Ruptela Tachograph solution: installation and configuration

Tachograph Solution

Tachograph solution offers fast and reliable way to read driver card information. This functionality is available for TCO3 devices. This document explains how to install and configure device to read tachograph information.


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You can get all newest software, firmware and documentation at `ftp://dev.ruptela.lt` (user name: ftp, password: ftp).

Compatibility

Not all tachographs can be read with FM devices. For SIEMENS VDO 1381 tachograph version must be higher than 1.3A (including). Example of version is shown in left picture below. Also in addition to version, not all series of tachograph is supported. Where to check series you can see in right picture below.
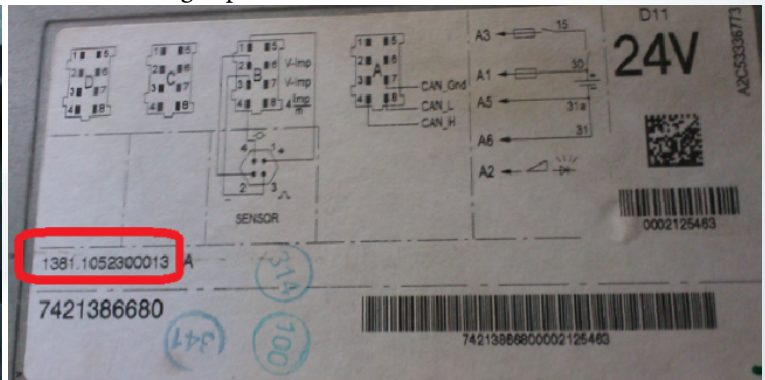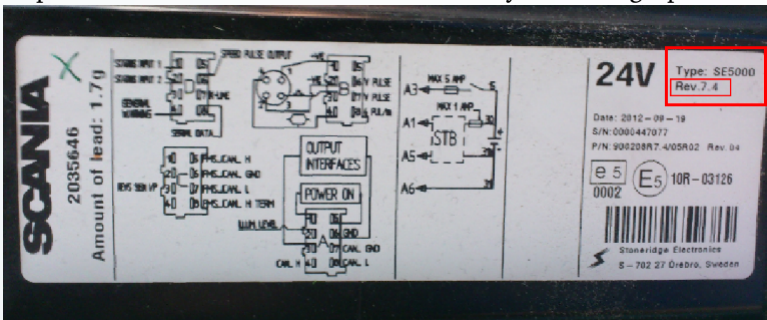

Blacklist of VDO tachograph series that are unreadable.

NOTE
For unsupported tachograph list please see end of this document - Appendix: Unsuported tachograph list.

Stoneridge tachographs must be version 7.0 and above. tachographs with lower versions are not supported. Please check picture below where to check version of your tachograph.
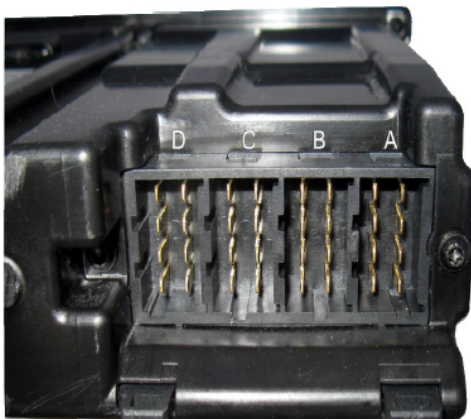

Tachograph connectors

Tachographs have four connectors:

A CAN-bus A

B Speed sender

C CAN-bus C

D Serial output

We will need **C** and **D** connectors. **Unplug them only with ignition off. This is important!**

In case these connectors are sealed, tacho read can be done without physical connection to tachograph. Tachograph data should come through FMS, same as board computer data. Please reffer to section *Tachograph read via FMS*.

Stoneridge general connectors view
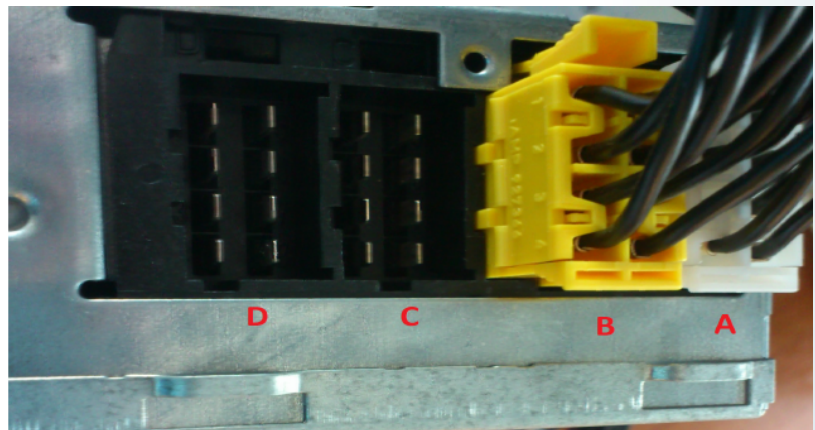
Siemens VDO general connectors view

Tachograph connection to TCO3

Tachograph read via FMS

This functionality works only from TCO3 [TCO] firmware version 4.24.

Not all trucks can be read this way. If, after installation, you get Tacho status 0, it means tachograph read via FMS is not available for current vehicle. In this case please use interface extender.

In most of new vehicles, basically starting from 2010, it is impossible to connect FM device directly to tachograph port C. Tachograph port C is connected directly to FMS gateway, see diagram:
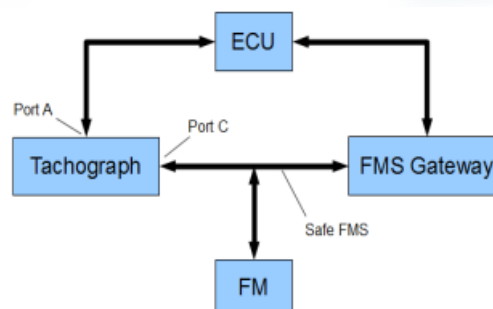
So if you have sealed connectors on tachograph simply connect FM device to vehicle FMS gateway (CAN connection) according to installation instruction for your vehicle make and model. Configuration is also same as for CAN connection–simply select **CAN** and choose **FMS** *see configuration picture below*.
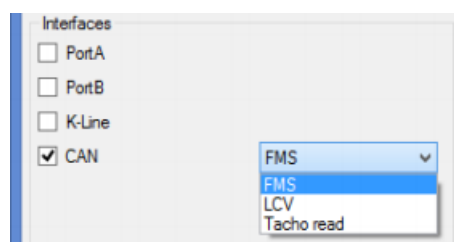
NOTE for TCO3 x4.27 or newer firmware!
When using TCO3 firmware x4.27 or newer **CAN Active** mode must be used disregarding vehicle make or model. CAN Silent mode cannot get tachograph data from FMS.

By default TCO3 device will gather CAN data but upon request from server (when you try to download tachograph data files) it will switch to tachograph read mode and download required files. Status check SMS messages will work same as for other connection methods (*see Status check via SMS commands* section).

Tachograph connection to TCO3 using interface extender

If Tacho reading via FMS is not available, you can use interface extender to connect to vehicle CAN and read tachograph. Interface extender gives you another CAN line: so you have one for CAN parameters and other for tachograph reading.

Notice for Scania and Mercedes Benz trucks
If you disconnect manufacturer's tracking device you must inform client to whom you are installing about this procedure!
In Scania from 2012 tachograph's **C** connector is connected to manufacturer's GPS device. You need to disconnect these wires from tachograph's **C** connector and connect Ruptela's device instead.

For Mercedes Benz Actros MP4 fleetboard does not work with other tracking devices. This means if you install Ruptela's device, Fleetboard will not work. Disconnect Fleetboard's wires from tachograph **C** connector and connect Ruptela s device instead.

Interface Extender can be connected either to **Port A** or **Port B** of TCO3 device. Connection schemes are shown below.
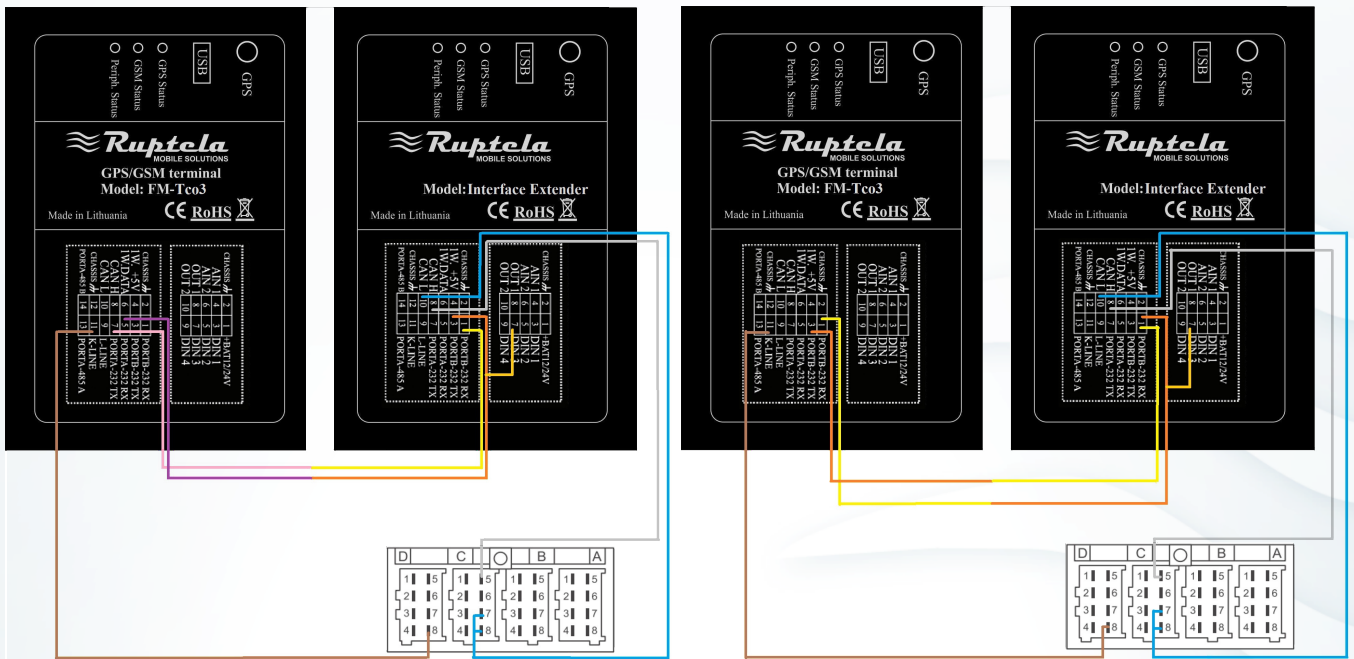
Extender connected to Port A of TCO3 device   Extender connected to Port B of TCO3 device

Configuration must be done as follows:

1. In first drop box choose **TCO3**, in second choose **TCO**

2. Click *IO settings* **Options** button

3. Check **K-Line** check box and select **TCO** from drop box. Also select correct port:

   (a) If Extender is connected to Port A: Check **Port A**, choose **RS232** and **Extender** as shown in picture (3a)

   (b) If Extender is connected to Port B: Check **Port B** and select **Extender** as shown in picture (3b)
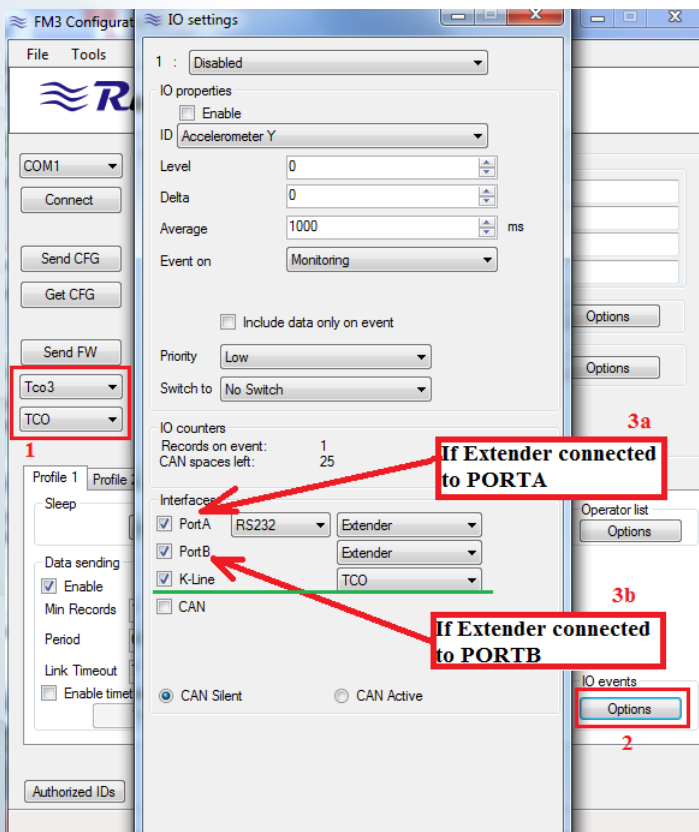
Direct tachograph connection to TCO3

If you do not need connection to vehicle board computer, you can use CAN interface to connect tachograph directly to device.

Connect tachograph **D** connector pin8 to TCO3 K-line. **C** connector pin5 to TCO3 CAN H port. **C** connector pin7 and pin8 must be connected together and attached to TCO3 CAN L port. Connection scheme is shown in picture to the right.
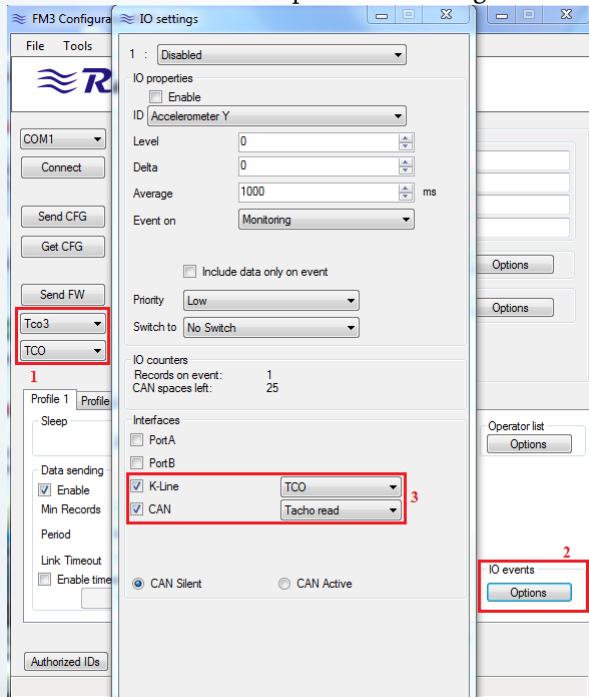
Figure 1: Direct tachograph connection to device scheme

Configuration must be done as follows:

1. In first drop box choose **TCO3**, in second choose **TCO**

2. Click *IO settings* **Options** button

3. Check **K-Line** check box and select **TCO** from drop box. Check **CAN** check box and select **Tacho read** from drop box. (*see configurator picture above*)

Now when device configuration and installation is done, you can download tachograph files to your computer.

If you connected this way, please refer to File download section.

Status check via SMS commands

You can use SMS commands to check the connection state.

Message format: [PASSWORD][space][COMMAND]

[COMMAND] is "tacho". (Ex. Without password: " tacho") Possible SMS responses:

0 - Tacho not responding

1 - OK

2 - Tacho reading interface is not configured in the FM device.

3 - Extender is not responding (either it's not connected, or getting to much error data over CAN line)

4 - Tacho reading is pending, state check is impossible.

5 - Connection is good, but communication is not going on.

If the connection was performed correctly you should get "tacho:1" response. You can check FM device and FM interface Extender connection using next SMS command.

Message format: [PASSWORD][space][COMMAND]

[COMMAND] is "ieversion". (Ex. Without password: " ieversion")
Possible SMS responses:"conf:x,ver:y"

x - FM's RS232 port configured for connection with extender (0–not configured 1–PortA, 2–PortB, 3–FM is configured to read tacho CAN without extender).

y - shows extender's FM version, if you get "NC" it means that FM does not gets response from extender.

Card reader connection to TCO3

You can connect only card reader to read driver card. With this functionality you will be able to read driver data - driving time, stop time, etc. However you will not be able to download *.ddd files with full tachograph information. Card reader connection scheme is displayed in picture below.

Important!
1100 Ohm resistor is required for **GAMAUTO** card reader. If you have different card reader do not connect resistor.
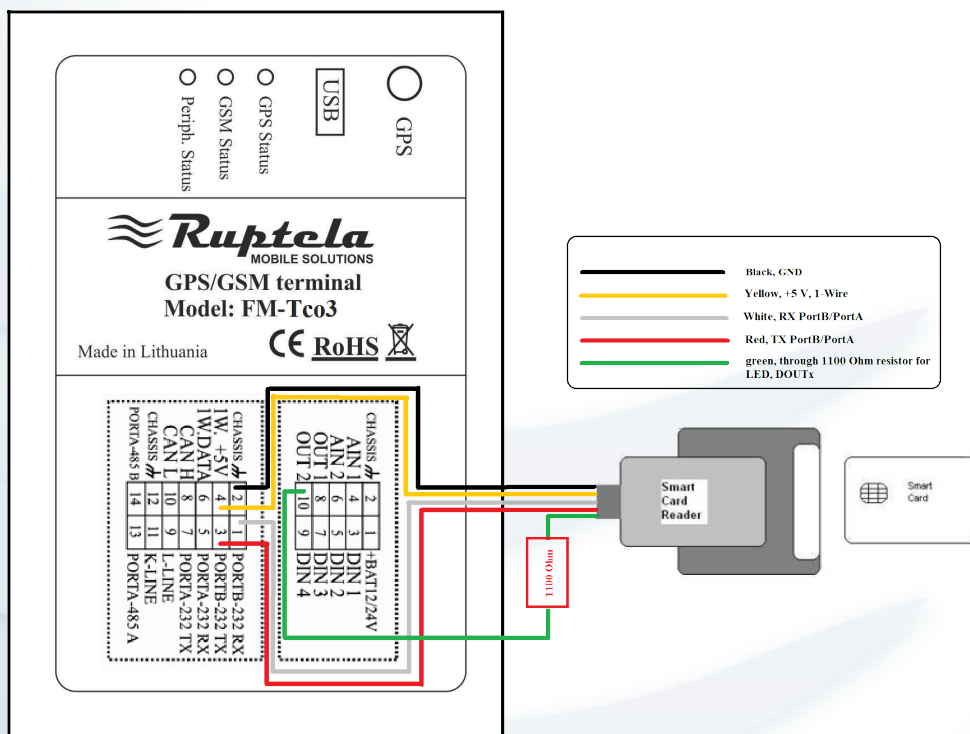
Configuration must be done as follows:

1. In first drop box choose **TCO3**, in second choose **TCO**

2. Click *IO settings* **Options** button

3. Check **K-Line** check box and select **TCO** from drop box. Also select correct port:

    (a) If Card Reader is connected to Port A: Check **Port A**, choose **RS232** and **TCO Card Reader** as shown in picture (3a)

(b) If Card Reader is connected to Port B: Check **Port B** and select **TCO Card Reader** as shown in picture (3b)
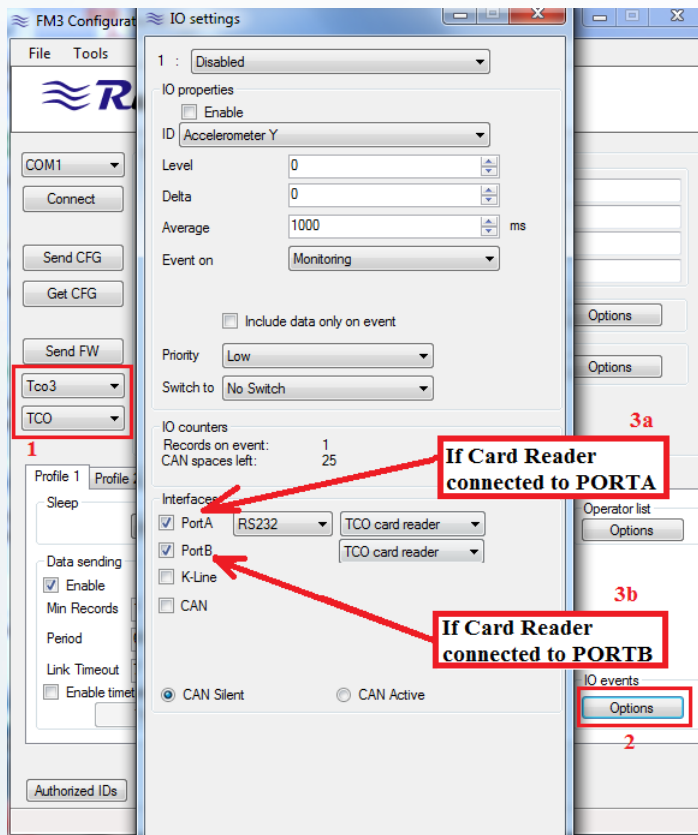

Driver card's data can be downloaded via trust Track Track system. Process is described in *file download* section. You do not need to authenticate with company card, but you will not be able to download *.ddd files, only driver card information.

Tacho Card Reader LED statuses

You can get indication if everything is working properly by LED blinking. LED (green color bulbs) statuses in card reader device:

- Blinking slowly : 5 s turned off, 0,2 s lights–it is allowed to put in the tachograph card

- Blinking equally: 1 s turned off, 1 s lights–reading data, it is not allowed to take out the card

- Lights: the card had been read successfully and needs to be taken out

- Blinking often: 0,2 s turned off, 0,2 s lights–error, it is not allowed to put in the card.

Tachograph file download using Trust Track system

First of all newest JAVA platform must be installed in your system. In order to download *.ddd files you must authenticate your ID by company's card. To do this you must have card reader connected to your computer. Insert company's card to card reader, log on to your Trust Track account and go to **Catalogue** section. Click on menu button **Tachograph files**. List of available files will be displayed. Click on **other settings**. You will see *connect card* button. When authenticated you will be able to download tachograph files to your computer.

> **Note**
> You can find detailed explanation of tachograph file download at our Trust Track system's web help.

Appendix: Unsupported tachograph list

This is list of **UNSUPPORTED** Siemens VDO 1381 series. If your tachograph's series is not in list, then data can be read from tachograph.

Unsupported VDO tachograph versions

Serial number	Vehicle manufacturer	Version	
1381-1051000005	Alexander Dennis	1.0	
1381-1051000006	Alexander Dennis	1.2	
1381-1051000008	Alexander Dennis	1.2a	
1381-2010000004	Autosan	1.0	
1381-2010000005	Autosan	1.2	
1381-2010000006	Autosan	1.2a	
1381-2050100001	DAF	1.0	
1381-1050100001	DAF	1.0	
1381-2050100007	DAF	1.2	
1381-2051100001	DAF	1.2	
1381-1051100001	DAF	1.2	
1381-1050100009	DAF	1.2	
1381-2051100003	DAF	1.2a	
1381-1051100003	DAF	1.2a	
1381-1010100005	Dennis Eagle	1.0	
1381-1010100006	Dennis Eagle	1.2	
1381-1010100007	Dennis Eagle	1.2a	
1381-1070100002	EvoBus	1.0	
1381-1070100003	EvoBus	1.0	
1381-1070100010	EvoBus	1.2	
1381-1070100011	EvoBus	1.2	
1381-1070100012	EvoBus	1.2	
1381-1070100001	EvoBus	1.2	
1381-1070100014	EvoBus	1.2a	
1381-1070100018	EvoBus	1.2a	
1381-1070100023	EvoBus	1.2a	
1381-1010109004	EvoBus	2.0	
1381-1010109009	EvoBus	2.1	
1381-0090200001	Fendt	1.3a	
1381-0090200002	Fendt	1.4	
1381-0111000001	Fiat	1.4	
1381-0070300001	Ford	1.0	
1381-0070300002	Ford	1.0	
1381-0070300004	Ford	1.0	
1381-0070300005	Ford	1.2	
1381-0070300006	Ford	1.2a	
1381-0070300009	Ford	1.2a	
1381-0070300010	Ford	1.2a	
1381-0070300011	Ford	1.3a	
1381-0070300012	Ford	1.3a	
1381-0070300017	Ford	1.4	
1381-0070300018	Ford	1.4	
1381-0070309004	Ford	2.0	
1381-0070309003	Ford	2.0	
1381-0250309003	Ford	2.0	
1381-0250309006	Ford	2.1	
1381-1060000003	HINO	1.0	
1381-1060000005	HINO	1.2	
1381-1060000006	HINO	1.2a	

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Table 1 – *Continued from previous page*

Serial number	Vehicle manufacturer	Version	
1381-1060000007	HINO	1.2a	
1381-0051000001	Isuzu	1.0	
1381-1051000001	Isuzu	1.0	
1381-0051000003	Isuzu	1.2	
1381-1051000004	Isuzu	1.2	
1381-0051000004	Isuzu	1.2a	
1381-1051000007	Isuzu	1.2a	
1381-0051000005	Isuzu	1.3a	
1381-0050200001	Isuzu	1.4	
1381-2072100002	Iveco	1.0	
1381-0071000002	Iveco	1.0	
1381-0071000003	Iveco	1.0	
1381-0111100002	Iveco	1.0	
1381-1072100002	Iveco	1.0	
1381-2072100004	Iveco	1.2	
1381-2072100005	Iveco	1.2	
1381-0071000005	Iveco	1.2	
1381-0111100004	Iveco	1.2	
1381-0111100005	Iveco	1.2	
1381-1072100003	Iveco	1.2	
1381-1072100004	Iveco	1.2	
1381-2072100006	Iveco	1.2a	
1381-2072100007	Iveco	1.2a	
1381-0071000006	Iveco	1.2a	
1381-0111100006	Iveco	1.2a	
1381-0111100008	Iveco	1.2a	
1381-1072100006	Iveco	1.2a	
1381-1072100007	Iveco	1.2a	
1381-0071000007	Iveco	1.3a	
1381-0071000008	Iveco	1.4	
1381-1011000003	KMW	1.3a	
1381-2050000019	Man	1.0	
1381-1050000007	Man	1.0	
1381-2050000023	Man	1.2	
1381-1050000008	Man	1.2	
1381-2050000027	Man	1.2a	
1381-1050000012	Man	1.2a	
1381-2070000039	Mercedes-Benz	1.0	
1381-0010000009	Mercedes-Benz	1.0	
1381-0010000010	Mercedes-Benz	1.0	
1381-0010000011	Mercedes-Benz	1.0	
1381-1070000007	Mercedes-Benz	1.0	
1381-1070000008	Mercedes-Benz	1.0	
1381-2070000046	Mercedes-Benz	1.2	
1381-0010000012	Mercedes-Benz	1.2	
1381-0010000014	Mercedes-Benz	1.2	
1381-0010000017	Mercedes-Benz	1.2	
1381-1070000024	Mercedes-Benz	1.2	
1381-1070000025	Mercedes-Benz	1.2	
1381-1070000038	Mercedes-Benz	1.2	
1381-2070000051	Mercedes-Benz	1.2a	
1381-010000018	Mercedes-Benz	1.2a	
1381-0010000020	Mercedes-Benz	1.2a	
1381-0010000022	Mercedes-Benz	1.2a	

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Table 1 – *Continued from previous page*

Serial number	Vehicle manufacturer	Version
1381-1070000034	Mercedes-Benz	1.2a
1381-1070000040	Mercedes-Benz	1.2a
1381-1070000041	Mercedes-Benz	1.2a
1381-0010000023	Mercedes-Benz	1.3a
1381-1070000044	Mercedes-Benz	1.3a
1381-1070000045	Mercedes-Benz	1.3a
1381-0010000027	Mercedes-Benz	1.4
1381-1070000055	Mercedes-Benz	1.4
1381-0010009003	Mercedes-Benz	2.0
1381-0010009004	Mercedes-Benz	2.0
1381-0010009009	Mercedes-Benz	2.1
1381-0070100001	Mitsubishi	1.0
1381-1070100006	Mitsubishi	1.0
1381-0070100002	Mitsubishi	1.2
1381-1070100017	Mitsubishi	1.2
1381-0070100004	Mitsubishi	1.2a
1381-1070100024	Mitsubishi	1.2a
1381-0070100005	Mitsubishi	1.3a
1381-1070100028	Mitsubishi	1.3a
1381-0070100007	Mitsubishi	1.4
1381-1070100040	Mitsubishi	1.4
1381-0070109002	Mitsubishi	2.0
1381-1070109005	Mitsubishi	2.0
1381-0070109003	Mitsubishi	2.1
1381-1070109011	Mitsubishi	2.1
1381-1081000001	Nissan	1.0
1381-1081000002	Nissan	1.0
1381-1081000003	Nissan	1.2
1381-1081000005	Nissan	1.2
1381-1081000008	Nissan	1.2a
1381-1081000009	Nissan	1.2a
1381-1081000012	Nissan	1.3a
1381-1081000013	Nissan	1.3a
1381-1081000014	Nissan	1.3a
1381-1081000016	Nissan	1.4
1381-1101009001	Nissan	2.0
1381-0081000004	Nissan / Renault	1.0
1381-0081000005	Nissan / Renault	1.2
1381-0081000007	Nissan / Renault	1.2a
1381-0081000008	Nissan / Renault	1.3a
1381-0081000009	Nissan / Renault	1.3a
1381-0081000011	Nissan / Renault	1.4
1381-0101009002	Renalut/Nissan	2.0
1381-0111409004	Renalut/Nissan	2.0
1381-0111400001	Renault-Nis./GM	1.0
1381-0111400003	Renault-Nis./GM	1.2
1381-0111400005	Renault-Nis./GM	1.2a
1381-0111400006	Renault-Nis./GM	1.3a
1381-0111400008	Renault-Nis./GM	1.4
1381-2052300001	Renault Trucks	1.0
1381-2052300002	Renault Trucks	1.0
1381-1052300001	Renault Trucks	1.0
1381-1052300002	Renault Trucks	1.0
1381-2052300004	Renault Trucks	1.2

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Table 1 – *Continued from previous page*

Serial number	Vehicle manufacturer	Version
1381-2052300005	Renault Trucks	1.2
1381-1052300004	Renault Trucks	1.2
1381-1052300005	Renault Trucks	1.2
1381-2052300007	Renault Trucks	1.2a
1381-2052300008	Renault Trucks	1.2a
1381-1052300006	Renault Trucks	1.2a
1381-1052300008	Renault Trucks	1.2a
1381-2052300012	Renault Trucks	1.3a
1381-2052300014	Renault Trucks	1.3a
1381-1052300013	Renault Trucks	1.3a
1381-2052300022	Renault Trucks	1.4
1381-2052300023	Renault Trucks	1.4
1381-1052300021	Renault Trucks	1.4
1381-0101009001	Renault/Nissan	2.0
1381-0111409005	Renault/Nissan	2.0
1381-0101009004	Renault/Nissan	2.1
1381-0111409010	Renault/Nissan	2.1
1381-0111409011	Renault/Nissan	2.1
1381-1071300004	Scania	1.2a
1381-1071400001	Scania	1.2a
1381-1070100008	Solaris Bus	1.0
1381-1070100015	Solaris Bus	1.2
1381-1070100020	Solaris Bus	1.2a
1381-1070000014	Solbus	1.0
1381-1070000021	Solbus	1.2
1381-1070000032	Solbus	1.2a
1381-1070000046	Solbus	1.3a
1381-1070000013	Sor Libchavy	1.0
1381-1070000027	Sor Libchavy	1.2
1381-1070000037	Sor Libchavy	1.2a
1381-1070000012	Tatra	1.0
1381-1070000017	Tatra	1.2
1381-1070000043	Tatra	1.2a
1381-1070000050	Tatra	1.3a
1381-1070000058	Tatra	1.4
1381-1070000011	Temsa	1.0
1381-1070000019	Temsa	1.2
1381-1070000030	Temsa	1.2a
1381-1070000010	Van Hool	1.0
1381-1070000020	Van Hool	1.2
1381-1070000031	Van Hool	1.2a
1381-1050100003	VDL Bus	1.0
1381-1050100005	VDL Bus	1.0
1381-1050100006	VDL Bus	1.2
1381-1050100008	VDL Bus	1.2
1381-1050100015	VDL Bus	1.2a
1381-1050100016	VDL Bus	1.2a
1381-1050100017	VDL Bus	1.3a
1381-0051000001	VDO	1.0
1381-1051000001	VDO	1.0
1381-2050100005	VDO	1.0
1381-1081000006	VDO	1.0
1381-1070100007	VDO	1.0
1381-0051000003	VDO	1.2

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Table 1 – *Continued from previous page*

Serial number	Vehicle manufacturer	Version	
1381-1051000004	VDO	1.2	
1381-2050100006	VDO	1.2	
1381-1081000007	VDO	1.2	
1381-1070000028	VDO	1.2	
1381-0051000004	VDO	1.2a	
1381-1051000007	VDO	1.2a	
1381-2050100008	VDO	1.2a	
1381-1081000010	VDO	1.2a	
1381-1070000042	VDO	1.2a	
1381-0051000005	VDO	1.3a	
1381-0050200001	VDO	1.4	
1381-2012100001	Volvo	1.0	
1381-2012100002	Volvo	1.0	
1381-2012100005	Volvo	1.0	
1381-1012000002	Volvo	1.0	
1381-1012100001	Volvo	1.0	
1381-1012100005	Volvo	1.0	
1381-2012000003	Volvo	1.2	
1381-2012000004	Volvo	1.2	
1381-2012300001	Volvo	1.2	
1381-1012000003	Volvo	1.2	
1381-1012000004	Volvo	1.2	
1381-1012300001	Volvo	1.2	
1381-1012100002	Volvo	1.2	
1381-2012000005	Volvo	1.2a	
1381-2012000006	Volvo	1.2a	
1381-2012300002	Volvo	1.2a	
1381-1012000006	Volvo	1.2a	
1381-1012000007	Volvo	1.2a	
1381-1012300003	Volvo	1.2a	
1381-2012000010	Volvo	1.3a	
1381-2012000012	Volvo	1.3a	
1381-1012000011	Volvo	1.3a	
1381-2012000018	Volvo	1.4	
1381-2012000019	Volvo	1.4	
1381-1012000018	Volvo	1.4	
1381-0061000006	VW	1.0	
1381-0061200001	VW	1.0	
1381-0120000001	VW	1.0	
1381-0120000002	VW	1.0	
1381-0061000008	VW	1.2	
1381-0061200002	VW	1.2	
1381-0120000006	VW	1.2	
1381-0120000007	VW	1.2	
1381-0121000006	VW	1.2	
1381-0120000008	VW	1.2a	
1381-0120000011	VW	1.2a	
1381-0121200001	VW	1.2a	
1381-0121000003	VW	1.3	
1381-0121000005	VW	1.3	
1381-0120000012	VW	1.3a	
1381-0121000007	VW	1.3a	
1381-0121000008	VW	1.3a	
1381-0120000019	VW	1.4	

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Table 1 – *Continued from previous page*

Serial number	Vehicle manufacturer	Version	
1381-0121000014	VW	1.4	
1381-0121000015	VW	1.4	
1381-0121009002	VW	2.0	
1381-0120009003	VW	2.0	
1381-0121009003	VW	2.0	
1381-0121009009	VW	2.1	