

O-Zone-Tech-CHR

Dodge Charger

2011 - 2013

INSTALLATION MANUAL



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1. INTRODUCTION

1.1. Scope

These non-binding installation instructions are intended to support authorized Webasto trained distributors, dealers and personnel in the installation of the O-Zone-Tech CHR System.

1.2. Applicability of Manual

These non-binding installation instructions apply to the vehicles listed on the front cover of this installation manual unless technical modifications on the vehicle influence the installation, excluding all liability claims. Depending on the version and equipment in the vehicle, changes may be required to the installation work set out in these installation instructions. In any event, the directives in the "Installation Manual" of the O-Zone-Tech CHR system must be followed. Acknowledged engineering conventions must be observed for the installation work.

CAUTION

Location of the O-Zone-Tech CHR module, wiring and control devices are important for proper operation. Failure to comply with the installation instructions provided may result in poor operation or damage to the module and/or to the vehicle or vehicle components.

Non-compliance with the installation instructions and information contained therein will void warranty. The same applies for repairs performed by untrained personnel and repairs not using original equipment spare parts.

1.3. Meaning of Warnings, Cautions and Notes

WARNING

This heading is used to highlight that non-compliance with instructions or procedures may cause injuries or lethal accidents to personnel.

CAUTION

This heading is used to highlight that non-compliance with instructions or procedures may cause damage to equipment.

NOTE

This heading is used to highlight and draw specific attention to information.

1.4. Safety

All relevant state and provincial regulations if any, governing the installation and use of non-idling devices must be observed! The general safety regulations for the prevention of accidents and the relevant operating safety instructions must be observed at all times.

1.5. Legal Provisions for Installation

Vehicle operation must not be impaired due to any O-Zone-Tech CHR components. All power circuits must be fused with appropriate fuse or circuit breaker.

2. PARTS LIST

Vehicle

Make	Model	Year	Webasto Kit Number
Chrysler	Charger	2011 to 2013	5010755A

Included in box

Item	#Product	Description	Qty.
1	OZCWB-00-1000-B	Fuel saver & CO2 reducer O-Zone-Tech-CHR module with mounting bracket	1
		<u>Bracket kit includes:</u>	
		-SUP-OZTC-CHR (Aluminum one piece bracket)	1
		-VIS08-424-066 (Phillips Screw Pan, #8-32x1/2", Stainless)	2
		-VIS08-179-W07-1K (Hex Locknut, Nylon, #8-32, Stainless)	2
		-VIS10-424-471 (Phillips Screw Pan, #10-32x1/2", Stainless)	3
		-VIS10-658-015 (Flat washer 1/4", 5/8")	3
		-VIS10-667-P02-1M (Helical lock-washer, bolt 1/4", stainless steel)	3
		-SUP-SJ5007 (Rubber standoff)	3
2	HAR-OZTC-CHR-THT	O-Zone-Tech CHR C2 harness Charger	1
3	HAR-OZTC-CHR-IO	O-Zone-Tech CHR C1 harness Charger	1
4	ASY-KITOWWB-ICHR	O-Zone-Tech CHR installation kit for Dodge Charger	1
		<u>Kit includes:</u>	
		- 762958M (SLIM TIE-RAP 11")	30
		- VELCRO-M-1X1 (1" x 1" male Velcro)	1
		- VELCRO-F-1X1 (1" x 1" female Velcro)	1
		- RB-211 (Rubber grommet ID = 3/16" & Groove = 1/16")	1
5	ASY-SWIHS-HT	O-Zone-Tech Hood Switch Kit	1
		<u>Kit includes:</u>	
		SWI-OZTC-HS (Hood Switch Sensor With Connector)	1
		SWI-MAGNET57135-PM (Hood Switch Magnet)	1

Item	#Product	Description	Qty.
6	ASY-KITVIS-HSCHR	Hood switch hardware kit for Charger	1
		<u>Kit includes:</u>	
		-VIS06-508-801 (Phillips screw, self-drilling, #6x1/2", Stainless)	4
		- VIS08-667-007 (Spring lock washer for bolt #8)	4
7	ASY-CBL335-01-HT	Internal and external temperature sensor with connector and 12" of cable with high temperature loom	2
8	SWI-OZWB-AUTO-FIL	O-Zone-Tech Keyless Mode Switch with connector	1
9	CD-INSTALL OZWB-CHR	O-Zone-Tech CHR configuration program Installation CD V2.7.51 and Firmware V2.7.51	1
10	LBL-OZTC-W-ENG	O-Zone-Tech Label for sun guard.	1
11	LBL-OZTC-W-HS-ENG	O-Zone-Tech Label for hood.	1
12	MANUAL-OZWB-CHR USER	User manual for O-Zone-Tech CHR Charger	1
13	MANUAL-OZWB-CHR INST	Installation manual for O-Zone-Tech CHR Charger	1
14	MANUAL-OZWB-CHR CHK	Checklist installation verification for O-Zone-Tech CHR Charger	1

3. SYSTEM OVERVIEW

The O-Zone-Tech CHR idle reduction module together with the Webasto heater is an eco-friendly automotive fuel saving and CO2 reduction system. This system will keep the vehicles inside temperature at a comfortable level while reducing unnecessary idling and will monitor the battery voltage.

Whenever battery voltage drops below preset value it will start the vehicle (maximum two attempts). Before starting the vehicle the module will apply ignition to the vehicle for a 2 second period. If during the start engine doesn't start within 10 seconds, the module will wait 10 seconds before repeating startup for the second time. If the vehicle doesn't start after the second attempt the module resets and waits for user input.

3.1. System Modes

System consists of the three modes:

3.1.1. Idle Reduction Mode

To put module in this mode the vehicle key must be in the RUN position and vehicle engine running, emergency lights OFF, vehicle transmission in the PARK or NEUTRAL position, and the vehicle hood closed.

If the module detects RPM<900 for 5 minutes (default setting) it will shut down vehicle engine. The green LED (OZTC) on the module will flash every second and the green LED (OZCAN) will stay on (steady) during forced engine shut

down. During forced engine shut down, module will provide power to the LED in the keyless switch (LED flashing), computer and/or radio, wipers and windows and if battery voltage drops below the preset value 12.1V (default setting), the module will start vehicle engine for programmed charge time of 15 minutes (default setting) to keep battery at the charged level. The module will monitor inside and outside temperatures and based on programmed values in sections of **Conditions** and **Air Conditioner** (programmable parameters) it will activate the Webasto heater or vehicle A/C to keep user at a comfortable level.

Moving transmission from PARK or NEUTRAL position, opening the hood, turning on the emergency lights, or pressing the vehicle START button will turn off this mode and vehicle will resume normal operation.

3.1.2.Keyless Mode

To activate this mode the vehicle engine must be off, emergency lights off, vehicle transmission in the PARK position, the vehicle hood closed and keyless switch must be pressed for 2 seconds.

The LED in the keyless switch will illuminate steady during keyless mode operation. The module will monitor inside and outside temperatures and based on programmed values in sections of **Conditions** and **Air Conditioner** (programmable parameters) it will activate the Webasto heater or vehicle A/C to keep user at a comfortable level. If battery voltage drops below the pre-set value of 12.1V (default setting), the module will start vehicle engine for programmed charge time of 15 minutes (default setting) to keep the battery at the charged level.

Pushing the keyless switch for 2 seconds, pressing the brake pedal, opening the hood, pressing the vehicle START button, or turning the emergency lights on will turn this mode off.

3.1.3.Anti-theft Mode (Optional)

To activate this mode, connectors C9 and C10 must be connected on the O-Zone-Tech CHR harness.

Before this mode is activated the vehicle engine must be running, emergency lights turned ON, transmission in the PARK or NEUTRAL position and the vehicle hood closed. Pressing the vehicle START button will activate this mode. The LED in the keyless switch will illuminate steady during anti-theft mode operation.

In this mode all systems are powered and engine is running.

Turning OFF the emergency lights, pressing the brake pedal, opening the hood, or pressing the vehicle START button will turn this mode off.

3.2. Software

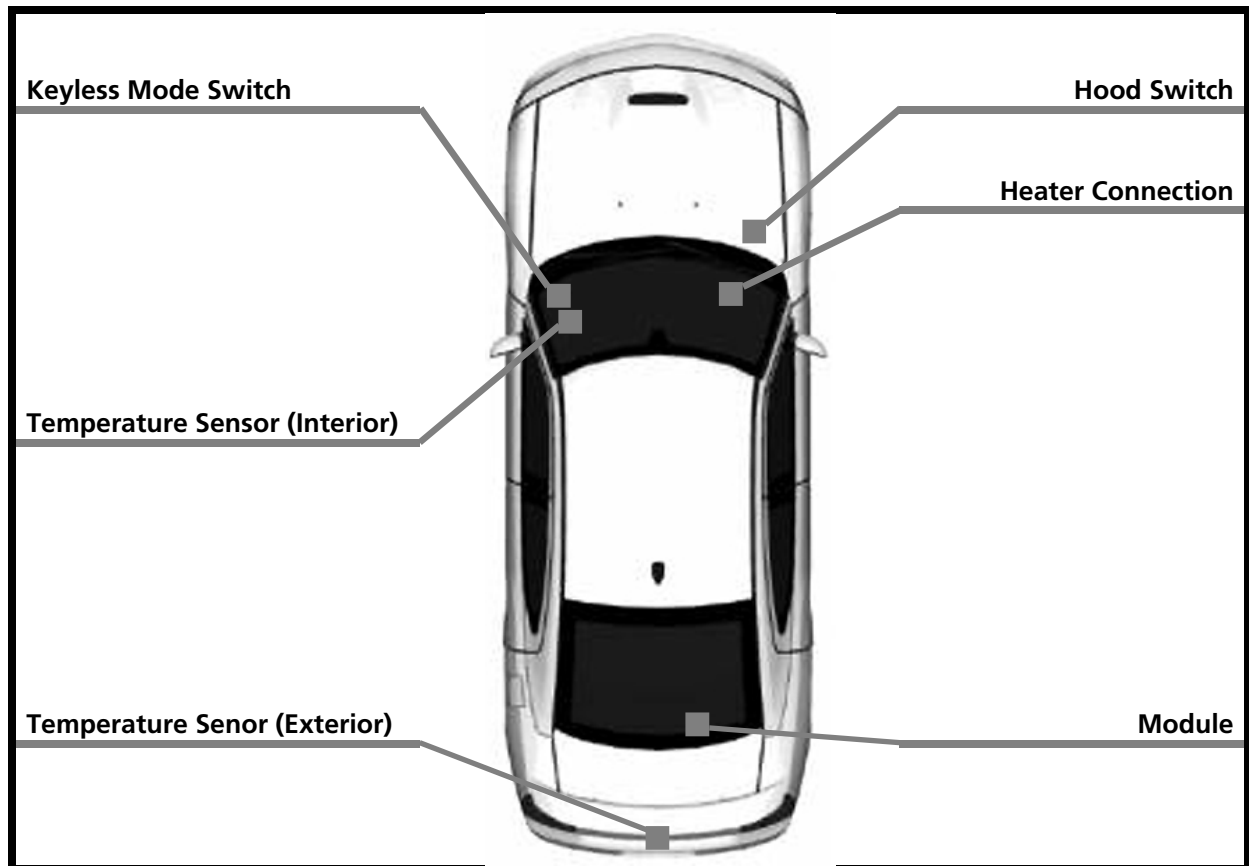
The O-Zone-Tech CHR software supplied with the module is required to program the operating parameters of the module. This includes the following:

- Keyless Mode Duration
- Idling Time
- Outside temperature for Webasto Heater activation
- Outside temperature for engine off
- Inside temperature for air conditioning
- Outside temperature for air conditioning
- Battery voltage level for engine startup
- Battery charging duration

The software also provides the ability to visualize, in real time, the status of the signals that are connected to the module such as: Battery voltage, inside temperature, outside temperature and RPM. The configuration file created by the software can be saved on a computer for future usage or consultation. As an added feature, an integrated data (idling time) upload function can be used to export stored information from the module to an EXCEL file format, providing easier visualization of fuel saved (calculated by the software) per vehicle. For procedure refer to the SOFTWARE section under Analyze IDLE in this manual.

4. HARDWARE INSTALLATION

4.1. Layout



4.2. Preliminary Information

- Remove interior trunk carpeting. - Disconnect the vehicles negative battery cable. - Remove spare tire. - Use a 10mm wrench	
- Remove the trunk speaker cover panel per manufacturer's recommendation.	
- Loosen the fuse box assembly using a flat screw driver located in the trunk and set aside for harness routing. NOTE: Careful of the pin under the fuse box.	

O-Zone-Tech II™ CHR

- Using an 18mm socket and ratchet, remove rear seat bottom per manufacturer's recommendation.	 A photograph showing the interior of a vehicle with the rear seat bottom removed, revealing the underlying metal frame and wiring.
- Using a long flat screwdriver, remove upper seat back per manufacturer's recommendation.	 Two photographs showing the removal of the upper seat back. The top photo is a close-up of a black plastic latch mechanism with a red arrow pointing to it and a text box that says "Push down to release". The bottom photo shows the rear seat area with the upper seat back removed, and a red arrow pointing to the remaining structure.
- Remove the rear window shelf panel per manufacturer's recommendation.	 A photograph showing the rear window shelf panel removed from the vehicle's interior, revealing the underlying metal frame and wiring.

- Remove aluminum sound deadening material used to cover opening for the optional speaker and discard.	
- Remove the skid plate at the right rear door per manufacturer's recommendation.	
- Remove the skid plate at the right front door per manufacturer's recommendation.	
- Remove the passenger side dash panel cap per manufacturer's recommendation.	

- Remove the kick panel under the glove box per manufacturer's recommendation. NOTE: Disconnect courtesy light connector before removing the kick panel completely.	
- Using a Phillips Head screwdriver remove the glove box and retaining bezel per manufacturer's recommendation.	
- Using a Phillips Head screwdriver, remove the driver side knee bolster per manufacturer's recommendation.	
- Under the hood remove the engine cover per manufacturer's recommendation.	

4.3. Module Mounting

- Secure the bracket with the module to the rear window parcel shelf as shown on the picture using the three bolts, lock washers and washers provided in the kit. NOTE: Make sure module is oriented as shown on the picture.	 A photograph of the rear window parcel shelf area. A black rectangular module is mounted to the shelf using three bolts. A red circle highlights the module. A speaker is visible to the right of the module.
- Connect C1 harness, connector C1 (white) to the module.	 A photograph showing the C1 harness (a bundle of wires) connected to the module. The white connector C1 is plugged into the module. The module is still mounted on the parcel shelf.
- Unplug the left connector on vehicle RF module (located on rear window parcel shelf). - Connect C2 harness ("T" harness), connector C4 to the vehicle harness connector and C2 harness ("T" harness), connector C3 to the vehicle RF module. - Use cable ties to secure the "T" harness.	 A photograph showing the C2 harness ("T" harness) connected to the vehicle RF module. The module is located on the rear window parcel shelf. A red circle highlights the connection point. The C2 harness is secured with cable ties.

4.4. Temperature Sensor (Outside Temperature)

- Route C6 connector of the C1 harness towards the right side of the vehicle down the trunk panel behind carpeting. - Route loomed temperature sensor cable towards the rear of the trunk next to the vehicle harness. - Secure using cable ties.	 A photograph showing the temperature sensor cable routed in the trunk. The cable is secured with cable ties. A red arrow points to the cable. The C6 connector of the C1 harness is visible on the right side of the vehicle.
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O-Zone-Tech II™ CHR

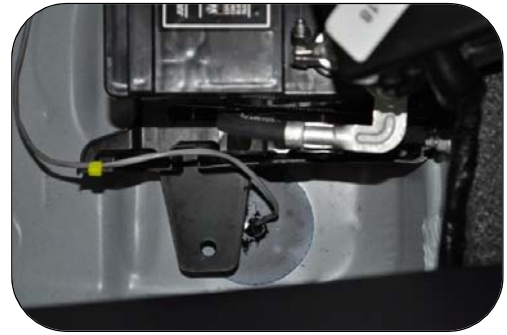
- Drill a 3/8" hole in plastic cap located in the trunk floor below the fuse block as shown.
- Push cable harness through the hole.
- Seal hole using silicone.
- Install wire loom on the harness section outside of the vehicle.

WARNING

Always make sure to inspect the back side of the location to prevent any unnecessary damage to components.

CAUTION

Always use safety goggles when using power tools!



- Push cable terminals, provided in the kit, into the connector housing.
- Terminal Positions:
 - A = red
 - B = black
- Connect the external temperature sensor provided in the kit to the cable harness.



- Route the cable towards the center of the rear bumper. Secure cable using cable ties.



4.5. Routing C1 Harness

- Route the rest of the C1 harness towards the front of the vehicle on the passenger side under the floor carpet, where the skid plates will be reinstalled later in this installation.

NOTE: If necessary loosen the lower portion of the B-Pillar trim.



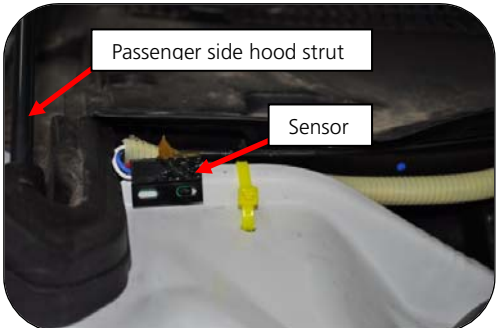
4.6. Webasto Heater Connection

- Connect the black 4 pin connector from the Webasto heater harness located near the vehicle blower (passenger kick panel) with mating connector on the O-Zone-Tech CHR, C1 harness.
- Secure wiring harness.

NOTE: Refer to the Webasto Heater installation manual for specific heater related help.



4.7. Hood Switch

- Cut a small hole in the vehicle grommet through the bulkhead as shown in the picture. - Route harness through the grommet next to the vehicle harness (C15 connector). - Use silicone to seal the opening. NOTE: Same hole can be used to route Webasto heater harness inside the vehicle.	
- Mark the location of the holes - Drill holes using 3/32" size drill bit. - Mount the hood sensor as shown and secure using self-tapping screws and lock washer. WARNING Always make sure to inspect the back side of the location to prevent any unnecessary damage to components. NOTE: Do not over tighten when securing.	
- Put connector housing to hood switch terminals. ➤ A = red ➤ B = white - Connect hood sensor harness to the O-Zone-Tech-CHR wire harness connector.	
- Apply a small amount of grease to the top of the hood sensor. - Close the hood so the grease will mark sensor location beneath the hood as seen in the picture.	

- Position the magnet center to the grease mark.
- Adjust magnet position if needed so it will not touch hood switch when hood is closed.
- Mark the location of the holes.
- Be sure use a drill bit stop to prevent any accidental damage to outer skin of hood. Drill holes using 3/32" size drill bit.
- Mount the hood sensor as shown in the picture and secure using self-tapping screws and lock washer.

WARNING

Always make sure to inspect the back side of the location to prevent any unnecessary damage to components.

NOTE: Do not over tighten!



4.8. Keyless Switch Wiring

- Route the wiring harness for the keyless switch and internal temperature sensor towards the driver side under side of dash.
- Drill a 5/8" hole in the panel to install keyless switch as shown in the picture.
- Connect the connector C15 on the C1 harness to the connector C16 on the keyless switch harness.
- Snap the keyless switch into the dash panel after connections have been made.

WARNING

Always make sure to inspect the back side of the location to prevent any unnecessary damage to components.

CAUTION

Always use safety goggles when using power tools!



4.9. Temperature Sensor (Inside Temperature)

- Drill a 3/8" hole in knee bolster to install interior temperature sensor.
- Insert the temperature sensor into the grommet.
- Push the grommet with the sensor into the hole in the knee bolster.
- Secure temperature sensor harness using cable ties.
- Place the dash panel back to its original location.

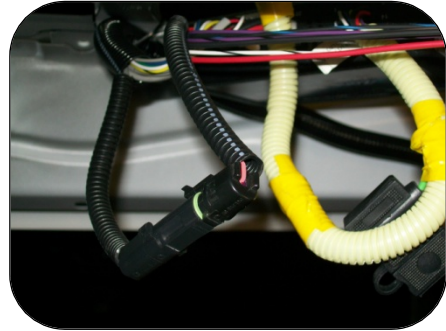
WARNING

Always make sure to inspect the back side of the location to prevent any unnecessary damage to components.



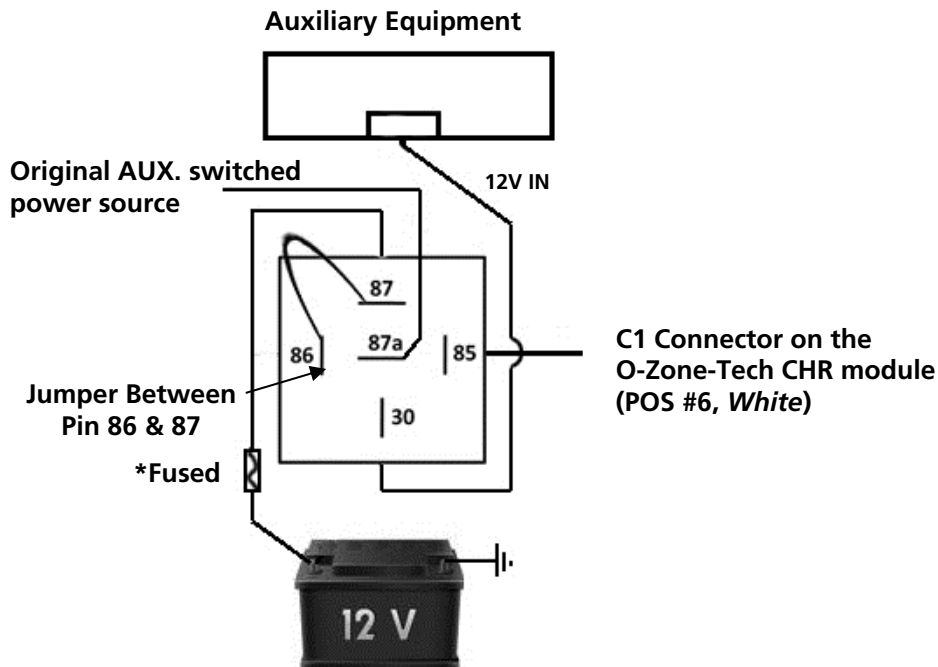
4.10. Anti-theft Mode

- Connect connectors C9 and C10 in the C1 harness.



4.11. Radio / Computer Connection

Depending on the aftermarket equipment installed onboard the vehicle, the power source must be identified and a relay installed to ensure it is properly powered during all O-Zone-Tech CHR system modes. Refer to the standard relay pin out chart below for proper connections.



NOTE

This relay connection is only necessary if the auxiliary equipment is powered through the ignition side of the vehicles electrical system. If connected directly to the B+, this step is NOT necessary.

*Actual fuse rating will vary depending on the auxiliary equipment being connected. Please refer to the manufacturers recommended fuse rating prior to powering the circuit.

4.12. Emergency Lights Connection

Connect the pink wire from connector C1 pin 3 on the C1 harness to the vehicle emergency lights signal wire, that will provide +12V when emergency lights are activated.

4.13. Programming the key bypass

Make sure all vehicle connectors are connected back that were disconnected during install (this is necessary to avoid setting the engine check light).

Connect the vehicle battery.

This programming needs to be done when the installation is complete.

STEP #1: Unplug the C2 connector.

STEP #2: Press the "SW1" push button on the module and keep it pressed. Re-connect C2 connector and wait until the red LED (OZCAN) turns ON.

STEP #3: Using the vehicles "START" push button, press it twice to select ignition mode. The red LED (OZCAN) should flash at this point.

STEP#4: Press the vehicles "START" pushbutton again to turn OFF the ignition. The red LED (OZCAN) will still flash.

STEP #5: Press the "SW1" push button on the module until the red LED (OZCAN) turns OFF and the green LED (OZCAN) turns ON. After two seconds the green (OZCAN) light will start flashing (see section 6.1.3 for explanation on the flashing pattern).

NOTE: If at STEP #5 the green LED (OZCAN) does not come on; please repeat all steps. Other LED will flash during programming; this is not relevant during this procedure.

5. SOFTWARE

IMPORTANT NOTICE:

Proceed with software installation before connecting the module to a USB port.

5.1. *Software Compatibility*

- Windows 2000 SP4
- Windows XP Pro, 32 or 64 bits
- Windows Vista Pro, 32 or 64 bits
- Windows 7, 32 or 64 bits
- Windows 8, 32 or 64 bits

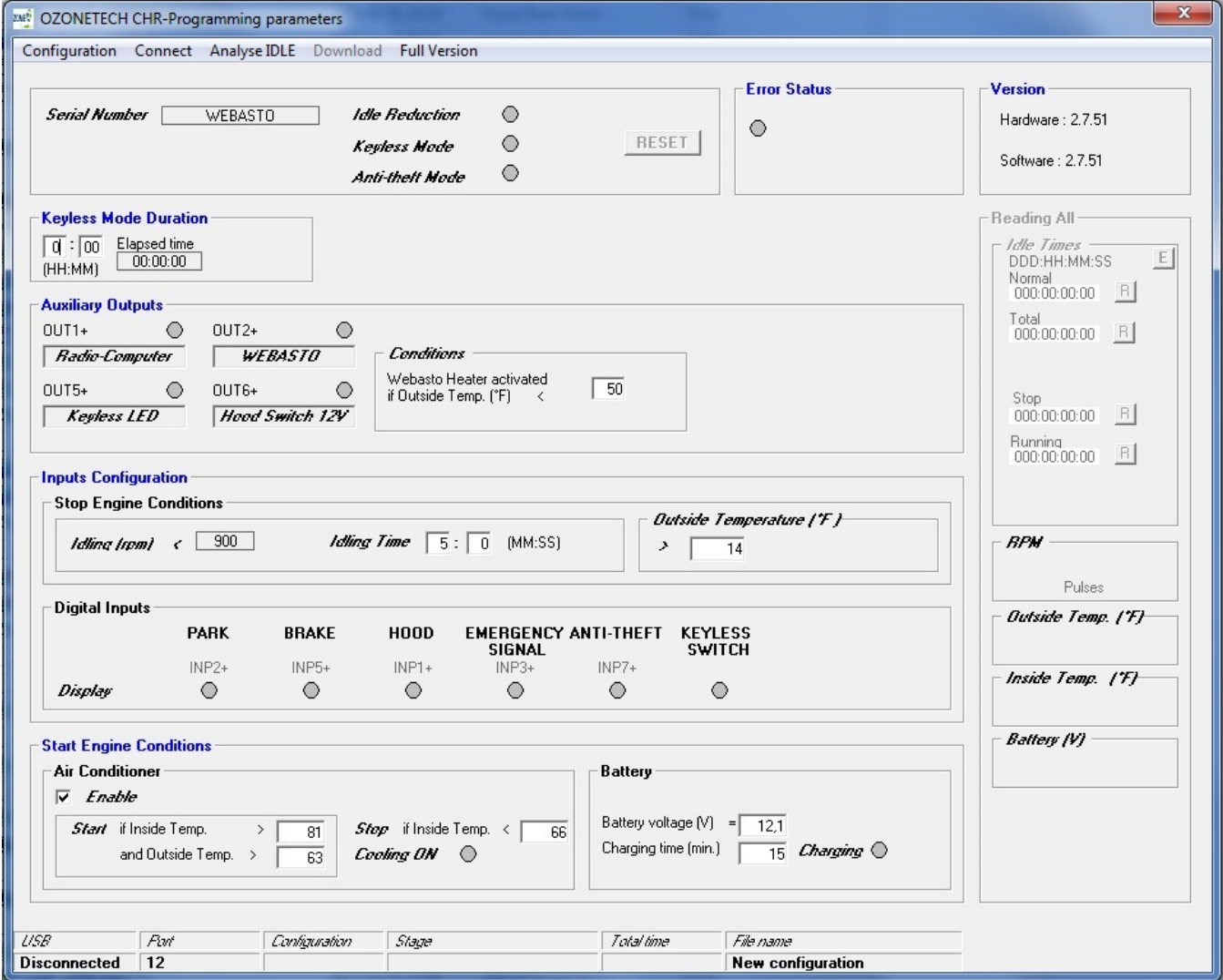
Insert the CD into the CD-ROM drive of the computer. The CD should start automatically; choose execute "O-Zone-Tech CHR.exe". If the installation menu does not start, go on the CD drive and click on "O-Zone-Tech CHR.exe", follow installation procedure in both cases.

When the software installation is completed, connect the module to the computer using a USB cable (the module must be powered and supplied with an IGNITION signal). Once the module has been detected (green LED should flash 1 time every second), allow a few seconds for windows drivers to configure.

- Once « DRIVERS » are installed, start the O-Zone-Tech CHR configuration program and make sure the module is properly powered (battery power and ignition signal).
- Press the « Connect » tab to establish communication with the module. The connection status (bottom left) of the program should change to « Connected » (see Fig. 1, down left window). Signal values like RPM (If engine is running), battery voltage or any activated inputs should be displayed in the software.
- If it doesn't work, go to the menu bar; select the « Ports » drop down menu (see fig. 2) under the « Configuration » tab to set the communication port required. If you can't see port highlighted try to disconnect and reconnect the USB cable using a different USB port; verify computer port settings and USB cable integrity.
- Once connected, the program will ask to upload module data onto the computer. Click « OK » to synchronize the module with the software. You are now able to set all the required working parameters for your vehicle.

5.2. Software Installation

O-Zone-Tech CHR Software Main Programming Window (Webasto Version)



OZONETECH CHR-Programming parameters

Configuration Connect Analyse IDLE Download Full Version

Serial Number WEBASTO **Idle Reduction** ☐ **Keyless Mode** ☐ **Anti-theft Mode** ☐ **RESET**

Keyless Mode Duration
 0 : 00 Elapsed time
 (HH:MM) 00:00:00

Auxiliary Outputs
 OUT1+ ☐ OUT2+ ☐
 Radio-Computer WEBASTO
 OUT5+ ☐ OUT6+ ☐
 Keyless LED Hood Switch 12V
Conditions
 Webasto Heater activated
 if Outside Temp. (°F) < 50

Inputs Configuration
Stop Engine Conditions
 Idling (rpm) < 900 Idling Time 5 : 0 (MM:SS) Outside Temperature (°F) > 14
Digital Inputs
 PARK BRAKE HOOD EMERGENCY ANTI-THEFT KEYLESS SWITCH
 INP2+ INP5+ INP1+ INP3+ INP7+
 Display ☐ ☐ ☐ ☐ ☐ ☐

Start Engine Conditions
Air Conditioner
☒ Enable
 Start if Inside Temp. > 81 Stop if Inside Temp. < 66
 and Outside Temp. > 63 Cooling ON ☐
Battery
 Battery voltage (V) = 12.1
 Charging time (min.) 15 Charging ☐

Error Status ☐

Version
 Hardware : 2.7.51
 Software : 2.7.51

Reading All
Idle Times
 DDD:HH:MM:SS
 Normal 000:00:00:00 R
 Total 000:00:00:00 R
 Stop 000:00:00:00 R
 Running 000:00:00:00 R

RPM
 Pulses

Outside Temp. (°F)

Inside Temp. (°F)

Battery (V)

USB	Port	Configuration	Stage	Total time	File name
Disconnected	12				New configuration

Fig. 1

5.3. Navigation Menu

5.3.1. Configuration

Configuration Connect Analyse IDLE Download Full version

The « Configuration » menu is used to select which USB port you want to use for communication.
To choose your USB port:

- Be sure that the O-Zone-Tech CHR module is connected via USB cable.
- You can directly choose the port in the "Ports" menu or, if you have more than one choice, click on "Search port" menu to let the software find it automatically.

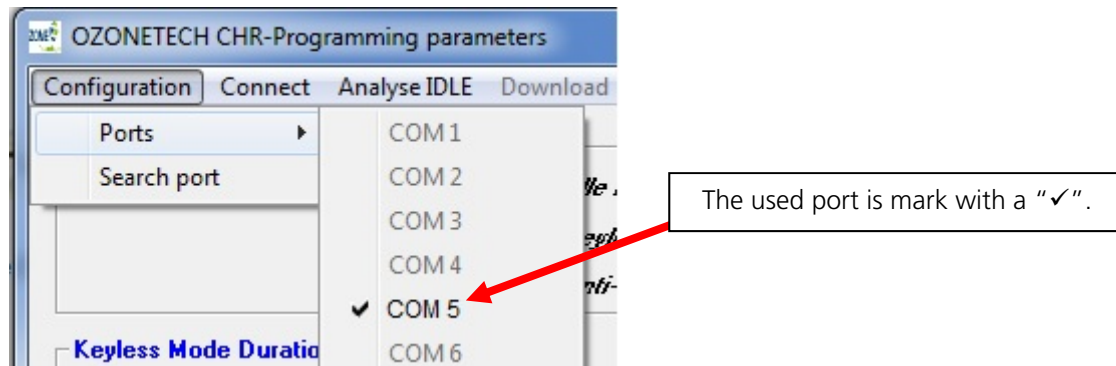


Fig. 2

5.3.2. Connect

Configuration **Connect** Analyse IDLE Download Full version

The « Connect » tab from the top menu is used to initiate communication with the module. When you connect, this window will appear:



Fig. 3

5.3.3. Analyze IDLE

Configuration Connect **Analyse IDLE** Download Full version

The « Analyze IDLE » selection tab is used to access the files generated by the modules internal timers. Click this tab will open the following window:

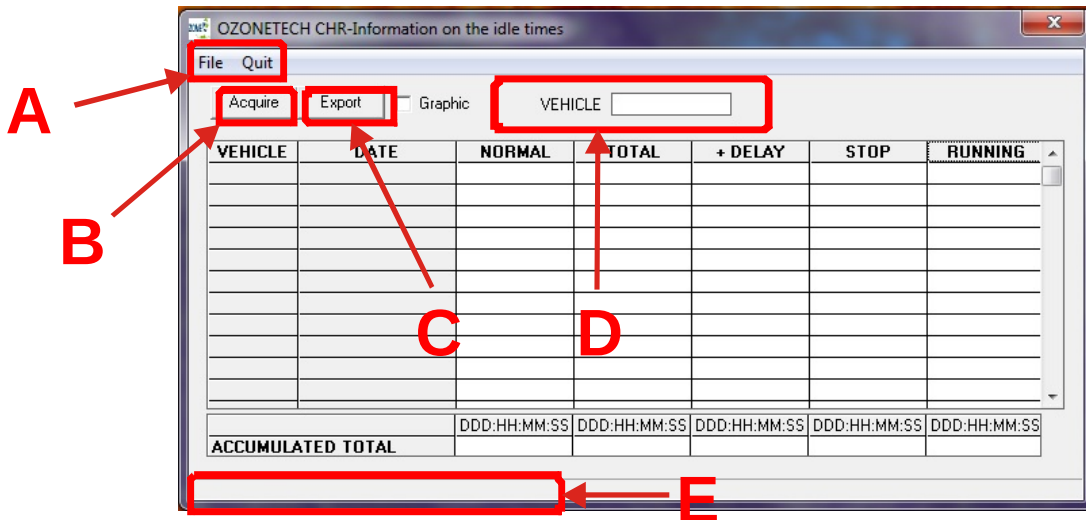


Fig. 4

- A. The "File" menu is used to open an "idl" file, which is specialized file used by this software to keep counter information.
The "Quit" menu is used to close the acquire windows and go back in the main menu.
- B. The "Acquire" button is used to read all counter information in the O-Zone-Tech CHR module.

NOTE

Click on "Acquire" create an "idl" file in the folder showed on "E". The file name follows the vehicle serial number if not previously created.

IMPORTANT

Pressing this button will also reset the module counters in the module (Normal, total, stop and running counters).

- C. The "Export" button will allow user to export the counter values to an excel file.
- D. Serial number should correspond to the serial number of the O-Zone-Tech CHR module installed in the vehicle. There is a unique number for each module.
- E. This is the file location of the file being viewed.

VEHICLE	DATE	NORMAL	TOTAL	+ DELAY	STOP	RUNNING
156 130 134	2012-12-13 16:46:09	000:00:18:02	000:00:42:52	000:00:02:36	000:00:36:38	000:00:46:20
156 130 134	2012-12-14 14:38:44	000:00:18:02	000:00:43:20	000:00:02:36	000:00:36:38	000:00:46:48
156 130 134	2012-12-15 00:01:10	000:00:18:02	000:00:43:20	000:00:02:36	000:00:36:38	000:00:46:48
156 130 134	2012-12-16 09:48:25	000:00:18:02	000:00:43:20	000:00:02:36	000:00:36:38	000:00:46:48
156 130 134	2012-12-17 12:59:26	000:00:18:02	000:00:43:20	000:00:02:36	000:00:36:38	000:00:46:48
156 130 134	2012-12-18 00:00:57	000:00:18:02	000:00:43:20	000:00:02:36	000:00:36:38	000:00:46:48
156 130 134	2012-12-19 16:43:53	000:00:17:48	000:00:42:16	000:00:02:34	000:00:36:20	000:00:45:44
156 130 134	2012-12-20 13:32:24	000:00:00:00	000:00:00:00	000:00:00:00	000:00:00:00	000:00:00:00
DAYS : 7		000:00:18:02	000:00:42:52	000:00:02:36	000:00:36:38	000:00:46:20
ACCUMULATED TOTAL		000:00:18:02	000:00:42:52	000:00:02:36	000:00:36:38	000:00:46:20

S:\transfert\Yvon\Zone Technologie\OzoneTech\Data\zon156 130 134.idl

Fig. 5

- **VEHICLE:** Vehicle number corresponding to the serial number of the O-Zone CHR module.
- **DATE:** Date of the acquisition (data downloaded) from the module.
- **NORMAL:** Counts the idling time programmed in the firmware. This is the time required to idle when all requirements are met before the engine is shut down.
- **TOTAL:** Counts the vehicles total idling time. This is the total time that engine will idle below 900 RPM.
- **+DELAY:** **(Not Applicable)**
- **STOP:** Counts the time as soon as the engine is shut down by the module after all requirements have been met. Any engine RPM will stop this counter. This is the timer that's considered "true idling savings time".
- **RUNNING:** Counts the engine run time as soon as any engine RPM is recognized. This is the total run time of the vehicles engine by the user module.

5.3.4.Download

Configuration Connect Analyse IDLE **Download** Full version

The « Download » tab is used to download or upload parameters to or from the O-Zone-Tech CHR module.

- If you choose "Download to PC" all information in your O-Zone CHR module will be sent to the computer and the main screen will be refreshed.
- If you choose "Upload to module" all information in your "O-Zone-Tech CHR programming parameter" software will be transmitted to the O-Zone-Tech CHR module.

5.3.5.Full Version

Configuration Connect Analyse IDLE Download **Full version**

The « Full version » tab is for manufacturer use only. No additional user functionality is available.

5.4. Window Explanation

For the following window explanations refer to Fig.1 on page 23.

5.4.1. Vehicle information



The 'Vehicle Information' window displays the following fields:

- Serial Number:** A text box containing the value 'WEBASTO'.
- Idle Reduction:** A circular LED indicator.
- Keyless Mode:** A circular LED indicator.
- Anti-theft Mode:** A circular LED indicator.
- RESET:** A rectangular button.

- Serial Number:** Module serial number. This number is unique for each module.
- Mode:** Idle Reduction mode, Keyless Mode and Anti-theft Mode are 3 possible operation modes for the O-Zone CHR module. The LED will turn green when the corresponding mode is activated.
- Reset:** Reset module to Idle reduction mode where ever you are within the control stage.

5.4.2. Error Status



The 'Error Status' window displays a single circular LED indicator.

- Error Status:** The virtual « Error status » LED will change from grey to red when the module fails to start the engine two consecutive times (programmable parameter by manufacturer).

5.4.3. Version



The 'Version' window displays the following information:

- Hardware :** 2.7.51
- Software :** 2.7.51

- Version:** Used to identify hardware (module firmware) and software revision level.
- Hardware:** Indicates the firmware version programmed in the module.
- Software:** Indicates O-Zone-Tech CHR computer software version.

5.4.4. Reading All



The 'Reading All' window displays the following information:

- Idle Times:** A section with four time counters: 'Normal' (000:00:00:00), 'Total' (000:00:00:00), 'Stop' (000:00:00:00), and 'Running' (000:00:00:00). Each counter has a small 'R' button to its right.
- RPM:** A section with a 'Pulses' label and a display area.
- Outside Temp. (°F):** A display area.
- Inside Temp. (°F):** A display area.
- Battery (V):** A display area.

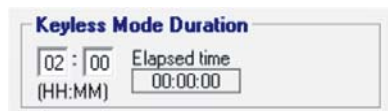
- Reading All:**
- **Idle times:** Real time display in days, hours, minutes, and seconds of the four times counters.
 - « E » button (top right corner) will reset all times counters (Normal, Total, Stop and Running).
 - « R » button will reset the associated times counter.
 - **RPM:** Real time RPM engine displayed.
Note: Estimated from the tachometer signal pulses.
 - **Outside Temp. (°F):** Real time display of outside temperature (F°).
 - **Inside Temp. (°F):** Real time display of inside temperature (F°).
 - **Battery (V):** Display voltage of the vehicle battery (V).

5.4.5. Status Tray Fields

USB	Port	Configuration	Stage	Total time	File name
connected	4	57600,n,8,1	IDLE CONTROL	000:00:00:00	New configuration

USB:	USB port status (connected or disconnected).
Port:	Virtual communication port number identification.
Configuration:	Virtual communication port configuration.
Stage:	Current system operating status.
- Idle Control:	The system is in engine idling control mode.
- Charging:	Following a low battery voltage detection, the system will restart the engine for the charging time period.
- Monitoring:	Following engine shutdown by the module, the system monitors the battery voltage.
- Start	The system is restarting engine.
- High Temp Mode	Start engine as soon as the passenger compartment temperature exceeds programmed range set (if programmed).
- Anti-theft	Let engine run when emergency lights are activated and key is removed from the barrel.
Total time:	Idling time counter displaying.
File name:	Name of the configuration file being used (idl extension file).

5.4.6. Keyless Mode Duration



Keyless Mode Duration

02 : 00 Elapsed time
(HH:MM) 00:00:00

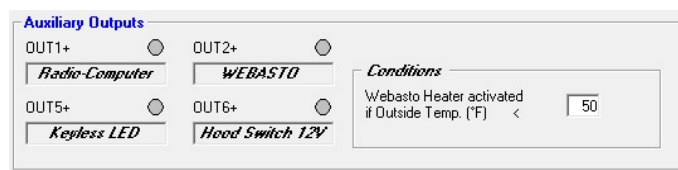
(HH:MM):

Used to program the duration of the keyless mode in hour (HH) and minutes (MM). Maximum value is 96:59.

Elapsed time:

Displays the elapsed time from the beginning of the keyless mode (HH:MM:SS).

5.4.7. Auxiliary Outputs



Auxiliary Outputs

OUT1+ ☐ OUT2+ ☐
Radio-Computer WEBASTO

OUT5+ ☐ OUT6+ ☐
Keyless LED Hood Switch 12V

Conditions
Webasto Heater activated if Outside Temp. (°F) < 50

OUT1(+):	Positive (+12V) Output #1 powered Radio-Computer through relay.
OUT2(+):	Positive (+12V) Output #4 that controls the Webasto heater ON signal.
OUT5(+):	Positive (+12V) Output #5 that controls the LED in the Keyless switch.
OUT6(+):	Positive (+12V) Output #6 power for the hood switch.
Conditions:	If outside temperature is below this programmed value, the Webasto heater will be activated. (Max = 50°F, min = -148°F)

NOTE

- All auxiliary outputs are on C1 harness.
- Virtual LED will turn from grey to green when the output is "ON".

5.4.8. Inputs Configuration

Inputs Configuration

Stop Engine Conditions

Idling (rpm) < Idling Time : (MM:SS) Outside Temperature (°F) >

Digital Inputs

	PARK	BRAKE	HOOD	EMERGENCY SIGNAL	ANTI-THEFT	KEYLESS SWITCH
	INP2+	INP5+	INP1+	INP3+	INP7+	
Display	☐	☐	☐	☐	☐	☐

Stop Engine Conditions

Idling (RPM): Under this value, module considers that the engine is idling (default is programmed at 900 RPM). Any higher RPM value will deactivate the idle reduction mode from the O-Zone-Tech-CHR module and will reset the Idling time counter.

Idling Time: Maximum duration in minutes and seconds that the vehicle will idle before stopping. RPM and outside temperature conditions must be considered. Maximum = 59 minutes and 59 seconds (59:59).

Outside Temperature: If outside temperature is below this value (programmable, min = 14°F), the idle reduction mode is canceled and the Idling time counter is reset.

Digital Inputs

Display: Virtual LED of the corresponding input will turn green if it is activated.

NOTE

- For "HOOD" input (INP1+), the virtual LED will be green if the vehicle hood is open.
- For ANTI-THEFT input (INP7+), the virtual LED will be green if the vehicle emergency lights are activated and if connector C9 and C10 are connected together ANTI-THEFT mode is activated.

5.4.9. Start Engine Conditions

Start Engine Conditions

Air Conditioner

☒ Enable

Start if Inside Temp. > and Outside Temp. > Stop if Inside Temp. < Cooling ON ☐

Battery

Battery voltage (V) = Charging time (min.) Charging ☐

Air Conditioner

Enable: The "Enable" checkbox is to allow the O-Zone-Tech-CHR module to start and stop the vehicle to control the vehicle air conditioner.

Start: The O-Zone-Tech-CHR module will start the engine if the vehicle inside temperature is over 81°F (programmable value) AND if the outside temperature is over 63°F (programmable value).

Stop: When the module have started engine due to high inside temperature, it will stop the engine if temperature goes back down below 67°F (programmable value).

Cooling ON: Virtual LED will turn green if conditions are met to control the air conditioner and engine has been started by the module. The HVAC knobs must be manually preset to cooling car when the module will start engine.

Battery

- Battery Voltage (V):** Low battery voltage limit value where module will start engine for battery charging time (programmable value). Maximum programmable voltage value = 13.2V and minimum = 0.0V, do not exceed 12.3V and do not program under 11.7V can cause no starting engine.
- Charging time (min.):** Period of engine running to recharge the battery after low voltage detected. Maximum = 255 minutes, minimum = 1 minute.
- Charging:** Virtual LED will turn green if conditions are met to recharge the battery.

6. LED SCENARIOS

6.1. Module

6.1.1. Green LED (OZTC):

Status	Description
Steady on for 2 seconds	The module was in reset
Flashing every 2 seconds	The module is in the idling control mode with key at ignition position but engine never started.
Flashing every 1 second	The module is in the idling control mode and has shut off engine to reduce idling.
Flashing every 500 milliseconds	The module is in keyless or anti-theft mode.
Flashing every 4 seconds	Module off (no mode activated) with computer connected.
Flashing every 5 seconds	The module is in sleep mode (lowest current consumption).

6.1.2. Red LED (OZTC):

Status	Description
Steady on	Downloading new main software, if error occurs: stays in steady on (illuminated) and waiting for new download.

6.1.3. Green LED (OZCAN)

Status	Description
Steady ON	The module perform an operation on the vehicle (Start or stop the engine) or user turn the ignition ON (Engine running or not).
Flashing every 4 seconds	Module OFF. NOTE: You can have more than 1 flash by the green LED every 4 seconds. The number of flash will indicate you the firmware of the key bypass module.

6.1.4. Red LED (OZCAN)

Status	Description
Flashing rapidly (8 times or more per second) with engine on.	The LED is following the RPM of the vehicle.

6.2. Switch

Status	Description
Flashing every second	In idle mode, module has shut off engine after idling time delay lapsed.
Steady on (illuminated)	Anti-theft or Keyless mode activated.

7. FINAL INSPECTION (CHECKLIST)

Use the following check list to complete final inspection.

Hood

- ☐ Hood switch and magnet installed (hood magnet properly aligned).
- ☐ Hood switch wire harness covered in loom and secured.
- ☐ Hood switch connector properly connected to the O-Zone-Tech CHR harness.
- ☐ Hole in bulkhead sealed with silicone (O-Zone-Tech CHR harness).
- ☐ Webasto heater harness connected to the vehicle power.
- ☐ Webasto heater fuse holder, relays, and resistor on the harness properly secured.
- ☐ Hole in bulkhead sealed with silicone (Webasto harness).
- ☐ Label (O-Zone-Tech CHR hood label) adhered in visible place under the hood.

Interior

- ☐ "T" harness (C1 harness) connected to the vehicle harness and secured using Velcro tape.
- ☐ Webasto heater harness connector (on/off signal) connected to the C1 harness mating connector C8 and secured.
- ☐ Webasto heater harness connected to the vehicle HVAC blower.
- ☐ Inside temperature sensor mounted, wire loomed and secured.
- ☐ Radio – Computer, emergency lights signal connected.
- ☐ Keyless switch wiring harness covered in loom and secured.
- ☐ Keyless switch installed and connected.
- ☐ Label (O-Zone-Tech CHR user label) adhered in visible place on the sun visor.
- ☐ Verify all moving parts can move freely after all harnesses have been secured. Correct if needed.

Trunk

- ☐ O-Zone-Tech CHR module installed and secured.
- ☐ O-Zone-Tech CHR wiring harness connectors C1 and C2 connected to the module.
- ☐ Connector C9 and C10 connected on harness if Anti-theft Mode used.
- ☐ C1 harness secured.
- ☐ External temperature wire harness covered in loom and secured.
- ☐ External temperature sensor routed through the floor and sealed with silicone.
- ☐ Vehicles negative battery cable re-connected and tightened.
- ☐ Fuse box secured.

Rear Bumper

- ☐ Temperature sensor connected and mounted, wire harness is secure.

Software and Programming Parameters

- ☐ All parameters entered and saved in the module programming.

Vehicle

- ☐ Reinstall carpet, trim, bezels removed during installation.

8. INITIAL START-UP

8.1. Start-up:

- Computer connected to the module and Webasto program is open.
- Close the hood.
- Press the "START" button on the vehicle and verify the green LED (OZTC) on the module flashes once every 2 seconds and green LED (OZCAN) is lit (steady).
- Go to the configuration menu and click search port. Select the available port (see section 5.3.1).
- Press connect button (see section 5.3.2).
- Once connected with the module, you should see the **Inside Temperature, Outside Temperature, Battery voltage** and **RPM** displayed on the software screen.
- The green light should be ON of the **Radio-Computer, Hood Switch, PARK and Idle Reduction** and the **RPM** should display 0.
- Before starting the vehicle, make sure the digital inputs of the software are responding correctly. You should see the green light of:
 - **PARK** when the vehicle is in the PARK or NEUTRAL.
 - **BRAKE** when the brakes are applied.
 - **HOOD** when the hood is open.
 - **EMERGENCY SIGNAL** when the emergency system is activated.
 - **ANTI-THEFT** if C9 and C10 connectors are connected and the emergency system is activated.
 - **KEYLESS SWITCH** when switch is pressed.

8.1.1. Idle Reduction Mode

How to activate this mode you should refer to FUNCTIONAL DESCRIPTION section in this manual.

Green **PARK** indicator light will be on while vehicle is in park.

Within 5 minutes of engine idling, the green indicator light will turn on for the **Idle Reduction, Radio-Computer** and **Hood Switch**.

After a 5 minute delay the engine will stop and an additional green indicator light will turn on for the **WEBASTO Heater** (only if outside temperature is below set value in **Auxiliary Outputs** under **Conditions**) and **Keyless LED** should blink.

If battery voltage is below the set value in **Start Engine Conditions** section under **Battery**, the green indicator light will turn off for **Keyless LED**. The green indicator light should turn on for **Charging**. At this point the module should have started the vehicle.

If **Enable** under **Air Conditioner** section was checked and inside temperature is above set value, in **Air Conditioner** section, the green indicator light will turn off for **Keyless LED**. The green indicator light should turn on for **Cooling ON**.

8.1.2. Keyless Mode

How to activate this mode you should refer to FUNCTIONAL DESCRIPTION section in this manual.

Green **PARK** indicator light will be on while vehicle is in park.

After pressing the switch for 2 seconds the green indicator light will turn on for the **Keyless Mode, KEYLESS SWITCH** (only when pressed), **Radio-Computer, Keyless LED** (steady), **WEBASTO Heater** (only if outside temperature is below set value in **Auxiliary Outputs** under **Conditions**). At this point the module should have started the vehicle.

If battery voltage is below the set value in **Start Engine Conditions** section under **Battery**, the green indicator light will turn on for **Charging**.

If **Enable** under **Air Conditioner** section was checked and inside temperature is above set value in **Air Conditioner** section the green indicator light should turn on for **Cooling ON**.

8.1.3.Anti-theft Mode (Optional)

How to activate this mode you should refer to FUNCTIONAL DESCRIPTION section in this manual.

Green **PARK** indicator light will be on while vehicle is in park.

After activating emergency lights and pressing the "START" button on the vehicle, the green indicator light will be on for the **Anti-theft Mode, Radio-Computer, Keyless LED** (steady), **EMERGENCY SIGNAL** and **ANTI-THEFT**

NOTE

Make sure to set vehicle HVAC controls to on position for the fan speed and AC (summer time) any time vehicle is shut down, otherwise heating and cooling of the interior vehicle will not work properly. Vehicle air blow direction could be set to desired position.

9. TECHNICAL DATA / O-ZONE-TECH MODULE

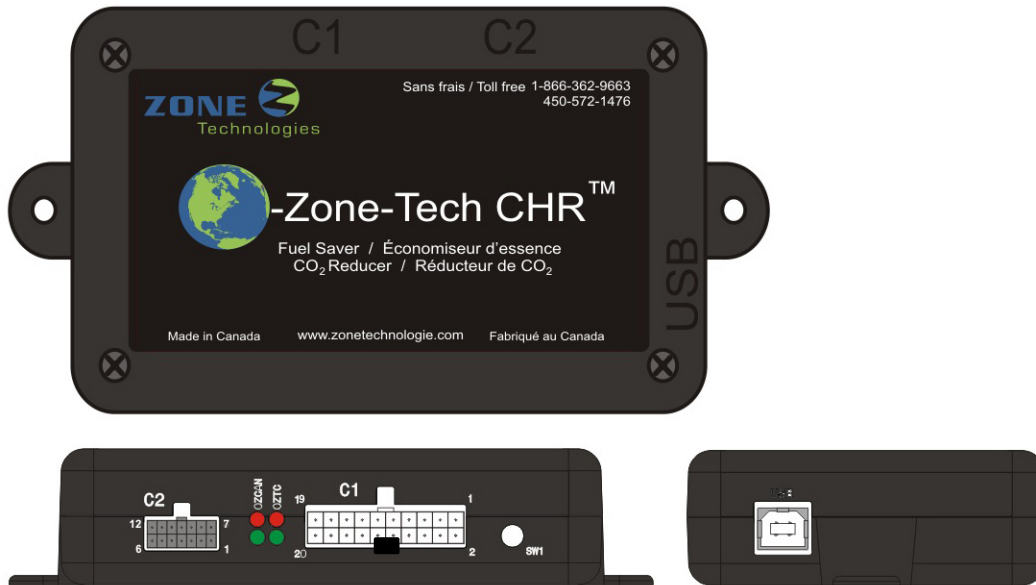
9.1. Technical:

Voltage input:	10 to 18Vdc
Operating temperature:	-40°F to 167°F (-40°C to 75°C)
Electrical consumption:	Before engine stop: • 100 mA
	After engine stop: • 300 mA
	Without Ignition signal: 8 mA
Constant power per output:	OUT #1, #2, #5 & #6: 12V, 1A
	BCM_START: 12V, 2A
	Total (MAX) 2A

9.2. Mechanical:

Dimensions (Without flange):	6.02" x 4.01" x 1.50" (152.91 x 101.85 x 38.10 mm)
Weight:	0.6 lbs. (0.268 Kg)

10. O-ZONE-TECH CHR CONNECTIONS OVERVIEW



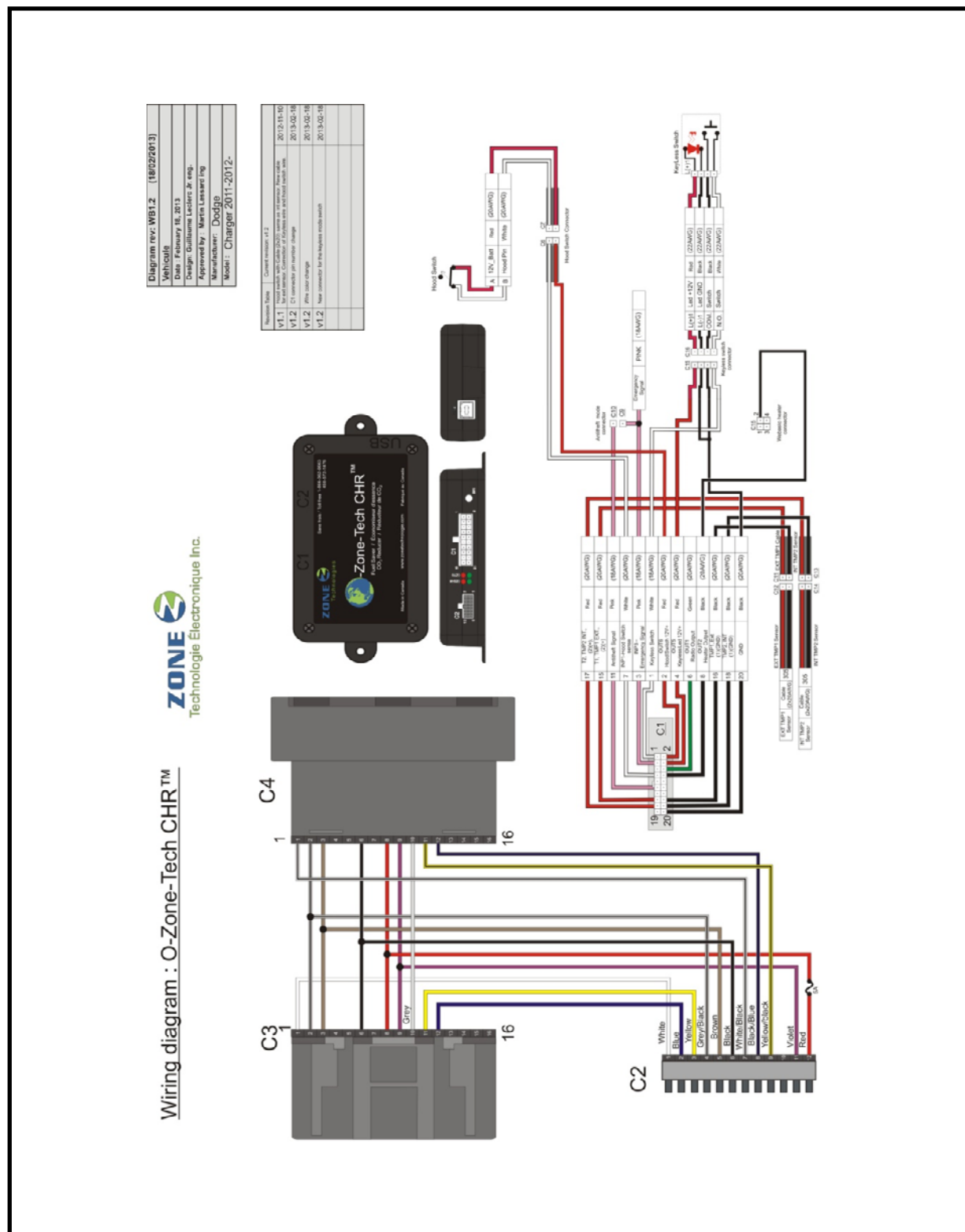
Function	Connection	Signal Identification	Description
Power source	C2.6, C2.12	OZTC-CHR power inputs	O-Zone-Tech CHR module power inputs. (C2.6 = Negative (GND) signal, C2.12 = 12Vdc)
Module communication	USB	USB 2.0 connector	O-Zone-Tech CHR to PC communication port
Inputs	C1.15 & C1.17	Temperature sensor	Temperature sensor input signals. Internal temperature sensor = Optional External temperature sensor = Standard
	C1.11	Antitheft	Antitheft mode activation input. A positive signal is applied when the engine is turned OFF will activate this mode (optional).
	C1.7	Hood switch	Hood open / closed signal. Tells the module the position of the hood.
	C1.3	Emergency Light	Emergency light input signal.
	C1.1	Keyless mode	Keyless mode activation input. A negative signal generated by a momentary switch is required to activate this mode.
	C2.11	Start/Stop Engine	Start / Stop engine push button position.
	C2.2, C2.3, C2.8 & C2.9	CAN High and Low	CAN bus communication signal.
	C2.1	Ignition signal	Ignition status from the RF module.
Outputs	C1.2, C1.4, C1.6 & C1.8	Positive outputs	500mA positive outputs.
	C2.7	Ignition control output	Output controlling the Ignition / Start signal to BCM

10.1. Connection Description

Connector	Pin	Wire Color	Description
USB	-	-	USB connection, link between O-Zone-Tech CHR module and computer
C2	1	White	12V Ignition sense input
	2	Blue	CAN Bus High coming from the key
	3	Yellow	CAN Bus Low coming from the key
	4	Grey/Black	Park signal input
	5	Brown	Brake signal input
	6	Black	System ground
	7	White/Black	12V ignition output
	8	Black/Blue	CAN Bus High coming from the BCM
	9	Yellow/Black	CAN Bus Low coming from the BCM
	10	N/A (No wire)	Not used
	11	Purple	Pushbutton position input
	12	Red	System +12Vdc battery feed
C1	1	White	Keyless mode switch input
	2	Red	OUT6 – Hood switch power
	3	Pink	INP3 – Emergency signal input
	4	Red	OUT5 – Keyless mode LED positive output
	5	N/A (No wire)	Not used
	6	Green	OUT1 – Radio / computer control positive output
	7	Black	INP1 – Hood switch input
	8	Black	OUT2 – Webasto heater control positive output
	9	N/A (No wire)	Not used
	10	N/A (No wire)	Not used
	11	Pink	INP7 – Anti-Theft mode input
	12	N/A (No wire)	Not used
	13	N/A (No wire)	Not used
	14	N/A (No wire)	Not used
	15	Red (Grey cable)	Temperature sensor #1 (External), positive signal
	16	Black (Grey cable)	Temperature sensor #1 (External), ground signal
	17	Red (Grey cable)	Temperature sensor #2 (Internal), positive signal
	18	Black (Grey cable)	Temperature sensor #2 (Internal), ground signal
	19	N/A (No wire)	Not used
	20	Black	Keyless switch and Keyless switch LED ground

11. WIRING DIAGRAMS

11.1. Complete



12. TROUBLESHOOTING

Before proceeding through the troubleshooting steps, please verify the following C2 connector statements are true:

- Constant +12V at connector C2 between pins 6 and 12.
- With ignition on +12V at connector C2 between pins 1 and 7.

COMPUTER		
Problem	Possible Cause	Possible Solution
- Unable to connect to the computer	- No ignition signal, power or ground.	- Turn key to ignition position. (The green LED – OZTC output from the module must flash once every second and the green LED – OZCAN will be on steady) if not, check if +12V ignition signal is present on C2 position 1 and check the wiring. Verify power and ground on connector C2 between pin 6 and 12. Check and correct wiring. If it doesn't resolve issue go to the next step.
	- Wrong communication port selection.	- Check port number selection in configuration command bar menu, click under "search port" and read port you are connected to. Go back in configuration command and select the corresponding port. If it doesn't resolve issue go to the next step.
	- Faulty FTDI driver installation.	- Check if the FTDI drivers are installed properly (In Windows, click Start menu, configuration panel, system, device manager, COM port → must be displayed « USB serial port (COMx), If not installed properly check with qualified IT person. If it doesn't resolve issue go to the next step.
	- Software compatibility	- Make sure to review the software compatibility section 5.1 prior to installing software.

IDLE REDUCTION MODE		
Problem	Possible Cause	Possible Solution
- Module doesn't stop engine.	- Idling time not elapsed	- Be sure idling time counter is elapsed (default value = 5 minutes)
	- Emergency lights ON	- Emergency lights must be off and 0V on connector C1 pin 3.
	- No RPM signal.	- Verify if red LED (OZCAN) is flashing to confirm that CAN connections are good.
	- RPM signal too high	- Run engine five minutes to be sure engine idling under 900RPM, if not check vehicle engine.
	- No PARK signal	- Verify in park position you should have zero volt on connector C2 pin 4, if not verify the

IDLE REDUCTION MODE		
Problem	Possible Cause	Possible Solution
	detected. - External temperature sensor settings - Hood switch - Inside temperature setup - Battery voltage setup higher than vehicle voltage - Vehicle alternator faulty	connection with the vehicle. - Verify in drive position you should have +12 volts on connector C2 pin 4, if not, replace the module. If you have +12V go to the next step. - Make sure you have correct reading, if not, check wiring and if necessary repair. If didn't resolved issue replace the external temperature sensor. - If you have good reading, verify if external temperature is higher at least 4°F then outside temperature setting. If it doesn't resolve issue go to the next step. - Verify if hood is closed. - Check +12V on the hood connector if not present, check connector C1 pin 2. - Check if +12V present on connector C1 pin 7 when hood is closed. If not present, check wiring connection and hood switch, repair or replace if necessary. If doesn't resolve issue go to the next step. - If enable box under air conditioning setup is checked make sure inside temperature is higher than inside temperature setup for vehicle/air conditioner start. If it doesn't resolve issue go to the next step. - Programmed value has to be lower than vehicle battery voltage displaying, fix accordingly. If it doesn't resolve issue go to the next step. - Check alternator and replace if necessary. If this doesn't resolve issue replace the module.
- Engine does not restart after forced engine stop.	- Battery voltage set to low level - Hood open	- Program battery voltage in setup to higher value (ex: Vehicle 13.6V, set value 13.2V). If this doesn't resolve issue go to the next step. - Close the hood. If doesn't resolve issue start car manually and repeat idle reduction test. If still not working properly replace the module.
- Engine does not restart after forced engine stop when inside temperature is too high	- External or internal temperature sensor	- Make sure you have correct reading, if not, check wiring and if necessary repair. If didn't resolved issue replace the corresponding sensor. - If you have good reading, verify if external and

IDLE REDUCTION MODE		
Problem	Possible Cause	Possible Solution
		internal temperature is higher than outside and inside temperature setting (make sure outside temperature is higher than 63°F, below this temperature it will not work). If it doesn't resolve issue replace the module.
- Vehicle doesn't start manually	- Wiring	- Bad connection on start wire, check T harness and repair if necessary. If doesn't resolve issue replace the T harness. If it still doesn't work replace the module.
- Vehicle is not cooling	- Vehicle HVAC knobs not set properly	- Make sure knobs temperature setting is at low setting, fan is ON and the AC selector is ON.
- Engine stops even if emergency lights are ON	- Wiring	- Verify if there is +12V on connector C1 pin 3, if not, repair as necessary. If doesn't resolve issue replace the module.
- Webasto Heater not activating in forced engine shut down mode.	- External temperature sensor	- Make sure you have correct reading, if not, check wiring and connector if necessary repair. If didn't resolved issue replace the corresponding sensor.
	- Connector C8	- If you have good reading, verify if external temperature is lower than set value (ex: outside temperature 40°F, set value has to be higher than 40°F for the heater to come on, it will never start if outside temperature is greater than 50°F). If doesn't resolve issue go to the next step.
	- Heater malfunction	- Check connector C8 and make sure wire colors match at the connecting point, repair if necessary. If +12V present go to the heater trouble shooting provided in the heater kit.
		- Check if +12V on connector C8 (black wire coming from the module). If no +12V, check on connector C1 pin 8. If +12V present correct the wiring and if not replace the module.
		- Reference heater troubleshooting provided in the kit.
- Engine stops even if vehicle transmission is engaged.	- Park signal	- Verify in park position you should have zero volt on connector C2 pin 4, if not verify the T harness.
		- Verify in drive position you should have +12 volts on connector C2 pin 4, If it doesn't resolve issue replace the T harness. If it still doesn't work replace the module.
- Engine stops even if hood is open.	- Hood open	- Verify if hood is closed.
		- Check +12V on the hood connector if not present, check connector C1 pin 2.

IDLE REDUCTION MODE		
Problem	Possible Cause	Possible Solution
		- Check if +12V present on connector C1 pin 7 when hood is closed. If not present, check wiring connection and hood switch, repair or replace if necessary. If doesn't resolve issue replace the module.
- Windows not working running in idle mode	- Wiring	- Check the T harness and repair.
- Wipers are not working running in idle mode	- Wiring	- Check the T harness and repair.
- Radio/computer is not working	- Connector or wiring	- Check on connector C1 pin 6 if there is a +12V signal. If no +12V on pin 6 replace the module.

KEYLESS MODE		
Problem	Possible Cause	Possible Solution
- Keyless mode does not activate.	- Hood open - Key press period too short - Ignition key present - Software settings to zero - Keyless switch - Brake signal	- Verify if hood is closed. - Check +12V on the hood connector if not present, check connector C1 pin 2. - Check if +12V present on connector C1 pin 7 when hood is closed. If not present, check wiring connection and hood switch, repair or replace if necessary. If doesn't resolve issue go to the next step. - Press the key for a minimum of 2 seconds. If doesn't resolve go to the next step. - Remove key from the barrel. If doesn't resolve go to the next step. - Verify time settings of Keyless mode duration, must not be zero. If doesn't resolve go to the next step - Refer to general section "Keyless switch not functional". If doesn't resolve go to the next step - Verify brake switch installation and/or confirm there is nothing interfering with brake pedal switch, brake pedal can't be pressed during this test (at this time, no +12V signal on connector C2 pin 5). If it doesn't resolve issue replace module.

KEYLESS MODE		
Problem	Possible Cause	Possible Solution
- Keyless mode deactivating to soon.	- Program setting, keyless mode duration time is set to low.	- Change setting to a longer duration of time.
- Keyless mode not deactivate when pressing the brake pedal.	- Brake signal	- Verify brake switch installation and/or confirm there is nothing interfering with brake pedal switch. - Press the brake pedal and check if +12V signal is on connector C2 pin 5. If signal is not present verify car wiring, fuse, T Harness, etc. If signal is present change the module.
- Keyless mode not deactivate when opening the hood.	- Hood switch	- Verify if hood is closed. - Check +12V on the hood connector if not present, check connector C1 pin 2. - Check if +12V present on connector C1 pin 7 when hood is closed. If not present, check wiring connection and hood switch, repair or replace if necessary. If this doesn't resolve issue, replace the module.
- Engine will not start when inside temperature is too high.	- External or internal temperature sensor	- Make sure you have correct reading, if not, check wiring and if necessary repair. If didn't resolved issue replace the corresponding sensor. - If you have good reading, verify if external and internal temperature is higher than outside and inside temperature setting (make sure outside temperature is higher than 63°F, below this temperature it will not work). If it doesn't resolve issue replace the module.
- Vehicle is not cooling	- Vehicle HVAC knobs not set properly	- Make sure knobs temperature setting is at low setting, fan is ON and the AC selector is ON.
- Vehicle is not heating.	- External temperature sensor - Connector C8	- Make sure you have correct reading, if not, check wiring and connector if necessary repair. If didn't resolved issue replace the corresponding sensor. - If you have good reading, verify if external temperature is lower than set value (ex: outside temperature 40°F, set value has to be higher than 40°F for the heater to come on, it will never start if outside temperature is greater than 50°F). If doesn't resolve issue go to the next step. - Check connector C8 and make sure wire colors match at the connecting point, repair if necessary. If +12V present go to the heater trouble shooting provided in the heater kit. - Check if +12V on connector C8 (black wire

KEYLESS MODE		
Problem	Possible Cause	Possible Solution
		coming from the module). If no +12V, check on connector C1 pin 8. If +12V present correct the wiring and if not replace the module.
	- Heater malfunction	- Refer to heater trouble shooting provided in the kit.
- Keyless switch not illuminated	- Wiring	- Check for +12V between pin L (and) 1 (red wire) and L (-) 1 (black wire), if you have +12V change Switch. If there is no +12V go to the next step. - Check if you have +12V on connector C1 pin 4 if you don't, replace the module otherwise repair wiring.
- Module start engine as soon as keyless switch is pressed	- Battery voltage	- Program Voltage level at appropriate level (recommended 12.1V) and charge the battery if necessary.
- Keyless mode does not deactivate when I press on the brake pedal.	- Brake signal.	- Verify brake switch installation and/or confirm there is nothing interfering with brake pedal switch. - Press the brake pedal and check if +12V signal is on connector C2 pin 5. If signal is not present verify car wiring, fuse, T harness, etc. If signal is present change the module.
- Radio/computer is not working.	- Connector or wiring	- Check on connector C1 pin 6 if there is a ground signal, if present check radio/computer relay circuit. If no ground on pin 6 replace the module.

ANTI-THEFT MODE		
Problem	Possible Cause	Possible Solution
- Engine can't keep idling when key is removed from barrel	- Wiring harnesses - No Anti-Theft signal - No activated emergency signal present (emergency lights must be ON) - Hood open - Brake pedal	- Verify complete harness (connectors, connection pins and correct if necessary) - Verify if the pink terminal connectors C9 and C10, connector C1 pin 11 and connector C1 pin 3 are connected. If it doesn't resolve issue go to the next step. - Verify if there is +12V on connector C1 pin 11 and connector C1 pin 3. If it doesn't resolve issue go to the next step. - Verify if hood is properly closed and/or hood switch integrity. Check connector C1 pin 2, +12V signal must be present on connector C1 pin 2 and 7 when hood is closed. If it doesn't resolve issue go to the next step. - Verify brake switch installation and/or confirm there is nothing interfering with brake pedal switch, brake pedal can't be pressed during this test (at this time, no +12V signal on connector C2 pin 5). If it doesn't resolve issue replace the module.
- The engine will not shut down when brake pedal is pressed.	- Brake pedal	- Verify brake switch installation and/or confirm there is nothing interfering with brake pedal switch. - Press the brake pedal and check if +12V signal is on connector C2 pin 5. If signal is present change the module. - If signal is not present verify car wiring, fuse, T harness, etc.

GENERAL		
Problem	Possible Cause	Possible Solution
- Can't start vehicle.	- Wiring harness	- Verify complete harness, connectors, connection pins and correct if necessary. Replace module if necessary.
- Vehicle inside temperature always high (no cooling)	- Vehicle HVAC knobs not set properly	- Make sure knobs temperature setting is at low setting, fan is ON and the AC selector is ON.
- Vehicle inside temperature always cold when forced shut down (no heating)	- Vehicle HVAC knobs not set properly	- Make sure knobs temperature setting is at high setting, fan is ON and the AC selector is OFF. If doesn't resolve issue refer to problem section named: "Webasto Heater not activating in forced engine shut down mode" for further troubleshooting.

GENERAL		
Problem	Possible Cause	Possible Solution
- Battery voltage always low	- Vehicle battery - Vehicle alternator - Battery voltage setting too low - Charging time too short	- Test the battery and replace if necessary. If doesn't resolve issue go to the next step. - Test the alternator and replace if necessary. If doesn't resolve issue go to the next step. - Change the battery setting. If doesn't resolve issue go to the next step. - Change the charging time setting (minimum 15 minutes). If doesn't resolve issue change the module.
- Keyless switch not illuminated	- Wiring	- Check for +12V between pin L (and) 1 (red wire) and L (-) 1 (black wire), if you have +12V change Switch. If there is no +12V go to the next step. - Check if you have +12V on connector C1 pin 4 if you don't, replace the module otherwise repair wiring.
- Keyless switch not functional	- Keyless switch stuck - Wiring	- Disconnect the switch and check continuity between pin 1 and 3, then press the key without release do continuity test between 1 and 2. If switch not working properly during continuity check replace the switch. If the switch is ok go to the next step. - Put manually ground on connector C1 pin 1 and check if keyless function is activated if yes repair the wiring else go to problem "Keyless mode does not activate" for further troubleshooting.

13. LIMITED WARRANTY

Webasto Product North America, Inc. (hereinafter referred to as Webasto) warrants the O-Zone-Tech CHR system against defects in material and workmanship for two (2) years effective at the time of installation.

The intent of the Webasto Non-Transferrable warranty is to protect the original end-user from such defects and provide free repair and replacement of defective parts in the manner provided herein. During the warranty period the exclusive remedy will be for Webasto, at their discretion, to repair or replace those parts which are demonstrated to be defective in material or workmanship.

While warranty is provided to the “original end-user”, it is to be administered and serviced by Webasto Product personnel or through an authorized Webasto distributor in accordance with the Webasto warranty policy or contractual agreement between Webasto and a second party.

Information concerning all warranties may be obtained by calling (800) 860-7866.

Limitations:

Webasto specifically excludes and limits warranty from the following:

- Damage to product in transit. All claims must be filed with carrier.
- Improper installation, which is not in accordance with valid, supplied installation instructions.
- Deterioration due to normal wear, corrosion, abuse, damage, accident, improper storage or operation.
- Modification of product by alteration, use of non-genuine parts or repair by unauthorized personnel.
- Economic loss for expenses related to travel, vehicle disability, personal injury or other incidental or consequential damages arising from any breach of this expressed warranty.

Owner’s Responsibilities:

- Improper or incorrectly performed maintenance or repair voids this warranty.
- A Warranty Registration Card is included with the sale of each system. It is the owner’s responsibility to complete this card and return it to Webasto for registration.

THIS WARRANTY IS NON-TRANSFERABLE.

IMPLIED WARRANTIES INCLUDING THAT OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY LIMITED TO THE DURATION OF THIS WARRANTY. WEBASTO DISCLAIMS ANY LIABILITY FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

THE LIMITATION AND EXCLUSIONS VARY AMONG STATES AND CANADIAN PROVINCES AND MAY NOT APPLY TO YOU. YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY AMONG STATES AND CANADIAN PROVINCES.



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