

ALCOLOCK™ LR

ALCOHOL INTERLOCK



ALCOHOL COUNTERMEASURE SYSTEMS

Instruction Manual

Industry Canada

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

1. This device may not cause interference, and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

1. l'appareil ne doit pas produire de brouillage, et
2. l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Alcohol Countermeasure Systems Corp

60 International Boulevard

Toronto, Ontario M9W 6J2 CANADA

acs-corp.com

ALCOLOCK, ALCOHOL COUNTERMEASURE SYSTEMS, ACS and The Molly are trademarks of Alcohol Countermeasure Systems (International) Inc. and are used under license. Alcohol Countermeasure Systems is trading style of Alcohol Countermeasure Systems Corp.

© Alcohol Countermeasure Systems, 2012

The information disclosed in this document is the valuable property of Alcohol Countermeasure Systems and all copyright and other proprietary rights to this document are reserved. No reproduction of this document is permitted without the prior written consent of Alcohol Countermeasure Systems.

ALCOLOCK™ LR HANDSET COMPONENTS

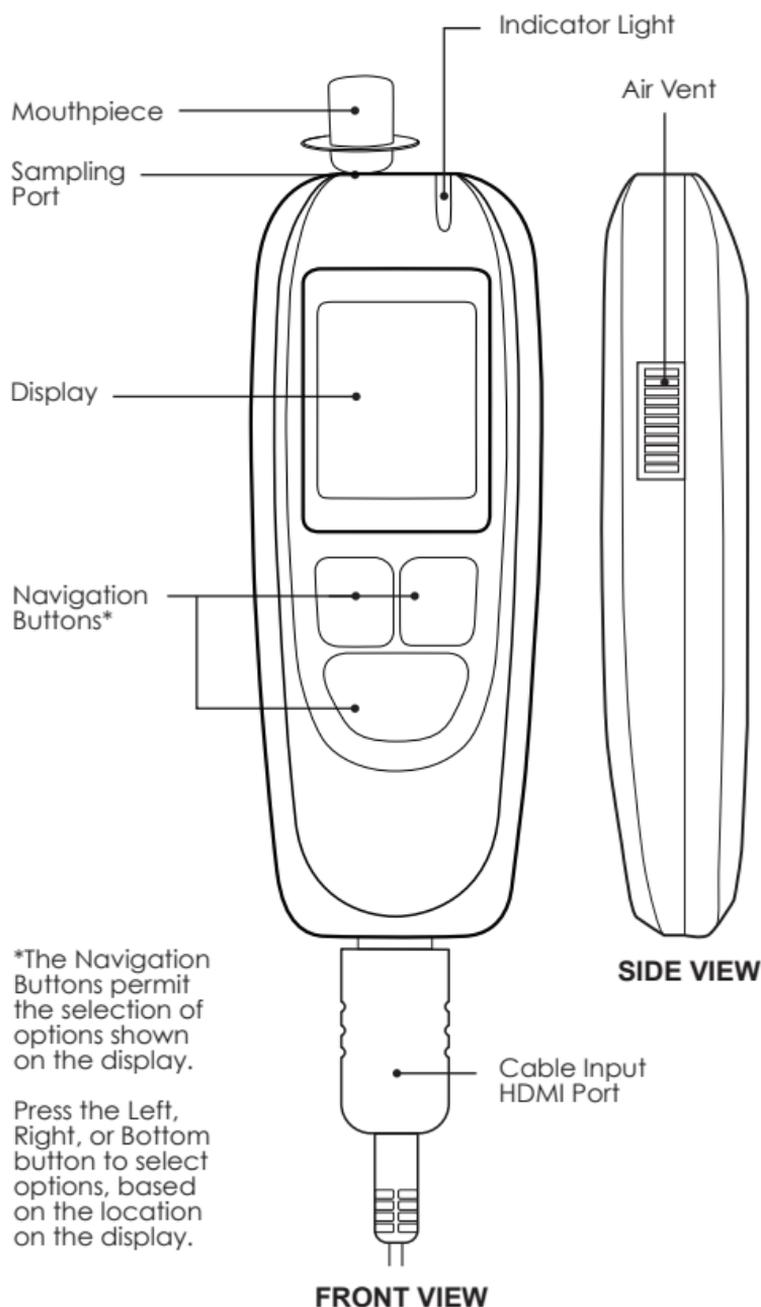


TABLE OF CONTENTS

ALCOLOCK™ LR HANDSET COMPONENTS	2
PRODUCT PROFILE	5
SAFETY AND PRECAUTIONS	7
GETTING STARTED	8
Alcohol Influence on Testing	8
Terms Used in This Manual	8
Fees	9
Installation	9
Maintenance	9
Operating Temperature	9
Battery Voltage	10
Handset Cable	10
To Disconnect the Handset	10
To Connect the Handset	11
Assistance	11
INSERTING THE MOUTHPIECE	12
PERFORMING A TEST	13
RESULTS DISPLAYED	15
WARM-UP	17
STANDBY	17
RESTART WITHOUT A BREATH TEST	18
Restart Available	18
Ready for Test	18
PERFORMING RETESTS	19
Drive Safely	19
Pull Over, Turn Off Engine	20

MENU OPTIONS.....	21
Diagnostic Mode	21
Service Date Mode.....	21
Sleep Mode.....	22
Wake-Up Mode.....	23
Language Mode	24
Exit Mode.....	24
TROUBLESHOOTING AND SERVICE.....	25
Troubleshooting Table.....	25
Service Dates.....	25
Error Messages	26
TECHNICAL FEATURES	28
Reset Codes.....	28
Emergency Override.....	28
Third Party Maintenance (TPM).....	28
Other.....	28
DISPOSAL OF DEVICE AT END OF SERVICE LIFE	29
ORDERING MOUTHPIECES	29
INDEX.....	30
SERVICE RECORD	31

PRODUCT PROFILE

The ALCOLOCK LR alcohol interlock device controls the normal operation of a vehicle through connection with the power, starting and control systems. To start the vehicle engine, the driver must provide an accepted breath test with an alcohol concentration (BrAC) below the preset limit. During operation of the vehicle, the driver will be requested to provide additional breath tests to maintain compliance with program requirements. The ALCOLOCK LR alcohol interlock device will never cause the vehicle engine to stop.

The ALCOLOCK LR device consists of a Handset to conduct breath alcohol tests and to communicate with the driver, and an Electronic Control Unit (ECU) that is connected with the power and control circuits of the vehicle.

The ALCOLOCK LR device is used in alcohol interlock programs under the direction of a jurisdictional authority and conforms to international regulations for alcohol interlocks being used in compliance programs.

WARNING!



- *Do not disassemble the ALCOLOCK LR device. Doing so may damage the components within and void the warranty*
- *Do not attempt to tamper with the installation or to circumvent the ALCOLOCK LR device. This is considered a Program Violation*
- *Do not attempt to drive after consuming alcohol. This is an unsafe practice and is considered a Program Violation*
- *The ALCOLOCK LR device may engage a Permanent Lockout if:*
 - *The scheduled service date is past due*
 - *An Early or Immediate Recall has been recorded and the device has not been serviced prior to the lockout date indicated on the Handset*

SAFETY AND PRECAUTIONS

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

- Always use a clean mouthpiece for good hygiene and to trap any foreign matter or excess moisture from the breath sample
- Do not store mouthpieces in a cold area before use. They may collect condensation, which may increase the chance of liquid entering the Handset during a test
- DO NOT perform a breath test while the vehicle is in motion. Provide an accepted breath test before you resume driving
- Do not eat, drink or smoke for at least 15 minutes before the test. This may contaminate the breath sample. Swish and swallow fresh water to remove any contaminants from the mouth
- Avoid exposing the Handset to direct sunlight for extended periods of time
- If liquid spills onto the Handset, remove with a cloth and allow the Handset to dry thoroughly. If there is substantial moisture damage, do not activate the Handset. Contact your local Service Centre
- Keep all radio frequency transmitting devices (such as mobile phones or laptops) away from the ALCOLOCK LR device to minimize interference, particularly when performing a test
- Do not attempt to tamper with or to circumvent the device. This is considered a Program Violation

NOTE: The ALCOLOCK LR device WILL NOT shut Off your vehicle during operation.

GETTING STARTED

Alcohol Influence on Testing



WARNING! Drinking alcohol and eating foods containing alcohol may cause a failed alcohol test.

Some factors that may affect the results of a test (because of possible residual alcohol in the mouth) are consumption of medicines, drops, gum, smoking, and using mouthwash or mouth spray. Swish and swallow fresh water to remove any contaminants from the mouth.

Do not eat, smoke or drink for at least 15 minutes before taking a test.

Before taking a test, refrain from using windshield washer fluid for at least 10 minutes or using any aerosol air fresheners, disinfectants, cologne or perfume in the vehicle, as these may also contain alcohol.

NOTE: *The above list of factors that may affect a breath test result is not exhaustive. There are additional items that may also affect the results. To avoid incorrect results, follow this guide carefully and consult the Service Centre or Service Provider.*

Terms Used in This Manual

- BrAC = Breath alcohol concentration
- Preset Limit = Set according to local regulations
- ECU = Electronic Control Unit
- HDMI = High Definition Multimedia Interface
- Service Provider = Alcohol interlock program provider
- Service Centre = Alcohol interlock service garage

Fees

Drivers who are subject to an alcohol interlock program are responsible for all installation and maintenance costs.

Installation

ALCOLOCK Service Centres are conveniently located, and the ALCOLOCK LR device may be installed while you wait by a qualified installer in accordance with jurisdictional regulations. Installation must be done at an ALCOLOCK Service Centre. You will receive full training on site by qualified technicians.

Maintenance

You must visit the Service Centre 30 days after installation. You must also visit at regular intervals thereafter or at intervals specified in the regulations, for maintenance and monitoring. Monitoring appointments typically take less than 20 minutes. Consult your Compliance Guide for more information.

During field use, handle the ALCOLOCK LR device with care and keep it clean and dry at all times. Clean the Handset with a damp cloth and mild soap. Do not use abrasive cleaners or solvents.

Operating Temperature

The ambient operational temperature range is -45°C and $+85^{\circ}\text{C}$.

NOTE: *The Handset will warm up in about 15 seconds at $+20^{\circ}\text{C}$; about 1 minute at 0°C and up to 3 minutes at extreme cold temperatures (-20°C) to be operational. It would be beneficial to keep the Handset in a warm environment prior to use.*

Battery Voltage

The vehicle battery supplies power to the ECU, which in turn powers the Handset.

The ALCOLOCK LR device operates within the vehicle battery range of 9V to 36V.

Handset Cable

The Handset cable connects the Handset to the ECU, which is connected to the vehicle's ignition.

The Handset should remain connected at all times, but follow these steps if the Handset needs to be removed:

To Disconnect the Handset



1. Make certain that the vehicle engine is Off.
2. With the back of the Handset facing you, hold the connector by the plug and press and hold the "PUSH" button.
3. Gently pull the Handset connector to disengage the connection.



WARNING! Disconnection of the cable when the engine is running is unsafe and may result in Program Violations.

To Connect the Handset



1. Make certain that the vehicle engine is Off.
2. Turn the Handset so that its back is facing you. Hold the cable connector with the "PUSH" button facing you. Align the cable connector pins (silver plate) to the Handset connector and carefully insert the connector.
3. The connector will latch if the pins are properly aligned.

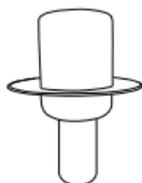


WARNING! Do not force a misaligned connector, pull on the cord, or turn the connector, as doing so may damage the device. If the device is damaged, you may not be able to take a breath test, in which case you may not be able to start your vehicle. The alcohol interlock WILL NOT shut Off your vehicle during operation.

Assistance

Contact your authorized Service Centre during normal business hours, or contact your Service Provider. Refer to your Compliance Guide for the Service Provider toll-free line.

INSERTING THE MOUTHPIECE



When the Handset is ready for a breath test, remove a new mouthpiece from the wrapper and insert as shown below:



Insert the mouthpiece into the sampling port on the top of the Handset.

Slide the mouthpiece into place and turn it slightly to secure.

Do a visual check to make certain that the mouthpiece is fitting properly.



WARNING! Using a contaminated mouthpiece may affect the results of the breath test.

PERFORMING A TEST



WARNING! DO NOT attempt to turn the ignition On. You must first provide an accepted breath test. Turning the ignition key to the On position will cause a “Turn Key Off” message on the Handset display and may result in a violation.



Power up the device by pressing any navigation button. A **Wait...** message will remain on the display until the Handset warms up. The indicator light will flash red.



The indicator light flashes green and the Handset displays **Ready for Test** when it has reached its optimal temperature. The warm-up time may be longer in cold temperatures.

NOTE: Do not store mouthpieces in a cold area before use. They may collect condensation, which may increase the chance of liquid entering the Handset during a test.



Insert a clean mouthpiece.

NOTE: Do not eat, drink or smoke for at least 15 minutes before the test. This could contaminate the breath sample. Swish and swallow fresh water to remove any contaminants from the mouth.



Blow moderately and continuously as you simultaneously hum into the mouthpiece. The Handset makes a tone to indicate accepted airflow and hum, and will display **Continue Blowing**. If you are not blowing correctly, a message will appear on the display indicating the necessary corrective action. DO NOT attempt another breath test until the display indicates **Ready for Test**.



When an accepted breath test has been delivered, you will hear a click – continue to blow until the tone ends. The display will indicate **Wait...** and the indicator light will flash red as the breath sample is being analyzed.

RESULTS DISPLAYED

A beep tone sounds and the display indicates one of the following messages:



1. **Start Engine** – You have passed the breath test, and no alcohol has been detected. You may start the vehicle engine.

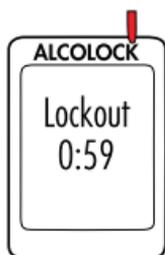
NOTE: *You must start the vehicle engine within the set time (refer to your Compliance Guide).*



2. **Caution** – (BrAC limit warning) You have passed the breath test, but alcohol (below the preset limit) has been detected. You have two options:
 - Wait five minutes and try the test again if you are certain that there is no alcohol in your system
 - Press the bottom button to acknowledge that you intend to drive with alcohol in your system. You must start the vehicle engine within the set time (refer to your Compliance Guide)



WARNING! *You may proceed to drive, with the knowledge that alcohol has been detected.*



3. **Lockout** – The breath alcohol level detected is at or over the preset limit. You may NOT start the vehicle engine.

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

NOTE: Refer to your Compliance Guide for lockout times.



WARNING! Do not attempt another breath test until you are certain that your alcohol level is under the preset limit. A second failed breath test may result in a longer lockout time (refer to your Compliance Guide).

NOTE: The results of all breath tests are recorded in memory and are downloaded during routine monitoring appointments. Any instance of alcohol detected in the breath samples may be considered a Program Violation. Refer to your Compliance Guide for program conditions.



When you have started the engine, **Drive Safely** is displayed. To activate Warm-Up mode, press and hold the left button.

WARM-UP



Where permitted, you may place the ALCOLOCK LR device in Warm-Up mode by pressing the left button. **Warm-Up** is displayed, and the vehicle engine can remain at idle without requiring another breath test for a set time (refer to your Compliance Guide – default is 30 minutes). Warm-Up mode will be discontinued when you press the accelerator or press and hold the right navigation button.

STANDBY



Depending on the jurisdiction, Standby mode replaces Warm-Up mode in commercial vehicles. If applicable, refer to your Compliance Guide for more information about Standby mode.

RESTART WITHOUT A BREATH TEST

If the vehicle engine is turned Off, you may restart it without providing another breath test, for a set time. This safety feature is helpful if the vehicle engine stalls. Refer to your Compliance Guide for more information.

Before restarting the vehicle engine, observe one of the following messages on the display:

Restart Available



You may restart the vehicle engine without providing another breath test.

Once you start the engine, **Drive Safely** is displayed.

To cancel the restart, press and hold the right navigation button. **Wait...** will display and the indicator light will flash red. After a few seconds, **Ready for Test** will display.

Ready for Test



The restart period has expired. You need to provide an accepted breath test to start the vehicle engine.

PERFORMING RETESTS

Additional breath tests are required at random times to ensure that the driver has not consumed alcohol since the vehicle engine was started. Refer to your Compliance Guide for more information.



The Handset beeps and displays **Retest**. The indicator light will flash green.

The retest request timer will activate and give you sufficient time to stop in a safe location. **DO NOT** perform a breath test while the vehicle is in motion.

NOTE: Refer to your Compliance Guide for retest time limits.

Once a retest is taken, one of the following messages will appear on the display:

Drive Safely



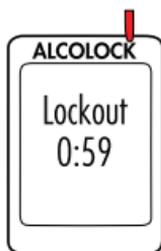
You have passed the breath test. You may continue driving.

Pull Over, Turn Off Engine



The indicator light flashes red and a tone is heard. You have failed the breath test. The alcohol level detected is over the preset limit. Park in a safe location and turn the vehicle engine Off.

When the vehicle engine is turned Off, the **Restart Available** message will be displayed. This will permit the vehicle engine to be restarted if the vehicle must be moved to a safer location. When the vehicle is parked in a safe location, the **Restart Available** message may be cleared by pressing the right navigation button.



Lockout and a countdown timer are displayed. Wait for the countdown to finish before attempting another breath test. You cannot start the vehicle engine until an accepted breath test is provided.

NOTE: Refer to your Compliance Guide for lockout times.



WARNING! Do not attempt another breath test until you are certain that your alcohol level is under the preset limit. A second failed test may result in a longer lockout time (refer to your Compliance Guide).

MENU OPTIONS

The ALCOLOCK LR device Main Menu contains a number of selectable options, such as wake-up / sleep times and language selection; these may be accessed from the **Ready for Test** screen by pressing and holding the left button on the Handset.

Diagnostic Mode

The ALCOLOCK LR Handset allows you to view diagnostic information, including the Handset version, the ECU version and the device input voltage.



1. Press and hold the left button to access the Main Menu. Press the left or right button to scroll to **Diagnostic**. To select, press the bottom button.
2. All diagnostic information will be displayed. Press the bottom button to exit this mode.

Service Date Mode



1. To view important dates and times, press and hold the left button to access the Main Menu.
2. Press the left or right button to scroll to **Service Dates**. To select, press the bottom button.
3. Press the left or right button to scroll through all of the dates in the list.
4. Press the bottom button to exit this mode.

Sleep Mode

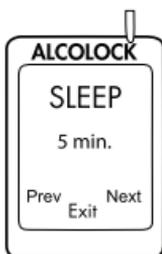
The ALCOLOCK LR device enters Sleep mode when the vehicle engine is Off, to conserve the vehicle battery.

To enter Sleep mode, park in a safe location and turn the vehicle engine Off. Press and hold the right navigation button to cancel the **Restart Available** screen. When **Ready for Test** is displayed, press and hold the left and right buttons until the screen is blank.

The ALCOLOCK LR device also allows you to set the time at which Sleep mode will activate.



1. From the **Ready for Test** screen, press and hold the left button to access the Main Menu.
2. Press the left or right button to scroll to **Sleep**. To select, press the bottom button.



3. Sleep mode offers four pre-programmed times: 5, 30, 60 and 90 minutes. Press the left or right button to scroll to your choice.
4. Press the bottom button to save your choice and to exit this mode.

Wake-Up Mode

The ALCOLOCK LR Handset may be set for up to three wake-up times per day. This helps to ensure that the Handset is warmed up and ready before you enter the vehicle.



1. Press and hold the left button to access the Main Menu. Press the left or right button to scroll to **Wake-Up**. To select, press the bottom button.



2. Press the bottom button to scroll to a Wake-Up time. Press the left button to turn a time on or off. Press the right navigation button to edit a time.



3. Press the left or right button to change a digit, and press the bottom button to move the cursor from hour to minute.
4. Press the bottom button to save your selection. Press the left button to exit this mode.



WARNING! Before using Wake-Up mode, make certain that the vehicle battery has sufficient charge. Wake-Up mode is automatically disabled if the Handset has not been used for three consecutive days.

Language Mode

The ALCOLOCK LR Handset is available in multiple languages. The selections are programmed at the factory.



1. Press and hold the left button to access the Main Menu. Press the left or right button to scroll to **Language**. To select, press the bottom button.
2. Press the left or right button to scroll to your choice.
3. Press the bottom button to save your choice and to exit this mode.

Exit Mode



Go to this menu item to exit the menu.

TROUBLESHOOTING AND SERVICE

Troubleshooting Table

The following table lists occurrences, along with possible solutions. For other occurrences, contact your Service Centre.

IF THE ALCOLOCK LR DEVICE ...	YOU SHOULD ...
Will not turn on	Check the vehicle battery
Displays an error code	Refer to the "Error Messages" section of this manual
Displays an Early or Immediate Recall	Contact your Service Centre
Aborts a breath test	Retry the test, or contact your Service Centre
Is in Permanent Lockout	Contact your Service Centre
Requires service	Contact your Service Centre

Service Dates

You must visit the Service Centre 30 days after installation. You must also visit at regular intervals thereafter or at intervals specified in the regulations, for maintenance and monitoring. Monitoring appointments typically take less than 20 minutes. Refer to your Compliance Guide for more information.



WARNING! *If the ALCOLOCK LR device enters Permanent Lockout, the vehicle must be towed and you will be liable for the expenses and the service call.*

Error Messages

The ALCOLOCK LR device may not accept a breath test (and may display error messages instead). To minimize errors, make certain that the Handset is connected properly, the vehicle battery is in good condition, and that mobile phones are not in use during breath tests.

The following table lists and describes error messages along with required actions.

MESSAGE	DESCRIPTION	WHAT TO DO
Abort 30, 40, 50	There is a problem with the Handset.	Try the test again. If the message persists, call your Service Centre.
Early Recall or Immediate Recall	A service reminder is displayed for a set time (<i>refer to your Compliance Guide</i>).	Call your Service Centre to schedule an appointment.
Missed Retest	A retest was not completed within the set time (<i>refer to your Compliance Guide</i>). A recall may follow.	Complete the test as required.
Missed Service	A Service Request was not observed within the set time (<i>refer to your Compliance Guide</i>).	Call your Service Centre to schedule an appointment.
Permanent Lockout	The service request time has expired. The engine cannot be started until the alcohol interlock is reset by the Service Centre.	Call your Service Centre to schedule an appointment. Towing will be required.

MESSAGE	DESCRIPTION	WHAT TO DO
Pull Over, Turn Off Engine	Occurs in response to a failed retest.	The driver has a set time to safely stop and turn the engine Off.
Service Due	A reminder that a service appointment is coming up.	Arrive at the scheduled time to avoid any Program Violations.
Start Violation	If the engine is started without first providing an accepted breath test, the Start Violation message is displayed and a retest request occurs.	Take the breath test and contact your Service Centre.
Try Again	There is a problem with the test.	Try the test again. Call your Service Centre if the problem persists.
Turn Key Off	The ignition key is in the On position before first providing an accepted breath test.	Turn the key to the Off position and provide an accepted breath test. Not turning the key Off may result in a violation.

TECHNICAL FEATURES

Reset Codes

Reset codes are used by service personnel to change the service dates, recall dates, lockout dates, and in emergency situations, to override the ALCOLOCK LR device. These codes are randomly generated and change daily. Attempting to circumvent these codes results in a Program Violation.

Reset codes depend on the jurisdiction; refer to your Compliance Guide for applicable codes.

Emergency Override

The Emergency Override code is available for true emergency situations. Using this code for any other reason will result 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 may apply in other circumstances. For example, a client might not be able to attend a service appointment for valid reasons.

DISPOSAL OF DEVICE AT END OF SERVICE LIFE

Return to your Service Centre for removal of the ALCOLOCK LR device from your vehicle. Following the removal, proper disposal of the device (ECU, Handset, or both) at the end of its service life will be done by the Manufacturer.

ORDERING MOUTHPIECES

Contact your Service Centre for Mouthpieces (Bag of 25), ACS Part Number: *95-000145*

INDEX

A

Accepted Breath Test,
5, 13, 14, 18, 20, 27
Alcohol Influence, 8
Assistance, 11

B

Battery Voltage, 10

D

Dates, 21, 25
Disposal, 29

E

Emergency Override, 28
Error Messages, 26, 27

F

Fees, 9

I

Installation, 9

L

Languages, 24
Lockout, 16, 20

M

Maintenance, 9
Menu Options, 21-24
Mouthpiece, 2, 12, 14, 29

O

Ordering Mouthpieces, 29

P

Performing Test, 13
Precautions, 7

R

Reset Codes, 28
Restart, 18
RF Interference, 1, 7
Retests, 19

S

Safety, 7
Service Dates, 21, 25
Service Record, 31-33
Sleep, 22
Standby, 17
Start Engine, 15

T

Temperature, 9
Terms, 8
Training, 9
Troubleshooting, 25-27

W

Warm-Up, 17

