
Manual for Tacho Universal Edition 2007



Legal Disclaimer

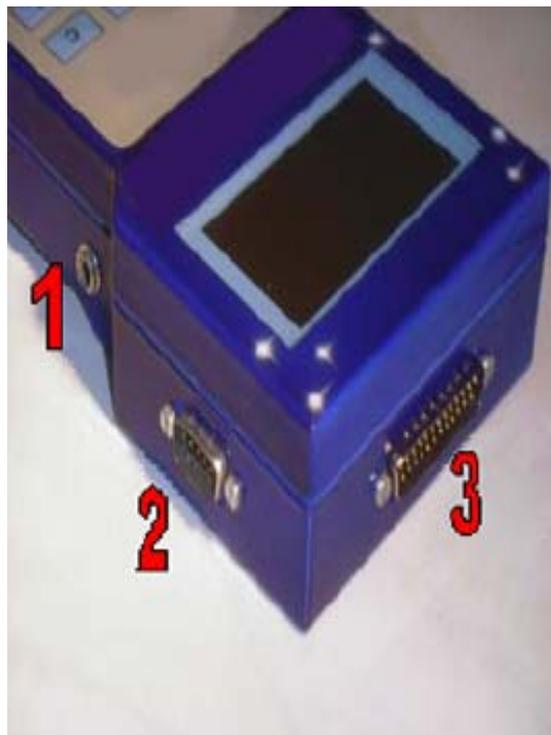
The Tacho Universal and all information in this manual are intended for repair of odometers only. When buying this product, the buyer promises to use this product only in accordance with the laws of the state in which it is sold.

How to use the Tacho Universal

Power supply

The Tacho Universal handheld is powered with 12 V by a 3,5 mm miniplug (port 1). Please use an AC adapter with at least 500 mA, better 1 A.

External power supply is necessary when programming a detached odometer. When programming through the diagnostic port, the handheld is powered by the car through the port. The diagnostic plug is positioned in port 3.



Warning:

When programming through the diagnostic port, do not supply the handheld with power through port 1!

Start menu

When supplying the handheld with power, you can see the start menu in the display. It offers the possibility, to change the backlight by pressing the **STOP**-button. With button **0** you can make an update (→softwareupdates). Press **OK** to continue.

Now the handheld is asking for a password. This funktion is always activated when you get a Tacho Universal, but you can switch it off (→ options).

Softwareupdates

Softwareupdates can be installed by yourself to the handheld. You only need a DOS or Windows computer with a serial port and a 0-modem-cable:

1. Connect the cable to your computer (com 1 or com 2) and port 2 on the handheld.
2. Ensure that you have not saved more than 20 databases in the handheld. If there are more, delete them (best is to make a backup with the Connect program before).
3. When starting the handheld, choose **0** for update.
4. Start the update program that you have received from us.
5. Wait until you see "RESET" on the display.

Note:

If updating under Windows makes problems, try it in DOS mode.

Menus

After the start menu, you see the main menu with the different manufacturers and the menus OPTIONS, UPDATEN and SYNC.

With button **8** you can move up, with button **2** down. When the bar is on the desired menu, press **OK**. If you have coosen a wrong menu, you can quit by pressing **STOP**.

Menu OPTIONS

- **Choose Language**
Here you can choose a different language for the Tacho Universal.
- **New PIN**
First you have to enter the old PIN. Then the handheld asks you for the new PIN that you have to repeat again. The password consists of a combination of pressing 6 buttons of your choice.

- **Erase all eeps**

With this menu you erase all data that you have saved before. First you have to press **E** to verify, then you have to enter your PIN.

- **Clear 1 EEP**

Here you can erase the last data you have saved.

- **Verify Pin**

With this menu you can switch on or off the password function when starting the handheld. With the button **OK** the handheld will ask you for the password after every start of the handheld, with the button **STOP** you can switch it off. To switch it off you have to verify it with the password.

- **Version**

Here you can see how old the installed software is

Menu UPDATEN

This is for new software, for example new manufacturers or models can be unlocked with this function. Therefore call your distributor.

Note:

Generally software improvements are installed by the start menu (**0** for Update). In the main menu Updaten is only used to unlock new programs.

Menu SYNC

Used for saving data from your handheld to your computer. This is done with the program Tacho Universal and a 0-modem-cable. Choose **SYNC** when the program asks for it.

Diagnostic programming

Programming by the diagnostic-port of the car is the easiest and most safe way. Put the diagnosis-plug to the port and the other end to the handheld (port 3).

Turn ignition on and choose the menu you need. Choose the **Diagnosis** function. Enter the desired mileage and press **OK**.

More details for the different models are in the separate manual.

Note:

The handheld does not show the old value for all models. But if it is displayed, it must be the correct mileage (small variations are ok).

Programming by cluster plug

After removing the cluster from the car, connect it with the plug and the handheld. Power the handheld by port 1.

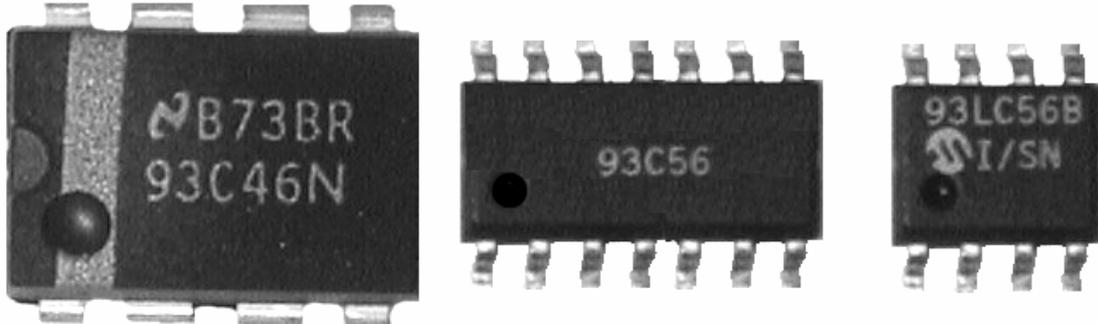
More details for the different models are in the separate manual.

Note:

The handheld does not distinguish between the programming methods diagnosis and cluster plug, it always shows you the option „Diagnosis“.

Eeprom programming

Some cars have to be programmed directly by the eeprom. Those eeproms can look like that:



DIL 8pin

SMD 14pin

SMD 8pin

Note:

The text on the eeprom can differ from what you see on the picture.

When you can read what is written on the eeprom, you have pin 1 on the left side on the bottom

Note:

Often pin 1 is also marked by a small point like on the picture.

Depending on the size of the eeprom, you use one of the following clips:

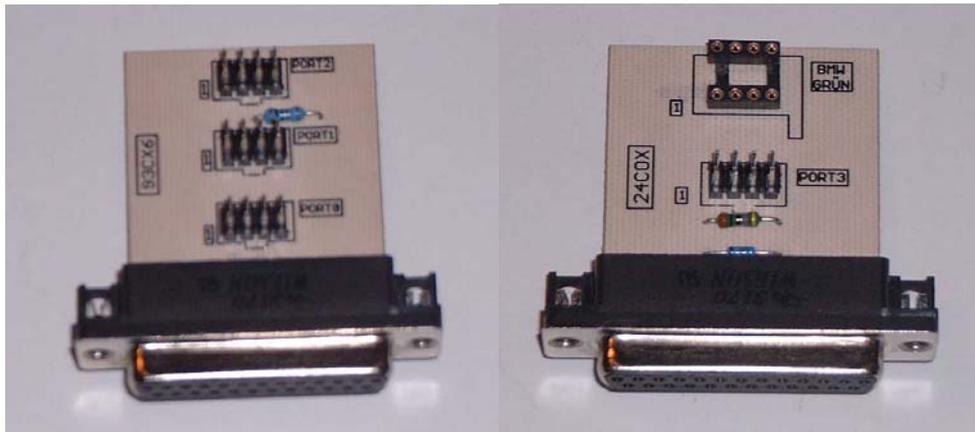


DIL 8

SMD 14

SMD 8

There are 2 different eeprom families: the 93CX6 series and the 24C0X series. Depending on the series, you use the fitting adapter-board:



Adapter 93CX6

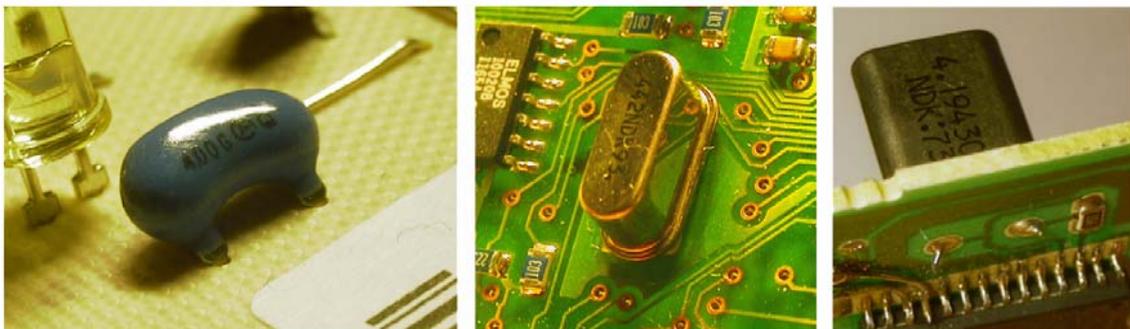
Adapter 24C0X

Warning:

Using the wrong adapter-board will destroy the eeprom!!!

For programming eeproms please follow the instruction step by step:

- Ensure the eeprom is clean and there is no paint or wax on it.
- All oscillators (crystals) on the board must be joined together.



- Put the clip on the eeprom, with the red mark on pin 1.
- Put the correct adapter-board in port 3 of the handheld.
- Power the handheld by port 1.
- Join the other end of the clip to the 8 pin port on the adapter-board with the red cable on the pin 1 mark.



- In the main menu choose the car model and the method **clip**.
- When you press **OK** the handheld reads the eeprom and jumps to the eeprom menu.
- In the right upper corner you can see the current mileage. Small variations are ok. If the displayed value is good, save all data with the menu **SAVE**.
- With the menu **adjust KM** you can write in the new value that you want. The handheld will verify the successful programming.
- Now carefully remove the clip from the eeprom and remove the connections from the chrystals.

Additional eeprom functions

- **Show** (a complete hexeditor)
- **Read eeprom** (you can read the eeprom again, the mileage will also be displayed again)
- **Save** (you can save up to 200 data bases)
- **Adjust KM** (if you have choosen the right menu, only the relevant data for the mileage is changed)
- **Load file** (saved data base can be loaded to the editor)

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- **Write all** (writes all eeprom data)

Warning:

The function **Write all** is only for repair and experienced users.

The hexeditor in the menu Show offers the possibility to show all eeprom data and to edit it. There are 2 different modes: the scroll and the edit mode. If the handheld is in the scroll mode you can move the cursor with the keys 2,4,6 and 8. At the bottom of the display you can read:

<Stop> Edit at 000

The numbers and letters show the current position of the cursor. To switch to the edit mode, press **Stop**. Now you can change the data. To leave the editor, press **OK**. To send the manual altered data to the eeprom, you have to change the option **Write all**.

Warning:

The function **Write all** and altering the data manually is only for experienced users.

Note:

With the editor you can check if the handheld reads something or if there is only FF or 00 in the data base. When you are in the scroll mode, you can read the eeprom again by pressing the button **A**. Pressing button **B** compares the data in the eeprom to the data in the display.

Programming by soldering plug

For some instruments you have to solder cables to the processor or some pints in the circuit board.

Detailed instructions can be found in the separate manual.

Warning:

When soldering, the handheld must not be connected to the plug, otherwise the handheld may be **destroyed!!!**