

DIAGSPEED

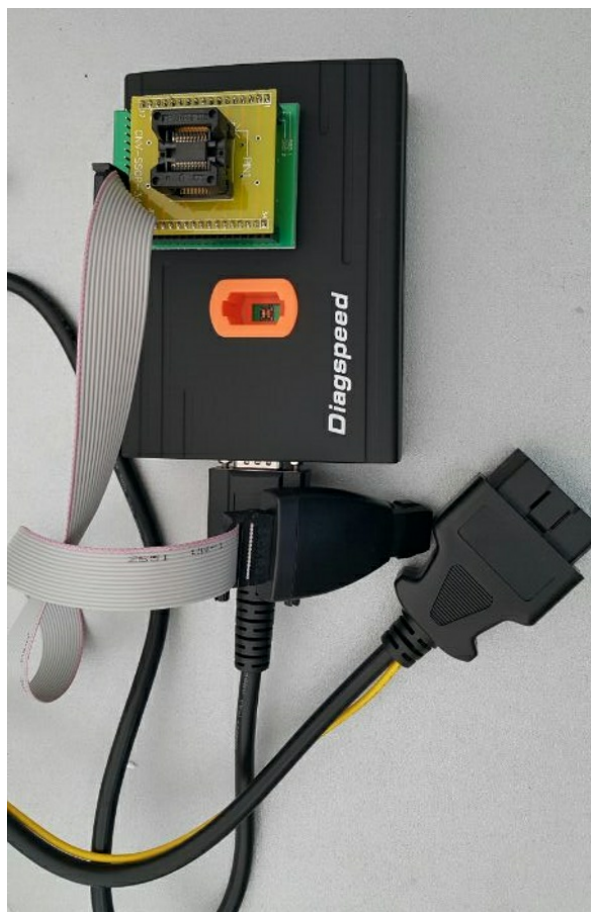


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1 INTRODUCTION

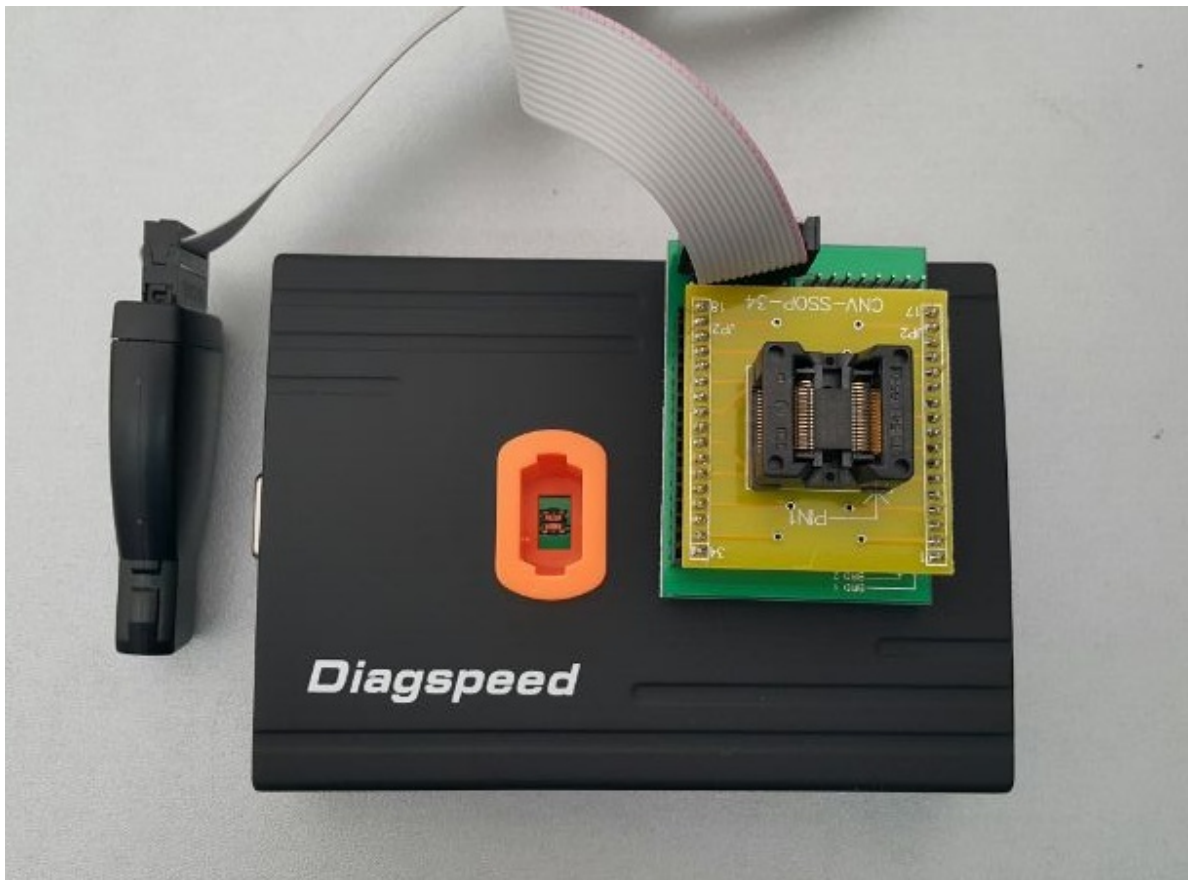
WARNING

**ALL OPERATIONS WITH
EIS / KEY / EVL / GEARBOX ECU
YOU MAKE FOR OWN RISK**

**MANUFACTURER SHALL NOT BE LIABLE FOR
IMPROPER USE OF DEVICE**

**TO WORK WITH DEVICE
INTERNET CONNECTION REQUIRED**

**IF YOU FIND ANY "BUG" IN SOFTWARE
PLEASE MAKE PRINT SCREEN
WRITE YOUR PROBLEM
AND SEND VIA MAIL TO YOUR SELLER
SCREEN + INFO
WE FIX THE PROBLEM AS QUICK AS POSSIBLE**



MB TOOLS device is designed to work with blocks of Mercedes, within the system of protection

set consists of

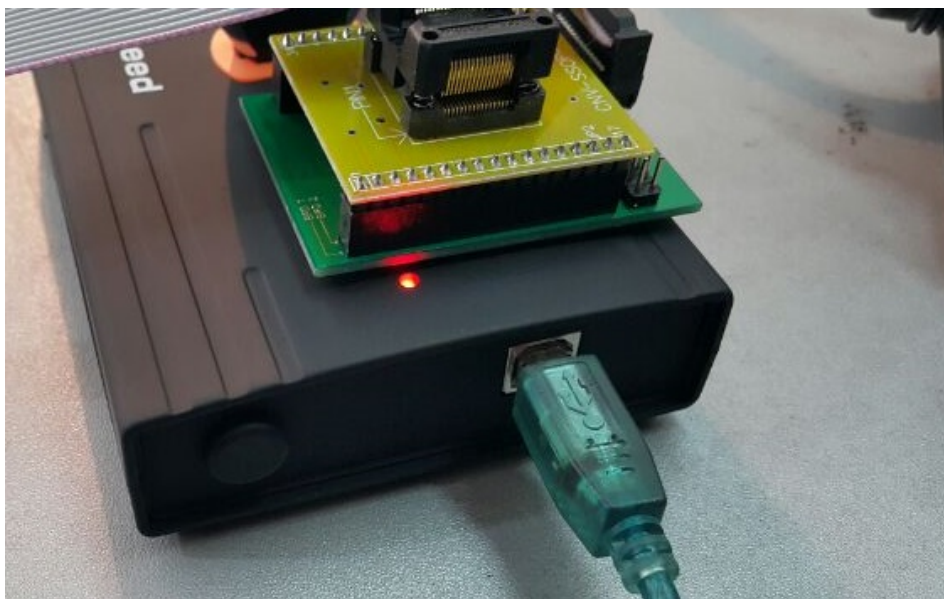
- main unit
- NEC BOARD
- IR Key Reader (Special Key)
- cables set (OBD2 cable and pins cable)
- DC power supply 12V (Maximum consumption - 950 mA)

1.1 FIRST START

Unpack and install software

files (**regkey.dat** and **MB_help.chm**) copy to installed program folder (C:\Program Files\MB Tools MB\...)

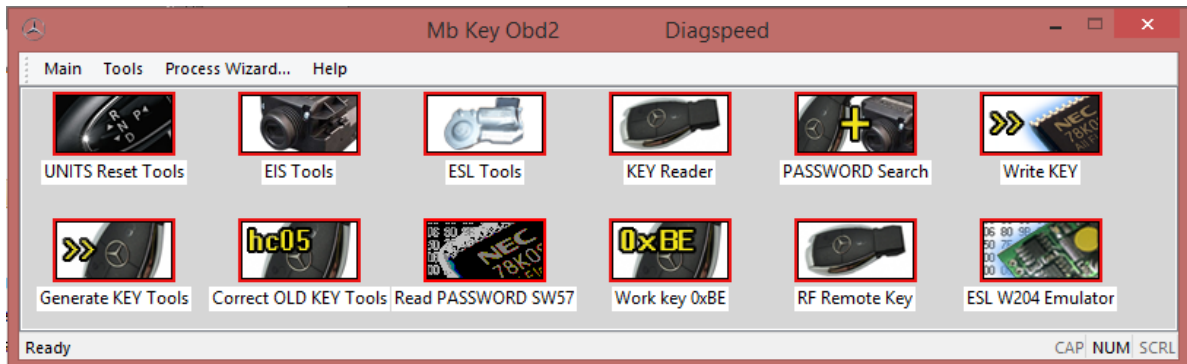
Install drivers **USB FTDI D2XX** (if you not have installed) . USB should work not to emulate com port



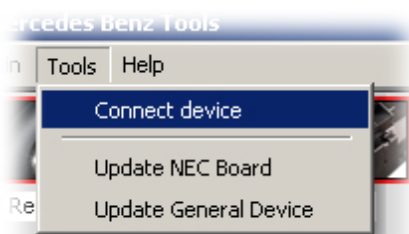
connect DEVICE to **USB** and **POWER SUPPLY** from **OBD2**



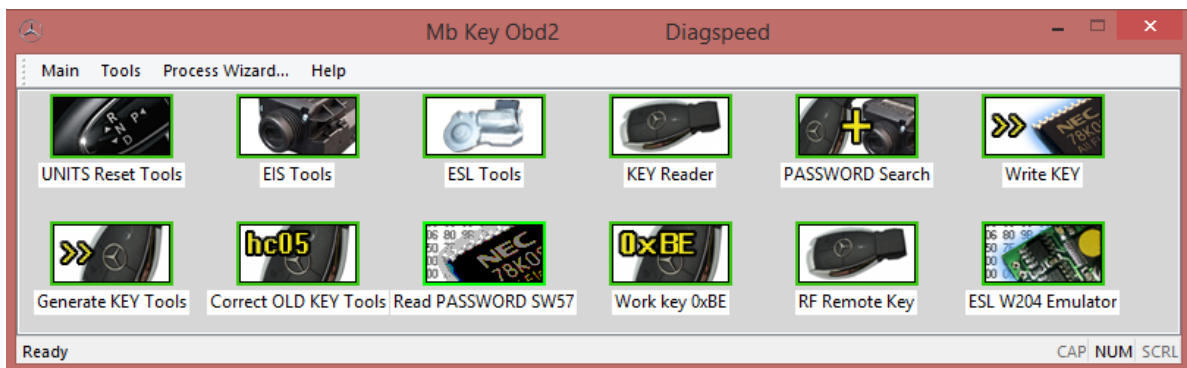
find on desktop **MB Tools** icon and run



go to **Tools** and click **CONNECT DEVICE**



...wait



now you can work with DEVICE

2 SOFTWARE DESCRIPTION



7-G Reset OBD2 Tools



EIS Tools



ESL Tools



KEY Reader



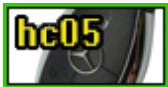
New KEY Generator



Write KEY

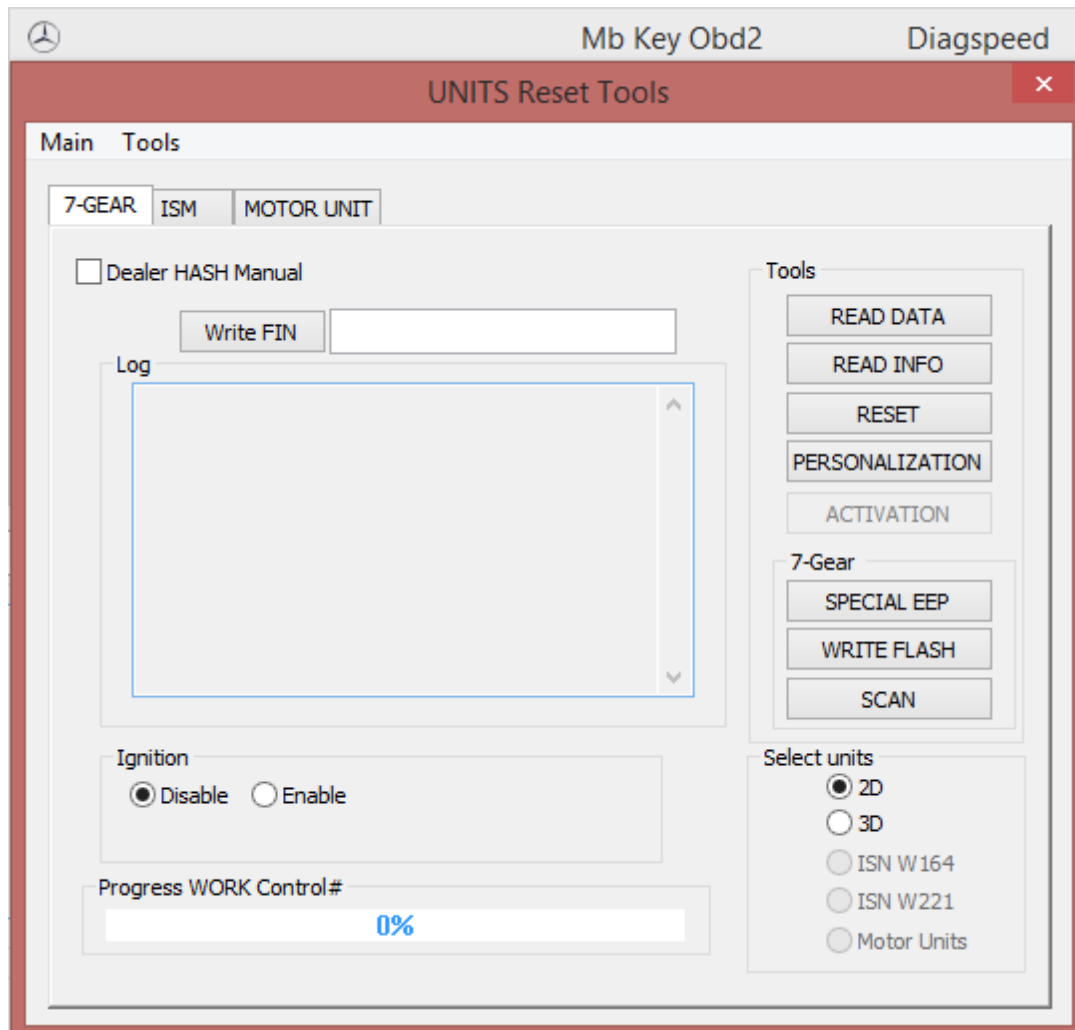


Generate Key Tools



Correct OLD KEY Tools

2.1 7-G RESET OBD2 TOOLS



7-G RESET Tools is designed to **READ/RESET/WRITE** 7Gtronic GEARBOX ECU

IMPORTANT

IS NOT POSSIBLE INSTALL TO CAR USED GEARBOX ECU WITHOUT RESET

READ DATA - read BLOCK data from gearbox ecu

READ STATUS - read gearbox ecu status NEW/USED

RESET GEAR - reset to "0 - NEW" used gearbox ecu (NEED CONNECT WITH SERVER)

WRITE FLASH - flash gearbox from "own data file"

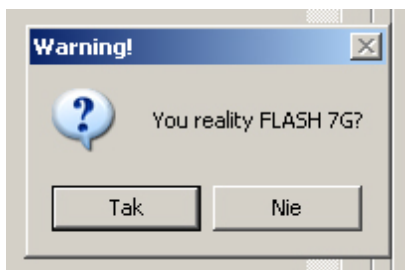
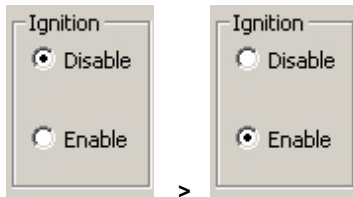
SCAN - at this moment this button it's NOT ACTIVE

=====

... if you want **READ DATA / STATUS** from GEARBOX ECU

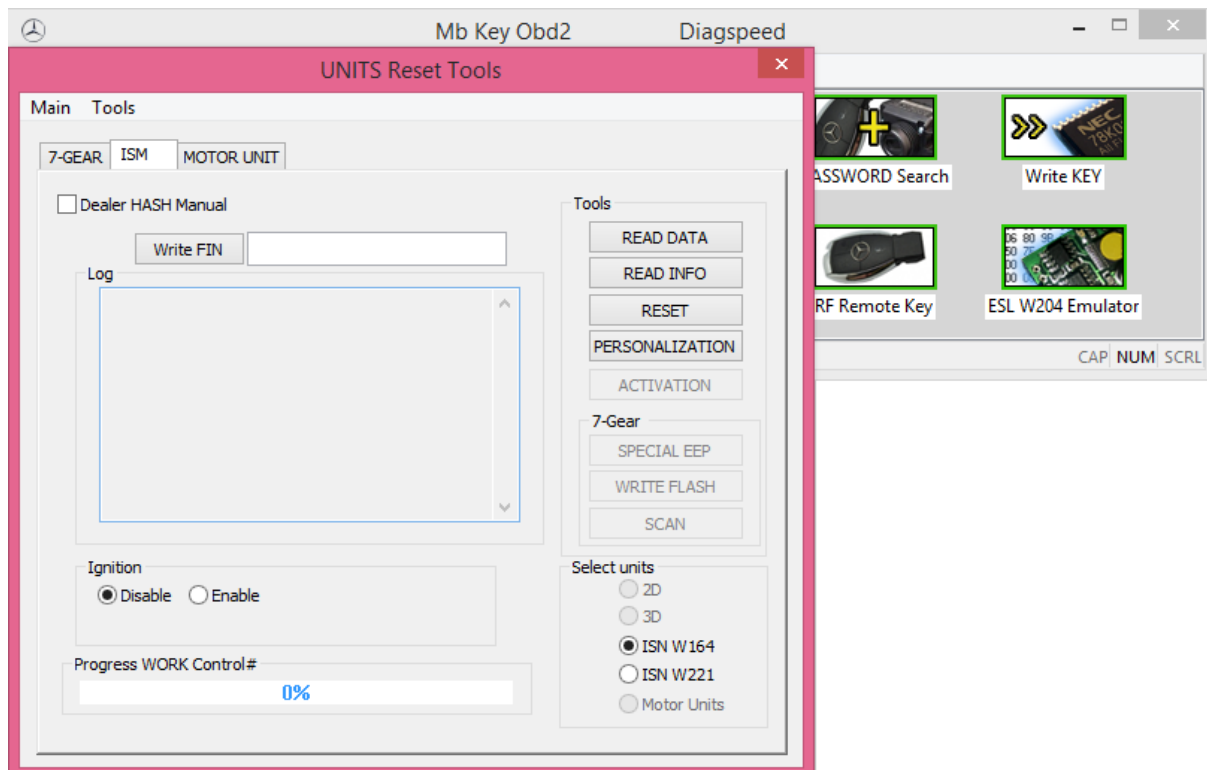


... if you want make **RESET GEAR** (CAN must be ENABLED and Ignition must be ENABLE)



to writing flash **7G Tronic GEARBOX ECU** you need special flash files

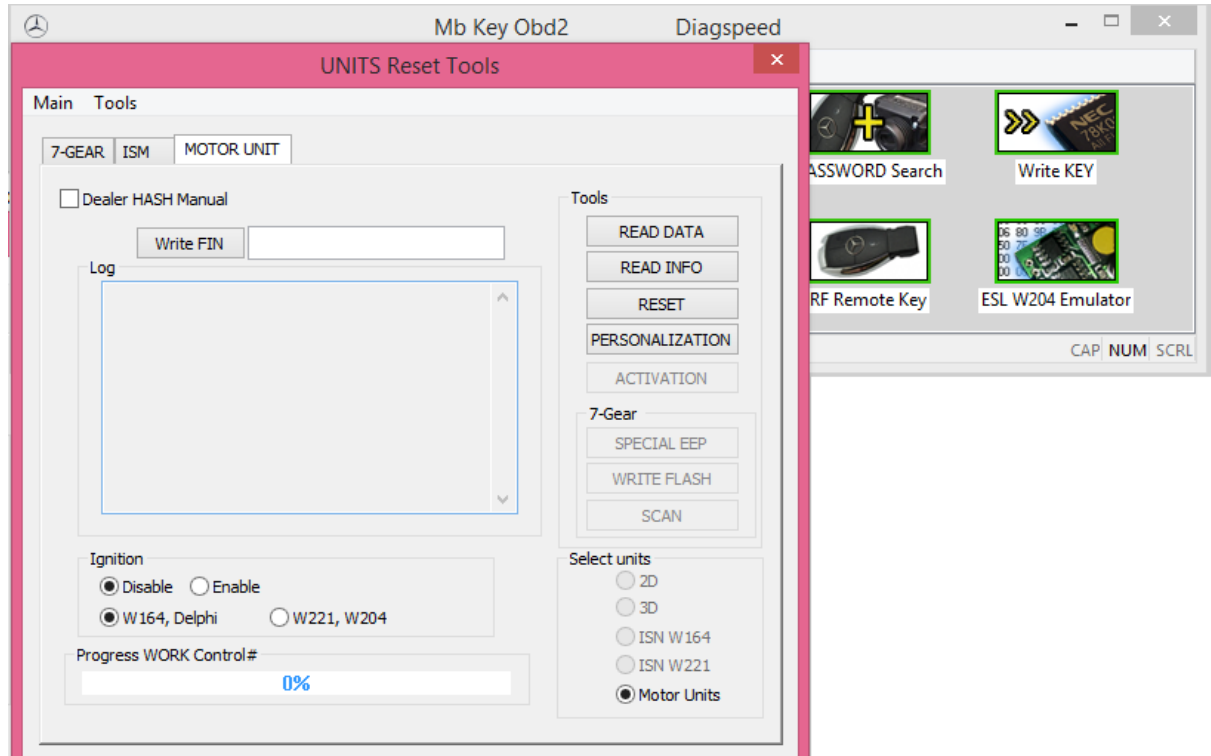
2.1.1 ISM



select **"ISM"**

- 1) **"READ DATA"**
- 2) **"RESET"**
- 3) **"READ INFO"**

2.1.2 MOTOR UNIT



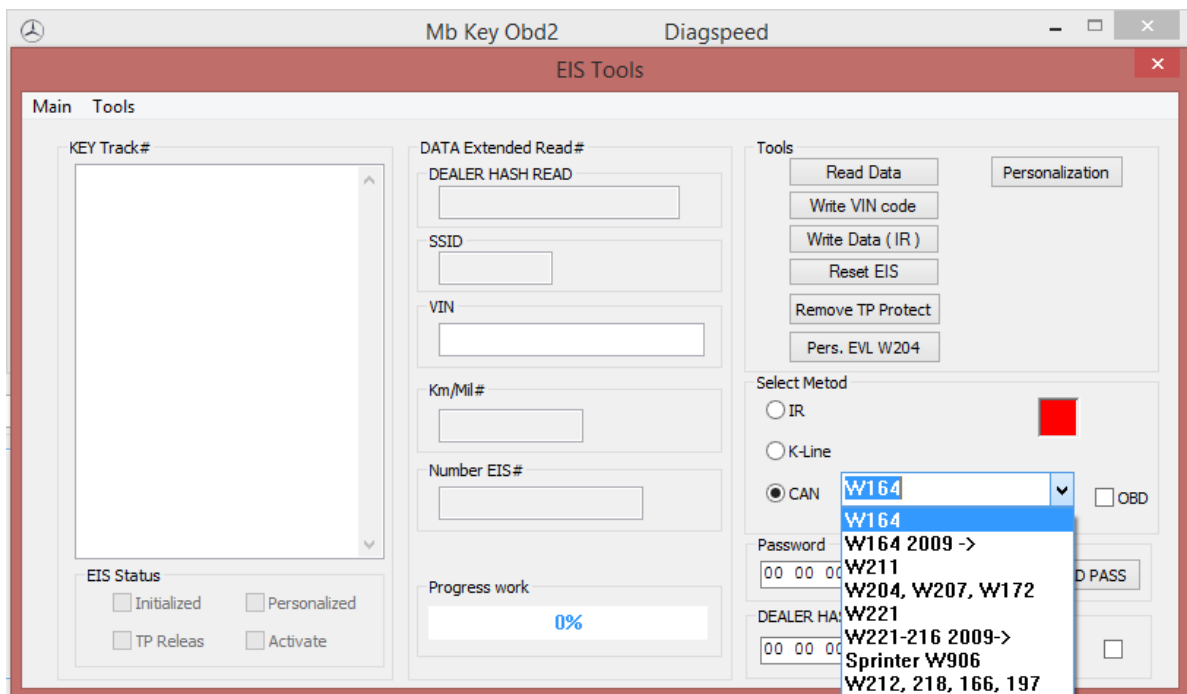
select **"MOTOR UNIT"**

select **"W164"** or **"W221, W204"**

it will automatic detect ecu

- 1) **"READ DATA"**
- 2) **"RESET"**

2.2 EIS TOOLS

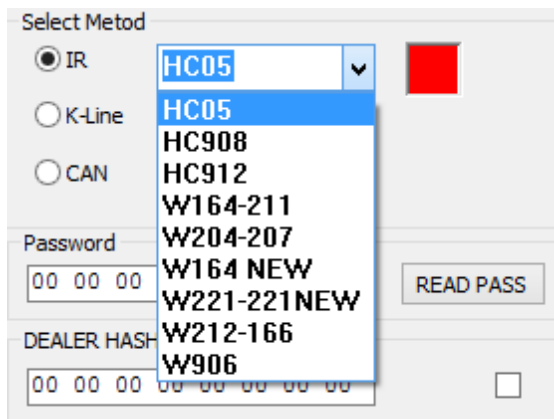


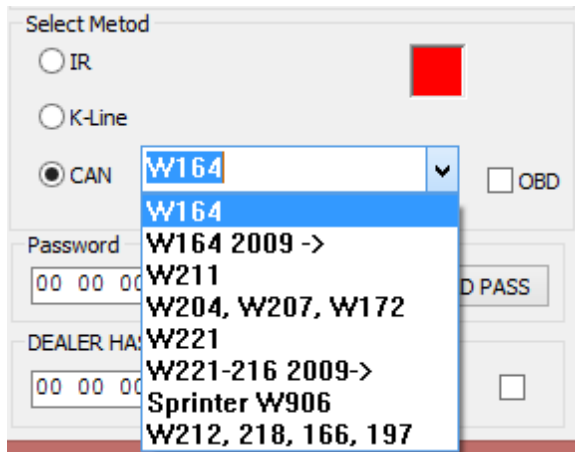
EIS Tools is designed to work with electronic ignitions modules (MOTOROLA & NEC)

connect **EIS** to **POWER** and to **DEVICE**

connect "**Special Key**" to **DEVICE**

select **READ EIS** metod...





push **Read Data** and WAIT...

IMPORTANT

if you want read **EIS** via **IR**
first push **Read Data** and than put "**Special KEY**" to EIS

if you want read **EIS** via **CAN** or **K-line**
put "**Special KEY**" to **EIS** and push **Read Data**

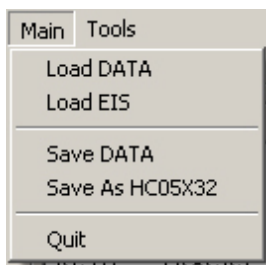


Read Data - read data from **EIS**

Write Data (IR) - write data to **EIS** only via **IR**

Reset EIS - make reset **EIS** (if you know PASSWORD and SPECIAL HASH)

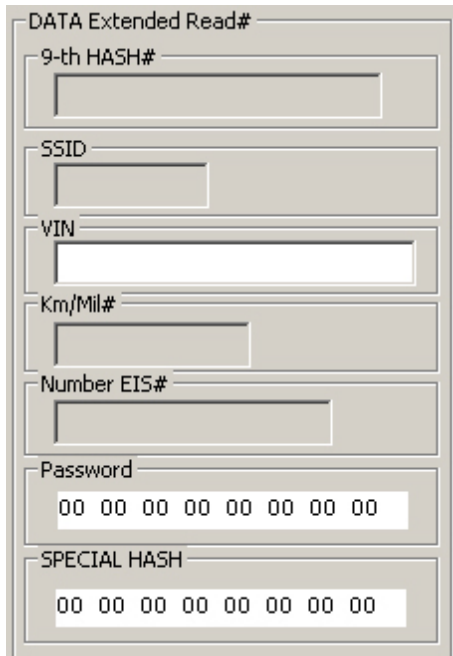
Change VIN - change VIN number in EIS



here you can **LOAD** and **SAVE** stored data

IMPORTANT

after **READ** always **SAVE** your data as HC05X32



DATA Extended Read#

9-th HASH#

SSID

VIN

Km/Mil#

Number EIS#

Password

SPECIAL HASH

in this place you can see data after READ EIS

9-th HASH

SSID

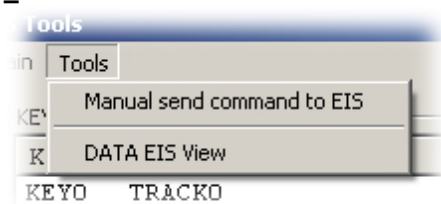
VIN number

KM/MIL (if stored in EIS)

Number EIS

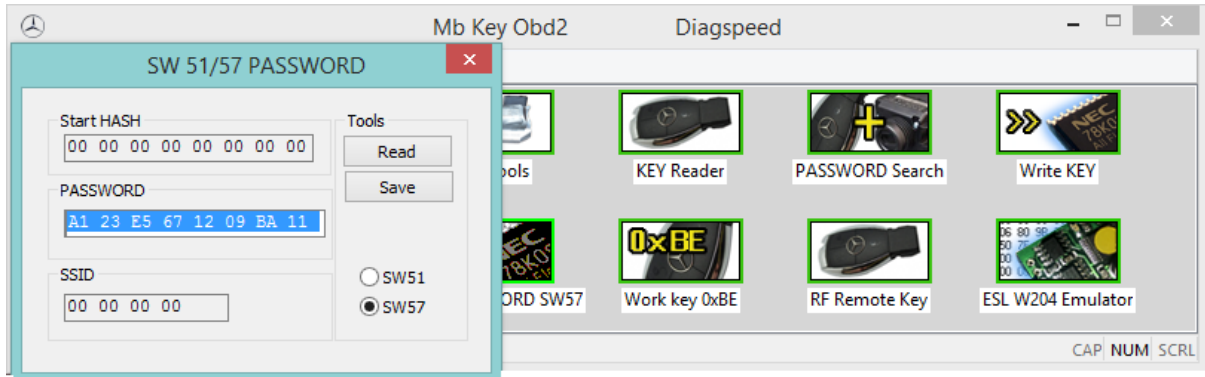
here also you can write **PASSWORD** and **SPECIAL HASH**

this data is needed to **RESET EIS** and **WRITE EIS via IR**

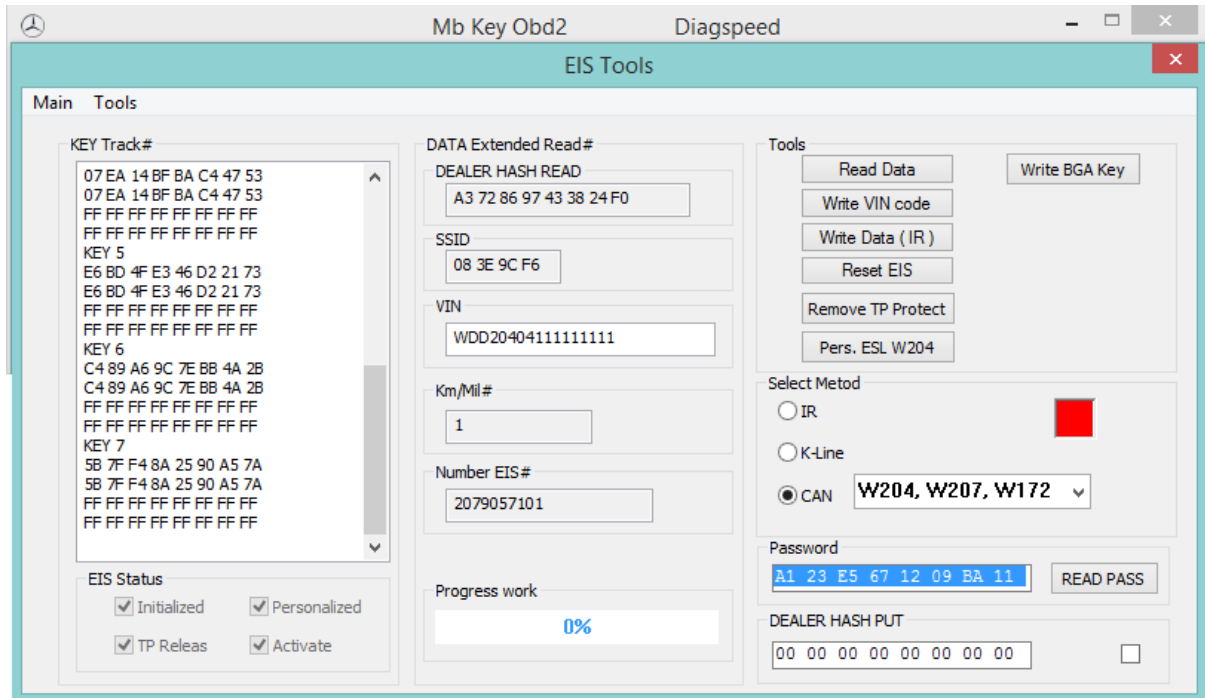


go [here](#) and read info about **Data EIS View**

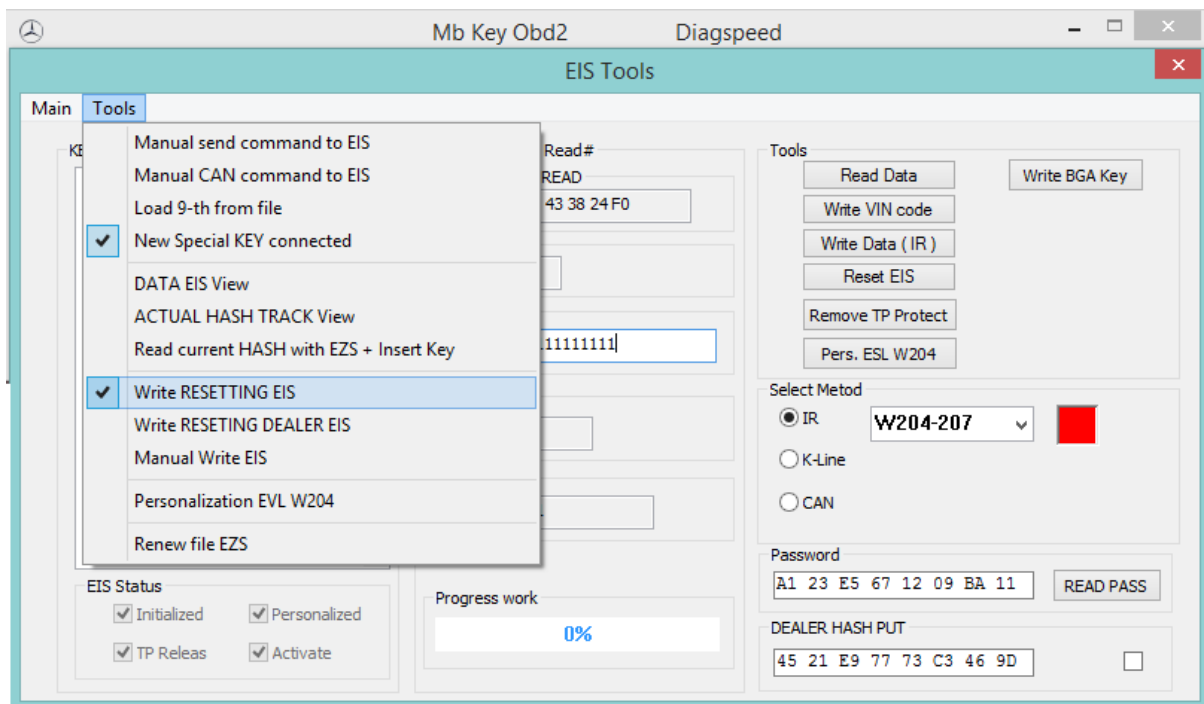
2.2.1 RESET EIS ESL



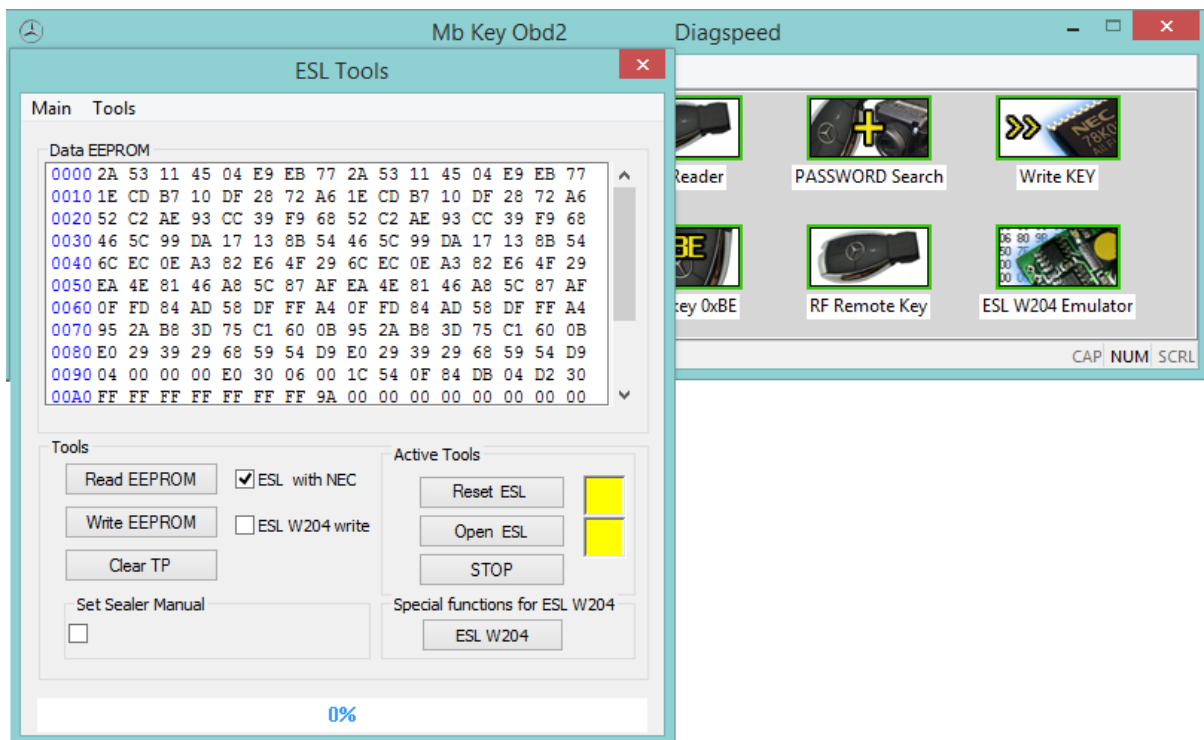
- 1) select **SW57 READ** copy password after **SAVE**
- 2) read **EIS** & write password after save as **HC05X32**



- 3) select **IR**, select car & press **RESET EIS** after put special **IR key** and press **YES**
- 4) open **TOOLS** select **WRITE RESETING EIS** after load save **HC05X32** after write data **IR**

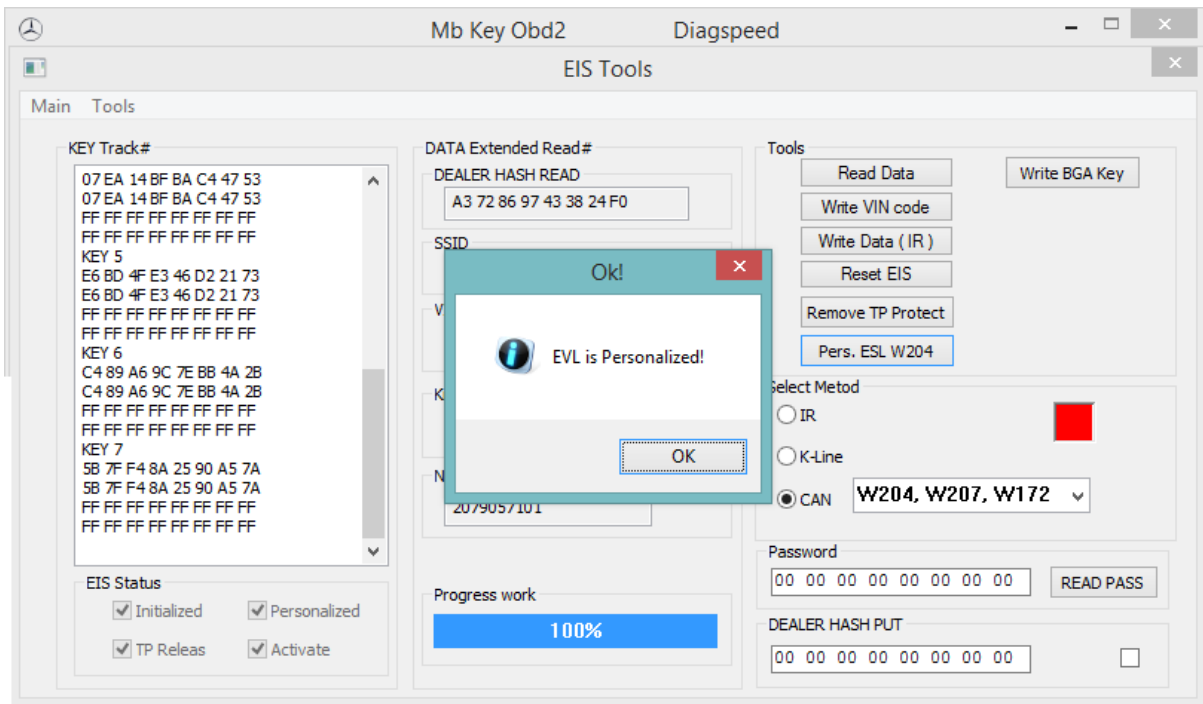


5) go to **ESL**



6) select **ESL with NEC**, **READ EEPROM** after **RESET ESL** after press **CLEAR TP**

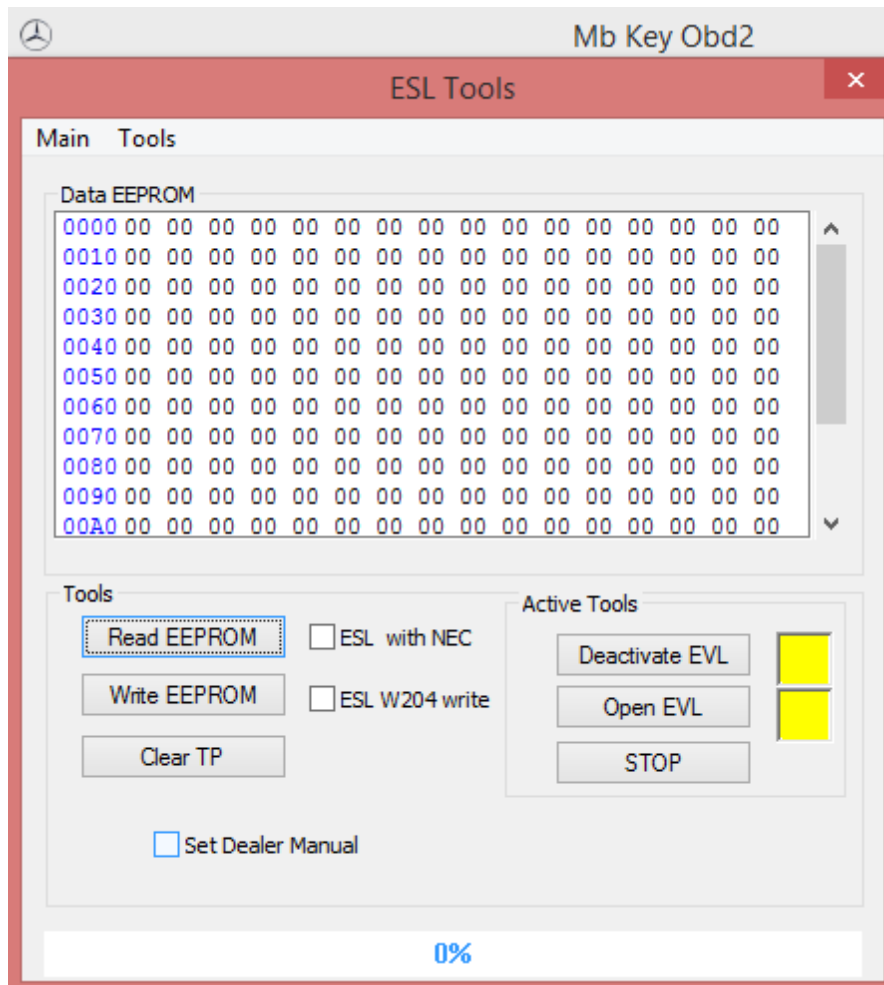
7) go to **EIS TOOLS** read **EIS** by **CAN** select **PERS. ESL W204**



8) write back win number

9) after open generate tools load save file & generate Key

2.3 ESL TOOLS



ESL Tools is designed to work with **MB ESL** module (electronic steering lock)

connect **ESL** (electronic steering lock) to **DEVICE** (see ESL CONNECTION)

if you want read data from **ESL** push "**Read EEPROM**"

if you want write data to **ESL** , go to **Main/Load file** and push "**Write EEPROM**"

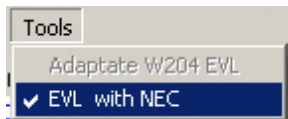
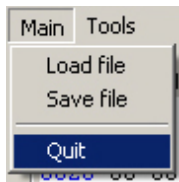
if you want to renew ESL press "Deactivate ESL"

IMPORTANT:

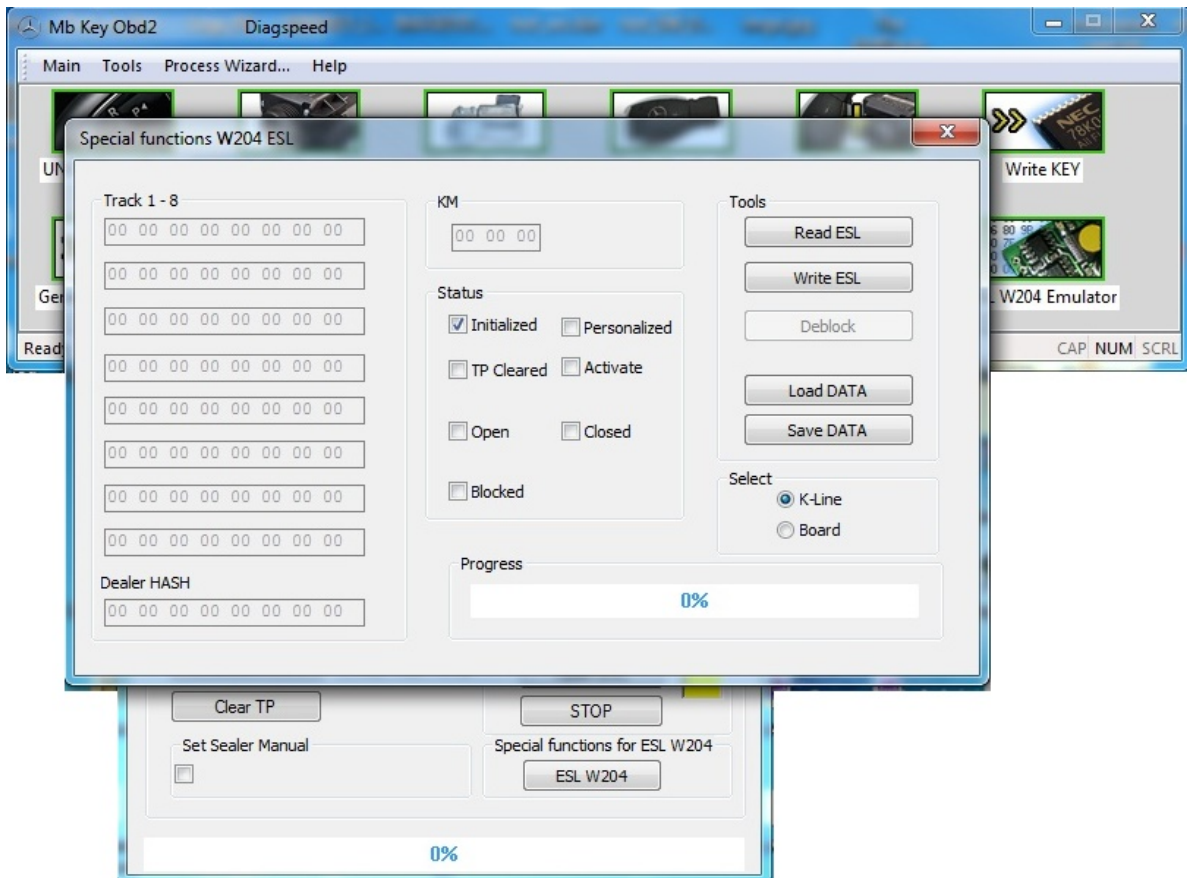
if you work with **OLD ESL** (ex. W210) with 2 ESL's lines (ESL1 & ESL2)

need switch **K-line** to ESL1 pin & ESL2 pin for **read/write** 1st & 2nd MCU

if you want **SAVE** or **LOAD** file , go to **Main**



if you want **READ ESL** with **NEC**
 ex. SPRINTER W906 / W204 / W207 / W212
 go to **Tools** and "mark" **ESL with NEC**
read EEPROM press "Deactivate ESL" after press "Clear TP"



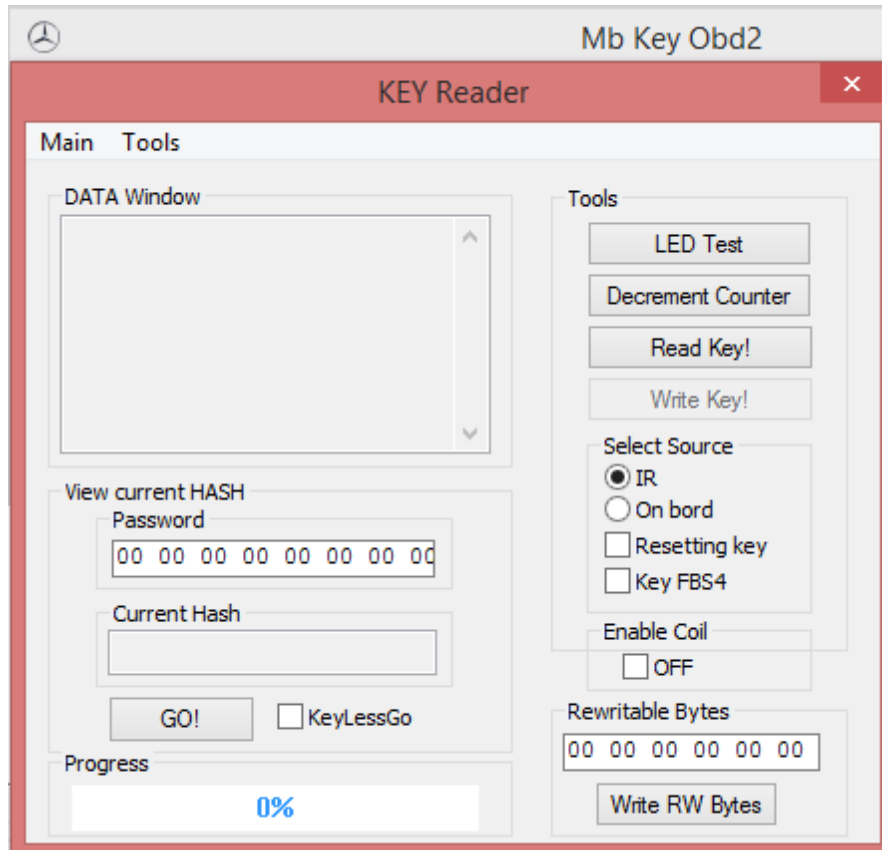
special function for **ESL W204 W207 W212**

select onboard desolder NEC from **ESL** & put on special adapter **ESL**

- 1) read **ESL**
- 2) **Deblock**

3) wait to finish

2.4 KEY READER



KEY Reader is designed to work with the car keys on IR channel or read the CPU from it on a stand

DATA WINDOW

ID Key : SSID (Serial System Identification) has a 4-byte pattern, some kind of VIN for the key and lock match

Count : designed for checking how many starts are left. The counts reduce the value by one with every start

Num of key : key number from 00 to 07. The total of 8 keys

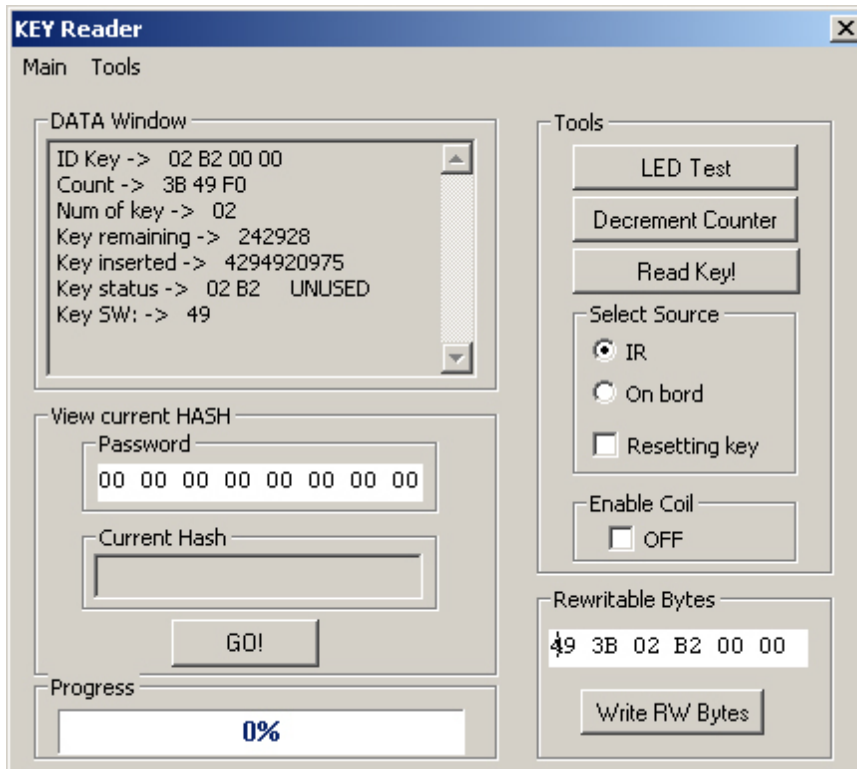
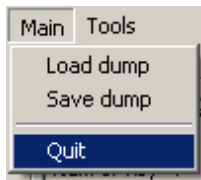
Key remaining :

Key inserted :

Key status : all info [here](#) (USED / UNUSED)

Key SW : ROM processor version

always after **READ KEY** you can **SAVE** your data



TOOLS

LED Test - check LED in KEY

Decrement Counter - key change it on 1 step (carefully use more than 100 changes could results to the fact that the key is not accepted lock)

Read Key ! - read all info from key

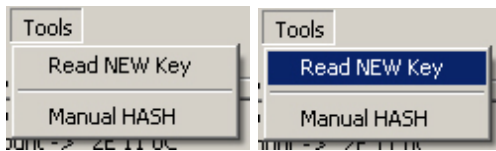
Enable Coil - tick when you work with OLD BIG FISH

In some cases, the client greatly quickly pulled the key from the ignition (key on Motorola) enough to put on the keys for a while under power

GO ! - for knowing the password key (write it in the top window) to get the current hash key

Select Source

you can Read Key via **IR** or **On board** (need desolder NEC MCU from KEY and install in NEC BOARD)



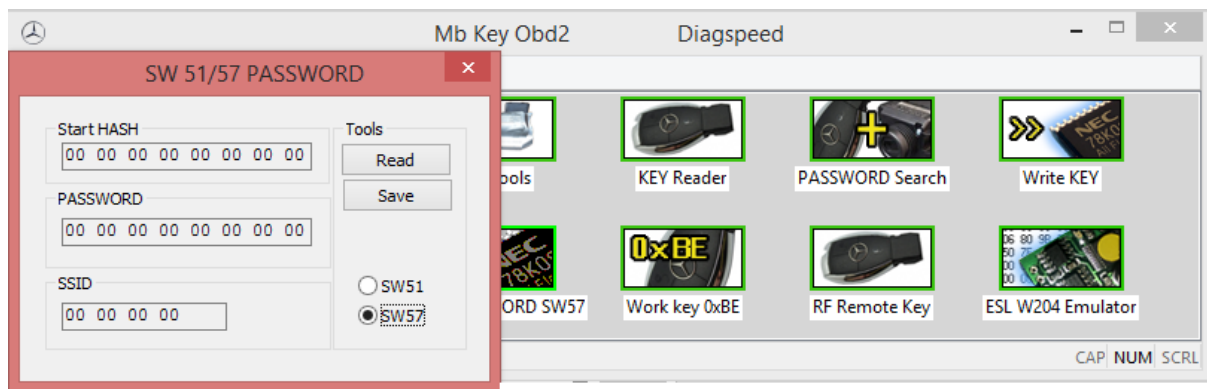
go [here](#) and read info about **Read NEW Key**

2.4.1 KEY STATUS INFO

Some examples of Status field

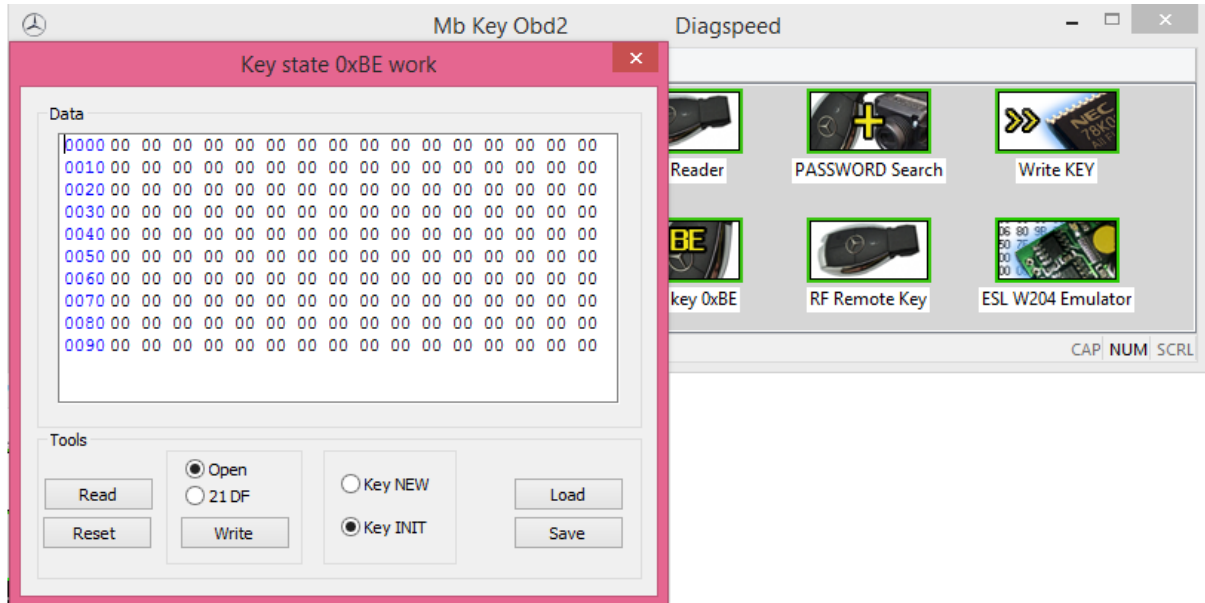
14 EC : faultless, adapted and activated key with the NEC or MOTOROLA processor
15 EB : faultless, adapted and activated key with the NEC processor
04 FC : adapted but NON activated key with MOTOROLA processor
05 FB : adapted but NON activated key with NEC processor
21 DF : key status with NEC processor ready for programming via IR (erased key)
00 00 : key status with MOTOROLA processor ready for programming via IR (erased key)
0C F4 : "orange" key status which will be discussed later

2.4.2 READ PASSWORD

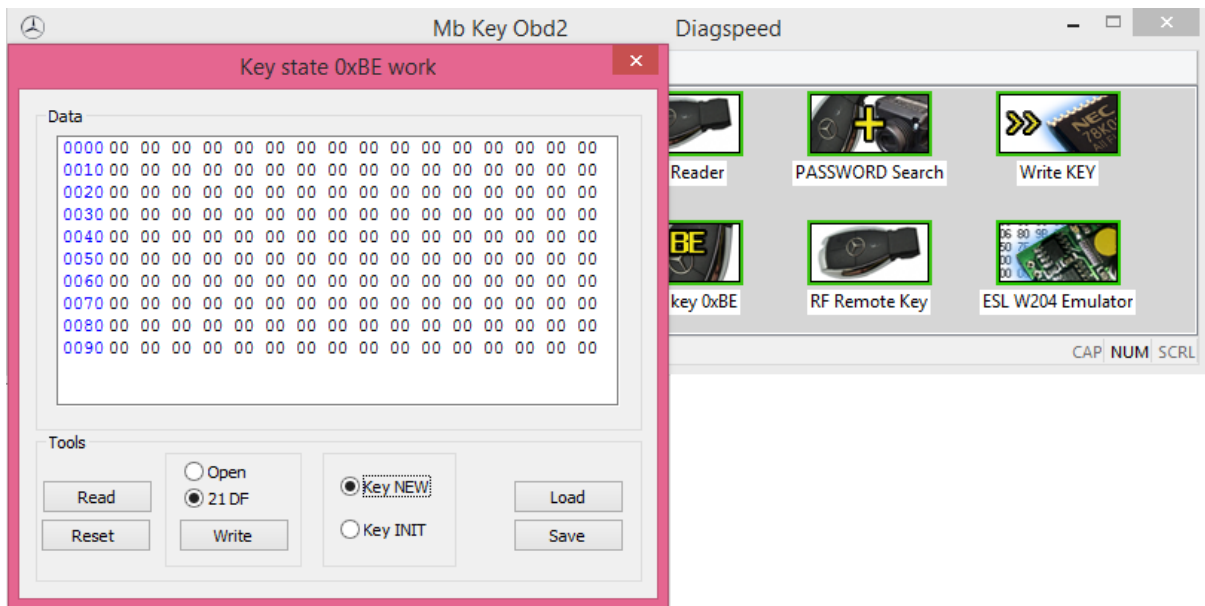


select "**SW57**" or "**SW51**" depend on the nec key
"Read" after **"Save"**

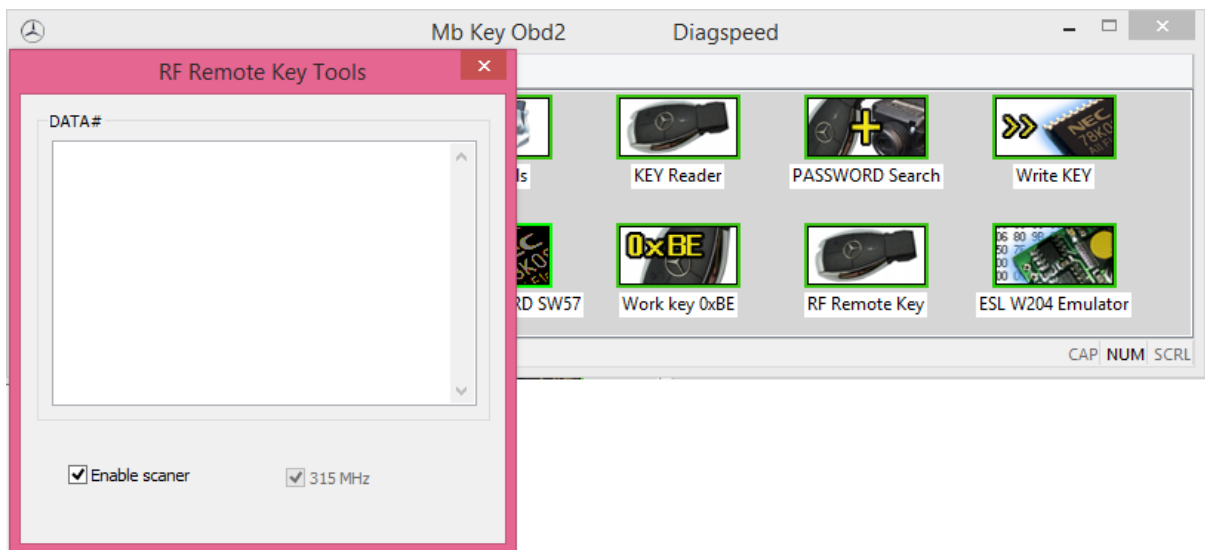
2.4.3 WORK KEY BE



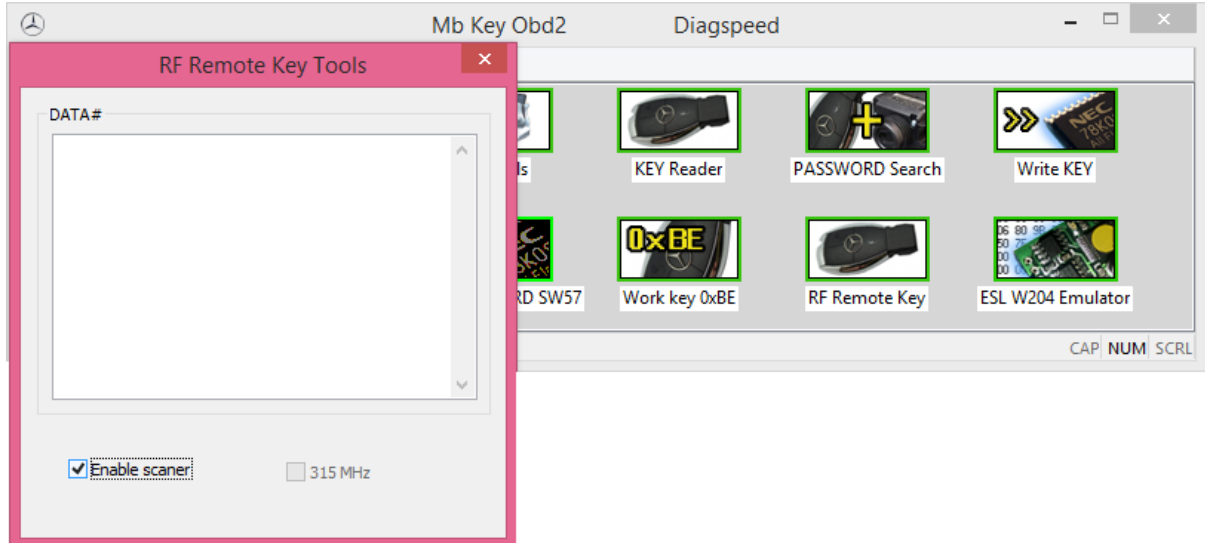
- 1) to read & reset key BE select **"Open"** & **"Key INIT"**
- 2) to write select **"21 DF"** & **"Key NEW"** "Load data" & press **"Write"**



2.4.4 RF REMOTE KEY



for test **RF Remote Key "315 MHz"** put check on **"315 MHz"** & check **"Enable scanner"**
 press remote key
 for test **RF Remote Key** for **"433 MHz"** remove check from **"315 MHz"** & **"Enable scanner"** press remote key

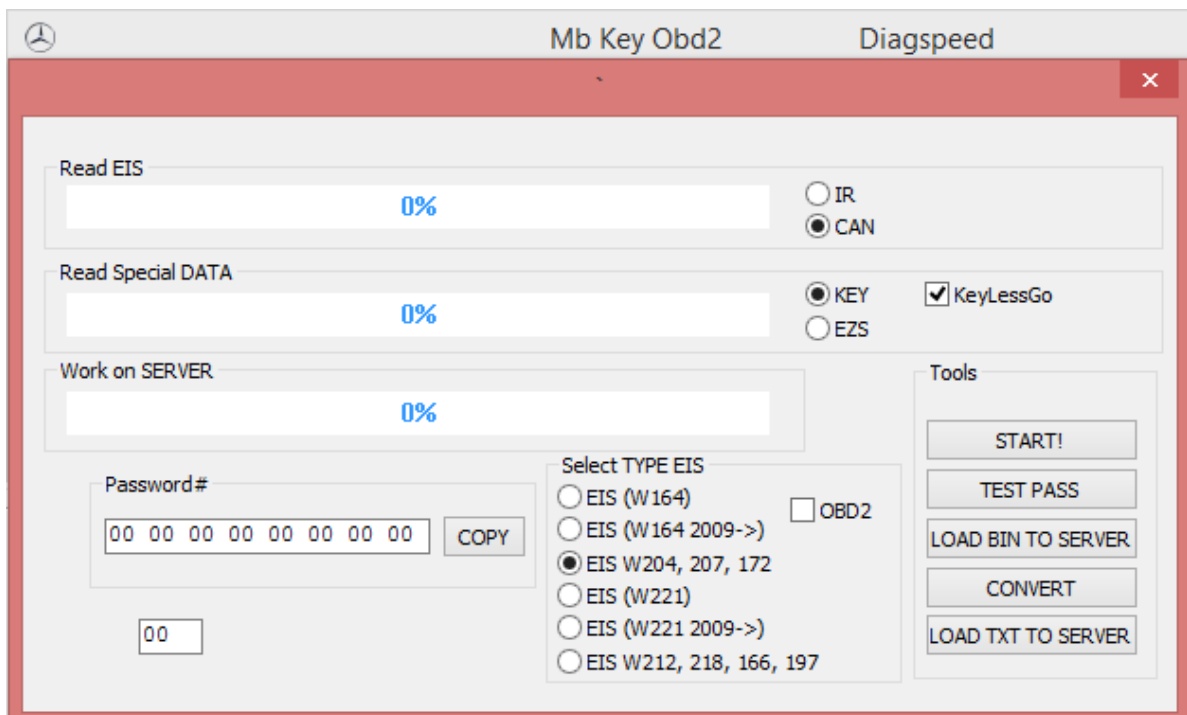


2.5 NEW KEY GENERATOR



NEW KEY GENERATOR is designed to work with electronic ignitions modules (NEC)

- 1) connect **DEVICE** by **OBD2** to **car** or on **BENCH**
- 2) put any key **BGA** or **Nec KeyLessGo** on **DEVICE**
- 3) select **TYPE EIS**
- 4) read **EIS** select **CAN**
- 5) read special data select **Key KeyLessGo**
- 6) press **START** and follow discription



select **EIS** type

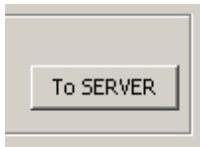
☐ IR
☒ CAN

☒ KEY ☒ KeyLessGo
☐ EZS

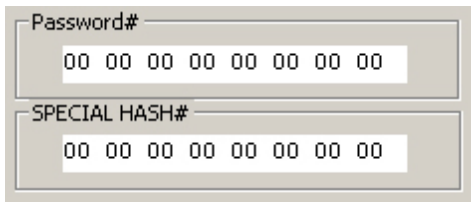
1) all **EIS** with **NEC**

when operation finished save your data to hard drive

next load your stored data to software
and push "**To SERVER**"
...wait

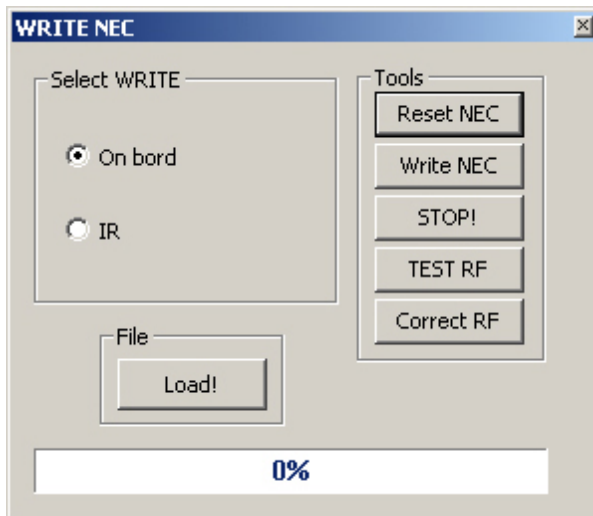


here you can see **PASSWORD** and **SPECIAL HASH**



save this data and open [EIS Tools](#)
now you can **WRITE / RESET EIS**

2.6 WRITE KEY



WRITE KEY (WRITE NEC) is designed to **RESET/WRITE** nec keys in two ways

Reset NEC

on board (need NEC MCU adapter)
via 3 cables

Write NEC

on board (need NEC MCU adapter)
via IR (if key it's clear)

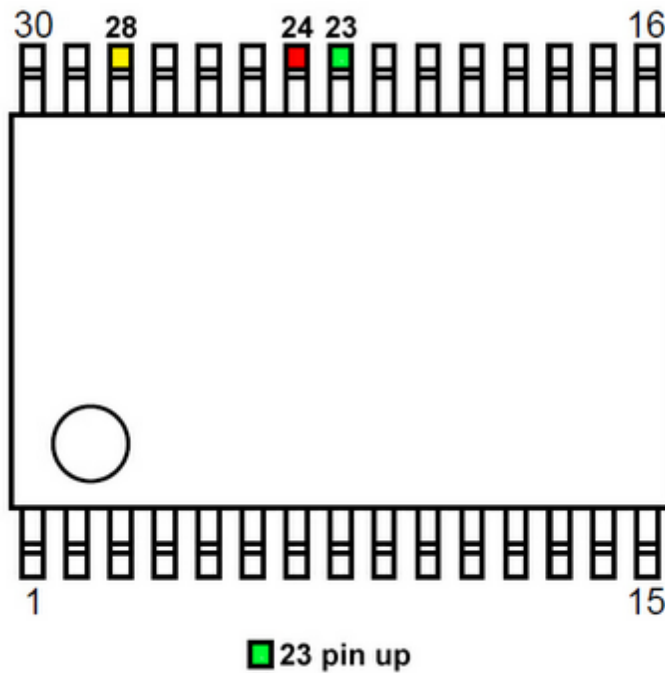
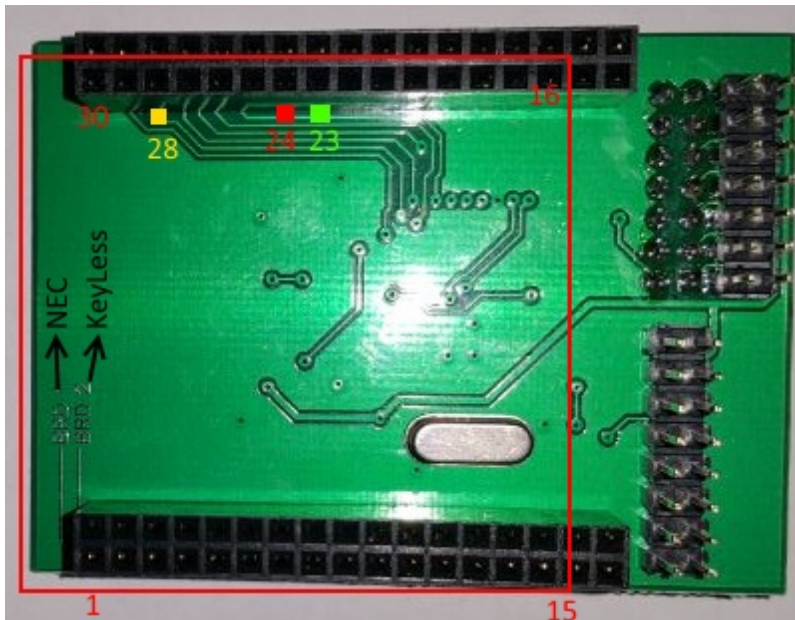
IMPORTANT

you cannot write USED (non clear) KEY via IR
first you must Reset NEC !
if you want write data to NEC , first you must LOAD file

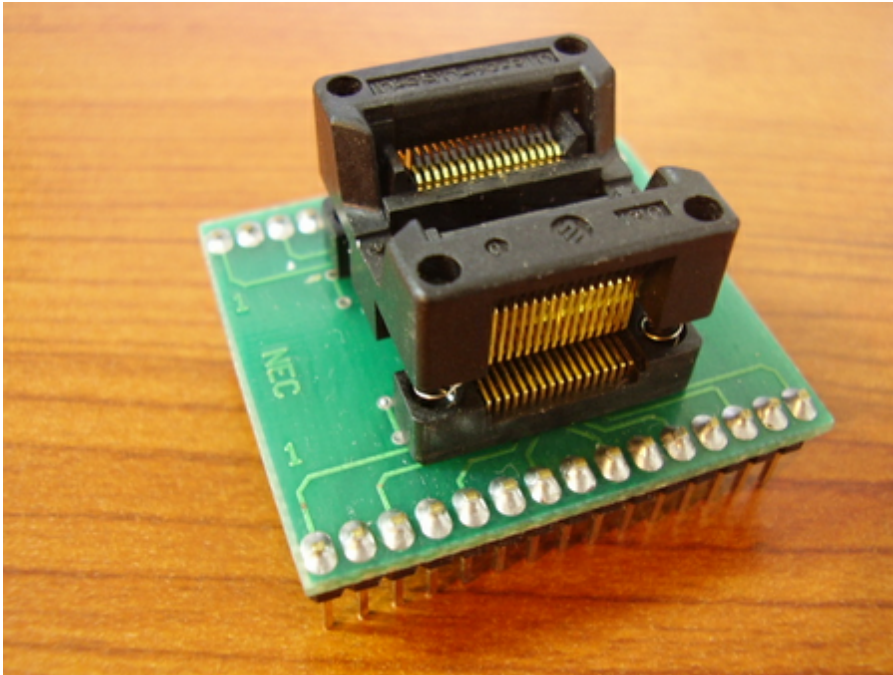
HOW TO CONNECT USED KEY TO DEVICE ?

to use **KeyLess** put socket on **BRD2**

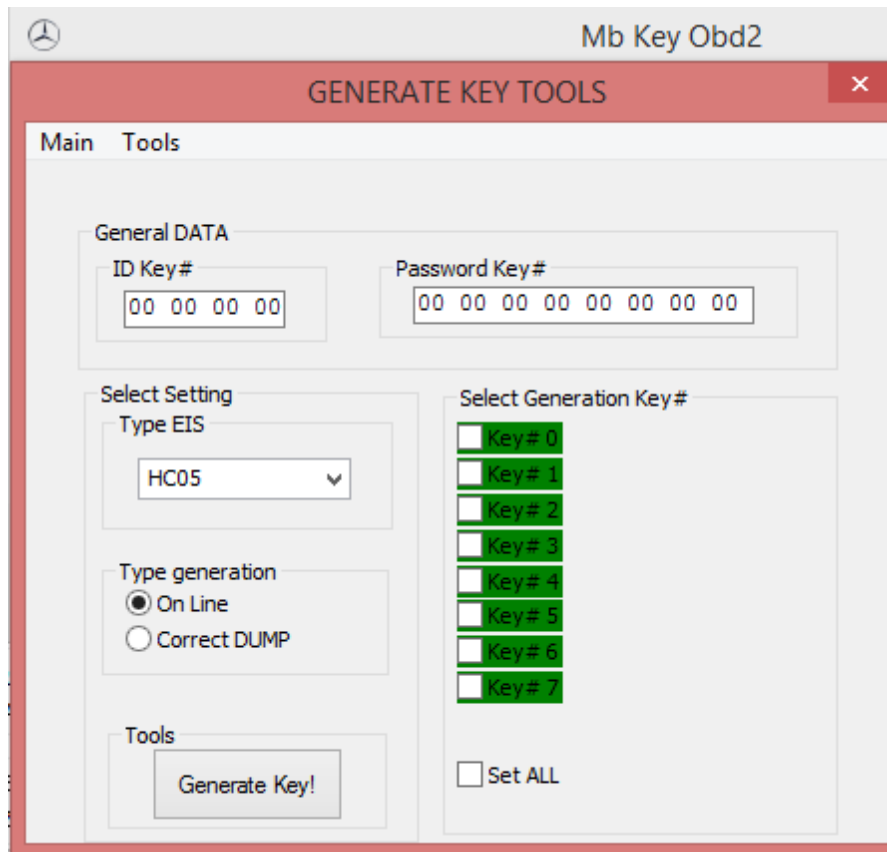
to use normal **NEC** put socket **BRD1**



NEC MCU adapter it's in set with device



2.7 GENERATE KEY TOOLS

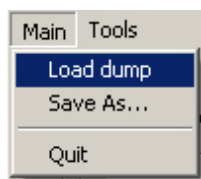


Generate KEY Tools is designed to generate keys in two ways

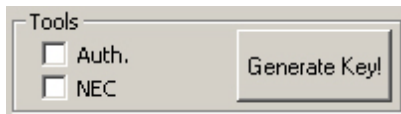


ON LINE GENERATION

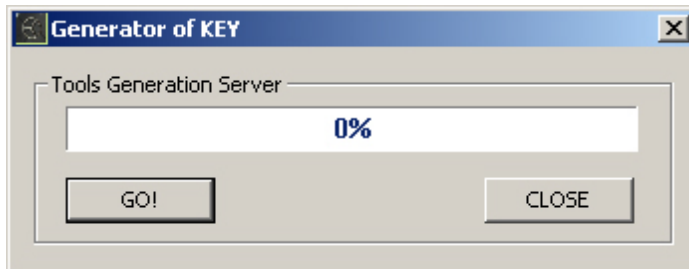
IMPORTANT
SOFTWARE AUTOMATICALLY SEEK
EIS Type & Key Type



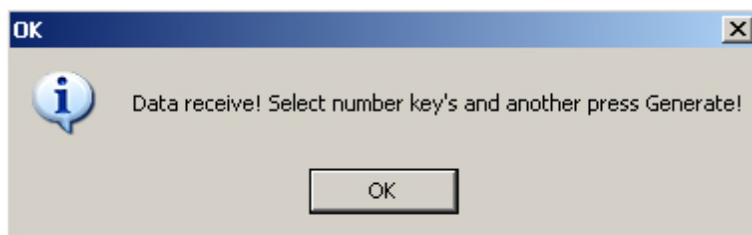
go to **Main** and **Load dump**



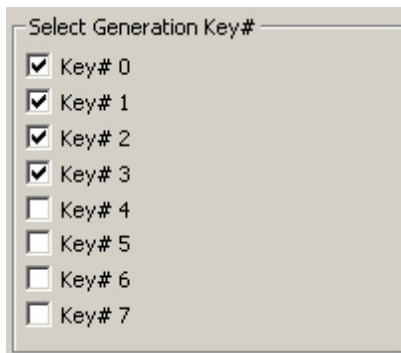
push **Generate Key !**



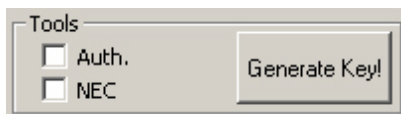
push **GO !**
...and WAIT



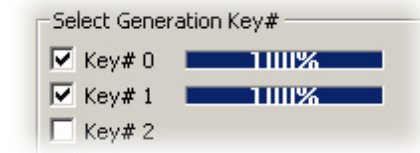
push **OK**



tick keys...



push again **Generate Key !**
...and WAIT



WARNING!

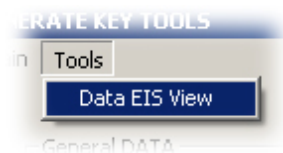
**Key generation rate depends on your computer !
In slow processor it can take up to 10 minutes !**



push **OK**

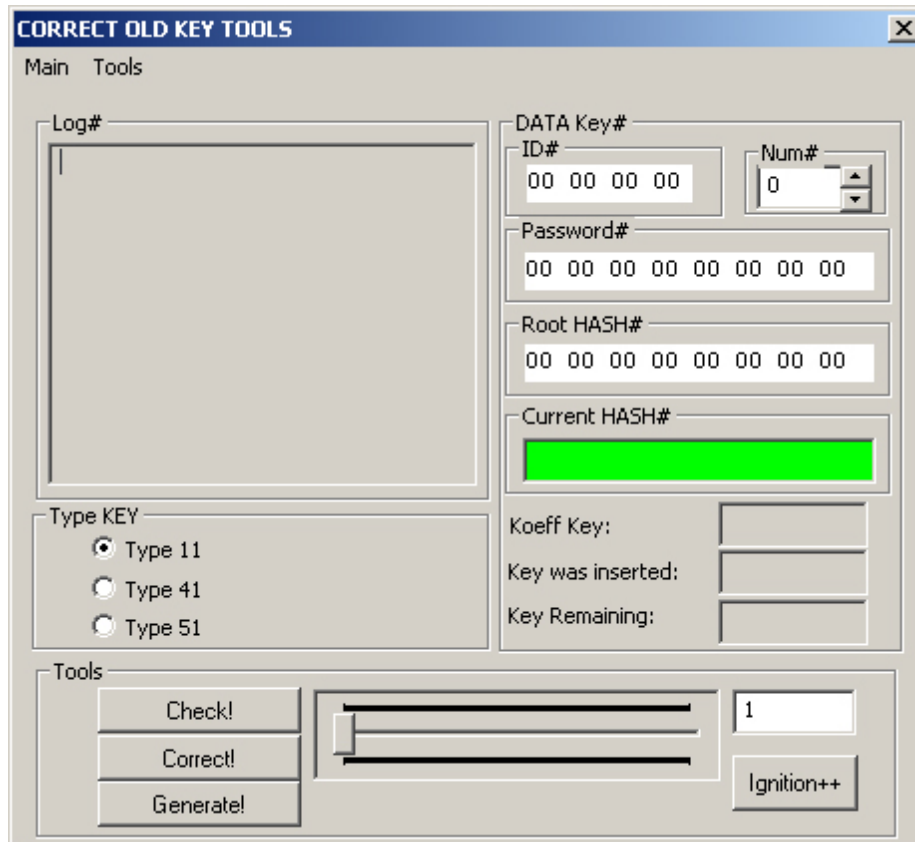
Dumps keys are stored in folder with your EIS file

**NOW YOU MUST PROGRAM NEW KEYS
NO NEED CHANGE DATA IN EIS / ECU / ESL ect.**

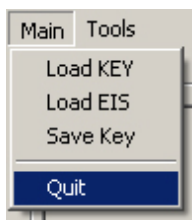


go [here](#) and read info about **Data EIS View**

2.8 CORRECT OLD KEY TOOLS



Correct OLD KEY Tools is designed to work with keys on **MOTOROLA MCU (HC05)** **"OLD BIG FISH"**



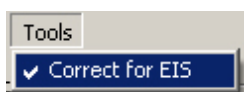
Load dump key

Press the **"Check"** and see the result.

If it is not satisfactory - then remember factor that is responsible for Inserted key click **"Generate"** and then enter STORED factor in the window above the **"Ignition +"**

Load dump **EIS** on a given key

In the Tools menu, select the **"Correct for EIS"** and then click **"Correct"**

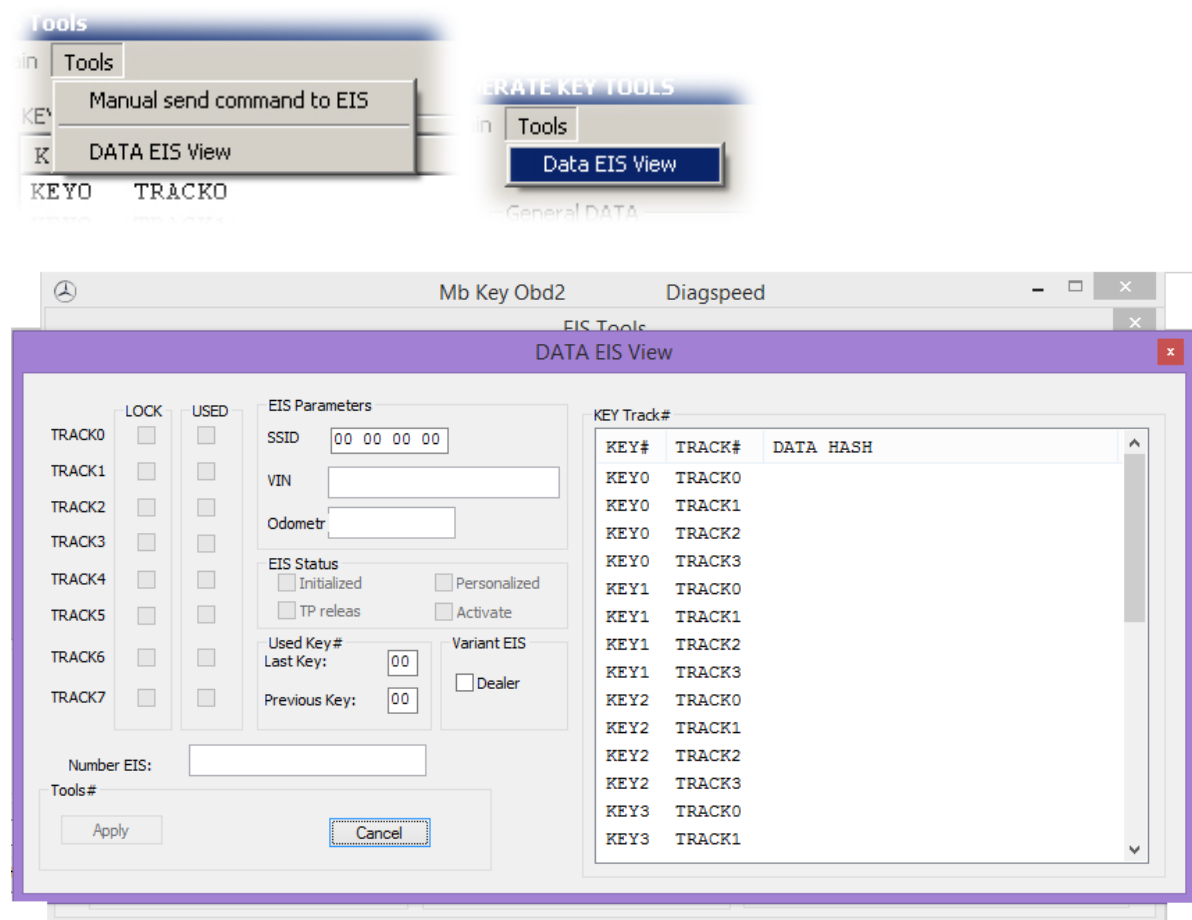


Save the resulting dump key corrected and fill in the key
Change EIS dump is not necessary

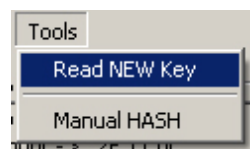
For this operation, you can use **EIS Tools** and read EIS via **IR** or **K-line** and save the dump (**Main > Save As HC05**)

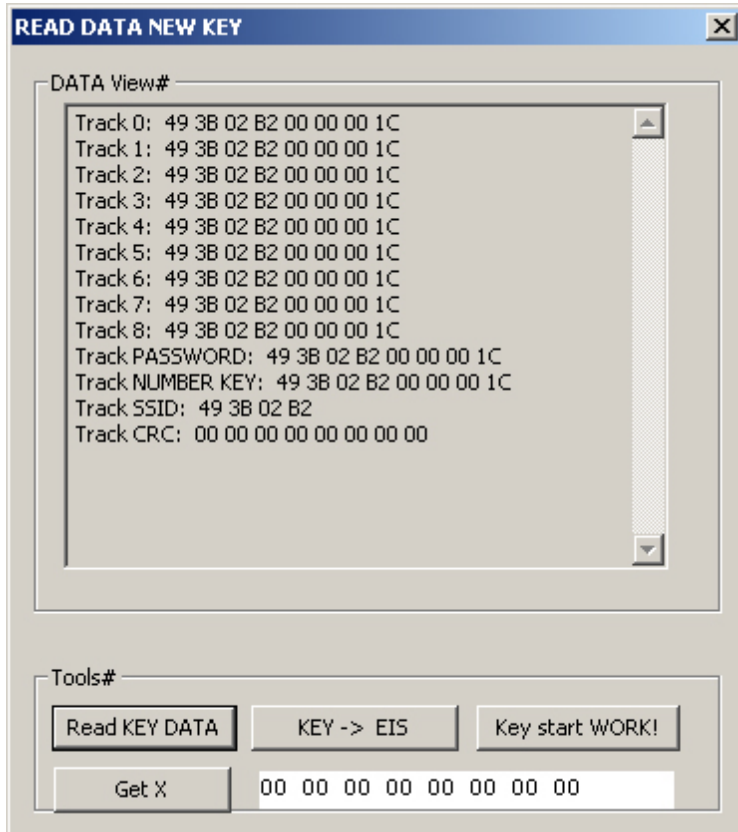
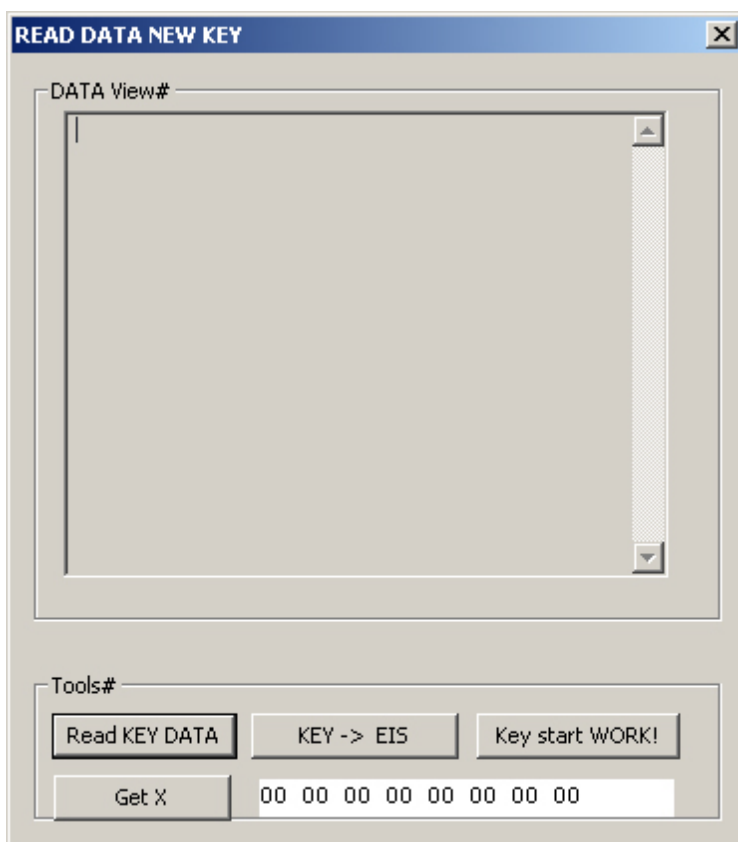
2.9 SPECIAL

DATA EIS View



Read NEW Key

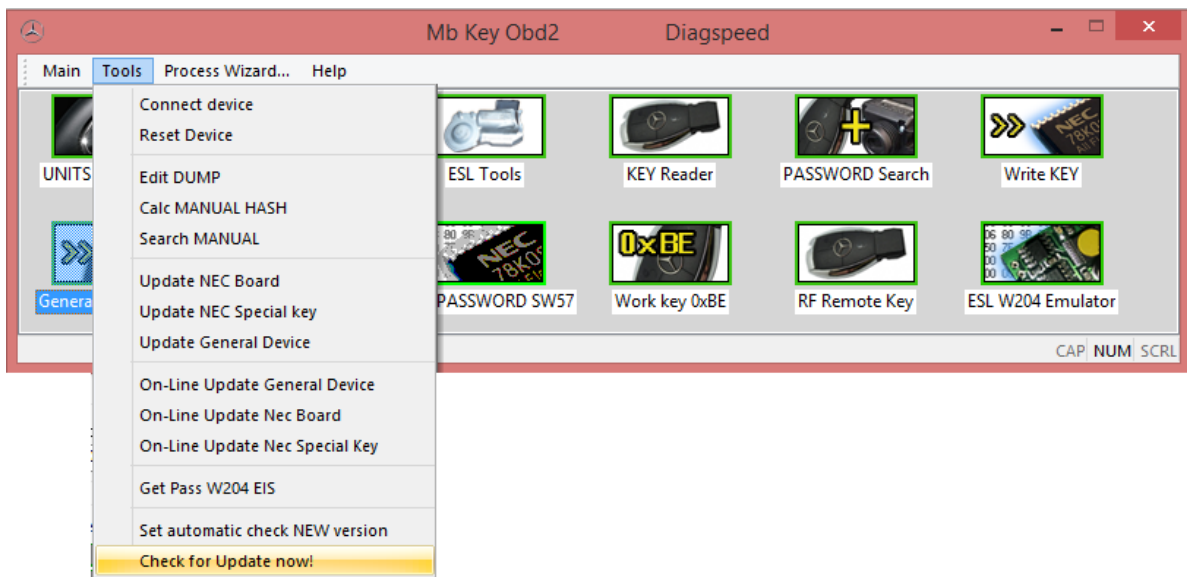




HOW TO WORK WITH "**PAIRS OF KEYS**" ?

3 HOW TO UPDATE ?

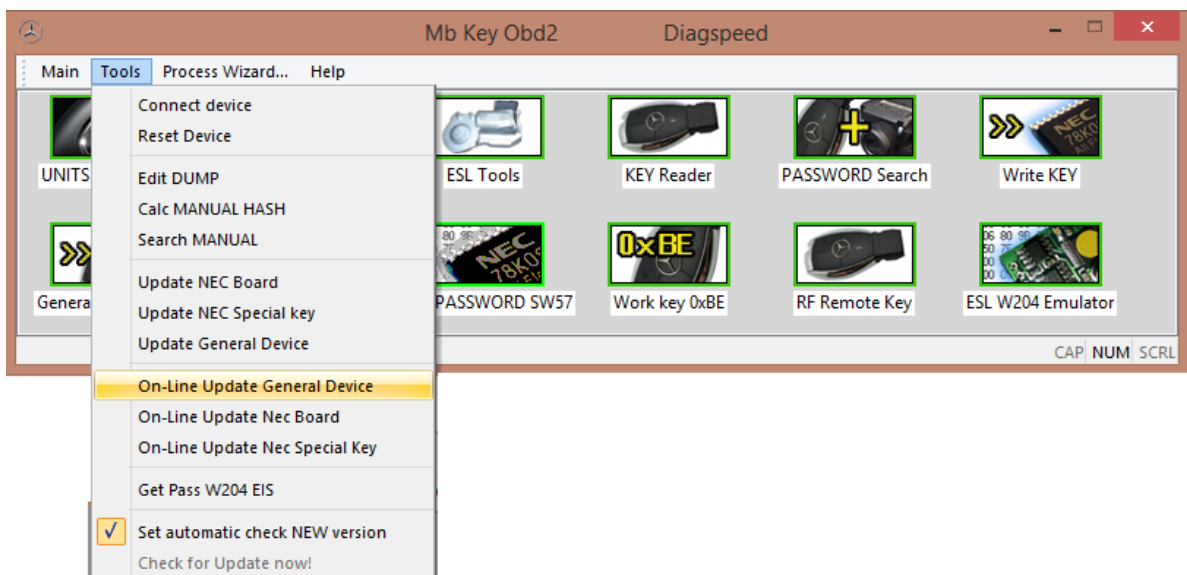
- 1) open **Software**
- 2) go to **TOOLS**
- 3) find **Update...**
- 4) after you will see new update setup



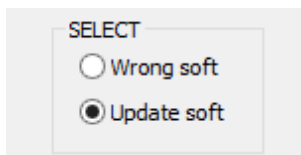
3.1 GENERAL DEVICE UPDATE

go to **Tools**

press **On-Line Update General Device**



SELECT Update soft



push **FLASH!** button ...and wait

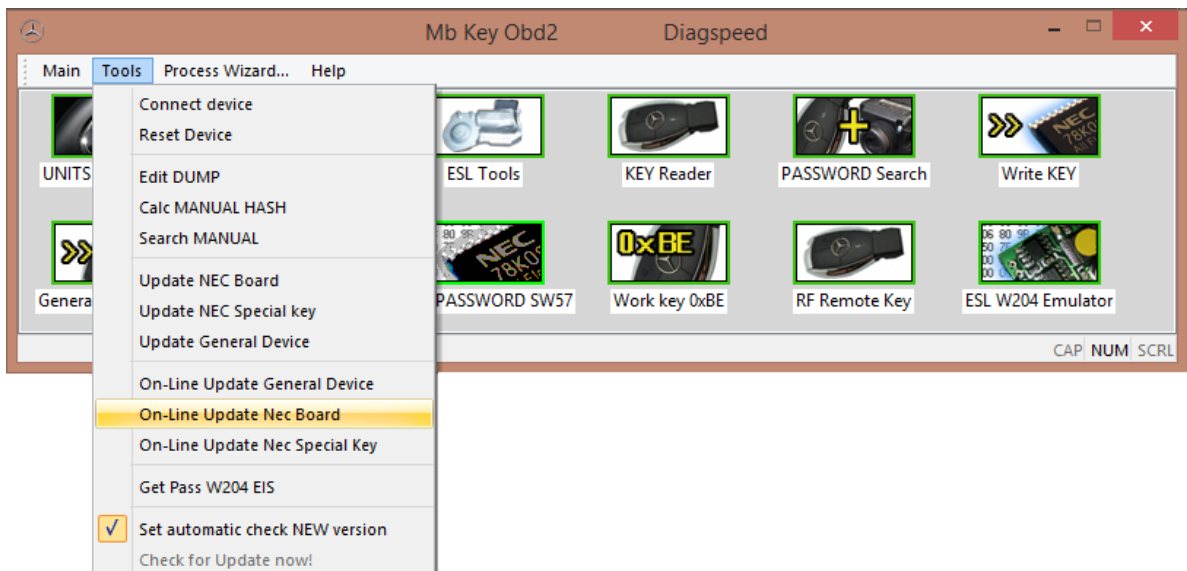
When update finished - push **OK** button

after close software, disconnect power & connect power, after open software

3.2 NEC BOARD UPDATE

go to **Tools**

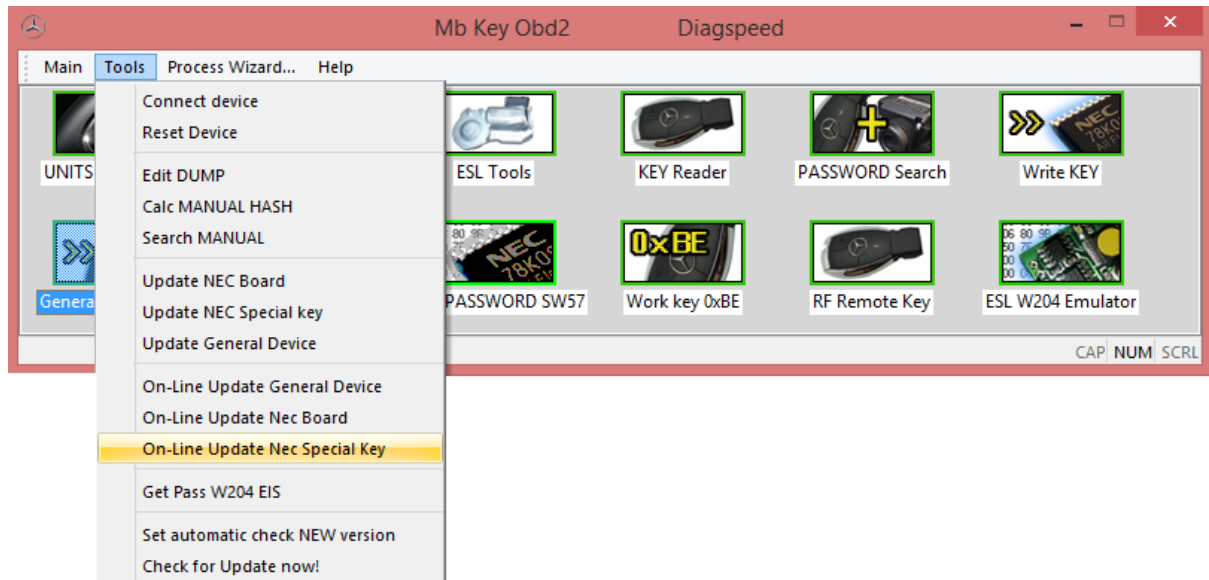
On-Line Update NEC Board



press **FLASH!** button ...and wait

When update finished - push **OK** button

3.3 NEC SPECIAL KEY



select **On-Line Update Nec Special Key**

after press **Flash**

4 DEVICE SOCKETS CONNECTIONS



SOCKET

DBH-15M	wire	color	OBD-II
11	K_LINE	green	7
12	VS +12V	red	16
13	GND	black	4+5
14	CAN_L	dark blue	14
15	CAN_H	yellow	6

OBD2 CONNECTOR

pin 4 : **GND**
 pin 5 : **GND**
 pin 6 : **CAN H**
 pin 7 : **K-LINE (1)**
 pin 14 : **CAN L**
 pin 16 : **+12V**

5 EIS CONNECTION

[HC705](#)

[HC908](#)

[HC912](#)

[HC9S12](#)

[NEC](#)

5.1 HC705

W210 / W208 / W202



A - Connector

pin 1 : **CAN H** (Green)

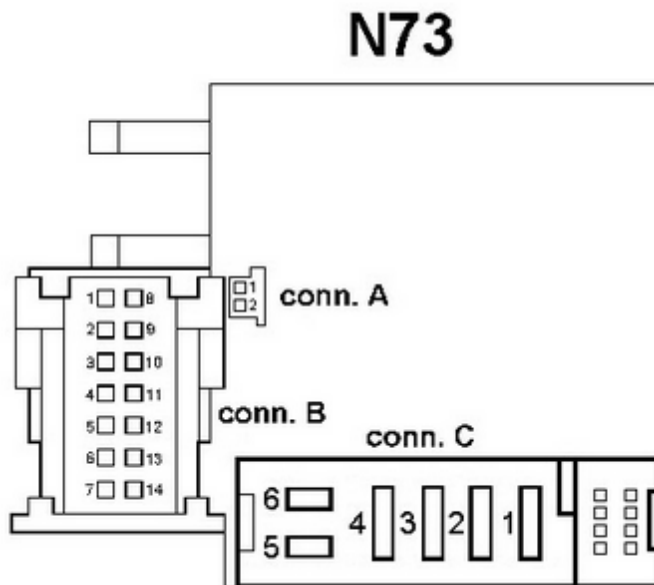
pin 2 : **CAN L** (White)

B - Connector

pin 3 : **GND**
 pin 4 : **ESL 1**
 pin 5 : **ESL 2**
 pin 7 : **+12V (30)**
 pin 14 : **K-Line**

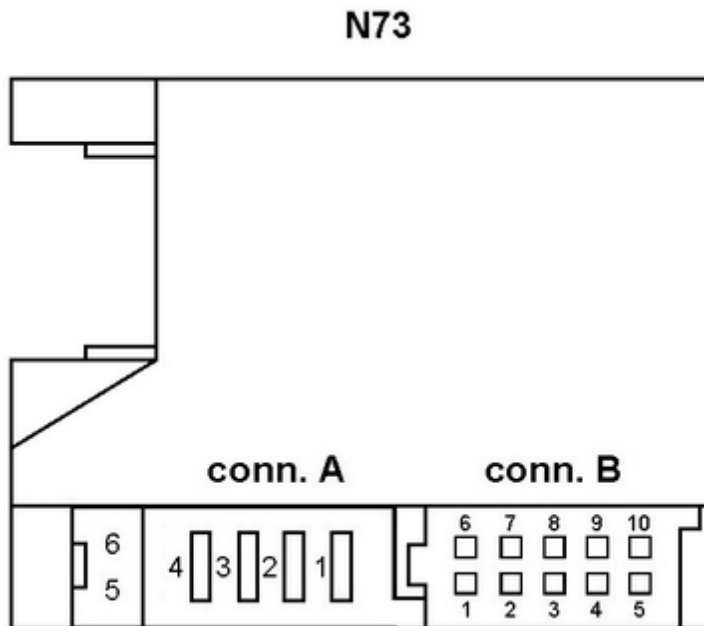
C - Connector

pin 2 : **+12V (30)**
 pin 4 : **+12V (15)**
 pin 5 : **ELV B+**
 pin 6 : **+12V (30)**



W220 / W215

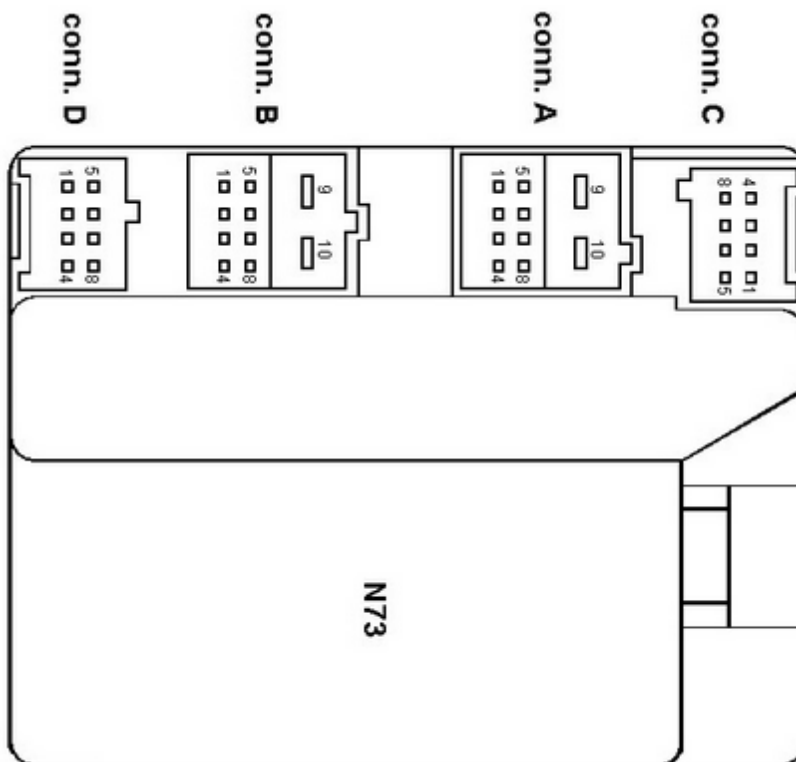
**A - Connector**pin 1 : **+12V (15)**pin 3 : **+12V (30)****B - Connector**pin 1 : **+12V (30)**pin 2 : **K-Line**pin 3 : **CAN L**pin 4 : **CAN H**pin 5 : **GND**pin 7 : **CAN H (Green)**pin 8 : **CAN L (White)**



5.2 HC908

W203 / VITO W639



A - Connectorpin 7 : **ESL 2**pin 9 : **+12V (30)**pin 10 : **ESL 1****B - Connector**pin 2 : **GND**pin 3 : **+12V (30)**pin 4 : **K-Line**pin 5 : **CAN L** (White)pin 6 : **CAN H** (Green)pin 7 : **CAN L**pin 8 : **CAN H**

W220 / W215 / R230 > go to [HC705](#) section



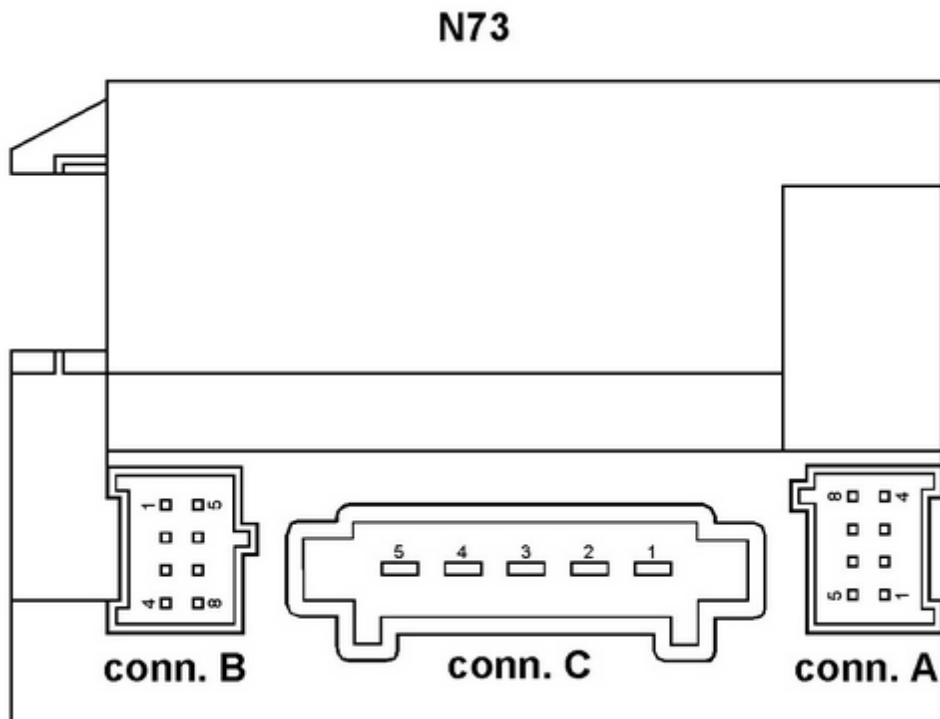
5.3 HC912
W203

**B - Connector**

pin 1 : **ESL 1**
pin 2 : **GND**
pin 3 : **+12V (30)**
pin 5 : **CAN L** (White)
pin 6 : **CAN H** (Green)
pin 7 : **CAN L**
pin 8 : **CAN H**

C - Connector

pin 1 : **+12V (30)**
pin 2 : **+12V (15)**
pin 4 : **ESL 2 - MAS**



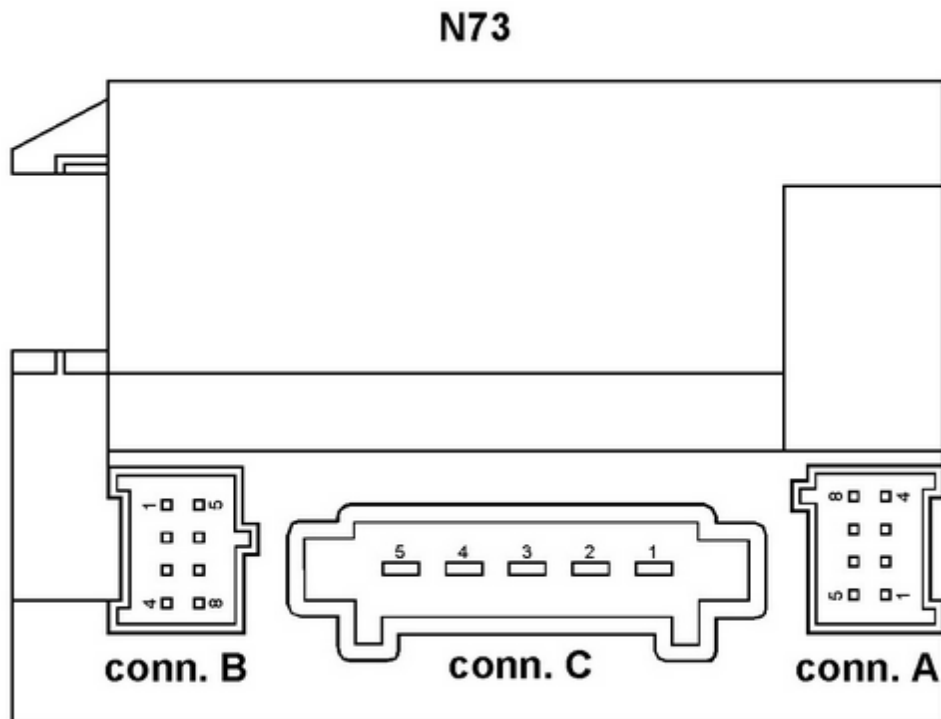
W211 / W219 / W209

**B - Connector**

pin 1 : **ESL 1**
pin 2 : **GND**
pin 3 : **+12V (30)**
pin 5 : **CAN L** (White)
pin 6 : **CAN H** (Green)
pin 7 : **CAN L**
pin 8 : **CAN H**

C - Connector

pin 1 : **+12V (30)**
pin 2 : **+12V (15)**
pin 4 : **ESL 2**



5.4 HC9S12

SPRINTER W906



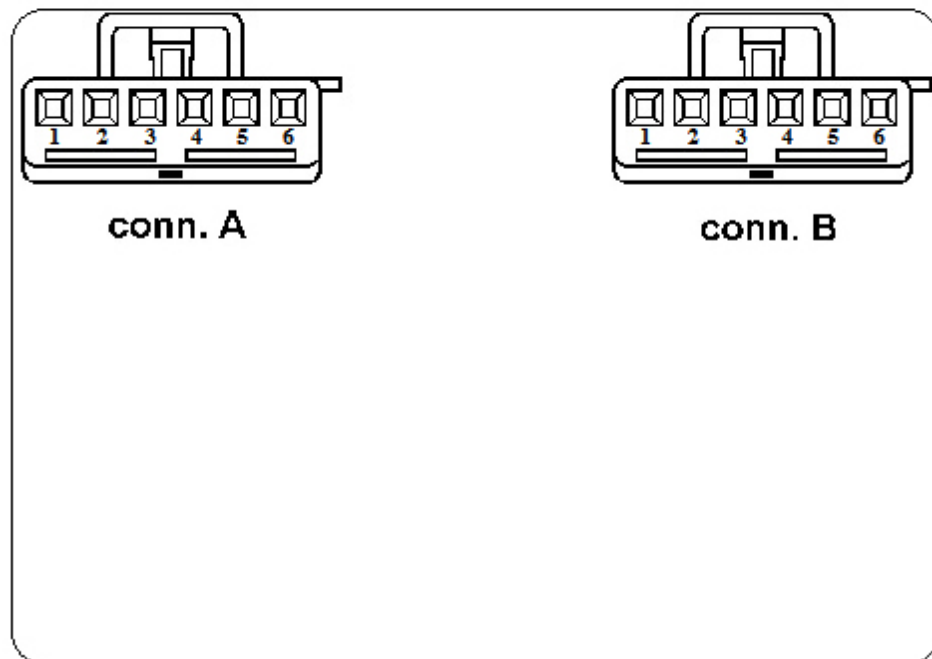
W211 / W219 / W209 > go to [HC912](#) section

5.5 NEC

W164 / R251 / W221 / W216



N73



A - Connector

pin 5 : **GND**

pin 6 : **+12V (30)**

B - Connector

pin 3 : **CAN L 164**

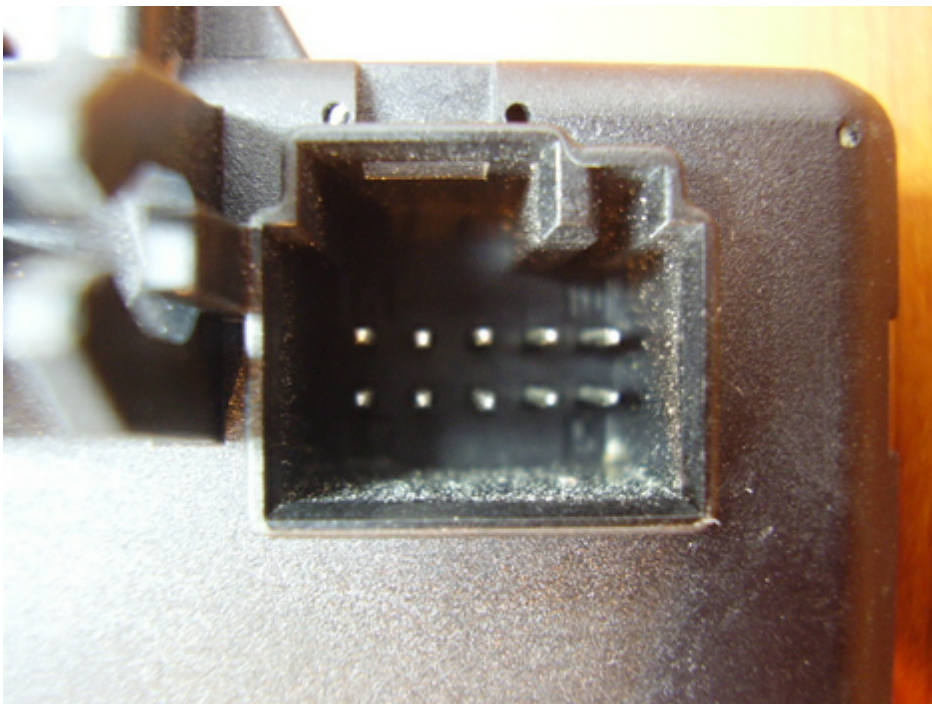
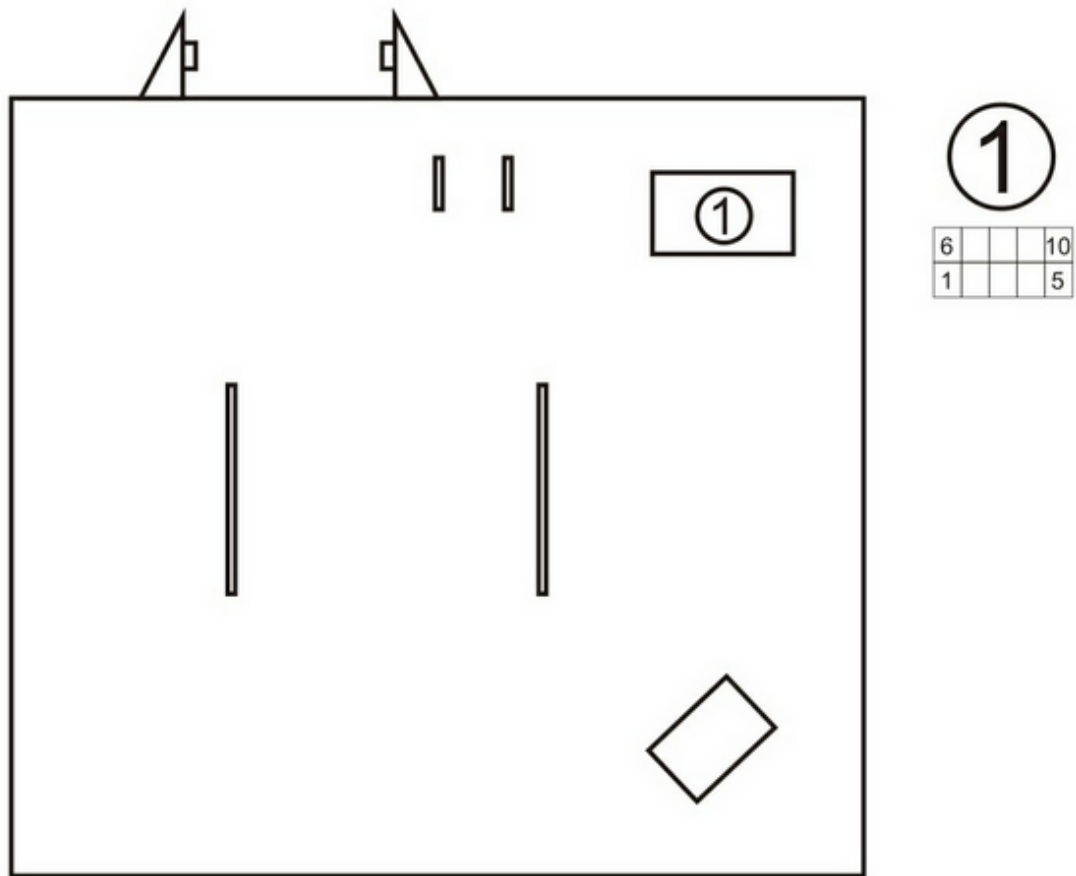
pin 4 : **CAN H 164**

pin 5 : **CAN H (Green) 221**

pin 6 : **CAN L (White) 221**

-

W204 / W207 / W212



1 - Connector

pin 1 : **CAN**
pin 2 : **CAN**
pin 3 :
pin 4 :
pin 5 :
pin 6 :
pin 7 : **+12V**
pin 8 :
pin 9 :
pin 10 : **GND**

6 ESL CONNECTION

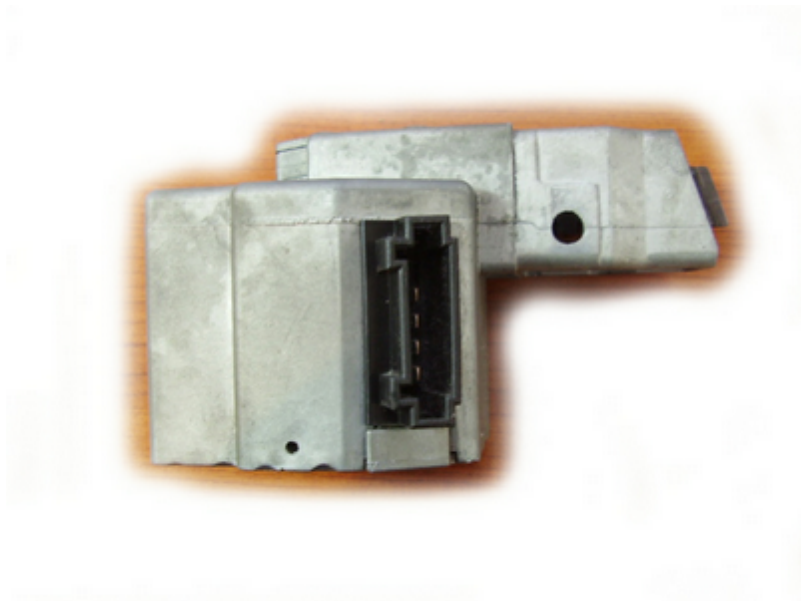
[W210 / W208 / W202](#)

[W203 / W639](#)

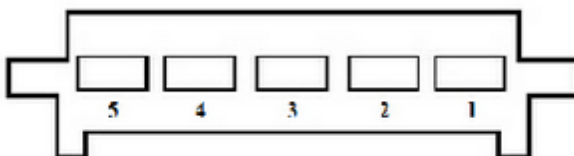
[W211 / W219 / W209](#)

[W212 / W207 / W204 / W906](#)

6.1 W210 / W208 / W202



N26/5



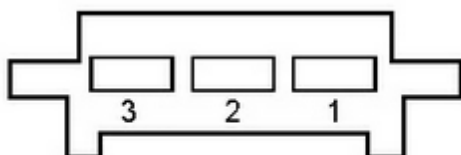
CONNECTOR W210/W208/W202 - EVL

pin 1 : **+12V** (30)
 pin 2 : **GND**
 pin 3 : **K-Line**
 pin 4 : **K-Line**
 pin 5 : **N/C**

6.2 W203 / W639



N26/5



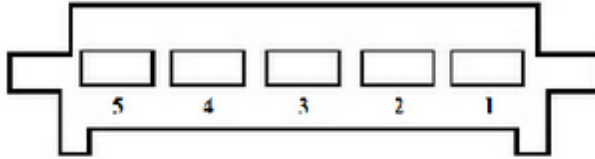
CONNECTOR W203 - 3 Pins EVL

pin 1 : **+12V (30)**

pin 2 : **GND**

pin 3 : **K-Line**

N26/5



CONNECTOR W203 - 5 Pins EVL

pin 1 : **K-Line**

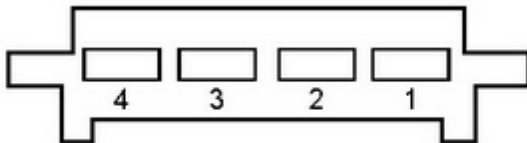
pin 2 :

pin 3 : **GND**

pin 4 : **+12V (30)**

pin 5 : **N/C**

N26/5



CONNECTOR W203 - 4 Pins EVL

pin 1 : **K-Line**

pin 2 :

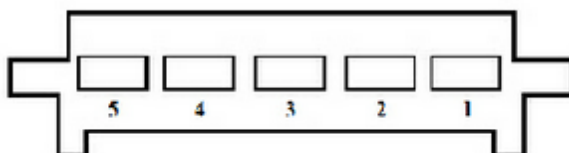
pin 3 : **GND**

pin 4 : **+12V (30)**

6.3 W211 / W219 / W209



N26/5



CONNECTOR W211/W219/W209 - EVL

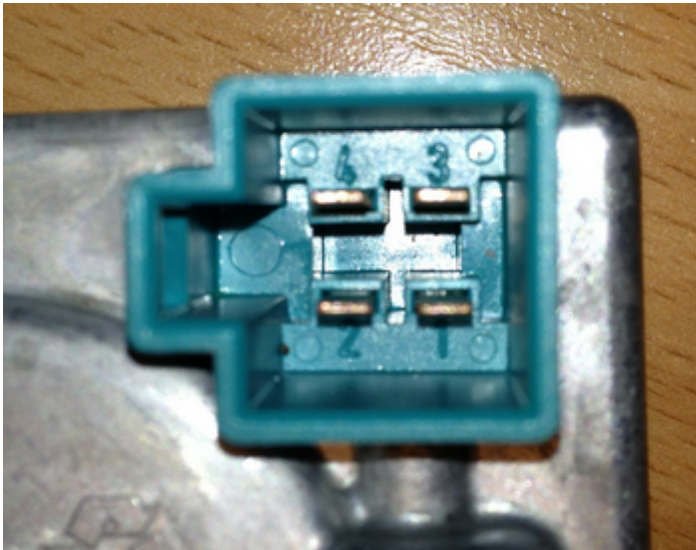
pin 1 : K-Line

pin 2 :

pin 3 : **GND**

pin 4 : **+12V (30)**

6.4 W212 / W207 / W204 / W906



CONNECTOR W204/W207/W212 - EVL

pin 1 : GND
 pin 2 : **+12V**
 pin 3 : ESL LINE / K-LINE
 pin 4 : **+12V**

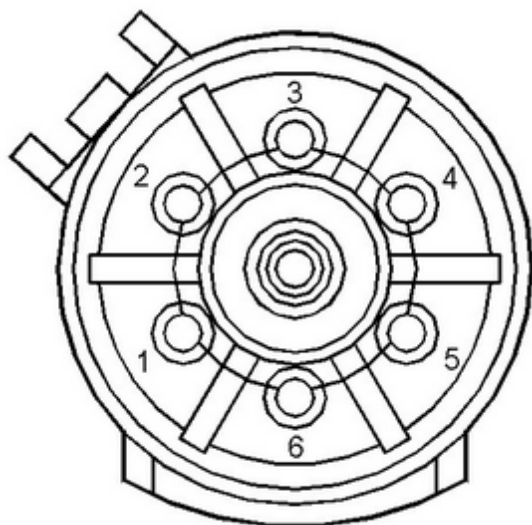
SPRINTER W906



CONNECTOR W906 (SPRINTER) - ESL

7 7G TRONIC - CONNECTION

pin 1 : **CAN H**
pin 2 : **CAN L**
pin 3 : -----
pin 4 : **+12V**
pin 5 : **GND**



7.1 ISM

