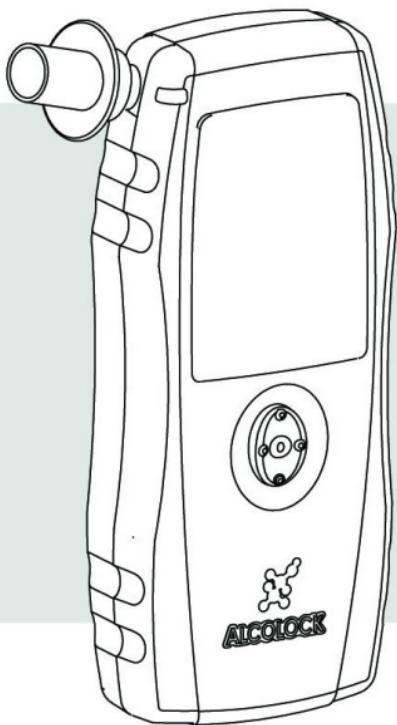


ACS



ALCOHOL COUNTERMEASURE SYSTEMS



G Series

Alcohol Interlock

OWNER'S MANUAL

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FCC Disclaimer

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

To comply with RF exposure requirements, a separation distance of at least 20 cm must be maintained between the antenna(s) of the Electronic Control Unit and all persons

This device complies with Part 15 of the FCC Rules. Operations is subject to the following two conditions: (1). this device may not cause harmful interference, and (2). this device must accept any interference received, including interference that may cause undesired operation.

Safety and Precautions

G Series has been designed for easy and safe operation. The alcohol interlock is to be used only for the purposes specified herein. To help ensure your safety, you must follow these precautions:

- In response to a retest request, carefully stop your vehicle at the side of the road. Complete a successful breath test before you resume driving.
- Do not open the handset case. Doing so will potentially damage the components within and void the warranty.
- Avoid exposing the handset to direct sunlight for extended periods of time.
- If liquid spills onto the handset, remove the excess with a cloth and allow the handset to dry thoroughly. If there is substantial moisture damage, do not turn the handset on. Contact your local service centre.
- Keep all radio frequency (RF) transmitting devices (such as cell phones) away from G Series to minimize interference.
- Do not attempt to tamper with or circumvent G Series. This is considered a program violation.

Maintenance

During field use, G Series is susceptible to dirt and debris. Clean the handset with a damp cloth and mild soap. Do not use abrasive cleaners or solvents.

Periodic service appointments are required. Consult your compliance guide for more information.

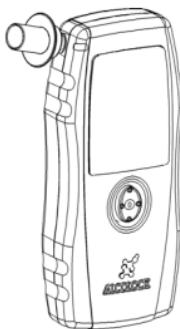
Information and Support

For information and support, please contact your local service centre.

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What is an alcohol interlock?



An Alcohol Interlock is an in-car breath alcohol screening instrument. It prevents a vehicle from starting if it detects that a driver's breath alcohol concentration (BrAC) is over a preset limit. It is designed to fit inside the vehicle, near the driver's seat, and connects directly to the vehicle's ignition system.

The interlock consists of a handset and an Electronic Control Unit (ECU). The ECU enables and disables the ignition of the motor and stores the handset settings.

The G series handset can have a wired or wireless connection to the ECU, depending on its version.

To help prevent other people from providing the required breath samples, the interlock requests additional breath samples at random intervals during the trip.

How does it work?

The G Series uses the same alcohol sensing technology used by police in roadside screening. A special alcohol-sensitive cell detects the amount of alcohol in the breath. Breath alcohol is directly proportional to the blood alcohol concentration (BAC).

User Fees

Drivers who are subject to an alcohol interlock program are responsible for all installation and maintenance costs. Refer to your compliance guide for a complete list of costs.

Installation

Installation centres are conveniently located, and the interlock is installed while you wait. You receive full training on site, and technicians help to ensure that everything operates properly.

The interlock is installed by a qualified installer in accordance with national regulations. An unqualified installation may invalidate the type approval of the vehicle.

Maintenance

You must visit the installation centre a short time after installation. You must also visit at certain intervals for maintenance and data download. Maintenance appointments typically take less than 20 minutes.

Refer to your compliance guide for the interval dates.

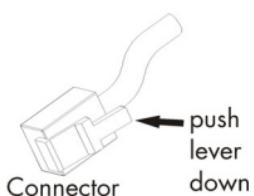
Handset Configuration

There are two versions of the handset, a wired version and a wireless version. The handset can have either a wired or wireless connection with the ECU. The handset uses a single navigation button to scroll up, down, right and left. Pressing the middle of the navigation button selects the desired option.

Handset Cable

The handset cable connects the wired version of the handset to the ECU, which in turn is connected to the vehicle's ignition. This cable can also be used to charge the wireless unit. The handset should remain connected at all times, but follow these steps if the handset needs to be removed:

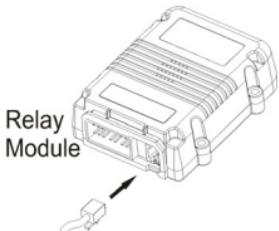
To Disconnect



1. Make sure that the vehicle motor is **off**.
The handset cable consists of a connector and a coiled cord.
2. Release the RJ-11 connector from the ECU plug by **pushing the connector lever down**.
This disconnects the handset cable.

Warning! Do not pull on the handset cord or turn the connector. This could damage the cable.

To Connect



1. With the vehicle motor **off**, locate the **handset cable plug in the ECU**.
Note! If the vehicle's motor is running, the ECU beeps every 15 seconds.
2. Connect the RJ-11 connector to the ECU. You should hear a light click when they connect properly.
3. If the vehicle motor is running, a **WAIT** message displays. G Series may require another breath test. Observe the message on the display.

Alcohol Influence on Testing

Drinking alcohol and eating foods containing alcohol will cause a failed alcohol test.

Some other factors that may affect a test (because they may contain or produce residual alcohol in the mouth) are medicines, drops, smoking, using mouthwash or mouth spray.

Rinsing the mouth with water after using mouthwash or mouth spray will remove the alcohol content in the mouth.

According to the previous information, **do not eat, smoke or drink for at least 10 minutes before taking a test.**

Additionally do not spray any air fresheners, disinfectants, cologne or perfume in the vehicle prior to a test, as these can also contain alcohol.

Note! The above mentioned list of factors that may affect a test is not exhaustive. There are additional items that may affect the results of a breath test. Follow this guide carefully to avoid incorrect results.

Operating Temperature

The maximum ambient operational temperature is between -45°C and +85°C.

Note! Depending on the ambient temperature, the handset takes a few seconds to warm up (approximately 15 seconds at 20°C, approximately 1 minute at 0°C).

Battery Voltage

The vehicle battery supplies the voltage to the ECU, which in turn powers the handset.

For the 12V Interlock system, the vehicle battery voltage can range from 9V - 18V. For a 24V Interlock system, the vehicle battery voltage can range from 16V - 36V.

USING THE INTERLOCK

Starting the Motor



1. The interlock turns on automatically when you plug it in, or when you turn the key to ON. **WAIT** displays as the unit warms up.

If the interlock is plugged in, but has gone into sleep mode, turn the power on again by pressing the navigation button. Alternatively, you can move the key between the On and Off positions.

Note: The ignition must be OFF before you can continue. Turning on the ignition



2. The handset displays Blow for 5 seconds when it has finished warming up. The warm-up time may be longer in cold temperatures.

Note: Do not store the mouthpiece to be used in a cold area. This causes condensation in the mouthpiece and increases the chance for water to enter the handset.



3. Insert a clean mouthpiece. Using a clean mouthpiece is good hygiene, and it helps ensure a usable breath sample.

Note: Do not eat, drink or smoke for at least 15 minutes before the test. This could contaminate the breath sample.

4. **Blow moderately and continuously as you simultaneously hum into the mouthpiece. The handset makes a tone to indicate proper air-flow and hum. If you are not blowing correctly, you will see a message to give you instructions on correcting it.**
5. **Stop blowing when the handset clicks and stops the tone. **WAIT...** displays as the breath sample is analyzed.**
6. **The handset beeps and displays the result:**



Start Motor

You have passed the breath test, and no alcohol has been detected. You can start the motor.

Note! You must start the motor within five minutes.



Caution (i.e., BAC limit warning)

You have passed the breath test, but alcohol (below the allowable limit) has been detected. You have two options:

- Press **CANCEL**, wait five minutes and try the test again if you are certain there is no alcohol in your system.
- Press **CONFIRM** to acknowledge that you intend to drive with alcohol in your system. The motor must be started within five minutes.

Note! You can continue driving, but G Series will have warned you about the alcohol detected.



Lockout

You have failed the breath test. The alcohol level detected is over the preset limit. You may NOT start the motor.

Lockout and a countdown timer display. Wait for the countdown to finish before attempting another breath test.

WARNING! Do not attempt another breath test until you are sure that your alcohol level is under the limit. A second failed test may result in a longer lockout time. Please refer to your compliance guide for actual program requirements and details specifying program violations.

All breath tests are logged by G Series and are downloaded during routine service appointments. Any instance of alcohol detected in the breath samples may be considered as a program violation. Refer to your compliance guide for specific limit amounts.

Warm-up and Standby (where applicable)



Once you have started your vehicle, **Drive Safely** displays.

You can place G Series in Warm-up mode by holding the navigation button. **Warm-Up** displays, and your vehicle can remain idle without requiring another breath test for up to 30 minutes.

To exit this mode, hold the right button. This mode automatically terminates if the RPM of your engine increases.

Note! For commercial vehicles, the corresponding mode is Standby. Standby displays, but the idle time is not limited to 30 minutes. The idle time for Standby mode is unlimited.

Restarting the Motor

If the motor is turned off for a short period of time, you can restart it without another breath test. This safety feature is helpful if the motor stalls, or if you need to make frequent, short stops. Refer to your compliance guide for the restarting time limit.

Observe the message on the handset:



Restart Available

You can restart the motor without providing another breath test.

To cancel the restart, press CANCEL.



Blow for 5 seconds

The restart period has expired. You need to pass a breath test to start the motor.

Running retests

Additional breath tests are required at random times to ensure that the driver has not consumed alcohol since the motor has been started. This occurs at random intervals during the trip. Refer to your compliance guide for more information.



1. The handset beeps and displays **Retest**.
2. Do not provide a breath test while the vehicle is in motion. The interlock provides sufficient time for you to stop in a safe location.
3. Provide a breath sample and observe the display messages as they apply:



Drive Safely

You have passed the breath test. You can continue driving.



Pull Over

The alcohol level detected is over the preset limit. Pull over in a safe location and turn the motor off.

Once the motor is turned off the **Restart Available** message will be displayed, this is in case there is a need to restart the engine to park in a safer location.

Once the vehicle is parked in a safer location (if the restart is used), turn the engine off and when the **Restart Available** screen is displayed again, press the left **CANCEL** button.

Lockout and a countdown timer display. Wait for the countdown to finish before attempting another breath test. You cannot start the motor until a passed breath test is provided.

WARNING! *Do not attempt another breath test until you are sure that your alcohol level is under the limit. A second failed breath test may result in a longer lockout time.*

In response to a retest request, carefully stop your vehicle at the side of the road. Complete a successful breath test before you resume driving.

G Series has a number of customizable options, such as volume control, language selection, and wake-up/sleep times. These options are found in the main menu, which can be accessed by pressing **MENU**.

Main Menu

The Main Menu contains the following menu options:

- Shut down
- Sleep
- Calibration
- Dates
- Language
- Settings
- Bypass
- Lockout Reset
- Test

Shut down

You can use this menu to shut down the handset manually. To shut down, select **MENU** and press **enter**, by pressing in the centre of the navigation button. You will see a 3 seconds count down as the handset shuts down. You can select **Back** at this time, if you do not wish to shut down the handset at this time.

Sleep

The handset can be put into sleep mode manually by selecting the Sleep menu. It can also go to sleep automatically when the ignition is switched off. This conserves the battery.

Calibration

This menu option should not be used by anyone other than authorized service personnel. It is used to calibrate the handset.

Dates

This menu lists service dates and other important dates and times. To view, push **MENU** to access the main menu. Scroll down to **Dates** with the navigation button and select it. The following dates are displayed:

- Current
- Last calibration
- Calibration expiry
- Service
- Service lockout

Language

This menu lets you choose a language to display all the messages in.

Settings

This menu lets you customize the brightness and speaker volume. The handset produces audio tones. You can set their volume from here.

Note! This applies to the handset only. The volume of the ECU cannot be set.

Bypass

This menu should not be used by anyone other than authorized service personnel. It allows to bypass a alcohol test, before starting the vehicle and requires a service code that is only available with the authorized personnel.

Lockout Reset

The handset may sometimes get locked out, if there is a violation in doing a breath test. It will then have to be reset using a lockout reset code, which is only available with the authorized service personnel. Each lockout is logged by the hand set.

Test

This menu lets you perform certain test on the handset. The test available are:

- Sleep: Puts the handset in sleep mode immediately, to test that the mode is working properly.
- Reset HS: Lets you reset the handset. Resetting handset may be required occasionally, if there is a communication error and gets frozen. Selecting this option, first turns the handset off and then on, before it goes through a warm-up sequence.
- Reset RM: Resets the ECU.
- Analog Signals: Displays analog signals from the battery, heater and so on.
- Speaker Test: Allows you to test if the speaker is functioning properly. To test, select the option and press the navigation button to Switch. You can switch speaker on and off for the test.
- LED Test: Makes sure that the LED indictor near the mouthpiece is working properly. It tests all the colours and flashing sequence. Press the navigation button to the right to change the colour. The

sequence is: dark > green > red > orange > green blinking > red blinking > orange blinking > back to dark.

- **USB Test:** Ensures that the connection to USB is working without any problems.
- **Date/Time:** Allows you to change the date and time. Scroll up and down to select what you wish you to change and scroll left and right to set the desired date and time.

Troubleshooting Table

The following table lists basic problems that can occur, along with their solutions. For other problems, contact your service provider.

If G Series...	You should...
Will not turn on	Check the vehicle battery
Displays an error code	Refer to the table of errors
Displays an early or immediate recall	Contact your service provider
Aborts a breath test	Retry the test, or investigate the Abort code
Is in permanent lockout	Contact your service provider
Requires service	Contact your service provider

Service Dates

After G Series installation, you need to return for a follow-up appointment. Service appointments are then scheduled at regular intervals. See your compliance guide for the interval dates.

The service appointments are for verifying interlock accuracy and downloading the log of breath tests.

Error Messages

G Series may not accept a breath test (and may display error messages instead). To minimize errors, make sure that the handset is connected properly, the motor's battery is in good condition, and that mobile phones are not in use during breath tests.

Messages	Description	What to do
ABORT 10, 30, 40, 45, 50	There is a problem with the handset.	Try the test again. If the message persists, contact your service provider.
Early Recall		A service reminder displays for 12 days, followed by a permanent lockout.
Immediate Recall 1, 4, 5, 6, 7, 11	Immediate recalls result from failed tests, missed retests, failure to pull over on a failed retest, a start violation, and/or the use of emergency override (where applicable).	A service reminder displays for five days, followed by a permanent lockout.
Missed Retest	Occurs when a retest is not done within the 3-minute time frame. The horn sounds for 3 minutes, and an Early Recall follows.	Complete the test as required.
Missed Service	If a service request is ignored, there is a 5-day grace period.	Call your service provider to schedule an appointment.

Messages	Description	What to do
Permanent Lockout	The service request and grace period have been ignored. The vehicle cannot be started until the interlock is reset by the service provider.	Contact your service provider immediately to schedule an appointment. The motor cannot be started, so towing may be required.
Pull Over	Occurs in response to a failed retest.	The driver has 3 minutes to safely stop and shut off the motor.
Service Due	Reminder that a service appointment is coming up.	Arrive at the scheduled time to avoid any program violations.
Start Violation	If you start the vehicle without passing a breath test, a violation results. G Series requests a retest, and the Start Violation message displays.	Take the breath test and contact your service provider.
Try again	There is a problem with the test.	Try the test again. Call your service provider if the problem persists.
Turn key off	The ignition key is in the On position.	Turn the key to the Off position and wait for the Start Motor message to display.

Reset Codes

Reset codes are used by service personnel to change the service dates, early recall dates, lockout dates, and in emergency situations, override the interlock. These codes are randomly generated and change daily. Attempting to circumvent these codes results in a program violation.

Emergency Override (where applicable)

The Emergency Override code is available for true emergency situations. Using this code for any other reason results in a Program Violation.

Third-Party Maintenance (TPM)

The repair shop enters a TPM code when work needs to be done on your vehicle.

Other

Reset codes can apply in other instances, too. For example, an early recall might occur by mistake, or a client might not be able to attend a service appointment for valid reasons.

Disposal of Unit at End of Service Life

Return to your dealer for removal of the interlock from your vehicle. Following the removal, proper disposal of the alcohol interlock (ECU, handset, or both) at the end of its service life will be done by the manufacturer.

Replacement Parts

Contact your service centre for the following parts:

- Mouthpieces (Bag of 25), ACS Part Number: 95-000145

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SERVICE RECORD



ALCOHOL COUNTERMEASURE SYSTEMS

UG-ENG-60-000139-B
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