



### 2.1.1 SAE Publications

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SAE J218 Passenger Car Identification Terminology

SAE J853 Vehicle Identification Numbers

SAE J1044 World Manufacturer Identifier

SAE J1229 Truck Identification Terminology

## 3. DEFINITIONS

### 3.1 Divider

A symbol, character, or physical border to separate the sections of the VIN or to define the limits (beginning and end) of the VIN.

### 3.2 Engine Type

A code determined by the vehicle manufacturer to uniquely identify the vehicle power source

### 3.3 Field

A set of character positions reserved for a specific element of information.

### 3.4 Sequential Number

A production number assigned to the vehicle.

### 3.5 Vehicle Descriptor Section (VDS)

The second section of the VIN. It provides information describing the general attributes of the vehicle.

### 3.6 Vehicle Identification Numbers (VIN)

The number assigned to a vehicle by the manufacturer primarily for registration and identification purposes. It may consist of numerals, letters, or a combination thereof (see SAE J853).

### 3.7 Vehicle Indicator Section (VIS)

The third section of the VIN. It is a combination of characters assigned by the manufacturer, which, in conjunction with the WMI and VDS distinguishes one vehicle from another.

### 3.8 World Manufacturer Identifier (WMI)

The first section of the VIN consisting of a code designating the manufacturer of the vehicle (see SAE J1044)

### 3.9 For other basic definitions, see SAE Publications listed under References.

## 4. REQUIREMENTS

### 4.1 Vehicle Identification Number Basic Content

The VIN shall consist of three sections and a verification character: first section, the World Manufacturer Identifier (WMI); second section, the Vehicle Descriptor Section (VDS); and last section, the Vehicle Indicator Section (VIS).

### 4.2 Vehicle Identification Number Length

The complete VIN shall be fixed at 17 characters.

### 4.3 World Manufacturer Identifier (WMI)

The WMI is pre-assigned to the manufacturer by the National Organization (SAE in the case of U.S. vehicle manufacturers) in accordance with SAE Recommended Practice J1044 World Manufacturer Identifier.

4.3.1 For manufacturers of more than 900 vehicles annually, the WMI will consist of 3 characters in position 1 through 3 of the VIN.

4.3.2 For Manufacturers of less than 900 vehicles annually, the WMI shall consist of 6 characters, positions 1 through 3 and 12 through 14. Character 3 shall be a 9 and will indicate a 6 character WMI. (For more information concerning WMIs for manufacturers of less than 900 vehicles annually, see SAE J1044.)

### 4.4 Vehicle Descriptor Section (VDS)

Characters 4 through 8 of the VIN shall be the VDS. The five characters in this section shall identify the general descriptive attributes of the vehicle. The coding and sequence of this section is determined by the manufacturer.

4.4.1 Sample attributes for Trucks: Make, Truckline, Series, Chassis Type, Body Type, Drive Wheels, and Engine Type.

4.4.2 Sample attributes for Passenger Cars: Make, Car Line, Series, Body Type, and Engine Type.

4.5 The ninth (9<sup>th</sup>) position of the VIN shall consist of a single VIN verification character called a "check digit". After all other characters in the VIN have been determined by the manufacturer, the check digit shall be calculated by carrying out the mathematical computation specified in this section. A sample calculation is included in Table 4.

#### 4.5.1 Check Digit Calculation:

- a. Assign to each number in the VIN its actual mathematical value and assign to each letter the value specified in Table 1.
- b. Multiply the assigned value for each character in the VIN by the position weight factor specified in Table 2.
- c. Add the resulting products and divide the total by 11.
- d. The numerical remainder or decimal equivalent determines the check digit value and the numbers 0-9 or the letter X that are used to indicate the check digit is obtained from Table 3.

TABLE 1 - ASSIGNED VALUES FOR LETTERS

A = 1	G = 7	N = 5	V = 5
B = 2	H = 8	P = 7	W = 6
C = 3	J = 1	R = 9	X = 7
D = 4	K = 2	S = 2	Y = 8
E = 5	L = 3	T = 3	Z = 9
F = 6	M = 4	U = 4	

TABLE 2 - VIN POSITION AND WEIGHT FACTORS

Position	Weight Factor	Position	Weight Factor
1	8	10	9
2	7	11	8
3	6	12	7
4	5	13	6
5	4	14	5
6	3	15	4
7	2	16	3
8	10	17	2
9	0		

TABLE 3 - CHECK DIGIT VALUES

Fractional Remainder	0	1/11	2/11	3/11	4/11	5/11	6/11	7/11	8/11	9/11	10/11
Decimal Equivalent	0	0.091	0.182	0.273	0.364	0.455	0.545	0.636	0.727	0.818	0.909
Check Digit	0	1	2	3	4	5	6	7	8	9	X

TABLE 4 - SAMPLE CHECK DIGIT CALCULATION

<b>VIN Position</b>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
<b>Sample VIN</b>	1	G	4	A	H	5	9	H	-	5	G	1	1	8	3	4	1
<b>Assigned Value</b>	1	7	4	1	8	5	9	8	-	5	7	1	1	8	3	4	1
<b>Weight Factor</b>	8	7	6	5	4	3	2	1	0	9	8	7	6	5	4	3	2
<b>Product</b>	8	49	24	5	32	15	18	80	0	45	56	7	6	40	12	12	2
<b>Sum of Products</b>	8+49+24+5+32+15+18+80+0+45+56+7+6+40+12+12+2 = 411																
<b>Divide by 11</b>	411/ 11 = 37 4/11 or 37.364 (Whole number 37 with Remainder 4 or 0.364)																
<b>Check Digit</b>	Check Digit = 4 (See Table 3)																
<b>Completed VIN</b>	1	G	4	A	H	5	9	H	4	5	G	1	1	8	3	4	1