MersCleaner - software for checking trip data on the Mercedes vehicles

Operating Manual   (09.2013)

Table of Contents

Vehicles and ECUs list

MersCleaner – software for KM values checking and control (for some ECUs), working with special USB-OBDII adapter.

Class, Vehicle	Year	Main KM	Current Service	Assist Assist+	Other ECUs in vehicle
A W168	1997-99	R/W	R/W	R/W	---
	2000-04	R/W	R/W	R/W	---
A/B W169	2003-05	R/W	R/W	R/W	EZS:R
C W202	1996-98	R/W	R/W	R/W	---
C W203	1999-2003	R/W	R/W	R/W	EZS:R
	2004-07	R/W	R/W	R/W	EZS:R, ESP:RW, CDI:RWp
W204	2007-2012	R/W	R/W	R/W	EZS:R,SRS:R, ESP:RW, CDI:RWp, BCM:RW, TPM:RW,ESA:RW
W207	2007-2012	R/W	R/W	R/W	EZS:R, SRS:R, ESP:RW, CDI:RWp, BCM:RW, TPM:RW,ESA:RW
W212	2009-2012	R/W	R/W	R/W	EZS:R, SRS:R, ESP:RW, CDI:RWp, BCM:RW, TPM:RW,ESA:RW
S W140	1996-98	R/W	R/W	R/W	---
W215	1999-2000	R/W	R/W	R/W	---
	2001-04	R/W	R/W	R/W	EZS:R
W216	2005-12	R/W	R/W	R/W	EZS:R,SRS:R,ABR:R, EPB,CDI:RWp, BCM:RW, TPM:RW,ESA:RW
CLK W208	1996-98	R/W	R/W	R/W	---
	2002-03	R/W	R/W	R/W	EZS:R
W209	2004-08	R/W	R/W	R/W	EZS:R, ESP:RW, CDI:RWp
CLS W219	2002-08	R/W	R/W	R/W	EZS:R, ESP:RW, CDI:RWp
E W210	1996-2002	R/W	R/W	R/W	---
E W211	2003-09	R/W	R/W	R/W	EZS:R, BCM:RW, ESP:RW, ESA:RW, CDI:RWp
G W461	1996-2006	R/W	R/W	R/W	EZS:R, ESP:RW, CDI:RWp
W463	1996-2006	R/W	R/W	R/W	EZS:R, ESP:RW, CDI:RWp
ML W163	1996-2004	R/W	R/W	R/W	---
ML W164	2005-10	R/W	R/W	R/W	EZS:R,rSAM:R ,ESP:RW, ESA:RW, CDI:RWp
GL X164	2005-10	R/W	R/W	R/W	EZS:R,rSAM:R, ESP:RW, ESA:RW, CDI:RWp
R W251	2005-10	R/W	R/W	R/W	EZS:R,rSAM:R, ESP:RW, ESA:RW, CDI:RWp
S W220	1999-2004	R	R/W	R/W	EZS:R
W221	2005-12	R/W	R/W	R/W	EZS:R,SRS:R,ABR:R,EPB:RWp,CDI:RWp, BCM:RW, TPM:RW,ESA:RW
SL W129	1999-2002	R/W	R/W	R/W	EZS:R
SLK W170	1997-2004	R/W	R/W	R/W	---
W171	2004-09	R/W	R/W	R/W	EZS:R, ESP:RW, CDI:RWp
Spr W901-903	1999-2001	R	R/W	R/W	---
W906 MaMa	2005-10	R/W	R/W	R/W	EZS:R, CDI:RWp
W906 BORG	2005-10	R	R	R/W	EZS:R, CDI:RWp
VITO W638	1999-2002	R/W	R/W	R/W	---
W639 MaMa	2004-10	R/W	R/W	R/W	EZS:R, CDI:RWp
W639 BORG	2004-10	R	R	R/W	EZS:R, CDI:RWp

Main KM – KM value on Dashboard display
BCM – (BNS) Battery Control Module
ESP(ABR) - Brake Assist
EPB - Electr. Parking Brake
ESA - Electr. Seats with memory
SRS - Airbag

TPM - Tire Pressure Module (Separate ECU)
CDI - Diesel ECU (CDI4, CDI5)
EZS - Electr. Ignition Switch
R – Read, W – Write possible
Wp – partially writeable

The program begins with a choice of a car parameter window: class and car type and its manufacture year.

In the right top corner placed the Language and Units selection menu - Miles or KMs.

If "Autocheck Updates" will be activated, MersCleaner software will start searching new version on web, and if it will be founded – MersCleaner ask you to update itself. After PC software part checking/updating, program starts searching and checking Adapter firmware update on web, and ask you to update it if new firmware will be founded. Double clicking in the field "Read News" shows the news about changes in the program for the last month.

After the car selection and button clicking OK in right lower corner of a start window starts the connected USB devices scanning. If any Cleaner-compatible adapter it is not found, the appropriate warning will be shown and a next window does not open. If Adapter it will be found out - the next window with the first tab of operation with the unit the Combination of Instruments opens.

There are cases when it is need to make correction of the InstrumentCluster, being not in the car, "on desktop". In this case, if for the given InstrumentCluster there are the basic distinctions of connection - for example, usage of various protocols of communication on the screen the message with the request will be deduced to specify connection type - through connector OBD or directly, "on desktop", via InstrumentCluster backside connector. For adapter MB-CAN connection directly to a panel connector use the information about connector pinout for the dashboard from WIS or other sources.

Please remember: the Cleaner programm is maked not for "juniors". All data modifications in car modules are spent ONLY UNDER RESPONSIBILITY of the tool user. MBcleaner before each operation of the data DIRECT RECORDING in the module memory first saves the memory dump in a folder 0Archive in a file with a text format and with a name looks like mc_120811122111.txt, where "mc" = "MBcleaner", and "120811122111" - the date and time at the saving moment. It is maded for the initial data returning possibility in the module memory in case of modified data unsuccessful writing.

Working with InstrumentCluster

In the upper part of the window - the drop-down list of car modules which of them contain known km values. To the right of it - a label about the selected units of measure of distances "Units=KM".

Still more to the right from it the asterisk character on a gray background is allocated. It serves for an input in the menu of update of an insertion of the Adapter, if it car have installed filter by Den-Co. - control of it state and update it firmware (see lower). The entering to this menu is carried out by pushing some times the left mouse button direct on this character.

In DASHBOARDS AFTER 2001 the DATA Reading-Writing operations must be with IGNITION OFF!

The green fields have possibility of the data change, the gray fields are read only.

The fields "Main KM" and "Start Date" are show current odometer value and dashboard start using date (info by Instruments cluster).

Data lower is current service data (if Assist is inside Dashboard: MB Vito, Sprinter, W203, W209, W210, A168, W220 and some other older and newer vehicles.

"Serv.Count" field shows the count of maked services.

Services are saved in the memory by a principle «a vertical ring from top to down». That is the sixth service lays down over the first, overwriting it, the seventh - over the second, etc.

"Date" - date at the service moment. In memory is stored no real Date but days quantity from the previous service to next, the Cleaner make just a mathematical transform of these day quantities to calendar dates. Therefore, if once while in the car using process the days quantity between services has been changed (730 to 365), then the calculated service dates of saved services will be invalid, they will be displaced for 1 year. "Km value" - km value at the service reset. More often it is approximated to hundreds KM.

"Remains km" - distance till the next service. The negative value means that service is passed with delay on the deduced size.

"Added, litres" - total quantity of the added oil between services, with rate 0.5l. "Length" – standard service length in KM. There are usual lengths are 15000, 20000, 22000, 24000, 30000km.

"Replenishments" - some dashboards save in the current service history the list of last ten km values and the added oil quantity.

The button «ECU ->» serves for data reading from the module, «-> ECU» - writes back the data into the module. The button "EEPROM-> File" in some panels allows to keep in a file a EEPROM memory dump in format .BIN or .TXT.

The button "File -> EEPROM" in some dashboards allows to load the data from a file (in format BIN or TXT) into EEPROM areas resolved to rewrite by dashboard firmware.

The button "ROM -> File" in some panels allows to save into the file a dump all possible ROM/FLASH memory areas in format BIN or TXT.

The button "Set Time" - synchronises date and time in a dashboard with date and time in computer.

The button "Miles-> KM" - some panels switches a mode of display from the Miles/*F standard on European (Celsius, KM).

The ASSIST table appears on the window in case of presence in memory of the dashboard the Assist services data.

This example picture have the red fields. This colour specifies that the data has not taken place autocheck in this field. As example, a field "Main km" is red because current km value is less than last service km value. Date of the third service is marked too because the time between this and previous service more than the maximum length (730 days - by the field in Current Service). The Km value in the third column is considered wrong because this value was beyond +-5000km. In fields SERVICE LENGTH it is authorised to write down certain values of lengths of service for certain cars - 15000, 20000, 22000, 23000, 24000, 30000km or similar.

In the services editing process the date of current service is copied automatically in a field with position corresponding of the kept services quantity.

Some dashboards do not allow to correct the Main km value via OBD (example - W220, Vito/Sprinter Borg(JohnsonControls) and some over). Some cars do not allow to change the current service data. In this case shows caution about it.

The field "Main km" should be corrected in last turn - then all current service km fields will be automatically corrected. For the data rewriting in dashboard memory press the button "-> ECU". During writing all data the replenish. fields (in right window part) will be automatically resetted.

Working with Assist

The ASS window in general is similar with the previous, but has some additional fields as physically given by module ZGW (component ASSIST).

Here the fields similar to the Dashboard have the same values and properties as in Dashboard window <IKE>.

Two fields "Main Km" and "Start Date" are km value and a module operation start date (it's an internal module data).
Two fields "CANbus Km" and "Date" are the data received via internal car digital bus from other modules.
The button "Take from Assist+" is maked to fast take all useful data from the table placed in window ASSIST+.

In order to avoid distortion of the data lying in ZGW EEPROM, please work with this module data AT the IGNITION SWITCHED OFF.

In the services editing process the date of current service is copied automatically in a field with position corresponding of the kept services quantity.

The field "Main km" should be corrected in last turn - then all current service km fields will be automatically corrected. For the data rewriting in dashboard memory press the button "-> ECU". During writing all data the replenish. fields (in right window part) will be automatically resetted.

Working with EZS

The EZS window - in most cases only for information, shows km values in the EZS ignition lock memory.

It have just the button for km values reading.
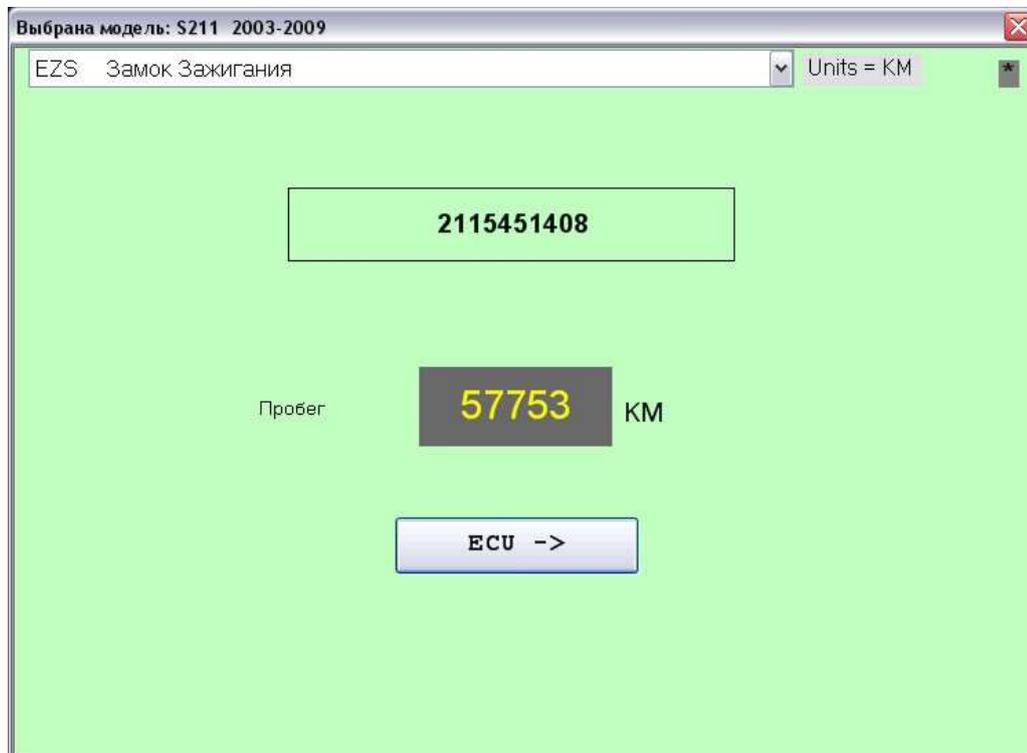
In case of work with W169 (crypted data in the EZS), have a possibility to make 0 km in this EZS using any Programmer – only for people who have a possibility to correct km value in a wheel latch ELV, overwise the original km value comes back to the dashboard from ELV through the EZS.

While the EZS is installed in the car, you need to read the program km value in the EZS using MBcleaner. Thus, if EZS number in the top window begins with 169..., near to the button of reading of km value will be sown a button "Calc 0 KM". After its pressing there is the data calculated for this EZS which should be writed in the EZS MCU to the specified addresses in EEPROM the lock manually, with the any programmer tool (of course, after the ZS extraction from the car).

The array 0C10-0C1F need to fill with any data (00, FF)

The array 0C7C...0C83 need to fill with bytes shown by the MBcleaner.

The memory addressing is same as described on MCU datasheet, see the MCU datasheet.

Working with ASSIST+

Window ASS+ contains more service records quantity (up to 50). Physically this data is stored usually in module ZGW or IKE (component ASSIST+).

As well as for a DashBoard, it is necessary to work with this module AT the IGNITION SWITCHED OFF, in order to avoid distortion of the data placed in module memory.

Here too there are fields of km values and dates, but there are no fields "is necessary" and "Oil added".

The fields line named "Last Service". This service "is not brought yet in archive" - area of memory for history storage, and stored in separately taken away place of memory in the module. It is a line of LAST service which can be excellent by means of regularly provided function in the menu of the car in case of wrong dump by means of buttons on a car wheel. All other service records remain in module "archive" and consequently are shown in the general table.

"Date" – Service date.
"KM value" - Exact km value at the service reset (but Assist have same but rounded to hundreds km value against this history).

"Serv.Length" – gray field, it calculates automatically by the entered km values in correction process. It means the trip since previous service. Example for this picture: 32521km-15726km = 16795km.

"Serv.Days" – days count since previous service. It calculates automatically by the entered dates in correction process.

The button "Take from ASSIST" serves for fast and convenient copying of all useful data from window ASSIST. Copies last five or less services in five or less fields of the table according to services quantity.

The service line "Last Service" have a separate button "-> ECU" for the saving modified data by this line in the ZGW memory separately from other records, because it placed EEPROM module ZGW. If it is necessary to keep the modified data not only current service but also the data in services archive, press the big button "-> ECU" placed lower. It works on preservation and lines of last service, and stores all data in the services archive. Thus there is long enough data reading from memory of archive entirely, preservation of a copy of the data in an archival folder of the computer, and rewriting of the data in archive ZGW.

Working with BCM

The BCM window (Battery Control Module) shows the data stored in battery module.
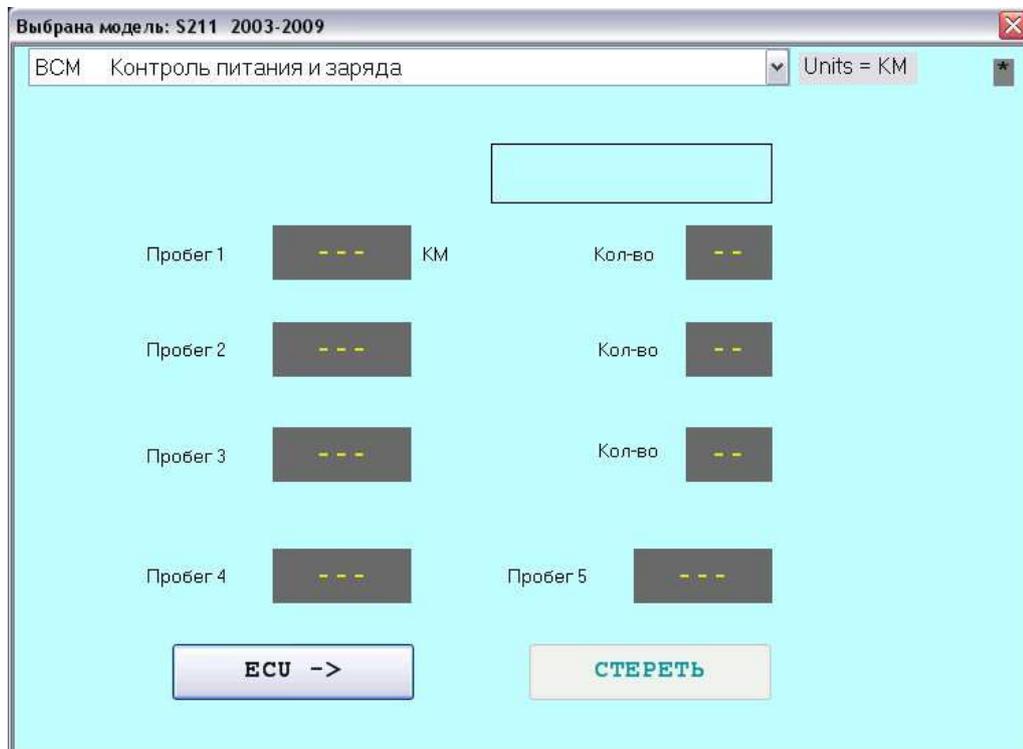
Some cars at all have no this module, for example - W164 ML/GL.

This window have an unique button except the reading button - "ERASE" (In ZERO ALL DATA).

In some modules (as example W204, W212) after erasing procedure the one-two parameters remains with old km value. They will be updated after next car "sleeping".

Working with ESP (ABR)

The ESP(ABR) window shows the data from brake assistant module.

For working with this module you must turn ignition ON.

Here is the tyres pressure control data - last three brakes and last three activations of the tyres pressure monitoring system. For some cars after data reading, the "Clear" button at the right side of an «Activation 1» field will be shown - then it has carried to you, this module have a possibility of km values recalculation and direct rewriting with the data calculated by the DashBoard current Main KM value. For other modules procedure of change of the data is described below.

ATTENTION!! ALL CAR MOVEMENTS DO WITH REMOVED OBD SOCKET! Because if the ABR/ESP module is in the active communication with the Cleaner or StarDiags program, the pressure monitoring system functions are In DIAGNOSTICS MODE too.

The general way of the data changing:

1. Take off pressure in one of wheel practically to a rim.

2. Drive the car until the pressure loss warning message came, thus one of "Brake" table fields will be renewed.

3. Fill out the wheel with normal pressure.

4. Reactivate system using steering wheel menu buttons, the menu in a dashboard (Reactivate). Thus current km value will fills one of fields in the "Activation" table.

5. Drive again on direct road without turns ~10km with a speed more 60km/h. The monitoring system will be in a self-training mode some time. The Cleaner field "Status" displays the current system state – Learning, Loss or Ready.

6. Repeat two more times points 1...4. Last time after reactivation no need to drive specially.

The ERASE button erases all errors in the module, including contents of errors SHADOW MEMORY (actually for W221 ABR).

Working with EPB

The EPB window (Electronic Parking Brake) it is intended for km values control in the module. It works only for W221 because such module was not observed in other cars yet.
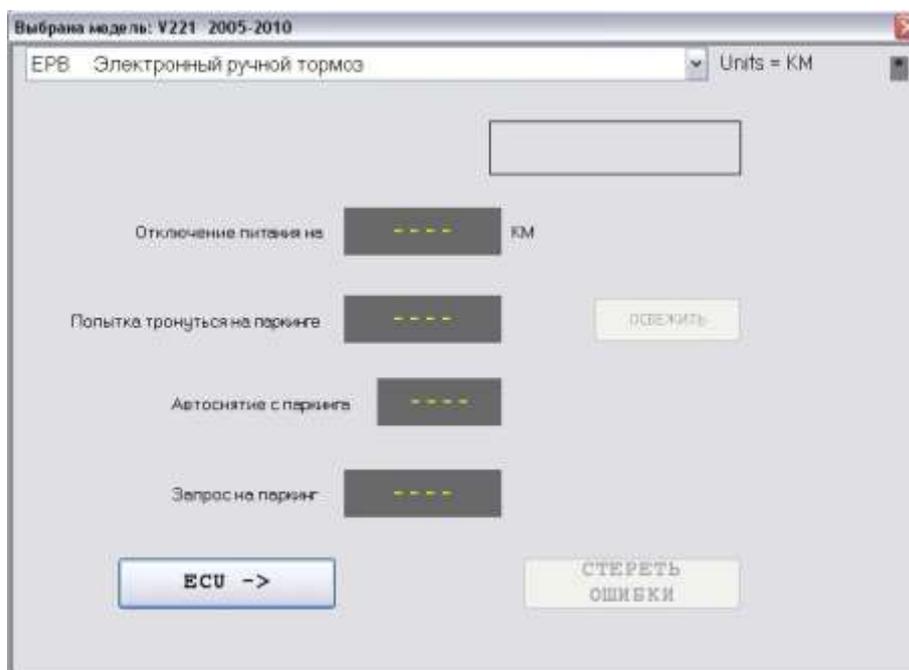
This module window is under development, it allows to change something only partially.

"Power switching-off" – last voltage reduction of the battery was below critical value. Battery switching-off for resetting it does not helps, it is need to turn ignition ON and all possible energy consumers are ON too - the climatic fan, all headlights, back glass heating, radio, etc. Wait supervising battery power to 7-8 volts in the module using the STAR diagnosis.

"Attempt to drive with parking brake" - last attempt to drive with the parking brake enabled. For value rewriting it is necessary to press button "REFRESH" and follow next instructions shown on the Cleaner screen - try to drive with the parking brake enabled again. The dashboard displays the red warning, at this moment the value in module memory will be renewed.

"Parking request" - last use of function of removal-statement on parking brake using the gear change handle (ISM). It is updated by repeat of parking brake enabling procedure using ISM.

Working with the SeatMemory (ESAx)

The ESAF window serves for the data control from history archive in forward seats memory.
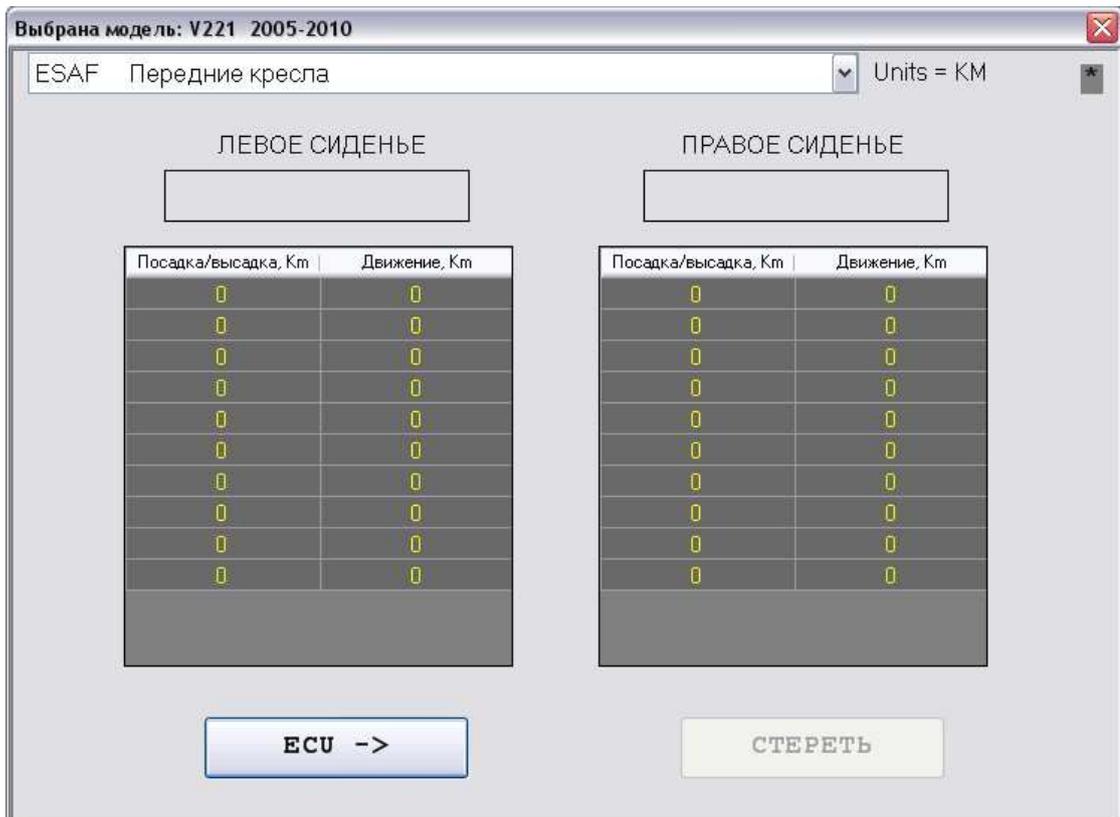

Press button "ERASE" to clear the data in these tables. If it is not erased by the button on the got or muffled engine it is necessary to move randomly various parts of seats using seat buttons, at an open door, at the closed door, or to reprogram seats modules.

These km values in table have description, it is possible to look using StarDiags.

Working with ZGW

The ZGW window shows km value at total clearing of malfunctions memory in the car.
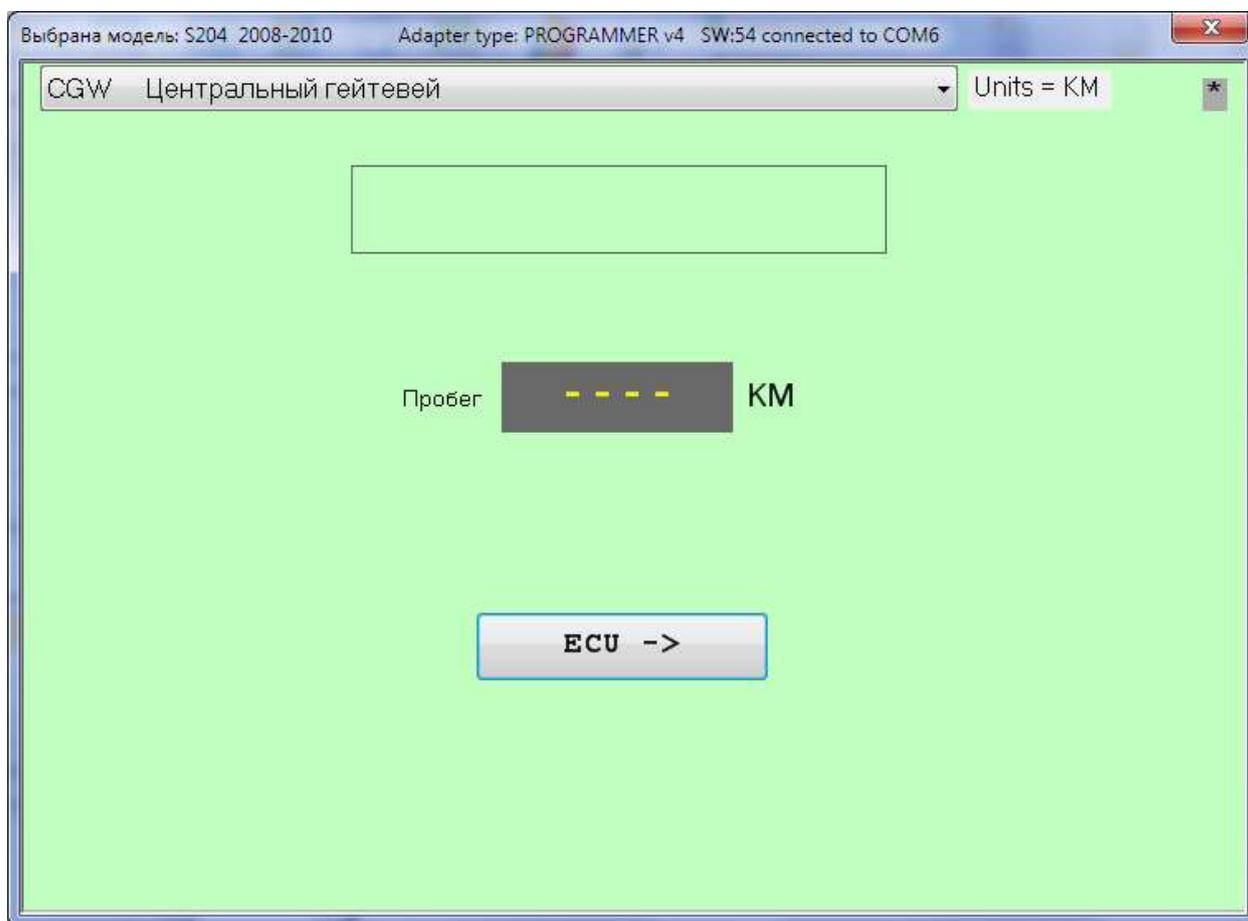
This value will change after the next total errors erasing in the car.

Working with ISM

The ISM window shows the km value in module ISM. This value usually equal with value in a dashboard, corresponds itself after the car wakeup.
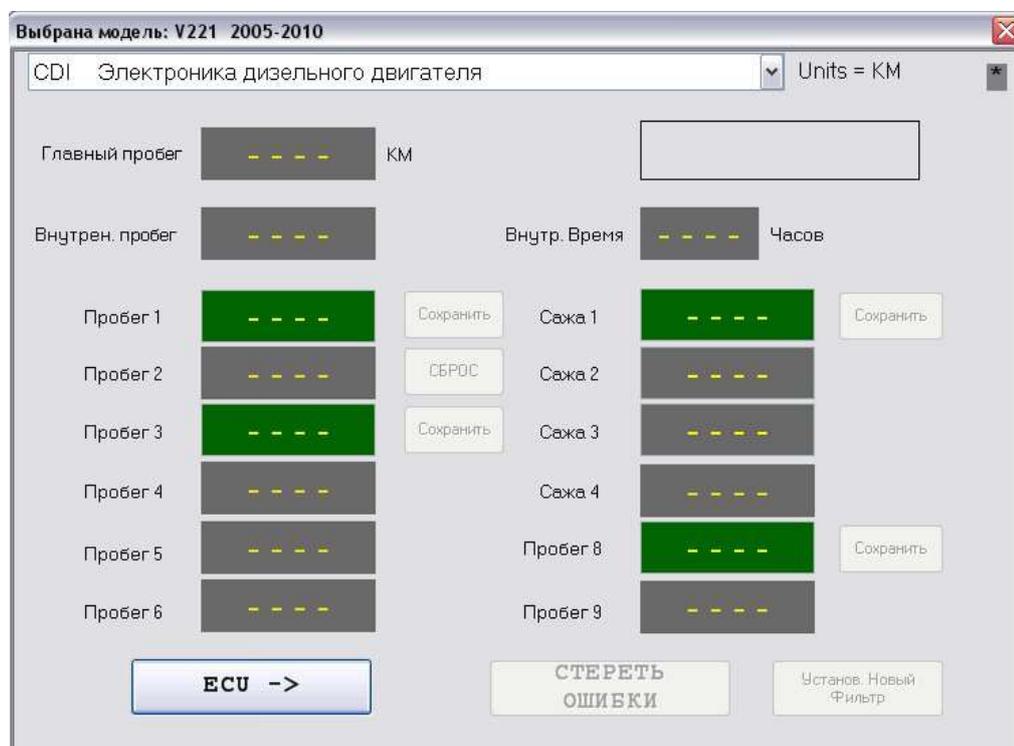
Working with SRS

The SRS window shows the working time in hours saved in the SRS module.

To change this value while it is possible only manually, directly programming the module EEPROM of SRS module using any programmer tool.

Working with CDI

The CDI window shows information from some diesel engine control modules: CDI-V(Vito), CDI-D, CDI-D2, CDI4 и CDI5.


The Cleaner program has no yet complete formulas for password access into some modules therefore if the program will inform on necessity to connect in parallel "StarDiagnosis" work with this module is possible only at connection of cable StarDiagnosis in parallel with MBcleaner cable (MBclener cable must be connected in parallel using OBD Y-cable or connecting just 3 wires: CANhi (6), CANlo(14), GND(4,5) from MBcleaner Adapter. At first need to "enter" into the module menu "Actual values" using StarDiagnosis, only after that you may press the «ECU->» button in MersCleaner software.

Fields "Internal Km" and "Intern. Time" shows the data which module CDI counts independently, they are not connected with the data in a Dashboard. This data can be changed only by means of module memory content correction manually only, using any programmer software.

The data in green fields can be corrected manually, but it is possible to simply press the button "Set new P.F.". Replacement procedure of Particle filter on "new" will be thus executed, and all km values which of them is possible to change through OBD, will be changed automatically.

Adapter and Filter firmware updating

For an entering into this menu you must click quickly 5-6 times on a symbol '*' in the right top corner of a Cleaner window.
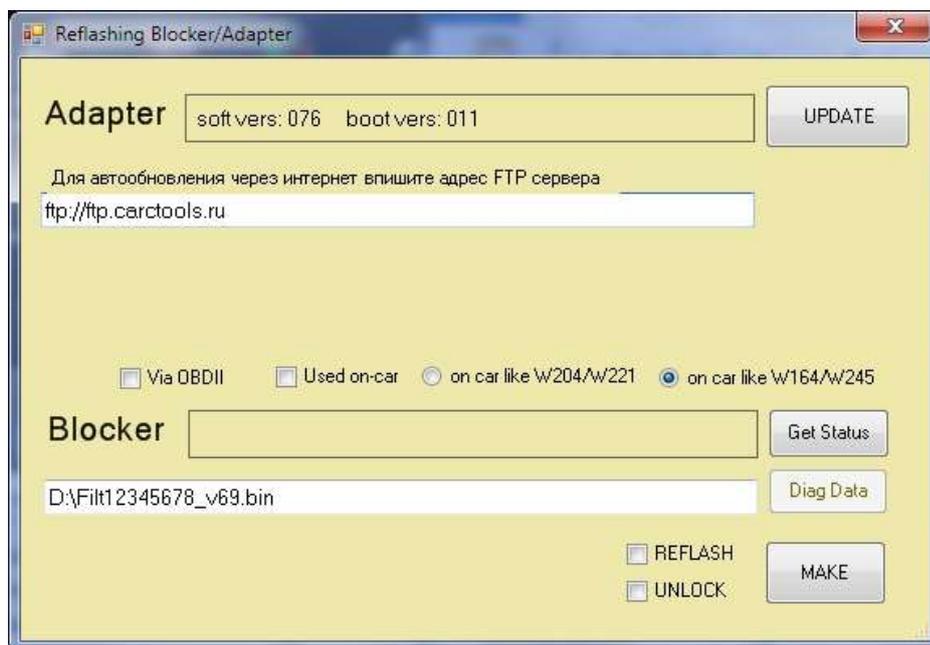
The top half of window serves for the adapter updating and information.

At window opening there will be requesting connected adapter version, the information will be shown in the field of an adapter condition. In this case the loaded into the adapter version is SW 21 with date 08.04.2010. If you like to update an adapter firmware manually, then you must to check up first the presence of access to the Internet, check up correctness of a writing of a way to the FTP server: **ftp://ftp.carctools.ru** in the path field, and then press Reflash button. At the end of updating, in the Adapter condition field the new firmware version and date will be shown.

The filter firmware updating can be spent as on a table (using the scheme shown on next pages), and through a car OBD socket, without taking out a filter from the EZS. For firmware updating it is need to request a filter firmware by the manufacturer, having sent your USB Adapter ID number, after receive answer with binary file by filter manufacturer you need to specify a correct way to this file in a white field manually or double click on the field with a file way. If you like to make just a filter «UNLOCK» procedure you doesn't need a special binary file, you can set in the file way field a way to any of your existing *.bin files on your computer because nothing need to be reflash in the filter. After that you must choose a correct mode of communication with a filter by means of installation of tags over a field of the Status of a filter.

"VIA OBDII" – if the filter is installed inside car EZS, communication via OBD car connector.

"Used on car" – Connection type is "on table" with used (locked) filter:

      "On car like W204/W221" – filter was installed into Fast CAN bus (500K).
      "On car like W164/W245" - filter was installed into Slow CAN bus (83K).

Apply power +5v or +12V on a filter, click the button "GET STATUS". In the status field there will shown the current filter firmware version and date. For the filters made after 01.2012, there is active a button for reading the internal filter status, allowing to estimate its working after installation in the car.

Next step is choosing what you like to do with filter :
"REFLASH" – firmware reflashing, require the binary file received by manufacturer.
"UNLOCK" – Filter unlock procedure (used for fixed protocol and speed to universal state with autodetect again).
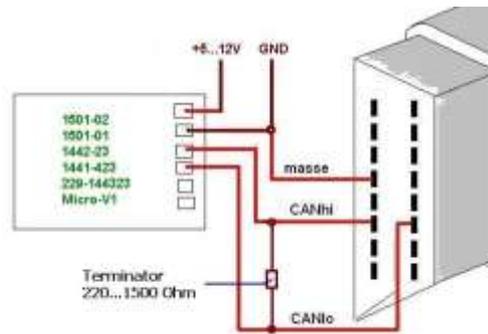After procedure choosing click the MAKE button to start selected procedures.

Filters connection Schemes "On Table" for firmware update

Connection for older filter (year 2010):
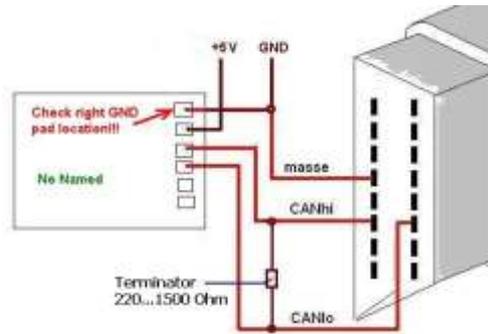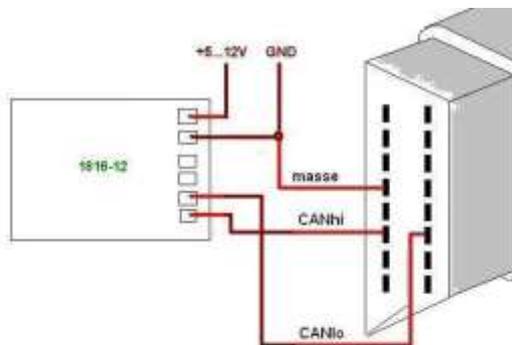

Connection for filter (year 2011-04.2012):

Connection for filter (05.2012):

For W164 (1816-12):   Universal (1815-12, 1815-13):