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DTCO SIM

TACHOGRAPH SIMULATOR

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The simulator is a device that is used as a replacement for tachograph in the vehicle where the tachograph is not mandatory, but the existing installation requires signals generated by the tachograph.

The device should be mounted in vehicle using handles on enclosure.
Plugs – A [white], B [yellow] and D [brown] should be connected to relevant sockets in the simulator.

Technical data:

All signals are compatible with ISO 16844-1 standard

Power supply	12V or 24V
Current consumption	40mA
„k" factor setting range imp/km	4000 ÷ 64000
Output power supply for speed sensor	8V DC
Working temperature range	–40°C ÷ +85°C
Dimensions	113 x 65 x 23 mm

The simulator generates following signals:

- V imp – pins B6, B7, D3
- 4 imp/m – pin B8
- zero speed signal – D8
- via CAN:
  - vehicle speed
  - distance travelled
  - date and time – pins A4, A8
- via k-line:
  - distance travelled
  - date and time – pin D7

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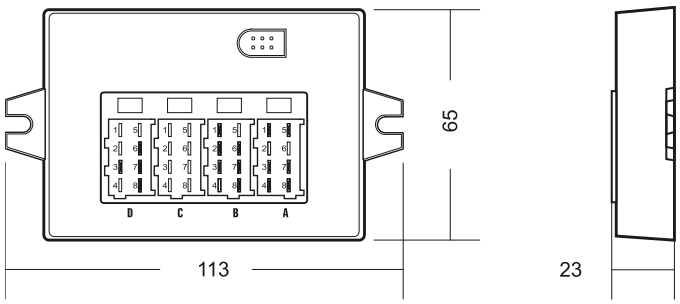
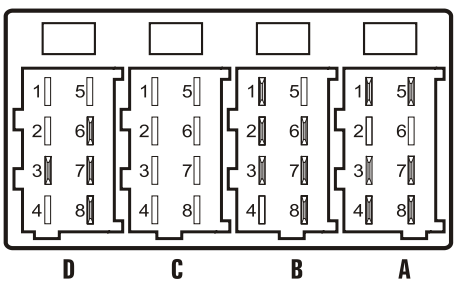
Dimensions



Connector



A1	Power from battery	**[30]**
A3	Ignition	**[15]**
A4	CAN H	
A5	Ground from battery	**[31a]**
A7	CAN GND	
A8	CAN L	
B1	Power supply output	**[+]**
B2	Power supply output	**[-]**
B3	Signal from speed sensor	
B6	V-impulse	
B7	V-impulse	
B8	4 imp/m	
D3	V-impulse	
D6	V-impulse	
D7	K-line	
D8	Zero speed signal	

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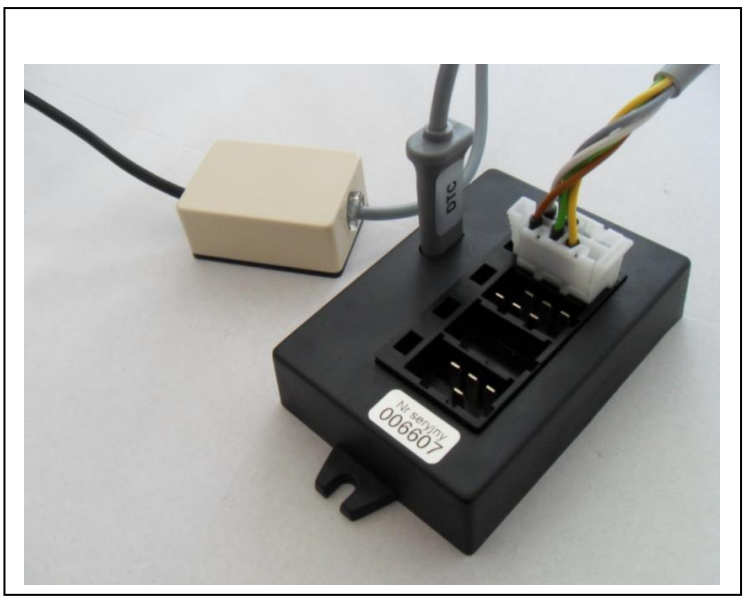
Programming connections



The simulator is programmed using USB-KSIM interface, delivered by BogArt.
The simulator is powered from external power supply, for example using 02.09 cable

Programming the simulator

1. Connect the USB-KSIM interface to the computer and to the tachograph simulator DTCOSIM - using the „DTC" cable. The simulator have to be powered from external power supply 24V (or 12V).

The following parameters of DTCOSIM simulator can be changed:

- Odo – odometer
- w – characteristic constant of vehicle
- PTO - number of impulses per one shaft revolution
- ES - product code
- VIN - vehicle identification number
- System time

2. Open PC application

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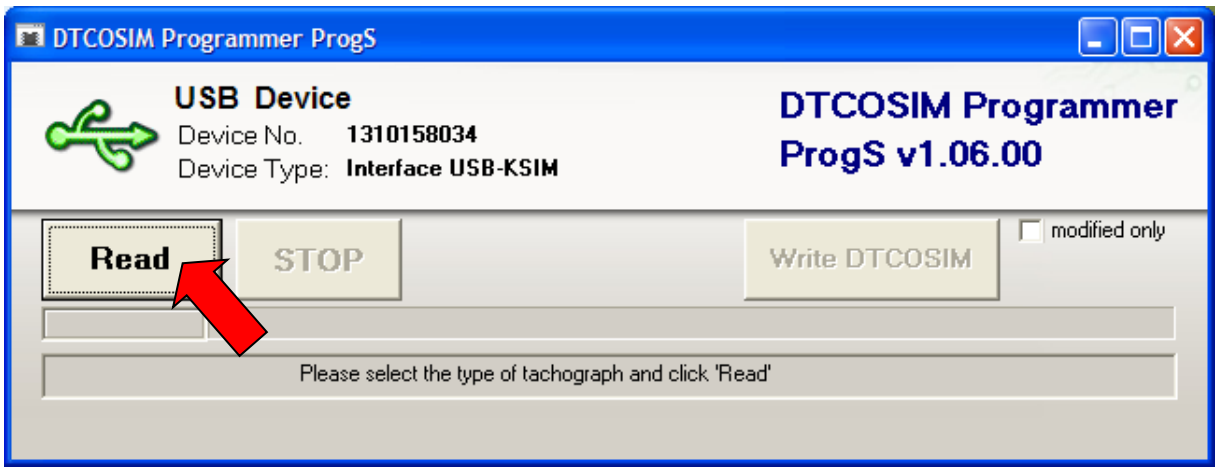
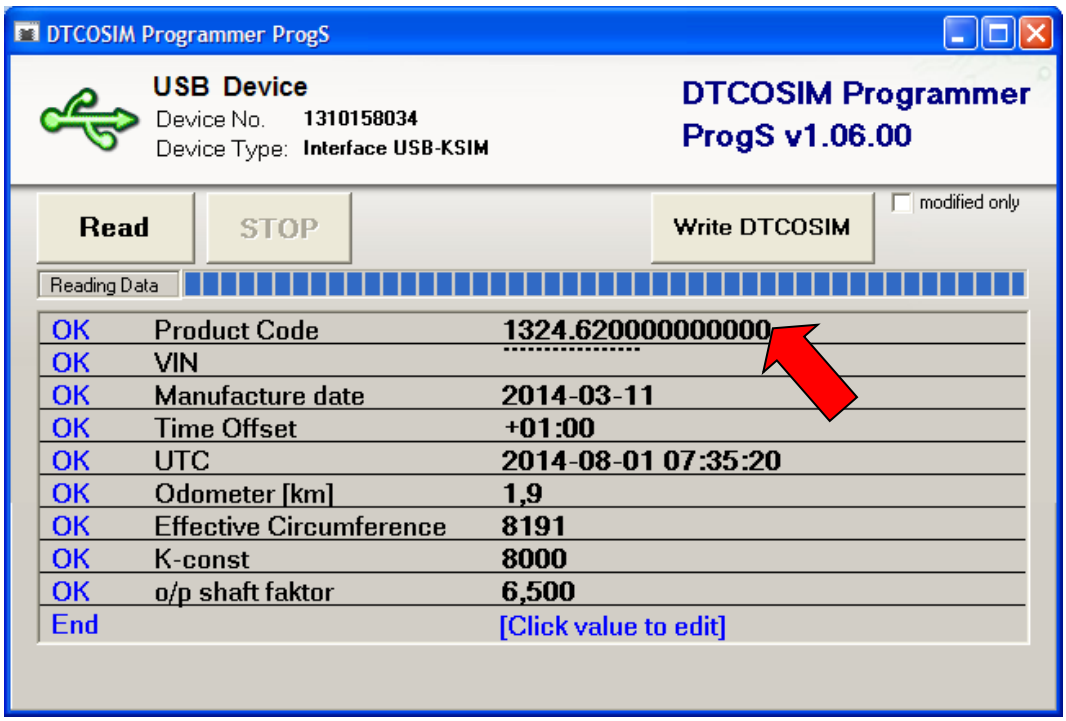
3. Click “Read”



4. Click the value you want to edit:



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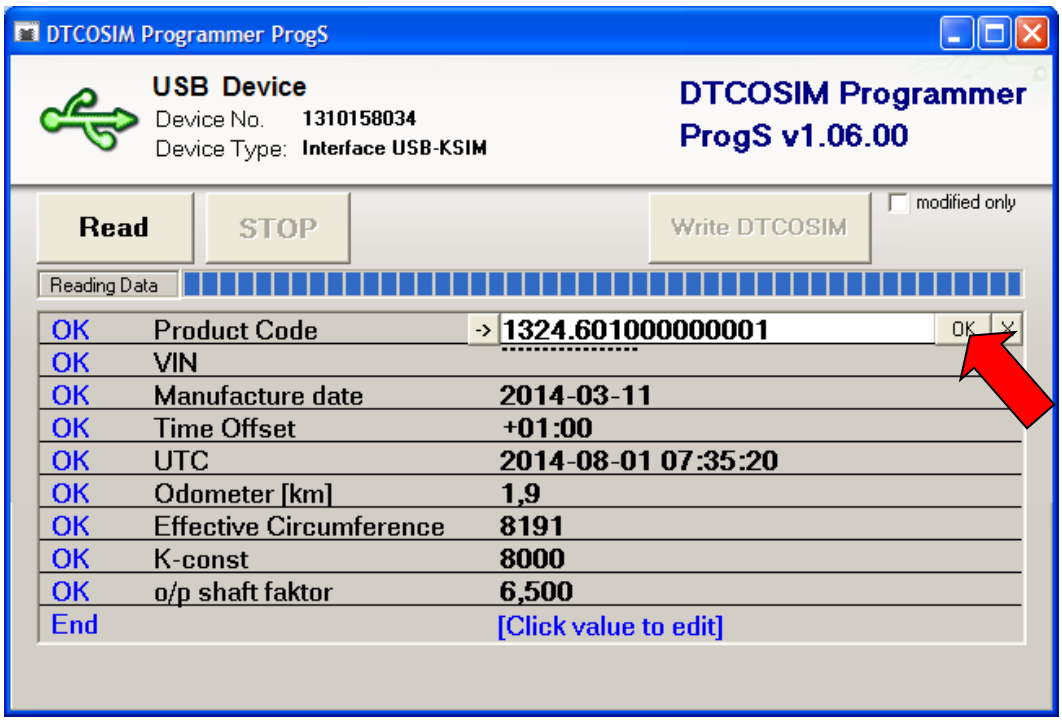
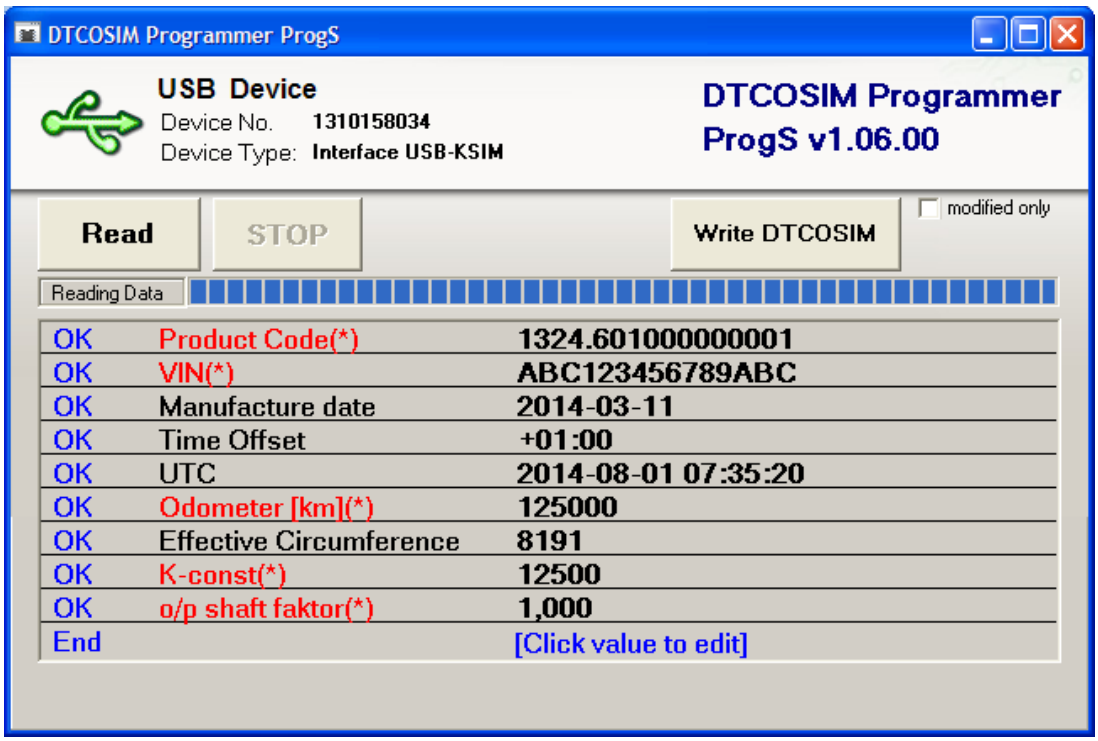
5. To confirm changed value (in red) click „OK”



6. Changed parameters names will be marked in red:



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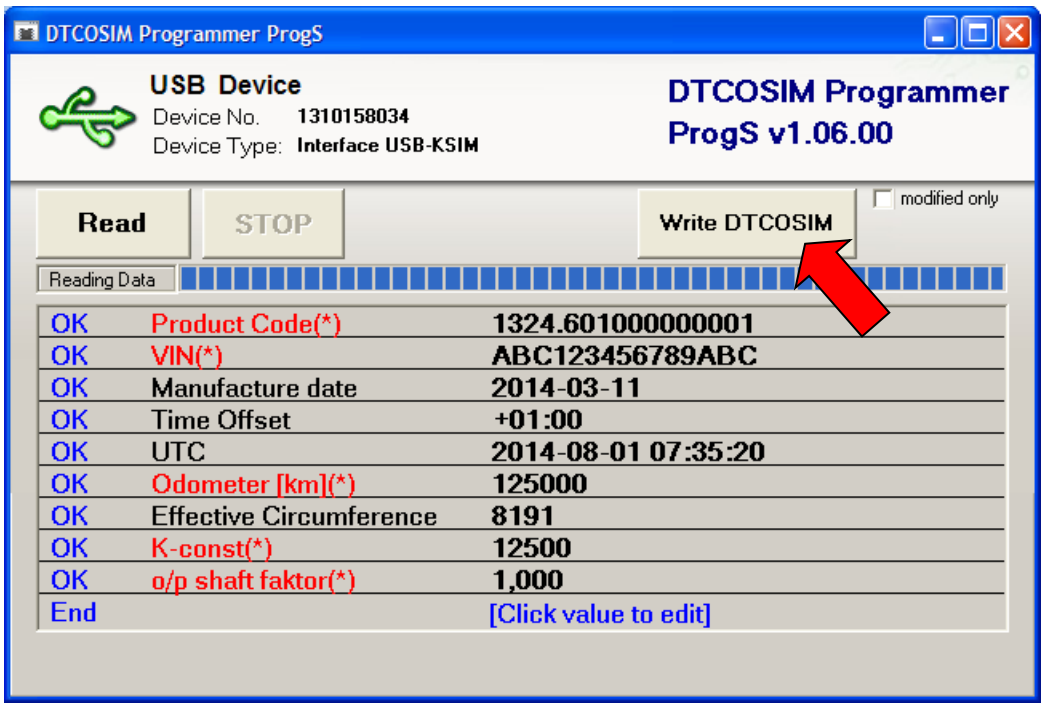
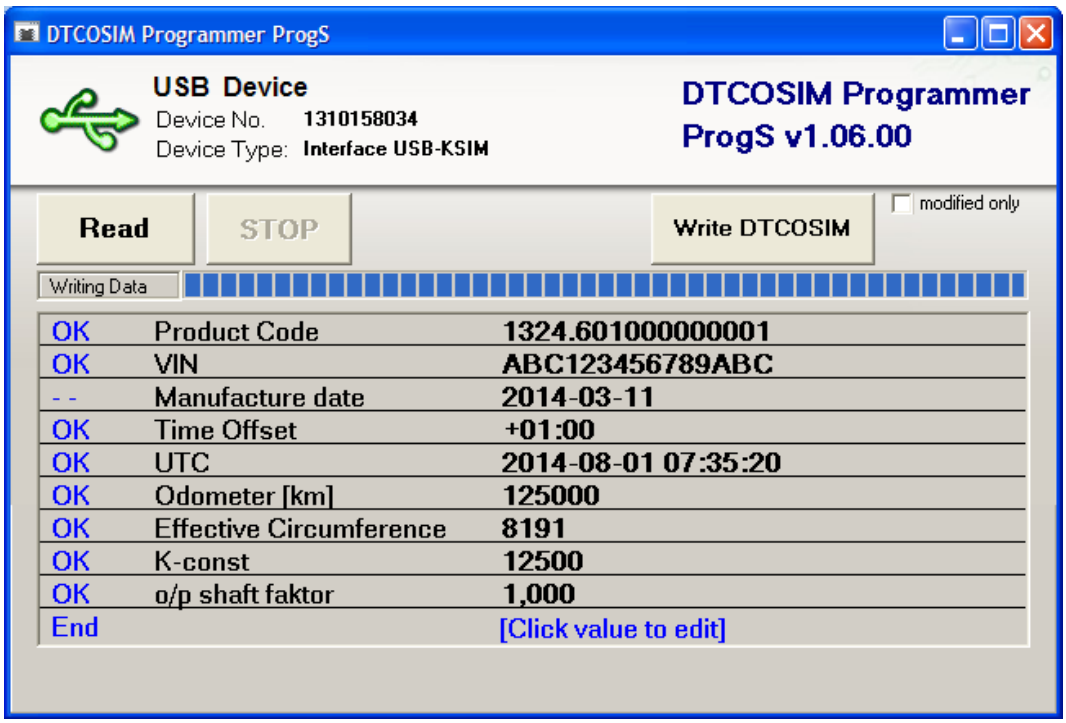
7. Click „Write DTCOSIM" to write:



8. After writing changes all values will be in black



9. Close the application

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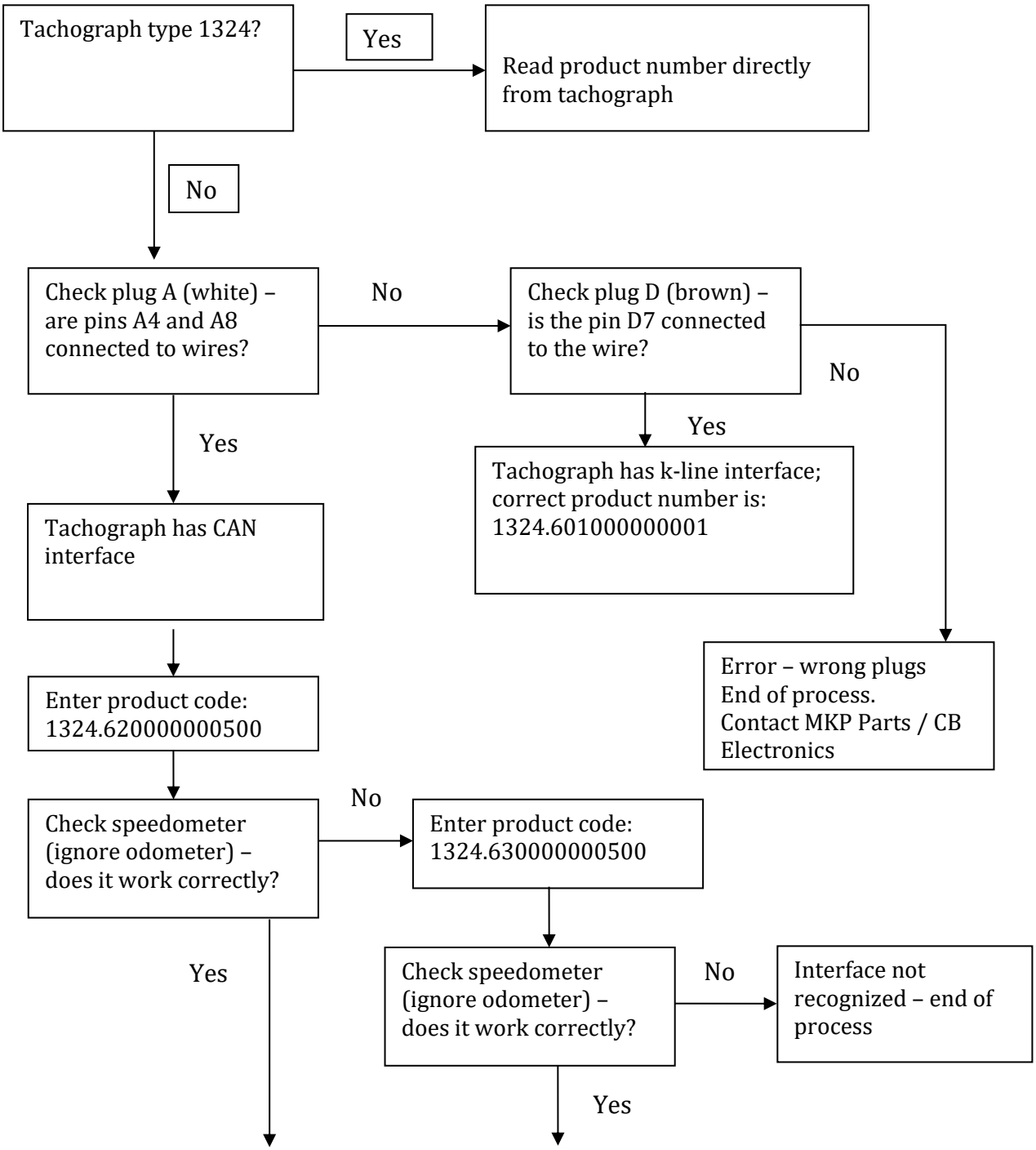
Finding product code

There are 2 basic types of tachographs interfaces: CAN and k-line. To enter correct product code it is necessary to learn what interface the tachograph to be replaced with simulator has.

Below diagram describes how to find correct product number:



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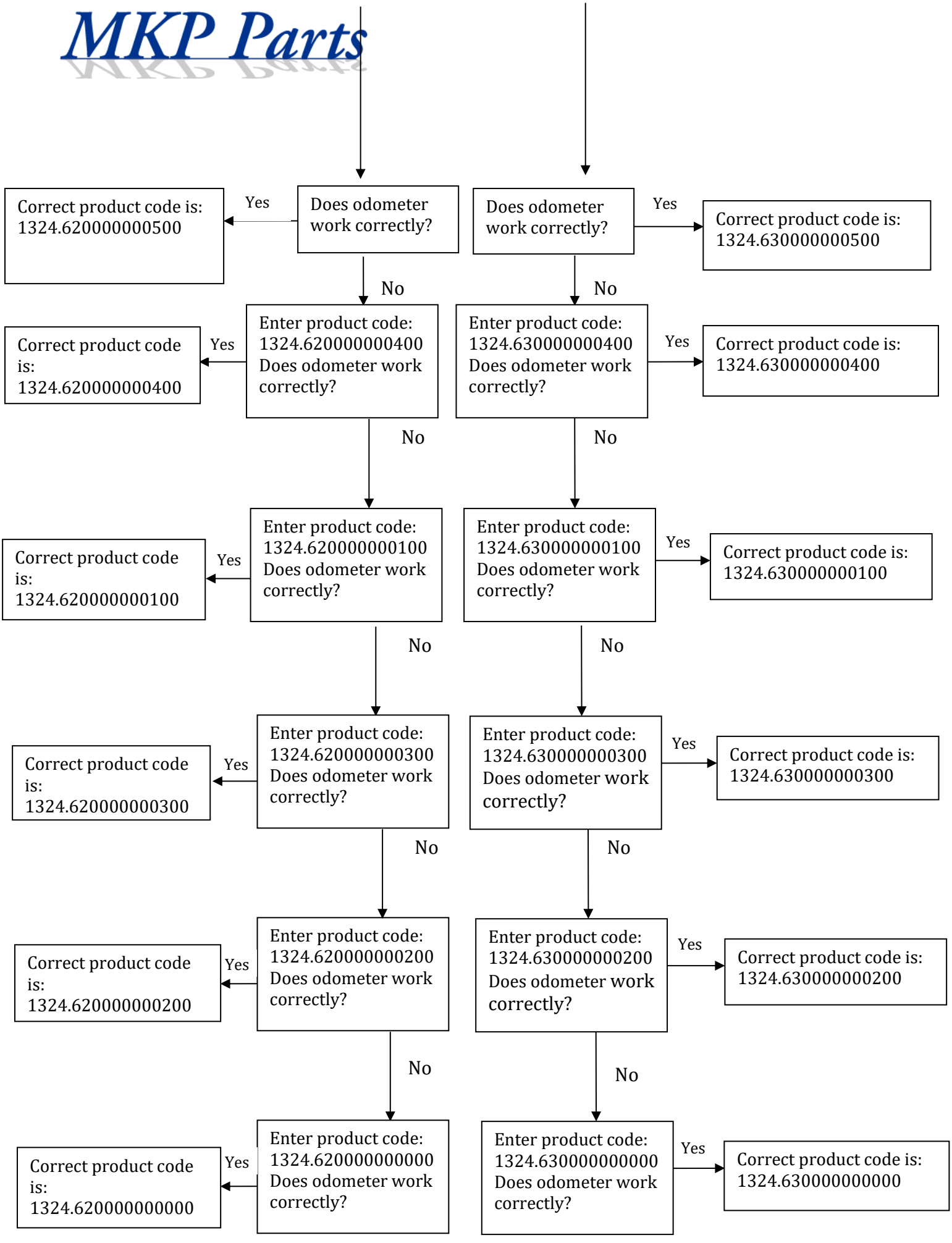
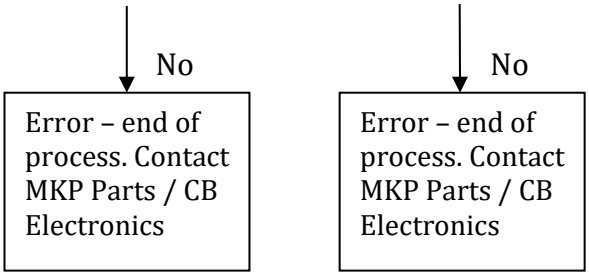

Does odometer work correctly?
Yes
Correct product code is: 1324.620000000500
No
Enter product code: 1324.620000000400 Does odometer work correctly?
Yes
Correct product code is: 1324.620000000400
No
Enter product code: 1324.620000000100 Does odometer work correctly?
Yes
Correct product code is: 1324.620000000100
No
Enter product code: 1324.620000000300 Does odometer work correctly?
Yes
Correct product code is: 1324.620000000300
No
Enter product code: 1324.620000000200 Does odometer work correctly?
Yes
Correct product code is: 1324.620000000200
No
Enter product code: 1324.620000000000 Does odometer work correctly?
Yes
Correct product code is: 1324.620000000000
Does odometer work correctly?
Yes
Correct product code is: 1324.630000000500
No
Enter product code: 1324.630000000400 Does odometer work correctly?
Yes
Correct product code is: 1324.630000000400
No
Enter product code: 1324.630000000100 Does odometer work correctly?
Yes
Correct product code is: 1324.630000000100
No
Enter product code: 1324.630000000300 Does odometer work correctly?
Yes
Correct product code is: 1324.630000000300
No
Enter product code: 1324.630000000200 Does odometer work correctly?
Yes
Correct product code is: 1324.630000000200
No
Enter product code: 1324.630000000000 Does odometer work correctly?
Yes
Correct product code is: 1324.630000000000



Programming date and time

Simulator has precise real time clock (accuracy ± 2 min/year) and automatically sets between winter and summer time.
The time should be set

- Time: according to actual UCT/GMT
- Offset: according to specific location (in Poland +1h)
  New simulators have the time set by manufacturer.

Terminator

Tachographs with CAN interface might need extra 120 Ohm resistor (so called Terminator), connected between pins A4 and A8 for proper functioning.

In case of tachograph type 1324, 2nd digit after dot informs whether extra resistor is necessary:

- 1324.x1xxxxxxxxx – extra resistor is necessary
- 1324.xxxxxxxxxxx – extra resistor is not necessary

In case of other tachograph types it is necessary to measure the resistance between pins A4 and A8:

- Resistance 120 Ohm - extra resistor is necessary
- Resistance substantially higher than 120 Ohm - extra resistor is not necessary

Note:
The resistance should be measured by ohmmeter, between pins A4 and A8 in tachograph A socket, on the tachograph not connected neither to power supply nor to the vehicle.

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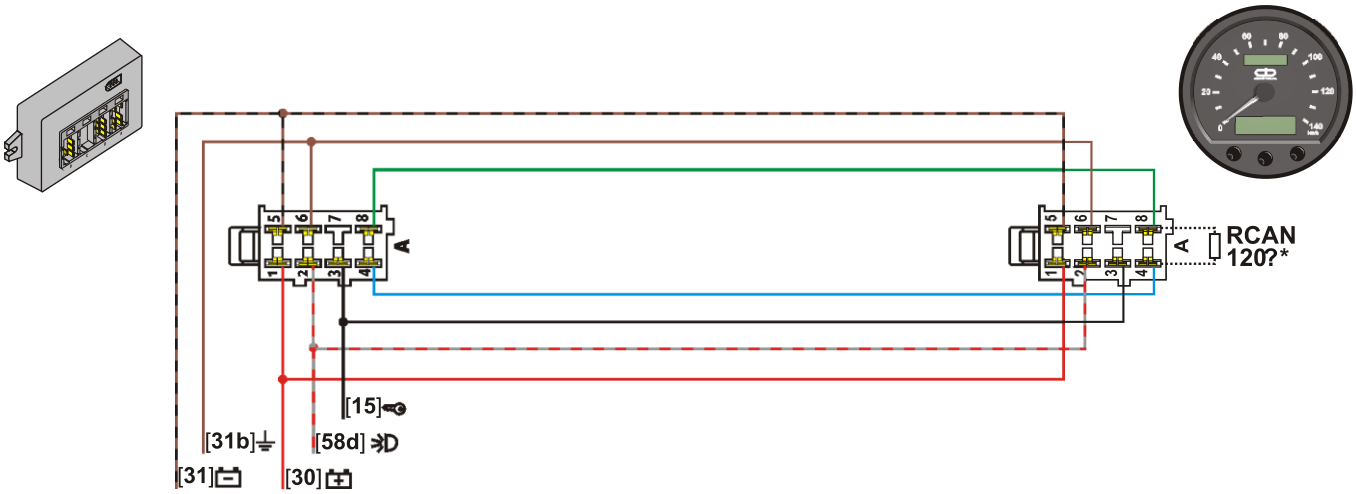
Hints & Tips

- set in Tachograph Simulator the very same odometer value as in tachograph to be replaced. Other value setting may be detected by vehicle on-board computer as unauthorized manipulation and may result in vehicle odometer switch off.

- some vehicles have to receive information about VIN number – the best to set this number in each simulator (in MAN it is necessary)

- o/p shaft factor value have to be setup in vehicles with automatic gear box

- The vehicle reaction on Product Code change is not immediate, the delay may be up to 10 sec. During Product Code finding process described in chapter “Programming product code”, each and every change should be followed by 10 sec waiting time to get the correct vehicle reaction



*this worth depend on the resistance of CAN interface