changes in the size may slightly affect odometer accuracy.

CAUTION

Alterations from original delivery may require reprogramming of the Tow Assist module. Seek consultation from your dealer or installer before operating if modifications are made.

OPERATION

- The Tow Assist system works in collaboration with an approved in-vehicle Electric Trailer Brake Controller to improve the safety and stability of trailer braking. See pg 5 for more information about approved controllers.
- The primary trailer braking control remains the responsibility of the Electric Brake Controller and the vehicle

driver. Tow Assist will intervene when it determines the safety of braking is compromised and the system can improve the situation.

- The goal of the Tow Assist system is to improve the safety of the trailer braking and stability, while also ensuring trailer braking efficiency or reliability is not reduced.
- The Tow Assist system sources operational power from an on board battery. However can have power supplied from the tow vehicle. This will require an additional connection and adequate power.
- Depending on the number of axles the power requirements varies.

1. **Braking Axle**

requires 12.0V 10A (for min 30 seconds)

2. **Braking Axles**

requires 12.0V 18A (for min 30 seconds)

3. **braking Axles**

requires 12.0V 26A (for min 30 seconds)

Initialisation

The Tow Assist will startup when:

- Woken from low power deep sleep mode, or Power is first applied from the tow vehicle power supply.
- During Tow Assist startup, audible clicking may be heard from the Tow Assist ECU performing a self-check. The light will flash briefly as part of the self-check.
- After startup, the Tow Assist light will remain off until a valid brake signal is detected. A brake signal generated by the driver pressing the brake pedal or pressing the brake override lever of the electric trailer brake control. By waiting for this signal, Tow Assist ensures it has detected a valid trailer braking signal and that the driver has correctly connected the tow vehicle to the trailer.
- Brake controllers will vary somewhat on the exact signal produced while at a standstill. Tow Assist requires a strong brake controller signal to wake-up the unit. Available brake controllers vary on actual output created from each controller setting. It is recommended to set the controller gain setting of "2" or higher to ensure there is enough signal created to wake-up the Tow Assist. The Tow Assist indicator light will illuminate, indicating the system is on. If Tow Assist does not go into normal operation, do the following until the system indicator light is green:
 - Press and hold the brake pedal for at least 2 seconds.
 - Press and hold the brake override switch for at least 2 seconds.
 - Increase the gain setting slightly.
 - If Tow Assist does not become active, check trailer plug connections, wire and power supply to the Tow Assist and repeat the steps above.
- Tow Assist will wake-up from a sleep state when power and a valid signal is detected from the brake input.
- Normal operation will commence when a brake signal is detected by the system. The system status will also be displayed on the light module.
 - Green operational light display only indicates the system is good and completely operational.
 - Amber warning light display only indicates the system has a fault and is shutdown. It will not operate in this state. Note that regular braking is still available. Use your Tow Assist app, alternatively contact your dealer or installer to have this corrected.
 - Operational and warning light displays on together (green and amber) indicates the system is operating in

a reduced state due to a detected fault. Some level of ABS and Sway Mitigation is available. Use your Tow Assist app, alternatively contact your dealer or installer to have this corrected.

- A detailed list of light states is listed in the reference section under light Module Operations see page 8.

Shutdown/Sleep

- Tow Assist will turn off the light module illumination after 20 minutes of trailer standstill without a braking signal detected. Tow Assist will go into low power sleep mode after 120 minutes of trailer standstill without a braking signal detected.
- **Note:** Anytime the light module is not illuminated, the driver must assume the Tow Assist is off and not operational.

Fault Monitoring

- Tow Assist will perform periodic system status checks. On start-up, the system will perform a detailed review of the system and the connected braking components.
- While operating, Tow Assist is constantly monitoring and reviewing the failure status of the ECU and supporting components.
- If the Tow Assist has an active fault, the system will continue to perform fault checks once at a standstill. Periodic checks are a sequence of 5 minutes after standstill, then at 15 minutes after standstill and then every 30 minutes until such time the fault is corrected and no longer.

BRAKE SYSTEM MONITORING

• Brake Magnets

Brake Magnets are monitored for a range of faults including open circuit on magnet connection, shorts to Ground Level, shorts to Positive Battery Level, and incorrect wiring detected on the brake magnets. These checks are performed at Tow Assist start-up and during active Tow Assist operation (ABS, TSM, EAC).

• Wheel Speed Sensors

Wheel Speed Sensors are checked for a range of faults including wheel speed signal and supply faults, tone wheel damage and a range of plausibility checks between different wheels.

• Power Supply

Tow Assist Power Supply is checked for conditions in standby and active operation including:

- Under voltage when Tow Assist not actively braking
- Under voltage levels when actively braking
- Over voltage level

TOW ASSIST COMPATIBILITY GUIDELINES

CAUTION

- It is the responsibility of the end user to ensure that their Electric Brake Controller is compatible with the Tow Assist System. AL-KO attempts to provide compatibility with most controllers available but is unable to anticipate design changes that might be introduced by the various controller manufacturers.

- Information on compatible Electric Brake Controllers for use with the Tow Assist system is available on the AL-KO website.
- Scan below to view Tow Assist compatible controllers guidance.

Digital copy, Click here to visit



TOW ASSIST APP

AL-KO Tow Assist support App's are available for smart devices. Scan the QR codes at the bottom of the page to download.

DEXTER App on
Google Play



DEXTER App on
App Store



BOSCH App on
App Store



BOSCH App on
Google Play



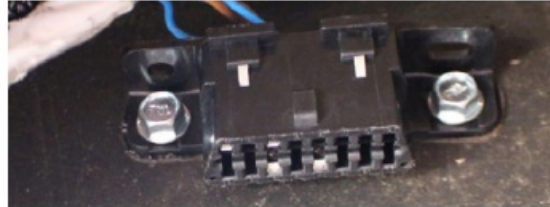
The Dexter app has a dedicated section for the Tow Assist system. The app is available in the google Play store or the Apple App Store.

- The Tow Assist interface portion of the app allows users to
 - Create and manage account
 - Manage multiple trailers
 - Read trailer odometer
 - Diagnose and learn about system faults
 - Save information about readings and faults
 - Reset the Tow Assist Controller (ECU)
- The Tow Assist portion of the phone app requires the support of the supplied Bluetooth communication adapter to communicate with the Tow Assist System. The Bluetooth adapter comes pre installed in your system located in the OBD2 connector. Remove the adapter when not in use to protect from environmental extremes.
- Please note that the app is only intended to read information from the Tow Assist ECU only.

The Bluetooth adapter



The OBD2 connector



TROUBLESHOOTING

A correctly installed and fully operational Tow Assist will display an operation light (green) on and warning light (amber) off.

1. If the system detects a fault, the warning light will be on. Perform the following steps:
 1. Wait for more than 5 minutes at standstill or power cycle the Tow Assist ECU. The Tow Assist ECU will perform a self-check.
 2. If the warning light remains on after 5 minutes at a standstill or power cycle, carefully drive off and stop again (generating a brake signal by pressing the brake pedal or pressing the brake override lever of the electric trailer brake control).
 3. If the warning light remains on, perform fault diagnosis in one of the next two sections.
2. **Fault Diagnosis: Diagnostic Interface Method** The Tow Assist App contains a diagnostic code log that provides the cause and repair for each fault. The full description of the possible diagnostic codes is listed in the reference section in this manual. To extract the diagnostic fault codes from the Tow Assist, the user can use OBD2 Bluetooth® dongle and the Tow Assist App.

3. Fault Diagnosis: Light Flash Method

An alternative basic troubleshooting method is available, however, it will not offer the same high level of troubleshooting detail that a connection to the diagnostic interface will. Diagnostic fault codes are mapped to Light Flash Codes which can be accessed by the installer, service representative and the user.

To activate the light Fault Display Mode the following actions must be performed:

1. The trailer must be stationary, electric brake controller connected and the Tow Assist powered on.
 2. The electric brake controller gain should be greater than 50% of its scale.
 3. The driver must not press the brake pedal.
 4. The driver must Apply (short press) the manual override switch on the electric brake controller with 10 short pulses within a 15 second period to commence the Fault Display Mode.
4. If these requirements are met then the Tow Assist will flash the fault codes as per the table in the reference section under light Module Diagnostics.

Fault code flashing sequence will operate in the following manner:

1. Fault Code (First Fault) (e.g. fault number 25)
2. Flash Warning light (amber) number of times as the 1st digit. (e.g. 2 flashes)

3. Flash Operation light (green) number of times as the 2nd digit. (e.g. 5 flashes)
4. All light off for 1 second (signifies 1st fault finished and will start 2nd fault)
5. Fault Code (Second Fault) (e.g. fault number 45)
6. Flash Warning light (amber) number of times as the 1st digit. (e.g. 4 flashes)
7. Flash Operation light (green) number of times as the 2nd digit. (e.g. 5 flashes)
8. All light off for 1 second (signifies 2nd fault finished and will start next fault)
9. Fault Code (maximum 10 available)

All light off for 3 seconds (signifies all faults finished and will start the sequence again).

The entire flashing sequence will repeat for 10 cycles before returning to normal light operation.

The light Fault Display Mode will cancel and return to standard light operation if the trailer is towed at any time or if power is removed from the Tow Assist controller.

SERVICE INSTRUCTIONS

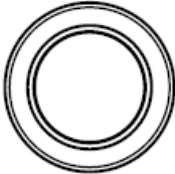







Repairs and Service to the Tow Assist system must be carried out by an AL-KO authorised technician.

Brake Magnet Service Instructions	<p>Check/Inspect</p> <ol style="list-style-type: none"> 1. Inspect condition of brake magnet for damage or incorrect installation. 2. Inspect condition of brake magnet cable shielding and wire. 3. Check the brake Magnet is correctly connected/plugged into wiring harness. 4. Inspect condition of wiring from magnet connection to ECU for damage. 5. Check ground connection of brake magnet return wire. (Must have a common ground with ECU). <p>Repair/Resolve Actions</p> <ol style="list-style-type: none"> 1. Damaged wiring harness should be replaced or repaired correctly. Contact your dealer or installer for questions about Tow Assist parts or service. 2. Brake magnet should be replaced or installation corrected if fault persists. 3. If fault persists once brake magnet replaced and harness is confirmed, contact your dealer or installer for assistance.
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Wheel Speed Sensor Service Instructions	<p>Check/Inspect</p> <ol style="list-style-type: none"> 1. Inspect condition of wheel speed sensor for damage or incorrect installation. 2. Check the wheel speed sensor is mounted securely. 3. Inspect condition of tone wheel for damage or missing teeth. 4. Check tolerance between tone wheel and wheel speed sensor. 5. Check if wheel speed sensor is correctly plugged into wiring harness. 6. Inspect condition of wiring from wheel speed sensor to ECU for damage. <p>Repair/Resolve Actions</p> <ol style="list-style-type: none"> 1. Damaged wiring harness should be replaced or repaired correctly. Contact your dealer or installer for questions about Tow Assist parts or service. 2. Wheel speed sensor should be replaced or installation corrected. 3. Hub Drum should be replaced or repaired if damage is found. 4. If fault persists once wheel speed sensor replaced and harness is confirmed, contact your dealer or installer for assistance.
Power Supply Service Instructions	<p>Check/Inspect</p> <ol style="list-style-type: none"> 1. Check power supply voltage while charging. 2. Check power supply voltage when not being charged. 3. Check wiring and connection between the power supply and the ECU <p>Repair/Resolve Actions</p> <ol style="list-style-type: none"> 1. Charge power supply to a good service level and check power supply response under heavy braking (100% Manual Override). 2. Ensure all power connections are of sufficient power capacity. 3. Ensure power supply is rated sufficiently to support all power load on trailer. 4. Replace power supply with new batteries if unable to maintain suitable power supply level.

REFERENCE

Light Module Operations

	Light State	System Status
	All light Off	ECU Powered Off/ Sleep/ No Brake Signal
	Operations light On Low Intensity Warning light Off	Full System Available (Pass-through Braking)
	Operations light On High Intensity Warning light Off	Full System Available
	Operations light On Low Intensity Warning light On	Reduced System Available (Passthrough Braking)
	Operations light On High Intensity Warning light On	Reduced System Available (ABS / TSM / EAC active)
	Operations light Off Warning light On	System NOT Available (No Operation)
	Operations light Intermittent Warning light On	Operation light Failed (System Available)
	Operations light Off Warning light Intermittent	Warning light Failed (System Available)

Possible Causes	Driver Action
System has no power or has gone into sleep mode.	Confirm connect of power to system, press brake pedal, press brake controller manual override.
System is in full operation and brake signal has been detected.	No action necessary by driver.
System is in full operation and ABS, TSM, or EAC control is operating.	No action necessary by driver. The high intensity light will return to low intensity about 3 seconds after a ABS or sway event concludes
System fault has occurred and the system can only offer reduced ABS, TSM, EAC control	Expect reduced operation from the system and adjust their driving/ braking accordingly. Stop for 5 minutes, then carefully drive off and stop again. The system will then preform a self-check. If the warning light remains on, see troubleshooting.
System is in reduced operation and ABS, TSM, or EAC control is operating	Expect reduced operation from the system and adjust their driving/ braking accordingly. Stop for 5 minutes, then carefully drive off and stop again. The system will then preform a self-check. If the warning light remains on, see troubleshooting.
System fault has occurred and the system cannot offer any control (ABS, TSM, EAC).	Expect no operation from the system and adjust their driving/ braking accordingly. Stop for 5 minutes, then carefully drive off and stop again. The system will then preform a self-check. If the warning light remains on, see troubleshooting.
System is in full operation, however the green light has detected as faulty	System status can't be reliably reported to driver. Driver should expect no operation from the system and adjust their driving/ braking accordingly. Stop for 5 minutes, allowing the system to preform a self check. Read fault codes through the App. Repair or replace light module.
System is in full operation, however the amber light has been detected faulty	System status can't be reliably reported to driver. Driver should expect no operation from the system and adjust their driving/ braking accordingly. Stop for 5 minutes, allowing the system to preform a self check. Read fault codes through the App. Repair or replace light module.

Service Diagnostic Action

Repairs and Service to the Tow Assist system must be carried out by an AL-KO authorised technician.

DT CODE	Fault Service Description	# Amber Flashes	# Green Flashes	Fault Service Detail
0561	Battery condition warning	2	1	Refer to the “Power Supply Service Instructions” Page 7
0562	Battery under voltage fault	2	1	
0563	Battery over voltage	2	1	
0564	ECU voltage reference plausibility fault	2	8	<ul style="list-style-type: none"> Internal brake voltage reference plausibility fault Refer to the “Brake Magnet Service Instructions” and “Power Supply Service Instructions” Page 7
4031	Front Axle, Left Wheel Speed Sensor Fault	1	2	<ul style="list-style-type: none"> Locate the wheel speed sensor on front axle, left or right wheel brake assembly backing plate. Refer to the “Wheel Speed Sensor Service Instructions” Page 7
4032	Front Axle, Left Wheel Tone Wheel or WSS Mount	5	2	
4034	Front Axle, Right Wheel Speed Sensor Fault	1	3	
4035	Front Axle, Right Wheel Tone Wheel or WSS Mount	5	3	
4037	Rear Axle, Left Wheel Speed Sensor Fault	1	4	<ul style="list-style-type: none"> Locate the wheel speed sensor on rear axle, left or right wheel brake assembly backing plate. Refer to the “Wheel Speed Sensor Service Instructions” Page 7
4038	Rear Axle, Left Wheel Tone Wheel or WSS Mount	5	4	
403A	Rear Axle, Right Wheel Speed Sensor Fault	1	5	
403B	Rear Axle, Right Wheel Tone Wheel or WSS Mount	5	5	

DT CODE	Fault Service Description	# Amber Flashes	# Green Flashes	Fault Service Detail
4063	Yaw Rate Measurement Fault	5	1	<ol style="list-style-type: none"> Check ECU mounting surface is rigid to ensure the ECU cannot be easily vibrated Check ECU mounting hardware to ensure ECU is securely mounted and is in the correct orientation Check ECU is protected from oncoming pro

406A	ECU Inertia Sensor Fault	5	1	<p>jectiles by the trailer frame or fitted shield</p> <p>Resolve/Repair</p> <ol style="list-style-type: none"> 1. Correct all ECU mounting issues and clear the faults 2. Perform a test drive to evaluate if problem has been resolved 3. If fault persists, ECU should be returned to dealer for investigation
4091	Center Axle, Left Wheel Speed Sensor Fault	1	6	<p>Locate the wheel speed sensor on center axle, left or right wheel brake assembly backing plate.</p> <ul style="list-style-type: none"> • Refer to the “Wheel Speed Sensor Service Instructions” Page 7
4092	Center Axle, Left Wheel Tone Wheel or WSS Mount	5	6	<ul style="list-style-type: none"> • Locate the brake magnet within front axle, left wheel brake assembly. • Refer to the “Brake Magnet Service Instructions” Page 7
4094	Center Axle, Right Wheel Speed Sensor Fault	1	7	
4095	Center Axle, Right Wheel Tone Wheel or WSS Mount	5	7	
40B0	Front Axle, Left Wheel Brake Magnet Fault	2	2	<ul style="list-style-type: none"> • Locate the brake magnet within front axle, right wheel brake assembly. • Refer to the “Brake Magnet Service Instructions” Page 7
40B1	Front Axle, Right Wheel Brake Magnet Fault	2	3	<ul style="list-style-type: none"> • Locate the brake magnet within the front axle, right wheel brake assembly. • Refer to the “Brake Magnet Service Instructions” Page 7

DT CODE	Fault Service Description	# Amber Flashes	# Green Flashes	Fault Service Detail
40B2	Rear Axle, Left Wheel Brake Magnet Fault	2	4	<ul style="list-style-type: none"> • Locate the brake magnet within rear axle, left or right wheel brake assembly. • Refer to the “Brake Magnet Service Instructions” Page 7
40B3	Rear Axle, Right Wheel Brake Magnet Fault	2	5	
40B4	Center Axle, Left Wheel Brake Magnet Fault	2	6	<ul style="list-style-type: none"> • Locate the brake magnet within center axle, left or right wheel • Refer to the “Brake Magnet Service Instructions” Page 7
40B5	Center Axle, Right Wheel Brake Magnet Fault	2	7	
40F1	External Simulated Load Fault	2	9	<p>External simulated load function is enabled, but physical load not detected, possibly open circuit.</p> <p>Check/Inspect</p> <ol style="list-style-type: none"> 1. Check if external simulation load is fitted to ECU. 2. Check connections and wiring between the simulated load and ECU. <p>Resolve/Repair</p> <ol style="list-style-type: none"> 1. Repair any connection or wiring between ECU and external simulation load.
4218	Operational light Fault	X	X	<p>Light module failure, system has detected a fault with the operational light.</p> <p>Check/Inspect</p> <ol style="list-style-type: none"> 1. Check any connection of the ECU light module. 2. Check connection and wiring between light module and the ECU. <p>Resolve/Repair</p> <ol style="list-style-type: none"> 1. Repair any connections or wiring between light module and ECU. 2. If fault persists, replace light module.

DT CODE	Fault Service Description	# Amber Flashes	# Green Flashes	Fault Service Detail
4226	Warning light Fault	X	X	<ol style="list-style-type: none"> 1. Check any connection of the ECU light module. 2. Check connection and wiring between light module and the ECU. <p>Resolve/Repair</p> <ol style="list-style-type: none"> 1. Repair any connections or wiring between light module and ECU. 2. If fault persists, replace light module.
5000	Trailer Factory Settings Not Programmed	3	1	<p>Dealer programmable trailer variant settings are not entered correctly.</p> <p>Resolve/Repair</p> <ol style="list-style-type: none"> 1. If fault persists, ECU should be returned to your dealer or installer for investigation.
5050	Factory Mode Enabled	X	X	Non-Serviceable fault. Contact your dealer or installer for investigation.
5091	General Wheel Speed Fault	1	8	<ol style="list-style-type: none"> 1. Check ECU mounting for rigidity correct orientation and protection from oncoming projectiles. 2. Check wheel brakes and bearings for high friction components causing wheel rotation drag. <p>Resolve/Repair</p> <ol style="list-style-type: none"> 1. Correct all ECU mounting issues and clear faults. 2. Ensure all wheel bearings are running with minimal rolling resistance. Ensure all brake components are not causing rolling resistance when not actively Applied. 3. Perform a test drive to evaluate if problem has been resolved. 4. If fault persists, ECU should be returned for investigation.

5200	Wiring Harness Feedback Fault	3	8	<p>Fault detected with the wiring harness connection on the ECU.</p> <p>Check/Inspect</p> <p>1. Check any new wiring connections made on the trailer to the brake assemblies.</p> <p>Resolve/Repair</p> <p>1. Review trailer electrical circuit for correctness and remove any incorrect wiring to brake magnet.</p>
5300	Service Brake Signal Plausibility Fault	3	9	<p>ECU internal brake service monitoring failure.</p> <p>Check/Inspect</p> <p>1. Check electrical brake controller operations and wiring.</p> <p>2. Check wiring and connection between electrical brake controller and ECU.</p> <p>Resolve/Repair</p> <p>1. If fault persists, ECU should be returned to your dealer or installer for investigation.</p>
5137	ECU Internal hardware Fault	5	8	<p>Check/Inspect</p> <p>1. Check condition of ECU, its mounting and wiring.</p> <p>Resolve/Repair</p> <p>1. If fault persists, ECU should be returned to your dealer or installer for investigation.</p>

Note: All flash codes above represent active faults in the ECU system. If a fault has been set previously and has since healed, a history flash code will be available the same fault code as listed below with an additional 5 flash counts added to the Warning Flashes (e.g. Front Left Brake Magnet active fault flash code = 2 & 2, Front Left Brake Magnet history fault code = 7 & 2).

WARRANTY AL-KO INTERNATIONAL PTY LTD

AL-KO TOW ASSIST PRODUCT 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 Tow Assist 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 36 months from date of fitment. 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 on the following page.
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
- 67-91 Nathan Road, Dandenong South, Victoria, 3175
- **Phone:** (03) 9997 4500
- **Email:** info.aus@alko-tech.com

Register your warranty at www.alko.com.au



- **Option 1.** Scan the above QR code
- **Option 2.** Visit alko.com.au/warranties
- **Option 3.** Take this link (digital copy only)

INSTALLATION DETAILS

- SERIAL No. _____
- INSTALLED BY _____
- DATE //

The personal information disclosed to us by you will be used for the purposes of identifying you if you wish to make a claim under the warranty, and for dealing with that claim. We may also use your information to communicate with you about our product and promotions.


Your information will only be disclosed to third parties where necessary to assess or complete your claim such as suppliers or distributors of our products, or to government bodies such as Vic Roads (or equivalent). If you do not complete all the information contained on the card, we may not be able to provide you with a warranty.

If you would like to access the personal information held by us about you, please contact our Privacy Officer on (03) 9997 4500.



Visit

Documents / Resources

	<p>AL-KO TOW ASSIST ABS and Sway Mitigation System [pdf] Owner's Manual TOW ASSIST ABS and Sway Mitigation System, TOW ASSIST, ABS and Sway Mitigation System, Sway Mitigation System, Mitigation System</p>
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References

- [AL-KO Vehicle Technology | Australian Trailer & Caravan Parts Manufacturer](#)
- [Warranties | AL-KO](#)
- [AL-KO Vehicle Technology | Australian Trailer & Caravan Parts Manufacturer](#)
- [Warranties | AL-KO](#)
- [User Manual](#)

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