Light Duty Vehicle Information Number (VIN) to ACES Vehicle Conifguration Database (VCDB) Database

Basic facts about VIN

- Unique 17 digit fixed format
- Requirement for all vehicles destined for use in the US
- Assigned to all vehicles produced from model year 1981 and later
- Standards for the VIN are set by the National Highway Transportation and Safety Administration (NHTSA)
- VIN positions can mean different things in different years and between manufacturers based on approval from the NHTSA
- Standards do not necessarily apply to markets outside the US. Note: MOTOR currently only supports US VINs
- Data within the first 10 digits of a VIN can tell specific information about a vehicle including year, make, model, country of origin, assembly plant and more
- Not all engine applications will be in the VIN number for certain makes and years
- The letters I, O and Q never appear in a VIN

Sample VIN:



osition 1-3 World Manufacturer Identifier						
Position 4	Restraint System Type Brake Type and GVWR Class (Trucks and Vans Only)					
Position 5-7 Line, Series, Body Type						
Position 8	Engine Type					
Position 9	Check Digit					
Position 10	Model Year					
Position 11	Assembly Plant					
Position 12-17	Production Sequence Number					

Positions 1-3: Identifies the manufacturer and country of origin. The first digit tells the general geographic area of the manufacturer. The second digit designates the country of origin. The third digit designates the manufacturer.

Positions 4-8: The fourth to eight digits are used to capture descriptive elements of a vehicle. The amount and type of information can vary from manufacturer to manufacturer. However some common data is always captured including engine, body type, restraint system and GVW range.

Position 9: Check digit used to verify the validity of a VIN.

Position 10: Used to determine the model year. Since the VIN standard has been in use for over 30 years, the 7th digit can be used to properly determine the model year in the 10th digit. If the 7th digit is a numeric character the model year is between 1981 and 2009, if it's an alpha character it's 2010 or later.

Position 11: Used to determine the specific plant and location the vehicle was manufactured.

Positions 12-17: Sequentially assigned serial number.

A Ford VIN of **1FTCR15X0TTA01050** would represent the following information:

Position	Code	Definition
1	(1)	Made in the USA
2	(F)	Made by Ford
3	(T)	Is a Truck
4	(C)	Has a G.V.W.R. of 4,001 - 5,000 lbs.
5, 6 & 7	(R15)	Ranger 4x4 (2-Door SuperCab)
8	(X)	Has a 4.0 Liter V-6
9	(5)	Check Digit - Ignore
10	(T)	Was built in 1996
11	(T)	Was built in Edison New Jersey
12	(A)	Ford Division
13 thru 17	(01050)	Was the 1,050th truck built that year

MOTOR's VINtoVCDB product contains the following:

- MOTOR maps the base 10 (first ten digits of the VIN) to the ACES standards using the Vehicle Configuration Database (VCDB).
- Information on the ACES standards can be found here: ACES standards
- Information on the VCDB can be found here: VCDB database
- The 9th digit (check digit) and digits 12-17 are represented by a wildcard @ character.
- A typical VIN will display as **1FTCR15X@T@@@@@@@** in the VIN database.
- Data is delivered in a database called VINtoVCDB.

- Database is updated and delivered monthly with new vehicles. The product is a listing of
 the available VIN ten digits applied to the appropriate VCDB attributes with additional
 attributes applied if provided by the OE
- Year over year the additional attributes may change based on source data availability

MOTOR's VINtoVCDB database contains the following fields

o VIN 1-17

 VIN number mask of Base10 digits in the form of 1FTCR15X@T@@@@@@@

MAKEIDaces

- Numeric Make ID code represented in the VCDB Make table
- Manufacturers of U.S. Light Duty passenger cars, trucks, and vans are fully supported, except low census makes and models.
- Canadian VINs are not supported.
- Some Medium Duty vehicles are contained within the database, but this segment is not fully supported.
- MOTOR supports data from 1981 to the current model year for the following manufacturers:

Hyundai Acura Ram Alfa Romeo Infiniti Saab **American Motors** Saturn Isuzu Audi Scion Jaguar **BMW** Smart Jeep Buick Subaru Kia Cadillac Land Rover Suzuki Chevrolet Lexus Toyota Chrysler Lincoln Volkswagen Daewoo Mazda Volvo Mercedes Benz Daihatsu Yugo Dodge Mercury Eagle Mini Mitsubishi Fiat Ford Nissan Oldsmobile Geo **GMC** Plymouth Honda **Pontiac** Hummer (AM General) Porsche

VEHICLEIDaces

- Numeric vehicle ID code represented in the VCDB Vehicle table
- 100% populated for all VIN records.

ENGINECONFIGIDaces

- Numeric engine configuration ID represented in the VCDB EngineConfig table
- 100% populated for all VIN records.

BODYNUMDOORSIDaces

- Numeric ID for number of doors represented in VCDB by the BodyNumDoors table
- Majority of VIN records contain number of doors.

BODYTYPEIDaces

- Numeric ID for body type represented in VCDB by the BodyType table
- Body types such as "Sedan" and "Coupe" will be listed when the vehicle is manufactured in different body styles, and the manufacturer conveys the information in the Base 10 VIN.

DRIVETYPEIDaces

- Numeric ID for vehicle drive type represented in VCDB by the DriveType table
- Drive types such as "FWD" and "AWD" will be listed when the vehicle is manufactured with different drive types, and the manufacturer conveys the information in the Base 10 VIN.

DriveTypeID	DriveTypeName
4	U/K
5	FWD
6	AWD
7	RWD
8	4WD

TRANSMISSIONCONTROLTYPEIDaces

- Numeric ID for transmission control type represented in VCDB by the TransmissionControlType table
- Depending on the vehicle manufacturer, the vehicle in context, and the amount of information conveyed in the VIN, transmission details will be provided when possible.

TransmissionControlTypeID	TransmissionControlTypeName
3	N/R
4	U/K
5	Automatic
6	Standard
9	Automatic CVT
11	Automatic Dual Clutch

TRANSMISSIONNUMSPEEDIDaces

- Numeric ID for number of transmission speeds represented in VCDB by the TransmissionNumSpeeds table
- Depending on the vehicle manufacturer, the vehicle in context, and the amount of information conveyed in the VIN, transmission details will be provided when possible.

BEDTYPEIDaces

- Numeric Bed Type ID represented in the VCDB BedType table.
- Majority of Bed types (Stepside, Flareside) will be found among Ford pickups.

WHEELBASEIDaces

- Numeric ID for vehicle wheel base lenth represented in VCDB by the WheelBase table
- Usually not found within VIN Base 10 information, but populated when present.

o BRAKEABSIDaces (No information found within VIN Base 10)

- Numeric ID for ABS brake type represented in VCDB by the BrakeABS table
- Not found within VIN Base 10 information.

o RESTRAINTTYPEIDaces (No information found within VIN Base 10)

- No longer supported by ACES standards, provided for backward compatibility.
- Not found within VIN Base 10 information.

STEERINGTYPEIDaces (No information found within VIN Base 10)

- Numeric ID for steering type represented in VCDB by the SteeringType table
- Not found within VIN Base 10 information.

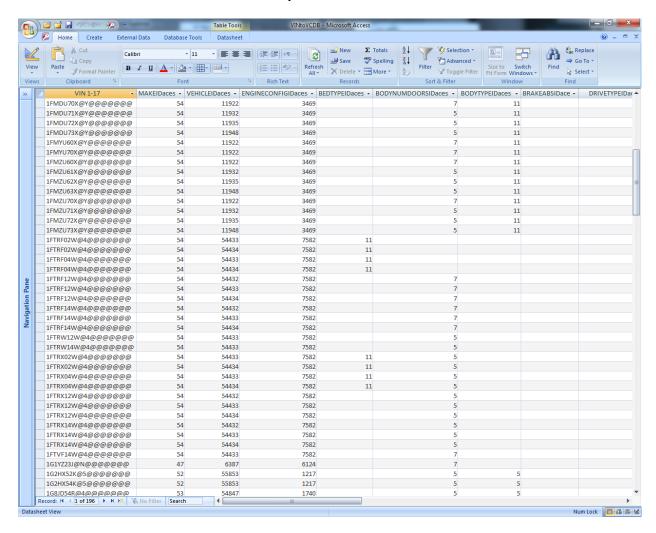
VERSIONDATEaces

Version of VCDB by date represented in VCDB by the Version table

ExportDate

Date data was extracted

MOTOR Sample VINtoVCDB Database



Sample VINs using MOTOR's VINtoVCDB database

Vehicle is a [2006 Ford F-150 4x4 Super Crew XLT]

Full VIN 1FTPW14546KB05033 supplied by user.

VIN Mask 1FTPW145@6@@@@@@@ is found to match.

VINtoVCDB Results:

VIN 1-17	MAKEID aces	VEHICLEID aces	ENGINE CONFIGID aces	BEDTYPEID	BODYNUM DOORSID aces	BODYTYPEI D aces	BRAKEABSI D aces	DRIVETYPE ID aces	RESTRAINT TYPEID aces		TRANSMIS SION CONTROL TYPEID aces	TRANSMIS SION NUM SPEEDSID aces	BASEID	VERSION DATE aces	ExportDate
1FTPW145@6@@@@@@@	54	56701	7583	11	5	Any	Any	8	Any	Any	Any	Any	Any	27-Jul-12	27-Aug-12
1FTPW145@6@@@@@@@	54	56702	7583	Any	5	Any	Any	8	Any	Any	Any	Any	Any	27-Jul-12	27-Aug-12
1FTPW145@6@@@@@@@	54	56705	7583	11	5	Any	Any	8	Any	Any	Any	Any	Any	27-Jul-12	27-Aug-12
1FTPW145@6@@@@@@@	54	56754	7583	Any	5	Any	Any	8	Any	Any	Any	Any	Any	27-Jul-12	27-Aug-12

The supplied Base 10 VIN information is found to be valid only for the following vehicle attributes translated by the ACES VCDB:

VINtoVCDB Field	Value	Value translated by ACES VCDB
MakeID	54	Ford
VehicleID	56701,56702,56705,56754	2006 Ford F-150 [FX4, King Ranch, Lariat, XLT]
EngineConfigID	7583	5.4L, V8, 24 valve, 330 ci, 5 eng vin, Electronic SFI Fuel Injected, SOHC-Gas
BedTypeID	11 (56701,56705 vehicles only)	Flareside bed for the FX4, and XLT only. All available beds for the King Ranch, and Lariat.
BodyNumDoorsID	5	4-door only
DriveTypeID	8	4WD only

For the example of the Ford F-150, the VIN information differs by submodels, engines, bedtypes, cab style, and drive type. The VIN supplied refers to Ford trucks only equipped with the 5.4L Gas fuel engines (as opposed to Flex or Diesel), 4 doors (also available in 2 doors), and 4WD drive types (also available in RWD). Furthermore, the VIN illustrates that for the FX4 and XLT, this vehicle is only a Flareside bed type (as opposed to Styleside).

As shown above with the F-150, specific information regarding the valid vehicle configuration for this VIN supplied is provided by MOTOR's VINtoVCDB database.

Vehicle is a [2010 Audi A3 TDI Premium Plus]

Full VIN WAUKJAFM6AA068110 supplied by user.

VIN Mask WAUKJAFM@A@@@@@@@ is found to match.

VINtoVCDB Results:

VIN 1-17	MAKEID aces	VEHICLEID aces	ENGINE CONFIGID aces	BEDTYPEID aces	BODYNUM DOORSID aces	BODYTYPEI D aces	BRAKEABSI D aces	DRIVETYPE ID aces	RESTRAINT TYPEID aces		TRANSMIS SION CONTROL TYPEID aces	SION NUM	BASEID	I VERSION	ExportDate
WAUKJAFM@A@@@@@@@@	73	147160	9065	Any	5	8	Any	Any	Any	Any	Any	Any	Any	27-Jul-12	27-Aug-12

The supplied Base 10 VIN information is found to be valid only for the following vehicle attributes translated by the ACES VCDB:

VINtoVCDB Field	Value	Value translated by ACES VCDB
MakeID	73	Audi
VehicleID	147160	2010 Audi A3 TDI
EngineConfigID	9065	2.0L, L4, 16 valve, 120 ci, Mechanical MFI Fuel Injected, Turbo DOHC-Diesel TDI
BodyNumDoorsID	5	4-door only
BodyTypeID	8	Hatchback only

For the example of the Audi A3 TDI, the VIN information correctly identifies that this VIN is valid only for the Turbo Diesel TDI engine on a 2010 Audi A3. Other available A3 models are the Base and Quattro with gas engines.

Vehicle is a [2009 Honda Accord EX-L]

Full VIN 1HGCP26859A090594 supplied by user.

VIN Mask 1HGCP268@9@@@@@@@ is found to match.

VINtoVCDB Results:

VIN 1-17	MAKEID aces	VEHICLEID aces	ENGINE CONFIGID aces	BEDTYPEID	BODYNUM DOORSID aces	BODYTYPEI D aces	BRAKEABSI D aces	DRIVETYPE ID aces	RESTRAINT TYPEID aces	STEERING TYPEID aces	TRANSMIS SION CONTROL TYPEID aces	TRANSMIS SION NUM SPEEDSID aces	BASEID	VERSION DATE aces	ExportDate
1HGCP268@9@@@@@@@@	59	73317	8981	Any	5	5	Any	Any	Any	Any	5	Any	Any	27-Jul-12	27-Aug-12

The supplied Base 10 VIN information is found to be valid only for the following vehicle attributes translated by the ACES VCDB:

VINtoVCDB Field	Value	Value translated by ACES VCDB
MakeID	59	Honda
VehicleID	73317	2009 Honda Accord EX (all trims)
EngineConfigID	8981	2.4L, L4, 16 valve, Electronic MFI Fuel Injected, DOHC-Gas i-VTEC
BodyNumDoorsID	5	4-door only
BodyTypeID	5	Sedan only
$Transmission {\tt ControlTypeID}$	5	Automatic transmission only

For the example of the Honda Accord EX, the VIN information differs by submodels, engines, doors available, body style, and transmission. The VIN supplied refers to a Honda Accord with only equipped with the 2.4L 4 cylinder engine (as opposed to V6), along with the 4 door sedan body style (as opposed to the 2 door coupe). Additionally, this VIN is for an Automatic transmission only (as opposed to Standard shift). Note that trim levels denoted by "-L" in "EX-L" are not always conveyed by the manufacturer in the VIN. Typically, the "-L" refers to having Leather seats installed.