

## VEHICLE AND MANUFACTURER IDENTIFICATION BY VIN CODE

As long ago as 1976 the ISO (International Organization for Standardization) published two standards concerning the Vehicle Identification Number (ISO 3779) and the World Manufacturer Identifier (ISO 3780), both regarding road vehicles and trailers.

Just before this, the European Commission had issued a directive about the identification of road vehicles with at least four wheels, with or without body, and capable of speeds above 25 km/h, including trailers (directive EEC/76/114). This directive was subsequently changed in May 1978 to bring it in line with the two ISO standards mentioned (except that ISO 3779 also concerns motorcycles and mopeds).

Although the EEC-directive stated that it should have been implemented by the member states on 01/10/1978, some countries only did so on 01/01/1995 (for instance The Netherlands) or even 01/01/1996 (Germany).

In North America a system is used which is much more stringent than ISO Standard 3779 but still follows the same principle.

The use of the Vehicle Identification Number is now almost universally accepted as 83 countries (including all countries with a major automotive industry) have had WMI's (see below) allocated.

In this article, I will try to set out the implications of the ISO Standards and the EEC-directives in respect to the documentation of buses and coaches. Also, some attention is given to the differences between these systems and the North American requirements. But first the European system.

First of all, every vehicle must have a *construction plate*, which should be fitted in an easy accessible location on a part of the vehicle which, during the life span of the vehicle, normally won't be changed. This plate should be clearly legible and must contain the following data:

- 1) the name of the manufacturer;
- 2) the number of the EU-type approval. As long as a vehicle doesn't have a EU-number or EU-approvals are not yet issued (this is so in case of buses), a member state may require that the national approval number is used (like for instance Belgium and Italy do);
- 3) the identification number of the vehicle;
- 4) the allowed maximum mass of the vehicle;
- 5) the allowed maximum mass of the vehicle, combined with a trailer;
- 6) the allowed maximum mass for each of the axles from front to rear.

As long as the European directives concerning dimensions and weights are not yet approved, a member state may require that the allowed masses according to national legislation are stated.

When the masses which are technically possible are greater than the legally allowed masses, than a member state may require that these figures are also stated, in a separate column.

For all data, Latin letters and Arabian numbers must be used while for the data mentioned under 1) and 3) only capital letters are allowed.

It is allowed for the manufacturer to add other data but only outside a clearly marked rectangle containing the mandatory data.

The most important part as far the documentation of buses and coaches is concerned is of course the identification number of the vehicle (VIN). The purpose of this number, which always contains 17 digits, is to ascertain the possibility of identifying the vehicle during a period of 30 years.

Apart from on the construction plate, this number must also be placed on the chassis or frame in a well accessible place. The characters used for the identification number must be at least 4mm high on the construction plate and 7mm on the chassis.

It is not allowed to use the letters I, O and Q for the VIN, nor is it allowed to use asterisks, slashes or other signs.

For this number and its sections, internationally accepted codes are used:

**VIN: Vehicle Identification Number;**

**WMI: World Manufacturer Identifier;**

**VDS: Vehicle Descriptor Section;**

**VIS: Vehicle Identifier Section.**

Note that the phrase "chassis number" is no longer used in the ISO Standards or in the EC directive. Effectively this means, when the EC directive is implemented in a member state, that it is not required for a vehicle to carry a chassis number but a VIN - in fact, a vehicle that does not carry a VIN may be refused (type) approval. Interestingly, some manufacturers (like Dennis) use both a chassis number and a VIN, in which only the last part (a sequential production number) is the same in both numbers.

**The WMI.**

The first group of the VIN contains a code which is assigned to a vehicle manufacturer to make identification of the manufacturer possible. This code consists of three digits which are assigned by or on behalf of the national authorities of the country in which the manufacturer is based.

The first digit points to a geographical region (as such, Africa, Asia, Europe, North America, South America and Oceania are recognized).

The second digit points to a country within one of these regions and the third points to a specific manufacturer. Manufacturers may have more than one WMI.

The designation of WMI country codes is set out in the following chart. The vertically placed characters point to the first position of the WMI, the horizontally placed characters are the ones used for the second position.

<table of WMI country codes>

There is, however, one important exception in the designation of WMI's. When a manufacturer builds less than 500 vehicles annually, the third digit of the WMI is **always a 9**.

Of course then a further identification is needed which can be found in the 12th, 13th and 14th position of the full VIN. You can find examples of this in the following table, which sets out the WMI's of some well-known bus manufacturers.

Large manufacturers		Small manufacturers	
1BA	Blue Bird	1N9 013	Neoplan USA
1EU	Eagle International	1C9 102	Crown Coach Corporation
SFD	Dennis	TM9 CA2	OASA
WAG	Neoplan	UH9 DA3	DAB
WDB	Mercedes-Benz	VF9 300	Kässbohrer France
WKK	Kässbohrer	VS9 001	Setra Spain
WMA	MAN	VS9 031	Ayats
XMG	DAF Bus International	XL9 003	BOVA
YE2	Van Hool	XL9 042	Den Oudsten Bussen
YS4	Scania	YA9 128	LAG, Eos Coach
YV3	Volvo Bus Corporation	ZA9 A18	De Simon
ZCF	Iveco-Fiat		

**The VDS.**

The second group of the VIN consists of 6 digits which may be used by a manufacturer to identify the vehicle type. Positions not used must be filled with numbers or letters. The last digit of the VDS (VIN-9) is used by some manufacturers (Volvo, LAG/Eos Coach) as a check digit.

There is a wide variety of ways that European manufacturers make use of the VDS. Some manufacturers do not use it at all, some just use the normal chassis designation and some use every position available as a code for chassis type, engine, suspension, number of axles and so on.

**The VIS.**

The last group contains 8 digits, of which the last four always must be numerical. This group may be used as the manufacturer wishes (with the exception of those who build less than 500 vehicles per year) and must make it possible, in combination with the other two groups, to identify the vehicle.

Positions in this group that are not used, must be filled with zeroes.

If the manufacturer uses a *year digit*, ISO 3779 recommends to use the first digit of the VIS for this. Likewise, when a factory code is used, ISO recommends to use the second digit of the VIS. Both of these codes are not mandatory according to the EU-directives. Some manufacturers, like Volvo and Neoplan, use

both the year and factory code, some only the year code (BOVA), some only the factory code (DAF) and some use neither (Scania, Kässbohrer - at least on non-American vehicles).

The year code can either indicate a calendar year or a model or production year as used by the manufacturer and the following table sets out the coding as recommended by ISO.

1971: 1	1979: 9	1987: H	1995: S	2003: 3
1972: 2	1980: A	1988: J	1996: T	2004: 4
1973: 3	1981: B	1989: K	1997: V	2005: 5
1974: 4	1982: C	1990: L	1998: W	2006: 6
1975: 5	1983: D	1991: M	1999: X	2007: 7
1976: 6	1984: E	1992: N	2000: Y	2008: 8
1977: 7	1985: F	1993: P	2001: 1	2009: 9
1978: 8	1986: G	1994: R	2002: 2	2010: A

If possible the VIN code should be placed on one line. Only in technically motivated exceptions is it allowed to place the VIN in two lines but a division within the three groups is not allowed. When the VIN is placed on two lines, the beginning and ending of each line must be marked by a symbol which cannot be confused with a number or letter.

These symbols (like an asterisk), which are also sometimes used to mark the start and end of the VIN itself, are **never** part of the VIN code and may not be used in documents.

### **The North American system.**

In the United States (since 1980) and Canada (since 1982) vehicles must have an identification number which conforms to the ISO Standards. The regulations apply to passenger cars, trucks, buses, trailers, incomplete vehicles and motorcycles. However, the requirements in North America go much further than the European directives. (Please note that the following remarks apply to US regulations. Although I believe the Canadian regulations are the same, I have no means to check this.)

Each vehicle must have a label affixed which contains the following data in the order shown:

- 1) the name of the manufacturer, preceded by the text "Manufactured by" or "Mfd. by";
- 2) month and year of manufacture (in either the form "May 1989" or "5/89");
- 3) Gross Vehicle Weight Rating (GVWR) in pounds;
- 4) Gross Axle Weight rating (GAVWR) in pounds for each axle;
- 5) the statement "This vehicle conforms to all applicable Federal motor vehicle safety standards in effect on the date of manufacture shown above";
- 6) the Vehicle Identification Number (VIN);
- 7) the type classification of the vehicle (e.g. bus).

This label shall be affixed to either the hinge-pillar, door-latch post, or the door edge that meets the door-latch post, next to the driver's seating position, or if none of these locations is practicable, to the left side of the instrument panel. If that location is also not practicable, the label shall be affixed to the inward-facing surface of the door next to the driver's position. If none of these locations is practicable, another location proposed by the manufacturer may also be approved if the label is easily readable without moving any part of the vehicle except an outer door.

(I believe that normally, this label in American buses is affixed in a location above the driver's window.)

In respect to the Vehicle Identification Number, the codes WMI, VDS and VIS are not used in the US regulations. Secondly, these regulations divide the VIN in 4 sections:

- 1) the first section consists of three characters that occupy positions 1 through 3 of the VIN and shall uniquely identify the manufacturer of the vehicle (effectively this is the same as the WMI). The same provision as in ISO 3780 about manufacturers that produce less than 500 vehicles is made. However, the compulsory use of the '9' as third character is not mentioned (still, all examples I have from US small manufacturers have the '9' as third digit);
- 2) the second section consists of 5 characters which occupy positions 4 through 8 of the VIN (i.e., one character less than the VDS). For buses, these 5 characters must always comprise codes for the model or line, series, body type, engine type and brake system;

- 3) the fourth section consists of only one character which occupies the ninth position of the VIN. This section is a check digit, which is calculated over the other 16 characters of the VIN and can be either a number or the capital letter X;
- 4) the fourth section consists of 8 digits on positions 10 through 17 of the VIN. For buses, the last four shall always be numeric. The first character of the fourth section represents the vehicle model year. The year codes are those recommended by ISO. The second character of the fourth section represents the plant of manufacture. The third through eight characters of the fourth section represents the number sequentially assigned by the manufacturer if the manufacturer produces 500 or more vehicles annually. If the manufacturer produces less than 500 vehicles annually, the 6th, 7th and 8th character of the fourth section represents the sequential production number (the 3rd, 4th, and 5th are the second part of the manufacturer identifier).

Although Buses World Wide does not concern itself with reporting identification numbers (at least, not the magazine) I hope this article will spark some interest in BWW members so that those who used to report or collect chassis numbers may now give their attention also to VIN codes, thereby making bus documentation even more complete.

*This article is a translation and 'international' version of an article that appeared in the 1995-9 issue of "de Autobuskroniek".*