How to Find My Engine Serial Number (ESN)?

In general, Cummins engine serial numbers consist of eight (8) digits, e.g. 79012323.

If you have a hard copy of an Owners Manual or an Operation and Maintenance Manual or if you already have access to the online manuals, there is a procedure that describes how to find the engine serial number on your engine’s dataplate. These steps will show you how to find that procedure and locate your engine serial number.

When using a hard copy manual go to the section titled “Engine Identification”. This will show you where to find your engine serial number.

When using an online manual, follow these steps:

1. Click on “Engine Family Search” link in the left column of QuickServe Online.
2. Select your engine family from the drop down menu.
   - Note: If you are not sure which engine family to select, call 1-800-DIESELS, and they can help you determine the correct engine family for your engine.
3. Click “Search”. It is not required that you select a Fuel System, Application or Build Year.
4. Click on the “Service” tab located across the top of the page.
5. Click on “Owners Manual” or “Operation and Maintenance Manual.”
6. Select the appropriate manual.
7. Open the section titled “Engine Identification”. This will show you where to find your engine serial number.

If you do not have access to a manual the following instructions tell you where to physically find the ESN on the engine. This will vary based on the engine model. Please note that if your engine dataplate is missing or is not readable, the ESN is identified on the engine block.

ISM:

The dataplate is located on the fuel pump side of the engine, on the rocker housing. The following information is shown on the dataplate:

- Engine Serial Number (ESN)
- Critical Parts List (CPL)
- Model
- Horsepower and RPM rating
- Emission statement (if applicable)

ISX:

The engine dataplate, located on top of the rocker lever cover, provides the model identification and other important data about the engine.

- Engine Serial Number (ESN)
- Critical Parts List (CPL)
- Model
- Advertised horsepower and RPM

ISB:

The dataplate is typically located on the engine rocker cover, but may be located on the side of the gear housing. The engine serial number and CPL provide data for ordering parts and service.

NOTE: ISB engines are produced worldwide. The data plates used on engines may differ in appearance and location of information.
NOTE: If the engine dataplate is not readable, the engine serial number can be identified on the engine block on top of the lubricating oil cooler housing. Additional engine information is available by reading the ECM dataplate.

ISC and ISL:

The dataplate is located on the top side of the gear housing. It includes the following engine data:

- Engine Serial Number (ESN)
- Critical Parts List (CPL)
- Model
- Horsepower and RPM rating

If the engine dataplate is not readable, the ESN can be found on the engine block on top of the lubricating oil cooler housing. Additional engine information is on the electronic control module (ECM) dataplate.

QSK45 and QSK60:

The dataplate on the QSK45 and QSK60 engines is located at the rear of the engine block opposite the starter. It includes the following data:

- Engine Serial Number (ESN)
- Critical Parts List (CPL)
- Horsepower
- RPM
ENGINE MODEL AND SERIAL NUMBER DESIGNATION

The engine serial number and model number are stamped on the cylinder block in the following location (as viewed from the front):

Left side, upper front corner just below the fire deck.

Option Labels

Computerized engine option labels are attached to the valve rocker cover. These labels contain the engine serial number and model number and, in addition, list any optional equipment used on the engine. Labels also include required tune-up information (injection timing, valve lash, max. no-load RPM, etc.).

With any order for parts, the engine model and serial number must be given. If a type number is shown on the option label covering the equipment required, this number should also be included on the parts order.

Transmissions and power take-offs generally carry their own name plates. The model and serial number information on these plates is useful when ordering parts for these assemblies.

Certification Labels

If required, a certification label is attached to the valve rocker cover. This label certifies that the engine conforms to federal and certain state emissions regulations for its particular application. It also gives the operating conditions under which certification was made.

Location of Engine Serial and Model Numbers
ENGINE MODEL, SERIAL NUMBER AND OPTION LABEL

The engine serial and model numbers are stamped on the cylinder block. See Figure 3. A guide to the meaning of the model number digits is listed in Table 2.

![Typical Serial and Model Number](image)

**Figure 3  Location of Engine Serial and Model Number on Block**

<table>
<thead>
<tr>
<th>Digit</th>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6</td>
<td>Series 60 Engine</td>
</tr>
<tr>
<td>2 &amp; 3</td>
<td>06</td>
<td>Six Cylinders</td>
</tr>
<tr>
<td>5</td>
<td>H</td>
<td>14 L Displacement</td>
</tr>
<tr>
<td>6</td>
<td>G</td>
<td>DDEC VI Engine Control</td>
</tr>
<tr>
<td>7 &amp; 8</td>
<td>2E</td>
<td>EGR Coach</td>
</tr>
<tr>
<td>7 &amp; 8</td>
<td>5E</td>
<td>EGR Crane/Excavator</td>
</tr>
<tr>
<td>7 &amp; 8</td>
<td>4E</td>
<td>EGR Fire Truck</td>
</tr>
<tr>
<td>7 &amp; 8</td>
<td>6E</td>
<td>EGR On-Highway Truck</td>
</tr>
</tbody>
</table>

**Table 2  Model Number Description for Series 60 Engine**

For example, 6067-HG6E represents a 14 liter Series 60 engine that is controlled with DDEC VI electronics Exhaust Gas Recirculation (EGR) truck.

Option labels attached to the valve rocker cover contain the engine serial and model numbers and list any optional equipment used on the engine. See Figure 4.

With any order for parts, the engine model number with serial number should be given. In addition, if a type number is shown on the option plate covering the equipment required, this number should also be included on the parts order.

All groups or parts used on a unit are standard for the engine model unless otherwise listed on the option plate.
2. VEHICLE CERTIFICATION LABEL

The Vehicle Certification Label, as shown in Fig. 1-2, is affixed to the left hand side door of the cab.

The name of manufacturer, production year and month, and verification of items which are in conformity with Federal Motor Vehicle Safety Standards are displayed.

3. ENGINE NUMBER

The Engine Number, as shown in Fig. 1-3 is on the left side of the engine block.

4. CHASSIS NUMBER

The Chassis Number is displayed on the left siderail of the frame near the front axle, as shown in Fig. 1-4.
Engine serial number and emission label

1. Engine emission label
2. Engine serial number stamp

© 2011 Navistar, Inc.
SECTION: INTRODUCTION

ENGINE IDENTIFICATION

When in need of parts, always specify the engine model and serial number.

The permanent engine serial number is stamped on the left side of engine (2, Figure i.1).

The Engine Emission Label identifies engine model code and year manufactured. The Emission Label is located on the top of the valve cover/intake manifold (1, Figure i.1).

Other nameplates, are located, on the turbocharger and starter. These nameplates, show manufacturer and specifications and are important to assist operator or maintenance personnel as to what equipment is on the engine and its operating conditions.

Figure i.1 Engine Serial Number and Emission Label
Engine Identification

Serial Number Location

The engine serial number is permanently stamped on the crankcase pad on the lower rear left side of the engine.

Engine Serial Number Location

Explanation of the Engine Serial Number

7.4 Engine Identification Code

H Type of Code: H=Diesel, turbocharged, air cooled and electronically controlled

M2 End Use Code: M2=Truck, A2=Stripped and service

U Country of Origin: U=U.S.A. or

N Country of Origin: N=Brazil (IESA)
Engine Serial Number

The engine serial number is stamped on the crankcase pad, on the rear left side below the cylinder head.

**Engine Serial Number Example**

6.4HM2YXXXXXXX

6.4  Engine displacement (liters)

H  Diesel, turbocharged, air-intercooled and electronically controlled

M2  Motor truck

Y  United States, Huntsville

7 digit suffix  Sequence number
Engine Identification

Engine Serial Number

The engine serial number is in two locations:

- Stamped on a crankcase pad on the right side of the crankcase below the cylinder head.
- On the engine emission label on the valve cover.

**Engine Serial Number Examples**

MaxxForce® DT: 466HM2U3000001

MaxxForce® 9 and 10: 570HM2U3000001
The vehicle identification number (VIN) is located on the left side rear of the engine block (1) and is typically a nine digit number stamped or laser-etched onto the engine at the vehicle assembly plant.

- The first digit identifies the division.
- The second digit identifies the model year.
- The third digit identifies the assembly plant.
- The fourth through ninth digits are the last six digits of the VIN.
Engine Serial Number

The engine serial number is located on a boss on the left, rear of the engine block above the oil filter.
Visual Identification

Engine Model Identification (ASET™ AC ENGINE)

Engine Information Plate

The engine information plate is located on the top of the front cylinder head cover (back cover for LE and MR chassis). This plate includes information concerning:

- Engine model, serial number and 11GBA part number.
- Advertised horsepower at rated speed rpm.
- Emissions regulations to which the engine conforms and other pertinent information required by emissions regulations.
- Inlet and exhaust valve lash settings and engine brake slave piston lash setting.

The following explanations are provided to aid in interpreting some of the key information found on the engine information plate.

Item 1 — U.S. EPA Regulations

- An X in block 1 means the engine meets United States EPA regulations for the year stamped in block 4.

Item 2 — California Regulations

- An X in block 2 indicates the engine meets California emissions regulations for the year stamped in block 4. This engine is referred to as a 50-state engine and can be sold in any state throughout the United States.

Item 3 — ADR Regulations

- An X in block 3 means the engine has been certified to meet Australian emissions regulations.
- One dash in block 3 indicates that the engine is not to be operated in Australia.

Item 4 — Model Year

- The four-digit number stamped in block 4 represents the year in which the engine was certified.

Item 5 — Federal Family

- The 12-digit number stamped in block 5 denotes the Federal Family to which the engine belongs, for emissions certification purposes.
- All engines will have a 12-digit Federal Family number in block 5.
- The letter in the Federal Family number further identifies engine configuration as follows:
  V — Vocational ASET™ AI/AMI (IEGR)
  H — Highway ASET™ AC (CEGR)
  G — Natural gas engines
  P — (Pumper) non-road engine

Item 6 — California Family

- If the engine meets California emissions regulations, the same 12-digit number stamped in the Federal Family block will be stamped in the California block.
- If the engine does not meet California emissions regulations, there will be two dashes in block 6.

Item 7 — Exhaust Emission Control System

- These letters represent the basic engine systems that impact emissions and are defined as follows:
  EM — Engine Modification
  EC — Engine Control
  TC — Turbocharger
  CAC — Charge Air Cooler
  DI — Direct Injection
  SPL — Smoke Puff Limiter
  CEGR — Cooled Exhaust Gas Recirculation

Item 8 — Engine Brake

- This block is used only when the engine is equipped with an engine brake. The number stamped in this block indicates the brake lash setting as follows:
  o J-Tech™ Engine Brake — 0.021 inch (0.53 mm)
  o PowerLeash™ Engine Brake — 0.045 inch (1.143 mm)

Item 9 — PowerLeash™ Engine Brake

- An X in block 9 indicates the engine was built with a PowerLeash™ engine brake camshaft.

Figure 1 illustrates the location of the information plate and Figure 2 illustrates its content. Figure 3 illustrates a completed sample information plate to be used as an example.
Engine Information Plate Location (ASET™ Ai Engine Shown, AC Same Location)

Engine Information Plate

Sample of Completed Plate

**Engine Serial Number Identification**

In addition to the engine information plate on the front cylinder head cover, the engine is also identified by the engine serial number stamped into the cylinder block. This serial number is located on the block right side just below the turbo oil drain tube flange as shown in Figure 4.
Engine Serial Number

Description and Operation

Engine Design Features (ASET™ AC ENGINES)

In the fall of 2002, Mack Trucks introduced two new engines that comply with changes in governmental laws regulating engine emissions. Both engines evolved from the E7 E-Tech™ and continue with the electronic unit pump (EUP) fuel injection system and the V-MAC® III electronic control system. The core change in the design of the two new engines, however, is the use of exhaust gas recirculation to lower combustion temperatures for control of nitrogen oxides (NOx). Two different methods are used to accomplish this control. The methods are:

- Internal Exhaust Gas Recirculation (IEGR) — Al/AMI engine
- Cooled Exhaust Gas Recirculation (CEGR) — AC engine

This manual covers only the ASET™ AC engine's CEGR design, in which a portion of the exhaust gas is "cooled" externally before it is recirculated through the combustion chambers. The ASET™ Al engine's IEGR design receives complete service coverage in ASET™ Al/AMI Engines Service Manual 5-110.

Regardless of the method used, CEGR or IEGR, both designs are improvements based on changes in several design features of the E7 E-Tech™ current controlled rate shaping (CCRS) engine. The changes are more extensive and visible for the AC engine which is used in linehaul applications at lower governed speeds, than the Al engine which is used in vocational applications at higher governed speeds.

- Internal Exhaust Gas Recirculation (IEGR) — Al/AMI engine
- Cooled Exhaust Gas Recirculation (CEGR) — AC engine

For linehaul operations covered by the CH and CX models, the AC engine lineup provides the optimum in economy and performance with reduced NOx emissions. Included are both Econodyne® and Maxicruise®.

ASET™ AC Engine Applications

<table>
<thead>
<tr>
<th>Engine</th>
<th>Chassis</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASET™ AC MAXICRUISE®</td>
<td></td>
</tr>
<tr>
<td>AC-310/330</td>
<td>CH, CX</td>
</tr>
<tr>
<td>AC-330/350</td>
<td>CH, CX</td>
</tr>
<tr>
<td>AC-355/380</td>
<td>CH, CX</td>
</tr>
<tr>
<td>AC-380/410</td>
<td>CH, CX</td>
</tr>
<tr>
<td>ASET™ AC ECONODYNE®</td>
<td></td>
</tr>
<tr>
<td>AC-350</td>
<td>CH, CX</td>
</tr>
<tr>
<td>AC-400</td>
<td>CH, CX</td>
</tr>
<tr>
<td>AC-427</td>
<td>CH, CX</td>
</tr>
<tr>
<td>AC-400 (E)</td>
<td>CH, CX</td>
</tr>
<tr>
<td>AC-460 (P)</td>
<td>CH, CX</td>
</tr>
</tbody>
</table>

The MACK PowerLeash™ engine brake was introduced on ASET™ engines during mid-2003. The PowerLeash™ brake is integrated into the rocker shaft assemblies and uses the standard height cylinder head cover. Compared to add-on engine brakes, the PowerLeash™ brake has lighter weight, increased braking output, improved response and more consistent operation.
Engine Serial Number Identification

In addition to the engine information plate on the front cylinder head cover, the engine is also identified by the engine serial number stamped into the cylinder block. This serial number is located on the block right side just below the turbo oil drain tube flange as shown in Figure 4 -- Engine Serial Number.

Figure 4 -- Engine Serial Number
IEGR — Internal Exhaust Gas Recirculation

**Item 8 — Engine Brake**

- This block is used only when the engine is equipped with an engine brake. The number stamped in this block indicates the brake lash setting as follows:
  
  - J-Tech™ Engine Brake — 0.021 inch (0.53 mm)
  - PowerLeash™ Engine Brake — 0.045 inch (1.143 mm)

**Item 9 — PowerLeash™ Engine Brake**

- An X in block 9 indicates the engine was built with a PowerLeash™ engine brake camshaft.

Figure 1 -- Engine Information Plate Location illustrates the location of the information plate and Figure 2 -- Engine Information Plate illustrates its content. Figure 3 -- Sample of Completed Plate illustrates a completed sample information plate to be used as an example.
### Figure 2 -- Engine Information Plate

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
<th>Column 4</th>
<th>Column 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example 1</td>
<td>Example 2</td>
<td>Example 3</td>
<td>Example 4</td>
<td>Example 5</td>
</tr>
</tbody>
</table>

### Figure 3 -- Sample of Completed Plate

![Sample of Completed Plate Image]

---

1/31/2005
Figure 9  Location of Engine Type Plate

Figure 10  Engine Type Plate Detail
In addition to the fourteen-digit number on the engine type plate, there is a ten-digit number used for warranty and service that is found on the DDEC-ECU label. The ten-digit number is derived from the fourteen-digit number. See Figure 10.
9. VEHICLE IDENTIFICATION NUMBER

VIN plate
The vehicle identification number (VIN) consists of a combination of 17 characters and numbers.

```
J   W 6   A   D  C    1  C   H   L  100001
1   2   3   4   5   6   7   8   9   10  11  12
```

1. Country   J: Japan
2. Make       W: Mitsubishi Fuso
3. Type       6: Incomplete Vehicle
4. Gross Vehicles Weight kg (lbs.)/Brake system
   A: 4531 to 6350 (10001 to 14000)/Hydraulic with vacuum servo assistance
5. Line       D: FE434
6. Series (Wheel base) m (ft.)
   C: 2.6 to 2.89 (8.5 to 9.5)
   E: 3.2 to 3.49 (10.5 to 11.5)
   F: 3.5 to 3.79 (11.5 to 12.5)
7. Cab chassis type
   1: Chassis cab
8. Engine
   C: 201 CID Diesel turbo (4D31T)
9. Check digit
   0, 1, 2, 3 ---- 9
10. Model year H: 1987
11. Plant
    K: Kawasaki-1
    L: Kawasaki-2
    M: Kawasaki-3
12. Plant sequential No.
    Serial number by type, plant, and model year
3. POWER TRAIN TABLE

<table>
<thead>
<tr>
<th>Model</th>
<th>Engine</th>
<th>Clutch</th>
<th>Transmission</th>
<th>Propeller shaft</th>
<th>Final reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>FE434CZSL</td>
<td>4D31T</td>
<td>C3W28</td>
<td>M3S5 5.181/0.739</td>
<td>P3</td>
<td>D3H 6.333</td>
</tr>
<tr>
<td>FE434EZSL</td>
<td></td>
<td></td>
<td>M2A3 2.451/1.000</td>
<td></td>
<td>D2H 4.875</td>
</tr>
<tr>
<td>FE434FZSL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FE434CZKSL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FE434EZKSL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. EQUIPMENT MODEL NOTATION

<table>
<thead>
<tr>
<th>Engine</th>
<th>4D31T</th>
<th>With turbocharger</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clutch</td>
<td>C3W28</td>
<td>Disc outer diameter</td>
</tr>
<tr>
<td>Transmission</td>
<td>M3S5</td>
<td>No. of forward speeds</td>
</tr>
<tr>
<td>Propeller shaft</td>
<td>P3</td>
<td>Typical weight of model</td>
</tr>
<tr>
<td>Final reduction</td>
<td>D3H</td>
<td>Teeth shape</td>
</tr>
</tbody>
</table>
VEHICLE IDENTIFICATION NUMBER

VEHICLE IDENTIFICATION NUMBER PLATE
The vehicle identification number plate is located on the upper portion of the driver's side rear corner panel. The meaning of each character in the vehicle identification number is given in the sample below.

MANUFACTURED BY NISSAN DIESEL MOTOR CO., LTD.

MANUFACTURED BY NISSAN DIESEL MOTOR CO., LTD.

UD

UD

AA-030E

AA-030E

VEHICLE IDENTIFICATION NUMBER

<table>
<thead>
<tr>
<th>Make Identifier</th>
<th>Make</th>
<th>Type</th>
<th>Brake system, Cab Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>JNA</td>
<td>UD</td>
<td>Incomplete Vehicle (Truck)</td>
<td>J: Hydraulic brake system</td>
</tr>
<tr>
<td>JNE</td>
<td></td>
<td>Truck</td>
<td>Cab-over-engine, Forward control</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Engine Type</th>
<th></th>
<th>Model Year</th>
<th>Plant Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>R: 4.169L Diesel with Turbocharger (TD42TI)</td>
<td>R: 1994</td>
<td>A: Ageo</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vehicle Line, Series, Chassis GVWR Class</th>
<th>Sequential Production Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>UD: UD1400 (U41), 4x2, Class 4</td>
<td>301234</td>
</tr>
</tbody>
</table>

95570291 591 GE-2-1 Rev. 9/95
### VEHICLE IDENTIFICATION NUMBER

<table>
<thead>
<tr>
<th>Make Identifier</th>
<th>Make</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>JNA</td>
<td>U D</td>
<td>Incomplete Vehicle</td>
</tr>
<tr>
<td>JNE</td>
<td>U D</td>
<td>Truck</td>
</tr>
</tbody>
</table>

#### Engine Type

- **8:** 6,925L Diesel (FE6)
- **9:** 6,925L Diesel with turbocharger (FE6T)
- **0:** 6,925L Diesel with turbocharger and intercooler (FE6TA)

#### Brake System, Cab Type

- **J:** Air-over-hydraulic brake system
- **K:** Cab-over-engine, Forward control

#### Model, Year

- **K:** 1989
- **L:** 1990
- **M:** 1991
- **N:** 1992
- **P:** 1993
- **R:** 1994

#### Plant, Code

- **A:** Ageo
- **G:** Gunna

#### Sequential Production Number

**GE-2-1** Rev. 4/93
VEHICLE IDENTIFICATION NUMBER

The vehicle identification number plate is located on the upper portion of the driver's side rear corner panel. The meaning of each character in the vehicle identification number is given in the sample below.

Make Identifier | Make | Type
--- | --- | ---
JNA | UD | Incomplete Vehicle (Truck)
JNE | UD | Truck

Engine Type
- S: 3.465L Diesel with Turbocharger
- R: 4.169L Diesel with Turbocharger

Brake system, Cab Type
- J: Hydraulic brake system
- Cab-over-engine, Forward control

Model Year
- K: 1989
- L: 1990
- M: 1991
- N: 1992
- P: 1993

Plant Code
- A: Ageo
- G: Gunma

Sequential Production Number

Vehicle Line, Series, Chassis GVWR Class
- U4: UD1100 (U40), 4x2, Class 3
- U4: UD1300 (U40), 4x2, Class 3
UNIT IDENTIFICATION

The chassis, engine and transmission serial numbers are stamped on the locations shown in the figures below.

Chassis serial number location

Transmission assembly and serial number location

Engine serial number location

Manual transmission

Automatic transmission

Differential carrier assembly and serial number location

GE-2-2 Rev. 4/94
ENGINE SERIAL NUMBER

The engine serial number is stamped on the right of the cylinder block.

UNIT IDENTIFICATION NUMBER

Unit identification numbers are stamped on the transmission, rear axle, differential carrier and front axle.

Manual transmission

Automatic transmission

Front axle

Rear axle

*: Location "A" has been changed to Location "B".
UNIT IDENTIFICATION

The chassis, engine and transmission serial numbers are stamped on the locations shown in the figures below.

**Chassis serial number location**

![Chassis serial number location diagram](image1)

**Engine serial number location**

![Engine serial number location diagram](image2)

**Transmission assembly and serial number location**

![Transmission assembly and serial number location diagram](image3)
Data Plate Locations

Engine

The Volvo D12D engine serial number is located on the rear left side of the cylinder block.

The serial number is also located on the certification label on the valve cover.

The Volvo D12C engine serial number is located on the rear left side of the cylinder block.

The serial number is also located on the certification label on the valve cover.

On Cummins engines, the serial number is located on a data plate on the timing gear housing in front of the air compressor.