

LowCostInterlock

TAB 720[®] User Manual



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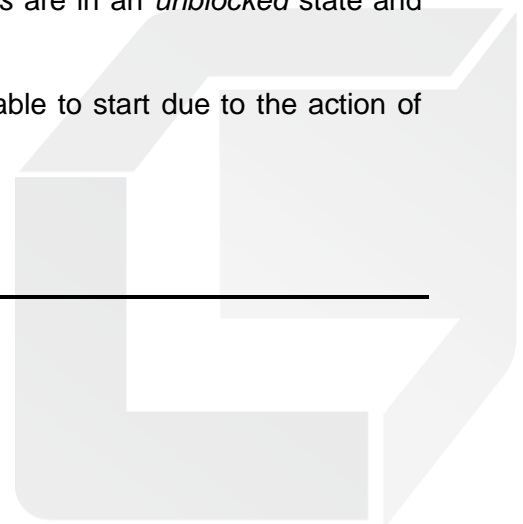
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TERMINOLOGY:

The definition of any word or phrase printed in *italics* may be found in the table below:

BAIID	Breath Alcohol Ignition Interlock Device. Also referred to as, "interlock."
Blocked	The condition in which the vehicle will not be able to start due to the action of the <i>Control Unit</i> .
Calibration	A procedure whereby the <i>handset</i> is checked or adjusted to ensure that it is providing accurate results.
Control Unit	The part of the TAB 720, mounted out of sight which <i>blocks</i> or <i>unblocks</i> the <i>ignition circuits</i> .
Early Recall	A requirement to visit a <i>Service Center</i> before the next scheduled visit. This is usually due to having failed to comply with one or more of the <i>Interlock Program</i> requirements.
Emergency override	A procedure which allows the driver to override the TAB 720 and start the vehicle without providing a satisfactory breath sample.
Ethanol	The chemical name for the particular alcohol found in alcoholic drinks such a wine, beer, whiskey etc.
False Positive Result	An above <i>setpoint</i> breath sample caused by factors other than that of alcohol levels in the driver's breath sample which reflect the blood alcohol level. Can be caused by mouthwash, perfume, washer fluid, etc.
Grace Period	Period of time following a particular deadline (e.g. a calibration /maintenance visit during which the required procedure may take place without penalty).
Handset	The part of the TAB 720 mounted on the dashboard of the vehicle into which you blow your breath sample.
Ignition Circuit	This is a general term which covers the various electrical sub-systems which must be present for the vehicle engine to start.
LCD	Liquid Crystal Display. The type of display screen used on the TAB 720.
LED	Light Emitting Diode. The light source providing the red and green lights on the TAB 720 cover.
Lockout	A period of time following an event during which the TAB 720 will prevent you from attempting to start your vehicle. In some jurisdictions, continuing non-compliance might lead to a Permanent Lockout which will require your vehicle to be transported to a service center for the lockout to be reset.

Maintenance	Periodic checks and adjustments required by the TAB 720 to ensure program compliance.
Valid breath sample	A breath sample provided by the driver which contains alcohol at a value below that of the <i>Setpoint</i> level.
Interlock Program	A program whereby drivers convicted of drink driving may drive a vehicle equipped with a <i>BAIID</i> instead of having their license suspended.
Permanent Lockout	See <i>Lockout</i> .
Positive breath sample	A breath sample provided by the driver which contains alcohol at a value at or above that of the <i>Setpoint</i> level.
Program Administrator	A person or organization responsible for the management of an <i>Interlock Program</i> .
Random Retest	A requirement of some <i>Interlock Programs</i> whereby the TAB 720 will request a further breath sample after the vehicle has been started. Also known as a Rolling Retest.
Restart Period	The period of time following the engine being turned off during which it may be restarted without providing a further breath sample. Also known as a Free Restart.
Setpoint	The alcohol level at or above which the TAB 720 will not unblock the <i>Ignition Circuits</i> . This level is set by the jurisdiction's <i>Program Administrator</i> .
Soft Keys	Buttons on the <i>handset</i> cover whose function changes dependant on the labels displayed on the screen directly above them.
Standby Mode	The mode into which the TAB 720 automatically returns after activity. It is not switched off and continues to monitor its environment while in this condition.
Start Period	The period of time following the handset displaying PASS after a breath sample. During this time the <i>ignition circuits</i> are in an <i>unblocked</i> state and the vehicle is able to be started.
Unblocked	The condition in which the vehicle will be able to start due to the action of the <i>Control Unit</i> .



INTENDED USE:

The TAB 720 is a Breath Alcohol Ignition Interlock Device (BAIID) designed for use primarily in *Interlock Programs*. It may be fitted to vehicles using either 12V or 24V. It will prevent the vehicle from being driven by any driver whose breath alcohol value is above a pre-set value.

While the TAB 720 effectively incorporates a vehicle immobilizer, it is not designed as an anti-theft device and should not be used as so.

PRINCIPLE OF OPERATION

The TAB 720 consists of a *handset* which is a sophisticated Breath Alcohol Meter plus a *Control Unit* which resembles a vehicle immobilizer. Until the driver provides the handset with a *valid breath sample* the *Control Unit* maintains the *Ignition Circuits* in a *blocked* condition whereby the vehicle's engine cannot be started. The *Ignition Circuits* may only be *unblocked* by providing the handset with a breath sample containing an alcohol level lower than the *setpoint* value

HYBRID VEHICLES

The TAB 720 may be installed on hybrid vehicles. Principle of operation is the same as with a standard vehicle using a conventional gas/diesel engine.

SAFETY

Starting a vehicle equipped with a *BAIID* will take slightly longer than starting one not equipped with such a device. For this reason do not leave a vehicle equipped with a TAB 720 in any position where it is likely to need to be moved quickly.

INSTALLATION

The TAB 720 may only be installed by a LCI approved technician in compliance with the LCI Installation Manual and in accordance with local jurisdiction regulations. Unqualified installation or service will invalidate the product warranty, may invalidate the type approval of the vehicle, and LCI will accept no liability for consequential damage to the vehicle.

CALIBRATION AND MAINTAINANCE

Calibration, Maintenance, and repair may only be conducted by LCI approved technicians using LCI approved parts. Failure to observe this condition will invalidate the product warranty and will relieve LCI of responsibility for any consequential product liability. *Maintenance* and *calibration* must be carried out in accordance with the LCI Service Manual in order to ensure correct operation of the unit.

The unit requires periodic *calibration* and *maintenance* procedures. Required dates for these procedures are carried in software and are outlined by each jurisdiction. When *calibration/maintenance* procedures are required, a *pre-calibration/maintenance* request will be displayed on the *handset* screen at startup for a period of time (locally regulated) before attention is required. In some jurisdictions an extra period of time (*Grace Period*) after the due date may be available during which the unit may be *calibrated/maintained*. If *calibration/maintenance* has not been carried out before the end of the *Grace Period* then the TAB 720 will prevent the vehicle from being started until it has been reset at an authorized *Service Center*.

DATA DOWNLOAD

Ignition Interlocks for use in *Interlock Programs* are required to store data electronically concerning events such as breath sample results, vehicle starts, *Random Retests*, attempts to disconnect the system or otherwise drive the vehicle without having provided an acceptable breath sample. *Interlock Programs* require that this information is downloaded from the unit on a regular basis. *Data Download* usually occurs at the same time as a routine *calibration/maintenance* visit. *Data Download* allows the Program Administrators to check that the conditions of the driver's license are being adhered to.

Downloaded data is encrypted and can be accessed only by the *Program Administrators*, LCI authorities, but not by its distributors.

Data download requires hardware and software specific to the TAB 720. Attempts to otherwise access or manipulate data will result in the event being recorded and disclosed at the next download

VEHICLE BATTERY

The TAB 720 is designed to work with an input voltage of 9V to 15V on a 12V system or 18V to 30V on a 24V system. It is important to recognize that under extremely cold conditions your vehicle's battery may not be able to provide the required 9 V – it would not in any case be able to turn the engine over with this voltage. Please ensure that you follow your vehicle manufacturer's instructions for battery care.

You should also be aware that the TAB 720 itself constantly draws power from the battery. The battery in a small family car would power the TAB 720 for over three months without recharging. However if your vehicle is to be taken off the road for any extended period of time please consult your local LCI service center for advice.

Many *Interlock Programs* require that vehicle battery disconnection is logged as an event in the memory of the interlock and some also require an *Early Recall* following a disconnection. Please review your program documentation for information regarding battery disconnection and vehicle servicing.

MODIFICATIONS

Do not attempt, under any circumstances, to modify either the TAB 720 system or its associated wiring. Failure to observe this advice may result in damage to the TAB 720 or to the vehicle on which it is installed. Such action may also result in the loss of your driving privileges. System design and installation is such that attempts to tamper with the components will be visually evident or electronically recorded or both.

FIG1. HANDSET FEATURES



OPERATING TEMPERATURE

The TAB 720 is designed for use at temperatures between -45°C and +85°C. If you switch on while the *handset* is at temperatures above this range then the message "Handset Temperature Too High" will be displayed and the unit will automatically return to *standby mode*. At temperatures below -20°C, LCD displays become slow to react and could therefore cause confusion to the user. For this reason, at temperatures below -20°C the graphics display will switch off and user communication will be made through the green and red Light Emitting Diodes (*LED*) on the handset front. In the case of the temperature being below -45°C then both green and red *LED*'s will illuminate without flashing for a short period of time before the unit returns to its *standby mode*. Please note, that the *LED*'s are operational at all working temperatures and may be used instead of the display screen if desired.

If the handset is at a temperature above 85°C then remove it from the vicinity of the heat source (usually the sun on the dashboard) to allow it to cool down. If it is below -45°C then apply gentle heat to warm it up. Placing it close to your body under your coat is usually an effective way of warming it.

The handset is connected to the vehicle via a cable. It is possible to disconnect the cable from the handset by firmly grasping the moulded connector plug and pulling it out of the socket. If you know that the vehicle is likely to be exposed to extreme temperatures then you may wish to remove the handset from the vehicle between uses. To re-connect, simply reverse the operation while observing the fact that the plug and socket must be correctly orientated. However, some *Interlock Programs* impose restrictions on this practice.

SYSTEM INFORMATION

DEVICE BUTTONS:

- Left button push - Distributors details
- Right Button push - Unit details software version number
- Both Button 1 and 2 push together - Menu
- Power button push – Emergency override (State Governed)
- Power button hold 5 seconds – Power down
- VBS (Vehicle Blocking System) - The VBS is not user accessible.

WARM UP TIMES

- 68°F AND ABOVE: 30 SECONDS - 10 SECONDS
- 23°F THRU 67°F: 90 SECONDS - 30 SECONDS
- -40°F THRU 22°F: +3 MINUTES - 90 SECONDS

SYSTEM START-UP

NOTE. The On/Off button on the *handset* is for service use only. In this particular variant of the LCI product range, power is controlled by the software.

The TAB 720 will exit its *standby mode* and power up automatically once your vehicle's ignition is switched on. A beep will sound, followed by a series of screens showing the following messages:

- **LCI Logo**
- **Instrument Serial Number**
- **Software Rev.**
- **LCI website**
- **Please Wait**

During this time, the red *LED* will flash slowly. This is intentional and is not an indication of a problem. It is recommended that you observe the display screen during start up as it may show information regarding *calibration/maintenance* requirements.

Meanwhile, the system automatically checks its operating parameters. When the *handset* is ready to take a sample, a further single beep will sound, followed by the message: "Fit Mouthpiece Provide Sample" alternating with the message "Blow for minimum 3 seconds"

BREATH SAMPLE TEST PROCEDURE

Before providing a sample

1. The TAB 720 reacts specifically to the presence of alcohol in the breath. However, it can be affected by use of alcohol containing products such as mouthwash or the application of perfume or aftershave immediately before providing your sample. Vehicle windshield wiper fluid can also contain high concentrations of alcohol and washing your windscreen before providing a sample may cause a *false positive result*. You should also avoid the presence paints, polish, solvents, and the like in the vicinity of the handset as many of these products contain alcohols.
2. Taking any form of alcohol by mouth within 15 minutes of providing a sample is not recommended and may cause positive or *false positive results* to occur. Many foods and drinks contain small but detectable quantities of alcohol. For this reason it is recommended that you take nothing by mouth for 15 minutes before driving a TAB 720 equipped vehicle. Depending on jurisdictional rules governing BAIID, you may be required to provide a breath sample at random during the operation of the vehicle. Be aware of this possible requirement when eating/drinking in the vehicle. It is always suggested to rinse your mouth out with water prior to proving a breath sample. See also section below labelled "*Random Retest*".

3. Elevated results can occur if you have consumed alcohol up to 15 minutes before providing a sample. This is because your mouth may still contain residual alcohol from the drink.
4. Smoking within two minutes before providing a sample is not recommended.

PROVIDING A SAMPLE

1. Remove the handset from its docking station (if applicable) by lifting upwards parallel to the mounting surface.
2. Insert a clean dry mouthpiece into the mouthpiece holder being careful to align the Location Key. For full details see section below titled "Disposable Mouthpiece". Take a deep breath, seal your lips around the wide end of the mouthpiece and blow into the TAB 720 for a minimum of 3 seconds. The *handset* will detect your breath flow and will emit a continuous tone as long as you are blowing sufficiently hard. Once sufficient breath has been blown, the continuous tone will stop and will be followed closely by a double beep. Once you have heard the double beep then stop submitting your sample. This procedure is to ensure that the sample taken comes from deep in the lungs and is therefore a better representative of the true blood alcohol level.

NOTE. The TAB 720 is equipped with highly sophisticated methods of detecting sample tampering. Any attempt to start your vehicle without providing an unadulterated human breath sample will fail and will be logged within the system. The vehicle cannot be started using a tampered sample and you may be subjected to penalties if you are using this product as part of an *Interlock Program*.

3. You will now see the *handset* display show the message "Analyzing."
4. After a few seconds, your breath sample will have been analyzed and, if the breath alcohol level is below the pre-set *setpoint*, then "PASS" will appear on the *handset* display. A coded signal will be sent immediately to the *Control Unit* in order to *unblock* the *ignition circuit*. Return the handset to its mounting position. You now have a *start period* during which you may start your vehicle, even if you turn the ignition off and then back on. The TAB 720 will return to its *standby mode* automatically.
5. If *Random Retesting* is required in your jurisdiction, at a random point within a set period following engine start, the system will sound a series of continuous beeps. At this point you now have a set period of time to provide a further test. Once the *handset* display shows "FIT MOUTHPIECE PROVIDE SAMPLE" alternating with "RETEST REQUIRED", blow into the unit as previously described. If you provide a *valid breath sample* the handset will display "RETEST PASS" and will return to *standby mode*. Return the handset to its mounting position and be aware that you may be asked to submit more samples until the vehicle is shut off. In some jurisdictions, the retest may be taken while continuing to drive your vehicle. In others, you will be required to pull-over to the side of the road to provide the sample. Please refer to your *service center* for details.

Should you provide a retest sample containing an alcohol level either at or greater than the *setpoint*, then this event will be noted in the TAB 720's

memory and will be included in the next data download to the jurisdiction's *Program Administrators*. It may also trigger an additional requirement for your vehicle to visit your local *Service Center* within a defined period of time (*Early Recall*). Moreover, it may simply prevent re-starting the vehicle until a visit to the *Service Center* has been completed. This may require your vehicle to be towed, or otherwise transported to the center, at your expense.

For safety reasons the TAB 720 will not shut down the vehicle engine in the case of a failed sample.

Please refer to your *Program Administrators* for details of how a failed *retest* is handled in your locality.

RESTART PERIOD

At the end of a period of use and after the vehicle's engine is turned off, the TAB 720 system enters what is called a *Restart Period*. During this period, the engine may be restarted without the need for a breath sample to be provided. This feature allows the driver to restart quickly should the engine be stalled or turned off for a short period.

DISPOSABLE MOUTHPIECE

The mouthpiece must be fitted into the mouthpiece holder in order to provide a sample.

Please note that the mouthpiece will only fit into the *handset* if orientated correctly. Unwrap the mouthpiece from its protective packaging and, with the location key facing upwards, slide the mouthpiece into the hole in the center of the *handset* above the display. The location key must fit into the corresponding guide slot in the holder and the mouthpiece pushed in until it will move no further.

Failure to correctly locate the mouthpiece may result in the *handset* refusing to accept a breath sample and therefore preventing the vehicle from starting.

The mouthpieces are disposable, manufactured under hygienic conditions, and supplied in individual wrappers. It is acceptable to wash and re-use mouthpieces provided they are perfectly dry before use. Use of wet mouthpieces may prevent your vehicle from starting; additional mouthpieces may be purchased from your local LCI distributor or *Service Center*.

CALIBRATION

The system requires periodic *calibration*. A *calibration* reminder will appear on the display screen when the *calibration* date is approaching. The timing of recalibration is set by your jurisdiction. Please note that failure to comply with the required calibration procedures may result in your vehicle being prevented from starting until reset, at your expense, at an approved *Service Center*. In this case, a *Permanent Lockout* countdown will start once the calibration date has

been passed. This will be shown at during the start-up sequence of the handset and will require that you acknowledge having read the message by pressing the indicated *soft key* before continuing.

IF THE IGNITION CIRCUITS FAIL TO UNBLOCK

If the *handset* displays "FAIL" then it has detected alcohol in the breath at a level in excess of the *setpoint*. If you have observed the points shown in the "Before Providing a Sample" section of these instructions, then you have a breath alcohol level above the pre-set limit. At the user's discretion, wait for a period of 15 minutes and try again. By this time your breath alcohol level may have reduced to a point whereby you will pass the test. In some jurisdictions, the TAB 720 may be programmed with a built in delay before another sample may be taken.

USER MAINTENANCE

If and when required, simply wipe over the handset over with a lightly dampened cloth.

Do not use chemical solvents, abrasives, or excess water as these could damage both the case material and the internal sensors.

FAQ'S

- Q:** My TAB 720 keeps telling me to "Blow for longer time" but I keep running out of breath before the double beep.
- A:** *You must blow for at least 3 seconds. Try blowing more softly. As long as you can hear a continuous tone then you are blowing hard enough.*
- Q:** I can see droplets of condensation coming out of the end of the mouthpiece. Will this affect the results?
- A:** *We recommend that if you see this happening that you change the mouthpiece for a dry one immediately. Condensation may prevent you from starting your vehicle; your wet mouthpiece may be dried out and re-used.*
- Q:** Can I leave my mouthpiece in the handset?
- A:** *Yes, in fact we would recommend that you do so especially if Random Retests are required.*
- Q:** I have forgotten my mouthpieces. Can I blow directly into the TAB 720?
- A:** *No. The unit is designed to accept a mouthpiece and is unable to take a sample without one. Attempts to use the TAB 720 without a mouthpiece may damage the handset and your vehicle will be unable to start. Subsequent repair will not be covered by warranty.*

Q: Can I re-use my mouthpieces?

A: *Yes; you can also wash them if desired. Use water and mild detergent, and rinse thoroughly. Do not use solvents (e.g. alcohol laden wipes, acetone). Mouthpieces must be perfectly dry before use in order to prevent false positive results.*

Q: How many drinks can I have before the TAB 720 will prevent me from starting my vehicle?

A: *The answer to this question is entirely dependent on where the TAB 720 setpoint level has been set and how quickly your body metabolizes alcohol. For this reason it is recommended not to drink any alcohol at all before driving. Remember that alcohol stays in the body for many hours after you stop drinking. Alcohol levels in the morning – after consuming alcohol the night before – may prevent you from starting your vehicle.*

Q: My handset display is displaying "Invalid Sample" followed by a 1, 2 or 3. What does this mean?

A: *The handset has detected an unusual reading in your breath sample. Please ensure that you are observing the correct blowing procedure and repeat the test. If the Invalid Sample message is displayed again, then please contact LCI for advice.*

Q: Can I disconnect the TAB 720 and drive my vehicle without it?

A: *No. Any attempt to tamper with the system, either by trying to disconnect the unit or by providing a sample other than one provided by you, is recorded electronically. It may also result in an Early Recall. Such actions may also leave you subject to penalties under your local jurisdiction.*

Q: What happens if I miss a random retest? Will the engine switch off?

A: *No. For safety reasons the TAB 720 cannot switch off a running engine. It can only prevent an engine from starting. If you fail to provide a sample within the specified time period, the event will be logged electronically and will be downloaded at a later date; additionally, per jurisdiction requirements, the vehicle's horn and/or lights may begin to function until the vehicle is shut off or a valid sample is provided. In some jurisdictions, you may be subjected to an early recall.*

Q: The cable connecting the handset to my vehicle has a USB fitting on it. Does this mean I can connect my handset to my computer?

A: *No. Although a USB connection is utilized, it is wired differently from a standard USB connector and uses a higher voltage. Attempts to connect the handset or the cable to any other device (e.g. laptop, printer smartphone) may result in damage to both devices. Furthermore, the TAB*

720 incorporates sophisticated encryption and protection algorithms. Both stored data and operational firmware are inaccessible without the correct passwords/hardware. Attempts to access the inner workings of the unit are also detected and logged in the unit's memory.

Q: What happens at the end of my Program, when the leased TAB 720 is due to be removed?

A: *If you do not wish to continue to utilize the interlock, then the system will be removed and your vehicle's electrics returned to their pre-installation condition. Removal costs are normally covered by you under the terms of your Interlock Program and terms with LCI. Should you wish to continue to use the installed interlock then please contact LCI.*

INTERFERING SUBSTANCES

The TAB 720 has been tested against the following possible interfering substances and has been found not to generate *false positive results*.

Acetaldehyde 0.08 mg/l

Carbon monoxide 0.10 mg/l

Ethylacetate 0.08 mg/l

n-Hexane 0.10 mg/l

Methanol 0.05 mg/l

n-Pentane 0.10 mg/l

Toluene 0.10 mg/l

Acetone 0.25 mg/l

Diethylether 0.15 mg/l

n-Heptane 0.10 mg/l

Methane 0.15 mg/l

n-Octane 0.10 mg/l

2-Propanol 0.05 mg/l



TAB 720 TECHNICAL SPECIFICATION

Handset Size	:	156mm x 71mm x 35mm
Handset Weight	:	150g
Sensor Type	:	Electrochemical Fuel Cell
Sensor specificity	:	To EN50436-1
Operational ambient temperature	:	-45°C to +85°C
Storage ambient temperature	:	-45°C to +85°C
Operational ambient humidity	:	10% to 95% RH non-condensing
Operating input voltage	:	9V to 15V (12V version) 16V to 32V (24V version) Negative earth
Display	:	Graphics backlit LCD
Warm-up time	:	<20 seconds at 20°C
Breath Sample Volume	:	0.8 L to 1.5 L (configurable)
Recovery time after insufficient sample	:	<15 seconds
Analytical response time for zero alcohol	:	<10 seconds
Recovery time at 0.35mg/L BrAc	:	<75 seconds
Vibration	:	To EN50436-1/ NHTSA Protocol
Shock	:	To EN50436-1/ NHTSA Protocol
Case material	:	Polycarbonate ABS
Memory output download software	:	Via cable to product specific
Mouthpiece material	:	HDPE. Product specific
Maximum Calibration Interval locally)	:	12 months (May be shorter
Warranty	:	1 year (May vary locally)
Approvals 7560/NHTSA Protocol	:	EN 50436-1, e11 03

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